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A R T I S T I C S W I M M I N G



# INTRODUCTORY GUIDE FOR THE APPLICATION OF DECLARED DIFFICULTY

FINA Artistic Swimming Innovation Group

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Version 3.2 – September 2, 2022



*Dear AS Family,*

*Over the last three years the Innovation Group has been working in the specific area of difficulty in routines looking for opportunities to improve or enhance the mutual comprehension of the issue among coaches, athletes, judges, media, and audience.*

*Athletes and coaches have boosted the sport to an unbelievable level of difficulty with their athleticism and hard work and continue to do so each season. As a result of the sport's growth and development routines are more and more amazing and awe inspiring but with an underlying complexity very hard to analyze and judge at a first sight.*

*Fortunately, we have solid foundations built by the enormous contributions of great coaches and judges who developed our Manual and DD Reports.*

*This document is the result of the Innovation Group's internal work done up to now, with the valuable help of the group of FINA Lecturers and TASC Members that tested our intermediate steps. Their comments and questions helped us to progress.*

*We present to you the work done in routine hybrids and declaring difficulty on a coach card. This document is meant to explain the use of the Hybrid Difficulty Table and using a coach card to declare routine difficulty that needs to be tested by you.*

*The first goal is to check if you find in our descriptions all possible combinations of different components of a hybrid (movements), as well as the added values (bonuses) specific for routines - number of swimmers, apnea time, patterns, placement.... etc.*

*The second goal is to practice using a coach card to declare difficulty in a routine.*

*For your information, the values for movements that you will eventually see in the difficulty table, calculator or coach card have been obtained by normalising current values inside our transitions categories. Bonus values have been assigned after internal testing by the Innovation Group according to the appreciated subjective difficulty and trying to be proportionate to the difficulty values of movements. Extensive testing will reveal the validity and adjustments will be applied if required.*

*We highly appreciate your participation in continued testing.*



## HYBRIDS

**A hybrid is defined as** having a combination of two or more movements performed with lower limbs with intentional apnea (head down under hips level). Horizontal movements along the surface with 1-2 lower limb actions that have consequential apnea (rolling over, kicking, etc.) are considered transitional movements.

Hybrid difficulty **COMPONENTS** are considered under three areas:

### 1. BASE MARK

NUMBER OF MOVEMENTS PERFORMED (NM)  
and  
TIME UNDERWATER (TU)

### 2. MOVEMENTS that comprise transitions in a hybrid and are grouped in “families”:

1. THRUSTS (T)
2. ROTATIONS (R)
3. FLEXIBILITY (F)
4. AIRBORNE WEIGHT (AW)
5. CONNECTIONS (C)

### 3. BONUSSES that add difficulty factors specific to hybrids:

1. TRAVELING (TR)
2. ANGLES (A)
3. PLACEMENT (PL)
4. SYNCHRONISATION (SY)
5. PATTERN CHANGES (PC)

## BASE MARK

**Base Mark** is the difficulty value that a hybrid has according to the time spent underwater (TU) and the number of movements performed (NM).

$$\text{BM} = \text{NM} + \text{TU}$$

These two parameters are common to all possible hybrids, from easiest to hardest.

If the Hybrid has no “Families” movements or Bonuses, the Base Mark is applied.

**Video examples of Base Mark:**

<https://vimeo.com/641654114/75dfce51e3>

*\*Note: when the symbol (“) appears it means “seconds” and not inches.*



## 1. NUMBER OF MOVEMENTS (NM)

**The Definition of a Hybrid Movement** = a definitive change in the position or direction of the lower limbs as mandated by the choreography of the routine.

- Number of movements in a hybrid will be given credit in 4 categories:

<b>Level 1 (NM1)</b>	6 movements or less
<b>Level 2 (NM2)</b>	7-19 movements
<b>Level 3 (NM3)</b>	20-29 movements
<b>Level 4 (NM4)</b>	30+ movements

- Spins / Twists / Twirls: each ½ turn (180°) shall count as 1 movement
- A “swirl” action counts as one movement from it’s beginning to its clear stopping point or next clear action as momentum/force must be considered.
- Fast kick type actions (for example fast “tendu” like action similar to ballet: movement in ballet where the working leg is extended along the floor until only the tip of the toe remains touching the floor) shall count as 1 movement (i.e. there is a clear exertion of energy/muscle tension and then a recovery)
- When rotating and performing leg movements at the same time, only the rotations shall be counted.
- Regarding **entries** and **exits**:
  - Front Pike Pulldown - the action of the body bending into the pike position is movement number one, with counting continuing from there
  - Entry from a Ballet Leg - A Ballet Leg kick counts in the hybrid if used as an entry into the hybrid (kick up and then a Catalina like rotation, kick up and then into inverted tuck, etc.)
  - **If starting from underwater, start counting from the first position – for example a pike, tuck, tabletop, or a submerged back pike (before a thrust)**
  - No movements shall be counted underwater – for example, a tuck from ankles at the end of a spin would count as one movement, however if the athlete(s) tuck when completely submerged no movement shall be counted
- Regarding “**back-to-back**” hybrids:
  - Shall be ONE hybrid if no breath is taken in between. For example, a hybrid is executed and then a front walkout ending appears to be taking place BUT the athlete(s) DO NOT break their face and breathe and instead tuck and continue with more movements. This is ONE hybrid, totalling all movements.
  - In comparison IF the athletes face(s) break the surface and they breathe in Back Layout the hybrid has ended, and if they continue into another hybrid, it will be considered a separate hybrid with movements counted accordingly.
- Regarding **Cadence** (team hybrids only):
  - Each cadence movement shall count as 1 movement. You do not count the movements of each athlete as they all do the same action, but on their own counts.



- Regarding Duet, Mixed Duet or Team, there may be a difference in the number of movements executed by different athletes in one hybrid, however, the total number of movements of each athlete **MUST** be in the same Level. For example, in one team hybrid half of the athletes do 15 movements, and the other half do 18 movements – this is all Level 2 (NM2), so this is permitted. What is not permissible is if half of the athletes do 18 movements (NM2) and half of the athletes do 22 movements (NM3). If the Technical Controller identifies a difference in levels the lower NM level will be applied to the Base Mark.

## 2. TIME UNDERWATER (TU)

**The Definition of Time Underwater** = apnea calculated from breath taken into hybrid entry, to first surfacing breath after completing the hybrid. Please read specific situation examples given below.

- Time underwater will be given credit in 3 categories:

<b>Level 1 (TU1)</b>	6 seconds or less
<b>Level 2 (TU2)</b>	7-15 seconds
<b>Level 3 (TU3)</b>	16 seconds and longer

- **STAND-ALONE HYBRID:**  
Hybrid underwater time shall be timed from “breath to breath” – from taking entry breath to go under (pull down, arch back, body boost, etc.), to first surfacing breath after completing the hybrid (roll up from walkout, body boost, eggbeater surfacing, etc.)
- **ACRO/DIVE-IN INTO HYBRID:**  
In the case that a hybrid takes place in combination with an acrobatic movement/highlight OR from directly after the dive-in, the underwater time shall be counted from the first movement of the hybrid to the surfacing breath.
- **HYBRID FOLLOWED BY ACRO:**  
In the case that the hybrid takes place in combination with an acrobatic movement/highlight occurring directly after a hybrid, the underwater time shall be counted from taking the entry breath, to the last movement of the hybrid.
- **ATHLETES START OR END A HYBRID AT DIFFERENT TIMES:**  
If some of the athletes start the Hybrid earlier than the other athletes or end the hybrid later than others, the time underwater starts from the moment the first athlete(s) start the Hybrid and ends when the last athlete(s) finish the Hybrid. This is applicable to cadence and other instances of 4 and 4 or 2,2,2,2, etc.
- **Regarding Duet, Mixed Duet or Team, there may be a difference in the time underwater executed by different athletes in one hybrid, however, the time underwater of each athlete **MUST** be in the same Level. For example, in one team hybrid half of the athletes are underwater 10 seconds, and the other half are underwater for 14 seconds – this is all Level 2 (TU2), so this is permitted. What is not permissible is if half of the athletes do 14 seconds underwater (TU2) and half of the athletes do 18 seconds underwater (TU3). If the Technical Controller identifies a difference in levels the lower TU level will be applied to the Base Mark.**



## FAMILIES OF MOVEMENTS

### 1. THRUSTS (T)

This family includes variations of thrusts (as defined in AS Rulebook BM). When “Thrust” is stated it means two legs, otherwise one leg is stated.

- A Thrust with flexibility (T4, T6 and T8) must exhibit flexibility at maximum height like Airborne Split Position or Vertical to Knight. A thrust with Airborne Split Position or a split variant must show body alignment under hips, as described in BP. Body alignment means lower back arched, with hips, shoulders, and head on a vertical line. Split variants may not exhibit bent front legs, and only back legs that bend downward (not inward).
- A Thrust with flexibility (T4) or a twirl (T4, T5) may have any ending including a crash.
- In the case that a thrust is performed that exhibits actions from different levels – declare the most difficult movement. For example, if a Thrust with Flexibility continued by catching (clearly stopping) in a Vertical Position above the knees is performed, declare a T9.

Video examples of Thrusts Family: <https://vimeo.com/642471073/716a29df4b>

#### a) Level 1

Thrust with crashing on the surface  
(means “not completed” thrust: From a Submerged Back Pike Position, a vertical upward movement of the legs and hips is rapidly executed as the body unrolls to assume a Vertical Position and continues by “falling” on the surface)

#### b) Level 2

Thrust with one leg: Thrust with the Bent Knee Vertical Position or Thrust in a Fishtail position

#### c) Level 3

Thrust with one leg followed by rotation of Spin 360°  
Thrust and vertical descent (may be followed by leg movements **while descending**)

#### d) Level 4

Thrust with one leg followed by rotation of Spin 720° or Twirl 180°  
Thrust with flexibility

#### e) Level 5

Thrust followed by rotation of Spin 360° or Twirl 180° (During rotation, leg movements can be performed close to the vertical position).

#### f) Level 6

Thrust with flexibility followed by rotation of Spin 360°

#### g) Level 7

Thrust with rotation of Spin 720° and over (Thrust continued by Spin or Continuous Spin)



**h) Level 8**

Thrust with flexibility followed by rotation of Spin 720° and over

**i) Level 9**

Thrust continued by catching (clearly stopping) in a Vertical Position above the knees or higher.

**2. ROTATIONS (R)**

This family includes all types of rotations: Twists, Spins, Twirls (as defined in AS Rulebook BM) and swirls (rotation performed in a pike position or other positions where body is not aligned with its vertical axis).

- For **descending spins in free hybrids**, the definition of degrees is by the submersion of the toes, OR when the rotation has come to a complete stop. **Please note this is different than for Figures or Technical Required Elements (see BM 13).**
- For **ascending spins in free hybrids**, the definition of degrees begins when the toes break the water's surface, OR when the rotation begins. **Please note this is different than for Figures or Technical Required Elements (see BM 13).**
- **Spin and Twist allowances (BM 12 and 13) do not apply to Rotation declarations in Free Hybrids. Athletes must fully complete rotations as declared on the Coach Card. For example, if an R3 is declared (Spin descending 360°-720°), then the Technical Controllers will be watching for completion of at least a full 360°.**
- Various modifications of leg positions during rotations are allowed.
- Rotations with one leg includes Bent Knee Vertical Position, Fishtail, Crane, Knight, and other position options.
- Rotations with two legs includes Vertical Position "VP", Fishtail close to vertical, Arched VP and other positions where 2 legs are clearly visible close to the vertical line.
- Joining/opening/bending/extending movements from Bent Knee VP/Fishtail to VP or VP to Bent Knee VP/Fishtail is considered in all "1 leg only" rotation classifications.
- "Unbalanced 1 leg twists" is considered in all "1 leg only" rotation classifications.
- A **Combined Spin** and a **Reverse Combined Spin** will be counted only in the case of an equal number of descending and ascending or ascending and descending rotations with no stop **that start and finish at the same height (for example if toes breaking the surface is beginning of spin, then toes submerging must be the end).**
- A **"Two-Direction"** rotation (Spin or Twist) means a rotation in one direction, followed without a pause by an equal rotation in the opposite direction. For example:
  - Two-Direction Twist 360° = a rotation of 180° in one direction followed without a pause by a rotation of 180° in the opposite direction.
  - Two-Direction Twist 720° = a 360° rotation in one direction followed without a pause by a rotation of 360° in the opposite direction.
  - Two-Direction Combined or Reverse Combined Spin 720° = a descending or ascending rotation of 720° followed without a pause by a descending or ascending rotation of 720° in the opposite direction.



- If there are several rotations in a hybrid, it is recommended to separate them from each other by other movements (unless it is a Combined Spin). For example – If an R3 and R5 please put extra movements between them.
- Twisting (any amount) or Twirling at the ankles will be credited as per number of movements. Declared spins that drop and spin at the ankles will be flagged by Technical Controllers. For example – if an R5 (spin descending more than 1440°) is declared and the athlete drops to the ankles after 2 rotations, and spins 720° at the ankles this is not a spin 1440° and the hybrid will go to Base Mark.

**Video examples of Rotations Family:** <https://vimeo.com/641650538/38beefa2fc>

**Rotations by Technique:** <https://vimeo.com/653441032/6659676c65>

**a) Level 1** includes rotations with **one or two legs:**

Swirl 180°-360°

Turning 180°-360° while doing other non-sustained or “up-down” actions such as:

- VP to Split repeating while rotating
- Fishtail to Pike repeating while rotating
- Bent Knee to Tuck while rotating
- Etc. . .

**b) Level 2** includes rotations with **one or two legs:**

Swirl 720°-1080°

Spin descending 180°

Twist **or Twirl** 180° with **1 leg only**

**b) Level 3** includes rotations with **one or two legs:**

Swirl 1440°

Spin ascending 180°-360°

Spin descending 360°-720°

Twist **or Twirl** 180° with **2 legs**

Twist 360° with **1 leg only**

**c) Level 4** includes rotations with **one or two legs:**

Spin ascending 720°-1080°

Spin descending 1080°-1440°

Twist 360° with **2 legs**

**d) Level 5** includes rotations with **one or two legs:**

Twist 720° with **1 leg**

Spin ascending 1440° with **1 leg**

Spin descending more than 1440° with **2 legs**

Twist opening 360° Vertical Position to Split

Twirl 360° with **2 legs**

Combined Spin 360°-720° with **1 leg**

Reverse Combined Spin 360°-720° with **1 leg**





**e) Level 6** includes rotations with **one or two legs**:

Combined Spin 360° with **2 legs**

Reverse Combined Spin 360° with **2 legs**

Two-Direction Combined or Reverse Combined Spin 360°-720° with **1 leg**

Spin ascending 1440° with **2 legs**

Twist 720° with **2 legs**

Twist Closing 360° from Split to Vertical Position

**f) Level 7** includes rotations with **two legs only**:

Combined Spin 720°

Reverse Combined Spin 720°

Two-Direction Combined or Reverse Combined Spin 360°

Twist 1080°

Unbalanced 360° Twist

Two-Direction Twist 360°

**g) Level 8** includes rotations with **two legs only**:

Combined Spin 1080°

Reverse Combined Spin 1080°

Two-Direction Combined or Reverse Combined Spin 720°

Twist 1440°

Unbalanced 720° Twist

Two-Direction Twist 720°

**h) Level 9** includes rotations with **two legs only**:

Combined Spin 1440°

Reverse Combined Spin 1440°

Two-Direction Combined or Reverse Combined Spin 1080°

Unbalanced 1080° Twist

### 3. FLEXIBILITY (F)

This family includes all types of flexibility movements that require an extreme range of suppleness (bring a joint to its maximum range of motion), such as Walkouts, Nova lift, Aurora open, Knight and Split.

- All positions should be shown with maximum strength in legs and a body position that demonstrates the flexibility of the athletes.
- The duration of execution should be sufficient to clearly identify the difficulty by the technical controllers.

**Video examples of Flexibility Family:** <https://vimeo.com/641660983/030337b7a6>

**a) Level 1**

Rapid split by one leg from any position (such as Pike, Tub, Tuck, Inverted Tuck, Bent Knee VP, Fishtail, VP, etc.



**b) Level 2**

Clearly demonstrated split (held at least 1-2 seconds)

Walkout Front

Back Layout to Surface Arch or Bent Knee Surface Arch

**c) Level 3**

Ariana rotation or split variants at the surface with a demonstration of at least 2 different splits (Right, Left, Middle)

Split to Split through Vertical Position (changing legs)

**d) Level 4**

Front Layout to Surface Bent Knee Arch Position or a Split (Example – Swordfish like movement)

From Surface Arch Position to Knight or Split

Bent Knee Surface Arch to Bent Knee VP

**e) Level 5**

Knights: combinations of Knight positions (demonstration of at least 2 Knight positions)

Knight to Fishtail (through Vertical Position)

Knight to Vertical Position

Sustained Knight Position (held at least 1-2 seconds)

Bent Knee Surface Arch to Vertical Position

**f) Level 6**

Surface Arch to Vertical Position

#### 4. AIRBORNE WEIGHT (AW)

This family includes movements that require an amount of the body out of the water (single or double legs) and reflect the difficulty of maintaining balanced and unbalanced airborne weight.

- When “sustained height” is stated, it means airborne weight lasting equal or more than 3 seconds. The duration of execution should be sufficient to clearly identify the difficulty by the technical controllers.
- Please take note of General Principles d) and e) on page 14 as Airborne Weight may not be declared when occurring simultaneously with a rotation.

**Video examples of Airborne Weight Family:** <https://vimeo.com/642431079/aff60a114f>

**a) Level 1**

Vertical descent in Bent Knee Vertical Position or Vertical descent from Fishtail join to VP (not as part of a Thrust or a Spin)

Front Pike Position to Bent Knee VP or Fishtail

**b) Level 2**

Vertical descent in Vertical Position (not as part of a Thrust or a Spin) or descending VP performing isolated movements

Front Pike to Vertical Position (porpoise action)



**c) Level 3**

Vertical ascent **with one or two legs** (not as part of an ascending spin)

Ascending Vertical Position performing isolated movements (one leg stays in a fixed position while the other performs movements with body in vertical alignment with fixed leg)

**d) Level 4**

Sustained height with one leg (Bent Knee Vertical Position or Fishtail) or combination of one and two legs, lasting equal or more than 3 seconds

**e) Level 5**

Isolated movements performed in stable Fishtail Position and piked body position (legs over surface, 30 to 60° from vertical) lasting equal or more than 3 seconds. Any knee/leg movements performed credited in number of movements.

**f) Level 6**

Sustained height in Vertical Position lasting equal or more than 3 seconds

**g) Level 7**

Sustained height shown at least 3 seconds in Vertical Position performed in an unbalanced position. Any knee/leg movements performed credited in number of movements.

## 5. CONNECTIONS “C”

This family includes movements when swimmers join or link together their legs creating a connected action.

- The swimmers must be touching in some manner during the performance of the connection.
- As per General Principle b) on page 14 “if a Connections (C) movement is repeated during a hybrid it may be counted only two times taking always the highest values”. A connection is declared once per connection (as per table) - it does not matter how many times the positions are changed, as they will be counted in number of movements.

**Video examples of Connections Family:** <https://vimeo.com/641668503/d7f550cda4>

**a) Level 1**

Pike Position at the surface of the water (connections on the surface of the water without lifting the feet from the water)

**b) Level 2**

One leg face-to-face connection

When swimmers are connected with one leg facing each other in any vertical position.

**c) Level 3**

One-leg back connection

When swimmers are connected with one leg back or to side of each other in any vertical position.



**d) Level 4**

Two-leg connection

When swimmers are connected with two legs facing, back or side to each other in any vertical position.

**e) Level 5**

Rotation vertical connection with one leg

When swimmers are connected with one leg facing, back or side to each other in any vertical position while performing a rotation of at least 180° at maximum height.

**f) Level 6**

Rotation vertical connection with two legs

When swimmers are connected with two legs facing, back or side to each other in any vertical position while performing a rotation of at least 180° at maximum height.

## BONUS

There are 5 bonuses available for added features in a free hybrid. Please note that not all bonuses are applicable to all disciplines and bonuses are NOT applicable to Technical Required Elements.

Bonus	Allowance per hybrid:	Solo	Duet	Team
Traveling	Once per hybrid	✓	✓	✓
Angles	Once per hybrid (Simple or Complex)		✓	✓
Placement	For each hybrid in the last 20 seconds	✓	✓	✓
Synchronisation	Team only - Part (2x) or Full (1x)			✓
Pattern Change	For each pattern change (Simple or Complex)			✓

**Video examples of all bonuses:** <https://vimeo.com/643072561/751c0b1733>

### 1. TRAVELING (TR)

The Traveling bonus may be declared only once per hybrid in solo, duet, or team for movement of all swimmers of 1.0m or more during the hybrid. If travel occurs only at the entry (pull-down, etc.) or exit of the hybrid (walkout, torpedo/propellor, etc.) this does not count.

If the Hybrid starts at one point in the pool and finishes at another point in the pool, having covered 1.0m or more, then a traveling bonus will be awarded.

Any pattern changes taking place during the hybrid are not considered as traveling (see Bonus 5. Pattern Change).

### 2. ANGLES (A)

An angles bonus may be declared only once per hybrid in duet or team. Angles are not considered for Solo; they may be credited as unbalanced positions in the difficulty table.



### a) Simple Angles (A-S)

Simple angles are defined as angles performed with straight legs on the sagittal plane (forward or backward movements) or frontal plane (lateral or side-to-side movements), with one or two legs.

The hybrid shows **2 or more different** angles but there is not more than 1 complex angle (see definition of complex angles below).

### b) Complex Angles (A-C)

The hybrid shows 2 or more **different** complex angles.

Complex angles are defined as:

- Large joint movements involving different axes and planes
- Positions where several joints are angled (toes, ankle, knee, hip...)
- Those hybrids that have micro movements of one of the joints (example knee)
- Those that involve a considerable displacement of the center of gravity or in continuous displacement
- Angles which involve unbalanced movements

## 3. PLACEMENT (PL)

The placement bonus may be applied for each hybrid performed during the last 20 seconds of the routine in solo, duet or team.

The hybrid must begin within the last 20 seconds of the routine. For example, if an athlete's solo routine is 2:18 a hybrid can begin anytime as of 1:58 to earn the placement bonus.

## 4. SYNCHRONISATION (SY)

This bonus is applied for Teams only (**including Free Hybrids in Tech Team**). Synchronisation of part or full hybrid means that all athletes perform the same movements at the same time. Equal movements (same legs **or symmetric movement**) in different directions (facing a different way) are considered synchronized movements.

### Part Synchronisation (SY-P or 2SY-P)

This bonus is awarded for a fully synchronized part of a hybrid that consists of at least 7 or more movements. The bonus can be added not more than 2 times per hybrid.

**Example of SY-P:** A team hybrid begins with 10 fully synchronized movements by all 8 athletes together, then the athletes do a 2-2-2-2 cadence action to end the hybrid. You can declare an "SY-P" bonus because the first part of the hybrid was synchronized and met the minimum movement requirement.

**Example of 2SY-P:** A team hybrid begins with 8 fully synchronized movements by all 8 athletes together, then there is choreography with 4 athletes doing a set of movements, and the other 4 doing different movements, then the team of 8 finishes the hybrid with 10 fully synchronized movements. You can declare "2SY-P" bonus because the first and last part of the hybrid was synchronized and met minimum movement requirement.



### Full Synchronisation (SY-F)

This bonus is awarded for a fully synchronized hybrid (a maximum of 3 asynchronous movements is allowed). The bonus is only awarded for hybrids with 7-19 (level 2), 20-29 (level 3) or 30+ (level 4) movements.

## 5. PATTERN CHANGE (PC)

This bonus is applied for Teams only for changes of formations made by the spatial relationship between members of a team.

Each pattern change in a hybrid is counted either as a Simple Pattern Change (PC-S) or a Complex Pattern Change (PC-C). For example, if a hybrid has 3 pattern changes and 2 are simple and 1 is complex the codes would be 2PC-S and 1PC-C in bonus section of the Coach Card.

### a) Simple pattern change (PC-S)

Pattern changes where athletes can see each other and can control the accuracy of the pattern.

### b) Complex pattern change (PC-C)

Changes from large patterns to compact patterns and from compact patterns to larger patterns.

Blind pattern changes where athletes cannot see each other while performing back or side pattern changes.

**NOTE:** Traveling of all athletes in the same direction while maintaining the pattern is not a pattern change - this is Traveling (see Bonus 1.)

### HYBRID DIFFICULTY TABLE:

- Please see the end of the guide for printable Hybrid Difficulty Table (2 pages).
- **Important: Most up-to-date version is [September 2, 2022](#)**



## GENERAL PRINCIPLES FOR DECLARING DIFFICULTY ON THE COACH CARD:

- a) When **Vertical Position (VP)** is indicated it includes variants of 2 legs close to vertical (legs can be up to 45° off from vertical)
- b) When a **Flexibility (F)**, **Airborne Weight (AW)** or **Connections (C)** movement is repeated during a hybrid it may be counted only two times (2x) always taking the highest values. For example: If there are three flexibility movements performed; two (2) of Level 1 and one (1) of Level 3, the value declared should be 1 x Level 1 and 1 x Level 3.
- c) **Rotation (R)** and **Thrust (T)** movements in levels 1-4 may be counted only two times (2x) per hybrid always taking the highest values. Each **Rotation (R)** and **Thrust (T)** movement of levels 5-9 adds its value regardless of the number of repetitions.
- d) If a **Rotation (R)** is declared (such as a Twist 360° with two legs) then Airborne Weight (AW) may not also be declared because the Twist already has the difficulty of Airborne Weight taken into consideration in its value.
- e) If an **Airborne Weight (AW)** movement and a rotation is occurring simultaneously - for example a Front Pike to Vertical Position (AW2) is executed while rotating 360° (R1), then you may only declare one – either the AW2 or the R1.
- f) If a **Flexibility (F)** movement is declared and a rotation is occurring simultaneously – for example a Bent Knee Surface Arch to Vertical Position (F5) is executed while twisting or twirling 180° (R2), then you may only declare one – either the F5 or the R2.
- g) Regarding **bonus** repetitions during a free hybrid:
  - o Traveling is counted once per hybrid
  - o Angles is counted once per hybrid either as simple or complex
  - o Placement is counted for each hybrid in the last 20 seconds
  - o Synchronisation is counted once per hybrid if full synchronisation (SY-F) and max twice per hybrid if part synchronisation (SY-P or 2SY-P)
  - o Each pattern change in a hybrid is counted either as a Simple Pattern Change (PC-S) or a Complex Pattern Change (PC-C).
- h) In **teams or duet**: when a hybrid movement or bonused action is not performed by all team/duet members its value will be factored by \*0.5 (half of swimmers included), or by \*0.3 (less than half of swimmers included). This principle applies in pair actions where just one swimmer is performing an action while the other performs surface accompaniment (whether connected or not).

When a hybrid movement (those with 2x maximums) has a factor applied of 0.5 (half swimmers) or 0.3 (less than half of swimmers) a coach may declare that movement a maximum of 4x when factored.

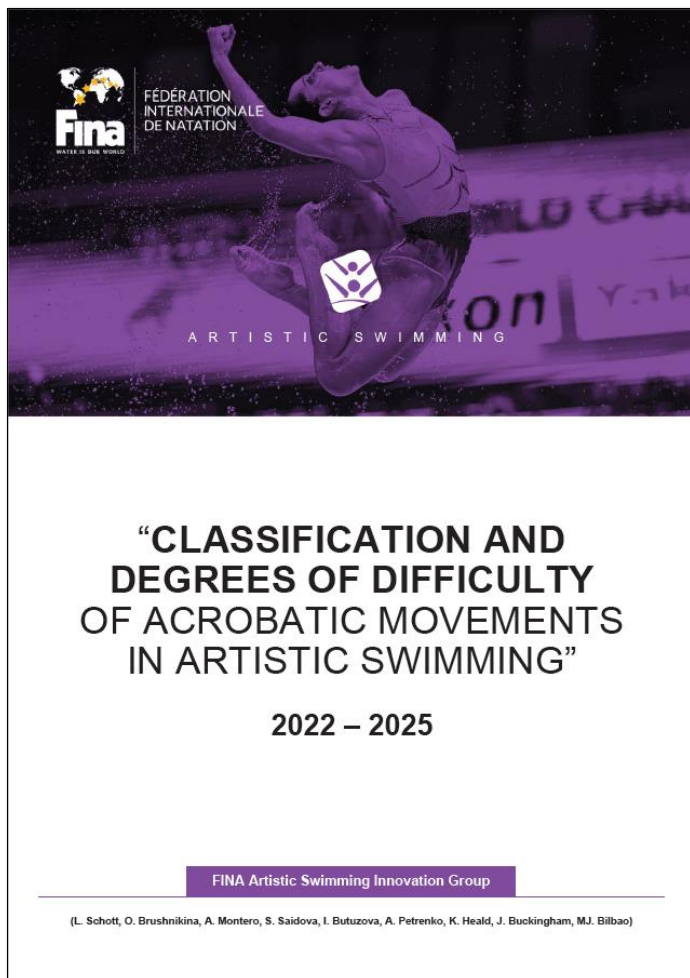
For example in a team – If 4 swimmers do R3 (R3\*0.5), then the other 4 swimmers do R3 (R3\*0.5), then this could be repeated again for a total of four (4) R3\*0.5 because this is the same as 2 “whole” R3 declarations and respects the maximum limit.



## ACROBATICS:

For acrobatics difficulty please refer to the Acrobatics Catalogue.

This acrobatics information is needed to complete a routine's declared difficulty on the Coach Card for Duet and Team routines.



For Acrobatics, coaches may also use the Acrobatics Calculator that is available online as a resource: <https://www.synchroswim.com.ua/>







## IMPORTANT - REGARDING DECLARED DIFFICULTY MOVEMENTS / COACH CARD:

It is very important that athletes perform movements as declared on the Coach Card AND in the order in which they are declared – otherwise a deduction will occur. We strongly advise **“Do what you declare!”**

If the coach has declared a movement or bonus on the Coach Card and an athlete does not perform it at all (it is omitted), or does not perform it in conformance to what is declared on the Coach Card (movement is different or in wrong order than declared) then the following shall occur:

- **For a Free Hybrid:**
  - Only the Base Mark value will be applied
  - For example, a routine hybrid is declared to have:
    - Base Mark of NM 7-19 (L2) and TU 7-15 sec (L2)
    - Thrust L3 (T3), Airborne Weight L3 (AW3), and a Rotation L4 (R4)
    - However, an athlete does not perform their R4 (for example a spin descending 1080°-1440°) and instead does a R3 (spin descending 360°-720°)
    - The routine will have only the Base Mark value of NM2 + TU2 applied for this hybrid (the value of T3+AW3+R4 will not be added)
    - Please note in duet or team if ONE athlete does not perform movement as declared the deduction will apply
  - The hybrid declaration must be in the exact order that it appears in the hybrid chronologically – as above – First a T3, then AW3, then R4 occurs. IF this is incorrectly ordered on Coach Card vs what is done in the water, the deduction will apply.
  - Please note when declaring Bonuses, it is asked that they are declared in order as per the Difficulty Table, considering first TR, then A, then PL, then SY, then PC.
  - If the coach makes an error on the Base Mark declaration on the Coach Card the Difficulty Technical Controller panel will adjust.
- **For a Technical Required Element (TRE)**
  - In technical routines, a Technical Required Element will be declared as TRE1a or TRE1b, TRE2a or TRE2b, TRE3a or TRE3b, TRE4a or TRE4b, and TRE5a or TRE5b (note: in disciplines where there is only one option for an element no letter is included when declared on the Coach Card – for example “TRE3”)
  - Required Elements can be performed in any order however, athletes must perform the Technical Required Elements in the order as declared on the Coach Card or a penalty will be applied as per the rulebook.
  - Please also note that additional movements can be added immediately before and after (breath to breath) Required Elements #1-5. Those movements will not add any extra difficulty nor will be considered as additional hybrids and therefore are not to be added to the Coach Card.
- **For an Acrobatic movement (Teams):**
  - Acrobatic codes should be added to the Coach Card as per the Acrobatic Catalogue
  - A Base Mark will be applied to acrobatics not performed in conformance to what is declared on the Coach Card.
  - Please refer to the Acrobatic Catalogue for Acro Base Marks for Groups A, B, C and P.



## COACH CARD LEGEND:

### Acrobatics Base Mark:

<b>Group A</b>	<b>ACRO-A</b>	For Acrobatics, please enter the acrobatic code in the “declared difficulty” column as per the Acrobatics Catalogue.
<b>Group B</b>	<b>ACRO-B</b>	
<b>Group C</b>	<b>ACRO-C</b>	
<b>Group P</b>	<b>ACRO-P</b>	
<b>Pair Acro</b>	<b>Acro-Pair</b>	

**\*\*Please refer to the Acrobatics Catalogue for Acrobatic codes and Acro Base Marks.**

### Hybrid Base Mark:

<b>Number of Movements (NM):</b>	<b>NM1</b>	<b>NM2</b>	<b>NM3</b>	<b>NM4</b>
	≤ 6	7-19	20-29	30+
<b>Time Underwater (TU):</b>	<b>TU1</b>	<b>TU2</b>	<b>TU3</b>	
	≤ 6 sec	7-15 sec	16 sec +	

### Hybrid Families and Bonuses:

<b>Families (groups):</b>		<b>Family + Level Codes:</b>
Thrusts	T	T1 - T9
Rotations	R	R1 - R9
Flexibility	F	F1 - F6
Airborne Weight	AW	AW1 - AW6
Connections	C	C1 - C6

<b>Bonuses:</b>		<b>Bonus Codes:</b>
Travelling	TR	TR
Angles	A	A-S or A-C
Placement	PL	PL
Synchronisation	SY	SY-P or SY-F
Pattern Change	PC	PC-S or PC-C


### Technical Required Elements:

<b>Element 1</b>	<b>Element 2</b>	<b>Element 3</b>	<b>Element 4</b>	<b>Element 5</b>
TRE1a	TRE2a	TRE3a	TRE4a	TRE5a
TRE1b	TRE2b	TRE3b	TRE4b	TRE5b

*\*Note: in disciplines where there is only one option for an element, no letter is included – for example “TRE3”*




## EXAMPLE OF HOW TO FILL OUT THE COACH CARD (TECH ROUTINE):



FÉDÉRATION INTERNATIONALE DE NATATION

# COACH CARD



**Please fill in with type or write in capital letters!**

<b>FINA Member Federation:</b>	Federation ABC		
<b>Competition:</b>	FINA WORLD SERIES #1		
<b>Event:</b>	<input type="checkbox"/> PRELIMS <input type="checkbox"/> FINALS		
	<input type="checkbox"/> Solo Tech	<input type="checkbox"/> Male Solo Tech	<input type="checkbox"/> Duet Tech <input type="checkbox"/> Mixed Duet Tech
	<input type="checkbox"/> Solo Free	<input type="checkbox"/> Male Solo Free	<input type="checkbox"/> Duet Free <input type="checkbox"/> Mixed Duet Free
	<input type="checkbox"/> Team Tech	<input type="checkbox"/> Team Free	<input type="checkbox"/> Acrobatic <input type="checkbox"/> Combo
<b>Theme:</b>	The Nutcracker		
<b>Name of competitor(s):</b>	Duet Name A, Duet Name B, Duet Reserve Name		

**ELEMENTS IN ORDER OF PERFORMANCE**

TIME	PART	EL	BASE MARK	DECLARED DIFFICULTY	BONUS	DD	TC
0:08-0:11	ACRO	1	Acro-Pair	L&f		0.2	
0:12-0:20	TRANS						
0:21-0:30	TRE	2		TRE4a		3.2	
0:31-0:38	TRANS						
0:39-0:49	TRE	3		TRE1a		3.0	
0:50-0:57	TRANS						
0:58-1:10	HYBRID	4	NM3 TU2	F3 AW4 R6 R3	TR A-S	2.0	
1:11-1:19	TRANS						
1:20-1:25	TRE	5		TRE2b		2.4	
1:26-1:31	TRANS						
1:32-1:40	TRE	6		TRE3a		2.9	
1:41-1:45	TRANS						
1:46-1:51	TRE	7		TRE5b		2.1	
1:52-1:59	TRANS						
2:00-2:18	HYBRID	8	NM4 TU3	AW3 R4 F5 AW4 R3	TR A-C PL	2.7	
2:18-2:20	TRANS						

FINA Member Federation: \_\_\_\_\_

Date: \_\_\_\_\_ Signature: \_\_\_\_\_



## EXAMPLE OF HOW TO FILL OUT THE COACH CARD (FREE ROUTINE):

FINA		COACH CARD					
<b>Please fill in with type or write in capital letters!</b>							
<b>FINA Member Federation:</b>	Federation ABC						
<b>Competition:</b>	FINA WORLD SERIES #1						
<b>Event:</b>	<input type="checkbox"/> PRELIMS		<input type="checkbox"/> FINALS				
	<input type="checkbox"/> Solo Tech	<input type="checkbox"/> Male Solo Tech	<input type="checkbox"/> Duet Tech				
	<input type="checkbox"/> Solo Free	<input type="checkbox"/> Male Solo Free	<input type="checkbox"/> Duet Free				
	<input type="checkbox"/> Team Tech	<input checked="" type="checkbox"/> Team Free	<input type="checkbox"/> Acrobatic				
<b>Theme:</b>	Swan Lake						
<b>Name of competitor(s):</b>	Federation ABC						
<b>ELEMENTS IN ORDER OF PERFORMANCE</b>							
TIME	PART	EL	BASE MARK	DECLARED DIFFICULTY	BONUS	DD	TC
0:10-0:16	HYBRID	1	NM1 TU2	R1 T3	A-S 1PC-S	0.8	
0:17-0:27	TRANS						
0:28-0:35	ACRO	2	ACRO-A	A-Sq-Back-f1-s1		1.95	
0:36-0:50	TRANS						
0:51-1:10	HYBRID	3	NM3 TU3	AW5 R4 F3 T4	TR A-C	2.1	
1:11-1:20	TRANS						
1:21-1:26	HYBRID	4	NM1 TU1	C3	SY-F	0.8	
1:27-1:37	TRANS						
1:38-1:45	ACRO	5	ACRO-B	S-St-0-m1		1.2	
1:46-1:55	TRANS						
1:56-2:06	HYBRID	6	NM2 TU2	F1 F1 R3 AW3	A-S SY-P 2PC-S	1.3	
2:07-2:10	TRANS						
2:11-2:20	HYBRID	7	NM2 TU2	R1 R1 AW4 T1	SY-F 1PC-C	1.7	
2:21-2:25	TRANS						
2:26-2:30	ACRO	8	ACRO-P	P-P-0-a3		1.75	
2:31-2:35	TRANS						
2:36-2:42	HYBRID	9	NM1 TU2	R3 AW3 F1		0.85	
2:43-2:49	TRANS						
2:50-2:59	ACRO	10	ACRO-C	T-Thr>P>-Forw-m3-h		1.8	
3:00-3:09	TRANS						
3:10-3:27	HYBRID	11	NM4 TU3	R1 R1 AW3 AW4	A-S PL 2PC-S 1PC-C	2.0	
3:28-3:30	TRANS						
FINA Member Federation: _____							
Date: _____				Signature: _____			



## DIFFICULTY CALCULATOR (EXCEL TEMPLATE TOOL)

A Difficulty Calculator designed like a Coach Card format has been developed into an Excel Template Tool and is available for coaches to use and modify to suit their needs to assist in strategizing their routine difficulty. This is a tool and resource for coaches and is not meant to be used for competition submission. Get familiar with it and make it your own, always adhering to values as per the current Hybrid Difficulty Table and Acrobatic Catalogue. Updates to the calculator will be made as needed to stay up to date with any revised values.

The user can enter movement and bonus codes to calculate the difficulty for hybrids, as well as add in Technical Required Element codes. Please refer to the “LEGEND” tab in the spreadsheet for all codes (this is important). When a code is entered the value will appear automatically in the cell below the code. Acrobatic values based on the Acrobatics Catalogue must be added manually at this point for this version. The user can also add all values in manually if preferred.

### Example 1:

TIME		PART	EL	BASE MARK	DECLARED DIFFICULTY								BONUS				TOTALS
0:00-0:15	ACROBATIC	1	ACRO-A	A	Sq	Forw	a3	m1									1.85
	Value																
0:16-0:25	TRANSITION																0.00
	Value																
0:26-0:30	HYBRID	2	NM3 TU2	R1	R3	AW3	T1					TR	A-S	SY-P	2PC-S		1.75
	Value		0.20 0.10	0.15	0.45	0.20	0.15					0.15	0.05	0.10	0.20		
0:31-0:36	TRANSITION																0.00
	Value																
0:37-0:40	ACROBATIC	3	ACRO-B	S	St	0	a1	r1									1.70
	Value																
0:41-0:48	TRANSITION																0.00
	Value																
0:49-1:00	HYBRID	4	NM2 TU2	F1	F1	R2	AW4										0.90
	Value		0.10 0.10	0.05	0.05	0.35	0.25										
ETC . . .																	0.00
	Value																

### Example 2:

TIME		PART	EL	BASE MARK	DECLARED DIFFICULTY								BONUS				TOTALS
0:00-0:15	TRANSITION																0.00
	Value																
0:16-0:25	TRE	1		D-TRE2a													2.80
	Value																
0:26-0:30	TRANSITION																0.00
	Value																
0:31-0:36	HYBRID	2	NM2 TU2	F1	F1	AW3	R4					A-C					1.20
	Value		0.10 0.10	0.05	0.05	0.20	0.55					0.15					
0:37-0:40	TRANSITION																0.00
	Value																
0:41-0:48	TRE	3		D-TRE4b													2.70
	Value																
0:49-1:00	TRANSITION																0.00
	Value																
ETC . . .																	0.00
	Value																



BASE MARK (BM)	Level 1		Level 2		Level 3		Level 4		
	<b>No. of Movements (NM):</b>	6 or less movements	<b>0.05</b>	7-19 movements	<b>0.1</b>	20-29 movements	<b>0.2</b>	30+ movements	<b>0.3</b>
	<b>Time Underwater (TU):</b>	Short (6 sec. or less)	<b>0.05</b>	Medium (7-15 seconds)	<b>0.1</b>	Long (16 sec. or more)	<b>0.2</b>	-	

## HYBRID BONUSES

Bonuses:	Traveling (TR) 1.0m or more	Angles (A) Simple (A-S) or Complex (A-C)	Placement (PL) Hybrid in last 20 seconds	Synchronisation (SY) Part (SY-P) or Full (SY-F)	Pattern Change (PC) Simple (PC-S) or Complex (PC-C)
Rep/hybrid:	Once per hybrid	Once per hybrid	Each in last 20 seconds	Team only SY-P 2x / SY-F 1x **Only for NM 7+ (L2-4)	Every PC counted
	<b>0.15</b>	Simple: <b>0.05</b>   Complex: <b>0.15</b>	<b>0.20</b>	Partial: <b>0.1</b>   Full: <b>0.5</b>	Simple: <b>0.1</b>   Complex: <b>0.3</b>

## FAMILIES

Family:	Thrusts (T)	Rotations (R)	Flexibility (F)	Airborne Weight (AW)	Connections (C)
Rep/hybrid:	L1-4 2x / L5-9 unlimited	L1-4 2x / L5-9 unlimited	2x	2x	2x
Level 1	Thrust with crashing	<b>One or two legs:</b> Swirl 180°-360° Turning 180°-360° while doing other non-sustained or "up-down" actions	Rapid split by one leg from any position (such as Pike, Tub, Tuck, Inverted Tuck, Bent Knee VP, Fishtail, VP, etc.)	Vertical descent in Bent Knee VP or Vertical descent from Fishtail join to VP Front Pike to Bent Knee VP or Fishtail	Pike Position at the surface of the water
	<b>0.15</b>	<b>0.15</b>	<b>0.05</b>	<b>0.05</b>	<b>0.05</b>
Level 2	Thrust with one leg	<b>One or two legs:</b> Swirl 720°-1080° Spin descending 180° Twist or Twirl 180° with 1 leg only	Clearly demonstrated split (held at least 1-2 seconds) Walkout Front Back Layout to Surface Arch or Bent Knee Surface Arch	Vertical descent in VP or descending VP performing isolated movements Front Pike to Vertical Position	One leg face-to-face connection
	<b>0.30</b>	<b>0.35</b>	<b>0.10</b>	<b>0.15</b>	<b>0.15</b>
Level 3	Thrust with one leg followed by rotation of Spin 360° Thrust and vertical descent	<b>One or two legs:</b> Swirl 1440° Spin ascending 180°-360° Spin descending 360°-720° Twist or Twirl 180° with 2 legs Twist 360° with 1 leg only	Ariana rotation or split variants at the surface with a demonstration of at least 2 different splits (Right, Left, Middle) Split to Split through VP (changing legs)	Vertical ascent with 1 or 2 legs Ascending VP performing isolated movements	One leg back connection
	<b>0.35</b>	<b>0.45</b>	<b>0.15</b>	<b>0.30</b>	<b>0.20</b>
Level 4	Thrust with one leg followed by rotation of Spin 720° or Twirl 180° Thrust with flexibility	<b>One or two legs:</b> Spin ascending 720°-1080° Spin descending 1080°-1440° Twist 360° with 2 legs	Front Layout to Surface Bent Knee Arch Position or a Split From Surface Arch Position to Knight or Split Bent Knee Surface Arch to Bent Knee VP	Sustained height with one leg or a combination of one and two legs lasting equal or more than 3 seconds	Two-legs connection
	<b>0.40</b>	<b>0.55</b>	<b>0.20</b>	<b>0.45</b>	<b>0.25</b>

Levels	Thrusts (T)	Rotations (R)	Flexibility (F)	Airborne Weight (AW)	Connections (C)
Level 5	Thrust followed by rotation of Spin 360° or Twirl 180°	<b>One or two legs:</b> Twist 720° with 1 leg Spin ascending 1440° with 1 leg Spin descending more than 1440° with 2 legs Twist opening 360° VP to Split Twirl 360° with 2 legs Combined Spin 360°-720° with 1 leg Reverse Combined Spin 360°-720° with 1 leg	Knights: combinations of Knight positions ( <b>at least 2</b> ) Knight to Fishtail (through VP) Knight to VP Sustained Knight Position ( <b>held at least 1-2 seconds</b> ) Bent Knee Surface Arch to Vertical Position	<b>Isolated movements performed in stable Fishtail Position and piked body position (legs over surface, 30-60° from vertical) lasting equal or more than 3 seconds. Any knee/leg movements performed credited in n° of movements</b>	Rotation vertical connection with one leg ( <b>rotation of at least 180° at maximum height</b> )
	<b>0.45</b>	<b>0.60</b>	<b>0.25</b>	<b>0.50</b>	<b>0.30</b>
Level 6	Thrust with flexibility followed by rotation of Spin 360°	<b>One or two legs:</b> Combined Spin 360° with 2 legs Reverse Combined Spin 360° with 2 legs Two-Direction Combined or Reverse Combined Spin 360°-720° with 1 leg Spin ascending 1440° with 2 legs Twist 720° with two legs Twist Closing 360° from Split to VP	Surface Arch to VP	<b>Sustained height in VP lasting equal or more than 3 seconds</b>	Rotation vertical connection with two legs ( <b>rotation of at least 180° at maximum height</b> )
	<b>0.50</b>	<b>0.65</b>	<b>0.30</b>	<b>0.60</b>	<b>0.40</b>
Level 7	Thrust with rotation of Spin 720° and over	<b>Two legs only:</b> Combined Spin 720° Reverse Combined Spin 720° Two-Direction Combined or Reverse Combined Spin 360° Twist 1080° Unbalanced 360° Twist Two-Direction Twist 360°		<b>Sustained height shown at least 3 seconds in VP performed in an unbalanced position. Any knee/leg movements performed credited in n° of movements</b>	
	<b>0.55</b>	<b>0.70</b>		<b>0.65</b>	
Level 8	Thrust with flexibility followed by rotation of Spin 720° and over	<b>Two legs only:</b> Combined Spin 1080° Reverse Combined Spin 1080° Two-Direction Combined or Reverse Combined Spin 720° Twist 1440° Unbalanced 720° Twist Two-Direction Twist 720°			
	<b>0.60</b>	<b>0.75</b>			
Level 9	Thrust continued by catching a sustained Vertical Position	<b>Two legs only:</b> Combined Spin 1440° Reverse Combined Spin 1440° Two-Direction Combined or Reverse Combined Spin 1080° Unbalanced 1080° Twist			
	<b>0.65</b>	<b>0.80</b>			





Please fill in with type or write in capital letters!

<b>FINA Member Federation:</b>				
<b>Competition:</b>				
<b>Event:</b>	<input type="checkbox"/> <b>PRELIMS</b>		<input type="checkbox"/> <b>FINALS</b>	
	<input type="checkbox"/> Solo Tech	<input type="checkbox"/> Male Solo Tech	<input type="checkbox"/> Duet Tech	<input type="checkbox"/> Mixed Duet Tech
	<input type="checkbox"/> Solo Free	<input type="checkbox"/> Male Solo Free	<input type="checkbox"/> Duet Free	<input type="checkbox"/> Mixed Duet Free
	<input type="checkbox"/> Team Tech	<input type="checkbox"/> Team Free	<input type="checkbox"/> Acrobatic	<input type="checkbox"/> Combo
<b>Theme:</b>				
<b>Name of competitor(s):</b>				

**ELEMENTS IN ORDER OF PERFORMANCE**

TIME	PART	EL	BASE MARK	DECLARED DIFFICULTY	BONUS	DD	TC

FINA Member Federation: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_