



**WORLD
AQUATICS**

INTRODUCTORY GUIDE FOR THE APPLICATION OF DECLARED DIFFICULTY

**Version 4.2
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The following has been revised in the March 1, 2024, version 4.2 of the Difficulty Guide:

- Limit of Thrusts (T) and Rotations (R) Family levels 5 to 9 to a maximum of three times (3x) per technique, per hybrid.
- Housekeeping to Difficulty Table to reflect clarified wording

The following was previously revised in the Dec 1, 2023, version 4.1 of the Difficulty Guide:

- Introduction statements added (p.3)
- Thrust family definition – Thrust BM definition added, Level 1: Thrust with 1 or 2 legs and crashing (p.4)
- Rotations family definition simplified with BM definition noted, Swirl, Twist/Twirl bullets added, and dropping to ankles bullet wording improved (p. 5-6)
- In Flexibility family F2 (Split Position) and F5 (Knight Positions) wording consistent for a “clearly demonstrated hold of 1 second or more” (p.8-9)
- AW5 definition improved (p.9)
- Connection family wording improvements (p.10-11)
- Definition of a movement added back in (from previous version) – to address defining required 7 movements or more for synchronisation bonuses.
- Cleaned up wording of general principles b) and c) to align with difficulty table
- Unbalanced definition improved + supporting images added (p.16)
- Factoring bonuses chart added (p.17)
- Housekeeping to Difficulty Table to reflect clarified wording

INTRODUCTION

- World Aquatics documents written word will prevail over any other documents or video examples (AQUA or otherwise).
- As stated in the AS Manual (p.205) regarding judging routines, the same principle shall also apply for TCs: Hybrids may be performed close to or far from TCs position and/or in moving water caused by the (intentional) power of actions, the number of athletes performing, or the moving progression (“travelling”) of the Hybrid, as such TCs must focus on what they see at or over the water surface.

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.

Video examples of Hybrid vs Transition:

<https://vimeo.com/763077398/Ofb6c57995>

Hybrid difficulty COMPONENTS are considered under two areas:

1. MOVEMENTS that comprise transitions in a hybrid and are grouped in “families”:
 - THRUSTS (T)
 - ROTATIONS (R)
 - FLEXIBILITY (F)
 - AIRBORNE WEIGHT (AW)
 - CONNECTIONS (C)
2. BONUSES that add difficulty factors specific to hybrids:
 - TRAVELING (TR)
 - PLACEMENT (PL)
 - SYNCHRONISATION (SY)
 - PATTERN CHANGES (PC)

Hybrid Declared Difficulty (DD) Value = MOVEMENTS (Families) + BONUSES

HYBRID BASE MARK

Base Mark for all hybrids will be the same and has a value of 0.5.

NOTE: The Hybrid Base Mark is NOT added to the value of the hybrid DD, it is the value the hybrid will go to if not successful in achieving the declared difficulty (the same process as Acrobatics).

FAMILIES OF MOVEMENTS

1. THRUSTS (T)

This family includes variations of thrusts as defined in AS Rulebook BM: *“From a Submerged Back Pike Position with the legs perpendicular to the surface of the water a vertical upward movement of the legs and hips is rapidly executed as the body unrolls to assume a Vertical Position*. Maximum height desirable”. *note: other 1 and 2 leg body positions are allowed as per the Thrust levels defined.”*

- 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 – stable height demonstrated) in a Vertical Position above the knees is performed, declare a T9.
- Regarding Thrust Level 9: Once the “clearly stopping – stable height demonstrated” in VP has occurred any difficulty movement can then be performed and be declared if applicable as per the rules. For example: T9 followed by R7, or T9 followed by AW6, etc.
- Video examples of Thrusts Family: <https://vimeo.com/642471073/716a29df4b>

a) Level 1

Thrust with 1 or 2 legs, followed by 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 – stable height demonstrated) in a VP above the knees or higher.

2. ROTATIONS (R)

This family includes all types of rotations: Twists/Twirls and Spins (as defined in AS Rulebook BM - the body remains on its longitudinal axis throughout the rotation) and Swirls.

- Swirl = A 1 or 2 leg rotation in a piked/arched body position (or other positions where body is not aligned with its vertical axis), while turning. Swirls may have height variation - the legs can be lower than VP definition or can move in and out of VP area.
- Twisting or Twirling = A Twist is a rotation at a sustained height. Therefore, any obvious change in height is subject to a Base Mark. "Obvious" is defined as a drop in two height levels. So, if the athlete starts above their knee (6.5) and drops to below knee (4.5) that would be a Base Mark. A change in one height level = execution.
- 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.
- Please see general principles on p.15-16 for definition of unbalanced
- "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.
- For ascending and descending spins if 50% or more occur at the same level then the spin is subject to a Base Mark. For example, if a R5 (spin descending more than 1440°) is declared and the athlete drops to the ankle level after 2 rotations (720°), 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

c) 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

d) Level 4 includes rotations with one or two legs:

Spin ascending 720°-1080°

Spin descending 1080°-1440°

Twist 360° with 2 legs

e) 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

f) 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

g) 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°

h) 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°

i) 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 for 1 second or more

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

Clearly demonstrated Knight Position held for 1 second or more

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 Principle d) as Airborne Weight may not be declared when occurring simultaneously with a rotation.
- Please see general principles on p.15-16 for definition of unbalanced
- 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 a stable and fixed single leg position (within VP definition of 0-45 degrees) - isolated movements performed with the other (non-fixed) leg lasting equal or more than 3 seconds.

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

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 with 1–2 legs in VP (with the exception of C1 which is 1-2 legs at the surface) during the performance of the connection.
- As per General Principle b) “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.
- Connected Actions in Teams (Connections of 4–8 athletes):
 - This means groupings of 4–8 athletes are connected - for example 2 lines or a circle of 4 athletes, or 1 line or circle of 8 athletes
 - For these connected actions of 4–8 athletes 0.1 will be added to the declared connection
 - Connected actions for groupings of 4–8 athletes will have the codes C1+, C2+, C3+, C4+, C5+ and C6+
 - For example, if a grouping of 4 athletes in a line perform a one leg side connection +0.1 will be added to the connection value, with the code C3+, and a value of 0.45.
- Video examples of Connections Family:
<https://vimeo.com/641668503/d7f550cda4>

a) Level 1

Piked body position at the surface of the water

Connections on the surface of the water without lifting the feet from the water. Note: If one of the pair has both legs at the surface this would be a C1.

b) Level 2

One leg face-to-face connection

When swimmers are connected in any one or two leg Vertical Position facing each other and make a clear connection with one vertical (“top”) leg.

c) Level 3

One-leg back or side connection

When swimmers are connected in any one or two leg Vertical Position with one leg back or to the side of each other and make a clear connection with one vertical (“top”) legs.

d) Level 4

Two-leg connection

When swimmers are connected with two legs facing forward, back or side to each other in any two-leg Vertical Position (variants of 2 legs close to vertical – legs can be up to 45° off from vertical).

e) Level 5

Rotation vertical connection with one leg

When swimmers are connected with ONE LEG, which could be executed in a one or two leg vertical position. Facing forwards, back or to the side of each other athletes make a clear connection with one vertical (top) leg 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 forwards, back or side to each other in any two-leg Vertical Position (variants of 2 legs close to vertical – legs can be up to 45° off from vertical), while performing a rotation of at least 180° at maximum height.

BONUSES

There are 4 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	✓	✓	✓
Placement	For each hybrid in the last 20 seconds	✓	✓	✓
Synchronisation	Team only – Part (2x) or Full (1x)			✓
Pattern Change	For each pattern change			✓

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 4. Pattern Change).

2. 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.

3. 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.

Example 1: Left Bent Knee VP with all athletes facing the same direction – Half the athletes lean right, half the athletes lean left – this is considered synchronized.

Example 2: A line of 4 athletes is facing one direction, with a line of 4 other athletes beside them facing in the exact opposite direction. The athletes are doing the same actions with the same legs – this is considered synchronized.

Video examples: <https://vimeo.com/764109370/5ef8710f29>

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 or more movements.

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.

- Spins / Twists / Twirls: each ½ turn (180o) 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 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.

4. PATTERN CHANGES (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. For example if a hybrid has 3 pattern changes the code would be 3PC in the bonus section of the Coach Card.

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 **March 1, 2024**

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) Flexibility (F), Airborne Weight (AW) and Connection (C) movements may be declared only two times (2x) per hybrid.
- c) Rotation (R) and Thrust (T) movements in levels 1-4 may be declared only two times (2x) per hybrid. **Rotation (R) and Thrust (T) movement declarations in levels 5-9 are limited to a maximum of three times (3x) per technique, per hybrid.**

Example of rotation technique = Twirl 360° with 2 legs

Example of a Thrust technique = Thrust with flexibility followed by a rotation of Spin 360°

Example #1 (an incorrect declaration):

Element 1 declared as: **R5 R5 R6 R5 R6 F1 R6 R7 R7 R5 R7 R7**

- If all **R5's** declared are all performed as a "Twirl 360° with 2 legs" technique, then this Element would go to Base Mark because a Twirl 360° with 2 legs was repeated 4 times.
- The same would happen in the case that all **R7s** declared are performed as "Two-Direction Twist 360°" – as the limit is 3x.

Example #2 (correct declaration):

Element 1 declared same as above as: **R5 R5 R6 R5 R6 F1 R6 R7 R7 R5 R7 R7**

- **Two (2) R5s** are performed as "Twirl 360° with 2 legs" and **two (2) R5s** are performed as "Twist opening 360° VP to split", then this is OK
- If also **two (2) R7s** are performed as "Two-Direction Twist 360°", and **two (2) R7s** are performed as "Unbalanced 360° Twist", then this is OK

Example #3 (correct declaration):

Element 2 declared as: **T9 AW6 R3 T9 R5 R3 T9 R7 R7 R7 AW2 T6**

- **Three (3) T9s** (Thrust continued by catching a sustained Vertical Position) are performed (maximum allowed), and **one (1) T6** (Thrust with flexibility followed by rotation of Spin 360°) is performed.
- This declaration is within maximum allowed (Max 3x per technique) with Thrust with catch being one type of technique and Thrust with flexibility and rotation 360° being a different technique.

- d) When two movements from different families in the difficulty table occur simultaneously then you may only declare one.

Examples:

- If an Airborne Weight (AW) movement and a Rotation (R) is occurring simultaneously – for example a Front Pike to VP (AW2) is executed while rotating 360° (R1), then you may only declare one – either the AW2 or the R1.
- If a Flexibility (F) movement and a Rotation (R) is occurring simultaneously – for example a Bent Knee Surface Arch to VP (F5) is executed while twisting or twirling 180° (R2) then you may only declare one – either the F5 or the R2.
- If an Airborne Weight (AW) movement and a Connection (C) is occurring simultaneously – for example a Vertical Ascent (AW3) is executed with a One leg back connection (C3) then you may only declare one – either the AW3 or the C3.

- e) Regarding bonus repetitions during a free hybrid:
- Traveling is counted once per hybrid
 - Placement is counted for each hybrid in the last 20 seconds
 - Synchronisation is counted once per hybrid if full synchronisation (SY-F) and max twice per hybrid if part synchronisation (SY-P or 2SY-P)
 - Each pattern change in a hybrid is counted

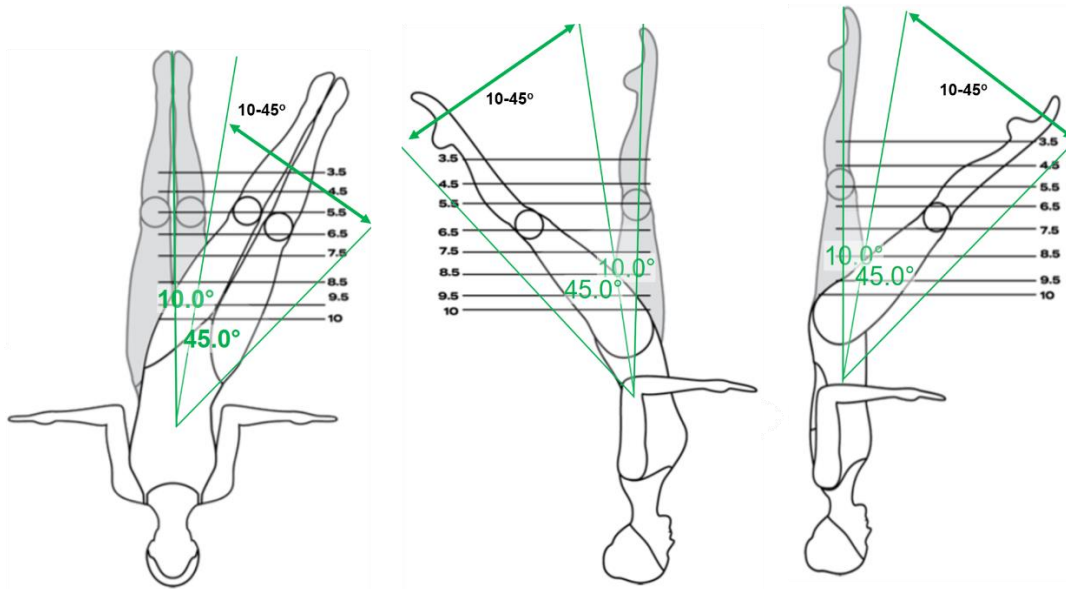
- f) In teams or duet: when a hybrid movement or bonused action is not performed by all team/duet members its value will be factored by *0.5 (half of swimmers included), or by *0.3 (less than half of swimmers included). This principle applies in pair actions where just one swimmer is performing an action 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 ($R3 \times 0.5$), then the other 4 swimmers do R3 ($R3 \times 0.5$), then this could be repeated again for a total of four (4) $R3 \times 0.5$ because this is the same as 2 “whole” R3 declarations and respects the maximum limit.

Please see page 17 for how bonuses may be factored.

- g) When a cadence is performed you just declare the full code once on the Coach Card. Difficulty Guide General Principle f) does not apply (factoring). Meaning – when the whole team does the same cadence movement sequentially/consecutively (one after the other – 1 at a time, 2 at time, 4/4/2, etc.), you just put the difficulty code once. For example, if all 8 athletes on a team do an R3 (spin descending 360°) one at a time – just declare R3 once on the Coach Card.
- h) In Thrust Level 9 (Thrust continued by catching (clearly stopping) in a Vertical Position above the knees or higher), we use the knees as a reference point for verification of accomplishing the movement. Knees as a reference point for difficulty verification will also be applied to other movements as follows with ascending or descending actions (please refer to AS Manual Height charts):
- For a Thrust and vertical descent
 - If a descent is executed from maximum height until below the knee (4.5 stable height) and then a crash occurs, this still applies as a T3.
 - For Vertical descent in Bent Knee VP (AW1), Vertical descent (AW2)
 - If a descent is executed from a high VP (9.5–8.5) until below the knee (4.5) and then a crash occurs, then an AW1 or AW2 still applies.
 - For Vertical ascent with 1 or 2 legs (AW3)
 - Vertical ascent must not bend at the knees before reaching above the knees (6.5). Once above knees other movements can occur.
- i) When unbalanced is stated it means both legs from thighs to feet, in the same direction: forwards, backwards, or sideways at an angle between 10–45 degrees. Body position arched, piked, or tilted. 0–10 degrees is too straight and therefore not unbalanced, and lower than 45 is out of the VP definition.



If one leg bends while the other leg is unbalanced and the swimmer's center of gravity out of the vertical line is compensated by knee bending that keeps the swimmer in a stable position – this does not qualify as unbalanced.

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.

<https://www.worldaquatics.com/artistic-swimming/rules>

FACTORING BONUSES			
<ul style="list-style-type: none"> 0.5 factoring is for half the team up to one less than all team members <ul style="list-style-type: none"> For example, there is a team of 8, any declared bonus that is done with 4, 5, 6, or 7 team members is *0.5 0.3 factoring is always when there is less than half of all team members <ul style="list-style-type: none"> For example, there is a team of 8, any declared bonus that is done with 1, 2, or 3 is *0.3 			
TRAVELING	TR: Movement of all swimmers of 1.0m or more <u>during</u> the hybrid (visible travel; not a pattern change!)		
	TR*0.5	This applies when only half the team or less than half are doing <u>a hybrid on their own</u>	For example: For a team of 8, 4 swimmers are doing a transition while 4 are doing a hybrid and <u>travel</u> (declare TR*0.5)
	TR*0.3		Or For a team of 8, 5 swimmers are doing a transition, while 3 are doing a hybrid with <u>travel</u> (declare TR*0.3)
PLACEMENT	PL: This bonus may be applied for each hybrid performed during the last 20 seconds of the routine.		
	PL*0.5	If half the team or less than half the team does a hybrid during the last 20 seconds.	For example: half of the team do eggbeater while half do hybrid in ("inside") the last 20 seconds of the routine (declare PL*0.5)
	PL*0.3	This applies when only half the team or less than half are doing <u>a hybrid on their own</u>	Or For a team of 8, 6 swimmers do transition while other 3 do a hybrid inside the last 20 seconds of the routine (declare PL*0.3)
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 or more movements.		
	SY-F*0.5	If half the team or less than half the team does a hybrid with full synchronization.	For example: half of the team are doing arms in eggbeater, while the other half perform a fully synchronized hybrid (declare SY-F*0.5)
	SY-F*0.3	This applies when only half the team or less than half are doing <u>a hybrid on their own</u>	Or In the case of a team of 8, 3 swimmers do a fully synchronized hybrid while the other 5 do a transition (declare SY-F*0.3)
	SY-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.		
	SY-P*0.5	If half team/less half team does a hybrid with part synchronization.	For example: half of the team are doing arms in eggbeater, while the other half perform a hybrid with a fully synchronized PART (declare SY-P*0.5)
	SY-P*0.3	This applies when only half the team or less than half are doing <u>a hybrid on their own</u>	Or In the case of a team of 8, 3 swimmers do PART of a hybrid fully synchronized while the other 5 do a transition (declare SY-P*0.3)
	2SY-P*0.5 2SY-P*0.3	The same as examples above but done 2 times.	
PATTERN CHANGES	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.		
	PC*0.5	When half the team or less than half the team does a hybrid with a pattern change/changes This applies when only half the team or less than half are doing <u>a hybrid on their own</u>	For example: In a team of 8, only 4 swimmers do a hybrid while the other 4 do a transition. The 4 that are doing a hybrid perform 2 pattern changes (declare 2PC*0.5)
	PC*0.3		Or In a team of 8, only 3 swimmers do a hybrid while the other 5 are doing a transition. The 3 that are doing a hybrid perform a pattern change (declare 1PC*0.3)

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 of 0.5) will be applied
- For example, a routine hybrid is declared to have:
 - Thrust L3 (T3), Airborne Weight L3 (AW3), Rotation L4 (R4), and a traveling bonus (TR)
 - 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 this hybrid put to Base Mark (value of 0.5). The value of T3+AW3+R4 and the traveling bonus 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 PL, then SY, then PC.

For a Technical Required Element:

- In technical routines, a Technical Required Element (TRE) 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 movements (Teams and Duets):

- 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 Acrobatics Base Marks

COACH CARD LEGEND:

Acrobatics Base Mark:

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

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

Hybrid Base Mark:

Hybrid Base Mark is fixed at 0.5. Important: the Hybrid Base Mark is NOT added to the value of the hybrid DD, it is the value the hybrid will go to if not successful in achieving the declared difficulty. “Hybrid” should be indicated in the Base Mark column on the Coach Card.

Hybrid Families and Bonuses:

Families (groups):		Family + Level Codes:
Thrusts	T	T1-T9
Rotations	R	R1-R9
Flexibility	F	F1-F6
Airborne Weight	AW	AW1-AW7
Connections	C	2-3 athletes: C1-C6
		4-8 athletes: C1+-C6+


Bonuses:		Bonus Codes:
Traveling	TR	TR
Placement	PL	PL
Synchronisation	SY	SY-P, 2SY-P or SY-F
Pattern Change	PC	PC

Technical Required Elements:

Element 1	Element 2	Element 3	Element 4	Element 5
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):




COACH CARD
In force as from 8 June 2023

Please fill in with type or write in capital letters!


Member Federation:	Federation ABC			
Competition:	World Cup #1			
Event:	<input type="checkbox"/> PRELIMS		<input checked="" type="checkbox"/> FINALS	
	<input type="checkbox"/> Women Solo Tech	<input type="checkbox"/> Men Solo Tech	<input checked="" type="checkbox"/> Women Duet Tech	<input type="checkbox"/> Mixed Duet Tech
	<input type="checkbox"/> Women Solo Free	<input type="checkbox"/> Men Solo Free	<input type="checkbox"/> Women Duet Free	<input type="checkbox"/> Mixed Duet Free
	<input type="checkbox"/> Mixed Team Tech	<input type="checkbox"/> Mixed Team Free	<input type="checkbox"/> Acrobatic	<input type="checkbox"/> Combo
Theme:	The Nutcracker			
Name of competitor(s):	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	Lif		0.8	
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	Hybrid	F1 F3 AW4 AW6 R5 R6 R3 R3	TR	3.55	
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	Hybrid	AW3 AW6 R4 F5 F5 R3	TR PL	2.75	
2:18-2:20	TRANS						

Member Federation: Federation ABC

Date: June 8, 2023 **Signature:** 

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




COACH CARD
In force as from 8 June 2023

Please fill in with type or write in capital letters!

Member Federation:	Federation ABC			
Competition:	World Cup #1			
Event:	<input type="checkbox"/> PRELIMS		<input checked="" type="checkbox"/> FINALS	
	<input type="checkbox"/> Women Solo Tech	<input type="checkbox"/> Men Solo Tech	<input type="checkbox"/> Women Duet Tech	<input type="checkbox"/> Mixed Duet Tech
	<input type="checkbox"/> Women Solo Free	<input type="checkbox"/> Men Solo Free	<input type="checkbox"/> Women Duet Free	<input type="checkbox"/> Mixed Duet Free
	<input type="checkbox"/> Mixed Team Tech	<input checked="" type="checkbox"/> Mixed Team Free	<input type="checkbox"/> Acrobatic	<input type="checkbox"/> Combo
Theme:	Swan Lake			
Name of competitor(s):	Athlete Names			

ELEMENTS IN ORDER OF PERFORMANCE							
TIME	PART	EL	BASE MARK	DECLARED DIFFICULTY	BONUS	DD	TC
0:10-0:16	HYBRID	1	Hybrid	T9 AW6 R7 R3 AW3 R7 R3	TR SY-P 1PC	4.40	
0:17-0:27	TRANS						
0:28-0:35	ACRO	2	ACRO-A	A-Sq-Back-tk-s1		1.85	
0:36-0:50	TRANS						
0:51-1:10	HYBRID	3	Hybrid	AW1.AW5 R4 R5 R6 F2	TR SY-F 2PC	3.70	
1:11-1:20	TRANS						
1:21-1:26	HYBRID	4	Hybrid	C3 C4	SY-F	1.30	
1:27-1:37	TRANS						
1:38-1:45	TRE	5	ACRO-B	BS-St-Tw-bb		1.45	
1:46-1:55	TRANS						
1:56-2:06	TRE	6	Hybrid	F1 F1 R3 R3	SY-F	1.50	
2:07-2:10	TRANS						
2:11-2:20	TRE	7	Hybrid	AW2 AW6 R7 R3 R3 F2	TR SY-F 2PC	3.70	
2:21-2:25	TRANS						
2:26-2:30	HYBRID	8	ACRO-P	PP-Knees-SP+K-bb		1.65	
2:31-2:35	TRANS						
2:36-2:42	HYBRID	9	Hybrid	F2 F4 AW5 R3 T1	TR SY-F 1PC	2.35	
2:43-2:49	TRANS						
2:50-2:59	ACRO	10	ACRO-C	CT->P>>Side-mn/2In-c		1.70	
3:00-3:09	TRANS						
3:10-3:27	HYBRID	11	Hybrid	AW6 R7 R3 AW3 R7 R3	TR PL SY-F 2PC	4.65	
3:28-3:30	TRANS						

Member Federation: Federation ABC

Date: June 8, 2023 **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. The user can also add all values in manually if preferred.

You can find the tool on the Learning Platform here:

<https://learning.fina.org/coaches-education-artistic-swimming/>

BASE MARK:	Hybrid Base Mark is fixed at 0.5 and is <u>NOT</u> added to the value of the hybrid DD, it is the value the hybrid will go to if not successful in achieving the declared difficulty (the same process as Acrobatics).			
BONUSES:	Traveling (TR) 1.0m or more	Placement (PL) Hybrid in last 20 seconds	Synchronisation (SY) Part (SY-P) or Full (SY-F)	Pattern Change (PC)
Rep/Hybrid:	Once per hybrid	Each in last 20 seconds	Team only SY-P 2x / SY-F 1x *Only for 7 or more movements*	Every PC counted
Value:	0.15	0.20	Partial: 0.1 Full: 0.5	0.3

FAMILIES					
Family:	Thrusts (T)	Rotations (R)	Flexibility (F)	Airborne Weight (AW)	Connections (C)
Rep/Hybrid:	L1-4 2x / L5-9 limited 3x per technique, per hybrid	L1-4 2x / L5-9 limited 3x per technique, per hybrid	2x	2x	2x
Level 1	Thrust with one or two legs followed by crashing on the surface	One or two legs: 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	Piked body position at the surface of the water
	0.15	0.15	0.05	0.05	0.05 / C1+ 0.15
Level 2	Thrust with one leg	One or two legs: Swirl 720°-1080° Spin descending 180° Twist or Twirl 180° with 1 leg only	Clearly demonstrated split held for 1 second or more 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
	0.30	0.35	0.10	0.15	0.20 / C2+ 0.30
Level 3	Thrust with one leg followed by rotation of Spin 360° Thrust and vertical descent	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	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 or side connection
	0.35	0.45	0.15	0.30	0.35 / C3+ 0.45
Level 4	Thrust with one leg followed by rotation of Spin 720° or Twirl 180° Thrust with flexibility	One or two legs: 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-leg connection
	0.40	0.55	0.20	0.45	0.45 / C4+ 0.55

Levels	Thrusts (T)	Rotations (R)	Flexibility (F)	Airborne Weight (AW)	Connections (C)
Level 5	Thrust followed by rotation of Spin 360° or Twirl 180°	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° VP to Split Twirl 360° with 2 legs Combined or Reverse Combined Spin 360°-720° with 1 leg	Knights: combinations of Knight positions (at least 2) Knight to Fishtail (through VP) Knight to VP Clearly demonstrated Knight Position held for 1 second or more Bent Knee Surface Arch to Vertical Position	Isolated movements performed in a stable and fixed single leg position (within VP definition of 0-45 degrees) – isolated movements performed with the other (non-fixed) leg lasting equal or more than 3 seconds..	Rotation vertical connection with one leg (rotation of at least 180° at maximum height)
	0.45	0.60	0.25	0.50	0.50 / C5+ 0.60
Level 6	Thrust with flexibility followed by rotation of Spin 360°	One or two legs: Combined or 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 VP	Surface Arch to VP	Sustained height in VP lasting equal or more than 3 seconds	Rotation vertical connection with two legs (rotation of at least 180° at maximum height)
	0.50	0.65	0.30	0.60	0.55 / C6+ 0.65
Level 7	Thrust with rotation of Spin 720° and over	Two legs only: Combined or Reverse Combined Spin 720° Two-Direction Combined or Reverse Combined Spin 360° Twist 1080° Unbalanced 360° Twist Two-direction Twist 360°		Sustained height shown at least 3 seconds in VP performed in an unbalanced position.	
	0.55	0.70		0.65	
Level 8	Thrust with flexibility followed by rotation of Spin 720° and over	Two legs only: Combined or Reverse Combined Spin 1080° Two-Direction Combined or Reverse Combined Spin 720° Twist 1440° Unbalanced 720° Twist Two-Direction Twist 720°			
	0.60	0.75			
Level 9	Thrust continued by catching a sustained Vertical Position	Two legs only: Combined or Reverse Combined Spin 1440° Two-Direction Combined or Reverse Combined Spin 1080° Unbalanced 1080° Twist			
	0.65	0.80			

