

Mogul Calculations and Jump Codes

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Scoring Calculations

Scoring Formulas for 7 judge system

- Turns = J1+J2+J3+J4+J5 – High Judge – Low Judge
- Air Judge Score = $(\text{INT}(\text{Jump1_DD} * \text{Jump1_Form} * 100)/100) + (\text{INT}(\text{Jump2_DD} * \text{Jump2_Form} * 100)/100)$
- Air = $\text{INT}((\text{J6}+\text{J7})/2 * 100) / 100$

- Time Points = $\text{MAX}(\text{MIN}(\text{INT}((13.625 - (8 * \text{Competitor Time})/\text{Pace Time}) * 100)/100, 7.5), 0)$
- Score = Turns + Air + Time Points

Scoring Formulas for 5 judge system

- Turns = J1+J2+J3
- Air Judge Score = $(\text{INT}(\text{Jump1_DD} * \text{Jump1_Form} * 100)/100) + (\text{INT}(\text{Jump2_DD} * \text{Jump2_Form} * 100)/100)$
- Air = $\text{INT}((\text{J4}+\text{J5})/2 * 100) / 100$

- Time Points = $\text{MAX}(\text{MIN}(\text{INT}((13.625 - (8 * \text{Competitor Time})/\text{Pace Time}) * 100)/100, 7.5), 0)$
- Score = Turns + Air + Time Points

Scoring Formulas for 3 judge system

- Turns = J1+J2+ ((J1+J2)/2)
- Air Judge Score = $(\text{INT}(\text{Jump1_DD} * \text{Jump1_Form} * 100)/100) + (\text{INT}(\text{Jump2_DD} * \text{Jump2_Form} * 100)/100)$
- Air = J3

- Time Points = $\text{MAX}(\text{MIN}(\text{INT}((13.625 - (8 * \text{Competitor Time})/\text{Pace Time}) * 100)/100, 7.5), 0)$
- Score = Turns + Air + Time Points

Explanation of Functions:

- INT = Integer Function: Returns the integer portion of a number
- MAX = Maximum Function: Returns the maximum value in the expression
- MIN = Minimum Function: Returns the minimum value in the expression

Jump Codes and Values

Moguls jump codes are created by adding individual codes together to form a jump. Each letter code represents a value and these values are added together to calculate the Degree of Difficulty (D.D.).

There are three distinct categories of jumps. Inverted, Upright and Rotations

Inverted codes always begin with a lower case letter (see below), upright codes always begin with an uppercase letter and rotations begin with a number. In general, codes from different categories of jump cannot be mixed unless specified in the explanations to follow.

Switch Takeoff and Landing

A competitor can take off and/or land in either direction (i.e. forwards or backwards). If a takeoff or landing is backwards it is known as *switch*. Switch takeoff or landing is notated using the minus sign “-“ at the beginning of the jump code for a switch takeoff and/or at the end for a switch landing.

The switch “-“ modifier has a value of 0.04 each time it is used. So if a competitor performs a jump with a switch takeoff and landing there would be a “-“ at the beginning and end of the jump code and you would add a value of 0.08 to the manoeuvre.

Inverted

Inverted Jumps include all jumps somersault and loop jumps. Only Single inverted jumps are allowed. A double or triple will receive an immediate DSQ (disqualification).

Inverted manoeuvres are all performed in some kind of position (Layout, Tuck or Pike/Puck). They may include twists: (Half, Full, Rudy etc) and can have position modifiers like additional positions or grab(s). They can also include switch takeoffs and landings.

To calculate the degree of difficulty of an inverted jump use the following formula:

No of manoeuvres (quantity) + direction + position + twist + position modifiers + switch + gender bonus

Number of manoeuvres (only singles allowed)

Quantity	Value
• Single	1.18
• Double	DSQ Doubles not permitted
• Triple	DSQ Triples not permitted

Direction

Inverted jump codes always begin with a lower case letter. These *direction* codes are:

Direction	Code	Value
• Back	b	0.00
• Front	f	0.07
• Side/Loop	s or l	0.05 (lower case L)

Positions (required for inverted back, front or side flips e.g. bL, fT, sP)

Position	Code	Value
• Layout	L	0.00
• Tuck	T	0.00
• Pike/Puck or Position	P	0.00

Twists (while only Full twist has a value, these are included to be comprehensive)

Twist	Code	Value
• Half twist	H	0.00
• Full twist	F	0.10
• Rudy (1 ½ twist)	Ru	0.00
• Double twist	dF	0.00
• Randy (2 ½ twist)	Ra	0.00
• Triple twist	tF	0.00

Position Modifiers

Modifier	Code	Value
• Position	p	0.03 (used after jump code)
• Grab	g	0.03 (used after jump code)
• Layout position code*)	l	0.00 (lower case L used immediately after twist)

- Up to three positions and one grab can be added to a jump. All positions (p) are to be listed first, then the grab (g) (.ie. bLpg or bPpppg not bLgp or bPpppp)
- The layout position modifier is only used after a half twist if performed in the layout position e.g. bHI- for a Back/Half (layout) with switch landing

Switch

Location	Code	Value
• Takeoff	-	0.04 (used at beginning of the jump code)
• Landing	-	0.04 (used at the end of the jump code)

Gender Bonus

Women get a bonus of 0.15 added to the DD value of each jump

Gender	Value
• Men	0.00
• Women	0.15

Men's Inverted Jump Examples (Add 0.15 to the DD Value for Women)

Jump	Code	Value	Qty +Dir +Pos +Twist +Mod +Sw +Gen
Back Layout	bL	1.180	1.18+0.00+0.00+0.00+0.00+0.00+0.00
Back Layout with position	bLp	1.210	1.18+0.00+0.00+0.00+0.03+0.00+0.00
Back Tuck	bT	1.180	1.18+0.00+0.00+0.00+0.00+0.00+0.00
Back Puck/Pike	bP	1.180	1.18+0.00+0.00+0.00+0.00+0.00+0.00
Back Puck/Pike with position	bPp	1.210	1.18+0.00+0.00+0.00+0.03+0.00+0.00
Back Puck/Pike w/pos and grab	bPpg	1.240	1.18+0.00+0.00+0.00+0.06+0.00+0.00
Loop Puck/Pike	lP	1.230	1.18+0.05+0.00+0.00+0.00+0.00+0.00
Loop Puck/Pike with grab	lPg	1.260	1.18+0.05+0.00+0.00+0.03+0.00+0.00
Back Full	bF	1.280	1.18+0.00+0.00+0.10+0.00+0.00+0.00
Back Full with position	bFp	1.310	1.18+0.00+0.00+0.10+0.03+0.00+0.00
Back Full with grab	bFg	1.310	1.18+0.00+0.00+0.10+0.03+0.00+0.00
Back Half(lay) with switch takeoff	-bHl	1.220	1.18+0.00+0.00+0.00+0.00+0.04+0.00
Back Full with switch t.o.& ldg.	-bF-	1.360	1.18+0.00+0.00+0.10+0.00+0.08+0.00

Uprights

Upright jumps include all jumps performed in the vertical axis without rotation

These include the traditional upright jumps (twister, spread, daffy etc)

A competitor can perform from 1 (single) to 5 (Quint) upright manoeuvres. Any more than 5 will not be counted.

There is no bonus for any position modifiers (i.e grabs etc) in upright jumps..

To calculate the degree of difficulty of an upright jump use the following formula:

No of manoeuvres (quantity) + each position + switch + gender bonus

Number of manoeuvres

Quantity	Value
• Single	0.70
• Double	0.95
• Triple	1.18
• Quad	1.34
• Quint	1.45

Positions

Positions	Code	Value
• Twister	T	-0.03
• Spread	S	0.01
• Daffy	D	0.03
• Iron Cross	X	0.015
• Backscratcher	B	0.01
• Mule Kick	M	0.015
• Kosack	K	0.025
• Zudnick	Z	0.00

Switch

Location	Code	Value	
• Takeoff	-	0.04	(used at beginning of the jump code)
• Landing	-	0.04	(used at the end of the jump code)

Gender Bonus

Women get a bonus of 0.15 added to the DD value of each jump

Gender	Value
• Men	0.00
• Women	0.15

Men's Upright Jump Examples (Add 0.15 to the DD Value for Women)

Jump	Code	Value	Qty +Positions	+Sw +Gen
Twister	T	0.670	0.70-0.03	+0.00+0.00
Double Twister	TT	0.890	0.95-0.03-0.03	+0.00+0.00
Triple Twister	TTT	1.090	1.18-0.03-0.03-0.03	+0.00+0.00
Spread	S	0.710	0.70+0.01	+0.00+0.00
Double Spread	SS	0.970	0.95+0.01+0.01	+0.00+0.00
Triple Spread	SSS	1.210	1.18+0.01+0.01+0.01	+0.00+0.00
Triple Daffy	DDD	1.270	1.18+0.03+0.03+0.03	+0.00+0.00
Twister Spread	TS	0.930	0.95-0.03+0.01	+0.00+0.00
Twister-Twister-Spread	TTS	1.130	1.18-0.03-0.03+0.01	+0.00+0.00
Daffy-Twister-Spread	DTS	1.190	1.18+0.03-0.03+0.01	+0.00+0.00
Iron Cross-Kosack-Iron Cross	XKX	1.235	1.18+0.015+0.025+0.015	+0.00+0.00
Spread-Twister-Twister-Spread	STTS	1.300	1.34+0.01-0.03-0.03+0.01	+0.00+0.00

Rotations

Rotational manoeuvres include all traditional single and multiple rotations (helicopters/360) as well as off-axis rotations. A rotational manoeuvre can also include up to three positions and/or one grab.

To calculate the degree of difficulty of a rotational jump use the following formula:

Rotation + position modifiers + switch + gender bonus

Rotations

Rotation	Code	Value
• 180°	1	0.60
• 360°	3	1.21
• 540°	5	1.35
• 720°	7	1.45
• 900°	9	1.50
• 1080°	10	1.56

Position Modifiers

Modifier	Code	Value	
• Off-axis	o	0.02	(lower case O used immediately after rotation code**)
• Position	p	0.03	(used after jump code)
• Grab	g	0.03	(used after jump code)

- The off-axis modifier (o) must always immediately follow the rotation code (i.e. 3op not 3po)
- Up to three positions and one grab can be added to a jump. All positions (p) are to be listed first, then the grab (g) (i.e. bLpg or bPpppg, not bLgp or bPppgp)

Switch

Location	Code	Value	
• Takeoff	- before	0.04	("-" used at beginning of the jump code)
• Landing	- after	0.04	("-" used at the end of the jump code)

Gender Bonus

Women get a bonus of 0.15 added to the DD of each jump

Gender	Value
• Men	0.00
• Women	0.15

Men's Rotational Jump Examples (Add 0.15 to the DD Value for Women)

Jump	Value	Code	Rot +Mod +Sw +Gen
360	3	1.210	1.21+0.00+0.00+0.00
360 off-axis	3o	1.230	1.21+0.02+0.00+0.00
360 with position	3p	1.240	1.21+0.03+0.00+0.00
360 with two positions	3pp	1.270	1.21+0.06+0.00+0.00
360 with grab	3g	1.240	1.21+0.03+0.00+0.00
360 with two positions and grab	3ppg	1.300	1.21+0.09+0.00+0.00
360 with three positions and grab	3pppg	1.330	1.21+0.12+0.00+0.00
360 with switch takeoff+landing	-3pg-	1.350	1.21+0.06+0.08+0.00
720	7	1.450	1.45+0.00+0.00+0.00
720 off-axis	7o	1.470	1.45+0.02+0.00+0.00
720 off-axis with position	7op	1.500	1.45+0.05+0.00+0.00
720 off-axis with grab	7og	1.500	1.45+0.05+0.00+0.00