

ALJAŽ PEGAN GYMNASTIC RESULTS DEVELOPMENT AT WORLD CHAMPIONSHIPS

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Abstract

In article we overview 19 years of a 33 year long sporting career of the gymnast Aljaž Pegan. His scores, ranks and exercises on the horizontal bar are presented for each World Championship. Exercises are further broken down into individual elements and descriptions of those elements. They are presented in accordance with the Code of Points published by Federation International Gymnastics, which was in force for a particular four-year period, and a theoretical comparison was made, taking into account all the changes and adjustments, with the Code of Points 2013-2016. Additionally, breakdowns of the seven Codes of Points for the horizontal bar which were in force in the period from 1989 to 2013 are also shown. Adaptation to the changing criteria of the Code of Points can be seen in the exercises through upgraded elements, which Aljaž could grasp due to his exceptional knowledge of basic motor structures such as: free hip circles, giant swings, flights and elements in double el-grip. During his career Aljaž and his coach invented two unique elements that bear his last name in the Code of Points, Pegan on the horizontal bar and on the parallel bars. His greatest success was at the World Championship in Melbourne, Australia in 2005, where he became the World Champion on the horizontal bar.

Keywords: *man artistic gymnastics, horizontal bar, result development, Code of Points.*

INTRODUCTION

The sporting career of Aljaž Pegan began in 1980 in Ljubljana when he was five years old. During his career Aljaž had two coaches. The first one was Boris Pavliha with whom he trained for six years. His second coach was Jože Mešl and together they trained at Partizan Trnovo, until Aljaž's 39th birthday. Aljaž ended his active participation on his birthday 2nd June, 2013 at the Slovenian Cup in Ljubljana, where he was second (Bedenik, 2013).

The influence of Jože Mešl and his alternative approach are the main reasons for Aljaž's rapid development and wide spectrum of gymnastic knowledge. The Mešl's approach deprived his gymnasts for medals in younger categories, but enabled them a faster leap to join more mature gymnasts. Meaning, gymnasts were quickly enabled to perform in a higher category, next to older and more experienced gymnasts and, where the

exercises were more difficult and complex (Bedenik, 2013).

During his career, Aljaž had to perform compulsory and optional exercises on an apparatus. Compulsory exercises were cancelled in 1996, despite the fact that gymnast who had to perform both exercises obtained wider spectrum of knowledge. Through the compulsory exercises he learned new elements, strengthened his base knowledge and thus he was able to effectively adapt to all kinds of changes in the Code of Points later in his career.

His engagement in gymnastics was not without injuries. Three of them were serious, among them two of them were the reason for ceasing competition in an all-around and specializing in parallel bars and a horizontal bar. He had his first injury in 1987 when he broke his leg on a vault, performing »Tsukahara«. In 1997 he suffered from the second injury when he had a terrible fall from the horizontal bar and injured his spine. The injury was one of the main reasons why he had focused only on parallel bars and the horizontal bar in the middle of his career. After this last injury in 2003 when he injured his finger on parallel bars he decided to focus only on the horizontal bar (Bedenik, 2013).

One of the explanations for the oscillation of result could be found in the training conditions. He had spent most of his sporting career training in a gym Partizan / Sport club Trnovo, which is a fairly small (13m x 9m x 5m) and poorly equipped in comparison with gymnastics centers, in which other top ranking gymnasts train. The conditions where he trained are important since he was one of the most elegant and reliable gymnasts, but had problems with a dismount. An element that often took its toll on otherwise perfect exercise. Lack of space and bad training conditions are the main reasons why he could not perfect his dismount - a triple salto backwards, or learn a more reliable dismount - e.g. a double salto backwards stretched with 2/1 turn. Bad conditions that

especially effect dismount training include an inadequate landing zone and a low height of the ceiling. Another reason for his unreliable dismount could be attributed to changed orientation in space. Since he trained in a small gym and competed in a much larger hall with a much higher ceiling, he had to reacquire orientation in space at each competition, which made it hard to perform the perfect dismount as was not able to fulfill all the criteria of a good dismount according to Geiblinger and Dowden (2015). If he had perfected or learned a new dismount, Aljaž could have achieved even better results than he already had.

His stamp in gymnastics is seen through the two unique elements he invented with his coach and in the Code of Points bear his last name. The thought of a new element on the horizontal bar with a turn was suggested by his training partner Lojze Kolman when Aljaž was learning the Gaylord element and his position, at the point when a gymnast re-grasps the bar, was high ("Aljaz Pegan makes", 2014). As Aljaž had a good position in the air and had enough time they added a turn to Gaylord, thus making a new element on the horizontal bar named Pegan (Gaylord with ½ turn). First time he performed it in Budapest on 20th March, 1993 during European championship, and was also noticed in Japanese department of study in 1994 (Nakasone, 2015). The second element named after Aljaž is on parallel bars and is a step up of the Diamidov element. Aljaž had great balance in a handstand on one rail and likewise when performing pirouettes on one rail. When Aljaž put both of these two conditions together, he made a new element on parallel bars (Diamidov with 5/4 turn or more to handstand). Though, Aljaž had performed the element on parallel bars for a quite some time, he saw little motivation to include a hard element with uncertain execution in an exercise since, he had already fulfilled norms for maximum starting value of 10 points. However, the

Code of Points 1997 brought some changes and thus Aljaž had to include his element in the exercise. In the end of the year 1996 Aljaž performed his element for the first time at the international competition and FIG added his element in the Code of Points 1997.

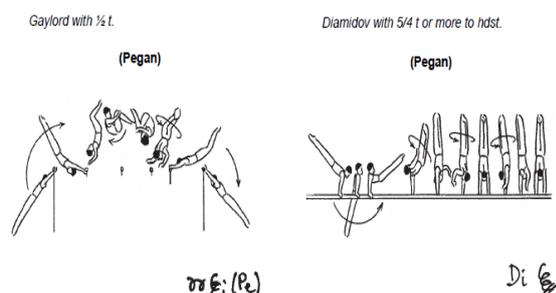


Figure 1. Element Pegan on the horizontal bar and on the parallel bars (FIG, 2013)

Despite the fact that both Pegan elements are a step up from an already existing elements, practicing and performing them is difficult. Being able to perform the base element does not condition the knowledge and performance of an element with extra rotation (turn).

During his long career Aljaž never attended the Olympic Games. He could have qualified for the Olympics Games through the team result, individual ranking in all-around and by becoming an individual apparatus world champion in the year preceding the Olympic Games.

The closest he came to qualifying for the Olympic Games was at the world championship in 1995 in Sabae, Japan. He competed in all-around competition but made a mistake in compulsory exercise and at the end missed the 1996 Olympic Games for bare 0.2 points. Soon after he got injured and continued his carrier only on parallel bars and on the horizontal bar.

Slovenia tried to qualify through team result for the second time at the world championship in 2003 in Anaheim, United States, but the team was not strong enough. Aljaž could have qualified for the Olympic Games on his own by becoming the world champion on the individual apparatus, but he did not qualify for the final event.

Aljaž could have qualified for the Olympic Games by becoming the world champion on the individual apparatus, at the 2007 world championship in Stuttgart, Germany. Unfortunately he came second on the horizontal bar.

Aljaž won his first medal at the national level after two years of training under supervision of coach Boris Pavliha. The period under Pavliha lasted for four more years, from the 1982-1986. During this time he attended and often won competitions at a national level. At the beginning of 1986 he came to Partizan Trnovo to train under Jože Mešl. During 1986 he was a perspective gymnast and attended a federal championship in Priština Yugoslavia where he was 10th. In 1987 he won at the Tournament of Brotherhood and Unity in Yugoslavia where he had competed with the best young gymnasts in Yugoslavia. The following year he became the junior champion of Yugoslavia and in 1989 he was a reserve in Yugoslavian team at the world championship in Stuttgart, Germany. At a junior four nations competition in 1990 in Belgium he almost came into all the finals and the Yugoslavian team was victorious. At the junior European championship in 1991 he was the 12th in all-around competition and the 6th on a horizontal bar. He was also a part of the Slovenian team at the Mediterranean games in France in 1993, where Slovenia was the third and Aljaž was the second on a horizontal bar.

During his career in a senior category he participated in over a hundred international competitions, where he had also achieved his greatest achievements on the horizontal bar.

In his long lasting career Aljaž attended fourteen World Championships in men's artistic gymnastics. His greatest success was at the World Championship in Melbourne, Australia in 2005 where he became the World Champion on the horizontal bar. In the years 2002, 2006 and 2007 he achieved the second place.

In his career he attended the World Cup competitions and won 27 times, became second 14 times and third place 9 times. In the season 2001/2002 Aljaž won at the overall World Cup final, he won the second place twice in the seasons of 1999/2000 and 2009, and in the season 2005/2006 he was the third.

He was twice awarded the European Champion on the horizontal bar, in 1994 and 2004. In 2007 he was the European runner up and in 2000 and 2008 he achieved the third place.

Besides numerous successes and medals Aljaž had received various prizes for which he had been selected among other candidates. The Gymnastic Union of Slovenia chose him as a sportsman of the year in the years of 1999, 2001, 2002 and 2006. Journalism Association of Slovenia chose him for sportsman of Slovenia in the year 2002. Sports Union of Ljubljana chose him for the sportsman of Ljubljana (capital city) in the year 2004.

Although the research of Novak and Čuk (1985) has been written a long time ago (and gymnastics developed severely since then), some aspects and conclusions are still valid. At the beginning of an athlete's career their results are improving, later they are stable and at the end results are getting worse. According to the general rule of development competitive results can be controlled whether our training plan gives adequate results. Authors came to a conclusion that the way of coming up with a score in artistic gymnastics has 3 characteristics, which hardens to put an objective view on result development. Those characteristics are:

- Evaluation is done subjectively. Measure instruments are judges, measure units are scores. Judges' score cannot be as objective as physical units of measurement.

- The perfect score is limited with a maximum score of 10 points (today still for execution only).

- The required content of the exercises varies among competitive categories, especially in difficulty.

Countries all over the world have usually their own competitive systems which consequently imply different competitive categories, making it hard for comparison. The alignment of competitive categories and exercises contents are applied in junior and senior categories and are determined by the International Gymnastics Federation (FIG).

An annual training plan is a tool that guides an athlete through 12 months of training and within those 12 months maximizes physiological adaptation and performance at specific time points, during the main competitions of the year. Within an annual plan some months can vary from the rest of the year to reduce physiological and psychological fatigue, and induce regeneration (Bompa & Haff, 2009).

Periodization divides the annual training plan into smaller training phases, thus making it easier to plan peak performance at the main competition. Within training phases we target biomotor abilities which will allow the athlete to develop the highest levels of speed, strength, power, agility and endurance possible. The annual training is composed with three main phases: preparatory, competition and transition. The transition phase connects annual training plans together and within this phase the main objective is to remove fatigue and allow the athlete to recover, via the use of active rest. The transition phase generally lasts 2 to 4 weeks but it can last up to 6 weeks (Bompa & Haff, 2009).

“Competitions can be classified into two broad categories: (1) major or official competitions and (2) preparatory or exhibition competitions. Major competitions are the athlete's most important competitions (e.g., national championships, world championships, Olympic Games). Preparatory or exhibition competitions are used to test the athlete and attain feedback regarding

specific aspects of training” (Bompa & Haff, 2009, p. 195).

“A key condition for gaining planned results over many years of preparation is to figure out a “tree of goals”, setting specific tasks subordinate to the main strategic objective of successful performance at the major competitions with appropriate results. The main ones are as follows:

- Creating optimal surplus (technical, tactical, physical, functional and psychological);
- Outstripping possession of new super-complex exercises and on time mastery of the integrated model of the current stage of preparation;
- Ensuring reliable and highly-productive activity in conditions that are more difficult than competition, according to the basic parameters” (Arkaev & Suchilin, 2004, p. 75).

Aljaž had an injury in 1997 which prevented him from competing in all-around competition so he focused only on parallel bars and the horizontal bar. In 2003 after his third injury he focused his career only on the horizontal bar. These are some facts how his annual training plan looked like and how he was able to prepare for major competitions. He trained from Monday to Saturday twice a day. The only exception was Wednesday when he had trained solely in the afternoon. Sometimes he also trained on Sunday mornings. Morning practice was from 10 to 12 am and afternoon practice was from 4 to 7 pm. Throughout the years duration of practices decreased and more attention was given to spatial orientation.

During the transition phase he had a program of exercises and with it he maintained his physical condition. His transition phases usually lasted from the middle of December to 10th of January and from the middle of June to the end of July. The transition phase varied depending on schedule of major competitions.

After each transition phase it took him from 9 to 11 weeks to get into a form. During this time he had problems with his

general condition and that was shown in elements reliability and especially in reliability of a dismount. After he got into form he usually needed three competitions to get into a stable competition performance which he could maintain for about a month and during this time his competition performance reached its peak.

Before each competition his weekly training plan was different and for the whole week he trained in leotard, stirrup pants and socks. His weekly training was basically a simulation of an actual competition. He warmed up as he would have before a real competition and then performed one full exercise and after that one more. The first exercise was meant as preliminary competition and the second as finals. After that he practiced only critical sections of an exercise to gain reliability and stability.

Through years of competitions element Pegan had a huge impact on Aljažs' Pegan career. Pegan on horizontal bar became a trademark of Aljaž Pegan and that also gave him a slight advantage over other gymnasts in the eyes of the judges. Vlasios Maras was the only gymnast who was successfully executing element Pegan on horizontal bar and also upgraded it to pike Pegan

The purpose of this analyse is to write a historical record about one of the most successful gymnast on the horizontal bar, Aljaž Pegan. Display competitive results and rankings on the horizontal bar at World Championships and to show changes of rules for the horizontal bar, which occurred in the Code of Points.

Code of Points

The Code of Points for MAG in 1989, 1993, 1997 and 2001, when the perfect score was 10 points, are presented with minimal standards by which exercise achieved a maximum start value of 10 points. Minimal standards were defined with an appropriate number of elements of various difficulty value parts.

The following element groups in the Code of Points 2001, 2004, 2006, 2009 and 2013 were (FIG, 2013, p. 123):

- I. Long hang swings with and without turns.
- II. Flight elements.
- III. Elements near the bar (in bar elements).
- IV. El-grip and dorsal hang elements and elements performed rearways to the bar.
- V. Dismounts.

Element group requirements fall under special requirements in the Code of Points (FIG, 2001), and fulfilling each group requirement provided 0.2 points to a total of 1 point which can be achieved in this section. To fulfill an element group requirement, a gymnast had to perform an element at least B value part and C value part for the dismount.

In the Code of Points coming after the one in 2001 element group requirements had a similar role, however they do not fall under special requirements but as an addition to the difficulty base value. Maximum points a gymnast can acquire in element group requirements is 2.5 points, to receive 0.5 points a gymnast has to perform at least one element from each element group. However there was a requirement that the dismount had to be of value part D to receive 0.5 points. In case the dismount is not of correct value part the following rule applies (FIG, 2013, p. 24):

- A or B value dismount +0.00 p. (not fulfill requirement)
- C value dismount +0,30 p. (partial requirement value)
- D or higher value +0,50 p. (full requirement value)

In the period when the Codes of Points 1989, 1993 and 1997 were in force, a gymnast may have performed every element twice in his exercise, however only if those elements and connections were not eligible for bonus points. In case that any element was performed more than

two times there was a deduction rule which changed over the years.

Repetition rule changed in the Code of Points (FIG, 2001, p. 22) in perspective to previous ones:

- No element (same Code Identification Number) may be repeated for difficulty credit or for Bonus Points. This applies also to elements repeated in connections.

- No element (same Code Identification Number) is permitted to contribute to the Start Value.

- No element (same Code Identification Number) may be performed three times in direct succession. The A-jury will deduct 0.20 points or each appearance of three such elements in direct succession.

In the Code of Points 2006, 2009 and 2013 an element may be repeated, however a gymnast will not receive any value for it (FIG, 2006, 2009 and 2013). »No element (same Code Identification Number) may be repeated for difficulty credit or for Connection Points. This applies also to elements repeated in connections« (FIG, 2013, p. 25).

The score of 10 points was structured with the next four sections:

- Exercise base value
- Exercise execution
- Special requirements
- Bonus points

A specific number of points may be achieved in each section, however number of points varies a lot through the Code of Points. A gymnast had the most impact on bonus points, which he could collect by connecting elements of specific value and thus making his exercise worth 10 points. Bonus points are a scoring factor with which a better comparison is made between exercises. Different possibilities for achieving bonus points will be presented for each Code of Points separately in the following tables.

Special requirements are one of the four sections of the score structure. A gymnast may obtain a specific number of

points for this section, however, the number of points varies a lot through the Code of Points. Each apparatus has its own special requirements and they are an essential part to achieve a maximum start value of an exercise. These essential parts cannot be replaced with another element from a different element group and a gymnast cannot fulfill two special requirements with just one element.

The following special requirements for horizontal bar applied in the Code of Points 1989, 1993 and 1997 (FIG, 1997, p. 123):

- An element with both hands in el-grip or in hang rearways through the lower vertical (minimum B).
- An element with grip release and a definite visible flight phase before re-grasping the bar (flight element)(minimum B).
- An »in-bar« element (minimum B).

If all the requirements were fulfilled in the Code of Points 1989 an exercise was worth 9.40 points. However, a gymnast could obtain the remaining 0.6 points by satisfying a scoring category called ROV which stands for risk, originality and virtuosity and could bring up to 0.2 points for each category thus making an exercise worth 10.0 points. Each category had to be evaluated separately, but in practice they were shown with the complexity of an exercise and together they formed a whole. For one part of an exercise it was possible to give two of three ROV factors (FIG, 1989).

Bonus points were a part of the score structure until the Code of Points 2001 came into force and gymnasts had to fulfill certain requirements to obtain points which could be awarded in this scoring category. With the new Code of Points in 2006 bonus points can be obtained only through connection of two elements of an appropriate value. Connection occurs when two flight elements or one flight and one on bar element are connected.

Additional criteria that increased element value or combined the two of

them into one value part. There are several criteria in each Code of Points, however, only the selected ones had an impact on Aljaž's exercises:

- For the direct connection of flight elements, the succeeding flight element increases in value by 1 category. *Example:* Tkatchov (C part) followed by free flight Giant (B part) becomes C+C part *or* Kovacs (D part) followed by Deltchev (C part) becomes D+D part *or* Tkatchov (C part) 2x followed by Deltchev (C part) becomes C+D+D part (FIG, 1989, p. 218).

- For the direct connection of flight elements, the succeeding flight element increases in value by 1 category. *Example:* Tkatchov (C part) followed by free flight Giant (B part) becomes C+C part *or* Kovacs (E part) followed by Deltchev (C part) becomes E+D part *or* Tkatchov (C part) 2x followed by Deltchev (C part) becomes C+D+D part (FIG, 1993, p. 157).

Additional information about value parts (FIG, 2001, p. 114):

- The direct connection of two flight elements creates one single value part, as follows: C+C=D, C+D or D+C=E, C+E or E+C= super E.

- The direct connection of D+D, E+D, D+E, E+E or similar flight elements retain their independent values for the benefit of the gymnast.

During the time Aljaž competed in the senior category FIG changed the Code of Points seven times. The Code of Points changes every four years and sets new standards, which competitors have to match by learning new or upgrading existing elements and constructing new exercises.

Aljaž started competing in a senior category when the Code of Points 1989-1992 was in force. Up until the year 1996 a gymnast had to perform compulsory and optional exercises, thus performing two exercises for each apparatus. The sum of both exercises gave the final ranking of a gymnast. Compulsory exercises were the same for all gymnasts and they contained various elements, for which gymnasts

spent a lot of time learning them. This paid off with a broad spectrum of knowledge which helped gymnasts to learn more difficult elements. After 1996 the compulsory exercises were cancelled.

Up until 2004 a gymnast exercise was evaluated from a starting value of 10 points downwards, provided an exercise fulfilled requirements set by the score structure. The score structure was divided into four sections. In each section a gymnast may have achieved a determined number of points, however, the points varied a lot through the Code of Points. By fulfilling requirements set by the score structure, a gymnast could achieve a maximum starting value. Great emphasis was placed on elegance of movement and reliability of performed elements. Gymnasts strived to perform their exercises in a flawless, elegant manner and with ease, because already the slightest mistake could mean a deduction, thus making a gymnast less competitive.

In 2006, the Code of Points and the entire gymnastics scoring system were completely overhauled. The change stemmed from the judging controversy at 2004 Olympics in Athens, Greece, which brought the reliability and objectivity of the scoring system into question, and arguments that execution had been sacrificed for difficulty in artistic gymnastics (Code of Points, 2014).

It started at 2004 Olympics in Athens when an American gymnast Paul Hamm won the gold medal in Men's all-around competition. However, his gold medal was put into doubt, by International Gymnastics Federation (FIG), when South Korean bronze medalist Yange Tae Young filed an official report, stating his start value was inaccurate in the all-around final event on parallel bars. Judges set Yange's start value to 9.9 instead of 10.0. This was enough to put Yange into the third place, since the difference between the first and the third place was only 0.049 points. If FIG would have ruled into Yanges' favor he would have won the gold and Hamm

would have been second. FIG responded with suspension of three judges for the error and with the decision that the results will remain unchanged (Olympic Games scandals and controversies, 2014).

The Code of Points which was in force from 2000-2004 stayed active for another year, although the controversy about judging happened at the 2004 Olympics. The next Code of Points which was in force only three years from 2006-2008 no longer had a maximum starting value of 10 points, however, the final score was consisted out of two separate scores, the execution score and the difficulty score. The score for execution is evaluated by deduction from 10 points downwards. Judges deduct points for general, technical, artistic, executional and exercise composition errors. A difficulty score is consisted out of ten elements, including dismount. Summarized value of the ten elements, which values are shown in the value table, gives the difficulty score of an exercise. The sum of both scores gives the final score a gymnast will receive for his exercise (Code of Points, 2014).

The Codes of Points 2008 and 2012 that followed the new Code of Points which came into force in 2006 did not change a lot. Actually the only difference was in the value table and some new elements were added, which are given the name by a gymnast who first executed them.

METHODS

Searching, reviewing, analyzing and verifying the results and video material for each World Championship and Code of Points for individual era.

Exercises for each World Championship are broken down into individual elements and descriptions of elements. They are presented in accordance with the Code of Points which was in force for a particular four-year period, and in theoretical comparison,

taking into account all changes and adjustments, with the 2013 Code of Points.

Input, processing and data design, such as the date of the competition, achieved rank, exercise content (EGR, CIN, D, V, CP), exercise value were made in Microsoft Excel 2010.

Legend of abbreviations: EGR-element group requirements, CIN-code identification number, D-difficulty, V-value, CP-connection points

The breakdown of exercises Aljaž performed at the World Championships

Despite best efforts, it was not possible to obtain all the exercises for each of the individual World Championships. Therefore, the analysis of certain exercises is made on the basis of other competitions that were close to the time of the World Championship, for which it was not possible to obtain any video material. Based on a discussion and joint work with, it was concluded that such an exercise was

probably the same as the one performed at the World Championship.

Analysis of the following world championship exercises was not possible, because there was not an adequate video material:

- Exercise for the 1991 World Championship in Indianapolis, was analysed based on the exercise Aljaž performed at the National Championship in 1991 in Ljubljana, Slovenia.

- Exercise for the 1995 World Championship in Sabae, was analysed based on the exercise Aljaž performed at World Cup in 1994 in Zürich, Switzerland.

- Exercise for the 1999 World Championship in Tijanjin, was analysed based on the exercise Aljaž performed at World Cup in 2000 in Ljubljana, Slovenia.

Exercise for the 2001 World Championship in Ghent, was analysed based on the exercise Aljaž performed at World Cup in 2001 in Glasgow, United Kingdom.

Table 1

Bonus points through Codes of Points 1993-2013.

Code of Points	CP max	Total max points
1993	0,2	1
1997		1,4
2001		1,2
2006		Depending on how many connections a gymnast will make
2009		Depending on how many connections a gymnast will make
2013		Depending on how many connections a gymnast will make

Table 2

Score structure and value parts through Codes of Points 1989-2013.

Code of Points	1989	1993	1997	2001	2006	2009 & 2013
Max score	10.000	10.000	10.000	10.000	Note	Note
Exercise base value	4,0	2,4	2,4	2,8	10 elements	10 elements
Exercise execution	4,4	5,4	5,0	5,0	10.000	10.000
Special requirements (Exercise composition)	1,0	1,2	1,2	1,0	2,5	2,5
Connection / bonus points (ROV)	0,6	1,0	1,4	1,2	*	*
Value parts						
A	0,1	0,1	0,1	0,1	0,1	0,1
B	0,2	0,2	0,2	0,3	0,2	0,2
C	0,4	0,4	0,3	0,5	0,3	0,3
D	0,6	0,6	0,4	0,6	0,4	0,4
E		0,8	0,6	0,7	0,5	0,5
F (SE)			0,7	0,8	0,6	0,6
G						0,7
N of elements	9	10	10	10	10	10

* depending on the connection of elements

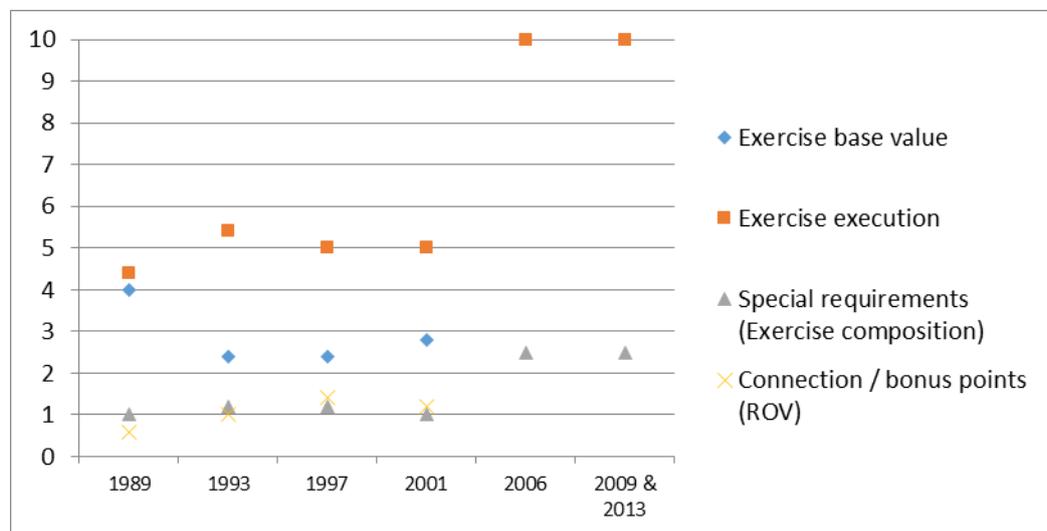


Figure 2. Score structure through Code of Points 1989-2013.

Table 3

Aljaž Pegan exercise content and results at World Championship.

Performed exercise at 1991 World Championship in Indianapolis and sections of score structure (Mešl Jože personal archive)

1991 Indianapolis, United States	Code of Points 1989				Code of Points 2013			
9.400/10.000								
63-70. place	EGR/CIN	D	CP	V	EGR/CIN	D	CP	V
From overgrip free hip circle through handstand	III/1	A		0,2	III/7	A		0,1
Stalder strad.	IV/38	B		0,4	III/38	B		0,2
Giant swing bwd.	V/25	A			I/31	A		0,1
Tkatchev strad.	VI/11	C		0,6	II/15	C		0,3
Gienger	VI/67	D		0,8	II/69	C	0,1	0,3
At front swing 1/2 turn around left hand in mixt grip								
At front swing regrip to undergrip								
Endo strad.	IV/22	B		0,4	III/26	B		0,2
Giant swing fwd.	V/1	A			I/13	A		
Stoop circle rearward fwd. atleast 45°	IV/2	B		0,4	IV/2	B		0,2
El-grip giant swing	V/18	B		0,4	IV/14	B		0,2
El-grip back uprise and hop ½ t. to ovgr.	V/22	B		0,4	IV/20	B		0,2
Giant swing bwd.	V/25	A			I/31	A		
Giant swing bwd.	V/25	A			I/31	A		
Triple salto bwd. t.	VII/52	D		0,8	V/47	E		0,5
Exercise base value (max 4,4)				4,4	EGRF I-V (2,5 max)			2,5
Exercise execution (max 4)				4	Exercise execution			10
Exercise composition (max 1)				1	CP			0,1
Bonus ROV (max 0,6)				0,6				
Start value				10				14,9

Performed exercise at 1992 World Championship in Paris and sections of score structure (Mešl Jože personal archive)

1992 Paris, France	Code of Points 1989				Code of Points 2013			
9.400/10.000								
21. place	EGR/CIN	D	CP	V	EGR/CIN	D	CP	V
From overgrip free hip circle through handstand	III/1	A			III/7	A		0,1
Stalder strad.	IV/38	B		0,4	III/38	B		0,2
Giant swing bwd.	V/25	A			I/31	A		
Tkatchev strad.	VI/11	C		0,6	II/15	C		0,3
Tkatchev strad.	VI/11	D		0,8	II/15	C		
Gienger	VI/67	D		0,8	II/69	C	0,1	0,3
At front swing 1/2 turn around left hand in mixt grip								
At front swing regrip to undergrip								
Endo strad.	IV/22	B		0,4	III/26	B		0,2
Giant swing fwd.	V/1	A			I/13	A		
Stoop circle rearward fwd. atleast 45°	IV/2	B		0,4	IV/2	B		0,2
El-grip giant swing	V/18	B		0,4	IV/14	B		0,2
El-grip back uprise and hop ½ t. to ovgr.	V/22	B		0,4	IV/20	B		0,2
One arm giant swing bwd. (360°)	V/30	B		0,4	I/32	B		0,2
Giant swing bwd.	V/25	A			I/31	A		
Giant swing bwd.	V/25	A			I/31	A		
Triple salto bwd. t.	VII/52	D		0,8	V/47	E		0,5
Exercise base value (max 4,4)				4,4	EGRF I-V (2,5 max)			2,5
Exercise execution (max 4)				4	Exercise execution			10
Exercise composition (max 1)				1	CP			0,1
Bonus ROV (max 0,6)				0,6				
Start value				10				15

Performed exercise at 1993 World Championship in Birmingham and sections of score structure (Gymn, 2004)

1993 Birmingham, United Kingdom		Code of Points 1993				Code of Points 2013			
9.150/ 10.000		EGR/CIN	D	CP	V	EGR/CIN	D	CP	V
12. place									
From overgrip free hip circle through handstand		III/1	A			III/7	A		0,1
Endo strad. with 1/2 t. thr. hdst.		IV/28	C		0,4	III/32	B		0,2
Giant swing bwd. with 1/2 turn		V/57	B		0,2	I/37	A		
Giant swing fwd.		V/1	A			I/13	A		
Giant swing fwd.		V/1	A			I/13	A		
Pegan		VI/65	E		0,8	II/53	E		0,5
Giant swing bwd.		V/31	A			I/31	A		
Tkatchev strad.		VI/13	C		0,4	II/15	C		0,3
Tkatchev strad.		VI/13	D	0,1	0,6	II/15	C	0,1	
Gienger		VI/83	D		0,6	II/69	C		0,3
At front swing regrip to undergrip									
Kip or drop kip to hdst. regrip to undergrip		I/6	A			III/1	A		
Giant swing fwd.		V/1	A			I/13	A		
Stoop circle rearward fwd. atleast 45°		IV/2	B		0,2	IV/2	B		0,2
El-grip giant swing		V/22	B		0,2	IV/14	B		0,2
El-grip back uprise and hop ½ t. to ovgr.		V/27	B			IV/20	B		0,2
Giant swing fwd.		V/1	A			I/13	A		
Zou Li Min		V/19	D		0,6	I/27	C		0,3
Endo strad. with 1/2 turn		V/27	B			III/32	B		
Giant swing bwd.		V/31	A			I/31	A		
Giant swing bwd.		V/31	A			I/31	A		
Triple salto bwd. t.		VII/64	D		0,6	V/47	E		0,5
Exercise base value (max 2,4)					2,4	EGRF I-V (2,5 max)			2,5
Exercise execution (max 5,4)					5,4	Exercise execution			10
Special requirements (max 1,2)					1,2	CP			0,1
Bonus points (max 1)					1				
Start value					10				15,4

Performed exercise at 1994 World Championship in Brisbane and sections of score structure (Gymnastics Results, 1994)

1994 Brisbane, Australia		Code of Points 1993				Code of Points 2013			
9.275/ 10.000		EGR/CIN	D	CP	V	EGR/CIN	D	CP	V
6. place									
From overgrip free hip circle through handstand		III/1	A			III/7	A		0,1
Endo piked with 1/2 t. thr. hdst.		IV/24	D		0,6	III/32	B		0,2
Giant swing bwd. with 1/2 turn		V/57	B		0,2	I/37	A		0,1
Giant swing fwd.		V/1	A			I/13	A		
Giant swing fwd.		V/1	A			I/13	A		
Pegan		VI/65	E		0,8	II/53	E		0,5
Giant swing bwd.		V/31	A			I/31	A		
Tkatchev strad.		VI/13	C		0,4	II/15	C		0,3
Tkatchev strad.		VI/13	D	0,1	0,6	II/15	C	0,1	
Gienger		VI/83	D		0,6	II/69	C		0,3
Endo strad. with 1/2 t. thr. hdst.		IV/28	C		0,4	III/32	B		
Giant swing bwd. with 1/2 turn		V/57	B			I/37	A		
Zou Li Min		V/19	D	0,1	0,6	I/27	C		0,3
Endo strad. regrip to el-grip		IV/34	D		0,6	III/26	B		0,2
El-grip back uprise and hop ½ t. to ovgr.		V/27	B			IV/20	B		0,2
Giant swing bwd.		V/31	A			I/31	A		
Giant swing bwd.		V/31	A			I/31	A		
Triple salto bwd. t.		VII/64	D		0,6	V/47	E		0,5
Exercise base value (max 2,4)					2,4	EGRF I-V (2,5 max)			2,5
Exercise execution (max 5,4)					5,4	Exercise execution			10
Special requirements (max 1,2)					1,2	CP			0,1
Bonus points (max 1)					1				
Start value					10				15,3

*Performed exercise at 1995 World Championship in Sabae and sections of score structure
(Gymnastics Results, 1995)*

9.700/10.000	Code of Points 1993				Code of Points 2013			
	EGR/CIN	D	CP	V	EGR/CIN	D	CP	V
90. place								
From overgrip free hip circle through handstand	III/1	A			III/7	A		0,1
Endo piked with 1/2 t. thr. hdst.	IV/24	D		0,6	III/32	B		0,2
Giant swing bwd. with 1/2 turn	V/57	B		0,2	I/37	A		0,1
Giant swing fwd.	V/1	A			I/13	A		
Giant swing fwd.	V/1	A			I/13	A		
Pegan	VI/65	E		0,8	II/53	E		0,5
Giant swing bwd.	V/31	A			I/31	A		
Tkatchev strad.	VI/13	C		0,4	II/15	C		0,3
Tkatchev strad.	VI/13	D		0,6	II/15	C		
Gienger	VI/83	D	0,1	0,6	II/69	C	0,1	0,3
Endo strad. with 1/2 t. thr. hdst.	IV/28	C		0,4	III/32	B		
Giant swing bwd. with 1/2 turn	V/57	B			I/37	A		
Zou Li Min	V/19	D	0,1	0,6	I/27	C		0,3
Endo strad. regrip to el-grip	IV/34	D		0,6	III/26	B		0,2
El-grip back uprise and hop 1/2 t. to ovgr.	V/27	B			IV/20	B		0,2
Giant swing bwd.	V/31	A			I/31	A		
Giant swing bwd.	V/31	A			I/31	A		
Triple salto bwd. t.	VII/64	D		0,6	V/47	E		0,5
Exercise base value (max 2,4)				2,4	EGRF I-V (2,5 max)			2,5
Exercise execution (max 5,4)				5,4	Exercise execution			10
Special requirements (max 1,2)				1,2	CP			0,1
Bonus points (max 1)				1				
Start value				10				15,3

*Performed exercise at 1996 World Championship in San Juan and sections of score structure
(Gymnastics Results, 1996)*

9.750/10.000	Code of Points 1993				Code of Points 2013			
	EGR/CIN	D	CP	V	EGR/CIN	D	CP	V
4. place								
From overgrip free hip circle through handstand	III/1	A			III/7	A		0,1
Endo piked with 1/2 t. thr. hdst.	IV/24	D		0,6	III/32	B		0,2
Giant swing bwd. with 1/2 turn	V/57	B		0,2	I/37	A		0,1
Giant swing fwd.	V/1	A			I/13	A		
Giant swing fwd.	V/1	A			I/13	A		
Pegan	VI/65	E		0,8	II/53	E		0,5
Giant swing bwd.	V/31	A			I/31	A		
Tkatchev strad.	VI/13	C		0,4	II/15	C		0,3
Tkatchev strad.	VI/13	D		0,6	II/15	C		
Gienger	VI/83	D	0,1	0,6	II/69	C	0,1	0,3
Endo strad. with 1/2 t. thr. hdst.	IV/28	C		0,4	III/32	B		
Giant swing bwd. with 1/2 turn	V/57	B			I/37	A		
Giant swing fwd. with one arm in ungr. (360°)	V/2	B			I/26	B		0,2
Zou Li Min	V/19	D	0,1	0,6	I/27	C		0,3
Endo strad. regrip to el-grip	IV/34	D		0,6	III/26	B		
El-grip back uprise and hop 1/2 t. to ovgr.	V/27	B			IV/20	B		0,2
Giant swing bwd.	V/31	A			I/31	A		
Giant swing bwd.	V/31	A			I/31	A		
Triple salto bwd. t.	VII/64	D		0,6	V/47	E		0,5
Exercise base value (max 2,4)				2,4	EGRF I-V (2,5 max)			2,5
Exercise execution (max 5,4)				5,4	Exercise execution			10
Special requirements (max 1,2)				1,2	CP			0,1
Bonus points (max 1)				1				
Start value				10				15,3

*Performed exercise at 1999 World Championship in Tianjin and sections of score structure
(Gymnastics Results, 1999)*

1999 Tianjin, China		Code of Points 1997				Code of Points 2013			
9.587/10.000									
13. place		EGR/CIN	D	CP	V	EGR/CIN	D	CP	V
From overgrip free hip circle through handstand		III/1	A			III/7	A		0,1
Endo piked with 1/2 t. thr. hdst.		III/64	D		0,4	III/32	B		0,2
Stalder with hop 1/1 t. through hdst.		III/29	D	0,1	0,4	III/39	C		0,3
Stalder with hop 1/1 t. through hdst.		III/29	D	0,1	0,4	III/39	C		
Giant swing bwd. with 1/2 turn		IV/22	B			I/37	A		
Giant swing fwd.		IV/1	A			I/13	A		
Giant swing fwd.		IV/1	A			I/13	A		
Pegan		VI/45	E		0,6	II/53	E		0,5
Giant swing bwd.		IV/21	A			I/31	A		
Tkatchev strad.		VI/13	C	0,1	0,3	II/15	C	0,1	0,3
Gienger		VI/63	C	0,1	0,3	II/69	C	0,1	0,3
Endo strad. with 1/2 t. thr. hdst.		III/53	C		0,3	III/32	B		
Giant swing bwd. with 1/2 turn		IV/22	B			I/37	A		
Zou Li Min		V/19	D	0,2	0,4	I/27	C		0,3
Endo strad. with 1/1 t. thr. hdst. in el-grip		III/65	E	0,2	0,6	III/34	D		0,4
El-grip back uprise and hop ½ t. to ovgr.		V/7	B			IV/20	B		0,2
Giant swing bwd.		IV/21	A			I/31	A		
Giant swing bwd.		IV/21	A			I/31	A		
Triple salto bwd. t.		VII/54	D		0,4	V/47	E		0,5
Exercise base value (max 2,4)					2,4	EGRF I-V (2,5 max)			2,5
Exercise execution (max 5)					5	Exercise execution			10
Special requirements (max 1,2)					1,2	CP			0,1
Bonus points (max 1,4)					1,4				
Start value					10				15,7

*Performed exercise at 2001 World Championship in Ghent and sections of score structure
(Gymnastics Results, 2001)*

2001 Ghent, Belgium		Code of Points 2000				Code of Points 2013			
8.350/10.000									
70. place		EGR/CIN	D	CP	V	EGR/CIN	D	CP	V
From overgrip free hip circle through handstand		III/6	A		0,1	III/7	A		0,1
Endo strad. with 1/2 t. thr. hdst.		III/26	B		0,3	III/32	B		0,2
Giant swing bwd. with 1/2 turn		I/31	A		0,1	I/37	A		0,1
Giant swing fwd.		I/11	A			I/13	A		
Giant swing fwd.		I/11	A			I/13	A		
Pegan		II/45	E		0,7	II/53	E		0,5
Giant swing bwd.		I/26	A			I/31	A		
Tkatchev piked		II/14	D	E	0,7	II/15	C		0,3
Tkatchev strad.		II/13	C		0,6	II/15	C	0,1	
Gienger		II/58	C	D	0,6	II/69	C	0,1	0,3
Endo strad. with 1/2 t. thr. hdst.		III/26	B			III/32	B		
Giant swing bwd. with 1/2 turn		I/31	A			I/37	A		
Zou Li Min		I/28	C		0,5	I/27	C		0,3
Endo strad. with 1/1 t. thr. hdst. in el-grip		III/40	E		0,7	III/34	D		0,4
El-grip back uprise and hop ½ t. to ovgr.		IV/17	B		0,3	IV/20	B		0,2
Giant swing bwd.		I/26	A			I/31	A		
Giant swing bwd.		I/26	A			I/31	A		
Triple salto bwd. t.		V/40	E		0,7	V/47	E		0,5
Exercise base value (max 2,8)					2,8	EGRF I-V (2,5 max)			2,5
Exercise execution (max 5)					5	Exercise execution			10
Special requirements (max 1)					1	CP			0,1
Bonus points (max 1,2)					1,2				
Start value					10				15,4

*Performed exercise at 2002 World Championship in Debrecen and sections of score structure
(Gymnastics Results, 2002)*

2002 Debrecen, Hungary		Code of Points 2000				Code of Points 2013			
9.700/10.000									
2. place	EGR/CIN	D	CP	V	EGR/CIN	D	CP	V	
From overgrip free hip circle through handstand	III/6	A		0,1	III/7	A		0,1	
Endo strad. with 1/2 t. thr. hdst.	III/26	B		0,3	III/32	B		0,2	
Giant swing bwd. with 1/2 turn	I/31	A			I/37	A		0,1	
Giant swing fwd.	I/11	A			I/13	A			
Giant swing fwd.	I/11	A			I/13	A			
Pegan	II/45	E		0,7	II/53	E		0,5	
Giant swing bwd.	I/26	A			I/31	A			
Tkatchev piked	II/14	D	E	0,7	II/15	C		0,3	
Tkatchev strad.	II/13	C			II/15	C	0,1	0,3	
Gienger	II/58	C	D	0,6	II/69	C			
Endo piked with 1/2 t. thr. hdst.	III/26	B			III/32	B			
Giant swing bwd. with 1/2 turn	I/31	A			I/37	A			
Endo with 1/1 t. thr. hdst. in el-grip	III/40	E		0,7	III/34	D		0,4	
El-grip back uprise and hop to undr.	IV/17	B		0,3	IV/20	B		0,2	
Giant swing fwd. with 1/1 turn in double elgrip	I/23	C		0,5	I/15	C		0,3	
El-grip back uprise and hop to undr.	IV/17	B			IV/20	B			
Giant swing fwd.	I/11	A			I/13	A			
Giant swing fwd. with 1/1 turn in mixt grip	I/12	B		0,3	I/14	B			
Back uprise to handstand with 1/2 turn	I/6	A			I/7	A			
Giant swing bwd.	I/26	A			I/31	A			
Giant swing bwd.	I/26	A			I/31	A			
Triple salto bwd. t.	V/40	E		0,7	V/47	E		0,5	
Exercise base value (max 2,8)				2,8	EGRF I-V (2,5 max)			2,5	
Exercise execution (max 5)				5	Exercise execution			10	
Special requirements (max 1)				1	CP			0,1	
Bonus points (max 1,2)				1,2					
Start value				10				15,4	

*Performed exercise at 2003 World Championship in Anaheim and sections of score structure
(Gymnastics Results, 2003)*

2003 Anaheim, United States		Code of Points 2000				Code of Points 2013			
9.500/10.000									
24. place	EGR/CIN	D	CP	V	EGR/CIN	D	CP	V	
From overgrip free hip circle through handstand	III/6	A		0,1	III/7	A		0,1	
Endo strad. with 1/2 t. thr. hdst.	III/26	B		0,3	III/32	B		0,2	
Giant swing bwd. with 1/2 turn	I/31	A			I/37	A		0,1	
Giant swing fwd.	I/11	A			I/13	A			
Giant swing fwd.	I/11	A			I/13	A			
Pegan	II/45	E		0,7	II/53	E		0,5	
Giant swing bwd.	I/26	A			I/31	A			
Tkatchev piked	II/14	D	E	0,7	II/15	C		0,3	
Tkatchev strad.	II/13	C			II/15	C	0,1		
Gienger	II/58	C	D	0,6	II/69	C		0,3	
Endo piked with 1/2 t. thr. hdst.	III/26	B			III/32	B			
Giant swing bwd. with 1/2 turn	I/31	A			I/37	A			
Endo piked with 1/1 t. thr. hdst. in el-grip	III/40	E		0,7	III/34	D		0,4	
El-grip back uprise and hop to undr.	IV/17	B		0,3	IV/20	B		0,2	
Giant swing fwd. with 1/1 turn in double elgrip	I/23	C		0,5	I/15	C		0,3	
El-grip back uprise and hop to undr.	IV/17	B			IV/20	B			
Giant swing fwd.	I/11	A			I/13	A			
Giant swing fwd. with 1/1 turn in mixt grip	I/12	B		0,3	I/14	B			
Back uprise to handstand with 1/2 turn	I/6	A			I/7	A			
Giant swing bwd.	I/26	A			I/31	A			
Giant swing bwd.	I/26	A			I/31	A			
Triple salto bwd. t.	V/40	E		0,7	V/47	E		0,5	
Exercise base value (max 2,8)				2,8	EGRF I-V (2,5 max)			2,5	
Exercise execution (max 5)				5	Exercise execution			10	
Special requirements (max 1)				1	CP			0,1	
Bonus points (max 1,2)				1,2					
Start value				10				15,4	

*Performed exercise at 2005 World Championship in Melbourne and sections of score structure
(Gymnastics Results, 2005)*

2005 Melbourne, Australia		Code of Points 2000				Code of Points 2013			
9.662/10.000		EGR/CIN	D	CP	V	EGR/CIN	D	CP	V
I. place									
From overgrip free hip circle through handstand		III/6	A			III/7	A		0,1
Endo piked with 1/1 t. thr. hdst. in mixt grip		III/27	C		0,5	III/33	C		0,3
Back uprise to handstand with 1/2 turn		I/6	A			I/7	A		
Giant swing bwd. with 1/2 turn		I/31	A			I/37	A		
Giant swing fwd.		I/11	A			I/13	A		
Giant swing fwd.		I/11	A			I/13	A		
Pegan		II/45	E		0,7	II/53	E		0,5
Giant swing bwd.		I/26	A			I/31	A		
Tkatchev piked		II/14	D	E	0,7	II/15	C		0,3
Tkatchev strad.		II/13	C			II/15	C	0,1	
Gienger		II/58	C	D	0,6	II/69	C		0,3
Endo strad. with 1/1 t. thr. hdst. in el-grip		III/28	C		0,5	III/34	D		0,4
El-grip back uprise and hop to undr.		IV/17	B		0,3	IV/20	B		0,2
Giant swing bwd.		I/26	A			I/31	A		
Zou Li Min		I/28	C		0,5	I/27	C		0,3
Giant swing fwd.		I/11	A			I/13	A		
Endo piked with 1/1 t. thr. hdst. in el-grip		III/40	E		0,7	III/34	D		
El-grip back uprise and hop to undr.		IV/17	B			IV/20	B		
Giant swing fwd. with 1/1 turn in double elgrip		I/12	B		0,3	I/15	C		0,3
El-grip back uprise and hop ½ t. to ovgr.		IV/17	B			IV/20	B		
Giant swing bwd.		I/26	A			I/31	A		
Giant swing bwd.		I/26	A			I/31	A		
Triple salto bwd. t.		V/40	E		0,7	V/47	E		0,5
Exercise base value (max 2,8)					2,8	EGRF I-V (2,5 max)			2,5
Exercise execution (max 5)					5	Exercise execution			10
Special requirements (max 1)					1	CP			0,1
Bonus points (max 1,2)					1,2				
Start value					10				15,8

*Performed exercise at 2006 World Championship in Aarhus and sections of score structure
(Gymnastics Results, 2006)*

2006 Aarhus, Denmark								
15.900/16.500								
Code of Points 2006				Code of Points 2013				
2. place	EGR/CIN	D	CP	V	EGR/CIN	D	CP	V
From mixt grip free hip circle through handstand	III/7	A			III/7	A		
Endo strad. with 1/1 t. thr. hdst. in mixt grip	III/33	C		0,3	III/33	C		0,3
Back uprise to handstand with 1/2 turn	I/7	A			I/7	A		
Giant swing bwd. with 1/2 turn	I/37	A			I/37	A		
Giant swing fwd.	I/13	A			I/13	A		
Giant swing fwd.	I/13	A			I/13	A		
Pegan	II/53	E	0,2	0,5	II/53	E	0,1	0,5
Rybalko with 3/2 t. to double el-grip	I/64	D		0,4	I/64	D		0,4
El-grip back uprise and hop ½ t. to ovgr.	IV/20	B		0,2	IV/20	B		0,2
Stalder strad. with hop 3/2 turn through hdst. in el-grip	III/41	D		0,4	III/41	D		0,4
Back uprise to handstand with 1/2 turn	I/7	A			I/7	A		
Giant swing fwd.	I/13	A			I/13	A		
Stalder strad. with hop 3/2 turn through hdst. in el-grip	III/41	E		0,5	III/41	E		0,5
El-grip back uprise and hop to undr.	IV/20	B			IV/20	B		
Giant swing fwd.	I/13	A			I/13	A		
Zou Li Min	I/27	C		0,3	I/27	C		0,3
Endo strad. with 1/1 t. thr. hdst. in el-grip	III/34	D		0,4	III/34	D		0,4
El-grip back uprise and hop to undr.	IV/20	B			IV/20	B		
Giant swing fwd. with 1/1 turn in double elgrip	I/15	C		0,3	I/15	C		0,3
El-grip back uprise and hop ½ t. to ovgr.	IV/20	B			IV/20	B		
Giant swing bwd.	I/31	A			I/31	A		
Giant swing bwd.	I/31	A			I/31	A		
Triple salto bwd. t.	V/47	E		0,5	V/47	E		0,5
EGRF I-V (2,5 max)				2,5				2,5
Exercise execution				10				10
CP				0,2				0,1
Start value				16,5				16,4

*Performed exercise at 2007 World Championship in Stuttgart and sections of score structure
(Gymnastics Results, 2007)*

2007 Stuttgart, Germany								
15.825/16.800								
Code of Points 2006				Code of Points 2013				
2. place	EGR/CIN	D	CP	V	EGR/CIN	D	CP	V
From mixt grip free hip circle through handstand	III/7	A			III/7	A		
Endo strad. with 1/1 t. thr. hdst. in el-grip	III/34	D		0,4	III/34	D		0,4
El-grip back uprise and hop ½ t. to ovgr.	IV/20	B			IV/20	B		
Giant swing bwd. with 1/2 turn	I/37	A			I/37	A		
Giant swing fwd.	I/13	A			I/13	A		
Giant swing fwd.	I/13	A			I/13	A		
Pegan	II/53	E	0,2	0,5	II/53	E	0,1	0,5
Rybalko with 3/2 t. to double el-grip	I/64	D		0,4	I/64	D		0,4
El-grip back uprise and hop ½ t. to ovgr.	IV/20	B			IV/20	B		
Stalder strad. with hop 3/2 turn through hdst. in el-grip	III/41	E		0,5	III/41	E		0,5
El-grip back uprise and hop to undr.	IV/20	B			IV/20	B		
Giant swing fwd.	I/13	A			I/13	A		
Stoop in shoot and 1/2 t. thr. hdst. in ovgr.	IV/4	D		0,4	IV/4	D		0,4
Giant swing bwd.	I/31	A			I/31	A		
Stalder with hop 1/1 t. thr. hdst. in el-grip (change de rotation direction)	III/40	D		0,4	III/40	D		0,4
El-grip back uprise and hop to undr.	IV/20	B			IV/20	B		
Giant swing fwd.	I/13	A			I/13	A		
Zou Li Min	I/27	C		0,3	I/27	C		0,3
Weiler with 1/1 turn to double el-grip	III/4	D		0,4	III/4	D		0,4
El-grip back uprise and hop ½ t. to ovgr.	IV/20	B			IV/20	B		
Quast with 1/1 turn	I/45	C		0,3	I/45	C		0,3
Giant swing bwd.	I/31	A			I/31	A		
Giant swing bwd.	I/31	A			I/31	A		
Triple salto bwd. t.	V/47	E		0,5	V/47	E		0,5
EGRF I-V (2,5 max)				2,5				2,5
Exercise execution				10				10
CP				0,2				0,1
Start value				16,8				16,7

*Performed exercise at 2009 World Championship in London and sections of score structure
(Gymnastics Results, 2009)*

2009 London, United Kingdom		Code of Points 2006				Code of Points 2013			
15.500/17.000									
5. place		EGR/CIN	D	CP	V	EGR/CIN	D	CP	V
From mixt grip free hip circle through handstand		III/7	A			III/7	A		
Endo strad. with 1/1 t. thr. hdst. in el-grip		III/34	D		0,4	III/34	D		0,4
El-grip back uprise and hop ½ t. to ovgr.		IV/20	B			IV/20	B		
Giant swing bwd. with 1/2 turn		I/37	A			I/37	A		
Giant swing fwd.		I/13	A			I/13	A		
Giant swing fwd.		I/13	A			I/13	A		
Pegan		II/53	E	0,2	0,5	II/53	E	0,1	0,5
Rybalko with 3/2 t. to double el-grip		I/64	D		0,4	I/64	D		0,4
El-grip back uprise and hop ½ t. to ovgr.		IV/20	B			IV/20	B		
Giant swing bwd.		I/31	A			I/31	A		
Stalder strad. with hop 3/2 turn through hdst. in el-grip		III/41	E		0,5	III/41	E		0,5
Back uprise to handstand and hop to undr.		I/1	A			I/1	A		
Giant swing fwd.		I/13	A			I/13	A		
Stoop in shoot and 1/2 t. thr. hdst. in ovgr.		IV/4	D	0,2	0,4	IV/4	D	0,1	0,4
Možnik strad. to mixt grip		II/17	D		0,4	II/17	D		0,4
Back uprise to handstand and hop to undr.		I/1	A			I/1	A		
Giant swing fwd. with 1/2 t. thr. hdst.		I/19	A			I/19	A		
Stalder with hop 1/1 t. thr. hdst. in el-grip (change de rotation direction)		III/40	D		0,4	III/40	D		0,4
El-grip back uprise and hop to undr.		IV/20	B			IV/20	B		
Giant swing fwd.		I/13	A			I/13	A		
Zou Li Min		I/27	C		0,3	I/27	C		0,3
Giant swing fwd. with 1/2 t. thr. hdst.		I/19	A			I/19	A		
Quast with 1/1 turn		I/45	C		0,3	I/45	C		0,3
Giant swing bwd.		I/31	A			I/31	A		
Giant swing bwd.		I/31	A			I/31	A		
Triple salto bwd. t.		V/47	E		0,5	V/47	E		0,5
EGRF I-V (2,5 max)					2,5				2,5
Exercise execution					10				10
CP					0,4				0,2
Start value					17				16,8

DISCUSSION

Every Code of Points that came into force had set new criteria to which gymnasts had to adapt. Aljaž managed to do that because of his wide spectrum of base knowledge. The base was built through years of training and a great number of repetitions of various elements he had to execute in compulsory exercises. Consequently, he could upgrade elements he had already known with an extra rotation or with a mixed or el-grip grips, thus executing elements and entire exercises with higher value. It can be seen through exercises how he upgraded his elements e.g. Endo was first executed with

½ turn and later with 1/1 turn, a similar connection is seen with Stalder. With this kind of changes and his elegant execution, Aljaž managed to remain one of the top competitors in the world men's artistic gymnastics.

When comparing exercises with difficulty values, with the Code of Points in 2013, they suffer since it became forbidden to count the same element (same Code Identification Number) in the exercise more than once. Therefore, some elements were excluded when making a theoretical comparison. Code identification number is an important factor in this rule

because many forms of the same element e.g. Endo straddled and piked, became combined under the same code identification number. Further examples are elements that end in mixt or over - grip. All in all, when making a theoretical comparison to the Code of Points 2013, an exercise loses some points.

Another aspect that changed in Aljaž's exercises was their length which was primarily due to giant swings forward and backwards. Those giant swings were designed as a preparation for an element of high value. In spite of the length of an exercise only ten elements were taken into account when calculating the value of an exercise.

When composing an exercise a gymnast must consider which elements and in what order the elements will be connected. In the Codes of Points 1989-2001 a starting value of an exercise was limited to 10 points. Each exercise was composed from four sections. One of them - base value dictated how many points a gymnast may achieve as a combined value of ten elements. If the value of elements exceeded an upper limit of points dedicated to the section a gymnast achieved a maximum number of points and the expedience of points was not relevant. According to the Code of Points 2006 a gymnast exercise is no longer limited with an upper limit, but is rather open and solely a consequence of the sum of the elements in the exercise and the connections between them.

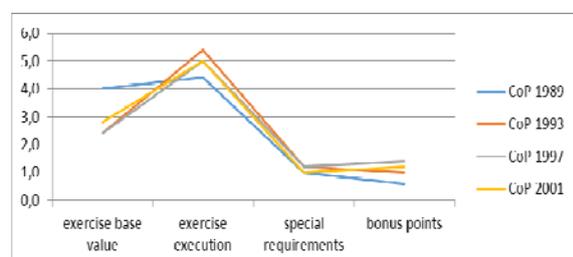


Figure 3. Score structure through Code of Points 1989-2001.

Figure 3 shows four sections of the score structure and how points dedicated

for each section varied between these sections through the Code of Points 1989-2001.

Each element described in the Code of Points has a predetermined value. A set of discrete values that the element can obtain is characteristic of each individual Code of Points and thus the values vary through the years. After the 2006 values were stabilized, however before that, values sway in both directions, sometimes unreasonably so.

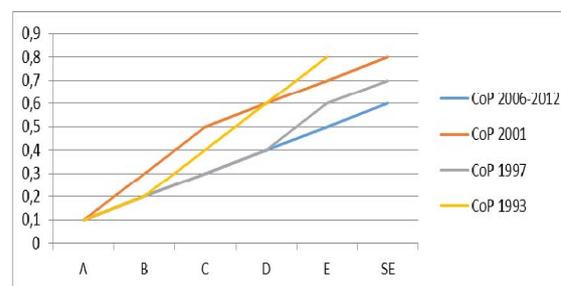


Figure 4. Value of value parts through Code of Points 1993-2006.

Figure 4 shows values of value parts through the period of the Code of Points 1993 to 2006-2012. The curve of the Code of Points 2006-2012 is overlapping with the curve of the Code of Points 1997 at value parts C and D, and curve of the Code of Points 1993 overlaps both previous Codes of Points at value part B. In all Codes of Points the value part A has the value of 0.1 point.

On the basis of an exercise start value and the score achieved, a percentage was calculated. The percentage shows to what extent Aljaž had achieved an exercise start value. Aljaž was one of the most elegant gymnasts on the horizontal bar so there is little surprise that the percentages are high (above 84%). Furthermore, the chart also shows that he executed exercises with great reliability.



Figure 5. Starting values and percentage of achieved score for World Championships 1991-2009

Figure 5 shows exercise start values and percentage which was calculated on the basis of exercise start value and achieved score.

The following graph shows a received score and an achieved place at each World Championship. Achieved places and received scores are also displayed in the charts for each World Championship.

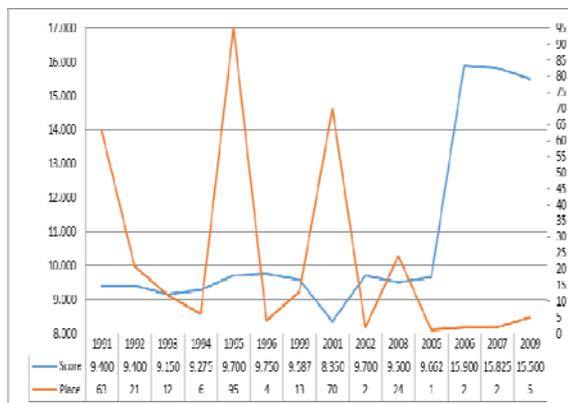


Figure 6. Achieved scores at World Championships 1991-2009 and ranks

Figure 6 shows final scores Aljaž received at each World Championship. The curve jumps after the year of 2005 because after that the new Code of Points was in force.

The next graph shows how small the differences are in gymnastics. The comparison of a winner and Aljaž shows how little difference is between them. It is safe to assume that reliability and elegance of execution was one of the key factors for winning medals until the Code of Points

2006. After which a gymnast who could execute harder exercises had an enormous advantage compared to other gymnasts. An additional important factor in the new Code of Points is the starting value of an exercise and a difference between the starting value and final score shows which gymnast had executed his exercise with a minimum number of errors. However, this factor is not presented in the graph.

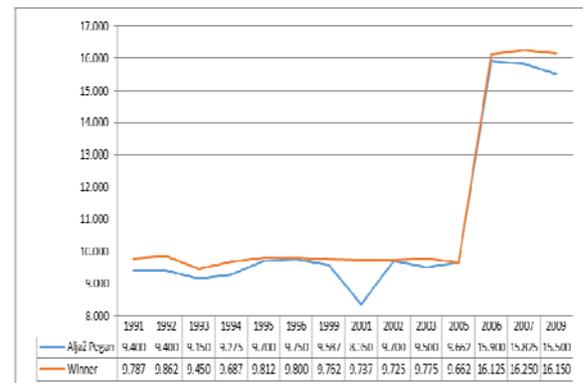


Figure 7. Comparison of Aljaž's score and the winners at World Championships 1991-2009

Figure 7 shows final scores of Aljaž Pegan and the winner at each world championship. The curve jumps after the year of 2005 because after that the new Code of Points was in force.

The next graph shows how Aljaž's difficulty value of his exercises changed through the years. Difficulty values of exercises are taken from exercises theoretical comparison to the Code of Points 2013.

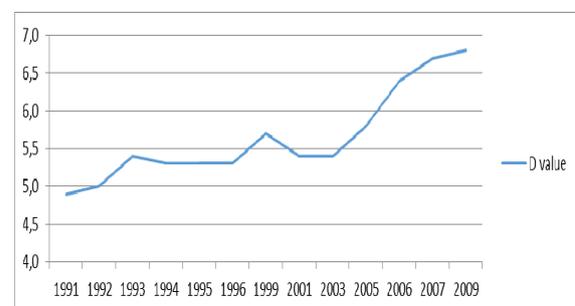


Figure 8. Development of an exercises D value compared to the Code of Points 2013.

Figure 8 shows how his difficulty value is consistent when the closed Code of Points was in force and with the new open Code of Points after 2006 his difficulty value increases in a shape of parabola, which is a typical curve of progress.

The following chart shows the percentage of Aljaž final ranking in the 144 international competitions (FIG, UEG) between 1991 - 2013. The percentages up to the 8th place are shown separately, since this is the limit for gymnasts to compete in the final on each apparatus. For a better overview places between 9 and 95 are put together.

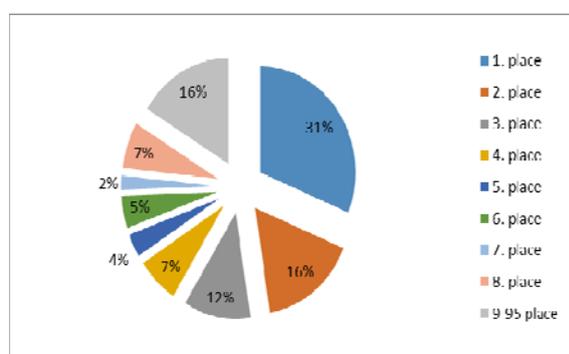


Figure 9. Percentage of achieved ranks at official FIG and UEG international competitions

CONCLUSION

The purpose of this case report was the presentation of exercises Aljaž Pegan had performed at the fourteen World Championships he had attended in his career. This case report also includes the breakdowns of seven Codes of Points for the horizontal bar through 1989-2013.

Through breakdowns of each exercise the development of exercises in relation to the changes in the Codes of Points can be seen. At the beginning exercises had more flight elements which made the exercise more attractive. With the development of the Code of Points and its focus on high value elements Aljaž had to upgrade his exercises with extra turns and el-grips or atypical grips. Due to these changes he

managed to stay in the world summit through his entire career.

An overall review of Aljaž's 33 year long career shows that he competed in a senior category for more than 22 years. He performed at over a hundred international competitions, most of them were World Cups, and in many he ranked among the top three. Though he took part in various competitions including World Championships, World Cups, European Championships, Mediterranean Games, he never got an opportunity to perform at the Olympic Games. His greatest success is becoming the world champion in 2005, in Melbourne, Australia.

When collecting data from several years ago there was a problem collecting accurate data and the main reason is that no one is keeping reference. Our opinion and recommendation is that clubs and coaches make documentation for each individual gymnast, such as exercises, videos of exercises, mark important dates for gymnast career or execution of an element for the first time. Also save any periodization plan and training plans. Mark any exchange cooperation with foreign coaches and training under different conditions. Such documentation is necessary to show gymnast results were planned and to make a collection of data which is necessary for writing case reports like this one.

Authors of similar research should pay attention of collecting accurate data and make an effort of talking with anyone who might shed a light on a subject they are researching.

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