

CHANGES DURING THE 110 YEARS OF THE WORLD ARTISTIC GYMNASTICS CHAMPIONSHIPS

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Abstract

This article presents changes, along with historical perspectives, in the World Artistic Gymnastics Championships during the last 110 years - 1903 to 2013. Changes include: the events contested, team and individual achievements and dominance, debut of skills, difficulty expansion, judges, scoring, competition format, Finals qualification system, expansion of FIG affiliation, frequency cycle of the WC, number of teams and gymnasts per competition, age requirement of gymnasts, team size, venues, apparatus, devices for learning, education and certification courses, disseminating information, and expanded media coverage.

Keywords: *History, Gymnasts, Rules, Judges.*

INTRODUCTION

2013 marked the 110th anniversary of the World Artistic Gymnastics Championships.

This article cites many changes and differences in the WC that took place through the years. Timelines are presented for various aspects of gymnastics.

Abbreviations and terms for this paper:

WC for World Artistic Gymnastics Championships; OG for Olympic Games; FIG for International Gymnastics Federation; CP for Code of Points; events are apparatus; skills are elements; tumbling is acro; titles are championships, AA for all-around; FX for floor exercise; PH for pommel horse; R for rings; PB for parallel bars; HB for horizontal bar; UB for uneven bars; BB for balance beam; T&F for track and field.

CHANGE IN THE CHAMPIONSHIPS NAME

From 1903 to 1913, the official title of the 'world - international' competition was organized by the European Federation of Gymnastics (founded in 1881), which was later renamed to the FIG (1921). The title was changed in 1931 (or 1934 onward) to the World Artistic Gymnastics Championships (by same document it is not known when it really starts (FIG, 1981). For this paper, the championships from 1903 onward will be referred to as the WC. However, it was not until 1930 that the FIG Congress determined that those would be the first with an official WC title. **Note:** Up until 1950, the WC format often differed from the OG format because the WC were governed by the FIG, and the OG (including gymnastics) were governed by the International Olympic Committee (IOC).

COUNTRIES AND DATES OF THEIR FIG AFFILIATION

Original FIG members in 1881 were two Belgium federations (fiamic and valoric), France, and Netherlands. Dates of other that became members of the FIG by the first Championship in 1903 were Great Britain in 1896, Czechoslovakia in 1897, Canada in 1899 (the first non-European and Western Hemisphere nation), Italy, Spain Luxemburg and Hungary and Luxemburg in 1902. Dates of FIG membership of some other countries: Romania, Slovenia and Croatia in 1907; Egypt in 1910 (the first African nation); USA in 1921; Switzerland in 1923; South Africa and Iran in 1947; Argentina, Columbia and Cuba in 1948; USSR in 1949; Japan, Germany and Brazil in 1951; India in 1952; Australia in 1954; Syria in 1956; Morocco in 1960; Mongolia and New Zealand in 1962; and China rejoined in 1978 (*China competed at the 1958 and 1962 WC but then withdrew, largely because of the Taiwan recognition*).

Total number of FIG affiliated nations through the years were: four countries in 1881; eight countries by 1903; 12 countries in 1921; 20 countries in 1938; 28 countries in 1950; 37 countries in 1954; 69 countries in 1978; and 127 countries by 2013.



Figure 1. Main square in Antwerp.

THE YEAR AND NUMBER OF GYMNASTS/TEAMS WHO TOOK PART IN EACH WC

1903 36/4; **1905** 24/4; **1907** 36/6;
1909 36/6; **1911** 48/8; **1913** 36-48/6; **1922**

30-40/5; **1926** 36-48/6; **1930** 36-48/6; **1934** men 78-104/13; **1938** men 48-64/8; **1950** men 60/6, women 53/7; **1954** men 132/16, women 126/15; **1958** men 128/15, women 88/13; women; **1962** men 132/20, women 116/17; **1966** men 143/20, women 156/22; **1970** men 154/22, women 137/21; **1974** men 126/18, women 148/22; **1978** men 147/22, women 145/22; **1979** men 151/23, women 164/26; **1981** men 171/27, women 135/19; **1983** men 175/26, women 176/28; **1985** men 147/21, women 158/23; **1987** men 176/27, women 201/31; **1989** men 190/29, women 187/28; **1991** men 213/30, women 190/29; **1992** (no team) men 141, women 104; **1993** (no team) 57 countries and at least 50 gymnasts taking part in the AA; **1994** (individual) men 85, women; **1994** (team) men 141/21, women 112/16; **1995** men 209/24, women 197/26; **1996** (no team) men approx. 25 in each event, women approx. 50 in each event; **1997** men 236, women 149; **1999** men 293, women 260; **2001** men 268, women 172; **2002** men averaged 57 in each event, women averaged 43 in each event; **2003** men 323/52, women 224/35; **2005** men 177, women 95; **2006** men 279/43, women 223/33; **2007** men 253/24, women 214/24; **2009** men 243, women 146; **2010** men 343/45, women 272/34 (representing 46 countries; **2011** men 262/24, women 216/24 (478 competitors representing 81 countries); **2013** men 264 (71 countries), women 134 (57 countries) - the men had over 135 and the women over 100 competitors in every single event.

For the first nine WC, 1903 to 1930, there were no more than 48 gymnasts. The first WC where there were well over 100 competitors was in 1954. The men topped 200 competitors in

1997 and the women in 1999.

Summary of the number of teams (countries) that took part in the WC

The first two WC, 1903 and 1905, had four teams; 1922 had five teams; 1911 and 1938 had eight teams; 1934 had 13 teams; except for those WC just mentioned the other six WC between 1907 and 1950 had six teams.

For the 1954 and 1958 WC there were 15 and 16 teams respectively. The number of teams escalated after 1958, reaching a total of 52 men's teams and 35 women's teams in 2003.

Only European nations took part in all WC up until 1950 when Egypt participated with a full team of eight gymnasts (which were the first gymnasts from the African continent). The USSR and Japan made its WC debut in 1954 (with their men's teams placing first and second respectively). Iran made its WC debut with one male gymnast in 1954. And, the USA also first took part in the 1954 WC with two male gymnasts (which were the first gymnasts from the Americas). USA first entered with a full men's team in 1958, which was the year that China, with a full men's team, made its debut.

The first WC where women took part was in 1934 where medals were awarded for only team. In 1938 the women's program consisted of team, AA, V, BB, FX and PB. In 1934 and 1938, three teams took part in each of these WC. In 1950, seven women's teams took part, all from Europe, and the uneven bars replaced the parallel bars as one of their events. In 1954, the USSR women's team made their debut (and placed first). One female Canadian gymnast, its first, took part in 1958. The USA women made their WC debut with a team in 1962.

THE HOSTS, FREQUENCY CYCLE AND YEARS OF THE WC

In the 110 years of the WC, 1903 to 2013, 20 countries and 33 different cities have been hosts. France and Germany were hosts four times. Belgium, Czech, Hungary and USA were hosts three times. Nine other countries were hosts twice. The first WC outside of Europe and in the Western Hemisphere was in 1979, in Fort Worth, Texas. The first WC in Australia (Brisbane) was in 1994, and in Asia (Sabae, Japan) in 1995.

Host countries and cities of the WC

1. France – Bordeaux, Lyon, Strasbourg, Paris - 4
2. Germany – Dortmund, Stuttgart, Dortmund, Stuttgart - 4
3. Belgium – Antwerp, Ghent, Antwerp - 3
4. Czech – Prague, Prague, Prague - 3
5. Hungary – Budapest, Budapest, Debrecen - 3
6. USA – Fort Worth, Indianapolis, Anaheim - 3
7. Italy – Turin, Rome - 2
8. Luxembourg – Luxembourg, Luxembourg - 2
9. Yugoslavia (Slovenia) – Ljubljana, Ljubljana - 2
10. Switzerland – Basel, Lausanne - 2
11. USSR (Russia) – Moscow, Moscow - 2
12. Netherlands – Rotterdam, Rotterdam - 2
13. Great Britain – Birmingham, London - 2
14. Australia – Brisbane, Melbourne - 2
15. Japan – Sabae, Tokyo - 2
16. China – Tianjin, *(in Nanning 2014) - 1 *(2)
17. Bulgaria – Varna
18. Canada – Montreal
19. Denmark – Aarhus,
20. Puerto Rico – San Juan

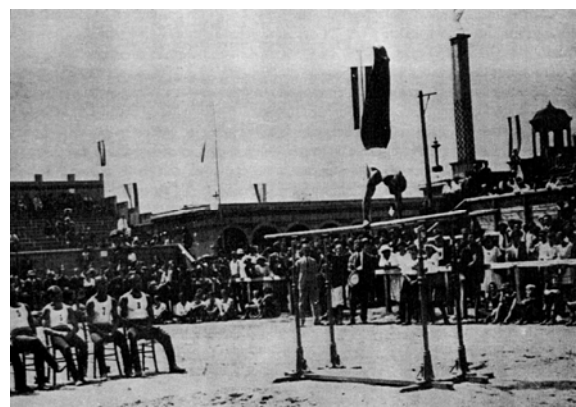


Figure 2. WC 1922 Ljubljana, Peter Šumi (AA champion 1922 and 1926) on parallel bars.

The WC were held every two years from 1903 to 1913. (The WC were not held from 1916 to 1919, due to World War I). The WC resumed in 1922 and until 1938 were held every four years. (Once more, the WC were not held in 1942 or 1946 due to World War II.) From 1950 to 1978, the WC continued to be held every four years. From 1979 until 1991, the WC cycle changed from four years to two years. From 1992 to 1997, the WC were held every year. However, two WC were held in 1994 - the first contested only all-around and individual events (no team); the second, held five months later, was a team only competition (no AA or individual events). Also, an individual events WC (no team or AA) was held a few months before the 1996 OG. The next two WC were in 1999 and 2001. Then, starting in 2001 the WC were held every year except for the Olympic year. The format for the WC the year before the OG is a full program (team, AA, individual events) since it is used as a qualifying competition for the succeeding year's OG.

THE GYMNASTICS EVENTS (APPARATUS) CONTESTED IN THE WC

The current men's events of PH, R (debuted in 1909), PB and HB were part of the WC competition program from 1903 to the 1930. In 1930 FIG Technical Committee was organized. For the first time in 1930, exercises as a group (which were of minor difficulty) were not a contested event. FX made its WC debut in 1930 and vaulting in 1934.

In addition to the gymnastics apparatus, track and field (T&F) and swimming events, weight lifting and/or rope climbing were contested as part of the combined all-around (and were given points which were added to the apparatus scores) through the 1950 WC. The T&F events usually were: a run from 60 to 150 meters, the long or high jump, the shot put or discus and the pole vault.

THE MAXIMUM NUMBER OF GYMNASTS PER TEAM

For the WC through the years was as follows:

1903 - Nine per team.

1905 to 1922 - Six per team.

1926 to 1954 - Eight per team (with the six best scores counting toward the team score).

1958 to 1991, 1994, 1997 and 1999 - Six per team.

1995 - Seven per team (7-5-4 format, explained later under 'Summary of WC format and participation.')

1997 - Six per team (6-5-4 format, explained later under 'Summary of WC format and participation.')

2006 - Six per team (2007, 2010).

2011 - 6-5-3 format.

CHANGES IN WC COMPETITION DOMINANCE

Men's TEAM dominance in WC:

France won team medals in each of the first six WC from 1903 through 1913, with Belgium winning medals in five, and Italy and the Czech-Bohemia in three, Luxembourg won medals in two, and Netherlands and Slovenia in one WC.

In the first two WC in 1903 to 1905, the overall most successful team was from France (whose gymnasts took the top five places in AA in the 1905 WC). From the 1907 to 1930 and 1938 WC, Czech-Bohemia was the most dominant, aside from France's dominance in 1909 and 1913 WC. At the 1922 WC, all the medals were won by just three countries – Yugoslavia (13), Czechoslovakia (9) and France (1). Yugoslavia was second to Czechoslovakia in 1922 and 1926 WC. Switzerland, second to Czechoslovakia in 1938, was the most dominant team in the 1934 and 1950 WC.

In the 1954 WC, the USSR completely dominated the competition with their men winning the team by 16.65 points over second place Japan. The USSR placed an unprecedented first through

seventh in the AA, and won five of the six individual apparatus, with a clean sweep of the top six places in rings. Also, except for Japan's Masao Takemoto tying for first in FX and Japan's team silver medal (which was a prelude to their men's future world dominance), European gymnasts won all the other men's medals. The USSR maintained its dominance in 1958 with Japan, again, placing second. Then for the next five WC - 1962, 1966, 1970, 1974 and 1978 - dominance switched, with Japan's team winning and the Soviet team placing second. The Soviets regained the top spot in the next two WC - 1979 and 1981 - with Japan being second. In 1983, China was the top team with the USSR second. The USSR was most dominant in the 1985, 1987, 1989 and 1991 WC. China was second in 1985, 1987 and 1991. East Germany was second in 1989. China regained dominance in the 1994 team WC, with Russia being second. China remained the most dominant for the next three WC - 1995, 1997 and 1999. Japan was second in 1995, with Belarus second in 1997 and Russia being second in 1999. At the 2001 WC, Belarus was the most dominant, with USA second. In 2001 and 2003, China was the most dominant for the next five WC - 2003, 2006, 2007, 2010 and 2011. The second most dominant teams were as follows: Russia in 2006, Japan in 2007, 2010 and 2011.

Summary of the top men's TEAM titles by nations in WC

France 1903, 1905, 1909; Czech-Bohemia 1907, 1911, 1913, 1922, 1926, 1930, 1938; Swiss 1934 and 1950; USSR 1954, 1958, 1979, 1981, 1985, 1987, 1989, 1991 (was not under name of USSR but United team); Russia 1994; China 1983, 1995, 1997, 1999, 2003, 2006, 2007, 2010, 2011. Germany (neither as DDR or FDR or GER) never won the team WC, but had one second and ten third place teams. In 1954 the USSR and Japan and later China teams took over dominance from the traditional gymnastics powers - Switzerland, Germany, Czechs and some others.

The most men's team titles/and 2nd place by nations in WC

China 9/3; USSR 8/6; Japan 5/8; Czechoslovakia 7/1.

A rank order of men's TEAM dominance in WC

China, USSR, Japan, Czechoslovakia, Germany.

Men's ALL-AROUND dominance by individuals in WC (with OG in brackets)

Marco Torres of France 1st in 1909 and 1913 (2nd 1920 OG).

Peter Sumi of Slovenia 1st in 1922 and 1926.

Viktor Chukarin 1st in 1954, (1st in both the 1952 and 1956 OG).

Eizo Kenmotsu 1st in 1970, 2nd 1978, 3rd 1974, (2nd in 1972, 4th in 1968 OG).

Nicolai Andrianov of USSR 1st in 1978 (1st 1976, 2nd 1980 OG).

Yuri Korolev 1st in 1981 and 1985.

Dimitri Bilozerchev 1st in 1983 and 1987, (3rd in 1988 OG).

Vitaly Scherbo 1st in 1993, 2nd in 1991 and 1995, 3rd 1994, (1st in 1992 and 3rd in 1996 OG).

Ivan Ivankov 1st in 1994 and 1997, 2nd 2001.

Yang Wei 1st in 2006 and 2007, 3rd in 2003 (1st in 2008, 2nd in 2000 OG); Kohei Uchimura 2009, 2010, 2011 and 2013 (1st in 2012, 2nd in 2008 OG).

A rank order of men's AA dominance by individuals in WC

Uchimura, Scherbo, Ivankov, Yang Wei, Kenmotsu, Bilozerchev. Korolev, Torres and Sumi.

AA dominance by a nation's men gymnasts in a single WC

In 1938, the Czechoslovakia placed 1st, 2nd and 3rd in AA.

In 1954, the USSR placed 1st, 2nd, 3rd, 4th, 5th, 6th and 7th in AA.

In 1958, the USSR placed 2nd, 4th, 6th and 7th in AA.

In 1970, the Japanese placed 1st, 3rd, 4th, 5th and 7th in AA.

In 1974, the Japanese placed 1st, 2nd, 4th, 5th, and 7th in AA.

In 1978, the USSR placed 1st, 2nd, and 3rd, in AA.

Rank order of the most dominant nations in men's AA in a WC

USSR in 1954; Japan in 1974; Japan in 1970; USSR in 1978 tied with Czechoslovakia in 1938; USSR in 1958.

Men's APPARATUS dominance in WC

FLOOR EXERCISE (men):

Georges Miez of Switzerland 1st in 1934, (1st in 1936, 2nd in 1932 OG).

Eugen Mack of Switzerland 2nd in 1934 and 1938.

Valentin Muratov of USSR 1st in 1954 (1956 in OG).

Masao Takemoto of Japan in 1st 1954 and 1958.

William Thoreson of Sweden 3rd in 1954 (1st in 1952 OG, 2nd in 1956 OG).

Nobuyuki Aihara of Japan 1st in 1962 (1st in 1960, 2nd in 1956 OG).

Franco Menichelli of Italy 3rd in 1962 and 1966, (1st in 1964, 3rd in 1960 OG).

Yukio Endo of Japan 1st in 1962, 2nd in 1966 (2nd in 1964 OG).

Akinori Nakayama of Japan 1st in 1966, and 1970, (2nd in 1968 and 1972 OG).

Shigeru Kasamatsu of Japan 1st in 1974, 2nd in 1978, (3rd in 1972 OG).

Kurt Thomas of USA 1st in 1978 (1st in Western Hemisphere and American world champion) and 1979.

Roland Bruckner of E. Germany 1st in 1979 (1st in 1980 OG).

Li Yuejiu of China 1st in 1981.

Tong Fei of China 1st in 1983 and 1985.

Yuri Korolev of USSR 1st in 1981, 2nd in 1985.

Igor Korobchinsky of USSR-Unified Team in 1st 1989, 1991 and 1992.

Vitaly Scherbo of BLR 1st in 1994, 1995, 1996, 2nd in 1991, 1992 and 1993 (1992 OG).

Grigory Misutin of UKR 1st in 1993, 3rd in 1995, 1996, (2nd in 1992 OG).

Ioannis Melissanidis of Greece 2nd in 1994, (1st in 1996 OG).

Alexei Nemov of Russia 1st in 1997, 1999, (2nd in 2000, 3rd in 1996 OG).

Gervasio Deferr of Spain 2nd in 1999, 2007, (2nd in 2008 OG).

Marian Dragulescu of Romania 1st in 2001, 2002, 2006, 2009, (2nd in 2004 OG).

Paul Hamm of USA 1st in 2003, 3rd in 2002.

Jordan Yovtchev of Bulgaria 1st in 2001 and 2003, 2nd in 2002, 3rd in 2000 and 2004 OG).

Diego Hypolito of Brazil 1st in 2005, 2007, 2nd in 2006, 3rd in 2011.

Kyle Shewfelt of Canada 3rd in 2003, 2006, (1st in 2004 OG).

Zou Kai of China 2nd in 2009, 2011, (1st in 2008 and 2012 OG).

Alexander Shatilov of Israel 3rd in 2009, 4th in 2011.

Eleftherios Kosmidis of Greece 1st in 2010.

Kohei Uchimura of Japan 1st in 2011, 2nd in 2010, 3rd in 2013, (2nd in 2012 OG).

A rank order of men's FX dominance by individuals in WC

Scherbo, Dragulescu, Zou Kai, Korobchinsky, Hypolito, Yovtchev, Nakayama, Menichelli.



Figure 3. Takashi Ono (2nd in AA at the 1958 WC), Vera Caslavskaya (AA Champion at the 1966 WC), Abie Grossfeld (USA) and Yuri Titov (AA champion at the 1962 WC) taken in 2011.

POMMEL HORSE:

Osvaldo Palazzi of Italy 1st in 1911 (scored the seemingly maximum 24.00 points).

Grant Shaginyan of USSR 1st in 1954, (2nd in 1952 OG).

Boris Shakhlin of USSR 1st in 1958, 2nd in 1962, 4th in 1954 (1st in 1956 and 1960 OG).

Miroslav Cerar of Yugoslavia (Slovenia) 1st in 1962, 1966 and 1970, 3rd in 1958, (1st in 1964 and 1968 OG).

Zoltan Magyar of Hungary 1st in 1974, 1978 and 1979, (1st in 1976 and 1980 OG).

Dimitri Bilozerchev of USSR 1st in 1983 and 1987, (1st in 1988 OG).

Gyorgy Guczoghy of Hungary 2nd in 1983, 3rd in 1981, and 5th in 1985.

Valentin Mogilny of USSR 1st in 1989.

Valeri Belenky of USSR 1st in 1991 and 1997, (9th in 1992 OG).

Li Jing of China 1st 1992, 3rd in 1991.

Erik Poujade of France 2nd in 1994 and 1997, (2nd in 2000 OG).

Li Donhua of Switzerland 1st in 1995, 2nd in 1996, 3rd in 1994 (1st in 1996 OG).

Alexei Nemov of USSR 1st in 1999, 3rd in 1996, (3rd in 1996 and 2000 OG).

Pae Gil Su of no. Korea 1st in 1992, 1993, and 1996, 3rd in 1997, (1st in 1992 OG).

Marius Urzica of Romania 1st in 1994, 2001, 2002, 2nd in 1999, 5th in 2003, (1st in 2000, 3rd in 1996 and 2004 OG).

Xiao Qin of China in 2005, 2006 and 2007, 2nd in 2001 and 2002, 7th in 2003, (1st in 2008 OG).

Takehiro Kashima of Japan 1st in 2003, 3rd in 2002 and 2005, (3rd in 2004 OG)

Nikolai Kryukov of USSR 3rd in 1999 and 2003.

Kristian Berki of Hungary 1st in 2010 and 2011, 2nd in 2007 and 2009, 4th in 2005 (1st in 2012 OG).

Prashanth Sellathurai of Australia 2nd in 2006, 3rd in 2009.

Louis Smith of GB 2nd in 2010, 3rd in 2007, 2010 and 2011.

Zhang Hongtao of China 1st in 2009, 4th in 2013.

A rank order of PH dominance by individuals in WC

Cerar, Magyar, Xiao Qin, Urzica, Pae Gil Su, Berki.

RINGS:

Joseph Martinez of France 1st in 1903 (scored the seemingly maximum 20.00 points).

Ferdinand Steiner of Czechoslovakia 1st in 1911 (scored the seemingly maximum 24.00 points).

Leon Stukelj of Yugoslavia (Slovenia) 1st in 1922 and 1926 (1st in 1928, 3rd in 1936 OG).

Emanuel Loffler of Czechoslovakia 1st in 1930 (scored the seemingly maximum 32.00 points).

Alois Hudec of Czechoslovakia 1st in 1934 and 1938 (1st in 1936 OG).

Albert Azaryan of USSR 1st in 1954 and 1958 (1st in 1956 and 1960 OG).

Yuri Titov of USSR 1st in 1962, 3rd in 1958.

Mikhail Voronin of USSR 1st in 1966, third in 1970, (2nd in 1968 and 1972 OG).

Akinori Nakayama of Japan 1st in 1970, 2nd in 1966, (1st in 1968 and 1972 OG).

Nikolai Andrianov of USSR 1st in 1974 and 1978, (1st in 1976 OG).

Alexander Ditiatin of USSR 1st in 1979 and 1981 (1st in 1980, 2nd in 1976 OG).

Dan Grecu of Romania 1st in 1974, 2nd in 1979, 3rd in 1978, (3rd in 1976 OG).

Dimitri Bilozerchev of USSR 1st in 1983, 2nd in 1987, (1st in 1988 OG).

Li Ning of China 1st in 1985, 2nd in 1987, 3rd in 1983 (1st 1984 OG).

Yuri Korolev of USSR 1st in 1985 and 1987.

Andreas Aguilar of Germany 1st in 1989, 5th in 1985 and 1987.

Andreas Wecker of Germany 2nd in 1989, 1991 and 1993.

Grigori Misutin of USSR 1st in 1991, 3rd in 1992.

Yuri Chechi of Italy 1st in 1992, 1993, 1994, 1995, 1996, 1997, 3rd in 1989 and 1991, 5th in 1987, (1st in 1996 OG).

Silvester Czollany of Hungary 1st in 2002, 2nd in 1992, 1997, 1996, 1999, 2001, (1st in 2000, 3rd in 1996 OG).

Paul O'Neill of USA 2nd in 1994, 4th in 1992.

Dan Burinck of Romania 2nd in 1995, 3rd in 1994.

Jordan Yovtchev of Bulgaria 1st in 2001 and 2003, 2nd in 1996, 2002, 2006, 2009, 3rd in 1995, 2007, (2nd in 2004, 3rd in 2000 OG).

Dong Zhen of China 1st in 1999.

Demosthenes Tampakos of Greece 1st in 2003, 3rd in 1999 (1st in 2004, 2nd in 2000 OG).

Matteo Morandi of Italy 3rd in 2002, 2003, 2005, 2010, 4th in 2011, 6th in 2009 (3rd in 2012 OG).

Yuri van Gelder of Netherlands 1st in 2005, 2nd in 2007, 3rd in 2006.

Chen Yibing of China in 2006, 2007, 2010 and 2011, (1st in 2008 OG).

Yan Mingyong of China in 2009, 2nd in 2010.

Arthur Zanetti of Brazil in 2011 and 2013, 2nd in 2011, 4th in 2009, (1st in 2012 OG).

A rank order of RINGS dominance by individuals in WC

Chechi, Azaryan, Yovtchev, Zanetti, Stukelj, Ditiatin, Nakayama, Andrianov.

VAULT (men):

Eugen Mack of Switzerland 1st in 1934 and 1938 (scored the seemingly maximum 20.00 points)

(1st in 1928, 2nd in 1936 OG).

Helmut Bantz of Germany 2nd in 1954. (1st in 1956 OG).

Takashi Ono of Japan 3rd in 1958, 4th in 1954, 5th in 1962, (1st in 1960, 2nd in 1952 OG).

Premysl Krbec of Czechoslovakia 1st in 1962.

Haruhiro Yamashita-Matsuda of Japan 1st in 1966 (1st in 1964 OG).

Mitsuo Tsukahara of Japan 1st in 1970 (2nd in OG).

Shigeru Kasamatsu of Japan 1st in 1974.

Nikolai Andrianov of USSR 2nd in 1974, 1976 and 1979. (1st in 1976 and 1980, (3rd in 1972 OG)

Junichi Shimizu of Japan 1st in 1978.

Arthur Akopian of USSR 1st in 1983, 2nd in 1981.

Lou Yun of China 2nd in 1985, 4th in 1983, (1st in 1984 and 1988 OG).

Sylvio Kroll of E. Germany 1st in 1987, 2nd in 1989, 4th in 1983, 1991, 7th in 1987, (2nd in 1988 OG).

You Ok Youl of Korea 1st in 1991 and 1992, 3rd in 1993, (3rd in 1992 OG).

Vitaly Scherbo of USSR 1st in 1993, 1994, 2nd in 1991, 3rd in 1995 (1st in 1992, 3rd in OG).

Yeo Hong-Chul of Korea 2nd in 1995, 3rd in 1994, (2nd in 1996 OG).

Alexei Nemov of Russia 1st in 1995, 1996, (1st in 1996 OG).

Grigory Misutin of Ukraine 1st in 1995, (2nd in 1992 OG).

Marion Dragulescu of Romania 1st in 2001, 2005, 2006, 2009, 2nd in 2003 (3rd in 2004 OG).

Li Xiaopeng of China 1st in 2002, 2003.

Lescek Blanik of Poland 1st in 2007, 2nd in 2002, 2005, (1st in 2008 OG).

Dimitri Kaspiarovich of BLR 2nd in 2006, 3rd in 2010.

Anton Golotsutskov of Russia 2nd in 2010 and 2011, 3rd in 2009, 4th in 2005, (3rd in 2008 OG).

Thomas Bouhail of France 1st in 2010, (2nd in 2008 OG).

Yang Hak-Seon of Korea 1st in 2011, 2013, 4th in 2010, (1st 2012 OG).

A rank order of men's VAULT dominance by individuals in WC

Dragulescu, Scherbo, Mack, Yang Hak-Seon, Nemov, You Ok Youl.

PARALLEL BARS:

Joseph Martinez of France 1st in 1903, 1905 and 1909 (scored the seemingly maximum of 24.00 points in 1909).

Francois Hentges of Luxemburg 1st in 1903.

Georgio Zampori of Italy 1st in 1911 and 1913 (scored the seemingly maximum of 24.00 points in 1911, and 20.00 points in 1913).

Guido Boni of Italy 1st in 1911 (scored the seemingly maximum of 20.00 points), (3rd in 1924 OG).

Leon Stukelj of Yugoslavia (Slovenia) 1st in 1922 (scored the maximum of 20.00 points), 3rd in 1928.

Ladislav Vacha of Czechoslovakia 1st in 1928, 3rd in 1930, (1st in 1928 OG).

Josip Primozic of Yugoslavia 1st in 1930, third in in 1938, (2nd in 1928 OG).

Eugen Mack of Switzerland 1st in 1934, fourth in 1938.

Michael Reusch of Switzerland in 1938, (1st 1948, 2nd in 1936 OG).

Hans Eugster of Switzerland in 1950 (scored the maximum of 10 points in the compulsory PB exercise), third in 1954, (1st 1952 OG).

Viktor Chukarin of USSR in 1954 (1st in 1956, 2nd in 1952 OG).

Boris Shakhlin of USSR in 1958, 2nd in 1962, (1st in 1960 OG).

Miroslav Cerar of Yugoslavia (Slovenia) 1st in 1962, 3rd in 1966.

Sergei Diomidov of USSR 1st in 1966.

Akinori Nakayama 1st in 1970, (1st in 1968 OG).

Eizo Kenmotsu of Japan 1st 1974, 1978, 2nd in 1970, (3rd in 1972 OG).

Bart Conner of USA 1st in 1979, 5th in 1978, 6th in 1983, (1st in 1984 OG).

Vladimir Artemov of Russia 1st in 1987 and 1989, (1st in 1988 OG).

Li Jing of China 1st in 1991 and 1992, (2nd in 1992 OG).

Vitaly Scherbo of BLR 1st in 1993, 1995, 2nd in 1996, (1st in 1992, 3rd in 1996 OG).

Huang Liping of China 1st in 1994, 2nd in 1995.

Rustam Shripov of Ukraine 1st in 1996, 2nd in 1994 (1st in 1996 OG).

Alexei Nemov of Russia 2nd in 1996, 2003, 3rd in 1994, (3rd in 2000 OG).

Zhang Jinjing of China 1st in 1997.

Li Xiaopeng of China 1st in 2002, 2003, 2nd in 1997, 2005, (1st in 2008, 3rd in 2004 OG).

Sean Townsend of USA 1st in 2001.

Mitja Petkovsek of Slovenia 1st in 2005, 2007, 2nd in 2002.

Vasileios Tsolakidis of Greece 2nd in 2011, 4th in 2009, 6th in 2005, (3rd in 2012 OG).

Yang Wei of China 1st in 2006.

Feng Zhe of China 1st in 2010, 2nd in 2009.

Danell Leyva of USA 1st in 2011.

A rank order of PB dominance by individuals in WC

Li Xianpeng, Scherbo, Kenmotsu, Artemov, Petkovsek, Li Jing, Tsolakidis.

HORIZONTAL BAR:

Joseph Martinez of France 1st in 1903 and 1909, 2nd in 1905 (scored seemingly maximum of 24.00 points).

Josef Cada of Czechoslovakia 1st in 1909 and 1922 (scored seemingly the maximum of 24.00 points in

1911 and 20.00 points in 1913), 2nd in 1909.

Marcos Torres of France 1st in 1913 (scored the seemingly maximum of 20.00 points).

Leon Stukelj of Yugoslavia (Slovenia) 1st in 1922 and 1926, 3rd in 1930, (1st in 1924 OG).

Josip Primozic of Yugoslavia 2nd in 1926, 5th in 1938.

Josef Stalder of Switzerland 3rd in 1950 and 4th in 1954 (1st in 1948, 2nd in 1952 OG).

Valentin Muratov of USSR 1st in 1954 (13th in 1956 OG).

Boris Shakhlin of USSR 1st in 1958, 2nd in 1954 (1st in 1964, 3rd in 1960 OG).

Takashi Ono of Japan 1st in 1962, 6th in 1958. (1st in 1956 and 1960, 6th in 1964 OG).

Yukio Endo of Japan 2nd in 1962 and 1966, (5th in 1964 OG).

Akinori Nakayama of Japan 1st in 1966, 2nd in 1970. (1st in 1968, 5th in 1972 OG).

Eizo Kenmotsu of Japan 1st in 1970, 3rd in 1974, 8th in 1978. (3rd 1968, 4th in 1972, 2nd in 1976 OG).

Eberhard Gienger of Germany 1st in 1974, 2nd in 1978 and 1981, (3rd I 1976 OG).

Alexander Tkachev of USSR 1st in 1981, 2nd in 1979, 5th in 1978.

Alexander Pogorelov of USSR 2nd in 1983.

Dimitri Bilozerchev of USSR 1st in 1983 and 1987.

Sylvio Kroll Of E. Germany 2nd in 1985, 6th in 1991.

Casimiro Suarez of Cuba 5th in 1987, (6th in 1980 OG).

Li Chunyang of China 1st in 1989 and 1991, (8th in 1992 OG).

Zoltan Supola of Hungary 2nd in 1994, 3rd in 1993, 5th in 1991.

Grigory Misutin of Ukraine 1st in 1992, 7th in 1991 (2nd in 1992 OG).

Sergei Kharkov of Russia 1st in 1993.

Vitali Scherbo of Belarus 1st in 1993, 3rd in 1996, (3rd in 1996 OG).

Ivan Ivankov of Belarus 3rd in 1994, 2nd in 2002, 7th in 2003.

Andreas Wecker of Germany 1st in 1995 (1st in 1996, 3rd in 1992, 8th in 1988 OG).

Kasimir Dounev of Bulgaria 2nd in 1996, 3rd in 1995, (2nd in 1996 OG).

Jesus Carballo of Spain 1st in 1995, 1996 and 1999, 2nd in 1997.

Jani Tanskanen of Finland 1st in 1997.

Alexander Beresch of Ukraine 3rd in 1997, 2nd in 2001.

Vlasios Maras of Greece 1st in 2001 and 2002, 3rd in 2006, 5th in 2005.

Philippe Rizzo of Australia 1st in 2006, 2nd in 2001, 4th in 2003.

Aljaz Pegan of Slovenia 1st in 2005, 2nd in 2002, 2006 and 2007.

Takehiro Kashima of Japan 1st in 2003.

Igor Cassina of Italy 2nd in 2003, 3rd in 2009 (1st 2004 OG).

Alexei Nemov of USSR 3rd in 2003, (1st in 2000, 3rd in 1996 OG).

Fabian Hambuchen of Germany 1st in 2007, 2nd in 2013, 3rd in 2010, 4th in 2005, (3rd in 2008 OG).

Zou Kai of China 1st in 2009, 2011 (1st in 2008 OG).

Epke Zonderland of Netherlands 1st in 2013, 2nd in 2009, 2010 (1st in 2012 OG).

Zhang Chenglong of China 1st in 2010, 2nd in 2011.

Kohei Uchimura of Japan 3rd in 2010 and 2013.

A rank order of HB dominance by individuals in WC

Carballo, Hambuchen, Zou Kai, Zonderland, Pegan, Maras.

Women's TEAM dominance in WC

In the first two women's WC, 1934 and 1938 Czechoslovakia was the most successful. Sweden was the dominant at the 1950 WC. The USSR was the most dominant in 1954, 1958 and 1962, with Hungary being second in 1954 (6.03 points behind the USSR). The USSR women's team, in 1954, placed first and won three of the events. (All the women's medals were won by Europeans except for the BB, which was won by Japan's Keiko Tanaka-Ikeda). In 1958 and 1962, Czechoslovakia finished second. In 1966, Czechoslovakia was the most dominant team, with the USSR being second. Then the USSR was the most dominant for the next three WC in 1970, 1974 and 1978, with East Germany being second in 1970 and 1974, and Romania being second in 1978. Romania was the most dominant in 1979, with the USSR second. The USSR was the most dominant for the next three WC, 1981, 1983 and 1985, with China being second in 1981, and Romania second in 1983 and 1985. Romanians regained dominance in 1987, with the USSR second in 1987. The USSR was the most dominant in 1989 and 1991 (as United team), with the Romanian second in 1989 and USA second in 1991 (their first WC team medal). The Romanians were the most dominant in 1994, 1995, 1997, 1999, and 2001. The following teams were second - USA in 1994, China in 1995, Russia in 1997, 1999, and 2001, USA was the most dominant for the first time in 2003, with Romania being second. Australia placing

third in 2003 medaled for the first time. China was the most dominant in 2006, with USA being second. USA was most dominant in 2007 with China being second. Russia was the most dominant in 2010 and second in 2011. USA was the most dominant in 2011.

The most women's TEAM titles by nations in WC

Since women started competing in the WC in 1934, the USSR has been by far the most dominant team over the years with 11 titles; Romania is next with seven titles; the Czechs have three titles and the U.S. has two titles. Since the break-up of the USSR after the 1991 WC and until 2013, the Russians have won one team title.

Rank order of women's TEAM dominance in WC

USSR, Romania, Czech, USA, China.

Women's ALL-AROUND dominance by individuals in WC (with OG in brackets)

Vlasta Dekanova of Czechoslovakia 1st in 1934 and 1938.

Helena Rakoczy of Poland 1st in 1950 and third in 1954; Galina Rudko of USSR in 1954.

Larisa Latynina of USSR 1st in 1958 and 1962 (1st in 1956 and 1960 OG).

Vera Caslavskaya of Czechoslovakia 1st in 1966 and 2nd in 1962 (1st in 1964 and 1968 OG).

Ludmilla Turischeva of USSR 1st in 1970 and 1974. (1st in 1972 OG).

Elena Mukhina of USSR 1st in 1978.

Nellie Kim of USSR 1st in 1979 and 2nd in 1978 (2nd in 1976 OG).

Yelena Shushunova of USSR 1st in 1985 and 2nd in 1987 (1st in 1988 OG).

Svetlana Boginskaya of USSR, Belarus 1st in 1989 and 2nd in 1991 (3rd in 1988 OG).

Shannon Miller of USA 1st in 1993 and 1994 (2nd in 1992 OG).

Lillia Podkopayeva of USSR, Ukraine 1st in 1995 (1st in 1996 OG).

Svetlana Khorkina of Russia 1st in 1997, 2001, 2003, 2nd in 1995 (2nd in 2004 OG).

Vanessa Ferrari of Italy 1st in 2006, 3rd in 2007.

Aliya Mustafina of Russia 1st in 2010, 3rd in 2013 (3rd 2012 OG).

A rank order of women's AA dominance by individuals in WC

Khorkina, Latynina, Turischeva, Caslavskaya, Miller, Shushunova, Kim, Boginskaya, Dekanova.

Summary of the number of women's AA titles by nations in WC

From 1934 through 1989, the USSR women have won 11 AA titles (12 titles if consideration is given to two Soviets tying for first place in 1985). From 1991 through 2013, the U.S. women won eight titles; the Russians won four titles; the Romanians and the Czechs won two titles each.

Rank order of women's AA dominance by nations in WC

USSR, USA, Russia, Romania, and Czech.

Women's APPARATUS dominance in WC VAULT (women):

Larisa Latynina of USSR 3rd in 1958, 2nd in 1962, (1st in 1956, 3rd in 1960, 2nd in 1964 OG).

Vera Caslavskaya of Czechoslovakia 1st in 1962 and 1966, (1st in 1964 and 1968 OG).

Yelena Shushunova of USSR 1st in 1985, 1987 and 3rd in 1991.

Lavinia Milosovici of Romania 1st in 1991, 2nd in 1993, 3rd in 1994, 1995, (1st in 1992 Olympics).

Oksana Chusovitina of Uzbekistan 1st in 2003, 2nd in 2001, 2005 and 2011, 3rd in 1992, 1993, 2002 and 2006, (2nd in 2008 OG).

Simona Amanar of Romania 1st in 1995 and 1997, 2nd in 1996 and 1999, (1st in 1996 OG).

Gina Gogean of Romania in 1st 1994 and 1996, 3rd in 1995 and 1997, 4th in 1993, (3rd in 1996 OG).

Elena Zamolodckikova of Russia 1st in 1999, 2002, 2nd in 2003, (1st in 2000 OG).

Cheng Fei of China 1st in 2005, 2006 and 2007, (3rd in 2008 OG).

Alicia Sacramone of USA 1st in 2010, 2nd in 2006, 3rd in 2005 and 2007.

Kayla Williams of USA 1st in 2009 (won over 2nd by .562).

McKayla Maroney of USA 1st in 2011 (won over 2nd by .567) and 2013, (2nd 2012 Olympics).

A rank order of women's VAULT dominance by individuals in WC

Amanar, Cheng Fei, Maroney, Milosovici, Gogean, Zamolodchikova, Sacramone.

UNEVEN BARS:

Larisa Latynina of USSR 1st in 1958, 3rd in 1962, (1st in 1956, 2nd in 1960, 3rd in 1964 OG).

Marcia Frederick of USA 1st in 1978 (1st American world champion), 6th in 1979.

Maxi Gnauck of E. Germany 1st in 1979, 1981 and 1983, (1st in 1980 OG).

Ma Yanhong of China 1st in 1979 and 2nd in 1981 (1st in 1984 OG).

Daniela Silivas of Romania 1st in 1987 and 1989, (1st in 1988 OG).

Svetlana Khorkina of Russia 1st in 1995, 1996, 1997, 2001, 2nd in 1994, (1st in 1996 and 2000 OG).

Chellsie Memmel of USA 1st in 2003, 2nd in 2005.

Elizabeth Tweddle of GB 1st in 2006 and 2010, 3rd in 2003, 2005, 4th in 2007, (3rd in 2012 OG).

Anastasia Liukin of USA 1st in 2005, 2nd in 2006, 2007 (2nd 2008 OG).

He Kexin of China 1st in 2009, (1st in 2008 OG).

Aliya Mustafina of Russia 2nd in 2010, 3rd in 2013 (1st 2012 OG).

A rank order of UB dominance by individuals in WC

Khorkina, Gnauck, Tweddle, Liukin, Silivas.

BALANCE BEAM:

Tanaka (Ikeda) of Japan 1st in 1954, 3rd in 1958 and 1962 (first Japanese and Asian women's world champion).

Eva Bosakova of Czechoslovakia 1st in 1962, 2nd in 1954 (2nd in 1956 and 1960 OG).

Larisa Latynina of USSR 1st in 1958, 2nd in 1962, (2nd in 1960, 3rd in 1964, 4th in 1956 OG).

Natalia Kutchinskaya of USSR 1st in 1966, (1st in 1968 OG).

Nadia Comaneci of Romania 1st in 1978, (1st in 1976 and 1980 OG).

Daniela Silivas of Romania 1st in 1985 and 1989, (1st in 1988 OG).

Svetlana Boginskaya of USSR 1st in 1991, 3rd in 1987.

Shannon Miller of USA 1st in 1994, 4th in 1995, (1st in 1996, 2nd in 1992 OG).

Lavinia Milsovici of Romania 1st in 1993.

Gina Gogean of Romania 1st in 1997, 3rd in 1993, (3rd in 1996 OG).

Lilla Podkopayeva of Ukraine 2nd in 1994, 1995, (2nd in 1996 OG).

Andreea Raducan of Romania 1st in 2001, 2nd in 1999.

Catalina Ponor of Romania 2nd in 2003, 3rd in 2005, 4th in 2007, (1st in 2004 OG).

Anastasia Liukin of USA 1st in 2005, 2007, (2nd in 2008 OG).

A rank order of BB dominance by individuals in WC

Silivas, Liukin, Tanaka-Ikeda, Ponor, Miller.

FLOOR EXERCISE (women):

Eva Bosakova of Czechoslovakia 1st in 1958, 2nd in 1954.

Larisa Latynina of USSR 1st in 1962, (1st in 1956, 1960 and 1964 OG).

Vera Caslavskaya of Czechoslovakia 2nd in 1966, 3rd in 1962 (1st in 1968 OG).

Natalia Kuchinskaya of USSR 1st in 1966, (3rd in 1968 OG).

Ludmilla Turischeva of USSR 1st in 1970 and 1974, (2nd in 1972 and 1976 OG).

Nellie Kim of USSR 1st in 1978, 2nd in 1979 (1st in 1976 and 1980 OG).

Yelena Shushunova of USSR 1st in 1987, 2nd in 1985 (7th in 1988 OG).

Daniela Silivas of Romania 1st in 1987 and 1989, 4th in 1985 (1st in 1988 OG).

Shannon Miller of USA 1st in 1993, (3rd in 1992 OG).

Gina Gogean of Romania 1st in 1995, 1996, 1997 2nd in 1993.

Andreena Raducan of Romania 2nd in 1999, 2001.

Svetlana Khorkina of USSR 2nd in 1997, 3rd in 1999, 2001, (2nd in 2000 OG).

Catalina Ponor of Romania 2nd in 2003, (1st in 2004, 3rd in 2012 OG).

Alicia Sacramone of USA 1st in 2005, 2nd in 2007.

Cheng Fei of China 1st in 2006.

Vanessa Ferrari of Italy 3rd in 2006, 2nd in 2013.

Shawn Johnson of USA 1st in 2007 (2nd in 2008 OG).

Lauren Mitchell of Australia 1st in 2010, 2nd in 2009.

Aly Raisman of USA 3rd in 2011, 4th in 2010 (1st in 2012 OG).

Simone Biles of USA 1st in 2013.

A rank order of women's FX dominance by individuals in WC

Gogean, Turischeva, Silivas, Latynina, Kim, Sacramone.

Note: As a nation, the USSR competed in the 1991 WC for the last time (under name of United team) and was subsequently broken up into 15 separate countries.

Extra Special individual achievements in WC

Men: Dimitri Bilozerchev's winning four individual titles in 1983 at age 16 and winning the AA in 1987 after shattering his shinbones in an auto accident in 1985. Kohei Uchimura winning four WC AA titles - 2009, 2010, 2011, and 2013 (and the 2012 OG AA). Viktor Chukarin, considering the hardships he endured during WWII as a prisoner in a concentration camp for over three years and winning the AA at age 33 in 1954, his only opportunity to take part in the WC.

Women: Svetlana Khorkina's three AA WC and one second, is the all-time leader in medals won at 20, of which 9 were gold. Larisa Latynina won four major AA titles, that includes two WC and two OG (and placing second in AA in her third OG), and competed in four WC (as Dirij in 1954) when they were four years apart. She ranks third in WC medals won at 14, of which 9 were gold. (Note: Latynina competed in three OG and won 14 out of 15 possible individual medals – a supreme achievement.)

CHANGES INVOLVING NUMBER OF JUDGES AND ARRIVING AT A SCORE

From 1903 to 1922 WC two judges were used to arrive at an average score. Evaluations were by quarter points in a 10-point system, with one point each 'set aside' for the approach and the retreat from the apparatus.

In the 1926 and 1930 WC there was an average score from three judges, where the deductions were by tenths of a point, and that was multiplied by 1.5, and with one point for approach and retreat presentation, the maximum score obtainable, for both of these Championships, was 16 points. (The maximum score was not always 10 points.) The number of judges per event varied through the years, but from the 1938 through 1989 WC there were four judges per event, and the average of the two middle scores determined the final score. From 1993 to 2003 WC, the average of the four middle scores of six judges determined the final score.

In the 2006 WC, 'open' scoring (beyond the limit of 10 points) was introduced which significantly improved differentiating the difficulty values of performances. Eight judges served on each event panel. Two judges evaluated the content (difficulty, connection points and element groups) and six judges evaluated the execution, with the average of the four middle scores, determining the final score. As of the 2011 WC, two judges evaluated

the content, five judges evaluated the execution, and two 'reference' judges served on the panel. The final score is the content score and the average of the three middle execution scores.

Judging Guide: Evolution of the Code of Points lead to more objective, accurate and, thus, fairer evaluation through quantifying difficulty and spelling out specific standards for execution. The Code of Points was introduced in 1949 and until 1962, only general guidelines were offered for evaluating difficulty, which relied solely upon the judge's opinion. Directives for judging at the time were: perfect performance, good, excellent or superior, inferior to average or satisfactory, fair, and insufficient or very defective (8). Although there were some guidelines for judging execution (which was, in the past, also referred to as presentation), it was not until 1989 that specific angles for execution were introduced.

A timeline of difficulty expansion: Elements were quantified by the FIG in 1962, with three difficulty categories (A, B, C) and first appeared in the 1964 Code of Points. Those categories were applied for the 1964 OG and the following WC (in 1966). The three categories lasted through the 1970s and were far from sufficient to properly award the many levels of difficulty, but it was a start. One reason given for just three categories was to keep the application of the rules practical and not too complicated for the judges. In 1979 risk was added for extra 'C' elements, but this proved inadequate. Women used 2 difficulty categories and medium and superior until 1979 and then went to A, B, C.

There are far more than three levels of difficulty, which are shown, for example, by the numerous ratings of difficulty in the vaulting table. Consequently, the 'D' category was added in the 1985. In time, more difficulty categories were added rewarding truer credits for gymnastics performance, which was necessary for fairer evaluations. In 1993 an 'E' category was added, then expanded to 'super E' category in 1997, along with the awarding of bonus

points for connecting elements. In 2005 'super E' was changed to an 'F' category. The 'G' category first appeared in 2009, and the 2013 women's Code further added an 'H' and then an 'I' category in its addendum. Through the years, it has been shown that judges could handle a complex set of rules.

Judges' Education: Rather than rely on just experience, the FIG first step toward instituting judges' education was at the 1954 WC. The first full intercontinental judges' course and examination was in 1964 in Zurich, and the FIG brevet certification was introduced.

Instant video replay was installed near each apparatus for the 1978 WC, enabling judges to verify, when needed, what the gymnast actually performed. This, especially, helped in deciding judging inquiry disputes.

CHANGES IN FORMAT AND THE QUALIFICATION SYSTEM FOR FINALS

Score accumulation versus scores from 'a clean slate' or 'new life' for each round of competition: Until the 1987 WC, scores were carried over from the qualifying rounds to the succeeding rounds of competition or finals. Starting with the 1989 WC, scores were no longer carried over to the team, AA and individual events finals.

It should be noted that when all the gymnasts competed in the AA (before 'new life'), a minimum AA average score of 8.0 points or a version of this minimum average score from the qualifying round was required to advance to the individual event finals. The AA average qualifying score requirement was eliminated once non-AA competitors and event specialists were permitted to take part in the WC (and Olympics).

A significant gymnastics change occurred in eliminating the compulsory exercises, which was implemented in the 1997 WC. Reasons given for eliminating the compulsory exercises: they were not interesting for television or the general

public viewing; the scoring, especially with 'new life,' simplified following the competition results, making it more attractive to the public. Also, the competition was shortened which was less taxing for the gymnasts.

The element groups (originally as combination, then special requirements) for each event, more or less, 'filled the gap' made by eliminating compulsory exercises, requiring gymnasts to display event 'all-around' ability.

CHANGES IN AGE REQUIREMENT OF GYMNASTS

The top-level international women gymnasts before 1966 were usually not younger than 20 years of age. Starting in the 1966 WC, 17-year-old women were on the gold medal team. Then, in the 1976 OG the women's AA gold medalist was just 14 years old. With a concern for young girls' welfare, the minimum age limit was changed from 14 to 15 before the 1980 OG. This did not eliminate the problem of pushing adolescences into major international elite (senior) competition, which occurred in the 1992 OG. In 1997, the minimum age requirement for international elite competition was raised to 16 years.

Men have not had the same problem as women concerning young teenagers for elite level competition. In 1981, the youngest male to date won the world AA championships at age 19. Then, in the 1983 WC a 16 years old won the AA and three other events plus a second on a fourth event, achievement was same in 2001 AA was also won by a 16 year old boy. However, with the current non-AA format, other 16 year olds may soon find themselves on the winner's podium, which is also the minimum age for men (new minimum age is 18 for senior men).

THE NUMBER OF GYMNASTS QUALIFYING FOR THE AA FINALS AND APPARATUS FINALS

Apparatus (individual event) finals were introduced in the 1958 WC with the top six qualifiers advancing to finals, with no limit in number from any one country. Starting in 1972 and followed up in the 1974 WC, only the top 36 AA gymnasts from the qualifying round advanced to the AA finals, with no limit in number from any one country.

Due to the few countries' gymnasts that qualified and dominated the finalists, starting with the 1976 OG and the subsequent WC, no more than three AA and two individual event (apparatus) qualifiers per country could advance to the finals. This certainly helped spread encouragement and the rewards in the gymnastics world. Starting with the 1978 WC, the apparatus finalists changed from six to the top eight qualifiers.

The 1979 WC served as a qualifying competition for the subsequent year's OG. The top 12 teams plus a limited number of individuals from the next several placing teams, qualified for the 1980 OG. However, this qualifying process turned out to be a 'wash,' since the Olympics were boycotted by a number of the leading countries.

Summary of WC format and participation

1989 - 'New life' was introduced, where the scores from qualification rounds were not carried over.

1992 - Only individual events (apparatus) were contested. First WC where team and AA were not contested. Up to six men and four women gymnasts per country could be entered with no more than two gymnasts per event.

1993 - AA and individual events (no team) were contested. First WC where top 24 qualified for AA finals, with two gymnasts per country (reduced from three).

1994 - The first of two WC was only for AA and individual events (no team). The first gymnasts from Nigeria took part in a WC.

1994 – The second WC (six months later) was a team only competition.

1995 - The teams consisted of seven gymnasts with six competing during the qualifying round. For the Team Finals five gymnasts per team competed with the best four scores counting toward the final team score, thus a 7-5-4 format. The first WC hosted in Asia.

1997 - The first WC without compulsory exercises. Six gymnasts per team competed with the best five scores counting toward qualifying for a team finals. Then, the top six teams of five gymnasts per team competed with the best four scores counting toward the final team score, thus a 6-5-4 format.

1999 – The WC started being held every year.

2001 – The top eight teams (rather than six) advanced to team finals, consisting of just three gymnasts per event per country (chosen from among each team's six gymnasts) with all three scores counting toward the final team score. The top 30 gymnasts from the qualifying rounds competed in the AA finals.

2002 - Only individual events (apparatus) were contested.

2003 - The number of gymnasts for AA finals, for the second time, was reduced from 36 to 24 (the 1993 WC had 24 AA finalists) with no more than two gymnasts per country – same for the individual event finals. This became the format for future WC.

These changes and the three gymnasts per country format for team finals have fostered the use of event specialists, which has resulted in de-emphasizing the AA, by substantially reducing the number of gymnasts per team taking part in the AA. A prime example, in the 2012 OG, the men's team from China won the team gold without any of their gymnasts competing in the AA.

2005 – The WC contested AA and individual events, but no team competition. Each country was permitted to have six men and 4 women gymnasts, with no more than two entries per country per event.

2006 - The first 24 teams plus the top placing individuals qualified for the 2007 WC. This was the start of the 2008 OG qualification process. 'Open' scoring (going beyond the 10 point limit) was instituted.

2007 - 24 teams entered, with eight of those teams qualifying for team finals. The top 24 gymnasts advanced to the AA Finals, and eight gymnasts to the individual event finals. Also, the top 12 teams and up to three gymnasts per country from those teams ranked lower than 12, (3 for teams 12-15) - qualified for the 2008 OG.

2010 - The top 24 teams plus the top individuals qualified for the 2011 WC, which was the start of the qualifying process for the 2012 OG.

2011 - The top eight teams plus the top three places in the AA and individual events qualified for the 2012 OG. Then, there was a second OG qualifier in January 2012 which qualified four more teams plus individuals. The 2012 OG consisted of a maximum of five gymnasts per team (reduced from the previous six team members), which will be the team size for subsequent WC.

2013 – The WC had no team competition, just the AA and individual events. The maximum entries per country were five men and four women gymnasts, with no more than two per event per country.

CHANGE IN COMPETITIVE VENUE

All WC competitions up through 1954 were held outdoors. Then, from 1958 onward, the WC were held indoors and the gymnasts competed on a raised podium, which has become the norm for major international competitions. Judges were seated well below the top of the podium, which did not obstruct the view of spectators and better highlighted the gymnasts' performances.

CHANGES IN APPARATUS AND PERFORMANCE REQUIREMENTS, LANDING MATS, HANDGUARDS AND SAFETY MEASURES; EVOLUTION AND YEARLY TIMELINE FOR SKILLS INITIALLY PERFORMED IN THE WC

(Note: Some skills were previously performed in other competitions - the OG, European or National championships).

Some of the following skills changed the structure of an event's performance. Through the years, apparatus and landing mats specifications have evolved. There was a time that certain pieces of the same apparatus were not uniform but in time apparatus specification details have been refined and with FIG certification, significant differences in equipment have been eliminated.

FLOOR EXERCISE: *The mat, spring floor, and size of area:* For the 1952 OG, the FX area was expanded from the previous size of approximately 20 x 20 feet (6 x 6 meters) to 39.4 x 39.4 feet (12 x 12 meters) – instituted for the WC in 1954. Up to 1954, the WC were outdoors and FX was conducted on grass. Then, when the WC went indoors in 1958, the FX area consisted of 1/8-inch (3 millimeters) thick felt covered with a carpet. In the 1978 WC the FX mat was a carpet covered one-inch (2.5 cm) thick foam with a slight elasticity approximately one-inch thick (2.5 centimeters). In 1979 the first floor with springs was introduced. It contained about two inch (5 cm) high springs or elastic foam pads attached to approximately 1/2 inch (1.25 cm) plywood for the entire the FX area, which was covered by a one-inch (2.5 cm) foam mat. This type of floor facilitated tumbling (acro) which became the dominant elements in FX rather than the non-tumbling previous agility skills, leg and arm balances, leaps and 'break dancing' type skills. As the springs and/or foam increased in size, bounding saltos (directly connected saltos) and far more difficult tumbling elements became the standard. From the beginning

tumbling skills of plain single saltos, twists were soon added, followed by double saltos (first attempted in the 1962 WC but was not successfully completed until the 1964 OG), then doubles with twists (full-twisting double saltos were successfully performed in 1974 WC; the double twisting double saltos followed in the 1980s).

Time limit for FX: Up to 1954 the time limit for FX was from 90 to 120 seconds. In 1958, the time limit changed from 60 to 90 seconds. Then, for 1979 it was changed to 50 to 70 seconds for men and 70 to 90 seconds for women. In 2008 the minimum time limit was eliminated and the maximum of 70 seconds for men and 90 seconds for women was retained.

Music accompaniment for women's FX was first required in the 1956 OG and then in the 1958 WC. but only for the compulsory exercise. In 1962 music was required for both the FX compulsory and optional exercise. The compulsory and most of the optional exercises were accompanied by piano music, however some gymnasts used full orchestra music for their optional exercise. At the time, some of the FIG Technical Committee Members felt that there was an advantage of a full orchestra over piano music. So after 1962, the rules mandated that accompaniment for the optional exercise could only be by a single instrument. In 1988, the rules concerning optional exercise music accompaniment could, once again, be by a full orchestra.

The debut of various FX tumbling (acro) skills (men and women) in WC (other competitions in brackets)

Back salto 1/1 twist in the 1958 WC.

Back salto 2/1 or women in 1974 (performed earlier in 1972 OG).

Back salto 3/1 twist for men in 1970,
Double back salto tuck (with a major error) in 1962 (first performed successfully in the 1964 OG),

Double back salto tuck 1/1 twist in 1974.

Double back salto straight in 1978.

Double back salto 1/1 twist straight in 1983.

Back salto 4/1 twists in 2013.

Front salto with 3/1 twists in 2013.

Triple back salto in 1989 (introduced in 1987 European Championships and the 1988 OG).

Double back salto by a woman in 1978 (introduced in 1975 Milk Meet in Canada).

Double back salto 1/1 twist by a woman at OG 1976.

POMMEL HORSE: In 1980, the pommels were increased in width size, which facilitated simultaneous multi-hand placements on one pommel. In 2008 the body of the horse was increased in width size along with a further increase in the pommels size.

The debut of various PH skills in WC

360 Russian on pommels, introduced in 1952 OG, then in 1954.

Shaginyan introduced in 1952 OG and then in 1954.

Bailie in the 1962 WC.

Longitudinal circular travel end to end (Magyar) in 1972.

360 spindle (counter turns) in 1975.

Flair in 1978 (previously shown in the 1976 OG).

Handstand dismount in 1978 as compulsory dismount.

Li Ning (scissor handstand) in 1983.

Full horse turning with travels on leather in 1989.

360 Russian on single pommel 1990s.

Sohn (360 kehre) in 1992.

Driggs (cross hop end to end) in 1995.

RINGS: Construction evolved from wood to fiberglass with a wood veneer or a very dense laminated hardwood used at the 1991 WC. The advent of dowelled handguards in the early 1970s facilitated a secure grip for the large swing elements, which necessitated that the wooden rings be made of a much stronger material to withstand the great stress put on them and afforded greater safety to the gymnasts.

Straight-arm shoot to handstand was introduced in the 1966 WC, shortly followed by the back rise handstand with

straight arms. Soon the big swing skills with straight arms became the standard.

Routines could get top scores with predominately swing elements through the 1980s. Starting in the 1990s, greater strength skills were needed (required) to attain a top score.

The inverted cross had been shown close to horizontal by a number of gymnasts in past WC. Currently, gymnasts are executing skills that, just a short time ago, would not have seemed possible.

The debut of various Rings skills in WC

Back salto 1/1 twist dismount in 1958.

Back salto 2/1 twists in 1970.

Double back salto 1962.

Double back salto 1/1 twist tuck in 1974.

Double salto straight in 1978.

Double back salto 2/1 twists tuck in 1979.

Yamawaki in 1983.

Triple back salto introduced in 1974 WC (Andrianov)

Goczoghy in 1985.

O'Neill (Guczoghy straight) in 1994.

Inverted cross in 1924 OG.

Maltese press to planch in 1994 (first performed in the 1962 U.S. National Championships by Carl

'Bill' Wolf).

Hang, pull with straight arms to cross 1996 (performed in 1961 USSR National Championships by Yuri Aivazyan).

Cross press straight body to inverted cross in 2001.

Back lever pull to maltese in 2001.

VAULT: The vaulting boards in the early WC were a slightly inclined wooden board with the front end being about three inches (7 centimeters) high with no or very little elasticity (spring). The subsequent boards being developed had a slight spring. Through the years, the size of the springs and/or foam pads and the elasticity of the boards increased so that in the 21st Century the height of the boards are about eight inches (20 cm).

While vaulting was contested in the early OG, it was conducted with the horse broadways or sideways. When vaulting was

first contested in the WC 1934, the horse was turned long ways (for men), thus the term 'long horse vault.' From the 1930s into the mid-1960s, the long horse body had four thin lines painted on the top of the horse - two lines were 16 inches (40 cm) from each end, and two other lines 8 inches (20 cm) inward from the lines nearer to the ends. If the hand(s) touched the line closest to the end, the performer received a one full point (1.0) deduction in score, if the hand(s) touched the inner line, the deduction was two points (2.0). In the late 1960s, the inner lines were eliminated, and the deduction for touching the line was reduced to a half point. In 1979, the lines near to the ends were eliminated and one thin line was painted across the middle of the horse. By 1989, the line was eliminated. In the 1979, the running approach had been lengthened from a previous 20 meters to 25 meters.

In to the 1950s, the best vault of two attempts determined a vault score. Then, there was a change - if the second vault was attempted, the first vault score was discarded and the second vault score counted. The rules eventually changed to just one vault in the qualifying round, however two different vaults were required to qualify for vault finals, of which a limited number of gymnasts take advantage. For example, in the 2011 WC, an Olympic qualifying competition, the men had 227 gymnasts in the vault qualifying competition, with just 37 who competed for vaulting medals, and the women had 192 gymnasts in the vault qualifying competition with only 31 who competed for vaulting medals, also with the hope of qualifying for the following OG.

Through the 1950s, non-turnover (handsprings and salto) vaults were almost exclusively performed. The handspring vault won in the 1960 OG, however non-turnover vaults won in 1962 and 1966 WC (and the 1964 OG) – the winning vaults were the hecht, and the Yamashita respectively. The Tsukahara vault was introduced in the 1970 WC. Then the boards became springier and the handspring front

salto followed in the 1970s. Next came the Kasamatsu vault in 1974.

Then, with the increase in saltos and twists, safety measures had to be implemented, and the mats became thicker and softer to absorb the increased impact from the multi-rotated vaults. Soon after the Yurchenko vault was introduced for women in the 1982 World Cup and then in the 1983 WC, and not permitted until 1989 for men, the collar mat around the vault board was instituted in the United States. A request was made to the FIG Women Technical Committee to use the collar mat around the board for the Yurchenko vault, but its use was refused. Unfortunately, changes are often met with resistance, and not until after a catastrophic accident occurred in competition in Japan in 1995, was the collar mat accepted. And, its use has become standard for the Yurchenko type vaults in competition.

The current vault table, which replaced the horse, was first used in the 2001 WC, making it considerably safer, especially, for Yurchenko and Tsukahara type vaults.

An interesting change is that the category of direct vaults (non-handsprings or saltos) has been eliminated from the 2013 men's CP, since international level gymnasts for many years have not performed these vaults in competition.

The debut of various Vaults in WC

Tsukahara in 1970.

Handspring front salto tuck in 1970.

Kasamatsu in 1974.

Kasamatsu 1/1 twist in 1979.

Yurchenko introduced in 1982 World Cup, then in 1983.

Handspring double front salto in 1979. For Women in 1981.

Handspring front salto 5/2 twists (Yeo Hong-Chui) in 1994.

Tsukahara and Yurchenko double back salto in 1999.

PARALLEL BARS: One primary change in the parallel bars was the rails, which were formerly made of wood and then with a metal bar down the length. The

rails were not always identical in their elasticity. Today the rail composition is fiberglass with a wood veneer cover, introduced in 1977 and FIG approved in 1979, which eliminated the manufacturers' problem of equalizing the elasticity of the rails. With the introduction of the giant swing in 1978 and an increase in under bar skills being performed, gymnasts apply honey, sugar and water or other sticky substance to the bars to prevent grip slippage in these types of skills. This has facilitated the wide use of straight-arm basket, giant, and Belle type skills - also all with turns. Other skills that have evolved are: hand support double forward and backward saltos to upper arms, Diomidov, Healy; advanced upper arm skills (front rise back salto and stutz handstand, front rise Diomidov, Dimetrienko, back rise front salto); and double salto dismounts.

The debut of various PB skills in WC

Back salto handstand in 1954.
Stutz to handstand in 1962.
Double back salto dismount in 1966.
Diomidov in 1964.
Healy in 1974.
Giant in 1978.
Front 1¼ straddle to support in 1979.
Front rise stutz handstand in 1981.
Makuts in 1979.
Morisue in 1983.
Front rise Diomidov in 1983 (Richards).
Belle in 1987.
Dimitrienko in 1999.

HORIZONTAL BAR: Most bars were no more than seven feet (210 cm) wide before the 1950s. In the late 1950s the width of the bar was increased and standardized to approximately eight feet (240 cm), which also increased the elasticity of the bar. The first of the larger flight skills started becoming prevalent in the mid-1960s. Spectacular flight skills that evolved were: flying giant skills over the bar, Jagers, Giengers, Tkachevs, Kovacs, Gaylords (also all with twists) - where the bar is released and regripped, displaying great flight amplitude. Dismounts with double and triple

saltos with straight body and twists are regularly performed. The dowelled handguards have markedly facilitated the gymnasts' regrip on flight skills.

The debut of various HB skills in WC

Stalder shoot in 1950 WC (first performed in the 1948 OG).
Endo in the WC in 1962.
Front 1/1 pirouette in 1962.
Voronin in 1966.
Double salto tuck 1/1 twist dismount in 1970.
Jaeger in 1974.
Kovacs in 1979.
Kolman in 1990 (performed in the 1990 European Championships).
Markelov In 1978 (performed in the 1977 European Championships) – first performed piked rather than straddled in the 1964 OG).
Tkachev in 1978 (first performed in the 1977 European Championships).
Deltchev in 1978 (first performed in the 1977 European Championships).
Gienger in 1978.
Winkler in 1981.
Deff in 1983.
Gaylord 1 in 1983.
Gaylord 2 in 1984 (OG).
Pegan 1993.
Back double salto 1/1 twist tuck in 1974 (first performed in the 1972 OG).
Back triple salto dismount in 1979.
Back double salto 2/1 twists tuck dismount in 1983.
Back double salto 3/1 twist tuck dismount in 1997.

UNEVEN BARS: (formerly known as the uneven parallel bars or asymmetrical bars): Uneven bars were introduced at the 1936 Olympic Games and first contested in the 1938 WC. The uneven bars were originally transformed from men's parallel bars where one bar was lowered and the other bar raised high with a maximum separation of approximately 1.5 feet (46 cm). With the advent of large circular swings and flight skills, the spread of the

bars increasingly widened to a maximum of approximately six feet (180 cm) apart.

The wood rails were replaced with fiberglass covered with a wood veneer in 1975 and approved by the FIG in 1979. Then, the thicker rails (originally egg-shaped, then oval shaped) were replaced with thinner round rails, approved by the FIG after the 1988 OG. The thinner rails better suited the size of women's hands and along with the dowelled handguards, their grip on the bars was significantly enhanced.

The debut of various UB skills in WC

Facing out on low bar, front salto to high bar (Rodochla) in 1962

Comaneci introduced in the 1976 OG, then in 1978 WC

Shaposhnikova in 1978.

Back giant swings in 1978.

Elgrip giants in 1980s.

Gaylord 1 in 2013 (performed in the 1995 pre-OG).

Pak salto 1/1 twist in 2001.

Triple back dismount in 1995.



Figure 4. Bart Conner, Natalia, Shaposhnikova, Nadia Comaneci, Svetlana Boguinskaya (Antwerp 2013.)

BALANCE BEAM: Originally beams were plain wood with straight sides. In the late 1950s the sides were convex curved. Then in the 1960s, a leather cover was added. Eventually, the top pad had a slight cushioning effect. In 1980 a spring reflex mechanism was in the beam's aluminum core, which had minimal give and helped reduce the impact from the acrobatic and leap skills.

The debut of various BB skills in WC:

Back salto in 1972.

Front salto introduced in the 1976 OG, then in 1978 WC.

Back double salto dismount in 1979.

Back double salto 1/1 twist dismount in 1985.

Onodi in 1989.

Back salto straight on beam in 1974.

Back salto 1/1 twist on the beam in 1985.

Front double salto dismount in 1997.

Triple lunge turn in 2004.

LEARNING AIDS AND DEVICES

(that facilitated acquisition of especially difficult skills)

In the 1960s, gymnastics apparatus companies developed thick foam mats (cushions), which made for softer landings. Also, along with the spread of deep foam pits, learning of multi-salto and twisting skills in tumbling, vaulting, flight skills and dismounts from R, PB, HB, UB, BB were facilitated. Other aids employed are: trampoline (1940s); ski and rod floor; tumble track (long trampoline; developed in the early 1980s); overhead spotting belt system; twisting belt (early 1950s); mushroom (1970s); bar straps; dowelled handguards (already mentioned); video analyzing equipment and other devices. All these aids and devices have enabled gymnasts to learn and acquire especially higher-level skills faster and in a safer manner.

Through the efforts of the FIG and the apparatus companies, the equipment became standardized which enhanced the equipment's quality and consistency.

EDUCATION: MEANS AND SIMPLICITY OF DISSEMINATING INFORMATION

Increased knowledge and that gained from the FIG Academies and 'scientific' training have enhanced learning and fitness levels. Expansion of disseminating information through the media, videotaping, literature, making information accessible especially at no cost through the internet has

helped spread and raise the level of gymnastics across the world. Publications such as the 'Science of Gymnastics Journal', 'International Gymnast' magazine, Gerald George's 'Championship Gymnastics' are just a few of the examples of educational material available.

Computer scoring helped streamline gymnastics: The advent of computer scoring programs within, perhaps, the last 30 years have provided accurate and 'instant' results of competitions for the media and public. This has contributed to making gymnastics more attractive and enjoyable for the public.

TELEVISION AND MEDIA COVERAGE, ITS IMPACT AND EXPANDED POPULARITY OF GYMNASTICS

The first OG gymnastics competition was televised in 1960 from Rome. Ever since then, Olympic coverage escalated and gymnastics is among the few sports receiving the most television coverage. In 1972 OG, gymnastics was given a huge boost with the television coverage of Olga Korbut's spectacular performances and her outbreak of emotion during the competition - which did much to popularizing gymnastics worldwide. Gymnastics has become a favorite among Olympic sports and is among the first sports sold out at the OG, which has carried over to the WC.



Figure 5. 2013 WC women's AA ceremony: 1st Simone Biles (USA), 2nd Kyla Ross (USA), 3rd Aliya Mustafina (RUS).

CONCLUSION

Gymnastics will continue to evolve in its skills, rules, and equipment. The changes presented have all impacted the development of gymnastics. The knowledge gained through the years, along with the educational and certification programs, and the advances in equipment, has led to an incredible increase in gymnastics skill difficulty, along with the necessary safety measures. The expanded television coverage, as limited as it is other than that of the OG, has accounted for the public's familiarity and knowledge of gymnastics, with an offshoot being a tremendous increase in participation, and its athletes becoming superstars throughout the world. In May 2013, the International Olympic Committee declared that gymnastics is in the top tier of the three most popular and revenue ranking Olympic sports, which ensures that gymnastics will remain in the Olympics as one of the five original sports.

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Figures 1, 3, 4, 5 are from authors archive, Figure 2 is from ŠD Narodni dom archive

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