

ELEMENTS DEVELOPMENT ON HORIZONTAL BAR IN MEN'S ARTISTIC GYMNASTICS IN JAPAN LITERATURE

Moriatsu Nakasone

Biwako Seikei Sports College, Kitahara, Japan

Original article

Abstract

More recently a total of 800 elements have been recorded in the Gymnastics Code of Points. However few of these elements made gymnastics history. As such we wonder by whom, when or where these various elements are performed. The purpose of this study was to collate data elements on the Horizontal Bar (HB) in men's artistic gymnastics and to suggest new elements in the future. The method of study was undertaken by bibliographic analysis. This article refers mainly to journals that were published by the Japan Gymnastic Association, and a list that was made regarding the occurrence of new elements on HB in Men's artistic gymnastics. From the analysis, the author gathered data regarding various elements that were performed. For example, Swing forward and vault backward straddle to hang (Tkatchev) was performed by Tkatchev A. in the 1979 World cup. A Tkatchev stretch was performed by Liukin V. and Nishikawa D. in the 1988 Seoul Olympics. In conclusion, developments of HB elements are greatly influenced by the improvement of apparatus, rules of the era. In the near future, directions of new occurring elements on the HB may add twists to the existing elements.

Keywords: *men, artistic gymnastics, history.*

INTRODUCTION

The first gymnastics world championship was held in Antwerp in Belgium in 1903, however artistic gymnastics was already at Olympic Games in Athens 1896. As gymnasts took part at international level at the very beginning of competition era, at national level were competitions organized even earlier. Rules how to evaluate changed since very beginning, and the last major change was in 2006 when single ten-point systems was changed into score of difficulty (open ended) and performance (still 10 points

maximum score). New elements may have been presented by gymnasts at the competition. For example, the salto forward with three turns and the salto backward with 4 turns on floor exercise were performed by 17-year-old Sirai. K. (Fédération Internationale de Gymnastique (FIG), 2014).

Recently 800 elements is in the Code of Points (CoP), more than 100 on horizontal bar (FIG, 2013). In the past there were already attempts to provide historical information (Atiković, 2014; Abie, 2010,

2014) and historical information about elements development on horizontal bar (Anton, 1997; Kinoshita, 2001; Kurihara, 1982). However per each element is not known by whom, when or where these various elements are performed. If we must summarize development of the elements in the past, there is possibility to predict new elements in the future. The purpose of this study was to collate data elements on the horizontal bar (HB) in men's artistic gymnastics.

METHODS

Elements are described with CoP (FIG, 2013). The method of study was undertaken by bibliographic analysis. This article refers mainly to journals that were published by the Japan Gymnastic Association (JGA), and a list that was made regarding the occurrence of new elements on HB in Men's artistic gymnastics. Additionally, we handle video of different World Championship.

Today we can obtain information of new elements by FIG Newsletters (FIG, 2006, 2008, 2010, 2011, 2012, 2013, 2014, 2015). New elements are named after the gymnasts that was first performed by (FIG, 2013). The new element must be performed successfully in order to be recognized as a new element in FIG regular competition as Olympic Games, World Championship, World Cup, etc (FIG, 2013).

RESULTS

HB Elements in CoP 2013 (FIG, 2013) have been classified into five groups:

1. Long hang swings and turns
2. Flight elements
3. Elements near the bar ("in-bar" elements)
4. El-grip and dorsal hang elements
5. Dismounts

Long hang swings and turns

Various types of one arm giant swing were characterized by the 1970s and 1980s. For example, the one arm giant swing

backward (360°) that was performed by Tong Fei in the 1979 (JGA, 1995) and the giant swing forward with one arm in under grip (360°) was performed by unknown Soviet gymnast in Soviet Cup in the 1978 (Kurihara, 1982). The one arm giant swing forward with 1/1 turn to el-grip and 1/1 turn to undergrip was performed by Zou Li Min in the 1985 World Championship. At that time, various types of the one arm giant swing had a major impact in combination with flight elements. In recent years, new elements performed in this group are the giant swing backward with hop 3/2 turns to double el-grip or the flying giant swing backward with 2/1 turns (JGA. dep. S, 2004). The giant swing backward. with hop 3/2 turns to double el-grip was performed by Rybalko (KAZ) in the 1993 World Championships. The flying giant swing backward with 2/1 turns was performed by Mizutori (JPN) in the 2004 japan national NHK Cup. And I earned information that Filip Yanev (BLU) applied this element in the 2004 Olympics. But I can't be made confirmation that did he perform. The flying giant swing backward with 1/1 turn that many gymnasts perform was first performed by Thomas (USA) in the 1979 world cup (Kurihara, 1982).

Flight elements

Recent years, this group was most promoted in men's artistic gymnastics. Dynamic flight elements had captivated not only gymnastics officials but also the audience. The back uprise and piked vault with 1/2 turn to hang or the back uprise and rear vault with 1/4 turn to hang were the mainstream until the 1970, but Jäger (DDR) performed the swing backward and salto forward straddled to hang in the 1974 World Championships (Kurihara, 1982). In response to this event, new flight elements were performed one after another by improvement of the protector and apparatus, and development of skills. In 1977, Markelov (URS) performed the back uprise and straddled hecht with 1/2 turn to hang (Kurihara, 1982), Tkachev (URS) performed the swing forward and vault

backward straddled hang (Kurihara, 1982) and Deltchev (BLG) performed the swing forward and salto backward straddled with 1/2 turn to hang (Kurihara, 1982). The double salto backward tucked over the bar was performed by Kovacs (HUN) in the 1979 further (Kurihara, 1982). In 1980, Yamawaki (JPN) performed the Markelov with legs together in Japan national NHK Cup, Gaylord (USA) performed the salto forward over the bar in the USA Inter College Competition (Kurihara, 1982). Also the czech giant and vault backward straddled to hang were performed by Jonson (USA) (Kurihara, 1982).

Development of flight elements were accelerating 1980s. Deff (FRA) performed the Gienger 1/1 turn in the 1981 World Championships (Endo, 2000) and Winkler (DKP) performed the salto forward stretched with 1/1 turn (JGA, 1995). Pogorelov (URS) performed the salto forward stretched with 1/1 turn from el grip in the 1982 (Japan Gymnastics Association of department of study (JGA. dep. S.), 1982b), Gaylord (USA) and Balabanov (URS) performed new elements in the 1984 each other (JGA, 1995; JGA. dep. S. 1985). Pineda (MEX) performed the Gienger with 1/2 turn over the bar in the 1985 World Championships and Xiao Ruizhi (CHN) performed the swing forward and counter salto forward straddled to hang in the 1986 World Cup (Tumura and Mori, 1986). Also in the 1988, the Tkatchev stretched and the Tkatchev stretched with 1/1 turn performed by Liukin (URS). Li Chunyang (CHN) performed the salto forward stretched from el-grip in the 1989 World Championship (JGA. dep. S. 1990b), Ambros (DDR) performed the Kovacs stretched (Goto, 1990) and Li Jing (CHN) performed the Gaylord piked in the 1989 Chunichi cup (JGA. dep. S. 1989c).

Many new flight elements were performed 1990s and 2000s. Kolman (SLO) performed the Kovacs with 1/1 turn in the 1992 European Championships (Shiraishi and Takaoka, 1992), Pegan (SLO) performed the Gaylord with 1/2 turn in the 1994 European Championships (JGA. dep.

S. 1994). The stoop circle forward to straddle cut with 1/2 turn and the Stalder 1/2 turn to rear vault with 1/4 turn to hang were performed by Carballo (ESP) (JGA, 1998). Cassina (ITA) performed Kovacs stretched with 1/1 turn in 2001. Now, for top gymnasts have become essential in order to win that learn the high difficulty flight elements the Cassina. In 2010, Kulesza (POL) performed the Tkatchev stretched with 1/2 turn to double el-grip (FIG, 2011), Munoz (ESP) performed the Yamawaki 1/2 turn stretched to mixed grip into back uprise to handstand in the 2011 World Championships (FIG, 2012).

Elements near the bar ("in-bar" elements)

This group has developed around the free circle backward straddled together through handstand that was first performed Stalder in the 1952 Olympic (Kurihara, 1982) and the free circle forward straddled together through handstand that was first performed Endo (JPN) in the 1964 Olympic (Kurihara, 1982). Homma (JPN) performed the Stalder with 1/2 turn through handstand in 1973 (JGA. dep. S., 1974), and Mizushima (JPN) performed the Stalder with hop 1/1 turn through handstand in 1990 Japan national individual events competition (JGA. dep. S. 1990a). The main trend this group to combination of group 1 to the Stalder and the Endo. For example, there are elements such as the Endo with 1/1 turn through handstand in el-grip, another example there is the Stalder with hop 3/2 turn through handstand in el-grip (FIG, 2013).

El-grip and dorsal hang elements

Group 4 has been most developed in the 1960s. Steineman (SUI) performed the from dorsal hang, uprise forward to support rearward in 1933 (Kaneko and Kishino, 1970). Ono (JPN) performed the from dorsal hang, uprise with 1/2 turn to support in 1960 (Kurihara, 1982), Kerdemildi (URS) performed the giant swing rearways forward (Russian giant) in the 1960 Olympic (Kurihara, 1982).

Skoumal (ČSSR) performed the giant swing backward with inlocation during swing in the 1966 (Kurihara, 1982). Elements of group 4 have almost completed the 1980s. The stoop in shoot and 1/1 turn through handstand in Mixed grip was performed by Li Ning (CHN) in the 1985 World Championships (JGA. dep. S. 1986). This element has been often performed at present, because the rule that gymnast get the additional point in combination with elements of more Zhan D values and Flight elements of more than D value. Recently, Likhovitskiy (BLR) performed the Koste 1/2 turn to elgrip in 2013 European Championships (FIG, 2014).

Dismounts

Schwarzman (GER) performed the Hecht straddled in the 1952 Olympics (Kurihara, 1982), Endo (JPN) performed the Hecht with 1/1 turn in 1964 Tokyo Olympics (Kurihara, 1982). Soshin (URS) performed the double salto backward pike in 1965, and Lisitsky (URS) performed the salto backward stretched with 2/1 turns in 1967. This group of elements developed rapidly since the 1960s. Straumann (SUI) performed the double salto backward tucked over the bar in 1970, Tsukahara (JPN) performed the double salto backward tucked with a 1/1 turn in the 1972 Olympics, and Andrianov (URS) performed the triple salto backward tucked in the 1974 World Championships.

In 1980, more high-value elements emerged. Watanabe (JPN) performed the double salto backward stretched with 2/1 turns in 1983 World Championships, Hoffmann (DDR) performed the triple salto backward tucked over the bar in 1984 Moscow and Riga Competition. Elements of forward somersault dismounts were also developed during time. Rumbutis performed the triple salto forward tucked in the 1986 Chunichi Cup. Bell (DDR) performed the triple salto backward tucked with a 1/1 turn in the 1987 European Championship. Moreover, Fedorchenko (KAZ) performed the double salto backward stretched with 3/1 turns in 1995 World Championship. All

competitors performed the Watanabe in the event finals of the 2012 Olympic Games. Fardan (DEN) performed the triple salto backward piked in the 1996 European Championship.

Improvement of equipment and hand guards

The advancement of horizontal bar techniques in gymnastics closely corresponds to the development of equipment and hand guards. The horizontal bar of the Olympic Games in 1924 had a diameter of 32mm, a height of 230cm, a width of 220cm; but by the end of 1980, the bar improved with a diameter of 28mm, a height of 255cm, a width of 240cm (Ichiba, 2005, pp.171-172). These changes were made possible by more advanced mechanisms for changing the height of the horizontal bar; therefore flight duration became longer. In addition, the wire supporting the horizontal bar changed to a double wire from a single wire to ensure resilience and stability. Today, the bar is highly elasticity, durable, thinner, and easier to grip all of which make it easier to execute more movement-rich swings.

The role of improved hand guards in the advancement of horizontal bar technique should not be dismissed. Changes in hand guards in the late 1970 have been confirmed to have played an important role in the development of horizontal bar technique, along with the official changes in equipment standards for the rings and horizontal bar in particular (Ichiba, 2005, pp.96-97). According to Ichiba " hand guards were originally used so as to protect performers' palms. At that time, they were still small and used on their palms adherently. They were shifted from the stage of passive and protective function to the next stage that provided the supportive function against oscillation by making a cuff near the finger hole (This cuff sometimes includes padding). Hand guards became larger as well as longer to create folded, but also more robust protection in the belted portion of the wrist. The larger hand guards not only provided passive protection but also served

to support swing by strengthening swings and swing support while supporting the wrist and strengthening the grip by creating a core, a folder and a robust belt section. In other words, technological development of equipment and hand guards is directly related to the development of more challenging elements.

We aren't supposed to forget Pits. Pits are the facilities where a chip of urethane and a sponge was filled in one serving in the hole opened in a landing part. Even if these facilities fall from the beginning, the impact is absorbed sufficiently. Safety started to be secured. Fear to a fall was taken by development in a pit, and a change had occurred to practice method. A challenge to new elements which weren't considered up to now became possible. Besides, development of Landing mat were changed to more soft more thicker to make absorbing an impact landed.

The trend toward more difficult moves

Future trends in horizontal bar elements should consider the perspective of the transition to the CoP. The CoP in gymnastics is the competition scoring system and is intended to guarantee fair competition through objective rules.

According to Kaneko (Kaneko, 2005a, p.248), Trends in the development of elements fall roughly into two types. One is to make conventional technique more complicated, and the other is to create quite a new technique that is completely original in its form.

A development of a more complex structure, for example, was the addition of 1/1 or 2/1 turns to a double somersault. Shirai (JPN) performed the salto backward with 4/1 turns in Floor Exercise (FX), and the round off, handspring backward and salto backward 3/1 turn in Vaulting Table (VT) to add difficulty to existing elements.

Examples of original forms are the flair in side support performed by Thomas in Pommel Horse (PH) in the 1970s and the round off, handspring backward and salto backward performed by Yurchenko in VT in the 1980s.

When new elements in recent years will be seen, almost all elements are added to elements of existence or combined elements of existence and elements of existence. Its tendency was omened from 30 years ago.

An incident in 1984 reflects this trend toward new elements. Because of Los Angeles Olympic Games, TV and Olympic became now strongly linked and globalization was realized in gymnastics. According to Watanabe (Watanabe, 2005, p.7) "Rule to understand that everyone in gymnastics globalized, score anyone to convince". An example of such globalization is the impact of scoring system, which handles only elements described in the CoP. That is to say, judge activity was inclining toward the quantitative way that everyone knows.

In 1993, the added point for by proficiency and originality were eliminated (Japan Gymnastics Association, 1993) and were replaced by added point to the combination or elements of difficulty D, E. According to Watanabe (Watanabe, 2005, p.5), "The difficulty of judging "what motion is worth bonus" had been pointed out since then. As judges in charge of evaluation in international competitions have their own physical culture from their backgrounds and moreover their judgments in these scoring areas would be reflected on the results of performers directly, there were probably many judges who insisted their opinions and wouldn't withdraw them" Additional points that are difficult to conceptually justify were also eliminated. In other words, the scoring system for competitions handles the elements described in the CoP, but some have noted that growing trend increasing the rotational speed of the elements has gained social gymnastics of the "civil rights" (Watanabe, 2005, p.5-6). Simultaneously, quantitative scoring criteria involved angle, deduction, and execution of the elements. Ishida (Ishida, 1995, p.16) said that evaluation of gymnastic performance that was observed with the point of view centered on its quality, some of which only specialists could appreciate, has had the remarkable

tendency to judge a performance by replacing it with physical quantity that anybody can understand.

In 1997, compulsory routines were abolished (JGA, 1997). Kaneko noted, "Attracted by commercialism of the media, significant compulsory performances were thoughtlessly abolished ... Since the contents in the compulsory performance are identified to every performer, it is the only way to develop a new technique that has never seen and approach the limit of the same technique in order to win. Then there is no way but developing the technique of a performer who has ability to practice such a new technique, therefore creation of a new technique is regard as a subject at any cost" (Kaneko, 2005a, p.248). Some have argued that appearance of new elements would diminish after compulsory routines were abolished, and primary means of innovation will be adding complexity to the existing elements.

Furthermore, in 2006, the 10-point system was abolished. Under the current rules, in order for the top gymnasts to earn high scores, they must perform 10 elements of as high difficulty as possible in five events without the VT. Therefore

competitors and coaches consider it preferable to learn the skills common to all events, rather than the skills specific to each event. For example, the double salto backward tucked with a 1/1 turn can be used on the horizontal bar and the double salto backward tucked with a 1/1 turn can be used on the Ring, "Tkachev" can be used on the horizontal bar and the swing forward, straddle cut backward, and regrasp with straight body at horizontal can be used on the Parallel Bars. Hence, there is common tendency to train for skills transferable to other events, which is considered one of the reasons for the tendency for existing elements with added complexity to be performed. For these reasons, the creation of completely new forms is unlikely to occur.

This is reflected in elimination of the added point for originality in 1993, the elimination of compulsory routines in 1997, and the establishment of new scoring rules since 2006. When such process is surveyed, future trends for new elements in the future are likely to involve adding extra complexity to existing elements rather than creating original ones up to now.

Table 1
Group 1 - Long hang swings and turns

Elements	Performer	Year	Competition	Reference
Swing backward and pirouette to hang	Unknown	1889	Paris	Kinoshita, 2001
Swing backward and pirouette to support	Boiko (URS)	1971	Japan VS Soviet Union	JGA. dep. S., 1972
Giant swing forward. with one arm in under grip (360°)	Unkown (URS)	1978	Soviet Cup	JGA. dep. S., 1978
One arm giant swing backward (360°)	Tong Fei (CHN)	1979	Unknown	JGA, 1995
Flying giant swing backward with 1/1 turn	Thomas(USA)	1979	World Cup	JGA. dep. S., 1979
On 1 arm, giant swing forward with 1/1 turn to el-grip and 1/1 turn to under grip	Zou Li Min (CHN)	1985	World Championships	video
Giant swing backward with hop 3/2 turns to double el- grip	Rybalko (KAZ)	1993	World Championships	video
Back uprise to handstand with 1/1 turn also to mixt	Karbanenko (RUS)	1993	World Championships	JGA. dep., S. 1993
Flying giant swing bwd. with 2/1 turns	Mizutori (JAP)	2004	Japan National NHK Cup	JGA. dep., S.2004

Table 2
Group 2 - Flight elements

Elements	Performer	Year	Competition	Reference
Back uprise and piked vault with 1/2 turn to hang	Voronin (URS)	1965	Unknown	JGA, 1995
Swing backward. and salto forward straddled to hang	Jäger (DDR)	1974	World Championship	JGA. dep. S., 1975
Back uprise and straddled. hecht with 1/2 turn to hang	Markelov (URS)	1977	Moscow News Cup	JGA. dep. S., 1977a
Swing forward and vault backward. straddled to hang	Tkatchev (URS)	1977	World Cup	JGA. dep. S., 1977a
Swing forwd. and salto backward. straddled with 1/2 turn to hang	Deltchev(BLG)	1977	Riga Competition	JGA. dep. S., 1977a
Swing forward and salto backward piked with 1/2 turn to hang (Piked Deltchev)	Gienger (DKP)	1977	World Cup	JGA. dep. S., 1977a
Swing backward and salto forward to hang also from el-grip	Krysin (URS)	1978	World Cup	JGA. dep. S., 1978
Double salto backward tucked over the bar	Kovacs (HUN)	1979	European Championships	JGA. dep. S., 1979
Stoop circle backward to Tkatchev straddled	Yogo (JPN)	1979	Japan national Competition	JGA. dep. S., 1980
Markelov with legs together	Yamawaki (JPN)	1980	Japan national Competition	video
Salto forward over the bar	Gaylord (USA)	1980	USA Inter College Competition	JGA. dep. S., 1981
Czech giant and vault backward straddled to hang	Jonson (USA)	1980	USA Inter College Competition	JGA. dep. S., 1981
Swing forward and salto backward with 3/2 turn to hang	Deff (FRA)	1981	World Championship	Endo, 2000
Salto forward stretched with 1/1 turn	Winkler (DKP)	1981	Unknown	JGA, 1995
Salto forward stretched with 1/1 turn from el grip	Pogorolev (URS)	1982	International Invitation Cup	JGA. dep. S., 1982b
Gienger stretched over the bar	Gaylord (USA)	1984	Unknown	JGA, 1995
Salto forward stretched	Balabanov (URS)	1984	Chunichi Cup	JGA. dep. S., 1985
Gienger with 1/2 turn over the bar	Pineda (MEX)	1985	World Championships	video
Swing forward and counter salto forward straddled to hang	Xiao Ruizhi (CHN)	1986	World Cup	Tumura and Mori, (1986)
Tkatchev stretched	Liukin (URS)	1988	Olympic Game	Kinoshita, 2001
Tkatchev stretched	Nishikawa (JPN)	1988	Olympic Game	Kinoshita, 2001
Tkatchev stretched with 1/1 turn	Liukin (URS)	1988	Moscow News Cup	Kinoshita, 2001
Kovacs stretched	Ambros (DDR)	1989	World Championships	Goto, 1990
Gaylord piked	Li Jing (CHN)	1989	Chunichi Cup	JGA. dep. S., 1989c
Kovacs with 1/1 turn	Kolman (SLO)	1992	European Championships	Shiraishi and Takaoka, 1992
Tkatchev straddled with 1/2 turn to mix el-grip into back uprise to handstand	Lynch (USA)	1992	'92 Phar-Mor U.S. Gymnastics Championships	www.youtube.com
Gaylord with 1/2 turn	Pegan (SLO)	1994	European Championships	JGA. dep. S., 1994
Stoop circle forward to straddle cut with 1/2 turn	Carballo (SPA)	1996	Olympic Game	video
Gienger from Czech Giant Swing	Sapronenko (LAT)	1997	World Championships	FIG, 2014
Stalder 1/2 turn to rear vault with 1/4 turn to hang	Carballo (SPA)	1998	European Championships	JGA. dep. S., 1998
Kovacs stretched with 1/1 turn	Cassina (ITA)	2001	World Championships	JGA. dep. S., 2002
Carballo with 1/2 turn to mixed el-grip	Quintero(COL)	2002	World Championships	JGA. dep. S., 2003
Quintero to el-grip	Quintero(COL)	2002	European Championships	JGA. dep. S., 2003
Pegan Pike	Maras (GRE)	2006	European Championships	FIG, 2014

Tkatchev stretched with 1/2 turn to mix el-grip into back uprise to handstand	Moznik (CRO)	2007	World Championships	FIG, 2008
Piatti stretched with 1/2 turn to mixed el-grip and back uprise to handstand	Kierzkowski (POL)	2009	World Championships	FIG, 2015
Tkatchev stretched with 1/2 turn to double el-grip	Kulesza (POL)	2010	World Championships	FIG, 2011
Gaylord from el-grip	Maras (GRE)	2011	World Championships	FIG, 2012
Yamawaki 1/2 turn stretched to mixed grip into back uprise to handstand	Munoz (SPA)	2011	World Championships	FIG, 2012
Kovacs with 2/1 turns	Bretschneider (GER)	2014	DTB Team Challenge	FIG, 2015

Table 3
Group 3 - Elements near the bar ("in-bar" elements)

Elements	Performer	Year	Competition	Reference
Free circle backward. straddle through handstand	Stalder (SUI)	1952	Olympic Game	Kaneko, 1976
Free circle forward. straddled together through handstand	Endo (JPN)	1964	Olympic Game	JGA. dep. S., 1965
Stalder with 1/2 turn through handstand	(William Bill)	-1958	(Intercollege competition)	(Abie Grossfeld, 2010)
	Honma (JPN)	1973	International Invitational Competition	JGA. dep. S., 1974
Endo in el-grip through handstand	Gienger (DKP)	1974	World Championship	JGA. dep. S., 1975
Stalder with hop 1/1 turn through handstand	Mizushima (JPN)	1990	Japan national individual Events Competition	JGA. dep. S., 1990a

Table 4
Group 4 - El-grip and dorsal hang elements

Elements	Performer	Year	Competition	Reference
From dorsal hang, uprise forward to support rearward	Steineman (SUI)	1933	Gymnastics Festival in Stuttgart	Kaneko and Kishino, 1970
Giant swing rearways forward (Russian giant)	Kerdemildi (URS)	1960	Olympic Game	Kaneko, 1976
Steineman uprise with 1/2 turn to support	Ono (JPN)	1960	Olympic Game	Kaneko, 1976
Giant swing backward with inlocation during swing	Skoumal (CEZ)	1966	World Championships	JGA. dep. S., 1967a
Endo in el-grip through handstand	Gienger (DKP)	1974	World Championships	Kurihara, 1982
Stoop in shoot and 1/1 turn through handstand in mixt grip.	Li Ning (CHN)	1985	World Championships	JGA. dep. S., 1986
Stoop in shoot and hop 1/1 turn through handstand to mixed el-grip or Adler hop with 1/1 turn to mixed el-grip	Baldauf (AUT)	2012	Cottbus World Challenge Cup	FIG, 2015
Koste 1/2 turn to el-grip	Likhovitskiy (BLR)	2013	European Championships	FIG, 2014

Table 5
Group 5 - Dismounts

Elements	Performer	Year	Competition	Reference
Hecht straddled hecht	Schwarzman (GER)	1952	Olympic Game	Kaneko, 1976
Hecht with 1/2 turn	Ono (JPN)	1956	Olympic Game	Kaneko, 1976
Hecht with 1/1 turn	Endo (JPN)	1964	Olympic Game	JGA. dep. S., 1965
Salto backward piked with 1/1 turn	Watanabe (JPN)	1965	Japan VS Soviet Union	JGA. dep. S., 1966
Double salto backward piked	Soshin (URS)	1965	Japan VS Soviet Union	JGA. dep. S., 1966
Salto backward stretched with 2/1 turn	Lisitsky (URS)	1967	European Championships	JGA. dep. S., 1967b
Salto forward. piked with 1/2 turn	Hayata (JPN)	1968	Japan National NHK Cup	JGA. dep. S., 1969
Double salto backward tucked over the bar	Straumann (SUI)	1970	Universiade	JGA. dep. S., 1970
Double salto backward tucked with 1/1 turn	Tsukahara (JPN)	1972	Olympic Game	JGA. dep. S., 1972
Double salto forward tucked	Schubert (DDR)	1973	International Berlin Cup	JGA. dep. S., 1973b
Triple salto backward tucked	Andrianov (URS)	1974	World Championships	JGA. dep. S., (Abie Grossfeld, 2010)
	(Mark Davis)	1971	(NAAU Championships)	
Double salto backward stretched	Roschukin (URS)	1974	Chunichi Cup	JGA. dep. S., 1975
Double salto backward tucked with 2/1 turn	Kajiyama (JPN)	1976	Olympic Game	JGA. dep. S., 1976b
Salto backward stretched with 3/1 turn	Morisue (JPN)	1976	Japan National Competition	JGA. dep. S., 1976a
Double salto backward tucked with 1/1 turn over the bar	Kitagawa (JPN)	1978	International Shanghai Cup	JGA. dep. S., 1978
Double salto forward. tucked with 1/2 turn	Shimizu (JPN)	1978	International Strasbourg Cup	Kurihara, 1982
Double salto backward stretched with 1/1 turn	Unknown (CUB)	1979	World Championships	JGA. dep. S., 1980
Double salto backward stretched with 2/1 turn	Watanabe (JPN)	1983	World Championships	JGA, 2007
Triple salto backward tucked over the bar	Hoffmann (DDR)	1984	Moscow and Riga Competition	JGA. dep. S., 1985
Triple salto forward tucked	Rumbutis (URS)	1986	Chunichi Cup	JGA. dep. S., 1987a
Triple salto backward tucked with 1/1 turn	Belle (DDR)	1987	European Championships	JGA. dep. S., 1987b
Double salto backward stretched with 1/1 turn over the bar	Hayden (USA)	1988	American Cup	Video
Double salto backward stretched with 3/1 turn	Fedorchenko (KAZ)	1995	World Championships	JGA. dep. S., 1996
Triple salto backward piked	Fardan (DEN)	1996	European Championships	Takeda, 1996

CONCLUSIONS

This paper was to collate data elements on the horizontal bar (HB) in men's artistic gymnastics and summarized the history of their occurrence, which has not been done in recent years. I think that new elements of chronological table in HB should be corrected by a formal document many times. We have to carry gymnastics history in the next generation.

REFERENCE

- Atiković, A. (2014). Development and Analysis Code of Points (CoP) in Men's Artistic Gymnastics (MAG) from the 1964 to 2013 year. In M. Bučar Pajek et al (eds.). *Final program, invited proceedings, book of abstracts and book of proceedings*. Ljubljana: Slovenian Gymnastics Federation, 2014, str. 22-35. http://issuu.com/revija.gimnastika/docs/2014_zbornik_tehnicni
- Eckhard. H. (2011). *Bernd Jäger: A gymnastics innovator turns 60!*. Retrieved May 6, 2015, from GYMmedia. com web site: <http://www.gymmedia.com/artistic-gymnastics/Bernd-Jaeger-gymnastics-innovator-turns-60>
- Endo, Y. & Ono, Kiyoko. (1982). *Taisoukyougi wo mirutameno Honn [Book to watch in Artistic Gymnastics]*. Tokyo: Douwashoinn.
- Endo, K. (2000). Taiso Daijiten 147 kai [Dictionary of Gymnastics 147th]. *Gekkan sports eye*, 60-61.
- Endo, K. (2001) Taiso Daijiten 154 kai [Dictionary of Gymnastics 154th]. *Gekkan sports eye*, 60-61.
- Endo, K. (2001) Taiso Daijiten 155 kai [Dictionary of Gymnastics 155th]. *Gekkan sports eye*, 60-62.
- FIG. (2006). *Code of points Men' s Artistic Gymnastics*. Lausanne: Fédération Internationale de Gymnastique.
- FIG. (2008). The MTC Newsletter No. 22, July 2008.
- FIG. (2009). *Code of points Men' s Artistic Gymnastics*. Lausanne: Fédération Internationale de Gymnastique.
- FIG. (2011). The MTC Newsletter No. 25, January 2011.
- FIG. (2012). The MTC Newsletter No. 26, January 2012.
- FIG. (2013). *Code of points Men' s Artistic Gymnastics*. Lausanne: Fédération Internationale de Gymnastique.
- FIG. (2014). The MTC Newsletter No. 27, March 2014.
- FIG. (2015). The MTC Newsletter No. 28, February 2015.
- Gajdoš, A. (1997). *Artistic Gymnastics: A History of Development and Olympic Competition*, Leicestershire: Loughborough University
- Grossfeld, A. (2010). A history of United States artistic gymnastics. *Science of Gymnastics Journal*, 2(2), 5-28.
- Grossfeld, A. (2014). Changes during the 110 years of the world artistic gymnastics championships. *Science of Gymnastics Journal*, 6(2), 5-27.
- Goto, Y. (1990). Dannshi Testubo Jiyuu Enngi no Hikaku [Comparison to Horizontal bar in Men free exercise]. *Kennkyu Buho*, 64, 77-81.
- Hayashi, M., & Endo, K. (1987). 87 Yôroppa Sennshukenntaikai Houkoku [Report of European Championships Championship in 1987]. *KennkyuBu jyoho*, 2, 38-40.
- Ishida, Y. (1995). Kunnstturnen und seine Bewertung (in Japanese). *Journal of Gymnastics Research*, 3, 9-10.
- Jair Lynch (1992). *US Olympic Trials High Bar*. (n.d). Retrieved May 6, 2015, from https://www.youtube.com/watch?v=u_Sj-fOyBZ8
- JGA. (1975). *Code of Points Men Artistic Gymnastics 1975 years edition* (in Japanese). Tokyo: Japan Gymnastics Association.
- JGA. (1979). *Code of Points Men Artistic Gymnastics 1979 years edition* (in Japanese). Tokyo: Japan Gymnastics Association.
- JGA. (1985). *Code of Points Men Artistic Gymnastics 1985 years edition* (in Japanese). Tokyo: Japan Gymnastics Association.

JGA. (1989). *Code of Points Men Artistic Gymnastics 1989 years edition* (in Japanese). Tokyo: Japan Gymnastics Association.

JGA. (1993). *Code of Points Men Artistic Gymnastics 1993 years edition* (in Japanese). Tokyo: Japan Gymnastics Association.

JGA. (1997). *Code of Points Men Artistic Gymnastics 1997 years edition* (in Japanese). Tokyo: Japan Gymnastics Association.

JGA. (1995). *sixty years history of Japan Gymnastics Association*. Tokyo: Japan Gymnastics Association, 181-187.

JGA. (2001). *Code of Points Men Artistic Gymnastics 2001 years edition* (in Japanese). Tokyo: Japan Gymnastics Association.

Japan Gymnastics Association. (2007). *Taiso Kyougi Shashinn Taikan* [Pictures of Encyclopedia in Artistic Gymnastics]. Tokyo: I-O-M.

Japan Gymnastics Association of department of study. (1974). *Kennkyu Buho*, 34, 6-7.

Japan Gymnastics Association of department of study. (1982a). *Kennkyu Buho*, 51, 14-15.

Japan Gymnastics Association of department of study. (1982b). *Kennkyu Buho*, 52, 10.

Japan Gymnastics Association of department of study. (1985). *Kennkyu Buho*, 54.

Japan Gymnastics Association of department of study. (1986). *Kennkyu Buho*, 56, 8-9.

Japan Gymnastics Association of department of study. (1987a). *Kennkyu Buho*, 58, 17-18.

Japan Gymnastics Association of department of study. (1987b). *Kennkyu Bu jyoho*, 2, 6.

Japan Gymnastics Association of department of study. (1989a). *Kennkyu Buho*, 63, 8.

Japan Gymnastics Association of department of study. (1989b). *Kennkyu Buho*, 64, 20.

Japan Gymnastics Association of department of study. (1989c). *Kennkyu Bu jyoho*, 4, 8.

Japan Gymnastics Association of department of study. (1989d). *Kennkyu Bu jyoho*, 4, 18.

Japan Gymnastics Association of department of study. (1990). *Kennkyu Buho*, 65, 11-12.

Japan Gymnastics Association of department of study. (1990). *Kennkyu Buho*, 65, 20.

Japan Gymnastics Association of department of study. (1993). *Kennkyu Bu jyoho*, 8, 6.

Japan Gymnastics Association of department of study. (1994). *Kennkyu Bu jyoho*, 9, 21.

Japan Gymnastics Association of department of study. (1996). *Kennkyu Bu jyoho*, 10, 65-66.

Japan Gymnastics Association of department of study. (1998). *Kennkyu Buho*, 81, 5.

Japan Gymnastics Association of department of study. (2003). *Kennkyu Buho*, 90, 39-40.

Japan Gymnastics Association of department of study. (2004). *Kennkyu Buho*, 93, 3.

Japan Gymnastics Association of department of study. (2006). *Kennkyu Buho*, 97, 15-16.

Kaneko, A. and Kishino, Y. (1970). *Tetsubou Unndou no Coach* [Coaching of Horizontal Bar]. Tokyo: Taishuukan.

Kaneko, A. (1974). *Taiso Kyougi no Coaching* [Coaching of Artistic Gymnastics]. Tokyo: Taishuukan.

Kaneko, A. (2005a). *Shintaichi no Keisei Jyo* [Mold of bodily knowledge the 1st volume]. Tokyo: Meiwashuppan.

Kaneko, A. (2005b). *Shintaichi no Keisei Ge* [Mold of bodily knowledge the 2nd volume]. Tokyo: Meiwashuppan.

Kaneko, A. (2007). *Shintaichi no Kozou* [Structure of bodily knowledge]. Tokyo: Meiwashuppan.

Kato, S. (1996). Der größte Beschluß von Vollversammlung der F.I.G. im Jahre 1994 und seine Einfluß auf die

Trainingsgegenwart des Turnens (in Betreff der Abschaffung von Pflichtwettkampf), *Ibaraki Journal of Health and Sport Sciences*, 14, 1-8.

Kinoshita, H. (2001). Zur Entwicklungstendenz der Flugelemnte am Reck (in Japanese). *Journal of Gymnastics Research*, 9, 21-34.

Kondo, A. (1985). Moscow Riga Taikai Hokoku [Reports of Moscow and Riga competition]. *Kennkyu Buho*, 54, 1-5.

Kondo, A. and Tsumura, J. (1988). Dai 24 kai Taisokyogi Sekaisennshukenn Taikai Hokoku [Reports of 24th World championship]. *Kennkyu Buho*, 60, 1-21.

Kondo, A. and Hayashi, M. (1995). 95 nenn Yôroppa Sennshukenntaikai Houkoku [Report of European Championships Championship in 1995]. *Kennkyu Buho*, 75, 1-17.

Kurihara, H. (1982). Tetsubo ni okeru Shingi no Shutsugenn to sono Henssen [Transition and Appearance for new elements of Horizontal Bar in Men Artistic Gymnastics]. *Kennkyu Buho*, 50, 95-106.

Marijo Možnik (2015) (n.d). Retrieved May 6, from

http://hr.wikipedia.org/wiki/Marijo_Možnik

Marijo Možnik (2015): *Ako se nešto ne pokrene bojim se da nećemo imati nasljednike*. (n.d). Retrieved May 6, from

<http://www.zg-sport.com/marijo-moznik-ako-se-nesto-ne-pokrene-bojim-se-da-necemo-imati-nasljednike/>

Sato, T., Taguchi, H. Brüggemann, P., & Zilmaz, A. (1995). Eine Betrachtung über die Beschleunigungstechnik im Vorschwung beim gestreckten Doppelsalto rückwärts am Reck :Vergleoch zwischen dem chinesisichen und japanischen Typ (in Japanese). *Journal of Gymnastics Research*, 3, 37-47.

Shiraishi, Y. & Takaoka, O. (1992). Dai 20 kai Yôroppa Danshi Taisoukyogi Sennshukenntaikai Houkoku [Reports of 20th European championship in Men Artistic Gymnastics] (in Japanese). *KennkyuBu jyoho*, 7, 38-43.

Takeda, Y. (1996). 1996 nenn Danshi Yôroppa Sennshukenntaikai Houkoku

[Reports of European championship in Men Artistic Gymnastics in 1996] (in Japanese). *Kennkyu Buho*, 77, 1-11.

Tsuchiya, J. Katase, F., & Akaba, A. (2002). 2001 Sekai Taiso Senshukenn Ghent Taikai Hokoku • Kyogi bunnseki [2001 Analyses and Reports in World championship in Ghent]. *Kennkyu Buho*, 88, 8-21.

Tumura, J., & Mori, A. (1986). 86 World cup Pekinn Taikai Hokoku [Report of world cup in Beijing in 1986]. *Kennkyu Buho*, 57, 1-16.

Watanabe, N. (1994). Morphologische Betrachtung des Stilwandels der Turnkunst (in Japanese). *Journal of Gymnastics Research*, 2, 47-58.

Watanabe, N. (2005). Zum Stilwandel der Turnkunst (in Japanese). *Journal of Gymnastics Research*, 13, 1-9.

Corresponding author:

Moriatsu Nakasone
Biwako Seikei Sports College
1204 Kitahira,
Otsu-shi, Shiga
Japan 520-0026
Phone : +81-77-596-8458
Fax : +81-77-596-8419
Email : nakasone@bss.ac.jp