

FORMS OF AND EXERCISES ON THE HORIZONTAL BAR DURING THE SECON HALF OF THE 19th CENTURY

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Abstract

The horizontal bar, from its invention until the middle of the 19th century, underwent several phases of evolution; it remained however, wooden and fixed to the ground. The exercises were static, dynamic, close to the bar, and without amplitude and swing. In the middle of the 19th century, metal bars and then height-adjustable horizontal bars started to appear. From this new and more favourable apparatus more difficult exercises and combinations with swing and amplitude emerged, while the static and dynamic exercises continued. In the 80s, the stabilizers for the wooden pillars appeared, while in the last decade of the 19th century, the iron flexible horizontal bar was constructed with stabilizing chains and a height-adjusting mechanism. Such a horizontal bar was also used in the 1896 Olympics, where exercises with amplitude and swing but also static and dynamic exercises were performed. The aim of this work was to research and highlight the main features of the evolution of the horizontal bar (exercises, regulations and apparatus) in the second half of the 19th century.

Keywords: *pillar, metal bar, dynamic-static exercises, regulations, artistic gymnastics.*

INTRODUCTION

From its invention (1811-1812), by the founder of the German gymnastics system Ludwig Jahn, the horizontal bar was regarded as an apparatus useful, simple and easy to use. It was thus, improved and promoted both by Jahn (mainly through his workbook) (Jahn & Eiselen, 1816) and by his students and then gained a prominent position both in the German gymnastics system and in the sport of artistic gymnastics that developed later (Borman, 1978). The horizontal bar currently holds

same prominent position in modern artistic gymnastics competitions since the alternations of various exercises and grips, the speed of the giant swings and especially the spectacular flight phases of the program, as well as the exits make it fascinating and popular piece of aparatus. It is also noteworthy that several pieces of apparatus (both for women and men) have been enriched with many elements from the horizontal bar (Kaimakamis, 2003). The fact that this apparatus (and the parallel bars)

was promoted and featured as an emblem of the German gymnastics system which was since its birth embraced by a national and political-social ideology (Krüger, 1993), was the cause of many enemies.

Over the years, all these enemies of the above system failed to halt the evolution of the horizontal bar which, as mentioned above, took a leading position both in the German gymnastics system and in the field of competitive artistic gymnastics.

METHOD

The present study attempted to research, record and highlight the evolution of horizontal bar in the second half of the 19th century. It also explores the position of this apparatus in physical education, in gymnastic systems and in sports. The method used is that of the research field while data collection was based on archival historical research and focused on the forms and ways of construction of the horizontal bar, as well as the type of exercises performed on it. In order to provide correct and objective interpretations, a brief reference to the German gymnastic system and its founder was made in the introductory part.

In this study, data collection was based mainly on the written primary sources of authors as: Jahn / Eiselen, Neuendorf, Kluge / Euler, Gregenow / Samel, Paging, Anne and Chrysafis. Also, several early authors of the modern era were included, such as Diem, Göhler, Gasch, Huquenin, Gajdos, Pahncke, Spieht, Borrmann, Kaimakamis. Useful information was also found in the work titled "Jahn's horizontal bar and its forerunners" in which various forms of horizontal bar (mainly for acrobats) from ancient times to Jahn's era (Kaimakamis et al, 2012), are researched.

Introduction and establishment of the metal bar

In the first half of the 19th century, the horizontal bar had various shapes and sizes and was wooden and fixed to the ground while the exercises were more static and

dynamic, without amplitude and swing, since this apparatus did not allow for such exercises (Spieht, 1989). Since the mid 19th century, mainly due to the introduction of the metal bar, there has been a rapid development of the exercises performed on this apparatus. Those involved in the sport of artistic gymnastics know that the quality and functionality of the apparatus has a direct impact on the quality and quantity of exercise performed, as well as the athletes' injury safety (Götze, 1983). According to the German historian Edmund Neuendorff (1875-1961), the first person to introduce the iron bar to Germany and perhaps to the whole world, in 1850, was J. Carl Lion. Another author, Wassmannsdorff, reports that in 1852 in Heidelberg a steel bar was used (Neuendorff, 1929). As mentioned above, in the sport of artistic gymnastics, exercises and pieces of apparatus are in constant interaction (Gross & Leikov, 1994). Thus, when the bar became metallic, that is, thinner, more flexible, more durable and more user-friendly, the quality and type of exercises and the way of their execution also changed greatly.

With the advent of the metal bar, there was no particular change in the general shape of the horizontal bar; initially, it remained stably fastened (planted) to the ground on wooden pillars (Figure 1a) and a little later a height-adjustable metal bar (Figure 1b) (Gregenov & Samel, 1919) was introduced.

The enhancement of the bar, from wooden to metal, was a turning point and exercises with more amplitude and swing started to appear. Thus, in the 1850s, the kip and the giant swing, two spectacular and useful "key" exercises were performed and they have been used in athletes' programs ever since. It is noteworthy, that acrobats of earlier years (Diem, 1967), were already familiar with the giant swing which is also illustrated in Eiselen's tables (1837) although it is not clear if athletes of that era were performing it. After the 1850s, athletes began to perform the giant swing more often using both A and B grip, ie front and back. According to the historian of artistic

gymnasics Josef Göhler (1992), the kip was performed for the first time in Leipzig by the German gymnast Karl Kunz. In the years that followed, this exercise was performed with variations; even with one hand (the other hand grabbed the forearm of the performing hand). The new bars featured several advantages but they were still far from perfect and effective since they were used as out of the foundry, that is, without any special processing. In fact, the bar was painted with a special dye or was wrapped with genuine leather (Gasch, 1920) in order for the athletes to avoid slipping off.

The Czech gymnastic's historian Anton Gajdos (1997) reports that in 1862 the Gymnastics Federation of his country (founded in 1843) organized gymnastic competitions which included exercises on a 6 cm diameter wooden horizontal bar. The type of exercises and the order of performance of the athletes came from a kind of lottery. The judges wrote several exercises, perhaps on papers, which were placed in a hat. Each athlete took a piece of paper from the hat and performed the exercises in the sequence written on the paper. There were three judges who scored on a scale of 1 to 5.

The horizontal bar in the 1870s and 1880s

In 1872, in Berlin, the Germans H.O. Kluge and C. Euler (1872) issued an in-depth piece of work titled "Turngeräte und Turneinrichtungen für Schul-und Militär Turn-Anstalten" which, among other things, devotes 15 pages and many images to the horizontal bar. The aforementioned authors divide the horizontal bars, depending on their form, use and location, into two categories: those that are fixed and located in outdoor gymnasiums, and those that are portable and located inside, in indoor gymnasiums. The authors also mention that sometimes the stable horizontal bars can be placed indoors while the portable ones, outdoors. Specifically, indoor horizontal bars have various forms and functional particularities (wall, ceiling, floor etc.) so that when they need to be removed, this can be done easily and quickly. It is important to

note that apart from all of these horizontal bars there is also a wooden portable one with an iron bar which can be easily set up and removed but is not suitable for high speed exercises or exercises with amplitude (Figure 2b). In total, Kluge and Euler exhibit 15 different horizontal bars, ie wooden with wooden bar, wooden pillars with iron bar, wall, and side-by-side at various heights; some of which are shown in Figure 2.

The wooden bar which was mainly made of beech or apple tree was often poured with hot oil to make it durable. The construction and processing of the wooden bar and the wooden horizontal bar in general, which continued to be used despite the fact that the metal bar had been introduced, went through the following three phases (Spiehl, 1989):

-Phase 1 (Gasch, 1920): they cut trunks from tall, straight and new trees (pines, beech, elms, maples, apple trees) which they peeled and left to dry. They then cleaned them well, coated them with oil and finally sanded them down. There was a similar process for the pillars which were thick and fixed to the ground. The exercises performed on this horizontal bar were static, dynamic, and without amplitude and swing.

-Phase 2 (Schwobe, 1988): They chose trunks of young trees without knots (mostly pine, beech, oak) which they stored for a long time. After the relevant treatment, they joined two pieces together making sure that the woodgrains were in the same direction; making the bar more durable. The bar however, was still very thick and fragile (6-8 cm in diameter) which made performing exercises with great swings and amplitude, difficult.

-Phase 3 (Schwobe, 1988): after the relative processing of the wood intended for the bar, they placed in the center an iron or steel rod, as in a writing pencil. The bar above was more durable and could be made a bit thinner, making the grip more convenient which was favourable for the execution of more and even more difficult and complex exercises.

Gajdos provides information about a gymnastics competition held in his country, the Czech Republic in 1875 (Gajdos, 1987). The most spectacular of the compulsory and free programs performed on the horizontal bar was: back uprise in B grip and direct swing to handstand, half turn right, back giant swing (in A grip), dismount with tuck position over the bar. Over time and particularly because the giant swings created a problem in the stability of the apparatus, three support bars (pricks) which

were the forerunners of the chains and the wires that were introduced later, were placed to right and left of each wooden pillar (mainstay) (Figure 6). Such a horizontal bar is also referred to in the "Updated Encyclopaedic Dictionary (in Greek)" which among other things states (Neoterion): "HORIZONTAL BAR: a gymnastic apparatus consisting of two solid wooden posts embedded in the ground and coupled to a three centimeters in diameter steel bar ..." (in Greek).

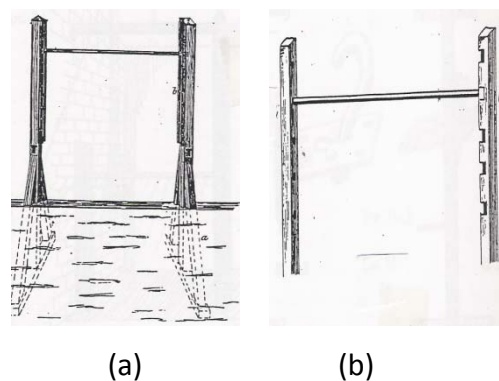


Figure 1. Stable horizontal bars with wooden pillars (a) and a metal bar (b). In the first figure the dotted lines illustrate the part and the shape of the pillars beneath the ground. In the second figure the metal bar is height-adjustable (Gregenow / Samel, p. 7).

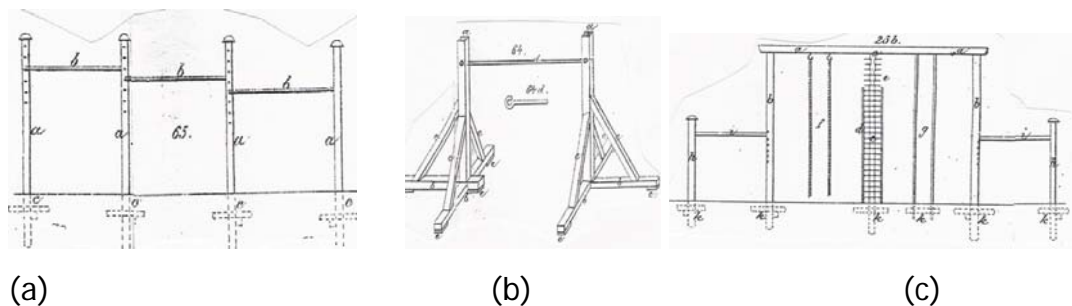


Figure 2. Various types of horizontal bars, according to Kluge and Euler (Kluge / Euler, 1872).

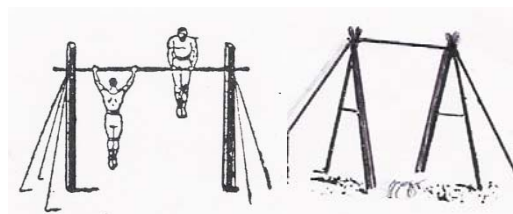


Figure 3. Various types of horizontal bar with support bars which were the precursors of the stabilization chains and wires (Updated Encyclopaedic Dictionary, Vol. 3, p. 39; Spieht, p. 70).

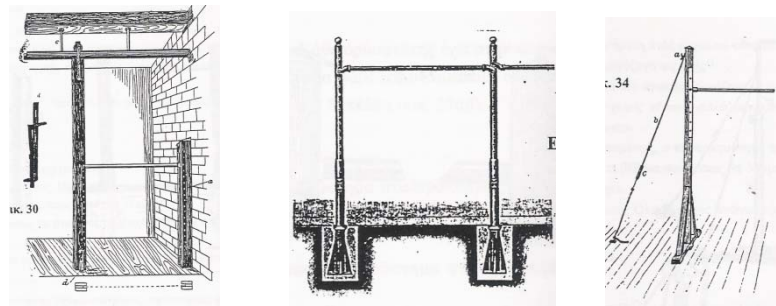


Figure 4. Various types of horizontal bar (fixed, portable, wooden, wall, exterior, etc.) (Gregenow/Samel, p.7-35).

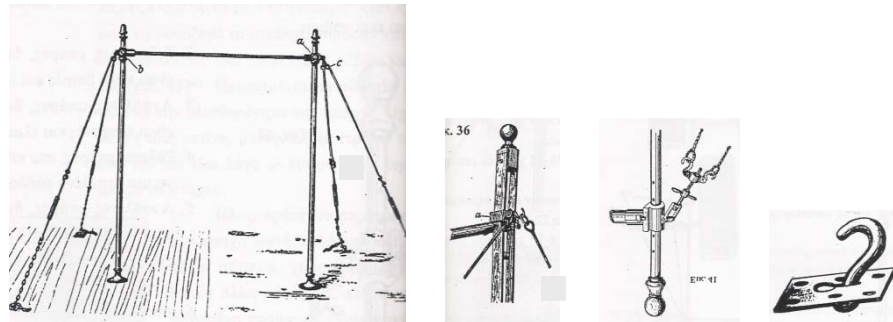


Figure 5. The almost perfect horizontal bar (metallic, portable) with height-adjustable bar and a stabilisation system used in the 1896 Olympics (Gregenov & Samel, 1919).

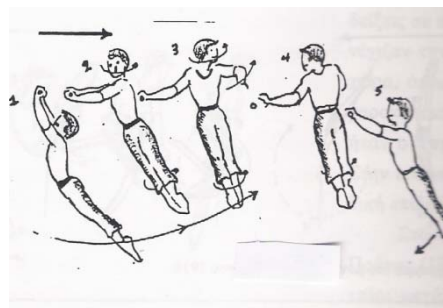


Figure 6. One of the first flight phases on the horizontal bar in the last decade of the 19th century (Kaimakamis, Main charact., p. 417).

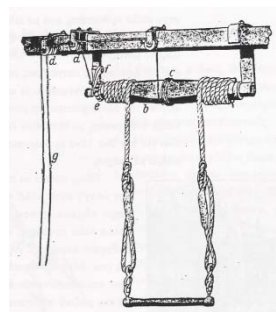


Figure 7. The swinging horizontal bar which in the 19th century was included in the main pieces of apparatus of gymnastics, and was then and until today used by acrobats (Gregenow/Samel, p.7-35).

In 1883, Ioannis Fokianos published a comprehensive, for its period, book entitled "Handbook of Gymnastic" where he devoted a 15-page chapter (Fokianos, 1883) to the horizontal bar. He did not describe the horizontal bar and its construction but divided the exercises into two major categories ie those that are performed by hang position and those that are performed by support position, while naming and illustrating the main grips (Fokianos, 1883). The remaining pages were devoted to the way a school class can be organized, composed and can practice on more than one horizontal bar.

The horizontal bar in the last decade of the 19th century

In the last decades of the 19th century, many types of horizontal bar are manufactured and used depending on the purpose, economic potential and space. Thus, there are high, low, wooden, metal, fixed, portable, wall, exterior etc. (Figure 4) (Gregenov & Samel, 1919).

In the last decade of the 19th century, in addition to the above-mentioned horizontal bars, the most developed competitive horizontal bar appeared which greatly resembled the one used in modern competitions. It was a metallic, portable horizontal bar with an adjustable-height bar and stabilising-chain systems (Figure 5) (Gregenov & Samel, 1919). Such a horizontal bar was used, as will be discussed later, in the first international Olympic Games in Athens in 1896 (Kaimakamis et al, 2003).

It is worthwhile noting that on the aforementioned horizontal bar, exercises and programs were already being performed at an enviable level which marked a particular development in this apparatus (compared to other gymnastic pieces of apparatus) giant swings, and even exercises with a flight phases (Kaimakamis et al, 2003). In fact, one of the first exercises was the following: swing backwards in B grip, release, full turn on the longitudinal axis (at the bar height) and regrip in A grip (Figure 6) (Göhler, 1980). Note that the above

exercise resulted from a backward dismount with twist.

In parallel, static and dynamic elements continued to be performed, sometimes mixed with swing elements and sometimes completely separate (Gotze & Herolz, 1992). It should be noted that the static and dynamic elements were retained (based on the regulation requirements) for the horizontal bar programs until the Berlin Olympics (1936) (Kaimakamis, 2005). Moreover, in those days, regulations were not uniform across federations and the pieces of gymnastic apparatus had neither common dimensions nor standards. This created major problems during competitions, even between clubs of the same country (Huguenin, 1981). Nonetheless, meetings and competitions between clubs and, more importantly, the organisation of sports festivals under the auspices of a European sports federation that cultivated the German gymnastics system had become an institution in several European countries (Kaimakamis, 2005).

Researching the historical evolution of the 19th-century horizontal bar, one also encounters the swinging horizontal bar, described in detail by Gregenov and Samel (Figure 7) (Gregenov & Samel, 1919).

One type of swinging horizontal bar was the swinging triangle that the Swiss Phokion Heinrich Clais (1785-1854) claimed to have invented in 1816 (Clais Phokion Heinrich, 1816). The apparatus was later developed into an "aeropetastis" and even the rings later invented by Spiess (Chrisafis, 1965). It is known that the swinging bar was established and evolved and is used, to this day, by circus acrobats.

This was about the state of the pieces of apparatus, especially the horizontal bar, when in 1896 the first international Olympic Games took place in Athens and the so-called gymnastic sports (artistic gymnastics) were conducted according to the German gymnastic system.

The horizontal bar at the first international Olympic Games (Athens 1896)

The regulations drafted by a special Greek committee under President John Fokianos did not allow acrobatic and dangerous exercises. However, especially the Germans who were very skillful performed spectacular giant swings switching grips and directions (Kaimakamis, 2005). The panel of judges consisted of seven people from different countries including the successor to the Greek throne, Constantine, who was chairman of the committee. The score ranged from zero to 20 and each judge assessed three factors simultaneously: synchronisation (overall picture), rhythm and technical training (Chrisafis, 1930).

The horizontal bar competition was divided into: the team performance on 10 horizontal bars and in the individual performance. Only the German team of 10 athletes, which was in any case unrivalled, took part in the first competition. The 10 athletes, under the guidance and command of the coach Fritz Hofmann, performed on 10 horizontal bar a impressive 4-minute program and became the Olympic Champions since their program more than covered all the requirements (Kaimakamis et al, 2003).

In the individual race, which was quite similar to today's apparatus final, 17 athletes from four different countries took part. The Germans, Weingärtner and Flatow (first and second respectively) (Krüger, 1994) emerged as Olympic champions. The program lasted up to 2 minutes and the judges assessed equally the following two factors: control and strength exercises, and flexibility and skill exercises. Each judge gave two points from zero to 20, one for each factor (Anninos, 1896). Overall, at these first Olympic Games, it was the Germans athletes who particularly impressed on all pieces of apparatus and thus won the most victories.

CONCLUSION

In the first half of the 19th century, the horizontal bar was wooden and fixed to the ground in various shapes and dimensions while the exercises were mainly static and dynamic, without amplitude and swing, since this apparatus did not allow for such exercises. In the middle of the 19th century, the metal bar was introduced which a direct impact on the exercises had performed. As a result, exercises with a great deal of amplitude and swing could be performed in parallel to the static and dynamic ones. Although the metal bars developed, the various forms of horizontal bars with wooden bars continued to be used. In the last decade of the nineteenth century, an iron, portable horizontal bar was constructed which used stabilising chains and a height-adjusting bar mechanism. On this horizontal bar, even more spectacular exercises and combinations were performed and the first flight phases and difficult dismounts were introduced. Until the end of the 19th century, there were no commonly used regulations, dimensions and functional specifications for the horizontal bar. Overall, during the 19th century, the horizontal bar dominated artistic gymnastics and the German gymnastics system, in general, in local and international competitions, as well as in the 1896 Olympics.

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