

THE TRADITION OF NAMING NEW GYMNASTICS STUNTS BY THE NAME OF THE FIRST PERFORMER IS GOOD, BUT...

This article describes existing tradition of naming every new gymnastic stunt by the name of first performer.

Note, that Today's Gymnastic levels are so high that they are unrecognizable. Mentioned is Japanese Phenomenon of maintained superiority in world-class men's gymnastics for 20 years. Shown are two examples of implemented forecasts by Gaverdovsky and Korenberg, who first performed Tkachev and Ginger respectively and are called by their names "Tkachev" and "Ginger". It's time to summarize the "But..." that has been mentioned in the Title and "Justice for all". The new stunts "Tkachev" and "Ginger" are begging to be called "Gaverdovsky-Tkachev" and "Korenberg-Ginger"! This would be true for all the four creative founders, two from which talented researchers and two master gymnasts. Each of these gymnasts not only creatively used scientific achievements and message, but also personally "forged" them foresightedly in the Olympic Gold Medals on High Bar.

Key words: existing tradition, gymnastic stunt, naming, justice for all, create, science foresight, biomechanics control.

*Disrespect toward one's predecessors
is shameful amorality*

Pushkin

A few words of Existing tradition

There is a tradition in the world of gymnastics. Every new gymnastic exercise is given the name of an athlete who enters it for the first time. Thus, achieving a great creative innovation is recorded in gymnastic history. The recognition of an athlete who first performs a new exercise is well deserved. Every new gymnastic exercise is the result of enormous creative effort, risk, and virtuosity. A new exercise demonstrates increased human possibilities and opens new ways of developing and enhancing this sport. Gymnastics is one of the oldest sports in the history of mankind and perhaps one of the most demanding of coordination. Gymnastics is a beautiful and thrilling spectacle to watch. A stunning effect was the first demonstration of Soviet Gymnastics at the Olympic Games in Helsinki in 1952 and the subsequent triumph at the next Olympic Games in Melbourne in 1956. Also, was the beginning of an intensive search of new exercises. It is quite natural that the new stunts are capable of promoting gymnastics to a higher level. A worthy contribution to it was invested by Japanese.

Japanese Phenomenon. It is natural that Japan understood and accomplished this before any other country. Japan already had the skills of assimilating the experience of other countries excelling in gymnastics; socially, economically, technically, and cultural affairs. This experience explains the phenomenon of the country's unique accomplishments. Japan followed the same route in gymnastics, and there was someone to learn from in excelling this sport. The World already knew Chukarin and Gorohovskaya, Shahlin and Latinina, Asaryan and Astahova, Shaginyan and Manina, Titov and Minayeva, Shtalder and Chaslavskaya etc.

Japanese exercises are now used in international gymnastic competitions. Japan maintained superiority in world-class men's gymnastics for 20 years. The contribution of Japan in the super difficult category has been investable: Tsukahara – High Bar (HB), Vault; Takemoto – FX; Honma – Rings, PB; Yamashita – Vault; Endo – HB. This last stunt "Endo" was performed for the first time at the Tokyo Olympics in 1964. The "Endo" is actually a reverse "Shtalder". It would be possible to mention many more gymnasts of various countries after whom new exercises have been named; this list would be long and impressive. I shall limit myself, however, to mentioning only a few of these innovators who are particularly outstanding: Tsukahara, Takemoto, ; Honma, Yamashita, Endo (Japan).

Today Gymnastics are unrecognizable. But the predecessors' names still revered: Adler, Ginger, Janz (Germany), Azarian, Chaguinian (Armenia), Andrianov, Bilozerchev, Burda, Yurchenko, Voronin, Markelov (Russia), Delchev (Bulgaria), Comaneci (Romania), Menichelli (Italy), Shachlin, Makouts, Porplenko (Ukraine), Maduar, Egervary, Eberle (Hungary), Thomas (USA) etc. They have worked hard and admirably and have rightfully earned a place in the annals of World Gymnastics. **Gymnastics takes prides in them. Gymnastics also has every reason to be proud when such tradition is used in other sports.**

For instance, a magnificent and astonishing style of High Jump. Dick Fosbery, an engineering student at Oregon State University, independently worked out and put into practice an absolutely new style of high jumping. He won the Gold Medal at the Mexican Olympics in 1968. From that time, all high jumpers in the world have used the same technique that was created by Dick Fosbery and have named: **"Fosbery-Flop"**. It is significant that jumper

control actions in the unsupported phase provide maximum deflection position back to the bar and pass under bar the jumper CG (biomechanics of control actions in all phases of unsupported jumps and gymnastic tricks are one).

Justice for all

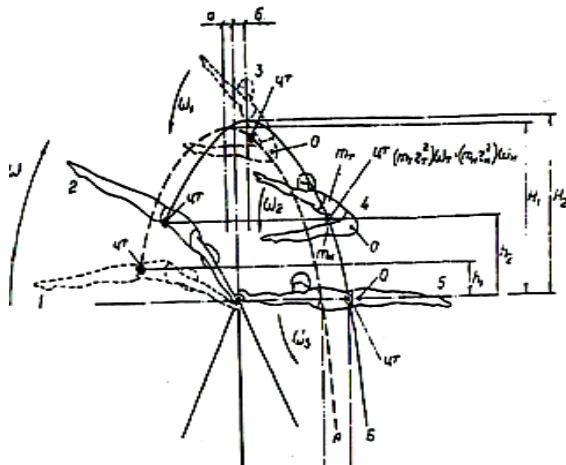
Just two examples in search for Justice. Alexander Tkachev (Russia) was a first performer of a new stunt: "from giant back, by big swing forward, flight back over High Bar, feet apart, in hang". This new stunt was recognized and has been named by the first performer – "Tkachev". Eberhard Ginger (Germany) was a first performer of a new stunt: "large swing forward back somersault having bent with turn-around in catch in hang". This new stunt was recognized and has been named by the first performer – "Ginger". However, not everyone knew that the Moscow scientist Yuriy Gaverdovskiy have researched the first of these exercises to determine the possibility and suitability of its introduction into gymnastic practice. He even made an imitator model of gymnast executing this exercise that he jokingly called "John". For a long time, colleagues and trainers did not believe in the feasibility of this difficult exercise: from giant back, by big swing forward, flight over High Bar, feet apart, in hang (picture1). And also not everyone knew that the scientist Dmitry Korenberg worked out, proposed and published in his article "Alone with exercise" (in the journal "Gymnastics", Moscow, 1970): large swing forward back somersault having bent with turn-around in catch in hang. It took Eberhard Ginger eight years to master this exercise before he performed it for the first time.

Both of these exercises have become very popular and to date, often in difficult combinations and variants; in other words developing. Of what kind of justice are we possibly talking about when the names of both talented scientists, who saw it and prophetically foresaw and predicted the future in these particular amazing tricks, have been "forgotten"? The answer speaks for itself: "The recipe of justice is obvious":

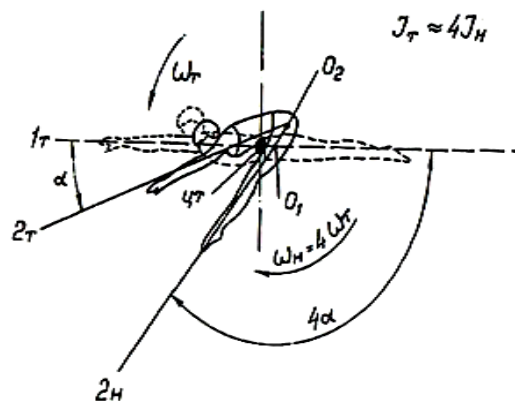
It's time to summarize the "But..." that has been mentioned in the title as well as with the "Justice for all". The new stunts "Tkachev" and "Ginger" are beginning to be called "**Gaverdovsky – Tkachev**" and "**Korenberg – Ginger**"! Each of these gymnasts not only creatively used scientific achievements and foresight, but also personally did "forge" them foresightedly in the Olympic Gold Medals on High Bar.

Scientific support of new tricks

A few words about supported and unsupported phases at stunts. In this small section which presents only a few simple biomechanical models (Pictures 1-4), which is a schematic describing the features of the technology "Tkachev". Why small, simple and few? Because more broadly and detail scientific aspects of current and future tricks described in the "Textbook" on a special course "Fundamentals of Technology gymnastic exercises" (Kiev, Киев, "Научная Книга", 1992). Picture 1 include similar initial positions and pose of gymnast (1 and 2), the Parabola paths his Center Gravity 0, like limit early and late passage of a phase without support (3,4 and 5 -specific posture at different points of the trajectories).



Pic.1



Pic.2

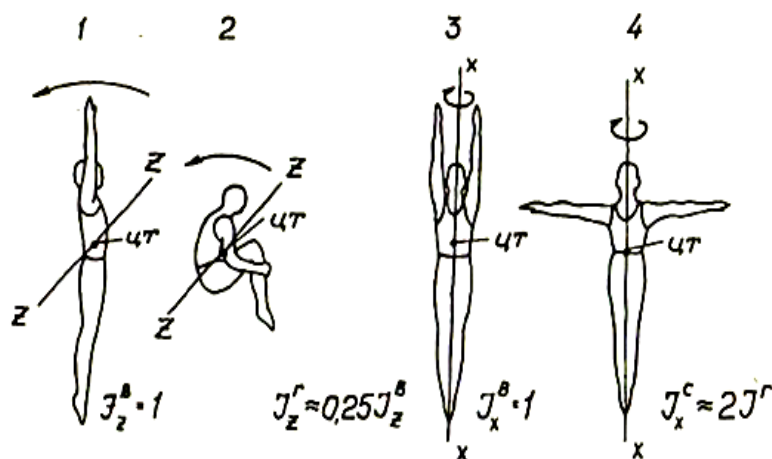
Pictures 1 presented: the initial positions of gymnast (1 and 2), the paths of Center Gravity 0 (CG) (A and B) limited early and late passage of a phase without support in reference to the unsupported and specific posture at different points of the trajectories (3, 4 and 5).

The body of a gymnast in motion over the crossbar complex by a parabola. The parameters are determined by previous actions on support, which gymnast cannot change in motion. The body itself is rotating about an axis passing through the CG. It is also clear that the gymnast can not have flight phase at all performances at the same trajectory parameters of CG. It will be held at the time of grip closer (which is not desired because it leads to bent arms) to or further away from the bar.

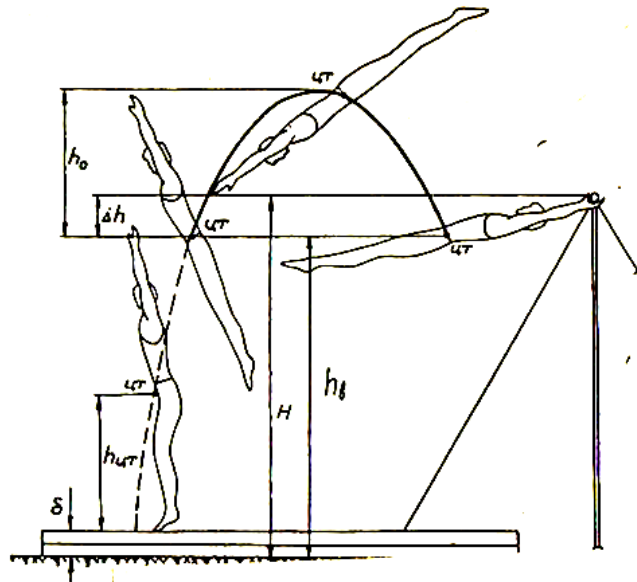
Therefore, it is important to find reliable ways to complete the flight phase with straight arms. Picture 2 explains biomechanical mechanism of this by law of conservation of angular momentum. What is being done by bending of body and legs apart (Picture 1 and Picture 2). In picture 1 on the limit trajectory B is obvious that a

gymnast, continuing to move along a path without changing the posture, is not grabbing over the crossbar. But at picture 2, he can vigorously straighten up and go to position 5 (Picture 1), hands moving forward and taking a secure grip of the crossbar. On picture 1, it is obvious that starting provisions of the gymnast and a trajectory of his CG are given upon maximum permissible during early and late transition from the basic period without support at execution "Tkachev" (a big move forward flight, having bent feet separately in back with hung), and also its characteristic provisions and poses in various points of trajectories.

While an athlete's body is in flight phase, movement is difficult: a body that moves on the parabolic curve is determined by previous actions on support which the athlete can't change in flight, and the body rotates around an axis, passing through CG. Obviously, the gymnast's Center of Gravity can't pass all executions by the time of grip closer or farther from a crossbeam. Gymnasts prefer to be mistaken in the near party that at least provides reliable grip with the bent hands. However it is connected with small price but not all take it. Therefore it is important to find reliable ways of a flight phase with straight arms. The gymnast can operate in certain limits of provision of separate parts of a body in space (that, naturally, doesn't change a trajectory CG). Let's sort this question on an example of bending and unbending of a gymnast without a support phases (Picture 2). It is well known that force rotation is unnecessary when attempting a back somersault and keeping a straight body as well as using a crossbar. Rather, it must be constrained in order to avoid twisting and falling on one's back. Figure 4 shows the design scheme "back flip with a straight body with a kick." Immediately it should state the obvious code name "flip" in this case, because the gymnast moves away from the bar into the position closest to the horizontal, so that the rotation is 0.75 somersault turnover, or 270 degrees. Dismount, "triple somersault contains respectively somersault rotation of 990 degrees, or 2.75 turns. We know that (Figures 3.1 and 3.2 and Figure . 4) at the time of withdrawal of the moment of inertia of the gymnast body four times its moment inertia pose groups that the law of conservation of angular momentum increases four times the speed of rotation of the gymnast in motion, with a reserve, which is sufficient to perform a triple somersault. These estimates are released by me and reserved at the Copyright (c) in 1992 []. Today triple somersault is performed by many gymnasts. Not only from the crossbar, but as well from gymnastic rings and platforms; Yuri Porplenko was the first one to perform it in 1995 at the USSR Cup in Yerevan and titled "Porplenko". "Seditious" question:



Is it possible to quadruple somersault?.. The law of conservation of angular momentum predicts the answer and the question ... In the quadruple somersault one must perform the rotation of 1350 degrees, or 3.75 turns. Double somersault with a straight body are now being done by many gymnasts (1.75 turns, or 630 degrees). Obviously, to perform a quadruple somersault rotation, speed should be increased to $n = 1350:630 = 2,14$ times, which as we have seen above can be achieved by grouping. Thus, the biomechanical capabilities of the gymnasts quadruple somersault already provided high coaching qualifications, state of the art high speed, striking technique departing from the support, perhaps, technical training (mandatory training equipment, training systems etc.



Picture5

When will overcome highest psychological barrier? When the level will raised to limit vestibular cortical features to the level of requirements quadruple somersault?

Gymnastics are waiting for the first performer. I do not know where, when, and by whom it will be achieve, but gymnastics genius Dimitriy Bilozerchev once said that in today's appropriate conditions quadruple somersault are being rehearsed...

Last but not least

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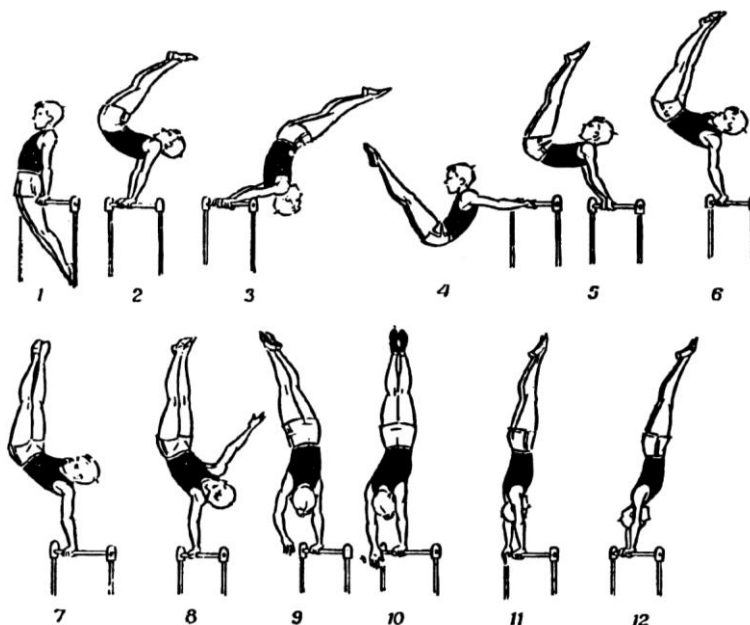
Thus, development of gymnastics includes creation of new stunts too. Alas, the Gymnastics waits challenger frequently a lot of time. Already half a century in memory there are giants in handstand and front grip performs by Paul Stolbov. A dozen years later Sergey Diamidov introduced a new great trick, named "Diamidov." The idea of connecting them to a new trick interest so far.

Biomechanically justified element is constructed (for lack of sufficient technical readiness gymnasts form visual representation of what was carried out with the help of support boundary pose and wiring young-gymnast, consistent photographic poses to the boundary, the phases and stages of action and animated reconstruction). We are pleased to state that in a risen element – one of the consequences of the original understanding of the classification scheme Gaverdovsky (only a part of the pin (Turnable) (6-3-2), published in a splendid article "Turns around the arm, snapping their puzzles and paradoxes" in the Magazine "Gymnastics", number 2, 1971, Moscow." "- represents a connection into the beautiful and perhaps one of the most demanding of coordination trick both known elements": "Czech Giant" (2-5) and "Diamidov"(6-12). Its full terminological Title is so long (it is intended for use at university education). We are advised at practice to call it as "Diamidov" from "Czech giant". "Sequence (1-12) is showing that the first part (2-5) of the new stunt is "Czech Giant", and second part of one (6-12), as a matter of fact, is "Diamidov".

An example, propose its own invention. A terminological title offered and described: "GIANT BACKWARDS IN REAR HANG BY ORDINARY GRIP WITH FULL-TWISTING ON ONE ARM TO HANDSTAND OR HANG" – represents an unfortunate move to "Diamidov" from Parallel Bars (PB) to Horizontal Bar (HB) which is considered more complicating in initial terms of body positions, grips, and its biomechanics parameters would begin to depend on the quality of the performance. It is natural, and only perfect to perform both. "Czech Giant" and "Diamidov" are hoping of connecting them in a new beautiful stunt.

It is perhaps one of the most demanding of coordination stunts to put it into gymnastic practice. Every new gymnastic exercise is the result of enormous creative effort, risk, and virtuosity. A new exercise demonstrates increased human possibilities and opens new ways gymnastics developing and enhancement. And then the List of glorified names of HB stunters Tsukahara, Tkachev, Stalder, Endo, Voronin, Markelov, Deltchev, Ginger, Pogorelov, Jager, Koste, Heyger, Steinemann etc, whose Perfect elements on HB and are now used in international gymnastic competitions remaining up to this time very popular, will be added by name of new Challenger.

At deeper interpretation of the basic techniques, training methods of this example is included in: university textbook on special courses "Selected topics gymnastics", Kiev, Copyright: © Leykin M.G., 1992; university textbook "Selected sections of biomechanics in gymnastics", Radom, Poland): Polytechnic Institute, 1997, pp. 180 (in Polish), Copyright: © Leykin M.G., 1997; at Ninth all Russia Biomechanics Symposium, "Mark G. Leykin, D. Biloztrchev, A. Bilozerchev, article "Biomechanics substantiation and creation new gymnastics stunt", Nizhny



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ХОРОШАЯ ТРАДИЦИЯ НАЗЫВАТЬ ИМЕНЕМ ПЕРВОИСПОЛНИТЕЛЯ НОВЫЙ ГИМНАСТИЧЕСКИЙ ТРЮК, ОДНАКО...

Статья посвящена существующей традиции именовать каждый новый гимнастический трюк именем первоисполнителя. Указано что сегодня уровень гимнастики как никогда высок, и продолжает подниматься невиданными темпами во всех видах многоборья, как в командной, так и в личной борьбе... Кратко описан японский феномен двадцатилетнего мужского превосходства (конец пятидесятих – начало восьмидесятых) и стимуляторы этого – успехи в создании массы новых гимнастических трюков, небывалых Рисков, Оригинальности, Виртуозности. Приведены размышления о недооценке роли достижений теоретиков гимнастики в процессе гимнастического творчества учитывать в названии новых трюков и имен теоретиков, сработавших на трюк. Приведен возможный вариант справедливого исправления Прогнозы Гавердовского и Коренберга впервые исполненные Ткачевым и Гингером соответственно названы их именами "Ткачев" и "Гингер". Пришло время подвести итоги "Но...", который был упомянут в названии и "Правосудие для всех". Новые трюки "Ткачев" и "Гингер" "просят называть их "Гавердовский-Ткачев" и "Коренберг-Гингер"! Это было бы верно для всех четырех творческих учреждений, двое из которых талантливые исследователи и пророки и два элитных мастера. Каждый из которых не только творчески использовал научные достижения и прогнозы мыслителей, но и лично "выковал" из них по Золотой Олимпийской Медали на перекладине.

Ключевые слова: существующая традиция, гимнастический трюк, правосудие для всех, научное предвидение, контроль за биомеханическим контролем.

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