



Biathlon shooting I

Biathlon History

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Preface

Only with the understanding of where we come from, we can know where we want to go and will go. This is also true for one of the most fascinating sports - biathlon.

This book is intended to provide an in-depth look at the development of the sport of biathlon as we know and love it today.

The interested reader learns confirmation of his knowledge and hopefully also some new things about the biathlon sport.

I wish you an informative read and would be pleased to receive additional suggestions from the readership.

I would like to thank all the supporters of the venture to publish my first little book, without being able to list them all here.

Hendrik Engelhardt

Historical development of the biathlon sport

Early period

The historical development of the biathlon sport is closely linked to the development of various spheres of human society.

First of all, it is necessary to think about the satisfaction of the most basic needs in early history. The hunter-gatherer peoples were also forced to go hunting in winter. They did this with the weapons at their disposal and also already on ski-like structures. This was necessary to be able to follow the game in the deep snow. So they hunted the game above the snow and killed it with spears and bows and arrows. It had to be shot or thrown at targets over longer distances under physical strain to ensure survival.

Of course, there were also

distribution struggles. This also in the winter. Here, the skills and abilities used on the hunting, which was necessary for survival, were applied to the fight for survival against an equal opponent. It must be assumed that here the same means were used as for hunting.

Certainly, both „applications“ of the ability and skill to hit a target, over further distances with appropriate weapons under load, influenced each other. Both also had to be successfully applied over snow in winter.

Confirmation of these assumptions of skiing hunters and fighters can be found in about 5000 years old bog finds and Arctic Stone Age art. The most famous example is the „Skihaserl von Rödöy“. This is a rock carving on the Norwegian island of Rödöy, which shows a hun-

ting skier wearing a hare mask. Further evidence is the image of a skiing archer, which is dated to the 2nd millennium BC. Aids for hunting and military confrontation were probably exclusively types of gliding skis. At first, however, braided snowshoes/



Uller – Illustration in an Icelandic manuscript by 1760 | Image credits (<http://www5.kb.dk/permalink/2006/manus/738/dan/92+verso/>)

tires were also used so as not to sink too deeply into the snow. To glide over the snow, split and smoothed logs were used. This explains the origin of the term

ski used today. In the Norwegian language, „ski“ means nothing other than „split wood“.

The roots of hunting and duel in winter on skis or ski-like structures are also found in Nordic mythology. In these myths there is a god of winter, hunting and duel, pasture and field named Uller. He was and is often depicted on skis, equipped with a weapon. Later, these images became the talisman of winter sports enthusiasts. This goes so far that circular pendants with winter sports motifs are still called „Uller“ in the Ore Mountains.

Ancient

In ancient times, the first written records of hunters on skis can be found in Rome, Greece and China. A written account of ski hunting by the Roman poet Virgil dates from around 400 BC. Before and around the turn of time, there are written records

of battles between warriors equipped with snow tires and skis, e.g. by Xenophon, Strabon, Arrian, Theophanes, Procopius and Acruni¹.

Modern times

The usefulness of skis in combat in winter conditions, in connection with the constantly advancing development of more usable firearms, forced the confrontation on skis. This was due to the climatic conditions, especially initially in the Scandinavian countries and in Russia. There, the first ski regiments were established and deployed as early as around 1550.

These troops were trained accordingly for this special mission. An integral part of the training was, of course, the use of skis as an essential element of mobility and the use of firearms.

Thus, in combination of both skills, military patrolling also became an integral part of the training of these troop contingents.

The first known biathlon competition was probably held in 1767. In this competition, soldiers carried weapons and shot at targets 40 to 50 paces away during the race. This competition took place near the Norwegian-Swedish border.

In the late 19th and early 20th centuries, military skiing and folk skiing influenced each other quite differently in the various European countries. A major impetus was given above all by Fridtjof Nansen's Greenland crossing in 1888.

Norwegian skiers subsequently had a significant influence on skiing throughout Europe. From Norway it is known above all that in 1912 a single patrol race with two shooting sessions of 10 shots each was

1 See also Nitzsche, K. et. al.: *Biathlon, Leistung-Training-Wettkampf*, Bundesrepublik Deutschland: Limpert Verlag GmbH 1998, S.1

carried out.

In Germany, popular skiing initially developed driven by Norwegian students in Freiburg in the Black Forest. This subsequently led to the founding of the German Ski Association, as a national umbrella organization of the already existing ski clubs and associations, in Munich in 1905.

As early as 1892, the first attempts at military ski training were made in the Prussian Goslar Infantry Regiment 82 („Goslar Hunters“) on the orders of the Prussian War Ministry. In the fall of 1893, the Prussian Jäger battalions 4, 8, 10 and 14 stationed in Colmar and Schlettstadt in Alsace received the first snow boots of Norwegian origin. Despite the first practice runs and activities in the Vosges, in the area of the „Belchen am kahlen Wasen“, the military value of ski training was much more clearly recognized and vehemently propagated from the civilian side. Thus, as early

as 1896, the Black Forest Ski Club invited the Schlettstadter Jäger battalion to races. In January 1897, a „hunter's race“ was held for the first time on



Norwegian ski soldier, drawing published in 1811 | Image credits (in [\[11\]](#))

the Feldberg. In this 29 soldiers and NCO's of Schlettstadter Jäger battalion participated. In the winter of 1902, the Black Forest Ski Club introduced a new type of competition, patrol skiing, and in 1905, when the German Ski Association (DSV) was founded, gave the suggestion that it should consider it its main task to train useful skiers

for the army. Despite the introduction of skiing in the cadet schools, in the war schools and in some battalions, even the two Bavarian Jäger battalions had partially received snow shoes in 1901, the possibilities of military skiing were not given the necessary importance. Thus, the establishment of independent ski hunter units and units was not thought of for a long time. Training on snowshoes or skis was still only an appendage in the overall training of the Jäger units. Prussian Jäger officer Wilhelm Paulcke, an enthusiastic mountaineer, skier and founding member of the DSV, reflected on this in the „Ski Chronik“ of 1910/11. He came to the logical conclusion „[...] that with this ski training operation, the German Army would have too few

skiers available at the front in an emergency during a snowy winter [...]“. He suggested „[...] to establish voluntary ski corps and to train the soldiers especially in reconnaissance, patrol and reporting service [...]“².

It was not until after the First World War, at the beginning of the winter of 1914/15 in the Vosges, that the well-trained French „Chasseurs Alpains“, who were able to ski, were encountered, that the formation of their own German snowshoe battalions was started.³ On October 14, 1914, the „DSV Committee for the Formation of the German Voluntary Ski Corps“ issued an appeal „to the skiers of Germany“ urging them to join the snowshoe force. Dated November 13, 1914, the Royal Bavarian War Ministry ordered the for-

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- 2 See also [Gunter, Georg: Die Deutschen Skijäger. Von den Anfängen bis 1945, Friedberg \(Dorheim\): Podzun-Pallas-Verlag 1993, S.7-8](#)
 - 3 See also [Roland Kaltenecker: Das Deutsche Alpenkorps im Ersten Weltkrieg: von den Dolomiten nach Verdun; von den Karpaten zum Isonzo, Graz, Stuttgart: Stocker-Verlag 1995, S.7](#)

mation of Snowshoe Battalion No. 1 in Munich, effective November 20, 1914. Shortly thereafter, the Württemberg Snowshoe Company No. 1 followed, and from December 1914, the Snowshoe Battalions No. II, III and IV, which were combined to form the Jäger Regiment No. 3. The soldiers of these units later formed part of the core of the German Alpine Corps.

In France, skiing did not initially develop through sports or tourism, but was used and developed directly in the military. As part of training and education, early patrol runs took place with the Alpine troops („Chasseurs Alpins“) and the Mountain Artillery.

In Italy, skiing initially developed in a civilian manner comparable to Germany. With the establishment of the Alpine Corps in 1902, these skills were directly harnessed for the military. After the First World War, military ski training was carried out almost cross-sectionally throughout the

Italian army.

In Austria, the development of skiing and its application took place comparable to that in Germany. Civilian and military skiing influenced each other. The Austrian Zdarsky adapted the Nordic skiing technique and Nordic skis to the Alpine (steeper) conditions. He shortened the usual Scandinavian 3m skis to a length of 1.8m, sawed out waists at the height of the bindings, and modified the bindings so that not only the bale was attached. This created the conditions for the transition from the Nordic telemark technique to what was then called the „Alpine“ skiing technique. The foundation of the Austrian Ski Association took place together with the DSV in Munich in 1905. In 1891 and 1893, the first guidelines for ski training in the Austrian army were issued. A military high altitude skiing was formed under Bilgeri. Since 1906, skis were manufactured in military workshops.

From Switzerland, the first skiing attempts of the „Gott-hard-Forti“ are known from the year 1893. Regular ski courses for officers and patrol runs quickly became an integral part of all Swiss military units. With the troop regulations of 1911, mountain troops were established and equipped for the first time. This included the equipment with skis. This troop proved itself during the border security of 1914 - 1918. In the 1920s, the importance of military ski training was once again strengthened within the framework of the Troop Regulations of 1925. Here, for the first time, voluntary off-duty mountain training was also regulated in the form of ski courses and the military patrol run of the Swiss Ski Association. Mountain training, and with it ski training, gained further increasing importance in the period before and during the Second World War. Thus, the defense of sovereignty was to take place primarily in

the mountains. This was also reflected in the training. Thus, in 1943, the first Patrouille des Glaciers (a ski mountaineering competition that still takes place today) was held, and military patrolling and corresponding competitions became an integral part of training.

Military patrol competitions were also held in the Soviet Union as part of the training of ski troops. This was the continuation of an old Russian tradition. In 1924, competitions were held in which the soldiers had to carry a gun, 8kg of black powder and 400g of grenades. They shot at balloons at a distance of 100m and ran over a distance of 25-30km.

Biathlon as a World Championship and Olympic Sport

As a demonstration competition, the ski patrol race was on the program at the first Winter Olympics in Chamonix in 1924, and then also in 1928, 1936 and 1948.



German military patrol in St. Moritz 1928 | Image credits (<https://www.thefirearmblog.com/blog/2014/02/12/military-roots-olympic-biathlon/>)

At the urging of the Scandinavian countries, the Swedish proposal to recognize the combination of cross-country skiing and shooting as an individual

Olympic competition was accepted at the 43rd session of the International Olympic Committee in Rome in 1949. The term biathlon is used for the first time in the 1955 rules after the IOC recognized biathlon as an Olympic sport in 1954. The development of biathlon as a competitive sport at the international level began in 1957 after the Union Internationale du Pentathlon Moderne (UIPM) accepted biathlon as an international professional association⁴.

After this decision, a rapid development of winter duet began. It was decided to hold annual world championships. The first one took place in 1958 in Courmayeur (ITA), where 25 athletes from 7 countries com-

4 See also „Biathlon in the UIPMB“ on page 11

peted in the only discipline - the 20 km biathlon individual race.

Annual German championships have also been held since 1958. The Olympic premiere of biathlon took place in 1960 in Squaw Valley (USA). After elimination competitions between the Federal Republic of Germany (FRG) and the German Democratic Republic (GDR), an all-German team also participated in these Games. Since that time, German biathletes have participated in Winter Olympics.

The rapid development of women's sports has not bypassed the discipline of biathlon. The UIPMB adopted the rules for women's competitions at its congress in Sarajevo (former Yugoslavia) in 1980. In 1981, the first international women's competition was held in Jachymov (former CSSR). In 1984, the first Women's Biathlon World Championships were held in Chamonix (FRA). These were held separately from the men's World Championships up to and

including 1988. In 1989, the first joint women's and men's World Championships took place in Feistritz (AUT). The IOC decided to include women's biathlon in the Olympic program in 1988. Since the 1992 Winter Olympics in Albertville (FRA), women biathletes have also competed in Winter Olympics. As with the men, the international competition program includes World and European Cup races as well as continental championships. Women compete in the same disciplines as men, but with reduced distances. The development of women's biathlon has been so rapid that today it is in no way inferior to men's biathlon.

The number of participants in the competitions of the World Cups became so large over the years that the IBU decided to introduce further competition series.

Thus, with the 2008/2009 season, the so called IBU Cup was introduced. This competi-

on series was initially called the European Cup since 1982/83 (women) and 1988/89 (men). The IBU Cup is the competition series below the World Cup. It also serves as a qualifying competition series for the World Cup. All nations use the IBU Cup to prepare young athletes for the World Cup.

Since the 2008/2009 season, a European Championship has been held in addition to the World Championship.

A separate European Youth Championship has been held since the 2015/2016 season. In addition, the IBU Junior Cup was established this season. It serves to introduce young junior athletes to the international performance comparison.

Development of the biathlon structures

Biathlon in the

UIPMB

Prior to the founding of the Union Internationale du Pentathlon Modeme (UIPM) on August 03, 1948, the Modeme Pentathlon was directly managed and promoted as an Olympic sport by the International Olympic Committee (IOC) from 1912 to 1948. Efforts in IOC circles to create a „winter mirror image“ to the Modeme Pentathlon resulted in a Winter Pentathlon that operated from 1930 to 1940.

At the 1948 Winter Olympics in St. Moritz, Switzerland, this form of competition was held as a demonstration sport with the disciplines of steeplechase, fencing, pistol shooting, cross-

country skiing and downhill skiing. Later, it was declared by the IOC that this competition had no Olympic future. Nevertheless, there were further efforts to create a winter pentathlon with other individual disciplines, but without reaching an agreement. Opinions began to prevail that favored a combination of only two sports - cross-country skiing and rifle shooting. The Swede S. Thofelt pushed this idea through and also convinced the later IOC President E. Brundage of the advantages of this combination over all other forms of winter pentathlon.

In 1955, biathlon was included in the program of the 1960 Winter Olympics, after being recognized as an Olympic sport in 1954. In 1957, the UIPM took on the responsibility of hosting annual world championships.

In 1967, the name of the international federation was changed to Union Internationale du Pentathlon Moderne, Biathlon (UIPMB).

The statute of the UIPMB, confirmed in 1972 and supplemented in 1976, guaranteed the equal membership of Modern Pentathlon and Biathlon in the Union. The statute included, among other things, that both sports were managed by the executive of the UIPMB, that the responsible board - pentathlon or biathlon - was responsible for the sport-specific issues and that the annual congresses passed resolutions in this regard.

The highest body of the UIPMB was the General Assembly, which met in each Olympic year. The Plenary Assembly elected the Board of Directors, composed equally of eight members each from Modern Pentathlon and Biathlon, as well as the Executive Board of UIPMB, formed by the President, the Vice President

for Modern Pentathlon, the Vice President for Biathlon, the Vice President for Information, the Treasurer and the Secretary General.

Foundation of the IBU

As the sport of biathlon became more and more representative in the 80s of the 20th century and international federations joined biathlon to an increasing extent, there were efforts to found an own international federation. The biathletes expected more independence and better economic conditions for the rapid development of the sport. On June 2, 1993, the International Biathlon Union (IBU) was founded in Heathrow near London as the top organization of the biathlon sport. However, it initially continued to be a member of the UIPMB. Then, in 1998, the fully separation

from the UIPMB was completed in Salzburg (AUT) and the IBU became an independent international professional federation recognized by the IOC. Thus, biathlon is the only ski sport that is not subject to the Federation Internationale de Ski (FIS).

The International Biathlon Union is the union of the national federations in which biathlon and biathlon-related sports are practiced.

The IBU currently has 56 member federations as full members.

The highest body is the Congress, in which all member associations are represented. Subordinate to the Congress is the Executive Board, which is the executive body. The IBU Executive Board is composed of the President, the Vice President and the Heads of Departments for Sport, Finance, Marketing, Information and Development. The Secretary General of the IBU conducts the business of the IBU as an

employee. The IBU Committee includes the members of the Technical Commission, the Medical Commission, the Development Commission, the Marketing Commission, the Information Commission, the Legal Committee and the Athletes' Commission.

Biathlon development in Germany

In the following, the development of biathlon in both German states after the Second World War is presented separately for reasons of clarity. This, although the development of biathlon sport in Germany took place more or less together and mainly in mutual competition. For example, it is interesting to know that until one finally competed in the 1964 Winter Olympics (Innsbruck, AUT), there were joint Olympic teams. This was also true for the biathletes. Before the Winter Olympics, they regularly had to win all-German qualification competitions in order to be able to start as part of the joint team.

Biathlon in the former GDR

The first German biathlon championships were held in the former GDR in Klingenthal in 1958. The first GDR champion, as the winner in the individual race, was Cuno Werner from ASK Oberhof.

The further development of biathlon in the former GDR is closely linked to the two clubs ASK Oberhof in the Thuringian Forest and SG Dynamo Zinnwald in the Ore Mountains.

In 1959, the committee of the Army Sports Association decided to form its own biathlon team. For this purpose, ASK Oberhof was used as a framework. Initially, 15 athletes were selected as biathletes, who did not meet the high standards of cross-country skiers. At the be-

ginning there were accommodation problems of the athletes themselves, so that they had to be accommodated in the Kammerbacher Pirschhaus, away from Oberhof.

Biathlon was not yet Olympic at that time. Nevertheless, the foundation of the biathlon department obviously took place with the confidence or the knowledge that biathlon would soon become an Olympic discipline.

With the year 1960 and the holding of the first Olympic biathlon competitions, the position of biathlon in the ASK was clearly consolidated. With the construction of a new infrastructure at the Grenzadler in 1961, significantly better infrastructural conditions were created.

Hans-Gert Jahn's winning of the relay bronze medal at the 1970 World Championships (Östersund, SWE) also marked the international breakthrough for athletes of the ASK.

At the end of 1970's, the

athlete Frank Ullrich and the coach Kurt Hinze achieved more and more lasting success. Frank Ullrich won the gold medal in sprint competition at the 1980 Winter Olympics (Lake Placid, USA) and a total of nine titles at world championships. ASK Oberhof provided further world champions and Olympic champions in the following years. At the 1982 World Championships (Raubichy near Minsk, former USSR), the GDR relay team, consisting exclusively of ASK athletes, won the World Championship title. This has never again been achieved by a team from a club.

In 1982, another important infrastructural step was taken with the construction of the shooting hall. At the same time, the Oberhof biathlon stadium, today's DKB Ski Arena, with shooting range and tracks, was built in 1981 and 1982. This created optimal training conditions. In 1984, the first Biathlon World Cup took place in Ober-

hof. Since then, Oberhof has been an integral part of the Biathlon World Cup calendar and has also hosted Biathlon World Championships.

It was only in the last years of its existence that a women's biathlon team was formed in the ASK from previous cross-country skiers.

In addition to the ASK Oberhof in the Thuringian Forest, the SG Dynamo Zinnwald was founded in the Ore Mountains, in the region of Zinnwald/Altenberg on 15.10.1956 as a simple sports community of the SV Dynamo. Initially, this was primarily focused on Nordic skiing. In addition, however, already at the beginning of its existence there were also active people who pursued the biathlon sport. From 1959, the SG was developed into a regional biathlon center by decision of the central management of the Dynamo Sports Association. This led to the restructuring of the training

facilities and a targeted promotion of young talent. In 1960, Heiner Gerth was the first Zinnwald biathlete to take part in the Winter Olympics (Squaw Valley, USA).

In 1964, SG Dynamo inaugurated a new club building in Georgenfeld, which replaced a simple hut and significantly improved the infrastructural conditions. The importance of biathlon increased continuously in



Andre Sehmisch in the running suit of the former GDR | Image credits (<http://www.andresehmisch.de/>)

Zinnwald during this time, while the importance of Nordic skiing declined. In 1967 Altenberg, to which Zinnwald belongs since 1994, hosted the 8th Biathlon

World Championships. In 1974, the Children's and Youth Sports School was founded in Altenberg to promote young talent in various winter sports. This was closely connected with the SG Dynamo Zinnwald. In 1988, a shooting hall was also inaugurated in Zinnwald. In July 1989, the training of a biathlon women's training group started.

The SG Dynamo Zinnwald produced, just like the ASK Oberhof, well-known biathletes and biathlon coaches. Especially Dieter Speer, Klaus Siebert, Frank-Peter Roetsch and Andre Sehmisch should be mentioned here. These biathletes alone have won countless world championship titles and Olympic victories. Klaus Siebert won the overall World Cup in 1979. Frank-Peter Roetsch succee-

ded in 1984, 1985 and 1987 and Andre Sehmisch won the overall World Cup in 1986.

On the national level of the former GDR, both clubs engaged in a continuous duel. In the end, SG Dynamo Zinnwald celebrated the most championship titles in the relay (without military patrol) and ASK Oberhof one victory more in the individual competitions individual and sprint.

After the founding of the Saxon Winter Sports Association Altenberg e. V. on August 7, 1990⁵ as Dynamo's successor, the squadron from the Erzgebirge with Roetsch, Heymann, Sehmisch and Groß became the first all-German relay champions in 1991⁶.

The biathlon sport in the former GDR was essentially sup-

5 In October 1992 after merger with SV Zinnerz Altenberg (formerly BSG Stahl Altenberg) merged into SSV Altenberg.

6 See also [Stationen in der Entwicklung des Biathlonsports in der Region Zinnwald/Altenberg: von https://www.wiedersehensrennen.de/assets/files/pdf/stationen.pdf](https://www.wiedersehensrennen.de/assets/files/pdf/stationen.pdf), letzter Abruf 16.01.2021

ported by the state organs. The army sports club Oberhof belonged to the army sports club Vorwärts of the National People's Army and the sports club Zinnwald belonged to the sports club Dynamo of the internal security organs of the GDR (People's Police, Ministry of State Security and Customs Administration).

Biathlon in the FRG

In the Federal Republic of Germany, the sport of biathlon has been in the shadows for much longer than in the former GDR.

Initially, there were mainly participations of competition teams in the military patrol at the International Military Ski Championships within the framework of the Conseil International du Sport Militaire (CISM). Until well into the 1960s, the closeness to military patrol skiing was negatively attributed to the civilian biathlon sport in the Federal

Republic. There was talk of a „hermaphrodite discipline“ and comments to the effect that it was difficult to understand what sporting cross-country skiing should have to do with shooting. This resulted in less or no promotion compared to alpine and Nordic winter sports athletes. In addition, up to and including the 1964 Winter Olympics, biathletes from the Federal Republic regularly failed to beat biathletes from the former GDR in the qualifications for the joint Olympic team.

This only changed significantly with the successful staging of the Biathlon World Championships in 1966 in Garmisch-Partenkirchen and Kaltensbrunn. As a result, biathlon also became popular in the Federal Republic. In March 1969, a biathlon association was founded, which remained dormant until its dissolution in 1994. This was mainly due to the fact that the DSV became aware of the attractiveness of the biathlon

sport and gave it appropriate weight, especially through the then Secretary General Hans-Heinrich Kirchgasser. As a result, the biathletes in the Federal Republic became at home in the DSV, as is still the case after reunification.

The biathlon sport was decisively influenced at its congress in 1976 (Seefeld, AUT) above all by the representative of the Federal Republic. Thanks to the cooperation of the officials from the Federal Republic (Michl Pössinger) and Austria (Hofrat Dr. Josef Deflorian), all countries agreed to the change to small bore rifle at this congress. Thus the biathlon in the Federal Republic had a decisive influence on the worldwide biathlon.

With a 12th place by Theo Merkel from Ruhpolding at the Olympic Winter Games in 1968 (Grenoble, FRA), the develop-

ment of the biathlon sport in the Federal Republic shifted more and more to Ruhpolding⁷. There, appropriate infrastructure was created and more and more, also international competitions, were held. The first world championships (already with the small bore rifles) took place in Ruhpolding in 1979.

In addition, biathlon was practiced and further developed in the Federal Republic in the Black Forest (at Notschrei), in the Bavarian Forest (1975 biathlon stadium Innenried near Zwiesel and from 1984 at the Großer Arbersee), in the Sauerland (Winterberg), in the Harz (Clausthal-Zellerfeld) and furthermore in the Werdenfelser Land (Kaltenbrunn and Mittenwald). In the Federal Republic of Germany, competitive sports were also supported by state institutions, primarily the German

7 See also [Bader, Josef: Michl Pössinger - Lebensbilder eines Gebirgsjägers, Bundesrepublik Deutschland: Eigenverlag Josef Bader 1998, S.180-182](#)

Armed Forces with their sports support groups, the former Federal Border Guard and the customs authorities.

At the end of the 1970s and the beginning of the 1980s, the first successes in duels with athletes from the GDR began to appear. The first medal at world championships was won by the biathlon relay team of the Federal Republic at the world championships in 1978 (Hoch-



Peter Angerer | Image credits (https://www.sc-hammer.com/?page_id=271)

filzen, AUT) with a 3rd place. At the 1980 Winter Olympics (Lake Placid, USA), the relay team from the Federal Republic won bronze behind the re-

lay team from the GDR. Peter Angerer from Ruhpolding won the first individual medals at the 1983 World Championships (Antholz, ITA). He won silver in the sprint and bronze in the individual race. In the same year, he managed to win the overall World Cup. At the 1984 Winter Olympics (Sarajevo, former Yugoslavia), he won the first Olympic gold medal in biathlon for the Federal Republic in the individual race and, in addition, silver in the sprint. In that year, the relay team from the Federal Republic became bronze medalists ahead of the fourth-placed relay team from the former GDR.

Biathlon in reunited Germany

The sport of biathlon in reunified Germany continues to be organized in the German Ski Association (DSV). Essentially,

the biathlon sport of the former GDR was integrated into the existing structures of the Federal Republic. This affected the athletes, coaches, support staff, the infrastructure and, above all, the knowledge and experience gained. The reunification

management structures within the DSV, which are designed to operate within the framework of this national Olympic sports federation in the German Olympic Sports Confederation (DOSB) and to be able to promote both young talent and top-level sport.



Fritz Fischer as final runner of the gold relay of Albertville (FRA) 1992 | Image credits ([https://www.focus.de/sport/wintersport/biathlon/...](https://www.focus.de/sport/wintersport/biathlon/))

was extremely successful in this area, even if it was not smooth. The successes of the first all-German biathlon team after reunification at the 1992 Winter Olympics in Albertville (FRA) were impressive proof of this.

Today, biathlon has its own

To this end, training centers (state performance centers) were founded or merged from local club structures at the level of the sports associations of the federal states and the state ski associations.

In addition, two national bi-

athlon bases (federal training centers) - in Oberhof (Thuringia) and Ruhpolding (Bavaria) - were created, in which especially the athletes of the top squads are trained.

The athletes come from local winter sports clubs and, selected through a qualification system within the junior competition series, move on to the various junior and top sports squads. Support is provided in the follow-on and top sport squads, in particular through top sport support at the federal level by the German Armed Forces, the German Federal Police and the German Customs. Prior to this, the athletes have the opportunity to further develop their talent in a targeted manner at various sports boarding schools, in addition to their school education.

For the necessary shooting sports regulations, the German Biathlon has joined the German Shooting Association (DSB), because the number of biathletes is not sufficient to get their

own sports regulations for shooting in the sense of the German weapons legislation, approved.

Development of the competition forms

The competition

forms

Individual competitions

Individual

From 1958 to 1965, only the individual race was held at world championships in the biathlon. In this discipline, there were and still are numerous changes up to the present. Only the course length of 20 km, the number of shooting stages of four and the five shots to be fired in each case have endured to this day.

Until the 1966 World Championships (Garmisch-Partenkirchen, FRG), all four shooting exercises were completed on different shooting ranges with different shooting distances. At

the first three shooting ranges, the shooters could shoot in any position. At the fourth and last shooting range, the shooters had to shoot freehand from standing firing position. The shooting distances were 250m, 200m, 150m and 100m in the order of the run-up. The diameters of the paper targets to be hit also changed from shooting range to shooting range and were, in accordance with the shooting distances, 30cm, 25cm, 20cm and 30cm. Since the 1966 World Championships, the first shooting test has been completed in the prone position and the other three have alternated between the standing and prone positions. The shooting results were evaluated by recording the hits or misses, which were penalized with two penalty minutes per miss and added to the running time.

This way of conducting com-

petitions could not last in the long run, because the material, technical and organizational effort was too great to be able to conduct both training and competitions. With the World Championships in Altenberg (GDR) in 1967, a change in the rules was introduced, which provided for the taking of all shooting tests on a shooting range with a shooting distance of 150m. The target diameter was also redefined in this context. In the standing position it was 50cm with an inner ring of 35cm diameter and a center of 25cm. Hits in the center were scored, hits in the inner ring were penalized as misses with one penalty minute and hits outside the inner ring were penalized as misses with two penalty minutes. In the prone position, the diameter was 25cm with a penalty-free center of 12.5cm diameter.

Currently, the individual race is held over a distance of 20km, with four shootings in the order prone, standing, prone, stan-

ding, each with 5 shots and a penalty time of 60sec per miss.

In the meantime, the IBU competition program has been extended to include an individual competition in a shortened form (Short Individual) over a distance of 15km and penalty times of 45sec per miss. This serves to be able to carry out this form of competition in case of unfavorable conditions.

Sprint

The sprint competition - originally also called handicap competition - was held for the first time at the World Championships in 1978 (Hochfilzen, AUT) and became an Olympic biathlon discipline in 1980 in Lake Placid (USA). The competition consists of a 10km run with one prone and one standing shooting on folding targets. As in the relay competition, a penalty loop must be run for each miss. The handicap is that the

competitor has only five shots - and not eight, as in the relay race - to hit the five targets.

Pursuit

The pursuit race, also called a chase race, is held over a distance of 12.5km for men and 10km for women. The race is started in the order of the placing from the previous qualification competition (usually a sprint). Thus, the winner of the qualification race starts first in the pursuit race. The second placed in the time interval of the previous sprint competition as second and so on. The 60 best of the qualifying competition preceding the pursuit competition are eligible to start. The competition includes four shooting exercises in the order prone, prone, standing, standing. For each target not hit, the competitor must run a penalty round, just as in the sprint. The spectators are always well informed

in this competition, because the finish of the competitors is also their ranking. This is the main reason for the attractiveness of this competition for spectators and competitors. The pursuit competition was included in the World Cup program in the mid-1990s and has also been an Olympic biathlon discipline since the 2002 Winter Olympics in Salt Lake City (USA).

Mass Start

At the 1997 World Cup final, the sprint competition was tested for the first time in a mass start. Basically 30 competitors start at the same time (Mass Start 30). The course length is 15km and the shooting starts are twice prone and twice standing. This relatively new start form reduces the duration of the competition, increases the tension and the spectators are constantly informed about the current rankings. The mass

start has also been an Olympic biathlon discipline since the 2006 Winter Olympics in Turin (ITA).

In the World Cup the 25 best placed athletes in the World Cup as well as the 5 best of the current World Cup event are eligible to start. In World Championships the 15 best placed athletes in the World Cup as well as all medal winners, who do not belong to them, of the current World Championship are eligible. The remaining competitors will be filled up according to the achieved points from the individual competitions of the current World Cup.

Since the 2018/2019 season the Mass Start 60 was introduced. This allows the start of up to 60 athletes at the same time. In each case, 30 athletes take turns on the 30 shooting lanes of the shooting ranges.

Super Sprint

The Super Sprint was included in the IBU competition program a few years ago and is currently being „tested“ on a national level. This is a sprint competition, which is divided into qualification runs and a final run, similar to the cross-country skiing. In the qualification runs a distance of 3km is run. There will be one prone and one standing shooting. These shootings are carried out according to the relay rules, but only with a spare or additional cartridge. A penalty round of only 75m must be run for each mistake. The final run will be carried out with a distance of 5km as a mass start. However, two prone shootings and then two standing shootings will take place here. The other rules remain the same.

This competition is still waiting for its first realization in international competition in the framework of IBU or World Cup.

Team competitions

Relay

The relay race over 4 x 7.5km was on the program for the first time at the 1966 World Championships in Garmisch-Partenkirchen (FRG). The rules for the relay race state that the relay runner must complete a shooting exercise after 2.5km and 5km. The first one in prone position and the second one in standing position. For the five targets to be hit in each case, he has eight shots at his disposal, five of which can be fired from the rifle's magazine and the other three must be reloaded individually if necessary. These spare cartridges initially had to be placed at the stand and remained there when not in use. Today, the sportsman can decide where to store them until they can be used. As a result, the cartridges are carried indivi-

dually in special holders on the stock of the rifle, and from there they are loaded directly when needed. For each target not hit, a penalty round of about 200m had to be run. These rules are still valid today, only the length of the penalty lap was shortened to 150m. In contrast to the individual run, in the relay run targets were shot at from the beginning, where one could immediately recognize the hit or miss.

Mixed Relay

In the World Cup and at World Championships, the mixed relay over 2 x 6 km (women) and 2 x 7.5 km (men) has been held since 2005, with two positions each occupied by women and men. The two women start first, followed by the men. All athletes have to shoot prone and standing. The shooting follows the conventional relay rules. One of the reasons for introducing

such a competition in addition to the conventional relay was the fact that many nations have good individual athletes in both the men's and women's events, but cannot provide a competitive relay with four equally strong athletes of one gender. For this competition, a separate mixed world championship was held for the first time at the 2005 World Cup finals in Khanty-Mansiysk (RUS). Since 2007, the discipline has been part of the competition program of official Biathlon World Championships. This type of competition is also held as a so called Single Mixed Relay, in which a team consisting of one woman and one man starts. The two relay team members start alternately until a total of four rounds have been run. Shooting is done according to the relay rules, but with a penalty round shortened to 75m.

Another example of mixed relays is the World Team Challenge, which has been held in the

Veltins Arena (Gelsenkirchen-Schalke, GER) since 2002. Mixed relay teams, consisting of one man and one woman, run in multiple changes over a distance of 15 km. As part of the German Biathlon Championships, which are always held on roller skis in September/October due to the pre-season, mixed relays are also held, consisting of two male athletes and one female. These then each have to perform the extent of a sprint race.

Team Competition

The team competition was held for the first time at the 1989 World Championships in Feistritz (AUT). A team consists of 4 athletes who have to complete the 10km for men and the 7.5km for women. The team has to perform 2 shooting exercises, where 2 athletes have to shoot 5 shots each in prone position and 2 athletes have to shoot 5 shots each in standing position.

The two athletes for prone or standing shooting will be determined before the competition. If they hit their 5 targets each, the team can continue the competition without penalty round. For each target not hit, these two must run a penalty round of 150m. The team must pass the finish line within 15 seconds, otherwise they will receive a one minute penalty. The rules of the team competition were adapted several times, e.g. 4 shooting exercises had to be completed by only 1 athlete at a time or the entire team had to complete the penalty laps or pause a penalty time without running. The team competition did not catch on and was held for the last time at the 1998 World Championships in Pokljuka (SVN). However, a similar competition is still held at the World Military Championships.

Women's Biathlon

The rapid development of women's sports in recent decades has not bypassed the discipline of biathlon.

Women's Biathlon World Championships have been held since 1984 and women biathletes have competed in Winter Olympics since 1992. The international competition program also includes World and European Cup races and continental championships. Women compete in the same disciplines as men, but with reduced distances.

Junior Biathlon

In order to reach the international top in competitive sports, it is necessary to develop athletes from a large reservoir of young talent who are able and willing to meet this demand. The use of laser, air and small bore rifles

has created training and competition opportunities for schoolchildren and young people. German championships have been held in this field since 1960.

For the pupils of the age groups 12-15 there is in the Federal Republic of Germany the competition series „German Biathlon Pupils Cup“ and for the youth of the age groups 16, 17, Youth 2 (18/19) and Juniors the competition series around the „German Cup“. The „German Cup“ is also used by the women and men for training close to the competition, as well as the „lo-west“ competition series.

The competition rules of the DWO apply to the school biathlon. The pupils complete individual, sprint, relay and pursuit competitions. Shooting is done with an air rifle at 10m. The scoring area is 1.5cm for prone shooting and 3.5cm for standing shooting. Either 30 or 45 penalty seconds will be added to the running time. The weapons al-

ways remain at the shooting range. In addition to special and complex skills and abilities, general skills and abilities are also tested in competition form in the student competitions. For example, cross-country competitions are completed.

The German Pupil Champion is the winner of the overall classification of the Pupil (S) 15 class. This applies to both female and male pupils.

The youths complete the same competition forms as the pupils within the scope of the competition series „Deutschlandpokal“. However, the small bore rifle is already used for the youths. In the various competitions, the youths receive a penalty minute for missed shots or have to complete a penalty round of 150m in length. The shooting distances and target sizes in the prone and standing events correspond to those of the men and women. The competition rules of the DWO or the

IBU will be applied⁸.

The international competition program in biathlon

The current international competition program can be found at <https://www.biathlonworld.com/downloads/>.

Other biathlon forms

In addition to the classic biathlon competitions in winter with skis and rifle, new forms of biathlon are emerging. So there are now roller ski biathlon, cross-country biathlon, mountain bike biathlon and archery biathlon. All these biathlon sports are an integral part of the sports program of the IBU with

corresponding rules and so organized at the international level.

The roller ski biathlon represents on the one hand the summer training form for the winter. National and international competitions are also held. The German championships for biathletes are held every year in September and/or October on roller skis and the first independent summer biathlon world championships on roller skis were held in Hochfilzen (AUT) in 1996.

Cross-country biathlon, the actual so called summer biathlon, has its own competition series in many countries, up to national championships. Cross-country biathlon is also used as a summer training form. In Germany, summer biathlon athletes are organized by the German Shooting Association (DSB) and not by the German Ski Association (DSV). It cannot

8 This section relates to Germany.

be ruled out that other forms of conducting this popular duel will develop in the future.

Development of the biathlon material

As shown in the previous sections, the sport of biathlon developed from the original hunting for survival and the struggle between tribes, peoples and nations. This is also reflected in the development of modern times, in that the „modern biathlon“ was developed and practiced especially for military purposes. Therefore, military weapons, targets and target distances were initially also used in the civilian sport of biathlon.

Weapons

In military terms, the regular service rifles were the first to be used, mostly the multi-loading rifles with black powder metal cartridge with centerfire ignition and round-head bullet, which had just been introduced at the end of the 19th centu-

ry. These were later used with new ammunition with low-smoke powder and pointed bullet, which significantly increased their performance. With the patrol runs common in the military, the respective performance of the current infantry standard rifles could also be demonstrated.

When winter duels were adopted in civilian sports, these military rifles, the so called large-caliber rifles, were used in their last stage of development. This remained so despite the reduction and standardization of the shooting distances until the introduction of the small-bore caliber rifle. Typical representatives were the Russian Mosin-Nagant, the Swedish M96 Mauser rifle or the German K98 carbine. The rifles had a caliber of 6.5mm to 7.92mm. These rifles fired the usual, extremely powerful, original infantry cartridges of up to 57mm in length.

Over time, they were modified with different barrels, stocks and sights. In addition, carrying straps and these were often used as shooting straps.

The final step in development took place with the change to small bore rifles in 1978 and the accompanying reduction and standardization of the shooting distance to 50m. Now it was much easier to build appropriate shooting facilities, to introduce the athletes to the sport already at the youth level and to significantly reduce the costs, especially for training, but also for the implementation of competitions and major events.

Initially, the small bore rifles used were scaled down rifles with the normal cylinder locking systems of the large bore rifles. Very soon, however, the need for a system optimized for biathlon was recognized in order to further reduce times at the shooting range and thus gain a time advantage. The aim of this optimization was to be able to

carry out the loading movement in only one direction without having to first turn the cylinder lock (and thus unlock it), then pull it back (and thus open it), then push it forward again (and thus close it and feed in a cartridge), and finally turn it back again (and thus lock it). First of all, so called knee-joint locks were used, which only required pulling back and pushing forward. These latches have been continuously developed and ergonomically optimized. Prominent examples are the Suhl rifle model 628 (former GDR) and the B-7 rifle from Izhmas (former USSR/RUS) with laterally deflecting knee joint locks.

Another so called straight feed system is the Fortner system developed in 1984, which is used in the biathlon rifles of the Anschütz company. This is a self-contained system based on the basic principle of a roller lock, which can also be operated by simply pulling back and pushing forward. In the GDR,

they went one step further and developed an adapted knee-joint breech, which is opened and closed by tilting the grip piece (pistol grip). This meant that the sportsman did not even have to take his shooting hand off the pistol grip when reloading (Suhl rifle model 626/626-1)⁹.

Currently, the rifle from An-



Opened action Suhl model 626-1
| Image credits (Hendrik Engelhardt, 2020, CC-BY)

schütz, as well as the rifle from Izhmas are mainly used. There

are various individual customization options, especially in the area of stocks, sights, carrying devices and barrels.

Targets

Initially, the large-caliber rifles were also shot at actual „military“ distances of up to 250m. Other remnants of military competitions were the changing target distances, which can be compared to moving targets.

The original head targets very quickly gave way to paper targets with different diameters of the hitting surfaces, adapted to the different shooting distances and the different stops.

The next step of simplification and detachment from military character of winter duel, was standardization of shooting distance to 150m and holding all shooting in one competition

9 See also Ulrich Eichstädt: *Schnee-Kanonen*, in: *Visier* 2/1993, S.40-48

on one shooting range.

With the introduction of the relay competition, it was also necessary to get rid of the paper targets, which were difficult to evaluate objectively in an acceptable time for the competitor. However, the competitor had to be able to react immediately to missed shots, since he had three spare/additional cartridges to be reloaded individually. This was solved by first shooting at 5 balloons arranged in a cardboard frame like a dice in the relay competition. When hit, these balloons burst and the athlete could immediately see his hit or miss. However, this solution often offered surprises when, for example, balloons broke loose from their frames due to the wind or loss of air. The balloons were already used as targets in the military patrol competitions¹⁰.

A better solution was develo-

ped for the 1967 World Championship in Altenberg (GDR). The balloons were replaced by black colored safety glass, which shattered when hit. This development already clearly showed the trend towards the targets used today.

The development of the tar-



The biathlon targets Olympic Winter Games 1960 | Image credits (<https://www.thefirearmblog.com/blog/2014/02/12/military-roots-olympic-biathlon/>)

gets and their arrangement proceeded in parallel, but not in a

10 See also Meergans, Günther: *Ein Leben voller Einsatz, Dülmen: Oberschlesischer Heimaverlag 1998, S.30*

straight line. The size of the targets was the first to be adapted. Since the use of the small caliber rifle, a 115mm black circle has been used for the standing position, which counted as the entire target area. In the prone position, on the other hand, a 115mm black circle was shot at, but with a scoring area of only 45mm. These target sizes have been retained to this day in conjunction with the shooting distance of 50m. The arrangement and number of targets evolved via several detours. For the relay competition, the arrange-

ment of the targets and the material were initially retained. In the individual competition, however, the targets were arranged in a triangular shape. Each athlete had to shoot at each target at least once and at most twice. This regulation was valid up to and including the 1980 Winter Olympics (Lake Placid, USA). In 1980, it was decided that in future all biathlon disciplines would have a horizontal arrangement of five targets per shooting exercise.

Since the sprint and relay competitions of the 1978 World Championships (Hochfilzen, AUT), shooting has been done on mechanical metal drop targets. These targets were also adopted for the individual competition from 1981. Since then, all competitions have been shot on these mechanical drop targets or the electromechanical targets developed later. In the case of the mechanical targets, the impulse of the impacting bullet transmitted to the targets



Targets Biathlon World Championship 1979 (Ruhpolding, BRD) | Image credits (ZDF Dokumentation WM 1979)

causes the black hit area to be covered by flaps with a white flap, thus indicating the hit. Switching between prone and standing shooting is done in exactly the same way as the „wind-up“ by cable. For prone shooting, another target with an aperture size of 45mm is pushed or fol-

is done electrically with these systems, as is the „wind-up“. The electromechanical systems have the advantage of the exact evaluation possibility of the shots as well as an automated function for „winding up“, if desired. In addition, the hits can be displayed more accurately



Targets at the shooting range Hochfilzen (AUT) | Image credits (Hendrik Engelhardt, 2018 CC-BY)

ded in front of the other target, so that only the hit area for prone shooting remains. With the electromechanical targets, the impulse of the bullet is measured and the black circle is covered by an electrically advanced white flap, thus indicating the hit. The change between the standing and prone positions

due to the precisely adjustable sensors. In the future, these systems will offer the possibility of even better evaluation of the shooting performance through coupling with other measuring systems as well as further technical precision.

Cross country skiing equipment

In the military patrol competitions held as training and competition, the military skis available at the time were used. These had a binding in which the normal boot or fixed shoe was held to the ski with its ball and the heel was free to move. Initially, the foot was held to the front part of the binding by straps. Later, spiral spring straps were used. With these designs, it was generally possible to use the classic running technique and, in downhill, telemark elements. Later, the skis became narrower and lighter, and the bindings were lightened by elements unnecessary for cross-country skiing. Thus, until the 1980s, the classic cross-country technique was used. In this case, the skis had to be elaborately prepared with one climbing wax and two gliding zones

in order to achieve good climbing and gliding properties. Since the beginning of the 1980s, a new cross-country skiing technique has developed in popular cross-country skiing and among specialist cross-country skiers, initially still using the previous material. In this so-called skating technique, a lateral impression from the ski is used for propulsion. Since this technique allows significantly higher speeds, it also prevailed among biathletes. With the new technique, the material was also optimized. Thus the biathletes use today special Skatingski, which have only one sliding zone. In addition, there are special bindings and high cross-country ski boots, which actively support this running style. The skis are adjusted to the respective athlete by their length and the ski tension. Special structures and compositions of the bases, the ski tension and the preparation with gliding agents are used to react to the different snow con-

ditions. Ski poles support the propulsion during cross-country skiing with the use of arms. These have also evolved over time. From the simple „stick“ with an improvised plate, today's extremely light, yet extremely stable carbon poles are far removed. At the same time, the so-called double pole thrust still serves today as the basic technique of pole use in cross-country skiing.

Clothing

Of course, the clothing of biathletes has also changed over time. Today, little remains of the original felt or wool clothing. In terms of clothing, development initially focused on the functionality of the cuts, for example, to become more streamlined and more flexible when running. Later, synthetic fibers were used for better climate control under high stress and difficult weather conditions. Currently, an intelligent mix of

synthetic and natural materials combined with functionally optimized cuts are used to provide biathletes with the best possible support under all circumstances.



Frank Peter Roetsch with aerodynamically optimized running suit | Image credits (Bundesarchiv, Bild 183-1987-0306-033/Schaar, Helmut/CC-BY-SA 3.0)

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