

# WHAT REMAINED FROM AUSTRIAN-HUNGARIAN'S ARMAMENT INDUSTRY?

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## **Abstract**

*From the perspective of economic history, it is interesting to follow the development of former Austro-Hungarian armament plants. Because the need of military hardware was high before World War I, and also in the post-war period of 1918 and 1990, most of the established manufacturers of armaments survived, but, due to the shrinking demand in the monarchy's successor states, to a certain degree the companies had to change their product-lines from war material to civilian goods. Now, 100 years after the dissolution of the Austrian-Hungarian monarchy, only a handful of former armament companies are still in the armament production business.*

**Keywords:** Economic History, Armament Industry, Steyr, Škoda, Sellier & Bellot

## **1. Introduction**

The Austrian-Hungarian monarchy was a great power, was engaged in nearly all wars in Europe over the centuries. Therefore, the demand of armament-goods was always high. To supply the needs and wants of Austrian-Hungarian's armed forces, the monarchy founded a number of plants for the production of military goods, dispersed over nearly all regions of the country. The most important centers of armament industry were in Western Bohemia, then in Styria, Lower and Upper Austria, Vienna, Budapest, Győr Trieste, Pola and Fiume.

After the First World War, Austria-Hungary was divided into the newly created "successor states" like Austria, Hungary, Czechoslovakia and Yugoslavia; additional parts of territory were added to Italy and Romania, and Galicia became part of the newly established state of Poland. Logically, these successor-states became owners of the existing plants, often continued with the producing of weapons, or converted these companies, step by step, to produce civilian goods.

## **2. The armament industry of Austrian-Hungarian monarchy until 1918 [1]**

### *Rifles, Guns and Ammunitions*

Austria already had a tradition in the production of small arms and rifles, and the most important manufacturer was the Österreichische Waffenfabriksgesellschaft (OEWG)/Austrian Weapons Manufacturing Company), located in Steyr (Upper Austria, with facilities in Wiener Neustadt (Lower Austria) and Vienna. During the era of industrialization, the Gebrüder Böhler (Böhler Brothers) built plants in the region of

Kapfenberg (Upper Styria) to make rifle barrels and later on became one of the most important armament manufacturers of the monarchy. However, during the second half of the 1880s, the Hungarian part of the monarchy was interested in becoming more independent from Austrian weapons-manufacturers. Therefore, in 1887, the “Fegyver- és Gépgyártó Részvénytársaság” (FEG/Weapon- and Machinery Ltd.), and the “Ganz-Company” were founded to produce small arms, and metal castings for rifles.

Regarding artillery, Austrian-Hungary was logically interested to achieve complete autarky from any imports, including mortars. Since the internal “Compromise” of 1867, three companies were now supplying artillery pieces and mortars: Škoda (Bohemia), Böhler (Upper Styria) and the Hungarian Canon Works (Győr), a subsidiary of the Magyar Királyi Államvasutak Gépgyára (MÁVAG/Hungarian Royal State Railroads Machine Factory).

Škoda was originally founded in 1859 by Count Arnold von Waldstein-Wartenberg in Bohemian Plzeň (Pilsen) and produced machines for the sugar industry, beer breweries, railway companies and the mining industry. In 1869, the company’s leading engineer, Emil von Škoda (1839-1900), bought the company and modernized it thoroughly in 1871 when he was building a new foundry, added a year later on a new mechanical manufacturing building, a new cast-iron forge in 1882, and in 1886, the new steel plant. In the mid 1880s, Škoda’s main business was already the production of armament goods, especially turrets for battleships and three years later, the company could deliver the large guns for the turrets too. In 1889, a separate armament division was founded by adding another plant in 1896. Between 1914 and 1918, Škoda produced nearly 13.000 artillery pieces for Austrian-Hungarian forces. To meet all the growing demands, Škoda increased its workforce from 10,000 employees in 1914 to 35,000 in 1917.

After the introduction of breech-loading guns, the supply of ammunition became more and more complex, and the monarchy established therefore large ammunition factories, i.e. in Blumau, Wöllersdorf, Hirtenberg and Roth, all located in the south of Vienna respectively in the Wiener Neustädter Basin. The large-scale output included rifle ammunition, gun rounds, cartridges and igniters, but demand required already in 1870 an additional subsidiary near Bratislava (today Slovakia) in the Mlynská Dolina Valley.

In Hungary, the production of ammunition was closely linked with the Weiss family. The history of the Weiss enterprise began with Berthold and Manfred Weiss First Hungarian Cans and Iron Factory, located in the Csepel-district of Budapest. One purpose of the company was the production of cartridges. In Bohemia, the French businessman Louis Sellier was authorized by the Emperor Franz I. in 1825 to make ignition cartridges for cap-lock muzzleloaders in Prague. Very soon afterwards, Jean Maria Nicolaus Bellot became a partner of Sellier, and in 1870, Sellier & Bellot produced 10 million cartridges per year; in World War One, the plant was fully engaged in manufacturing ammunition for the Austrian-Hungarian forces. Another company which produced cartridges was the Iron Works of Witkowitz, which was founded in 1829, but in 1843 Rothschild bought the company and expanded it; later on the factory became an important manufacturer of armored plates and for cartridges.

### *Vessels and Ships*

Limited, and somewhat encapsulated in the Adriatic Sea, the monarchy had for a long time no need for a strong blue water navy. The shipbuilding industry therefore remained modest until the later years of the 19<sup>th</sup> century, when the government recognized the need

for an efficient shipbuilding industry and established on the coastal area of the upper Adriatic Sea near Trieste the Stabilimento Tecnico Triestino S.T.T., which became the largest naval yard of monarchy. In 1897, the yard was even enlarged by buying the Navale Adriatico in San Marco to produce large warship. In 1909, S.T.T. bought even some smaller naval yards on the river Danube in Linz and Galatz to build river-monitors. Before the First World War, S.T.T. employed nearly stood at 3.200 workers. After the beginning of the war, S.T.T. changed its name into “Austrian Yard”. During wartime, many workers of Italian origin left the company for political reasons and split loyalites.

The second biggest yard in the Austrian part of monarchy was the Cantiere Navale Triestino, which was founded in 1894 in Monfalcone. During the war, the yard was located too close to the front-lines and was conquered by Italian troops. Not until 1917, during the 12<sup>th</sup> Isonzo-battle, the Austrian Hungarian army reconquered the yard. Very important for the Austrian-Hungarian navy was the former small village Pola, situated on southern Istria, which became the main operating base of Austrian-Hungarian Navy in 1850, and in 1856 a naval yard was founded on the so-called “Olive Island” to maintain and build smaller warships.

After the Compromise of 1867, the Hungarian part of the monarchy also wanted a naval base and a naval yard on its territory and the Hungarians decided to expand the harbor in Fiume/Rijeka. In 1905 the Hungarian entrepreneurs Ganz, Danubius, Schönnichen and Hartmann bought some smaller ship-builders in Fiume to found a naval facility which was able to build larger warships and named the new yard “Danubius”. During the last decade before World War One, the yard was enlarged to build even battleships. The largest warship which was built there by Danubius was the Dreadnought-type “S.M.S Szent István”, which had bad luck in wartime. The battleship was torpedoed by an Italian fast craft on June 10, 1918, and sunk rapidly due to design defects. Furthermore, the Whitehead Yard was also located in Fiume, founded in 1875 by Robert Whitehead (1823-1905) who became famous when he and the Austrian engineer Giovanni Luppis (1813-1875) invented the torpedo. In 1910, the yard began to build submarines. In the Hungarian part of the monarchy, on the Danube river in Budapest, the naval yard of Ganz & Comp - the Danubius Schiffbau AG - built many river-monitors.

### *Aviation*

The Austrian Hungarian Monarchy started its military aviation by creating the balloon troops in 1893, which were reorganized in 1911 and now named “k.u.k Aviation Troops”. At the beginning of World War One, these Aviation Troops consisted of 40 aircraft, 10 observation balloons and 85 pilots. The aircraft of k.u.k Aviation Troops were mainly of German and some of Austrian origin. In the Austrian part of monarchy, the most important producers of military aircraft became the Albatros Works, the Jacob Lohner & Co, the Phönix Aircraft Works, the Austrian-Hungarian Aviatik, the Viennese Car Body and Aircraft Factory Dr. Guttman, the Machine Factory (in Vienna), the Austrian Aircraft Factory (in Wiener Neustadt), and the Aircraft Arsenal (Fischamend). In the Hungarian part of monarchy, the most important aircraft factories were the Ungarische Flugzeugwerke/Hungarian Aircraft works (UFAG), the Magyar Repülőgépgyár (MARE) in Albertfalva, the Ungarische Lloyd Flugzeug- und Motorenfabrik/Hungarian Lloyd Aircraft and the Engines Works/Magyar Repülőgép Motorgyár (MALÉRT) in Aszód. Additionally, the Ungarische Allgemeine Maschinenfabrik/Hungarian Machine Works-Magyar Általános Gépgyár (MAG) in Mátýásföld also built airplanes.

### *Transportation, Trucks*

The motorization in Austrian-Hungarian Monarchy began actually in 1870, when Siegfried Marcus (1831-1898) had his car operational, but the first Austrian military truck was built by Austrian Daimler Motor Corporation Bierenz, Fischer & Co (Wiener Neustadt) in 1899. During the maneuvers in 1901, five cars and two trucks were used by the troops. At the turn of the century, some car and truck manufactures produced a number of cars and trucks: The Puch Works in Graz were founded in 1899 as First Styrian Bicycle Ltd". During the First World War Puch produced various trucks. The growing Gräf & Stift" company, founded in 1904, produced cars and small busses, and during First World War mainly trucks. In 1913, the Austro-Daimler Motor Corporation Bierenz, Fischer & Co merged with Škoda and produced artillery movers. In 1907 the Austro-Fiat AG was founded, which was later changed into Austrian Automobile Factory Ltd. (ÖAF). During First World War, ÖAF produced also trucks. Other companies which produced cars and trucks were Saurer in Vienna, Fross-Büssing KG, and Steyr Works Ltd. In Bohemia and Moravia, the Nesseldorfer Work (later Tatra), Škoda, Praga, Laurin & Klement produced cars and trucks. In the Hungarian part of the monarchy, the Rába Vagon- és Gépgyár was founded (in 1896 in Győr to produce locomotives and railway cars. Since 1914, Rába made cars and military trucks for various purposes.

Some years before the First World War, armored vehicles were also developed. Austro-Daimler built the first wheeled armored vehicle of the monarchy. The vehicle was presented to the emperor during a maneuver. Yet, when the engine was started, the horse of the emperor shied. Due to the following confusion, the emperor spoke of an "unusable invention" and it didn't go into production, but a few years later, the car was sold to France. And another well-known invention stayed unsuccessful, when the genius engineer Lieutenant Günther Burstyn (1879-1945) had in 1911 designed a battle tank which was rejected by the War Ministry in Vienna. The tank had a weight of seven tons, was a tracked vehicle with a 3.7 cm canon, and had a crew of three. With its astonishing performance it was a true forerunner of the later battle tanks.

During wartime, Austria built armored vehicles under the name "Romfell" (Romanic-Fellner) that was developed by Captain Branco Romanic and Lieutenant Simon Fellner. Another project was the "Junovicz", which was designed by Captain Wladimir Junovicz, but only five vehicles were delivered to the troops.

### **3. The interwar period (1918 – 1939)**

After the First World War, as already mentioned above, the Austrian-Hungarian monarchy was broken up into the successor-states Austria, Hungary, Czechoslovakia, Yugoslavia and some smaller parts which came to Italy, Romania, and to the newly founded state of Poland. The consequences of this break-up for the armaments industry are shown below.

#### **3.1 Austria [2]**

In Austria after 1918 the production of armament came to an end, and due to the Treaty of Saint-Germain-en-Laye, signed on September 10, 1919, the manufacturing of arms, munitions, and other war material, had to be carried out in one single factory, which should be owned and controlled by the State, and whose output should be strictly limited

to arms, munitions and war material as seemed necessary for the military forces, and was additionally limited to armament as delineated in the Articles of the Treaty.

Very soon, after the signing of peace-treaty, Austrian companies were looking for partners, and in cooperation with the Swiss ammunition producer Solothurn Ltd., and the German armament producer Rheinmetall, the production of armament started again. In 1926, the OEWG was renamed Steyr-Works Ltd., and in 1929 the famous developer Ferdinand Porsche became chief engineer of Steyr, but he quitted the job in the same year, when the management of Steyr didn't adjust to his ideas. In 1934, Steyr merged with Austro-Daimler-Puch Ltd., to Steyr-Daimler-Puch Ltd., and in the interwar period, Steyr developed and produced not only small arms and machine guns, but also cars, trucks and wheeled armored vehicles for the forces of Austria.

The end of war also had great influence on Böhler. Böhler had to destroy all already manufactured armament goods, and machines and tools which were used for the production of arms, and the Allied Control-Commission watched over all these destructions. Böhler logically changed its production to civilian goods; the only important armament which was still produced later on was an anti-tank canon, which was used by Austrian armed forces as well as by Dutch and Italian forces.

In despite of the hard order of the Treaty of Saint-Germain, Hirtenberger survived because the successor states of the former monarchy had a large demand on ammunition and low domestic capacities. In 1920, a large fire stopped the production facility, but after rebuilding, production was resumed in 1924. In 1928 Hirtenberger purchased the factory of Roth in Lichtenwörth to make ammunition for the Austrian armed forces, and began in 1932 the production of the FW 44 "Stiglitz" biplane, based on a licence-agreement with Focke-Wulf. Between 1935 and 1937, Hirtenberger was in many ways successful, exporting nearly 550 million cartridges to Argentina, Bolivia, Chile, Ecuador, Mexico, China, Spain, Poland, Bulgaria, Hungary, Greece, Iran and Italy.

### **3.2 Hungary [3]**

Like in Austria, after the First World War, the production of armament goods in Hungary came to end. Due to the Treaty of Trianon, signed on June 4, 1920, the military forces of Hungary had to be demobilised within three months. During the interwar period, Fegyver-és Gépgyár (FÉG) continued its production in a limited amount.

The factory of Weiss in Csepel was plundered during the Hungarian-Romanian war of 1919/1920 by Romanian troops, and Weiss was arrested by the communists. After his release, Weiss rebuilt his factory, and in the late 1920s production was resumed but changed to civilian products like motorbikes, cars (i.e. the armoured scout car 39M Csaba), bicycles, sewing machines and steel products of high quality. In the early 1930s, Weiss made great progress in producing aluminum. Therefore, Weiss became a leading company in production of different metals. He also looked into the manufacturing of airplanes like the German Udet U 12, Heinkel HD 22 and Fokker C VD, all under license. During the interwar period, Ganz also returned to his core business and produced high performance diesel engines for locomotives. During the interwar period, Rába Magyar Vagon- és Gépgyár cooperated with German companies, i.e. Krupp and MAN, which also led to the production of various kinds of armament goods, i.e. trucks, armored vehicles and battle-tanks. The shipyard on the river Danube in Budapest survived the war and in the interwar period produced river-vessel for civilian use.

### 3.3 Czechoslovakia [4]

Because of growing tensions in Europe, the government decides to build up strong armed forces and to create an armament industry with various branches, especially small arms, machine guns, fortifications and also went into the aircraft production. After the First World War, the now independent Czechoslovakia inherited *Škoda*, which, as an armament producer, was too large for the new small state. Therefore, to survive, *Škoda* had to reorganize its production into civilian product-lines and the money for investment came from the French company Schneider & Cie. The first new products by Skoda were locomotives but the company was also engaged in the production of food, tobacco, automobiles and aircraft. *Škoda* successfully exported machinery for the sugar industry, for breweries, power plants, the mining industry and meat-producing facilities. In 1925, *Škoda* merged with the car-producer Laurin Klement, which had its facility in Mladá Boleslav. Additionally, in 1926, *Škoda* bought the aircraft manufacturer Avia. In the interwar period, *Škoda* developed and then produced a battle tank. In 1930, Skoda had nearly 36.000 employees.

Sellier & Bellot continued with its core business, and became the leading supplier of the new Czech armed forces and the police supplying ammunition. In 1936, Sellier & Bellot moved to a new facility in Vlašim.

### 3.4 Yugoslavia

The newly founded independent Kingdom of Yugoslavia inherited no significant armament plants of former Austrian-Hungarian monarchy. Because of the large Italian population along the Western Adriatic coast, Italy had received Istria with Pola, and additionally, the city of Fiume became independent, therefore it inherited not any of the larger naval yards of the former Austrian-Hungarian monarchy. Most of the armament industry of Yugoslavia was on Serbian soil.

### 3.5 Italy [5]

After the war, Italy occupied the former Austrian regions of Trieste and Istria. In 1929, Stabilimento Tecnico Triestino (S.T.T.) was merged with the Cantieri Navale Triestino (C.N.T.) to Cantieri Riuniti dell' Adriatico (CRDA). Furthermore, the former S.T.T. was also known as CRDA Trieste and as C.N.T. CRDA Monfalcone. Until the beginning of World War Two, CRDA Trieste built heavy and light cruisers as well as submarines for the Royal Italian Navy and CRDA Monfalcone was specialized in building submarines. In 1924, Italy occupied the territory of (the independent) city of Fiume, and changed the name of the former Danubius Yard into Cantieri Navali del Quarnero (C.N.Q.). This C.N.Q. yard built destroyers, submarines and torpedo-boats. The former "Whitehead Yard" was reorganized in 1928 and named Silurificio Whitehead Società Anonima Fiume ("Silurificio" stands for production of torpedoes, the Italian word "siluro" means torpedo). The Whitehead torpedo factory was very successful in exporting to many countries around the world its excellent products, i.e. Spain, Argentina, Mexico, Netherlands, Yugoslavia, Turkey, Finland and the USSR.

#### **4. The Second World War (1939-1945)**

During the Second World War, the demands on armament goods were extremely high, and therefore all the weapon factories expanded their production, invested in new plants and had to employ prisoners of war and even forced labor.

##### **4.1 Austria [6]**

After the so-called “Anschluss” (Annexation) in 1938, Steyr-Daimler-Puch (SDP) was reorganized into an armament company and became a subsidiary of large “Hermann Göring Werke” industrial complex. To satisfy the requirements of the Wehrmacht, new plants for the production of armament goods were built all over Austria (now being a part of the German Reich), i.e. in Graz and St. Valentin. Böhler became again an important producer of armament goods, so anti-tank guns, howitzers, and steel of high quality for the armament industry. After the “Anschluss”, Hirtenberger stopped the anyway limited aircraft production and became part of the Wilhelm Gustloff Works, and even more a major production center of infantry ammunition. One of the industrial strategies of Germany was to use existing small Austrian companies, build on their know-how and management to expand production and implement new production lines as well. In St. Valentin’s brand new “Nibelungen Works”, 4780 Panzer IV were built, and in Wiener Neustadt (Airfield North) 8500 M-109 fighters were assembled, until the plant was totally destroyed by the air raid in April of 1945 and then a few days later overrun by Soviet forces.

Beginning in late 1942, many of the armament plants in Germany were destroyed, because of the growing number of heavy bombing raids into Germany coming from Great Britain with lasting effect in 1943/44. Logically, Austria was assumed to be safe from air attacks. However, when the USAAF was relocating its bomber bases from Libya to the Foggia region in Southern Italy, its bombers could reach now targets beyond the Balkans all the way into Southeastern Germany. A main target was Wiener Neustadt which experienced 29 large air attacks, also the Me-109 plant in Klagenfurt, the large aircraft engine plant in Wiener Neudorf, the He-162 production (with its assembly in Schwechat), plus the limited He-177 production line nearby in Zwölfaxing. Targets were the refineries of Shell and oil storage sites near Vienna, the synthetic fuel facility in Moosbierbaum and other industrial sites like the important ball bearing plant in Steyr, truck manufacturing (Saurer, Henschel, Steyr), chemicals, etc. It was planned to build parts of the the A-4 (“V-2”) in the Rax-Werke near Wiener Neustadt. The Hirtenberg facilities in Wiener Neustadt, Lichtenwörth and Wöllersdorf were hit by bomb-raids, but the facility in the Triestingtal was not, therefore, it was able to maintain production until the Soviet troops advanced in April 1945 into the Triestingtal.

##### **4.2 Hungary [7]**

During wartime, Weiss had to develop and produce armament goods. Weiss became a leading company in production of various battle-tanks and wheeled armored vehicles. Like Weiss, Ganz also had to produce armament goods. In wartime, Rába expanded the production of armament good and even aircraft (Messerschmitt Me Bf 109 and Me 210) were produced.

#### **4.4 Czechoslovakia [8]**

In October 1938, Nazi-Germany invaded the Sudetenland and in March 1939 the remainder of Czechoslovakia. Afterwards, Germany made use of the armament industry of Czechoslovakia. Czechoslovakia was very important for the provision of armament goods because Bohemia and Moravia were not heavily bombed during the war (too far away from England and Italy with heavy bomb loads) and the armament plants sustained no losses until the last days of the war. Škoda (Böhmisch-Mährische Maschinenfabrik) built 2800 units of the famous Jagdpanzer (tank hunter) „Hetzer“; the company was a main supplier for trucks and air-cooled Diesel engines. Austro Tatra built cars in Vienna until 1948.

#### **4.3 Italy [9]**

During the Second World War the yards in Trieste, Monfalcone and Fiume produced various war materials for the navy. Besides smaller vessel, the CRDA built the two large battleships, “Vittorio Veneto” and the “Roma”, the yard in Fiume built torpedoes for dive-bombers. In 1943, German troops occupied the yard but didn't continue with production. Shortly before the end of the war, the yard in Fiume was occupied by troops of Yugoslavian army. Whitehead ended the production and fled to Livorno.

### **5. After the Second World War**

#### **5.1 Austria [10]**

Austria, as a part of Germany, had lost the war and regained its independence after having signed the State Treaty for the re-establishment of an independent and democratic state at Vienna on May 15, 1955. After the war, the “rebuilding of the state” demanded a growing and demand on civil products like automobiles, trucks, machinery, and Steyr used its experience to develop and built tractors and off-road vehicles and trucks. Already in 1950 it was possible to start the production of hunting rifles. After the foundation of Austria's armed forces in 1955, Steyr began with the production of armament, especially wheeled and tracked armored vehicle and light tanks, off-road cars, trucks, small arms and automatic rifles. During its heydays, Steyr employed more than 17.000 workers and exported its products to Switzerland, Portugal, Czech Republic, Brasil, Greece, Cyprus, Botswana, Tunisia, Marocco, Argentina, Bolivia and Nigeria and Great Britain.

After 1987, due to decline of demand, Steyr was partitioned in several independent companies. The production of small arms, automatic rifles and hunting and sports rifles was organized in the furthermore independent company Steyr Mannlicher GmbH & Co.KG. After a more than a 160 years lasting business activity, the Steyr works in Steyr became successful again, and the Steyr Mannlicher GmbH & Co KG is worldwide well known for its products of high quality. Pistols, submachine guns, sniper rifles, automatic rifles, hunting rifles and sports rifles were highly demanded by many countries, including with hunters and sportsmen around the world. The automatic rifle AUG with its futuristic design was introduced in Austria, in Australia, Malaysia, Ireland, Luxembourg, New Zealand, Tunisia, Uruguay and even is used in the USA by government special units and certain SWAT teams. In 1998, the production of heavy weapons was sold to an Austrian Investment-Group which sold the production in 2003 to the US-armament producer General Dynamics (Land). Due to low demand and a decline by the Austrian government for purchasing additional 8-wheel armored personnel carriers, the works of General



Dynamics in Vienna had to lay-off most of its workers and the future of the plant in Vienna/Simmering is in doubt.

After the war, Böhler started its production again in July 1945, but in 1946 became part of the state-owned industry. Following this move, in 1973 Böhler was merged with other companies into the large VOEST-Alpine AG. During the next decades, Böhler was reorganized and changed its owners again. Today, Böhler Edelstahl GmbH & Co KG is part of VOEST-Alpine-Edelstahl GmbH, and is globally active and famous for its high-quality steel products including working for jet engines (turbine blades) and space systems. Hirtenberger somehow survived each crisis and is nowadays a subsidiary of Germany's Rheinmetall.

## **5.2 Hungary [11]**

Hungary's defeat was sealed in a Peace Treaty, signed in Paris on February 10, 1947, which also restored the former Trianon borders. Between 1946 and 1959, *Fegyver- és Gépgyár* changed its name to Lámpagyár and between 1959 and 1975 the FEG changed its name again into Fémáru és Szerszámgépgyár (Metal Products and Tools). Since 1975, FEG has been renamed Fegyver- és Gázkészülékgyár. Very short before FEG was dissolved in 2004, it was renamed FÉG Army Fegyvergyártó Kft. During its operation, FEG was a very important producer of small arms, automatic rifles and machine guns for the Hungarian forces.

## **5.3 Czechoslovakia [12]**

After the liberation of Czechoslovakia, and soon after the end of the war, the Communist Party brought the country totally under its rule. After the war, Škoda (like all other major companies) was nationalized and many sections were split-off. In 1947, the Škoda Works in Dubnica nad Váhom became an independent enterprise for armament production. The CSSR was furthermore forced to join the Council for Mutual Economic Assistance (and therefore denied to join the Marshall Plan offerings) and in 1955 joined the Warsaw Pact and had now to produce weapons, cars and trucks for its own armed forces and the armed forces of the "Fraternal Pact Countries". From the old days of the monarchy, only Sellier & Bellot survived, and as before, was active in the production of ammunition.

## **5.4 Yugoslavia [13]**

Yugoslavia, now a "winner-state" of the war, had, due to the results of peace treaty of Paris, obtained Fiume from Italy. In 1948, in memory of the 3<sup>rd</sup> of May, the naval yard Kvarnersko Brodogradiliste in Fiume/Rijeka was renamed "3. Maj". After modernization, the yard mostly built smaller merchant ships, but also some naval vessels like the destroyer "Split" for the former Yugoslavian navy. During its heydays, the yard employed more than 4.500 workers. After the Yugoslavia broke into successor-states in the early 1990s, Croatia took control over the yard in 1991, but it didn't build naval vessels anymore.

## **5.5 Italy [14]**

After the Second World War the yards in Triest and Monfalcone started shipbuilding again and became a part of large Fincantieri Group. The shipyard in Monfalcone built

some warships, i.e. the aircraft carrier “Cavour” for the Italian Navy, but is currently especially engaged in the building of large cruising ships.

## Conclusion

As this short time-travel demonstrated, the armament industry of the former Austrian-Hungarian Monarchy had a fluctuating fortune after the dissolution of the monarchy in 1918. Because the need of armament goods was high during the interwar-period (1918-1939), in the Second World War (1939-1945), also in and the period of the Cold War (1945-1990), most of the former manufacturers of armament goods survived, but, due to the shrinking demand in the successor states, the companies shifted - to a certain percentage - their product-ranges from the pure military to civilian goods.

100 years after the dissolution of Austrian-Hungarian Monarchy only a handful of former armament companies survived and are still making armament goods. These companies are e.g. in Austria Steyr Mannlicher (pistols, submachine guns, automatic rifles) and Hirtenberger (ammunition); in the Czech Republic it is Sellier & Bellot (ammunition) and Tatra (with its special trucks); in Italy Stabilimento Tecnico Triestino and Cantiere Navale Triestino as yards of the large Italian defence- and shipbuilding corporation Fincantieri (making also naval vessels).

The relation between the fate of companies and of historical events is a remarkable close one, so is the success of enterprises and the advancement of great engineering. However, today it is largely forgotten that many of these plants were providing the highest standards, were ground-breaking in regard of technology, invention and manufacturing.

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