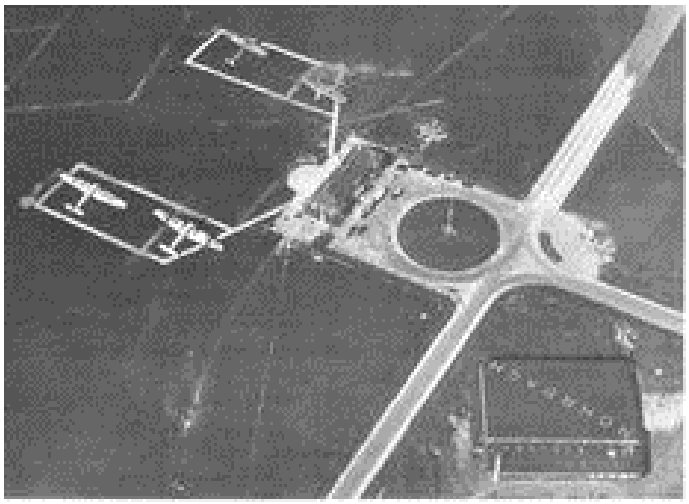
Rohrbach Metal Aeroplan Co. A/S



left: Rohrbach Hangar with Ro IX Rofix and two Ro VII Robbe flying boats in the background

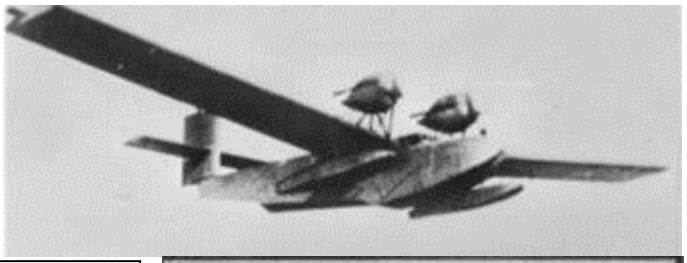
After the 1st World War the treaty of Versailles restricted aircraft production in Germany and totally forbid the making of military aircraft. German manufacturers tried all the tricks in the world to circumvent this and in the twenties a range of "civilian" types were actually designed for military uses. (post and cargo planes = bombers, Aerial survey planes = reconnaissance aircraft and courier aircraft = fighters). In order to avoid the interference of the "Allied Control Commission" several German factories opened daughter companies abroad like in Sweden and Switzerland. In Denmark the **"Rohrbach Metal Aeroplan Co. A/S**" was established in 1922, director became E. Hildesheim who in 1918 had started the defunct "Viking Aeroplan og Motor Co." The company assembled the parts made by the mother company "Rohrbach Metall Flugzeugbau G.m.b.H in Berlin, at a factory at Sundby/Amager and at a large hangar erected at Copenhagen airport/Kastrup (this was in 1937 bought and moved to Grønholt by Bohnstedt-Petersen). The first build type named Ro II powered by two 360HP Rolls-Royce Eagle engines was test flown on 11.November 1923 from the beach at the Kastrup airport. The second aircraft of the type established in 1924 a series of 5 impressive world records. The Ro III was an improved version with a narrower fuselage which was sold to Japan, whereas two Ro IIIa were delivered to the Turkish Navy in 1926 (serving from Izmir until 1933). Even England who was a part of the Allied Control Commission bought a Ro IV flying boat in 1925 and later built the Beardmore large landplane on licence. The Turkish Army in 1926 wanted to order and build 50 all metal fighters in Turkey and the construction of two prototypes was made at Kastrup. The type called Rofix, powered by a 450HP BMW-VI engine, was designed by the later famous designer Kurt Tank (FW type aircraft) and one was test flown by Ernst Udet. Both prototypes (construction number 22 and 23) were test flown successfully in January 1927,

but later in 1927 on 15 May and 15 June crashed, the last when being demonstrated to the official Turkish procurement commission. Although both crashes were attributed to pilot inaptitude in flying such an advanced aircraft the project was cancelled. More types were civilian flying boat types, called the Robbe, Roland and Romar of which the Roland I and II 15 were built. The factory closed in March 1928 with the reason that the restrictions in Germany had relaxed. The German state had been subsidizing the German aircraft industry for years, and the company had to close during 1931/1932, as a direct result of the economic crisis in the country. The French Ro-X was Rohrbach company's last order.

The German owner of the mother company being Jewish immigrated together with the company to USA in the beginning of the thirties, where the company existed in 1990ties.

Adolf Rohrbach was born in 1889 and got a job at the Blohm & Voss shipyard right after he graduated as engineer. He then moved to Luftshiffbau Zeppelin in Friederichshafen, near Lake Bodensee. A few years later he was transferred to the Zeppelin works in Staaken near Berlin where he worked on the giant Zeppelin bombers. Rohrbach soon became the main design engineer.After WWI, the company started the design of a civilian airliner called the Zeppelin-Staaken E4/20. The airliner was of revolutionary design. It was the first metal stressed-skin design. It had a capacity of 12-18 passengers in an enclosed cabin. It even had an on-board toilet. The airplane first flew during November 1920 with an average speed of 225 km/h. Because of the advanced construction principles, the Allied Control Commission responsible for monitoring Germany's compliance with the Versailles treaty had the aircraft destroyed, and the Zeppelin company at Staaken closed down during 1921. The stressed-skin design was so advanced, that foreign aircraft manufacturers were lining up to study the design methods (It is worth nothing that it remains the preferred method of aircraft construction to this day!). The huge level of interest prompted Adolf Rohrbach to set up the Rohrbach Metall-Flugzeugbau G.m.b.H. in Berlin in 1922.

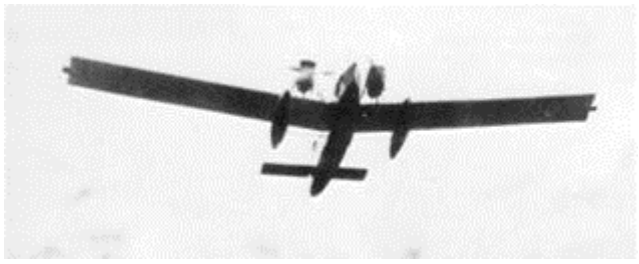
Ro II

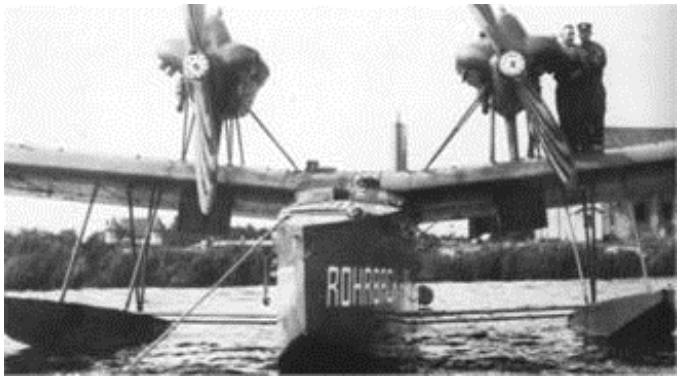


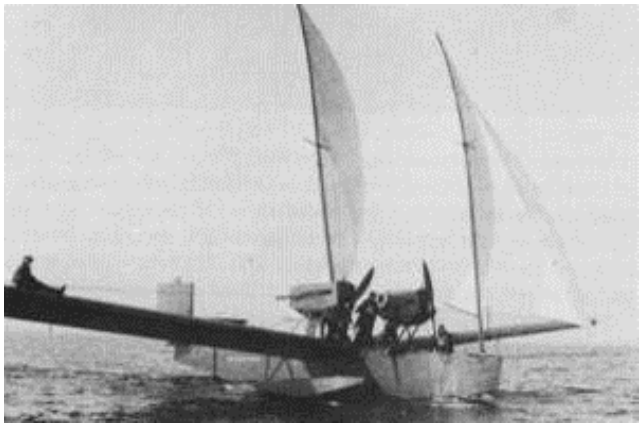
Rohrbach Ro-II's fuselage was constructed using sheet-metal formers and a duraluminium skin. The sheet-metal formers separated the flying boat's hull into several waterproof compartments, making the Ro-II "unsinkable". The two 360 bhp Rolls-Royce Eagle IX engines were situated on struts above the wings, with an adjustable rudder that could be rotated, to trim out the aircraft, should an engine drop out. The main wing was constructed using a huge box-spar, with the leading and trailing edges riveted to the wing box. Additional safety features included dual controls and the inclusion of two telescopic masts with schooner-like sails.The narrow wings resulted is reduced drag, and comparatively high take-off and landing speeds. The second Ro-II prototype set a world speed record on the 24th of September 1924, for 500 and 1000 km distances with a cargo load of 500kg. The speed was of around 159 km/h, a 50% improvement of the record.

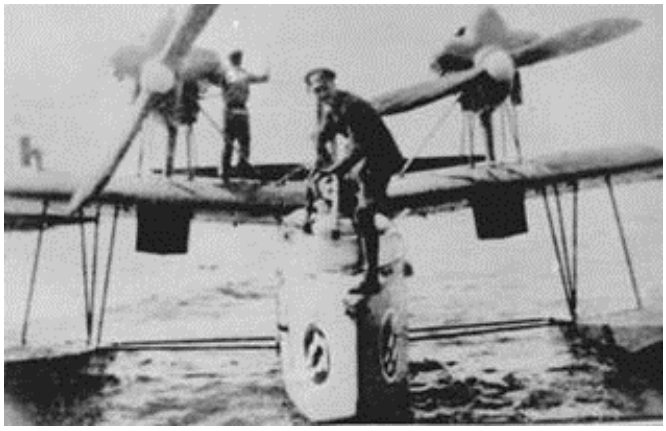
Ro III Rodra

Test flight of the Ro-II resulted in the improved Ro-III flying boat. While the wings were identical, the fuselage was completely redesigned, with a new, more ship-like, bow and a step-keel, to better get out of the water during take-off. Incidentally, the modifications were designed by the young engineer Kurt Tank, who later became chief designer at Focke-Wulf. Several (possibly four) Ro-III aircraft were exported to Japan, who used them to study the new stressed-skin design technology.An additional two (Ro-IIIa – with Dietrich engines) were delivered to Turkey during 1926. The Ro-III was also called the Rodra for ROhrbach DRei A. These were in active service until 1933.



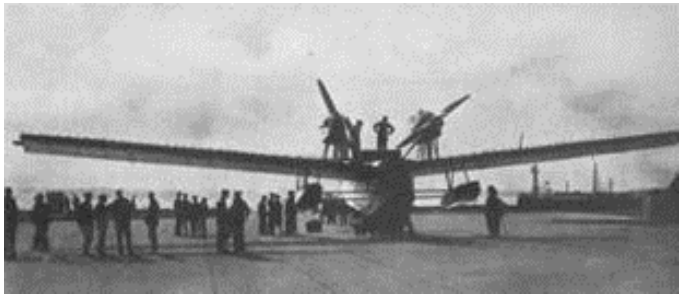






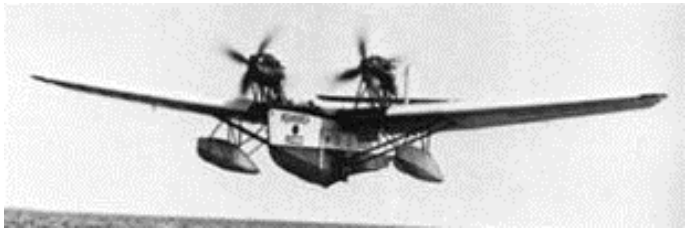
Ro IV Inverness

The British were also very interested in acquiring the new technology, and acquired, through the Beardmore company, a license to build the Ro-IV aircraft. The Ro-IV was very similar to the Ro-III, but used Napier Lion engines. To prevent the British public from knowing that the aircraft was in fact German, it was renamed as the Beardmore Inverness flying boat.



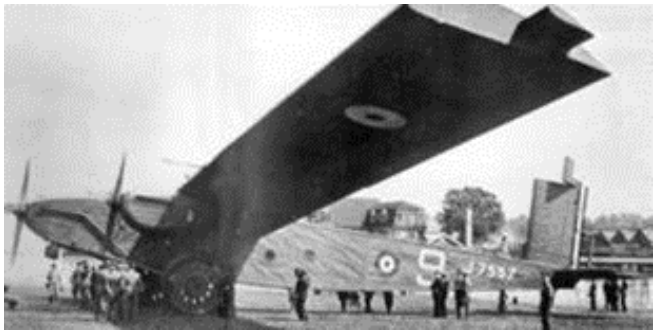
Ro V Rocco

The next design from the Rohrbach company was the Ro-V “Rocco” flying boat. This aircraft was designed in Berlin and manufactured in Copenhagen. However, since some of the restrictions of the Versailles treaty were lifted in 1926, more and more of the production took place in Berlin. The Ro-V Rocco had its maiden flight in 1927 in Copenhagen.



Ro VI Inflexible

Beardmore never really mastered the stressed-skin technology and took five years to complete their first stressed-skin aircraft – the Bearmore Inflexible. Their recommendation to the Royal Aircraft Establishment was that biplanes were safer, and that all-metal aircraft were too heavy to be of any use.



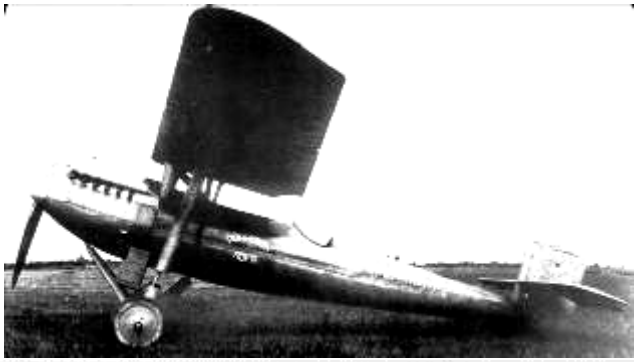
Ro VII Robbe

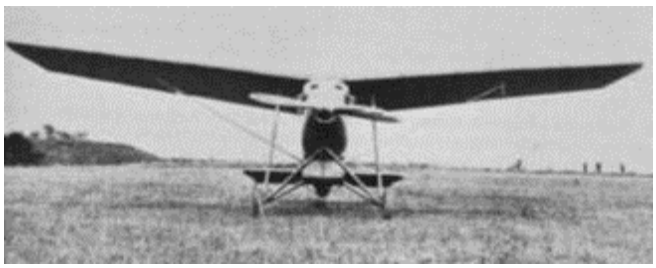
The Ro-VII “Robbe” was completed before the Ro-V “Rocco” and was a 6-seater flying boat. The aircraft had tapered wings and driven by two engines in a pusher configuration. A modified Robbe II was completed during 1927 and was to be used to Ernst Udet on his cross-Atlantic record attempt. He crashed during a test flight, and the east-west Atlantic crossing was cancelled.

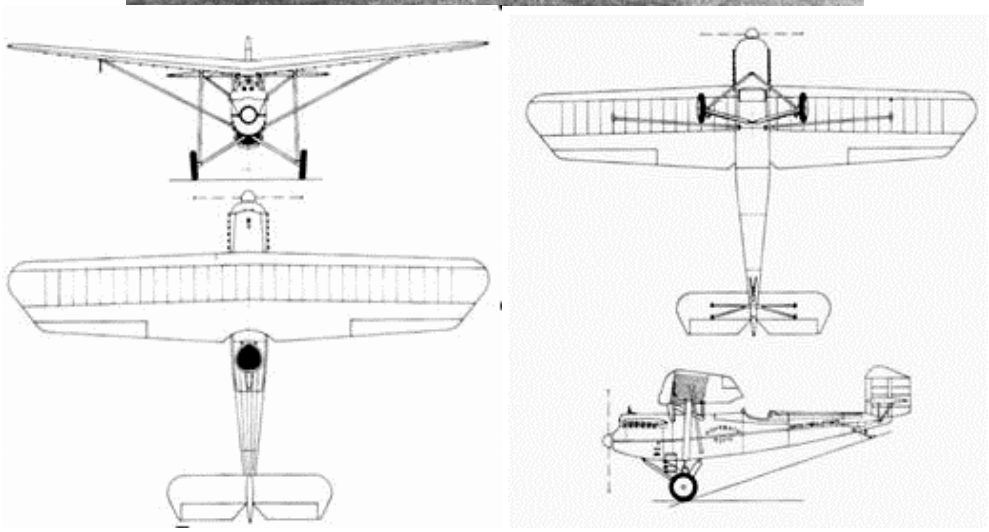
Ro VIII Roland

The Ro-VIII was a tri-motor aircraft. It was not a seaplane, and a total of 18 were designed and built in Germany.

Ro IX Rofix







Rohrbach Ro IX Rofix

Type	WerkNr.	Registration	History
	22		Crashed on 27/1 1927 during landing (The pilot Werner Landmann survived)
	23		Crashed on 15/7 1927 after 48 flights. (Pilot Paul Bäumer was killed)

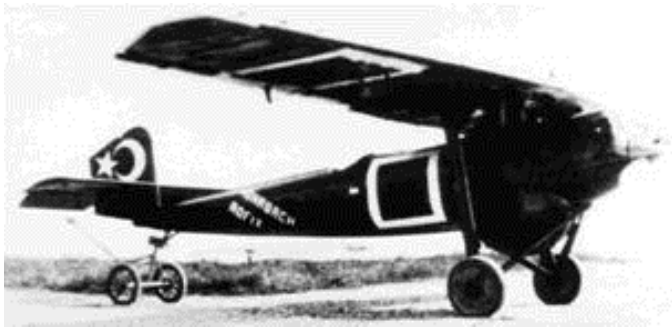
Type	1 seat fighter
Engine	1 BMW VI 450HP (but could take a 600HP engine)
Dimensions	Length 9.50 m, height 3.70 m, span 14.00 m, wing area 28 m2, aspect ratio 7.0
Weights	Empty 1320 kg, fuel 330 kg, crew 80 kg, flying weight 1850 kg
Performance	Max. speed at sea level 257 km/h, at 3000 m 285 km/h, at 5000 m 265 km/h, landing speed 105 km/h, climb to 1000 m 2.0 min., to 3000 m 7.0 min., to 5000 m 14.0 min., max. altitude 8000 m, service ceiling 7600 m, range 770 km

1st Prototype

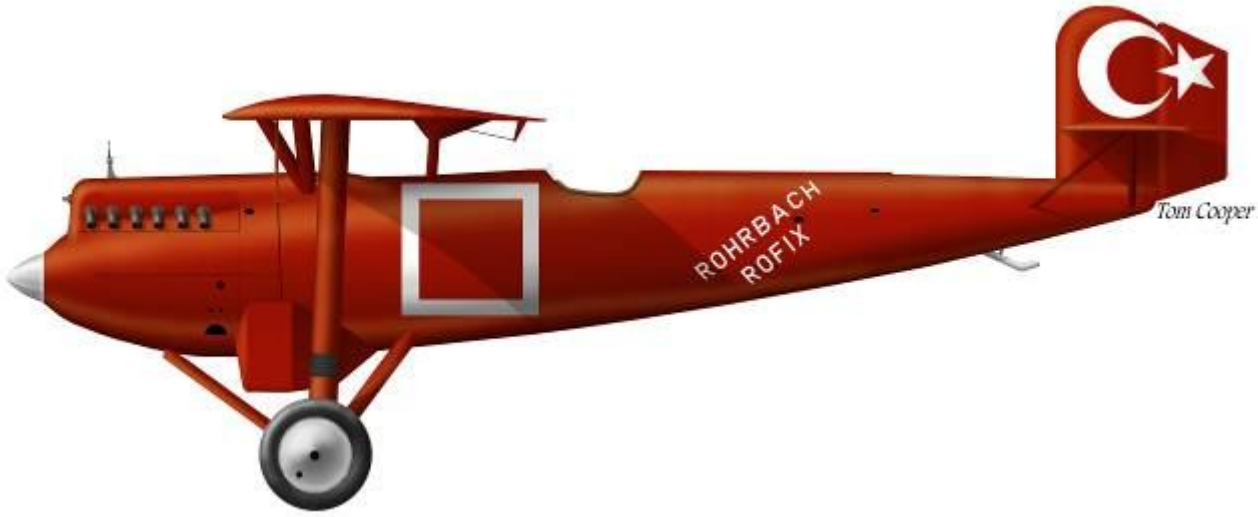
from left to right: Werner Landmann, Frau Erhardt, Charlotte Rohrbach, Kurt Tank, Ernst Udet in cockpit, meister Runge behind aircraft, Betriebsdirektor Erhardt, Adolf Rohrbach and Korvetten Kapitän Nuribe of the Tukish Navy.

wreck of first prototype

2nd Prototype (painted bright red)



wreck of 2nd prototype



THE TURKISH 1926 FIGHTER COMPETITION

In 1926 the Turkish Aviation forces had largely met its objectives with regards to procurement of new aircraft except for a modern fighter to replace the old SPAD XIIIs. In order to choose the best available aircraft a national specification was drawn up and an international tender released. This was an important and new event in Turkish aviation history and it was favorably reacted to by aircraft manufacturers. French firms, which had the most advanced models available offered several

designs (Nieuport-Delage 42C and 62, SPAD 51, 56 and 61 and Dewoitine C.21) from which three, each with a different engine type, were finally tested.

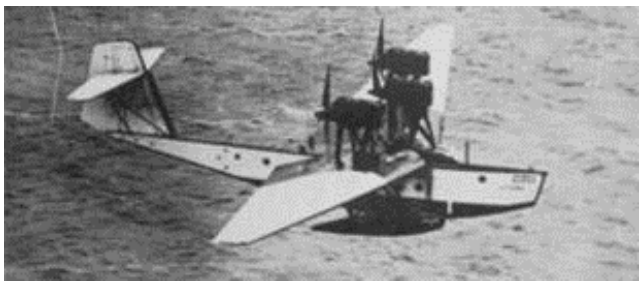
The German Rohrbach company (situated in Copenhagen, Denmark) offered its Rofix fighter to be built at Eskişehir and 2 prototypes and options for 28 was signed for. The design was very advanced for its time and the aircraft was constructed of crome/nickel steel and duraluminium, the skin was of thin aluminum plates. The aircraft was armed with two 8mm machineguns firing through the propeller arc.
The ROHRBACH Ro IX ROFIX was powered by a BMW-VI 450HP engine. The two prototypes ordered in 1926 for evaluation both crashed during tests at Copenhagen airport

No:	22	21.Jan.27 first flight	15.May 27 Crashed no casualties
	23	27.Jan.27 first flight	15.Jul .27 Crashed pilot killed

The famous pilot Ernst Udet flew the first prototype and was impressed with the flying characteristics which he described as total vice less. Especially the total lack of vibrations impressed him and he compared it favorably with the Fokker D.VII. After the second crash the later famous aircraft designer Kurt Tank (FW 190 etc.) made a comprehensive accident analysis and report. The aircraft crashed after having performed a spin and making a new one from which it did not recover. The wreck was recovered from the sea into which it had crashed the next day. The report concludes that the cause of the crash was that the pilot failed to pull the aircraft out of the spin by giving the engine enough power.
The crash only happened a few days before the official handover to the Turkish authorities!
The death of the pilot Paul Baeumer's was tragic, just days after breaking two altitude and speed world records, Paul Baeumer flew to the Danish capital of Copenhagen where he presented his latest B IV "Sausewind" version to possible buyers. After finishing the performance of his own aircraft, Baeumer was asked to demonstrate the "Rofix" model of the Rohrbach aircraft company to a group of Turkish Army officials. It was a question of honor for the passionate flyer to step in when the originally scheduled pilot didn't show up. The flight went smooth until Baeumer initiated a spin of which he couldn't get out again. The plane crashed in front of the observers into the waters of the Øresund sound between Denmark and Sweden. Paul Baeumer died instantly - at the age of 31. This unsuccessful test was witnessed by Kur.Alb Muzaffer (Ergüder) and Plt.Tgm Enver (Akoğlu) who was supposed to fly the aircraft later.

Ro X Romar

During 1928-1929 Rohrbach was busy designing and building three Ro-X Romar prototypes. These large aircraft were designed for trans-atlantic passenger flight and sold to Lufthansa. They had to be taken out of service soon after they were put into service, after several serious accidents. The French ordered a single Ro-X Romar, most likely to study the stressed-skin construction methods pioneered by Rohrbach.



There was a bomber project of the ROMAR with an arrangement of 2x4 bombs in the wing roots and 2xbombs outside the side floats.

Ro XI Rostra

The Danish subsidiary company was shut down during 1927-1928. The buildings at Øresundsvej were torn down quite recently to make way to the new Øresund Metro station. After 1928, the Rohrbach company in Germany continued on its own, and went on to design and built the Rohrbach Ro-XI Rosta. It was a development of the Ro-II, and only a single unit was built.

Aircraft built by Rohrbach

WerkNr	Type	WerkNr	Type	WerkNr	Type
1	Ro II	22	Ro IX Rofix	43	Ro VIII Roland II
2	Ro II	23	Ro IX Rofix	44	Ro VIII Roland II
3	Ro III	24		45	Ro VIII Roland II
4	Ro III	25		46	Ro VIII Roland II
5	Ro III	26	Ro V Rocco	47	Ro VIII Roland II
6	Ro III	27	Ro VIII Roland I	48	Ro VIII Roland II
7	Ro III	28		49	Ro VIII Roland II
8	Ro III	29	Ro X Romar I	50	Ro VIII Roland II
9	Ro III	30	Ro X Romar I	51	
10		31	Ro X Romar I	52	
11		32		53	
12		33		54	
13	Ro IIIA (Turkey)	34		55	
14	Ro IIIA (Turkey)	35	Ro VIII Roland I	56	
15		36	Ro VIII Roland I	57	
16		37	Ro VIII Roland I	58	
17	Ro IV	38		59	
18	Ro VIII Roland I	39		60	
19	Ro VIII Roland I	40		61	
20	Ro VII Robbe I	41		62	Ro X Romar II
21	Ro VII Robbe I	42	Ro VIII Roland II		