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**The HAFRABA and forerunners of the German *Autobahn*
project**

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1 Introduction

This article discusses how motorways were developed in Europe in the 1920s and 1930s. It focuses on the various forerunner projects and the role of the Hafraba association, which has been significant in the Hessian region, with its actors in Kassel, Frankfurt and Darmstadt. This paper shows how the *Autobahn* concept developed, from the Italian motorways to the Bonn-Cologne *Autobahn*, to the design of the Nazi *Autobahn* project and finally to the motorways of today.

It has not been ascertained yet how the evolution of the *Autobahn* concept relates to the highly increased motorization of the 1920s. The respective studies on motorization in Germany during the 1920s, such as those from Edelmann and Flik, deal more with the taxation of vehicles and the automobile industry.¹ Moreover, they point out rationalization potentials by concentrating and adopting American production methods of mass production. However, they do not link their approach with the politics of road construction. Only Mom, in comparing selected European countries, shows the correlation of motorization with the politics of road construction.² Still, the question as to what extent drivers made use of the *Autobahn* system in Germany before 1945 cannot be quickly answered, due to the fact that motorization was very weak by European standards. Motorization remained weak in spite of support between 1933 and 1939 by the Nazi state. We can only speak of mass motorization during the 1950s and 1960s.

The question of what is meant by the term *Autobahn* was posed systematically for the first time by Gabriel.³ We will assent to his analysis and define “motorways” in this paper as junction-free roads which are reserved for traffic of motor vehicles.

Additional characteristics that have gradually developed over time are namely:

- (1) the lanes going in one direction are spatially separated from the lanes going in the opposite direction;
- (2) this separation is either a median strip or a crash barrier;
- (3) there are at least two lanes in each direction; and

¹ *Heidrun Edelmann: Vom Luxusgut zum Gebrauchsgegenstand (From Luxury to consumer Goods)*, Frankfurt 1989. *Reiner Flik: Von Ford lernen? Automobilbau und Motorisierung in Deutschland bis 1933*, (Learning from Ford? Car Manufacturing and Motorization in Germany until 1933) Köln 2001

² *Gijs Mom: Roads as Rails – European Highway-Network Building and the Desire for Long-Range Motorized Mobility*, in: *Technology & Culture*, no. 4, vol. 46 (2005), pp. 745-772

³ *op. cit.*

(4) there is only limited access to the road in intervals of a few kilometres.

This definition can be extended with regard to which kinds of vehicles are admissible. No motorcycles were initially allowed on the Bonn – Cologne *Autobahn*, as well as on the motorways of northern Italy. On the park highways of Long Island, buses were not allowed due to low-crossing bridges, leading to an intended social discrimination toward those who didn't own cars. In addition, the Genoa – Serravalle motorway was reserved for trucks only ("Camionale").⁴ Moreover, long-distance motorways are to be distinguished from city motorways.

Antoine Picon has called for integrating the history of planning and construction of a motorway into a general theory of infrastructure.⁵ Airports, container harbors, shopping centers and blocks of offices appear just as motorways do: as facilities without featuring a specific location ("non-locations"). Herewith, he refers to the differentiation of generic and specific space in architectural theory.⁶ He describes the motorway as being generic because it endlessly reproduces the space of the lane. At the same time, he describes the motorway as being specific because of its adaptation to the respective national and environmental conditions.

Furthermore, the motorway network developed into an essential feature of the 20th and 21st century, and not only for mass motorization. During the 1950s, US President Dwight Eisenhower promoted a motorway project for the country which was analogous to the German *Autobahn*. In pushing his plan, he argued that motorways would offer a decentralized escape route for the population of big cities in the event of a nuclear war.⁷ In the 1970s, the US Pentagon viewed highways as a model for a failsafe communication network for the Pentagon, whereby data packets would autonomously find their way through the network analogous to individual motor vehicles. Furthermore,

⁴ B. Joerges: Die Brücken des Robert Moses: Stille Post in der Stadt- und Techniksoziologie (The Bridges of Robert Moses: Slow Mail in the City- and Technology-sociology), in: Leviathan, 1999, issue 1. And: Lando Bortolotti: Origine e Primordi della Rete Autostradale in Italia 1922-1933, in: Storia Urbana, Band 59, 1992, p. 57

⁵ Antoine Picon: Towards a history of Infrastructure, in: Michele Bonino und Massimo Moraglio: Inventing Movement – History and Images of the A6 Motorway, Turin 2006, p. 13-17

⁶ Jean Attali: The Roman System, or the Generic in All Times and Tenses, in: Rem Koolhaas (Editor): Mutations, Barcelona 2000

⁷ Phil Patton: Open Road – A Celebration of the American Highway, New York 1986, p. 89, see also: Mark M. Rose: Interstate – Express Highway Politics 1939-1989, Tennessee UP, 1990, 2. improved edition, chapter 6 and Bruce E. Seely: Building the American Highway System – Engineers as Policy Makers, Philadelphia 1978, p. 213

the network would be secure, to a large extent due to its manifold intersections. This basic model for a safe communication network combined with the by then-developed data transport protocol TCP/IP was the basis for the development of the Internet infrastructure. The integration of the personal computer into the Internet as the “motor vehicle of the spirit” led to the “Internet boom” of the 1990s. In the 21st century, the Internet continues to influence communication in both business and private life.

In research for this paper and in order to understand the development of *Autobahn* construction, the debates in transport policy before 1933 were screened and their effects on *Autobahn* construction analyzed. For this, the publications on transport policy of the following journals of the years between 1930 and 1932 were evaluated:

- *ADAC Motorwelt*
- *Der Deutsche Volkswirt*
- *Deutsche Wirtschaftszeitung* – Organ des DIHT
- *Die Reichsbahn*
- *Hafraba-Mitteilungsblatt* (from 1932 on: *Die Autobahn*)
- *Verkehrstechnische Rundschau*
- *Verkehrstechnik*
- *Wirtschaftsdienst*
- *Zeitschrift für Verkehrswissenschaft.*

Additionally, the federal archive collection of press releases on questions of transport policy by the German Commercial Clerks Association were inspected. Also, various archives on the federal, state und municipal levels were inspected. Edelmann’s elaborate analyses of the political debates on transport issues between 1920 and 1939, were used as well.⁸

In the 1920s, Germany had weak motorization in comparison to other European countries. This weak motorization had several reasons. The critical years between 1919 and 1923 after World War I represented unfavorable circumstances for an expansion of car sales. The middle class, which became impoverished because of the war and the ensuing inflation of 1923, could not be considered car consumers. Furthermore, the luxury tax of the federal (Reich) government on cars, which was valid until 1926, decreased sales as well.

⁸ *Heidrun Edelmann: Vom Luxusgut zum Gebrauchsgegenstand (From Luxury to Consumer Goods)*, Frankfurt 1989.

Between 1923 and 1933, a lively debate about the future of the road systems took place in Germany.⁹ It included the following topics:

- An increase of motor vehicle traffic
- The extension of the road system
- The definition of an *Autobahn* network
- The new construction of an *Autobahn* network
- The financing of road constructions
- A restructuring of responsibility for road construction between federal states and communities
- Taxation of motorized traffic
- The competition between road and railway and the shift of traffic from railway to automobile, bus and truck.

The last point will not be discussed in this paper.¹⁰

2 Motorization in Germany from 1920 to 1930

The deficits of the then-existing road system became obvious when it could not bear the increase in motor vehicle traffic. The number of registered motor cars in the German state quickly rose, tripling from 161,000 in 1925 to 433,000 in the year 1929.¹¹ The motor car gained much importance in the business life of the 1920s, compelling the central association of German wholesale traders to survey its members on the extent of business-related car trips.¹² Table 1 below demonstrates the nearly two-fold increase in cars in the city of Frankfurt (Main) from 1927 to 1932.¹³

⁹ The following works are concerned with this debate: the discourse has been explored in great detail by the former secretary of the Hafraba, Kurt Kaftan, in 1955. *Kurt Kaftan: Der Kampf um die Autobahnen* (The Struggle for Motorways), Berlin 1955. Unfortunately, sources are completely missing. *M. Kornrumpf: Hafraba e.V. – Deutsche Autobahnplanung* (German *Autobahn* Planning) 1926-1934, Bonn 1990. The value of this work is limited since Kornrumpf does not name his sources completely and admires the Nazi movement. Gabriel analyzed only recently the forerunners of German *Autobahns*: *Roland Gabriel: Deutsche Autobahnvorläufer* (German *Autobahn* Forerunner) – AVUS, Hafraba, Munich-Leipzig-Berlin, Leipzig-Halle, Düsseldorf-Cologne-Bonn, in: *Wolfgang Wirth: Die Autobahn – Von der Idee zur Wirklichkeit* (The *Autobahn*: From Idea to Reality), Cologne 2005, p. 24-62. Sources are only partially named.

¹⁰ See my Working Paper in History of Mobility No. 2/ 2003: Rivalry and Regulation - The German Cargo Transport Policy 1920 – 2000. Paper presented at First International Conference on the History of Transport, Traffic and Mobility (T2M), 6 – 9 November 2003, Eindhoven Technical University, The Netherlands, in the Internet resource http://www.ibwl.uni-kassel.de/vahrenkamp/history_mobility/history_mobility.htm

¹¹ *Statistisches Jahrbuch für das Deutsche Reich* (Statistical Yearbook for Germany), 1926, p. 103; 1930, p. 158.

¹² Stadtarchiv (City Archive) Frankfurt/Main, Akte IHK 854.

¹³ *Statistische Jahrbücher für das Deutsche Reich* (Statistical Yearbook for Germany), 1928 bis 1933 (1928 to 1933)

Year	Cars and buses	Cars and buses per 10,000 inhabitants	Number of inhabitants per Car and bus
1927	4278	90.2	110,8
1928	5955	108.2	92,4
1929	7284	131.8	75,8
1930	8134	147.9	67,6
1932	7912	148.0	67,6

Table 1: Development of Cars and Buses in Frankfurt (Main), 1927 to 1932

Moreover, a significant growth in registered trucks is notable. The number of trucks rose in the 1920s with a high average growth rate of 22 per cent p.a., according to the Berlin Institute of Research on Business Cycles.¹⁴ Simultaneously, the efficiency of transporting goods by truck in the 1920s rose so that trucks gained advantages over transportation by train in terms of speed and price. According to research by Mellerowicz, the cost of truck transportation in the 1920s dropped 60 per cent due to better truck design and construction.¹⁵ Small trucks especially were rapidly and widely distributed because of their distinct advantage of procuring goods and quickly delivering them to customers. The following table shows the growth of trucks in Germany between 1922 and 1930.¹⁶

Year	Number of trucks	Growth in %
1930	157,432	9.4
1929	143,952	18.2
1928	121,765	20.6
1927	100,969	12.2
1926	90,029	12.0
1925	80,363	32.5
1924	60,629	17.2
1923	51,736	18.4
1922	43,711	

Table 2: Number of trucks in Germany, 1922 to 1930

This rapid growth in registered motor vehicles induced a very high traffic density, thereby putting an excessive burden on country roads. The national traffic count on 10,277 routes in 1928/1929 showed an average number of 319 vehicles per day and, per road

¹⁴ Lastkraftwagen in der Volkswirtschaft, Institut für Konjunkturforschung (Trucks in the economy, Institute for Economic Research), Berlin, weekly report of 7th May 1930, p. 23-24.

¹⁵ K. Mellerowicz: Der Stand des gewerblichen Güterfernverkehrs (The State of Commercial Goods Transporting), in: *Die Strasse*, issue 5, 1935, p. 145.

¹⁶ Statisches Jahrbuch für das Deutsche Reich (Statistical Yearbook for Germany) 1924/25, p. 114; 1926, p. 104; 1927, p. 125; 1928, p. 158; 1929, p. 160; 1931, p. 146.

on state and provincial roads, the significant category for long-distance traffic, 67 horse-drawn vehicles, 64 motorcycles, 142 automobiles and 46 trucks.¹⁷ On these country roads, traffic rose significantly between 1924 and 1928: vehicle traffic, excluding trucks, jumped 210 per cent compared to the traffic count in 1924/1925 and truck traffic increased 118 per cent.

During the 1920s, bus traffic developed as a competitor to the railroad. While the extension of the railroad network was brought to a standstill, the network of bus routes expanded to 56,000 kilometres. It caught up with the network of railroads and the traffic infrastructure for weekend and excursion trips to areas unreachable at the time by trains. In order to stay the competition, railroad operators offered package tours at a reduced price at the end of the 1920s.¹⁸ Along with the boom of modern means of transportation such as cars and buses, tourism as an independent economic factor was also developing in the 1920s. Many communities became aware of the importance of this factor and discovered the active arrangement of tourism as a new political field. Therefore, it was not surprising that the discussion about tourism in the 1920s was linked to the discussion about the need for car and bus transportation on *Autobahns*. The topics 'tourism' and '*Autobahn*' were referred to over and over again in the newsletter of the Hafraba.

Several times during this period, the inadequacy of the existing country road network was pointed out. Adolf Elsaesser, a road administration official in the city of Mannheim, stressed in one article that 6 out of the 16km of the country road between Heidelberg and Mannheim weaved through towns, meaning that drivers could only travel at a low speed and had to watch out for rail vehicles.¹⁹ In publications concerned with country road and automobile traffic, the conflicts and dangers were repeatedly pointed out. For instance, there was the problem of fast motor vehicles having to negotiate the roadways with slower traffic, such as pedestrians, cyclists, livestock herds and horse-drawn vehicles. Consequently, restrictions were put on the speed of automobiles.²⁰ Carl Kappler proved the specific backwardness of the German country road system after he

¹⁷ *Karl Hoffmann*: Die Ergebnisse der 2. deutschen Verkehrszählung von 1928-29 (Results of the 2nd German Transportation Census of 1928 to 1929), in: *Verkehrstechnik*, issue 47, 1931, p. 189-191.

¹⁸ *Christine Keitz*: Reisen als Leitbild (Travel as Model), p. 78 ff

¹⁹ Städte an den Hafraba-Strassen (Cities along the Hafraba Roads) –III. Mannheim, in: *Mitteilungsblatt*, issue 5, 1930, p. 7-9.

²⁰ The National Decree on Heavy Vehicle Traffic from 16 March 1928 specified in the first paragraph as road usage in addition to: Riders (Passengers), marching formations, processions, pulled or led animals.,.in:..RGB, I, 1928, p. 66

had experienced a 30,000 km test drive across Europe. He showed that other countries in Europe had enlarged country roads -- 2 to 3 meters wider than those in Germany -- and that local authorities had cut down cramping trees along the roads, as well.²¹ A special complaint of truck drivers regarded the heavily curved sections of many country road routes, such that the vehicles had to tilt while rounding the curve, causing loaded goods to shift or fall inside the truck. The driver would often have to restock his goods, thus delaying the delivery.²² However, in Elsaesser's reports about the condition of country roads, empirically proven information on the maximum average speed of specific routes is missing. The Hafraba stated in its reports an average speed of 45km/h,²³ but due to hindrance by slower road users this seems too high a number.

According to Mom, the most important motive for motorway construction was greater road safety in comparison to country roads, although²⁴ remarkably, this argument was barely vocalized in the discussion of the 1920s. The Hafraba also primarily, as justification for building an *Autobahn* system, mentioned the possibility to drive at a higher speed.²⁵ The association's argument was that the *Autobahn* would be the appropriate type of road for motor vehicles - an argument that was also emphasized by Nazi propaganda later on. Reports and statistics about road accidents began to appear in the magazine 'Verkehrstechnik' ("Transportation Technology") in 1926. But there were never drawn conclusions from them pointing to a need for an *Autobahn*. Questions about road safety were raised for the first time and discussed at big conventions during the 1920s in the USA because of high car density at the time.²⁶

The fragmentation of responsibilities for road planning and road construction in different federal states, communities, and provinces added to the insufficiency of the road network. In Prussia, the responsibility was transferred from the communities to the

²¹ Carl Kappler: Landstrassen in Deutschland (Country roads in Germany), in: Mitteilungsblatt, issue 9, 1930, p. 1-2.

²² Julius Meyer und Heinrich Wilkin: Die Landstraße als Heimat des Lastzugbesitzers (The Country Road as Home to the Truck Owner), in: Die Straße, 1935, p.160-163

²³ First meeting of the committee on traffic policy at the Hafraba's meeting rooms in Frankfurt/Main, Savignystr. 7, on Monday, 16th May 1927, Schrift Nr. 7 – Hellerdruck Frankfurt 1927, p. 20 (cf. appendix).

²⁴ Mom, op. cit.

²⁵ Piero Puricelli, in an essay in an essay in German for the Hafraba, compares the exhilarating speed on the *Autobahn* with the words „The flight of wild animals“, Roads and Car-Only-Roads, in: Mitteilungsblatt, issue 9, 1929, p. 1

²⁶ See the 2nd Congress on Transportation Security in Washington D.c. with 1,200 participants in March 1926, Verkehrstechnik, 1926, p. 343

federal states and provinces on 1 April 1927. Furthermore, the Highway Code was not uniformly regulated by the Reich.²⁷

3 The Work of the STUFA

Controversy and discussion continued as to how the existing road system could be adjusted to serve the rapidly growing traffic of motor vehicles. On the one hand, there was the concept of extending the existing country roads. The “Studiengesellschaft für Automobilstraßenbau” (Stufa – Research Association for the Construction of Automobile Roads), by 1926, published a network of motor vehicle roads covering the whole of Germany with a total length of 10,630 km.²⁸ The new route Kassel – Fritzlar – Fulda – Würzburg, which was important for the state of Hesse, was included in this network. The version for this route was planned by the Nazi *Autobahn* project in the order: Kassel – Bad Hersfeld – Fulda – Würzburg. But the project was only completed as far as Bad Hersfeld. The network is shown in figure 1.²⁹ The rational planning criteria, on which the network of the STUFA is based, are notable. The STUFA identified economic areas that produced agricultural and industrial products, as well as raw materials, and linked those as starting and arrival points along a road network. Therefore, their planning was based on the expected economic traffic of goods and individuals. This kind of rational planning became the basis for the traffic policy of the German empire by 1933, but was abandoned completely during the time of the Nazi regime³⁰.

²⁷ *Friedrich Frey*. Das Hessische Strassenwesen (The Hessian Roads), Mainz 1928, Also: *Friedrich Frey*: Das Neue Strassenverkehrsrecht im Reich und in den Ländern (The New Traffic laws in the German Empire and among [other?] countries), Mainz 1928. Frey's writing is the only of its kind in the 1920s on traffic laws, which signals the beginning of attention given to the subject. Later, the general inspector for German roads, Fritz Todt, followed suit, in 1932, with his comprehensive study, „Road construction and management,“ which considered the splintering of road management. See BA, R 4601, File 3001/A

²⁸ Stadtarchiv Kassel (City archive of Kassel), (File) 10/3 Hafraba. Also: Verkehrstechnik, issue 18, 1926, K. Heller: Das Kraftwagenstrassennetz Deutschlands (The Trucking Roads network in Germany), in: Strassenbau und Strassenunterhaltung (Road Construction and Maintenance), supplement to the journal Verkehrstechnik, 1928, p. 669-671. Also: *Roland Gabriel*, op. cit., p. 30-33.

²⁹ *Rappaport*, op. cit.. The stretch linking Kassel-Fitzlar-Fulda, in this design, occupied only rank 2 in construction (a thin line), but in the STUFA Network of 1928 was increased to rank 1, see *Heller op.cit...*

³⁰ See my publication: Der Autobahnbau 1933 – 1943 und das hessische Autobahnnetz, (The Construction of the *Autobahn* 1933 – 1943 and the Hessian *Autobahn* Network) Working Paper in History of the Mobility 3/2001, in Internet under: http://www.ibwl.uni-kassel.de/vahrenkamp/history_mobility/history_mobility.htm, and in the journal of the Union of Hessian History and Culture, Vol. 109, 2004, Marburg, p. 225-266

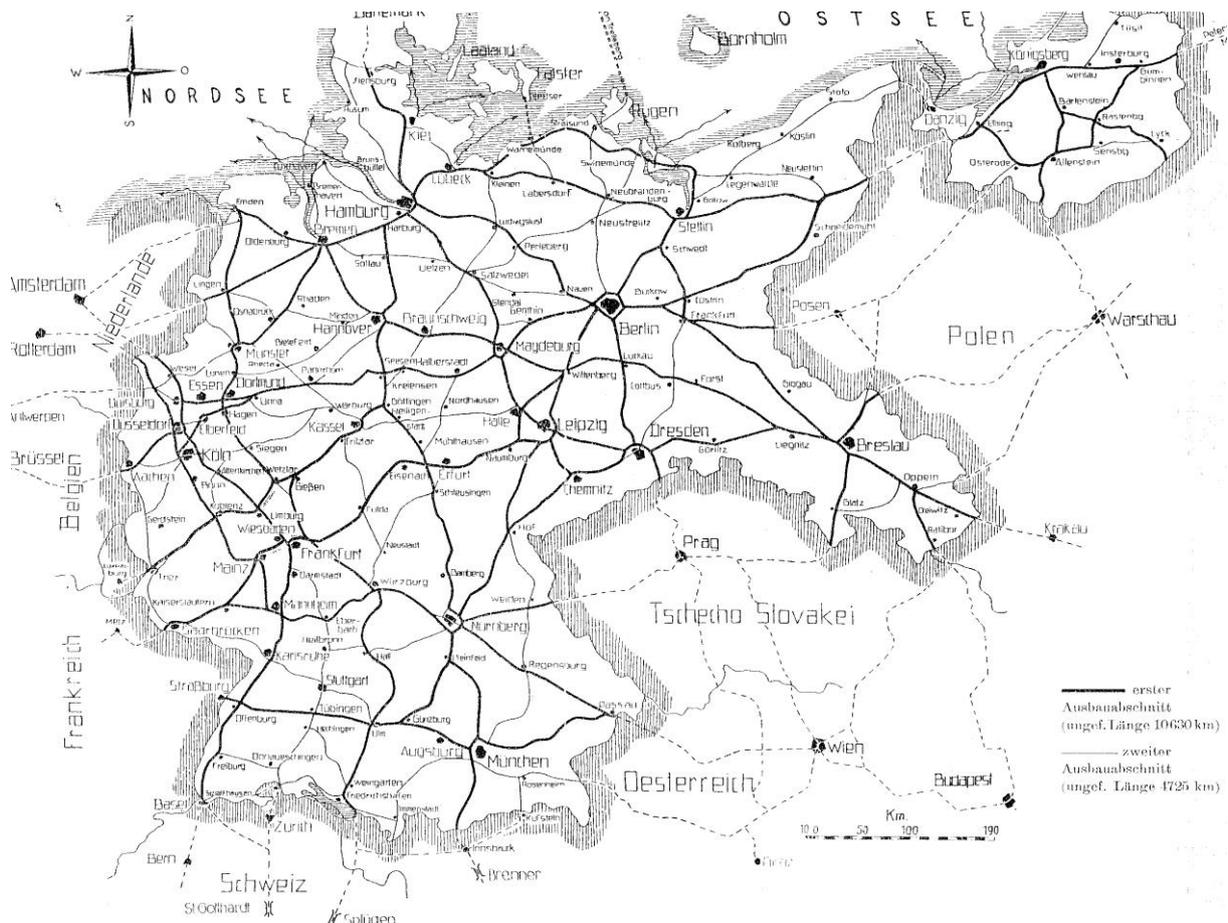


Figure 1: The STUFA-Network of long distance roads

A total of 138 roads were identified and provided with numbers from 1 to 138, which are still valid today. Moreover, standard procedures for their extension were laid out. According to those procedures, the standard breadth for the road would be 6 meters and for every additional traffic lane, 2.5 meters if the width were greater. The federal states committed themselves to conducting this extension according to the requirements of traffic development and according to their financial capability, but they stopped short of setting a date for the work to begin. In 1930, the federal government agreed on a plan with the states for a homogenous extension of the motorway network. The total usable width including the shoulders was to be increased to 8 meters, in mountainous terrain to 7 meters.³¹

³¹ Ausbau der Fernstrassen in Deutschland (Improvement of long-distance roads in Germany), in: ADAC-Motorwelt, issue 38, p. 27-29.

4 The Controversy: *Autobahn* versus Roads

On the other hand, there were plans to have motorways exclusively for motor vehicles. The promoters of the *Autobahn* argued that only with this approach would it be possible to separate the motor vehicle traffic from slower road users. This separation would also need motorways to be junction-free, so that other traffic lines could cross them via bridges. Only with this design could automobiles display their capability to cross distances at a high speed. Consequently, the county director, Dr. Usinger, called for in his article “What do you think about motor vehicle-only highways?” the separation of the motor vehicle traffic from the remaining traffic that consisted of slower road users.³² Moreover, it was argued that with this *Autobahn* concept, the drive-through traffic could be taken out of the cities so that damage to buildings caused by ground tremors could be avoided.³³

The *Autobahn* promoters pursued both local and long-distance traffic concepts. Although Germany did indeed have a very low car density per capita compared to other countries,³⁴ local traffic was comparatively high and put great stress on the then-existing network of country roads. This was the main reason for the urgent demand for motorways connecting neighboring cities. The issue of an *Autobahn* linking the cities of Düsseldorf, Cologne and Bonn was widely being discussed.³⁵ Furthermore, in 1927, the LEHA association was founded, having as its goal to connect the cities of Leipzig and Halle by means of a motorway for automobiles only (in the following: *Autobahn*).³⁶ Discussions on linking Heidelberg with Mannheim via an *Autobahn* had already, by

³² In: Mitteilungsblatt, issue 3, 1929, p. 1-2.

³³ On the argument of damaging buildings, see Mitteilungsblatt, issue 1, 1928, p. 8; or: Verkehrstechnik, 1929, p. 204.

³⁴ The density of vehicles per 100 inhabitants in Germany was only one fourth that of France and one third of England's density, see Statistisches Jahrbuch für das Deutsche Reich, 1933, p. 84. In Italy, the density was only half that of Germany, see *H. Uhlfelder*: Die oberitalienischen Autobahnen, in: Mitteilungsblatt, issue 7, 1930, p. 9-14, here p. 11.

³⁵ *Grossjohann*: Der Beginn einer neuen Epoche in Deutschland – Zur Eröffnung der Autobahn Köln-Bonn am 6. August 1932 (The Beginning of a New Epoch in Germany – On the opening of the Cologne-Bonn *Autobahn* on 6 August 1932), in: Die *Autobahn*, issue 8, 1932, p. 1-5. *Grossjohann*: Die Kraftwagenstrasse Bonn-Köln-Düsseldorf (The Trucking Road of Bonn-Cologne- Düsseldorf), in: Strassenbau und Strassenunterhaltung, supplement of the journal *Verkehrstechnik*, 1929, p. 415. Furthermore: Gabriel, op. cit., p. 40-42. “Das Rheinland baut eine Autostrasse: Europas modernste Kraftwagenstrasse zwischen Köln und Bonn”, title of ADAC-Motorwelt, 1930, issue 7, p. 27-28.

³⁶ Mitteilungsblatt, issue 8, 1930, p. 19 and Mitteilungsblatt, issue 1, 1933, p. 7. Also the brochure: Zum Projekt „Leha“, Leipziger Verkehr und Verkehrspolitik, Schriftenreihe des Rat-Verkehrsamtes Leipzig, issue 19, 1931, Institut für Stadtgeschichte Frankfurt/Main, Magistratsakten MA6289, furthermore: *Roland Gabriel*, op. cit., p. 43-45.

1926, started taking place.³⁷ The Hafraba association focused on the long-distance connection of an *Autobahn* route from Hamburg to Basel (see below). On 11 January 1927, a conference on motorways was held in Leipzig and its main topic was the *Autobahn* route Berlin – Leipzig – Munich (being linked to Rome by the Brenner alpine pass), The conference focused on modernizing country roads vs. building *Autobahns*.³⁸ The *Autobahn* promoters, however, were isolated on the meeting. Only the representative of the Hafraba, Prof. Robert Otzen, stood by the *Autobahn* concept without reservations.³⁹

In order to stress their argument of the urgency of modernizing country roads, they showed that there was no need for long-distance traffic. An *Autobahn* was seen as traffic passage serving the local or excursion traffic of big cities in the range of up to 100 km at the most. The function of such a motorway to make recreation areas in the immediate vicinity of big cities accessible for their regional residents was widely accepted in the 1920s. It was assumed that an *Autobahn* would be less suitable for long-distance traffic in comparison with the soon-to-be introduced airplanes and existing railways. It seemed unimaginable that by offering a network of motorways an intense demand for long-distance traffic would develop. At the conference on motorways in Leipzig in 1927, one speaker, secretary Arthur Speck of the federal administration of Saxony, doubted whether there was empirical evidence at all for long-distance traffic on the existing country roads and he applied this argument to the prospective *Autobahn* routes.⁴⁰ Arthur Speck was an important opponent of the *Autobahn* concept who led the nationwide traffic counts of 1924/1925 and 1928/1929. Secretary Vilbig of the federal administration of Bavaria also supported the point of view that modernizing the country roads network had to have priority and *Autobahn* projects should be shelved. Only as an exception should an *Autobahn* be built as an arterial road leading out of cities or for excursion

³⁷ *Gabriel*, op. cit., p. 42-43.

³⁸ Deutscher Verkehrsdienst, published by Reichszentrale für Deutsche Verkehrswerbung, Nr. 289 from 11 December 1926, Stadtarchiv München (City archive of Munich), Verkehr 84, as well as: Autofernstraße Berlin-Leipzig-München-Rom, Report from the Autofernstraßen-Conference Leipzig, Neues Rathaus, 11 January 1927, Leipzig, Verlag Rats-Verkehrsamt, 1927.

³⁹ Report by Vilbig on the conference in: *Vilbig: Ausbau der Straßen – Nur-Autostraßen? Drei Musterbeispiele aus Bayern*, in: *Verkehrstechnik*, issue 21, p. 327. Vilbig took part in the conference on the *Autobahn* in Leipzig in 1927.

⁴⁰ Lecture on ministerial consultant Speck of Dresden, in: *Autofernstraße Berlin-Leipzig-München-Rom*, Report from the Autofernstraßen-Tagung Leipzig, Neues Rathaus, 11 Januar 1927, Leipzig, Verlag Rats-Verkehrsamt, 1927, p. 16f. See also: *Arthur Speck: Der Fernverkehr auf deutschen Landstrassen* (Long-distance travel on German country roads), in: *Verkehrstechnik*, issue 13, 1932, p. 239-242. Speck was opposed to the *Autobahn* because he found it more urgent to extend the then-existing road network. See also *Gabriel*, op. cit., p. 36f.

traffic, such as the projected Munich – Starnberg route.⁴¹ The *Autobahn* opponents viewed these motorways as dreams, maintaining that, in addition to the existing road network and railroad network, an *Autobahn* network appeared not far off. This, maintained the opponents, was, in reality, beyond human capability and instead, rather illusionary.⁴²

5 The Debate on Financing the Road Network

Financing was an additional point of controversy. The Research Association of Financing German Road Construction estimated the finance requirements for modernizing the road networks at 3.5 billion Reichsmarks. It was proposed to use bonds in order to raise this money.⁴³ The net debt services of these bonds should be covered by the taxation of fuel and vehicles. The opponents of the *Autobahn* concept were afraid that building these roads would deprive the urgent modernization of the country roads its own financing.

In December 1927, the German Parliament discussed how road traffic could be conveniently taxed and how the resources could be spent on the extension and maintenance of the road network. Parliament commissioned the government to make a memo, eventually titled “Über die Besteuerung der Kraftfahrzeuge” (On the taxation of automobiles). This study was released in December 1930. It verified the expenses, which were determined according to the standard principle of the federal states for the maintenance of the roads and the new road construction.⁴⁴ Table 3 illustrates the commission’s findings.

⁴¹ *Vilbig*: Ausbau der Straßen – Nur-Autostraßen? Drei Musterbeispiele aus Bayern (Construction of roads – only roads? Three examples from Bavaria), in: *Verkehrstechnik*, issue 21, 1927, p. 327-330.

⁴² *Rappaport*, op. cit., p. 288

⁴³ *Die Finanzierung des deutschen Strassenbaus* (The Financing of constructing German roads), Berlin 1930. The Association for the Study of Financing German Road Construction was founded in October 1928 by various banks, economic organizations and industrial leaders.

⁴⁴ Report of the Reichstag, 23 December 1930, 5th election cycle, addendum to the stenographic report, Vol. 449. All following data on taxation are from the memo noted. In column 3 for the current dialogue on road networks all expenses for redemption and interest payments of the laying of road construction are included.

Year	Length of the Network in km	Maintenance in Mio. RM	Basic renewal and improvement in Mio. RM	New Construction in Mio. RM	Sum in Mio. RM	Financed by loans in Mio. RM	Covered by revenue in Mio. RM
	2	3	4	5	6	7	8
1927	269 735	276	261	116	656	210	443
1928	273 390	306	223	118	651	158	490
1929	276 494	326	244	139	713	188	522

Table 3: Expenditures of the German States for Maintenance and New Constructions of Roads

As seen here, the finance requirements are 25 to 32 per cent covered by bonds which were remitted as foreign bonds. The finance requirements for new constructions were funded from the revenue of bonds. Subtracting the revenues of bonds from the overall cost, the finance requirements of 433 million Reichsmarks in the year 1927, and then up to 522 million Reichsmarks in the year 1929, resulted, which had to be covered by tax revenues. Those expenses were only covered by 156 million Reichsmarks which resulted from automobile taxation in the year 1927. This amount increased to 209 million in the year 1929. According to §41 of the “Finanzausgleichsgesetz” (law related to the financial relations of the federal states), revenue from automobile taxation must be remitted to the federal states for the purpose of maintaining public roads.⁴⁵

Although the government had strongly increased revenue from the automobile economy, thanks to a rise in the customs duty and the purchasing constraint of grain alcohol in 1930, it announced no further financing of the road network for the time being. In a law passed on 15 April 1930 relating to the modifications of the customs duty, the tariff for the import of mineral oil was raised from 6 Reichsmarks per one hundred kilograms to 10 Reichsmarks. Previously duty-free gasoline was likewise raised to 10 Reichsmarks per one hundred kilograms. For domestically produced mineral oils, a sales equalization tax of 3.80 Reichsmarks per one hundred kilograms was approved. In 1931, road traffic faced an increased financial burden, in part because domestic fuel manufacturers, as well as importers, were forced by the federal government to purchase 3.5 per cent of the sold volume of grain alcohol. Overall, a financial burden from duties in the amount of 9.55 Reichspfennig per litre of gasoline arose. It was estimated that in 1931, tax revenue from automobile taxation amounted to 230 million Reichsmarks and tax and duties for gasoline amounted to 177 million. Therefore, 407 million Reichsmarks would benefit the federal government from road traffic revenues. However, the advisory board for the motor vehicle tax, which belonged to the interim Reich Council, estimated the financial burden for the road traffic economy at 450 million Reichsmarks for the fiscal year

⁴⁵ RGB, I, 1927, p. 91

1930/31, in which a limit of the burden for automobile sales was already exceeded.⁴⁶ Hence, the political debate on traffic was strongly influenced by the taxation of fuel and vehicles at the end of the 1920s.⁴⁷ Numerous articles were published in the media, especially in the weekly magazine 'ADAC-Motorwelt,' which complained about the high tax burden on car drivers. The government was blamed for hindering the automobile industry, which in return would add to the economic downswing. The journal *Auto und Wirtschaft* reported that the tax burden of the motor traffic industry rose from 275 million RM in 1929 to 466 million RM in 1931.⁴⁸

The argument that building an *Autobahn* would deprive the country roads network of government funding for the modernization was countered by the Hafraba, which offered that their plan would not be financed by the government, but rather via private funding in the form of foreign loans and refinancing by tolls. The Reich should merely assume a loan guarantee.⁴⁹ Herewith, the Hafraba plan came into conflict with the country's constitution (Finanzausgleichsgesetz), which did not allow for refinancing roads by toll fees. This naturally provided a handy argument for the opponents of the *Autobahn* project working in the federal ministry of transportation.

6 The construction of motorways in Italy

Discussions on traffic policy did not take place only in Germany, but in Italy as well, with regard to how to build a motorway between the two countries. German debates were inspired by the shining example of entrepreneur Piero Puricelli's motorway initiative in Milan. In Germany, 27 publications featuring the motorway appeared from 1925 to 1939, as Hafen has revealed.⁵⁰ This section of the paper looks at the peculiar social and economic factors that led to motorway construction in Italy.⁵¹

⁴⁶ Memo, op. cit.

⁴⁷ *Edelmann*, op. cit., p. 140-145, *Reiner Flik*, op. cit., p. 71-92

⁴⁸ *Dr. H. Kruse*: Die Notlage der Kraftverkehrswirtschaft, in: *Auto und Wirtschaft*, Nr. 1/Berlin 1932, p. 1. (Emergency situation of motor traffic economy),...

⁴⁹ 1. Sitzung des Finanzierungs-Ausschusses am Donnerstag, Frankfurt 1927 (cf. Anhang) (First Meeting of the Financing Committee on Thursday, Frankfurt 1927) (cf. Attachment)

⁵⁰ *Paul Hafen*: Das Schrifttum über die deutschen Autobahnen (Writings on the German *Autobahn*), Bonn 1956. p. 30-32

⁵¹ *Daniela Zenone*: Das Automobil im italienischen Futurismus und Faschismus (The Car in the Italian Futurism and Fascism), Forschungsbericht FS II 02-115, 2002, Wissenschaftszentrum Berlin, *Lando Bortolotti*: Origine e Primordi della Rete Autostradale in Italia 1922-1933, in: *Storia Urbana*, Band 59, 1992, p. 35-69 sowie *Massimo Moraglio*: Per una storia delle autostrade italiane: il

At first glance, the motorway projects in Italy show the same paradox as the German ones. Both countries had a low car density per capita, whereas the car density in Italy was simply consistent with half the German density. However, this comparison of numbers does not account for the varying regional allocation of automobiles. The industrial centers of northern Italy had a car density per capita which had the same magnitude as in German cities. Thus, in the city of Turin, there was 1 car per 56 inhabitants in 1930 and in Milan this figure was 1 car per 60 inhabitants. These densities are comparable with (and even higher than) 1 car per 68 inhabitants, which was the proportion in Frankfurt a.M. in 1930 (cf. table 1).⁵² Therefore the cities in northern Italy and Frankfurt had similar motivations to promote a motorway project.

As a consequence of warfare production in World War I, Northern Italy experienced rapid industrialization. The proliferation of Fiat production sites in Turin are evidence of this.⁵³ At the same time, a self-confident class of entrepreneurs with abundant capital became more visible in Northern Italy. It is not remarkable that agitation against war-profiteers characterized the political arena during the economic crisis of 1920, and was also politically exploited by Mussolini.⁵⁴ It is still an unanswered question as to whether reparation from Austria and Germany contributed to an increasing capital supply in Italy. The industrial advancement in Northern Italy was connected with heavy automotive traffic in cities and their suburbs clearly provoking the need for a motorway network. The connection between motorway construction, with its connotation of modernity, and the pace of modernization is evident and is discussed by Daniela Zenone.

In distinct contrast to the Hafraba-project and to the German Nazi *Autobahn* project, the Italian initiatives were without exception decentralized. Individual communities, with the help of the local chamber of commerce and local leading businesses, seized the initiatives. The projects were signed by the government in Rome and approved by the Department of Public Works. Not all projects were totally privately financed but rather received either in part as state warranties for deficiency suretyships or warranty interest

periodo fra le guerre mondiali, in: *Storia urbana*, issue 100, 2002, p. 11-26. See also his paper: *The Highway Network in Italy and Germany between the Wars*, in: Gijs Mom and Laurent Tissot (Ed.): *Road History. Planning, Building and Use*, Neuchâtel, Alphil Editions, 2006, p.217-232.

⁵² I owe the data from Turin and Milan to my colleague Massimo Moraglio, University of Turin. His sources are: Istat, *Annuario statistico*, Rome, Istat, 1930, und *Città di Torino, Bollettino statistico*, 1930.

⁵³ V. *Delle Donne*: Agnelli – Die Biographie, Berlin 1995: „FIATs bonanza was the war“, p. 47. See also: Daniela Zenone, op. cit.

⁵⁴ Walter Rauscher. *Hitler und Mussolini*, Graz 2001

and in part grants to one third – as it happened for the Turin-Milan motorway owned by FIAT.⁵⁵ As a result, Bergamo, cut off from railroad traffic because of the construction of the Treviglio-Rovato route, demanded a motorway from Milan to Bergamo.

⁵⁵ Mitteilungsblatt 12/1929, p. 5

Route	Length in km	Company	Capital	Municipal investment in the construction costs in Lira	Permission with royal decree	Start of construction	Opening
Milan - Lakes	84.5	SA Autostrada	50 mio.		1922-12-17	1923-03-26	1924-09-21
Milan - Bergamo	48.8	SA Bergamasca	20 mio.	7 mio.	1925-09-04		1927-10-28
Naples - Pompeii	20	SA Autostrada Meridionali	15 mio.	Fixed interest by the state	1925-09-04		1928-10-28
Bergamo - Brescia	45	SA Bresicana with investment from the board of trade and municipal statutory corporations			1929-02-14		1905-04-14
Turin - Milan	125.8	owned by FIAT	30 mio.	3.7 mio. grant by the state per year	February 1930 decree-law	1930	1932-10-14
Florence - Viareggio	81	SA L'autostrada di Venecia		1/3 of the costs are borne by Venice and Padua, the remain by a 50-year government bond		1929-11-23	1933-10-15
Rome - Ostia	20			100% by the City of Rome			1928 - 10-28
Genoa - Serravalle	50	LKW		Institution was AASS			1935

Table 4: Sections of the Italian motorways⁵⁶

Table 4 shows the individual projects which were, with two exceptions, founded as cooperations. Only the Rome-Ostia motorway belonged to the city of Rome. The Genoa-Serravalle road is a special case because it was exclusively reserved for truck traffic and was built for military purposes. It is notable that accessibility to tourist destinations for the residents of large cities in Italy influenced motorway construction: Milan – Lakes, Florence – Viareggio and Rome – Ostia.

The motorway promoter Piero Puricelli was a building contractor in Milan and, being so prominent in the city, was also appointed manager of the Milan exhibition. Not surprisingly, Puricelli was able to mobilize private capital for his motorway project near the North Italian lakes: In 1918, he had already financed a research institute for road construction for the Italian Automobile Association TCI, whose financing was supported by private businesses and public facilities later on. In 1922, he presented a plan to the TCI of a motorway from Milan to the North Italian lakes. Puricelli discussed the plan with Mussolini shortly after the latter seized power on 28 October 1922. Puricelli received

⁵⁶ According to Bortolotti, op. cit

approval from the government, which was installed on 17 December 1922. Construction started in June 1923.⁵⁷

The first route, Milan – Varese, was conceived as to shadow the railway. Just as a ticket was necessary to travel by rail, a car driver would have to buy a ticket at the motorway entrance. These tolls would essentially pay the construction costs. The toll was staggered: For a medium-range car of 17 to 26 HP, the single trip charge was (converted) 3.80 Marks.⁵⁸ The first Milan – Varese route was 49 km long and was opened to traffic on 20 September 1924. On 27 June 1925, the opening of the 36 km long Milan – Como route followed. These routes had a road width of 11 m on their common main route and were of a total length of 36 km. The main route had three lanes with the middle one reserved for overtaking. The side routes consisted of a length of 52 km and a road width of 8 m on two lanes.⁵⁹ In contrast, the later routes had a width of 10 m.⁶⁰

⁵⁷ *Lando Bortolotti*: Origine e Primordi della Rete Autostradale in Italia 1922 - 1933, in: *Storia Urbana*, Vol. 59, 1992, p. 46f

⁵⁸ *Alexander Thewalt*: Projekte der Autobahnfrühzeit im Ausland – Beispiele aus Italien und den USA, in : *W. Wirth*: Die Autobahn – Von der Idee zur Wirklichkeit, Köln 2005, p. 63-76. (Projects of the early *Autobahn* abroad – Examples from Italy and the USA) (The *Autobahn* – From Idea to Reality) Also: *H: Uhlfelder*: Die oberitalienischen Autobahnen (The Italian Motorways), in: *Mitteilungsblatt*, issue 7, 1930, p. 9-14.

⁵⁹ First meeting of the technical committee of the Hafraba association in Frankfurt/Main on Tuesday, 5th April 1927, *Schrift* Nr. 5 – Hellerdruck Frankfurt 1927, p. 9 (cf. appendix).

⁶⁰ *Bosco, Roberto*: Die italienischen Autobahnen (The Italian Motorways), issue 14, 1939, p. 454-456

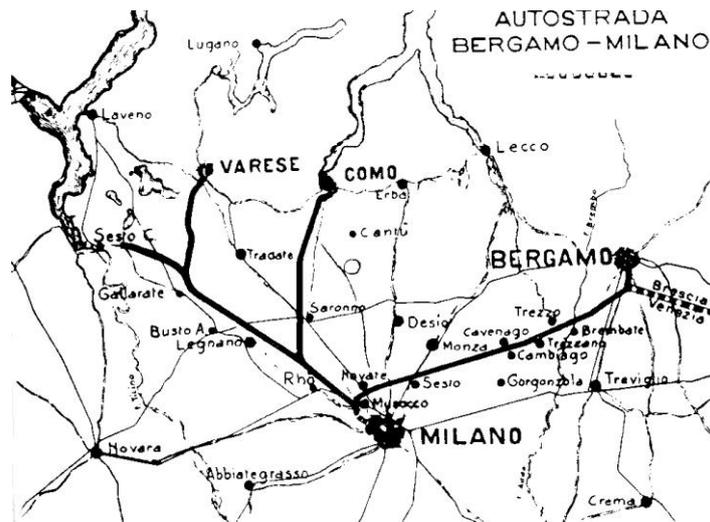


Figure 2: The North Italian motorways of 1927

Figure 2 shows the course of these motorways.⁶¹ Due to low traffic, the approach with two or three lanes was sufficient to ensure a fast drive by car (cf. figure 3). Speed limits of 40 km/h were only for trucks.⁶² At the same time, these motorways were the first roads ever in Europe to be junction-free. Therefore, bridge constructions played a major role in building these roads. Later on, with the road extended to four lanes, bridges proved to be static bottlenecks, also criticized because of their functional appearance and lack of aesthetics (see below). The route was covered with a layer of concrete, the material most suitable for automobile traffic, according to the American experience.⁶³

Differing from the Nazi *Autobahn* project, which did not have a strong military-political relevance, and according to authors of the 1930s, the development of the Southern Alp chain for motorized traffic appeared in the objectives for the Italian motorway project in an effort to enhance defence during transalpine wars. This was borne of the experiences in World War I. This explains the Italian support for this project, in contrast to the situation in Germany. However, this military-political interpretation is not supported by Bortolotti's or by Moraglio's research.⁶⁴ However, there had been bad experiences

⁶¹ Robert Otzen: Die Autostrasse Hansestädte-Frankfurt-Basel, Ziele und Zweck des Vereins "Hafraba", Hannover 1927, p. 14. (The Motorways of the Hansa Cities – Frankfurt – Basel, Goals and Purpose of the "Hafraba"....)

⁶² H. Uhlfelder, op. cit., gives a daily average of 1,497 vehicles for the year 1928.

⁶³ See also the discussion on concrete roads in the USA in the journal *Verkehrstechnik*, 1926 to 1930. In 1910, the first concrete roads were already being built in California, in order to create an alternative to transportation with the local railroad monopolies. See Gregory Thompson: *The Passenger Train in the Motor Age: California Rail and Bus Industries 1910-1941*, Ohio State Univ. Press 1993.

⁶⁴ Lando Bortolotti: *Origine e Primordi della Rete Autostradale in Italia 1922 - 1933*, in: *Storia Urbana*, Vol. 59, 1992, pp. 33-69

suffered during the war in Italy, with truck traffic on streets which were not made to have a solid surface. There was thus a search for new concepts for building solid roads made out of concrete or asphalt, and these would make up the Autobahn. The 14 ton trucks, which supplied the fighting front with materials, destroyed the flimsy streets in no time at all.

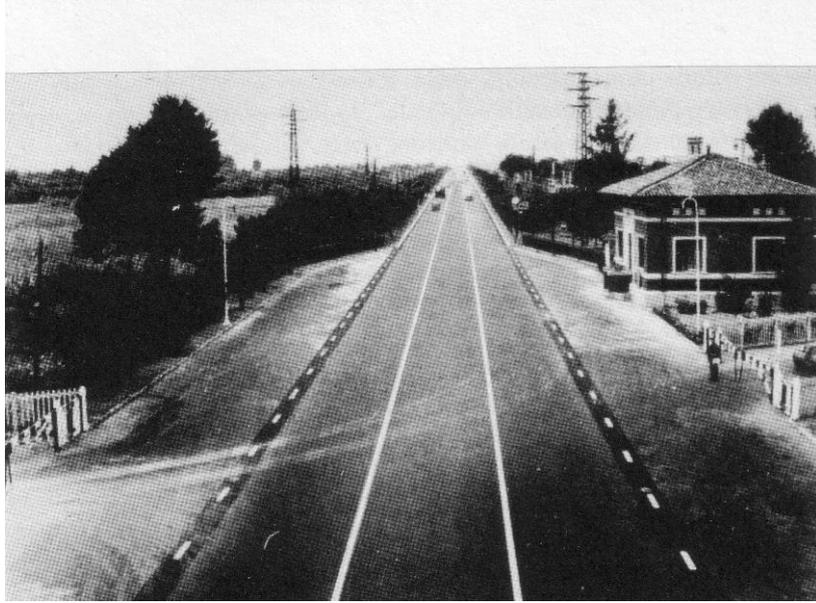


Figure 3: Motorway Milan – Gallate with three lanes⁶⁵

Exactly on the anniversary of Mussolini's march into Rome on 28 October 1922, the motorway sections just mentioned were opened up with a propaganda spectacle. This link of motorway opening with politics could be, by all means, an example to the Nazi regime. Mussolini could have taken advantage of this spectacle insofar as he could exploit it to cover previous failures in road construction politics in Italy. The road network was in extremely bad condition in the 1930s. Bortolotti has pointed out that at the end of 1932, after 10 years of fascist control, only 3.2 per cent of the 20,000 kilometres of country roads had a solid or semisolid surface.⁶⁶ Therefore, motorway construction was a symbolic policy of modernization which did not show any tangible impact for broad sections of the country. The Department for Public Works was obviously too weak in enforcing a centralized plan for the motorway network. Instead, the self-confident entrepreneurs took on the construction of important routes. Therefore, in Italy only unconnected segments were created rather than an entire network.

⁶⁵ From: *Lando Bortolotti und Guiseppe De Luca: Fascismo e autostrada*, Mailand 1994, p. 54

⁶⁶ *Lando Bortolotti: Origine e Primordi della Rete Autostradale in Italia 1922 - 1933*, in: *Storia Urbana*, Vol. 59, 1992, pp. 33-69, here p. 45

7 The Discussion outside Germany

On international road conferences, the long distance Paris – Vienna – Istanbul route was widely discussed.⁶⁷ Complete motorway networks covering the whole of Europe were subject to discussion as well and were introduced by Puricelli, among others.⁶⁸

Projects of road construction were also discussed in Austria and Switzerland. In 1930, Austria started building the Grossglockner alpine pass from Salzburg to Carinthia,⁶⁹ a project which was already being talked about in Austria in the 1920s. Surprisingly, it had many parallels to the German *Autobahn* project which started three years later, if one considers the purpose of the publicly debated job creation scheme as well as promoting it as a national myth and therefore exploiting it for domestic politics. Taking advantage of this major project in a political way could easily have had a role-model character for the Nazi road construction policy of the year 1933.⁷⁰ The “Schweizerische Autostrassen-Verein” (Swiss Motorway Association), founded in 1929, debated projects as well, focusing on the development of efficient road connections in Switzerland, such as the Bern – Thun road.⁷¹

A Paris-Lille motorway was discussed in France.⁷² Piero Puricelli, who often made proposals for a European motorway network, did so at the 7th International Congress on Road Construction in Munich in 1934. Figure 6 shows what he had in mind.⁷³ At international conferences on motorway construction, the idea of constructing a London – Paris – Vienna – Istanbul motorway was discussed. Many proposals were submitted to

⁶⁷ Die Autobahn, issue 5, 1932, p. 1.

⁶⁸ P. Puricelli: Entwurf für ein europäisches Autostrassennetz, in: Die Strasse, issue 2, 1934, p. 42s. Puricelli presented his concept on the 7th International Road Conference in Munich, 3-8 September 1934. (Design for a European motorway network...)

⁶⁹ G. Rigele: Die Grossglockner Hochalpenstraße. Zur Geschichte eines österreichischen Monuments, Wien 1998 (The Grossglockner alpine road. On the history of an Austrian monument, Vienna 1998). Also: Bernd Kreuzer: Cars, Tourists and Road Networks in Austria before Mass Motorization, Paper presented at Third Conference on the History of Transport, Traffic and Mobility (T2M), York, 6th till 9th October 2005.

⁷⁰ Todt's journal Die Strasse (The Roads) reported on the Grossglockner alpine road for the first time in May 1935, see Leopold Örley: Die Großglockner-Hochalpenstraße, issue 10, 1935, p. 372-374.

⁷¹ Marcel Nyfeller: Das Projekt einer Autostrasse Bern-Thun (The Project of a Bern-Thun Motorway), in: Mitteilungsblatt, issue 12, 1930, p. 6.

⁷² Mitteilungsblatt 6/1929, p. 5

⁷³ P. Puricelli: Entwurf für ein europäisches Autostrassennetz (Design for a European Auto Road Network), in: Die Strasse, issue 2, 1934, p. 42.

build motorways between Italy and Germany and in the 1920s, Puricelli suggested a Berlin – Munich – Rome motorway.⁷⁴ On 4 September 1937, the *Völkische Beobachter* (The Folk Observer) published an outline for the Alpine pass of this proposed motorway and previously, it had given an account of meetings, conducted by Hitler, Puricelli and Todt, focusing on the same project.⁷⁵

8 The Cologne – Bonn *Autobahn*

An important milestone in the *Autobahn* idea becoming reality was the junction-free Bonn – Cologne *Autobahn*. Its construction started in 1930 and it was opened on 6 August 1932 by Konrad Adenauer,⁷⁶ then mayor of Cologne, who had also become a member of the administrative council of the Hafraba.⁷⁷ The Hafraba reported in great detail on the opening in its magazine.⁷⁸ The Bonn – Cologne *Autobahn* was intended for “automobile use only”, thus motorcycles were not permitted, and it had restricted access, with one exit near Brühl (cf. figure 4).

⁷⁴ Bortolotti, L.: Fra Politica, Propaganda e Affari: L'Autostrada Roma-Berlino 1927-1942 (Between Propaganda and Business: The Motorway Rom-Berlin), in: Storia Urbana, Band 81, 1997, p. 47-79.

⁷⁵ Völkischer Beobachter (The Folk Observer) vom 3.12.1936, Bayerisches Staatsarchiv (Bavarian State Archive), München (Munich), Autobahndirektion Südbayern (Motorway Directorate of South Bavaria), File 0368, and: File 0405

⁷⁶ Grossjohann: Die Kraftwagenstrasse Bonn-Köln- (The Bonn-Cologne- Düsseldorf Car Road), in: Strassenbau und Strassenunterhaltung, supplement to the journal Verkehrstechnik, 1929, p. 415-417, furthermore: Gabriel, op. cit., p. 40-42.

⁷⁷ Mitteilungsblatt, issue 7, 1931, p. 6.

⁷⁸ Grossjohann: Der Beginn einer neuen Epoche in Deutschland – Zur Eröffnung der Autobahn Köln-Bonn am 6. August 1932, (The Beginning of a New Epoch in Germany – On the Opening of the Cologne-Bonn *Autobahn*) in: Die Autobahn, issue 8, 1932, p. 1-5.

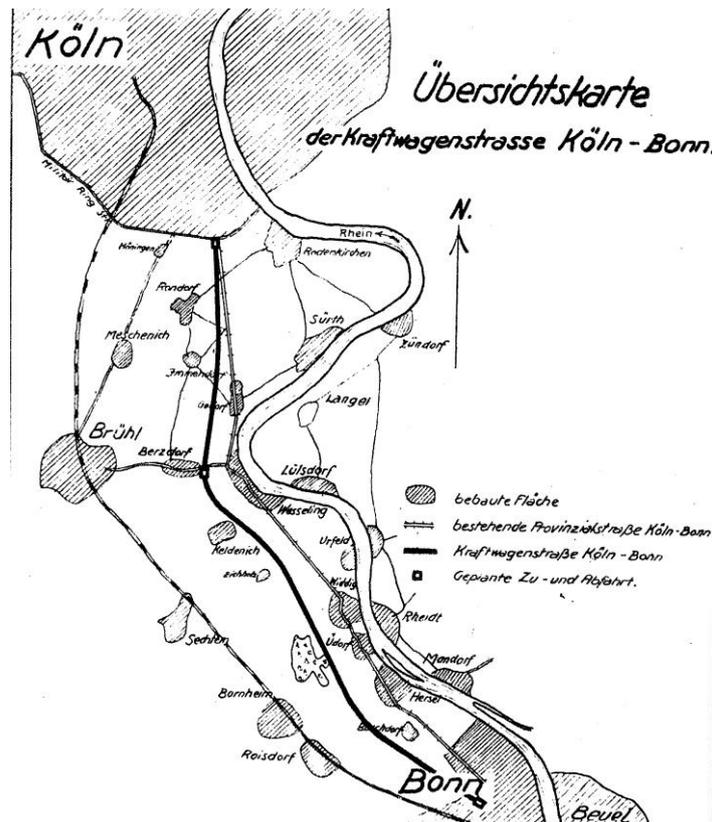


Figure 4: Cologne – Bonn *Autobahn*

The Bonn – Cologne *Autobahn* was planned and constructed with four lanes and had a width of 12 m. Two lanes were reserved for each direction, and road markings separated each in the middle of the road. Additionally, there was a shoulder of 2 m on each side. For traffic policy at that time, it was a very innovative concept to construct a four-lane *Autobahn*. The demand for a four-lane road was justified with the argument that the second lane in each direction would be necessary for overtaking, since trucks only went at 40 km/h and therefore led to a very slow volume of traffic.⁷⁹ This argument needs to be seen within the context of the forecast of a high volume of traffic on this planned road. The Bonn – Cologne – Düsseldorf country road was considered the busiest road in Germany at the time, with a top volume of traffic at 1,800 vehicles per hour.

Contrary to the situation of the Bonn – Cologne *Autobahn* was the case of the North Italian motorways. These were only planned with two to three lanes, with the both directions using the middle lane for overtaking. This solution did not lead to any disturbance in traffic, since the volume of traffic was very low on these roads. In 1928, an average of 1,497 vehicles per day could be counted on these routes, a number close

⁷⁹ Grossjohann 1929, op. cit., p. 416.

to the maximum of 2,073 vehicles per day.⁸⁰ Country roads in the United States, which typically covered long distances so as to connect cities, was another situation altogether. There was no special demand for possibilities to overtake because there were only few trucks on these long-distance routes. Traffic, then, flowed at a steady speed within the maximum speed range. Due to this fact, routes only consisted of two lanes.⁸¹ By the 1920s, however, there were arterial roads with more lanes for local traffic which led out of the big cities.⁸² As Seely has shown, the American engineers used cost-benefit analysis to justify a stepwise extension of the road network according to the growth of traffic. In many regions of the US, they could not identify a traffic demand in need of a motorway with four lanes.⁸³

⁸⁰ *H. Uhlfelder*, op. cit., p. 11.

⁸¹ *Grossjohann*, op. cit.

⁸² Report by Vilbig on the VI. International Road Conference in Washington D.C. with reference on the arterial roads in Chicago and Detroit, in: ADAC-Motorwelt, issue 1, 1931, p. 20-23.

⁸³ *Seely*, op. cit., p. 22 und *Bruce E. Seely: Building the American Highway System – Engineers as Policy Makers*, Philadelphia 1978

9 The Foundation of the Hafraba in Frankfurt (Main)

Among other initiatives to expand the road network, the “Association for the Preparation of the Autobahn of Hanseatic cities – Frankfurt – Basel” (HAFRABA), the counterpart to the STUFA, was the most important one.⁸⁴ It was founded in the town hall of Frankfurt (Main) on 6 November 1926 and therefore became significant within Hessian regional history.⁸⁵ The abbreviation HAFRABA signifies Hamburg-Frankfurt-Basel (later on: Hanseatic cities – Frankfurt – Basel) and denotes the aim of the association: to promote an *Autobahn* from the ports on the North Sea, i.e. Hamburg, via Frankfurt as an important place of commerce in western Germany to southern Germany at the border of Switzerland, i.e. Basel.

The Hafraba foundation was preceded by a meeting in Frankfurt on 9 September 1926, for which the local department of economics in Frankfurt had dispatched about 70 invitations to interested cities, provinces, associations, and business corporations.⁸⁶ Frankfurt portrayed itself as a ‘city of streets’. Councilman Schlotter said during the greetings that Frankfurt is an important junction for German and European roads. He suggested bonds from the USA in order to finance the project. Additionally, Schlotter emphasized the argument, which was consistently stressed by the Hafraba later on, that the construction of high-capacity roads for automobiles would attract foreign tourists.⁸⁷ American tourists arrive with their cars by ship at the ports of Hamburg and Bremen so that they should be provided with a high-capacity road to the Mediterranean Sea, he said, warning, too, that French plans to build a road from Cherbourg to Nice would shorten the way to the popular Mediterranean destination to about 400 kilometres

⁸⁴ “Frankfurt” refers to “Frankfurt am Main” in the following.

⁸⁵ Report of the first meeting of the board of Hafraba in Frankfurt on 10th February 1927 (cf. appendix).

⁸⁶ Bericht über die Besprechung des Projekts Automobilstrasse Hamburg-Mailand, Druckschrift des Wirtschaftsamts Frankfurt, 1926, Stadtarchiv Kassel, Akte Städtisches Verkehrsamt, 10/3 (Report on the discussion on the motorway project Hamburg-Milan, Print of Frankfurt Office of Commerce, Kassel City Archive, City Traffic Office file, 10/3)

⁸⁷ *Wilhelm Cuno*: Die Hafraba und der Fremdenverkehr von Übersee (The Hafraba and the tourist traffic from overseas), in: *Mitteilungsblatt*, Heft 4, 1929, p. 2f, also: *Thalenhorst*: Städte an den Hafraba-Strassen: Bremen (Cities along the Hafraba roads: Bremen), in: *Mitteilungsblatt*, Heft 4, 1930, p.1-3..The Hafraba distributed a brochure, which included the article from Marcel Violet: What the French want, from *L’Echo des Sports* (undated, likely from 1927), in German, containing the Cherbourg-Nice project as the French response to the Hafraba design, city archive of Kassel, traffic office file 10/3. The contest between Germany and France to attract American tourists gained more and more attention within the Hafraba, see for example Frey’s, “Strassenwesen und Strassenverkehrswesen” in „Rhein-Main-Gebiet”, in: *Mitteilungsblatt*, Heft 11, 1929, p. 6.

compared to the way via Hamburg. This would obviously negatively affect tourism in Germany. Comparing those arguments with data about tourism it can be seen that the number of American tourists increased from 76,000 in 1926 to 159,000 in 1932. However, the proportion of foreign tourists who visited Germany remained almost steady - between 13 and 15 per cent. The number of automobiles carrying American tourists, i.e. that were unloaded at the ports, could not have been high because only 474 vehicles from the USA were reported in Germany in 1926/1927.⁸⁸ The argument that an *Autobahn* network would attract foreign tourists and would generate foreign currency revenue was emphasized by Fritz Todt, the leader of the Nazi *Autobahn* project, in later years.⁸⁹ To justify the planning of a motorway from Turin to Savona, the argument of foreign tourists was stressed again in the 1950s and 1960s i.e., that tourists from northern Europe would need this connection to the Mediterranean Sea.⁹⁰

From the beginning, the association planned to extend the *Autobahn* from Basel to the Italian port of Genoa, targeting automobile drivers heading to the Mediterranean Sea and Nice. Figure 5 shows the projected course of the *Autobahn* with the turn-off to Bremen.⁹¹ In Switzerland, the “Association for the Promotion of the Construction of the *Autobahn* Basel – Italian border” was founded to promote the extension from Basel to the Italian border.⁹²

⁸⁸ Statistisches Jahrbuch für das Deutsche Reich, Jg. 1927, p. 48, Jg. 1933, p. 51, Jg. 1928, p. 159

⁸⁹ *Fritz Todt: Reichsautobahnen in der Wirtschaft (Autobahn and the Economy)*, Frankfurter Volksblatt, 27.2.1936, Archiv Hessischer Rundfunk (Hessian Radio), Zeitungsausschnitte Autobahnen

⁹⁰ *Michele Bonino und Massimo Moraglio: Inventing Movement – History and Images of the A6 Motorway*, Turin 2006, p. 79f

⁹¹ *Robert Otzen: Die Autostrasse Hansestädte-Frankfurt-Basel, Ziele und Zweck des Vereins “Hafraba”*, Hannover 1927, p. 7 (cf. Appendix).

⁹² *Mitteilungsblatt*, issue 7, 1929, p. 11; report on the exhibition of the Hafraba in Basel, in: *Baseler Nachrichten vom 31.8.1927*, Stadtarchiv Kassel, Akte Städtisches Verkehrsamt, 10/3.



Figure 5: The North-South Route of the Hafraba *Autobahn* through Germany with its turn-off to Bremen

When one explores the political and social forces being brought together in the Hafraba association, one comes to the conclusion that there were influences from the construction and transport industry. These were complemented by the transport administrations of states and cities. Therefore, the Hafraba association can be seen as a mix of entrepreneurs and public agencies (“public-private-partnership”). It repeatedly claimed to be a private initiative and not part of a state administration, in contrast to the Leha association which it denounced as “bureaucratic”.⁹³

The strong participation of municipal institutions in the Hafraba caused concern that a lot of public money would be used for *Autobahn* projects. Therefore, the Upper-Hessian Automobile Club of Giessen stated on June 5 1928 to the city’s Chamber of Commerce and Industry that it should be prohibited from using public money for *Autobahn* projects. It was argued that it would be impossible to raise sufficient private capital without public

⁹³ Report of the first meeting of the advisory board, op. cit., p. 10.

help. Therefore, public money should be used for more practical purposes than for an *Autobahn*.⁹⁴

There were two groups among Hafraba association's 32-member advisory board and 6-member executive board.⁹⁵ One group of members consisted of:

- leading officials, including mayors, of the urban administrations of the cities along the route from Hamburg to Basel: Bremen, Hamburg, Hannover, Göttingen, Kassel, Giessen, Marburg, Mainz, Frankfurt (Main), Wiesbaden, Darmstadt, Mannheim, Karlsruhe and Freiburg. The mayor of Frankfurt, Dr. Landmann, played a leading part in the Hafraba, providing the city hall conference rooms several times:
- leading officials of the transport administrations of the states along the Hamburg-Basel route, e.g. Arthur Zierau, representing the federal state of Baden, Kurt Becker from the Prussian province of Hesse-Nassau and Dr. Krebs from the state of Hesse-Volksstaat:
- Robert Otzen, professor of railroad construction from the Technical University of Hannover. Otzen was chairman of the Hafraba until 1931.

The second group consisted of 10 directors from the construction and transport industry, for example, Vogel and Dykerhoff from the Portland Zementwerke (Cement Works) in Amöneburg and Heidelberg, Milke from the Strassenbau AG in Cologne and Meisenheimer from Wygass+Freytag in Frankfurt (Main). Five other representatives came from chambers of commerce. The spokesman of the advisory board was Landmann, the mayor of the city Frankfurt (Main). The secretary of the Hafraba association was Willy Hof. At the end of 1929, the Hafraba consisted of 125 members, representing 12, 13 provinces, 33 towns, 50 companies and 6 chambers of commerce.⁹⁶

One of the most prominent members of the Hafraba executive board was the Italian highway promoter Piero Puricelli. He spoke German fluently and served therefore as an important link between Italy and Germany. This exchange has been explored in great detail by Bortolotti.⁹⁷

⁹⁴ Wirtschaftsarchiv Darmstadt, 9/1749

⁹⁵ The list of the board members is published in Report of the first meeting of the advisory board of Hafraba on 10th of February 1927, op. cit., p. 28-29.

⁹⁶ *Robert Otzen: Drei Jahre Hafraba (Three Years of Hafraba)*, in: *Mitteilungsblatt*, issue 11, 1929, p. 3.

⁹⁷ *L. Bortolotti: Fra Politica, Propaganda e Affari: L'Autostrada Roma-Berlino 1927-1942 (Between Politics, Propaganda and Business: The Autobahn Rom-Berlin)*, in: *Storia Urbana*, Vol. 81, 1997, p.47-79.

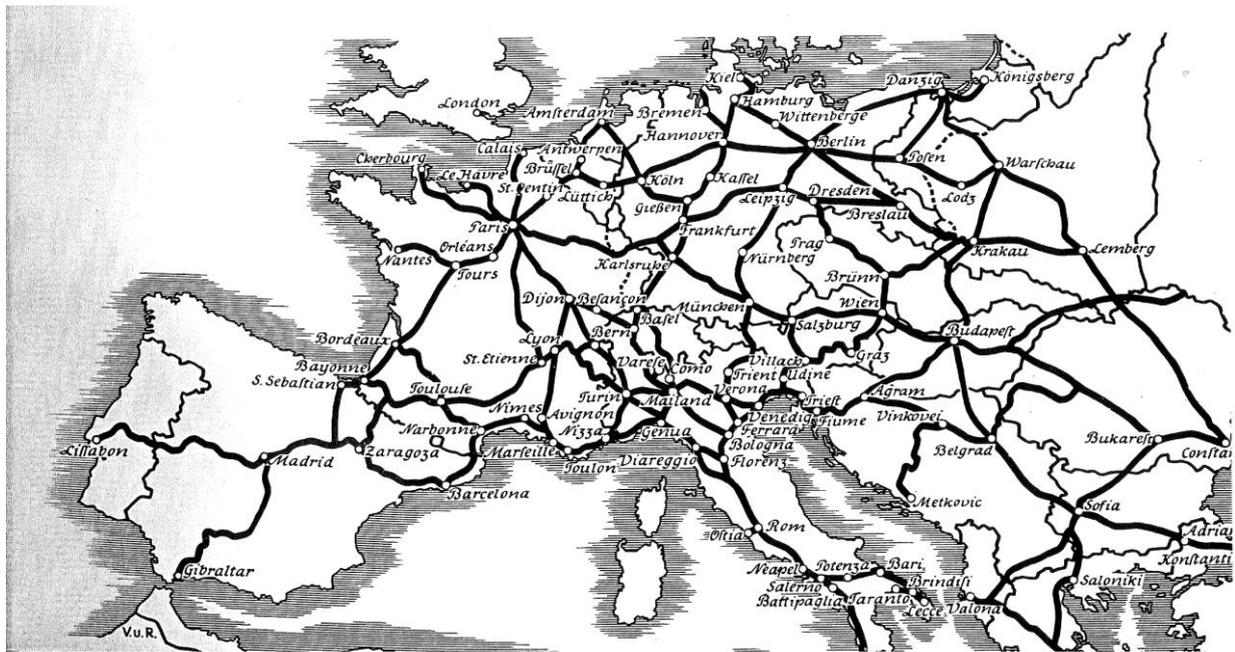


Figure 6: Puricelli's draft of a European Autobahn network

The speaker of the Hafraba executive board, Robert Otzen, often underscored the strong impetus of Puricelli which led to the foundation of the Hafraba association.⁹⁸ In 1926, Otzen reported on an excursion which he made as Puricelli's guest on the Italian motorway, which for the first time gave him the impression of a motor ride on a road without obstacles.⁹⁹ At the first meeting of the advisory board in Frankfurt in 1927, Puricelli held a speech in German, emphasizing¹⁰⁰ not only the idea of creating a modern road network in the form of the German *Autobahn*, but also the concept of utilizing both private enterprise and public agencies in order to bring the idea to fruition.

⁹⁸ Robert Otzen: Die Autostrasse Hansestädte-Frankfurt-Basel, Ziele und Zweck des Vereins „Hafraba“, Hannover 1927, p. 15. (The Motorways of the Hanseatic Cities-Frankfurt-Basel, Goals and Purpose of the Hafraba Association....)

⁹⁹ Report of the first meeting of the board of Hafraba on 10th of February 1927, op. cit., p. 13.

¹⁰⁰ Op. cit.

HAFRABA

Mitteilungsblatt des Hafraba e.V.

VEREIN ZUR VORBEREITUNG DER AUTOSTRASSE HANSESTÄDTE-FRANKFURT-BASEL

Das Mitteilungsblatt wird an Mitglieder, Verwaltungsrat und Ausschüsse kostenlos versandt. Abonnementspreis: 6 RM. im Jahr Einzelnummer 50 Pfg.

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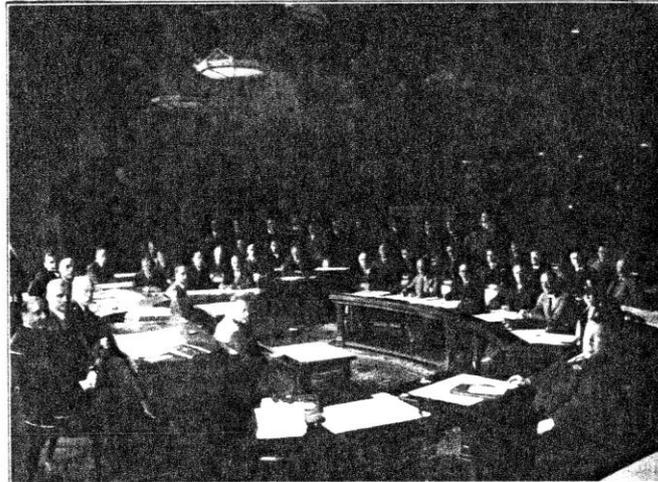
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Aufnahme einer Sitzung des I. Internationalen Autobahn-Kongresses im Verwaltungsrats-Sitzungssaal des „Internationalen Arbeitsamts in Genf“

I. Internationaler Autobahn-Kongreß in Genf

(Sonderbericht für das »Hafraba-Mitteilungsblatt«)

Der Kongreß tagte vom 31. August bis 2. September im Gebäude des „Internationalen Arbeitsamtes“ in Genf. Eröffnet durch eine Ansprache des Direktors des Internationalen Arbeitsamtes, Herrn Albert Thomas, der die Gründung eines Autobahnkongresses im Interesse der Behebung der internationalen Krise sehr begrüßte, denn dieser sei nicht nur in verkehrstechnischer, sondern vor allem auch in wirtschaftlich-sozialer Hinsicht von Bedeutung. Die Tatsache, daß der Kongreß im Verwaltungsratsaal des Arbeitsamtes tagte, sei schon Beweis dafür, welche persönliche Interesse Herr Thomas selbst an den aufgeworfenen Fragen habe und wie eng

die Beziehungen, die zwischen dem Zweck der Tagung und den Zielen seines Arbeitsamtes beständen, seien. Er ermutigte die Teilnehmer an dem Kongreß, vor der öffentlichen Meinung die Begründung ihrer Bestrebungen darzulegen und ihre Ideen zu entwickeln, wobei in den gegenwärtigen Zeiten auch der moralische Faktor betont werden dürfe, denn hier seien ja Mittel zur Bekämpfung der Arbeitslosigkeit gegeben, um so mehr, da der Gedanke der Autobahnen geeignet wäre, für das internationale Kapital eine Verlockung zu sein.

Zum Ehrenpräsidenten des Kongresses wurde Herr Dr. Ing. Puricelli, Königl. Italien, Senator, Er-

1

Figure 7: Layout of the Hafraba newsletter

10 The Activities of the Hafraba

The HAFRABA association published numerous papers to promote its ideas. By 1927, eleven publications had appeared (see appendix.) From 1928 on, the newsletter “HAFRABA – Mitteilungsblatt des Hafraba e.V.” was published with 12 issues per year.

Figure 7 depicts a front page of the newsletter, with a layout in the functional style of the 1920s. Starting in 1932, the newsletter was entitled “Die Autobahn”. In its newsletters, the Hafraba also published information from organizations that it cooperated with, such as the Leha association and the Swiss Autostrassen Association (SVA).¹⁰¹ In 1933, the editors of the newsletter switched political alliances to Hitler, as he was the most important promoter of the *Autobahn* idea. The editions of July and September 1933 showed Hitler on the front page and the July 1933 edition showed Hitler on the front page with the headline: “The *Autobahn* network is the path to the rebirth of Germany’s rise and glory”. In 1934, the number of issues nearly doubled from 12 to 22. When, on 18 August 1933, the Hafraba association was compulsorily dissolved and incorporated into the project company GEZUVOR - *Gesellschaft zur Vorbereitung des Reichs-Autobahnbaus* (company for the Preparation of Autobahn Construction)¹⁰² the Gezuvor became the publisher of “Die Autobahn”. The chief editor of the Hafraba newsletter, Kurt Kaftan, remained in his function until the end of 1934,¹⁰³ when publishing the journal “Die Autobahn” was stopped. The head of the Nazi *Autobahn* project, Fritz Todt, published his own journal “Die Strasse” with 24 issues per year and with a reduced number of issues from 1940 until 1942. This journal was already being published in August 1934, so that for the residual months of 1934, both journals, “Die Strasse” and “Die Autobahn”, appeared simultaneously. From 1935 on, the front pages of “Die Strasse” had the term “Die Autobahn” as its subtitle.

In its publications, the Hafraba association showed the weaknesses of the existing road network in Germany. It promoted motorways for automobiles, pointing to the growing demand for more road capacity due to increasing motorization and the goal of connecting important cities. The Hafraba association presented a plan for an *Autobahn* network for the whole of Germany as early as 1927,¹⁰⁴ which was later imitated by many other promotional groups. But the executive board decided to focus on the original north-south Hamburg-Frankfurt-Basel route and not to extend this route to a whole network. When in 1930, the town planning counsellor of Wetzlar, Theodor Golder, published a

¹⁰¹ See tables of content of *Die Autobahn* 1932 and *Hafraba-Mitteilungsblatt* 1928 to 1931.

¹⁰² *Die Autobahn*, issue 9, 1933, p. 7-9.

¹⁰³ In Todt’s journal “Die Strasse” Kaftan had no influence. Only once, at the opening of the first *Autobahn* route from Frankfurt (Main) to Darmstadt in May 1935, was he allowed to publish a retrospect: „Hafraba“ – Ein Rückblick (Hafraba – A Look Back), in: *Die Strasse*, issue 9, 1935, p. 321s. This was the only time the HAFRABA project was mentioned in Todt’s journal. Kaftan published his memoirs about the *Autobahn* project in 1955: *Kaftan, K.: Der Kampf um die Autobahnen (The Struggle for the Autobahn)*, Berlin 1955.

¹⁰⁴ *R. Otzen: Die Autostrasse Hansestädte – Frankfurt – Basel. Zweck und Ziele des Vereins "Hafraba", Schrift Nr. 1, Hannover 1927, p. 13f (cf. appendix). (The Motorways of the Hansa Cities-Frankfurt-Basel. Purpose and aims of the Hafraba Union)*

plan for extending the Hafraba route to a road network throughout Germany, the executive board wrote a letter to the mayors of the cities along the Hafraba route and claimed that the Golder network was not the position of the Hafraba.¹⁰⁵ Figure 8 shows this map. Fritz Stück, a town planner in Kassel, also suggested several additional routes to the Hafraba one, such as the Cologne – Kassel – Leipzig route.¹⁰⁶ The spokesman of the Hafraba, Robert Otzen, was as well a promoter of a complete *Autobahn* network. He stated that only a network would attract broad political support for the project.¹⁰⁷ However, the majority of the executive board did not agree with him, prompting his resignation as spokesperson of the Hafraba in May 1931. His opponents brought forward the argument that a network would weaken the position of the Hafraba cities in south-west Germany.

On the first meeting of the technical committee on 5 April 1927, Otzen called on the Hafraba to quickly finish the draft of the north-south route of approximately 900 km from the Hanseatic cities to Basel in order to have it on hand for the first “International Automobile Exhibition” in Cologne, which would take place 20- 31 May 1927.¹⁰⁸ The draft of the route initially consisted of 45 segments, later on of 53, with each one making up 20 km of the route pictured on a scale of 1:100,000.¹⁰⁹ The following segments were included:

1. Construction section I, Hanseatic cities- Hanover:
Lübeck, Travemünde, Warnemünde, Lesum, Eichede, Ahresburg, Hamburg, Stade, Carlsdorf,
Soltau, Bergen, Winsen, Hanover, Sarstedt, Gronau, Alfeld, Einbeck, Nörten, Bremen, Verden, Walsrode, Hagen.
2. Construction section II, Kassel:
Göttingen, Reinhardswald, Kassel-North, Kassel-South, Fritzlar, Jesberg, Kirchheim, Marburg
counterdraft Marburg
3. Construction section III, Frankfurt-Darmstadt:
Gießen, Bad Nauheim, Friedberg, Frankfurt, Möhrfelden, Darmstadt, Bensheim.
4. Construction section IV, Karlsruhe:

¹⁰⁵ *Golder*: Weiterausbau der Hafraba-Idee (Extensions on the Hafraba-Ideas), in: Hafraba-Mitteilungsblatt, issue 2, 1930, p. 1-3, Stadtarchiv Karlsruhe, Akte 1/H/3500. The Golder plan might have been a prototype for the Nazi *Autobahn* project.

¹⁰⁶ *Fritz Stück*: Um Kassels Zukunft – das Aufbauprogramm, Kassel, Geotechnischer Verlag 1930. (On Kassel’s Future – the Construction Program, Kassel)

¹⁰⁷ *Robert Otzen*: Zur Systematik des deutschen Landstrassenbaus, in: Bautechnik, issue 26, 1931, Stadtarchiv Karlsruhe, Akte 1/H/3500 (On Systematics of German Country Roads)

¹⁰⁸ Report of the first meeting of the technical committee of the Hafraba association in Frankfurt/Main on Tuesday, 5th April 1927, Schrift Nr. 5 – Hellerdruck Frankfurt 1927, p. 5f (cf. appendix).

¹⁰⁹ *Robert Otzen*: Die Autostraße Hansestädte-Frankfurt-Basel, Erläuterungsbericht zum Entwurf der Autostraße (see above, Explanation for the Design of Motorways), Schrift Nr. 4 – Hellerdruck Frankfurt 1927, p. 4 (cf. appendix). Also: *Gabriel*, op. cit., p. 45. Mitteilungsblatt issue 1, 1928. Kasseler Post vom 29.1.1928, (of 29 January 1928) UBK. None of the volumes of the pre-sketch could be found in the archives.

Mannheim, Heidelberg, Wiesloch-Speyer, Bruchtal, Karlsruhe, Raststatt, Baden-Baden.
 5. Construction section west-east route:
 Frankfurt, Mainz.

Kurt Becker, federal chief construction counsellor from Kassel, was responsible for the development of construction section II. This segment consisted partly of four-lane roads; three lanes were set aside for parts with lesser traffic, apparently following the Italian version. Additionally, there was a shoulder of 1 m width for each direction. Each lane was supposed to be 3 metres wide. The question of how the two directions would be separated from each other remained unanswered in the draft. Apparently, no middle crash barrier or road marking was planned. For the route Hannover-Kassel-Giessen, presumably low in traffic, it was planned to construct three lanes, however, only two lanes would be built in the beginning.¹¹⁰



Figure 8: Golder's draft of an *Autobahn* network for Germany in 1930

¹¹⁰ Otzen, op. cit., pp. 8, 15 and First meeting of the technical committee of the Hafraba association in Frankfurt/Main on Tuesday, 5th April 1927, Schrift Nr. 5 – Hellerdruck Frankfurt 1927, p. 10.

Furthermore, the Hafraba demanded the Frankfurt – Mannheim section be a showcase and demonstration project. By doing so, the Hafraba association already addressed the issue of local transportation with the "small HAFRABA" for the Frankfurt – Mannheim region. These *Autobahn* plans were a consequence of the traffic situation in the Rhine-Main region, which was "unbearable", according to the Darmstadt chamber of commerce, allegedly leading to a bottleneck for economic development. The chamber of commerce referred to it as a "traffic predicament" with the railways offered by the national railway system "not even remotely" meeting the existing demand.¹¹¹ Figure 9 shows a map of the planned routes from the year 1928.¹¹²

In 1931, the Hafraba altered its 1927 concepts, instituting new guidelines. The width of the *Autobahn*, it said, should suit the increasing width of the Automobile, that is, to 20.5 meters.¹¹³ For each direction two lanes were planned of 3,50m width and in the middle a separation strip of 3m width. This marked a first in *Autobahn* history whereby direction lanes would be separated by a middle strip. This would serve various functions, not only traffic safety via separation of directions of travel. Piwecki commented on this idea: „It's important that the width of the middle strip was also the planned possibility of delivering energy and electricity, .traffic signs, and in consideration of free market initiative of the association, possibly commercial billboard advertising.“¹¹⁴ In a conversation on 23 December 1931 in the Hessian finance ministry, the Hafraba decided that the planned stretch of Frankfurt-Mannheim corresponded to the new guidelines.¹¹⁵

¹¹¹ Mitteilungsblatt, issue 12, 1929, p. 7.

¹¹² Institut für Stadtgeschichte Frankfurt/Main, Magistratsakten MA6289.

¹¹³ Uhlfelder: Richtlinien für den technische Anlage von Autobahnen (Guidelines for the Construction of Motorway), Teil A: Strecken im Flachland, in: Mitteilungsblatt 4/1931, p. 4-6, derselbe: Richtlinien für die technische Anlage von Autobahnen, Teil B: Stationen, in: Mitteilungsblatt, Heft 10, 1931, p. 6-8, derselbe: Richtlinien für die technische Anlage von Autobahnen, Teil C: Abzweigungen und Kreuzungen, in: Mitteilungsblatt, Heft 11, 1931, p. 2-7

¹¹⁴ Frank Piwecki: Frühe Konzepte des individuellen Massenverkehrs in Deutschland, dargestellt am Beispiel des Vereins "HAFRABA", Magisterarbeit im Hauptfach Geschichte, Universität Hannover 1996,., p. 100

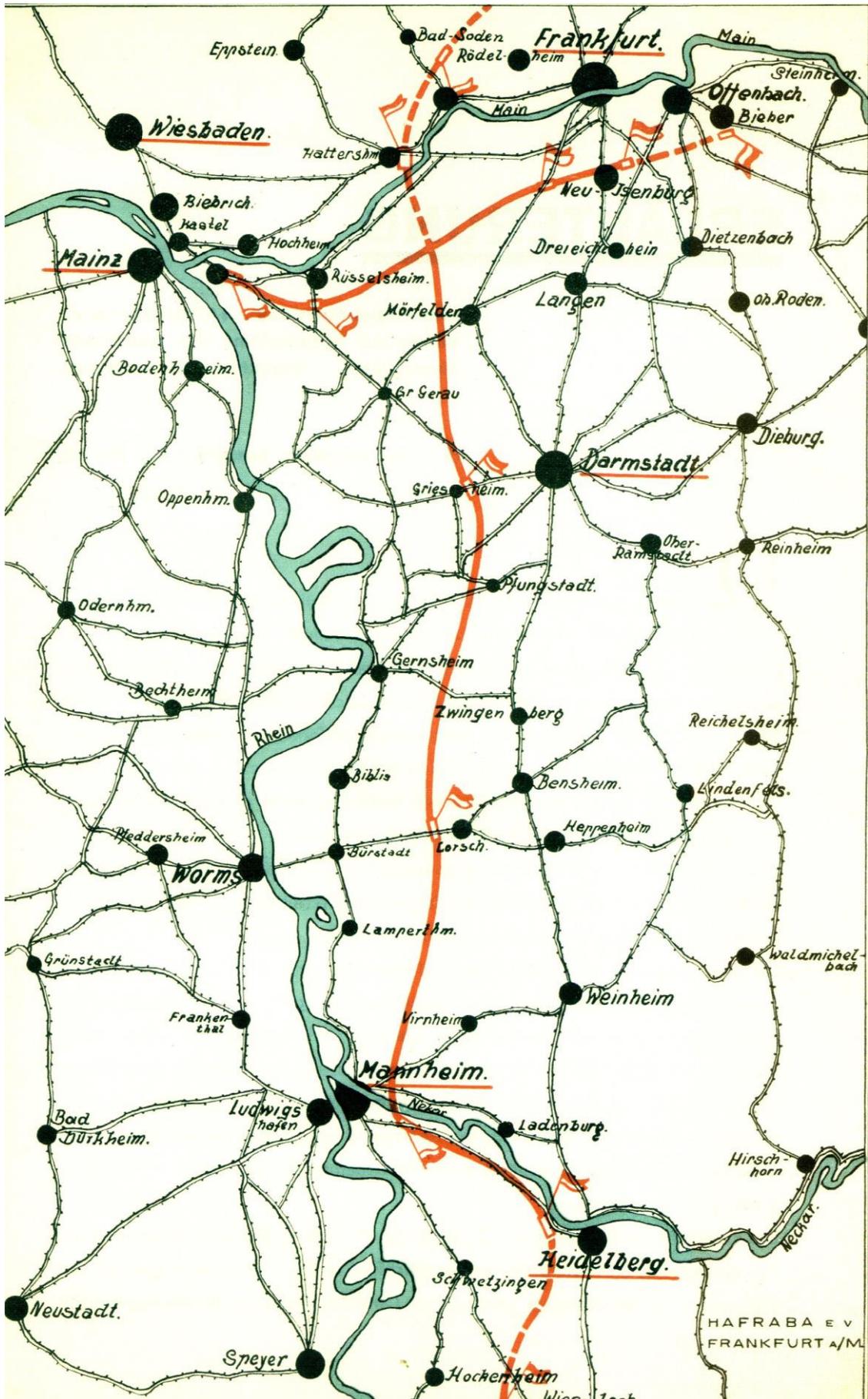


Figure 9: The small Hafraba Frankfurt-Mannheim route

Besides proposing routes and networks for the *Autobahn*, the Hafraba association focused on the following subjects in its publications:

1) The question of how to finance the *Autobahn* projects. Italy served as a role-model. The north-south Hamburg-Hanover-Kassel-Frankfurt-Basel route was to be financed by private capital and refinanced by a toll fee. This concept was introduced to the public in a memorandum dated 17 March 1928.¹¹⁵ However, to build privately financed roads was difficult in Germany. This procedure would not be in compliance with § 13 of the *Finanzausgleichsgesetz*.¹¹⁶ Furthermore, the transport administration did not support privately financed roads, favoring instead the interests of the railroad.¹¹⁷ The Hafraba applied for an exemption from paragraph 13 in Parliament and,¹¹⁸ moreover, petitioned the transport ministry in 28 August 1932 for a privately financed construction of the Frankfurt-Mannheim-Heidelberg route. Since Arthur Speck, an official in the Saxony road administration, was regarded as a significant opponent of the *Autobahn* construction, the application aimed to respond explicitly to his arguments and to refute them. Four volumes with the planning details were attached to the motion, but none of these volumes have been found in the archives.

In the memoirs of Kaftan, Brüning and Treviranus, one has the impression that the Brüning cabinet in 1932 wanted to immediately administer the advanced plans of the HAFRABA to construct the Frankfurt-Mannheim *Autobahn* as a measure to encourage employment under the Fifth Urgent Order.¹¹⁹ This viewpoint, however, is not supported by the minister's discussions in preparation for the Fifth Urgent Order.¹²⁰ This has to do merely with the construction of streets in general, not with

¹¹⁵ Stadtarchiv Kassel, Akte Städtisches Verkehrsamt, Hafraba, 10/4.

¹¹⁶ On the problem of financing, see *Kaftan*, op. cit., p. 111-124.

¹¹⁷ Record of the conference of the HAFRABA with the Transport Administration on 18th of August 1928, in: Thüringisches Hauptstaatsarchiv Weimar, C233, p. 22. See also Hafraba-Mitteilungsblatt, issue 1, 1928, p. 6.

¹¹⁸ Application by representative Rippel et al. from 4th of March 1931, Institut für Stadtgeschichte Frankfurt/Main, Magistratsakten MA6289. Application by Koch-Weser et al. from 4th of July 1930, *Kaftan*, op. cit., p. 124f.

¹¹⁹ *Kaftan*, a.a.O., p. 133, See also *G. Treviranus: Die HAFRABA im Arbeitsbeschaffungsprogramm 1932 (Hafraba and Job Creation)*, in: Bundesminister für Verkehr (Hersg.): HAFRABA – Bundesautobahnen Hansestädte – Frankfurt – Basel, Bau Verlag, Wiesbaden und Berlin 1962, p. 42-43. Treviranus was member in the Cabinet Brüning. See also: *Heinrich Brüning: Memoiren 1918 – 1934*, München 1972, Band 2, S. 605.

¹²⁰ Die Ministerbesprechungen zur Vorbereitung der 5. Notverordnung am 19. Mai 1932 und 20. Mai 1932 sind dargestellt in Dokument 757 und 759 1930 in: Akten der Reichskanzlei Weimarer Republik, herausgegeben von *Karl Dietrich Erdmann*, Kabinette Brüning I u. II, Band 3, Oktober 1931 bis Juni 1932, bearbeitet von *Tilman Koops*, Boppard am Rhein, 1990, Sp2539s und 2544s

construction of the *Autobahn*.¹²¹ As well, influential members of the cabinet had spoken openly against the *Autobahn* plans. The federal finance minister of the Cabinet, a Mr. Papen, in a memo dated 30 September 1932 to the federal transportation minister and the federal economics minister, outlined the opposing position of his ministry to the *Autobahn* and to financing from fees on the *Autobahn* of the previous year. With this, he expressly pointed out that the federal transportation minister during cabinet budgetary advising on 19 February 1931 had refused the parliamentary motion in support of the HAFRABA plan.¹²²

2) The importance of the automobile industry for the economic development of a country. It referred to the high number of employees in the automobile industry and its subcontracting industries. For example, Dr. Krebs, an official in Darmstadt's ministry of domestic affairs, reported on a study trip to the USA where he observed these facts.¹²³ Furthermore, traffic on an efficient road network was considered a source of economic growth and an instrument for conducting commerce.¹²⁴ Road building was repeatedly referred to at international road building conferences as a means of job creation. For the Frankfurt-Mannheim route, an estimated 6,000 people were employed for two years.¹²⁵ The journals *Verkehrstechnik* and *ADAC-Motorwelt* also reported frequently on this topic. According to the plans of the Hafraba, the *Autobahn* project should be refinanced by toll revenue. Therefore, the profitability of the project played a decisive role. The argument of engaging the unemployed in constructing the *Autobahn* received greater importance as it was argued that by employing the unemployed, construction costs could be reduced. This idea was presented at the 2nd International Highway Convention in Milan and also appeared in the chapter "The industrial-engineering importance for the working services" of the Hafraba petition to grant a certificate of exemption with regard

¹²¹ Die Ministerbesprechungen zur Vorbereitung der 5. Notverordnung am 19. Mai 1932 und 20. Mai 1932 sind dargestellt in Dokument 757 und 759 1930 in: Akten der Reichskanzlei Weimarer Republik, herausgegeben von *Karl Dietrich Erdmann*, Kabinette Brüning I u. II, Band 3, Oktober 1931 bis Juni 1932, bearbeitet von *Tilmann Koops*, Boppard am Rhein, 1990, Sp2539s und 2544s

¹²² BA R2/23460

¹²³ *Mitteilungsblatt*, issue 2, 1930, p. 2-6; and *Neumann*: Strassenverkehr und Strassenwesen in den USA, in: *Mitteilungsblatt*, issue 1, 9131, p. 4f. On the „model character“ of America for the German car industry, see also *Heidrun Edelmann*: Vom Luxusgut zum Gebrauchsgegenstand, Frankfurt 1989, p. 69-79. Numerous reports on the USA can also be found in the journals *Verkehrstechnik* and *ADAC-Motorwelt*.

¹²⁴ J. Horn: *Autobahn und Industrie*, in: *Mitteilungsblatt*, issue 7, 1931, p. 1f. In *Mitteilungsblatt* 8/1930, p. 19, there is a report: *Das Auto als Konjunkturhebel* (The car and the Economy).

¹²⁵ *Mitteilungsblatt* 1/1931. See also „Wege zur Belebung der Bauwirtschaft unter Berücksichtigung der Hafraba“ (Revamping the Construction Industry and Hafraba), lecture by *U. Rouselle*, in: *Mitteilungsblatt* issue 7, 1931, p. 5f.

to funding the Frankfurt-Mannheim *Autobahn*. The motion was submitted to the federal Ministry of Transport on 28 August 1932, as mentioned previously here.

- 3) The Hafraba used modern empirical methods in determining how much traffic would use the Frankfurt-Mannheim route. It distributed a questionnaire among German entrepreneurs in cooperation with the Frankfurt chamber of commerce and industry on 11 September 1928.¹²⁶ The chamber of commerce and industry of Frankfurt Main-Hanau included a memo with the questionnaire to its members, reminding them of the importance of economic traffic within the Rhein-Main region. This approach is part of the discussion on profitability and rationalization in the 1920s. Parliament established the Enquete Committee in order to highlight, using empirical methods, the situation in individual branches of the economy. The explanation in the questionnaire indicated that a motorway would allow for time saving because the goods would be able to be delivered much faster. In order to demonstrate the advantages of their approach, the Hafraba used the Frankfurt-Heidelberg route in the questionnaire. The distance on country roads was 83.5 kilometres and just 71 kilometres on the planned road of the Hafraba. 53 per cent of the country road ran through small towns and the roads were described as partly narrow and curvaceous. The speed limit in small towns was specified at 25 kilometres per hour. Therefore, an average speed of 31.5 kilometres per hour, or a two-hour and 39 minute drive was the time needed to safely drive the whole route. Compared to that, the average speed of the Hafraba road was 75 kilometres per hour so that the road could be mastered in 55 minutes. Consequently, almost 1 $\frac{3}{4}$ hours could be saved. A four-coloured map was attached to the questionnaire, showing the Frankfurt-Heidelberg route (see figure 9). At the same time, the cross range from Neuisenburg to Wiesbaden was shown, indicating the subsequent *Autobahn* interchange in Frankfurt. The main route had exits in Griesheim and Lorch before it reached Mannheim. Despite all of this, however, the success of the Hafraba questionnaire was disappointing. Only 82 of the 2,900 dispatched questionnaires were returned. The Hafraba published the traffic counts results.¹²⁷
- 4) Technical questions of the construction of an *Autobahn* and the layout of junctions.¹²⁸ The junction options baroque, renaissance (clover) and gothic were

¹²⁶ Institut für Stadtgeschichte Frankfurt/Main, Magistratsakten MA6289.

¹²⁷ Route Frankfurt/Main-Offenbach-Darmstadt, in: *Mitteilungsblatt* 2/1929, p. 6. Route Frankfurt/Main-Mainz, in: *Mitteilungsblatt*, issue 2, 1928, p.6 and issue 8, 1931, p. 9f.

¹²⁸ First meeting of the technical committee of the Hafraba association in Frankfurt/Main on Tuesday, 5th April 1927, *Schrift* Nr. 5 – Hellerdruck Frankfurt 1927, also *H. Uhlfelder*: *Richtlinien für die technische*

distinguished and rather peculiar names to appear in a modern traffic concept.

The clover junction form was created and patented by Willy Sarbach in Switzerland, who was inspired by an exhibition of the Hafraba in Basel in 1927.¹²⁹

- 5) Kurt Becker, a member of the Hafraba executive board, promoted in several of the association's magazines how the edge of roads and planned motorways should be adequately built. This topic was taken on by Todt later on and the landscape lawyer Alwin Seifert explored it in-depth by order of Todt. Becker showed a badly constructed bridge on an Italian motorway in a speech for gardening executives. The Hafraba disapproved of the purely functional design of bridges and underpasses on the Italian motorways. Instead, it favored architectural principles that blend constructions into the landscape. Thereby, it anticipated Todt's concepts of landscape aesthetics.¹³⁰ Becker demonstrated his ideas in a lecture for horticulture officials and showed a bridge crossing an Italian motorway as an example of bad style (cf. figure 10).¹³¹

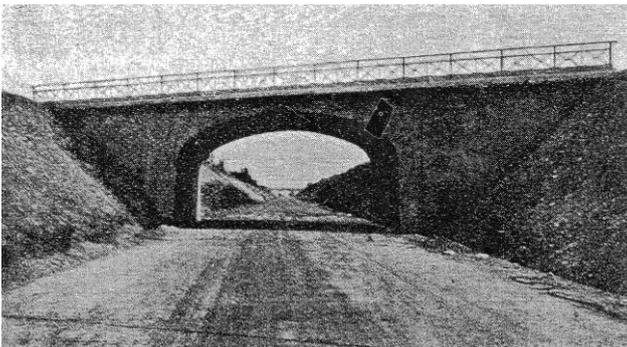


Figure 10: A bridge crossing an Italian motorway

- 6) Express highways abroad were discussed, especially those in the USA, Italy and Spain. For example, the Mount Vernon Memorial Park Road in the USA was featured.¹³²

Anlage von Autobahnen (Guidelines for the Construction of Motorways), Teil C: Abzweigungen und Kreuzungen, in: *Mitteilungsblatt*, issue 11, 1931, p. 2-7.

¹²⁹ Op. cit., and *K. Kaftan*: *Der Kampf um die Autobahnen (The Struggle for Motorways)*, Berlin 1955, p. 101; *Gabriel*, op. cit., p. 51.

¹³⁰ Lecture by Willy Hof at the Hafraba exhibition in Kassel, *Kasseler Post* 29.1.1928, UBK. On landscape aesthetics according to Todt, see *T. Zeller*: *Straße, Bahn, Panorama – Verkehrswege und Landschaftsveränderung in Deutschland 1930 bis 1990*, Diss. München, Campus Verlag, Frankfurt 2002.

¹³¹ *Die Möglichkeit der Verwendung von Pflanzungen beim Bau neuzeitlicher Autostrassen (Plantations at the Roadside)*, in: *Verkehrstechnik*, Heft 50, 1929, p. 863-865

¹³² *Mitteilungsblatt*, issue 5, 1932, p. 5. On the planning of the motorcars-only road Madrid-Irun with a total length of 360km, see *Mitteilungsblatt* issue 5, 1929, p. 4f.

- 7) Reports were held on international motorway and road construction conferences.¹³³

Touring exhibitions in several cities were organized to promote the Hafraba project. In 1927, there were exhibitions in Cologne, Frankfurt, Hamburg and Hannover.¹³⁴ Moreover, there were exhibitions in the trade museum in Basel in 1927, in the Landesmuseum in Kassel in 1928 and in the trade museum in Darmstadt in 1928.¹³⁵ Oddly, these exhibitions were only occasionally covered in the Hafraba newsletter. The Hafraba exhibition in Darmstadt was opened in the lobby of the Museum of Industry on 15 November 1928. The mayor, Dr. Glässing and the Darmstadt chamber of commerce and industry extended the invitation. Chamber president Schenk emphasized the great interest of his chamber in the Hafraba approach and he acknowledged that at the end of the 1920s, the competition between motorized vehicles and the railroad would be a potential obstacle for the implementation of the Hafraba approach. Government Council Dr. Krebs gave a preliminary presentation about the Hafraba concept and emphasized the numerous initiatives in Italy for motorway construction. The timing was fortunate because the first automobile-only road from Milan into the North Italian lake area had just succeeded the 100-kilometre Milan-Bergamo-Brescia route.

11 The Failure of the Hafraba

In the spring and summer of 1933, decisions and planning processes leading to the Nazi *Autobahn* project followed in rapid succession. At a general meeting of the Hafraba on 23 May 1933, its CEO Willy Hof reported on several conversations with Hitler about the Hafraba *Autobahn* concept. Hitler wanted to extend a network to cover the nation and a meeting on 6 April 1933 is documented in the chancellory files.¹³⁶ The editor of these

¹³³ Mitteilungsblatt issue 9, 1931, p. 1f contains the report on the first international Autobahn conference in Geneva from 31st of August till 2nd of September 1931; and the Mitteilungsblatt issue 5, 1932, p. 1f contains the report on the second international Autobahn conference in Milano from 18th till 20th of April 1932. Furthermore: Bericht von internationalen Strassenbaukongress in Washington DC vom 6. bis 11. Oktober 1930, in: Mitteilungsblatt, issue 12, 1930, p. 12.

¹³⁴ Kasseler Post vom 29.1.1928, UBK.

¹³⁵ Züricher Illustrierte Nr. 38, 1927 und Baseler Nachrichten vom 31.8.1927, both Stadtarchiv Kassel, Akte Städtisches Verkehrsamt, Kasseler Post vom 10.2.1928, ibidem, Mitteilungsblatt issue 2, 1929, p. 7.

¹³⁶ Akten der Reichskanzlei, Regierung Hitler 1933-1938 (Files of the Chancellor), ed. by *Konrad Repgen*, Teil I: 1933/34, Band 1, processed by *Karl-Heinz Minuth*, Boppard am Rhein 1983, p. 305, as well as report by the Hafraba manager Hof on his conversation with the Reich chancellor on the planning and financing of Autobahn construction on 6th of April 1933, op. cit., p. 308.

files, Minuth, has stressed that there is no file to be found on the meeting of Hitler and Hof, as quoted by Kaftan, on 3 March 1933, in which Hof described the meeting in his report as “first reception and lecture”.¹³⁷

At the general meeting in Frankfurt on 23 May 1933, the Hafraba was “brought into line”, as intended by the Nazi dictatorship. The politically disagreeable members were not allowed to join the discussions again.¹³⁸ The regional “Kampfbund der deutschen Architekten und Ingenieure” (Fighting Council of German Architects and Engineers), in Frankfurt led by Fritz Todt, suggested taking a cursory investigation of the Hafraba plans before they become the basis of the country’s job creation scheme. In a letter to the new Nazi mayor of Frankfurt, Dr. Krebs, dated 13 June 1933, the regional group justified this suggestion by stating that the Hafraba was “only following capitalist and Jewish economic interests”. This attempt was declined by the city of Frankfurt, since it did not want to endanger a quick start of construction.¹³⁹

On 24 June 1933, it was quickly decided to start constructing the Frankfurt-Darmstadt route. This route would be the first section of the Nazi *Autobahn* project. The common story is that this route was directly based on the plans of the Hafraba, although in the archives one can not find a document to support this assumption.¹⁴⁰ Like in the Hafraba plan there was a central strip between the lanes going in opposite directions. Figure 11 shows the central strip of the *Autobahn* at Darmstadt in 1936.¹⁴¹

¹³⁷ Op. cit., p. 306.

¹³⁸ Protokoll der Mitgliederversammlung (Minutes of the General Meeting), Die Autobahn, issue 6, 1933, p. 7.

¹³⁹ Institut für Stadtgeschichte Frankfurt/Main, Magistratsakten MA6289.

¹⁴⁰ Völkischer Beobachter of 25th of June 1933, p. 2, edition A. The Frankfurter Nachrichten of 30th of June 1933 had the title “Ein Paradies für Autofahrer” (“Paradise for car drivers”) on the beginning of the measuring works, Institut für Stadtgeschichte Frankfurt/Main.

¹⁴¹ Private picture by Siegfried Vahrenkamp, Osnabrück, 1936.



Figure 11: *Autobahn* at Darmstadt in 1936

On 18 August 1933, the Hafraba association was compulsorily dissolved and incorporated into the project company Gezuvor - *Gesellschaft zur Vorbereitung des Reichs Autobahnbaus* (company for the Preparation of *Autobahn* Construction).¹⁴² Most of the original members of the executive board were included in the new company. The personal records and portrait photos of the members were published in issue 9 of “Die *Autobahn*” in 1933.¹⁴³ The head office was shifted from Frankfurt (Main) to Berlin. The Gezuvor consisted of 11 regional sections with only regional responsibility. The Hannover-Kassel section was lead by Kurt Becker. The closure of the Hafraba platform led to an increase of Todt’s power. He kept exclusive authority for planning the overall network and in an 18 August 1933 speech before high-ranking state representatives on the occasion of the transformation of the Hafraba into the Gezuvor, he admonished the Gezuvor to focus on decentralization and to refrain from central planning.¹⁴⁴

It is noteworthy that the clearly visible, visionary, and utopian character of the Hafraba *Autobahn* project was transferred to the Nazi *Autobahn* project as well and enhanced into grotesqueness despite the low car density in Germany. This policy differed tremendously from the extension of the US Highway network, which was expanded

¹⁴² Die *Autobahn*, issue 9, 1933, p. 7-9.

¹⁴³ From the old board of the Hafraba, the following were members of the NS party in August 1933: director Willy Hof, spokesman of the board Arthur Zierau, Niemeyer (city construction council in Frankfurt) and Nienhaus, mayor of Heidelberg.

¹⁴⁴ *Städtisches Anzeigenblatt Frankfurt a.M.* vom 26.8.1933, p. 378f, Institut für Stadtgeschichte Frankfurt/Main.

according to increasing needs following an exact cost-value-ratio, as proven by Seely.¹⁴⁵ According to the evaluation of Mark Rose, the Express Highway system in the USA, which was built based on the German *Autobahn* example, didn't develop until the 1950s and appeared decades too late in relation to heavy overland traffic.¹⁴⁶ Mom shows that in the 1950s in Europe, a utopian approach ahead of traffic volume was necessary in order to politically justify the construction of an *Autobahn* network, as he showed at the example of in Holland.¹⁴⁷ The Nazi *Autobahn* adopted the idea of a toll from the Hafraba as well. In §7 of the German federal law relating to the establishment of a business "Reichs-Autobahngesellschaft" (Corporation of the Reich Autobahn), dated June 27 1933, it is stated that tolls can be levied.¹⁴⁸

Despite its many activities, the Hafraba association neither received great public attention nor did it gain acceptance. It's possible that the argument of the Hafraba propaganda, that there was a need for the north-south route, was unconvincing. As traffic counts conducted in 1924 and 1925 show, the main long- distance traffic of cars on the existing roads flowed in the direction of Berlin – Cologne, but north-south traffic was low.¹⁴⁹ This observation was then to be confirmed in Nazi construction priorities. While the route Berlin – Cologne was finished by 1942, construction of the route Hannover – Hamburg had not yet begun. The idea of connecting Hamburg with Genoa recalls the "geotechnical approach" by Fritz Stück, who projected "axes" without proving empirically that traffic was to be expected.¹⁵⁰

The federal association of the automobile industry was also opposed to the *Autobahn* plans of the Hafraba, due to the high tax burden. However, the federal association totally misjudged the strategic opportunity of the *Autobahn* to create a market for automobile sales. It argued in a letter to the chancellor on 6 January 1931 that refinancing construction costs with the help of a toll would not work, as the Italian example had shown. Its letter responded to a memorandum of the federal government on "taxing

¹⁴⁵ Seely: *Der amerikanische Blick auf die deutschen Autobahnen*, op. cit.

¹⁴⁶ Mark M. Rose: *Interstate – Express Highway Politics 1939 – 1989*, Tennessee UP, second rev. edition, 1990, p. 92

¹⁴⁷ Mom, op. cit.

¹⁴⁸ *Die Autobahn*, issue 7, 1933, p. 1f

¹⁴⁹ F. Pflug: *Der Kraftfahrzeugverkehr* (The car traffic), in: B. Harms (Ed.): *Strukturwandlungen der Deutschen Volkswirtschaft* (Changes in the German Economy), Berlin 1928, vol. 2, p. 251.

¹⁵⁰ Folckert Lüken-Isberner: *Fritz Stück und die Stadtplanungsdiskussion im Kassel der Weimarer Republik* (Fritz Stück and City Planning), in: *Hessisches Jahrbuch für Landesgeschichte*, Vol. 40, 1990, p. 219-240.

motor vehicles”¹⁵¹ which in section e) dealt with the question of motorway toll fees. The association rejected a toll since it would be an additional burden for car drivers who were already burdened with the raised fuel taxes of 1930.¹⁵² The federal ministry of finance presented this memorandum to the Reichstag in the late 1930s.

The attitude of the chambers of commerce and industry toward the private financing of motorways was not unanimous. The Essen Chamber of Commerce and Industry (IHK) voted against the *Autobahn* project, opposing the six Hafraba members of the IHK. Already in the stage of planning the Bonn – Cologne *Autobahn*, the IHK of Essen opposed a toll fee for this route, hinting at §13 by submitting a resolution to the federal council, who was not at all responsible for these cases.¹⁵³ In his study, Thalmann shows that the IHKs of the Ruhr region did not have a common policy for *Autobahn* projects.¹⁵⁴ So far, the *Autobahn* policy of the IHKs in total has not yet been systematically explored.

The scant public attention toward the Hafraba ideas can be proven by evaluating the issues of economic and traffic journals of the years 1930 to 1932, as mentioned in the introduction to this paper. In most of the journals, the Hafraba project was not mentioned at all. Even the journal *ADAC-Motorwelt* – the leading journal for motorists- with a total of 156 numbers, which have been evaluated in our study, mentions the Hafraba project by way of only two tiny comments.¹⁵⁵ The ADAC rather supported the standpoint of primarily extending the road network already in existence. In 1931, on the occasion of a memorandum of the federal ministry of finance on the taxation of motor vehicles, the ADAC demanded the use of revenue for extending the existing road network, and thereby also to create jobs for the numerous unemployed.¹⁵⁶ Other automobile clubs followed the ADAC as well. The Bavarian Automobile Club in Munich supported the Hafraba projects only half-heartedly: In its written comment, published in the Hafraba magazine, it claimed that the modernization of the road network already in existence is of prime importance, rather than the new construction of an *Autobahn*.¹⁵⁷ The Upper-Hessian Automobile Club in Giessen energetically opposed the Hafraba projects and

¹⁵¹ Report of the Reichstag, Drucksache 620, 1930.

¹⁵² Institut für Stadtgeschichte Frankfurt/Main, Magistratsakten MA6289.

¹⁵³ Report on the first meeting of the administrative council on Thursday, 10th of February 1927, op. cit., p. 16-22.

¹⁵⁴ *Frauke Thalmann: Industrie- und Handelskammern im Ruhrgebiet während der Weimarer Republik (The IHK in the Ruhrdistrict in the 1920s)*, Berlin 1996, p. 250.

¹⁵⁵ *ADAC-Motorwelt*, 1931, Heft 25, p. 17-19, *ADAC-Motorwelt*, 1932, Nr. 19, p. 2-3.

¹⁵⁶ *ADAC-Motorwelt*, 1931 Heft 25, p. 20-26.

¹⁵⁷ *Ludwig Graf Almeida: Kraftfahrer und Nur-Autostraße (The Car Driver and Car-Only-Roads)*, in: *Mitteilungsblatt* Heft 11/1929, p. 4-5

sent a letter to the Chamber of Commerce of Giessen on 24 November 1928 in which a toll on *Autobahns* was dismissed and it referred to the former defence from 5 June 1928 that the Automobile Club generally rejected the whole Hafraba project.¹⁵⁸ The Hafraba project would be untimely in regard to the current economic and road situation in Germany. Kurt Becker, member of the Hafraba board, regretted the disapproving attitude of the automobile associations in his speech in Kassel, on the occasion of the Hafraba exhibition.¹⁵⁹ Between 1926 and 1933, not a single Hafraba member contributed to the journal *Verkehrstechnik* which was a leading publication in the field of traffic policy until 1933. Rather, the government officials of the federal states and provinces published articles for it, ignoring the Hafraba concept. Only once was there a small comment on the Hafraba project.¹⁶⁰

Moreover, the low impact of the Hafraba ideas can also be explained with the varying interests of the automobile industry. Most German car engines were not made for the permanent stress on motorways, so that the German automobile industry had no point in supporting *Autobahn* construction.¹⁶¹

Appendix

Publications of the Hafraba in 1927

(Source: Libraray of University Braunschweig)

- Otzen, Robert: Die Autostraße Hansestädte-Frankfurt-Basel ; Schrift Nr. 1 ; Zweck und Ziele des Vereins "Hafraba" – Verlag der Göhmanschen Buchdruckerei, Hannover 1927
- Tagungsbericht der 1. Verwaltungsrat-Sitzung am Donnerstag, 10. Febr. 1927, in den Räumen der Frankfurter Gesellschaft für Handel, Industrie und Wissenschaft in Frankfurt a/M, Schrift Nr. 2 , Hellerdruck Frankfurt 1927
- Vorträge gehalten anlässlich der 1. Verwaltungsrat-Sitzung am 10. Februar 1927 in den Räumen der Frankfurter Gesellschaft für Handel, Industrie und Wissenschaft in Frankfurt a/M/, von Piero Puricelli und Robert Otzen, Schrift Nr. 3 – Hellerdruck Frankfurt 1927
- Otzen, Robert: Die Autostraße Hansestädte-Frankfurt-Basel, Erläuterungsbericht zum Entwurf der Autostraße, Schrift Nr. 4 - Hellerdruck Frankfurt 1927
1. Sitzung des Technischen Ausschusses am Dienstag, den 5. April 1927 in Frankfurt am Main, Schrift Nr. 5 - Hellerdruck Frankfurt 1927
1. Sitzung des Verkehrswirtschaftlichen Ausschusses am Montag, den 16. Mai 1927, in den Räumen der "Hafraba" Frankfurt am Main Savignyrstr. 25, Schrift Nr. 7 - Hellerdruck Frankfurt 1927

¹⁵⁸ Wirtschaftsarchiv Darmstadt 9/1749

¹⁵⁹ Kasseler Post vom 29.1.1928, UBK.

¹⁶⁰ *Verkehrstechnik*, 1928, p. 212.

¹⁶¹ See A. *Dinklage*: Autobahnen verlangen andere Motoren (Motorways and the need of new kinds of motors), in: *Die Autobahn*, Heft 14, 1934, p. 638; and W. *Kamm* & H. *Goll*: Einfluß der Reichsautobahn auf die Gestaltung der Kraftfahrzeuge (The impact of the motorway on the design of cars), in: *Die Strasse*, Heft 3, 1936, p. 67, further *Edelmann*, op. cit., p. 176.

2. Sitzung des Technischen Ausschusses am Dienstag, den 24. Mai 1927, im Hotel Disch in Köln a.Rh., Schrift Nr. 7 - Hellerdruck Frankfurt 1927
2. Sitzung des Verwaltungsrates am Mittwoch, den 25. Mai 1927, im Sitzungssaal des Hotel Disch in Köln am Rhein, Schrift Nr. 8 - Hellerdruck Frankfurt 1927
2. Sitzung des Verkehrswirtschaftlichen Ausschusses am Samstag, den 29. Oktober 1927, im Turmsaale des Rathauses zu Mannheim, Schrift Nr. 9 - Hellerdruck Frankfurt 1927
1. Sitzung des Finanzierungs-Ausschusses am Donnerstag, den 1. Dezember 1927, im Hotel Ernst-August zu Hannover, Schrift Nr. 10 - Hellerdruck Frankfurt 1927
3. Sitzung des Verwaltungsrats am Donnerstag, den 1. Dezember 1927, im Hodlersaal des Neuen Rathauses zu Hannover, Schrift Nr. 11 - Hellerdruck Frankfurt 1927

Abbrivations:

ADAC: Allgemeiner Automobilclub Deutschland

DIHT: Deutscher Industrie- und Handelstag

GEZUVOR: Gesellschaft zur Vorbereitung des Reichsautobahnbaus e.V.

HAFRABA: Verein zur Vorbereitung der Autostraße Hansestädte-Frankfurt-Basel

IHK: Industrie- und Handelskammer

Jg. : Jahrgang

Kfz: Kraftfahrzeug

LKW: Lastkraftwagen

Mio. : Million

NS: nationalsozialistisch

PKW: Personenkraftwagen

RGB: Reichsgesetzblatt

RM: Reichsmark

UBK: Universitätsbibliothek Kassel, Hessischer Lesesaal