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## **Motorization and Autobahn Projects in Germany and Europe in the Interbellum**

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## 1 Introduction

The motorway network in Europe developed into an essential infrastructure of the 20<sup>th</sup> and the beginning of the 21<sup>st</sup> century. This network provided means of commuting, as well as accommodated leisure travel and the cargo supply of the mass consumption. This article discusses how motorways evolved in Europe in the 1920s and 1930s. It focuses on the various projects, on the discussion of a European motorway network and on the role of the Hafraba association, which has been significant in Germany. This paper shows how the motorway concept developed from the Italian motorways to the Bonn-Cologne Autobahn and to the design of the Nazi Autobahn project and it explains how the quick start of the Nazi Autobahn project in 1933 relied on the preparatory works of the Hafraba association.

It has yet to be ascertained how the evolution of the motorway 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.<sup>1</sup> Moreover, they point out rationalization potentials by concentrating and adopting American production methods of mass production. However, they do not link their approach to the politics of road construction. We define motorways in this paper as junction-free roads which are reserved for traffic of motor vehicles. Pedestrians, cattle, bicycles and horse-drawn wagons are excluded from the road.

This paper is part of a greater research project on motorways in Europe<sup>2</sup> where various archives were evaluated, such as the Institut für Stadtgeschichte Frankfurt, Wirtschaftsarchiv Darmstadt, Preussisches Geheimes Staatsarchiv Berlin, Historisches Archiv der Stadt Köln and the Archiv des Landschaftsverbandes Rheinland Pulheim.

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<sup>1</sup> Heidrun Edelmann, *Vom Luxusgut zum Gebrauchsgegenstand* (Frankfurt, 1989). Reiner Flik, *Von Ford lernen? Automobilbau und Motorisierung in Deutschland bis 1933* (Köln, 2001).

<sup>2</sup> Vahrenkamp, Richard, *Der Autobahnbau in Hessen bis 1943* (Wirtschaftsarchiv Darmstadt, 2007).

## 2 Motorization and the road system in Germany from 1920 to 1932

In the 1920s, Germany had weak motorization in comparison to other European countries.<sup>3</sup> 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 as car consumers. Furthermore, the luxury tax of the federal government on cars, which was valid until 1926, decreased sales as well. Although motorization was weak, growth rates were high. The number of registered motor cars in the German state quickly rose, tripling from 161,000 in 1925 to 433,000 in 1929.<sup>4</sup> The motor car gained much importance in the business life of the 1920s. Table 1 below demonstrates the nearly two-fold increase in cars in the city of Frankfurt (Main) from 1927 to 1932.<sup>5</sup>

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.<sup>6</sup> Simultaneously, the efficiency of transporting goods by truck in the 1920s rose so

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<sup>3</sup> 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, 84. In Italy, the density was only half that of Germany, see H. Uhlfelder, 'Die oberitalienischen Autobahnen', *Hafraba Mitteilungsblatt*, 4 (1930), issue 7, 9-14, here p. 11.

<sup>4</sup> *Statistisches Jahrbuch für das Deutsche Reich*, 1926, p. 103 and 1930, p. 158.

<sup>5</sup> *Statistische Jahrbücher für das Deutsche Reich* 1928 to 1933.

<sup>6</sup> 'Lastkraftwagen in der Volkswirtschaft', Institut für Konjunkturforschung, Berlin, weekly report on 7 May 1930, 23-24.

that trucks gained advantages over transportation by train in terms of speed and cost.

This rapid growth in registered motor vehicles induced a growing 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 on state and provincial roads, the significant category for long-distance traffic, 67 horse-drawn vehicles, 64 motorcycles, 142 automobiles and 46 trucks.<sup>7</sup> 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.

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 federal states and provinces on 1 April 1927. Furthermore, the Highway Code was not uniformly regulated by the Reich.<sup>8</sup> Between 1923 and 1933, a lively debate about the future of the road systems took place in Germany in the context of rapidly expanding motor traffic. The deficits of the then-existing road system became obvious when it could not bear the increase in motor vehicle traffic.

### **3 The controversy: *Autobahn* versus roads**

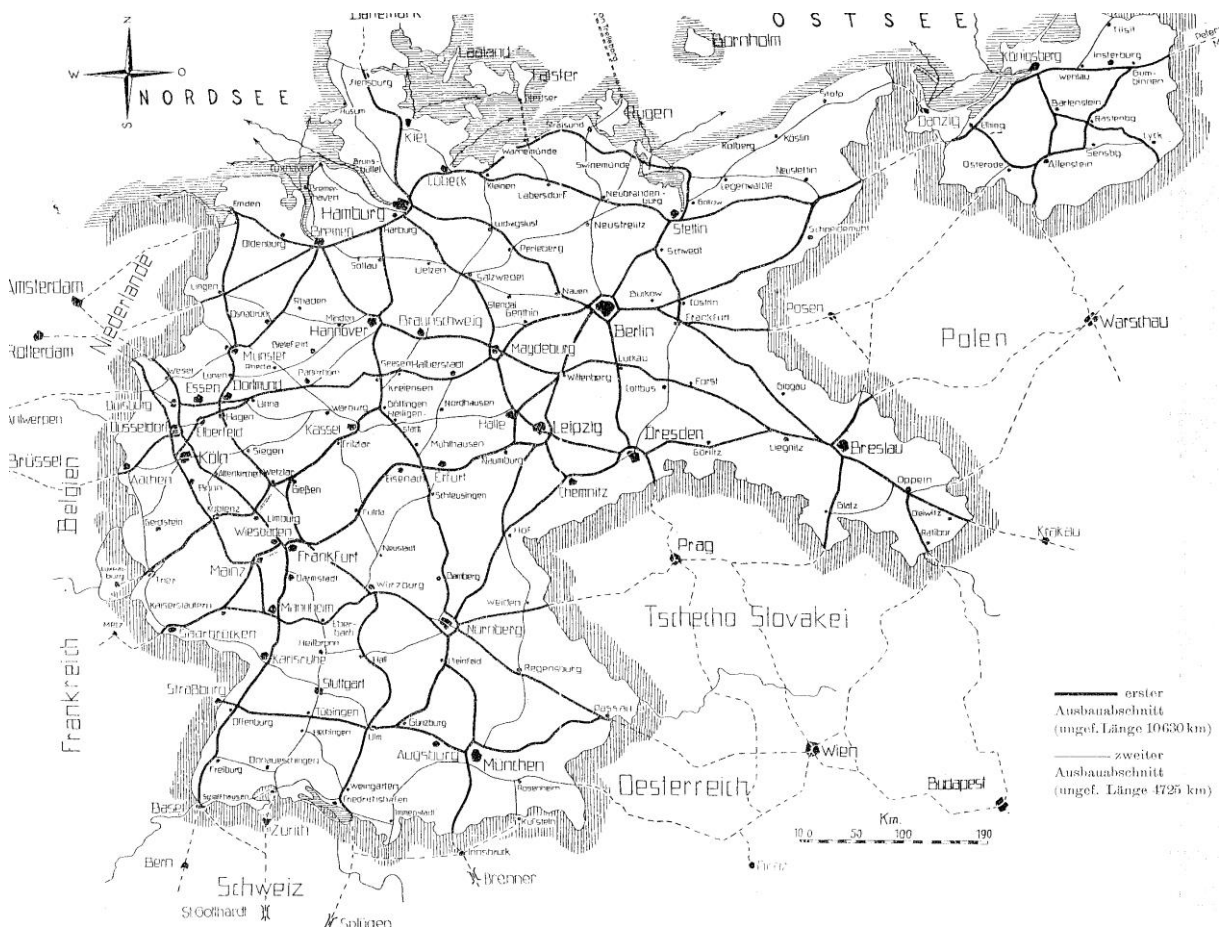
Controversy and discussion continued in Germany as to how the existing road system could be adjusted to serve the rapidly growing traffic of motor vehicles. On the one hand, there was the concept of extending the existing country roads. The 'Studiengesellschaft für Automobilstraßenbau' (Stufa – Research Association for the Construction of Automobile Roads), by 1926, had published a network of motor

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<sup>7</sup> Karl Hoffmann, 'Die Ergebnisse der 2. deutschen Verkehrszählung von 1928-29', *Verkehrstechnik*, 12 (1931), 189-191.

<sup>8</sup> Friedrich Frey, *Das Neue Strassenverkehrsrecht im Reich und in den Ländern* (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. The later 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 Bundesarchiv Berlin, R 4601, File 3001/A.

vehicle roads covering the whole of Germany with a total length of 10,630 km.<sup>9</sup> The network is shown in figure 1.<sup>10</sup> 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 traffic policy in the German empire by 1933, but was abandoned completely during the time of the Nazi regime.<sup>11</sup>



**Figure 1: The STUFA-Network of long distance roads**

<sup>9</sup> Stadtarchiv Kassel 10/3 Hafraba. Kurt Heller, 'Das Kraftwagenstrassennetz Deutschlands', *Strassenbau und Strassenunterhaltung*, supplement to the journal *Verkehrstechnik*, 9 (1928), 669-671.  
<sup>10</sup> Rappaport, 'Das Netz der Kraftwagenstrassen Deutschlands', *Verkehrstechnik*, 7 (1926), 285-288.  
<sup>11</sup> Vahrenkamp, *Der Autobahnbau*.

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 of 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 road network. The total usable width, including the shoulders, was to be increased to 8 meters, in mountainous terrain to 7 meters.<sup>12</sup>

On the other hand, there were plans to have motorways exclusively for motor vehicles. These motorways were named Autobahn. 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, in his article 'What do you think about motor vehicle-only highways?' called for the separation of motor vehicle traffic from the remaining traffic that consisted of slower road users.<sup>13</sup> 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.<sup>14</sup>

In the 1950s, when traffic density became high, the most important motive for motorway construction was greater road safety in comparison to country roads, but remarkably, this argument was barely vocalized in the discussion of the 1920s.<sup>15</sup> The Hafraba association also primarily mentioned, as justification for building an

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<sup>12</sup> 'Ausbau der Fernstrassen in Deutschland', *ADAC-Motorwelt*, 25 (1930), issue 38, 27-29.

<sup>13</sup> *Hafraba Mitteilungsblatt*, 3 (1929), issue 3, 1-2.

<sup>14</sup> On the argument of damaging buildings, see *Hafraba Mitteilungsblatt*, 2 (1928), issue 1, 8; and: *Verkehrstechnik*, 10 (1929), 204.

<sup>15</sup> Gijss Mom, 'Roads as Rails – European Highway-Network Building and the Desire for Long-Range Motorized Mobility', *Technology & Culture*, 46 (2005), 745-772.

Autobahn system, the possibility to drive at a higher speed.<sup>16</sup> 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* 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.<sup>17</sup>

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, 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 being widely discussed.<sup>18</sup> 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. Discussions on linking Heidelberg with Mannheim via an Autobahn had already, by 1926, started taking place. 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.<sup>19</sup> The

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<sup>16</sup> Piero Puricelli, in an essay in German for the Hafraba, compared the exhilarating speed on the Autobahn with the words 'The flight of wild animals', 'Strassen und Nur-Autostrassen', *Hafraba Mitteilungsblatt*, 3 (1929), issue 9, 1.

<sup>17</sup> See the 2<sup>nd</sup> Congress on Transportation Security in Washington D.C. with 1,200 participants in March 1926, *Verkehrstechnik*, 7 (1926), 343.

<sup>18</sup> Grossjohann, 'Der Beginn einer neuen Epoche in Deutschland – Zur Eröffnung der Autobahn Köln-Bonn am 6. August 1932', *Die Autobahn*, 1 (1932), issue 8, 1-5. And: 'Das Rheinland baut eine Autostrasse: Europas modernste Kraftwagenstrasse zwischen Köln und Bonn', title of *ADAC-Motorwelt*, 25 (1930), issue 7, 27-28.

<sup>19</sup> *Deutscher Verkehrsdienst*, published by Reichszentrale für Deutsche Verkehrswerbung, Nr. 289 on 11 December 1926, Stadtarchiv München, 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.

Autobahn promoters, however, were isolated at the meeting. Only the representative of the Hafraba, Robert Otzen, stood by the Autobahn concept without reservations.<sup>20</sup>

In order to stress their argument of the urgency of modernizing country roads, the Autobahn opponents 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 to 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 state 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.<sup>21</sup> 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 state 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 traffic, such as the projected Munich – Starnberg route.<sup>22</sup> 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.<sup>23</sup> 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 Reichsmark. It was

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<sup>20</sup> Report by Vilbig on the conference Vilbig, 'Ausbau der Straßen – Nur-Autostraßen? Drei Musterbeispiele aus Bayern', *Verkehrstechnik*, 8 (1927), 327. Vilbig took part in the conference on the Autobahn in Leipzig in 1927.

<sup>21</sup> Lecture on ministerial consultant Speck of Dresden, *Autofernstraße*, 16s. See also: Arthur Speck, 'Der Fernverkehr auf deutschen Landstrassen', *Verkehrstechnik*, 13 (1932), 239-242. Speck was opposed to the Autobahn because he found it more urgent to extend the then-existing road network.

<sup>22</sup> Vilbig, *Ausbau*.

<sup>23</sup> Rappaport, *Das Netz*, 288.

proposed to use bonds in order to raise this money.<sup>24</sup> 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.

#### 4 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.<sup>25</sup> This section of the paper looks at the peculiar social and economic factors that led to motorway construction in Italy.<sup>26</sup>

At first glance, the situation in Italy was similar to Germany. 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).<sup>27</sup> Therefore the cities in northern Italy and Frankfurt had similar motivations to promote a motorway project.

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<sup>24</sup> *Die Finanzierung des deutschen Strassenbaus* (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.

<sup>25</sup> Paul Hafen, *Das Schrifttum über die deutschen Autobahnen* (Bonn, 1956), 30-32.

<sup>26</sup> Daniela Zenone, *Das Automobil im italienischen Futurismus und Faschismus*, Forschungsbericht FS II 02-115, 2002, Wissenschaftszentrum Berlin. Lando Bortolotti, 'Origine e Primordi della Rete Autostradale in Italia 1922-1933', *Storia Urbana*, 59 (1992), 35-69 and Massimo Moraglio, 'Per una storia delle autostrade italiane: il periodo fra le guerre mondiali', *Storia urbana*, 100 (2002), 11-26.

<sup>27</sup> 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.

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.<sup>28</sup> 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.<sup>29</sup> 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 speed, and the pace of modernization is evident and is discussed by Daniela Zenone.

In distinct contrast to the Hafraba-project and to the Nazi Autobahn project, the Italian initiatives did not have the goal of an Autobahn network, but 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 and in part grants to one third – as it happened for the Turin – Milan motorway owned by FIAT.<sup>30</sup> As a result, Bergamo, cut off from railroad traffic because of the construction of the Trevilio-Rovato route, demanded a motorway from Milan to Bergamo.

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<sup>28</sup> Delle Donne, *Agnelli – Die Biographie* (Berlin, 1995): 'FIATs bonanza was the war', 47. See also Zenone, *Das Automobil*.

<sup>29</sup> Walter Rauscher, *Hitler und Mussolini* (Graz, 2001).

<sup>30</sup> *Hafraba Mitteilungsblatt*, 3 (1929), issue 12, 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			AASS			1935

**Table 2: Sections of the Italian motorways**

Table 2 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 – Seravalle motorway 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 approval from the government, which was installed on 17 December 1922. Construction started in June 1923.<sup>31</sup>

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.<sup>32</sup> 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.<sup>33</sup> Due to low traffic, the approach with two or three lanes was sufficient to ensure a fast drive by car. Speed limits of 40 km/h were only for trucks.<sup>34</sup> 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, and were 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.<sup>35</sup>

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 Alps chain for motorized traffic appeared in the objectives for the Italian motorway project in an effort to enhance defense during transalpine wars. This was borne of the experiences in World War I and explains the Italian support for this

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<sup>31</sup> Bortolotti, *Origine*, 46s.

<sup>32</sup> Uhlfelder, *Die oberitalienischen*.

<sup>33</sup> 1. Sitzung des Technischen Ausschusses am Dienstag, den 5. April 1927 in Frankfurt am Main, Schrift Nr. 5 – Hellerdruck Frankfurt 1927, 9.

<sup>34</sup> Uhlfelder, *Die oberitalienischen*, reported on a daily average of 1,497 vehicles for the year 1928.

<sup>35</sup> 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).

project, in contrast to the situation in Germany. However, this military-political interpretation is not supported by Bortolotti's or by Moraglio's research.<sup>36</sup> However, there had been bad experiences 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.

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.<sup>37</sup> 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.

## **5 The motorway and traffic projects in other countries**

In the Interbellum, various visions for motorway connections in Europe and for entire networks were subject to discussions. Most of the projects were only proposed and discussed. Only the Austrian project, the *Grossglockner* alpine pass, went into the phase of implementation. At international road conferences, the long-distance

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<sup>36</sup> Bortolotti, *Origine e Primordi*.

<sup>37</sup> *Ibidem*, 45.

Paris – Vienna – Istanbul route was widely discussed.<sup>38</sup> Complete motorway networks covering the whole of Europe were subject to discussion as well, and were introduced by Puricelli, among others.<sup>39</sup> Projects of road construction were also discussed in Austria and Switzerland. The *Schweizerische Autostrassen-Verein*, founded in 1929, debated projects as well, focusing on the development of efficient road connections in Switzerland, such as the Bern – Thun road.<sup>40</sup> In 1930, Austria started building the *Grossglockner* alpine pass from Salzburg to Carinthia, a project which was already being talked about in Austria in the 1920s.<sup>41</sup> 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 in 1933.<sup>42</sup> The same mix of job creation, public and international attention, modernization and national myth can be seen in the giant traffic project in the Soviet Union. The building of the Belomor channel from Leningrad to the White Sea in 1930, made possible only by forced labor with high rates of death, did not dampen the international admiration. Indeed, Stalin elevated the project to the level of national myth.<sup>43</sup>

A Paris – Lille motorway was discussed in France.<sup>44</sup> Piero Puricelli, who often made proposals for a European motorway network, did so at the 7<sup>th</sup> International Congress on Road Construction in Munich in 1934. Figure 3 shows what he had in mind.<sup>45</sup> At international conferences on motorway construction, the idea of constructing a London – Paris – Vienna – Istanbul motorway was discussed. Many proposals were

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<sup>38</sup> *Die Autobahn*, 1 (1932), issue 5, 1.

<sup>39</sup> Piero Puricelli, 'Entwurf für ein europäisches Autostrassennetz', *Die Strasse*, 1 (1934), issue 2, 42s. Puricelli presented his concept on the 7<sup>th</sup> International Road Conference in Munich, 3-8 September 1934.

<sup>40</sup> Marcel Nyfeller, 'Das Projekt einer Autostrasse Bern-Thun', *Hafraba Mitteilungsblatt*, 4 (1930), issue 12, 6.

<sup>41</sup> Gert Rigele, *Die Grossglockner Hochalpenstraße. Zur Geschichte eines österreichischen Monuments* (Wien, 1998).

<sup>42</sup> Todt's journal *Die Strasse* reported on the Grossglockner alpine road for the first time in May 1935, see Leopold Örley, 'Die Großglockner-Hochalpenstraße', 2 (1935), 372-374.

<sup>43</sup> Karl Schlögel, *Sankt Petersburg – Stadt am Meer, Stadt am Belomor-Kanal*, in: Karl Schlögel, *Marjampole* (München, 2005), 141-154.

<sup>44</sup> *Hafraba Mitteilungsblatt*, 3 (1929), issue 6, 5

<sup>45</sup> Piero Puricelli, 'Entwurf für ein europäisches Autostrassennetz', *Die Strasse*, 1 (1934), issue 2, 42.

submitted to build motorways between Italy and Germany and in the 1920s, Puricelli suggested a Berlin – Munich – Rome motorway.<sup>46</sup>

## 6 The Foundation of the Hafraba in Frankfurt (Main)

Among other German 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.<sup>47</sup> It was founded in the town hall of Frankfurt (Main) on 6 November 1926. 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.<sup>48</sup> 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 to facilitate financing 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.<sup>49</sup> American tourists arrive with their cars

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<sup>46</sup> Lando Bortolotti, ‘Fra Politica, Propaganda e Affari: L’Autostrada Roma-Berlino 1927-1942’, *Storia Urbana*, 81 (1997), 47-79.

<sup>47</sup> ‘Frankfurt’ refers to ‘Frankfurt am Main’ in the following.

<sup>48</sup> *Bericht über die Besprechung des Projekts Automobilstrasse Hamburg-Mailand*, Druckschrift des Wirtschaftsamts Frankfurt, 1926, Stadtarchiv Kassel, Akte Städtisches Verkehrsamt, 10/3.

<sup>49</sup> Wilhelm Cuno, ‘Die Hafraba und der Fremdenverkehr von Übersee’, *Hafraba Mitteilungsblatt*, 3 (1929), issue 4, 2s. Also: Thalenhorst, ‘Städte an den Hafraba-Strassen: Bremen’, *Hafraba Mitteilungsblatt*, 4 (1930), issue 4, 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 Friedrich Frey, ‘Strassenwesen und Strassenverkehrswesen im Rhein-Main-Gebiet’, *Hafraba Mitteilungsblatt*, 3 (1929), issue 11, 6.

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, 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.<sup>50</sup> 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.<sup>51</sup> 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.<sup>52</sup>

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 2 shows the projected course of the Autobahn with the turn-off to Bremen.<sup>53</sup> 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.

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<sup>50</sup> *Statistisches Jahrbuch für das Deutsche Reich* 1927, p. 48, 1928, p. 159, 1933, p. 51.

<sup>51</sup> Fritz Todt, 'Reichsautobahnen in der Wirtschaft', *Frankfurter Volksblatt* on 27 February 1936, Archiv Hessischer Rundfunk, press cuttings Autobahnen. I explored tourism as justification of the Autobahn project in my paper 'Automobile tourism and political propaganda: constructing the Munich – Salzburg Autobahn 1933 – 39' *Journal of Transportation History*, 27 (2006), issue 2, 21-38.

<sup>52</sup> Michele Bonino und Massimo Moraglio, *Inventing Movement – History and Images of the A6 Motorway* (Turino, 2006), 79s.

<sup>53</sup> Robert Otzen, *Die Autostrasse Hansestädte-Frankfurt-Basel, Ziele und Zweck des Vereins 'Hafraba'* (Hannover, 1927), 7.



Figure 2: 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. 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'.<sup>54</sup>

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 5 June 1928 to the city's Chamber of Commerce and Industry that it should be prohibited from using public money for

<sup>54</sup> Tagungsbericht der 1. Verwaltungsrat-Sitzung, 10.

Autobahn projects. It was argued that it would be impossible to raise sufficient private capital without public help. Therefore, public money should be used for more practical purposes than for an Autobahn.<sup>55</sup>

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.<sup>56</sup>

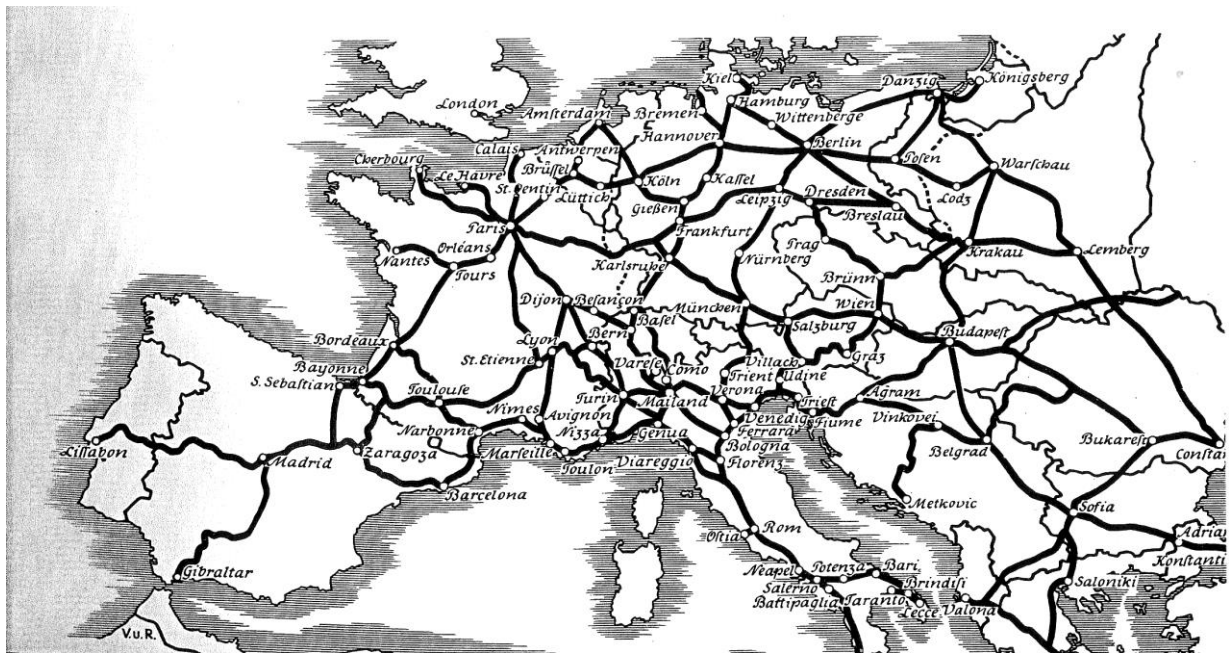


Figure 3: Puricelli's draft of a European Autobahn network<sup>57</sup>

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. 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.<sup>58</sup> At the first meeting of the advisory board in Frankfurt in 1927, Puricelli held a speech in German, emphasizing not only the idea of creating a modern road network in the form of the German Autobahn, but also the concept of

<sup>55</sup> Wirtschaftsarchiv Darmstadt 9/1749.

<sup>56</sup> Bortolotti, *Fra Politica*, 47-79.

<sup>57</sup> Piero Puricelli: Entwurf für ein europäisches Autostrassennetz, in: *Die Strasse*, 1 (1934), issue 2, 42

<sup>58</sup> Tagungsbericht der 1. Verwaltungsrat-Sitzung, 13.

utilizing both private enterprise and public agencies in order to bring the idea to fruition.<sup>59</sup>

## 7 The Activities of the Hafraba

The HAFRABA association published numerous papers to promote its ideas. By 1927, eleven publications had appeared. From 1928 on, the newsletter 'HAFRABA – *Mitteilungsblatt des Hafraba e.V.*' was published with 12 issues per year. 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). 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. The headline of the July edition reads: '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 der Reichsautobahnen e.V.' the Gezuvor became the publisher of '*Die Autobahn*'.<sup>60</sup> The chief editor of the Hafraba newsletter, Kurt Kaftan, remained in his function until the end of 1934, 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

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<sup>59</sup> Ibidem, 2.

<sup>60</sup> *Die Autobahn*, 2 (1933), issue 9, 7-9.

Autobahn network for the whole of Germany as early as 1927,<sup>61</sup> 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 plan for extending the Hafraba route to an Autobahn 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.<sup>62</sup> Figure 4 shows this map<sup>63</sup>. 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.<sup>64</sup> 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.

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 railway services offered by the national railway system ‘not even remotely’ meeting the existing demand.<sup>65</sup>

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<sup>61</sup> Otzen, *Die Autostrasse*, 13s.

<sup>62</sup> Golder, ‘Weiterausbau der Hafraba-Idee’, *Hafraba Mitteilungsblatt*, 4 (1930), issue 2, 1-3. The Golder plan might have been a prototype for the Nazi Autobahn project.

<sup>63</sup> Golder, ‘Weiterausbau der Hafraba-Idee’, *Hafraba Mitteilungsblatt*, 4 (1930), issue 2, p. 2.

<sup>64</sup> Robert Otzen, ‘Zur Systematik des deutschen Landstrassenbaus’, *Bautechnik*, 25 (1931), issue 26, Stadtarchiv Karlsruhe, Akte 1/H/3500.

<sup>65</sup> *Hafraba Mitteilungsblatt*, 3 (1929), issue 12, 7.

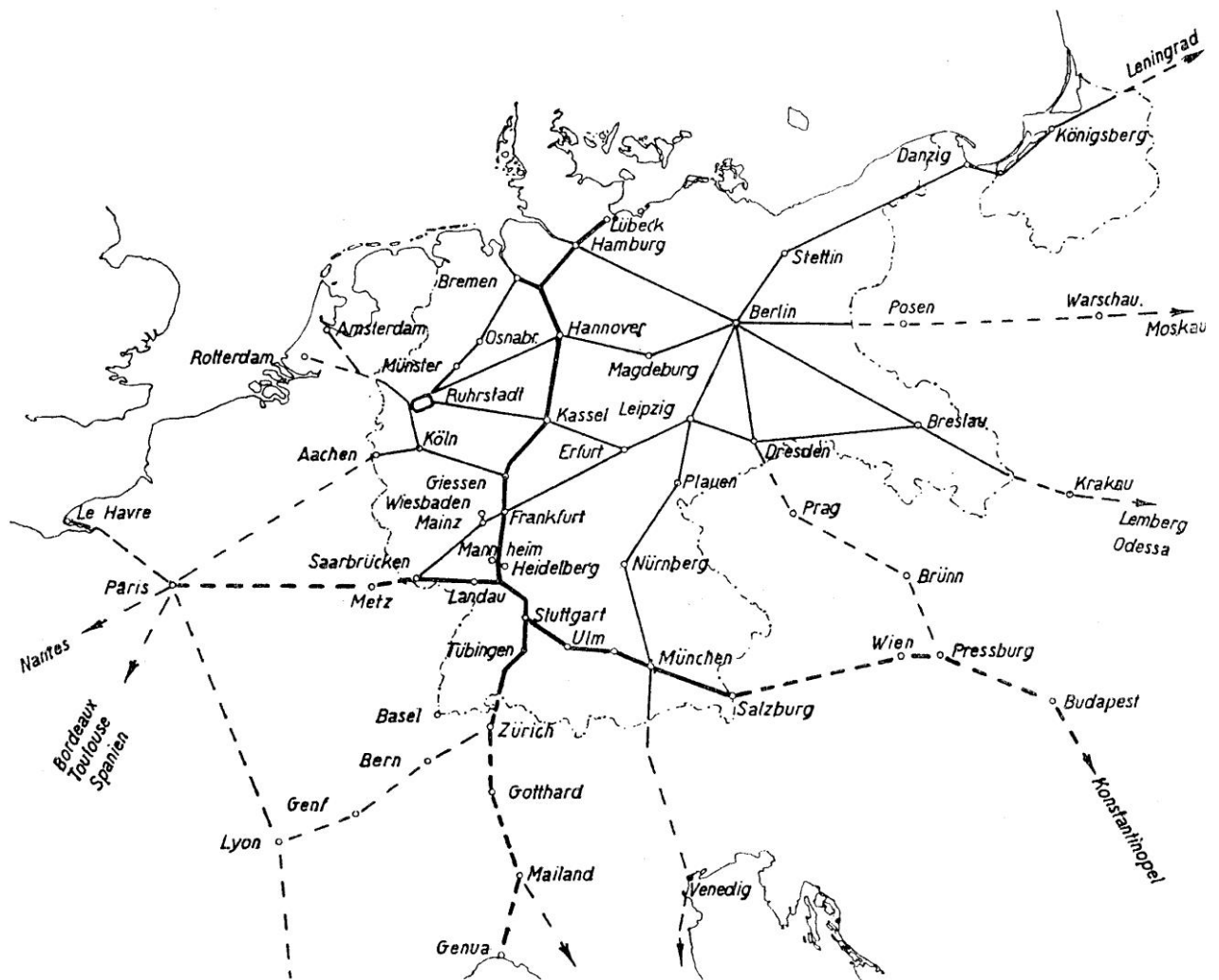


Figure 4: Golder's draft of an *Autobahn* network for Germany in 1930

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.<sup>66</sup> However, to build privately financed roads was difficult in Germany. This procedure would not be in compliance with § 13 of the law of finance regulation (*Finanzausgleichsgesetz*). Furthermore, the transport administration did not support privately financed roads, favoring instead the

<sup>66</sup> Stadtarchiv Kassel, Akte Städtisches Verkehrsamt, Hafraba, 10/4.

interests of the railroad.<sup>67</sup> The Hafraba applied without success for an exemption from paragraph 13 in Parliament and,<sup>68</sup> moreover, petitioned the transport ministry on 28 August 1932 for a privately financed construction of the Frankfurt-Mannheim-Heidelberg route.

2) The Hafraba underlined 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.<sup>69</sup> Furthermore, traffic on an efficient road network was considered a source of economic growth and an instrument for conducting commerce.

3) The Hafraba linked the traffic policy to the labor market policy. Road building was repeatedly referred to as a means of job creation for the unemployed. For the Frankfurt-Mannheim route, an estimated 6,000 people should be employed for two years.<sup>70</sup>

4) 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.<sup>71</sup> 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 Rhine-Main region.

5) Technical questions of the construction of an Autobahn and the layout of junctions.<sup>72</sup>

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<sup>67</sup> Record of the conference of the HAFRABA with the Transport Administration on 18 August 1928, Thüringisches Hauptstaatsarchiv Weimar, C233, 22.

<sup>68</sup> Application by representative Rippel et al. on 4 March 1931, Institut für Stadtgeschichte Frankfurt/Main, Magistratsakten MA6289. Application by Koch-Weser et al. on 4 July 1930.

<sup>69</sup> *Habraba Mitteilungsblatt*, 4 (1930), issue 2, 2-6; and Neumann, 'Strassenverkehr und Strassenwesen in den USA', *Habraba Mitteilungsblatt*, 5 (1931), issue 1, 4s. On the 'model character' of America for the German car industry, see also Heidrun Edelmann, *Luxusgut*, 69-79. Numerous reports on the USA can also be found in the journals *Verkehrstechnik* and *ADAC-Motorwelt*.

<sup>70</sup> *Habraba Mitteilungsblatt*, 5 (1931), issue 1. See also 'Wege zur Belebung der Bauwirtschaft unter Berücksichtigung der Hafraba', lecture by U. Rouselle, *Habraba Mitteilungsblatt*, 5 (1931), issue 7, 5s.

<sup>71</sup> Institut für Stadtgeschichte Frankfurt/Main, Magistratsakten MA6289.

<sup>72</sup> 1. Sitzung des Technischen Ausschusses, also H. Uhlfelder, Richtlinien für die technische Anlage von Autobahnen, Teil C: Abzweigungen und Kreuzungen, *Habraba Mitteilungsblatt*, 5 (1931), issue 11, 2-7.

6) 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.<sup>73</sup> Becker showed a badly constructed bridge on an Italian motorway in a speech to gardening executives.

7) Express highways projects abroad were discussed, especially those in the USA, Italy and Spain. For example, the Mount Vernon Memorial Park Road in the USA was featured.<sup>74</sup>

8) Reports were held on international motorway and road construction conferences.<sup>75</sup>

9) Touring exhibitions in several cities were organized to promote the Hafraba project. In 1927, there were exhibitions in Basel, Cologne, Frankfurt, Hamburg and Hanover.<sup>76</sup>

## 8 The Bonn – Cologne 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, then mayor of Cologne and later Chancellor of West Germany, who had also become a member of the administrative council of the Hafraba. The Hafraba reported in great detail on the opening in its magazine. It was viewed as entry into a new era.<sup>77</sup> The Autobahn project Bonn – Cologne has to be evaluated in the context of traffic policy in the Rhineland province of Prussia. After World War I, allied forces occupied the Rhineland till 1930 and cut the capacity of the railway. So the truck transport of cargo substituted railway transport

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<sup>73</sup> Thomas Zeller, *Driving Germany – The Landscape of the German Autobahn, 1930 – 1970* (New York, 2007).

<sup>74</sup> Hafraba *Mitteilungsblatt*, 6 (1932), issue 5, 5. On the planning of the motorcars-only road Madrid-Irun with a total length of 360km, see *Hafraba Mitteilungsblatt*, 3 (1929), issue 5, 4s.

<sup>75</sup> *Hafraba Mitteilungsblatt*, 5 (1931), issue 9, 1s contains the report on the first international Autobahn conference in Geneva on 31 August till 2 September 1931; and the *Hafraba Mitteilungsblatt*, 6 (1932), issue 5, 1s contains the report on the second international Autobahn conference in Milano on 18 till 20 April 1932. Furthermore: 'Bericht von internationalen Strassenbaukongress in Washington DC vom 6 bis 11 Oktober 1930', *Hafraba Mitteilungsblatt*, 4 (1930), issue 12, 12.

<sup>76</sup> *Kasseler Post* on 29 January 1928, library university of Kassel.

<sup>77</sup> Grossjohann, 'Der Beginn einer neuen Epoche in Deutschland – Zur Eröffnung der Autobahn Köln-Bonn am 6. August 1932', *Die Autobahn*, 1, 1932, Heft 8, S. 1-5. And: *Hafraba Mitteilungsblatt*, 5 (1931), issue 7, 6.



**ADAC**  
**MOTORWELT**

OFFIZIELLES ORGAN DES ALLGEMEINEN DEUTSCHEN AUTOMOBILCLUBS (REICHSVERBAND DER KRAFTFAHRZEUGBESITZER DEUTSCHLANDS) · SITZ MÜNCHEN · BERLIN

Drahtanschrift: ADAClub • ADAC-Zentrale: München 2 NO · Königinstraße 11a • Fernsprech-Nummer 929

**ADAC**  
**Schönheits-Wettbewerb**  
für Kraftwagen  
in Swinemünde  
am 14. August 1932  
Näheres siehe Seite 41

**Nummer 30/31**      **München, 29. Juli 1932**      **29. Jahrgang**



Figure 5: Title of the ADAC Motorwelt 1932

and showed its advantages. By 1929, 30 percent of the trucks in Prussia were located in the Rhineland province.

Adenauer not only was the mayor of Cologne, but at the same time head of the committee of the Rhineland province which prepared moves for the Rhineland parliament. As the minutes of the Rhineland parliament of the 1920s reveal, Adenauer, together with the governor of the Rhineland province, pushed a series of Autobahn projects in the region of Cologne to overcome the shortage of railroad transport and to make use of the modern transport technology of cars, buses and trucks.<sup>78</sup> Autobahn projects were planned to connect Aachen with Cologne and Düsseldorf with Cologne. But only the Bonn – Cologne Autobahn project went into the phase of realization. Like the Hafraba, Adenauer linked the goal to improve the traffic conditions to labor market policy. To build roads was seen as a means to creating many jobs for the numerous unemployed. The constructions should be financed by public loans which had to be backed by tolls paid by the users of the Autobahns. But this concept did not comply with the financial constitution of the Reich. The §13 of the *Finanzausgleichsgesetz* did not allow for levying tolls on public roads. So the projects of Adenauer did not get support on the level of the federal government. Even an exemption from §13 could not be achieved, although it might be legislated; the German Railway Company lobbied heavily against the Autobahn projects.<sup>79</sup> The Railway Company had a strong position in German politics. According to the Dawes scheme, the Railway Company had to guarantee reparation payments.<sup>80</sup> As a compromise, the Bonn – Cologne Autobahn could be built, but under an alternative financial scheme. The construction was paid out of the fund for emergency works of the federal government. The works supported by this fund should create value for the public. As a consequence, the Autobahn became a toll-free road. During the construction, some 5,500 people, recruited from the unemployed, worked at the project and supplied some 210,000 men days of work so that the goal to create work for the unemployed was achieved.<sup>81</sup>

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<sup>78</sup> Bestand 902, OB Konrad Adenauer, Historisches Archiv der Stadt Köln, and Archiv des Landschaftsverbandes Rheinland Puhlheim.

<sup>79</sup> *Finanzausgleichsgesetz* on 9 April 1927, RGB I, 1927, 91. The negotiations between the Rhineland province and the federal government are documented in Geheimes Staatsarchiv, Berlin, HA Re 151 Finanzministerium, IC Nr. 11939. Letter of the president of the Reichsbahn, Dorpmüller, to the Minister of Finance on 23 December 1926, *ibidem*.

<sup>80</sup> Ursula Ruser, *Die Reichsbahn als Reparationsobjekt* (Freiburg, 1980).

<sup>81</sup> *General Anzeiger*, Bonn, on 3 August 1932, Bestand 902, OB Konrad Adenauer, Historisches Archiv der Stadt Köln. The history of the construction is published in the booklet: *Europas erste Autobahn – Kraftwagenstrasse Köln-Bonn 50 Jahre*, Landschaftsverband Rheinland (Köln, 1982), Archiv des Landschaftsverband Rheinland.

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. It 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. 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.<sup>82</sup> 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.



Figure 6: Traffic on the Autobahn Bonn – Köln in 1932  
(Source: Kölnische Illustrierte Zeitung 1932)

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 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

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<sup>82</sup> Grossjohann, 'Die Kraftwagenstrasse Bonn-Köln-Düsseldorf', *Strassenbau und Strassenunterhaltung*, Beilage der Zeitschrift *Verkehrstechnik*, 10 (1929), 415-417, here p. 416.

1928, an average of 1,497 vehicles per day could be counted on these routes, a number close to the maximum of 2,073 vehicles per day.<sup>83</sup>

## 9 The failure of the Hafraba and the triumph of the Nazi Autobahn project.

In the spring and summer of 1933, after the take over of power by Adolf Hitler, 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 the Hafraba line to an entire network to cover the nation.<sup>84</sup> A giant project would be more suitable for propaganda.

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.<sup>85</sup> The regional '*Kampfbund der deutschen Architekten und Ingenieure*' in Frankfurt, led by Fritz Todt, suggested taking a cursory investigation of the Hafraba plans before they became 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.<sup>86</sup>

On 24 June 1933, Fritz Todt – the head of the Nazi Autobahn project – 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

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<sup>83</sup> Uhlfelder, *Die oberitalienischen*, 11.

<sup>84</sup> A meeting on 6 April 1933 is documented in the chancellor files: *Akten der Reichskanzlei, Regierung Hitler 1933-1938*, herausgegeben von Konrad Repgen, part I: 1933/34, volume 1, processed by Karl-Heinz Minuth, Boppard am Rhein 1983, 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 6 April 1933, *ibidem*, 308. The Nazi Autobahn project is studied in detail in my book: *Der Autobahnbau*.

<sup>85</sup> Protokoll der Mitgliederversammlung, *Die Autobahn*, 2 (1933), issue 6, 7.

<sup>86</sup> Institut für Stadtgeschichte Frankfurt/Main, Magistratsakten MA6289.

was directly based on the plans of the Hafraba, although in the archives one can not find documents to support this assumption.<sup>87</sup> The road should express the claim of Nazi rule with giant dimensions. Whereas the Hafraba laid down the principle of 20.50 meters of total width of the Autobahn, Todt expanded the width to 23 meters. Like with the Hafraba plan, there was a central strip between the lanes going in opposite directions. Figure 7 shows the central strip of the Autobahn at Darmstadt in 1936.<sup>88</sup>



Figure 7: *Autobahn* at Darmstadt in 1936 (private photo)

On 18 August 1933, the Hafraba association was compulsorily dissolved and incorporated into the project company 'GEZUVOR – Gesellschaft zur Vorbereitung der Reichsautobahnen e.V.'.<sup>89</sup> 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.<sup>90</sup> The head office was shifted from Frankfurt (Main) to Berlin. The GEZUVOR consisted of 11 regional

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<sup>87</sup> *Völkischer Beobachter* on 25 June 1933, 2, edition A. The *Frankfurter Nachrichten* on 30 June 1933 had the title 'Ein Paradies für Autofahrer' on the beginning of the measuring works, Institut für Stadtgeschichte Frankfurt/Main, Magistratsakten MA6289.

<sup>88</sup> Private picture, 1936.

<sup>89</sup> *Die Autobahn*, 2 (1933), issue 9, 7-9.

<sup>90</sup> 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 and Nienhaus, mayor of Heidelberg.

sections with only regional responsibility. 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.<sup>91</sup>

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 in the 1930s according to increasing needs following an exact cost-value-ratio, as shown by Seely.<sup>92</sup> 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.<sup>93</sup> 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 corporation of the Reich Autobahn, dated 27 June 1933, it is stated that tolls can be levied which was never done.<sup>94</sup>

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.<sup>95</sup> This observation was then to be confirmed in Nazi construction priorities. While the route Berlin – Cologne was finished by 1942, construction of the route Hanover – Hamburg had not yet begun. The idea of connecting Hamburg with

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<sup>91</sup> *Städtisches Anzeigenblatt Frankfurt a.M.* on 26 August 1933, 378s, Institut für Stadtgeschichte Frankfurt/Main.

<sup>92</sup> Bruce Seely, 'Der amerikanische Blick auf die deutschen Autobahnen', Werkstatt Geschichte, Heft 21, Hamburg 1998, 13-15.

<sup>93</sup> Mark M. Rose, *Interstate – Express Highway Politics 1939 – 1989* (Tennessee UP, second rev. edition), 1990, 92.

<sup>94</sup> *Die Autobahn*, 2 (1933), issue 7, 1s.

<sup>95</sup> Fritz Pflug, 'Der Kraftfahrzeugverkehr', in: Bernd Harms (ed.), *Strukturwandlungen der Deutschen Volkswirtschaft* (Berlin, 1928), vol. 2, 251.

Genoa recalls the 'geotechnical approach' by Fritz Stück, who projected worldwide 'traffic axes' without proving empirically that traffic was to be expected.<sup>96</sup>

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 motor vehicles'<sup>97</sup> 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.<sup>98</sup> The federal ministry of finance presented this memorandum to the Reichstag in the late 1920s.

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.<sup>99</sup> In his study, Thalmann shows that the IHKs of the Ruhr region did not have a common policy for Autobahn projects.<sup>100</sup> So far, the Autobahn policy of the IHKs in total has not 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. In most of the journals, the Hafraba project is not mentioned at all. Even the journal *ADAC-*

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<sup>96</sup> Folckert Lüken-Isberner, 'Fritz Stück und die Stadtplanungsdiskussion im Kassel der Weimarer Republik', *Hessisches Jahrbuch für Landesgeschichte*, 40 (1990), 219-240.

<sup>97</sup> Report of the Reichstag, Drucksache 620, 1930.

<sup>98</sup> Institut für Stadtgeschichte Frankfurt/Main, Magistratsakten MA6289.

<sup>99</sup> 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.

<sup>100</sup> Frauke Thalmann, *Industrie- und Handelskammern im Ruhrgebiet während der Weimarer Republik* (Berlin, 1996), 50.

*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.<sup>101</sup> 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.<sup>102</sup> 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.<sup>103</sup> The Upper-Hessian Automobile Club in Giessen energetically opposed the Hafraba projects and 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 defense of 5 June 1928 that the Automobile Club generally rejected the whole Hafraba project.<sup>104</sup> The Hafraba project would be untimely in regard to the current economic and road situation in Germany. In this respect, the thesis of Gijs Mom – that especially automobile clubs in Europe substantially supported Autobahn projects – is to be revised.<sup>105</sup> This thesis applies neither to the ADAC nor to the Upper-Hessian Automobile Club 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.<sup>106</sup> 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.<sup>107</sup>

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<sup>101</sup> *ADAC-Motorwelt*, 26 (1931), issue 25, 17-19, *ADAC-Motorwelt*, 27 (1932), issue 19, 2-3.

<sup>102</sup> *ADAC-Motorwelt*, 26 (1931), issue 25, 20-26.

<sup>103</sup> Ludwig Graf Almeida, 'Kraftfahrer und Nur-Autostraße', *Hafraba Mitteilungsblatt*, 3 (1929), issue 11, 4-5.

<sup>104</sup> *Wirtschaftsarchiv Darmstadt* 9/1749.

<sup>105</sup> Mom, *Roads as Rail*, 745s.

<sup>106</sup> *Kasseler Post* on 29 January 1928, library university of Kassel.

<sup>107</sup> *Verkehrstechnik*, 9 (1928), 212.

Moreover, the low impact of the Hafraba ideas can also be explained by the varying interests of the automobile industry. Most German car engines were not made for permanent stress on motorways, so that the German automobile industry had no point in supporting Autobahn construction.<sup>108</sup>

## 10 Conclusion

Many plans for motorways in Europe during the Interbellum, especially the Europe-wide networks, had a utopian character of relatively weak motorization. The plans lacked political support. Even for the north-south route of the Hafraba in Germany, the support of politics was weak. In Italy, the strong bourgeoisie developed the power to achieve local strips of motorways. The traffic policy of bourgeoisie substituted a weak road administration which could not secure a program to improve roads. The Italian approach failed in Germany because the road administrations of the states had wide influence and took a position against the Autobahn. Furthermore, there was resistance among railway supporters who had a strong position in German politics as a result of the Dawes scheme to pay reparations. Adolf Hitler took the chance to make use of the utopian character of the Autobahn network as a symbol for the rise of the Nazi state. When one compares Italy and Germany to the other countries of Europe in the Interbellum, it is often said that motorways as infrastructure could be best built by dictator regimes. But this view does not take into account just how weak road administration in Italy was.

### Abbreviations:

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<sup>108</sup> See Albert Dinklage, 'Autobahnen verlangen andere Motoren', *Die Autobahn*, 3 (1934), issue 14, 638; and Werner Kamm, 'Einfluß der Reichsautobahn auf die Gestaltung der Kraftfahrzeuge', *Die Strasse*, 3 (1936), 67, further: Edelmann, *Vom Luxusgut*, 176.

ADAC: Allgemeiner Automobilclub Deutschland

GEZUVOR: Gesellschaft zur Vorbereitung der Reichsautobahnen e.V.

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

IHK: Industrie- und Handelskammer

Mio. : Million