



## Emergence and Transfer of Vehicle Safety Standards: Why We Still Do Not Have Global Standards

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The implementation of new U.S. vehicle safety standards beginning in 1966 provided solutions and studies that served as guidelines for Europeans. Within Europe, some market players wanted to align with American standards (to facilitate the creation of a larger market), but others did not (for trade protection). European countries failed to disseminate European standards rapidly because of the strongly opposing views among market players. European carmakers at first opposed American standards because of the technical and financial risks, but met the American criteria nevertheless. Germany and the United Kingdom were key actors in the progressive convergence of European and American standards. In 1972, European car manufacturers banded together to form the Committee of Car Makers of the Common Market. Their secret ambition was to undermine American influence in Europe on exhaust emissions and safety issues. The creation of the Committee corresponded with strong reactions against both the increasing technical barriers to European imports in the United States and to the serious threat posed to European exports by the possible extension of American standards worldwide.

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My main goal in this paper is to study how vehicle safety standards emerge, evolve, and migrate from one area to another, in an attempt to understand the logic of implementation (or non-implementation) of global regulations. I do not focus primarily on automobile safety innovations as such, but on the standards that follow such industrial improvements. The literature on standards emanates from diverse academic disciplines, including political science, history of technology, engineering, and legal studies. I follow the path of pioneering historical studies on technical standards that showed how standards become irreversible and are inefficient from an industrial perspective.<sup>1</sup> The case study I consider supports the same conclusions. This

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<sup>1</sup> See in particular, Paul A. David, "Clio and the Economics of QWERTY," *American Economic Review* 75 (May 1985): 332-37.

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irreversibility explains why the stakes are particularly important for economic actors and why standards produce industrial battles. I intend to join the trend of current historians of standards who study how and in what sense standard-setting reveals industrial conflicts of interest between economic actors (in this case, carmakers), and how it interferes with public policy (for this study, European institutions).<sup>2</sup> My hypothesis is that safety standards were tools of trade policy. I consider standards as guarantees of accessibility to enlarged markets versus standards as trade obstacles limiting the import of foreign vehicles. Additionally, this is a first step in understanding the European Commission's learning process and its functions relative to American power and to the Member States of the European Communities (EC), as well as its knowledge and management tools.

Member States of the European Union (EU) have been coordinating their national standards since the mid-1960s. European institutions are increasingly concerned with safety issues. They want to define new standards for cars and trucks for safer travel on all European roads. Are they developing these standards in relation to pre-existing models?

In studying sources of inspiration outside the EU, we can look to the links between EC legislation and legislation elaborated within the United Nations (UN) framework in Geneva. The United States was the most notable non-signatory country to the 1958 Agreement of the UN Economic Commission for Europe (UNECE), which implemented international regulations for vehicle specifications. Our main topic, therefore, is the question of an eventual alliance with the United States on standards issues. Americans, from the mid-1960s onward, had already confronted new safety issues concerning the automobile industry and had had to find solutions. They were the first country to deal with these issues on a federal level. Did European institutions consider the U.S. solutions and studies (data collection methods, test results, and so on) as guidelines for European discussions? Did European industrialists accept these results as resources for their own endeavors?

We can attribute the fundamental differences in car standards that researchers have found between European countries and the United States to the physical characteristics of European cities, government attitudes, the relatively shorter distances within Europe, and the basic social and cultural variations between Europe and the United States and among European countries.<sup>3</sup> Additionally, Americans and Europeans developed completely

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<sup>2</sup> See for instance, Andreas Fickers, " 'Politique de la grandeur' versus 'Made in Germany': Die Analyse der PAL-SECAM-Farbfernsehkontroverse als Beispiel einer politischen Kulturgeschichte der Technik" (Ph.D. diss., University of Aachen, 2002), published in the series "Pariser Historische Studien" of the German Historical Institute in Paris, 2005.

<sup>3</sup> *The Automobile in Western Europe*, Stanford Research Institute, 1967, quoted by Giuseppe Volpato, *L'industria automobilistica internazionale* (Padova, 1983).

different model ranges.<sup>4</sup> American carmakers produced cars with a style and technical characteristics oriented toward the needs of their domestic market. In particular, they ignored the European orientation toward fuel-efficient cars in response to the petrol crisis. This prevented their European subsidiaries (Opel, Ford, Vauxhall, Simca, and so on) from developing an efficient penetration of European markets. At the same time, some European carmakers (Renault in particular) never made an entrance into the American market because their cars did not correspond to the needs (relative to the current climate) or habits of U.S. drivers.

A recent collection of papers focusing on Ford's European history since 1903 outlined several main characteristics of the company's efforts.<sup>5</sup> These included differences between Ford production and European tastes; hesitations about creating a small car common to all of Europe (first named Bobcat, then renamed Fiesta); adopting diesel motorization (which represents a significant share of the European market); and leaving room for European subsidiaries to maneuver, even if keeping decision-making in the hands of American institutions might lead to a temporary decline in car sales. Thus, Ford came to Europe with a single car, with a desire to produce smaller cars, and to leave European subsidiaries room to maneuver. During the 1950s, the company withdrew from difficult markets (France and Spain) and concentrated on markets more open to its products (the United Kingdom and Germany).

Two major changes occurred during the 1970s. First, Ford began to produce the smaller cars for which there was a large demand in Europe, even though smaller size meant reduced sales margins. Second, Ford expanded its activities in southern European countries (particularly in Spain and France). Ford Europe conceived and developed the Fiesta; with the success of that model, Ford became the leading European car producer by the beginning of the 1980s. Steven Tolliday highlights the doubts surrounding the project and the drive to complete it. The U.S. marketing department had been enthusiastic, the finance department much less so.<sup>6</sup>

I deal with the same range of issues: adapting products between the United States and Europe to facilitate commercial expansion or, alternatively, maintaining national specializations to protect markets. I analyze the discussions between market players about vehicle production standards. My central question concerns the emergence of standards, their migration across large areas (national standards spreading across continents, or even

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<sup>4</sup> Volpato, *L'industria automobilistica internazionale*, 209 and 225; and Andrew M. McLaughlin and William Maloney, *The European Automobile Industry: Multi-Level Governance, Policy, and Politics* (London, 1999).

<sup>5</sup> Hubert Bonin, Yannick Lung, and Steven Tolliday, eds., *Ford, 1903-2003: The European History*, 2 vols. (Paris, 2003).

<sup>6</sup> Steven Tolliday, "The Origins of Ford of Europe: From Multidomestic to Transnational Corporation, 1903-1976" and "The Rise of Ford in Britain: From Sales Agency to Market Leader, 1904-1980" in *Ford, 1903-2003*, 1: 153-241, and 2: 7-71.

becoming global), and their reference models. How is this story of standards part of the “Americanization” debate? How have waves of Americanization shaped Europe’s economic and cultural life?<sup>7</sup>

### **Collecting Data, Statistics, and Studies: The United States as Resource and Guide?**

In the mid-1960s, the United States had a safer traffic record than any country in the world, whether measured by the number of traffic deaths per thousand vehicles or the number of traffic deaths per 100 million miles.<sup>8</sup> Nevertheless, public pressure grew in the United States to increase the safety of cars in 1965 and 1966, culminating with the publication of Ralph Nader’s book *Unsafe at Any Speed* and of the National Academy of Sciences’ *Accidental Death and Disability: The Neglected Disease of Modern Society*.<sup>9</sup> In 1966, the U.S. Congress held a series of highly publicized hearings regarding highway safety, passed legislation to make installation of seat belts mandatory, and created several agencies (which would eventually become NHTSA, the National Highway Traffic Safety Administration), including the National Traffic Safety Agency, the National Highway Safety Agency, and the National Highway Safety Bureau. The Highway Safety Act of 1970 officially established NHTSA as an agency of the executive branch of the U.S. government, part of the Department of Transportation.<sup>10</sup> It describes its mission as “Save lives, prevent injuries, reduce vehicle-related crashes.”<sup>11</sup>

The data files maintained by the National Center for Statistics and Analysis constitute one of NHTSA’s major achievements in pursuit of this mission. In particular, the Fatality Analysis Reporting System, or FARS, has become a resource for traffic safety research not only in the United States, but also throughout the world. Research contributions using FARS by scholars from many countries appeared in many non-U.S. technical publications and provided the most solid knowledge on the subject. NHTSA established its own research in a classic large-scale study based on a multi-disciplinary approach conducted at Indiana University in the mid-1970s.

In 1966, the U.S. government determined new requirements for the vehicles it used. In order to satisfy public expectations, these requirements

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<sup>7</sup> Harm G. Schröter, *Americanization of the European Economy: A Compact Survey of American Economic Influence in Europe since the 1880s* (Dordrecht, 2005).

<sup>8</sup> In 2002, the United States had sunk to sixteenth place (behind Australia, Austria, Canada, Denmark, Finland, Germany, Great Britain, Iceland, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Sweden, and Switzerland) in deaths per thousand vehicles. In deaths per 100 million miles, the United States had dropped from first to tenth place.

<sup>9</sup> Ralph Nader, *Unsafe at Any Speed: The Designed-In Dangers of the American Automobile* (New York, 1965).

<sup>10</sup> Olivier Favry, *L’ami public américain: les nouvelles relations industrie automobile-état aux Etats-Unis de 1979 à 1991* (Paris, 2002).

<sup>11</sup> See <http://www.nhtsa.dot.gov>.

were rapidly implemented and extended nationwide. European carmakers expected they would quickly spread to European legislatures, and that there would be new U.S. Customs requirements for vehicles imported from Europe. In fact, the influence on Europe was not only strictly regulatory. Ralph Nader's book resonated in France and in Europe generally and played an important role in changing perceptions concerning road safety.<sup>12</sup>

Both the United States and European countries created new institutional structures related to road safety.<sup>13</sup> The first actions were American, creating the National Transportation Safety Board (NTSB) as an independent organization on April 1, 1967. The NTSB was initially dependent on the Department of Transportation for administration and funding. In 1975, the Independent Safety Board Act made the organization completely independent. Its European equivalent, Euro NCAP (European New Car Assessment Programme), was a non-governmental organization created much later (in 1997). Euro NCAP received financial support from the European Union and depended on a European network of public and private researchers specializing in accidentological biomechanics. Its main activity consisted of measuring the crash resistance of cars provided voluntarily by carmakers and assigning star ratings based on crash test results. The Transport Research Laboratory originally developed EuroNCAP for the U.K. Department of Transport, but many other interested parties subsequently joined. Current members include the Catalonian region of Spain, France, Germany, the Netherlands, Sweden, as well as the United Kingdom. International Consumer Research and Testing represents consumer groups. Members of the FIA Foundation (sponsored by the Fédération Internationale de l'Automobile) and ADAC (Allgemeiner Deutscher Automobil-Club) represent motoring clubs. Thatcham (the Motor Insurance Repair Research Centre) represents British insurers. The European Commission is an observing member of Euro NCAP's board and provides additional support.

Most European working groups on safety issues based their work on U.S. studies and standards. For instance, when the European Enhanced Vehicle-Safety Committee (EEVC), constituted in October 1970, collected statistics on road accidents, the Committee cited the American Motor Vehicle Safety Standards as a reference for their activities.<sup>14</sup> Public concern about better protection of automobile passengers from injury motivated the first road safety studies. Relatively low importance was placed on vehicles' material

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<sup>12</sup> A French edition of Nader's book was brought out by Flammarion as early as 1966 under the title: *Ces voitures qui tuent*. In response to Nader's book, Germans feared the implications of safety issues for speed limits.

<sup>13</sup> James J. Flink, *The Car Culture* (Cambridge, Mass., 1976).

<sup>14</sup> The European Enhanced Vehicle-Safety Committee, developed to work on collision tests, was a consortium of Member States (France, Germany, Italy, the Netherlands, Spain, Sweden, and the United Kingdom) as well as of national research laboratories and industrial experts. Their meetings also included an observer from the European Commission.

deterioration, although this is of genuine economic importance. The EEVC studied the effects of different physical impacts on dummies and tried to define trends for car design based on the dummies' tolerance levels to improve road safety. The European Economic Community (EEC) sponsored the committee's research, in particular the goal of creating dummies more similar to human beings in order to increase the usefulness of test results. The design of the EEVC approach, based on European experience and technical experiments within the framework of its five working groups, attempted to predict future needs for European road safety. Since the mid-1970s, the Committee has dealt with the protection of passengers in side collisions and pedestrians' protection while improving the shape of cars' front ends. The EEVC did not work in isolation. The NATO (North Atlantic Treaty Organization) Committee on the Challenges of Modern Society also tried to collect accident statistics, and wanted to implement homogenous standards. The diffusion of information across networks and working groups on safety issues was particularly important.

These working groups had two objectives: to allow car manufacturers to produce vehicles that provided financially affordable crash protection, and to advise legislators. After the adoption of the Community framework-directive on vehicle type-approval in 1970, numerous directives were adopted on weights and dimensions, tires, brakes, glass, compulsory use of safety belts, and so on. They insisted that their prescriptions not require sophisticated designs, be very expensive for manufacturers, or increase vehicle weights. They also wanted to allow enough time for manufacturers to adapt their vehicles. These goals were particularly important in the context of escalating fuel prices. They believed that Europe had to show that it had the necessary technical capabilities to study accidents, develop proposals, and implement plans for new vehicles.<sup>15</sup> Nevertheless, for road safety research, Europe still relied on American data.

Americans were the first, in the 1950s, to develop tests on the influence of axle loads on roads. The AASHO (American Association for State Highway Officials) built a test site in Ottawa, Illinois, between August 1956 and September 1958. They held practice tests from October 1958 to November 1960, and then began a series of special studies. AASHO tests provided a better understanding of the relationship between axle load and road deterioration. They demonstrated that road impact rises exponentially according to axle load weight. These tests were particularly important because the European Commission used them to establish its policy, and national working groups in Europe (such as the Laval Commission for axle load taxation in France) used them as a reference. The working group on "weights and characteristics of vehicles" from the Transports and Communications section of the Economic and Social Committee (ESC) considered the technical arguments made in the AASHO study perfectly

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<sup>15</sup> "EEVC, The Future for Car Safety in Europe," paper presented to the Fifth European Safety Vehicles Conference, London, June 1974.

acceptable: the study data and conditions allowed implementation of a coherent system of basic standards for dimensions and weights.<sup>16</sup> This preliminary choice may have influenced the final choice of a European standard for road transport.

However, several European manufacturers, who feared that the simple adoption of data and conceptual tools from the United States would greatly influence the standards adopted by the European Communities, contested the principles and conclusions of the AASHO tests. Paul Berliet (chief executive officer of truck manufacturer Berliet) indicated that the results could not be applied in France because the roads were not built the same way as in the United States. He argued that the roads built for AASHO tests had poor foundations, were not treated against frost, and were purposely underdimensioned in order to amplify the deterioration phenomenon. He quoted engineers who indicated that “the axle load issue was no longer relevant given the roads that we were able to build at that time.” He also referred to the Lahr tests, applied in Germany, which showed that there was a stronger relationship between road impact and the frequency of axle load circulation on roads than to the weight of a single axle. The German MAN company was opposed for the same reasons to the application of AASHO tests results in the European context.<sup>17</sup>

### **Safety Legislation in Europe, the United States, and International Prescriptions**

In May 1947, high-ranking officials at the nascent United Nations foresaw the need for a rational organization of inland transport at the European level. Automobile safety formally emerged as a significant UN concern during the 1949 Convention on Road Traffic in Geneva, which designated vehicle failures as a principal cause of road traffic accidents. On the basis of a resolution of the Road Transport section of the UN Economic Commission for Europe, Working Party 29 (WP29) on the construction of vehicles was created in 1952 to elaborate European automobile technical standards for the UNECE's Inland Transport Committee. Later on, WP29 acted in parallel with European Community working groups, and there were close links between this institution and the EU. UN standards were dependent in practice on the common agreement of European Economic Community countries. Additionally, Community directives were similar to the UNECE prescriptions.

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<sup>16</sup> Short report on the second meeting of the working group “Weights and Characteristics of Road Vehicles” of the Transport and Communications section of the ESC, held in Brussels on 8 March 1979, file 7974, Historical Archives of the European Commission, Brussels.

<sup>17</sup> Letter from Henri Puaux to Paul Berliet, 29 Sept. 1969, Marius Berliet Foundation, Lyon.

Later on, WP29 remained an important market of ideas for European Commission officials seeking to formulate vehicle regulations.<sup>18</sup>

The United States did not recognize the 1958 agreement of the UNECE and relied instead on its own Federal Motor Vehicle Safety Standards. Thus, vehicles could not be imported or exported between the United States and most of the rest of the world without appropriate modifications. It was initially not possible to produce a single car design that met both UNECE and U.S. federal standards, but it has grown easier to do so as both sets of regulations have evolved. One of the most contentious differences was the design of headlamps. In 1974, NHTSA banned the Citroën SM automobile, which contemporary journalists noted was one of the safest vehicles available at the time. The issues involved design, but were unrelated to safety: the Citroën SM did not meet bumper standards that took effect in 1973 (which were aimed, ineffectually, at controlling the costs resulting from collisions), and it was not equipped with sealed-beam headlamps, which at the time were mandatory in the United States, though outmoded. The Citroën DS also offered a good illustration the problems of U.S.-model vs. UNECE-model headlamps from 1940 to 1983, when American regulations required sealed-beam headlamps.

International working groups often discussed adopting American technical proposals on an international scale. In 1962, the Groupe de Travail de Bruxelles (GTB) discussed American proposals concerning car lighting systems to find a common technical solution.<sup>19</sup> Similarly, in the same year, there were discussions on adopting an American gearbox system as an international standard. European legislators expressed great interest in American proposals concerning that issue.

There was a strong similarity between the European Community legislation and the legislation produced by the UNECE. The current trend, expressed for instance in the work of CARS21 (Competitive Automotive Regulatory System for the Twenty-First Century) elaborated in December 2005, is to simplify the EU legislation by aligning it to the UNECE's. The group recommends replacing 38 EU directives with UNECE regulations, introducing self- or virtual testing for 25 directives and UNECE regulations, and repealing one directive. The group proposes a set of better principles for the regulatory process in the automotive sector. The application of these principles should enable legislatures to improve the quality of regulations while minimizing costs for economic operators. The group recommends maintaining efforts to increase international coordination of motor vehicle

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<sup>18</sup> Andrew M. McLaughlin and Grant Jordan, "The Rationality of Lobbying in Europe: Why are Euro-Groups So Numerous and So Weak? Some Evidence from the Car Industry," in *Lobbying in the European Community*, ed. Sonia Mazey and Jeremy Richardson (New York, 1993), 122-61, at 125.

<sup>19</sup> The Brussels Working Group (Groupe de Travail de Bruxelles, GTB) dealt with the international coordination of vehicle lighting systems. Vorwig an Nordhoff, 9 May 1962, UVW Z 174/2499 (Year 1962), Volkswagen Archives, Wolfsburg.

regulations with a view toward involving key vehicle markets and extending coordination in areas not yet covered. Therefore, the group has explored the possibilities for stronger international regulation, particularly the idea of implementing the UNECE's international automotive regulations.<sup>20</sup>

A wider extension of standards application induces new strategic alliances. For example, in WP29, European carmakers considered that the participation of Japan as a member (rather than only as an observer) would probably reinforce the trend against European choices for pollution issues, but that Japan could be an ally of Europe against American positions concerning safety issues.<sup>21</sup>

### **A Progressive Convergence of Community Standards toward U.S. Standards? The Case Study of Weights and Dimensions of Commercial Vehicles**

The standardization of weights and dimensions of commercial vehicles among members of the EEC, which began in 1949, progressed very slowly for several decades because of the diverse and often competing interests of the market players. The Convention on Road Traffic established in Geneva within the framework of the UNECE on September 19, 1949, was the starting point for international attempts to create a uniform standard concerning the weights and dimensions of vehicles in international traffic. The text of the Convention was so general that it rapidly became inoperative. The issue of weights and dimensions of commercial vehicles became part of the European Community statutory framework. The European Conference of the Ministers of Transport (ECMT) adopted a resolution in October 1960 in The Hague that was very close to German prescriptions. Among the Member States of the EEC, Italy and the Netherlands did not accept the proposal, while the Federal Republic of Germany and France ratified it.<sup>22</sup>

Therefore, in the early 1960s, there were several documents for implementing new standards for truck weights and dimensions in Europe. However, they were notably different and none was as referenced by all European countries. In March 1962, the European Council introduced an examination procedure and in-advance consultation by Member States concerning transport. The European Commission then confronted these issues and discussed them within the framework of Community institutions. Despite real attempts by the European Commission to conclude these negotiations (in particular the attempts of the Transport Commissioner from Luxembourg, Lambert Schaus), some issues, such as the axle weight for trucks circulating within the framework of the European Community, remained unresolved.

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<sup>20</sup> CARS21 final report, Publication of the European Commission, Directorate General Enterprise and Industry, 12 Dec. 2005.

<sup>21</sup> CSCA Steering committee, Dec. 1973, CCFA Archives, Paris.

<sup>22</sup> France decided to go backward and not to ratify in 1963.

This persistent uncertainty concerning Community technical rules was problematic for haulage contractors as well as for car producers. Consequently, haulage contractors used vehicles that were not well suited to their needs, postponed replacing their vehicles, and continued to use obsolete materials. Car producers had to add the cost of modifications necessary for exported vehicles to their usual production expenses, including the cost of producing a small number of vehicles to meet export specifications. Confronting the enormous difficulty of the bargaining situation on the European level, Member States could no longer wait for standardization. The Italian government adopted its own new rules in October 1961 and the three Benelux countries (Belgium, Luxembourg, and the Netherlands) issued a document concerning their internal traffic in October 1962.

There were two opposing groups: those in favor of 10 tons by simple axle, and those in favor of 13 tons by simple axle (who were more numerous for several years).<sup>23</sup> Opposition crystallized in the European Council, in particular through the confrontation between France (13 tons) and Germany (10 tons). The German position gained additional support during the 1970s after the United Kingdom and Denmark joined the EEC in 1973. Other carmakers were less affected by the new Community rules. The result was a failure to consider French and Italian interests, as the balance of forces in Europe tipped further toward a lighter axle load. The French and Italians were particularly concerned with the profitability of road transport, whereas other Member States wanted to avoid an increase in infrastructure costs, which could be a consequence of adopting a heavier axle load, and they also wanted to maintain a balance between road and rail transport.<sup>24</sup>

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<sup>23</sup> The Federal Republic of Germany and the Netherlands favored 10 tons. When they became Member States of the European Communities, this was also the position defended by the United Kingdom, Denmark, and Ireland. France defended the 13-ton axle load; they originally instituted this limit because the most common carrying capacity was 10 tons. In order to carry 10 tons, it was necessary to have a dead weight of 9 tons, for a total weight of 19 tons, 6 tons on the front axle and 13 tons on the back axle. This vehicle type was the most common truck in France. They maintained this standard on semi-trailers inherited from the United States after the Second World War, whereas other European countries preferred trailers. French truck producers, including Berliet, Saviem, and Unic, specialized in the production of semi-trailers of 13 tons by simple axle; see Jean-François Grevet, "Au coeur de la révolution automobile: l'industrie du poids lourd du plan Pons au regroupement Berliet-Saviem: Marchés, industries et Etat en France, 1944-1974" (Ph.D. diss., Lille III University, 2005).

<sup>24</sup> Marine Moguen-Toursel, "Lobbying, compromis, rapprochements transversaux: les manœuvres autour de la définition d'un nouveau code européen pour le transport routier (1950-80)," in *Stratégies d'entreprise et action publique dans l'Europe intégrée (1950-80): affrontement et apprentissage des acteurs / Firm Strategies and Public Policy in Integrated Europe (1950-80): Confrontation and Learning of Market Players*, ed., Marine Moguen-Toursel (Brussels, 2007), 165-92.

We must also consider the relationship to American standards. Was the final choice of a lighter axle load for trucks operating in the European Communities induced by the desire of national governments to keep road transport from becoming too competitive, thus preserving an imbalance with the railways, or by the desire to align with American standards on this issue, particularly by allowing truck sales between Europe and the United States without having to modify production?<sup>25</sup> In the latter case, we could consider movement toward a lighter axle load as the result of an increasing American influence on this matter. The adoption of a much heavier axle load could have been a way to protect the European market against an invasion of American trucks. Thus, we could understand the wish of French manufacturers to adopt 13 tons by simple axle as Europe's technical protection against the American 8 tons by simple axle. When Germany adopted 8 tons as a national standard in 1955, the hope of adopting that specification as Community standards provoked the opposition of French manufacturers and may have prompted the discussions in April 1958 between Mercedes-Benz and Renault concerning establishing a 10-ton regulation, which had been the previous German standard.

The real fear at that time was that the European market would be overwhelmed by an Anglo-American offensive.<sup>26</sup> In this respect, the French wish to adopt 13 tons by axle load in the European Community amounted to non-tariff protectionism. What were the respective volumes of truck production in various countries at that time? While Germany produced twice as much as France and the United Kingdom three times as much, U.S. production was fifteen times the French production.<sup>27</sup>

The French preference for 13 tons was also sustained by innovations in the French tire industry, which had a comparative advantage over its competitors that made the larger load possible on small vehicles. Standardization of radial tires resulted in the improvements achieved during the 1950s. Radials represented a decisive step in the process of reducing rolling resistance for tires. Renault Véhicules Industriels tests in the late 1970s evaluated the rolling resistance by ton of vehicle at 6 kilograms, which was remarkably low (the level was twice as high for private cars).<sup>28</sup> The Michelin company favored an axle load of 13 tons. Both Michelin and Dunlop took part in the ADPVI (Association for the Development of the Productivity of Commercial

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<sup>25</sup> Jean-François Grevet, "La coopération européenne, la meilleure solution face au Marché Commun? Les stratégies de la SAVIEM, constructeur français de poids lourds et filiale de la Régie Nationale des Usines Renault (1958-1973)," in Moguen-Toursel, ed., *Stratégies d'entreprise et action publique*, 197 and 205.

<sup>26</sup> See Grevet, "La coopération européenne, la meilleure solution face au Marché Commun?"

<sup>27</sup> "Pourquoi l'essieu de 13 tonnes en Europe?"; various interviews by Paul Berliet, 1966-67, Marius Berliet Foundation.

<sup>28</sup> Yves Bonnetain, "La contribution de Renault VI aux économies d'énergie," Sept. 1980, file 1979-1986, Marius Berliet Foundation.

Vehicles), created in 1959 by Paul Berliet to support European agreement on 13 tons by simple axle. Berliet hired Henri Puaux to run the association with Roger Ricard. In addition to Berliet, Pegaso, Michelin, Marrel, Kléber-Colombes, Dunlop, and Unic were members. This association was very active in establishing contacts with members of the Economic and Social Committee of the European Commission and of the European Parliament. It also circulated pamphlets to explain its arguments. It made every effort to reject AASHO tests as the basis for European working groups.

Paul Berliet considered the axle load issue an Anglo-American offensive to sell their trucks in Europe without any adaptations.<sup>29</sup> Inside Europe, it would give Germany a big initial advantage because its 10-ton vehicles were of very high quality.<sup>30</sup> It would likely increase French imports of German trucks, which in June 1971 already constituted 33 percent of the French truck market:

European projects go therefore against our possibilities and the U.S. trend as well as recent observations and trends in terms of tires, road safety, production cost, adherence, road congestion, and productivity and only rely on diplomatic arguments or transactions excluding any valuable technical studies.<sup>31</sup>

In Paul Berliet's view, modifying French standards would provoke a sudden increase of foreign trucks in the national market, putting the French industry in great danger. But, though Berliet considered this trend very negative for its production (the company was also reluctant to provide figures to the French government, which wanted quantitative estimates concerning the impact of an eventual reduction of axle load), Saviem concluded that its own industrial consequences of an axle load reduction would be very small.<sup>32</sup> Consequently, the financial subsidies expected from the EEC and the French state in the event of the adoption of a compromise varied accordingly: for technical consequences, 33 million French francs for Berliet, and from 7 to 9 million French francs for Saviem. After including commercial consequences, the estimate was between 83 and 133 million French francs.<sup>33</sup>

Despite all these attempts, the standardization process on this issue was heavily influenced by countries such as Germany, whose national administration wanted standards close to those of the American industry.<sup>34</sup> The situation was complicated, because civil servants and industrialists did not share the same point of view. The automotive industry considered that, in terms of transport policy, the federal government was "doing its best to give a

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<sup>29</sup> Interview with Paul Berliet, 11 March 2003, Marius Berliet Foundation.

<sup>30</sup> D. G. Rhys, *The Motor Industry: An Economic Survey* (London, 1972), 153.

<sup>31</sup> *Automobiles Berliet, Code de la route, conséquences d'une éventuelle réduction de la charge par essieu*, 1 Sept. 1971, Marius Berliet Foundation.

<sup>32</sup> Letter from J.-P. Bessond to R. Ricard, 29 Aug. 1971, Marius Berliet Foundation.

<sup>33</sup> *Harmonisation des codes européens*, 23 March 1971, Marius Berliet Foundation.

<sup>34</sup> Roland Stephen, *Vehicle of Influence: Building a European Car Market* (Ann Arbor, Mich., 2000), 173.

hard time to the German automotive industry.”<sup>35</sup> The German Minister of Transportation, Georg Leber, proposed a text to the Bundestag, accepted in March 1955, that foresaw a reduction of weights and dimensions of commercial vehicles.<sup>36</sup> Therefore, for a few years beginning in 1955, Germany adopted the American standard of 8 tons. Industrialists from the car industry and other members of the BDI (Bundesverband der Deutschen Industrie, the German employers’ organization), fought against this decision as much as they could, arguing that it would not benefit the transport sector. Moreover, they thought that the decision went against implementing a Common Market. In particular, they considered what the optimum exchange of goods would be to allow implementation of a real economic Common Market. They also considered that their Minister of Transportation was doing his best to postpone a decision on weights and dimensions of commercial vehicles in the European framework (the European Conference of Ministers of Transport, ECMT).

Carmakers proposed data that might provide a genuine basis for compromise. The VDA (Verband der Automobilindustrie, the German auto industry association) and the BDI had tried to persuade the Minister of Industry and the Chancellor against this legislation since the end of 1956. The Chancellor seemed to realize the damage that Leber’s text could cause the automotive sector. However, beginning in the spring of 1957, the Minister of Transportation began lobbying on behalf of his point of view. Industrialists complained about the unfair ways in which the opposite party conducted discussions and also argued that the original goals for this law, increasing transport safety and road maintenance, would remain unrealized. The standards for commercial vehicles were smaller; the number of vehicles in circulation would increase. The Federal Republic of Germany’s biggest problem remained the lack of road infrastructure. They quoted the International Road Federation’s statistical inquiry concerning the length and importance of road infrastructure in thirteen European countries. The inquiry showed that Germany was far behind other large European countries in road infrastructure. Industrialists implicated the country’s failing road network at that time in the growing number of road accidents. Ten of the twelve Bundestag Transport Committee members expressed themselves clearly in favor of “a European solution which mostly corresponds to the compromised proposals of the transport industry.”<sup>37</sup> Nevertheless, the German Minister of Transportation’s political aims gained priority on this issue. Later, the Germans put aside the 8-ton standard for a return to a heavier standard, which was closer to that adopted by other Member States of the European Communities.

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<sup>35</sup> Annual Report 1957, file Könecke 221, DaimlerChrysler Archives, Stuttgart.

<sup>36</sup> 1 Jan. 1958 was the date for implementation for new vehicles.

<sup>37</sup> Rede vor den In- und Auslandsvertretern am 3 May 1956, file Könecke 221, DaimlerChrysler Archives, Stuttgart.

We would like to highlight the various transnational contacts among European industrialists on the weights and dimensions of commercial vehicles. The most notable contacts made were among Renault, Daimler-Benz, and Volkswagen. The idea of adopting an axle load as high as possible to maximize the profit of transport by road progressively gained ground among German automobile makers. Nevertheless, although constructive discussions took place among European carmakers, German industrialists (from Mercedes in particular) did not put their signatures on the document.<sup>38</sup>

All German car manufacturers and haulage contractors showed us very clearly their wish to adopt 13 tons by simple axle. They could not, since they feared [the Transportation Minister, Georg] Leber, adopt an official position so clearly, but they asked their French counterparts to maintain their fight for the defense of 13 tons.<sup>39</sup>

They denounced the wish of Leber, “who supported the American point of view,” to deal with this issue within the framework of the OEEC, which was favorable to 8 tons by simple axle, rather than in the Common Market, where 13 tons/11 tons would still have some chance of adoption.<sup>40</sup>

In light of all these factors, discussions turned progressively toward a lighter axle load. The prevailing personalities on this issue were the German negotiators. For several years, they were opposed to their country’s industrialists while trying to impose standards closer to the American ones. While industrialists would have preferred heavier and more profitable standards for road transport, we can characterize the German ministers in charge of these safety and environmental issues as strongly in favor of environmental protection. They wished to introduce a new balance between rail and road, with the government in favor of rail while road transport was gaining ground due to pure market considerations.

### **Reactions of European Car Manufacturers**

From 1966 onward, the U.S. administration wanted to adopt new safety standards for its vehicles, which were likely to apply nationwide. This development concerned European carmakers because of the inherent risk that European countries would follow the same path. European standards would change under American influence, and the standards chosen would have an impact on vehicle exports from Europe to the United States.<sup>41</sup>

European carmakers at first opposed U.S. safety standards. They represented technical and financial risks because the standards were difficult

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<sup>38</sup> *Réunions de courrier, Year 1958*, 16 April 1958, Société d’histoire de Renault, Boulogne-Billancourt.

<sup>39</sup> *Harmonisation des codes européens*, 23 March 1971, Marius Berliet Foundation.

<sup>40</sup> *Réunions de courrier, Year 1958*, 15 April 1958, Société d’histoire de Renault.

<sup>41</sup> The French automobile organization considered that even if this new measure had not been clearly aimed at Volkswagen, American authorities would not be dissatisfied to see some constraints imposed on that brand’s imports; see Steering Committee, 1966, CCFA Archives, Paris.

to meet from a technical perspective and carmakers would have to spend money for implementation without having enough test data on the new equipment. Internal discussions were intense. In Renault's steering committee, opposition was not unanimous. Bernard Vernier-Palliez, chair of the Renault truck subsidiary, indicated that he wanted a European standard that would not be too different from the American one.<sup>42</sup> He announced the intention to discuss this point with other European carmakers and with delegates from the WP29 of the UNECE.

Because of these internal discussions, the Renault company sought answers on both political and technical levels.<sup>43</sup> The steering committee concluded that American safety standards were not efficient for reducing road injuries and deaths because they focused on front-end impact, which represented only one percent of accidents. Considering the negative publicity that would result from their opposition to safety standards, the committee considered it better to indicate that these new standards introduced technical obstacles into international exchanges, rather than highlighting the difficulties the company would have meeting the requirements. In fact, of twenty-four new standards required by January 1, 1968, Renault found it impossible to satisfy only three. Many requirements involved General Motors' patents, in particularly telescopic steering.

Nevertheless, European carmakers rapidly organized themselves to meet the new standards. French manufacturers decided to make direct contact with the American government, without French Embassy intervention, because Americans preferred that industrialists operate in this way. They sent a car to answer the American administration's technical questions. At the same time, they rapidly contacted other European car manufacturers to form a coherent group and to show a united front concerning the American standards. British carmakers also organized a movement to develop common European positions. Only Volkswagen remained apart and escaped bilateral discussions, a matter concern at Renault, among others. This attitude at Volkswagen could be evidence that the company felt it had overcome any difficulties.

The Liaison Committee for automobile manufacturers (Comité de Liaison de la Construction Automobile, CLCA) and the EEC developed similar positions.<sup>44</sup> The United States considered these positions; they abandoned some standards, modified others, and postponed the deadlines for enforcement.<sup>45</sup>

In 1972, several European carmakers (Fiat, Volkswagen, Peugeot, Renault, Citroën, British Leyland, and Daimler Benz), excluding subsidiaries of

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<sup>42</sup> Bernard Vernier-Palliez, Renault Steering Committee, 27 Nov. 1967, Renault Archives.

<sup>43</sup> Steering Committee Renault, 2 Nov. 1971, Renault Archives.

<sup>44</sup> The Liaison Committee comprised professional organizations, not only of the EEC member countries, but also American, Japanese, and Swedish members.

<sup>45</sup> CCFA Archives, 1966 onward.

American firms present in Europe, created the Committee of Car Makers of the Common Market (CCMC).<sup>46</sup> This committee was, after the Liaison Committee, the second that organized carmakers in Europe. These two groups merged into the ACEA (Association of European Car Makers) in February 1991.<sup>47</sup> According to a German source, the motivation for its creation was the carmakers' wish to explain to European authorities which measures they could realistically adopt to improve road safety and to reduce exhaust emissions.<sup>48</sup> Therefore, the intent was to design an efficient tool for proceeding with European implementation of automobile standards for safety, noise, and pollution. Its secret ambition was to reduce American influence on Europe on exhaust emission standards and safety issues. Its creation corresponded to a strong reaction against both the increasing technical barriers to European imports in the United States and the serious threat posed to European exports if American standards were extended worldwide.<sup>49</sup>

The Association Peugeot-Renault created the CCMC, which has remained a very French institution since 1972, with French presidents or general secretaries. The CCMC developed opinions closely reflecting those of its Italian and Spanish members. The lack of interest of some of its members (most notably German and British, who viewed the structure as not liberal enough or as insensitive to the environmental issues so important to German members) reinforced this trend.<sup>50</sup> On the standards issue, the creation of the CCMC marked the end of the historical opposition between French and Italian firms on one side, and German carmakers on the other side.<sup>51</sup>

## Conclusion

It appears that the United States has been a source of inspiration concerning road safety for other countries and international organizations since the 1960s. The United States developed higher standards for industrial improvements, which seemed to correspond to the gravity of the U.S. situation and which also supported U.S. technological choices. Most of the time, European standards were not as strict as American ones, for reasons relating to vehicle characteristics and to the automobile sector as a whole. On national, EEC, and OECD levels, authorities did not want to burden the automobile industry any more than necessary in the world competition in which it was engaged. Some automakers wanted to adapt their vehicles to

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<sup>46</sup> BMW, ALFA, and DAF were not founding members of the CCMC, but they rapidly became interested in participating without becoming actual members.

<sup>47</sup> Stephen, *Vehicle of Influence*, 80.

<sup>48</sup> "Branchenpolitische Fragen," Niederschrift über die Sitzung des Aufsichtsrates, 27 Feb. 1973, UA 417, BMW Archives, Munich.

<sup>49</sup> Sigfrido Manuel Ramirez Pérez, "The European Search for an Automobile Industrial Policy (1968-1972)," unpub. paper, Workshop (Paris, 2007), 26-28.

<sup>50</sup> Jean-Louis Loubet, *Histoire de l'automobile française* (Paris, 2001), 459.

<sup>51</sup> Ramirez Pérez, "The European Search for an Automobile Industrial Policy," 27.

U.S. requirements. The ability to meet American standards constituted a quality test. They felt that neither price nor production issues should constitute obstacles to reaching the same quality standards for all vehicles as for those exported to the United States.

These standards quickly began competing with others as they spread, creating conflicts of interest. There were many market players involved with these issues. The choice of standards constituted a complex combination of public policy, societal expectations, and industrialists' interests. The EC and some national negotiators (particularly in Germany) were ready to adopt U.S. research (which could influence the adoption of related standards) as guidelines. Other market players (mainly car and truck manufacturers in France, Germany, and for a while in Spain and Belgium) were opposed to this strategic choice and struggled against it. They made industrial agreements and established lobbying groups. Two different logics were operating with respect to vehicle safety standards. Whereas international institutions (the United Nations as well as the European Community) tried to adopt already implemented standards (in particular, American ones) and to enlarge their applicability, a majority of European car manufacturers considered their own economic interests. Thus, they preferred to limit the extension of standards to those that would create obstacles to the invasion of foreign vehicles into their national markets. Because of these strongly opposing interests, the European Council failed to elaborate European standards rapidly enough. With the membership of new countries (in particular, the United Kingdom in 1973), the balance of interests in the EU gradually changed in favor of a convergence of European and American standards. Firms that stood to lose from standardization were unable to prevent the institutional innovations that ushered in these changes, because such innovations were part of a very general bargaining framework.<sup>52</sup>

In the early twenty-first century, the growing similarity between EU and international standards, as well as the recent adherence of the United States to the World Forum for Harmonization of Vehicle Regulations (WP29), seems a good indicator of the emergence of global standards. Concerning international working groups, the most accurate on these issues is the Geneva-based UNECE. The actual trend, based on a cost analysis, considers limiting new vehicle specifications (in favor of self-testing and virtual testing) and replacing EU directives by UNECE regulations when necessary. Additionally, standards are becoming more global with the inclusion of Japanese and Korean market players in the discussion.<sup>53</sup>

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<sup>52</sup> Stephen, *Vehicle of Influence*, 180.

<sup>53</sup> Interview with Bernard Gauvin (president of the WP29 since 1987; responsible for road safety matters in the French Ministry of Transport), October 2006, Ministry of Transport, Paris.