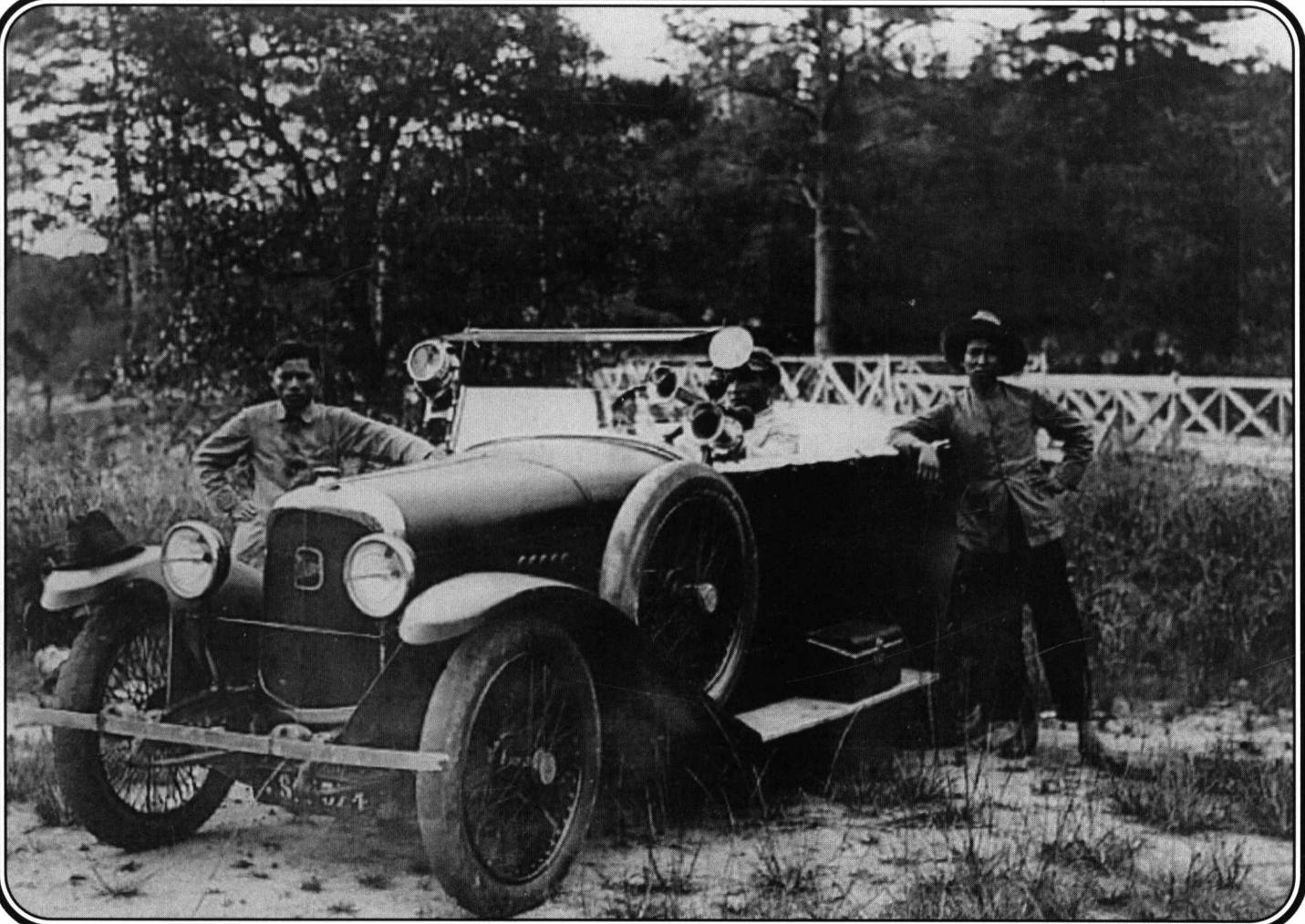


AUTOMOTIVE HISTORY REVIEW

Fall 2007



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Editor's Notes, Correction, and Letter to the Editor

History can repeat itself, though not always in the same way. When the private equity firm Cerberus Capital Management agreed to acquire Chrysler's automotive operations last May, much was made of the fact that the company had been sold to an entity that had no previous experience in the manufacture of automobiles. For Dodge, at least, it was a case of *déjà vu*. After the death of Horace and John Dodge, their widows sold the company to the New York investment banking house of Dillon, Read & Co. Under the bankers' management, sales declined and, after three years, in 1928, Dillon, Read sold the business to Walter P. Chrysler. Now we have a ringside seat on a similar situation 80 years later. As I am fond of remarking, a good thing about automotive history is that there's more of it every day. Certainly, we are, and for some time have been, living in an era that is exciting as any previous one in automotive history, one in which significant new technologies are struggling to emerge, reminiscent of the steam-electric-internal combustion engine competition of a century ago, and an age in which new players enter the field (Hyundai, Kia, Tata), old ones depart (Plymouth, Oldsmobile), moribund ones take on new life through new owners (Bentley, Maserati), and in which the unthinkable happens (the current interest of two firms in India in Jaguar and Land Rover, and ownership of MG and Rover by the Chinese).

Chrysler could be viewed through the lens of the histories of pioneers John and Horace Dodge, the entrepreneur Walter P. Chrysler, and the latter day saint Lee Iacocca, to name its more colorful managers. But its history is more than their stories as I was reminded by reading the obituaries of Alfred D. Chandler, Jr. I had not known of him before his death in May at 88, but he was considered "America's pre-eminent business historian" (*Fortune*). According to *The New York Times*, "before Dr. Chandler, the bulk of business histories were morality plays that portrayed executives as heroic or damnable. He helped redirect the field

towards dispassionate analysis of the anatomy of business. He emphasized the transformative power of technology as railroads and the telegraph spawned big business. These corporations needed what Mr. (sic) Chandler called 'a new subspecies of economic man—the salaried manager.'" The *Times* related that he developed this theme "most famously" in *The Visible Hand: The Managerial Revolution in American Business* (1977) for which he won the Pulitzer Prize. Although Dr. Chandler never addressed the automobile industry directly, one can see his primary theme at work in the old Big Three as examples where "the gray-suited executive class gradually replaced the entrepreneurial tycoon as the chief corporate power" (*The Washington Post*). Turn to *My Years With General Motors*, and you will see that Alfred P. Sloan, Jr., acknowledges "his assistance as our consulting historian and research associate," and relates that "one of our major studies of the evolution of General Motors was most creatively carried out by him" (preface, p. viii).

I suspect that he was an influence on a number of our members who teach or write about corporate history and management. Dr. Chandler himself taught at both the Massachusetts Institute of Technology and the Harvard Business School.

On the other side of the Atlantic, there has been some concern on how to stimulate interest in history. "History matters—pass it on" was the theme of a campaign in Great Britain last year to promote the study of history. According to actor Stephen Fry (best known in the U.S. on "Masterpiece Theatre" as Jeeves the butler in the dramatization of P.G. Wodehouse's stories of Bertie Wooster), we should "use the gripping narratives of the past to make sense of the world today."

In Fry's view, "the biggest challenge facing the great teachers and communicators of history is not to teach history itself, nor even the lessons of history, but why history matters." He admits that "there's no phrase that I can come up with that will encapsulate in a winning sound-bite why history matters."

We instinctively *know* that history matters. How to ignite an interest is the big question. In Fry's view, each of us incorporates individually, the history of our ancestors, people kind and good in their own times who "never questioned hangings, burnings, tortures, inequality, suffering and injustice that today revolt us." What dogs history is "a pernicious refusal to enter imaginatively the lives of our ancestors." We must try to imagine ourselves as living in earlier times in order to empathize with our ancestors. "History is . . . the story of ourselves had we been born a little earlier." This is a form of the old school of Method acting, and it is not surprising that it is presented to us by an actor. So try imagine yourself living, say, a century ago just as self-propelled transportation was beginning to change your life. Our UK member *Heon Stevenson* sent a copy of Fry's talk.

Now to the issue at hand. We begin with *Ryan S. Mayfield's* "The Road Less Traveled: Automobiles in French Colonial Indochina." His paper was an entry in last year's student competition. Ryan wrote it as an undergraduate in international studies at California Lutheran University. He was part of a team that received a Freeman fellowship to do research in Vietnam in the summer of 2004. His project sought to publish the childhood travel diary of Mlle Claudie Beaucarnot as a historical primary source of Indochina. The group retraced her 1943 trip by car which helped them understand her diary. A native Californian, Ryan lives in Simi Valley where he works for a magnet wire distributor. The editor considers that he peer-reviewed the article in preparing it for publication with Ryan's input and modifications.

Australia is first represented by "Muscle Cars Down Under" by *Adrian Ryan*. Sensing an untapped subject, last year I asked our Australian members for a volunteer to do an article on the subject. Several responded, indicating interest in the topic there as well. Adrian was a public relations manager for Ford Australia until 1994 when he started his
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Rear Cover: Restored Anasagasti in Argentina (supplied by Alvaro Casal Tatlock).

Acknowledgments: Except as otherwise noted, each author provided the illustrations

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The Road Less Traveled: Automobiles in French Colonial Indochina

by Ryan S. Mayfield

Introduction

In the 20th century, innovation and technology advanced at a rate unparalleled in world history. One of the foundations of this revolution was the automobile. It was a major means of transporting ideas and people across land masses quickly and cheaply. In the developed world the automobile has greatly benefited the life of nearly every person in some way. As British author Ruth Brandon wrote, "Without my car I could not live where I do, eat, shop, travel as I do, holiday where I do, perceive the world as I do."¹ Truly, the automobile has been an integral part of the lives of many people throughout the world. But the unique circumstances surrounding French colonial Indochina in the 20th century resulted in the automobile taking on a different status than was to be expected for such an invention.

The Tables in this article will show the total motor vehicles in Indochina covering the years 1922-37 (Table A), and Indochinese road development showing the length and type of colonial routes 1918-36 (Table B) and length and type of all roads by province (1922-36 (Table C). Using data from Table C, Table D shows the total length of auto-usable roads by province 1922-36.

Until World War II, French colonial Indochina consisted of the provinces of Cambodia, Laos, Cochinchina, Amman, and Tonkin. Saigon was in Cochinchina, Hanoi in Tonkin, and the rest of the country for the most part in Annam. During the Vietnam War, these last three provinces were known respectively as South, North, and Central Vietnam. The colonial era ended with the departure of the French in 1954.

The manner in which the automobile influences culture is quite varied. Elsewhere, automobiles have greatly provided a means of increased productivity but not in Vietnam because the variables surrounding the automobile did not allow it to become a success. It follows that the lack of success with automobiles did not allow Vietnam to reap the full benefits the automobile brings. This success or productivity includes not just financial progress, but intellectual progress as a result of people in closer communication, and a social progress as people are exposed to other countrymen outside their villages. It is my belief that the automobile failed the culture miserably. This is to say that from the perception of many Vietnamese under colonial rule the automobile brought nothing of value to the general populace, but rather created more conflict. Three major indications point to this conclusion. The first point is that the use of the automobile contributed to racial and class conflicts. Secondly, automobiles created misunderstandings with pedestrians and cyclists over road use. The final point is that the expense of roads caused dissension among the inhabitants.

With the long span automotive history covers, it is difficult to isolate trends when time is such a factor of change. This article will primarily be concerned with the automobile in

the context of French Indochina, as opposed to modern Vietnam, for two reasons. First, if any period could be considered a golden age for the automobile, it would have to be its years under French colonial rule which coincided with the growth of automobile use. For example, over the 15-year period from 1922 to 1937, the automobile population of colonial Indochina grew from 4,088 to 13,600 vehicles.² Automobiles were not readily sold on the mass market in the western world until the 1890s by, interestingly enough, French car manufacturer Peugeot and other less influential companies.³ The majority of Indochina had been conquered before the fall of Hanoi some 20 years prior to the creation of an automobile market.

The periods after French rule should not be considered as the golden age of the automobile either. The continuous warfare had rendered many of the national and provincial roads impassable. The system of highways was destroyed and rebuilt twice during the Indochinese War, then overhauled during the Franco-Viet Minh War, and overhauled once again with American aid in 1968. Overhauls were necessary due to the constant bombardment not only from military forces, but from natural forces such as tidal floods. With the war at hand, men and resources were not available to make repairs that were constantly needed on the roads. For example, despite all of these overhauls, South Vietnamese roads were still impassable due to random attacks by the Viet Cong. The roads would be open for awhile, until dangerous conditions left the roads useless for long periods of time.⁴ Even after the wars, Vietnam was in no financial condition to afford food let alone import massive numbers of automobiles.⁵ For many families the necessity to survive meant that any material goods smuggled or sent from relatives abroad would have to be sold. For the reasons of war after 1945 and consequently extreme poverty, colonial Indochina is the nearest to the golden age for automobiles by default.

The second reason colonial Indochina is a prime period for studying is the fact that it coincided with the time frame for which the automobile was introduced and popularized. By popularized, I mean accepted to a degree that it was not a rarity. Part of my objective is to show that the automobile was not immersed into the Vietnamese culture, but at the same time there was, nonetheless, a healthy automobile presence. Analyzing this particular time frame gives the opportunity to view the situation from the beginning. Understanding the initial and the early automobile situation allows us to see how the automobile has developed in post-French and modern Vietnam.

The Road System in Colonial Vietnam

Before discussing the failure of the automobile, a foundation must be laid regarding its actual presence. Every potential factor needed to make the automobile a success was,

indeed, in place during French colonization. A necessary component to any automobile development is the existence of good roads. In 1912, Governor-General Albert Sarraut initiated an ambitious program to build a system of highways.⁶ By at least the mid-1920s this highway system had become a superb example of modern transportation. With the exceptions of possibly the American-held Philippines or British Malaya, French Indochina had the finest system of roads in the Far East. This is no small feat, considering the fact that this area included China and Japan. This fact has been well documented from different well-traveled American and French sources.⁷ Included in this system were, eventually, a total of 22 colonial highways maintained by the French colonial government and a series of locally- and provincially-maintained roads. For the most part, the early roads were made from what the French call *empierreée* or, in English, cobblestone. Any remaining stretches of highway were left as unpaved dirt roads, which proved a problem during the flooding season. Roughly a third of these dirt roads were rendered useless during at least half of the year due to bridges being destroyed, roads submerged with water, and other flooding-related problems.⁸ By the mid-1940s, much of the highway system had been improved to asphalt.⁹ The conversion to asphalt diminished, but however, by no means extinguished the problems with flood waters.¹⁰

The backbone for the entire highway infrastructure of Indochina was Colonial Route One, better known as the Mandarin Road. The very mention of the Mandarin Road evoked a romantic notion of the riches and splendor of the Orient. This road started at the northern Chinese border, through Hanoi, down the coast, past Saigon, and then at some point branched off to Siam or what is known today as Thailand (Fig. 1). Much to the disappointment of French traveler Roland Dorgelès, the Mandarin Road was nothing more than, "a wide, badly paved highway, skirting the railroad."¹¹ His statement is very true while at the same very misleading. As his account of the Mandarin Road progresses, his understanding of the road becomes fuller. Farther down the road, Dorgelès corrects his previous statement by saying, "the Mandarin Road . . . has as many aspects as the journey has days."¹² By this he means to say that the road is as varied as it is long. There would be stretches where the road would be overtaken by a rice paddy, and yet other stretches where it was wide and accommodating. These flaws, as described by Dorgelès, were by far exaggerated as all but 50 of over 1,600 miles were passable most of the year around the time of Dorgelès' visit.¹³ The previous statistic indicates that this was a phenomenal road considering the climate and length to maintain. The Mandarin Road was very functional, but to Dorgelès' dismay was by no means paved with gold.

From the main highway branched the other 21 colonial highways. Hanoi and Saigon served as hubs for the concentration of highways in their respective location. Few federal highways ventured off into the mountains; they mainly stuck to Highway One near the coast. Route Seven even ventured from Tonkin into the mountains to connect with Vientiane in Laos.¹⁴ To a great degree, it was still possible to travel to any significant city in Indochina by automobile during the dry season. An experienced driver could make most trips during the flood season as well with the assistance of ferries and

plenty of time. While most cities were connected by a colonial highway, problems arose when that highway was impassible. Obstacles often meant travelers had to either return home to wait out the problem, take an alternate route via another city, or secure another means of transportation. Author Duong Van Mai Elliot remembered taking a trip from Hanoi to Haiphong that lasted all day despite a distance of only 75 miles. The problem was that the railroad was out of commission and only one highway was in service between the two bustling cities.¹⁵ At times, the railroad paralleled the highways so if conditions crippled the road it would be impossible to travel by train or automobile.¹⁶ As time progressed, the adoption of asphalted roads did create a system of roads that was near all-weather.

The cities themselves had developed sophisticated road systems. Roland Dorgelès noted that the Mandarin Road "straightened out to pass through towns," indicating the nicest portions of highways were those that passed through the towns (Fig. 2).¹⁷ It is not surprising that cosmopolitan Saigon had large modern avenues like those found in Europe. The heavily-Chinese populated Cholon was also noted to have had good motor roads due to its prosperity.¹⁸ By 1936, Cochinchina had by far the best system of roads in Indochina with most of the maintenance responsibility carried by the provincial government. In fact, only ten percent of the roads in Cochinchina were maintained by the colonial government, with the rest under local control. Compare this with Annam, Cambodia, and Laos which maintained only 50 percent of their roads, and Tonkin which maintained 80 percent. In addition, Cochinchina had more road length than any of the other provinces Hanoi also adopted a French-style system of roads with its tree-lined boulevards that remain today full of bicyclists.¹⁹ Cambodia's capital, Phnom-Penh, also had a complete set of automobile-friendly roads, though not as inviting as bustling Saigon.²⁰

With an extensive system of roads covering most of the country, Indochina was then able to accommodate automobiles. Initially, automobiles were a rarity left for foreigners living in the big cities. This was the case for the entire Asian continent. Therefore, the places which first took hold of the automobile were places where foreigners were most prevalent.²¹ This would include the places where French and Chinese citizens immigrated and visited along with a few American, British, and Italian expatriates and tourists. Higher concentrations of immigrants and tourists could be found in Saigon, Cholon, Hanoi, and to a lesser extent, Phnom-Penh. Westerners would likely already be familiar with the automobile before coming to Indochina and would often bring their own over from their country of origin.²² For a long time, automobiles would be in the hands of only recent immigrants, the extremely wealthy or powerful, and a very few business operators. It was not until later in the French period that automobiles became prevalent. Until the 1920s, not even wealthy plantation owners could afford their own automobile. They had to travel by bicycle or small cart to the nearest big city to catch the train.²³

The Automobile in Vietnam (1922 to World War II)

By 1922, the automobile had begun to take hold, as over 4,000 autos were accounted for statistically. This number grew

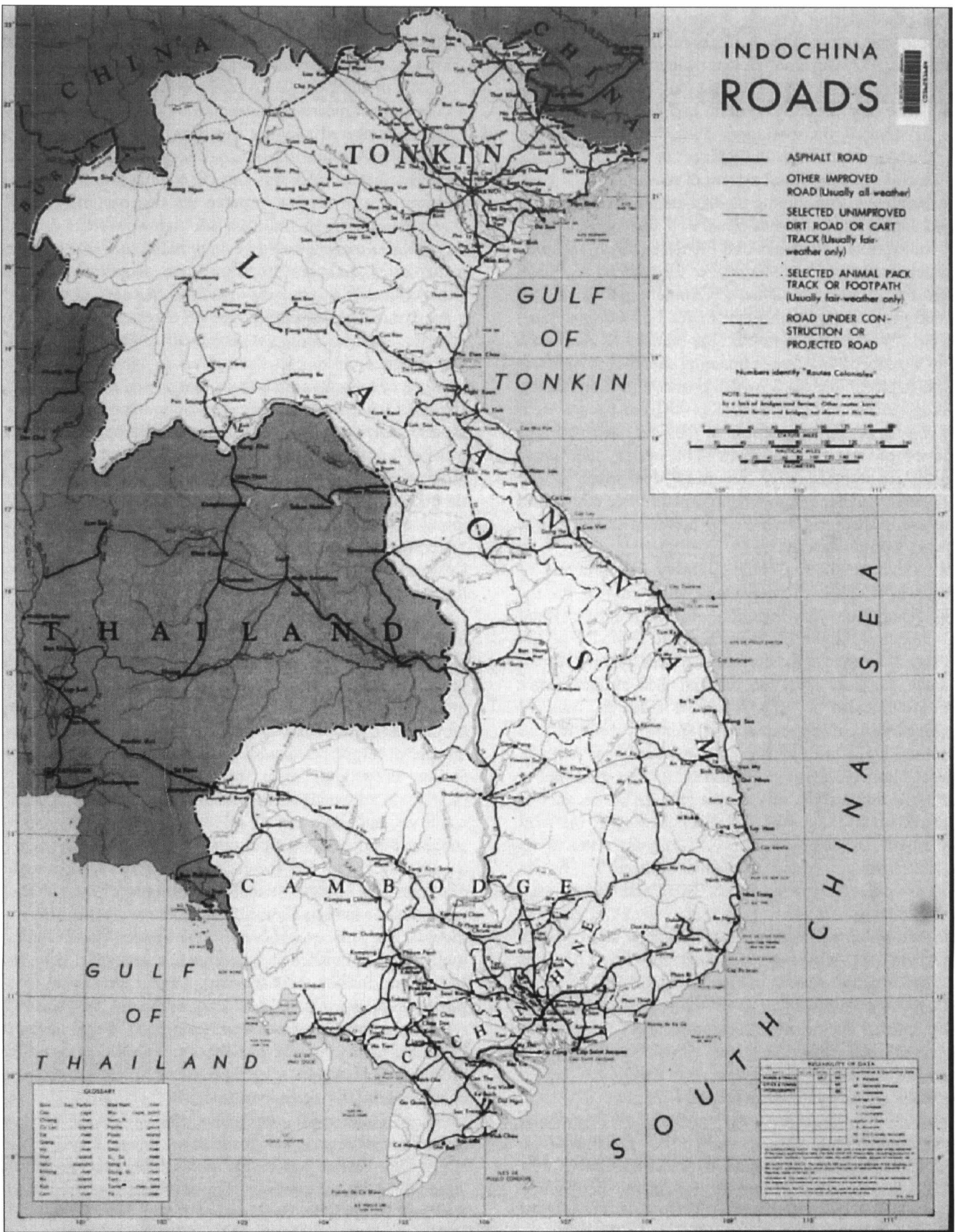


Figure 1 – Map of Vietnam during the Colonial Era. Note the Mandarin Road along the coast from Hanoi to Saigon, Colonial Route 1 running down the spine of the country, and the proliferation of roads in the Red River (Hanoi) and Mekong (Saigon) Deltas. Archives, University of California at Berkeley.



Figure 2 – Tree-lined avenue in My Tho, wide and accommodating for vehicle traffic and similar to many cities throughout Indochina. Urbain, CALESTROUPAT 1950.

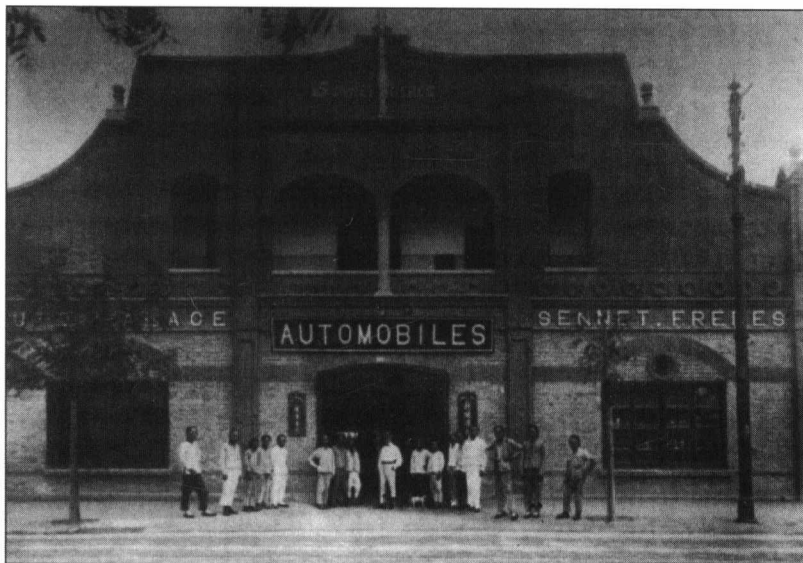


Figure 3 – An early photograph in Saigon of what was probably the first Renault garage in Asia. Guttridge Postcard Collection (before 1935).



Figure 4 – A portion of the old Renault garage as it appeared in 2004. Photograph by Ryan S. Mayfield.

exponentially as over 22,000 were recorded just seven years later in 1929. The majority of these vehicles could be found in Cochinchina, and the greater part of these were in Saigon-Cholon.²⁴ Peugeot had dealerships in both Saigon and Phnom-Penh, and competed for market share with other French brands such as Renault and Citroën (Figs. 3, 4, and 5).²⁵ Saigon was really the automobile center of Indochina, complete with several garages, auto insurance dealers, vacation car rentals, and tire shops. Saigon was also home to the Société des Transports et Automobiles de l'Indochine (S.T.A.I.).²⁶ The S.T.A.I. had member garages stretching the length of the Mandarin Road and one in Phnom-Penh. S.T.A.I. even sponsored an auto race, called the Grand Rallye des Hauts Plateaux.²⁷ Ford was the major American entrant into the Indochinese market, as indicated from garage advertisements proclaiming that they “fixed Ford Cars.”²⁸ It is certain that Ford and the other American companies shipped cars to British Malaya and China.²⁹ It would seem reasonable that Ford of Canada, which shipped cars to British Malaya and China, would also ship to Vietnam. Other American companies were rarely found in Indochina, but there is evidence that the makes Plymouth³⁰ and Lincoln³¹ had a slight presence.

Following the legacy entrenched in the colonial way of doing things, Indochina lacked manufacturing capabilities and subsequently had to import nearly all machinery. Despite British influence in Malaya and China, the preferred vehicles of choice in those respective nations were American.³² From the onset it appears that American automobile manufacturers had a considerable advantage in Asian markets due to the lower price achieved through the innovation of the assembly line. However, it is likely that American influence was in no way as strong in Indochina as in the rest of Asia. In his booklet, *Automotive Markets in China, British Malaya, and Chosen*, author William Irvine claims that the European auto makers maintained hold of the high-



Figure 6 – French family in their automobile around Dalat. The horn on the driver's side was a necessary component of any car in French colonial Indochina. M. Raymond Chagneau, 1930.

priced vehicle market due to “special efforts” to do so, and that this is a “situation that holds true in practically all the strictly Far Eastern markets.”³³ Given that point and that the duties placed upon manufactured objects of foreign origin were extremely high, it is unlikely that any automobiles made outside of France were abundant.³⁴ If a person perceived a Citroën to be of better quality, and, even after adding customs duties it equaled the price of a Ford, it would be obvious as to which brand the consumer would choose. One Peugeot advertisement depicting a car full of stylish white women even claims that “all the roads in Indochina are covered with Peugeot cars.”³⁵ I would compare colonial Vietnam with modern Singapore where cars are not common, but those people who could afford cars usually would rather pay slightly more for a luxury car than a common car when tariffs are high.

Demographically, it is interesting how car ownership broke down in Indochina. According to both Robequain and the Annual Statistics of Indochina, over half of the individually-owned cars belonged to native Indochinese, totaling about 6,800.³⁶ With a native population of over 23 million, the percentage of privately-owned cars was relatively miniscule. Overall, the European population of Indochina in 1937 was around 42,300 and not even close to one percent of the total population.³⁷ Using the Annual Statistics from 1937 nearly 15 percent of the population owned an automobile, which would probably indicate that nearly every French-blooded family owned one. In addition to privately-owned automobiles, there were a substantial number owned by the state (both French colonial and imperial), by small business (*sociétés anonymes*), and by dealers. Nevertheless, in 1936 it is evident that the automobile was still rare enough that many ethnic Vietnamese still had never witnessed one.³⁸

For most Indochinese, the automobile held an entirely different role altogether from modern western culture. Today, the automobile has become a necessity that one cannot live without to function as a social human being. People now commute to work, and there are no longer corner grocery stores within walking distance in most places. The automobile for the Indochinese was a luxury item that did not hold much practical value. Automobiles were bought as pleasure cars to tour the countryside. This supports the idea that luxury cars with all the amenities of comfort were popular, including limousines.³⁹ In nearly every automobile advertisement I have seen from Indochina, the words “comfortable” or “suspension” appears prominently.⁴⁰ The name given to cars in the French (*voitures de tourisme*) indicates the connotation of touring or relaxing. The French have stereotypically been linked with the notion of vacation, so the introduction of the automobile conformed to the social constraints of the culture. If people are going on a long drive touring, they naturally want comfort. Exotic Indochina was a popular destination for adventure seekers worldwide. This previous concept gave rise to the automobile as a means to explore Vietnam in a manner less rigid than a set train line or a caravan of porters. Another aspect to this thrill-seeking mentality was the selling feature of speed. One touring business advertised in the Grand Rallye brochure that its service offers cars with “*VITESSE*” (speed) written in all capitalized letters.⁴¹ As a luxury item, thrill seekers, including Emperor Bao Dai,

bought automobiles for their performance capabilities. Those with the ability and desire to buy automobiles did so primarily for the functions of entertainment and diversion.

Not until later in the colonial period was the automobile realized as a major means of practical applications. The General Government of Indochina began recording the number of automobiles in 1922, but not until the statistics of 1929 did the categories of buses, tractors, and trucks appear. The expense associated with the early automobile prevented it from being commonplace. As Robequain keenly observed, already-depreciated second-hand automobiles cycled to Vietnamese entrepreneurs were the start of the general populace benefiting from the automobile.⁴² Every ounce of life was consumed from the common carrier, as it was repaired to live another day to carry loads of crammed customers along specific routes. The development of traditional carrier services with taxis seemed to be a service industry advanced by native Vietnamese. One traveler, who published his book in 1927, reported that Vietnamese taxicab drivers were usually lined up around the Saigon opera house.⁴³ What must be mentioned is that transportation fares of any kind of automobile were very expensive. One travel guide quoted a private vehicle rental at \$120 US from Saigon to Phnom Penh and round trip bus fare almost \$30 US per person in 1926.⁴⁴ Dilapidated public carriers certainly existed for the common public, but in the scope of colonial Indochina their role was insignificant. It is safe to assume the use of the automobile in French Indochina was generally limited to tourists, wealthy merchants, and French settlers.

The Use of the Automobile Contributed to Racial and Class Conflicts

Now that the state of the automobile has been established, we must address how the circumstances of its introduction were detrimental to the culture. Automobiles in themselves as objects cannot be detrimental to any culture, but the perception from various variables surrounding automobiles may be very negative. Understandably, historical sources do not focus on openly deriding automobiles, but a recurring theme surrounding events where automobiles are present or relevant indicates strong negative connotations.

Under the rule of a foreign power, the people of Indochina were pushed to determine who they were, what side they would take, and with whom they would identify. Lines were drawn across families and villages because of ideological differences. Indochina became a colony of great division especially in terms of race, class, wealth, and notably ideology. Expert David G. Marr explores this era of complex social thinking in his book *Vietnamese Tradition on Trial*.⁴⁵ Marr’s insights are applicable to the negative perception of automobiles on many different levels, at least from the perspective of the educated class. To begin with, a remnant of the old Mandarin class would exist for the duration of the colonial period. Marr points out that until the 1920s traditional scholarly thought saw anything outside of Confucian East Asian understanding as barbaric.⁴⁶ This generation of thinking would see little difference between the ways of the industrialized French and those of the simple tribes living in the mountains of Indochina. Particularly, an automobile

would seem an improper and inferior mode of transportation compared with a rickshaw, based on the principle that a car is not proper for a cultured person to use. The sense of propriety was based not on what was most superior usefully but on what was superior culturally. Cultural superiority meant namely “the way it has always been done,” and automobiles were certainly not part of the way it had always been done in Vietnam. Widespread adoption of the automobile in Indochina would fail the culture in this sense of Neo-Confucian thought, for it would have been perceived as moral decay.

After a generation passed, when the intellectual community had been educated in French classrooms, the “West-versus-East” paradigm disintegrated with the realization that “Eastern spirit” could not be superior when Indochina was subjugated to a Western power.⁴⁷ Marr continues, “In place of idealized philosophical and cultural systems, Vietnamese writers moved increasingly to historical process as a central explanation of reality.” The reality that still remained was French control over Indochina, and the disparity of automobile ownership was an obvious point of difference between the French and native Vietnamese. The concept of the automobile as a symbol of Western superiority dissipated, but the negative perception remained from an entirely different standpoint. Full of nationalism, those Vietnamese valuing independence held contempt not for the automobile in itself, but for arrogant French automobile owners.

The automobile became an everyday symbol of cultural imperialism that existed in French Indochina. In his autobiographical work from a rubber plantation, communist revolutionary Tran Tu Binh describes automobiles as if they were oppressive agents in cohorts with the French. To begin his servitude, Mr. Tran is crammed with 150 others on a “bone-jarring, soul-shattering two-day truck ride.”⁴⁸ At this point, his perception of the automobile is similar to an African slave’s perception of the slave ship. The truck’s use comes to personify French maltreatment in the mind of Tran and his abused compatriots. Since the truck was used as a means of abuse, it becomes hated as much as the wicked master behind the tool. Recalling his contact with Frenchmen, Mr. Tran regularly evokes automobiles to paint a picture of greed, inequality, haughtiness, and arrogance. Immediately, the fact that the plantation manager owned several cars is conveyed when he is introduced in the narrative. When the manager had “[one car] to use around the plantation, another to go off on trips, yet another for the family when they went out on pleasure drives,” it made an impact in terms of the paucity of largess and benevolence on the part of French settlers.⁴⁹

Resentment was reinforced as some workers were assigned to work in the plantation auto garage “reserved for the use of the manager and the French overseers.”⁵⁰ A recurring theme is French automobile ownership facilitated by the sweat of the indentured native population. Specifically, workers in the garage toiled to repair the plantation automobile fleet in inhumane conditions. On a broader scale, the Michelin Company owned and set the code of conduct for the Phu-rieng rubber plantation including the harsh beatings of workers.⁵¹ Michelin is known worldwide as the premier tire maker in the world, and the rubber garnered from the trees on

the plantation was an integral product of those tires. The Indochinese rubber plantations exploited their workers to provide cheaper prices for French consumers and profits for French companies. Michelin’s Phu-rieng employees certainly resented their French employer, but also the French product they made at their own expense. For these rubber tree workers the automobile and tire industry were daily reminders of French exploitation and control of Vietnamese sovereignty. Naturally, based on the French connotation associated with these automobiles, it is reasonable to say that the automobile brought more negativity than good to the Vietnamese in colonial Indochina.

What complicates this statement is the simultaneous social movement in Vietnam against capitalism and the bourgeois class altogether. The reality was that generally the circles of French and the relatively wealthy coincided. Certainly a great deal of resentment was directed toward the French since colonialization, but it is difficult to isolate what resentment the Vietnamese felt toward wealth with two variables in play. If there was any indicator at all for wealth in colonial Indochina it would be the automobile. Looking back, the statistics of automobile ownership make a clear statement about wealth breakdown in Indochina. Statistics showing that around 15 per cent of French individuals owning automobiles contrast greatly with the 6,800 automobiles among 23 million Vietnamese.⁵² Conveniently, the perspective from the travel diary of Claudie Beaucarnot helps hedge the race factor, while allowing the reader to independently see the role class played in Indochina.

Automobiles Created Misunderstandings With Pedestrians and Cyclists

Born in Indochina, Mlle Claudie Beaucarnot (later Mme Brugière) was a *métisse*, or a person of mixed racial heritage of both Vietnamese and French. The fact that she associated freely among races in a supra-colonial identity allows us to view an Indochinese source from a perspective not tainted by racial resentment. Nevertheless, the diary repeatedly defaults into an us vs. them mentality regarding confrontation with pedestrian peasants. Besides providing a means of travel within Vietnam, the Beaucarnot family vehicle was a machine that created class conflict. This statement is by no means an exaggeration, but a statement of fact that is reaffirmed at least four times in the Beaucarnot diary alone.

From the very first day accounted in the diary, on leaving the Red River Delta, the reader immediately is made aware that there is a conflict between pedestrian and driver. Mlle Beaucarnot declares “. . . the heat stupefies the Vietnamese pedestrians. We are obliged to honk many times before they take heed, never knowing if they will go to the right or the left.”⁵³ The Beaucarnots’ perspective is that the roads were constructed to accommodate drivers, and pedestrians must work around traffic. Should the pedestrians not move, automobiles were equipped with a horn to obnoxiously announce that an automobile was present, and that those who were seen as graciously permitted use of the road needed to make way for the supposed rightful possessor of the road. The “move it or lose it” philosophy keys us in into the mentality of the privileged as not having any concern for those outside their sphere. Honking his horn,

Table C

Indochinese Road Development

Length of All Roads by Type, Province and Year, In Kilometers and Miles

*"Auto-Usable" is the sum of "Cobblestone," "Asphalt," and "Dirt Roads (auto-usable)"**"Total Length" is the sum of "Auto-Usable" and "Dirt Roads (not auto-usable)"*

In Kilometers

Colonial

<u>State</u>	<u>Year</u>	<u>Total Length</u>	<u>Auto-Usable</u>	<u>Cobblestone</u>	<u>Asphalt</u>	<u>Dirt Roads</u> (auto-usable)	<u>Dirt Roads</u> (not auto-usable)
Annam	1922	2,737	2,384	1,851		533	353
	1929	3,105	2,768	2,375		393	337
	1930	3,369	2,909	2,303		606	460
	1933	3,359	2,987	2,320		667	372
	1936	3,312	3,074	1,837	497	740	238
Cambodia	1922	1,496	1,145	924		221	351
	1929	1,602	1,405	1,295		110	197
	1930	1,675	1,512	1,451		61	163
	1933	3,359	2,987	2,320		667	372
	1936	1,759	1,668	979	652	37	91
Cochinchina	1922	834	777	734		43	57
	1929	993	974	960		14	19
*Rds. Declass.	1930	729	676	676			53
	1933	649	649	649			
	1936	650	650	153	497		
Laos	1922	1,794	799	230		569	995
	1929	2,164	1,364	615		779	800
	1930	2,186	1,453	668		785	733
	1933	2,336	1,578	814		764	758
	1936	2,258	1,754	991	22	741	504
Tonkin	1922	2,127	1,447	986		461	680
	1929	1,717	1,561	1,145		416	156
	1930	1,798	1,739	1,205		534	59
	1933	1,720	1,720	1,437		283	
	1936	1,822	1,697	769	715	213	125

In Miles

Colonial

<u>State</u>	<u>Year</u>	<u>Total Length</u>	<u>Auto-Usable</u>	<u>Cobblestone</u>	<u>Asphalt</u>	<u>Dirt Roads</u> (auto-usable)	<u>Dirt Roads</u> (not auto-usable)
Annam	1922	1,700	1,480	1,149		331	219
	1929	1,928	1,719	1,475		244	209
	1930	2,092	1,806	1,430		376	286
	1933	2,086	1,855	1,441		414	231
	1936	2,057	1,909	1,141	309	460	148
Cambodia	1922	929	711	574		137	218
	1929	995	873	804		68	122
	1930	1,040	939	901		38	101
	1933	2,086	1,855	1,441		414	231
	1936	1,092	1,036	608	405	23	57
Cochinchina	1922	518	483	456		27	35
	1929	617	605	596		9	12
*Rds. Declass.	1930	453	420	420			33

Table C cont'd.

<u>State</u>	<u>Year</u>	<u>Total Length</u>	<u>Auto-Usable</u>	<u>Cobblestone</u>	<u>Asphalt</u>	<u>Dirt Roads</u> (auto-usable)	<u>Dirt Roads</u> (not auto-usable)
Cochina	1933	403	403	403			
	1936	404	404	95	309		
Laos	1922	1,114	496	143		353	618
	1929	1,344	847	382		484	497
	1930	1,358	902	415		487	455
	1933	1,451	980	505		474	471
	1936	1,402	1,089	615	14	460	313
	Tonkin	1922	1,321	899	612		286
	1929	1,066	969	711		258	97
	1933	1,068	1,068	892		176	
	1936	1,131	1,054	478	444	132	78

Table D

Indochinese Road Development

Total Length of Auto-Usable Roads by Province and Year, in Kilometers and Miles

In Kilometers

Total

<u>State</u>	<u>Year</u>	<u>Colonial Auto-Usable</u> <i>cobblestone, asphalt, dirt</i>	<u>Local</u>	<u>Total</u>	
Annam	1922	2,384	2,849	5,233	
	1929	2,768	3,492	6,260	
	1930	2,909	3,077	5,986	
	1933	2,987	3,159	6,146	
	1936	3,074	3,462	6,536	
Cambodia	1922	1,145	1,219	2,364	
	1929	1,405	1,199	2,604	
	1930	1,512	1,227	2,739	
	1933	1,769	2,243	4,012	
	1936	1,668	1,820	3,488	
Cochinchina	1922	777	3,482	4,259	
	*Local Includes: local, provincial, and communal	1929	974	5,092	6,066
	1930	676	5,742	6,418	
	1933	649	5,514	6,163	
	1936	650	6,583	7,233	
Laos	1922	799	656	1,455	
	1929	1,364	964	2,328	
	1930	1,453	913	2,366	
	1933	1,578	1,343	2,921	
	1936	1,754	1,505	3,259	
Tonkin	1922	1,447	5,406	6,853	
	1929	1,561	5,154	6,715	
	1930	1,739	5,488	7,227	
	1933	1,720	4,117	5,837	
	1936	1,697	4,005	5,702	

Table D cont'd.

In Miles

Total

<u>State</u>	<u>Year</u>	<u>Colonial Auto-Usable</u> <i>cobblestone, asphalt, dirt</i>	<u>Local</u>	<u>Total</u>
Annam	1922	1,480	1,769	3,250
	1929	1,719	2,169	3,887
	1930	1,806	1,911	3,717
	1933	1,855	1,962	3,817
	1936	1,909	2,150	4,059
Cambodia	1922	711	757	1,468
	1929	873	745	1,617
	1930	939	762	1,701
	1933	1,099	1,393	2,491
	1936	1,036	1,130	2,166
Cochinchina	1922	483	2,162	2,645
	1929	605	3,162	3,767
*Rds. Declass.	1930	420	3,566	3,986
	1933	403	3,424	3,827
	1936	404	4,088	4,492
Laos	1922	496	407	904
	1929	847	599	1,446
	1930	902	567	1,469
	1933	980	834	1,814
	1936	1,089	935	2,024
Tonkin	1922	899	3,357	4,256
	1929	969	3,201	4,170
	1930	1,080	3,408	4,488
	1933	1,068	2,557	3,625
	1936	1,054	2,487	3,541

after World War I, the spending totals amounted to \$3.5 million and \$6.2 million US respectively.⁵⁹ Naturally, increased spending means revenue must increase proportionally. A gasoline consumption tax did exist to tax automobile owners who used the roads most.⁶⁰ However, an unfair burden of tax was placed on the shoulders of the Vietnamese working class. The system in place for Vietnamese permitted local mandarins to collect taxes as officials of the treasury. Not only would the Vietnamese be required to pay their tax, but the mandarin would squeeze the peasants and pocket the extra money. Meanwhile, Europeans paid a standard income tax without the squeeze or paid no tax at all. It was written in one source, "In the eyes of [colonial] Europeans, the main appendage of [their newfound] nobility rests on tax exemption. Let us be careful. It is not for colonists . . . to revive the privileges which ceased to exist in France after the night of August 4, 1789."⁶¹ From the perspective of the Vietnamese peasant, the automobile received another strike against it. Outrageously, the peasant class toiled to survive, but still had to pay high taxes to a government that used

a substantial amount of money for infrastructural projects primarily used by the wealthy. The average Vietnamese person did not move far away, take summer vacations or pleasure drives, but lived his complete life in the land of his ancestors. The automobile failed the Vietnamese people again in the sense that the roads created to facilitate its use were financed to a great degree by a class of people not willing or able to use them. Virginia Thompson says, "The Annamite (Vietnamese) leaves his natal village, but to return."⁶² The automobile was not just a visible symbol of economic and racial disparity but also of the wealthy benefiting at the expense of the poor.

Based on these findings it is quite reasonable to see that the automobile did in fact negatively affect the Vietnamese culture. Although other factors like geography, poverty, and the lack of a local auto industry all have contributed to the lack of widespread adoption, it cannot be overlooked that perhaps the automobile was not accepted because of the way it divided people. In colonial Indochina the automobile was a wedge dividing classes and races. Again and again we see conflicts

where cars are involved between motorists, pedestrians, and bicyclists. Finally, the fact that the expensive highways were recipients of tax dollars that benefited the elite of society rather than the whole was another example of a perceived negative aspect. It is assured that in some form automobiles will always remain in Vietnam, but to gain widespread approval, the automobile must overcome the stigmas it acquired during the colonial era.

Footnotes

¹Brandon, Ruth; *Auto Mobile* (London: Macmillan, 2002), p. 5.
²Table A.

³*The History of the Automobile*, <http://inventors.about.com/library/weekly/aacarsassemblya.htm>, May 2, 2003.

⁴"Mounting Security Opens Anew Highways to Civilian Traffic," *Vietnam Magazine*, vol. 3, no. 11 (The Vietnam Council on Foreign Relations, 1970), pp. 4-6.

⁵Peter T. White, "Hanoi, the Capital Today," *National Geographic*, November 1989, p. 571. Regarding Hanoi in 1988, Peter White wrote, "Nearly everyone is on the state payroll, but the monthly salaries are so low that one can live on them only a couple of weeks."

⁶W. D. Styer; *French Indochina: Section 11 & 12 Transportation*, Civil Affairs Handbook M359-8 (Washington D.C.: Headquarters Army Service Forces, 1944), p. 26.

⁷*Ibid*; U.S. Department of State, Saigon Consulate, *Tour of Inspection to Bac Lieu Cochinchina*, by L. L. Smith, Correspondence to a superior, Department Instruction No. 623, Microfilm: 0025 (560 150), p. 2; U.S. Department of Commerce, *Automotive Markets in China, British Malaya, and Chosen*, by William I. Irvine (Washington D.C.: Government Printing Office, 1923), p. 74; Charles Robequain, *The Economic Development of French Indochina* (New York: Oxford University Press, 1944), p. 99.

⁸Roland Dorgelès; *On the Mandarin Road* (New York: The Century Co., 1926), 13; Also see Tables B, C, and D which compile statistics from several volumes of: Statistique Générale, *Moyens de Transport et de Communication* (Averages of Transportation and Communication), *Annuaire Statistique de l'Indochine* (Annual Statistics of Indochina), (Hanoi: Imprimerie d'Extrême-Orient).

⁹Styer; op. cit., p. 26.

¹⁰See Tables B, C, and D.

¹¹Dorgelès; op. cit. p. 7.

¹²*Ibid*; p. 29.

¹³Statistique Générale; *Moyens de Transport et de Communication* (Averages of Transportation and Communication), *Annuaire Statistique de l'Indochine: 1923-26* (Annual Statistics of Indochina), (Hanoi: Imprimerie d'Extrême-Orient, 1927), p. 130.

¹⁴Robequain; op. cit., p. 102.

¹⁵Duong Van Mai Elliot; *The Sacred Willow*, (New York: Oxford University Press, 1999), p. 190. Rail service between Hanoi and Haiphong ranged from 2 hours (fast train) to 4 hours. Timetable, Chemins de Fer de l'Indochine (18 October 1937), pp. 40-41.

¹⁶Robequain; op. cit., p. 99.

¹⁷Dorgelès; op. cit., p. 29.

¹⁸Jane A. Randall; *Guidebook to the Ports of Asia* (Manila: Philippine Education Co., 1926), p. 164.

¹⁹White; op. cit., p. 9, p. 570.

²⁰Sidney J. Legendre; *Land of the White Parasol* (Binghamton N.Y.: Vail-Ballou Press Inc., 1936). This book chronicles travels by automobile in and around Phnom-Penh.

²¹Irvine; op. cit., p. 4.

²²This fact that automobiles were shipped over is based on information from a movie based on a true account : Marguerite Duras, *The Lover* (MGM, 1992).

²³Robequain; op. cit., p. 203.

²⁴Statistique Générale, *Moyens de Transport et de Communication* (Averages of Transportation and Communication), 1936-37, p. 115.

²⁵Peugeot advertisement, *Bulletin du tourisme Indochinois* (Bulletin of Indochinese Tourism, November-December 1937).

²⁶Brugière, Claudie; *Adieu Saigon, Au Revoir Hanoi: The 1943 Vacation Diary of Claudie Brugière*, (David Del Testa, 2002), p. 14. See at <http://www.bucknell.edu/Beaucarnot/documents/EnglishBeaucarnotTranslation.pdf>.

²⁷Société des Transports et Automobiles de l'Indochine, *Grand Rallye des Hauts Plateaux* (pamphlet), (1954), pp. 22, 32, 34, 40, 41.

²⁸*Ibid*.

²⁹Irvine; op. cit., p. 73.

³⁰Peter T. White and David Alan Harvey; "Saigon: Fourteen Years After," *National Geographic*, November 1989, p. 607. This picture shows a well cared-for antique Plymouth in modern Vietnam much like what can be found in Cuba.

³¹Jean Jacques Maitam; interview by Dr. David Del Testa, live interview, California Lutheran University, Thousand Oaks Calif., December 9, 2002; Jean Jacques Maitam, *A House Divided* (Greensboro N.C.: Tudor Publishers, 1999). In both the interview and the book, M. Maitam indicates that his father and Emperor Bao Dai were the only two men in all of Indochina to own Lincolns. M. Maitam recalls that his father's 12-cylinder black Zephyr seated eight, yet was not large enough to accommodate all of the family.

³²Irvine, op. cit., p. 4. In this account, 65 per cent of cars in China in 1920 were American.

³³*Ibid*, p. 5.

³⁴Robequain; op. cit., p. 322.

³⁵Peugeot advertisement, *Bulletin du tourisme Indochinois* (Bulletin of Indochinese Tourism), November-December 1937. Literally: "Toutes les routes de l'Indochine sont sillonnées par les voitures Peugeot."

³⁶Statistique Générale, *Moyens de Transport et de Communication* (Averages of Transportation and Communication), 1936-37, p. 115.

³⁷Robequain; op. cit., p. 21.

³⁸Legendre; op. cit., p. 21.

³⁹Peugeot advertisement; *Bulletin du tourisme Indochinois* (Bulletin of Indochinese Tourism), (Saigon: Bureau Officiel du Tourisme Indochinois) January-February 1938.

⁴⁰Peugeot advertisement, op. cit.; Société des Transports et Automobiles de l'Indochine, *Grand Rallye des Hauts Plateaux* (pamphlet) (1954), p. 40. The latter advertisement features a Land Rover going off road past a sign saying "dangerous road."

⁴¹Ibid., Société des Transports et Automobiles de l'Indochine, p. 34.

⁴²Robequain; op. cit., p. 105.

⁴³Hervey, Harry; King Cobra, (New York: Cosmopolitan Book Company, 1927).

⁴⁴Randall, op. cit., p. 165.

⁴⁵Marr, David G.; Vietnamese Tradition on Trial: 1920-1945, (Berkeley: University of California Press, 1981).

⁴⁶Ibid, p. 9.

⁴⁷Ibid, p. 10.

⁴⁸Tu Binh, Tran; The Red Earth: A Vietnamese Memoir of Life on a Colonial Rubber Plantation, (Athens, Ohio: Ohio University for International Studies, 1985). Translated by John Spragens Jr., Edited by David G. Marr, p. 23.

⁴⁹Ibid, p. 24.

⁵⁰Ibid, p. 30.

⁵¹Ibid, pp. 33-34.

⁵²Statistique Générale, Moyens de Transport et de Communication (Averages of Transportation and Communication), 1936-37, p. 115.

⁵³Brugière; op. cit., p. 11.

⁵⁴Ibid, p. 11.

⁵⁵Ibid, p. 11.

⁵⁶Ibid, p. 11.

⁵⁷Bulletin du tourisme Indochinois; Sept-Oct. 1938. p. 5.

⁵⁸Robequain, op. cit., p. 102.

⁵⁹This is a conversion very difficult to estimate. It is true the piaster was pegged to the franc, and 1931's totals are accurate based on the New York Exchange rate of one franc rounded equal to four cents and the pegged rate. *The Wall Street Journal* (New York). June 7, 1932. p. 4. What is harder to figure is a conversion for 1941 because Europe was in war and the franc was not being traded in New York. I would imagine the franc was worthless. According to one source one franc equaled two cents in 1945. I am using this conversion rate arbitrarily as a war-time standard rate for lack of official information. My source for this is Sol R. Brandell. *Recollections of a World War II Infantryman*. 89th Infantry Division of WWII. www.89infdivww2.org/memories/brandell_22.

⁶⁰Robequain, op. cit., p. 155.

⁶¹A. Messimy; "Notre Oeuvre Colonial" (Paris, 1910). in *French Policy and Developments in Indochina* by Thomas E. Ennis (New York: Russell and Russell, 1936), pp. 64-65.

⁶²Virginia Thompson; *French Indo-China*. (London: George Allen Unwin, 1938), p. 459.

More Funny Stories About the Ford

In Review No. 47, we published some examples of humor relating to the Model T Ford that appeared in Vols. 1 and 2 of Funny Stories About the Ford, Vols. 1 and 2. Herewith, some more of the same from 1915.

Took it for an Offer

At a race meeting in London, a man was charging \$1.00 for parking space for cars. When space began to be at a premium, he raised the price to \$1.50, and later to \$2.00. It happened that the first car to approach after the second raise in price was a Ford, and as a warning to the driver the man shouted out "Two dollars." The driver, mistaking this for a bid, quickly replied, "It's yours!"

Too Light to Carry Far

Upon investigation, it is found that there is no truth to the report that the warring nations of Europe are cutting down expenses by shooting Fords out of their big guns.

All There But the Tires

Mr. Smith was tearing the roof off of his barn. His neighbor, Thompson, passing by, stopped and asked him what he was going to do with the old tin. "That's just what I've been wondering," Smith replied. "Send it to the Ford Motor Co. They might be able to use it," Thompson suggested. So Smith acted on the suggestion, crated the tin, and shipped it to Detroit. A few days later he received a very courteous letter from the Ford Motor Co. "Your car," they wrote, "is one of the worst wrecks we have ever seen, but we'll have it fixed for you within a week or ten days."

Remove Contents Immediately After Opening

The whole Jones family was attacked with ptomaine poisoning. The family doctor was called in, and as soon as first aid had been rendered, he endeavored to locate the cause of the epidemic. "Did you all eat something yesterday," he asked, "that had been standing in tin?" Mr. Jones thought a minute. "By gosh, doc," he replied, "that's just what did it. We had a picnic yesterday and we let the lunch stand in the Ford all day."

Music to His Ears

Two brothers, George and Fred, each received a legacy of \$2,000. With the cash in their pockets, they hied themselves to town to invest in automobiles. George spent the day on Automobile Row, visiting all of the show rooms, and finally buying the biggest machine that he could get for his \$2,000. Fred, who was a more thrifty fellow, went directly to the Ford agency and bought a Model "T." The next morning, the brothers started home with their cars, George taking the lead in his big Six. When about half way home, another machine passed George like a streak and disappeared in a cloud of dust. Imagine George's chagrin when he perceived that the car ahead of him was Fred's Ford. Arriving home, and seeking to get back at his brother, George asked him what caused the terrible rattling noise that he heard as Fred's car passed him on the road. "Oh," Fred replied, "that was the \$1,500 in my pocket."



LA QUALITE
OU ON NE
DISCUTE
PAS

7013-EKI

Peugeot

302 • ROUES AVANT INDÉPENDANTES • 402

Grâce à leur sécurité d'adhérence, ces deux voitures sont capables de moyennes plus élevées et beaucoup plus économiques que des voitures plus puissantes, dont la tenue de route défectueuse ne permet pas de rouler sans risque au-delà d'une certaine allure.

*Peugeot advertisement appearing in Horaires – Chemins de Fer de l'Indochine, 18 Oct 1937
(from the editor's collection).*

Muscle Cars Down Under

by Adrian Ryan

Introduction

In 1965, the Australian motor vehicle market was a far cry from that of today. Back then, the sales leader was GM-Holden, ahead of Ford, Chrysler/Mitsubishi, British Leyland (Austin, Morris), and Volkswagen, with Toyota/Mazda/Honda hardly registering on the scale. None of the locally-built cars was available with a V-8 engine, and the Japanese invasion of small cars had really yet to begin. There wasn't a real performance, or muscle, car on the market. By this term, I mean a virtually standard-bodied sedan or coupe with the largest V-8 engine available for that car range, plus sports suspension, wider wheels and tires, and better brakes as well as some "go faster" paint and stripes.

When one starts to think about the birth of the all-Australian muscle car two names come immediately to mind—William O. ("Bill") Bourke and John Bagshaw. These two "petrol heads" were the "front men" for Ford and Holden in Australia and dearly loved by the motoring press. Both were ebullient, charismatic, dedicated and a little crazy. They electrified the Australian motor industry that had been dominated by grey suits in top floor corner offices. They were a huge gulp of fresh air in the conservative business of making and selling cars.

When these two men came to power neither Ford nor Holden produced anything that could really be considered a performance car. In the mid 1960s Holden had the EH S4 sedan that boasted the company's biggest engine, the 179 cubic-inch displacement (c.i.d.), overhead valve straight six that developed just 115 b.h.p. (86 kW). The HD model followed with 140 b.h.p. (104.44 kW) from literally the same engine and was quickly replaced with the HR that had a 186 c.i.d. six developing 145 b.h.p. (109 kW).

Birth of the Australian Muscle Car

Late in 1965 the charismatic managing director of Ford Australia, William O. Bourke, an American, was visiting the company's proving ground hidden in the You Yang Ranges near Geelong, the birthplace of Ford in Australia. One of his senior engineers, Don Dunoon, showed him a project he was working on for the Victoria Police Force: a pursuit car based on the XR Falcon 4-door sedan fitted with the 289 c.i.d. V-8 engine. This engine developed 225 b.h.p. (168 kW) compared with the 289 in the standard cars that put out 200 b.h.p. (149 kW). Instead of the



Fig. 1 – Allan Moffat drove Ford muscle cars to many championship wins especially in the Falcon GT HO Phase 3



Fig. 2 – The two cars driving side by side are 1969 Falcon GT HO Phase 1 cars. The picture was taken at the Sandown Race Track, Melbourne, where a 6-hour race is run each year a month before the Bathurst 100 km race.

usual 3-speed automatic, the police version was fitted with a 4-speed manual gearbox, heavier springs and a roll bar. Enthusiastic driver that he was, Bourke was impressed with the car's performance and handling.

At the next Operating Committee meeting he proposed the idea of producing a limited run of GT cars based on the police version. Someone pointed out to him that GT cars were all 2-door models and Ford Australia didn't have a 2-door XR Falcon. Undeterred, Bourke was reported to have said "Well, let's build the world's first 4-door GT."



Fig. 3 – 1969 Falcon XW GT HO Phase 1 (right); 1969 Holden HT Monaro (center) taken at the Sandown Race track.



Fig. 4 – Race and rally driver Colin Bond was a thorn in Ford's side with his Monaro GTS350.

By March 1967 the car was approved and production began with just three production models coming off the line followed by a further 105 in April and an eventual total of just 596 cars. Those GT Falcons were the beginning of the Australian muscle car story—a story that is ongoing even as you read this article (Fig. 1).

Since 1960 the motor racing event of the year for touring cars in Australia has been the 500-mile (800 km) race first staged at the Phillip Island circuit in Victoria and later, from 1963, on what was originally a panoramic tourist road in the New South Wales provincial city of Bathurst when it became a 625-mile (1,000 km) event.

For the local manufacturers, Chrysler, Ford and General Motors-Holden (GM-H), winning this “production car” race provided huge prestige and increased sales even though the race cars gradually drew further and further away from their showroom siblings. Someone in the U.S. coined the phrase “Win

on Sunday—Sell on Monday,” and it was relevant in Australia as well.

The XR GT Falcons swept the board in their first attempt at the 1967 500-mile (800-km) race at Bathurst's Mount Panorama circuit and, as a result, spurred Chrysler and GM-H into producing cars that would compete on equal terms. The Australian muscle car era was born (Figs. 2 and 3).

Australian Muscle Cars of the '60s . . .

By mid 1968, GM-H had introduced the Monaro, a sleek 2-door coupe whose body was modeled on that of the Oldsmobile Toronado (although it was rear-wheel drive) and fitted with a 5.3-litre (327 c.i.d.) US-sourced V-8 engine developing 250 b.h.p. (186 kW) (Fig. 4). In its first race, the Sandown preliminary to Bathurst, the Monaro was victorious and followed this win a few weeks later with a crushing 1-2-3-clean sweep at Bathurst—the power race had really started.

Ford tried to counter the Monaro GTS's Chevrolet engine with its 302 c.i.d. Windsor V-8 (230 b.h.p., 171.5 kW) in its 1968 XT Falcon GT; the car was leading the race with less than 20 laps to go when it was forced out after a stone put a hole in the radiator, thereby handing the race to the Chevrolet-powered Holden. Three Falcon GTs did win the team prize in the grueling London-Sydney Marathon rally in 1968 but they didn't win Bathurst and that's what really mattered in the showroom race for sales.

Chrysler entered the fight for muscle car honors in 1969 with the

Valiant Pacer (available as both a four- and two-door, the latter based on the Dodge Dart) fitted with a modified Slant Six engine developing more than 170 b.h.p. (126 kW), however, it was swamped by the XW GT HO (Handling Option) Falcon from Ford and GM-H's revised HT GTS 350 Monaro. The Falcon's 351 c.i.d. Windsor engine sported the Autolite 4300, 600 cubic-feet-per-minute, 4-barrel carburetor and developed 290 b.h.p. (216 kW) and 385 lbs/ft (522 Nm) of torque. GM-H's Monaro 350 c.i.d. (5.74 litre) poured out 300+ b.h.p. (224 kW).

. . . and the '70s

In 1970 Chrysler introduced the E34 Pacer with the 250 c.i.d. Hemi 6-cylinder engine with a 4-barrel carburetor developing 235 b.h.p. (175.3 kW) coupled to a 3-speed floor shift transmission. Ford launched the XY Falcon GT HO Phase 2 with a new, more powerful Cleveland 351 c.i.d. V-8 replacing the Windsor engine in time for the Bathurst race (Fig. 5), and



Fig. 5 – 1970 XY Falcon GT HO Phase 2.

slotted it against the new HG Holden GTS 350. Both cars were improved versions with more power and torque, sharper steering and suspension and stronger wheels.

In 1970, however, John Bagshaw decided to make a muscle car out of the mid-sized Torana. He took the standard GTR “sporty” Torana that was fitted with Holden’s 161 c.i.d., 6-cylinder engine developing 125 b.h.p. (93.25 kW) and transformed the engine into the 186X with 160 b.h.p. (119 kW) and came up with a giant killer! This was the Torana GTR XU-1 and, with a curb weight of just 1,030 kg (2,270 lbs) the power-to-weight ratio was fantastic and the little car proceeded to embarrass the big Ford V-8s on the race tracks.

The power race continued through the rest of the 1970s with successive models from each manufacturer. Chrysler opted out in

1973 after developing the 2-door Charger R/T fitted with the 265 c.i.d. Hemi 6 in 1971, and the E38 Bathurst model with a 280 b.h.p. (208 kW) Hemi armed with triple Weber carburetors (Fig. 6). But the hottest Charger was the 1972 R/T E49 with a 302 b.h.p. (225.3 kW) version of the 265 Hemi 6-cylinder engine with a 4-speed gearbox, but this was Chrysler’s swan song and the company opted out of the horsepower race.

Ford continued with the XY Falcon by developing a Phase 3 model with the 351 engine boosted to 390 b.h.p. (291

kW). Ford’s engineers had secretly designed a super version of the 1972 XA GT Falcon and had actually built the first three prototypes and one production version to be known as the GT HO Phase 4 when a scare campaign by a Sydney newspaper about “150 mile per hour supercars” stopped production for fear of losing Government fleet contracts.

Likewise, Holden had plans to squeeze a hot V-8 engine into the little Torana and was poised to launch it onto the market when the “manure hit the fan,” so to speak, and the project was dropped. Holden did, however, bring out several V-8 Torana models in the mid-70s. These were the SL/R 5000 and A9X both fitted with a 250 b.h.p. (186 kW) engine (Fig. 7).

Ford continued with the XB Falcon GT until 1976 when the release of the XC model saw no GT in the range. It kept the



Fig. 6 – 1973 Valiant Charger R/T (from the editor’s collection).



Fig. 7 – 1977 Holden Torana LX SS A9X, driven by Peter Brock at Bathurst, a race he won a number of times.

V-8 engines in the Falcon until November 1982 when the decision was made to manufacture only 6-cylinder models of the Falcon, Fairlane and Ford LTD.

And after 1980

Holden used its locally designed and built 308/304 V-8 in the Commodore road cars until the US-sourced aluminum 5.7-litre Gen III V-8 replaced it in 2001. The smaller and lighter Commodore fitted with the Aussie 5-litre V-8 became virtually unbeatable on the race tracks in the early to mid-1980s and Ford's decision to drop the V-8 lost the company quite a lot of race fans.

There was a revival by Ford in the early 1990s under the leadership of the new president of Ford of Australia, Jac Nasser. The Windsor 5-litre V-8 was re-introduced and in 1992 an anniversary model of the GT was built in very limited numbers but it was more of a semi-luxury touring car rather than a real muscle car.

Meanwhile Holden Dealer Team morphed into Holden Special Vehicles (HSV) and produced body-kitted, warmed-up versions of the standard Commodore in the late 1980s. The first of the HSV vehicles was the 1988 VL Commodore SS Group A known as the Walkinshaw (the UK's Tom Walkinshaw being the instigator of the HSV operation). It had a modest (by today's standards) 241 b.h.p., (180 Kw) 5-litre V-8 engine. HSV also built a similar performance version of the more luxurious Calais at the same time, but with just 182 b.h.p. (136 Kw).

HSV's most popular performance car was the Clubsport. This was originally based on the VN series 5-litre Commodore of 1990-91 with the 5-Litre V-8 engine and ran through each Commodore series with subsequent improvements in power, until 1998 when the VS model began using a 5.7-litre engine starting at 335 b.h.p. (250 Kw). This engine currently produces 412 b.h.p. (307 Kw) and is used in the Clubsport R8 model based on the VZ Commodore.

The GTS was based on the 1992 VP model beginning with a 5-litre 268 b. h.p. (200 Kw) engine. In 1994 HSV introduced a stroked version of the Australian V-8, developed in association with ace Australian race engine builder Ron Harrop, into its special models and these became extremely popular as the only real muscle cars on the market. This was the VR GTS of 288 b.h.p. (215 Kw). The current VZ GTS has increased to 412 b.h.p.(307 Kw), using the same engine as the Clubsport R8.

HSV ran the official GM-Holden V-8 Supercar race team which, after a troubled start, went on to enjoy enormous success and this translated into very profitable sales and the glory reflected on the common or garden-variety Commodores as well in showroom traffic. Ford saw what it was missing

out on and formed a partnership with the United Kingdom company Tickford. Ford Tickford Engineering (FTE) was set up in 1992 to develop performance versions of the Falcon. The first of these were the 6-cylinder XR6 models. Later the V-8-powered XR8 was introduced. FTE eventually became Ford Performance Vehicles (FPV) when the UK firm Prodrive took over the development of the performance Falcons and the official Ford V-8 Supercar race team.

Conclusion

The Australian muscle car scene is still thriving today with both HSV and FPV vying for sales. HSV, with a more extensive range than Ford, delivered 3,666 high-performance Holden muscle cars in Australia and New Zealand in 2006 while FPV turned out 2,144 hot Falcons for Ford. The popular V8 Supercar touring car race series attracts large circuit crowds and many more TV viewers and this helps to keep the muscle car flame burning bright. Both Ford and Holden have extensive ranges covering sedans and utilities (pick-ups) from entry-level models up to almost USD \$100,000 super luxury models like HSV's Grange, based on the top-line Holden Caprice.

As we continue through 2007 the muscle car industry in Australia is alive and well. Recent prices for 1970s Australian muscle cars are in the AUS \$400,000—\$500,000 range (US \$356,000—US \$445,000, the AUS \$ being US \$0.89 as of October 22, 2007) and ensure the continuing popularity of the current ones that will become collectibles in the future. In fact, the most recent record price recorded for an Australian muscle car was AUS \$683,650 (including commission) (US \$608,720) for a 1971 Ford GT HO Phase III. The most popular auto magazine among car enthusiasts is *Australian Muscle Car* that covers current and past models in great detail. It has a very popular section that unearths famous Aussie muscle cars thought to have disappeared.

Making the Pace—Motor Pacing for Bicycle Races, 1896-1903

by David Manson

Introduction

Early motoring historians Charles Jarrott, H. O. Duncan, and L. Baudry de Saulnier all gave space to motor pacing of bicycle racing, but more recent motor historians rarely mention it. In my home city of Sydney, Australia, motor-paced cycle races were watched by crowds of up to 15,000 people, months before any car was seen on its streets. Motor pacing merits a study.

Many members of the Society of Automotive Historians must know the frustration of having a keen interest in a particular aspect of motor history, but living far away from the best source material. My major, almost sole source for this article has been the Cycling columns of the *Sydney Mail*, a weekly of quality directed towards rural readers. Much of the columnist's material must have been lifted from English cycling magazines—unattributed quotations below are from the *Mail*, but their true sources may be elsewhere.

Motor Pacing

The bicycle boom of the 1890s allowed bicycle and tire manufacturers to spend lavishly on publicity. Sponsorship of racing and record-breaking runs on short tracks was a major form of expenditure. The best of these tracks were concrete or asphalt-sealed and were located at fairgrounds or sports fields. Cycle racing drew huge crowds, and became the first truly international sport—when Danes and Americans race in Japan, that must be considered international.

“Pacing” is the use of an expert rider, or in longer events a relay of riders, to assist a star cyclist in races or record attempts to maintain his best working speed, by riding closely ahead of him. It remains a major part of cycling competition, as telecasts of the Tour de France demonstrate each year. Pacing increased the complication and expense of cycle racing—H. O. Duncan refers to Netherlands champion Mathieu Cordang being paced to second place in the Bordeaux—Paris classic of May 1897 by “170 men and four petroleum tricycles.” The most extreme example was possibly Charles Murphy's mile record behind a Long Island Railway train. Organizers were under pressure to find cheaper methods.

The first powered tandem cycles for pacing were devised by the Parisian cyclist and electrician Pignault, and launched around April of 1896. “It travelled at a very high rate,” said *Bicycling News* (referring to its British debut on January 7, 1897) “passing the triplets and quads with the greatest of ease, and there was nothing more extraordinary than to see this machine flying round the track, with no other noise than that caused by the running of the chain, the men sitting bolt upright, while Linton was straining every nerve to keep up with it.” There is an entertaining account of Pignault's experiment in Charles Jarrott's *Ten Years of Motors and Motor Racing*

(London: E. Grant Richards, 1906), pp. 67-71, Jarrott describing Pignault as “very excitable.” It would be good to have Pignault's side of the story. By July 1897, Alexandre Darracq, then France's premier cycle manufacturer, was experimenting with an electric triplet (three riders) which exceeded 37 mph over 10 miles. The idea of electric pacing was not given up easily; as late as May 1901 the Friedenau track in Berlin was trying trolley-style overhead wiring as a power source.

With these electrics came the de Dion gasoline tricycle. The trike was unsuitable for pacing—underpowered, unstable on banking, and carrying only a single rider—but its engine, particularly the enlarged 240 cc version, was just what pacing needed. Applied to a tandem bicycle, it could help two riders to maintain speeds of up to 40 mph for an hour, and new “world's records” were set almost weekly. It was just what the advertisers wanted.

For road-going motorcycles, all possible frame and engine layouts were tried, and conventional design was a long time coming. Pacing tandems found their “conventional” form straight away; the front rider took a speed posture, steering and pedaling, while the rear man sat as far back as could be arranged, doing three jobs to the best of his ability—pedaling, controlling the motor, and serving as a human windshield for the racing cyclist behind him. Both riders pedaled on the earliest machines, as the engines alone were too weak to counter weight and wind resistance, particularly for distances of five miles or more. The most convenient location for the motor was therefore directly in front of the rear rider. At first, the engine was mounted quite high, which may have aided balance and maneuverability, but as engines grew bigger, lower mountings were used. Otherwise the initial design was unchanged throughout the life of the tandem pacer, which ran from 1898 to late 1903.

Motor Pacing in Australia

The Dunlop Rubber Co. imported two motor tandems, which arrived in Melbourne on September 20, 1899, one being the machine which had paced J. Platt-Betts to a new set of British records over distances up to 10 miles. They were said to be of French make, 160 pounds in weight, 7-1/2 feet in overall length, and able to cover 125 miles on 5 quarts of gasoline at an average speed of 36 mph. Though originally claimed to as 2-1/4 h.p., they were later revealed to have only the 1-3/4 h.p. engines.

The parent Dunlop company in England had disbanded its pacing teams early in 1899—they had been using up to 20 riders per meeting, and accusations of dubious tactics by pacers were frequent. Surely Dunlop was hoping to reduce costs by using just a few motors. Australian experience suggests these economics might not have been realized. The outfits traveled widely, hired by clubs and promoters. Freight, supplies, trained

riders and mechanics had to be organized. An experienced executive, C. O. Sherwood, managed the operation. Misbehavior of a tandem could disrupt a program and upset both competitors and spectators. The most common problem was breaking of chains, which could be quickly replaced, but other problems were not unknown. "Motors, however," said the *Adelaide Advertiser* in October 1902, "are at times of uncertain temper, and just when O'Grady wanted to get the best pace out of his it failed to explode satisfactorily." At a carnival in Sydney on March 14, 1900, both machines broke down and only one could be repaired. The paced pursuit races were thrown into disarray and a programmed race between the tandems could not be held. This is the only reference to such a contest being programmed, though days later, an impromptu match was held in Melbourne after an Easter meeting had been disrupted by rain and high wind. This resulted in a win for Ossie Prowse and partner, at just over 32 miles per hour. The experiment was not repeated—the only other race between pacing tandems was staged at Goulburn, New South Wales, in November 1900 by visiting Americans Vaughan and Chapman. Their tandems, though also American, seem to have been de Dion powered.

In April 1900, Dunlop announced that it had investigated the latest de Dion tricycles but found them too fast for most Australian tracks; the company would instead re-engine its tandems with 2-1/2 h.p. de Dion engines and import a third example as a spare. But the country was suffering from drought and a trade depression, and even those modest plans seem to have fallen through. The tandem which paced Arthur Smyth to world records at Sydney on February 14, 1902, was a year or more out of date, its de Dion engine having the obsolete surface vaporizer carburetor (Fig. 1). Smyth was 46 years old, weighed

224 pounds, and rode the five miles in 9 minutes 41 1/5 seconds. The pacing crew wore Massey-Harris livery but the tandem probably belonged to Dunlop. Several Australian bicycle makers had tried building powered tandems, but there seems to be no record of success.

Towards the end of 1902, solo motorcycles with much more powerful engines began to reach Australia. The Massey-Harris agents landed a 6 h.p. Buchet-engined machine and arranged to lend it to Dunlop when required. "Plugger" Bill Martin returned from the USA with a 6 h.p. Soncin which could lap a 1/2-mile track at 60 mph. Visiting champions Thaddeus Robl of Germany and Piet Dickentman of the Netherlands were said to have brought six pacing machines with riders. They certainly brought two motor tandems, a tricycle, and a Benz car (Fig. 2). Cycling officials refused the team's offer of rides in the Benz, or bailed out after one lap, but when Robl called for three ladies from a Melbourne crowd as passengers, he was rushed. The Benz was later sold at a handsome profit.

In Europe, doubts were being expressed about the legitimacy of tandem pacing machines, as their wind-cheating advantage was carried to extremes; late in 1901, the French professional body banned them. Within two years, tandems fell out of use, replaced by conventional solo motorcycles of much higher power, with a roller frame at the rear to keep the cyclist at a safe fixed distance. These outfits had a long but eventually finite history.

Conclusion

Three conclusions may be drawn from this study. Seemingly a dead end, the tandem pacing motorcycle nevertheless introduced the internal combustion engine to a



Fig. 1 – Tandem machine motor-pacing Arthur Smyth on his Massey-Harris racer, beating the world's 5-mile standing start record, on the Sydney Agricultural Society's Track (*New South Wales Cyclist*, February 22, 1902, courtesy State Library of New South Wales).

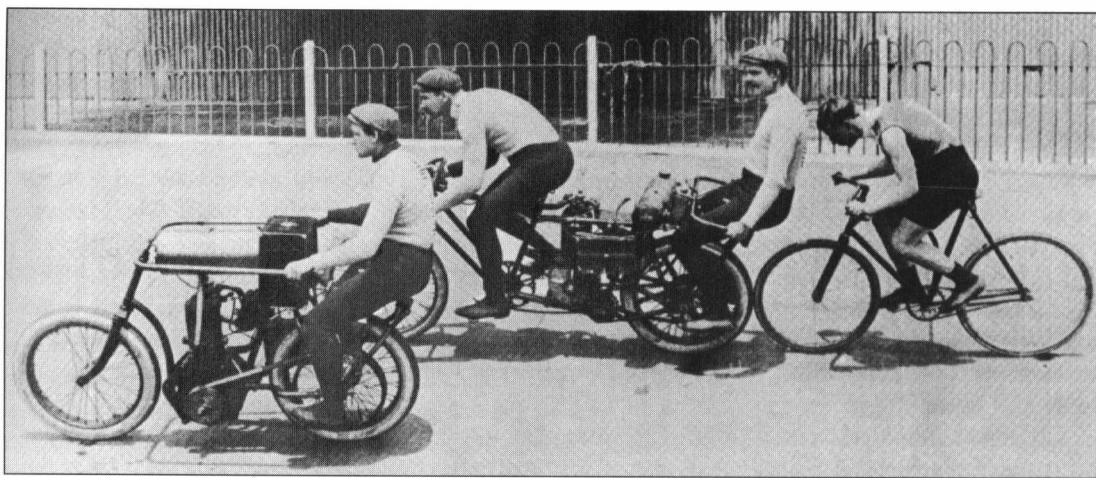


Fig. 2 – Piet Dickentman riding behind tandem pace, with solo motorcycle escort, at the Exhibition Ground, Melbourne, January 1904 (Garry Baker Collection).

large audience worldwide, and showed its problems along with its potential. Second, it was probably the first true commercial use of such engines on wheels, in a sphere where electric propulsion had failed and steam could never succeed. And, finally, pacing tandems may well have fixed the format of the motorcycle in its dominant, almost universal, form.

EDITOR'S NOTES, CORRECTION, AND LETTER TO THE EDITOR

continued from p. 2

own public relations consultancy. Previous to Ford, he held similar positions with automotive companies such as Repco Ltd. and the Victorian Automobile Chamber of Commerce. He was the public relations director of the Melbourne International Motor Show from 1974 to 1978, and from 1995 to 2004. He currently manages Ford Australia's Archives Centre on a part-time basis and publishes an Australian website, www.motornetnews.com.au. The article was peer-reviewed by his fellow Australian, *Paul Murrell*. A new member of SAH, Paul is a professional motoring and feature writer for such publications as *Wheel Spin*, *Australian Classic Car*, *SA Life* and *Highlife*. As a side note, a number of illustrations for the *Review* arrive as e-mail attachments. Adrian's were not immediately accessible and thanks are due to a new member, *Bill Kreiner* of New Jersey, who was able to access and transmit them to me.

Something of a companion piece is *David Manson's* "Making the Pace—Motor Pacing for Bicycle Races, 1896-1903," relating the use of motorized vehicles in early bicycle races, an aspect of motoring history that for me, at least, was previously unknown. Another Aussie, David describes himself as an amateur historian with a strong interest in early and local Australian topics. Paul Murrell did the review honors for this article as well.

South America is represented by *Alvaro Casal Tatlock's* "Elegant and Mysterious: Sr. Anafagasti's Dream." The Anafagasti was a car little known even in its heyday, and Alvaro has added to our knowledge of a small chapter of Argentine motor history. Alvaro's "Cars Made in Uruguay (1955-1977)" appeared in *Review* No. 33 (Fall 1998). Alvaro is curator of the Montevideo Automobile Museum. The article was reviewed by our only other member in South America, *Dr. Paulo Cesar Sandler*. Dr. Sandler has recently written books on the histories of Simca and DKW, both in their home countries and in his native Brazil.

Peter Engelhard returns to these pages (his "Fiat as a German Manufacturer" having appeared in the Summer 2003 issue (No. 40) with "A Summary of the Yugoslav Auto

Industry's Historic Evolution and its Economic Drivers Until the Crisis of the 1990s." Peter lives in Essen, Germany, where he is Senior Manager Economic and Energy Markets Research RWE AG. Before this, he was Manager, Automotive Market Research at Robert Bosch, GmbH in Stuttgart. He received his Ph.D. in Economics from Philipps University in Marburg, Germany where he lectured while preparing for his doctorate. Dr. Engelhard's article was not peer-reviewed.

Something new has been added: an automotive history crossword puzzle that *Phil Mathews* gave me in the History Tent at Hershey. I hope you like this imaginative submission. Finally, I've delved into the *Review* archives and thought you might like to see mockups of two covers that didn't make the final cut.

As always, the appearance and accuracy of this issue owes much to our sterling proofreaders *Pat Chappell* and *Kit Foster*, and to Mountain Laurel Press and Arena Press.

I am particularly grateful to all those who have acted as peer reviewers since we instituted this process with *Review* No. 40 (Summer 2003). With respect to this issue, two articles originally scheduled to appear have been deferred on the basis of peer review comments, pending fuller development of their topics. This ensures greater accuracy of automotive history which, after all, is a primary goal of the Society and each of its members.

Graham Orme-Bannister's The Aluminium Piston Story was one of the highlights of *Review* No. 47 (Spring 2007). Some comments on it which may interest you appeared in the September 2007 Newsletter of the Society of Automotive Historians in Britain. They were furnished by M. H. "Mike" Evans, Chairman of the Trustees of the W. O. Bentley Foundation.

On page 40, *Graham* relates that *W. O. Bentley* was commissioned as a Lieutenant in the Royal Naval Air Service in June 1915, and that his first call was on *E. W. Hives* of Rolls-Royce. Mr. Evans says that the date of this visit was most likely July 8. Immediately thereafter *Hives* wrote *Sir Henry Royce* relating that *Bentley* had visited in a D.F.P. "and mentioned that they had fitted

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Elegant and Mysterious: Sr. Anasagasti's Dream

by Alvaro Casal Tatlock

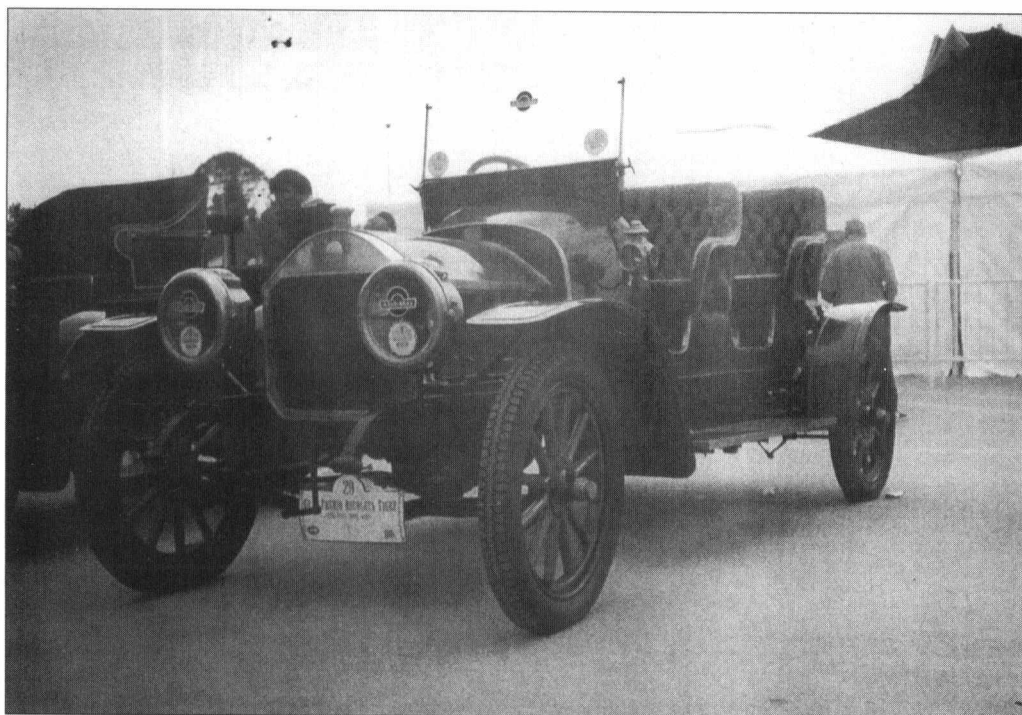


Fig. 1 – An Anasagasti restored in Argentina, which competes regularly in the annual Recoleta-Tigre event for vehicles made before 1914.

Early Days of the Automobile in Argentina

The Anasagasti was the first Argentine series-produced automobile built for sale to the public. At least two of these vehicles have survived. This is rather more than what was expected when the Anasagasti story started to be explored and my initial findings were published in *The Veteran and Vintage Magazine* over 30 years ago. In 1972 no complete examples seemed to exist. Only a handful of parts.

One of the survivors is owned by the Argentine Air Force and another one is the property of the Club de Automóviles Clásicos. Usually one or both of them take part in the annual Recoleta—Tigre Run in Buenos Aires. This is a historic event for motor vehicles built before 1918 (Fig. 1 and rear cover).

Apparently there were no cars at all in Argentina before 1895, when Sr. Dalmiro Varela Castex created quite a sensation in Buenos Aires with his recently-imported Benz victoria. Reactions ranged from the humorous to the outraged but this pioneer wasn't discouraged by all the fuss: a couple of years later he added a de Dion tricycle to his stable.

By 1898 several European makes started to come to Argentina. On June 4, 1899 two motor-tricyclists staged a 5-kilometer duel at Palermo and Sr. Francisco Radé's Peugeot won. Nine cars were imported during 1900 and 16 in 1901, while on November 16 of that year a ladies' charity organization staged a motor race in Buenos Aires.

Imports gradually increased from 28 cars in 1902 to 62 in 1903. In June, 1904, the Automovil Club Argentino was founded and drivers' licenses were issued in 1906, the first one going to Sr. Castex. And in 1907 Sr. Manuel Iglesias built a gasoline-engined automobile for his own use.

Horacio Anasagasti

Horacio Anasagasti was among these early enthusiasts. He became an engineer in 1902, having been a brilliant student at the University of Buenos Aires. Subsequently he attended a six-month technical course at the Isotta Fraschini factory in Milan. He returned home with a 40 h.p. Isotta fitted with a sporting two-seater body made to his own design and also the distributorship of the marque in Argentina.

In 1908 he went into partnership with R. Travers and J. Galvez, and the three opened a

garage at Arenales 1086 in Buenos Aires. They handled Grégoire and Gobron-Brillié cars as well as Isotta Fraschinis, while other products sold were Stepney rims, Hutchinson tires, and Stentor exhaust whistles. Anasagasti also found time to form the national Aero Club, take a keen interest in ballooning and act as vice-president of the Argentine Scientific Society. His first balloon ascent was in July 1908. On January 24, 1909, he made his first ascent in his own balloon, the French-built *Patriota*. He was accompanied by Jorge Newbery.

Cars, however, remained his first love; he wrote technical articles for a local magazine and raced his Isotta, with which he won a trophy at Mar del Plata in 1908.

In December 1909 he resigned from the garage business and set up in association with Luis J. Velarde. Initially the new firm operated from the old premises but then transferred to a new brick-fronted building at 1670 Alvear Avenue (today it is Libertador Avenue).

Argentine auto historian Jorge Augé Bacqué (who generously assisted me with this article) notes that today it would seem highly improbable that a car factory could have been operating in what is now the most elegant avenue in Buenos Aires. However, that was the place where Horacio Anasagasti & Co. got started, at first making bronze and aluminum castings, though already they referred to themselves as manufacturers of tractors and automobiles. This was the first

Argentine industry where the employees worked only eight hours a day and wages were among the highest in this country's industry. Sr. Anasagasti offered other amenities such as a personal electric fan for each worker and a large glass bowl from which they could help themselves to refreshing fruit juice.

Numerous skilled European immigrants were arriving in South America in those days and Anasagasti hired some of them to complete his 20-man workforce. Several had some automobile-making experience and a number of components were fabricated. Among them were a complete 4-cylinder engine and gearbox. These components were sectioned and fitted with glass panels for display purposes. Argentina was celebrating its first centenary and this engine and transmission as well as other items went on display at the monumental commemorative Buenos Aires International Rail and Land Transport Exhibition held in a covered area of 90,000 square meters. They won a "Grand Prize Diploma."

Argentina was prosperous then and this transport extravaganza included a Renard Road Train, the famous Peking-Paris Itala and Hémerly's "Blitzen" Benz which had recently covered itself with glory at Brooklands. The local Benz agents Macchi and Pozzi planned to enter it in a big race which never took place. Its only outing was on the outskirts of Buenos Aires, where Francisco Radé pushed it up to 95 mph. on a dusty and ill-surfaced road. Quite a performance!

The exhibition ran from July 17 to November 25, but before it was over an elated Anasagasti was off to Europe aboard the "Principessa Mafalda" liner. In Paris he explained his plans for manufacturing cars in Argentina, first with imported engines and later with power units of local make. The Ballot brothers agreed to ship several of their 12 and 15 h.p. engines and also a set of wooden patterns of castings which Anasagasti would try to reproduce at home.

He tried his luck with other French firms. Malicet et Blin undertook to supply bolts, roller bearings, complete chassis with wheels, axles, gearboxes, steering, differentials and other parts. Hele-Shaw of France contracted to supply clutches; Moreux would produce radiators to Anasagasti's design, as would Mégevet of Geneva. Horacio Anasagasti planned to get his lamps from Blériot or Ducellier. On his return to Buenos Aires in May 1911 he found quite a few of the items from his "shopping-list" awaiting him.

The Anasagasti Automobile

Although the Alvear workshop had by now a good repairing business, servicing among others, the presidential car, it now turned promptly to car production. A few months later the first Anasagasti automobile was born. It had a Ballot engine, Bosch magneto ignition and Claudel carburetor. Only the body and a few other minor parts were of local origin. Nevertheless the workshop tried gradually to increase the local content in subsequent vehicles.

This was difficult. Many years later some of the old hands still remembered the great cost and trouble attendant on the production of cylinder blocks. Of 20 that had been initially cast only eight proved to be non-porous and serviceable. Crankshafts, connecting rods, crankcases, gearboxes, differentials, drive-shafts, springs and steering boxes were also

made. Franco Villasis made the Anasagasti-designed radiators. Anasagasti also designed a pressure lubrication system for the Ballot engines and these were duly converted.

Ing. Horacio Anasagasti was determined to transform his scissors-and-paste operations into a truly Argentine car. He felt that it would be important to take part in competition events in order to demonstrate his cars. *El jefe* himself handled the 12 h.p. prototype in the Rosario-Cordoba-Rosario Rally of September 17, 1911, run by the Sociedad Sportiva Rosario. He was accompanied by Francisco Roubins as mechanic and Pedro Rova as passenger. At the halfway mark the car retired with mechanical trouble.

Production plans had not been announced but a month later the company started advertising with references to its 1910 centenary Diploma as well as promoting an ambitious program of chassis manufacture, coachbuilding and repair work. By the following January something more concrete was forthcoming in the shape of an announcement that the Argentine-made Anasagasti cars would make their appearance "in the near future," fitted with 4-cylinder Ballot engines rated at 12 h.p. and 15 h.p. Silver plated medals, depicting a car on one side and a radiator on the other, were distributed to the *aficionados*. Prices started at 6,600 pesos for a 12 h.p. with phaeton or landaulet body. Later on Anasagasti dropped the Ballot engine in favor of the 4-cylinder T-head Picker-Janvier unit, available in 2,982 c.c. or 3,610 c.c. sizes.

The Anasagasti in Competition

Nineteen-twelve saw a bold and costly move: going to Europe where Horacio Anasagasti competed in the July Paris-Madrid event with one of his 12 h.p. models, making a trouble-free run. He presented this car to Alfonso XIII, King of Spain and motor enthusiast (this car disappeared in the 1930s during the Spanish Civil War).

There followed a brief and hectic activity in European events. Ing. Brown competed with a 15 h.p. model in the September San Sebastian Rally. He started from Boulogne-sur-Mer and finished without penalty as well as taking fifth place in the ensuing *concours d'élégance*.

On September 26th another Anasagasti finished fourth in its class at the Mont Ullain hill-climb. Out of a field of 116 starters it placed 17th in the general classification. In October, Guyot recorded 97.3 kph at the "Cote de Guillon," scoring a class win as well as second in the *concours de rendement*. A French magazine described these Argentine cars as "the elegant and mysterious South American Anasagastis."

Soon afterwards Horacio Anasagasti returned home to reap the benefits of his European exploits. He gained some good publicity by presenting a car to the newly-created Academy of Military Aviation. This car was used for a time for airport duty by aviation pioneer Jorge Newbery, and subsequently it was fitted with a Hucks-type starter and used accordingly until 1920 if not longer. Then, for many years the car was thought lost but then it reappeared and is now once again in running order as mentioned above.

While sales were promoted, Horacio Anasagasti took one of his 12 h.p. cars to Uruguay and ran it in a 2,000 kilometer event (Montevideo-Salto-Montevideo), which was this country's

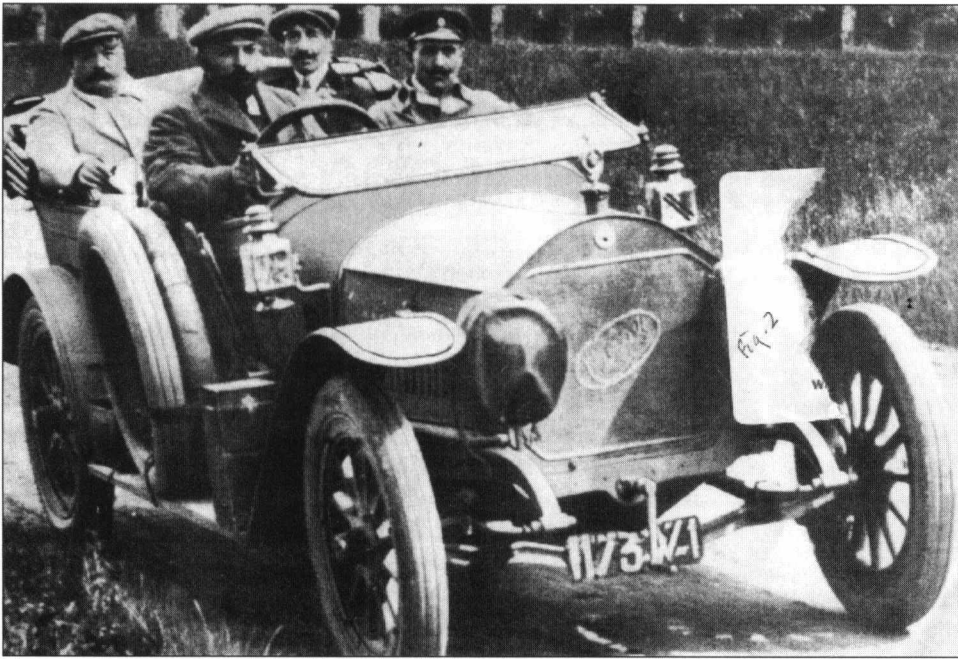


Fig. 1 – An Anasagasti restored in Argentina, which competes regularly in the annual Recoleta-Tigre event for vehicles made before 1914.

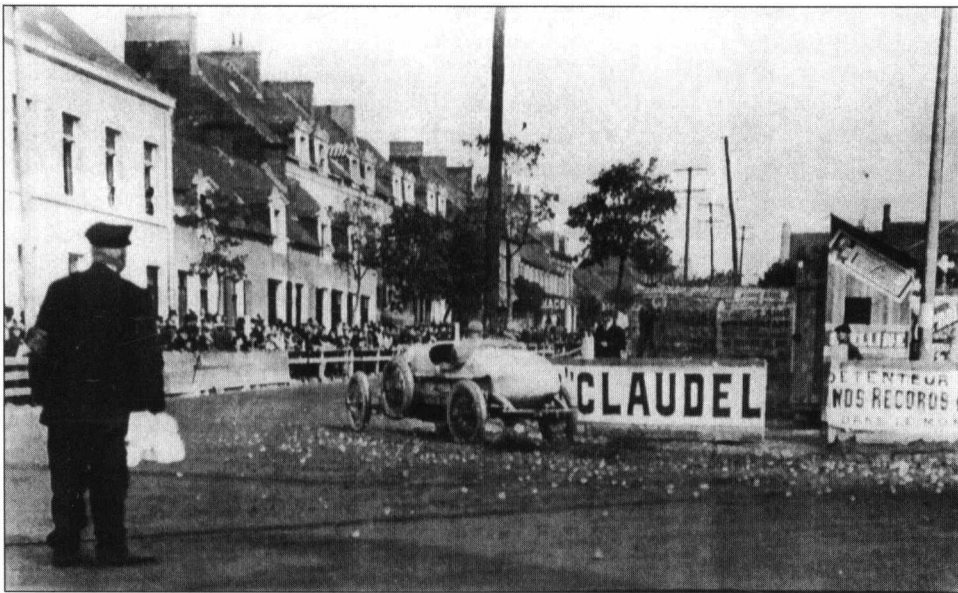


Fig. 3 – A sporting-bodied Anasagasti driven by the Marquis d'Avaray, competing in France.

first motor competition. It was run over appalling roads in January 1913. Anasagasti's co-driver was P. Valevilla. They won their class and finished fourth overall.

Two months later Anasagastis were once again trying their luck in France. Three sports-bodied 15 h.p. machines were entered for the 12-day Tour de France, driven by Brown, d'Avaray and Repousseau. Brown and d'Avaray tied for the first place with two other competitors. Repousseau retired (Fig. 2).

D'Avaray ran a blue and white Anasagasti in the 1913 *Coupe de l'Auto* but his seventh place was also last. Apparently the car was mockingly nicknamed Angostura Bitters by some drivers (Fig. 3).

Since Horacio Anasagasti believed that racing improved the breed and sales no matter how much it cost, all the advertisements he published in the Argentinian press during 1913 and 1914 stressed the cars' racing background. But sales were far from spectacular.

Nonetheless he struggled on. Two 15 h.p. cars supported the Cordoba Sporting Week in March 1914, Vicente Madero's machine winning the amateur class and Pagetti taking third place in the professional category. The handwriting, however, was on the wall. Anasagasti's determination to keep sales going led him to offer generous credit terms and he did not always concern himself as to whether the customers either could or would pay up, despite a generous installment plan.

Too many of them did not. And when war broke out in Europe the flow of parts from France came to an end. Somewhere around the middle of 1915 the first series-produced South American automobile became a lost cause. Some sources estimate that 30-odd cars had been made but others feel several hundred came out of the Alvear Avenue factory. The firm was still quoted in the June-July issue of the Touring Club Argentino's magazine but Ing. Anasagasti closed it down in 1916. He was then 35 years old.

The competition swansong came in the "Second Flying Kilometre Competition" of Argentina on November 25, 1915. Ricardo Zuberbuhler's 3,610 c.c. machine covered the distance in 34 5/8 seconds, taking second overall and first in the 4-litre class.

Conclusion

Ing. Anasagasti retained his interest in motoring and aviation. He also helped plan Argentina's Southern National Park. But he made no further attempts to build cars and died at his estate in San Carlos de Bariloche on April 8, 1932.

A few Anasagastis earned their keep for many years as taxis but they are now only a dim memory. Others were lost, but fortunately two are now alive and well and, who knows, others may be still sleeping in Argentina's hinterland.

Anasagasti's quixotic experience was short-lived but he showed the way. He demonstrated that South American auto production was possible and undoubtedly he influenced others who paved the way for what is now an important industry not only in Argentina but in other countries of the area as well.

A Summary of the Yugoslav Auto Industry's Historic Evolution and its Economic Drivers Until the Crisis of the 1990s

by Peter Englehard

Introduction

The history of the automotive industry in Yugoslavia is not well documented. However, because Yugoslav manufacturers played not only an important role in the country's motorization after World War II but also aimed to play a European (if not a world-wide) role in the 1970s and 1980s, there is reason enough to illuminate this chapter of automotive history in more detail.

This article concentrates on the Yugoslav passenger car production though there has also been some significant manufacture of trucks. Furthermore, it covers the historic time span until the decay of the Socialist Federal Republic of Yugoslavia in the late 1980s and its final dissolution in the early 1990s. Figure 1 illustrates that at this time the Yugoslav passenger car industry consisted of three major players: Zastava, located at Kragujevac in Serbia, accounted for more than 60 percent of the country's total passenger car output of almost 290,000 units. REVOZ, based in the Slovenian city of Novo Mesto, contributed almost 25 percent, and TAS of Sarajevo (today called Volkswagen Sarajevo), Bosnia and Herzegovina, a further 10 percent.

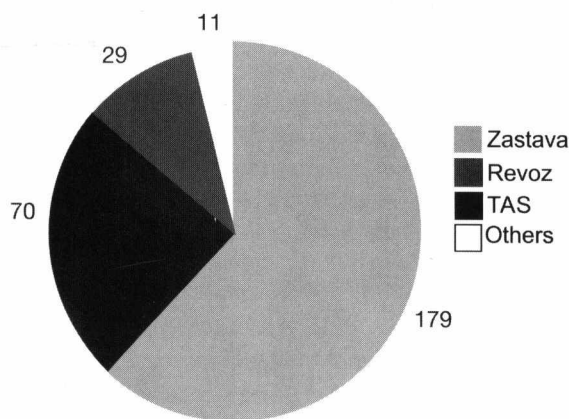


Figure 1: Break-down of Yugoslav passenger car production in 1990 by manufacturer [1,000 units]

Source: Engelhard, "Zastava: a passenger car manufacturer between east and west," in *Automotive Emerging Markets*, No. 61 (2002).

This article is structured as follows: First, we briefly outline the evolution of the general economic framework which set the historic scene for the Yugoslav passenger car industry. Then we sketch the specific developments in the three Yugoslav republics which set up the manufacture of cars that which shall be our focus. Based on this, we will identify the major economic drivers behind the automotive industry's evolution in Yugoslavia.¹

I. A brief summary of Yugoslav economic history

Before World War II, Yugoslavia was an utterly backward agrarian country. Seventy-seven percent of the population were employed in the agricultural sector; 40 percent of all Yugoslavs were illiterate. The industrial sector was underdeveloped and its structure typical for a peripheral European economy in the early 20th century: Approximately half of the Yugoslav economy was owned by foreign investors, the remaining half being dominated by the incumbent Royal family and its favorites. Leeway for indigenous industrial entrepreneurship was extremely limited mainly due to insufficient access to financial and human capital. In addition to these weak economic fundamentals, some 40 percent of the country's industry had been destroyed or severely damaged during World War II with 3.5 million of 15 million Yugoslavs left homeless.

Industrialization after World War II

The struggle for liberation from German and Italian occupation during World War II brought the Communist partisan movement under Josip Broz, alias Tito, to power in 1945. He established a socialist and federative state comprising the republics of Serbia, Montenegro, Macedonia, Bosnia and Herzegovina, Croatia and Slovenia. Soon after, the new regime adopted a program of forced industrialization for the desperate country which was inspired by Stalin's Soviet Union. In 1946, key economic sectors such as manufacturing, mining, logistics and banking came under direct state ownership. Based on a vision for an industrialized and developed Yugoslavia, a first five-year economic plan was adopted in 1947. Centralized and collectivist planning remained the dominant principle for coordinating the economy until 1951.²

Meanwhile, Yugoslavia's political leadership was able to throw off Soviet hegemony and to embark on a course of neutrality between the Communist Bloc and the Western World. This was also associated with a change in Yugoslav economic policy. After 1951, economic planning had been significantly decentralized. While state ownership was still dominant, centralized detail planning was abandoned in favor of broad scale planning of the general proportions of the economy. Single companies attained a substantial freedom for individual volume and price setting while decision making was largely delegated to councils comprising the directorate and delegates of the labor force. In the early post war years, Yugoslavia's external trade had been heavily biased towards the Socialist Bloc, which accounted for 90 percent of its imports and 56 percent of its exports (mid 1948). However, Tito's political emancipation from his former political mentor Stalin provoked most of Yugoslavia's trade partners which remained under Soviet hegemony to cut off trade

relations making a more Western orientation of economic relations inevitable.³

Opening for foreign trade and foreign investment

In 1961, Yugoslavia's socio-economic development entered a third phase which, notwithstanding occasional modifications, e.g. through the constitution of 1974, lasted until the dissolution of the federal state in 1991. Economic development was now based on decentralized market coordination, social ownership of enterprises and corporatist negotiations with governmental organizations. Furthermore, the hitherto closed economy had been opened for external trade during the 1960s. Laws and laws permitting joint ventures with Western companies date back to 1967 when Yugoslavia became the first country in Southeastern Europe to allow direct foreign investment inside its borders by Westerners.⁴ The still collectivist institutional setting of the Yugoslav economy by and large was less efficient than the capitalist economies of the Western world.⁵ It created several cyclical, ill proportioned ups and downs of economic development and lead into the endemic crisis of the 1980s.⁶ Nevertheless, for the first time Yugoslavia was able to shake off the burden of extreme poverty and underdevelopment during the postwar era. The standard of living improved substantially in the 1960s and 1970s. It caught up with the most developed Eastern European countries and occasionally even approached Western European levels in the most advanced parts of the country.

The path of motorization

Against this backdrop, car ownership (sparse before this time) increased during the 1960s and 1970s due to an improving standard of living which was driven by the growth of the domestic economy and the incomes of Yugoslav expatriates in Germany and France who could transfer their earnings back to Yugoslavia with comparative ease. It is reported that a substantial number of Yugoslavs sought some sort of temporary employment abroad for the sole purpose of acquiring a car back home.⁷

Table 1 contains data on car ownership measured by passenger car density, i.e. the number of inhabitants per passenger car in operation at the beginning of the respective year, for Yugoslavia and selected Eastern European and Western countries. The data set illustrates the rapid increase in motorization. It was mainly driven by the private sector which towards the end of the 1970s owned 90 percent of all motor vehicles in operation.⁸

**Table 1: Passenger car density
(Inhabitants per passenger car in operation)**

	<u>1960</u>	<u>1970</u>	<u>1980</u>	<u>1990</u>
Yugoslavia	439	36	9.7	7.1
USA	3.0	2.3	1.9	1.9
Western Germany	15	4.6	2.7	2.6
Eastern Germany	124	16	7.0	3.9
Czechoslovakia	85	20	8.3	5.0
Poland	377	86	19	7.9
USSR	346	159	35	18

Source: *Verband der Automobilindustrie (VDA)*, Polk Marketing Systems

In the first place, the documented increase in Yugoslav car ownership had been helped by the domestic production of passenger cars, though imported cars gained significance in the 1960s and conquered a market share of approximately 50 percent by the end of the decade. Three Yugoslav republics, namely Serbia, Slovenia, and Bosnia and Herzegovina, independently established production facilities for passenger cars in the 1950s, 1960s and 1970s. The largest of these enterprises was Serbia's Crvena Zastava ("Red Flag").

II. The passenger car industry of Serbia

Yugoslav automotive manufacturing has its origins in the production of weaponry, mainly serving the needs of domestic armed forces. Zastava is the oldest industrial entity in Serbia. Supported by French experts, it was established in 1853 under the designation of "Topolivnica" (Artillery Works) by the Serbian government, near the city of Kragujevac, 140 km south of Belgrade. Topolivnica was developed into a major producer of weaponry in the Balkans. In 1904 it operated under the name of Vojnotehnicki Zavod (Institute for Military Technology) when a special workshop was furnished for the repair and maintenance of motor vehicles. Soon, Vojnotehnicki Zavod began to manufacturing spare parts on its own. From such activities a low volume assembly of army trucks had evolved by the end of the 1930s. However, total output of those Chevrolet-branded vehicles did not surpass 500 units until 1941.

Cooperation with Fiat

In late 1944, the company was taken over by communist forces and reorganized into several distinct branches. Besides the manufacture of armaments and machinery, the assembly of trucks resumed. In the early 1950s, a modest assembly of Willys-Overland Jeeps was established by the industrial conglomerate which then was called Crvena Zastava. However, the assembly of Jeeps soon ended when the licensing agreement between Willys-Overland and Crvena Zastava was not extended. Instead, under the new principle of worker's self-management⁹ the workers of Crvena Zastava collectively decided on August 6, 1953 that a proportion of their incomes should be dedicated to investing in the manufacture of passenger cars. The real circumstances of this decision surely are subject to further research since the involvement of the workers' councils in business decision making remained more or less nominal at least throughout the 1950s.¹⁰ Nevertheless, passenger car production began in 1954 under a Fiat license. The first Zastavas were mid-sized sedans called 1300, 1400, and 1900 and constituted technical siblings of respective Fiat models with the same designations. The 1300 remained in production for over 40 years. It was an equivalent to the 1961 Fiat Milletrecento, which at that time represented the state of the art in automotive technology.¹¹

Mass production and increasing exports

Mass production of passenger cars in Yugoslavia began in the early 1960s with the introduction of the small Zastava 750, a variant of the contemporary Fiat 600D (Fig. 2). Equipped with a 25 b.h.p. 4-cylinder engine, the sturdy car was well adapted to the needs of a newly industrializing but nevertheless largely



Fig. 2 – 1963 Zastava 750 (from the editor's collection).



Fig. 3 – 1979 Zastava 1100 S (from the editor's collection).

agrarian country. Essentially unchanged the Zastava 750 remained in production until 1981.

After the legal framework for joint ventures with foreign manufacturers had been established in 1967, Zastava was the

first Yugoslav company to enter such an arrangement in 1968. Italian company Fiat contributed US \$5,000,000 for an 11 percent share of Zastava's capital. In the following year, total capital in the joint venture went up to US \$112 million, and Fiat's share increased to about 20 percent at US \$22 million.¹²

The joint venture with Fiat enabled Crvena Zastava to position itself on Western European markets for the first time. Hitherto, the company's business focus was on supplying the domestic market, now it could use the Fiat sales channel and the infusion of new technology from its partner to gain access to the export market. Despite occasional problems with product quality and output quantities rising far too slowly to meet domestic and export demand at the same time, this was a highly welcome opportunity for Yugoslavia to improve the domestic industry's technical base and at

the same time to alleviate the country's notorious shortage of hard and convertible currency. Furthermore, the increasingly close ties with Fiat also drew Crvena Zastava into programs for



Fig. 4 – 1985 Yugo GV, as sold in the United States (from the editor’s collection).



Fig. 5 – 1988 Yugo Florida (from the editor’s collection).

supplying parts and autos to Poland and setting up a Fiat factory in Russia.¹³

In the early 1970s, license agreements with Fiat were renewed. The completely new Zastava 101 emerged from the joint venture in 1971. Branded as Zastava Scala for some export markets, it was based on the Fiat 128, but came as a hatchback—a body style missing in the Fiat line-up at that time (Fig. 3). The originally planned 128 hatchback had been cancelled by Fiat because of insufficient profitability. The car was sold in major European markets either through its own dealerships or through the Fiat networks to supplement the Fiat 128 product range although the poor quality of the car always remained a concern. Despite its ubiquitous quality problems the 101 generated substantial demand on the domestic market. Tight supply compared to a steadily rising demand for cars, a

favorable purchase price and moderate costs of operation and maintenance all contributed to a somewhat forced acceptance in the market place. Nevertheless, Crvena Zastava managed to bring down delivery times for a new car from several years in the 1960s to approximately one month in the early 1970s. In 1967, the number of imported cars and CKD kits assembled by other Yugoslav enterprises (51,780 units) surpassed domestic production at the now fully integrated Crvena Zastava plant for the first time. Despite this fact, Crvena Zastava was able to grow further and to remain profitable which testifies to a sufficient degree of operational efficiency.¹⁴

Passenger car output at Zastava increased steadily over the 1970s; the total number of Zastava 750s reached the 1,000,000 mark shortly before the car was dropped in 1981. In the mid-1970s, Zastava decided to develop an all-new model code-

named 102. It was introduced to the public in 1981 as the Yugo 45. Again, the Yugo 45, which was called “Koral” in some markets, was developed in close cooperation with Fiat under the established joint venture. Technically, the Yugo closely resembled the Fiat 127 but came with a distinct body shell. With the new Yugo 45, Crvena Zastava also approached exports on an even larger scale. In the mid 1980s it was exported for sale in the United States of America (Fig. 4). Due to its extra-ordinarily low price, it had some initial success in the U.S. However, it soon discredited itself because of its perceived poor quality. Crvena Zastava retreated from the U.S. in 1991.

Zastava's decay

In 1987-88 a further new model was presented to the public called the Yugo Florida (Fig. 5). The Florida sported a body styled by Giugiaro and technically resembled the Fiat Tipo. However, Zastava could hardly profit from the Florida. Political and economic conditions began to erode rapidly in disintegrating Yugoslavia and severely interfered with its launch.¹⁵ In Serbia and the other former republics of Yugoslavia, civil war raged in the early 1990s. Also sanctions were imposed on Serbia's external trade by the United Nations and the European Union from 1992 to 1995 and from 1998 to 2000, the year that the ultranationalist regime of Slobodan Milošević markets of Slovenia and Macedonia were accessible for Zastava in those times. Finally, the Kragujevac plant was bombed in the 1999 NATO air raids. Although all trade restrictions had been lifted after 2000, Zastava has been suffering ever since from low demand for its now outdated product line-up, low productivity and lack of investment. Only step-by-step it has been approaching again traditional export markets in the Balkans and in the Middle East. However, in 2002 a new investor, Nucarco, stepped in¹⁶ and the product portfolio has been revamped again with Fiat's help.

III. The passenger car industry of Slovenia

The historical roots of the Slovenian manufacturer REVOZ can be traced back to 1954, when ‘Industrija motornih vozil’ (IMV) was established near the city of Novo Mesto. The company first began to assemble a small van under a license from the German Auto Union using the name plate “Donau.”¹⁷ Beginning in the summer of 1967, it cooperated with British Motor Holdings to produce Austin passenger cars.¹⁸ The latter arrangement was replaced by a new cooperation with Renault which became effective in 1972.

Cooperation with Renault

Renault had been present in Yugoslavia as an importer since 1960. In 1969, it executed an industrial and commercial cooperation contract with the Litostroj company (which today is a respected manufacturer of water turbines) for the import and assembly of Renault 4, Renault 6 and Renault 16 models.¹⁹ However, in 1972 Renault made a new arrangement with IMV under which IMV was to build the Renault 4, Renault 12, Renault 18, Renault 5 and the Renault Clio. Since 1988 IMV's passenger car business has been operated by its REVOZ (REnault VOZila) subsidiary of which Renault acquired a 54 percent majority in 1991. Renault increased its ownership in

2001 to 66.7 percent and finally took full ownership in 2004.²⁰ IMV/REVOZ's output record is summarized in Table 2.

Table 2: Output attained by IMV/REVOZ under cooperation with Renault (as of the end of 2006)

<u>Model</u>	<u>Period of Production</u>	<u>Total Output [units]</u>
Renault 4	1973-1992	575,824
Renault 12	1974-1977	7,278
Renault 16	1974-1976	342
Renault 18	1980-1987	18,714
Renault 5	1989-1996	295,663
Renault Clio I	1993-1998	299,831
Renault Clio II	Since 1998	1,141,313
Total production		2,338,965

Source: Renault

Renault's initial motivation for establishing a joint venture with a domestic player was to gain access to an emerging market of considerable size as Yugoslavia clearly was in the 1970s. This motive was still underlying the takeover of 1991. However, with the dissolution of Yugoslavia since the late 1980s a change in business objectives became inevitable. Slovenia certainly was among the most advanced car markets in the region with a comparatively high degree of purchasing power. Nevertheless, the limited total size of the domestic Slovenian market did not bear a stand-alone passenger car production while the rest of Yugoslavia fell prey to civil war in the early 1990s. Renault had to reorient REVOZ towards export markets. This basically changed the type of the company's foreign direct investment from seeking market access into seeking cost advantages. In spite of losing the Yugoslav market, Renault obviously assessed REVOZ as being competitive enough to be fully integrated into Renault's Pan-European production system.²¹

Assembly of Citroën cars

However, IMV/REVOZ was not Slovenia's only automotive venture. TOMOS (Tovarna Motornih Vozil), located in the city of Koper, is a company which has been specializing until today in the manufacture of small motorcycles. In 1960 TOMOS also began to assemble the Citroën 2CV from imported parts. Later, the company diversified its product line-up by offering the Citroën Dyane, GS, and the small delivery van Citroën 25. However, output volume and productivity of TOMOS's automotive branch are reported to have been notoriously low.²² Since 1972 TOMOS has been concentrating again on motorcycles. Motor vehicle assembly was shifted to Iskra Avtoelektrika²³ which maintained it until the late 1970s under the CIMOS brand. Today, CIMOS is a major Slovenian supplier of parts to the European automotive industry.

IV. The automotive industry of Bosnia and Herzegovina

There has been a passenger car industry in Bosnia and Herzegovina since 1965, when the local manufacturer Pretis (Preduzeće Tito Sarajevo), which also had operated the manufacture of NSU motorcycles in Yugoslavia, started a local assembly of German NSU compact cars in Vogošća, a northern suburb of Sarajevo. The NSU Pretis 1000 remained in

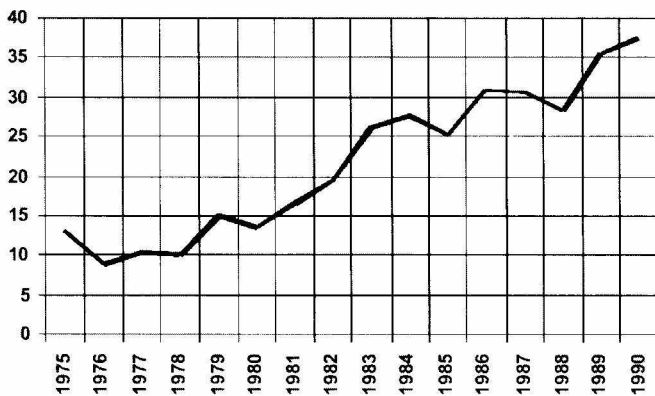
production until 1970. Output volumes remained comparatively low (adding up to a total of only 10,000 to 15,000 units over five years) and due to insufficient economies of scale the venture was abandoned in 1970.²⁴

Joint venture with Volkswagen

Only two years later a new local assembly of passenger cars was set up in Vogošća. The local industrial conglomerate UNIS, to which also Pretis had belonged, entered an agreement with Volkswagen (to which NSU had belonged since 1968) to establish the Tvoronica Automobila Sarajevo (TAS) joint venture. Prior to this, Volkswagen assembled vehicles at the Inex factory in Belgrade, whose annual output of 1,000 to 2,000 vehicles was deemed meager. However, in 1969 UNIS offered facilities to Volkswagen which were estimated to allow for an annual output of at least 10,000 units. Volkswagen owned 49 percent of the joint venture and UNIS 51 percent.²⁵ Starting in 1972, the plant first assembled Volkswagen Beetles (1200, 1300 and 1303) from imported CKD kits with local content being significantly increased in 1973. Until 1976 TAS had built 31,667 Beetles which were destined for sale to domestic customers. Then, TAS assumed the manufacture of Volkswagen Golf I and II, Jetta and the small pick-up Caddy. The Caddy was TAS's only genuine product and exported to many foreign countries through Volkswagen's sales channels.

Figure 6 depicts the historic evolution of production volumes at the TAS/Volkswagen plant between 1974 and 1990.

Figure 6: Historic evolution of annual output volumes at the TAS/Volkswagen plant [1,000 units]



Source: Volkswagen

It shows that annual output largely remained within the originally envisaged scope of 10,000 units as long as it was more or less exclusively earmarked for Yugoslavia's domestic market—which was basically the case throughout the 1970s. In the 1980s, however, output capacities were significantly increased through investments made by Volkswagen despite worsening overall economic conditions in Yugoslavia. Golf and Jetta cars produced in Vogošća were largely destined for the domestic market which, in good years, absorbed slightly less than 20,000 units and in bad years only slightly more than 10,000 units. Roughly half of the plant's output throughout

the 1980s consisted of the Volkswagen Caddy and was almost entirely destined for export (according to Volkswagen annual reports).

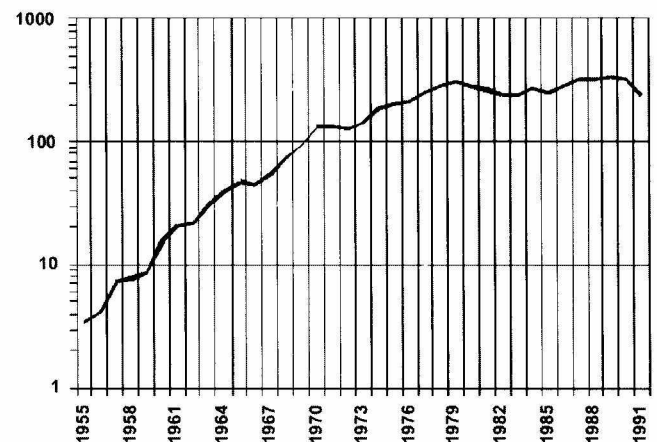
Production stopped when the war between the Bosnian ethnicities reached Sarajevo in 1992. At that time the company's accumulated output record stood at approximately 350,000 vehicles. The plant was severely damaged and remained in limbo for six years. Since August 1998 passenger car production has resumed under the name of Volkswagen Sarajevo d.o.o., which is a joint venture of Volkswagen (58 percent) and the Slovenian company Prevent (42 percent).

V. The drivers of Yugoslav passenger car manufacturing

It is a general historic feature of the Yugoslav passenger car industry that there has never been a truly indigenous manufacturer. Instead, all of them relied either on the licensing of foreign technology to local enterprises or on joint ventures with major foreign manufacturers. A second historic feature of the Yugoslav passenger car industry: it is basically a post-World War II story.

Thus, the evolution of a domestic automotive sector of any significant scale gained pace only with a delay of some 40 to 50 years compared to the industrial countries of the Western World. Consequently, the question has been occasionally raised whether setting up a domestic passenger car production had been promising any macroeconomic benefits at all for Yugoslavia. Figure 7 shows the evolution of Yugoslavia's motor vehicle production from 1955 to 1991.

Figure 7: Evolution of Yugoslavia's motor vehicle production from 1955 to 1991 [1,000 units, logarithmic scale]



Source: author's database

The strategy of import substitution

Total annual output remained below 100,000 units throughout the 1960s and hardly ever reached a level of more than 300,000 units except occasionally in the late 1990s. However, various studies found that as early as in the 1960s the minimum efficient scale of auto production in a European plant was reached at an annual output somewhere between 100,000 to 300,000 units for fully integrated plants and at some 25,000

units for assembly of CKD kits. Against this backdrop, Yugoslavia might have been better off by importing cars and paying by exports of goods which could be produced at a comparative advantage.²⁶

On the other hand it must be kept in mind that historic paths in the evolution of industrial sectors did not always follow the theory of comparative advantages. For example, the European automotive industry has always been subject to industrial policy and political intervention. This holds particularly true for the Central and Southeastern European countries which embarked on strategy of accelerated industrial development after World War II.

Setting up a domestic passenger car industry was often considered to be an issue of national pride and Socialist economic progress. In the later years of the European Socialist experiment the Communist “puritanism” of the early postwar year gave way to a kind of “Welfare Socialism” in the more advanced countries. Producing passenger cars at home was also means of providing a long desired product to the population while vehicle imports could not be financed due to the endemic shortage of hard currency. Moreover, producing passenger cars and exporting them at moderate prices to Western countries was a means to take in more hard currencies which were needed to buy equipment and machinery from “capitalists” in order to build up the Socialist industry. Last but not least it must be kept in mind that the 1950s and 1960s were a period in which high hopes were associated with the theory and strategy of import substitution. Import substitution meant to intentionally decrease imports of advanced technology goods and to increase their domestic production even if the latter was associated with a comparative disadvantage for a certain time. The rationale of this strategy aimed at attaining long term benefits from industrialization at the sake of certain short term gains from foreign trade.²⁷ The automotive industry was a preferred field of action for import substitution strategists not only in Socialist Eastern Europe but in newly industrializing countries all over the world, e.g. in Latin America, where it gave decisive impulse to establish this sector firmly in the region’s portfolio of industries.²⁸

Industrial particularism

In the case of Yugoslavia, the drive to produce its own automobiles must also be analyzed in the light of the country’s particular historic and political conditions. The creation of Yugoslavia after 1918—as a common state for all “Southern Slavs” under Serbia’s implicit lead—has never been undisputed especially in Slovenia, Croatia, and Bosnia and Herzegovina. Particularism and a desire for greater autonomy in these republics still played a role when Yugoslavia had become a Socialist Federation after World War II²⁹ and finally contributed substantially to the Federation’s violent dissolution after 1990.³⁰

Hence, initiatives in Slovenia and Bosnia and Herzegovina to set up their own automotive assemblies in the first instance reflected a desire to increase and diversify local manufacturing as well as participation in a growing domestic market for passenger cars. Respective initiatives were also welcomed among the public since the dominance of Zastava in the domestic market was regarded as being too one-sided.³¹ Beyond

theses considerations, the emancipation from Serbia’s dominant political and economic position inside Yugoslavia was part of a strong motive to form liaisons with foreign partners and establish own automotive industries.³²

Setting up joint ventures

In the first instance there have been two trajectories for industrial evolution inside Yugoslavia’s automotive sector after World War II. The first trajectory began with the set up of a fully integrated facility whereby product technology was licensed from a foreign manufacturer. It was followed by Serbia’s Crvena Zastava. The second trajectory was followed by the manufacturers outside Serbia. Basically, they started as assemblers of imported CKD kits while generating only a small local value added. Both approaches merged in the early 1970s when joint ventures with foreign automotive majors became the dominant organizational blueprint in the Yugoslav automotive industry. Crvena Zastava was effectively transformed into a joint venture through Fiat’s investment while the assemblies in Slovenia and Bosnia and Herzegovina were soon closed down and replaced by joint ventures with Renault and Volkswagen.

What were the driving forces behind these particular developments? Certainly, the new legislation which was in place since 1967 and which allowed for the establishment of joint ventures with foreign companies was something like a “pull force.” According to *Dunn* there were two inherent advantages in such joint ventures for Yugoslav companies.³³

- Joint ventures promoted greater acquisition and more effective incorporation of Western technology into the process of production. Unlike licensing, joint ventures increase the likelihood that imported technology is effectively incorporated into the production, since the Western supplier has a vested interest in providing more current technology and making it work reliably.
- Joint ventures effectively contributed to relieve the country’s shortage of hard currency. First, Western technology was acquired as the Western partner’s capital investment, thereby reducing hard-currency outlays for direct imports. Second, the joint venture’s output could provide for savings through import substitution. Third, joint ventures in the automotive sector had an export orientation, with foreign sales bringing the domestic partner a share of hard-currency.

These factors must be taken into account for all automotive joint ventures which emerged in Yugoslavia. For the assemblers in Slovenia and Bosnia and Herzegovina, a second driver, namely Yugoslavia’s policy toward imports, must be considered. In a way, it played the role of a “push force” for transforming assembly enterprises into fully integrated joint ventures.

Yugoslav policy toward imports, assembly of imported parts and domestic production always reflected conflicting interests: the desire of customers for greater vehicle choice, industrial interests of republics, and Serb industrial policy, i.e. the vested interests of incumbent Crvena Zastava. Thus, Yugoslavs never enacted any measures to keep importers out of

the market. Nevertheless, the customs regime and regulations on foreign exchange changed in such a way in the early 1970s that assemblers had to increase the fraction of foreign hard currency in their cash flows in order to finance the import of parts. This effectively forced them to become exporters themselves and to increase local content.³⁴

In the course of transforming assembly ventures into fully integrated joint ventures the formerly established relationships with foreign small or medium-sized passenger car manufacturers such as NSU, British Motor Holdings, and Citroën, were superseded by arrangements for cooperation with major automotive manufacturers such as Renault or Volkswagen. Domestic companies and officials considered large multinational partners to be more appropriate for joint ventures. Major automotive manufacturers were supposed to provide superior R&D and marketing abilities. However, the most decisive criterion making them the partners of choice was probably their capability of supplying substantial financial credits required for initial investments in large-scale projects.³⁵

VI. Epilogue

Yugoslavia's economic and political crisis which openly occurred after the death in 1980 of Tito, the country's undisputed post-war leader, also put the incumbent passenger car manufacturers under severe strain. Finally, the civil war of the 1990s and the dissolution of Yugoslavia changed their business environment in an even more radical way.

The most well off company certainly was Slovenia's REVOZ. Nowadays it is a highly productive part of an international automotive group and it operates in one of the most advanced and wealthiest countries in Southeastern Europe which is firmly integrated into the European Union.

TAS's perspectives turned extremely bleak when Bosnia and Herzegovina plunged into an utterly atrocious war associated with ethnic cleansing and the far reaching destruction of the country's economic base. Its fate may improve under the renewed cooperation with Volkswagen. However, output of Škoda models at the Vogošća plant so far have remained modest.

Zastava's output and sales plunged dramatically during the 1990s to less than 10,000 units per year and further decreased towards the end of the decade while annual output capacities were estimated at 190,000 units before the NATO air raids of April 1999 and still at some 50,000 thereafter.³⁶ Although the Milošević regime was finally removed from power in October 2000 and Serbia's economy began to stabilize, Zastava's recovery has been slow so far. In 2006, total passenger car output amounted to a still meager 20,000 units. New partnerships with foreign investors give hope for Zastava and there has been some reported progress in re-establishing the brand in some of its traditional foreign markets, e.g. the Middle East. According to latest news, production of the new, Fiat Punto-based Zastava 10 was scheduled to begin in the summer of 2007. The company also plans to manufacture Fiat Doblo at the Kragujevac plant beginning in 2009.³⁷ Nevertheless, Zastava appears to be one of the last automotive players in Central and Southeastern Europe whose fate is still undecided. It could follow a path leading to integration into the supra-national production system of a leading European automotive major as happened outside the former

Yugoslavia e.g. by Škoda in the Czech Republic (today a subsidiary of Volkswagen), FSM in Poland (today Fiat Auto Poland) and Dacia in Romania (now owned by Renault). Alternatively, it could follow a path leading to demise due to the ever increasing pressure for productivity and innovation in global competition—either as a stand-alone or in a weak partnership—was experienced by, e.g., VEB Automobilwerke Eisenach and VEB Sachsenring in East Germany, Tatra in Czechoslovakia, FSO in Poland, and Olcit in Romania.³⁸

Footnotes

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¹³Dirlam & Plummer; op. cit., p. 137.

¹⁴Dirlam & Plummer; op. cit., p. 138; Engelhard, op. cit., p. 20.

¹⁵Ibid.

¹⁶Radošević, Slavo; Rozeik, Andrew; *Foreign direct investment and restructuring in the automotive industry in Central and Eastern Europe*, Vienna Institute for International Economic Studies (2004), p. 12.

¹⁷Schrader, Halwart; Norbye, Jan P.; *Das Lastwagenlexikon* 3rd edition (Motorbuch Verlag, Stuttgart, 1998), p. 48.

¹⁸Stanković, Slobodan; *An ever growing number of private automobiles in Yugoslavia*, Radio Free Europe Research (1971).

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²⁰Radošević & Rozeik, op. cit.; Benedik, Jasmin; *The impact of direct investments from France to Slovenia and their mutual trade in correlation with human capital on both economies*,

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²³Sukijasović, Miodrag; *Joint Business Ventures in Yugoslavia Between Domestic and Foreign Firms: Developments in Law and Practice* (The Institute of International Politics and Economics, Belgrade, 1973), p. 103.

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²⁵Čengiĉ; op. cit.

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Wheatsheaf, Hemel Hempstead, 1994), pp. 105 ff.

²⁸Cardoso, Eliana; Helwege, Ann; *Latin America's Economy*, 6th edition (The MIT Press, Cambridge, Mass., 1997), pp. 73 ff.

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³⁰Benson, op. cit., pp. 21 ff; Glenny, Misha; *The Fall of Yugoslavia*, 3rd edition (Penguin, London, 1996).

³¹Čengiĉ; op. cit.

³²Dirlam & Plummer, op. cit., p. 138.

³³Dunn, op. cit.

³⁴Dirlam & Plummer, op. cit., p. 139.

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³⁷Dow Jones; “Zastava will weitere Fiat-Modelle bauen,” in *Dow Jones Maschinen und Fahrzeuge*, No. 133, p. 2.

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EDITOR'S NOTES, CORRECTION, AND LETTER TO THE EDITOR

continued from p. 24

aluminium pistons for two and a half years: he had used them on Brooklands and claims that he could get more power with them because they did not over-heat when using very high compression.” Evans goes on to say that Rolls-Royce's first design for an aluminium piston followed, on July 22, apparently tested in the engine of a Silver Ghost.

In the same paragraph, Graham also commented that it was “recorded elsewhere that Rolls-Royce fitted aluminium pistons to its 1913 Alpine Trial cars. . . .” On the basis of his examination of Rolls-Royce Drawing registers from 1909 forward which contained a listing of all pistons, both experimental and production, and finding no mention of aluminium pistons, he is confident that the Alpine Trial cars did not have aluminium pistons.

In his opinion, the primary benefit of aluminium pistons was not the lighter weight, but its superior conductivity: “it could transfer far more heat to the coolant. Once that had been achieved, the big bonus followed—the ability to run faster, and to develop more power at those higher speeds while still maintaining acceptable piston temperatures.

CORRECTION

Review No. 47 (Spring 2007)

Error in Editor's Notes: It's Katherine Mechler from Houston, not Katharine Mechler from Dallas. Katie now lives in Falls Church, Va.

LETTER TO THE EDITOR

RE: David Reilly's question (p. 28) “Why Overdrive?”

I believe there are three principal reasons for the use of overdrive to obtain a fourth forward drive ratio on manual transmission cars produced from the 1930s through the 1960s:

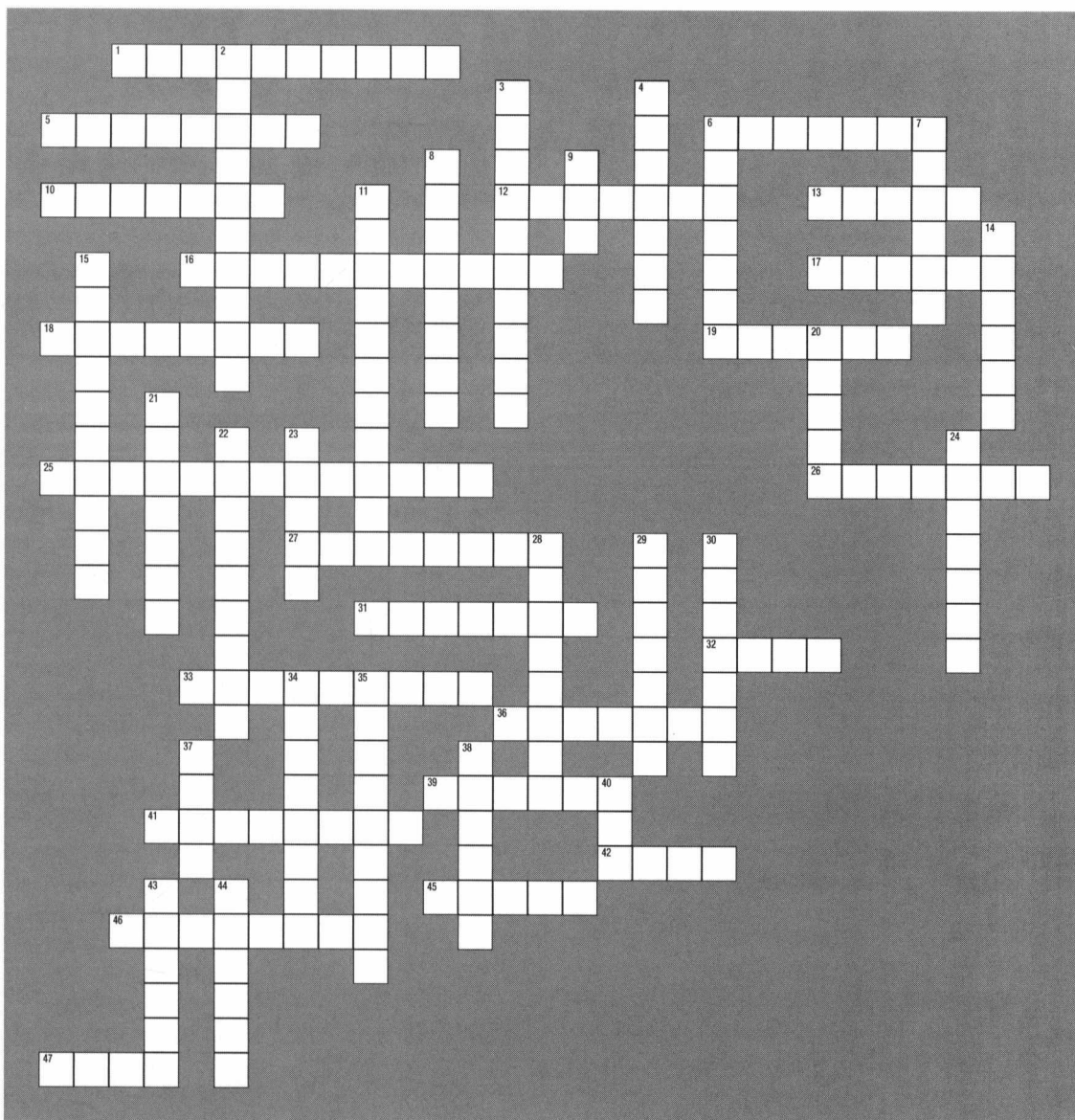
(1) Economics—It required little retooling to add overdrive to the almost universal 3-speed manual transmission in American cars. While Borg Warner made many units for American cars, the overdrive was also offered in Europe by Laycock de Normanville.

(2) Convenience—The overdrive offered another gear ratio without using the clutch or gear lever by just lifting the foot off the accelerator momentarily. Americans did not like to shift gears even before the introduction of automatic transmissions. My mother, for instance, often started our 1934 Oldsmobile in second gear and only shifted once to high. Also, in congested, slow-moving traffic, the driver could sometimes drive along using second gear and second with overdrive without moving the gear lever. And, finally, with the over-running clutch on overdrive transmissions, the actual gear shifting into second and third gears did not have to be done so carefully. Sometimes drivers would make the shift without using the clutch pedal, with no gear clashing!

(3) Comfort—Gearshift levers had moved to the steering column only in the late 1930s, which freed the front seat for a middle passenger without interfering with gear shifting. Since American families were larger then and the number of cars per capita was lower, there was much utility in having a true six-passenger car. Adding a fourth gear to a column shift is cumbersome and confusing, particularly to Americans brought up on the 3-speed, H-pattern gearshift, which again argues for the automatic overdrive solution.

*Orron Kee
Virginia, USA*

AUTOMOBILE HISTORY CROSSWORD by Phil Mathews



ACROSS

1. First American car with fully automatic transmission (1940)
5. Named after famous rock, and binder twine
6. First production V-12
10. Pioneered front wheel drive
12. Inventor of geartrain in 3-speed automatic transmission
13. Henry Ford's family nationality
16. Also built farm tractors
17. Mr. Chrysler's first name
18. Another name for side valve engine
19. Inventor of compression ignition engine cycle
25. State where Rolls-Royce built cars
26. Most cylinders in a production engine
27. First use of interchangeable parts (1903)
31. Chevrolet and _____ first production American fuel injection (1957)
32. Uses bulldog mascot
33. Built cars and developed rear axle layout still used on trucks
36. Car using greyhound mascot
39. Failed radical new car, 50 built in 1948
41. First production fuel injection (1954)
42. Inventor of spark ignition engine cycle
45. 2nd best selling car in 1920
46. Stainless steel body
47. First used moving assembly line

Answers will appear in Review No. 49.

DOWN

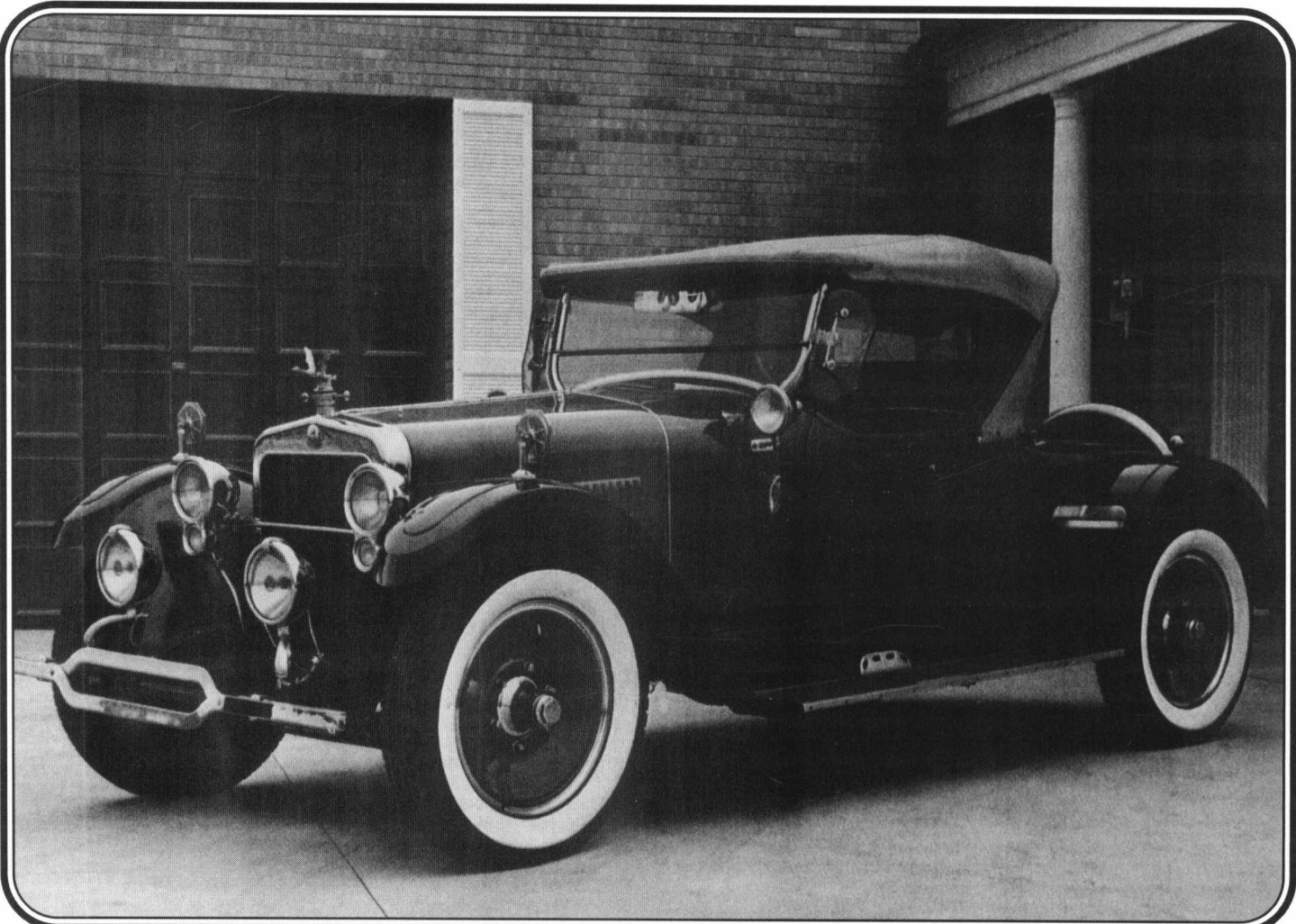
2. Also built Pioneers' Conestoga wagons
3. Brothers Fred and August built America's finest car
4. Also built farm tractors
6. Car that won world's first auto race
7. Named after famous explorer
8. First radial tire (1949)
9. First post WWII product was aluminum pots and pans
11. MA city where first American car was built for sale (1896)
14. 1888 first commercial _____
15. "People's car"
20. Chevrolet brother's nationality
21. First ponycar
22. Engineer who invented today's common spring/strut suspension (common misspelling)
23. Carmaker who built his fortune building bathtubs
24. US city where Mercedes built cars
28. First supercharged car (1924)
29. First DOHC 4-valve-per-cylinder engine (1914)
30. Automobile patented in 1885 in _____
34. 55-57 Chevy Nomad wagon was originally to be a _____ model
35. Invented battery/coil and breaker ignition system
37. Civilian version of WWII utility vehicle
38. Developed pneumatic tire
40. Ransom Eli Olds built this car
43. Introduced both Cadillac and Lincoln cars
44. Fastest American car 0-60 in 1933 (_____ V8)

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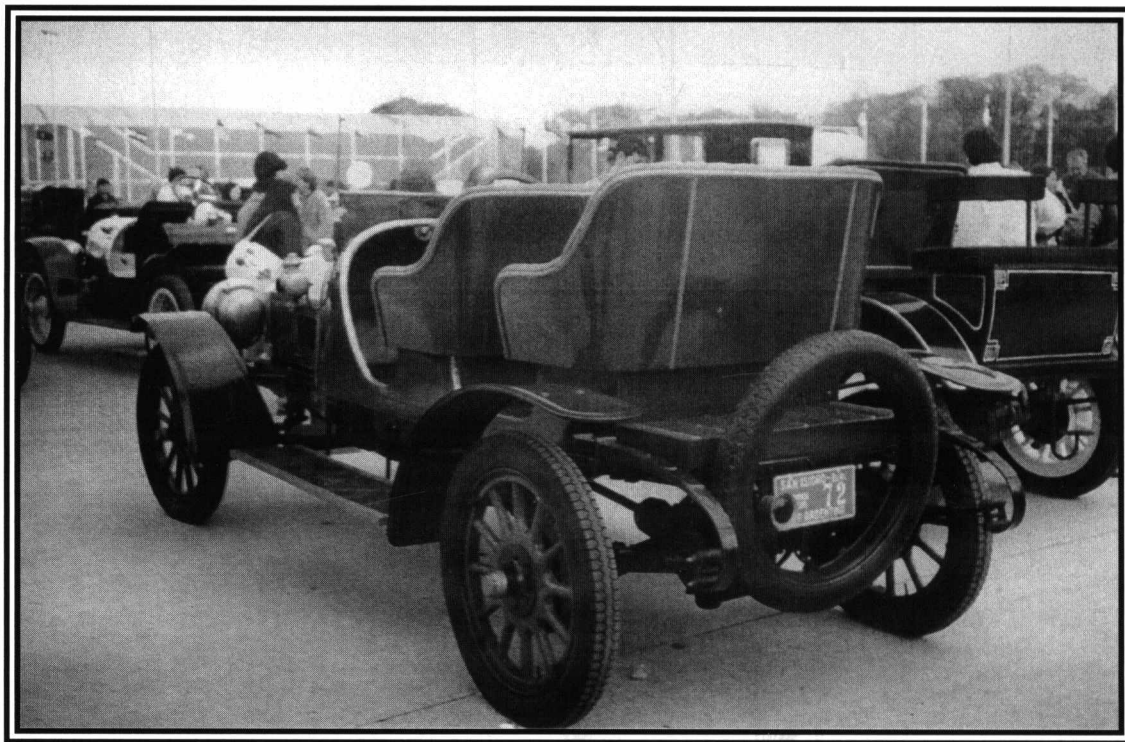


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