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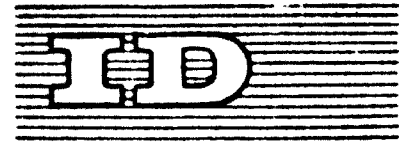
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The Seminar on the Establishment and Development
of the Automotive Industry in Developing Countries

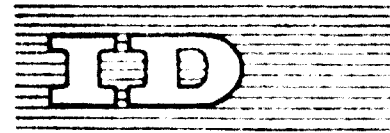
Karlovy Vary, CSSR 24 Feb- 14 March 1969

THE ESTABLISHMENT AND DEVELOPMENT
OF THE AUTOMOTIVE EQUIPMENT INDUSTRY IN YUGOSLAVIA^{1/}

by

Prvoslav Raković
Director General of "Zavodi Crvena Zastava"
Yugoslavia

^{1/} The views and opinions expressed in this paper are those of the author and do not necessarily reflect the views of the secretariat of UNIDO.



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by

Ing. Prvoslav Raković
Director General
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Yugoslavia

SUMMARY

1. After the Second World War, Yugoslavia resumed the production of the lorry "Praha-Pionir" licensed by Czechoslovakia. Other licences were obtained from the Federal Republic of Germany and Austrian commercial vehicle producers, Klöckner-Humboldt-Deutz and Saurer.
2. After much consideration, Yugoslavian planning authorities decided to go into the production of passenger cars. In 1954 an agreement between the factory ZCZ (Zavodi Crvena Zastava - Factory Red Flag) and Fiat was signed, licensing the production of Fiat-developed cars in Yugoslavia. In 1967 ZCZ produced approximately 54,000 vehicles. Two other small factories signed co-operation contracts with NSU and Citroën.

* This is a summary of a paper issued under the same title as ID/WG.13/12.

^{1/} The views and opinions expressed in this paper are those of the author and do not necessarily reflect the views of the secretariat of UNIDO.

3. The experience gained by the Yugoslav automotive industry in obtaining licences from foreign firms is recorded.
4. The ancillary automotive industries developed along with the automotive industry. Of great help were the existing facilities and skills of the former aviation industry. At present about 100 manufacturers of automotive parts exist.
5. The paper discusses comprehensively the relations established between the assembly industry and the component-producing sub-contractors, and indicates the problems involved. The difficulties which occurred were of technical (quality), economical (price), juridical (licences) and organizational (schedules) nature. The paper gives recommendations with respect to improving the relations between the producers of the finished goods and the producers of parts.
6. The development of the Yugoslav automotive industry and automotive equipment industry was influenced by Government policy. Most of the factories were established at the end of the planning period, during which insufficient consideration was given to the conditions of the market and external competition. During the period of self-management (1955-1967), which followed the planning period, the market laws began to influence the Yugoslav economy.
7. In 1965 the "Economic Reformation" was introduced in Yugoslavia. Its main principles are: to incorporate the Yugoslav economy into the international division of labour, to liberalize imports, to subordinate the activities of the industry to economic laws, to pay more attention to profitability and efficiency, to reduce means of protection etc. A list is given of the laws which were passed for the successive realization of this reformation. These laws made considerable changes in the conditions of the Yugoslav industry. Among the vehicle producers, the main passenger car manufacturer was particularly adversely affected when the Yugoslav market was opened to foreign competition. Since the products of this producer were not competitive, difficulties were encountered.
8. The present difficulties of the Yugoslav automotive industry can be solved, in the author's opinion, by means of partnership and international co-operation. The Yugoslav automotive industry should continue to integrate and present itself as a single group.

We regret that some of the pages in the microfiche copy of this report may not be up to the proper legibility standards, even though the best possible copy was used for preparing the master fiche.

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Introduction

1. To give an accurate picture of the conditions affecting the establishment and development of the industries related to the automotive industry in Yugoslavia, it is necessary to review the situation before and after the Second World War as well as to give a detailed account of the present conditions of the parent industry.
2. An acquaintance with the past history and present status of the automotive industry will help us better to understand the problems arising in the relations between automobile manufacturers and related industries. It will also make it easier to assess the experience gained in the past and the ways in which these problems can be solved.
3. Before the Second World War, or more exactly, before 1941, there was only one factory in Yugoslavia and its production programme included the construction of both engines and vehicles. This was the Rakovica Engine Plant (IIR), established in 1927 not far from Belgrade, which assembled engines for military planes and also manufactured a number of parts under licence from the French firm, Gnome-Rhone, Paris. Subsequently, in 1938, the IIR concluded a contract with Czechoslovakia for a licence to produce lorries (of the "Praga" RN-8 type) of 3 tons loading capacity.
4. During the first year the Yugoslav plant imported "knocked-down" vehicles for assembly only, and later went on to machine-finish various parts and to build up sub-assemblies and assemblies. In the first stages, semi-finished products (castings, forgings and stampings) were purchased from Czechoslovakia, but this practice was progressively abandoned as it became possible to manufacture them in the plant's own workshops.
5. Likewise, the production of engines and vehicles by the IIR constituted the first step towards the establishment of related industries. The first plants producing motor accessories, components and other items, were established at about that time. Among such plants, most of which were set up in the area of the City of Belgrade, we may mention Micron, Nestor and Teleoptik.
6. The general economic situation of Yugoslavia between the two world wars (1918-1941) is well known. There were three characteristic periods:
 - (a) 1918-1923: A period of economic prosperity and development, which witnessed the reconstruction of the country following the devastations suffered during the First World War;

(b) 1929-1939: A period of crises and recessions, during which the State intervened in the economy;

(c) 1939-1941: A period of economic recovery during which the economic crisis was reversed. The establishment of the first automotive industry took place during that period. It began to exert a beneficial effect not only on the development of related industries but also on a large number of other industries, in particular that of the production of basic materials.

7. The pre-war absorption capacity of the market, reflecting the country's purchasing power, which in its turn depends on the level of economic development, can be seen from the following table showing the number of vehicles in the automobile park in Yugoslavia.

Table 1
Production of automotive vehicles in Yugoslavia, 1929-1938

	<u>TRUCKS</u>	<u>TRUCKS</u>	<u>BUSES</u>	<u>TOTAL</u>
1929	3,272	3,327	812	15,460
1930	3,431	3,473	631	15,433
1935	3,370	7,262	707	14,749
1936	4,427	9,076	811	18,203
1937	5,202	11,347	850	20,851
1938	7,661	13,561	943	26,451

✓ Yugoslav Statistical Yearbook, 1961, p.182.

8. The effects of the Second World War (1941-1945) were particularly severe for Yugoslavia, not only on account of the heavy losses in human life (amounting to 11 per cent of the pre-war population, which meant that one out of ten persons was either killed or missing), but also on account of the enormous material damage caused by enemy and occupation forces (during the Yugoslav peoples' well-known struggle for liberation). It is estimated that the approximate loss of national wealth resulting from the war exceeded the sum of 19,000 million at the 1938 rate of exchange. This represents a very heavy loss for a comparatively small and, at the time, undeveloped country.

9. During the first post-war years, 1945-1946, when the new Yugoslavia set out to rebuild its economy, the country began the reconstruction of its automotive industry and the rationalization of its vehicle park, which included a variety of models and types - some 300 to 400 different vehicles. It was recognized from the very beginning that means of transport play a most important part not only in economic expansion but, owing to the complexity of the automotive industry, in industrial development as well.

I. ESTABLISHMENT OF THE AUTOMOTIVE INDUSTRY IN YUGOSLAVIA

Commercial Vehicles

10. In emerging from the chaos that the Second World War had left behind in the country and in setting out to rebuild the national economy, particularly in the sphere of communications, industry and other vital branches, the conclusion was reached that the production of commercial vehicles should be established. The automotive industry has a many-sided role; its purpose is not simply to provide transport, but to achieve the necessary standardization, which is an important factor in the useful employment of vehicles, and to offer encouragement and support to a whole set of related industries. It is with these ends in view that the following undertakings were established:

Maribor Automobile and Motor Factory - Tovarna Avtomobilov in motorjev Maribor (TAM)

11. In 1945 and 1946, efforts were made to re-start production of Praga 3-ton lorries under the Czechoslovak licence. Under the decisions taken by the competent planning authorities, however, the DFM plant (Rakovica) was allocated to the production of tractors and tractor engines, and the production of the 3-ton lorries was transferred to Maribor (Slovenia), where the TAM factory began to operate on 13 March 1947. Twenty seven lorries were delivered from the factory that year. As these were the first vehicles to be manufactured within the country, the model was called "Pioneer" (Pionir).

12. During the period 1947-1957, TAM produced 10,000 vehicles of various kinds (lorries, buses and other similar types). In 1960, plant capacity rose to 3,000 units a year. In 1957, TAM entered into a contract with the West German firm "Klöckner-Humboldt-Deutz AG" for the manufacture, under licence, of heavy lorries and buses with air-cooled diesel engines.

13. TAM's production programme is as follows:

- (a) The "Pionir" lorry, manufactured on the "Praga" model under Czechoslovak licence, petrol engine, 70 CV^{2/}, payload 3 tons. Production of this model was given up in 1963;
- (b) TAM 4500 lorry, under "Klöckner-Humboldt-Deutz" licence, 4 cylinder, air-cooled diesel engine, 85 CV, payload 4.5 tons;

^{2/} CV = cheval = 0.986 HP

- (a) TAF 5000 lorry, under "Kilbeker-Humboldt-Deutz" licence, 6 cylinder, air-cooled diesel engine, 125 CV, payload 5 tons;
- (d) TAF 2000 light lorry, own design, "Perkins" type diesel engine manufactured by IPR, 55 CV, payload 2 to 2.5 tons.

14. TAF has developed a whole family of special vehicles based on the foregoing types, such as: buses, refrigerator-lorries, tipping lorries, fire engines, etc. Production capacity for all these types has risen to 4,500 units per year, with the prospect of future increase. Since it was first established, TAF has produced about 17,000 vehicles, of which a substantial number have been sold outside the country. Apart from vehicles, the TAF production programme includes engines and engine assemblies for industrial constructional and other types of machinery, within the range of 33 to 220 CV.

**Production of the JAG Automobiles Factory -
JAG (JUGOSLAVIA) AUTOMOBILE (JAG)**

15. JAG was the only manufacturer of commercial vehicles in the country until 1954. In that year, the automobile factory at Priboj na Limu (PAP), built during the years 1952-1951, came into being. The PAP production programme includes 5 and 7 ton lorries built under a licence from Laurer (Austria). The PAP production programme is the following:

PAP-1003-P lorry, payload 5.5 tons, 6 cylinder diesel engine, 80 CV;

PAP-1012-E lorry, payload 6 tons, 6 cylinder diesel engine, 120 CV;

4-wheel drive lorry, payload 7 tons, 6 cylinder diesel engine, 130 CV;

PAP-13 lorry, payload 7 tons, 6 cylinder diesel engine, 130 CV.

PAP has developed the production of several types of city and long distance buses and special vehicles (tankers, tippers, etc.) based on this range of lorries.

16. In 1963 PAP broadened its range of lorries and buses by the acquisition of a licence from the British firm "Leyland". The standard model is the PAP-16-P lorry, payload 7.5 tons, 6 cylinder engine, 204 CV; buses and special vehicles are also built on the chassis of this model. PAP production capacity has reached the figure of 3,000 units a year, and is still rising.

17. The Priboj Automobile Factory has become part of an association called ITV (Industry of Transport Vehicles), with its headquarters in Belgrade.

The ITV Association is made up of the following:

FAP - Priboj

FAKOS (Engine Manufacture) - Sarajevo

11 Oktomvri - 11 October (coach-building) - Skopje

Autokaroserijska - Automobile Body - Zagreb

IKARUS - Zemun

UTVA - Pancevo

ZMAJ - Zemun

INT (Engines and tractors) - Belgrade

Kompresor - Compressor - Belgrade

The chief function of the ITV Association is the marketing and sale of vehicles within the country and abroad and research on projected designs of transport vehicles.

Novo Mesto Motor Vehicles Industry -
Industrija Motornih Vozila Novo Mesto (IMV)

18. The activities of this undertaking were at first limited to repair work and partial assembly of vehicle bodies. IMV now manufactures delivery vehicles of its own construction, payload 1 ton, 3 cylinder 2-stroke DKW engine, 9 CV. Present production capacity is 1,500 units a year.

Kragujevac Red Banner Plant -
Zavodi Crvena Zastava Kragujevac (ZCZ)

19. The Crvena Zastava plant was established in 1954, in response to increasing market demand, to manufacture light commercial vehicles under licence from the Italian firm, FIAT. Its production programme comprises the following categories:

Zastava: 615 light lorry, payload 1.5 tons, 4 cylinder petrol engine, 48 CV;

Zastava: 620 light lorry, payload 2 tons, 4 cylinder petrol engine, 61 CV, a development on the Zastava-615 design;

Zastava: 1300J light lorry, payload 1,200 kg, 4 cylinder petrol engine, 50 CV.

20. Present capacity is 4,500 units a year, with the prospect of rising to 10,000 units a year in the next few years. Almost 25 special vehicles have

been designed from the basic models described above, including: minibuses, ambulances, light vans, light tipping lorries, bread, meat and milk delivery vehicles, etc. This range of commercial vehicles, with payload capacity ranging from 1 to 3 tons, completes the production programme of the undertakings mentioned, and adequately provides for the country's needs in variety and quantity. A certain proportion of the output is also exported to countries throughout the world.

Private cars

21. Before the Second World War there was no domestic production of private cars in Yugoslavia. The idea of setting up private car manufacture in the country led to heated controversies. The opponents of the proposal based their arguments on the following points:

- (a) The size of the country and the number of the population. In their opinion, a country of 20 million inhabitants was not large enough to support a profitable private car industry;
- (b) The social pattern in Yugoslavia. At the time when the question of manufacturing private cars was being discussed, the almost general opinion was that private ownership was not the answer to the problem of this kind of vehicle in Yugoslavia. It was also thought that individual salaries in Yugoslavia would not, within a more or less near future, be sufficient for private customers to become an important factor in the market for vehicles; some alleged that a car was merely a status symbol like a refrigerator or television set; others that a car was a luxury item indicative of the owner's social position.

22. After prolonged discussion the conclusion was reached that the private car was a need for modern man, and represented an appropriate element in the standard of living of a citizen of a socialist country; that domestic production of cars should be started for the very good reason that the automotive industry and, in particular, the private car industry, had an important role to play in the development of other industries in Yugoslavia, similar to the role they had played in the development of industry and of the economy in general in the countries that already possessed their own automotive industry.

23. With regard to the possibilities of marketing, it was agreed that, as the opportunities in our own country were not vast, the industry should be orientated towards exports, in the first place towards the socialist countries

where the potential market for automobiles is enormous, and also towards the developing countries, in view of the high esteem which Yugoslavia enjoys in those countries, with which it has established close economic co-operation, both for its domestic and foreign policy.

24. It is interesting to recall with what reservations and doubts planners and economists embarked on calculating the production capacity to be set up. In 1954, the year when ZCZ began to draw up investment programmes for building a factory (calculation of capacity to be provided) and organizing the production of 12,000 private cars a year, the official opinion of the authorities responsible for the national plan was that not more than 3,000 units a year should be planned for; they doubted whether the sale of larger numbers would be possible. According to the Yugoslav Statistical Yearbook (published in 1961), there were 11,290 private cars in Yugoslavia in 1954. The management of ZCZ, however, saw clearly enough even at that time that a capacity for 12,000 private cars a year was too small to satisfy the needs of the market and to ensure minimal production profitability.

25. All these discussions were most interesting. A great deal was written and many studies undertaken on the subject. It seems to us very important for the development of Yugoslav economy that the idea of setting up a private car industry in the country carried the day. The private car has quickened the pace of the people's manner of living and stimulated a good deal of initiative in the sense that everyone has become more interested in work. When a man has finished his daily work, he embarks on some supplementary part-time job, all for the purpose of earning more money so that he can buy a car.

26. The possibility of having a private vehicle has changed the pattern of family expenditure; many are eager to save up to buy a car. Families go out or travel more often; less time is spent in cafes or night clubs; people no longer stay indoors. A private car is a great convenience for all sorts of professional people - engineers, doctors, agricultural specialists, lawyers, surveyors, farm workers and others.

27. Clear justification for the decision to set up production of private cars in Yugoslavia can be found in the fact that the number of private cars in use in 1967 - 300,000 units - is thirty times more than in 1956. Surveys indicate that the Yugoslav market is capable of absorbing 100,000 private cars a year, and that there is a prospect of further expansion. Such an

increase in the number of units in use would not have been possible without domestic production of automobiles, not to speak of the other effects on the country's economy, particularly in the industrial sphere, arising from such production.

Kragujevac Red Banner Plant -
Zavodi Crvena Zastava Kragujevac (ZCZ)

28. In the autumn of 1953 a competition was held to select a vehicle to be manufactured under licence. Seven European automobile manufacturers took part. The FIAT (Turin) car passed the tests satisfactorily. Since the Italian firm had a wide range of vehicles in its production programme and offered advantageous terms, it was decided to conclude a contract for the manufacture under licence of its vehicles and for technical co-operation with that firm; the contract was signed on 12 August 1954. The technical co-operation plan provided at first for the assembly of vehicles. The next stage consisted in determining production capacity for the vehicles covered by the licence, and in gradually taking over local production of parts.

29. The current ZCZ production programme is as follows:

Zastava -750 private car, rear-mounted four cylinder petrol engine, 32 CV, top speed 125 km/h;

Zastava -1300 private car, forward-mounted four cylinder petrol engine, 60 CV, top speed 145 km/h;

All-grounds Jeep-type vehicle AR-51/55 (Campagnola), forward-mounted four cylinder petrol engine, 63 CV, top speed 116 km/h.

Some twenty special vehicles have been developed on the basis of these three models (ambulances, station-wagons, special post-office, police and break-down service vehicles, etc.) These vehicles are entirely manufactured within the country except the Zastava 1300 which was 35 per cent locally manufactured in mid-1967. Production was to be 100 per cent local by the end of the year.

30. Besides the basic licence agreement signed between ZCZ and FIAT in 1954, a number of supplementary contracts were signed in subsequent years under which the range originally covered was enlarged, because certain models existing in the 1954 FIAT programme were being successively dropped and new, more advanced models were taking their place. Supplementary additions to the licence agreement were drawn up in 1956, 1960 and 1961.

31. To complete its range of cars for the market, under the import liberalization regime, ZCZ enlarged its programme in 1966 by undertaking the assembly of FIAT 850 and 1100 R vehicles. Some parts are manufactured within the country but most come from Italy. The cars are produced in limited quantities only, solely to complete the range and thus meet competition on the market.

32. Total ZCZ production in 1967 amounted to 54,000 vehicles, made up of:

Zastava 750	35,000 units
Zastava 1300	10,000 units
850 and 1100 R	4,000 units
Commercial vehicles	5,000 units

33. Besides ZCZ, which is the most important manufacturer of private cars, there are two other undertakings in Yugoslavia whose activities include the assembly and manufacture of certain private car parts under co-operative agreements with the original manufacturers.

"Tito" Vogošće Plant - Sarajevo (PRETIS)

34. This plant manufactures certain parts and assembles vehicles under licence from the NSU firm (Federal Republic of Germany):

Pretis Prinz 1000 I, air-cooled 2-stroke 4 cylinder engine, 43 CV;
 Pretis Prinz 110, air-cooled 2-stroke 4 cylinder engine, 53 CV.

In 1966, the plant assembled and sold the following number of cars:

Pretis Prinz 1000 L	2,160 units
Pretis Prinz 110	240 units

35. The plant also manufactures motor cycles under licence:

"Maxi" motor cycle, air-cooled 1 cylinder 2-stroke engine, 175 cc, 12.5 CV;

"Prima" scooter, air-cooled 2-stroke engine, 7.4 to 9.3 CV.

Production in 1966 was:

"Maxi" motor cycle	2,696 units
"Prima" scooter	219 units

The Pretis plant is steadily enlarging its capacity for manufacture and assembly of cars and motor cycles.

Koper Motor Vehicles Plant -
Tovarna Motornih Vozil Koper (TOMOS)

36. This factory makes certain parts and assembles cars under licence from the French Firm Citroen:

AZL 2 CV car, air-cooled, 2-stroke 2 cylinder engine, 18 CV;

AMI-6, 3 CV car, air-cooled, 2-stroke 2 cylinder engine, 24 CV.

In 1966 the plant placed on the market the following numbers of cars:

AZL 2 CV 329 units

AMI-6 3 CV 435 units

37. The plant's main activity is in the manufacture of light motor cycles, which was begun in 1956 under licence from the Austrian firm Steyr-Daimler-Puch. TOMOS has developed these models subsequently in its own planning and research offices. The most important model the Colibri motorized cycle, is manufactured in several versions with the same basic features: air-cooled 2-stroke 1 cylinder engine, 2.4 CV. Total production of motorized cycles in 1966 amounted to 45,500 units, of which a substantial number was exported. The plant's production capacity for motorized cycles is increasing. The plant also produces small engines for boats.

Co-operating (related) industries

Distribution of the manufacturing programmes between automobile manufacturers and related industry

38. The manufacture of commercial vehicles and private cars in Yugoslavia has from the first raised a number of problems connected with the setting up of related industries. As soon as foreign licences were obtained, it became necessary to organize these industries, since the production programme of the local automobile builders was based on the assembly of such essential parts as the chassis, body, engine, gearbox, differential, etc. The range of parts manufactured by the Yugoslav automobile plants was similar to that of the foreign manufacturers who had granted licences. Domestic manufacturers were at first obliged to place orders outside the country for parts which the foreign manufacturer himself ordered from specialized firms (electrical equipment, engine parts, pumps).

39. Thus the acquisition of the licence and the study of projected manufacturing capacity, based on the manufacturing programme and production capacity of the licensor, implied a division of the manufacturing programme between the automotive industry and its related industries. Unlike other automobile builders throughout the world, the Yugoslav manufacturers, because of their wide range of models and the small amount of their production, have been obliged to encourage the utmost development of related industries on the basis of specialization. The specialized firms do not work for a single car builder; they have to cover the needs of the automotive industry throughout the country.

40. The objectives to be attained were the following:

- (a) Specialization: training of skilled personnel capable of solving the problems that might arise in a particular sphere (in production as well as in design) for the whole domestic industry. At the outset, the problem of specialized staff was particularly acute.
- (b) Reduction of production costs: Because of the limited serial production, it is not possible for several manufacturers to include the same parts in their manufacturing programme; the manufacture of parts, sub-assemblies, and assemblies of the same kind should be undertaken by individual specialized manufacturers supplying the whole automotive industry, including the tractor and agricultural machinery branches. The drawback of this situation is that having a single manufacturer for one particular part or sub-assembly implies a monopoly, with its effect on price-fixing. Such a situation also creates problems in organizing a regular and continuous supply of parts for the automobile builder, for, if the supply of parts or assemblies from the sub-contractor came to a stop at any given moment, the production line in the automobile plant would automatically be brought to a standstill.
- (c) Reduction in the amount of capital investment: The automotive industry requires substantial capital investments. As financial resources are limited, in Yugoslavia, owing to the rapid expansion of industry and of the economy in general, constant attention must be paid to that problem.
- (d) Utilization of existing capacity: The problem here was to make use of facilities originally designed for producing aircraft with engines of traditional design. When jet engines were invented, Yugoslavia, being a small country, was unable, for lack of sufficient investment resources, to embark on the design and development studies necessary to produce them.

Since, however, these plants already had specialized staff and the necessary equipment, they were to be the first to begin manufacturing for the automotive industry. Although this situation had certain advantages, in that efficient production of parts and sub-assemblies was speedily achieved, it had nevertheless raised certain economic problems, because an automobile cannot be compared with an aircraft where expense is largely disregarded, in the interest of achieving the necessary engineering precision.

41. The importance of the role played by related industries is best illustrated by the fact that its products represent 40-50 per cent of the total value of an automobile. As against six automobile builders in Yugoslavia, there are about 100 related enterprises spread throughout the whole country, but the majority are established in Serbia or Slovenia where the main factories of the automobile builders are located. The development of related industries, leading to specialization by individual enterprises to meet the needs of all automobile builders, has, apart from the positive effects already mentioned, also raised problems of an economic and technical nature in the relations between the automobile builders and their sub-contractors, as well as problems of organization which will be dealt with in a later chapter. A list of related industrial undertakings, showing their location and field of activity, is given in Annex 1.

II. DOMESTIC PRODUCTION OF AUTOMOBILES IN YUGOSLAVIA DURING THE PERIOD 1955 TO 1965

42. The foregoing account, together with the statistics relating to production during the period 1955-1965, should give some idea of the position of the automotive industry in Yugoslavia and the volume of its production. This will facilitate understanding of the relationship established within the industry and the problems arising from its development over this period. The period 1955-1965 has been selected because it represents a characteristic phase in the evolution of the Yugoslav economic structure.
43. Prior to that period, Yugoslavia has passed through two economic phases:
- (a) The reconstruction period, 1946 and 1947: reconstruction of the country following the devastation caused by the Second World War.
 - (b) The managed-economy period: a period of economic planning, during which the federal administration and other bodies played an important role. This phase lasted from 1948 to 1953, the year when legislation on "self-management" in undertakings was brought into operation throughout the country. Management of undertakings was put into the hands of the plant community. This change marked the beginning of the decline of the administrative planning and management system; market conditions now began to govern the economy.
44. The period of significance for the automotive industry began in 1955, since prior to that date there was virtually no automobile manufacture. All that existed was in the preparatory stage and the only active producer was TAM. The year 1965 brought the period to a close. In July of that year, an Economic Reform was announced, bringing a new feature into the Yugoslav economy: through the liberalization of imports the way was opened for the Yugoslav economy to share in the international division of labour. The period 1965 to 1967 and future prospects for the development of the automotive industry in Yugoslavia are dealt with in a separate chapter.
45. Table 2 below shows the production of automotive vehicles in Yugoslavia during the period 1955-1965.
46. Examination of this table leads to the following conclusions:
- (a) Production shows a continuous increase. As regards lorries and buses, the growth rate may be considered fairly high, especially in the earlier years shown. In 1965 the production of lorries and buses reached the total number of 11,800 units, a firm foundation for future development.

Table 2

Production of automotive vehicles in Yugoslavia, 1955-1965

<u>Year</u>	<u>Private cars</u>	<u>Buses</u>	<u>Lorries and special vehicles</u>	<u>Motorcycles</u>	<u>Total</u>
1955	760	239	2,450	-	3,449
1956	990	426	2,765	3,421	7,602
1957	3,088	666	3,459	13,060	20,273
1958	2,936	671	4,089	8,202	15,898
1959	4,431	511	3,716	24,530	33,188
1960	10,461	896	4,564	41,414	57,335
1961	14,999	829	5,426	37,751	59,005
1962	13,125	2,144	6,454	31,968	53,691
1963	20,923	1,823	7,975	43,113	73,834
1964	27,854	2,362	9,081	48,142	87,439
1965	35,880	2,287	9,572	48,774	96,513
TOTAL:	135,446	12,854	59,285	300,325	508,277

- (b) The number of motorcycles manufactured, about 50,000 units a year, may be considered reasonable for European conditions, although the later years show a certain stagnation (which is, however, typical for motorcycles and motorized cycle manufacture in Europe).
- (c) Manufacture of private cars, which at the end of the eleven years shown in the table reached 32,000 units in 1965 - the planned annual capacity of the factory - was not sufficient either to satisfy market demand or to form an adequate basis for economical production.

47. The striking feature of the production of private cars achieved in 1965 is in our opinion its almost total lack of profitability, which made it impossible to accumulate sufficient resources for future investment and accelerated expansion. At the same time production at this level made restrictions on imports necessary to maintain domestic production during a period when the market potential substantially exceeded national production capacity. Production of private cars at this level did not make it possible for related industries to apply advanced technology so as to bring the prices of their products within the range of world prices, or accumulate sufficient resources for future development.

III. ESTABLISHMENT OF BUSINESS RELATIONS BETWEEN
AUTOMOBILE BUILDERS AND RELATED INDUSTRIES
AS A BASIS FOR PROGRESSIVE INTEGRATION
IN THE AUTOMOTIVE INDUSTRY

48. The situation observed during the period 1955-1956 in private car manufacture (which is no better in respect of the manufacture of commercial vehicles since there are four such vehicle builders each with a different range of production) has raised a large number of problems, which are reflected in the relations between builder and sub-contractor, on the one hand, and builder, market and customer, on the other.

49. In the period 1955 to 1965 an attempt was made to find: first, the right way to develop related industries; and second, the best possible method of organizing relations between the principal producer - the vehicle builder - and his sub-contractors for parts, assemblies and sub-assemblies, styled "co-operators". These questions are dealt with in detail in the following pages in the light of the conditions prevailing during the period in question. A detailed knowledge of all these problems is important, since the relations between the automobile builder and his sub-contractors are connected with those between the community, the market and the customer. It was only under the conditions created by the Economic Reform towards the middle of 1965 that it became possible to begin settling these problems in a more effective manner and on an entirely new basis. The experience gained during the period 1955 to 1965 can serve as a foundation for solving current problems. The aim is to speed up the expansion of the automotive industry and its related industries in order to face competition on the market more effectively.

50. We shall outline below how the problems involved in the relations between the automobile builder and his sub-contractors were considered at the time. In the first place, an attempt was made to show how the various undertakings concerned should co-operate and what were the economics and technical advantages of such co-operation. In this respect, it was often observed that the degree of co-operation achieved reflected the stage of a country's industrialization.

51. Industrial co-operation made remarkable progress after the publication, in 1953, of the decree relating to the association of undertakings, and in 1954, of the decree relating to the right of acquiring industrial property abroad. The latter regulated conditions for the exploitation of industrial licences obtained from foreign firms.

52. There are several definitions of the concept of "co-operation", of which we shall cite a few:

"Co-operation in industrial production means the division of labour in a considered and orderly manner, the results of which should be reflected in a series of technical and economic advantages and in the rationalization of production in general."

"Specialization and co-operation, as essential elements in the contemporary organization of production processes, result in numerous benefits to the participants themselves and also on the social scale as a whole. These benefits are the result of a better utilization of production capacity, reduction in the cost of manufacture, more rapid perfecting of manufacturing methods, more effective employment of specialized personnel, economy in capital investment, etc."

"Industrial co-operation is a modern form of production of a given article by two or more industrial undertakings with the aim of manufacturing a better product more rapidly at lowest production costs and through better utilization of existing capacity."

Or lastly, as Karl Marx has said:

"Co-operation means the planned, joint participation of a large number of persons engaged in the same kind of work or in different kinds of related tasks."

The foregoing definitions, and many others, refer basically to the same thing, that is, a more advanced standard of organization and of distribution in the process of manufacturing the parts of an article, for the purpose of achieving the best possible technical and economic conditions.

53. As co-operation developed, various problems also arose, so that at the present time we may frankly affirm that while we enjoy a fairly high advanced degree of co-operation, with some dozens of undertakings participating in the production of a single article (even more than fifty undertakings as is the case with automobile manufacture), we are still far from being able to say that the question of the organization of related industries has been completely resolved. We might even say that there are plenty of problems that are not yet fully clarified. More precisely, we may say that, in spite of the experience gained, a large number of problems still remain to be solved. If solutions are not found, many of the anticipated benefits, which have in fact accrued in countries with developed industries, will still be wanting. Naturally, we do not claim in the present survey to offer authoritative solutions for the problems that face us in present conditions, but we hope from our experience to make a modest contribution.

54. It has already been remarked that the problems are of a technical and economic and, in part, legal nature; the question of organization is involved too, and to some extent understanding of the pattern of social relations in Yugoslavia.

55. We have to deal with three essential elements in the general picture:
- (a) The principal producer, the builder of the finished product;
 - (b) The sub-contractor, the co-operating undertaking, responsible for some part of the product;
 - (c) The community, the market and the ultimate consumer.

The principal producer

56. The process of manufacture of a product is divided between the principal producer and the sub-contractors. The obligations of the principal producer and of the sub-contractors towards the customer are not exactly the same, and therefore their rights and obligations in the organization of the process of production are not on the same level.

57. Only the principal, the car builder, can and should take responsibility for the finished product. The customer is acquainted only with the establishment of putting the car on the market: he looks to it for his guarantees of quality, a properly organized after-sales service, adequate facilities for obtaining spare parts and prompt satisfaction in the event of complaint.

58. The principal, that is the producer of the finished article, has the difficult task of competing with other producers of the same kind of article, in the domestic market as well as abroad; the commercial risks are therefore mainly his.

59. Synchronization and continuity in production are of vital importance to him. Any stoppage in the process of manufacture (in most cases serial production) caused by the lack of some part, possibly of trifling value, to be supplied by a sub-contractor, may occasion irreparable loss.

60. In these circumstances, the relation between the principal producer and the co-operating undertakings must be clearly and precisely defined, if a product of high quality at low cost is to be obtained.

61. Why should the maker of the finished article organize this co-operation? Above all, he wants to make use of the possibilities of specialized undertakings

in manufacturing particular parts or sub-assemblies calling for skilled personnel or a highly individual technological process, or some equipment of a special type. As the specialized undertaking usually manufactures these parts for several manufacturers in a particular branch of industry, such as the automotive industry, the electrical industry, the machine building industry etc., it is in a position to turn out a high quality product at minimum cost.

62. Co-operation may also be organized when there already exist plants in which capital investment has been made. The maker of the finished article finds it worth-while to make use of these existing facilities in order to reduce his own capital investment to the lowest possible level. But he must always bear in mind that the advantage gained by a saving on capital investment at a given moment might be lost as a result of problems arising in connexion with the quality, quantity, continuity or high cost of supplies. Otherwise, grave mistakes may be made.

63. Not every purchase of an article by the builder of the finished product comes under the heading of "co-operation". The manufacture of standard articles used by several industrial consumers as production goods or by the market as consumption goods has nothing to do with co-operation, as their manufacture is determined not by the capacity of the builder of the finished article but by market demand. The technology of such manufacture does not depend on the organization of the principal constructor's production processes. The maker of the standard product sells it to any interested customer, whether the goods are made according to the design of one or several clients or on the basis of the maker's own technique.

64. Items falling under this kind of heading include things like nuts and bolts, light bulbs, ball bearings etc. All these are articles bought simply on the basis of a sales contract, just like consumption goods. Suppliers of raw materials, energy and power, etc., are dealt with, of course, on the same basis.

65. The manufacturer of a particular part or sub-assembly can be called a "co-operator" of the builder of the finished product when he has organized his own manufacturing processes on the basis of drawings that form part of the builder's own technical documentation.

66. It is vital for the co-operating manufacturer to possess modern technological facilities. Otherwise high-quality, low-cost production will be impossible. It is equally necessary for the co-operating manufacturer to be able to keep up with the expansion and needs of the builder of the finished product and to guarantee him continuous delivery.

67. We will now show by a few examples how the automobile manufacturer, by insisting on not paying for a particular part or sub-assembly manufactured by a sub-contractor more than he would have paid for an imported article, has obliged the sub-contractor to develop more advanced techniques.

68. The manufacturer of leaf and helicoidal springs had stated a price which was 100 per cent above that quoted by a foreign supplier for the same product. After negotiation, during which the spring manufacturer did his utmost to prove that he was working without making any profit and that his selling price was exactly the same as the cost price, it was agreed that a few European spring manufacturers should be visited to learn something about modern production technology. When he saw how production based on advanced technology was carried on, the spring manufacturer fully understood the necessity for changing his own methods. It was then clear to him that the automobile builder was justified in asking for a lower price. After changing his production techniques, the manufacturer in question was able not only to deliver springs at a reasonable price to the domestic builder, but to compete successfully in a competition organized by a foreign lorry builder.

69. The same thing happened in the case of a manufacturer of radiators, who claimed that it would be impossible for him to deliver his products at the price acceptable to the automobile builder, and that he was working at a considerable loss. After visiting some modern European plants the local manufacturer realized that he had to change the whole of his technology; the pace of his production was far behind that of the foreign producers.

70. These are only two examples; many others could be mentioned where the manufacturer of the finished product insisted on the application of modern methods by the sub-contractor and provided him with technical and other assistance.

71. Synchronisation of production between the automotive industry and related industries as well as continuity of production are essential factors, in

addition to quality and cost. The manufacturer of a complicated product may well find that he is co-operating with some dozens of other undertakings (which often are responsible for 30 or 40 per cent, or even more, of the value of the finished job). If, therefore, supplies from co-operating manufacturers are not synchronized and continuous, the vehicle builder will either find his work held up, which greatly increases the cost of production, or he will be obliged to carry heavy stocks of parts, tying up large amounts of working capital and again increasing net cost.

72. The manufacture of an important item is a product (or that of a vital group of parts) which is not dictated by technical or economic considerations but is simply due to circumstances resulting from a distribution of production at the behest of the respective authorities, cannot be considered an example of industrial co-operation. In these cases, while such a sharing-out of the production programme must be maintained, in our opinion it is necessary to regularize the relationship by endeavouring to associate or integrate production or merge the undertakings. This is the only way to bring sufficient influence to bear on the aspect of technological requirements, i.e. a method of organizing production that will reduce the costs of manufacture.

73. Following this process of reasoning, relations between the principal producer and his suppliers might be regulated in the following manner:

- (a) In respect of standard items, goods of interest to several consumers and, in general, current consumption goods, a simple contract of sale is sufficient; the same applies to materials.
- (b) In respect of the manufacture of parts and sub-assemblies, i.e. the sub-contractors to the vehicle builders, there should be a contract stipulating clearly all the conditions governing the management of the affairs of the undertakings concerned. Such a contract should specify the builder's obligation to buy his annual requirements of supplies exclusively from the sub-contractor, provided of course, the latter offers the most advantageous terms. The contract should likewise regulate the question of technical assistance to be provided by the vehicle builder.

74. Actual deliveries of supplies will be effected on the basis of an annual contract of sale concluded each year between the vehicle builder and the contractor offering the most advantageous terms.

The sub-contractor - a co-operating undertaking responsible for part of the production

75. Our experience indicates that the undertaking responsible for producing the various parts and the vehicle builder have opposite views on the technical and economic conditions governing their relationship.
76. The sub-contractor feels that his economic position is unfavourable and that the builder of the finished product is getting an undue profit out of assembling the parts supplied by the co-operator and selling the product on the market.
77. The sub-contractor thinks that he, too, ought to have a proportionate share in any ultimate profits due to favourable selling conditions for the finished article. In his opinion, the vehicle builder ought to guarantee him a long-term contract lasting over several years, ten for example, to ensure his future prospects and provide some motivation for the capital investment necessary for profitable manufacture and recovery of expenses incurred in preparing for production.
78. The sub-contractor also thinks that his own production costs ought to be recognized and that his prices should not be compared with international prices; the capital structure of his firm and his equipment constitute a specific case; his technology depends on the plant at his disposal; his technical facilities and possibly the volume of his production may be smaller than those of a domestic or foreign competitor.
79. The sub-contractor is not eager to conform to the manner of organizing the after-sales service network proposed by the builder of the finished product; he would prefer to arrange for the maintenance of the parts he manufactures himself, retain direct sales for spare parts, have his own customer-relations service to maintain his claim for direct responsibility for the part he manufactures.
80. The sub-contractor wants the technical documentation from which he has to work to become his own property; if a licence is involved, he wants the relevant part of the licence to be transferred to him with all the obligations and rights pertaining to it. He prefers to be in direct contact with the foreign partner who has ceded the licence.

81. In other words, the sub-contractor wants to be on an equal footing with the manufacturer of the finished product and thinks that any special regime for the vehicle builder amounts to something very like monopoly and is contrary to the social relationships established in the socialist system.
82. In his claim to independence, the sub-contractor objects to any kind of supervision of his manufacturing processes; the only control he is willing to accept is that of the vehicle builder who accepts or rejects the finished parts.
83. With regard to product development following some technical discovery, or if the builder of the finished product asks for some modification or other in response to market demand, the sub-contractor will agree only when he finds this to his advantage, and he is unwilling to acknowledge the vehicle builder's right to carry out such modifications, often dictated by strong competition on the market, on his own account. The sub-contractor wants security in his contractual relationship and the maximum opportunity for profit; he is reluctant to make modifications and strives to reduce his business risks to a minimum.
84. A considerable number of related industrial undertakings are of the opinion that it would be impossible to complete the product without them and that therefore the appropriate benefits should be guaranteed to them a priori. Most of the undertakings in the related industries think that the question of technology is their own affair and that the builder of the finished product should not meddle in it; that would imply his interference in the business management of the undertaking. The essential question here is whether the technology is modern or out of date: that is what determines production costs.
85. Aiming at large-scale production, related industrial undertakings invite the vehicle builder to introduce maximum standardization in order to reduce their production costs, since most of them are geared to producing for a single branch of industry - the automotive industry, the electrical industry, food industries etc.
86. As for the principal producer's demand that the sub-contractors should guarantee him continuous, synchronized delivery at a predetermined production-cost level, the sub-contractors think that to meet this demand, the vehicle builder should be prepared to involve his own investment resources.

Community - market - consumer

87. The third basic factor acting indirectly on the organization of industrial co-operation and influencing the relationship between the principal producer and related industrial undertakings is the community, which, by its fiscal, customs and other regulations, aims at stimulating up-to-date, competitive national production. For this purpose, the community puts the domestic producer face to face with foreign competition to force him to organize the production process at minimum cost, to be in a position to meet international competition on the domestic market and on foreign markets (exports).

88. The community is therefore much concerned with the organization of modern industrial co-operation, calculated to reduce capital investment, diminish the cost of production and intensify the utilization of underemployed capacity.

89. The community is concerned for the expansion of industrial production throughout the country's territory. It should be possible for small specialized firms producing economically not only to achieve worth-while economic results, but also to facilitate some degree of decentralization, with the effect of slowing down migration into the big cities and diffusing the aptitude for industry, creating an industrial worker class in the smaller towns and even in the villages.

90. The community also insists on an adequate after-sales service to ensure the continuous functioning of goods supplied and normal working life for the product, as is the case in developed countries. The community insists also on the necessary availability of spare parts, the basic necessity for regular operation.

91. The community takes the view that the problem should be essentially resolved by the evolution of supply and demand on the market, regulating not only selling price and production costs, but at the same time the question of the quality and the maintenance of the product on the market, since the expensive, poor-quality product would be eliminated through competition.

92. The market, however, as a specific factor in the community, is even more rigorous as a regulator of its interests. A free market, acting according to the law of supply and demand, operates entirely on the basis of the economic advantages that can be obtained. It is well known that the market,

acting through economic processes to ensure the best possible conditions for the buyer, will import substantial quantities of consumption goods, thus encouraging the maximum degree of competition within the country, without taking account of any specific circumstances affecting the producer, such as lack of equipment, low productivity, lack of qualified manpower, poor quality of raw materials etc.

93. Our market, in fact, by placing imported goods side by side with our own products in order to influence price and quality of domestic production, tends to make our industry capable of facing up to international competition. Naturally, we must ignore the occasional cases of certain import firms taking advantage of the demand and offer to sell at outrageous prices, articles that have been imported at low cost, the production cost of such articles being high in our country and consequently commanding high selling prices. In this fashion, such import firms collect an undue excess profit, and to that end often engage in the importation of goods while neglecting distribution of domestically produced articles.

94. The important thing is, therefore, that the market, as regulator of sales opportunities, should oblige producers to keep strict account of their production costs, selling prices, quality, arrangements for after-sales service, regularity of supplies to the market and all the other demands of the contemporary market situation. Otherwise the disposal of their products may become difficult or it may happen that the appearance of a new local producer, better capable of satisfying the market demand, may put them out of business.

95. Last in the framework of the community and the market comes the individual consumer, the customer who is directly concerned that the community-market should act in accordance with the above rules. The customer lends them his assistance. The individual makes his own personal effort, even, to eliminate the inferior product by economic or political means (electors' meetings, consumer councils, the press etc.).

96. This customer-action has a considerable influence on the provision of reasonably priced high-quality goods for consumers. At the present time many articles are subjected to consumer criticism not only from the point of view of quality and price, but from the point of view of shape and aesthetic appeal, design and modernity, range, extensive choice of types, etc. The customer is

not willing to accept that a product which was once perhaps the last word in technique should remain unchanged. He expects continual modernization and updating; he insists that the latest accomplishments of the developed countries should become known in our own country and that domestic producers should develop and improve products out of their own resources, always keeping up with the foreign manufacturer.

97. In drawing attention to the three elements referred to, our purpose has been to pinpoint the forces at work, which must be taken into account in looking for satisfactory and steady development of industrial co-operation, to obtain the results expected by the community, the market and the individual.

IV. CO-OPERATION WITH THE FOREIGN MANUFACTURER

98. So far, we have said nothing about industrial co-operation with foreign countries. There are three aspects to consider:

- (a) Industrial co-operation with foreign countries in general.
- (b) Inclusion of related industrial undertakings in industrial co-operation with foreign countries.
- (c) Co-operation of domestic industry with foreign industry for the purpose of joint representation on other markets.

Industrial co-operation with foreign countries in general

99. In the light of the industrial heritage left to us by the former Yugoslavia, especially in respect of the number and capacity of available qualified personnel, the Federal People's Republic of Yugoslavia was obliged to begin by acquiring a certain number of licences, in selected branches of industry were to catch up as quickly as possible with the achievements of the developed countries.

100. However costly this procedure might be, in the light of the currency resources at the country's disposal, it was nevertheless less expensive than going on manufacturing with out-of-date methods and trying to spar at one bound by our own means the some dozens of years of progress separating us from the advanced industrial countries. A question which must be considered apart is the choice of licences, in particular the forms and methods that were applied in choosing between licences and the problems of contracts concluded with foreign partners, where certain clauses of a technical or economic nature were not always the most advantageous for the Yugoslav undertakings because of their lack of experience and the know-how the foreign partner knew well how to benefit from.

101. It is a mistake to think that the mere acquisition of the licence is enough to ensure keeping up with new advances throughout the world and to guarantee future expansion. The purchase of a licence always involved the risk of trailing behind the concessionaire: the licence purchased is for what he is producing at a given moment, when he is in a position to provide any necessary assistance. The licence does not include whatever he may be planning to bring into production, whatever he is in the process of studying in his laboratories or research departments, etc; this means that rapid mastery of the process and

development of its own research department, test services and laboratories constitute an essential problem to which special attention must be given by the purchasing undertaking.

102. Is this the way things were done in Yugoslavia? Unfortunately, in most cases, it was not, the Government administration did not succeed through its laws and regulations in drawing up the necessary requirements to specify the appropriate approach to the foreign partner when the licence was being acquired. Meanwhile, the undertakings concerned, for objective or subjective reasons, did not energetically tackle the question of mastery of production methods or of training the qualified staff needed for future expansion.

103. What happened was that a commercial outlook permeated the industry. Often enough, all that was organized was simply the assembly of parts delivered from abroad and the sale of the finished product on the Yugoslav market at prices freely determined. This had a negative influence on the development of research and domestic technology. The enormous expenditure in foreign currency was another question, equally important.

104. It must be observed that the economic system of the country contributed substantially to this state of affairs by allowing the problems relating to the obtaining of reproduction goods to be considered separately from those relating to investment. The result was that some licensees were able to procure the foreign exchange necessary for reproduction equipment more easily than the means for investment, which in our opinion led to certain distortions.

105. If reproduction resources and investment had been considered as a whole, and if the contracts concluded with the concessionaires had stipulated a period after which the article subject to the licence would have to be wholly manufactured within the country, and had specified the investment resources to be provided, we should have reached the stage of domestic manufacture earlier and have spent less in foreign currency.

Participation of related industry undertakings in industrial co-operation with foreign countries

106. The concession of part of the licence to a related domestic industry, and putting it in relationship with the foreign undertaking (the concessionaire)

and his sub-contractors, is another question. The licensee and the undertakings that supply him with various parts of the products subject to the licence have divergent points of view on this subject.

107. The licensee usually considers that the concession of part of the process of manufacture to a specialized undertaking should not mean handing over of the technical documentation and other rights deriving from the licence contract, since that would put him in a position of total dependence on the work of the sub-contractor, as regards quality of manufacture, selling price of the parts, the period of running-in the manufacturing process, and synchronization and continuity of supplies. In a word, the economic side of his activity would be paralysed.

108. He would not be able to approach any other industrial undertaking for the manufacture of the part in question or to import it in time if the supply were not maintained, if the price were unreasonable or the quality unsatisfactory. This would mean that the builder of the finished product would fail in all his obligations towards the community and would invariably lose against competition, abroad as well as at home.

109. Related industrial enterprises, on the contrary, regard the licensee as enjoying an exceptional position, with all the features of monopoly. The sub-contractor has no security for his investments, nor for the remainder of his business activity, since the licensee might cancel his orders if the price did not suit him, even in cases where a long-term general contract was in force, as a general contract always contains a provision for annual contracts fixing prices for each particular year.

110. The sub-contractor also thinks that the licensee should always be obliged to provide him with the technical documents and sometimes even with the technological documents. But this is difficult, almost impossible, since the licensee supplies the technical documents (working drawings) only for the sub-assemblies and assemblies that form part of his own manufacturing programme, referring his licensee, for the documents relating to sub-contracted parts, to the specialized undertakings whose industrial property they are.

111. This is understandable since, in foreign countries, specialized undertakings have their own research offices dealing with the parts they manufacture and are consequently themselves owners of the industrial property. The builder of the finished product in most cases simply provides the specifications together with the order for a particular part or group of parts. There are cases where the licensor is unwilling to supply the full set of documents for commercial reasons and refers the licensee to his own sub-contractors.

112. All this means that the licensee is in a position to supply to his domestic sub-contractors only the technical documents for the parts that the licensor produces in his own plant. Consequently, a joint effort has to be made to get hold of the necessary documents; or each domestic undertaking, i.e. the proposed sub-contractor, has to be left to obtain the material for itself. This does not imply cession of the licence rights but simply the creation of equal conditions for the potential producers.

113. A question of vital importance for the licensee and his domestic sub-contractors who make use of the foreign partner's experience is that of the technical assistance to be provided: elaboration of technological projects, participation of Yugoslav engineers and technicians in the work of the research department, the licensor's project planning and technology, training for technicians and skilled workers in his workshops or in those of the specialized manufacturers. From the economic point of view, it is also important to go on to trade in supplies, i.e. for the licensor to undertake to purchase raw materials, semi-finished and other goods necessary for his product in the licensee's country. Reciprocity in the supply of goods is an important economic opportunity for achieving a balance of payments in foreign currencies.

Co-operation of domestic industry with foreign industry for the purpose of joint representation on other markets

114. A good deal of emphasis has been placed on this form of co-operation but the results up till now have been modest.

Paths to follow - determination of the principles of co-operation

115. Industrial production in the contemporary world cannot be imagined without local or foreign competition.

116. Our aim in the present study, however, is to emphasize that the prior condition for the most rapid and effective expansion of industrial co-operation and its streamlining is, in our opinion, the need to discover the optimum combination of the three factors we have indicated as the essential elements operative in the Yugoslav economy and which therefore are decisive for the development of industrial co-operation in our country.

117. Of the three factors mentioned, the most important, in the conditions prevailing in our country and under our economic system, must be the interest of the community, the market and the consumer. We have seen that the administration has modified the system of foreign payments through a series of currency regulations adopted by the legislative bodies that has brought the manufacturer of the finished product face to face with strong foreign competition. It is well known that in our economic system no one is or can be exempt from domestic competition, for every article is offered on the market by a number of different producers.

118. The community provides export incentives only to a limited degree, and there are signs that these incentives will be gradually tapered down, the argument being that our production should be capable of manufacturing goods that will stand up to competition on world markets. We can no longer tolerate high production costs for so-called "specific" reasons, or "Yugoslav quality" products.

119. The struggle to eliminate these "specific" conditions is, in fact, a campaign for advanced technology, for the reconstruction of existing factories and the building of new ones, so that our production costs may be brought within the international range. This is the only way we can beat competition in Yugoslavia and become competitive on the world market.

120. In every country industry is the most important source of material goods that form the basis for a high standard of living and welfare. For this reason it is absolutely necessary to prevent our industry, through costly and inefficient production, from hindering in some measures the progress towards a high standard of living and general prosperity. As we have already mentioned, our market, too acts in this way, and the needs and demands of our clientele work on these same lines .

121. The builder of the finished product cannot expect any concession on the part of the community, any acceptance of costly and low-quality production, nor any "understanding" on the part of the consumer. He has to adapt himself to the idea that any weakness of his will be taken advantage of by his competitors.

122. In our industrial communities (undertakings) in Yugoslavia, the remuneration of the personnel is always determined in relation to economic achievement, depending above all on high productivity, reduction of production costs, low selling prices: in a word, the commercial success of the goods. Naturally, if the market, the customers, allow the builder of the finished product no latitude as to the quality and cost of production, we cannot expect them to be tolerant towards related industrial undertakings.

123. It is in this light that the relations between the principal producer and his sub-contractors must be considered; it is the only sensible path to follow if we want to overcome current problems in co-operation.

124. A system of relations between the manufacturer of the finished product and his sub-contractors tolerating a number of technical or economic weaknesses would lead inevitably to the manufacturer's ruin. With this fear in mind, and being unable to regulate their relations with related industrial undertakings in any other way, the manufacturers of the finished product have followed a different course, in fact mistaken, but seeming to them a way out from this situation.

125. We might say that the problem of organizing co-operation in Yugoslavia during the 1955-1965 period was not only in its first phase, but in some respects even involved certain aspects of a crisis.

126. The crisis arose, in our opinion, from the fact that the manufacturers of the finished product, unable to solve the technical and economic problems involved in their relations with their sub-contractors, sought a solution in planning the manufacture of items already produced by specialized undertakings (or by undertakings in the process of becoming specialized) within their own plants - assuming the form, in some degree, of autarkic undertakings, a transformation for which there was neither technical nor economic justification.

127. There is no reason why specialized undertakings should work for one or two manufacturers; they should work at least for a whole branch of industry. The

manufacturers of electrical equipment, instruments, wheels, etc. for example, ought to supply all the undertakings in the automotive branch - private car or commercial vehicle or tractor builders. Only on this condition is a certain degree of standardization possible, to be followed by expanded serial production and reduction of production costs.

128. We consider that on the basis of what we have just said, it is possible to form some idea of the problems that arose in the relations between the makers of the finished products and their sub-contractors during the 1955-1965 period, of the endeavours that were made to solve them, and of the manner in which the conditions for their solution were created during the Economic Reform which governs the current period.

129. The relations between the manufacturer of the finished product and his sub-contractors can, in our opinion, be regulated only in the following manner:

- (a) The manufacturer of the finished product must organize production in such a way that he manufactures in the parent factory only parts of which he can ensure a profitable and high-quality production and are capable of future development and improvement. For the remainder, he must make use of the capacity available anywhere in the country; in the first place, specialized undertakings in that branch of industry.
- (b) The manufacturer of a finished product, while providing in his own establishments the most modern technology and lowest product cost (as compared with world prices) is under an obligation to give all the technical assistance necessary to related industrial enterprises so that they may achieve a similar level in production. This means that he must provide his sub-contractor with all the necessary technical documents which are his own property, or a portion of the documentary material obtained when he acquired the licence. Subsequently, he should, as far as possible, help the related industry undertakings of his own country, to make use of the experience of the licensor; and he should ask the licensor to do everything possible to get his own sub-contractors to maintain a permanent relationship with the Yugoslav licensee's sub-contractors.
- (c) The manufacturer of the finished product should provide his sub-contractors with full information about his own future projects so that they can estimate their own prospects, make provision for appropriate investments, study the technology and whatever may be necessary to keep up with the parent factory.

The manufacturer of the finished product and related industrial undertakings should agree upon the principles to be followed in price policy, taking as their basis international prices for the article under consideration. The annual contracts to be concluded between the parties should establish selling prices for each year.

- (d) The relations between the manufacturer of the finished product and the manufacturers of current consumption goods (nuts and bolts, light bulbs, ball-bearings, electrical fittings, etc.) should be regulated by ordinary contracts of sale, as goods of this kind are not intended for a single client, but for several undertakings, for a whole branch or even several branches of industry.
- (e) Contracts between the manufacturer of the finished product and undertakings manufacturing parts, sub-assemblies, etc., should be long-term. Such contracts should define the system of business relations in advance and deal with the problem of after-sales service, spare parts, approval of manufactured parts, etc., but deliveries should be effected according to annual contracts determining the range, quantities and price.

130. The long-term contracts should specify the manufacturer's obligations to take the whole of his annual requirement from the particular sub-contractor, if the latter offers the best possible conditions (not solely in respect of selling price). The annual contract is concluded with the undertaking offering the most advantageous conditions.

131. It should be noted that the manufacturer of the finished product was under an obligation to supply all the necessary information, technical and other assistance, to every enterprise interested in manufacturing parts, sub-assemblies, etc., for him under advantageous conditions. This was his only opportunity, during that period, to bring any influence to bear on the price of the sub-contracted parts and to ensure synchronized and regular supplies from the sub-contractors.

132. Long-term contracts, offering at the same time a basis for annual sales contracts, would have in practice slowed down the future development of the automotive industry. In most cases, such a contract would amount to offering a guarantee to the sub-contractors and would diminish their incentive to make progress in the manufacturing processes, to bring down the cost of manufacture and improve quality, in a word, for development in general.

133. In the conditions prevailing in our country, all this would have serious consequences, for world progress in technology is so rapid and international competition so strong that anyone unable to follow market trends closely cannot expect any commercial success.

134. The livelihood of the sub-contractor who has organized his production efficiently and at low cost, and who can guarantee regular deliveries of good-quality parts to the manufacturer of the finished product, is not threatened. Such a sub-contractor is a vital support to the manufacturer, and in severing the connexion the latter would lose the advantages he had; his production would be jeopardized.

135. The manufacturer of the finished product cannot remain indifferent to the technological solutions applied to a production process by his sub-contractor. He must, indeed, insist on advanced techniques, and give all possible assistance.

136. To sum up, the collaboration between the manufacturer of the finished product and his sub-contractors should assume the form of a free community of undertakings concerned, closely linked together by all kinds of mutual assistance and exchange of experience, provided that these links do not become such as to stifle initiative in seeking to reduce costs. If the economic conditions are such that there are several manufacturers of a similar part, and if free competition tends to reduce production cost and improve quality, it should not be hindered by long-term contracts lacking all flexibility. In practice, it is for the undertaking concerned to assess the economic benefit of manufacturing parts, sub-assemblies, etc., for the manufacturer of the finished product, if its chances of successful competition in the market seem reasonable.

137. These considerations refer to the problems arising in the relations between the manufacturers of the finished product and their sub-contractors during the period 1955-1965, the period when the automotive industry in Yugoslavia was born.

138. Most of these problems were not settled, as we were awaiting their solution by the manufacturers of the finished product and their suppliers on the basis of their own experience, or because we thought that the matter would be dealt with by the Government under appropriate legislative procedures.

139. Two factors influencing the search for the answer to the problems in the relationship to be established between the manufacturers of the finished product and related industry during the period ending in 1965 should be mentioned; First, an attempt was made to bring about integration of a number of manufacturers, the principal manufacturer and his sub-contractors in the first place,

setting up a single economic organization with the aim of reducing manufacturing costs and the amount of capital investment necessary; Secondly, there was the influence of the Yugoslav local government system, based on the one hand on the political and territorial unit with its own economic interests, its progress depending on the economic opportunities available in that particular territory, and on the other hand, communal "self-management", on a large scale. The process of integration took three different forms:

- Mergers,
- Business associations,
- Long-term collaboration.

140. Starting from the assumption that many technical, economic and organizational problems could be resolved through integration, the Government and the national social and political bodies laid particular emphasis on it, enforcing its application in a number of ways.

141. The process of integration, however, did not go according to plan and did not bring the expected results; conditions at the time were not favourable. The conditions to which we refer are in the first place the free play of the market and competition within as well as outside the country. It was not until the time of the Economic Reform that such conditions began to operate, and through the import of economic forces, to regulate the relations between the parties concerned.

142. The Government and the social and political bodies endeavouring to accelerate the process came up against the resistance of communities and undertakings that had failed to understand its economic necessity, looking on it only as bureaucratic compulsion. For this reason the process of integration during the period up to 1965 did not bring the desired results.

143. It should be emphasized that the third method of integration, based on long-term contracts, produced the best results. It regularized the relations between the partners, and helped to define certain principles and methods to be taken as the basis for future action. For example, in the long-term contracts, the system of determining prices, is, in most cases, made clear. For a long time this point was the vital problem in the relations between manufacturer and the sub-contractor. Another good feature of the long-term contract is that it does not involve interference in the problems of "self-management" in the contracting undertakings.

144. During this period the importance of the local communities grew considerably; the maximum effort was made by each to develop its economy, and particularly industry, on its territory; but in the effort to put its own expansion on the soundest possible basis, each commune sought to build up integration within its own borders. Integration of undertakings at different economic levels was attempted, without consideration for their technical-economic basis, or for their mutual interests. Through such integrations, the best established undertakings had to carry the weaker, it being understood that any losses involved in the organization of production were the responsibility of the local community, under the regulations then in force.
145. We may frankly affirm that the results obtained during the period 1955-1965, were not satisfactory. It was necessary to wait until integration became economically attractive for the undertakings, and thus a sound basis for a lasting solution.
146. Of course this period had a powerful effect on the relations between automobile manufacturers and their sub-contractors: production was expanding strongly and the free play of the market was beginning to operate. The number of sub-contractors, growing to about 100 undertakings, also had important effects.
147. Relations within the automotive industry were also influenced by the fact that there were enormous differences in the volume of production, technological level, availability of qualified staff and experience in manufacturing and business management.
148. To conclude, we should like to say a few words about a very important factor, ever present in the search for solutions to the mass of problems arising in the relationships between undertakings in the automotive industry. This is the question of the price of parts, sub-assemblies, etc., and the price of the finished product. Throughout the period under consideration, related industrial undertakings insisted that their real costs of production should be acknowledged and a certain percentage of profit added to determine the price.
149. Obviously, acceptance of such ideas on the price structure implied acceptance of the costs involved in obsolete technology and out-of-date organization of production methods; it created a complacent attitude about sales, for if the costs were "recognized", competition no longer mattered.

150. Acceptance of such ideas would have a negative influence on the development of the product, even as regards its improvement and modernization. The automobile manufacturers took the view right from the start that prices should be determined in two ways only: First, by the free operation of the market - market prices. In so far as there might be only one manufacturer of a particular part, sub-assembly, etc., on the Yugoslav market, consideration of the market price would have to take into account international prices; Secondly, on the basis of the proportion of the labour-value in the manufacture of the particular part in proportion to the labour-value in the construction of the complete vehicle. The manufacturer's technology would be used as the basis for the comparison. If the sub-contractor's technology was on the same level, the relationship would be normal. If the sub-contractor's technology was relatively inferior, he would not be in a position to earn his expected profit. He would therefore be obliged to improve his technology. If, however, the sub-contractor's technology was more advanced than that of the vehicle builder, he gained an excess profit, and this prompted the vehicle builder to speed up development of his own technology.

151. A great deal of trouble was taken to get these points of view accepted by a number of automobile builders and some of the sub-contractors.

152. The solution to the problem of price determination has not yet been found and the basic conditions for settling so complicated and delicate a question will only be created by the application of the principles of the Economic Reform.

V. DEVELOPMENT OF THE AUTOMOTIVE INDUSTRY FROM 1965 TO THE PRESENT TIME AND ITS FUTURE PROSPECTS

Economic Reform and its effects

153. On taking into consideration world economic, and particularly, industrial, trends: scientific and technological achievements and their application to industry on the one hand, and on the other, the political concept of the co-existence of different social and political systems, the following line of reasoning emerges:

- (a) Yugoslavia, though a relatively small country, with a corresponding market, cannot in present world technical and scientific conditions, and confronted with contemporary technological dynamism, mechanization, technical and other innovations characteristic of the space age, stand aside and remain isolated from these happenings;
- (b) Coincident with the application of the political principles of active co-existence and the adoption of rules to govern relations between nations and governments with different social systems, it is inevitable that there should be economic, financial and technical co-operation between such countries;
- (c) Collaboration between peoples and governments is bound to lead to the formation of a single world market influencing economic and other relationships. Following up these ideas, the conclusion was reached that the success of the Economic Reform in Yugoslavia should enable our country to take its place in the international market.

154. We may say without fear of exaggeration that the Yugoslav economy has given proof of the desirability of such a course. It must not be ignored that accession to the world market must mean a somewhat selective approach to industry.

155. This means that undertakings in which the conditions and production plans are not such as to enable them independently to put into practice the principles of the Reform must integrate with other undertakings in their branch of industry to do so. Otherwise they will have to change their production programme or simply fail.

156. The basic principles of the Economic Reform are:

- (a) Yugoslav industry must take its place in the international division of labour to ensure its own existence and future progress.
- (b) Its activities must conform to the laws of economics, profitability of production being the primary concern.

- (c) Domestic industry can be protected only to a limited degree, no more than in the developed countries. The policy of reducing protection is being put into effect by stages, graduated to the capacity of each industry to apply the principles of the Reform.
- (d) Liberalization of imports to meet market demands, thus providing competition with domestic industry so as to stimulate its speedier development and enable it to be competitive on both domestic and foreign markets.
- (e) The national currency - the dinar - should become convertible within the more or less near future, and import and export problems will then assume an entirely new importance.

The customer-market relationship will begin to act more freely and vigorously on domestic production.

157. To bring the principles of the Economic Reform into operation, the National Assembly and the Government have promulgated a whole set of legislative acts and decrees dealing with:

- (a) The banking system. The banks are no longer to be government bodies for the distribution of money, but independent organizations. The other national undertakings are to participate, with their resources, in founding banks, and as members of their Executive Committees, to take part in their management.
- (b) The credit system. Credit provided for borrowers must become dearer. The aim is to compel undertakings to take steps, in the first place within and in respect to the market, to ensure a higher co-efficient in the monetary circulation; i.e., to achieve larger turnover with more limited liquid resources.
- (c) The currency system, permitting the unrestricted importation of re-production equipment and other supplies for industry, even though the same articles may be manufactured within the country. By this means, it is hoped to encourage domestic producers to intensify their efforts to achieve price and quality standards, and punctual deliveries, to match their foreign competitors.

Obviously, import restrictions cannot be abolished at one blow. Over a specified period, completely unrestricted importation will apply only to some categories of goods, with partial restrictions on others. For some branches, a system of general licences has been established for imports of parts, sub-assemblies, etc.

- (d) An act dealing with the integration of the capital of national undertakings has also been issued; its object is to bring into association the organizations concerned belonging to the same branch of industry, what we call a "horizontal association" (between the manufacturer of the finished product and related industry), or to associate several branches ("vertical association"), e.g. the iron and steel and automotive industries. This act also regulates financial and manufacturing co-operation between domestic and foreign undertakings, and the participation of foreign capital in Yugoslav undertakings.

158. These acts and decrees and other regulations issued during the period have substantially changed the operating conditions of the Yugoslav economy in general and industry in particular. The undertakings are stimulated to re-examine in detail their production plans and utilization of capacity, to study the level of technology reached and the principles of internal organization, the use made of investments, organization of sales and purchasing departments, marketing, etc. Yugoslav industry is at this moment going through the process of setting to work the principles of the Economic Reform which is in full swing.

Effects of the Economic Reform on
the automotive industry

159. In the preceding pages, we have outlined the dimensions of the motor and vehicle industry in Yugoslavia separately for commercial and private vehicles, its production plans, range and capacity, and we have described the early stages of its development (1955-1965). We can now give some consideration to current problems and the paths to be followed in the future in the light of the effects of the Economic Reform on this branch of industry. Annex 2 contains a table of annual vehicle registrations and Annex 3 a table of annual vehicle production in Yugoslavia. We shall now explore the effects of the Economic Reform, first on the production of commercial vehicles and, next, on that of private cars.

(a) Effect of Economic Reform on the production of commercial vehicles

160. The effect of the Economic Reform on the manufacture of commercial vehicles was in the first place its impact on the problem of sales, as the purchase of lorries and other similar vehicles was governed by a novel and purely economic logic during the period of scrutinizing the profitability of investments and the more effective use of working capital.

161. Since the serial production of commercial vehicles in Yugoslavia is only two or three times less than that of the bigger European manufacturers of such vehicles, the problem of enlarging capacity is less urgent than that of reducing costs through the application of advanced technology. To achieve economic production, the links with related industry need to be organized, undertakings integrated and collaboration with foreign counterparts established.

162. Exportation of these vehicles to external markets is a matter of special importance. The first thing is to regulate the connexion with the licence concessionaire in the form of a "partnership": to apportion the production range and programme, agree on the conditions for presentation on the partners' domestic markets and on foreign markets.

(b) Effect of the Economic Reform on the production of private vehicles

163. The situation is different in respect to private vehicles, production capacity is much smaller. Serial production of each model is limited and insufficient for the application of up-to-date technology. As the cost of manufacture is high, the selling price on the domestic market is not competitive with that of the foreign maker, and does not provide a margin for accumulating adequate resources for investment in future expansion of the private vehicle industry.

164. There is also the question of meeting market demand: the Yugoslav market potential is estimated at 100,000 cars a year, while domestic production at present amounts to some 50,000 units a year.

165. A separate problem is the range of models and research on new ones, as the Economic Reform has proclaimed liberalization of imports and private cars are already being brought in, and the local customer is in a position to choose what he likes.

166. The links with related industry call urgently for organization, not only in respect of price, quality and regular phased supply, but also because foreign makers are busy introducing their products to the Yugoslav market and getting in touch with representatives of related industries to make sure that there will be enough currency available to buy their cars.

167. These relationships would not have caused any uneasiness in the domestic automotive industry if they had not been based on mere contracts of sale, aimed at striking the international price level, while making no simultaneous provision for the capital investment necessary for producing at such a price. What happened was that the Yugoslav undertakings manufacturing automobile parts found they were exporting without making any profit - or even at a loss; all this for the purpose of getting the needed foreign currency, and while trying to cover the losses by selling the same parts to the Yugoslav manufacturer at a higher price.

168. In cases where long-term contracts between the Yugoslav supplier of automobile parts and his foreign counterpart are based on sharing the manufacturing programme, making provision for joint investment, technical assistance and other vital factors, so that the domestic supplier is in a position to manufacture the range of parts at international prices, and at the same time able to supply the Yugoslav manufacturer, the latter is by no means adopting a negative attitude towards such co-operation. The Yugoslav market will always be able to absorb a certain quantity of particular types of foreign cars.

169. Production and financial co-operation with foreign manufacturers, and capital investment by the latter in domestic undertakings, is much more urgent in the private car industry than for other types of automobiles. A contribution is expected from such co-operation to help the domestic industry to develop in the conditions created by the Economic Reform.

(c) Effect of the Economic Reform on the manufacture of sub-contracted parts

170. Related industries will be affected more profoundly by the measures proclaimed in the Economic Reform. Representatives of these industries, if unable to join in the international division of labour, will inevitably have to adjust to the fact that they will have to meet competition from another manufacturer of the same parts, either domestic or foreign.

171. The process of integration, inevitable in the conditions created by the Economic Reform, will be accelerated and take new forms, more appropriate for putting into effect the principles of the Reform.

172. Quite recently, a grouping of the producers engaged in the manufacture of the Zastava private and commercial vehicles has been effected. The manufacturer of the Zastava automobiles, as we know, is the Red Banner Plant, Kragujevac. The group is called the "community of producers sharing in the manufacture of Zastava automobiles" and its primary aims are as follows:

- (a) Technical and economic analysis of each member-undertaking or group of members of the Community in order to provide for their participation in the international division of labour; examination of the possibility of putting into operation other economic principles of the Reform and steps to be taken for that purpose.

- (b) Determination of methods for calculating prices, taking market price and the basis of international prices as the starting-point.
- (c) Establishment of the principles governing mutual relationships, in the first place in respect of synchronized and continuous supply of spare parts, after-sales service, conditions of guarantee, sale of spare parts, etc.
- (d) Establishment of the principles of joint selling, exporting and importing.
- (e) Agreement with one or several banks on the methods and conditions for financing simple and multiple reproduction, etc.

173. These principles are implemented through the conclusion of annual contracts between the members of the Community; there is no interference by the latter as a body in the direct negotiations between the undertakings concerned, or in their right to self-management. Any member-undertaking that could not or was unwilling to apply the agreed principles would be eliminated making way for another manufacturer of the same part or set of parts; or the vehicle builder could import the parts if necessary. In this way, a sort of selection procedure is set up, a very important and at the same time very difficult point in developing countries, especially where there is a socialist system. At the moment, the Community in question is just starting up and if the basic principles can be successfully brought into operation, other groups in the automotive industry will be able to follow its example to overcome the problems raised by the Economic Reform.

VI. DEVELOPMENT PROSPECTS FOR THE AUTOMOTIVE INDUSTRY

174. Looking at the competition on the domestic and foreign markets, and taking into account the general situation of private car manufacturers throughout the world, we must acknowledge that the private car industry in Yugoslavia is in a very serious position and that its expansion calls for new methods. For this reason we are concerned to clarify the details of the problem.
175. While examining the development prospects of the private car industry, we shall at the same time be throwing light on the commercial vehicle industry, though, of course, aspects specific to commercial vehicle manufacture must be borne in mind. With respect to related industry, its development is closely bound up with that of the automotive industry in general.
176. We are in the presence of hectic progress throughout the world in the private car industry. Competition is becoming fiercer and fiercer. The application of the most up-to-date technology has come to the point that the struggle to sell cars has meant the formation of a few groups of manufacturers who, thus united, have a better chance of holding their own.
177. The Yugoslav citizen observing the trend in the world automobile industry may well ask: what can our automobile industry look forward to, in view of present world trends, especially in the conditions created by our Economic Reform?
178. At the present time, there is one private car manufacturer in Yugoslavia and there are two other undertakings assembling private cars and manufacturing a few parts.
179. The production capacity of The Red Banner Plant automobile factory reached 54,000 units in 1967 - a figure that speaks for itself. Such a volume scarcely permits the application of a modern technology, the cost of manufacture being such that the selling price cannot possibly be competitive on local or foreign markets. During the twelve years the Kragujevac automobile factory has been in existence an extensive network of manufacturers of parts, sub-assemblies, etc., has been set up, at present some 70 undertakings, which are official sub-contractors of the automobile factory. If we take into account other suppliers and contractors working for the sub-contractors themselves, we should get a figure of some hundreds of undertakings.

180. The after-sales service, represented by general agents, independent services and authorized dealers, includes at present some 80 organizations, and there are 25 sales organizations active on the Yugoslav market.
181. As things stand at the moment, and in view of the characteristic trends in the world automotive industry and the need to get the Economic Reform established in the automotive field, The Red Banner Plant, as the leading car manufacturer in Yugoslavia, is obliged to sort out its ideas about future development without any delay.
182. The question is whether, in the conditions prevailing in our country, an increase in serial production to 150,000 - 180,000 or even 200,000 units a year could be the answer to the situation and next, whether that would make it possible to conduct a reasonably independent policy on the domestic and foreign markets.
183. Looking at the development of the automobile industry in the last twenty years, the conclusion is that nowadays international competition is such that the production of 500,000 units a year is still not sufficiently profitable for a manufacturer to meet competition easily. Some claim that in the present conditions, only a production of 1,000,000 units a year can be regarded as a basis for a more or less independent policy. In fact, if we think in terms of the number of vehicles to be built from parts manufactured, series of 150,000, 180,000 even 200,000 units may not solve our problem.
184. The solution is to be found in industrial co-operation within the framework of the international division of labour. In the conditions existing in Yugoslavia, the series of parts manufactured must considerably exceed the number of vehicles to be built: not all the component parts are manufactured within the country and we must look for a division of the programme between the counterparts concerned in two or more countries.
185. Therefore, we consider that our automobile industry can find a way out in industrial co-operation with foreign plants, based on "partnership" and appropriate contracts.
186. According to the data produced by the MIF-ICFTU, when they met at Turin, 18/19 December 1965, there are nineteen big and thirty-nine smaller manufacturers making up the world automobile industry (not counting the socialist

countries); a substantial number have already amalgamated (Volkswagen - Auto Union, Citroen-Panhard, Renault-Peugot, BMW-Clas, BMC and the smaller British automobile manufacturers, etc.). More and more, groups of automobile manufacturers are being formed in order better to face up to competition.

187. In other words, the Yugoslav private car manufacturer, too, is forced to belong to a group of automobile manufacturers organizing industrial and financial co-operation and production on the basis of a "partnership" with the members of this international group.

188. The Economic Reform, the objectives of which are inclusion in the international division of labour, liberalization of foreign trade and convertibility of the dinar, should create the necessary conditions for the participation of the Yugoslav automotive industry in an international group of automobile manufacturers.

189. Detailed studies are being made of this subject, and the matter is not being left at a purely theoretical stage; numerous meetings have been held with representatives of the automobile industry, from the East and the West. Meetings, negotiations and signed agreements have confirmed the legitimacy of the concept referred to. Although the discussions have not yet been concluded and not all the contracts signed, the conditions established make it possible to see fairly clearly what the future prospects are.

190. In this connexion there are some very advantageous (at first sight) propositions from a number of foreign firms. However, most of these propositions lead only to plans for assembling cars.

191. Some foreign firms are endeavouring to resolve the problem of selling their cars through the purchase of a number of parts and assemblies, etc., from specialized manufacturers in Yugoslavia, and some contracts have already been made. These transactions are put forward as a form of industrial co-operation, but if the operations are analysed in detail, it is seen that basically they are purely trading agreements.

192. Full incorporation of our automobile industry in the international division of labour calls for:

A higher level of technology

Long-term agreements between the co-partners concerned

A considered plan for sharing the manufacturing programme

Co-operation between the co-partners' research services

Co-operation in the financial field and participation of foreign capital on a "partnership" basis

Co-operation in the sale of automobiles on other markets.

193. Industrial co-operation in finance and manufacture with foreign firms creates not only the conditions for large serial production, but also opportunities for the exchange of experiences between project and research services - a very important point in the contemporary development of the automobile industry - and also the exchange of technological experience, which is fundamental for the reduction of manufacturing costs.

194. It is not sufficient for the parent factory alone to be engaged in industrial co-operation with the foreign firm; it is absolutely necessary to include related industry.

195. Obviously, the related industries too must be prepared for a measure of division of labour, as is the parent factory. In the course of this procedure, the idea of a "national" car, "national industry", etc., must be eliminated. The division of labour must be achieved through industrial co-operation, collaboration in manufacturing and finance, "partnership", always in conformity with the laws of economics and the influence of the market.

196. Our impression is, in the light of Yugoslav economic policy, that our country's automobile industry should put itself forward as a united group for its inclusion in the international division of labour. The time has come to effect the integration of automobile manufacturers and their sub-contractors.

197. This integration might take the form of a consortium or other suitable partnership system. The conditions for the expansion of the automotive industry in Yugoslavia, which are imposed by the Economic Reform and by the general trends in the European automobile industry, will thus be created.

198. The manufacturers of parts, sub-assemblies, etc. must understand that such a process is inevitable. It must be understood, at last, that there is no such thing as a Yugoslav price, or a specific quality; there are only international

prices, international quality and international competition. It is a mistake to believe that any manufacturer whatever can stay on the market with existing prices or productivity or with technology as applied today.

199. There is one more question to be discussed: whether Yugoslavia needs several automobile manufacturers or not. The answer to this question will have to come from the market, but we consider that our market potential is not such as to be able to absorb a wide range of cars of the same category and that there would also be the problem of providing after-sales service for the customer, spare parts, etc.

200. For this reason we think that now is the time to initiate discussions on the question of co-operation between all the domestic automobile manufacturers and the co-ordination of their activity. It must not be forgotten that this will call for substantial investments and the concentration of qualified staff; the automobile industry is a complicated branch of industry and of primordial importance for the economy of the country.

201. The increasing interest of foreign firms in the Yugoslav market is entirely comprehensible at the present moment, with the campaign for larger sales at its height.

202. There is no point in harbouring the illusion that an increase in the number of foreign counterparts' assembly lines and types of cars of the same category might resolve the problems implicit in the Economic Reform. The fundamental answer to the problem of the Yugoslav automotive industry must be: productivity and prices on a par with the international level and higher profitability. This means that we should not try to solve this important question by measures of a commercial nature.

203. Now returning, at the end of our paper, to its subject: "Establishment and development of the automotive equipment industry in Yugoslavia", we must emphasize that the progress of related industry is closely bound up with that of automobile manufacturers and their inclusion in the international division of labour.

204. The problems considered in this paper deal, in the first place, with the relations between automobile manufacturers and their sub-contractors. These relations and associated problems have reflected the development of the country's

economic system. The development of the automotive industry in general, depends in large measure on the happy solution of the relations between the manufacturer and his sub-contractors. The question of the relations between the automobile manufacturer and sub-contractor involves a conflict of ideas and different points of view: should the industry develop in accordance with the laws of economics, the law of the market, and endeavour to apply a system of organization and technology enabling it to match the international price level? Or is it to remain in its present state, basing its prices on the actual cost of manufacture?

205. The automobile manufacturers started off with progressionist ideas; they were the sole risk-bearers. They provided the guarantees, and had to face the foreign competition. The proclamation of the Economic Reform has contributed to bring the ideas of the automobile manufacturers to the forefront. We consider that the near future will give a much more powerful impulsion to the development of related industries, now that polemics on the policies to be followed have terminated and an effort has already been made to get together and unite the energies needed for more rapid progress.

206. We sincerely hope that the experiences, proposals and opinions set out in this paper will have a broader significance and prove useful to developing countries facing similar problems.

207. It is not easy to acquire one's own experience in establishing a new branch of industry, even with the knowledge of the experience of others. Everywhere and almost always, in spite of oneself, desires and not possibilities are the starting point. And it is only in the course of practice, the hard way, that one arrives at the real truth, sometimes so simple and so clear.

208. We believe also that the success of the automotive industry in Yugoslavia depends on the implementation of the Economic Reform; and for this reason all the progressionist forces in this branch of industry are determined that the Reform shall succeed.

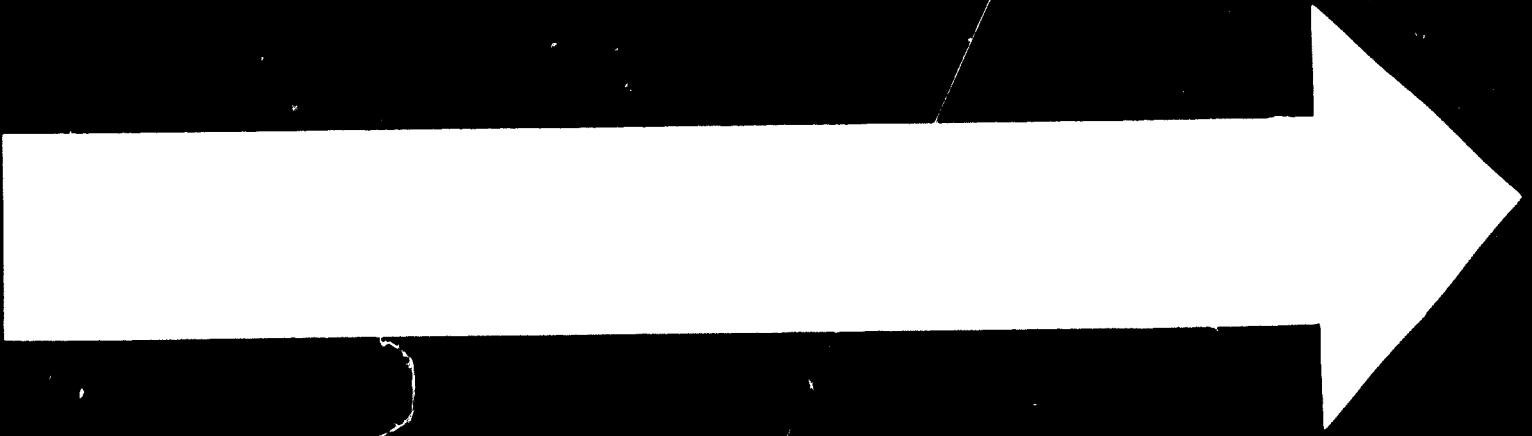
Annex 1

List of manufacturers of equipment for the automobile industry
in Yugoslavia a/

<u>Manufacturer</u>	<u>Headquarters</u>	<u>Product</u>
1 Fabrika motora (FAMOS)	Sarajevo	Diesel engines for lorries
2 11. Oktovri	Skoplje	Bus bodies
3 Autokaroseriija	Zagreb	Buses
4 IKARUS	Zemun	Buses
5 UTVA	Pancevo	Special vehicles
6 Industrija motora (IMR)	Rakovica	Diesel engines and tractors
7 KOMPRESOR	Belgrade	Repairs
8 Industrija motornih vozil (IMV)	Novo Mesto	Lorries, special vehicles, mini-buses
9 AVTOMONTAZA	Ljubljana	Buses, bodywork and heating apparatus
10 AUTOKAROSERIJA	Novi Sad	Buses
11 SAP	Ljubljana	Buses
12 Poslovno tehnicka saradnja (CIS)	Ljubljana	Instruments, accessories, lighting equipment, filters
13 ISKRA	Kranj	Engine fittings
14 SATURNUS	Ljubljana	Lighting equipment
15 RUDI CAJAVEC	Banja Luka	Instruments and accessories
16 21. OKTOBAR	Kragujevac	Engine and vehicle equipment
17 Industrija precizne mehanike (IPM)	Beograd	Injection pumps and carburetors
18 RIKARD BENCIĆ	Rijeka	Injection pumps
19 PETAR DRAPSIN	Mladonovac	Piston rings, grey iron castings, light metal forgings and stampings

a/ Data taken from the booklet The Automobile Industry of Yugoslavia in 1967, published by the Motor Manufacturers Bureau, Belgrade.

	<u>Manufacturer</u>	<u>Headquarters</u>	<u>Product</u>
20	27. MART	Novi Sad	Piston rings, cylinders, grey iron castings
21	Tovarna avtoopreme (TAP)	Ptuj	Vehicle equipment
22	Industrija lezaja (ILK)	Kotor	Plain bearings, sleeves and bushings for internal combustion engines, compressors and machines
23	FADIP	Bocej	Lighting equipment
24	SOKO	Mostar	Universal joints and steering gear
25	Mitrovacka industrija ventila (MIV)	Sremska Mitrovica	Valves for internal combustion engines
26	STROJNE DELAVNICE	Ptuj	Rubber items for vehicles
27	JOZE KERENCIĆ	Ormoz	Stampings and parts in plastic materials
28	TELEOPTIK	Zemun	Instruments and accessories
29	TORPEDO	Rijeka	Industrial diesel engines and vehicle engines
30	FAD	Gornji Milanovac	Automobile parts
31	ATMOS	Maribor	Miscellaneous parts for automobiles
32	AUTODUBRAVA	Zagreb	Special bodywork
33	AUTOPROMET	Nis	Special bodywork
34	AVTOELEKTRO	Tolmin	Sparking plugs and electrical items
35	AVTOPREVOZ	Tolmin	Special bodywork
36	BOROVO	Borovo	Tires
37	BRATSTVO	Novi Travnik	Caterpillar tractors, forgings for vehicles
38	DJURO SALAJ	Nis	Aluminium and aluminium alloy parts, mouldings

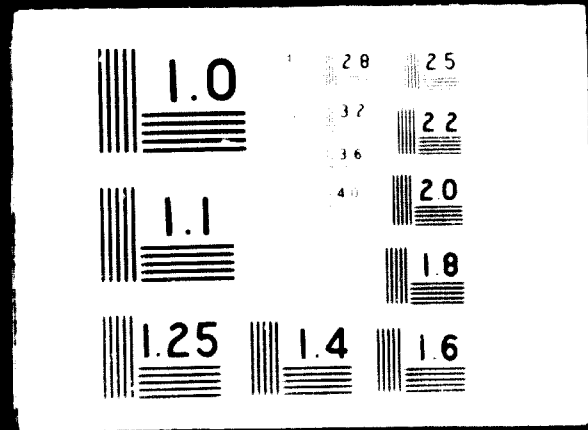


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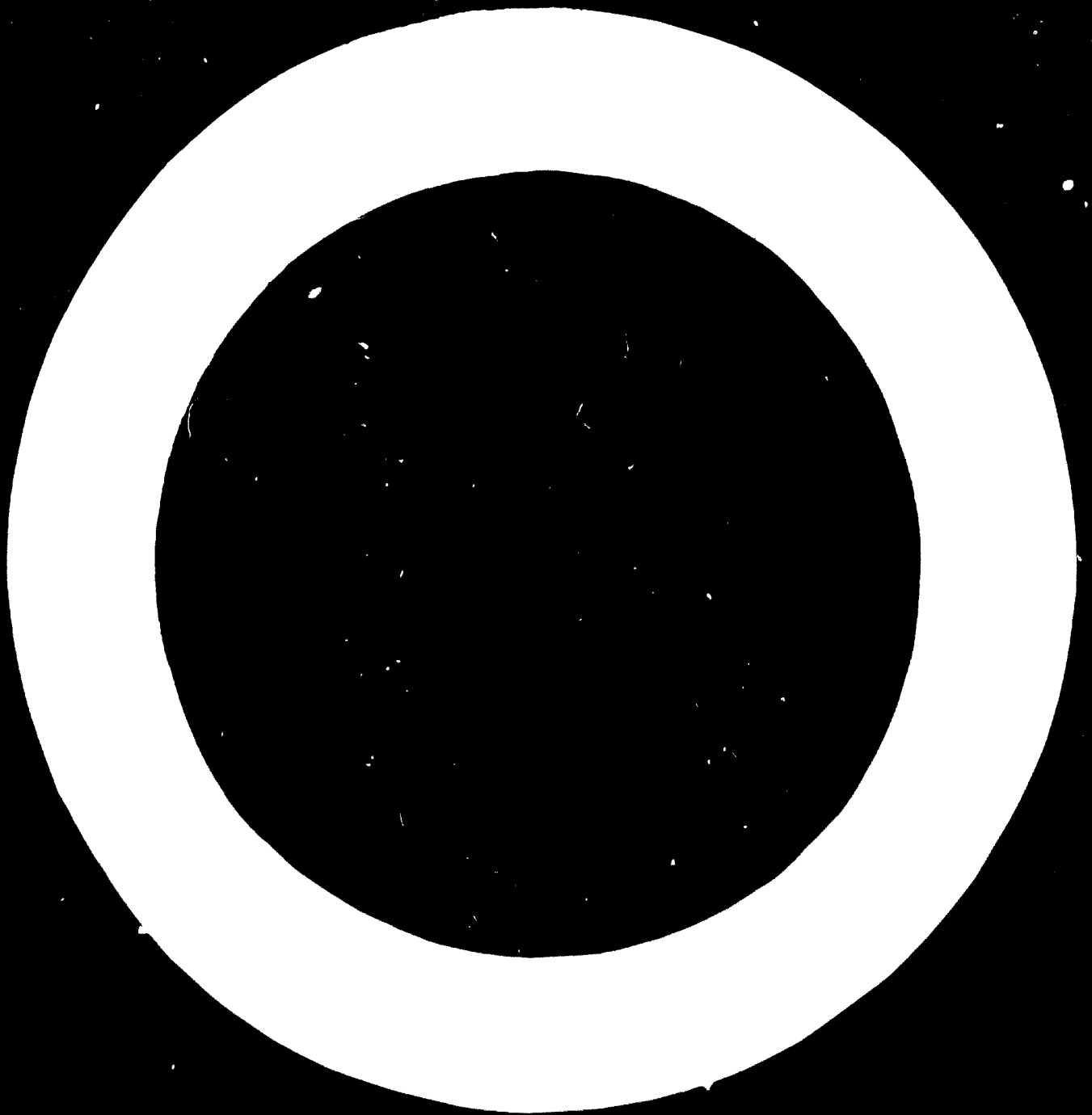


We regret that some of the pages in the microfiche copy of this report may not be up to the proper legibility standards, even though the best possible copy was used for preparing the master fiche.

	<u>Manufacturer</u>	<u>Headquarters</u>	<u>Product</u>
39	ELMA	Crnuce	Fuse boxes
40	FABRIKA AMORTIZERA	Pristina	Shock absorbers
41	FABRIKA VAGONA	Kraljevo	Leaf springs for vehicles
42	FAMOS	Surdulica	Brake and clutch linings
43	FIAZ	Prokuplje	Brake and clutch linings
44	FRAD	Aleksinac	Elements for oil, air and petrol filters, leaf springs
45	Industrija finomehancarskih aparater (IPA)	Celje	Piping for fuel and heat conductors
46	IKL	Belgrade	Ball and roller-bearings
47	INDUSTRIJA STAKLA	Pancevo	Safety glass for automobiles
48	ISKRA	Nova Gorica	Electrical equipment for automobiles
49	ITAS	Kocevlje	Trailers, semi-trailers and special trailers
50	JEKLO	Ruse	Steel forgings
51	JUGOZEMST	Mladonovac	Brake and clutch linings, gaskets
52	KAROSERIJA	Maribor	Special bodywork
53	KARTONAZA	Ljubljana	Tubes in cardboards
54	Kovaska industrija KOVANECOL ORODJA	Zreco	Die-stampings and engineers tools
55	KRUSIK	Valjevo	Batteries
56	LAMA	Dekani	Fastening devices
57	LAMAC	Zagreb	Chains
58	LIVNICA KILJEZA I TERENA	Kikinda	Iron castings, wrought iron work
59	MARIBORSKA LIVARNA	Maribor	Non-ferrous stampings and forgings

	<u>Manufacturer</u>	<u>Headquarters</u>	<u>Product</u>
60	MILOJE ZAKIĆ	Krusevac	Tires, articles in agglomerated rubber
61	MUNJA	Zagreb	Batteries (lead)
62	NOVA OPREMA	Slovenj. Gradec	Seats and seat-trim
63	NOVOSADSKA FABRIKA KABELA	Novi Sad	Electrical wiring and cables
64	OBRTNO TORBARSTVO IN SEDLARSTVO	Maribor	Seats and leather work
65	Oroteks	Oroslavlje	Canvas tilts
66	18. NOVEMBAR	Orahovac	Items in plastics
67	PANONIJA	Murska Sobota	Forged tools
68	PROGRES	Raska	Bolts, nuts etc.
69	PRVA PETOLETKA	Trstenik	Hydraulic and pneumatic equipment, shock absorbers
70	PRVI PARTIZAN	Titovo Uzice	Valves and sinterized metal parts for vehicles
71	REKORD	Rakovica	Items in rubber for automobiles
72	RIS	Zagreb	Items in rubber for automobiles
73	RUEN	Kocani	Parts for automobiles
74	SAVA	Kranj	Tires and rubber items for automobiles
75	SLOBODA	Topola	Castings
76	TAD	Bjelovar	Silentblocs for automobiles
77	INDUSTRIJA FILCA I GREBENA (TATKO)	Prokuplje	Anti-noise insulation
78	TEHNIKA	Kula	Screen-washers
79	TEHNOGUMA	Batocina	Items in rubber and plastic for automobiles
80	TEHNOSTROJ	Ljutomer	Trailers

	<u>Manufacturer</u>	<u>Headquarters</u>	<u>Product</u>
81	TESNILKA	Medvode	Gaskets, filter elements, clutch linings, pinions and stampings
82	TIGAR	Pirot	Tires, items in rubber, foam rubber
83	TOVARNA UMAJLIRANE POSODE	Colje	Chassis and wheels
84	TOVARNA USNJA	Slovenj Gradac	Upholstery for seats
85	TOVARNA VERIG	Lesce pri Bledu	Chains for vehicles
86	TRUDBENIK	Doboj	Accessories, sparking plugs
87	TVORNICA MASINSKIH DELOVA (TMD)	Novi Sad	Bolts, nuts, etc.
88	IZV BORIS KIDRIĆ	Maribor	Bodywork
89	UDARNIK	Veliko Gradiste	Accelerator pedals
90	UNIVERZAL	Banja Luka	Automobile and garage equipment, hydraulic lifts
91	UTENZILIJA	Boograd	Throttle controls
92	VITOJEVAC	Vrnjci	Items in rubber
93	VOZILA GORICA	Sempetar pri Gorici	Trailers, semi-trailers and special trailers
94	ZASTAVA	Knić	Service station equipment, tools for vehicles
95	ZAMPRES	Svilajnac	Bolts, nuts, etc.
96	ZELEZARNA STORE	STORE pri Colju	Iron castings
97	ZELEZARNA RAVNE	Ravne na Koroskom	Steel forgings and castings, leaf springs

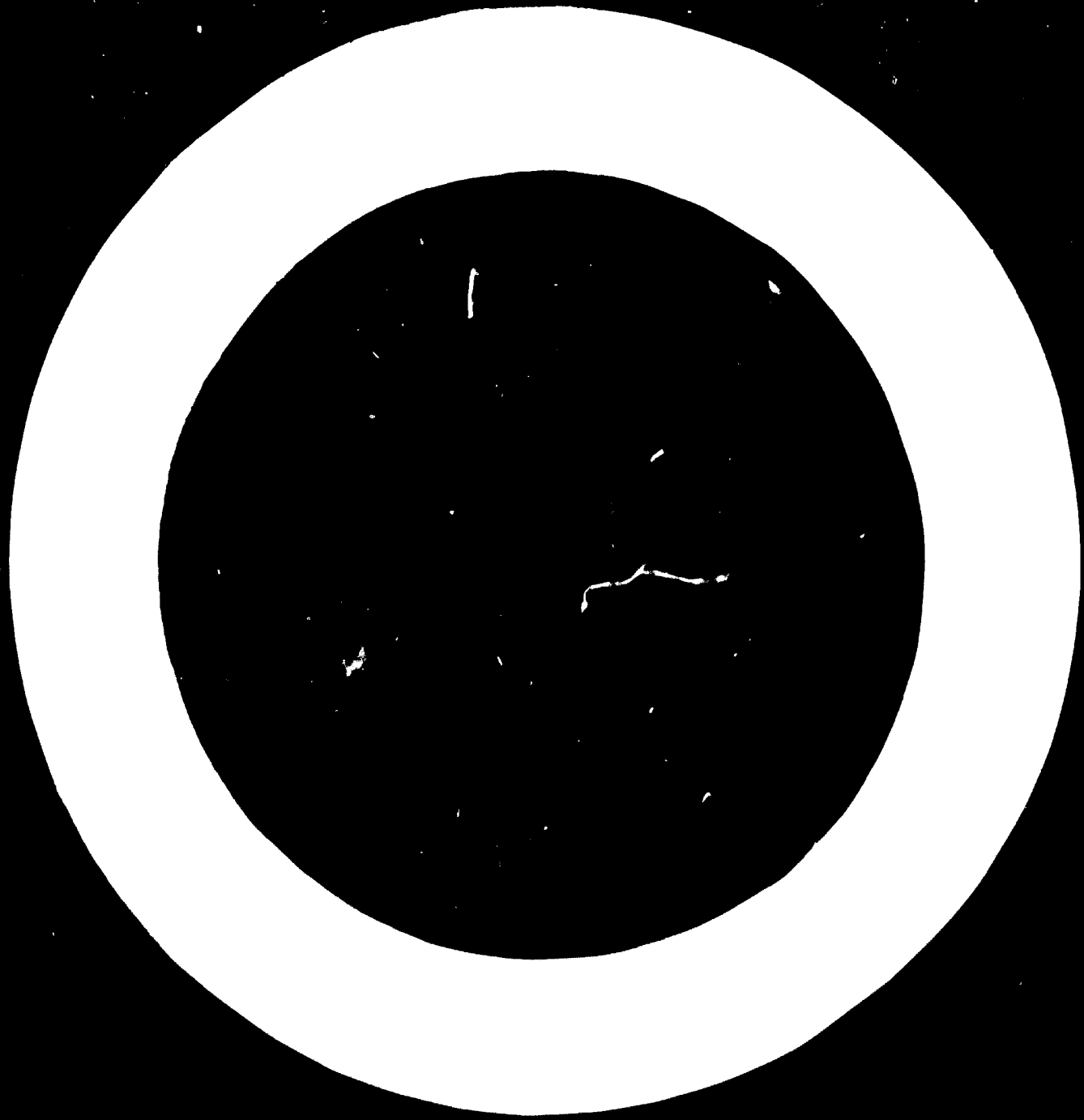


Annex 2

Annual registrations of vehicles in Yugoslavia ^{a/}

<u>Year</u>	<u>Motor-cycles</u>	<u>Private cars</u>	<u>buses</u>	<u>Lorries</u>	<u>Special vehicles</u>	<u>Road and Agricultural tractors</u>
1938	7,661	13,561	942	4,286	-	-
1947	10,984	6,634	751	13,922	1,170	-
1948	11,398	7,195	936	15,783	1,178	-
1949	11,240	7,252	1,093	16,041	1,429	-
1950	11,416	6,455	1,144	16,084	1,395	379
1951	9,254	6,916	1,171	15,322	1,155	366
1952	10,783	8,542	1,354	17,957	1,305	902
1953	12,348	10,171	1,591	19,844	1,500	3,038
1954	11,893	11,290	2,119	20,260	1,566	3,870
1955	12,541	12,622	2,356	21,074	1,861	4,999
1956	15,586	14,664	2,701	21,112	2,030	6,134
1957	26,424	21,570	3,412	25,763	2,575	9,079
1958	37,649	28,394	3,910	28,482	3,075	12,148
1959	54,517	39,022	4,620	31,535	3,519	14,869
1960	69,766	54,257	5,158	33,527	3,984	17,196
1961	72,156	75,587	5,232	32,389	4,065	14,081
1962	91,005	97,942	6,143	37,703	4,434	15,887
1963	97,977	110,534	6,634	42,574	5,057	16,868
1964	102,168	141,792	7,374	48,902	6,021	17,598
1965	106,396	186,319	8,227	57,680	6,663	19,160
1966	112,318	253,344	9,836	70,115	7,379	21,274

^{a/} Data from the Yugoslav Statistical Yearbooks



Annex 3

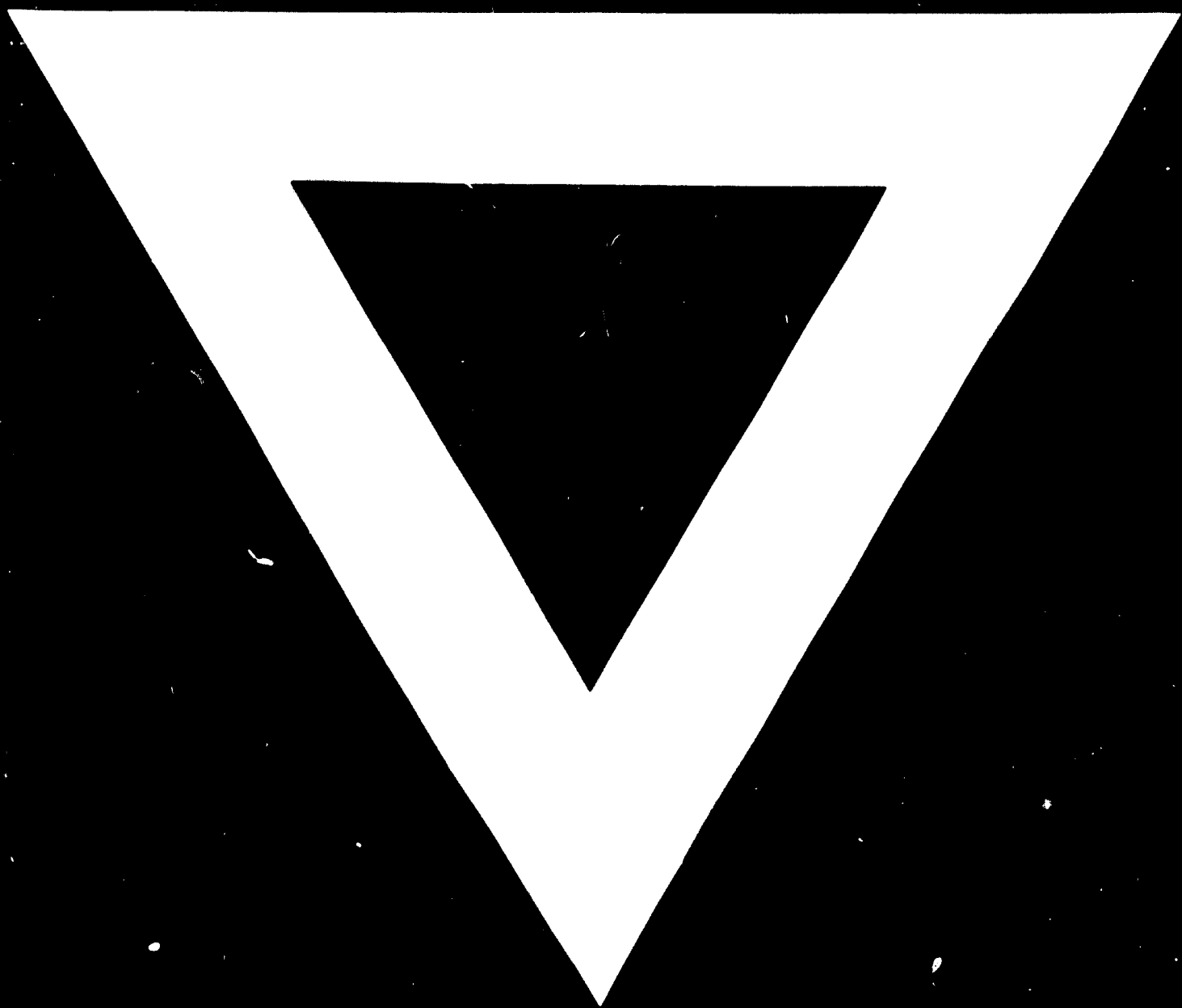
Annual production of automobiles in Yugoslavia ^{a/}

<u>Year</u>	<u>Private cars</u>	<u>Buses</u>	<u>Trucks and special vehicles</u>	<u>Motor-cycles</u>	<u>Total</u>
1947	-	-	27	-	27
1948	-	-	113	-	113
1949	-	-	535	-	535
1950	-	-	826	-	826
1951	-	36	787	-	823
1952	-	41	654	-	695
1953	-	75	1,329	-	1,404
1954	-	114	1,651	-	1,765
1955	760	239	2,450	-	3,449
1956	990	426	2,765	3,421	7,602
1957	3,088	666	3,459	13,060	20,273
1958	2,936	671	4,089	8,202	15,898
1959	4,431	511	3,716	24,530	33,188
1960	10,461	896	4,564	41,414	57,335
1961	14,999	829	5,426	37,751	59,005
1962	13,125	2,144	6,454	31,968	53,691
1963	20,923	1,823	7,975	43,113	73,834
1964	27,854	2,362	9,081	48,142	87,439
1965	35,880	2,287	9,572	48,774	96,513
1966 ^{b/}	36,936	1,984	9,914	48,415	97,249
TOTAL:	172,383	15,104	75,387	348,790	611,664

^{a/} Data from the booklet *The Yugoslav Automobile Industry 1967*, published by the Motor Manufacturers Bureau.

^{b/} Provisional figures





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