



ECONOMIC COMMISSION FOR AFRICA
Conference on the Harmonization of Industrial
Development Programmes in West Africa
Niamey, 10 - 27 October 1966

UN LIBRARY

JAN 20 1966

UNISA COLLECTION

POSSIBILITIES
OF
MOTOR VEHICLE ASSEMBLY
IN
WEST AFRICA

Possibilities
of
Motor Vehicle Assembly
in
West Africa

August 1966

C o n t e n t s

Contents	2
List of Tables	8
List of Figures	14
Introductory Note by the Secretariat	16
Summary	17
1. Introduction	20
2. Scope and Method	22
3. Diagnosis and Prognosis of the Automobile Market	27
3.1 Size and Structure of the Market in the Different Countries	27
3.1.01. Dahomey	27
3.1.01.1. General Survey	27
3.1.01.2. Passenger Car Market	28
3.1.01.3. Bus Market	29
3.1.01.4. Truck Market	30
3.1.02. Gambia	33
3.1.02.1. General Survey	33
3.1.02.2. Passenger Car Market	34
3.1.02.3. Bus Market	34
3.1.02.4. Truck Market	35
3.1.03. Ghana	37
3.1.03.1. General Survey	37
3.1.03.2. Passenger Car Market	38
3.1.03.3. Bus Market	39
3.1.03.4. Truck Market	40

	<u>Page</u>
3.1.04. Guinea	43
3.1.04.1. General Survey	43
3.1.04.2. Passenger Car Market	44
3.1.04.3. Bus Market	45
3.1.04.4. Truck Market	46
3.1.05. Ivory Coast	49
3.1.05.1. General Survey	49
3.1.05.2. Passenger Car Market	50
3.1.05.3. Bus Market	51
3.1.05.4. Truck Market	52
3.1.06. Liberia	55
3.1.06.1. General Survey	55
3.1.06.2. Passenger Car Market	57
3.1.06.3. Bus Market	57
3.1.06.4. Truck Market	58
3.1.07. Mali	61
3.1.07.1. General Survey	61
3.1.07.2. Passenger Car Market	62
3.1.07.3. Bus Market	63
3.1.07.4. Truck Market	64
3.1.08. Mauritania	66
3.1.08.1. General Survey	66
3.1.08.2. Passenger Car Market	67
3.1.08.3. Bus Market	68
3.1.08.4. Truck Market	68
3.1.09. Niger	72
3.1.09.1. General Survey	72
3.1.09.2. Passenger Car Market	73
3.1.09.3. Bus Market	74
3.1.09.4. Truck Market	75

3.1.10. Nigeria	78
3.1.10.1. General Survey	78
3.1.10.2. Passenger Car Market	79
3.1.10.3. Bus market	80
3.1.10.4. Truck market	81
3.1.11. Senegal	84
3.1.11.1. General Survey	84
3.1.11.2. Passenger Car Market	85
3.1.11.3. Bus Market	86
3.1.11.4. Truck Market	87
3.1.12. Sierra Leone	90
3.1.12.1. General Survey	90
3.1.12.2. Passenger Car Market	91
3.1.12.3. Bus Market	92
3.1.12.4. Truck Market	93
3.1.13. Togo	95
3.1.13.1. General Survey	95
3.1.13.2. Passenger Car Market	96
3.1.13.3. Bus Market	97
3.1.13.4. Truck Market	98
3.1.14. Upper Volta	101
3.1.14.1. General Survey	101
3.1.14.2. Passenger Car Market	102
3.1.14.3. Bus Market	103
3.1.14.4. Truck Market	104
3.2. Size and Structure of the Market in the Subregion	107
3.2.1. General Survey	107
3.2.2. Passenger Car Market	112
3.2.3. Bus Market	113
3.2.4. Truck Market	115

	<u>Page</u>
4. Existing and Planned Motor Vehicle Assembly Plants	117
4.1. Assembly Plants in the Individual Countries	117
4.1.1. Dahomey: Société de Construction Automobile du Bénin	117
4.1.2. Ghana	119
4.1.2.1. R.T. Briscoe (Ghana) Ltd.	120
4.1.2.2. Compagnie Française de l'Afrique Occidentale (C.F.A.O.)	120
4.1.2.3. Ghana National Trading Corporation (G.N.T.C.)	122
4.1.2.4. John Holt Industries	122
4.1.2.5. Société Commerciale de l'Ouest Africain (S.C.O.A.)	123
4.1.2.6. United African Company (Vehicle Assembly Plant)	124
4.1.3. Guinea	126
4.1.3.1. Société de Montage et Distribution de Véhicules Automobiles (SOMOVA)	126
4.1.3.2. Projected plant: Fiat	128
4.1.4. Ivory Coast	128
4.1.4.1. Société Africaine de Fabrication des Automobiles Renault (S.A.F.A.R)	128
4.1.4.2. Projected Enterprises Société Ivoirienne de Fabrication et de Montage Automobile (S.I.F.M.A.) and Compagnie Française de l'Afrique Occidentale (C.F.A.O.)	131

	<u>Page</u>
4.1.5. Nigeria	132
4.1.5.1. B.E.W.A.C. Automotive Products Ltd.	132
4.1.5.2. Compagnie Française de l'Afrique Occidentale (C.F.A.O.)	134
4.1.5.3. Leventis Motors Ltd.	135
4.1.5.4. Niger Motors Ltd. (Federated Motor Industries)	136
4.1.5.5. Société Commerciale de l'Ouest Africain (S.C.O.A.)	137
4.1.5.6. Projected Plants: Intra Motors Ltd. and One Passenger Motor Vehicle Assembly Plant	138
4.1.6. Senegal: Berliet Sénégal	139
4.2. Survey of Size and Structure of Assembly in the Subregion	141
5. Procedures and Cost of Assembly	147
5.1. Manufacture of Automobiles in Highly Industrialized Countries	147
5.2. Assembly Procedures of an Independent Assembly Plant Dependent on Stage of Pre-Assembly	149
5.2.1. The Principal Types of Independent Assembly Plants	149
5.2.2. Survey of Application Range	152
5.3. Cost Categories Influencing the Price of the Finished Product	153
5.3.1. Categories and Classification of Cost	153
5.3.2. Cost Categories as Determined by Capacity	158
5.3.2.1. General Trends in Cost Development	158
5.3.2.2. Changing Cost Classification with a Passenger Car Assembly Plant of an Annual Capacity of 10,000 Units	161

	<u>Page</u>
5.4. Production in Assembly Plant and Local Industries	165
6. Possibilities of Extending and/or Setting up Motor Vehicle Assembly Plants in the Subregion	170
6.1. Preliminary Remarks	170
6.2. Passenger Car Assembly	173
6.3. Assembly of Trucks and Small Buses	175
6.4. Assembly of Large Buses	176
7. Recommendations on the Layout of Assembly Plants	178
7.1. Assembly of Passenger Cars	178
7.2. Bus Assembly	187
8. Result	195
Appendix I: Industries that may on Principle be Considered as Suppliers of a Passenger Car Assembly Plant Operating on CKD Basis	196
Appendix II: Tables for Section 3	199

List of Tables¹⁾

- 1 Registration of Vehicles in Dahomey in the Years 1961 to 1965 and Forecast for 1975 and 1980
- 2 Automobile Park in Dahomey in the Years 1960 to 1965 and Forecast for 1975 and 1980
- 3 Automobile Park in Dahomey on April 30, 1963 Classified by Make
- 4 Car Park in Dahomey Classified by cc-Capacity
- 5 Bus Park in Dahomey Classified by Number of Seats
- 6 Truck/Van Park in Dahomey Classified by Pay Load and Special Bodies
- 7 Tractor Park in Dahomey Classified by HP-Capacity
- 8 Trailer Park in Dahomey Classified by Pay Load
- 9 Automobile Park in Dahomey Classified by Type of Engine
- 10 Registration of Vehicles in Gambia in the Years 1954 to 1964 and Forecast for 1975 and 1980
- 11 Automobile Park in Gambia in the Years 1962 to 1965 and Forecast for 1975 and 1980
- 12 Registration of Vehicles in Ghana in the Years 1955 to 1965 and Forecast for 1975 and 1980
- 13 Automobile Park in Ghana in the Years 1960 to 1965 and Forecast for 1975 and 1980
- 14 Automobile Park in Ghana on December 31, 1963 Classified by Make
- 15 Car Registrations in Ghana Classified by cc-Capacity
- 16 Bus Registrations in Ghana Classified by Number of Seats
- 17 Truck (Including Tractors)/Van Registrations in Ghana Classified by Pay Load and Special Bodies
- 18 Trailer Registrations in Ghana Classified by Pay Load
- 19 Registration of Vehicles in Ghana Classified by Type of Engine
- 20 Registration of Vehicles in Guinea in the Years 1960 to 1965 and Forecast for 1975 and 1980

¹⁾ Tables 1 - 96 cf. Appendix I

- 21 Automobile Park in Guinea in the Years 1960 to 1965 and Forecast for 1975 and 1980
- 22 Registration of Vehicles in Guinea in 1963 Classified by Make
- 23 Automobile Park in Guinea Classified by Type of Engine
- 24 Registration of Vehicles in the Ivory Coast in the Years 1955 to 1965 and Forecast for 1975 and 1980
- 25 Automobile Park in the Ivory Coast in the Years 1960 to 1965 and Forecast for 1975 and 1980
- 26 Automobile Park in the Ivory Coast on December 31, 1963 Classified by Make
- 27 Car Park in the Ivory Coast Classified by cc-Capacity
- 28 Bus Park in the Ivory Coast Classified by Number of Seats
- 29 Truck/Van Park in the Ivory Coast Classified by Pay Load and Special Bodies
- 30 Tractor Park in the Ivory Coast Classified by HP-Capacity
- 31 Trailer Park in the Ivory Coast Classified by Pay Load
- 32 Automobile Park in the Ivory Coast Classified by Type of Engine
- 33 Registration of Vehicles in Liberia in the Years 1955 to 1965 and Forecast for 1975 and 1980
- 34 Automobile Park in Liberia in the Years 1961 to 1963 and 1965 and Forecast for 1975 and 1980
- 35 Automobile Park in Liberia on December 31, 1963 Classified by Make
- 36 Registration of Vehicles in Mali in the Years 1962 to 1965 and Forecast for 1975 and 1980
- 37 Automobile Park in Mali in the Years 1963 to 1965 and Forecast for 1975 and 1980
- 38 Automobile Park in Mali on October 31, 1965 Classified by Make
- 39 Car Park in Mali Classified by cc-Capacity
- 40 Bus Park in Mali Classified by Number of Seats

- 41 Truck/Van Park in Mali Classified by Pay Load
- 42 Registration of Vehicles in Mauritania in the Years 1962 to 1965 and Forecast for 1975 and 1980
- 43 Automobile Park in Mauritania in the Years 1960, 1963, 1964 and 1965 and Forecast for 1975 and 1980
- 44 Automobile Park in Mauritania on June 30, 1963 Classified by Make
- 45 Car Park in Mauritania Classified by cc-Capacity
- 46 Truck/Van Park in Mauritania Classified by Pay Load
- 47 Tractor Park in Mauritania Classified by HP-Capacity
- 48 Trailer Park in Mauritania Classified by Pay Load
- 49 Automobile Park in Mauritania Classified by Type of Engine
- 50 Registration of Vehicles in Niger in the Years 1955 to 1965 and Forecast for 1975 and 1980
- 51 Automobile Park in Niger in the Years 1960 to 1965 and Forecast for 1975 and 1980
- 52 Automobile Park in Niger on December 31, 1965 Classified by Make
- 53 Automobile Park in Niger Classified by Type of Engine
- 54 Registration of Vehicles in Nigeria in the Years 1955 to 1965 and Forecast for 1975 and 1980
- 55 Automobile Park in Nigeria in the Years 1960 to 1965 and Forecast for 1975 and 1980
- 56 Automobile Park in Nigeria on December 31, 1962 Classified by Make
- 57 Car Park in Nigeria Classified by cc-Capacity
- 58 Bus Park in Nigeria Classified by Number of Seats
- 59 Truck/Van Park in Nigeria Classified by Pay Load and Special Bodies
- 60 Registration of Vehicles in Senegal in the Years 1959 to 1965 and Forecast for 1975 and 1980

- 61 Automobile Park in Senegal in the Years 1960 to 1965 and Forecast for 1975 and 1980
- 62 Registration of Vehicles in Senegal in the Year 1963 Classified by Make
- 63 Car Registrations in Senegal Classified by cc-Capacity
- 64 Bus Park in Senegal Classified by Number of Seats
- 65 Truck/Van Registrations in Senegal Classified by Pay Load and Special Bodies
- 66 Registration of Vehicles in Sierra Leone in the Years 1955 to 1965 and Forecast for 1975 and 1980
- 67 Automobile Park in Sierra Leone for 1960, 1963 and 1965 and Forecast for 1975 and 1980
- 68 Registration of Vehicles in Sierra Leone in the Year 1964 Classified by Make
- 69 Car Imports in Sierra Leone Classified by cc-Capacity
- 70 Bus Park in Sierra Leone Classified by Number of Seats
- 71 Truck/Van Imports in Sierra Leone Classified by Pay Load and Special Bodies
- 72 Registration of Vehicles in Togo in the Years 1959 to 1965 and Forecast for 1975 and 1980
- 73 Automobile Park in Togo in the Years 1963 to 1965 and Forecast for 1975 and 1980
- 74 Registration of Vehicles in Togo in the Year 1964 Classified by Make
- 75 Car Registrations in Togo Classified by cc-Capacity
- 76 Bus Park in Togo Classified by Number of Seats
- 77 Truck/Van Registrations in Togo Classified by Pay Load
- 78 Automobile Park in Togo Classified by Type of Engine
- 79 Registration of Vehicles in Upper Volta in the Years 1959 to 1965 and Forecast for 1975 and 1980
- 80 Automobile Park in Upper Volta in in the Years 1961 to 1965 and Forecast for 1975 and 1980
- 81 Automobile Park in Upper Volta on December 31, 1965 Classified by Make

- 82 Car Park in Upper Volta Classified by cc-Capacity
- 83 Bus Park in Upper Volta Classified by Number of Seats
- 84 Truck/Van Park in Upper Volta Classified by Pay Load and Special Bodies
- 85 Tractor Park in Upper Volta Classified by HP-Capacity
- 86 Trailer Park in Upper Volta Classified by Pay Load
- 87 Vehicle Demand in West Africa in the Year 1963 and Forecast for 1975 and 1980
- 88 Import of Vehicles in West Africa in the Year 1963 and Forecast for 1975 and 1980
- 89 Structure of the West African Vehicle Demand in 1963
- 90 Forecast of the Structure of the West African Vehicle Demand in 1975
- 91 Forecast of the Structure of the West African Vehicle Demand in 1980
- 92 Automobile Park in West Africa in the Year 1963 and Forecast for 1975 and 1980
- 93 Car Demand in West Africa in the Year 1963 and Forecast for 1975 and 1980 Classified by cc-Capacity
- 94 Bus Demand in West Africa in the Year 1963 and Forecast for 1975 and 1980 Classified by Number of Seats
- 95 Truck and Van Demand in West Africa in the Year 1963 and Forecast for 1975 and 1980 Classified by Pay Load
- 96 Tractor and Trailer Demand in West Africa in the Year 1963 and Forecast for 1975 and 1980

97	Capacity and Probable Output of Motor vehicle Assembly Plants in West Africa in 1966	145
98	Range of Application of the Individual Assembly Methods	152
99	Local Vehicle Assembly in West Africa as against Imports of Assembled Vehicles.	172

List of Figures

<u>No.</u>		<u>Page</u>
1	Registration of Vehicles in Dahomey in the Years 1961 to 1965 and Forecast for 1975 and 1980	32
2	Registration of Vehicles in Gambia in the Years 1954 to 1964 and Forecast for 1975 and 1980	36
3	Registration of Vehicles in Ghana in the Years 1955 to 1965 and Forecast for 1975 and 1980	42
4	Registration of Vehicles in Guinea in the Years 1960 to 1965 and Forecast for 1975 and 1980	48
5	Registration of Vehicles in the Ivory Coast in the Years 1955 to 1965 and Forecast for 1975 and 1980	54
6	Registration of Vehicles in Liberia in the Years 1955 to 1965 and Forecast for 1975 and 1980	60
7	Registration of Vehicles in Mali in the Years 1962 to 1965 and Forecast for 1975 and 1980	65
8	Registration of Vehicles in Mauritania in the Years 1962 to 1965 and Forecast for 1975 and 1980	71
9	Registration of Vehicles in Niger in the Years 1955 to 1965 and Forecast for 1975 and 1980	77
10	Registration of Vehicles in Nigeria in the Years 1955 to 1965 and Forecast for 1975 and 1980	83
11	Registration of Vehicles in Senegal in the Years 1959 to 1965 and Forecast for 1975 and 1980	89
12	Registration of Vehicles in Sierra Leone in the Years 1955 to 1965 and Forecast for 1975 and 1980	94
13	Registration of Vehicles in Togo in the Years 1959 to 1965 and Forecast for 1975 and 1980	100
14	Registration of Vehicles in Upper Volta in the Years 1959 to 1965 and Forecast for 1975 and 1980	106

<u>No.</u>		<u>Page</u>
15	Demand of Motor Vehicles in West Africa	110
16	Structure of the Motor Vehicle Demand in West Africa	111
17	Existing Motor Vehicle Assembly Plants in West Africa	143
18	Various Cost Typical for the Different Kinds of Motor Vehicle Assembly	157
19	Alteration of the Composition of Unit Cost with the Different Types of Passenger-Car Assembly	163

Introductory Note by the Secretariat

This study was prepared by Battelle-Institut, Frankfurt/Main, whose services were provided to the ECA secretariat by the Government of the Federal Republic of Germany.

The terms of reference were prepared by the ECA secretariat. For this purpose, the secretariat drew from the report of the West African Industrial Co-ordination Mission (document E/CN. 14/246), the recommendations of the West African Conference on Industrial Co-ordination held in Bamako 5 - 15 October 1964 (document E/CN.14/324, E/CN.14/INR/78) and the recommendations of the Symposium on Industrial Development in Africa held in Cairo 27 January - 9 February 1966 (document E/CN.14/347, E/CN.14/AS/VI/7).

Summary

1) In the West African Subregion

about 48,000 motor vehicles

were sold in 1963, 29,500 thereof were passenger cars, 2,000 buses, 15,500 trucks and vans, 500 tractors and 500 trailers. That corresponds to an import volume of more than 65,000 tons or \$ 95 million cif-value.

According to our estimates the total demand for motor vehicles in West Africa will be

about 85,000 (74,000) units in 1980 (1975),

corresponding to an import volume of about 120,000 (105,000) tons or \$ 175 (150) million cif-value.

About 70 per cent will account for passenger cars, nearly 4 per cent for buses and the remaining lot for trucks, vans, tractors and trailers.

2) At present, there are

15 motor vehicle assembly plants

in West Africa, 6 thereof are located in Ghana, 5 in Nigeria and 1 each in Dahomey, Guinea, the Ivory Coast, and Senegal. 12 out of the 15 assembly plants build exclusively trucks and buses, 2 assembly plants build passenger cars, trucks and buses and one assembles passenger cars only. All plants are assembling on S.K.D. and M.K.D. basis and enjoy customs and/or tax preferences.

These plants have a total capacity of

19,700 trucks/buses and 3,700 passenger cars.

Their capacities are presently employed at

60 per cent.

Erection of another 5 assembly plants is under discussion.

3) While manufacture and assembly of motor vehicles in highly industrialized countries have all characteristics of mass production (enterprises with an annual production of some hundred thousand units) an independent assembly plant operating in developing countries is depending on partial assembly because of the limited sales market; the small unit numbers, however, lead to the adoption of simple assembly methods such as stationery and progressive assembly. Due to the smaller employment of machines there results smaller labour productivity. The extra cost arising are not compensated by the price reductions obtainable with the purchase of partly assembled motor vehicles (cheaper freight charges and no assembly cost in the manufacturer's plant). That means that independent assembly plants with low annual production cannot exist unless there are low customs rates on the import of motor vehicle parts and, at the same time, high customs rates on the import of assembled motor vehicles.

Tariff protection is not necessary in the case of assembly plants whose increasing unit numbers (more than 10,000 units p.a. with passenger cars and more than 2,000 units p.a. with trucks) allows a shift to the efficient line assembly and which limit their material imports to a maximum of 40 per cent by self-production and supply by local plants¹). This fact is reflected by structural changes in the different types of cost which in full bring about an approach

¹) The only exception is made by the assembly of large-buses with self-supporting steel skeleton which may be profitable with an annual production of only 50 units on account of the high wage share in the manufacture of the body .

to the cost of comparable assembly processes in highly industrialized countries.

- 4) On the basis of the results furnished by the market investigation and the appraisal of existing plants and on consideration of the technical-economical conditions of motor vehicle assembly

presently one passenger car assembly plant
 (10,000 units)

and another passenger car assembly
 plant (10,000 units) as well as
 three large-bus assembly plants
 (50 units each)

in 1980

can be recommended under certain prerequisites. In view of the existing capacities erection of additional truck assembly plants is not advisable.

The two passenger car plants should be set up in Nigeria and the Ivory Coast and the large-bus plants in Nigeria, Ghana and the Ivory Coast.

1. Introduction

In June 1966, the Bundesministerium für Wirtschaftliche Zusammenarbeit (Federal Ministry for Economic Cooperation) represented by the Bundesamt für Gewerbliche Wirtschaft (Federal Office for Industry and Trade) requested Battelle-Institut, Frankfurt, to investigate the

Possibilities of Motor Vehicle Assembly in West Africa.

The report on the results of this investigation will serve as a basis of discussion at the ECA Conference on the Harmonization of Industrial Development Programmes in West Africa to be held in Niamey, Niger, in October 1966.

The report should submit to the participant countries details on the questions of type of assembly plant, manufacturing programme, capacity and location in West Africa.

In particular, it is necessary to analyse separately for the individual types of vehicles (passenger cars, trucks, buses) whether there is - or will be up to 1980 - a market in West Africa justifying the erection of one or several new assembly plants in the Subregion. Extension of the presently existing assembly plants is to be considered additionally.

In order to supply the data required for the investigation, two staff members of Battelle-Institut, one economist and one industrial engineer, have visited the following countries:

- | | | |
|---------------|--------------|----------------|
| - Dahomey | - Liberia | - Senegal |
| - Gambia | - Mali | - Sierra Leone |
| - Ghana | - Mauritania | - Togo |
| - Guinéa | - Niger | - Upper Volta |
| - Ivory Coast | - Nigeria | |

In accordance with ECA, these countries will be referred to in the following as 'West African Subregion'.

The results of the inquiries made in West Africa and the studies of Battelle-Institut, Frankfurt, are contained in this report for the Economic Commission for Africa in Addis Ababa.

The report is a preliminary study showing the possibilities and limits of motor vehicle assembly in the West African Subregion, and may as such assist the Conference in its decision. It does not claim to substitute for detailed project studies which will be indispensable as soon as the national governments will have agreed upon an assembly plant having a certain location and a certain capacity.

2. Scope and Method

The scope of the report is determined by the number of countries and vehicle types as well as the requirements set by ECA.

The countries included in the report are listed in the introduction.

The following categories of motor vehicles were considered:

- passenger car
- bus
- truck
- tractor
- trailer.

In order to arrive at a more precise market review the following sub-groups have been analysed:

passenger car

- small car (less than 1,100 c.c.)
- medium-sized car (1,100 - 1,800 c.c.)
- big car (more than 1,800 c.c.)

bus

- mini-bus (less than 10 seats)
- small bus (10 - 30 seats)
- large bus (more than 30 seats)

truck

- van (less than 1 ton)
- small truck (1 - 5 tons)
- heavy truck (more than 5 tons)

tractor

- light tractor (up to 170 H.P.)
- heavy tractor (more than 170 H.P.)

trailer

- trailer up to 9 tons
- trailer of more than 9 tons

The study was arranged according to the following methods:

The required data were collected by

- evaluation of secondary statistics of the respective countries,
- primary statistics collected in the states of West Africa,
- evaluation of reports and other publications and
- contacts with automobile producers and subcontractors.

The figures used in the report were mainly furnished from

- bureaus of statistics
- motor vehicle registration offices
- ministries of industry and commerce
- ministries of transportation
- ministries of planning
- ministries of finance
- chambers of commerce
- ECA.

The Battelle-experts carried out primary investigations with the aid of the following persons and institutions:

- importers
- traders
- transport enterprises

- taxi, bus and truck drivers
- owners and managers of assembly plants
- ministries
- advisers of the United Nations and the IBRD
- American, British, German and French government advisers
- chambers of commerce.

The secondary statistics and primary figures of Battelle-Institut were supplemented by consideration of the results of a number of reports and publications of different institutions.

In order to supply data on the techniques and costs of assembly, the information available at Battelle-Institut itself was used in a revised form allowing for the latest experience of the engineering experts of the German automobile industry made clear in a number of interviews.

The data collected from these four sources have helped

- to determine the volume and structure of the present and future demand for motor vehicles in West Africa,
- to describe the type and size of assembly plants already existing or planned,
- to define assembly procedures and minimum capacities, categories of costs characteristic of assembly plants and the change of costs at rising output,
- to decide on possibilities of setting up assembly plants on account of the market volume for certain types of vehicles and minimum economical capacities, and
- to give recommendations on the layout of independent assembly plants.

The analysis of the sales market shows the development of motor vehicle registrations in the last 10 years and of the motor vehicle park in the last 5 years. As official figures of the motor vehicle park in most countries do not make allowance for discarded vehicles, they have been adjusted according to the average lifetime of the individual types of vehicles as ascertained by the Battelle-experts. Structure of the total market by type and structure of individual vehicle types by categories have been analysed for 1963¹). Adjustments were, however, not necessary as far as available figures do not relate to numbers of registrations, but only to the motor vehicle park, since only the market structure for the different types of vehicles was to be analysed, which can be done by use of relative figures. The mentioned categories were in many cases to be based on estimates evaluating the type, structure, and the classification of the vehicles for tax purposes.

Demand for motor vehicles in the years 1975 to 1980 is forecast by trend extrapolation using the method of least squares²). These results have been checked and, where necessary, adjusted on the basis of our market appraisal. As it is to be seen in the general market survey of the individual countries the following has been considered: the overall economic growth of the infrastructure (especially traffic-ways) and the other sectors of the economy separately, moreover the income development (especially per head income) as well as the budgetary situation and the traffic volume resulting from all these factors. We have resisted from computing the trend where only short time series were available.

Production programme, capacity and employment of the assembly plants already existing in West Africa are described. Planned extensions and new constructions are in addition evaluated.

¹) ECA uses the year 1963 as basis in its Harmonization Plan for the West African Subregion. The same year has therefore been chosen as basis year in the present report, although for many countries market figures are available for the years 1964 and 1965 as well.

²) This method has been chosen since it is best suitable for the present trend calculation. An asterisk appearing in equations indicates that the original figures, i.e. the individual years, have been converted to simplify calculations ($x^* = x - \bar{x}$). Calculation Method: cf. e.g. G. Udny Yule/M.G. Kendall "An Introduction to the Theory of Statistics", London 1953, p. 346-348.

The registration figures of the individual vehicle types and categories as gained from the market analysis combined with the output figures reported in the description of the existing assembly plants indicate for each group of vehicle the share of the West African market that is supplied with automobiles assembled in West Africa and the share that is supplied with imports of finished vehicles.

An economic judgement of the question whether part of the imported automobiles should be substituted by vehicles assembled in West Africa is only possible when minimum capacities for the assembly of certain vehicle types are known. Minimum capacities depend upon the type of assembly procedure employed. The defined capacity has its effect on total costs and on the cost structure. Considerations of capacity and costs decide upon the possibility of erecting local supply plants for an assembling enterprise.

Erection of an assembly plant operating for an integrated market is advisable under the condition that the number of imported vehicles of a certain category - in view of the free capacities of the existing assembly plants and a realistic appraisal of the market share to be obtainable by the manufacturer or manufacturing group - is equal to or larger than the capacity generally perceived as economical minimum for the assembly of the respective type of vehicle.

The same method is applied for investigating the feasibility of establishing assembly plants in 1980.

After having decided which plants can start production under certain conditions recommendations on the layout of these assembly plants are given in the form of a pre-feasibility study.

3. Diagnosis and Prognosis of the Automobile Market

3.1. Size and Structure of the Market in the Different Countries

3.1.01. Dahomey

3.1.01.1. General Survey

In Dahomey

about 1,200 automobiles

were sold in 1963, i.e. about 50 per cent more than in 1961. Nearly $\frac{2}{3}$ (790) of this sum were attributed to passenger cars and $\frac{1}{3}$ (410) to trucks; the market share of buses, tractors and trailers (altogether 20 units) was not more than 1 per cent in 1963 (Table 1, Figure 1).

The automobile park of the country has increased from 1960 to 1965 from about 3,500 to 8,000 units, although (apart from mere municipal vehicles) the average life of the automobiles is only 4 to 5 years due to the poor condition of the highways. While the passenger car and truck park has increased by a relatively constant average of 20 per cent annually the bus park tripled in the last 5 years. This fact can be explained by the creation of a municipal bus service in Cotonou in 1964 (Table 2).

On the assumptions that the market of agricultural products can be increased continuously, the strongly promoted small industry does not suffer any essential setback, and the planned textile and cement project will be realized the truck sales might follow the development trend of the last years, the more so since there are no signs of a shift of goods transport from trucks to tractors. Even if the outlined developing opportunities are regarded as positive the passenger car sales will not increase in the coming

decade at the same high degree as it was the case in the last years: the townspeople considered as buyers of passenger cars on account of their income are already owning cars and less than 5 per cent of all automobiles are demanded by the rural population which has only low purchasing power anyhow. In case the bus service introduced in Cotonou in 1964 proves convenient it is planned to set up a bus network all over the country. Through the realization of such a plan the bus market would grow above average; when realizing this project the competition of the private small truck owners conveying at a lower price should be taken into consideration.

On these assumptions the sales in Dahomey will arise to

about 1,900 (1,600) automobiles in 1980 (1975)

(Figure 1). The automobile park will increase until then by about 7,000 units to nearly 15,000 units.

3.1.01.2. Passenger Car Market

About 40 per cent of the about 700 passenger cars demanded in 1965 comprise the group of small cars under 1,100 c.c.; 35 per cent comprise the medium-size cars, the remaining 25 per cent are attributed to vehicles of more than 1,800 c.c. A comparison of these 1963 figures shows that there is partly a demand shift from cars pertaining to the group of more than 1,800 c.c. to medium-size cars (Table 4).

Nearly 90 per cent of the passenger cars sold in Dahomey in 1963 originate in France; Citroen and Renault alone hold 60 per cent of the market. While the market share of passenger cars imported from Germany (especially Opel and Ford) have increased until 1965 to about 20 per cent the sales market for cars from the USA, England and Italy remains still insignificant (Table 3).

All passenger cars are equipped with gasoline engines (Table 9).

The total demand for passenger cars amounting to about 800 (1,200) units in 1963 (1980) under consideration of the trend towards medium-size cars is broken down into the three groups as follows:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
under 1,100 c.c.	300	400	500
1,100 to 1,800 c.c.	250	400	500
over 1,800 c.c.	240	250	200
	<u>790</u>	<u>1,050</u>	<u>1,200</u>

3.1.01.3. Bus Market

Apart from 1964, when a regular bus service was introduced in Cotonou, 5 buses have been sold annually since 1961. If the project of a bus network were realized the annual demand might increase to 30 to 40 buses. More than 50 per cent of the demand are attributed to buses having 10 to 20 seats. There is, at present, no demand for big buses (Table 5).

The vehicles for the new bus lines (10 to 20 seats) are supplied exclusively by Renault whereas the mini-buses (up to 10 seats) are purchased either from Germany (VW, Ford) or England (Rover) (Table 3).

With the exception of 5 old big buses all buses operating in Dahomey are equipped with gasoline engines (Table 9).

On the given assumptions Dahomey disposes of the following bus

park:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
less than 10 seats	-	5	5
10 to 30 seats	10	20	30
more than 30 seats	-	5	5
	<u>10</u>	<u>30</u>	<u>40</u>

3.1.01.4. Truck Market

In 1965 about 20 per cent more trucks and vans were sold in Dahomey than in the first year following Independence. This means (1964 excepted, when the total automobile market of the country decreased due to a tariff reduction expected for 1965) a constant growth of the registrations from 370 to 450 units. Out of the total registrations about 40 per cent fall to vans equipped with a passenger car engine and undercarriage with a payload of less than 1 ton; about 35 per cent fall to light trucks with a capacity of 1 to 5 tons; 20 per cent fall to vehicles between 5 and 9 tons. About 20 heavy trucks (more than 9 tons of payload) and 5 tractors are presently demanded in Dahomey p.a. (Table 6 and 7).

About 3/4 of all trucks and vans have been imported in the last 3 years from France (mainly Citroen and Renault). 10 to 15 per cent each of the commercial vehicles come from Germany (Henschel, Mercedes-Benz, VW) and the USA (Chevrolet, Dodge, Willys Overland). An essential part of the tractors is supplied by Citroen and Berliet (Table 3).

About 85 per cent of the trucks and vans are equipped with gasoline engines; all tractors registered in the last 3 years are diesel vehicles (Table 9).

The market of trailers has increased from 5 units in 1961 to 25 units in 1965. Even on the consideration that only nearly half of the trailers are tractor trailers (payload more than 8 tons) i.e. the total demand for trailers increases more than the demand for tractors, it is likely that scarcely more than 20 trailers can be sold in 1980 because of the limited transport volume in Dahomey although the extrapolated trend of the last years leads to a much higher potential market.

Since, as already noted, there are no special signs for a shift of the truck sales from the market development of the past years, and no structural changes in the long-distance goods traffic are presently expected due to the poor condition of the roads the following sales markets are forecast:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
Vans (less than 1 ton)	170	210	230
Light trucks (1 to 5 tons)	150	180	190
Heavy trucks (more than 5 tons)	90	130	140
	<u>410</u>	<u>520</u>	<u>560</u>
Light tractors (up to 170 HP)	2	2	2
Heavy tractors (more than 170 HP)	3	8	8
	<u>5</u>	<u>10</u>	<u>10</u>
Trailers (up to 12 tons)	2	10	10
Trailers (more than 12 tons)	3	10	10
	<u>5</u>	<u>20</u>	<u>20</u>

DAHOMY

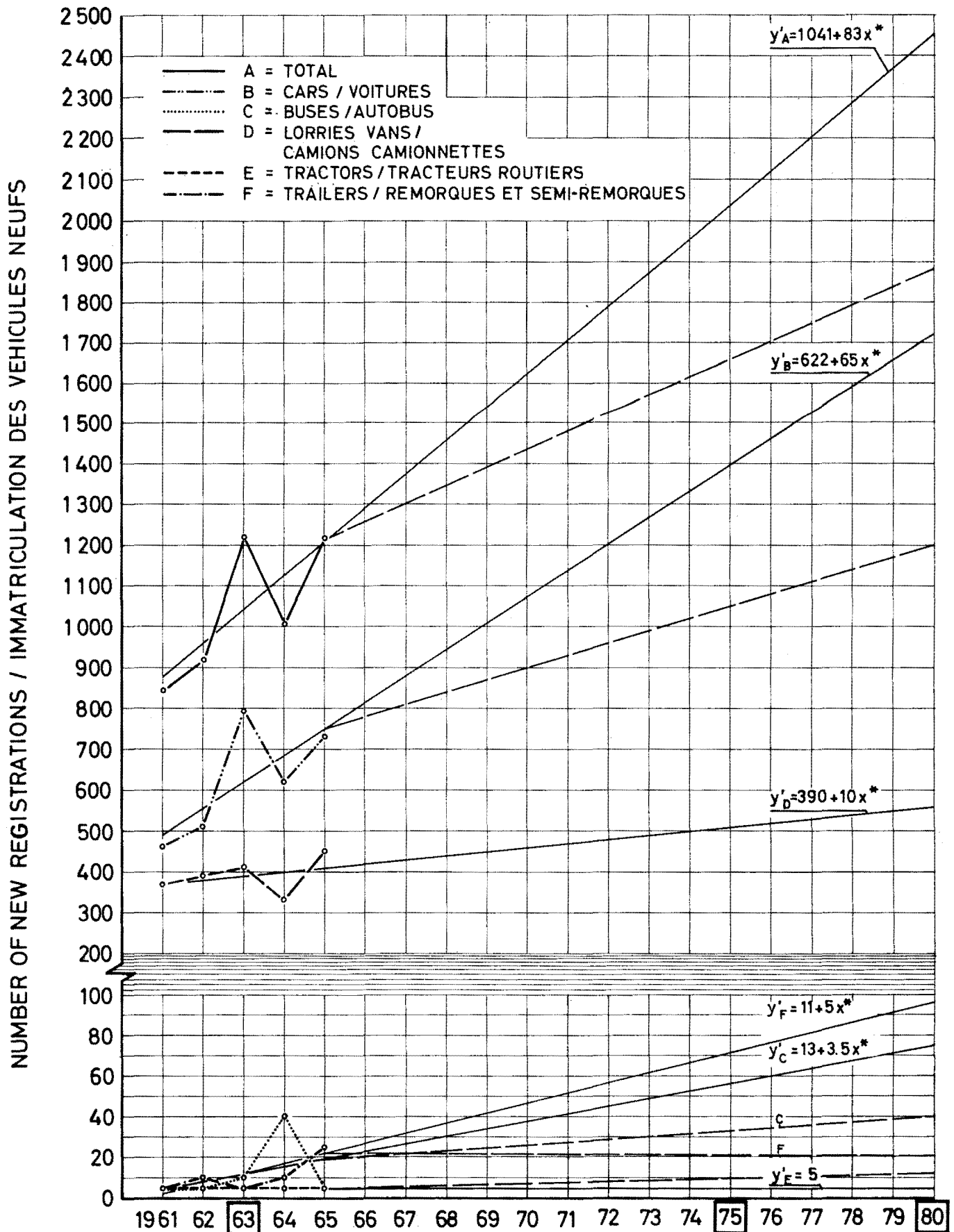


FIGURE / GRAPHIQUE 1

3.1.02. Gambia

3.1.02.1. General Survey

In Gambia

270 motor vehicles

were registered in 1963. In the last 10 years the sales of passenger cars, buses and trucks (including tractors) were subject to strong fluctuations. The trend of all types of vehicles shows, however, a demand increase (Table 10, Figure 2).

According to the corresponding information given by government officials, foreign advisers in some ministries and motor vehicle importers no extraordinary economic factors which might change the development trend of the motor vehicle demand are expected in the near future. On the basis of these conditions and considering the small size of the country and the low number of population

only 450 (370) motor vehicles

will be sold in Gambia in 1980 (1975) (Figure 2).

The automobile park of the country comprised about 1,550 vehicles in 1963: 900 passenger cars, 590 trucks and vans and about 60 buses. On the assumption that the average life of motor vehicles in Gambia - being at present of 5 to 6 years for passenger cars and trucks - does not change essentially in the future the motor vehicle park will increase until 1980 (1975) to 2,500 (2,200) units (Table 11). The calculation has been made on the basis of estimated registrations.

3.1.02.2. Passenger Car Market

The market share of cars pertaining to the group of 1,100 to 1,800 c.c. has increased from about 50 per cent (1960) to about 75 per cent (1965) whereas the sales of small cars (under 1,100 c.c.) has decreased in the same period from 35 per cent to 20 per cent. The demand for cars over 1,800 c.c. has fallen considerably: it is of 5 per cent at present (about 15 per cent in 1960).

Although British products (Ford, Vauxhall, Landrover, Morris) still hold 65 to 70 per cent of the market it has, nevertheless, considerably decreased in the last 4 to 5 years: at the beginning of the 60ies more than 90 per cent of all cars were imported from England. The share of French cars has increased considerably in the same period (presently 25 to 30 per cent) although non-British cars are charged with a double import tax.

There is no market for passenger cars with diesel engines.

For the years 1975 and 1980 the following market structure can be expected:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
under 1,100 c.c.	30	55	70
1,100 to 1,800 c.c.	115	145	175
over 1,800 c.c.	10	20	25
	<u>155</u>	<u>220</u>	<u>270</u>

3.1.02.3. Bus Market

The market share of the small buses nearly exclusively equipped with gasoline engines (10 to 30 seats) is estimated at 75 per cent. About 10 per cent each of the market fall to buses having more than 30 seats and to mini-buses (under 10 seats). The big buses are equipped with diesel engines.

The French Renault buses as well as the British Ford and Bedford are the most often represented.

On account of the relatively low transport volume in Gambia there will be chief demand for small buses also in the future; the structure of the bus market to be expected for 1975 and 1980 is as follows:·

	<u>1963</u>	<u>1975</u>	<u>1980</u>
under 10 seats	2	3	3
10 to 30 seats	16	15	15
over 30 seats	2	2	2
	<u>20</u>	<u>20</u>	<u>20</u>

3.1.02.4. Truck Market

On Gambia's truck market which is still today dominated to 90 per cent by British products Bedford (about 50 per cent) and Landrover (about 25 per cent) alone hold 3/4 of the market. More than 50 per cent of all imported trucks are bought second-hand and are used nearly exclusively for the transport of peanuts; therefore, they are operating only 7 months a year.

About 5 per cent of the trucks and vans of the country are running on diesel fuel.

On the basis of our market analysis and on account of a shift of goods transport to heavy trucks with increasing improvement of the road network the overall truck market will have the following structure in 1975 and 1980:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
Vans (under 1 ton)	35	50	55
Light trucks (1 to 5 tons)	40	45	45
Heavy trucks (over 5 tons)	20	35	40
	<u>95</u>	<u>130</u>	<u>140</u>

GAMBIA / GAMBIE

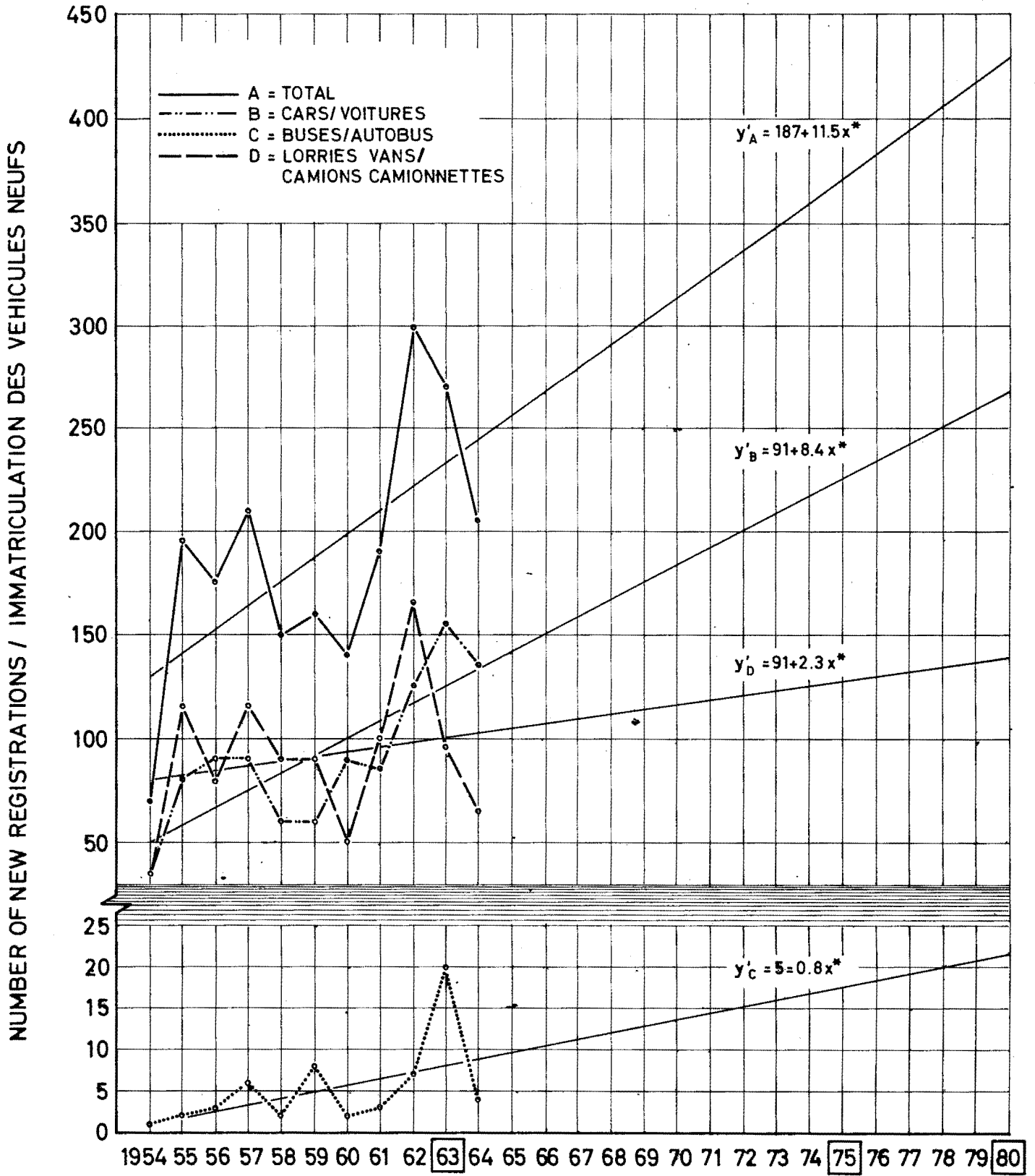


FIGURE / GRAPHIQUE 2

3.1.03. Ghana

3.1.03.1. General Survey

In Ghana

more than 9,000 motor vehicles

were sold in 1963. This figure is still relatively high considering the fact that the registrations have decreased from nearly 11,500 units in 1960 to less than half of it in 1965. While the bus market has quintupled since 1955 the passenger car market has fallen from more than 3,000 units, ten years ago, to about 2,500 in 1965; the sales of commercial vehicles have even decreased in the same period by more than 50 per cent to about 1,850 units (Table 12, Figure 3).

Since the average life of motor vehicles in Ghana is of about 5 years, i.e. the greatest part of the new registrations replaces discarded vehicles, the motor vehicle park of Ghana accounting for about 41,800 units in 1965 has not changed since 1960. The passenger car park has, however, increased by more than 15 per cent (to about 25,000) whereas the truck and bus park has fallen by 10 per cent each. The trailer park has decreased enormously from 1,450 to 250 units (Table 13).

This development can be explained by a one-sided promotion of the infrastructure compared with the measures in agriculture and industry. It is true that by these policies Ghana was enabled to have now the best road network in West Africa, but it is also true that the GDP/income per head has therefore increased only from \$ 1,340 million/\$ 197 in 1960 to \$ 1,565 million/\$202 in 1965. The motor vehicle market will stay on

the same present level unless the standstill in the commercial sector is removed. Since the existing infrastructure (road and power network) represents a favourable prerequisite for industrialization the development will advance more rapidly than in other West African countries as soon as a new impulse has taken place.

Considering all these factors it can be expected that

about 10,000 (9,000) motor vehicles

can be sold in Ghana in 1980 (1975) (Figure 3). In the same period of time the motor vehicle park of Ghana will increase to about 60,000 (52,000) units.

3.1.03.2. Passenger Car Market

Although the passenger car registrations have increased from 1955 to 1963 by 2/3 (to more than 5,000 units) they have again fallen to 2,500 in 1965. About 80 per cent of all cars demanded in Ghana belong to the group of cars between 1,100 and 1,800 c.c. This rate is much higher than that usual in West African countries for this group of cars; it arose at the beginning of the 60ies to the debit of the market share of vehicles with more than 1,800 c.c. Small cars and those with more than 1,800 c.c. account each for half of the remaining demand (Table 15).

In 1963 Ghana's passenger car fleet consisted by 40 per cent of German cars (Opel, VW, Mercedes-Benz). Every fourth registered car comes from England (Morris, Vauxhall, Austin, Hillman). About 15 per cent each of all vehicles in use have been built in the USA (Ford, Chevrolet) and France (Peugeot, Simca). 4 per cent of the about 27,000 passenger cars of Ghana were products

of the Italian Fiat, about 1 per cent of the Japanese Datsun. VW, Morris and Austin being highly preferred on the small car market, Opel, Vauxhall and Peugeot on the market of middle-class cars and Mercedes-Benz, Ford and Chevrolet as government vehicles, this market structure will probably not essentially change in the coming years (Table 14).

The market share of the passenger cars with diesel engine sold annually in Ghana is of about 1 per cent. All other cars are equipped with gasoline engines (Table 19).

On the basis of the overall demand of 5,100 (6,000) vehicles in 1963 (1980) there arises the following market situation on the assumption that the demand structure is not changing essentially in the future:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
under 1,100 c.c.	285	530	600
1,100 to 1,800 c.c.	4,370	4,240	4,800
over 1,800 c.c.	470	530	600
	<u>5,125</u>	<u>5,300</u>	<u>6,000</u>

3.1.03.3. Bus Market

Ghana's bus park reached its peak in 1963 with 3,300 buses. While 105 buses had been imported in 1955 the average value of the last 5 years was of about 600. This development will continue in the next years because conveyance of passengers in the so-called Mammy-Lorries (small trucks with wooden bodies) has been forbidden since 1965. At present, about 60 per cent of the demand fall to buses with 10 to 19 seats and about 30 per cent to buses with 20 to 29 seats. The market share of large buses (over 30 seats) and small buses (under 10 seats) is nearly 5 per cent each. Since the buses with

about 20 seats operate the pick-up traffic as well as the non-scheduled long-distance traffic which is exclusively dependent on the fully booked seats this market structure will change not essentially in the near future (Table 16).

Half of the 3,200 buses registered in Ghana in 1963 were of German origin (Mercedes-Benz, VW, Ford). Another 45 per cent of the buses of all categories come from England (Morris, Austin, Bedford, Leyland, Albion) (Table 14).

About 1/3 of the buses registered in the last years operate with diesel fuel (Table 19).

The outlined conditions and development tendencies lead to the following market structure:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
up to 10 seats	40	80	100
10 to 30 seats	735	780	850
over 30 seats	10	40	50
	<u>785</u>	<u>900</u>	<u>1,000</u>

3.1.03.4. Truck Market

The sales of trucks and vans totalling about 4,000 units in the second half of the 50ies are decreasing year by year at different intensity; in 1965, they reached bottom with 1,850 units. Such a decrease cannot simply be explained by the beginning shift of long-distance transports to heavy trucks, but is uniquely determined by the fallen demand for freight space: After the years of infrastructural investments the deficient development of Ghana's industry could not keep pace and this appears especially obvious on the truck market.

About 1/3 each of the trucks sold in the last years had a capacity of less than 1 ton resp. 1 to 3 tons. Trucks with 3 to 5 tons capacity hold a relatively low market share of little more than 10 per cent , while the category 5 to 8 tons has a market share of 20 per cent (Table 17).

The relatively high demand for small commercial vehicles is likewise reflected by the trailer sales. Half of the 70 trailers sold annually for some years now - from 1955 to 1961 the average annual sales were of more than 380 units - has a capacity of up to 1 ton only; another 40 per cent pertain to the category of 1 to 5 ton trailers while the market share of the big trailers (over 5 tons) is under 10 per cent (Table 18).

In Ghana, 4 out of 5 trucks are of British origin. In 1963, Bedford alone provided 7,000 units, i.e. about 40 per cent of all trucks. Apart from other British products such as Morris, Austin, Landrover, Albion and Commer the German Mercedes-Benz and VW trucks and vans as well as the American Ford hold market shares worth mentioning (Table 14).

About half of the trucks is driven with gasoline, the other half with diesel oil (Table 19).

In the light of the increasing truck demand occasioned by further creation and development of the industry and a slight demand shift towards larger commercial vehicles the following sales market can be expected:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
Vans (under 1 ton)	950	800	900
Light trucks (1 to 5 tons)	1,500	1,100	1,200
Heavy trucks (over 5 tons)	700	800	900
	<u>3,150</u>	<u>2,700</u>	<u>3,000</u>
Trailers	50	150	200

GHANA

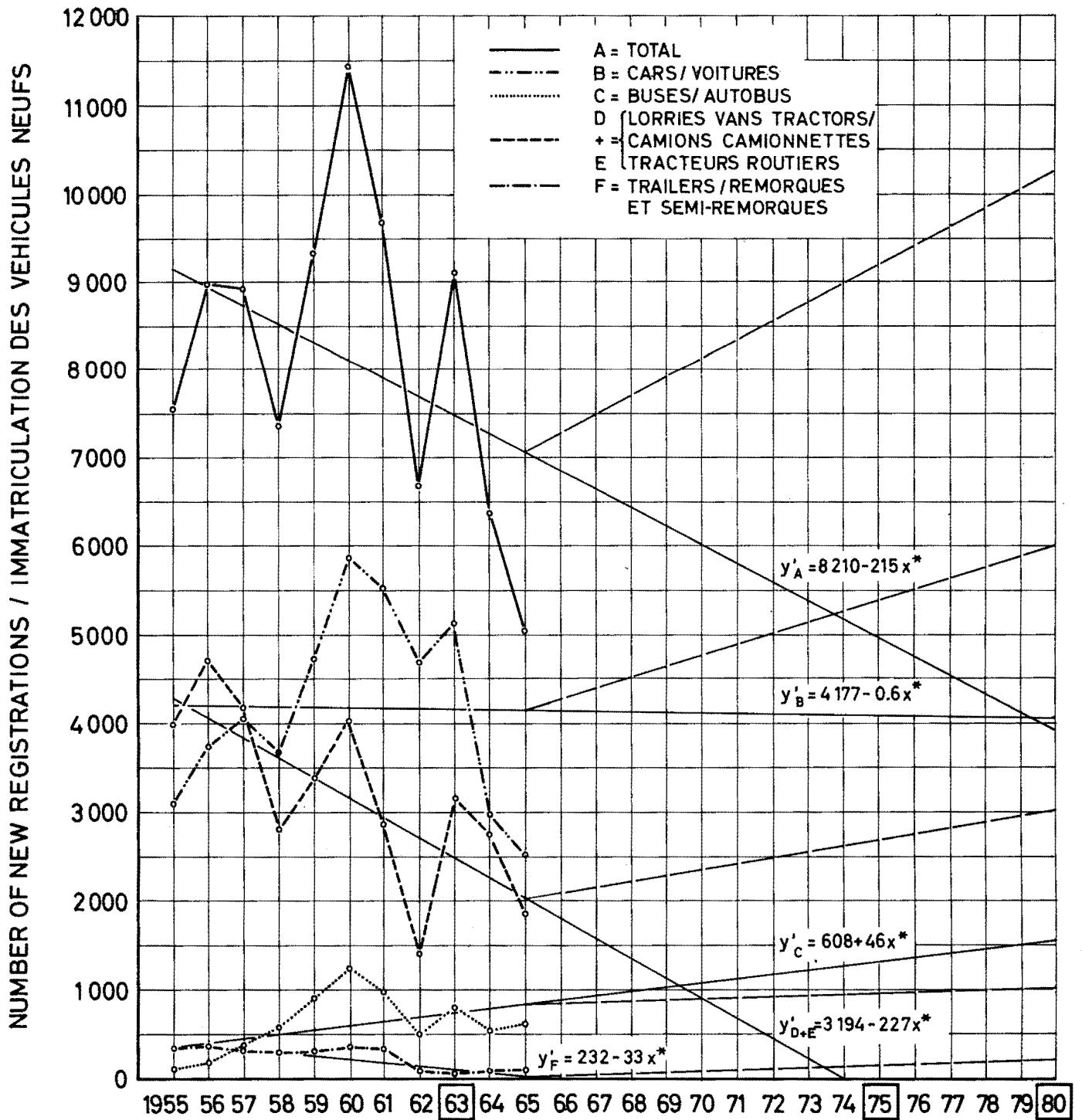


FIGURE / GRAPHIQUE 3

3.1.04. Guinea

3.1.04.1. General Survey

In Guinea

about 1,650 motor vehicles

were registered in 1963. This indicates at the same time the average registrations from 1960 to 1965 (disregarding the atypical peak year 1961 with more than 3,200 registrations). In this year about 1,000 vehicles alone (mostly trucks) came from the Soviet Union and were employed over a short period on large building sites. More than 60 per cent (1,000) of the 1,650 vehicles were passenger cars, another 35 per cent (600) trucks and about 2 per cent (35) buses. For most of the years the ratio trucks to passenger cars is, however, reverse. The average sales of tractors is of not more than 10 units a year (Table 20, Figure 4).

In Guinea the average life of a passenger car is 6 years, that of a truck 5 years. That explains the quantitatively unchanged motor vehicle park between 1960 and 1965 (about 10,000 units). The structure of the vehicle park has, however, changed: while, in 1960, still about 60 per cent of the park fell to trucks and only little more than 35 per cent to passenger cars in 1965 about 45 per cent of all vehicles were passenger cars and 55 per cent trucks. This development is an effect of a declining transport volume due to a but slightly increasing agricultural production and the completion of some large building projects (power station, extension of airport, sport and school centres) rather than of the slow general increase in the purchasing power (per head income growth by \$ 5 within 5 years: 1960: \$ 67; 1965: \$ 72) (Table 21).

If the trend of the last 5 years continued the motor vehicle registrations would decrease steadily until 1980 and reach a level of about 1,300 units. It is more likely, however, that, together with the slowly growing production of existing enterprises and establishment of additional industrial enterprises, agricultural production will increase again thus causing a new stimulus in the demand for commercial vehicles.

Passenger car sales should not essentially change from the level of 1960 to 1964 since the very gradually increasing income level will hardly allow the usership to increase in the coming decade. Moreover, it has to be noticed in this context that the greatest part of vehicles registered by private persons consisted of second-hand cars.

On these assumptions

about 2,200 (2,000) motor vehicles

will be saleable in 1980 (1975) (Figure 4). If development of the highways and improvement of the maintenance service achieved a slight increase in the average life (or at least no decline of the present values) the motor vehicle park of the country might grow until 1980 to about 14,500 units.

3.1.04.2. Passenger Car Market

Statistics on the classification of the passenger car market according to c.c.c. capacity or HP are not available in Guinea. On the basis of our investigations it can, however, be assumed that about 30 per cent of all registrations fall to small cars (up to 1,100 c.c.) and 50 per cent to cars of 1,100 to 1,800 c.c.; the remaining 20 per cent account for vehicles having a capacity of more than 1,800 c.c.

In 1963, about 60 per cent of all newly registered vehicles were of French origin (Peugeot, Renault, Citroen, Simca) and about 15 per cent came from the USA (Willys Overland, Ford, Chevrolet). 10 per cent each were imported from Germany (VW, Mercedes, Opel) and the Soviet Union (Volga, Gaz, Moskovitch). In the last years the proportion of the registered Soviet passenger cars has increased, especially in the group small and medium-size cars (Table 22).

In Guinea all passenger cars are equipped with gasoline engines (Table 23).

On the basis of a demand of about 1,000 (1,000) passenger cars in 1963 (1980) and the assumption made on the categories there results the following market situation:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
under 1,100 c.c.	300	270	300
1,100 to 1,800 c.c.	500	450	500
over 1,800 c.c.	200	180	200
	<u>1,000</u>	<u>900</u>	<u>1,000</u>

3.1.04.3. Bus Market

In the years 1960 to 1965 about 30 buses have been registered in Guinea. 2/3 out of this sum fall to municipal buses (over 30 seats).

Until 1962 the big buses came nearly exclusively from Hungaria (Ikarus), then from the USA (Mack, International). The buses of medium size operating the state long-distance traffic have likewise been imported from the USA (Ford, G.M.C.) (Table 22).

About 3/4 of all buses are equipped with gasoline engines, the rest with diesel engines (Table 23).

Since a great part of Guinea's passenger transport might furtheron be handled on long-distance trucks unless a corresponding government restriction were issued, and an essential extension of the municipal bus network is not to be expected the 1980 bus sales will hardly lie over 30 units:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
up to 30 seats	25	15	15
over 30 seats	10	15	15
	<u>35</u>	<u>30</u>	<u>30</u>

3.1.04.4. Truck Market

Apart from 1961 when about 800 trucks (Gaz, Zil, Maz) came from Soviet Russia additionally to the normal demand for the building site traffic the number of truck registrations from 1960 to 1965 fluctuated between 600 and 1,000 units. Out of the 600 trucks registered in 1963 about 60 per cent pertained to the category trucks and vans with a payload of 4 tons; about 30 per cent had a capacity of 4 to 6 tons and the rest was made up by heavy trucks and tractors. Data on the development of the trailer market were not available.

More than 2/3 of all trucks annually registered are of Russian origin (Gaz, Zil, Maz), another quarter comes from the USA (mainly Willys Overland) while French truck producers (especially Berliet) hold only a very small market share. This market structure will change in the following years in favour of the Mack-vehicles assembled in Conakry (Table 22).

The share of the diesel vehicles in the overall truck park is of about 5 per cent, that of the tractors of about 80 per cent (Table 23).

On the assumption that the truck registrations develop re-
spective to the trend of the last years and the market
structure does not change essentially as to the categories
the sales situation is approximately as follows:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
Vans and light trucks (under 4 tons)	400	670	730
Heavy trucks (over 4 tons)	<u>200</u>	<u>410</u>	<u>470</u>
	600	1,080	1,200
Tractors	5	20	25

GUINEA / GUINEE

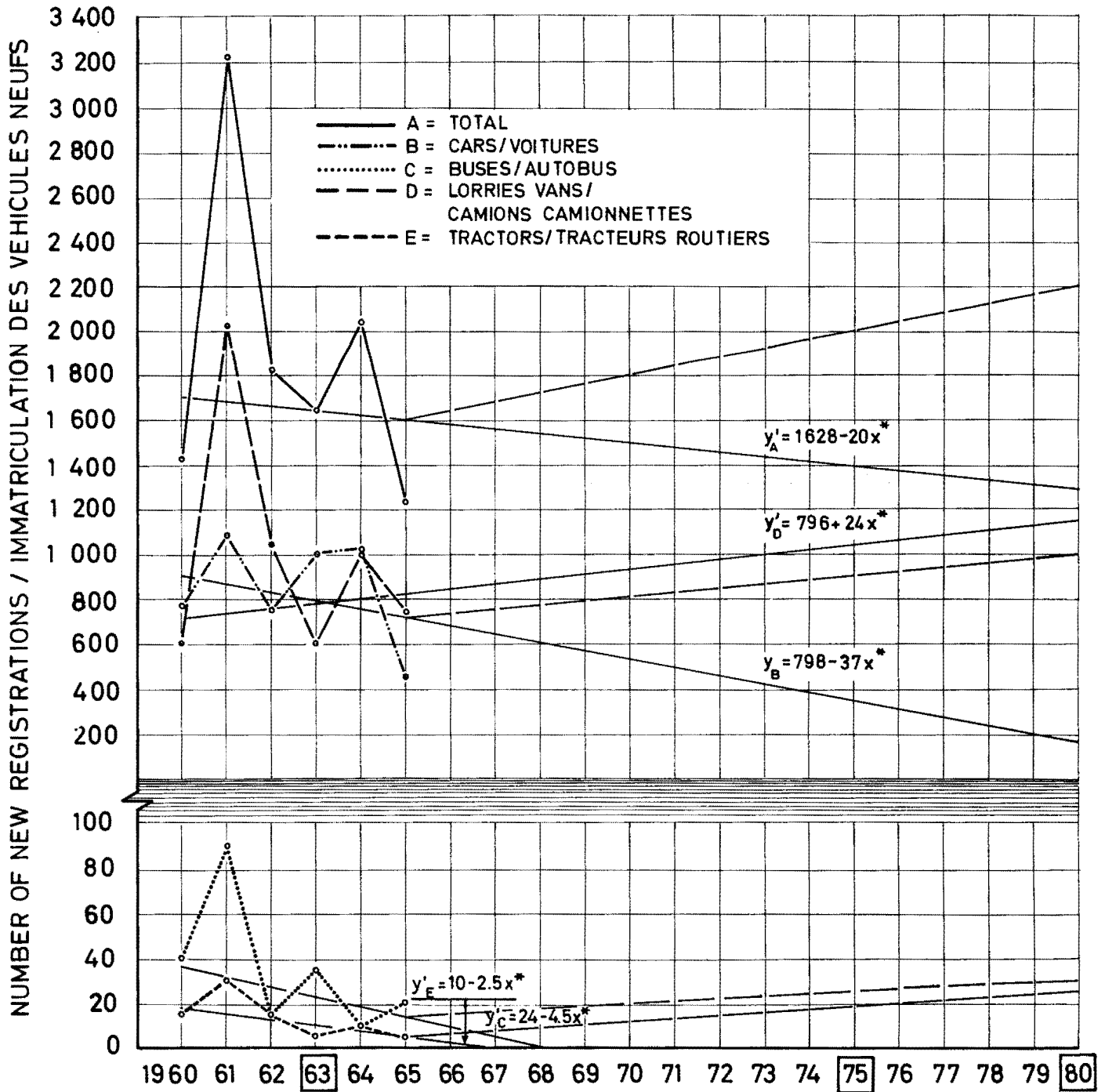


FIGURE / GRAPHIQUE 4 [1961 FIGURES ARE NOT CONSIDERED IN THE TREND CALCULATION / EVALUATION DES TENDENCES SANS TENIR COMPTE DE L'ANNEE 1961]

3.1.05. Ivory Coast

3.1.05.1. General Survey

In the Ivory Coast about

7,000 motor vehicles

were sold in 1963. This means a demand increase of about 50 per cent within nearly 10 years. While the sales of trucks and buses have remained nearly constant in this time (2,000 resp. 40 units per year) the sales of passenger cars have nearly tripled (to 4,300); the registrations of tractors and trailers have increased even by 6 times (to 300) resp. 10 times (to 320) (Table 24, Figure 5).

As the average life of motor vehicles in the Ivory Coast is of about 5 years (passenger cars: between 5 and 6 years; trucks: between 4 and 5 years) - and thus a considerable part of the newly registered cars replaces scrapped vehicles - the motor vehicle park of the country has increased from about 18,500 units in 1960 to only about 30,000 in 1965. It is remarkable in this context that the passenger car park has doubled in this period of time while the truck park has increased only by 15 per cent. The development of the latter can be explained by a partly shift of goods transports from trucks to tractors while the doubling of the car park must be regarded as a sign of an increased purchasing power of the population (Table 25).

Main reasons for the outlined development of the motor vehicle market can be found in the steady and relatively strong economic development of the country (GDP/increase in income per head of about \$ 600 million/ \$ 170 in 1960 to about \$ 1,000 million/ \$ 250 in 1965) and the rapid improvement of the road network. In the light of the relatively stabile political situation

and the realistic development plans of the Ivory Coast there are no reasons for expecting any essential change in the development trend in the coming decade.

On the basis of the overall development tendency of the motor vehicle market in the past ten years the market is expected to increase by about 80 per cent until 1980 although, since 1961, the sales are in a range of about 7,000 units annually. Therefore, in 1980 (1975)

about 13,000 (11,000) motor vehicles

will be sold in the Ivory Coast (Figure 5). On the assumption of a steady increase in the sales volume and nearly unchanged average life of the motor vehicles the motor vehicle park will increase to about 66,000 (53,000) units until 1980 (1975).

3.1.05.2. Passenger Car Market

Since 1956 passenger car registrations have increased by more than 250 per cent although the sales growth has slowed down considerably in the last 5 years. About 50 per cent of the demand fall to vehicles pertaining to the class between 1,100 and 1,800 c.c.; nearly 40 per cent fall to small cars under 1,100 c.c.; the remaining lot falls to cars over 1,800 c.c. (Table 27).

The market share of the French products Renault and Peugeot (more than half of the total sales) as well as Citroen and Simca has decreased from about 85 per cent in 1962 to nearly 70 per cent in 1965 in favour of the German types (Opel, Ford, VW). The market share of American and British passenger cars is relatively constant, under the 5 per cent limit, whereas the still rather small market of the Italian Fiat has increased steadily in the past 5 years (Table 26).

All passenger cars are equipped with gasoline engines. There is yet no market for diesel vehicles (Table 32).

On the basis of an overall demand for passenger cars amounting to 4,300 (9,200) units in 1963 (1980) there arises the following market situation:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
under 1,100 c.c.	1,700	3,100	3,700
1,100 to 1,800 c.c.	2,200	3,850	4,650
over 1,800 c.c.	400	750	850
	<u>4,300</u>	<u>7,700</u>	<u>9,200</u>

3.1.05.3. Bus Market

With the exception of the year 1965, when an additional number of more than 50 buses (with more than 40 seats) has been purchased for town traffic in Abidjan, there has been an annual demand for about 50 buses since 5 years. Through the shift of passenger transport from small trucks to buses of medium size this market will expand in the years to come. The chief market accounting for more than 60 per cent pertains to the group of buses with 10 to 30 seats (Table 28).

The small buses (up to 10 seats) sold are mainly of German origin (VW, Ford) whereas the remaining market is supplied by 4/5 by Renault/Saviem (Table 26).

About 75 per cent of all buses, i.e. all except of the small ones, are equipped with diesel engines (Table 32).

The most important market development is to be expected with the group of cross-country buses having 10 to 30 seats. As

regards size groups a change in the market structure which has been nearly the same since Independence is not expected:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
up to 10 seats	5	15	20
10 to 30 seats	25	75	90
over 30 seats	10	30	30
	<u>40</u>	<u>120</u>	<u>140</u>

3.1.05.4. Truck Market

Since 1955 the market of trucks and vans fluctuating by about 2,000 units a year has remained constant. The structure of the truck demand has, however, experienced a decisive change: due to the development of the road network an essential part of the long-distance traffic volume has shifted from trucks under 5 tons of payload (esp. 3 to 5 tons) to heavy trucks and tractors. In short-distance traffic, however, trucks with a carrying capacity of 1 to 3 tons are still preferred. Nearly half of the 2,000 vehicles sold annually are vans having a payload of up to 1 ton; they can mainly be counted under the group of passenger cars under 1,800 c.c. (Table 29 and 30).

More than 80 per cent of all trucks and vans come from France (Renault/Saviem, Peugeot, Citroen), another 15 per cent from the USA. Until 1963 Berliet, Renault/Saviem and Mercedes-Benz held more than 25 per cent each of the market share of tractors; until 1965 the market share of the Renault/Saviem meanwhile assembled in the Ivory Coast has increased to about 40 per cent; that of Berliet decreased to less than 10 per cent (Table 26).

About 4/5 of the tractors are equipped with diesel engines. The share of diesel vehicles in the trucks and vans is only of nearly 10 per cent (Table 32).

The trailer sales have increased since Independence by about 75 per cent, from 200 to 350 units annually. The share of tractor trailers in the total trailer market was of about 90 per cent in 1963. Out of that sum 1/4 was attributed to the group of 8 to 12 tons of payload and 3/4 to that over 12 tons. The demand for truck trailers (under 8 tons) and small tractor trailers (8 to 12 tons) has decreased continuously since 1960 whereas the demand for heavy trailers (over 12 tons) has increased in the last 5 years from about 60 to 80 per cent (Table 31).

On the assumption that the demand for trucks increases slightly with the industrialization of the country and on consideration of the mentioned shift in chief demands - without assuming the strong sales increases of the last 5 years in the market of tractors and trailers to develop at the same pace - the market situation for commercial vehicles in the Ivory Coast is as follows:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
Vans (under 1 ton)	850	1,000	1,000
Light trucks (1 to 5 tons)	800	950	1,000
Heavy trucks (over 5 tons)	200	200	200
	<u>1,850</u>	<u>2,150</u>	<u>2,200</u>
Light tractors (up to 170 HP)	70	60	50
Heavy tractors (over 170 HP)	225	390	500
	<u>295</u>	<u>450</u>	<u>550</u>
Trailers (up to 12 tons)	30	50	70
Trailers (over 12 tons)	290	500	580
	<u>320</u>	<u>550</u>	<u>650</u>

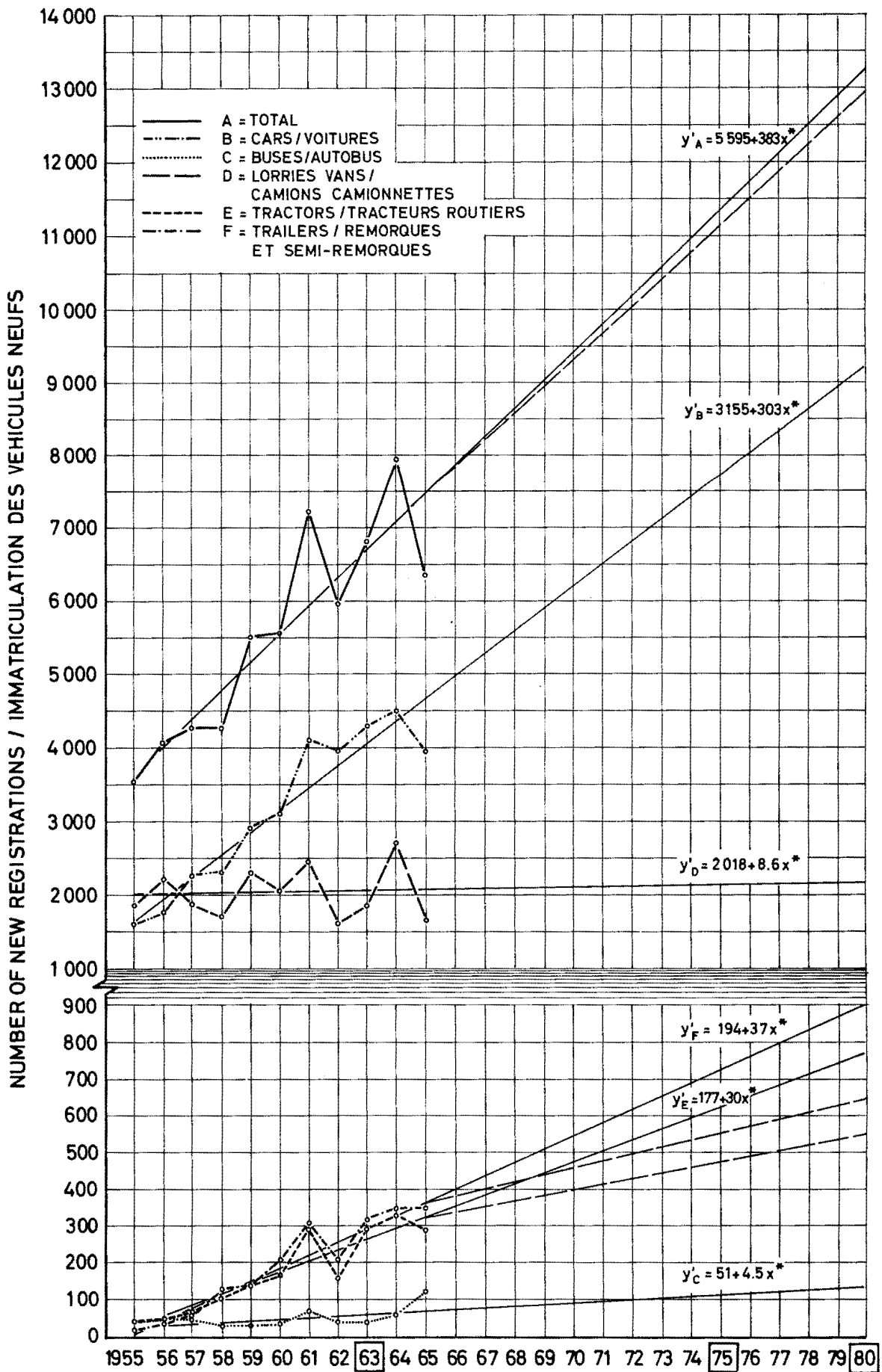


FIGURE / GRAPHIQUE 5

3.1.06. Liberia

3.1.06.1. General Survey

In 1963, Liberia imported

about 3,000 motor vehicles.

Between 1955 and 1965 this value has been exceeded only in 1961 when about 3,450 vehicles were imported. The market developing relatively constant between 1955 and 1959 from 640 to 1,060, increased spasmodically in 1960 to 2,700 units.

From 1955 to 1960 the annual imports remained relatively constant and fluctuated by 3,000 units. The considerable increase in the registrations from 1960 onwards was occasioned in essential by the great vehicle demand arising with the opening up of the iron ore deposits near Nimba and in the Bong Range.

About 65 per cent (2,000) of the motor vehicles imported in 1963 were passenger cars; about 25 per cent (770) fell to trucks and the remaining 7 per cent to buses (Table 33, Figure 6).

According to our estimations the motor vehicle park increased from 1961 to 1965 from 8,000 to 10,000 units; compared with other West African countries the medium life of a motor vehicle of 4 years is relatively low. The structure of the park has slightly changed in this period of time. While the share of passenger cars increased from about 55 per cent (4,200) to 60 per cent (5,900) and the bus share from 4 per cent (350) to 7 per cent (700) the share of trucks in the overall park decreased from 43 per cent (3,450) to 34 per cent (3,400) (Table 34).

The extension of the park of passenger cars and buses can be explained by the generally increased standard of living reflected by the strong growth of the per head income (by \$75 in 5 years: 1960: \$175; 1965: \$250). The decline in the demand on the truck market has its reason in the declining transport volume occasioned by the presently stagnant economy (excluding iron ore production and raw caoutchouc production) and the realization of some large building projects (ore mining, railways, government buildings).

Taking as basis the trend of the past 10 years the registrations might increase until 1980 to about 8,000 units. This development is, however, unlikely to continue since the trend of the last 5 years shows a clear flattening.

Even at a constant favourable development of the income per head the usershift of passenger cars will grow only insignificantly. Moreover, the increase in the lifetime expected in connection with the development of highways and improvement of the maintenance service will not accelerate the demand increase. Therefore, the passenger car sales can be assumed to keep their present level.

Continued development of the infrastructure (road building projects), stronger industrialization (- the establishment of a steel mill is under discussion -) and an increase in the presently stagnant agricultural production will slightly raise the demand for commercial vehicles until 1980.

On consideration of these conditions about

3,800 (3,700) motor vehicles

will be saleable in Liberia in 1980 (1975) (Figure 6).

Until 1980 (1975) the motor vehicle park might increase to 18,200 (15,000) units.

3.1.06.2. Passenger Car Market

In 1963, the passenger car park was classified as follows: nearly 15 per cent small cars (up to 1,100 c.c.); about 55 per cent cars pertaining to the category of 1,100 to 1,800 c.c. and about 30 per cent vehicles of more than 1,800 c.c.

In 1963, 50 per cent of all passenger cars running in the country were of German origin (Opel, VW, DKW, Ford), 20 per cent came from the USA (Ford, Chevrolet, Willys Overland). British products (Ford, Vauxhall) were presented with 12 per cent and French (Simca, Renault, Peugeot), Swedish (Volvo) and Italian cars (Fiat) with about 5 per cent each (Table 35).

Nearly all passenger cars are equipped with gasoline engines.

Basing on the 1963 (1980) demand amounting to about 2,000 (2,000) and the estimated distribution of the categories as well as considering an expanding share of the small cars the market situation will be as follows:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
under 1,100 c.c.	240	500	500
1,100 to 1,800 c.c.	1,150	1,000	1,000
over 1,800 c.c.	<u>620</u>	<u>500</u>	<u>500</u>
	2,010	2,000	2,000

3.1.06.3. Bus Market

Compared with the preceding years the bus imports have more than tripled since 1963.

According to our estimations the buses running in Liberia have nearly all less than 30 seats. These buses operate the private municipal lines in the capital of Monrovia as well as the cross-country traffic.

In 1963 nearly 35 per cent each of the bus fleet comprised Renault and VW-vehicles while 15 per cent each fell to Chevrolet (USA) and Fiat buses (Italy) (Table 35).

Nearly all buses are equipped with gasoline engines.

On the assumption that the share of bus traffic in the traffic volume does not change in the future a slight sales increase can be expected:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
Up to 30 seats	220	240	250
over 30 seats	<u>-</u>	<u>10</u>	<u>10</u>
	220	250	260

3.1.06.4 Truck Market

From 1960 to 1965 the number of truck registrations fluctuated between about 700 and 1,300. Data on the classification of the demand into pay load categories are not available; we estimate, however, the share of trucks up to 1 ton pay load in the truck park of 1963 to have been of about 15 per cent; another 15 per cent might be attributed to trucks up to 4 tons. Trucks having a pay load of up to 8 tons represent 60 per cent of the commercial vehicle park. 10 per cent of all trucks in use are heavy trucks (more than 8 tons) and tractors.

In 1963, about 60 per cent of all trucks came from the USA (Ford, Fargo, Willys Overland), about 15 per cent from England (Austin, Landrover) and nearly 10 per cent from Italy (Fiat). 6 per cent each of the trucks were French (Peugeot, Renault) and German products (Mercedes-Benz). 3 per cent have been imported from Sweden (Volvo) (Table 35).

On the conditions outlined above and the assumption that there will be no essential change in the categories in the next decade the market situation will be as follows:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
Vans (under 1 ton)	115	210	225
Light trucks (1 to 4 tons)	115	210	225
Heavy trucks (over 4 tons)	<u>500</u>	<u>880</u>	<u>940</u>
	730	1,300	1,390
Tractors	40	100	110

LIBERIA

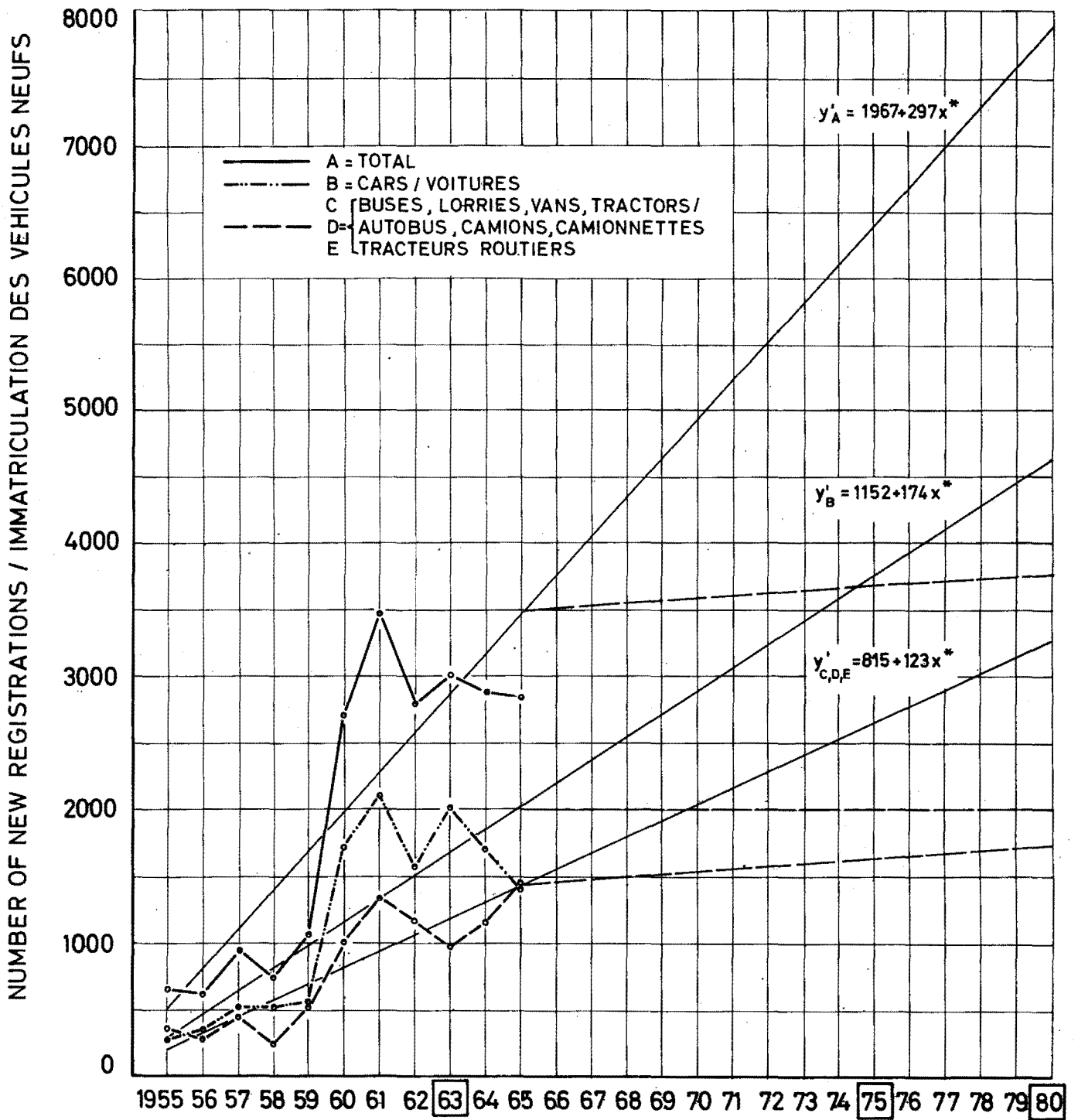


FIGURE / GRAPHIQUE 6

3.1.07. Mali

3.1.07.1. General Survey

In 1963

about 1,050 motor vehicles

were registered in Mali (60 per cent passenger cars and about 35 per cent trucks and vans). Moreover, Mali imported about 10 tractors, trailers and buses in the same year. These values indicate the nearly unchanged level and the static structure of the motor vehicle park in the years 1962 to 1965 (disregarding the peak year 1964 [about 1,500 units] when an additional number of about 300 Gaz vehicles were imported from the Soviet Union) (Table 36, Figure 7).

The average life of motor vehicles in Mali is indicated by 4 to 5 years in the case of trucks and by 5 to 6 years with passenger cars; that is to say that many newly registered cars replace scrapped cars. This, on its turn, explains the fact that the motor vehicle park of the country has increased from 1963 to 1965 only by nearly 400 units. The structure of the motor vehicle park has remained unchanged within this period (Table 37).

Reasons for this development can be found in the sales market equally limited by the scarcely noticeable economic growth (GDP/increase in the income per head from about \$ 275 million/\$ 67 in 1960 to \$ 330 million/\$ 71 in 1965) and the rigorous import regulations. Even if the planned asphaltting of the most important roads of the country were realized such as envisaged until 1971 and conditions for a smooth handling of long-distance road traffic were thus given the motor vehicle registrations would not increase rapidly due to the factors mentioned above. Expansion of the overall sales market by more than 20 per cent seems unlikely under the prevailing conditions.

Therefore, in 1980 (1975)

only about 1,250 (1,200) motor vehicles

will be saleable in Mali (Figure 7). On the assumption of a steady market change and only gradually increasing life of the vehicles the motor vehicle park is likely not to exceed about 6,500 (6,000) units in 1980 (1975).

3.1.07.2. Passenger Car Market

Compared with 1961 an essential part of the passenger car demand has shifted from big to small vehicles. At present, about 85 per cent small cars (up to 1,100 c.c.) and medium-size cars (1,100 to 1,800 c.c.) are being sold, the market share of both categories being equal. While in 1961 every 4th passenger car pertained to the category over 1,800 c.c. in 1965 only every 7th car pertained to this category (Table 39).

French products holding about 90 per cent of the market command the passenger car sales of the country; Citroen and Peugeot alone supply 2/3 of the market whereas Renault and Simca are represented to a relatively low degree in Mali. Otherwise, only passenger car sales from Germany (Opel, VW, Mercedes-Benz) are worth mentioning (market share of over 5 per cent). Registrations of Russian cars (Moskovitch, Volga) are still very small (Table 38).

All passenger cars are equipped with gasoline engines.

The total demand of about 600 (750) passenger cars in 1963 (1980) leads to the following market situation:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
under 1,100 c.c.	260	300	320
1,100 to 1,800 c.c.	260	300	320
over 1,800 c.c.	<u>120</u>	<u>100</u>	<u>110</u>
	640	700	750

3.1.07.3. Bus Market

Since 1962 bus registrations have fluctuated between 5 and 10 units a year. The park of the country presently comprises about 60 buses in use 80 per cent of which have more than 20 seats. These buses are operating mainly the 6 bus lines in Bamako and the environments of the capital as well as the line Bamako-Mopti. Small buses having less than 20 seats account only for 5 per cent of the demand (Table 4).

While the big buses are presently being imported from Hungaria (Ikarus) and Germany (Krupp) the small ones come from France (Citroen, Renault) and Czecho-Slovakia (Skoda).

About 80 per cent of the buses (the big ones) are equipped with diesel engines.

Since passenger transport by buses has been carried out exclusively by the governmental T.U.B. there has been a shift from small buses under 20 seats to buses having over 20 or 30 seats. With increasing improvement of the road network there will hardly be a change in this tendency:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
under 30 seats	10	10	10
over 30 seats	<u>-</u>	<u>5</u>	<u>5</u>
	10	15	15

3.1.07.4. Truck Market

With the exception of 1964 the sales of trucks, vans, tractors and trailers remained about equal. While the market share of vans under 1 ton pay load (which should be classified under passenger cars) amounted to about 20 per cent, only 30 per cent of all sales fell to the category of light trucks. Cross-country goods transport is handled mainly on trucks having 3 to 5 and 5 to 10 tons pay load. Both categories hold about the same market share and account for nearly half of all trucks registered in Mali (Table 41).

Next to France (Citroen, Peugeot, Simca, Berliet) supplying about 75 per cent of all trucks and vans the Soviet Union (Zil, Gaz, Maz) holds the second greatest market share with more than 10 per cent. All other countries have a market share of less than 5 per cent. The high proportion of German Krupp vehicles in the truck park is explained by the unique purchase of more than 200 units in 1963 (Table 38).

While half of all tractors is equipped with diesel engines only one out of seven trucks and vans is running on diesel fuel.

On the basis of the present limited market for trucks and on consideration of the general economic development of the country and - occasioned by an improvement of the highways - a possible shift of a part of the goods transports from small and medium-size trucks to heavy trucks and tractors the following sales market results:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
Vans (under 1 ton)	110	90	90
Light trucks (1 to 5 tons)	150	240	250
Heavy trucks (over 5 tons)	<u>110</u>	<u>110</u>	<u>110</u>
	370	440	450
Tractors	10	15	15
Trailers	10	20	20

NUMBER OF NEW REGISTRATIONS / IMMATRICULATION DES VEHICULES NEUFS

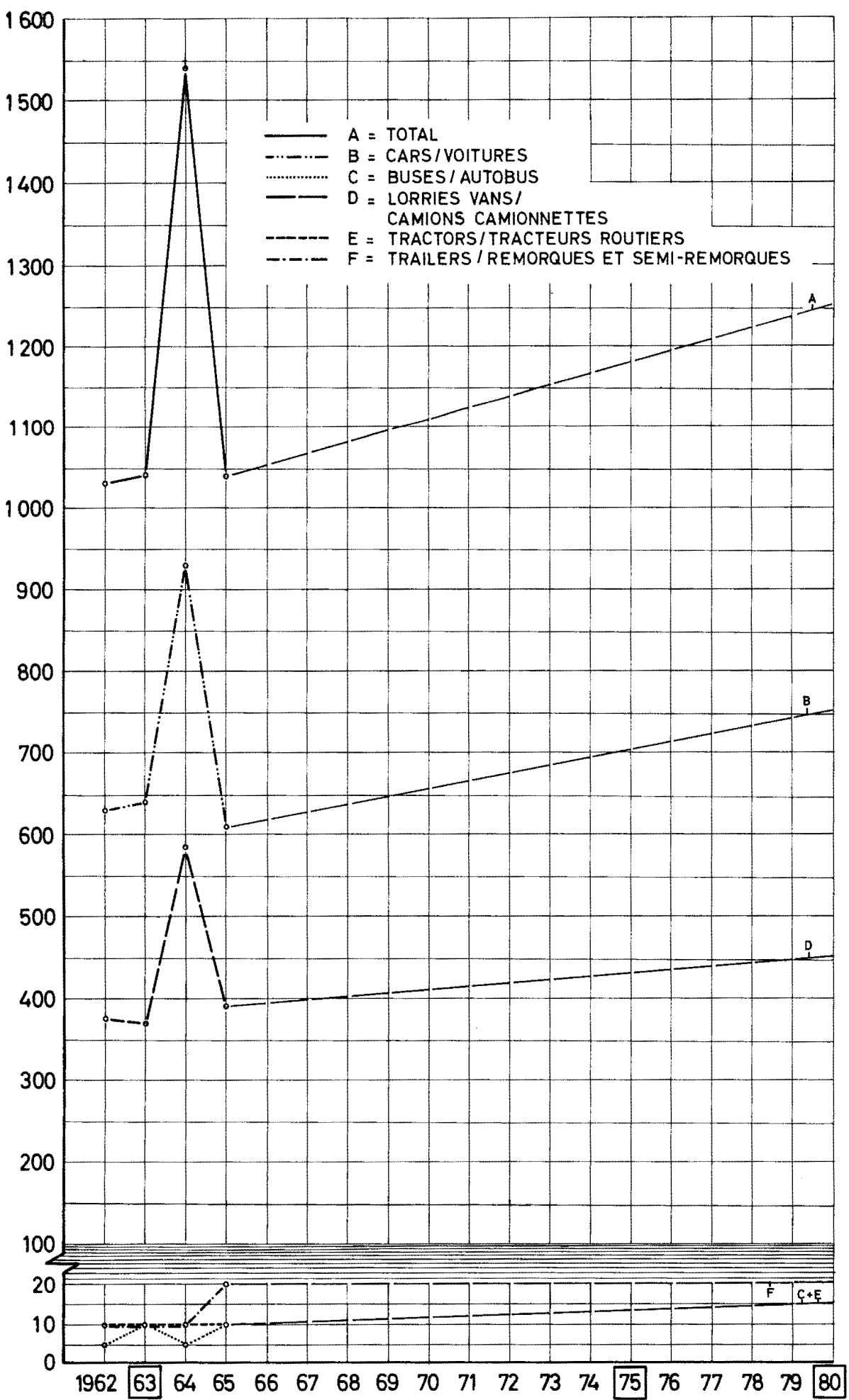


FIGURE / GRAPHIQUE 7

3.1.08. Mauritania

3.1.08.1. General Survey

In Mauritania

about 585 motor vehicles

were sold in 1963. This value is, however, by about 85 units above the average value of the years 1962, 1964 and 1965 since the greatest part of the trucks registered in 1963 was purchased for mining activities in Fort Gouraud. The passenger car sales having increased from 1962 to 1965 by about 30 per cent (to 250), the truck sales rose only by about 20 per cent (to 255). Apart from two isolated cases the bus registrations have remained constant for some years (5 to 10 units) (Table 42, Figure 8).

In spite of 400 to 500 annual registrations between 1960 and 1965 Mauritania's motor vehicle park has increased by only 1,400 to 3,500 vehicles because the average life of passenger cars is only 5 years and that of trucks only 6 years. In the same period of time the structure of the motor vehicle park has changed: while in 1960 3 out of 4 vehicles were trucks the share of passenger cars in the total park increased to about one third in 1965. This can be explained by the limited transport volume of the country, and the existing overcapacity of available freight space, on the one hand, and the steadily increasing living standard, especially of the about 30,000 inhabitants living in the towns, on the other hand (income per head: \$115 in 1960; \$190 in 1965) (Table 43).

If the steady economic growth of the last 5 years (increase of GDP from about \$80 million in 1960 to \$140 million in 1965) remains constant the passenger car sales will increase at the same pace as since Independence while the truck sales might be limited for the above mentioned reasons.

Altogether, the market for motor vehicles in Mauritania will be of

about 900 (800) units in 1980 (1975).

(Figure 8). Assuming the average life of motor vehicles not to change essentially in the next 10 years the motor vehicle park will increase until 1980 (1975) to about 5,500 (4,750) units.

3.1.08.2 Passenger Car Market

In 1965, 250 passenger cars were registered in Mauritania. Thereby the total park of vehicles in use increased to nearly 1,200. More than 50 per cent account for small cars (under 1,100 c.c.) and about 20 per cent each for medium-size cars (1,100 to 1,800 c.c.) and vehicles having more than 1,800 c.c. (Table 45).

More than half of all passenger cars sold in 1963 fell to Citroen (mainly 2 CV); Peugeot and Renault holding another 25 per cent, Simca only 5 per cent, the French market share was of more than 80 per cent. Moreover, the sales of cross-country vehicles were of some importance (Landrover: 10 per cent; Willys Overland: 35 per cent). This breakdown is unlikely to change in the next years since 2 CV and Jeep are the best suitable cars for this desert land and Peugeot and Renault have fixed customers as government vehicles and taxis (Table 44).

All passenger cars running in Mauritania are equipped with gasoline engines (Table 49).

The total demand of 155 (475) passenger cars in 1963 (1980) is broken down as follows:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
under 1,100 c.c.	80	200	260
1,100 to 1,800 c.c.	40	100	110
over 1,800 c.c.	<u>35</u>	<u>100</u>	<u>105</u>
	155	400	475

3.1.08.3. Bus Market

In 1965, 40 buses have been registered in Mauritania, 33 out of which have less than 30 seats and 7 more than 30 seats. Average bus sales in the last 3 years came to less than 10 units. Owing to the thin population of the country and the few small towns more than 10 buses will hardly be saleable per year in the foreseeable future.

35 of the 40 buses come from France (Berliet, Renault, Citroen), the remaining lot is of German origin (Table 44).

About half of the vehicles is equipped with gasoline engines, the other half with diesel engines (Table 49).

A change in the demand structure as to categories is not expected. The greatest demand will furtheron exist for buses with less than 30 seats?

	<u>1963</u>	<u>1975</u>	<u>1980</u>
up to 30 seats	4	8	8
over 30 seats	<u>1</u>	<u>2</u>	<u>2</u>
	5	10	10

3.1.08.4. Truck Market

Apart from cattle caravans the total transport of Mauritania is handled on trucks. At present, there is a surplus supply of freight space; therefore, in the last years the number of registered trucks equalled about the number of vehicles discarded in the same period of time.

Since no essential structural changes are to be recognized in the truck park (more than 40 per cent account for vans and small trucks up to 1 ton; more than 25 per cent for light trucks between 1 and 5 tons and 30 per cent for heavy trucks with more than 5 tons) the truck sales might increase not at all or only slightly in the near future. A decisive change in the market might be effected only by a considerably accelerated exploitation of the iron and copper mines of the country (Table 46).

The same applies also to the tractor sales. The present park consists to about equal shares of light (up to 170 HP) and heavy (over 170 HP) tractors. About 3/4 of the trailers have a capacity of more than 9 tons.

French producers of trucks and vans (Citroen, Berliet, Renault), tractors (Renault, Berliet, Citroen) and trailers (Fruehauf, Titan) have a market share of little more than 50 per cent. Only 20 per cent each of all trucks come from the USA (Dodge, Willys Overland, Fargo) and England (Rover). Next to France the most important seller of tractors is the USA while the most non-French trailers are imported from Germany (Table 44).

About 90 per cent of the trucks and vans are equipped with gasoline engines. Nearly 2/3 of the tractors are equipped with diesel engines (Table 49).

On the basis of the conditions outlined above there is the following market situation:

	<u>1964¹⁾</u>	<u>1975</u>	<u>1980</u>
Vans (under 1 ton)	100	150	170
Light trucks (1 to 5 tons)	60	90	100
Heavy trucks (over 5 tons)	<u>75</u>	<u>110</u>	<u>130</u>
	235	350	400
Light tractors (up to 170 HP)	5	5	5
Heavy tractors (over 170 HP)	<u>5</u>	<u>10</u>	<u>10</u>
	10	15	15
Trailers up to 9 tons	3	5	5
Trailers over 9 tons	<u>7</u>	<u>10</u>	<u>10</u>
	10	15	15

1) 1963 values do not represent a true picture because of the extraordinary market situation; therefore, 1964 values have been used.

MAURITANIA / MAURITANIE

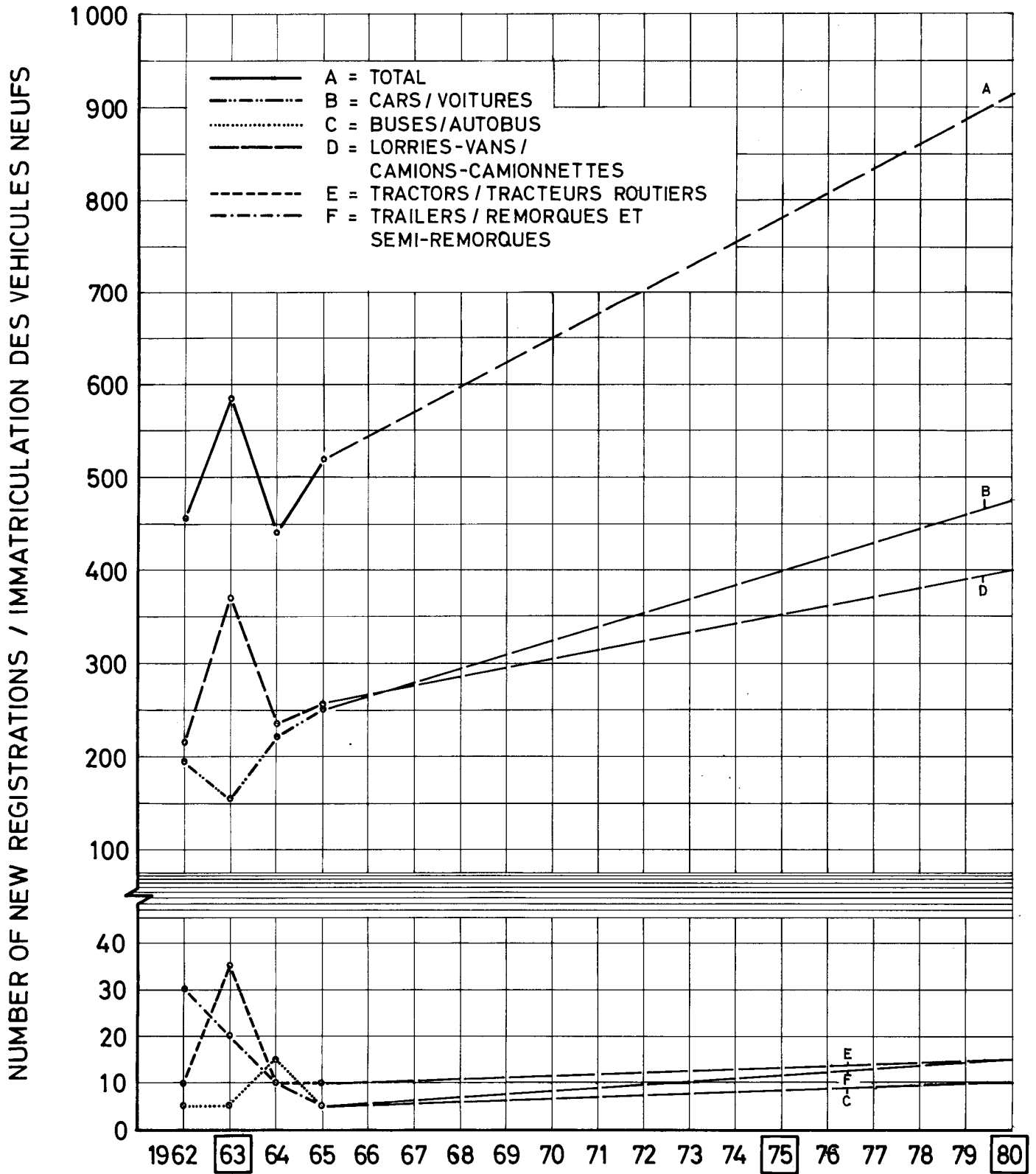


FIGURE / GRAPHIQUE 8

3.1.09. Niger

3.1.09.1. General Survey

In 1963

nearly 800 motor vehicles

were registered in Niger. That corresponds to a market expansion of about 300 units in less than 10 years. The truck sales increasing in this period of time only by about 1/4 (to 400), the demand for passenger cars has more than doubled (to more than 300); tractors and trailers have been sold in the last 3 years with 20 units each, i. e. twice as much as at the end of the 50ies. The number of annual bus registrations has been fluctuating for a decade between 5 and 10 units (Table 50, Figure 9).

In Niger the average life of trucks is 6 to 7 years and of passenger cars 5 to 6 years; these values lie about one year over comparable empirical values in the coastal countries. The motor vehicle park has been increased between 1960 and 1965 from nearly 3,000 to somewhat over 4,000 units. In this period of time the passenger car park has increased by 50 per cent and the truck park by 30 per cent only; this development can be explained by the shift of goods transports to vehicles of high capacity which can also be seen in the considerably increased tractor park (by 75 per cent) (Table 51).

Although the GDP/income per head has increased in the Republic of Niger (basing with more than 90 per cent on agriculture) by about \$100 million/\$20 (to \$300 million/\$190) and will increase steadily with the continuation of the diversification of agricultural production and the setting up of a light industry satisfying the demand the motor vehicle park is not expected to expand considerably in the coming decade. The demand for motor vehicles will follow the development trend of the preceding decade.

Therefore,

about 1,300 (1,150) vehicles

will be saleable in 1980 (1975) (Figure 9). A considerable part of the annual new registrations serving as replacement for scrapped motor vehicles, the motor vehicle park of Niger will increase to only little more than 7,500 units (6,200) until 1980 (1975).

3.1.09.2. Passenger Car Market

The passenger car demand which increased in the last 10 years by about 15 units annually falls to 30 per cent to small cars (up to 1,100 c.c.), 50 per cent to cars of medium size (1,100 to 1,800 c.c.) and 20 per cent to passenger cars of more than 1,800 c.c.

The French products of Citroen, Peugeot, Renault and Simca hold more than 80 per cent of the market (Citroen and Peugeot alone more than 50 per cent). German (Opel, Mercedes, VW), American (Chevrolet, Ford) and Italian (Fiat) products have a market share of only of 15 per cent altogether (Table 52).

All passenger cars running in Niger are equipped with gasoline engines (Table 53).

Assuming the category structure not to change essentially the total demand is broken down as follows:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
under 1,100 c.c.	100	150	170
1,100 to 1,800 c.c.	170	250	290
over 1,800 c.c.	<u>65</u>	<u>100</u>	<u>120</u>
	335	500	580

3.1.09.3. Bus Market

Since there are only few buses operating in Niamey and the greatest part of the cross-country travellers uses trucks, the new registrations of the last years were just sufficient to keep the bus park about constant.

This circumstance will scarcely change in the coming decade unless there takes place together with the improvement of the roads a shift of passenger transport from mixed trucks and passenger trucks to buses. About 30 per cent of the buses presently registered have less than 30 seats; about 20 per cent have 10 to 30 seats and about 50 per cent are buses with more than 30 seats.

The majority of the mini-buses are German VWs; all buses with more than 10 seats come from France (Chausson, Renault, Citroen) (Table 52).

About 3/4 of the buses are equipped with diesel engines (Table 53).

On the basis of the assumptions made the following market situation is expected:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
under 10 seats	-	3	3
10 to 30 seats	2	2	2
over 30 seats	<u>-</u>	<u>5</u>	<u>5</u>
	2	10	10

3.1.09.4. Truck Market

About 75 per cent of the 2,500 trucks and tractors at present in use dispose of a capacity of less than 5 tons; 20 per cent can convey between 5 and 10 tons and 5 per cent have more than 10 tons of pay load. The latter comprises also most of the special vehicles (tank wagons). About 2/3 of the vehicles under the category of 'up to 5 tons' are vans with a pay load under 1 ton. Until 1980 slight structural changes in the pre-truck park are expected to take place: it is assumed that by then about 60 per cent of all goods will be carried by about 40 per cent of all trucks (of the category over 5 tons).

More than 60 per cent of the trucks come from France (Citroen, Peugeot, Renault, Berliet), another 15 per cent from the USA (Dodge, Willys Overland and G.M.C.) and more than 15 per cent from England (Landrover). The market share of German products being insignificant with trucks, it reaches about 15 per cent in the case of tractors (Henschel); the rest of the market is nearly exclusively supplied by French vehicles (Berliet, Renault, Citroen). About 70 per cent of all trailers used in Niger are built by the French enterprises Fruehauf and Titan (Table 52).

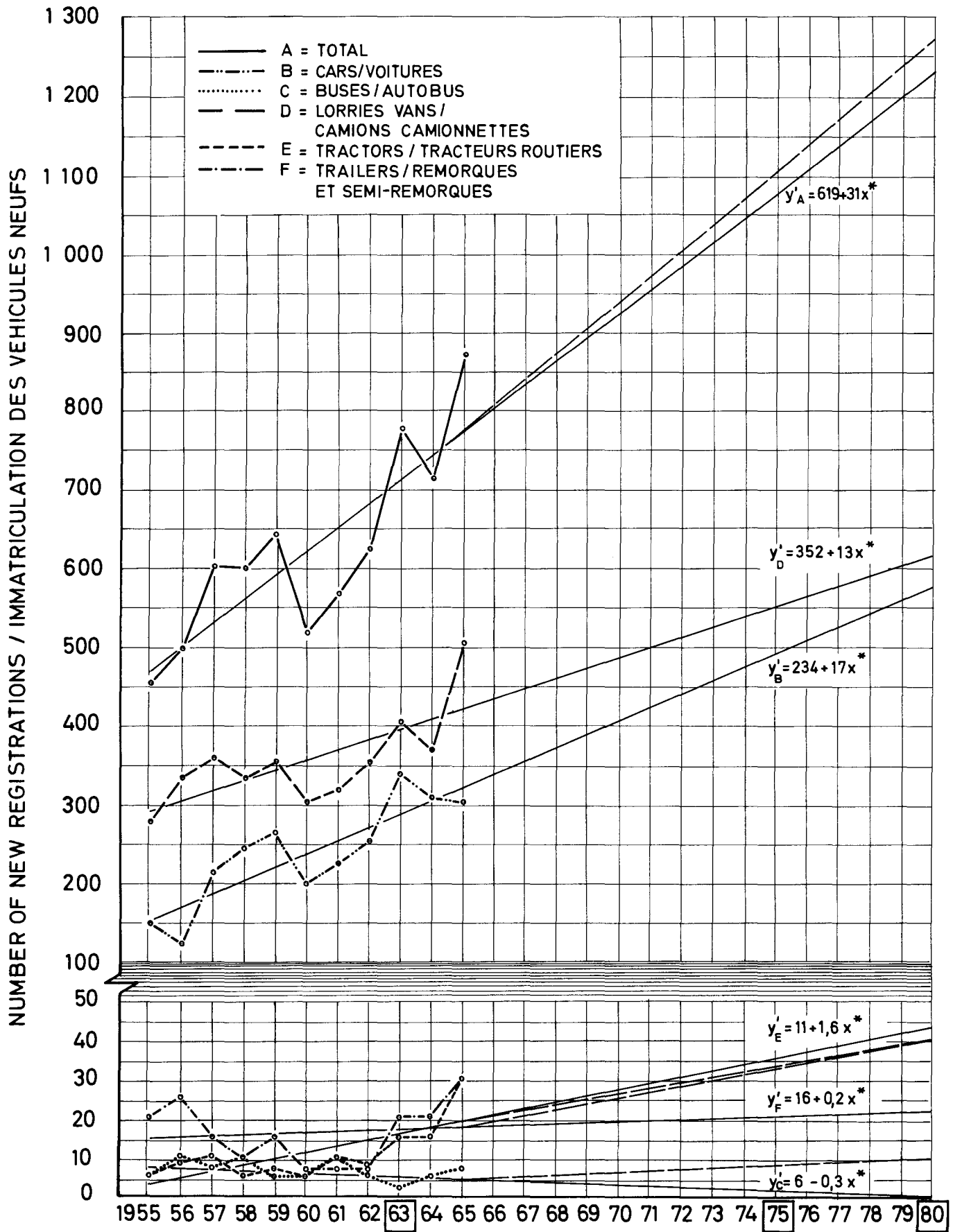
About 3/4 of the tractors are equipped with diesel engines. 10 to 15 per cent of the trucks run on diesel fuel (Table 53).

The transport volume of Niger being relatively limited the truck sales market is not liable to increase considerably on the assumption that goods transport shift to heavy vehicles. It will at best follow the trend of the preceding decade:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
Vans (under 1 ton)	200	250	270
Light trucks (1 to 5 tons)	100	130	140
Heavy trucks (over 5 tons)	<u>100</u>	<u>170</u>	<u>190</u>
	400	550	600

	<u>1963</u>	<u>1975</u>	<u>1980</u>
Tractors	15	35	40
Trailers	20	35	40

NIGER



FIGURE/GRAPHIQUE 9

3.1.10. Nigeria

3.1.10.1. General Survey

In Nigeria

about 17,000 motor vehicles

were sold in 1963. In the preceding years this value was exceeded already in 1960 and 1961 by about 19,000 registrations each. Until 1965 the sales rose to 23,600 units, i.e. the motor vehicle market of Nigeria doubled within 11 years. The most remarkable increase has been noticed with passenger cars whose sales number has increased in the last ten years by 3 1/2 times to about 17,000 (1965). In 1965 twice as much (600) buses were sold than in 1955. The truck market (including vans) developed not that rapidly. Starting from 6,000 vehicles sold in 1955 it reached its peak in 1960 with 8,000 units and decreased again to 5,500 (1963) resp. 6,100 (1965) (Table 54, Figure 10).

In the last 5 years Nigerian motor vehicle park increased from 50,000 units (1960) to 76,000 (1965) that is by more than 50 per cent. Simultaneously the structure of the motor vehicle park changed: while in 1960, 6 out of 10 vehicles were passenger cars and 4 were trucks this ratio changed until 1965 to 7 and 3 (Table 53).

While the general upward movement of the development of the motor vehicle park is occasioned primarily by the steady growth (average growth of the GDP by 4.5 per cent from 1958/59 to 1962/63) of the Nigerian economy the favourable financing aid Nigerian officials obtain from the government when purchasing a car have contributed their by no means unessential share to the increase in the passenger car sales. In the coming years a change in these policies are not expected.

If the development tendency of the Nigerian motor vehicle park of the last 10 years remains unchanged in the future and no sudden change takes place in the demand structure in 1980 (1975)

about 40,000 (35,000) motor vehicles

will be saleable (Figure 10). On the basis of the annual new registrations to be expected as well as the average life (passenger car: 5 years; trucks, buses: 4 years) the motor vehicle park of Nigeria will grow until 1980 (1975) to about 160,000 (135,000) units.

3.1.10.2. Passenger Car Market

The share of medium-size cars (1,100 to 1,800 c.c.) of about 45 per cent in the passenger car park of the year 1957 increased until 1963 to nearly 70 per cent. The share of small cars decreased from 25 per cent to 15 per cent; the share of the big passenger cars (over 1,800 c.c.) fell even from 30 per cent to 17 per cent (Table 57).

Cars of British origin (Ford, Morris, Hillman, Landrover, Austin) have the greatest market share in Nigeria which, however, decreased between 1961 and 1963 from nearly 50 to 42 per cent for the benefit of German (1961: 28 per cent; 1963: 30 per cent), French (1961: 12 per cent; 1963: 16 per cent) and Italian products (1961: 4 per cent; 1963: 5 per cent). The most important sales increase was obtained by Peugeot, VW, Opel and Fiat (Table 56).

Only 2 per cent of all passenger cars running in Nigeria are driven by diesel fuel.

On account of the change observed in the demand structure the following market situation is expected for 1975 and 1980:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
under 1,100 c.c.	1,700	5,500	7,000
1,100 to 1,800 c.c.	7,400	17,000	20,000
over 1,800 c.c.	<u>1,900</u>	<u>4,500</u>	<u>6,000</u>
	11,000	27,000	33,000

3.1.10.3. Bus market

The bus sales doubled between 1955 and 1965 from 300 to 600 units annually. Small buses with less than 20 seats nearly always equipped with gasoline engines account for about 80 per cent of the bus park. 1/5 of the buses registered in Nigeria has more than 20 seats. These vehicles operating mainly the municipal lines (big buses: 40 to 70 seats) and passenger long-distance traffic (20 to 50 seats) are equipped to 70 per cent with diesel engines. Altogether, however, 90 per cent of the bus park consist of gasoline vehicles (Table 58).

On the basis of the type structure of the bus park in 1963 the bus demand is met with 2/3 by British (Morris, Austin, Bedford, Ford) and with 1/3 by German producers (VW, Mercedes-Benz, Ford) American (Chevrolet) and French (Peugeot) products have a market share of only 5 per cent altogether (Table 56).

Regarding the development of the bus park it is striking that it increased very rapidly from 1958 (600 units) to 1961 (2,000 units) and then continued slowly reaching 2,300 buses in 1965. This can be explained by the shutdown of several cross-country lines which had been operated for some years by buses over 20 seats and had not been able to cope with the competition of the more cost-favourable vans and trucks (mixed transporters).

On consideration of this development the following market structure seems likely:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
up to 20 seats	440	780	920
over 20 seats	<u>110</u>	<u>200</u>	<u>230</u>
	550	980	1,150

3.1.10.4. Truck market

The sales of vans, trucks and tractors shows an increasing tendency between 1955 and 1960 (from about 6,000 to 8,000 units per year) and oscillated until 1965 constantly at 6,000. The structure of the market has remained nearly unchanged: about 1/3 of the commercial vehicles accounts for vans and trucks under 3 tons while 50 per cent of the trucks pertain to the category of vehicles with 5 to 7 tons. Trucks having a pay load of 3 to 5 tons have 10 per cent of the market; heavy vehicles having a pay load of more than 7 tons account for about 5 per cent. No data were available on number and category structure of tractors.

About 70 per cent of all trucks are of British origin (Bedford: 25 per cent; Austin: 13 per cent; Landrover and Morris: 9 per cent each) and about 20 per cent are German products (Mercedes-Benz: 15 per cent). For these prevailing trade-marks there are assembling plants in Nigeria (Table 56).

Nearly all vans (up to 1 ton) are equipped with gasoline engines, while about 70 per cent of vehicles having a pay load of more than 1 ton run on by diesel fuel.

For the appraisal of the market volume in the years 1975 and 1980 it seems not advisable to follow the trend showing a declining development. This development - as verified by carriers and motor vehicle importers - can be explained to a great deal by a shift from 5-ton-vehicles to vehicles having a greater pay load. Therefore, steady growth being given the sales volume for trucks will keep its present level over time. Therefore, the following market situation can be expected:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
Vans (under 1 ton)	275	300	300
Light trucks (1 to 5 tons)	2,200	2,350	2,350
Heavy trucks (over 5 tons)	<u>3,025</u>	<u>3,550</u>	<u>3,550</u>
	5,500	6,200	6,200

NIGERIA

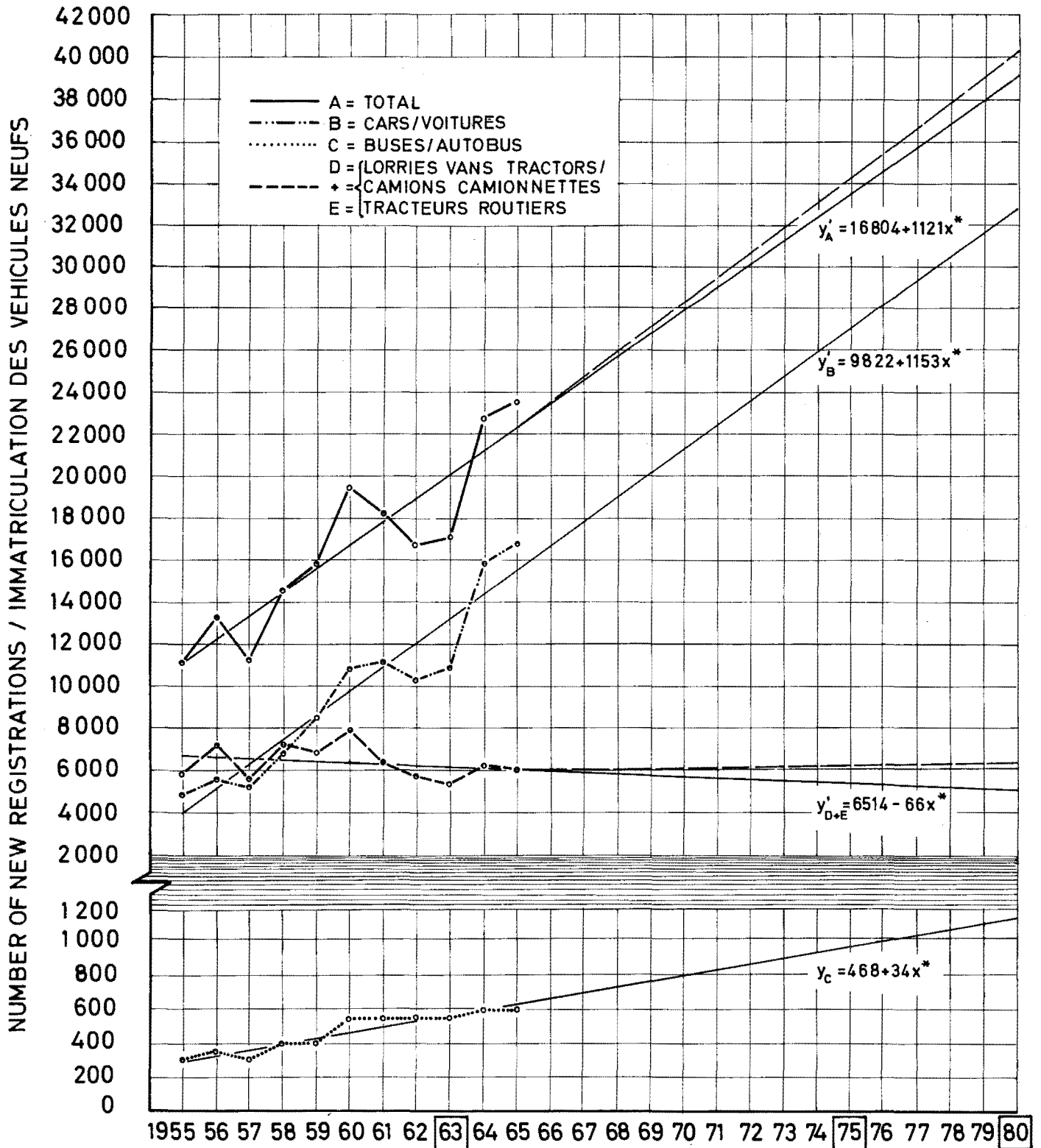


FIGURE / GRAPHIQUE 10

3.1.11. Senegal

3.1.11.1. General Survey

Since 1962 motor vehicle sales have shown a falling tendency; from this peak year to 1965 the motor vehicle sales have fallen by more than 40 per cent. In 1963

about 2,650 units

were sold. 60 per cent out of this amount (about 1,650) fell to passenger cars, nearly 30 per cent (about 770) to trucks and about 5 per cent (140) to buses. While the passenger car registrations have increased from 1960 to 1963 by about 10 per cent truck registrations have fallen by 20 per cent and bus registrations by 35 per cent. In the same period of time about 40 tractors and 25 trailers were sold annually (Table 60, Figure 11).

In spite of the relatively long life of motor vehicles in Senegal (7 years) the motor vehicle fleet has decreased from more than 35,000 units in the year of Independence to nearly 30,000 in 1963 resp. 26,000 in 1965. This can be explained by the fact that at the time when Dakar was the headquarters of French West Africa more vehicles of the extensive vehicle park had to be scrapped than new cars were registered in the same period. Between 1960 and 1965 the bus park decreased relatively the most (by about 35 per cent) and the passenger car park relatively the least (by about 25 per cent). The number of trucks decreased in that period of time by more than 3,500 (about 25 per cent) units; the tractor fleet fell by only 35 units to 220 (Table 61).

The decline in the motor vehicle sales since 1963 can be explained partly by the slow economic growth in the past years. Especially Senegal has not succeeded in fully absorbing the decline in the export of agricultural products by additional export of non-agricultural raw materials. It is hard to say how fast the country where more than 10 per cent of all employed persons are working in industrial or handicraft enterprises will reach steady economic growth and thus a solid basis for the motor vehicle market.

Despite of that the trend of possible future sales calculated by the development of motor vehicle registrations in the past 7 years shows an unjustified pessimistic picture. It is more likely that together with an improving export situation for agricultural produce and the advancing industrialization of Senegal passenger car and truck sales will slightly increase until 1980. Altogether, a market for

about 3,200 (3,000) motor vehicles

can be expected in 1980 (1975) (Figure 11). For the mentioned reasons the motor vehicle park will hardly increase strongly but reach, nevertheless, about 30,500 (22,000) units in 1980 (1975).

3.1.11.2. Passenger Car Market

While the total sales - 1962 excepted - have been oscillating since 5 years at about 1,600 units annually the structure of the market been subject to considerable changes since Independence: in 1960 nearly half of the demand fell to small cars whereas it was only 1/3 in 1965. The market share of medium-size cars has increased in the same period of time by more than 10 per cent and that of big passenger cars by about 2 per cent (Table 63).

In 1963 more than 80 per cent of all passenger cars sold came from France; Peugeot and Renault together reached a total market share of more than 50 per cent, Citroen and Simca more than 25 per cent. 10 per cent of the passenger cars were imported from Germany (VW, Opel, Ford), 4 per cent from Italy (Fiat). The market share of the other countries is negligible (Table 62).

The passenger cars registered in Senegal are all equipped with gasoline engines.

On the basis of a total demand of 1,650 (2,000) units in 1963 (1980) and on consideration of the structural shift the following sales market is expected:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
under 1,100 c.c.	565	650	700
1,100 to 1,800 c.c.	880	980	1,060
over 1,800 c.c.	<u>200</u>	<u>220</u>	<u>240</u>
	1,645	1,850	2,000

3.1.11.3. Bus Market

Bus sales fluctuated between 220 units in 1960 and 20 units in 1965. The average annual sales were, however, 150 units. Chief demand was found for buses with 10 to 20 seats; the remaining lot went to buses with more than 20 seats employed mostly in the municipal traffic. This ratio will scarcely change in the coming decade since passenger transport of trucks was forbidden in 1964 and cross-country traffic is now being handled mostly on buses of this category (Table 64).

Half of all buses registered in 1963 accounts for small Renault vehicles with 18 seats (Table 62).

Since all small buses are equipped with gasoline engines only a quarter of all buses running in Senegal is running on diesel fuel.

On the basis of the average demand in the last years and assuming the passenger traffic volume in the next 10 to 15 years to increase respective to the general economic development of the country the following market situation is furnished:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
up to 20 seats	110	145	160
over 20 seats	<u>30</u>	<u>35</u>	<u>40</u>
	140	180	200

3.1.11.4. Truck Market

The commercial vehicle fleet market of Senegal has experienced two changes in the 6 years following Independence: the total sales having increased up to 1962 by about 100 units annually decreased up to 1965 to about 650 units, i.e. by about 1/3 compared with 1960. This can be explained by the shift of goods transport towards big trucks and tractors and, what is even more essential, by a too high supply of transport volume as compared with the demand. This shows some of the structural change on the truck market namely the beginning shift of demand from trucks to tractors. On the other hand, the market share of vans has increased from 1960 to 1965 by about 10 per cent whereas in the same period of time the share of 1 to 4-ton trucks in the total market has decreased from about 20 to 15 per cent (Table 65).

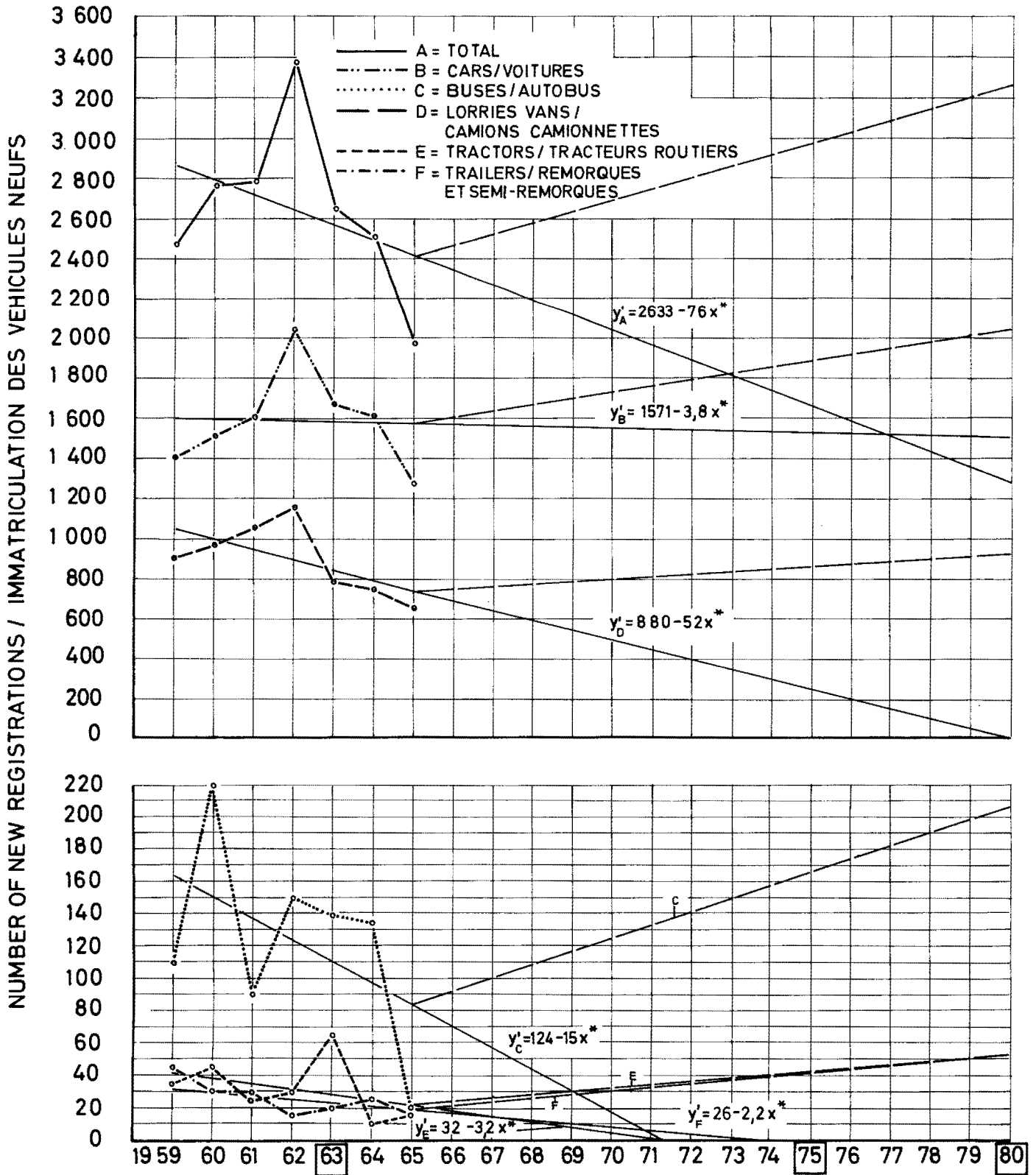
More than 3/4 of Senegal's vans and trucks are French products (Citroen, Peugeot, Renault, Berliet). About 10 per cent each come from Germany and England (Table 62).

About 10 per cent of all trucks and most of the tractors run on diesel fuel.

Since the park of nearly 10,000 commercial vehicles presently available is sufficient to meet the transport demand of the country an essential increase above the demand for replacements is not expected, the more so since the structural changes in long-distance traffic will continue with increasing development of the road network which is already now in good condition compared with other West African states (more than 1,600 km of asphalt road and 2,000 km of laterite roads). Considering furthermore that the freight volume will increase considerably with a rise in the export of agricultural products and non-agricultural products as well as with the advancing industrialization of the country the following market situation is given:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
Vans (under 1 ton)	410	470	500
Light trucks (1 to 4 tons)	140	170	180
Heavy trucks (over 4 tons)	<u>220</u>	<u>210</u>	<u>220</u>
	770	850	900
Tractors	65	40	50
Trailers	20	40	50

SENEGAL



FIGURE/ GRAPHIQUE 11

3.1.12. Sierra Leone

3.1.12.1. General Survey

In 1963 Sierra Leone imported

about 1,750 motor vehicles,

i. e. 1/3 more (less) than 1955 (1965).

About 65 per cent accounted for passenger cars (1,150), 25 per cent (540) for trucks and 5 per cent (60) for buses. Bus registrations having quadrupled (increased by twelve times) between 1956 and 1963 (1965) the demand for passenger cars and trucks has about doubled from 1955 to 1965 (Table 66, Figure 12).

The average life of passenger cars and trucks is about 5 years; because of the high share of the extremely short-living mini-buses in the total bus park the average life of buses is only 3 years, i. e. about 20 per cent of all vehicles of the country have to be replaced annually. In spite of that the motor vehicle park of Sierra Leone has increased in 6 years by about 30 per cent (from 7,200 units in 1960 to 10,400 units in 1965). The structure of the park remained nearly unchanged ignoring that the bus share has increased from about 1 to more than 3 per cent (Table 67).

The relatively steady expansion of Sierra Leone's motor vehicle park can be explained by the continuous development of mining industry and agriculture. Thanks especially to the exploitation of diamond fields the country disposing (apart from some enterprises processing agricultural raw products) only of small industry had an increase in the GDP by about 4 per cent to £230 million between 1960 and 1965. On account of the realistic development projects of the country the continuity of the economic development will not fail to continue in the future. Therefore, sudden changes in the motor vehicle market of Sierra Leone are unlikely.

On the basis of the development tendency of the preceding decade and assuming steady market expansion sales will come to

3,750 (3,300) motor vehicles in 1980 (1975),
(Figure 12).

In case the average life of the vehicles in use does not change essentially in the next 10 to 15 years this would lead to a motor vehicle park of about 16,500 (14,000) units in 1980 (1975).

3.1.12.2. Passenger Car Market

The share of medium-size cars on the total passenger car sales of Sierra Leone has increased from about 50 per cent in 1961 to nearly 60 per cent (750 units) in 1965; the sales rate of small cars has increased from about 15 per cent to 20 per cent (250 units). In the same period of time the market share of the big passenger cars (more than 1,800 c.c.) fell from about 35 per cent to 20 per cent (250 units). Through this shift in demand the registrations of small cars and big cars are at present the same (Table 69).

About 30 per cent of all passenger cars registered in 1964 were of English (Hillman, Austin, Morris, Ford, Vauxhall) and German (VW, Mercedes-Benz) origin. Another 1/4 came from France (Peugeot, Renault) and 5 per cent market share each had Italian (Fiat) and Japanese motor vehicle manufacturers (Hino, Toyota) (Table 68).

All passenger cars registered in Sierra Leone are operating with gasoline engines.

On the basis of a total demand of 1,150 (2,300) passenger cars in 1963 (1980) the following market is expected:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
under 1,100 c.c.	230	400	450
1,100 to 1,800 c.c.	660	1,200	1,400
over 1,800 c.c.	<u>270</u>	<u>400</u>	<u>450</u>
	1,160	2,000	2,300

3.1.12.3. Bus Market

In 1963, 60 new buses were registered 50 out of which has less than 20 seats and 10 more than 40 seats. 80 per cent of the 50 big buses of the state-owned transport company operating presently run in Freetown, the remaining lot operates the cross-country lines. Since the about 300 small buses transporting at low price are in great favour their market share will scarcely increase in the next years (Table 70).

The big buses, i. e. 15 per cent of the total bus fleet, are diesel-operated while the small buses are equipped exclusively with gasoline engines.

On the basis of the present conditions and the development tendency the market structure in 1980 will be as follows:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
up to 30 seats	50	180	230
over 30 seats	<u>10</u>	<u>20</u>	<u>20</u>
	60	200	250

3.1.12.4. Truck Market

In 1963 about 550 vans and trucks were imported to Sierra Leone. About 35 per cent each belonged to the category of small trucks with a capacity of 1 to 3 tons and to the trucks with a pay load of more than 3 tons. About 1/4 of the imported commercial vehicles accounted for vans (less than 1 ton) (Table 71).

More than 70 per cent of the trucks and buses - a separated make structure for both types of vehicles was not available - are of British origin (Bedford, Rover, Ford, Austin). Another 15 per cent come from France (Renault), 7 per cent from Japan (Toyota). The market share of German, Italian and American truck manufacturers is below the 5 per cent limit (Table 68).

About 30 per cent of all trucks registered in Sierra Leone are equipped with gasoline engines.

Taking as basis the limited transport requirements of the country the future truck demand is not likely to change from the development trend of the preceding decade. There is no reason for a shift in goods transport from light to heavy trucks and tractors:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
Vans (under 1 ton)	140	300	300
Light trucks (1 to 3 tons)	190	400	450
Heavy trucks (over 3 tons)	<u>210</u>	<u>400</u>	<u>450</u>
	540	1,100	1,200

SIERRA LEONE

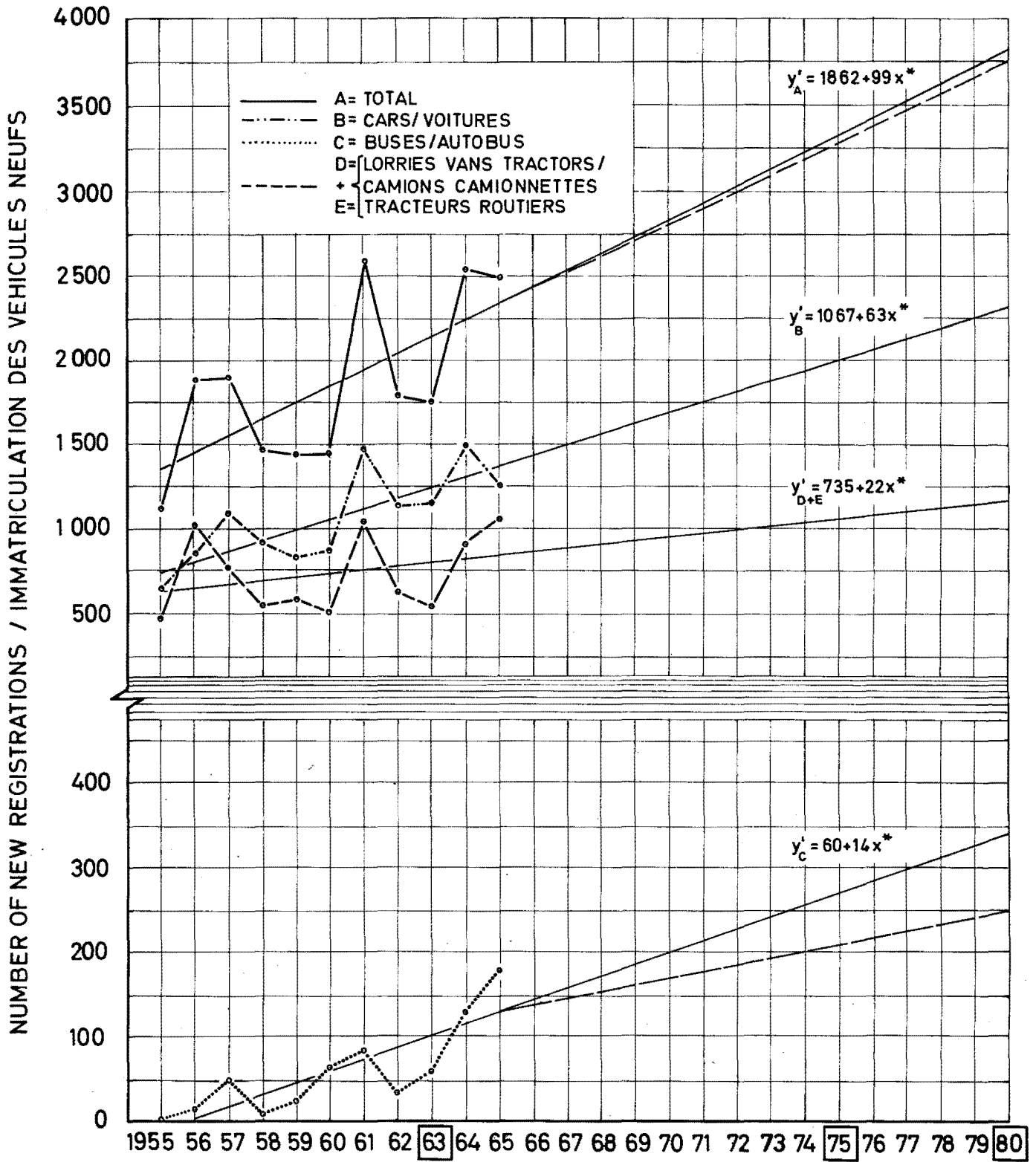


FIGURE / GRAPHIQUE 12

3.1.13. Togo

3.1.13.1. General Survey

In Togo

about 750 motor vehicles

were sold in 1963, i. e. the same amount as in 1959. In the three years between 1959 and 1963 and the 2 following years the average annual sales increased by about 180 motor vehicles. The structure of the sales market has not changed essentially in the last years, i. e. the market share of passenger cars and trucks remained approximately constant (nearly 60 resp. 40 per cent). The sales both of tractors and trailers have increased however between 1959 and 1965 from 5 to 10 units each (Table 72, Figure 13).

The Togolese motor vehicle park in 1963 comprised about 2,400 passenger cars, 20 buses, 2,050 trucks and 45 tractors and 45 trailers. In spite of about 1,800 new registrations between 1963 and 1965 the total motor vehicle park has increased only by 500 vehicles (passenger cars having increased more than trucks) due to the average life of vehicles being between 5 and 6 years in this country. This can be explained by the high proportion of truck replacements and the shift of some of the goods transport to tractors; on the other hand, the presently stagnant sales of agricultural produce play also an important part (Table 73).

Decisive factors having strongly positive influence on the motor vehicle sales in Togo are scarcely to be seen. On account of the limited market realization of the planned cement, textile and phosphate fertilizer enterprises which would without any doubt lead to a considerable buoyancy, apart from possible secondary repercussions, can be expected only if a part of the products of these enterprises can be exported.

Therefore, it is more likely that the motor vehicle sales will increase slowly with the increase in the sales of agricultural produce. Passenger car and truck registrations are likely to follow the trend of the last years whereas the demand for tractors and trailers will be smaller than expected on the basis of the trend. In 1980 (1975) a total of

about 1,150 (1,050) motor vehicles

will be saleable (Figure 13). On the basis of an even market expansion and a vehicle life not essentially changing from present conditions the motor vehicle park will not exceed 6,700 (6,000) units in 1980 (1975) because of the need for replacements.

3.1.13.2. Passenger Car Market

In 1963 415 passenger cars were sold in Togo. About 35 per cent of the vehicles registered between 1963 and 1965 are small cars (under 1,100 c.c.), about 55 per cent are medium-size cars (1,100 to 1,800 c.c.) and the remaining 10 per cent belong to the category over 1,800 c.c. (Table 75).

More than 60 per cent of all Togolese passenger cars come from France, mostly Citroen and Renault (mainly small cars) as well as Peugeot; Simca holds a relatively small market share of less than 5 per cent. Another quarter of the market is supplied by German products (mainly VW and Opel). The sales of passenger cars from other countries are negligible (Table 74).

All passenger cars are equipped with gasoline engines (Table 78).

On the basis of the total passenger car demand of 450 (680) units in 1963 (1980) and the present market structure the following sales categories are furnished:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
under 1,100 c.c.	145	220	240
1,100 to 1,800 c.c.	225	340	370
over 1,800 c.c.	<u>45</u>	<u>60</u>	<u>70</u>
	415	620	680

3.1.13.3. Bus Market

The greatest part of the passenger transport on roads being handled on small trucks and the most important towns of the country being within reach of railways there are only few buses in Togo (in 1963: 20) operating mainly in Lomé or handling passenger traffic in the environments of the capital. About 2/3 of these buses have less than 20 seats (Table 76).

All buses come either from France or Germany.

In 1965 2/3 of the buses were operated with diesel, 1/3 with gasoline (Table 78).

On account of the outlined conditions annual sales exceeding 10 buses seem doubtful in the next decade. Since the envisaged closing has not yet been decided upon and a new expert opinion is under preparation this statement is made under reservation. On the assumption that the structure of the bus market will change only insignificantly the following market situation is furnished:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
under 10 seats	2	2	2
10 to 30 seats	3	6	6
over 30 seats	<u>2</u>	<u>2</u>	<u>2</u>
	5	10	10

3.1.13.4. Truck Market

In 1959 and 1963 only 300 trucks were registered although the average value from 1959 to 1965 accounts for nearly 350 units. Altogether, truck sales show a slightly rising tendency which will continue with removing the sales difficulties in the agriculture and the beginning setting up of a light industry supplying the domestic market. Decisive shift of goods transport to tractors is hardly expectable since for bulk goods transport there is the competition of railway (on the main lines) and the poorly developed branch lines can presently be run only by trucks with low capacity.

Out of the 300 vehicles sold in 1963 about 1/3 accounted for vans with a pay load up to 1 ton; considering their construction they have to be counted under the passenger car category up to 1,800 c.c. Another 40 per cent pertained to the category of light trucks (1 to 6 tons) and about 25 per cent to trucks having a capacity of more than 6 tons (1 per cent: more than 10 tons). Tractors and trailers accounting for about 10 units each have only a small share in the commercial vehicle fleet which will scarcely increase considerably until 1980 for the reasons mentioned above. In our opinion, the registrations indicated by the trend are too high (Table 77).

About 50 per cent of the trucks and vans and about 75 per cent of the tractors and trailers have been produced in France. Renault supplies at present all tractors and Citroen holds the greatest share of the truck market (20 per cent of the total market) followed by Renault, Peugeot and Berliet. More than 1/4 of all trucks registered in 1964 accounted for British products (Bedford, Rover, Austin);

another 10 per cent were imported from Germany (mostly Mercedes-Benz) (Table 74).

2/3 of the tractors are equipped with diesel engines. Every fifth of the trucks is running on diesel fuel (Table 86).

On the basis of the sales market of 1963 and on consideration of the outlined development tendency the following market picture will be furnished in 1975 resp. 1980.

	<u>1963</u>	<u>1975</u>	<u>1980</u>
Vans (under 1 ton)	100	140	150
Light trucks (1 to 6 tons)	120	170	190
Heavy trucks (over 6 tons)	<u>80</u>	<u>100</u>	<u>100</u>
	300	410	440
Tractors	5	15	15
Trailers	10	15	15

TOGO

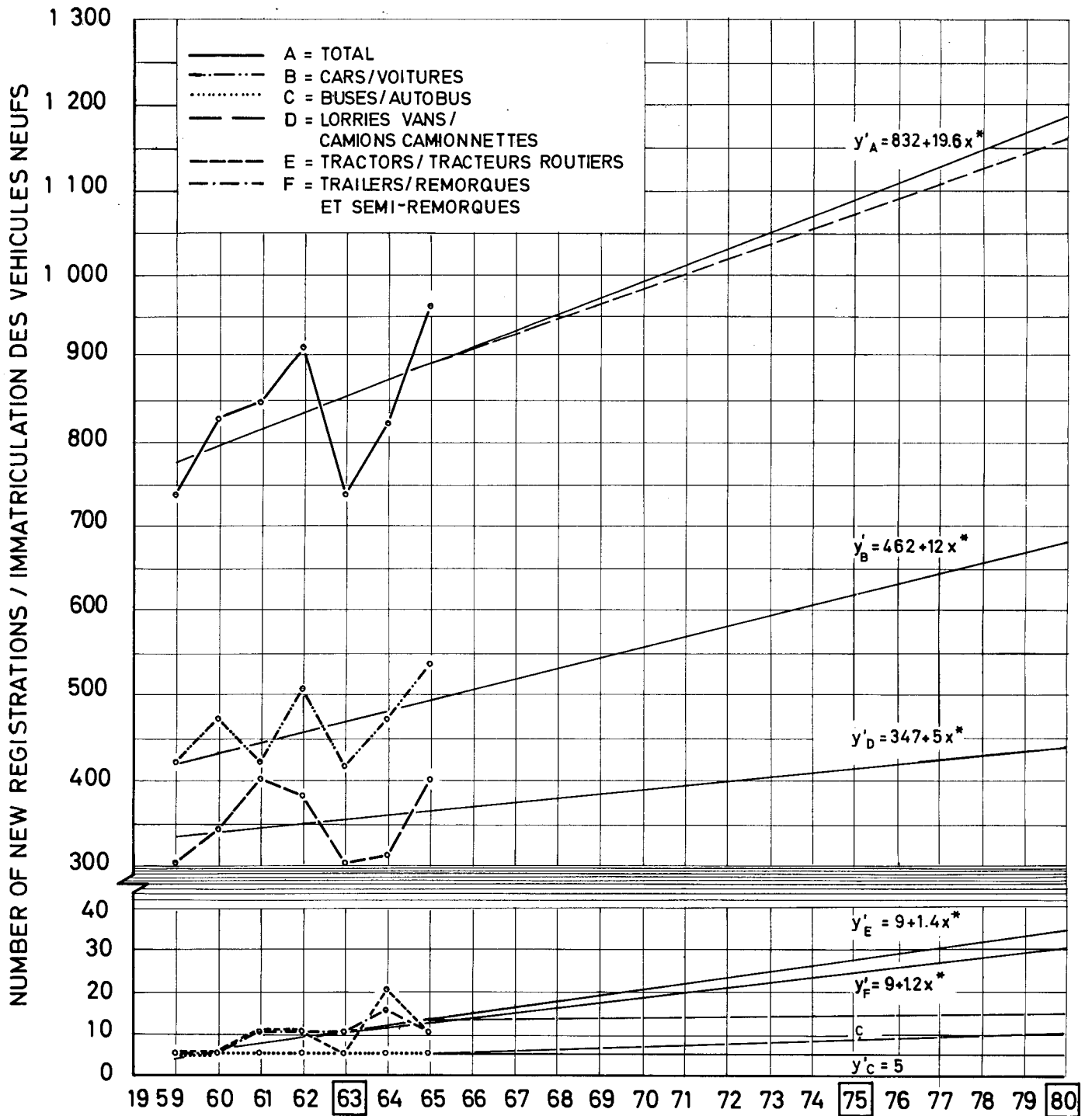


FIGURE / GRAPHIQUE 13

3.1.14. Upper Volta

3.1.14.1. General Survey

In Upper Volta

about 1,000 motor vehicles

were registered in 1963. As it was the case between 1959 and 1965 about 55 per cent fell to passenger cars, 40 per cent to trucks, 2 per cent to buses and 3 per cent to trailers. Increasing relatively equally the annual registrations have nearly doubled from 1959 to 1965 (from 575 to 1,065 units) (Table 79, Figure 14).

The average life of passenger cars, trucks and tractors in Upper Volta is about 5 years each while buses are generally discarded after 3 years.

Between 1961 and 1965 more than 80 per cent of the newly registered motor vehicles replaced the scrapped vehicles. This fact explains the small growth of the motor vehicle fleet from about 4,200 units in 1961 to 4,800 units in 1965. The structure of the park has, however, remained nearly unchanged (passenger cars: 50 per cent; trucks: 47 per cent) (Table 80).

The slow expansion of the motor vehicle market in the last years corresponds to the general economic development reflected by the growth of the GDP (1960: about \$180 million; 1965: about \$225 million) and the income per head (1960: \$42; 1965: \$47).

If the trend of the last 7 years continued the motor vehicle registrations would come to about 2,500 units in 1980. This growth appears too strong considering the fact that the registrations of the last 3 years have increased only by 30 units each.

It is hard to predict how much the planned exploitation of the manganese deposits in the north of the country will influence the truck sales in Upper Volta.

Under these circumstances

about 1,900 (1,650) motor vehicles

might be saleable in Upper Volta in 1980 (1975) (Figure 14). This would mean an increase of the motor vehicle fleet to about 8,800 units in 1980.

3.1.14.2. Passenger Car Market

Medium-size cars (1,100 to 1,800 c.c.) had the greatest share in the passenger car fleet of the country (1961: 55 per cent; 1965: 50 per cent) while small cars (up to 1,100 c.c.) accounted for nearly 40 per cent (35 per cent); in 1965 every tenth car running in Upper Volta pertained to the category of passenger cars with more than 1,800 c.c. (Table 82).

In 1965 nearly 90 per cent of all newly registered passenger cars were of French origin: Peugeot (33 per cent), Citroen (29 per cent), Renault (14 per cent), Simca (11 per cent). While all other manufacturers have not been in a position to increase their market share Renault gained 5 per cent between 1961 and 1965. The relatively small customs rate of about 33 per cent on motor vehicles assembled by S.A.F.A.R. in Abidjan (Ivory Coast) is of importance in this context; passenger cars directly imported from France are charged with import duties amounting to about 66 per cent. Nearly 10 per cent of all passenger cars registered in Upper Volta came from Germany (Opel, Mercedes-Benz); 2 per cent each came from the USA (Chevrolet) and Italy (Fiat), British cars accounting for 10 per cent in 1961 are no longer represented (Table 81).

Only one per cent of the passenger cars running in Upper Volta is operating with diesel fuel.

On the basis of a demand of 570 (1,000) passenger cars in 1963 (1980) the following market situation is expected:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
under 1,100 c.c.	200	300	350
1,100 to 1,800 c.c.	310	465	550
over 1,800 c.c.	<u>60</u>	<u>85</u>	<u>100</u>
	570	850	1,000

3.1.14.3. Bus Market

From 1960 to 1965 an average of 15 buses was registered in Upper Volta. The share of buses having more than 30 seats has decreased from about 45 per cent to about 25 per cent (Table 83).

It is remarkable that in 1965 the bus type of the British Landrover had the greatest share in the bus fleet (nearly 50 per cent). French products (Chausson, Renault and Citroen) account for another 35 per cent of the buses while nearly 10 per cent come from the USA (International) and only 5 per cent from Germany (VW) (Table 81).

About 80 per cent of the buses are operating with gasoline engines and about 20 per cent (mainly big buses) run on diesel fuel.

On the conditions outlined above there arises the following market situation:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
up to 30 seats	15	20	25
over 30 seats	<u>5</u>	<u>10</u>	<u>10</u>
	20	30	35

3.1.14.4. Truck Market

Truck registrations increased in the last 5 years from 350 to 490 units. The most remarkable change in the composition of the truck fleet was to be found in the category of vehicles between 5 and 12 tons which doubled their park from 100 vehicles (1961) to 215 (1965).

In 1965 about 45 per cent each of all commercial vehicles went to vans (up to 1 ton) and trucks (1 to 5 tons) (Table 84).

Average annual registrations of tractors in the last 5 years came to about 15 units, of trailers to about 20 units. While the tractor sales showed a tendency towards high capacity categories (more than 170 HP) (1961: 60 per cent; 1965: 75 per cent) the structure of the trailer park (50 per cent of trailers under 8 tons, 50 per cent of trailer over 8 tons) remained constant (Tables 85 and 86).

French products command the sales market of trucks (80 per cent: Citroen, Peugeot, Renault) as well as of tractors (85 per cent: esp. Berliet). About 10 per cent of the demanded trucks are imported from the USA (Dodge, International), 8 per cent from England (Rover). About 10 per cent of the tractors come from the USA (International) the remaining 5 per cent of the demand are met by German producers (MAN, Mercedes-Benz) (Table 81).

The share of diesel vehicles in the total truck fleet is about 15 per cent and about 80 per cent with tractors.

On consideration of a shift from medium-size to heavy trucks and tractors the following structure is expected:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
Vans (under 1 ton)	185	350	400
Light trucks (1 to 5 tons)	200	290	310
Heavy trucks (over 5 tons)	<u>25</u>	<u>60</u>	<u>90</u>
	410	700	800
Tractors			
- up to 170 HP	5	5	5
- over 170 HP	<u>10</u>	<u>20</u>	<u>25</u>
	15	25	30
Trailers			
- up to 8 tons	7	10	10
- over 8 tons	<u>8</u>	<u>15</u>	<u>15</u>
	15	25	25

UPPER VOLTA / HAUTE-VOLTA

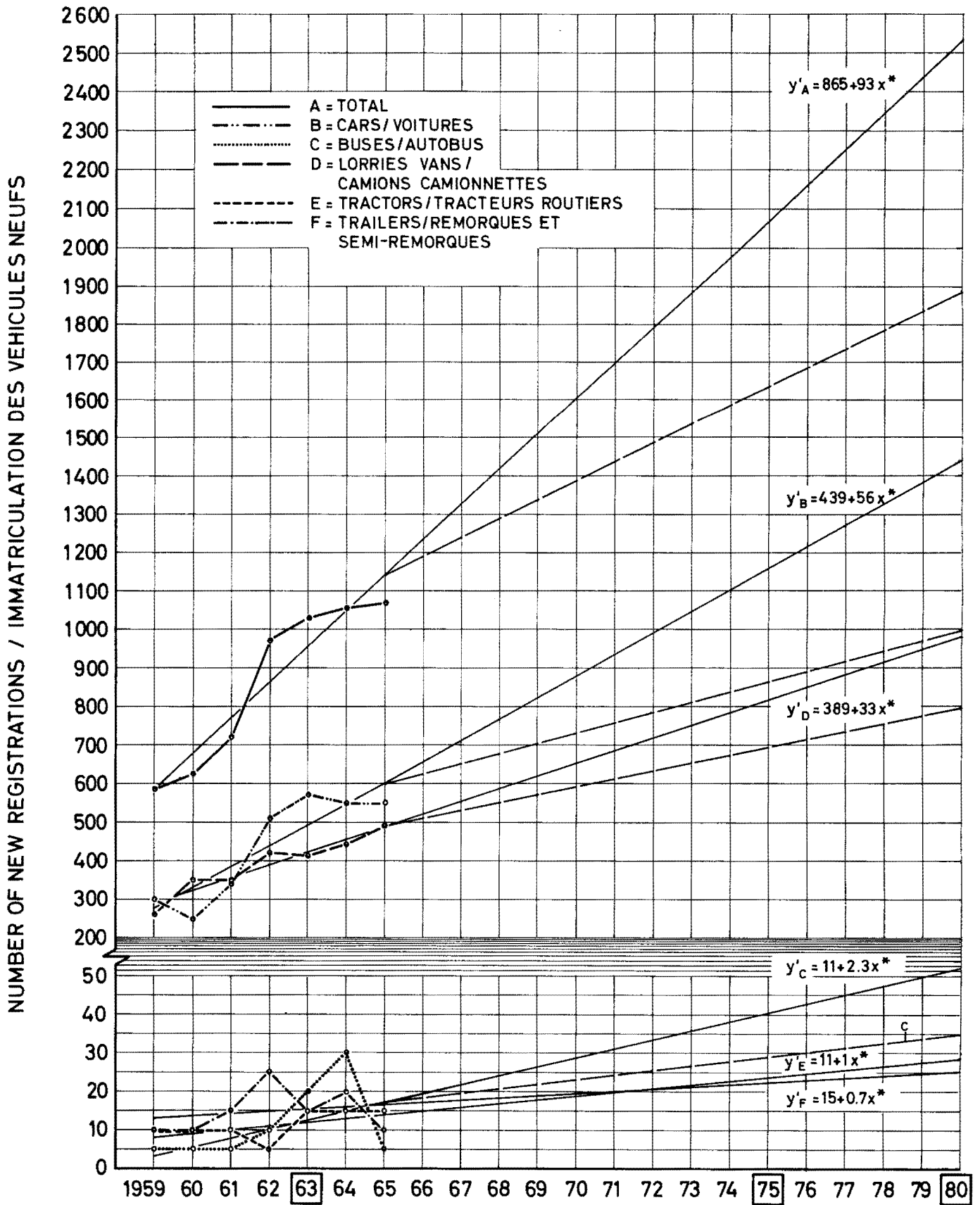


FIGURE / GRAPHIQUE 14

3.2. Size and Structure of the Market in the Subregion

3.2.1. General Survey

In the West African Subregion

about 48,000 motor vehicles

were sold in 1963. This corresponds to an import volume of

more than 65,000 tons equalling
\$95 million cif.

More than 60 per cent of the new registrations were passenger cars, about 4 per cent buses and about 30 per cent trucks and vans; tractors and trailers (mostly tractor trailers) had a market share of about 1 per cent each (Table 87 to 89).

More than 2/3 of all vehicles (32,000 units) were sold in only 3 of the 14 countries of the Subregion: in Nigeria (36 per cent), Ghana (19 per cent) and the Ivory Coast (14 per cent). Adding Liberia and Senegal with 6 per cent each of the total sales 1/4 of the West African sales is attributed to 9 countries of the total region. In these countries only about 23 million people are living (about 25 per cent of the population of the total area) who in 1963 produced less than 1/5 of the GDP (\$7.5 million) of all West African states.

While in areas formerly under French administration French cars are chiefly demanded the market share of German cars in most former British colonies is greater than that of British cars; in Liberia German and American manufacturers hold the market. In general it can be said that after Independence the demand has become more differentiated in all countries. German and though still to a small degree Italian and Japanese manufacturers increase their market share in the Subregion year by year at different

intensity in the different countries without having essentially weakened the so far dominating market position especially of the French products. This development has not come to an end yet the new alignment of customs policies in formerly French areas being attributed enormous significance. While until 1964/65 motor vehicles imported from France were charged with far lower customs rates than vehicles coming from other countries they are by now fully adjusted in nearly all countries.

While the demand for motor vehicles in Nigeria will increase strongly until 1980 so that every second car registered in West Africa will run in this country it might remain constant in the Ivory Coast (15 per cent of the total market) and even decrease slightly in Ghana (to 12 per cent of the total market). In 1980, no other state will have a market for more than 4,000 vehicles; they will all remain under the 5 per cent limit. According to our estimations the West African total demand for motor vehicles will come to

about 85,000 (74,000) units

in 1980 (1975)

corresponding to an import volume of

about 120,000 tons (105,000) tons

equalling a value of

about \$175 (150) million cif.

This means an annual expansion of the market by about 50 per cent against 1963. This total market is broken down as follows: passenger cars: more than 70 per cent; buses: nearly 4 per cent; vans and trucks, tractors and trailers: about 26 per cent (Tables 89 to 91, Figures 15 and 16).

Comparison with 1963 values show that the passenger car demand will increase relatively and absolutely while the truck demand will decrease. The main reasons for this development (increase of the living standard by expanding agricultural and industrial production; partly shift of goods transport from light to heavy trucks and tractors as soon as good highways are available) are represented in section 3.1.

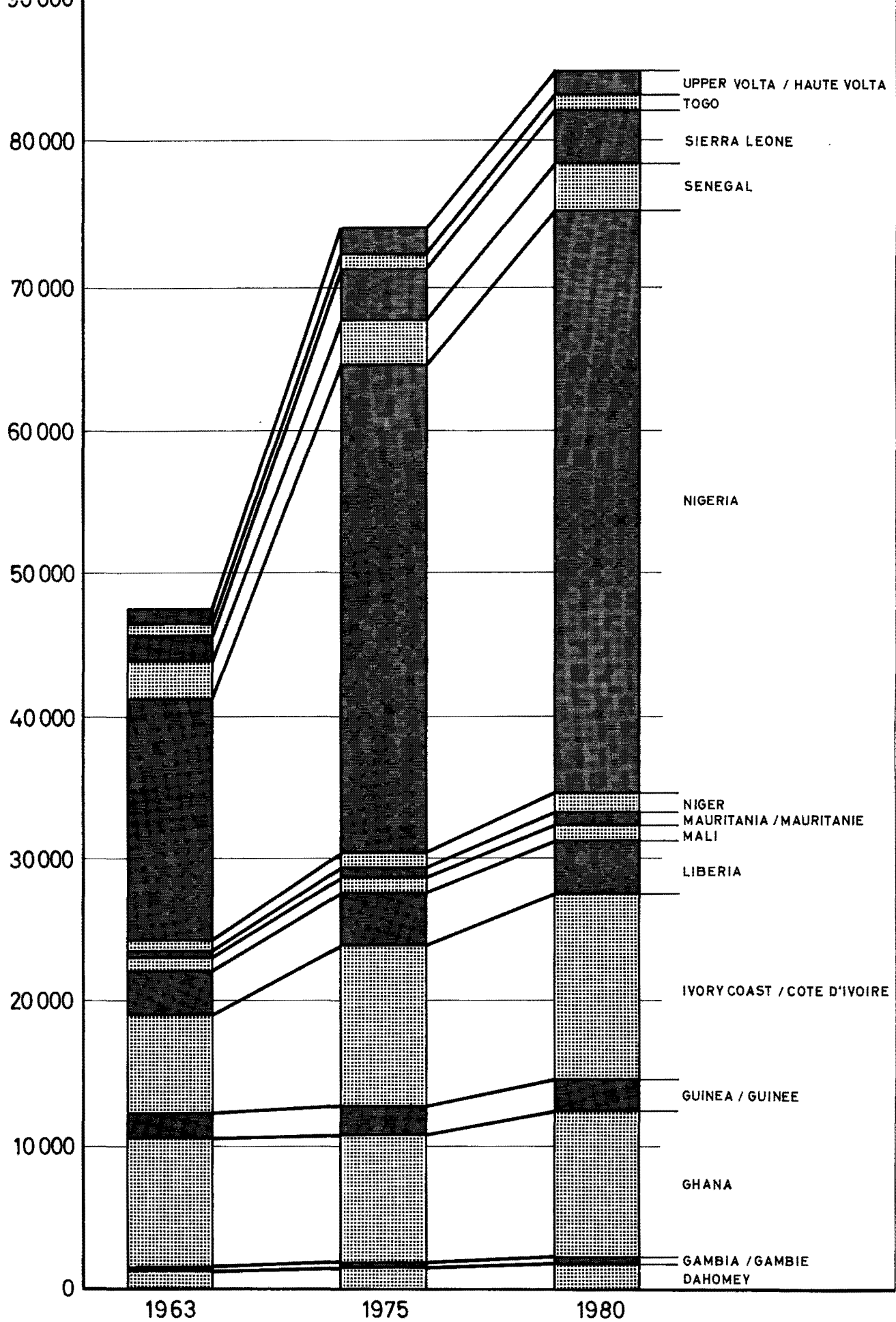
Basing on our market research we estimate the motor vehicle park of the Subregion at

about 225,000 units in 1963.

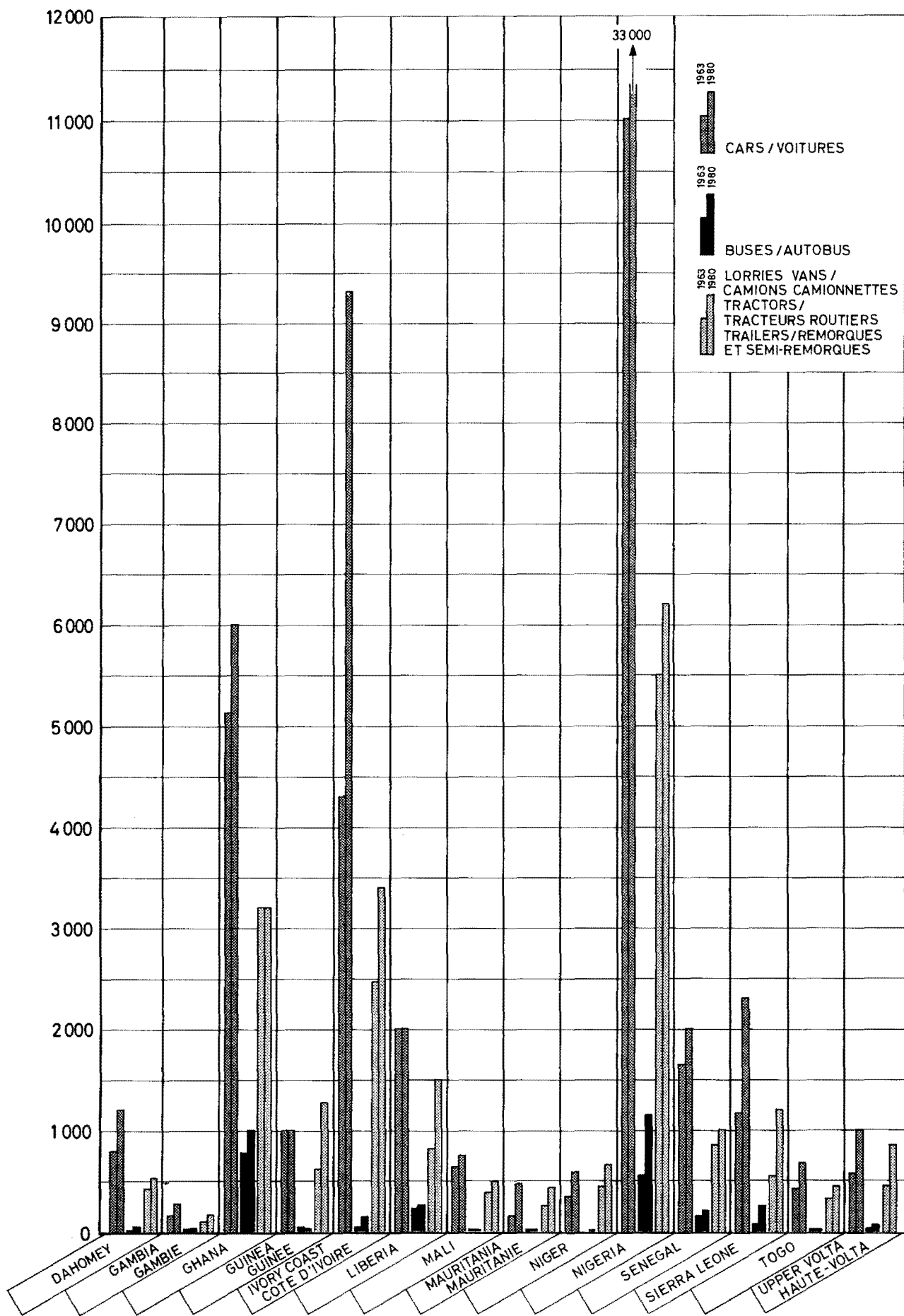
About 60 per cent accounted for passenger cars, 35 per cent for trucks and tractors, the rest for buses. Since in most of the West African countries the motor vehicle life is short and thus a high number of replacements will be required the motor vehicle park will increase until 1980 (1975) only to

about 420,000 (355,000) units

(Table 92).



FIGURE/GRAPHIQUE 15 : Demand of Motor Vehicles in West-Africa /
 Demande de Véhicules en Afrique Occidentale



FIGURE/GRAPHIQUE 16: Structure of the Motor Vehicle Demand in West Africa / Structure de la Demande de Véhicules en Afrique Occidentale

3.2.2. Passenger Car Market

In West Africa

nearly 30,000 passenger cars

were registered in 1963. More than 6,000 (about 20 per cent) were small cars (up to 1,100 c.c.) and about 18,500 (nearly 65 per cent) medium-size cars (1,100 to 1,800 c.c.); nearly 5,000 (more than 15 per cent) counted under the category of big passenger cars with more than 1,800 c.c. (Table 93).

More than 1/3 of the demand came from Nigeria, another third from Ghana and the Ivory Coast. In Gambia and Mauritania altogether about 300 passenger cars (about 1 per cent of the West African market) were sold in this year while the other countries of the Subregion accounted for over 1 per cent (Niger, Togo) and scarcely 7 per cent (Liberia).

The striking fact with the market structure according to manufacturers is that the share of French motor vehicles (Citroen, Renault, Peugeot and, further behind, Simca) in French speaking areas is in general (still) over 70 per cent. With the exception of the anyway unimportant Gambia British products (Morris, Vauxhall, Hillman, Ford) have less than half of the sales market in Ghana, Nigeria and Sierra Leone. In these countries as well as in Liberia German manufacturers (VW, Opel, Mercedes-Benz) supply an essential part of the purchasers. The one-sided alignment of the formerly French areas can be explained by the still existing very close economic relationship with France.

According to our appraisal of the market development in the different countries the passenger car sales will increase in the West African Subregion until 1980 (1975) to more than

60,000 (50,000) units.

This doubling of the sales volume will involve in the coming 15 years a slight structural change. The market share of medium-size cars will decrease by 5 per cent for the benefit of the small cars. This will furnish the following overall market picture:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
up to 1,100 c.c.	6,100	12,600	15,150
1,100 to 1,800 c.c.	18,550	30,700	35,700
more than 1,800 c.c.	<u>4,650</u>	<u>7,800</u>	<u>9,600</u>
	29,300	51,100	60,450

3.2.3. Bus Market

In the West African Subregion

nearly 2,000 buses

were sold in 1963. More than 85 per cent accounted for the small buses (10 to 30 seats) while about 10 per cent went to large buses (over 30 seats). Mini-buses (under 10 seats) are indicated in some countries not separately but under small buses; their market share might come to about 5 per cent (Table 94).

More than 40 per cent (780) of all buses were sold in this year in Ghana, another 30 per cent (550) in Nigeria. Among the other countries only Liberia (220) and Senegal (140) have a major bus market. In Dahomey, Mali, Mauritania, Niger and Togo not more than 10 buses each were sold in 1963. The sales rates of the other countries fluctuated between 1 and 3 per cent.

Most of the buses sold in West Africa were of British origin (Morris, Austin, Bedford, Albion, Leyland) as indicate the high registration figures of these makes in Ghana and Nigeria. An important market share in these countries is held by the small buses of Mercedes-Benz and the VW mini-buses. Apart from Guinea and Mali where the Hungarian Ikarus are mainly operating Renault and Saviem have the best market position for small resp. big buses in the French speaking areas. Far behind lies Citroen.

Our market research has shown that also in the coming decade Ghana and Nigeria will have the greatest bus demand. In the Ivory Coast and Sierra Leone the demand will increase considerably whereby the market share of both countries will more than double until 1980. The market share of Liberia and Senegal will decrease in spite of an increasing demand.

According to our estimations about

3,200 (2,800) buses

will be saleable in West Africa in 1980 (1975) (mainly provided with 10 to 30 seats). Simultaneously the demand structure will change slightly: the sales of big buses with more than 30 seats will grow relatively more than those of small buses whereby the market share of this category will fall to 82 per cent and that of big buses to 13 per cent. The sales rate of mini-buses remains insignificant.

	<u>1963</u>	<u>1975</u>	<u>1980</u>
under 10 seats	50	110	130
10 to 30 seats	1,660	2,395	2,610
over 30 seats	<u>190</u>	<u>380</u>	<u>430</u>
	1,900	2,785	3,170

3.2.4. Truck Market

In the 14 countries of the West African Subregion

about 15,500 trucks and vans
about 450 tractors and
about 450 trailers (mostly tractor trailers)

were sold in 1963. 1/4 of the trucks pertained to vans (under 1 ton). About 6,200 (40 per cent) went to small trucks (1 to 5 tons), about 5,500 (35 per cent) to heavy trucks (over 5 tons). Tractors count under the category of heavy trucks (the majority can transport more than 12 tons). Exact classification of the tractors according to capacity was not possible for lack of data. We estimate, however, that about 2/3 of all tractors have a capacity of more than 170 HP; these machines draw tractor trailers with a pay load of more than 12 tons (Tables 95 and 96).

About 35 per cent (5,500) of all trucks were sold in Nigeria, another 20 per cent in Ghana; thus, these two countries comprise half of the total West African market. It has to be born in mind, however, that separated classification of trucks and tractors was not possible neither in these countries nor in Sierra Leone on account of the statistics available. Another important truck buyer is only the Ivory Coast (12 per cent of the truck demand of the whole region); there, moreover, 2/3 of all tractors were demanded. With the exception of Gambia and Mauritania the other nations participate with shares of 2 to 5 per cent in the truck market of West Africa, Senegal accounting for the upper limit and Togo for the lower limit.

In Nigeria and Ghana where most of the trucks are sold British products (Bedford, Austin, Morris, Landrover, Albion, Commer) hold 3/4 of the market; in Sierra Leone and Gambia their share is somewhat smaller. Ghana excepted where about 70 per cent of all trucks are of Russian origin (Gaz, Zil, Maz), the French commercial vehicles (Citroen, Berliet, Renault/Saviem) dominate in the French speaking countries: their market share is of more than 70 per cent in Dahomey, Ivory Coast, Mali, Upper Volta and Senegal and of more than 50 per cent in Mauritania, Niger and Togo. In Liberia American trucks (Ford, Fargo, Willys Overland, Dodge) meet more than 50 per cent of the demand. In no country the sales of German trucks (Mercedes-Benz, Magirus, Henschel) exceed 20 per cent of the respective sales and does not even reach 10 per cent in the important countries Ivory Coast and Ghana.

We estimate the demand for commercial vehicles (trucks and vans as well as tractors) in West Africa to reach

nearly 20,000 units in 1975 and 1980.

The sales amount will thus increase by only 5,000 units compared with 1963, i. e. by one quarter. Main reasons are to be found in the overcapacity of freight space and the shift from light to heavy transporters occurring everywhere.

The sales market classified into categories will be as follows:

	<u>1963</u>	<u>1975</u>	<u>1980</u>
Vans (under 1 ton)	3,640	4,300	4,600
Light trucks (1 to 5 tons)	6,160	7,000	7,350
Heavy trucks (over 5 tons)	<u>5,500</u>	<u>7,150</u>	<u>7,550</u>
	15,350	18,450	19,500
Tractors	470	730	860
Trailers	460	870	1,040

4. Existing and Planned Motor Vehicle Assembly Plants

4.1. Assembly Plants in the Individual Countries

4.1.1. Dahomey: Société de Construction Automobile du Bénin

The Société de Construction Automobile du Bénin is presently the only enterprise of this type in Dahomey. Assembly of motor vehicles was started in Cotonou in February 1966. The company which is equipped with a capital stock of \$ 250,000 was founded by the appointed Citroen dealer in Dahomey, Gaston Nègre, with government participation of roughly 20 %.

Cotonou was chosen as location for different reasons: there is a good market of Citroen vehicles in Dahomey; assembly parts are exempted from import duties; the enterprise was granted tax privileges for 3 years; the government supplied roughly 20 % of the required capital, and, last not least, Gaston Nègre is already operating an important garage and service station in Cotonou.

The assembly hall is to be used for Citroen passenger cars and delivery trucks exclusively. Capacity is 5 units per day, 100 per month. Vehicles are assembled from imported M.K.D.¹⁾ parts. Present output per month is

- 15 Citroen 2 CV (passenger car)
- 15 Citroen 3 CV (station wagon)
- 20 Citroen Ami 6 (passenger car).

The present capacity employment of 50 % is sufficient to meet the demand in Dahomey and to export approximately 10 passenger cars per month to Togo.

1) medium knocked down; see section 5.1.2.

The plant area covers roughly 12,750 sq.m. The roofed assembly hall including offices spreads over 75 x 20 m., i.e. 1,500 sq.m.

Principal equipment is an assembly line consisting of movable carriages to be pushed by hand on slide bars from station to station; a body parts varnishing chamber with subsequent infrared drying unit; an air compressor.

Capital expenditure on property, plant and equipment up to now approximates US \$ 270,000. 30 % hereof was spent on real estate, 45 % on buildings, 15 % on operating equipment; 10 % was sundry expenses.

The company employs 3 French (manager, person in charge of materials, foreman) and 60 African persons.

Company sales, presently restricted to Dahomey (80 %) and Togo (20 %), are planned to be extended to Nigeria and Niger as soon as trade agreements have been reached.

In order to come up to the expected increase in demand the company plans as a first step to raise its output until capacities will be fully employed. As a second step, it is planned to extend capacities by

- 50 Citroen ID 19 (passenger car) and
- 60 Citroen trucks (2.5 to 8 tons) per year.

4.1.2. Ghana

Ghana is the only country where six assembly plants for trucks and small buses are existing. 3 enterprises are located in Accra, 2 in Takoradi and 1 in Tema.

Erection of these plants was enabled by the import policy of the government of Ghana; import licenses for completed commercial vehicles are given only in extremely rare cases, which makes it a necessity for all motor vehicle dealers to assemble in their own plants the models for which they hold appointments. However, owing to the country's lack of foreign exchange, it is not possible to import sufficient amounts of M.K.D. parts. The assembly capacity of five of the 6 assembly plants are therefore but insufficiently employed.

All plants are operating for the domestic market only. Sales are concentrated on Accra (around 60 %), Kumasi (approximately 30 %) and Takoradi (approximately 10 %).

Apart from the buses assembled in Ghana and 5 % of the assembled trucks (mostly tippers and special trucks) all vehicles are delivered without bodies (driver's cab excluded). The bodies are produced by numerous small mechanical shops operating at lower costs than the assembly plants and according to the individual desire of the truck buyers.

4.1.2.1. R.T. Briscoe (Ghana) Ltd.

R.T. Briscoe (Ghana) Ltd., Accra, is a subsidiary of East Asiatic Company Ltd., Copenhagen. As an appointed dealer for Mercedes-Benz passenger cars and buses, the company has expanded the maintaining and repair shop already existing and has started assembly of Mercedes-Benz buses (o319 D model, 22 seats) in 1964.

Capacity of the plant of roughly 400 buses per year is presently employed at a rate of 90 %. The buses are being assembled from M.K.D. parts.

With the exception of special tools, the plant does not dispose of any machinery. Bus bodies are surface-treated in the varnishing and drying unit of the Briscoe repair shop.

Capital expenditure of the assembly plant was around US \$ 200,000, with the building (approximately 3,000 sq.m.) erected on the site of the repair shop accounting for 50 % and tools and equipment for 50 %.

About 95 workers are employed in the bus assembly, including one European manager. According to the work occurring the workers will be employed also in the repair shop.

All buses assembled by Briscoe are sold on the domestic market.

The company does presently not intend to expand its production programme or capacity. It is, however, possible to double the output of the existing plant in case bus demand should be rising and import licenses on M.K.D. parts were granted in sufficient amounts.

4.1.2.2. Compagnie Française de l'Afrique Occidentale (C.F.A.O.)

The assembly plant of the French trading enterprise C.F.A.O. was founded in 1957. It was established in Accra because C.F.A.O. had

already been operating a motor vehicle repair and service station there and because of the new port in Tema.

The assembly programme comprises buses and trucks of up to 12 tons of all brands for which C.F.A.O. holds appointments. Capacity of the assembly shop is 1,200 vehicles per year, which has, however, up to now not been fully employed owing to the limitation of imports. The capacity was employed only to 20 % (220 vehicles assembled) in 1965 but is expected to advance to 60 % in 1966. Assembly of the following vehicles is planned for 1966:

- small buses		
Morris (17 seats)	240	
Renault (21 seats)	<u>80</u>	320
- trucks (1 1/2 - 12 t)		
Morris	280	
Robur ¹⁾	100	
Skoda ²⁾	25	
Henschel ³⁾	<u>20</u>	425
- total		<u>745</u> =====

Vehicles are assembled from M.K.D. parts. Apart from the usual minimum equipment such as movable carriages on slide bars, spot welders, varnishing and drying set, lifting blocks and car lifting platforms, the plant does not dispose of further machinery. Capital expenditure on operating equipment was roughly \$ 60,000. Approximately \$ 110, 000 was spent on the assembly hall (roughly 4,000 sq.m.). Costs of the site (approximately 23,000 sq. m.) could not be ascertained.

The assembly plant employs 80 African and 2 European persons.

The entire production is sold on the domestic market.

1) country of origin: Germany
2) country of origin: CSSR

Extension of the capacity is not planned under present circumstances but is possible without major capital investment in case of a future increase in demand, provided supply of M.K.D. parts is secured.

4.1.2.3. Ghana National Trading Corporation (G.N.T.C.)

In Accra G.N.T.C. builds trucks with a pay load of 5 to 18 tons (Fargo (USA) and Mercedes-Benz (Germany)). The company is also appointed dealer for both brands.

The present capacity of 10 Fargo and 10 Mercedes vehicles per week (roughly 1,000 per year) is fully utilised.

Assembly is based on imported M.K.D. parts which includes engines, transmissions, chassis and driver's cabs.

At the moment, the company employs 46 native and 2 European persons.

The entire production is sold on the domestic market.

In order to extend the production capacity, G.N.T.C. is presently setting up a modern assembly line in the region of the port town Tema. The new plant is laid out for 15 Fargo and 15 Mercedes trucks per week (approximately 1,500 per year) and will start operation in 1967. Vehicles will be assembled from M.K.D. parts.

4.1.2.4. John Holt Industries

One of the two motor vehicles assembly plants located in the port town Takoradi West of Accra has been operated for a number of years by the John-Holt-group.

The production programme comprises trucks of 3/4 to 16 tons of the British Ford, Commer and Karrier brands. Annual capacity of the plant approximates 1,500 trucks. Output in 1965 was only 200 trucks and is expected to increase to around 600 vehicles in 1966 which would correspond to a 40 % capacity employment.

Around 60 African workers and one European manager are employed presently. At full capacity employment the enterprise would offer about 120 workplaces.

Due to the limited import prospects the plant could up to now not be equipped with all necessary machinery. E.g. there are no spot welding appliances. Vehicles are being assembled on S.M.K.D. basis¹⁾.

For the time being the company does not plan to extend capacities.

4.1.2.5. Société Commerciale de l'Ouest Africain (S.C.O.A.)

Since 1948 the French trading enterprise S.C.O.A. which is represented in almost all West African countries has been operating an assembly plant for small buses (15 seats) and trucks of 1 1/2 to 7 tons capacity of the British Austin in Takoradi.

Capacity of 1,000 to 1,200 vehicles per year is not fully utilised due to the limited import of assembly components. Only 120 vehicles were turned out in fiscal 1965/66 but the company hopes to assemble 600 vehicles (300 small buses, 300 trucks) in 1966/67.

The assembly line as well as a varnishing and drying set are combined in a roofed works hall spreading over 8,500 sq.m.

1) see section 5.1.2.

Capital expenditure on the assembly hall amounted to roughly US \$ 150,000. Roughly US \$ 70,000 was spent on operating equipment (tools, welding appliances, lifting equipment, varnishing set). The site is taken on lease.

The assembly plant employs one European manager and roughly 70 African workers who will occasionally be transferred to one of the numerous S.C.O.A. repair and service shops.

For the time being the company does not plan to extend its capacity.

4.1.2.6. United African Company (Vehicle Assembly Plant)

U.A.C. is affiliated with the Unilever group. Assembly of motor vehicles was started in 1959 in the newly developed industrial area of Tema near Accra.

The production programme comprises the following models:

Bedford - truck	1.5 to 8 tons
Bedford - van	0,5 "
Albion/Leyland- truck	10 to 12 "
Land Rover-Station wagon	
Land Rover-van	

Plant capacity is 1,600 to 2,000 vehicles per year, five-day week being given. However, actual output remains below capacity. In 1965, the company was able to assemble 1,600 vehicles on account of an import permit amounting to US \$ 3.6 million. In 1966 the import quota was reduced to US \$ 1.8 million so that production will have to be cut down to 700 vehicles. The total will be divided among the individual models as follows:

- 125 -

170 Bedford trucks	(pay load: 2 tons)
110 Bedford trucks	(pay load: 3 tons)
140 Bedford trucks	(pay load: 5 tons)
40 Bedford trucks	(pay load: 6 tons)
150 Bedford trucks	(pay load: 7-8 tons)
45 Albion/Leyland trucks	(pay load: 10 to 12 tons)
45 Land Rover	

The capacity will be employed only to 40 %.

The Bedford and Albion/leyland vehicles are assembled from M.K.D. parts whereas for the assembly of Land-Rovers assembled chassis are imported from Great Britain.

Apart from the equipment required for truck assembly (tools, welding appliances, lifting devices, travelling crane and varnishing set) the plant disposes of bending, rolling and forging equipment serving for the production of small bus bodies (6 per month).

An amount of roughly US \$ 600,000 was invested in the entire assembly plant, roughly US \$ 335,000 of which was spent on the building and US \$ 260,000 on equipment.

The company employs roughly 200 persons. The management consists of five Europeans and one Ghanese.

As there are no market difficulties for vehicles assembled by U.S.C. in Ghana, the company would be quite willing to increase assembly capacities, provided the government would grant higher import quotas on assembly sets. The management does, however, not count on an additional granting of import licenses.

4.1.3. Guinea

There is presently one plant in Guinea assembling American MACK trucks, jeeps and farming tractors. Establishment of a second plant assembling Fiat passenger cars is under discussion.

4.1.3.1. Société de Montage et Distribution de Véhicules Automobiles (SOMOVA)

The government of Guinea holds 51 % and the American MACK 49 % of the capital stock of SOMOVA totaling \$ 800,000.

MACK decided to erect an assembly plant in Conakry the government of Guinea having been willing to exempt until 1970 the new plant as priority enterprise from all taxes and import duties and in addition to stop imports of other commercial vehicles.

Assembly was started in February 1966. Up to July, 37 trucks with standard body (5 trucks of 15 tons, 20 of 10 tons, 22 of 5 tons), 3 tank wagons (12,000 l capacity) and 4 special purpose vehicles (including 3 garbage trucks) were assembled.

Assembly was based on S.K.D. parts. Swift assembly on M.K.D. basis will not be possible before the end of 1967 when all equipment will be installed in the new work halls, part of which is still under construction. Buildings will spread over roughly 25,000 sq.m. on a factory site of 50,000 sq.m.

Assembly capacity amounts to

- 800 trucks (5 to 10 tons)
- 250 jeeps
- 250 agricultural tractors.

After completion of the first stage (end of 1967), the capacity will be extended to 500 jeeps and 500 agricultural tractors whereas the truck capacity will remain unchanged.

In the initial phase up to end-1967 assembly of

around 600 standard trucks and

around 100 bauxite transporters with a pay load of 65 tons

is envisaged.

Special purpose vehicles such as tippers and tank wagons etc. are assembled by SOMOVA whereas the major part of the standard trucks leaves the assembly line without body.

Operating equipment installed at present does not exceed the requirements for S.K.D.assembly.

SOMOVA employs 150 African persons and 5 European managers, the latter only for a limited period of time.

The principal market for SOMOVA vehicles is in Guinea. A number of vehicles is said to have been exported already to Liberia, Mali, Senegal and Sierra Leone. Expansion of exports is planned to include Ivory Coast in the future.

Neglecting the work now under construction SOMOVA does not plan to extend its capacity.

4.1.3.2. Projected plant: Fiat

The Italian Fiat group conducts negotiations with the government of Guinea on erection of a motor vehicle assembly plant. Details concerning the manufacturing programme, capacity, starting up of production, capital costs and required personnel are not known. The projected plant is supposed to assemble 1,000 to 2,000 passenger cars and light trucks per year.

4.1.4. Ivory Coast

One motor vehicle assembly plant is presently operating in Abidjan/Ivory Coast. Two other enterprises are planning to erect assembly plants.

4.1.4.1. Société Africaine de Fabrication des Automobiles Renault (S.A.F.A.R.)

S.A.F.A.R. was founded by the French automobile producing group Renault. Assembly of passenger cars, trucks and vans was started in April 1962. The plant is located in Abidjan because the administration believes Ivory Coast to offer the best economic development prospects in West Africa. As priority enterprise, S.A.F.A.R. enjoys import duty and tax privileges for a period of 10 years.

The plant is laid out for a capacity of 10 vehicles per day (2,500 per year). The production programme comprises the following models:

- passenger cars (incl. vans)

Renault 4 (Limousine, Berline, Fourgonnette)

Renault 8 (Major)

Renault 10 (Major)

Renault 16

- trucks and vans

Renault Marchande (incl. small bus) (1 to 1.5 tons)

Renault 2.5 tons

Saviem JL 20 and JL 29 (7 to 32 tons)

Since 1962 output has developed as follows:

1962	-	approximately	600 vehicles
1963	-	"	1,300 vehicles
1964	-	"	1,750 vehicles
1965	-	"	1,850 vehicles.

Production is planned to increase to roughly 1,950 vehicles (1060 passenger cars, 80 vans, 810 trucks) in 1966, which represents an almost 80 % employment of capacity.

Passenger cars and trucks with a pay load of less than 5 tons are assembled from MKD parts whereas the driver's cab for the heavy Saviem truck is still being imported completed from France. On the other hand, S.A.F.A.R. manufactures seats and bottoms for the small Renault bus. For the time being the company does not intend to increase the production of parts because the great number of models included in the production programme.

The enterprise disposes of the following essential operating equipment which turns S.A.F.A.R. into one of the leading motor vehicle assembly enterprises in West Africa:

- undercarriage assembly line (passenger cars, light trucks)
- body assembly line (passenger cars, light trucks)
- assembly line for trucks of more than 5 tons load capacity
- body varnishing and drying unit
- upholstery
- joinery.

All assembly lines are equipped with crane units and welding appliances.

Total area of the plant covers roughly 36,000 sq.m.

The assembly hall spreads over roughly 9,000 sq.m.

Capital expenditure originally amounted to roughly \$ 1.2 million. Approximately 10 % hereof was spent on real estate, 50 % on buildings and 40 % on equipment.

Aside from 7 Europeans in charge of business and production management, the company employs 130 African workers, 90 % of whom come from the Ivory Coast.

Roughly 90 % of the production is presently sold in the Ivory Coast. Pursuant to special agreements granting import duty privileges on S.A.F.A.R. vehicles, approximately 9 % of production goes to Upper Volta, around 1 % to Niger.

The company intends to open up further export markets in other West African countries as soon as the respective trade negotiations will be concluded.

For the time being S.A.F.A.R. does not plan to increase the capacity of the assembly plant.

4.1.4.2. Projected Enterprises

Société Ivoirienne de Fabrication et de Montage Automobile (S.I.F.M.A.) and Compagnie Française de l'Afrique Occidentale (C.F.A.O.)

Of the two projects, Société d'Equipment pour Afrique (S.E.A.) enjoys the best chances to be realized. Under the style of Société Ivoirienne de Fabrication et de Montage Automobile (S.I.F.M.A.) the company is planned to start assembly of Mercedes-Benz trucks and tractors and tractor trailers in mid-1968. Capital expenditure will approximate US \$ 600,000.

Plans of Compagnie Française de l'Afrique Occidentale (C.F.A.O.) to erect an assembly plant for Citroen (2 CV, 3 CV), Peugeot (404) and Simca (1300) passenger cars in Abidjan could up to now not be realized because authorities of the Ivory Coast are

not willing to grant duty privileges on the M.K.D. parts to be imported. Therefore, realization of the project in the near future appears doubtful.

4.1.5. Nigeria

Five assembly plants are presently operating in Nigeria, four of which are located in Lagos, one in Port Harcourt. Another two assembly plants are projected.

All assembly plants enjoy a 15 % reduction of import duties when assembly components instead of completed vehicles are imported.

Certain components, such as batteries and tyres, are supplied by domestic producers.

4.1.5.1. B.E.W.A.C. Automotive Products Ltd.

B.E.W.A.C. was founded in 1965 by English businessmen with a capital interest of the government of the Eastern Region. Assembly of jeeps, trucks, agricultural tractors and trailers was started in July 1966.

Port Harcourt was selected as location not only in view of the government participation but also for the reason that the main sales market for trucks is in the east of Nigeria.

The production programme comprises

jeeps: Landrover and
trucks: Albion (6 to 7 tons)
Leyland(8 to 9 tons)
Scammell (12 to 14 tons and 15 to 30 tons)

as well as agricultural tractors and trailers. Landrovers are built with chassis and bodies whereas trucks are merely provided with chassis.

The plant has a maximum capacity of roughly 2,700 units (1,700 jeeps, 1,000 trucks), 400 tractors and 300 trailers may in addition be assembled.

The management considers the rest of the year of 1966 an initial period; therefore we have preferred to evaluate the future production volume of the plant on the basis of the planned assembly figures for 1967:

jeeps:	Landrover	1,000
trucks:		450
	Albion (6 to 7 tons)	250
	Leyland(8 to 9 tons)	100
	Scammell (12 to 14 tons)	50
	Scammell (15 to 30 tons)	50

The planned volume of production represents a 50 % utilisation of capacity. Assembly of 250 tractors and 200 trailers is in addition planned.

Jeeps and trucks will be assembled from M.K.D. parts imported from Great Britain, with the exception of seat upholstery and canvas roofs for the Landrover jeeps which will be produced in Nigeria. However, the company plans to substitute slowly but steadily imported components by parts manufactured in tis own assembly plant.

Total capital expenditure on property, plant and equipment came up to roughly \$ 350,000.

The number of employees will be around 200 after the starting period. 150 persons will be engaged in assembly, the rest in auxiliary operations.

The company expects to sell its vehicles exclusively in Nigeria, the bulk going into the Eastern Region and Lagos.

4.1.5.2 Compagnie Française de l'Afrique Occidentale (C.F.A.O.)

C.F.A.O. started assembly of trucks from S.K.D. parts in Lagos in 1950. A new work hall was erected in 1966 and will be put in operation in August.

The production programme comprises mainly Morris vans of 3/4 to 1 ton and, in addition, light Morris trucks of 1 1/2 to 7 tons. Of the assembled trucks, 15 to 20 % are sold with bodies, the rest as chassis vehicles.

The plant has a capacity of 1,500 units per year when operating in one shift, 3,000 when operating in two shifts. At the moment, it is operating in one shift. Seasonal employment is highest between September and February. In these months the plant employs 120 workers, but only 35 to 40 during the other months.

Assembly figures of the last few years fluctuated between 1,000 and 1,200 units which represents an 80 resp. 100 % rate of capacity employment.

The new assembly shop produce roughly 1,500 Morris trucks and vans in the next year. Total output will be composed of

1,150 vans	(3/4 to 1 ton)
15 trucks	(1 1/2 tons)
40 trucks	(2 tons)
60 trucks	(3 tons)
100 trucks	(5 tons)
140 trucks	(7 tons)

4.1.5.3. Leventis Motors Ltd.

Leventis is an enterprise with a chain of more than 50 manufacturing and trading establishments in Nigeria. Its Mercedes-Benz representation started assembly of Mercedes trucks in Lagos in 1962.

The 1965 production programme comprised the truck models 911 (pay load: 5 tons) and 1133 (pay load: 7 tons) assembled on conveyor lines, and the 1618 model (pay load: more than 12 tons) assembled each by three engineers (stationary assembly). All three models are available as standard trucks (with variable platform length), tippers or tractors. Truck trailers and tractor trailers are also being assembled. Upon special demand a number of large buses (63 seats) were built in 1965. Basic material for all vehicles are S.K.D. parts imported from Germany.

The plant originally designed for an annual output of more than 3,000 trucks produced 1,500 units during the five months of the 1965 assembly season. This is an increase of 500 units as compared with 1962. (however, in the first half of 1966, production was less than 200 trucks). Of the 1965 figure, roughly 150 units were trucks of 12 to 20 tons, roughly 450 were trucks of 7 tons and roughly 900 trucks of 5 tons. Moreover about 300 trailers were built. Of the 5 ton trucks, roughly 90 % were equipped with standard bodies; roughly 80 % of the 7 ton trucks were tippers or tractors. Of the 150 heavy trucks (more than 12 tons) 90 were manufactured as tractors, 60 as standard trucks.

The factory site and assembly hall (roughly 2,500 sq.m.) are rented. Equipment comprises slide bars with movable frames, pulley block, tyre pump set, simple varnishing unit without drying chamber, tools (including drilling and grinding machines) as well as three fork lift trucks; total costs of \$ 25,000 had to be invested.

In the 5 months assembly season of 1965, Leventis Motors Ltd. employed two Europeans (director of operations and engineer) and 260 native workers.

Sales of the 911 and 1113 models are concentrated in Eastern Nigeria whereas the 1618 model is primarily sold in Lagos. It is operating the long-distance traffic on the Lagos-Kano route.

At the moment, Leventis Motors Ltd. does not plan capacity extensions.

4.1.5.4. Niger Motors Ltd. (Federated Motor Industries)

For several years the enterprise, affiliated with the Unilever group has been maintaining an assembly shop for Bedford truck chassis having a pay load of 1,5 to 7 tons in Apapa, the port area of Lagos. The assembled trucks can be provided with either truck or bus bodies.

The plant disposes of all necessary machinery for the assembly on M.K.D. basis. Capacity is 1,500 vehicles per year when operating in one shift, 2,000 vehicles when operating in two shifts.

1965 output achieved in one shift was 1,000 chassis vehicles, equalling a roughly 65 % employment of capacity.

Roughly 60 % of the total output was trucks of up to 4 tons; trucks of 4 to 5 tons and of 5 tons and more accounted for 20 % each.

Around 60 persons are employed. Products are sold exclusively in Nigeria.

The company does not plan to extend capacities of the assembly shop.

4.1.5.5. Société de l'Ouest Africain (S.C.O.A.)

Since 1956 the plant has been assembling vehicles of the Peugeot and Austin brands, for which S.C.O.A. is also appointed dealer.

The following models are built on M.K.D. basis in two assembly lines:

Peugeot station wagon 403
Austin small bus (up to 20 seats)
Austin trucks and vans (pay load: 1.5 to 6 tons)

Plant capacity is around 2,000 vehicles per year, but 1965 output approached only 1,200, i.e.

220 Peugeot station wagons
350 Austin small buses
630 Austin trucks and vans (part of which chassis vehicles).

Capacities were thus employed at 60 %. S.C.O.A. hopes the rate will advance to around 65 % (1,300 motor vehicles) in 1966.

Apart from the equipment generally used in motor vehicle assembly plants, S.C.O.A. disposes of its own upholstering shop.

Capital expenditure on property, plant and equipment has so far run up to \$ 675,000.

The present payroll includes 180 persons, 3 of whom are Europeans.

The present capacity is sufficient to cover domestic requirements for the models included in the manufacturing programme. S.C.O.A. does not intend to expand its production it does, however, consider to assemble Peugeot trucks aside from the Peugeot station wagons and passenger cars already being built.

4.1.5.6. Projected Plants: Intra Motors Ltd. and One Passenger Motor Vehicle Assembly Plant

Intra Motors Ltd. plants to erect an assembly plant in Nigeria. In addition the central government has invited tenders for erection of a passenger car assembly plant.

Intra Motors Ltd. is affiliated with Intra Car Ltd., of Lagos, which is the appointed dealer for the French Simca brand and the Japan passenger car model Nissan.

The new Intra Motors Ltd. plant will assemble Nissan passenger cars in Port Harcourt. Details on capital costs, capacity, output, starting up of operations etc. were, however, not available.

Details on the second project, erection of a passenger car assembly plant, may be gathered from an invitation for tender of the Nigerian government, which was published in "Official Gazette" on May 5, 1966. Upon close of our research work it was not possible to ascertain the company, the model to be assembled or the time at which operations will be started. Rumours are that the Roots group is considering to build a plant of an annual capacity of 10,000 units.

4.1.6. Senegal: Berliet Sénégal

Berliet Sénégal was established with a capital stock of US \$ 720,000, of which the French automobile producer Berliet holds 90 % and the government of Senegal 10 %. The company ranks as priority enterprise enjoying tax privileges for a certain period of time. Assembly of Berliet vehicles was started in Dakar in February 1964.

Reasons for selection of the site were that the port of Dakar is a favorable location in European-West African traffic, that the vehicle market in Senegal and the adjoining areas are considered by the company's administration capable of developing and that the company was granted the mentioned tax privileges.

The present manufacturing programme comprises

trucks with a pay load of up to 3 tons
semitrailer trucks of 13 to 20 tons
special purpose trucks (cold-storage wagons, tank wagons
etc.)
buses (30 to 100 passengers).

The plant has a capacity of 400 vehicles per year which might be doubled without any difficulties in case the respective demand arose.

At the moment, capacities are but half employed. Output figures for 1965 were

20 trucks (3 tons)
20 trucks (4 tons)
50 trucks (6 tons)
50 trucks (7 tons)
40 tractors
20 special purpose trucks
200

Buses were assembled for the first time in 1966. The company plans to build a total of 60 buses with 25 seats and 75 standing places, to be used in city line traffic.

On the basis of M.K.D. parts, the vehicle are being assembled on two parallel lines one of which carries chassis, the other driver's cabs and bodies. Surface treatment is being handled in a varnishing and drying set.

Contrary to the other assembly plants in the West African countries, the Berliet plant has induced erection of a number of supply shops. Berliet obtains e.g. components such as radiators, air compressor and fuel tanks, bodies for tippers, tank wagons and buses, battery cases, compressed air and fuel pipes from its own or other workshops in Dakar.

Capital expenditure on the assembly plant has up to now amounted to approximately US \$ 650,000. Roughly 20 % hereof was spent on the site (15,000 sq.m.), 50 % on the work hall (2,500 sq.m.), office buildings and homes, 30 % on equipment.

The payroll of the assembly plant includes only 70 African employees, another 200 persons being indirectly employed in the supply shops. Three Europeans are engaged in the management, and another two are responsible for the maintenance service of the sold vehicles.

Up to now production has only covered domestic demand, but it is planned to export vehicles to neighboring countries in the future.

If exports will develop favorably Berliet counts on a steady increase in output, which will ask for an extension of capacities to around 1,000 vehicles until 1975.

4.2. Survey of Size and Structure of Assembly in the Subregion

15 motor vehicle plants

are maintained in six states of West Africa: Dahomey (1), Ivory Coast (1), Ghana (6), Guinea (1), Nigeria (5) and Senegal (1).

5 motor vehicle assembly plants

are projected: in the Ivory Coast (2), Guinea (1) and Nigeria (2).

Of the existing 15 plants, 12 build only trucks (mostly light trucks; heavy trucks are rare) and buses (small and a few large buses), mostly without bodies. The bodies are generally manufactured in small workshops, unless special purpose mountings such as tippers, tank and cold-storage wagons are required. Two plants assemble passenger cars, trucks and buses; in one enterprise passenger cars (small cars) are assembled only. (Figure 17).

Trucks and buses, which in most cases have the same chassis differing only in the type of body, are being assembled from S.K.D. or M.K.D. sets. Assembly of passenger cars is based on M.K.D. parts only. There is no assembly on C.K.D. basis.

Annual capacity of the truck/bus assembly plants ranges between 400 and 3,000 units, with most of the plants laid out for 1,000 to 1,500 units per year. Respective figures for passenger car assembly are between 1,000 and 1,500.

Total assembly capacity available in West Africa amounts to

19,700 trucks/buses and 3,700 passenger cars.

Merely four of the truck and bus assembly plants run at full capacity: Briscoe and G.N.T.C. in Ghana and C.F.A.O. and S.C.O.A. in Nigeria. Two thirds of capacities are employed at C.F.A.O. in Ghana and Niger Motors in Nigeria, whereas the other plants, with the exception of S.A.F.A.R., are merely half employed. However, it must be mentioned that operations of B.E.W.A.C. (Nigeria) and SOMOVA (Guinea) have only been started recently. S.A.F.A.R. (Ivory Coast) is presently engaged at a rate of 75 % of its passenger car capacity and 80 % of its truck capacity.



FIGURE / GRAPHIQUE 17

**Existing Motor Vehicle Assembly Plants in West Africa /
Usines de montage pour vehicules déjà établies en Afrique Occidentale**

Dahomey

Société de Construction Automobile du Bénin, Cotonou

Ghana

1. R.T. Briscoe (Ghana) Ltd., Accra
2. Compagnie Française de l'Afrique Occidentale (C.F.A.O.), Accra
3. Ghana National Trading Corporation (G.N.T.C.), Accra
4. John Holt Industries, Takoradi
5. Société Commerciale de l'Ouest Africain (S.C.O.A.), Takoradi
6. United African Company (Vehicle Assembly Plant), Tema

Guinea/Guinée

Société de Montage et Distribution de Véhicules Automobiles (SOMOVA),
Conakry

Ivory Coast/Côte d'Ivoire

Société Africaine de Fabrication des Automobiles Renault (S.A.F.A.R.),
Abidjan

Nigeria

1. B.E.W.A.C. Automotive Products Ltd., Port Harcourt
2. Compagnie Française de l'Afrique Occidentale (C.F.A.O.), Lagos
3. Leventis Motors Ltd., Lagos
4. Niger Motors Ltd. (Federated Motors Industries), Lagos
5. Société Commerciale de l'Ouest Africain (S.C.O.A.), Lagos

Senegal/Sénégal

Berliet Sénégal, Dakar

The passenger car assembly plant of Société de Construction Automobile du Bénin has started operation only six months ago and its capacity is employed only to 50 %. The average rate of capacity employment of all assembly plants is

60 %.

This is reflected by the annual production volume expected for 1966:

1,950 passenger cars
1,400 buses
<u>10,350</u> trucks
13,700 motor vehicles (Table 97).

Practically each of the assembly plants sells its entire production on its domestic market. Exports to neighbouring countries are (still) rare.

In view of the present market situation, the prevailing import regulations and predominantly, the available production capacities, none of the assembly plants intends to expand its production in the next few years.

All assembly plants can exist only because either import of assembled commercial vehicles is stopped (Ghana, Guinea) or import duties on assembly components are considerably below customs rates for completed vehicles. The customs-savings account for 15 to 48 % of the c.i.f. price in Dahomey, Ivory Coast and Nigeria. The government of Senegal, however, does not grant any duty privileges. All with the exception of the Ghanaese plants are in addition enjoying tax privileges which are either granted for the full tax rate or part hereof and mostly limited to a certain period of time.

Table 97:

Capacity and Probable Output of Motor Vehicle Assembly Plants in West Africa in 1966

Capacité et production des usines de montage de véhicules en Afrique Occidentale à attendre en 1966

(round figures/valeurs arrondis)

Countries/ Pays	Production Programme/ Programme de Production Capacity/ Capacité Output/ Production Utilisation	Cars/ Voitures particulières			Buses, Trucks, Vans/ Autobus, Camions, Camionnettes					Total		
		Capacity/ Capacité	Output/ Production	Utili- sation (%)	Capacity/ Capacité	Output/Production			Utili- sation (%)	Capacity/ Capacité	Output/ Production	Utili- sation (%)
						Buses/ Autobus	Trucks, Vans/Cami- ons,Cami- onnettes	Total				
Dahomey Soc. Constr. Autom.		1.200	600	50	-	-	-	-	-	1.200	600	50
Ghana												
Briscoe		-	-	-	400	360	-	360	90	400	360	90
C.F.A.O.		-	-	-	1.200	320	430	750	65	1.200	750	65
G.N.T.C.		-	-	-	1.000	-	1.000	1.000	100	1.000	1.000	100
J. Holt		-	-	-	1.500	-	600	600	40	1.500	600	40
S.C.O.A.		-	-	-	1.200	300	300	600	50	1.200	600	50
U.A.C.		-	-	-	2.000	30	670	700	35	2.000	700	35
Guinea/Guinée SOMOVA FIAT		-	-	-	1.300	-	300	300	25	1.300	300	25
						envisaged/projeté						
Ivory Coast/Côte d'Ivoire S.A.F.A.R. S.I.F.M.A. C.F.A.O.		1.500	1.140	75	1.000	-	810	810	80	2.500	1.950	75
						envisaged/projeté						
						envisaged/projeté						
Nigeria												
B.E.W.A.C.		-	-	-	2.700	-	1.450 ¹⁾	1.450	55	2.700	1.450	55
C.F.A.O.		-	-	-	1.500	-	1.500 ²⁾	1.500	100	1.500	1.500	100
Leventis		-	-	-	3.000	-	1.500 ²⁾	1.500	50	3.000	1.500	50
Niger Motors		-	-	-	1.500	-	1.000 ²⁾	1.000	65	1.500	1.000	65
S.C.O.A.		1.000	220	20	1.000	350	630	980	100	2.000	1.200	60
Intra Motors						envisaged/projeté						
Car Assembly Plant						envisaged/projeté						
Senegal/Sénégal Berliet		-	-	-	400	60	140	200	50	400	200	50
Total		3.700	1.960	55	19.700	1.420	10.330	11.750	60	23.400	13.710	60

1) Figure for 1967, since enterprise in initial phase/Valeur pour 1967, puisque l'entreprise se trouve dans la phase d'établissement

2) Figure for 1965/Valeur pour 1965

Of the five planned, or at least considered new projects, three will assemble passenger cars (C.F.A.O., Ivory Coast, Intra Motors Ltd., Nigeria and the assembly plant announced by the government of Nigeria), one will build passenger cars and light trucks (Fiat, Guinea), and one trucks only (S.I.F.M.A.). Planned capacities, initial capacity employment and starting up of operation of the new projects could not be ascertained.

We have only been informed that so far only one project, the planned assembly hall for Mercedes-Benz trucks of S.I.F.M.A. in Abidjan, has a chance to be realized. Because of this uncertainty, none of the projects is considered in section 6.

5. Procedures and Cost of Assembly

5.1 Manufacture of Automobiles in Highly Industrialized Countries

Automobile plants in highly industrialized countries mostly produce hundreds of thousands of vehicles a year; annual production volume of the industry's largest plants often exceeds the million mark.

As a consequence, automobile production in these countries has all characteristics of mass production, the principal of which are

- a high rate of mechanisation
- a high rate of specialisation.

The rate of mechanisation is reflected in the extensive use of machinery and mechanical equipment in manufacture and assembly which often leads to full automation of partial processes.

The rate of specialisation is on the one hand, expressed in a sharp division of the manufacturing programmes of the individual manufacturers in terms of vehicle types (passenger cars, vans, mini-bus, truck, tractor, bus, caterpillar, utility truck, agricultural tractor etc.) and of the subsequent industries such as body production, production of trailers (for trucks and caravans) On the other hand, the number of suppliers may indicate the rate of specialisation or division of labour. A large-scale automobile plant often cooperates with 4,000 to 5,000 suppliers.

A motor vehicle consists of

- assembly units
- aggregates
- individual parts.

The most important assembly units composed of individual parts and aggregates are the following:

- chassis and body
- engine, clutch, transmission
- front and rear wheel suspensions
- electric equipment such as generator, lights, blinkers, cables etc.
- wheels
- brakes
- steering gear
- interior equipment and seats

An individual part is a component of the automobile that can not be divided any further. Characteristic of an aggregate is that individual components having a certain function in the operation of the automobile are combined to unity that is not yet considered as an assembly unit of the vehicle. Typical examples are ignition plug and battery.

Breaking down of the automobile into

- aggregates and individual parts
- assembly units

makes it possible to divide manufacture and assembly which is prerequisite for the erection of independent assembly plants.

5.2. Assembly Procedures of an Independent Assembly Plant Dependent on Stage of Pre-Assembly

5.2.1. The Principal Types of Independent Assembly Plants

The technical outfit of a plant especially designed to assemble individual parts, aggregates and assembly units of automobiles is determined by

- stage of pre-assembly
- assembly procedure.

The rate of pre-assembly is generally expressed by one of the three terms indicating the stage of completion at which the automobile is shipped:

- "Semi-Knocked-Down" (S.K.D.)¹⁾
- "Medium-Knocked-Down" (M.K.D.)
- "Completely-Knocked-Down" (C.K.D.)

A "S.K.D." automobile is shipped in assembly units such as body, engine, axles, wheels. "C.K.D." indicates that all automobile elements necessary to assemble the mentioned assembly units are shipped separately. Intermediate terms are referred to as "M.K.D." the automobile is shipped partly in assembly units, partly in aggregates and individual parts.

Automobiles may be assembled in one of the three methods:

- individual or stationary assembly
- progressive assembly
- line assembly.

1) This stage is sometimes also called "Partially-Knocked-Down" (P.K.D.)

Individual assembly means that the automobile is located at the same place all over the entire assembly process. Individual parts resp. part groups are carried to the assembly station. Stationary assembly is normally based on S.K.D. sets.

Progressive assembly means that the automobile is put on a conveying device to be moved by hand from one assembly station to the other one. The degree of disassembly typical of this procedure is M.K.D.

Line assembly means that the automobile is transported from one assembly station to the other one by means of a conveyor belt driven by a mechanical unit in certain time intervalls. This requires diligent timing of the assembly times on the individual work places. Components for line assembly are dissembled C.K.D.

A "S.K.D." assembly plant will order the entire assembly material in the form of pre-assembled parts from the automobile producer in possession of the know-how for the production of the entire motor vehicle. These parts will be connected simply by means of screw unions which does not require any special machinery.

A plant operating in this procedure will normally apply the individual assembly method.

A "M.K.D." assembly plant will order assembly materials from the automobile producer partly as pre-assembled assembly units, partly in the form of systems or elements. Assembly of these materials requires a certain amount of machinery. The plant will need assembly tools, welding or riveting appliances and varnishing equipment (Paint box or chamber).

A plant operating in this procedure will normally apply the progressive assembly method.

The M.K.D. assembly plant may purchase certain individual parts or aggregates from local shops provided they exist in the respective country.

A "C.K.D." assembly plant will on principle order assembly materials in the form of individual parts and aggregates from the producer; in certain cases partially assembled assembly units such as certain part-assembly units of the engine can be obtained. Assembly operations are very similar to those carried out in an automobile plant of a highly industrialized country. As assembly starts from individual parts it is necessary to have (apart from the final assembly) also pre-assembly i.e. assembling the individual parts into assembly units. Such a plant will normally apply the line assembly method for final assembly as well as for the principal pre-assembly operations.

An assembly plant of this type is generally characterised by its subsequent workshops manufacturing highgrade individual parts. The plant may also purchase a large number of individual parts from local shops provided they exist in the respective country.

5.2.2. Survey of Application Range

As mentioned in the preceding section, the degree of pre-assembly as well as the type of the independent assembly plant are defined by the number of automobiles to be assembled. Increasing use of machinery and mechanical equipment becomes profitable when output is rising.

Economical application of the different forms of assembly depend on the type of motor vehicle and differ accordingly. However, it is possible to establish a certain volume of production as soon as it is known whether the plant will assemble passenger cars or trucks. Buses with separate chassis may be added to the truck category since assembly and manufacturing conditions are similar¹⁾.

Taking into account the differences in present customs²⁾ rates on assembled automobiles as against automobile parts, Table 98 shows the application of the individual assembly methods.

Table 98: Range of Application of the Individual Assembly Methods

<u>Type of Vehicle</u>	<u>S.K.D.</u>	<u>M.K.D.</u>	<u>C.K.D.</u>
Truck (incl. bus with separate chassis)	50 to 300 units per year	300 to 2,000 units per year	more than 2,000 units per year
Passenger car	2000 to 4000 units per year	4,000 to 10,000 units per year	more than 10,000 units per year

1) For buses with self-supporting body see section 7.2.

2) c.f. section 4.2.

5.3. Cost Categories Influencing the Price of the Finished Product

5.3.1. Categories and Classification of Cost

Cost prices of an automobile producer can be ascertained by a method of calculation generally called calculation by differentiated addition. The calculation pattern is as follows:

	direct cost of material	
	+ <u>indirect cost of material</u>	
(I)	total cost of material	
	+ productive wages	
	+ indirect cost of production	cost of production
	+ assembly wages	cost of assembly
	+ <u>indirect cost of assembly</u>	
(II)	prime cost	
(III)	+ <u>cost of administration and distribution</u>	
(IV)	cost price	
(V)	+ <u>addition for risks and profit</u>	
(VI)	calculated price	
	=====	

The calculated price plus particular costs of distribution such as packing expenses, freight out, turnover tax and trade margin, equals the price offered to the customers.

The same pattern is generally applied for an assembly plant purchasing pre-assembled parts of a certain automobile model.

Direct Cost of Material

As the input of an independent assembly plant consists of high-grade products, direct cost of material account for 60 to 80 %, i.e. for the largest share of total cost of the plant. A price " ex works, unpacked" includes the following direct cost of material:

- manufacturer's material cost
- packing expenses
- freight (incl. loading expenses and insurance)
- customs duties.

Summation of these costs must be supplemented by royalties in case the assembly plant purchases less than 60 to 70 % of the total material required from the automobile producer having designed and developed the vehicle. Motivation for these charges, which generally amount to 3 to 5 % of costs of shipped materials, is to compensate for the producer's costs of development and design as included in the calculated price of the entire product.

Costs of production and assembly

According to the degree of pre-assembly of the purchased materials, the independent assembly plant will have a certain amount of expense to be called cost of production if they occur with the manufacture of individual parts.

Assembly costs are those expenses that are directly connected with the assembly of individual parts and assembly units.

Although both categories of cost break up into direct and indirect expenses, there are differences in structure. Costs of labour play a decisive role in the structure of assembly costs, whereas costs of production are largely determined by the amount of operating expenses necessitated by the extensive use of machinery in the production of high-grade automobile parts. Even where the wage level is low possibilities for input of human labour are limited.

Costs of machinery are composed as follows:

- amortisation
- interest
- maintenance
- tools.

The bulk of the productive machinery used in pressing, cutting, deep-drawing etc. of automobile parts are high-grade tools such as dies. Production of these tools is only profitable when a certain assembly part of the automobile model is manufactured in a minimum number of units, which is defined by the costs of the tools.

It follows that all considerations concerning the manufacture of certain assembly parts on the productive facilities of the assembly plant must concentrate on evaluation of operating cost of machinery and among these of the cost of tools.

Costs of Administration and Distribution

Apart from the expenditure on office personnel and equipment (e.g. for preliminary planning of work, purchasing, accounting), this category comprises expenditure on distributive functions within the assembly plant itself, such as auxiliary sales personnel, exhibition space, person in charge of complaints etc.

The cost categories typical of an assembly plant differ with the size of the plant. Figure 18 shows typical cost categories for the individual assembly methods. In order to be more precise we have dealt with two different cases of the mentioned "M.K.D." assembly:

Case 1 (M.K.D.₁) is M.K.D. assembly with only an insignificant quota of locally supplied materials, whereas in case 2 (M.K.D.₂) this quota is so high that the assembly plant is paying royalties to the automobile producer.

COST FRAIS		TYPE OF ASSEMBLY FORME DE MONTAGE	SKD	MKD ₁	MKD ₂	CKD
		ADMINISTRATION				
PRODUCTION FABRICATION	WAGES SALAIRES					
	OVERHEAD FRAIS GENERAUX					
ASSEMBLY MONTAGE	WAGES SALAIRES					
	OVERHEAD FRAIS GENERAUX					
MATERIAL SUPPLY ACHAT DE MATERIEL	LICENCES					
	PACKAGING EMBALLAGE					
	FREIGHT FRET					
	CUSTOMS DOUANE					
	MATERIAL MATERIEL					
	OVERHEAD FRAIS GENERAUX					

FIGURE / GRAPHIQUE 18 :

Various Cost Typical for the Different Kinds of Motor Vehicle Assembly

Frais typiques pour les diverses formes de montage de véhicules

5.3.2. Cost Categories as Determined by Capacity

5.3.2.1. General Trends in Cost Development

Condition for the erection of an independent assembly plant of the simplest type (SKD) is the fact that costs are lower for imports of assembly parts than for imports of assembled vehicles. The amount of expenses saved is composed of

- a) lower customs duties
- b) lower freight rates
- c) reduced prices of automobile producer.

Ad a): Customs duties will be lower since most countries charge smaller import rates on automobile parts than on assembled vehicles.

Ad b): Freight costs will be lower because knocked-down automobiles require less transport space.

Ad c): Automobile producers are normally ready to grant a price reduction for individual assembly units because they will be saving on assembly costs. However, this will only be possible when a large number of units is delivered; delivery of small amounts will be organized in the way that the automobile is first assembled and then partially knocked down for shipment; collection of the individual parts from the stock for assembling only a few motor vehicles is more expensive than collecting and assembling these parts on the assembly line.

The mentioned decreases in cost are confronted by some cost increase to be met by an assembly plant. These will be:

- a) higher packing expenses
- b) higher cost of assembly
- c) additional royalties.

Ad a): Packing expenses will be higher since assembly parts require more care in packing and marking than assembled vehicles.

Ad b): As mentioned in section 5.1.3.1., assembly costs break up into

assembly wages and
indirect cost of assembly.

Assembly wages are equal to work hours times wage rate resp. job time times piece wage. With the exception of wages for foreign skilled workers, average wage rates will be lower in developing countries than in highly industrialized countries. On the other hand, time required for assembly will be longer in an independent assembly plant than in the automobile plant, which is due to

- less qualified personnel
- smaller extent of mechanization.

The higher number of work hours required may result in higher expenses on wages.

Indirect cost of assembly consists of cost caused by capital input and cost of auxiliary and operating materials.

The smaller extent of mechanization as resulting from the smaller output figures of an independent assembly plant has its effects on expenses of amortisation and interest to be paid for buildings and mechanical equipment. Amortisation expenses of an independent assembly plant may be smaller on account of the large participation of human labour, but, on the other hand, interest rates will be higher for that part of the capital that may not be substituted by human labour.

Expenses on auxiliary and operating materials also are normally higher with an independent assembly plant than with an automobile producing plant.

All in all, the smaller extent of mechanization, which is a consequence of the smaller number of units put out, will lead to higher costs of assembly.

Ad c): As mentioned in section 5.1.3.1., automobile producers charge royalties from assembly plants purchasing more than 30 to 40 per cent of materials from other suppliers.

Erection of independent assembly plants with relatively small output is only possible when cost advantages exceed the mentioned disadvantages. This is the case in most of the developing countries in so far as domestic automobile prices including import duties are higher than cost prices of the assembly plant including the mentioned increases in expenses. However, it is quite possible that domestic prices will range below cost prices of the assembly plant should the respective government reduce import duties for assembled vehicles. In this situation the assembly plant may very well produce a loss as a consequence of its relatively high costs, which indicates that, considering the economy as a whole, assembly plants with low output figures are not profitable.

The risk of running into a loss may be reduced by one of the following measures to be applied by an assembly plant operating with the MKD₁, MKD₂ or SKD method and intending to raise its output figures:

- a) increase capital input in assembly,
- b) negotiate on lower purchasing prices by increasing volume of material ordered from producer,
- c) reduce freight cost per unit,

- d) resort to favourable local supply sources,
- e) add suitable manufacturing branches to assembly operations.

Ad a): Increasing mechanization will make it possible to utilize more effective assembly methods, such as progressive or line assembly, which may possibly result in a decrease of assembly costs per unit.

Ad b): Lower purchasing prices, i.e. lower unit costs of materials, may be possible if the automobile producer saves costs of knocking down and rationalizes handling of major orders.

Ad c): Freight costs per unit may be reduced on account of the better utilization of transport space.

Ad d): Resorting to favourable local supply sources will reduce cost of material accruing for assembly plants.

Ad e): Taking over additional manufactures requiring relatively high use of machinery may on the whole lead to reduced unit costs, provided saved costs of materials exceed additional productive expenses.

The change in cost pattern at rising output figures and shifting assembly method will produce decreasing cost prices per automobile. Theoretically, application of the line assembly method on the CKD assembly stage will level unit costs of an independent assembly plant to those of the automobile producing plant.

5.3.2.2. Changing Cost Classification with a Passenger Car Assembly Plant of an Annual Capacity of 10,000 Units

Per cent quotas of the mentioned cost categories in total unit costs differ with the individual types of vehicles (passenger car, truck and bus) and the mentioned assembly methods. The

reasons for this are

- differing shares of cost of materials in total cost
- differences in degree of pre-assembly according to number of assembly units
- differences in degree of industrialization of the country in which the assembly plant will be located. The stage of industrialization defines the extent of local supply and productive costs.

However, although these per cent variations are of greatest importance for the individual plant, the before-mentioned trends of cost development appear to be a common experience with all assembly plants. In view of this fact it is possible to demonstrate general trends of cost development by means of a single graphic example. We have selected a passenger car assembly plant because the present study recommends under certain conditions a plant of similar structure.

Basis of reference of the per cent quotas of the individual cost categories in total unit costs of a medium-sized passenger car as presented in Figure 19 are the unit costs conceived of as "normal" in a CKD assembly of 10,000 units per year. The term total unit costs applies to cost prices excluding calculated risk and profit and excluding singular cost of distribution.

In the first stage of SKD assembly, cost of materials accounts for 79 per cent, 2 per cent of which is procured from local suppliers; freight costs including customs duties amount to 3 per cent, packing expenses 2 per cent, administration 6 per cent and assembly 20 per cent. Total unit costs surpass those of CKD assembly by 10 per cent.

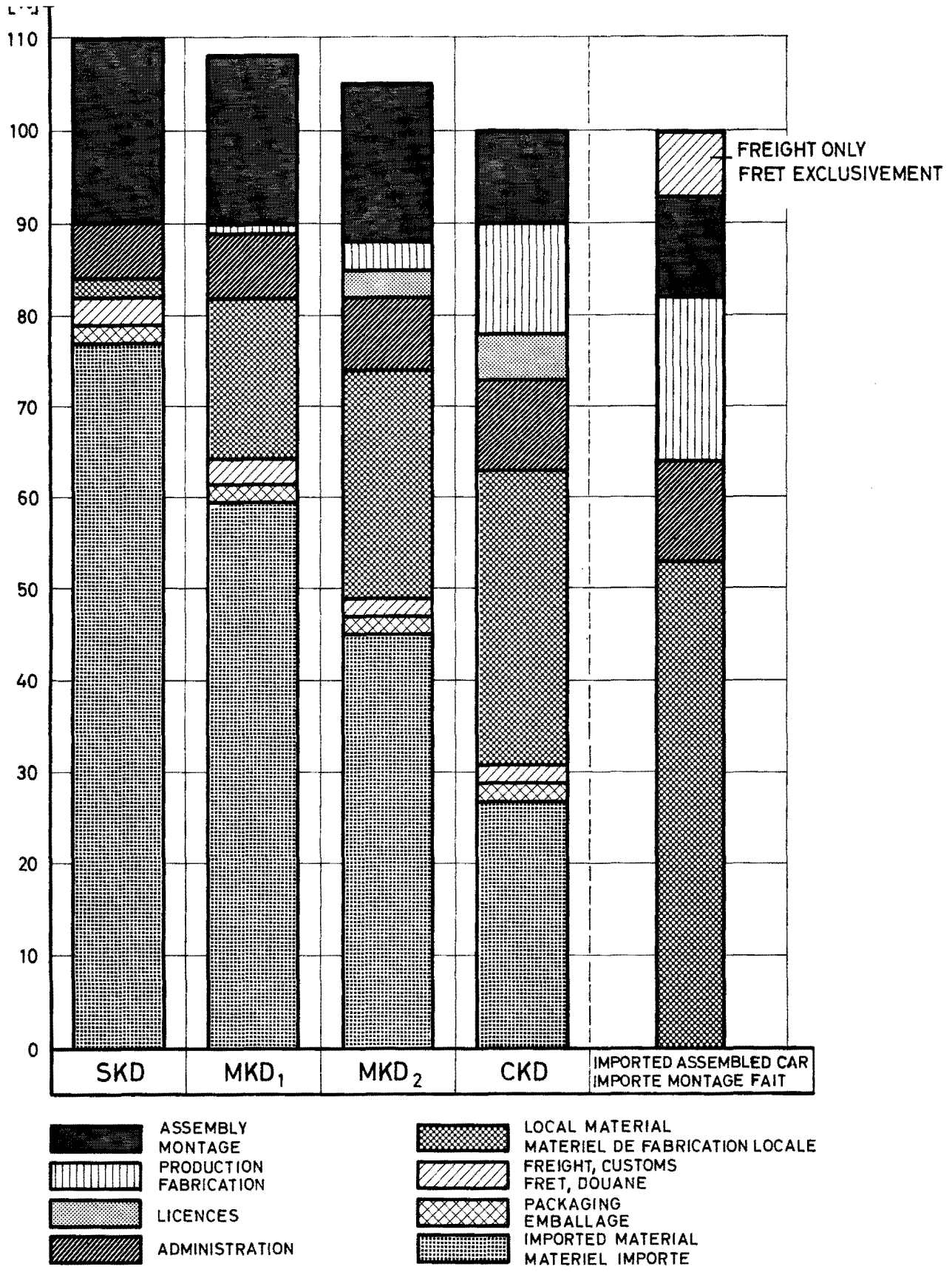


FIGURE /GRAPHIQUE 19: Alteration of the Composition of Unit Cost with the Different Types of Passenger-Car Assembly

Variation de la composition des frais à l'unité pour les diverses formes de montage de voitures

In MKD₁ assembly, imported materials are down to 59 per cent, with the share of materials procured from local suppliers rising to 18 per cent and own products used in assembly accounting for 1 per cent. Freight cost including customs duties and packing expenses makes up for the same percentage as in SKD assembly. Costs of administration are up to 7 per cent, assembly costs down to 18 per cent due to improved assembly methods. Total unit costs decrease by 2 per cent to 108 per cent.

In MKD₂ assembly, the quota of imported materials is so low that the company is paying royalties of 3 per cent. Measured against total unit costs, imported materials account for not more than 45 per cent, whereas locally supplied materials are up to 25 per cent. Accordingly, freight costs including customs duties are reduced to 2 per cent. Packing expenses are unchanged at 2 per cent. Manufacture of parts is raised to 3 per cent to the debit of costs of materials. Technical reorganization leads to a reduction of assembly costs (17 per cent) and an increase in administration costs (8 per cent). On account of the changes effected, total unit costs decrease further to 105 per cent.

CKD assembly brings total unit costs down to 100 per cent. With the exception of royalties, the cost pattern of CKD assembly resembles that of an automobile producer of a highly industrialized country turning out 10,000 vehicles per year¹⁾. Taking over essential parts of manufacture cost of materials decrease to 59 per cent, productive costs grow to 12 per cent. Assembly costs are down to 10 per cent on account of shifting to line assembly whereas administration expenses proceed by a further 2 per cent to 10 per cent.

¹⁾ shown in Figure 19 in column "imports of assembled vehicles"

5.4. Production in Assembly Plant and Local Industries

Provided prerequisites required for industrial manufacture are available in a country the independent assembly plant may increase its profitableness with increasing unit numbers by procuring automobile components from own facilities or local suppliers.

Own production will only be added to the assembly plant in case the prices offered by local suppliers are above the productive costs to be expected in the assembly plant itself.

As a consequence, it appears advisable to review local supply in the following order:

- a) Parts required not only in automobile plants but also in other enterprises:

Examples: screws and nuts
pipes
cables
sheets
profiles
glass plates

- b) Parts required in automobile plants only, but fit for use in several assembly plants:

Examples: bodies
tyres
batteries
ignition plugs
electric generators
steering wheels
springs

c) Parts that may only be applied to one automobile model:

- Examples: engine bodies
- cylinders
- crankshaft
- clutch
- differential
- transmission.

Ad a): The degree of industrialization within the country itself decides upon possibilities of local supply of parts of this group. Manufacture on own facilities is not advisable because, even if the plant assembles a large number of automobiles, requirements of these parts will normally range below the minimum capacity for their production.

Ad b): Parts of the second group may be procured from local suppliers in case other motor vehicle assembly plants exist within the country or in neighbouring states. If production capacities for components of this group are not profitable on account of the variety of the models, it is recommended to create a uniform demand guaranteeing profitable manufacture by means of

- standardization of parts or
- standardization of elements.

Ad c): Production of automobile components of this group is characteristic of manufactures added to the assembly plant when profitable output numbers are reached or exceeded.

Possibilities to standardize parts or elements of this group are limited. However, when a high percentage of local supply was required in a certain country, demand for these components has been raised in a number of cases by installing the same engine in different automobile models.

Manufacture of bodies for trucks and buses listed under c) shows characteristic differences from other local industries in respect of

- the high labour costs,
- profitableness even at low annual output.

I. Trucks

The truck chassis fully assembled by the assembly plant including driver's cab is equipped with a wooden or metal body.

Since machinery for the production of bodies is fit for simultaneous use in the manufacture of furniture, window frames and household equipment, ^{it} is advisable to have the required truck bodies made in separate supply plants; for the same reason, there is no clearly defined minimum capacity for this manufacture. However, regarding that the manufacture of bodies requires experienced personnel of the following skills

- welder
- sheet worker
- harness maker
- tool maker
- carpenter
- painter,

an annual production of

60 to 80 bodies

seems favourable for a good rate of productivity.

In the production of truck bodies the following mechanical equipment is needed:

1. hydraulic bending press (300 to 900 tons)
2. bending machines for pipes and sheet
3. flanging machine
4. shears and saws for pipes, profiles and sheet

5. straightening machine
6. lathe
7. milling machine
8. drilling machine
9. grinding machine
10. welding appliances
11. riveting hammers
12. sewing machines (upholstery)

Minimum costs of these machines will be

approximately \$ 200,000.

II. Bus

There are two types of bus bodies

- a) separate chassis (substructure)
- b) self-supporting steel structure
(substructure with lattice work)

Ad a):

A bus with separate chassis offers the advantage of being more resistant to the strains resulting from the poor condition of the roads.

Equipment needed in the production of this type of bus body is similar to that used for truck bodies. Productivity is ensured even at a low output (approximately 50 units per year). The same reasons as mentioned in the section on truck bodies recommend manufacture of this type of bus-body in an independent supply plant.

Expenditure on wages and materials for one bus body is about 10 times that for one truck mounting.

Ad b):

Buses with self-supporting steel structure are lighter and thus more economical when frequently stopped and started in city traffic.

For this type of bus it is not advisable to divide assembly and manufacture of the body. The bus is, therefore, assembled in an assembly plant, which aside from assembly equipment disposes of the machinery required for the manufacture of the body.¹⁾

¹⁾ For details cf. section 7.2. "Example of Lay-Out of Bus Assembly"

6. Possibilities of Extending and/or Setting up
Motor Vehicle Assembly Plants in the Subregion

6.1. Preliminary Remarks

Annual automobile sales in West Africa between 1963 and 1965 reached the following totals:

30,000 passenger cars,
2,000 buses,
15,000 trucks and vans,
500 tractors,
500 trailers.

Vans (up to a pay load of 1 ton) representing almost exclusively passenger car models (under 1,800 c.c.) made as commercial vehicles or at least being assembled on passenger car chassis, they have to be regarded as passenger cars as regards the manufacturing process. The same chassis are used in many small buses (up to 30 seats) and light trucks (1 - 5 tons pay load); the bodies only decide on the intended use of the vehicles. In terms of assembly techniques both automobile categories may be joined in one group. Assembly of tractors is very much like that of heavy trucks (more than 5 tons pay load) so that these types of vehicles also may be joined in one group. Trailers are either assembled in truck assembly plants or produced individually in small specialised shops. As both assembly methods do not represent any particular difficulties, and present and future trailer requirements of West Africa will therefore be covered without any substantial capital investment, trailers have been excluded from the following considerations.

Making allowance for the mentioned characteristics of production techniques present automobile demand breaks down as follows:

passenger cars and vans (up to 1,800 c.c., less than 1 ton pay load)	: approximately 29,000 units
passenger cars (more than 1,800 c.c.)	: approximately 4,500 units
trucks (1 - 5 tons pay load) and buses (less than 30 seats)	: approximately 8,000 units
trucks (more than 5 tons pay load) and tractors	: approximately 6,000 units
buses (more than 30 seats)	: approximately 200 units.

Demand is either met by imports of assembled vehicles or by automobiles assembled in West Africa. The relation of both quotas may be inferred from 1966 estimates of output figures of the 15 existing assembly plants.

Table 99: Local Vehicle Assembly in West Africa as against Imports of Assembled Vehicles

	Local Assembly		Imports of Assembled Vehicles		Total	
	Units	%	Units	%	Units	%
Passenger cars/Vans (up to 1,800 c.c.)	1,950	7	27,050	93	29,000	100
Passenger cars (more than 1,800 c.c.)	-	-	4,500	100	4,500	100
Trucks (1 to 5 tons) and buses (up to 30 seats)	6,550 ¹⁾	82	1,450	18	8,000	100
Trucks (more than 5 t) and tractors	3,650	61	2,350	39	6,000	100
Buses (more than 30 seats)	100	50	100	50	200	100
Total	12,250	25	35,450	75	47,700	100

Three quarters of total demand are presently still covered by imports of assembled vehicles.

¹⁾ When the planned 1967 output of B.E.W.A.C. amounting to 1,450 units is realized this figure will rise to 8,000 units.

6.2. Passenger Car Assembly

Merely 7 % of the 29,000 passenger cars and delivery vans (less than 1,800 c.c. capacity) presently demanded are being assembled in West Africa. Assembly operations are effected in small series mostly for the domestic markets in Dahomey, Ivory Coast and Nigeria. As already mentioned, customs duty privileges maintained for imports of assembly sets and tax exemptions granted are the main reasons for economical operation. In none of the West African countries there is at present a demand corresponding to the economical minimum capacity of a passenger car assembly plant on C.K.D. basis. Considering in addition that, on account of the great number of required models, one individual producer will find it difficult to raise his market share to over 30 %, erection of an assembly plant of the mentioned type can only be recommended in case the automobile markets of the 14 countries can be integrated. Another prerequisite is that the plant to be erected assembles not more than three different models. The market share of the assembly plant would increase if different brands were built in the same plant, provided again the production programme does not include more than 3 models.

From merely economic points of view, i.e. neglecting political protection and subvention measures (customs duty and tax privileges), setting up of a passenger car assembly plant can be recommended only under the following conditions:

- all 14 countries are integrated into one market
- The plant assembles at least 10,000 unit per year
 - on C.K.D. basis and
 - with a high (roughly 60 %) share of parts procured from domestic suppliers.

- which can be obtained only if

- the producer achieves a market share of around 30 % and

- not more than three different models are being built in the same plant.

In view of the size of its market and the industrial substructure already existing (tyre factory, battery factory, other supply plants), Nigeria is recommended as location; i.e. Lagos.

Total demand for passenger cars and vans (up to 1,800 c.c.) will increase to roughly 55,000 units per year up to 1980. With conditions remaining unchanged, the new situation would ask for either erection of a second assembly plant or extension of the first one. A new plant should be located in Abidjan (Ivory Coast) because of the country's central position in West Africa, its domestic demand which is expected to be rising substantially, and its industrial substructure which will up to then be improved.

Demand for large passenger cars (more than 1,800 c.c.) presently amounting to 4,500 is entirely met by imports of assembled vehicles. Due to the great number of models demanded - no make accounts for more than 10 % of the market of this category - , it would not be rational to set up local production in West Africa; even if the demand for this type of vehicle has grown to almost 10,000 units per year up to 1980.

6.3. Assembly of Trucks and Small Buses

Almost three quarters of the present demand (roughly 14,000 units) for trucks, tractors and small buses (up to 30 seats), are covered by vehicles assembled in West Africa.

In this connection it is remarkable that more than 80 % of the light trucks (1 to 5 t pay load) and small buses (up to 30 seats) are assembled from M.K.D. or S.K.D. sets whereas this quota is only around 60 % for heavy trucks (more than 5 tons pay load) and tractors.

According to our estimates, demand for trucks and tractors will advance to only 15,600 in 1980; not more than 2,700 buses will be required in the Subregion. The present annual capacity of 20,000 units available at the existing truck assembly plants will thus be sufficient to meet total requirements even throughout the next decade, all the more so since most of the plants are capable of operating in two shifts. On the other hand, this will again only be possible if the markets of all countries will be integrated thus ensuring that the automobiles built in the coastal towns are sold not only on the respective domestic market but also in the neighbouring countries.

Operations of the present plants are profitable only because of the mentioned import limitations for completed commercial vehicles and/or the customs duty and tax privileges granted. Regarding effects on the economy as a whole, profitable results will only be achieved if

- markets of the 14 countries will be integrated and
- a number of assembly plants will merge in order to increase productivity,

- integrated plants would assemble more than 2,000 units per year on C.K.D. basis,

which would ask for

- increasing market shares of the integrated plants.

On the other hand, we believe that, under the present circumstances realisation of these conditions is not very realistic because the plants under discussion are enjoying state protection as priority enterprises in most of the countries; in addition, some plants were established with government participation. In any case, foundation of new assembly plants for trucks and small buses is not advisable even if integration of the markets were reached.

6.4. Assembly of Large Buses

Half of the 200 large buses (more than 30 seats) presently demanded in West Africa are assembled in truck assembly plants in Dakar, Abidjan and Lagos. The remaining 50 % are distributed among the other countries and among many makes, to the effect that the respective individual demand is very low and total demand heterogeneous. Only an integrated West African market and a limited number of models might help to increase market shares of the existing assembly plants or justify erection of specialised plants in case of an expanding market.

Demand for large buses in the entire region will rise to 400 units per year in 1980. Although these buses might be assembled without additional capital investments, in the existing truck assembly plants, the low minimum capacity of 50 buses annually might

allow to build large buses in specialised new assembly plants. In respect of the distribution of demand, the new plants should be located in Lagos, Accra and Abidjan, with the latter two being only advisable under the condition that part of the production can be exported to neighbouring countries.

7. Recommendations on the Layout of Assembly Plants

Layout examples for the passenger car and large bus assembly plants recommended in section 6 on the assumption of an integrated market until 1980, are given in the following.

7.1. Assembly of Passenger Cars

I. Supply of Material

A. To be purchased from local suppliers resp. importers.

Taking into account that possibilities of purchasing material from local suppliers are finally dependent upon the situation of the supply industries, the following parts are generally taken into consideration:

- rough castings for cylinders, brake drums and flywheel
- pistons and piston rings
- oil cooler
- cover sheets
- tube and hose pipes
- simple turned and forged parts
- simple punched parts
- clutch disks
- gaskets and rubber parts
- mufflers
- standard parts
- shock absorbers
- tyres
- batteries
- interior equipment, upholstery
- seat frames

- steering wheels
- wheels and wheel hub covers
- bumpers
- decorative bands and chrome parts
- window openers
- glass plates
- simple components of electrical equipment, cables.

B. To be purchased from automobile producer

The extent of this is closely connected with the volume of assembly resp. production.

The following individual parts resp. assembly units may be considered:

- rough castings for engine bodies, cylinder heads, generator barrels
- crankshafts, connecting rods, bearings
- camshafts, valves
- oil pumps and fillers
- thermo-regulator and cooling fan wheel
- gasoline pump, carburetor, air filter
- clutch (excluding disk and lining)
- transmission
- differential
- steering
- steering knuckles, bearing lever, springs
- rear axle (excluding brake drum and shock absorber)
- braking cylinder
- cable pulls
- lever gear

- roof, frames, switchboard
- door locks and handles
- generators, starters, ignition timer, ignition key
- instruments, headlights, windshield wipers.

II. Unit number, Procedure and Extent of Assembly

Plant capacity is

10,000 passenger cars per year,

with three different models being assembled.

The method best suited to this output is line assembly, which will be applied in pre-assembly of body and engine as well as in final assembly.

The volume of manufacture resp. assembly is as follows:

a) mechanical production

processing of rough castings for

- engine bodies
- cylinders
- cylinder heads
- generator bodies
- flywheel
- brake drums

b) pressing

pressing of all body parts excluding those requiring exceptionally wide use of tools (roof, frame, switchboard)

- c) raw construction of bodies
assembly of body parts

- d) varnishing
consisting of partial procedures
cleaning
undercoating
priming
grinding
painting

- e) construction of engine
assembly of engine including clutch

- f) final assembly and fitting
final assembly of body
installation of engine and axles
final assembly

III. Required Sites and Buildings

Operation of the projected plant requires a site of approximately 30,000 sq.m.

Owing to the differences in real estate prices among the individual countries and between the congested municipal areas and country areas, it is not possible to give an estimate of the sum to be spent on the site of the projected plant before its location is definitely known.

Buildings required are

assembly halls
store rooms
office and employees' rooms,

covering an area of about 25,000 m².

Capital expenditure on the buildings is estimated to approximate

\$ 1.5 million.

IV. Mechanical Equipment

A. Workshop

milling machines (slide table or turrethead boring machines)
boring machines
fineboring machine
honing machine; bullard machine
multiway special machines
devices
special-purpose tools

B. Pressing shop

two-stage presses	700 to 800 tons
one-stage presses	500 tons
eccentric presses	100 to 150 tons
fulling machine	
guillotine shears	
special tools (total weight of approximately 1,000 tons)	

C. Assembly and store houses

assembly belts
varnishing set
spot welding machines
assembly appliances
benches
all-purpose tools
store shelves

D. Maintenance of machinery and tools

milling machines
lathes
drilling machines
slotting machines
grinding machines

E. Conveying equipment

cranes
conveying chains and belts
fork lift trucks
electric trucks
trailers
containers and holders for transportation
scrap baling press

F. Supply of air, water and power

compressor station
water system
transformer station
electricity supply main

Costs of mechanical equipment break down as follows:

	approximately million \$
mechanical workshop	0.8
pressing shop	
machinery	2.5
tools	4.0
assembly and store houses	0.7
maintenance of machinery and tools	0.5
conveying equipment	0.8
supply of air, water and power	<u>0.2</u>
total	<u>9.5</u> ===

V. Personnel

The following personnel will be required:

unskilled workers	70
semi-skilled workers	275
skilled workers	175
persons engaged in technical management and administration (including inspection, testing of materials, technical advising)	150
commercial management including auxiliary personnel	<u>140</u>
total	810 =====

Total wages and salaries amount to

approximately \$ 120,000 per month.

VI. Capital required

Capital required for acquisition of the site cannot be anticipated for the reasons mentioned before. Therefore, capital investment can be estimated only, it is broken down into:

buildings	\$ 1.5 million
mechanical equipment	<u>\$ 9.5 million</u>
total	\$ 11.0 million =====

In calculating the amount of the working capital, we have assumed that the required materials will be tied in the plant for two months in the average and that the operating capital is available for payment of the current liabilities over two months (wages, energy etc.)

Capital required to finance the material cost of 10,000 passenger cars times 2/12:	appr. \$ 1.7 million
--	----------------------

Capital required to finance payment of current liabilities of two months	<u>appr. \$ 0.3 million</u>
--	-----------------------------

total working capital	appr. \$ 2.0 million =====
-----------------------	-------------------------------

Total capital requirements of the projected passenger car assembly plant will thus run up to

\$ 13 million.
=====

7.2. Bus Assembly

Assembly of buses equipped with self-supporting steel structure might be taken into consideration for the future demand of West Africa because

- the minimum output required is low at 50 buses per year.
- the number of assembly work hours is high at 1200 to 1300 hours per bus.

If, for example, the level of wage rates paid in the assembly plant of the developing country is only 50 % of that of the automobile manufacturer and the number of work hours required is 25 % higher, due to lower productivity, wage costs of the assembly plant in the developing country are only 62.5 per cent of the wage costs of the automobile manufacturer.

Since the strength of a bus equipped with steel skeleton depends on the quality of the junctions within the structure, welding personnel of the assembly plant must be highly qualified.

I. Supply of Material

A. To be purchased from local suppliers resp. importers

Dependent on the position of the supply industries in that country where bus assembly is to be erected, the following materials may be purchased from local suppliers or importers:

- a) sheets
made of steel and aluminium, e.g. black sheet,
deep-drawing sheet,

- b) profiles
such as drawn or welded square steel profiles,
special profile sections made of steel or light metal,
- c) plastics
for floor covering, wall and top lining, upholstery,
- d) glass plates
of plane or bended safety glass and plexiglass,
- e) fixing materials
such as screws, nuts, disks, spring washers and
rivets made of light metal,
- f) electrical components
such as cables, insulating tubes, switches, head
lights, inside lights, electric bulbs,
- g) wood
- h) miscellaneous
such as insulating materials, fittings, locks,
handles, decorating and covering bands, glues

B. To be purchased from automobile producer

The purchase is closely connected with the anticipated volume of assembly.

As the projected plant will primarily be designed to manufacture bodies, the frames should preferably be build from assembled units such as

- chassis
- axles
- steering
- transmission
- engine

to be purchased from the automobile producer.

II. Number, procedures and extent of assembly

The method best suited to an annual production of 50 buses is individual assembly.

The volume of assembly resp. manufacture is as follows:

a) Manufacture of skeleton

forming of individual skeleton parts and subsequent assembly to skeleton assembly units:

- floor
- roof
- sidewalls
- front wall
- rear wall

b) sheet forming
manufacture of drawn sheet components and their assembly
to skeleton assembly parts listed under a).

c) assembly
assembly of skeleton and sheet assembly parts

d) varnishing
consisting of partial procedures

cleaning
undercoating
priming
grinding
painting

e) final assembly and fitting;
installation of

interior lining
glazing
decorating and covering bands
locks and fittings
electric equipment, lights
seats.

III. Required Sites and Buildings

A site of approximately 10,000 sq.m. is needed for the assembly
of 50 buses.

Assembly of 150 buses would require approximately 15,000 sq.m.

Owing to the differences in real estate prices among the individual countries and between congested city areas and country areas, it is not possible to anticipate the sum to be spent on the site of the projected plant before its location is definitely known.

Housing will be required for

assembly hall	2,500 sq.m.
office and employees' rooms	500 sq.m.
store houses	500 sq.m.
	<hr/>
	3,500 sq.m.

Capital expenditure on buildings will approximate

\$ 205,000.

Installation of a dustfree varnishing box equipped with a suction unit is taken into account.

IV. Mechanical equipment

The following machinery will be required:

- profile bending machine
- tube bending machine
- stretching press
- eccentric press
- hacksaw machine
- metal-cutting band saw
- circular metal saw
- guillotine shears for fine sheet
- edging machine
- beading machine

spot welding machine, stationary
spot welding machine, suspended
table drilling machine
lever punching machine
floor stand grinders
3-roller plate bending machine
curved shears
sledge hammer
planing machine
miscellaneous machines for wood working
miscellaneous upholstering equipment

The following high-quality tools will be required:

- special tools for profile bending machine
- moulds for stretching press
- welding and assembling units
- adjusting and controlling equipment.

Supplementary machinery:

high-frequency transformer
compressor
work benches
straightening plates
store shelves
containers
fork lift truck.

Capital expenditure on total equipment will amount to

roughly \$ 250,000.

V. Personnel

The payroll of the projected plant should be composed as follows:

unskilled workers	15
semi-skilled workers	20
skilled workers	12
technical management	8
general management incl. office employees	10
total	<u>65</u>

Wages and salaries will total

roughly \$ 13,000 per month.

VI. Capital Required

Capital required for acquisition of the site cannot be anticipated for the reasons mentioned before. Aside herefrom, capital investments will be needed for

buildings	\$ 205,000
mechanical equipment	\$ 250,000
total	<u>\$ 455,000</u>

In calculating the amount of working capital, we have assumed that the required materials will be tied in the plant for three months in the average and liquid funds must be available in sufficient amount to ensure payment of the current liabilities of two months (wages, energy etc.)

8. Result

Assuming realization of all of the mentioned prerequisites, and considering that results of the project in question should benefit an integrated West African market as a whole, our recommendation at the present moment is to set up

one passenger car assembly plant operating on CKD basis with a high share of material procured from domestic suppliers. Domestic supply industries must be available. Investigation of such production possibilities have not been discussed in the present report but should be examined in a separate study. The appendix of this report will give certain information concerning the question which industries should be set up or promoted if a local automobile industry is to be set up.

Until 1980

a second passenger car assembly plant and
three plants for assembly of large buses,

can be established assuming realization of the mentioned prerequisites.

In view of the capacities already existing, new truck assembly plants in an integrated market should not be set up.

The recommended assembly plants will be profitable not only as far as the individual enterprise is concerned but also regarding the effects on the countries' economic systems. In this respect they differ from plants operating in the stationary or progressive assembly method on SKD or MKD basis. For their locally assembled vehicles they need neither customs or tax preferences nor non-tariff measures having the same or similar effect in order to compete with imports of assembled cars.

Appendix I: Industries that May on Principle be Considered
as Suppliers of a Passenger Car Assembly Plant
Operating on CKD Basis

Dealing with the technical and economic foundations of assembly plants in section 5, we have concluded that efficiency of the technical layout of an assembly plant is in part determined by the existence of local supply industries. Although a detailed study of the supply industries was not included in the present report, it appears useful to outline the principal local industries capable of supplying automobile parts, thus supplementing the considerations of the sections 5 and 7. It is to be emphasized that as it is the case with assembly plants creation of joint ventures is important also for supply industries in order to use development and production experience most efficiently.

Due to the great number of individual parts required for an automobile and the differences in assembly methods as established by the different materials and specifications of the components, and due to the differences in economic conditions affecting the supply plants, the possibilities of procuring automobile parts from local suppliers can only be examined in an individual study, all the more so since the extent of this supply is also defined by the economic structure of each country.

The following may thus be considered as an outline only. The individual plants are listed according to the degree of probability of their being realized. Underlying assumptions are that

- realization is most likely for those plants requiring only some know-how, low output numbers and a relatively small capital investment;
- local markets will provide a sufficient number of buyers of the products of those plants which are not exclusively engaged in supplying the automobile industry.

Under these assumptions, the following plants may be considered as possible supply plants for a passenger car assembly plant operating on CKD basis:

Branches	Examples for Possible Manufacturing Programme
Upholstering	seats, interior lining
Steel construction (manufacture of steel furniture)	seat frames
Manufacture of textiles and foils	stuffing materials, interior lining materials
Rubber factories	moulded rubber parts
Plastics pressing plants	moulded plastics parts
Cable plants	cables
Electro-Plating plants	chromium-plated, hard chromium-plated and nickel-plated parts
Screw factories	screws, standard parts
Mechanical shops (such as turneries milling shops drilling shops)	machining of engine components transmission components brake components clutch components special tubes special screws
Foundries gray cast iron malleable iron light-metal casting	rough castings (e.g. for cylinders pistons brake drums)

Branches

Examples for Possible
Manufacturing Programme

Accumulator factories

batteries

Spring factories

plate springs, spiral springs

Tyre factories

tyres

Automobile wheel factories

rims

Forgeries

drop forgings

Sheet pressing plants,
Sheet drawing plants

gasoline tanks, mufflers,
structure parts

Glass factories

laminated glass plates

Brake lining factories

brake linings, clutch linings

Electric installation
factories

starters, ignition distributors,
ignition plugs

Lamp factories

electric bulbs

Measuring device factories

speedometers, gasoline meters

Appendix II

Tables for Section 3:

Diagnosis and Prognosis of the Automobile Market.

Table 1:

Registration of Vehicles in Dahomey in the Years 1961
to 1965 and Forecast for 1975 and 1980

Immatriculation des véhicules au Dahomey de 1961 à 1965
et évaluations pour les années 1975 et 1980

(round figures/valeurs arrondis)

Year/ Année	1961	1962	1963	1964	1965	1975	1980
Cars/ Voitures particulières	460	510	790	620	730	1.050	1.200
Buses/ Autobus	5	5	10	40	5	30	40
Trucks, Vans/ Camions, Camionnettes	370	390	410	330	450	520	560
Tractors/ Tracteurs routiers ¹⁾	5	5	5	5	5	10	10
Trailers/ Remorques	5	10	5	10	25	20	20
Total	845	920	1.220	1.005	1.215	1.630	1.830

1) Estimated on the assumption that about 1/3 of the vehicles indicated in the original statistics under "tracteurs" are tractor-trailer-units (also considered in Table 2).

Les chiffres ont été évaluée en supposant qu'à peu près 1/3 de tous les véhicules indiqués par la statistique originale dans la rubrique "tracteurs", sont des tracteurs routiers (On en a également tenu compte dans le tableau 2).

Table 2:

Automobile Park in Dahomey in the Years 1960 to 1965
and Forecast for 1975 and 1980

Véhicules en circulation au Dahomey de 1960 à 1965 et
évaluations pour 1975 et 1980

(round figures/valeurs arrondis)¹⁾

Year/ Année	1960	1961	1962	1963	1964	1965	1975	1980
Cars/ Voitures particulières	2.200	2.600	3.050	3.700	4.250	4.860	7.500	9.000
Buses/ Autobus	25	30	30	35	70	75	170	200
Trucks, Vans/ Camions, Camionnettes	1.150	1.450	1.750	2.100	2.350	2.720	4.500	5.500
Tractors/ Tracteurs routiers	25	25	30	35	35	40	100	140
Trailers/ Remorques	30	30	40	40	45	60	120	160
Total	3.430	4.135	4.900	5.910	6.750	7.755	12.390	15.000

- 1) Expert discussions in the Bureau du Plan and the Service des Mines came to the result that the official motor vehicle park statistics up to 1965 indicate figures too high by about 1/3. This fact having been considered the present values are to be regarded as corrected.

Il résulte des discussions menées au Bureau du Plan et au Service des Mines que les chiffres indiqués dans la statistique officielle du parc automobile jusqu'à 1965 sont trop élevés d'un 1/3 environ parce que tous les véhicules retirés de la circulation n'ont pas été enregistrés. Dans ce tableau on a tenu compte de ce fait et les chiffres représentent donc les valeurs corrigées.

Table 3:

Automobile Park in Dahomey on April 30, 1963 Classified by Make

Répartition des différentes marques de véhicules en circulation
au Dahomey le 30 avril, 1963

(round figures/valeurs arrondis)

Type/ Genre	Cars/ Voitures particulieres		Buses/ Autobus		Trucks, Vans/ Camions, Camionnettes		Tractors/ Tracteurs		Trailers/ Remorques		Total	
	Units/ Nombre	%	Units/ Nombre	%	Units/ Nombre	%	Units/ Nombre	%	Units/ Nombre	%	Units/ Nombre	%
American/ Américaine	100	2	-	-	220	6	15	12			335	4
Chevrolet	30		-		70		-				100	
Dodge	10		-		45		-				55	
G.M.C.	-		-		25		-				25	
International	-		-		15		10				25	
Willys Overl.	35		-		45		-				80	
Others/ Autres	25		-		20		5				50	
British/ Britannique	5	.	10	29	120	3	15	12			150	2
Ferguson	-		-		-		10				10	
Rover	-		10		105		-				115	
Others/ Autres	5		-		15		5				25	
French/ Française	4.230	93	15	42	2.985	87	75	60			7.305	89
Berliet	-		-		135		10				145	
Citroen	1.435		5		1.550		10				3.000	
Continental	-		-		-		10				10	
Ford	25		-		55		-				80	
Hotchkiss	20		-		5		-				25	
Panhard	25		-		-		-				25	
Peugeot	885		-		230		-				1.115	
Renault	1.330		10		945		15				2.300	
Saurer	-		-		5		-				5	
Sift	-		-		-		10				10	
Simca	510		-		45		-				555	
Unic	-		-		10		-				10	
Others/ Autres	-		-		5		20				25	
German/ Allemande	195	4	10	29	90	3	10	8			305	4
Ford	35		5		10		-				50	
Henschel	-		-		20		-				20	
MAN	-		-		10		5				15	
Mercedes-B.	25		-		15		-				40	
Opel	70		-		10		-				80	
VW	50		5		15		-				70	
Others/ Autres	15		-		10		5				30	
Others/ Autres	20	.	-	-	25	1	10	8			55	1
Total	4.550	100	35	100	3.440	100	125	100	85	100	8.240	100

Details are not available/
Détails ne sont pas disponibles

Table 4:

Car Park in Dahomey Classified by cc-Capacity

Voitures en circulation au Dahomey, classés
suivant les volumes de la cylindrée

(round figures/valeurs arrondis)

Year/ Année		1963 (30.4.)		1964 (31.3.)		1965	
		Units/ Nombre	%	Units/ Nombre	%	Units/ Nombre	%
under/ moins de	1100 ccm	1.790	39	2.120	40	2.760	40
1100 to/ à	1800 ccm	1.390	31	1.720	32	2.480	36
over/ plus de	1800 ccm	1.370	30	1.470	28	1.650	24
Total		4.550	100	5.310	100	6.890	100

Table 5:

Bus Park in Dahomey Classified by Number of Seats
 Autobus en circulation au Dahomey, classés suivant
 le nombre de places

(round figures/valeurs arrondis)

Year/ Année	1963 (30.4.)		1964 (31.3.)		1965	
	Units/ Nombre	%	Units/ Nombre	%	Units/ Nombre	%
Seat Capacity/ Nombre de places						
under/ moins de 10 seats/ places	5	14	5	10	10	15
10 - 19 seats/ places	20	58	30	60	35	54
20 - 29 seats/ places	5	14	5	10	5	8
30 - 40 seats/ places	-	-	5	10	10	15
over/ plus de 40 seats/ places	5	14	5	10	5	8
Total	35	100	50	100	65	100

Table 6:

Truck/Van Park in Dahomey Classified by Pay Load
and Special Bodies

Camions/camionnettes en circulation au Dahomey,
classés suivant la charge utile et les
carrosseries spéciales

(round figures/valeurs arrondis)

Year/ Année	1963 (30.4.)		1964 (31.3.)		1965	
	units/ nombre	%	units/ nombre	%	units/ nombre	%
pay load/ charge utile						
under/ moins de 1 t	1.320	39	1.510	39	1.940	42
1 to/ à 2,9 t	940	28	1.050	27	1.230	27
3 to/ à 4,9 t	290	8	310	8	375	8
5 to/ à 9 t	720	21	790	21	915	20
over/ plus de 9 t	100	3	140	4	120	2
special vehicles (Tanker, Refrigerator Car)/Vehicules spéciaux (camion citerne, fourgon frigorifique)	30	1	30	1	60	1
Total	3.400	100	3.830	100	4.640	100

Table 7:

Tractor Park in Dahomey Classified by HP-Capacity

Tracteur routiers en circulation au Dahomey, classés
suivant la puissance en cv

(round figures/valeurs arrondis)

Year/ Année	1963 (30.4.)		1964 (31.3.)		1965	
	units/ nombre	%	units/ nombre	%	units/ nombre	%
HP-capacity/ CV-capacité 1)						
under/ moins de 125 HP/CV	5	10	5	8	10	13
125 to/à 169 HP/CV	10	20	15	23	15	19
170 to/à 205 HP/CV	10	20	15	23	20	25
over/ plus de 205 HP/CV	25	50	30	46	35	43
Total	50	100	65	100	80	100

1) DIN-PS (German Industry Standards/
Norme de l'industrie allemande)

Table 8:

Trailer Park in Dahomey Classified by Pay Load

Remorques en circulation au Dahomey, classés
suivant la charge utile

(round figures/valeurs arrondis)

Year/ Année	1963 (30.4.)		1964 (31.3.)		1965	
	units/ nombre	%	units/ nombre	%	units/ nombre	%
under/ moins de 5 t	30	35	30	33	40	31
5 to/ à 8,9 t	20	24	20	23	30	23
9 to/ à 13 t	25	29	30	33	35	27
over/ plus de 13 t	10	12	10	11	25	19
Total	85	100	90	100	130	100

Table 9: Automobile Park in Dahomey Classified by Type of Engine
 Véhicules en circulation au Dahomey, classés suivant le
 type du moteur

(round figures/valeurs arrondis)

Year/ Année	1963 (30.4.)		1964 (31.3.)		1965	
	Gasoline/ Essence	Diesel/ Gas-Oil	Gasoline/ Essence	Diesel/ Gas-Oil	Gasoline/ Essence	Diesel/ Gas-Oil
Cars/ Voitures particulières	4.540	10	5.300	10	6.880	10
Buses/ Autobus	35	5	55	5	90	5
Trucks, Vans/ Camions, Camionnettes	3.015	415	3.320	480	4.010	640
Tractors/ Tracteurs routiers	10	40	10	50	10	65
Total	7.600	470	8.685	545	10.990	720

Table 10:

Registration of Vehicles in Gambia in the Years 1954 to 1964
and Forecast for 1975 and 1980

Immatriculation des véhicules en Gambie de 1954 à 1964 et
évaluations pour 1975 et 1980

(round figures/valeurs arrondis)¹⁾

Year Année	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1975	1980
Type Genre													
Cars/Voitures particulières	35	80	90	90	60	60	90	85	125	155	135	220	270
Buses/ ²⁾ Autobus	(1)	(2)	(3)	(6)	(2)	(8)	(2)	(3)	(7)	20	(4)	20	20
Trucks, Vans/ Camions, Camionnettes	35	115	80	115	90	90	50	100	165	95	65	130	140
Total	70	195	175	210	150	160	140	190	300	270	205	370	430

- 1) Reliable statistics on the annual registrations are available only for the years 1963 and 1964. As they are equal to the import volume the import data going back to 1954 have been taken as basis for the appraisal of Gambia's motor vehicle market.

Le nombre réel d'immatriculations annuelles n'est connu que pour les années 1963 et 1964. Etant donné que ces chiffres se recouvrent avec ceux des importations, on est parti pour la Gambie des importations à partir de 1954.

- 2) Values under 10 have been rounded for adding up.

Les valeurs au dessous de 10 ont été arrondies pour faire le total.

Table 11:

**Automobile Park in Gambia in the Years 1962 to 1965
and Forecast for 1975 and 1980¹⁾**

**Véhicules en circulation en Gambie de 1962 à 1965 et
évaluations pour 1975 et 1980¹⁾**

(round figures/valeurs arrondis)

Year/ Année	1962	1963	1964	1965	1975	1980
Cars/ Voitures particulières	750	900	1.000	1.070	1.400	1.700
Buses/ Autobus	50	60	60	70	80	85
Trucks, Vans/ Camions, Camionnettes	560	590	610	660	700	750
Total	1.360	1.550	1.670	1.800	2.180	2.535

- 1) Estimations on the basis of expert discussions with the Economic Adviser in the Prime Minister's Office and importers of motor vehicles.

Evaluations en raison d'enquêtes auprès du Conseiller économique de l'Office du Premier Ministre et d'importateurs de véhicules.

Table 12:**Registration of Vehicles in Ghana in the Years
1955 to 1965 and Forecast for 1975 and 1980****Immatriculation des véhicules au Ghana de 1955
à 1965 et évaluations pour 1975 et 1980****(round figures/valeurs arrondis)**

Year/ Année	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1975	1980
Cars/ Voitures particulières	3.110	3.740	4.060	3.680	4.720	5.830	5.505	4.695	5.125	2.970	2.510	5.300	6.000
Buses/ Autobus	105	170	350	570	900	1.235	960	495	785	515	600	900	1.000
Trucks, Vans, Tractors/ Camions, Cami- onnettes, Trac- teurs routiers	4.000	4.710	4.185	2.810	3.380	4.010	2.885	1.405	3.150	2.755	1.840	2.700	3.000
Trailers/ Remorques	335	350	310	295	310	355	325	70	50	75	80	150	200
Total	7.550	8.970	8.905	7.355	9.310	11.430	9.675	6.665	9.110	6.315	5.030	9.050	10.200

Table 13:

Automobile Park in Ghana in the Years 1960 to 1965
and Forecast for 1975 and 1980

Véhicules en circulation au Ghana de 1960 à 1965 et
évaluations pour 1975 et 1980

(round figures/valeurs arrondis)

Year/ Année	1960	1961	1962	1963	1964	1965 ¹⁾	1975	1980
Cars/Voitures particulières	20.670	23.440	25.180	27.430	26.320	25.000	30.000	35.000
Buses/ Autobus	2.780	3.240	3.130	3.330	2.840	2.500	4.500	5.000
Trucks, Vans, Tractors/Camions, Camionnettes, Remorques	16.740	17.440	16.420	16.580	15.430	14.000	17.000	18.000
Trailers/ Remorques	1.450	1.570	910	320	280	250	1.000	1.100
Total	41.640	45.690	45.640	47.660	44.870	41.750	52.500	59.100

1) Estimated on the basis of registrations

Évalué à partir des immatriculations

Répartition des différentes marques de véhicules en circulation
au Ghana le 31 décembre 1963

(round figures/valeurs arrondis)

Type/ Genre	Cars/Voitures particulières		Buses/ Autobus		Trucks, Vans, Tractors/Ca- mions, Camion- nettes, Trac- teurs routiers		Trailers/ Remorques		Total	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
American/ Américaine	4.165	15	145	4	735	4	-	-	5.045	11
Chevrolet	800		-		165		-		965	
Dodge	25		5		15		-		45	
Fargo	5		-		130		-		135	
Ford	2.680		140		315		-		3.135	
International	5		-		50		-		55	
Pontiac	215		-		-		-		215	
Rambler	55		-		-		-		55	
Studebaker	70		-		5		-		75	
Willys	145		-		25		-		170	
Others/Autres	165		-		30		-		195	
British/ Britannique	6.640	25	1.480	46	13.675	83	350	.	22.145	47
A.E.C.	-		5		155		-		160	
Albion	-		115		755		-		870	
Austin	840		445		1.460		-		2.745	
Bedford	-		160		7.125		-		7.285	
Commer	5		40		610		-		655	
Fordson	5		15		350		-		370	
Hillman	465		-		-		-		465	
Humber	115		-		-		-		115	
Jaguar	55		-		-		-		55	
Land Rover	130		-		1.335		-		1.465	
Leyland	-		145		80		-		225	
M.G.	105		-		-		-		105	
Morris	2.185		550		1.645		-		4.380	
Rover	205		-		-		-		205	
Seddon	-		-		65		-		65	
Singer	60		-		-		-		60	
Standard	345		-		35		-		380	
Trailer	-		-		-		345		345	
Triumph	65		-		-		-		65	
Vauxhall	1.795		-		-		-		1.795	
Wolseley	200		-		-		-		200	
Others/Autres	65		5		60		5		135	
French/ Française	3.305	12	10	0,5	160	1	-	-	3.475	7
Peugeot	2.590		10		155		-		2.755	
Simca	675		-		-		-		675	
Others/Autres	40		-		5		-		45	
German/ Allemande	10.935	41	1.575	49	1.530	9	-	-	14.040	30
Borgward	310		15		10		-		335	
DKW	110		-		-		-		110	
Ford-Taunus	290		140		25		-		455	
Henschel	-		10		45		-		55	
MAN	-		-		110		-		110	
Mercedes-Benz	1.595		940		550		-		3.085	
NSU	85		-		-		-		85	
Opel	4.865		5		205		-		5.075	
Tempo Matador	-		40		25		-		65	
Volkswagen	3.660		425		550		-		4.635	
Others/Autres	20		-		10		-		30	
Italian/ Italienne	1.220	4	-	-	55	0,5	-	-	1.275	3
Fiat	1.205		-		55		-		1.260	
Others/Autres	15		-		-		-		15	
Japanese/ Japonaise	215	1	5	.	75	0,5	-	-	295	0,5
Datsun	200		-		65		-		265	
Others/Autres	15		5		10		-		30	
Others/ Autres	425	2	10	0,5	295	2	-	-	730	1,5
Total	26.905	100	3.225	100	16.525	100	350	100	47.005	100

Table 15:

Car Registrations in Ghana Classified by cc-Capacity

Immatriculation des voitures au Ghana, classés suivant les volumes de la cylindrée

(round figures/valeurs arrondis)

Year/ Année		1961		1962		1963		1964	
		units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
under/ moins de	1100 ccm	500	9	400	9	280	6	270	9
1100 to/ à	1800 ccm	4.070	74	3.860	82	4.370	85	2.370	80
over/ plus de	1800 ccm	940	17	430	9	470	9	330	11
Total		5.510	100	4.690	100	5.120	100	2.970	100

Table 16:

Bus Registrations in Ghana Classified by Number of Seats

Immatriculation des autobus au Ghana, classés suivant le nombre de places

(round figures/valeurs arrondis)

Year/ Année	1961		1962		1963		1964	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
under/ moins de 10 seats/ places	90	10	55	12	40	5	20	4
10 - 19 seats/ places	470	51	300	64	475	63	290	61
20 - 29 seats/ places	240	26	90	19	235	31	145	31
30 - 39 seats/ places	15	2	20	4	10	1	5	1
over/ plus de 40 seats/ places	100	11	5	1	-	-	15	3
Total	915	100	470	100	760	100	475	100

Table 17:

Truck (Including Tractors)/ Van Registrations in Ghana
Classified by Pay Load and Special Bodies

Immatriculation des camions (tracteur routiers y compris)/
camionnettes au Ghana, classés suivant la charge utile et
les carrosseries spéciales

(round figures/valeurs arrondis)

Year/ Année	1961		1962		1963		1964	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
under/ moins de 1 t	555	22	460	39	800	30	855	34
1 to/ à 2,9 t	900	36	360	31	1.090	41	630	25
3 to/ à 4,9 t	210	8	55	5	95	4	275	11
5 to/ à 8 t	575	23	185	16	405	15	555	22
over/ plus de 8 t	175	7	80	7	160	6	140	5
special vehicles (Tanker)/ Véhicules spéciaux (camion citerne)	95	4	20	2	90	4	80	3
Total	2.510	100	1.160	100	2.640	100	2.535	100

Table 18:

Trailer Registrations in Ghana Classified by Pay Load

Immatriculation des remorques au Ghana, classés suivant la charge utile

(round figures/valeurs arrondis)

Year/ Année	1961		1962		1963		1964	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
under/ moins de 1 t	145	46	30	50	25	50	30	50
1 to/ à 2,9 t	145	46	20	34	15	30	10	17
3 to/ à 5 t	20	6	5	8	-	-	15	25
over/ plus de 5 t	5	2	5	8	10	20	5	8
Total	315	100	60	100	50	100	60	100

Table 19:

Registration of Vehicles in Ghana Classified by Type of Engine

Immatriculation des véhicules au Ghana, classés suivant le type du moteur

(round figures/valeurs arrondis)

Year/ Année Type/ Genre	1961		1962		1963		1964	
	Gasoline/ Essence	Diesel/ Gas-Oil	Gasoline/ Essence	Diesel/ Gas-Oil	Gasoline/ Essence	Diesel/ Gas-Oil	Gasoline/ Essence	Diesel Gas-Oil
Cars/Voitures particulières	5.430	70	4.620	75	5.090	35	2.940	25
Buses/ Autobus	575	390	385	110	560	225	340	175
Trucks, Vans, Tractors/ Camions, Camionnettes, Tracteurs routiers	1.490	1.390	910	495	1.700	1.450	1.410	1.340
Total	7.495	1.850	5.915	680	7.350	1.710	4.690	1.540

Table 20:**Registration of Vehicles in Guinea in the Years
1960 to 1965 and Forecast for 1975 and 1980****Immatriculation des véhicules en Guinée de 1960
à 1965 et évaluations pour 1975 et 1980****(round figures/valeurs arrondis)**

Year/ Année	1960	1961	1962	1963	1964	1965	1975	1980
Cars/Voitures particulières	770	1.080	750	1.000	1.020	450	900	1.000
Buses/ Autobus	40	90	15	35	10	20	30	30
Trucks, Vans/ Camions, Camionnettes	600	2.020	1.040	600	1.000	740	1.080	1.200
Tractors/ Tracteurs routiers	15	30	15	5	10	5	20	25
Total	1.425	3.220	1.820	1.640	2.040	1.215	2.030	2.255

Table 21:

Automobile Park in Guinea in the Years 1960 to 1965
and Forecast for 1975 and 1980

Véhicules en circulation en Guinée de 1960 à 1965 et
évaluations pour 1975 et 1980

(round figures/valeurs arrondis)¹⁾

Year/ Année	1960	1961	1962	1963	1964	1965	1975	1980
Cars/Voitures particulières	3.400	3.800	3.950	4.300	4.600	4.250	6.000	7.000
Buses/ Autobus	150	210	190	190	160	150	200	220
Trucks, Vans/ Camions, Camionnettes	5.700	6.500	6.500	5.800	5.600	5.250	6.000	7.000
Tractors/ Tracteurs routiers	100	110	110	90	90	80	120	150
Total	9.350	10.620	10.750	10.380	10.450	9.730	12.320	14.370

- 1) The official statistics consider only insufficiently the discarded vehicles; therefore, the figures are too high. They have been corrected on the assumption that the average life of trucks is about 4 to 5 years, that of cars 5 to 6 years.

Les statistiques officielles ne tiennent compte qu'insuffisamment des véhicules retirés de la circulation, c'est pourquoi les nombres indiqués sont trop élevés. Ils ont été corrigés en supposant que l'âge moyen des camions était de 4 à 5 ans et celle des voitures de 5 à 6 ans.

Table 22:

Registration of Vehicles in Guinea in 1963 Classified by Make

Répartition des différentes marques des véhicules mises en circulation en Guinée en 1963

(round figures/valeurs arrondis)

Type/ Genre Make/ Marque	Cars/Voitures particulières		Buses/ Autobus		Trucks, Vans/ Camions, Camionnettes		Tractors/ Tracteurs routiers		Total	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
American/ Américaine	140	14	25	71	120	20			285	17
Willys Overland	50		-		45				95	
Chevrolet	20		3		10				33	
Ford	40		22		15				77	
Dodge	-		-		15				15	
International	-		-		10				10	
Mack	-		-		10				10	
Others/Autres	30		-		15				45	
British/ Britannique	15	1,5	-	-	25	4			40	3
Land Rover	10		-		25				35	
Others/Autres	5		-		-				5	
French/ Française	620	62	2	6	75	13			697	42
Peugeot	250		-		10				260	
Renault	180		2		40				222	
Citroen	135		-		20				155	
Simca	50		-		-				50	
Others/Autres	5		-		5				10	
German/ Allemande	120	12	3	9	10	2			133	8
Mercedes-Benz	35		1		-				36	
Volkswagen	40		2		-				42	
Opel	30		-		-				30	
Others/Autres	15		-		10				25	
Italian/ Italienne	15	1,5	-	-	-	-			15	1
Fiat	15		-		-				15	
Others/Autres	-		-		-				-	
Soviet/ Soviétique	80	8	5	14	350	58			435	27
Volga	25		-		-				25	
Moskovitch	20		-		-				20	
Gaz	25		1		150				176	
Maz	-		-		55				55	
Zil	-		-		130				130	
Others/Autres	10		4		15				29	
Others/ Autres	10	1	-	-	20	3			30	2
Total	1.000	100	35	100	600	100	5	100	1.635	100

Details are not available/
 Détails ne sont pas disponibles

Table 23: Automobile Park in Guinea Classified by Type of Engine
Véhicules en circulation en Guinée, classés suivant le
type du moteur

(round figures/valeurs arrondis)

Year/ Année	1960		1961		1962		1963	
	Gasoline/ Essence	Diesel/ Gas-Oil	Gasoline/ Essence	Diesel/ Gas-Oil	Gasoline/ Essence	Diesel/ Gas-Oil	Gasoline/ Essence	Diesel/ Gas-Oil
Cars/Voitures particulières	5.450	-	6.550	-	6.880	-	7.870	-
Buses/Autobus	135	55	200	55	220	55	250	60
Trucks, Vans/ Camions, Camionnettes	7.570	500	10.540	500	10.675	500	11.250	500
Tractors/ Tracteurs routiers ¹⁾	20	80	20	90	20	90	20	70
Total	13.175	635	17.310	645	17.795	645	19.390	630

1) Estimated on the assumption that the ratio gasoline - Diesel vehicles corresponds to about 1 : 4 in West Africa.

Évalué en supposant, que le rapport entre véhicules à essence et véhicules-Diesel est de 1 : 4 en l'Afrique Occidentale.

Table 24:

Registration of Vehicles in the Ivory Coast in the
Years 1955 to 1965 and Forecast for 1975 and 1980

Immatriculation des véhicules en Côte d'Ivoire de 1955
à 1965 et évaluations pour 1975 et 1980

(round figures/valeurs arrondis)

Year/ Année	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1975	1980
Cars/Voitures particulières	1.600	1.750	2.250	2.300	2.900	3.100	4.100	3.950	4.300	4.500	3.950	7.700	9.200
Buses/ Autobus	40	45	50	30	30	35	70	40	40	60	120	120	140
Trucks, Vans/ Camions, Camionnettes	1.850	2.200	1.850	1.700	2.300	2.050	2.450	1.600	1.850	2.700	1.650	2.150	2.200
Tractors/ Tracteurs 1) routiers	40	50	70	105	145	170	290	160	295	330	290	450	550
Trailers/ Remorques	20	35	60	130	140	210	310	210	320	350	350	550	650
Total	3.550	4.080	4.280	4.265	5.515	5.565	7.220	5.960	6.805	7.940	6.360	10.970	12.740

- 1) Estimated on the assumption that about 4/5 of all vehicles indicated in the original statistics under "tracteurs" are tractor - trailer-units (also considered in Table 25).

Les chiffres ont été évalués en supposant qu'à peu près 4/5 de tous les véhicules indiqués par la statistique originale dans la rubrique "tracteurs", sont des tracteurs routiers (on en a également tenu compte dans le table 25).

Table 25:

Automobile Park in the Ivory Coast in the Years 1960
to 1965 and Forecast for 1975 and 1980

Véhicules en circulation en Côte d'Ivoire de 1960 à
1965 et évaluations pour 1975 et 1980

(round figures/valeurs arrondis)¹⁾

Year/ Année	1960	1961	1962	1963	1964	1965	1975	1980
Cars/Voitures particulières	9.200	11.460	13.120	14.800	16.340	17.020	35.000	45.000
Buses/ Autobus	150	190	190	190	210	290	450	550
Trucks, Vans/ Camions, Camionnettes	8.160	8.980	8.790	8.880	9.800	9.490	13.000	15.000
Tractors/ Tracteurs	470	670	700	850	1.015	1.100	2.200	2.500
Trailers/ Remorques	390	620	700	880	1.055	1.350	2.500	3.000
Total	18.370	21.920	23.500	25.600	28.420	29.250	53.150	66.050

- 1) According to detailed fieldwork the average life of motor vehicles in the Ivory Coast is about 5 years only. Since the official statistics have considered only the officially discarded vehicles the park figures are too high. This fact having been considered the values in this table can be regarded as corrected.

La statistique officielle ne considère que le nombre de véhicules officiellement retirés de la circulation. Pour cette raison le nombre de véhicules en circulation indiqué par la statistique officielle est trop élevé. Les enquêtes effectuées sur place ont montré que l'âge moyen des véhicules en Côte d'Ivoire n'est que d'environ 5 ans. Les chiffres donnés par ce tableau ont été corrigés en tenant compte de ce fait.

Table 26:

Automobile Park in the Ivory Coast on December 31,
1963 Classified by Make

Répartition des différentes marques de véhicules en
circulation en Côte d'Ivoire le 31 décembre 1963

(round figures/valeurs arrondis)

Type/ Genre Make/ Marque	Cars/Voitures particulières		Buses/ Autobus		Trucks, Vans/ Camions, Camionnettes		Tractors/ Tracteurs routiers		Trailers/ Remorques		Total	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
American/ Américaine	620	3	15	4	2.495	15	140	9	20	1	3.290	8
Chevrolet	245		-		665		5		-		915	
Dodge	30		5		530		5		-		570	
G.M.C.	5		-		580		10		-		595	
International	-		5		590		55		-		650	
Mack	-		-		-		30		-		30	
Willys Overl.	95		-		25		-		-		120	
Others/Autres	245		5		105		35		20		410	
British/ Britannique	465	2	55	16	125	1	5	.	-	-	650	2
Austin	5		-		10		-		-		15	
Bedford	-		5		65		-		-		70	
Rover	410		45		45		-		-		500	
Others/Autres	50		5		5		5		-		65	
French/ Française	20.950	88	195	55	13.140	82	850	53	1.140	89	36.275	84
Berliet	-		5		440		225		-		670	
Citroen	3.875		5		3.385		20		-		7.285	
Doll	-		-		-		-		285		285	
Ford	60		-		170		5		-		235	
Fruehauf	-		-		-		-		210		210	
Peugeot	5.675		5		1.525		-		-		7.205	
Renault	6.710		105		7.060		180		-		14.055	
Saviem	-		70		165		210		-		445	
Scort	-		-		-		-		110		110	
Simca	4.415		-		265		-		-		4.680	
Trailer	-		-		-		-		95		95	
Titan	-		-		-		-		185		185	
Unic	-		-		60		55		-		115	
Others/Autres	215		5		70		155		255		700	
German/ Allemande	1.330	6	90	25	280	2	590	37	45	4	2.335	5
Ford	275		35		30		-		-		340	
Henschel	-		-		20		80		-		100	
Krupp	-		-		-		45		-		45	
MAN	-		-		50		30		-		80	
Mercedes-Benz	155		-		120		370		-		645	
Opel	590		-		-		-		-		590	
Volkswagen	210		55		45		-		-		310	
Others/Autres	100		-		15		65		45		225	
Italian/ Italienne	395	1	-	-	10	.	5	.	-	-	410	1
Fiat	360		-		10		5		-		375	
Others/Autres	35		-		-		-		-		35	
Others/ Autres	10	.	-	-	-	-	5	.	75	6	90	.
Total	23.770	100	355	100	16.050	100	1.595	100	1.280	100	43.050	100

Table 27:

Car Park in the Ivory Coast Classified by cc-Capacity

Voitures en circulation en Côte d'Ivoire, classés suivant
les volumes de la cylindrée

(round figures/valeurs arrondis)

Year/ Année	1960		1962		1963		1964	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
under/ moins de 1100 ccm	4.100	36	6.805	36	9.100	38	10.735	38
1100 to/ à 1800 ccm	5.190	45	9.475	50	11.685	49	14.220	50
over/ plus de 1800 ccm	2.165	19	2.675	14	2.985	13	3.120	12
Total	11.455	100	18.955	100	23.770	100	28.075	100

Table 28: Bus Park in the Ivory Coast Classified by Number of Seats
 Autobus en circulation en Côte d'Ivoire, classés suivant
 le nombre de places

(round figures/valeurs arrondis)

Year/ Année	1960		1962		1963		1964	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
under/ moins de 10 seats/ places	40	22	65	21	75	21	80	19
10 - 19 seats/ places	90	50	140	45	155	44	175	42
20 - 29 seats/ places	20	11	60	19	70	20	100	24
30 - 40 seats/ places	10	6	10	3	10	3	10	3
over/ plus de 40 seats/ places	20	11	35	12	45	12	50	12
Total	180	100	310	100	355	100	415	100

Table 29:

Truck/Van Park in the Ivory Coast Classified by Pay
Load and Special Bodies

Camions/camionnettes en circulation en Côte d'Ivoire,
classés suivant la charge utile et les carrosseries
spéciales

(round figures/valeurs arrondis)

Year/ Année	1960		1962		1963		1964	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
under/ moins de 1 t	4.455	44	6.320	45	7.170	45	8.200	44
1 to/à 2,9 t	2.575	25	3.175	26	4.385	27	5.465	29
3 to/à 4,9 t	2.160	21	2.595	18	2.680	17	2.915	15
5 to/à 8 t	745	7	1.150	8	1.365	8	1.735	9
over/ plus de 8 t	165	2	225	2	275	2	360	2
special vehicles/ (Tanker, Refrige- rator Car)/Vehi- cules spéciaux (camion citerne, fourgon frigorifique)	110	1	140	1	175	1	190	1
Total	10.210	100	13.605	100	16.050	100	18.865	100

Table 30:

Tractor Park in the Ivory Coast Classified by HP-Capacity

Tracteur routiers en circulation en Côte d'Ivoire classés
suivant la puissance en cv

(round figures/valeurs arrondis)

Year/ Année	1960		1962		1963		1964	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
under/ moins de 125 HP/CV	75	16	100	11	115	10	115	8
125 to/à 169 HP/CV	60	13	135	15	150	12	150	10
170 to/à 205 HP/CV	230	48	385	43	490	41	610	40
over/ plus de 205 HP/CV	110	23	285	31	450	37	645	42
Total	475	100	905	100	1.205	100	1.520	100

Table 31:

Trailer Park in the Ivory Coast Classified by Pay Load

Remorques en circulation en Côte d'Ivoire, classés suivant leur charge utile

(round figures/valeurs arrondis)

Year/ Année	1960		1962		1963		1964	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
under/ moins de 5 t	35	7	50	5	50	4	70	4
5 to/à 7,9 t	45	10	45	5	50	4	65	4
8 to/à 12 t	120	25	215	22	230	18	250	15
over/ plus de 12 t	275	58	655	68	955	74	1.255	77
Total	475	100	965	100	1.285	100	1.640	100

Table 32:

Automobile Park in the Ivory Coast Classified by
Type of Engine

Véhicules en circulation en Côte d'Ivoire, classés
suivant le type du moteur

(round figures/valeurs arrondis)

Year/ Année Type/ Genre	1960		1962		1963		1964	
	Gasoline/ Essence	Diesel/ Gas-Oil	Gasoline/ Essence	Diesel/ Gas-Oil	Gasoline/ Essence	Diesel/ Gas-Oil	Gasoline/ Essence	Diesel/ Gas-Oil
Cars/Voitures particulières	11.455	-	18.945	10	23.760	10	28.065	10
Buses/ Autobus	165	20	245	65	275	85	305	105
Trucks, Vans/ Camions, Camionnettes	9.800	410	13.325	830	14.970	1.075	17.495	1.370
Tractors/ Tracteurs routiers	90	385	125	780	135	1.070	155	1.365
Total	21.510	815	32.640	1.685	39.140	2.240	46.020	2.850

Table 33:

Registration of Vehicles in Liberia in the Years
1955 to 1965 and Forecast for 1975 and 1980¹⁾)

Immatriculation des véhicules en Libéria de 1955
à 1965 et évaluations pour 1975 et 1980¹⁾)

(round figures/valeurs arrondis)

Year/ Année	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1975	1980
Cars/Voitures particulières	290	340	510	510	550	1.700	2.100	1.560	2.010	1.700	1.400	2.000	2.000
Buses/Autobus	- contained under trucks/ compris dans les camions					-	30	65	220	500	220	250	260
Trucks, Vans, Tractors/Camions, Camionnettes, Tracteurs routiers	350	270	420	230	510	1.000	1.330	1.170	770	670	1.210	1.400	1.500
Total	640	610	930	740	1.060	2.700	3.460	2.795	3.000	2.870	2.830	3.650	3.760

- 1) The table has been set up according to import statistics assuming registrations and imports to be about equal.

Pour ce tableau on a pris des statistiques d'importation en supposant que les immatriculations et les importations étaient à peu près égale.

Table 34: Automobile Park in Liberia in the Years 1961 to 1963 and 1965 and Forecast for 1975 and 1980¹⁾

Véhicules en circulation en Libéria de 1961, 1963 et 1965 et évaluation pour 1975 et 1980¹⁾

(round figures/valeurs arrondis)

Year/ Année	1961	1962	1963	1965	1975	1980
Cars/ Voitures particulières	4.200	4.700	5.750	5.900	7.600	9.000
Buses/Autobus	350	400	600	700	1.400	1.700
Trucks, Vans, Tractors/ Camions, Camionnettes, Tracteurs routiers	3.450	3.700	3.250	3.400	6.000	7.500
Total	8.000	8.800	9.600	10.000	15.000	18.200

- 1) Based on figures of the Economic Survey for 1961 of the US Embassy in Monrovia values for 1962 to 1965 were estimated according to information obtained in discussions with importers and government advisers.

En partant des évaluations contenues dans le rapport économique de l'Ambassade des Etats Unis à Monrovia de 1961 qui paraît conforme à la réalité, on a évalué les chiffres pour 1962 à 1965 avec l'aide d'importateurs de véhicules et de conseillers des Gouvernements.

Table 35:

Automobile Park in Liberia on December 31, 1963
Classified by Make

Répartition des différentes marques de véhicules
en circulation en Libéria le 31 décembre 1963

(round figures/valeurs arrondis)

Type/ Genre Make/ Marque	Cars/Voitures particulières		Buses/ Autobus		Trucks, Vans, Trac- tors/Camions, Cami- onnettes, Tracteurs		Total	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
American/ Américaine	1.150	20	100	17	2.010	62	3.260	34
Buick	95		-		-		95	
Chevrolet	190		100		95		385	
Desoto	95		-		-		95	
Dodge	-		-		95		95	
Fargo	-		-		290		290	
Ford	390		-		1.150		1.540	
Willys	190		-		290		480	
Others/ Autres	190		-		90		280	
British/ Britannique	670	12	-	-	480	15	1.150	12
Austin	-		-		190		190	
Commer	-		-		100		100	
Ford	480		-		-		480	
Land Rover	-		-		190		190	
Vauxhall	95		-		-		95	
Others/ Autres	95		-		-		95	
French/ Française	380	6	200	33	190	6	770	8
Peugeot	95		-		95		190	
Renault	95		200		95		390	
Simca	190		-		-		190	
German/ Allemande	2.880	51	200	33	190	6	3.270	34
DKW	290		-		-		290	
Ford	190		-		-		190	
Mercedes-Benz	90		-		190		280	
Opel	1.540		-		-		1.540	
Volkswagen	770		200		-		970	
Italian/ Italienne	290	5	100	17	285	8	675	7
Fiat	290		100		95		485	
Lancia	-		-		190		190	
Swedish/ Suédoise	380	6	-	-	95	3	475	5
Volvo	380		-		95		475	
Total	5.750	100	600	100	3.250	100	9.600	100

Table 36:

Registration of Vehicles in Mali in the Years 1962
to 1965 and Forecast for 1975 and 1980¹⁾

Immatriculation des véhicules au Mali de 1962 à 1965
et évaluations pour 1975 et 1980¹⁾

(round figures/valeurs arrondis)

Type/ Genre	Year/ Année	1962	1963	1964	1965	1975	1980
Cars/ Voitures particulières		630	640	930	610	700	750
Buses/ Autobus		5	10	5	10	15	15
Trucks, Vans/ Camions, Camionnettes		375	370	585	390	440	450
Tractors/ Tracteurs routiers		10	10	10	10	15	15
Trailers/ Remorques		10	10	10	20	20	20
Total		1.030	1.040	1.540	1.040	1.190	1.250

1) Because of ambiguous statistics the values have been estimated on the basis of expert discussions in the Ministry of Traffic.

En raison des statistiques contradictoires, on a évalué ces nombres après s'être renseigné auprès des experts du Ministère des Transports.

Table 37:

Automobile Park in Mali in the Years 1963 to 1965
and Forecast for 1975 and 1980¹⁾)

Véhicules en circulation au Mali de 1963 à 1965 et
évaluations pour 1975 et 1980¹⁾)

(round figures/valeurs arrondis)

Type/ Genre	Year/ Année	1963	1964	1965	1975	1980
Cars/ Voitures particulières		3.060	3.350	3.300	3.600	4.000
Buses/ Autobus		60	55	55	75	90
Trucks, Vans/ Camions, Camionnettes		1.800	1.880	1.950	2.100	2.300
Tractors/ Tracteurs routiers		60	60	60	70	80
Trailers/ Remorques		70	70	70	90	110
Total		5.050	5.415	5.435	5.935	6.580

¹⁾ Official statistics available only for October 30, 1965. The figures are too high and were adjusted accordingly on the basis of the average life of trucks (4 to 5 years) and passenger cars (5 to 6 years).

On ne dispose de la statistique officielle que pour le 30.10.1965. Puisque les chiffres qui y sont indiqués représentent des valeurs d'immatriculation continue ils sont beaucoup trop élevés. Pour cette raison on les a corrigés en supposant une durée de vie moyenne de 4 à 5 ans pour les camions et de 5 à 6 ans pour les voitures particulières.

Table 38:

Automobile Park in Mali on October 31, 1965 Classified by Make

Répartition des différentes marques de véhicules en circulation
au Mali le 31 octobre 1965

(round figures/valeurs arrondis)

Type/ Genre	Cars/Voitures particulières		Buses/ Autobus		Trucks,Vans/ Camions, Camionnettes		Tractors/ Tracteurs routiers		Trailers/ Remorques		Total	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
American/ Américaine	110	2	-	-	190	5	5	4			305	4
Chevrolet	25		-		30		-				55	
Dodge	5		-		45		-				50	
Fargo	-		-		10		-				10	
Ford	45		-		35		-				80	
G.M.C.	-		-		10		-				10	
International	-		-		40		5				45	
Pontiac	10		-		-		-				10	
Others/Autres	25		-		20		-				45	
British/ Britannique	10	.	-	-	10	.	-	-			20	.
Austin	-		-		10		-				10	
Others/Autres	10		-		-		-				10	
French/ Française	3.980	88	30	33	2.580	72	75	63			6.665	81
Berliet	-		-		115		25				140	
Citroen	1.730		10		1.495		10				3.245	
Ford	-		-		5		-				5	
Hotchkiss	-		-		10		-				10	
Peugeot	1.355		5		525		-				1.885	
Renault	560		10		385		30				985	
Simca	295		-		20		-				315	
Willème	-		-		10		-				10	
Others/Autres	40		5		15		10				70	
German/ Allemande	290	7	10	11	285	8	25	20			610	7
Hanomag	-		-		20		-				20	
Krupp	-		5		230		25				260	
Magirus	-		-		5		-				5	
Mercedes-Benz	50		-		10		-				60	
Opel	150		-		-		-				150	
Ford-Taunus	15		-		5		-				20	
Volkswagen	70		5		5		-				80	
Others/Autres	5		-		10		-				15	
Italian/ Italienne	25	.	-	-	-	-	-	-			25	.
Soviet/ Soviétique	70	2	10	11	355	10	-	-			435	5
Gaz	-		10		85		-				95	
Kraz	-		-		45		-				45	
Maz	-		-		80		-				80	
Moskovitch	35		-		-		-				35	
Volga	30		-		-		-				30	
Waze	5		-		45		-				50	
Zil	-		-		90		-				90	
Others/Autres	-		-		10		-				10	
Others/ Autres	35	1	40	45	170	5	15	13			260	3
Total	4.520	100	90	100	3.590	100	120	100	20	100	8.320	100

Details are not available
Détails ne sont pas disponibles

Table 39:

Car Park in Mali Classified by cc-Capacity

Voitures en circulation au Mali, classés
suivant les volumes de la cylindrée

(round figures/valeurs arrondis)

Year/ Année	30. 4. 1961		30. 10. 1965	
	units/ nombre	%	units/ nombre	%
cc-Capacity/ Volume de la cylindrée				
under/ moins de 1100 ccm	915	39	1.880	42
1100 to/à 1800 ccm	840	36	1.950	43
over/ plus de 1800 ccm	570	25	690	15
Total	2.325	100	4.520	100

Table 40:

Bus Park in Mali Classified by Number of Seats
Autobus en circulation au Mali, classés suivant
le nombre de places

(round figures/valeurs arrondis)

Year/ Année	31. 10. 1965	
	units/ nombre	%
Seat Capacity/ Nombre de places		
under/ moins de 20 seats/ places	20	22
21 to/à 30 seats/ places	35	39
31 to/à 40 seats/ places	20	22
over/ plus de 40 seats/ places	15	17
Total	90	100

Table 41:

Truck/Van Park in Mali Classified by Pay Load

Camions/camionnettes en circulation au Mali,
classés suivant la charge utile

(round figures/valeurs arrondis)

Year/ Année	31. 10. 1965	
	units/ nombre	%
pay load/ charge utile		
under/ moins de 1 t	460	13
1 to/à 2,9 t	1.210	33
3 to/à 4,9 t	860	24
5 to/à 10 t	765	22
over/ plus de 10 t	300	8
Total	3.595	100

Table 42:

Registration of Vehicles in Mauritania in the Years
1962 to 1965 and Forecast for 1975 and 1980

Immatriculation des véhicules en Mauritanie de 1962
à 1965 et évaluations pour 1975 et 1980

(round figures/valeurs arrondis)

Year/ Année	1962	1963	1964	1965	1975	1980
Cars/Voitures particulières	195	155	220	250	400	475
Buses/ Autobus	5	5	15	5	10	10
Trucks, Vans/ Camions, Camionnettes	215	370	235	255	350	400
Tractors/ Tracteurs routiers	10	35	10	10	15	15
Trailers/ Remorques	30	20	10	5	15	15
Total	455	585	490	525	790	915

Table 43:

Automobile Park in Mauritania in the Years 1960, 1963
and 1965 and Forecast for 1965 and 1980¹⁾)

Véhicules en circulation en Mauritanie de 1960 à 1965
et évaluations pour 1975 et 1980¹⁾)

(round figures/valeurs arrondis)

Year/ Année	1960	1963	1964	1965	1975	1980
Cars/Voitures particulières	405	900	1.120	1.170	2.000	2.500
Buses/Autobus	10	25	40	40	60	70
Trucks, Vans/ Camions, Camionnettes	1.585	2.000	2.235	2.150	2.500	2.700
Tractors/ Tracteurs routiers	70	90	90	85	90	100
Trailers/ Remorques	55	70	75	75	90	100
Total	2.125	3.085	3.560	3.520	4.740	5.470

- 1) Expert discussions in the Bureau Statistique came to the result that the park indicated in the official statistics is too high because of insufficient consideration of the discarded vehicles. For obtaining real values the official data have been corrected according to the average life of motor vehicles (5 to 6 years).

Il résulte des discussions menées au Bureau des Statistiques que le nombre de véhicules indiqué dans la statistique officielle est trop élevé et cela parce que l'on n'a pas suffisamment tenu compte du nombre de véhicules retirés de la circulation. Pour obtenir un tableau conforme à la réalité, on a corrigé les informations officielles en prenant un âge moyen de 5 à 6 ans pour les véhicules.

Table 44:

Automobile Park in Mauritania on June 30, 1963
Classified by Make

Répartition des différentes marques de véhicules
en circulation en Mauritanie le 30 juin 1963

(round figures/valeurs arrondis)

Type/ Genre	Cars/Voitures particulières		Buses/ Autobus		Trucks, Vans/ Camions, Camionnettes		Tractors/ Tracteurs routiers		Trailers/ Remorques		Total	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
American/ Américaine	60	6	-	-	555	23	35	32	5	7	655	17
Chevrolet	5		-		40		5		-		50	
Dodge	5		-		235		-		-		240	
Fargo	-		-		85		-		-		85	
Ford	5		-		20		-		-		25	
G.M.C.	-		-		30		5		-		35	
International	-		-		35		5		-		40	
Willys Overl.	30		-		100		-		-		130	
Others/Autres	15		-		10		20		5		50	
British/ Britannique	110	10	-	-	485	20	10	9	5	7	610	16
Rover	100		-		470		-		-		570	
Others/Autres	10		-		15		10		5		40	
French/ Française	925	83	20	80	1.335	54	55	50	45	60	2.380	63
Berliet	-		10		150		15		-		175	
Citroen	570		5		850		10		-		1.435	
Ford + Simca	70		-		25		-		-		95	
Hotchkiss	5		-		60		-		-		65	
Peugeot	160		-		60		-		-		220	
Renault	110		5		145		20		-		280	
Others/Autres	10		-		45		10		45		110	
German/ Allemande	15	1	5	20	70	3	10	9	20	26	120	3
Mercedes-Benz	-		-		20		5		-		25	
Unimog	-		-		20		-		-		20	
Others/Autres	15		5		30		5		20		75	
Others/ Autres	-	-	-	-	10	.	-	-	-	-	10	.
Total	1.110	100	25	100	2.455	100	110	100	75	100	3.775	100

Table 45:

Car Park in Mauritania Classified by cc-Capacity

Voitures en circulation en Mauritanie, classés
suivant les volumes de la cylindrée

(round figures/valeurs arrondis)

Year/ Année	1 9 6 3		1 9 6 4		1 9 6 5	
	units/ nombre	%	units/ nombre	%	units/ nombre	%
cc-Capacity/ Volume de la cylindrée						
under/ moins de 1100 ccm	600	54	760	55	910	55
1100 to/à 1800 ccm	210	19	310	22	370	23
over/ plus de 1800 ccm	300	27	320	23	360	22
Total	1.110	100	1.390	100	1.640	100

Table 46:

Truck/Van Park in Mauritania Classified by Pay Load

Camions/camionnettes en circulation en Mauritanie,
classés suivant la charge utile

(round figures/valeurs arrondis)

Year/ Année	1 9 6 3		1 9 6 4		1 9 6 5	
	units/ nombre	%	units/ nombre	%	units/ nombre	%
under/ moins de 1 t	935	40	1.105	43	1.220	44
1 to/à 2,9 t	410	18	455	18	480	17
3 to/à 4,9 t	245	11	245	9	265	9
5 to/à 9 t	630	27	660	25	680	25
over/ plus de 9 t	100	4	120	5	125	5
Total	2.320	100	2.585	100	2.770	100

Table 47:

Tractor Park in Mauritania Classified by HP-Capacity

Tracteurs routiers en circulation en Mauritanie, classés
suivant la puissance en cv

(round figures/valeurs arrondis)

Year/ Année	1 9 6 3		1 9 6 4		1 9 6 5	
	units/ nombre	%	units/ nombre	%	units/ nombre	%
under/ moins de 125 HP/CV	30	27	30	25	35	29
125 to/à 169 HP/CV	25	23	25	21	25	21
170 to/à 205 HP/CV	20	18	30	25	25	21
over/ plus de 205 HP/CV	35	32	35	29	35	29
Total	110	100	120	100	120	100

Table 48:

Trailer Park in Mauritania Classified by Pay Load

Remorques en circulation en Mauritanie, classés
suivant la charge utile

(round figures/valeurs arrondis)

Year/ Année	1 9 6 3		1 9 6 4		1 9 6 5	
	units/ nombre	%	units/ nombre	%	units/ nombre	%
under/ moins de 5 t	5	8	5	6	5	6
5 to/à 7 t	10	15	10	13	10	13
7 to/à 9 t	5	8	5	6	5	6
over/ plus de 9 t	45	69	60	75	60	75
Total	65	100	80	100	80	100

Table 49: Automobile Park in Mauritania Classified by Type of Engine
 Véhicules en circulation en Mauritanie, classés suivant le
 type du moteur

(round figures/valeurs arrondis)

Year/ Année	1 9 6 3		1 9 6 4		1 9 6 5	
	Gasoline/ Essence	Diesel/ Gas-Oil	Gasoline/ Essence	Diesel/ Gas-Oil	Gasoline/ Essence	Diesel/ Gas-Oil
Cars/Voitures particulières	1.115	-	1.390	-	1.670	-
Buses/ Autobus	15	10	15	20	20	20
Trucks, Vans/ Camions, Camionnettes	2.180	225	2.420	265	2.580	285
Tractors/ Tracteurs routiers	45	65	45	70	45	70
Total	3.355	300	3.870	355	4.315	375

Table 50:**Registration of Vehicles in Niger in the Years 1955 to
1965 and Forecast for 1975 and 1980****Immatriculation des véhicules au Niger de 1955 à 1965
et évaluations pour 1975 et 1980**

(round figures/valeurs arrondis)

Year/ Année	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1975	1980
Cars/Voitures particulières	145	120	210	240	260	195	220	250	335	305	300	500	580
Buses/ Autobus	5	10	7	10	5	5	10	5	2	5	7	10	10
Trucks, Vans/ Camions, Camionnettes	275	330	355	330	350	300	315	350	400	365	500	550	600
Tractors/ Tracteurs routiers	5	8	10	5	7	5	10	8	15	15	30	35	40
Trailers/ Remorques	20	25	15	10	15	7	7	7	20	20	30	35	40
Total	450	493	597	595	637	512	562	620	772	710	867	1.130	1.270

Table 51:

Automobile Park in Niger in the Years 1960 to 1965
and Forecast for 1975 and 1980¹⁾

Véhicules en circulation au Niger de 1960 à 1965 et
évaluations pour 1975 et 1980¹⁾

(round figures/valeurs arrondis)

Year/ Année	1960	1961	1962	1963	1964	1965	1975	1980
Cars/Voitures particulières	965	1.025	1.100	1.250	1.350	1.425	2.500	3.000
Buses/Autobus	40	45	40	35	35	35	50	60
Trucks, Vans/ Camions, Camionnettes	1.805	1.865	1.955	2.075	2.145	2.350	3.400	4.000
Tractors/ Tracteurs routiers	60	65	65	70	80	105	200	250
Trailers/ Remorques	75	75	75	85	95	110	200	250
Total	2.945	3.075	3.235	3.515	3.705	4.025	6.350	7.560

- 1) Numbers indicating the motor vehicle park in the official statistics are valid only for 1960 when all vehicles in running order were newly registered. The values for later years have been corrected according to the average life of motor vehicles in Niger (6 years).

Etant donnée la manière dont fut fait le dénombrement des véhicules en circulation on ne peut se fier aux chiffres indiqués par la statistique officielle pour les parcs automobiles pour l'année 1960. Les chiffres ultérieurs ne tiennent pas compte de tous les véhicules retirés de la circulation par enregistrement à continuation. Ils ont été corrigés en considérant pour le Niger un âge moyen des véhicules de 6 ans.

Table 52:

Automobile Park in Niger on December 31, 1965
Classified by Make

Répartition des différentes marques de véhicules
en circulation au Niger le 31 décembre 1965

(round figures/valeurs arrondis)

Type/ Genre	Cars/Voitures particulières		Buses/ Autobus		Trucks, Vans/ Camions, Camionnettes		Tractors/ Tracteurs routiers		Trailers/ Remorques		Total	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
American/ Américaine	125	5	-	-	645	15	7	5	5	3	782	11
Chevrolet	40		-		15		-		-		55	
Dodge	-		-		255		-		-		255	
Ford	50		-		50		-		-		100	
G.M.C.	-		-		80		-		-		80	
International	5		-		15		7		5		32	
Willys Overl.	10		-		195		-		-		205	
Others/Autres	20		-		35		-		-		55	
British/ Britannique	-	-	-	-	770	18	-	-	-	-	770	11
Land Rover	-		-		770		-		-		770	
French/ Française	2.145	83	60	75	2.765	64	135	84	160	84	5.265	72
Berliet	-		3		290		60		-		353	
Citroen	805		10		1.335		10		-		2.160	
Hotchkiss	10		-		45		-		-		55	
Peugeot	765		2		615		-		-		1.382	
Renault	425		20		435		25		-		905	
Chausson	-		25		-		-		-		25	
Simca	135		-		10		-		-		145	
Fruehauf	-		-		-		-		65		65	
Titan	-		-		-		-		70		70	
Others/Autres	5		-		45		40		25		115	
German/ Allemande	190	7	20	25	85	2	18	11	-	-	313	4
Opel	90		-		-		-		-		90	
Mercedes-Benz	65		-		15		3		-		83	
Henschel	-		-		10		10		-		20	
Magirus	-		-		25		-		-		25	
Volkswagen	35		20		10		-		-		65	
Others/Autres	-		-		25		5		-		30	
Italian/ Italienne	65	3	-	-	-	-	-	-	-	-	65	.
Fiat	65		-		-		-		-		65	
Others/ Autres	45	2	-	-	40	1	-	-	25	13	110	2
Total	2.570	100	80	100	4.305	100	160	100	190	100	7.305	100

Table 53:

Automobile Park in Niger Classified by Type of Engine

Voitures en circulation au Niger, classés suivant le type du moteur

(round figures/valeurs arrondis)

Year/ Année Type/ Genre	1961		1962		1963		1964		1965	
	Gasoline/ Essence	Diesel/ Gas-Oil	Gasoline/ Essence	Diesel/ Gas-Oil	Gasoline/ Essence	Diesel/ Gas-Oil	Gasoline/ Essence	Diesel/ Gas-Oil	Gasoline/ Essence	Diesel/ Gas-Oil
Cars/Voitures particulières	1.310	-	1.640	-	1.930	-	2.250	-	2.580	-
Buses/ Autobus 1)	20	40	25	40	20	50	20	55	20	60
Trucks, Vans/ Camions, Camionnettes	2.080	230	2.650	290	3.000	370	3.320	480	3.780	530
Tractors/ Tracteurs 1) routiers	10	95	10	85	15	100	15	115	20	135
Total	3.420	365	4.325	415	4.965	520	5.605	650	6.400	725

1) Ratio estimated on the basis of the structure of the vehicle park and experience in other West African countries.

Rapport calculé en tenant compte des différentes marques de véhicules et des expériences faites dans les autres pays d'Afrique Occidentale.

Table 54:

Registration of Vehicles in Nigeria in the Years 1955 to 1965 and Forecast for 1975 and 1980¹⁾Immatriculation des véhicules en Nigeria de 1955 à 1965 et évaluations pour 1975 et 1980¹⁾

(round figures/valeurs arrondis)

Type/ Genre	Year/ Année	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1975	1980
Cars/ Voitures particulières		5.000	5.700	5.350	6.950	8.600	10.950	11.300	10.400	11.000	15.900	16.900	27.000	33.000
Buses/ Autobus		300	350	300	400	400	550	550	550	550	600	600	980	1.150
Trucks, Vans/ Camions, Camionnettes		5.950	7.350	5.750	7.300	6.950	8.000	6.500	5.900	5.500	6.350	6.100	6.200	6.200
Total		11.250	13.400	11.400	14.650	15.950	19.500	18.350	16.850	17.050	22.850	23.600	34.180	40.350

1) The official statistics available classify only

- private cars including taxis (passenger cars of private persons, government, enterprises, etc. as well as vans of private persons)
- commercial vehicles (vans of enterprises, buses, trucks, special vehicles).

The present values for passenger cars, buses and trucks are estimated according to the official statistics of different types of vehicles for 1953, 1959, 1961, 1962, 1963.

Les statistiques officielles qui existent distinguent seulement:

- "Private Cars including Taxis" (voitures particulières, du gouvernement, des entreprises, etc., ainsi que des camionnettes des particuliers).
- "Commercial Vehicles" (Camionnettes des entreprises, autobus, camions de toutes sortes, véhicules spéciaux).

Les valeurs indiquées dans cette table pour voitures particulières, autobus et camions ont été évaluées à l'aide de la statistique officielle des véhicules groupés suivant leur type pour les années 1953, 1959, 1961, 1962 et 1963.

Table 55:

Automobile Park in Nigeria in the Years 1960 to 1965
and Forecast for 1975 and 1980

Véhicules en circulation en Nigeria de 1960 à 1965 et
évaluations pour 1975 et 1980

(round figures/valeurs arrondis)

Year/ Année	1960	1961	1962	1963	1964	1965	1975	1980
Cars/Voitures particulières	29.150	35.150	37.300	41.450	44.200	51.300	106.000	134.000
Buses/ Autobus	1.550	2.000	2.150	2.250	2.250	2.300	3.200	3.800
Trucks, Vans/ Camions, Camionnettes	19.350	22.950	22.600	21.000	21.250	22.300	24.700	24.700
Total	50.050	60.100	62.050	64.700	67.700	75.900	133.900	162.500

Répartition des différentes marques de véhicules
en circulation en Nigeria le 31 décembre 1962

(round figures/valeurs arrondis)

Type/ Genre Make/ Marque	Cars/Voitures particulières		Buses/ Autobus		Trucks, Vans/ Camions, Camionnettes		Total	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
American/ Américaine	2.260	5	-	-	650	3	2.910	5
Chevrolet	1.150		-		260		1.410	
Pontiac	350		-		-		350	
Others/ Autres	760		-		390		1.150	
British/ Britannique	17.490	42	1.465	65	14.760	71	33.715	52
Albion	-		-		380		380	
Austin	1.040		510		2.830		3.340	
Bedford	-		180		5.590		5.770	
Commer	-		15		310		325	
Ford	4.670		100		830		5.600	
Guy	-		35		-		35	
Hillman	2.040		-		-		2.040	
Humber	250		-		-		250	
Land Rover	1.280		-		1.980		3.260	
Leyland	-		10		520		530	
Morris	3.920		600		1.810		6.330	
Standard	750		-		110		860	
Triumph	235		-		-		235	
Vauxhall	2.350		-		-		2.350	
Wolseley	270		-		-		270	
Others/ Autres	685		15		400		1.100	
French/ Française	6.610	16	40	2	420	2	7.070	11
Citroen	320		-		70		390	
Peugeot	5.180		-		310		5.490	
Renault	730		40		40		810	
Simca	380		-		-		380	
German/ Allemande	12.620	31	730	32	4.470	21	17.820	28
DKW	-		15		-		15	
Ford	560		65		55		680	
Krupp	-		-		190		190	
MAN	-		-		100		100	
Mercedes-Benz	1.290		175		3.190		4.655	
Opel	4.230		-		140		4.370	
Volkswagen	6.080		460		620		7.160	
Others/ Autres	460		15		175		650	
Italian/ Italienne	1.960	5	15	.	80	.	2.055	3
Fiat	1.900		15		75		1.990	
Others/ Autres	60		-		5		65	
Swedish/ Suédoise	160	.	-	-	200	1	360	.
Volvo	160		-		200		360	
Others/ Autres	350	1	-	-	420	2	770	1
Total	41.450	100	2.250	100	21.000	100	64.700	100

Table 57:

Car Park in Nigeria Classified by cc-Capacity

Voitures en circulation en Nigeria, classés
suivant les volumes de la cylindrée

(round figures/valeurs arrondis)

Year/ Année	1957		1961		1962		1963	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
cc-Capacity/ Volume de la cylindrée								
under/ moins de 1100 ccm	4.470	25	5.530	16	6.050	16	6.320	15
1100 to/à 1800 ccm	8.450	46	21.770	62	23.950	64	28.270	68
over/ plus de 1800 ccm	5.330	29	7.850	22	7.300	20	6.860	17
Total	18.250	100	35.150	100	37.300	100	41.450	100

Table 58: Bus Park in Nigeria Classified by Number of Seats
Autobus en circulation en Nigeria, classés suivant
le nombre de places

(round figures/valeurs arrondis)

Year/ Année	1 9 6 2		1 9 6 3	
	units/ nombre	%	units/ nombre	%
Seat Capacity/ Nombre de places				
under/ moins de 20 seats/ places	1.720	80	1.920	85
over/ plus de 20 seats/ places	430	20	330	15
Total	2.150	100	2.250	100

Table 59:**Truck/Van Park in Nigeria Classified by Pay Load and Special Bodies****Camion/camionnettes en circulation en Nigeria, classés suivant la charge utile et les carrosseries spéciales****(round figures/valeurs arrondis)**

Year/ Année	1956		1961		1962		1963	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
under/ moins de 1 t	1.550	10	1.600	6	1.460	7	950	5
1 to/à 2,9 t	3.310	22	6.350	28	7.120	31	6.360	30
3 to/à 4,9 t	1.430	10	2.240	10	2.610	12	2.020	10
5 to/à 7 t	8.020	54	11.540	50	10.110	44	10.290	49
over/ plus de 7 t	480	3	1.020	5	1.100	5	1.180	5
special vehicles/ Véhicules spéciaux	125	1	200	1	210	1	200	1
Total	14.915	100	22.950	100	22.610	100	21.000	100

Table 60:

Registration of Vehicles in Senegal in the Years 1959
to 1965 and Forecast for 1975 and 1980

Immatriculation des véhicules au Sénégal de 1959 à 1965
et évaluations pour 1975 et 1980

(round figures/valeurs arrondis)

Year/ Année	1959	1960	1961	1962	1963	1964	1965	1975	1980
Cars/ Voitures particulières	1.385	1.495	1.590	2.025	1.645	1.595	1.265	1.850	2.000
Buses/ Autobus	110	220	90	150	140	135	20	180	200
Trucks, Vans/ Camions, Camionnettes	885	955	1.040	1.140	770	730	640	850	900
Tractors/ Tracteurs routiers	35	45	25	30	65	10	15	40	50
Trailers/ Remorques	45	30	30	15	20	25	15	40	50
Total	2.460	2.745	2.775	3.360	2.640	2.495	1.955	2.960	3.200

Table 61: Automobile Park in Senegal in the Years 1960 to 1965 and Forecast for 1975 and 1980¹⁾

Véhicules en circulation au Sénégal de 1960 à 1965 et évaluations pour 1975 et 1980¹⁾

(round figures/valeurs arrondis)

Year/ Année	1960	1961	1962	1963	1964	1965	1975	1980
Cars/Voitures particulières	19.755	18.525	17.905	16.995	16.165	15.120	16.000	18.000
Buses/Autobus	2.080	1.875	1.760	1.650	1.550	1.350	1.500	1.600
Trucks, Vans/ Camions, Camionnettes	12.880	12.080	11.495	10.625	9.840	9.075	9.000	10.000
Tractors/ Tracteurs routiers	255	245	240	270	240	220	300	400
Trailers/ Remorques	300	290	265	245	235	215	300	400
Total	35.270	33.015	31.665	29.785	28.030	25.980	27.100	30.400

- 1) In 1960 all vehicles in running order have been newly registered. Therefore, the official 1960 values are reliable. In the following years the discarded vehicles and exported vehicles have been considered only insufficiently. Therefore, the official figures have been corrected for the following years on the basis of the average motor vehicle life in Senegal (6 to 7 years).

Vu que tous les véhicules en circulation ont été réimmatriculés en 1960, on peut se fier à la statistique officielle de cette année-là. Les enregistrements après cette date ne tiennent pas suffisamment compte des véhicules retirés de la circulation et des exportations. C'est pourquoi on a corrigé les chiffres indiqués par la statistique officielle pour les années suivantes en comptant un âge moyen des véhicules au Sénégal de 6 à 7 ans.

Table 62:

Registration of Vehicles in Senegal in the Year 1963
Classified by Make

Répartition des différentes marques des véhicules,
mises en circulation au Sénégal en 1963

(round figures/valeurs arrondis)

Type/ Genre	Cars/Voitures particulières		Buses/ Autobus		Trucks, Vans/ Camions, Camionnettes		Tractors/ Tracteurs routiers		Trailers/ Remorques		Total	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
American/ Américaine	20	1	-	-	20	2	-	-	-	-	40	1
British/ Britannique	10	1	-	-	80	8	-	-	-	-	90	3
French/ Française	1.340	81	75	53	770	77	55	85	20	100	2.260	79
Berliet	-		-		60		10		-		70	
Citroen	220		-		175		-		-		395	
Hotchkiss	10		-		-		-		-		10	
Panhard	5		-		-		-		-		5	
Peugeot	490		-		120		-		-		610	
Renault	385		70		75		-		-		530	
Simca	215		-		-		-		-		215	
Others/Autres	15		5		340		45		20		425	
German/ Allemande	165	10	-	-	85	9	-	-	-	-	250	9
Ford	20		-		-		-		-		20	
Opel	25		-		-		-		-		25	
Volkswagen	60		-		25		-		-		85	
Others/Autres	60		-		60		-		-		120	
Italian/ Italienne	60	4	-	-	-	-	-	-	-	-	60	2
Fiat	60		-		-		-		-		60	
Others/ Autres	50	3	65	47	35	4	10	15	-	-	160	6
Total	1.645	100	140	100	990	100	65	100	20	100	2.860	100

Table 63:

Car Registrations in Senegal Classified by cc-Capacity

Immatriculation des voitures au Sénégal, classés suivant les volumes de la cylindrée

(round figures/valeurs arrondis)

Year/ Année	1960		1961		1962		1963		1964		1965	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
under/ moins de 1100 ccm	720	48	695	44	925	46	560	34	570	36	450	35
1100 to/ à 1800 ccm	620	42	730	46	860	42	885	54	850	53	670	53
over/ plus de 1800 ccm	155	10	165	10	240	12	200	12	175	11	150	12
Total	1.495	100	1.590	100	2.025	100	1.645	100	1.595	100	1.270	100

Table 64:

Bus Park in Senegal Classified by Number of Seats
Autobus en circulation au Sénégal, classés suivant
le nombre de places

(round figures/valeurs arrondis)

Year/ Année	1. 4. 1963		1. 4. 1964	
	units/ nombre	%	units/ nombre	%
Seat Capacity/ Nombre de places				
under/ moins de 20 seats/ places	1.420	82	1.540	79
over/ plus de 20 seats/ places	320	18	405	21
Total	1.740	100	1.945	100

Table 65:

Truck/Van Registrations in Senegal Classified by Pay Load and Special Bodies

Immatriculation des camions/camionnettes au Sénégal, classés suivant la charge utile et les carrosseries spéciales

(round figures/valeurs arrondis)

Year/ Année	1960		1961		1962		1963		1964		1965	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
under/ moins de 1 t	525	55	535	50	670	59	410	53	475	65	450	70
1 to/à 4 t	190	20	235	23	190	17	140	18	115	16	90	14
over/ plus de 4 t	220	23	260	25	255	22	205	26	110	15	80	13
special vehicles (Tanker, Refrige- rator Car)/Vehi- cules spéciaux (camion citerne, fourgon frigorif- ique)	20	2	20	2	25	2	20	3	30	4	20	3
Total	955	100	1.050	100	1.140	100	775	100	730	100	640	100

Table 66:

Registration of Vehicles in Sierra Leone in the Years
1955 to 1965 and Forecast for 1975 and 1980¹⁾

Immatriculation des véhicules en Sierra Leone de 1955
à 1965 et évaluations pour 1975 et 1980¹⁾

(round figures/valeurs arrondis)

Year/ Année	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1975	1980
Cars/Voitures particulières	650	860	1.090	920	820	870	1.470	1.140	1.160	1.500	1.260	2.000	2.300
Buses/Autobus	-	15	50	10	25	65	85	35	60	130	180	200	250
Trucks, Vans/ Camions, Camionnettes	470	1.020	770	550	590	510	1.050	620	540	910	1.060	1.100	1.200
Total	1.120	1.895	1.910	1.480	1.435	1.445	2.605	1.795	1.760	2.540	2.500	3.300	3.750

- 1) Registration figures in Sierra Leone are available only for 1964. For the remaining years import figures have been used.

En Sierra Leone, les immatriculations n'étaient connus que pour 1964. C'est pourquoi, pour les autres années, on parti des importations.

Table 67:

Automobile Park in Sierra Leone for 1960, 1963 and 1965 and Forecast for 1975 and 1980¹⁾

Véhicules en circulation en Sierra Leone pour 1960, 1963 et 1965 et évaluations pour 1975 et 1980¹⁾

(round figures/valeurs arrondis)

Type/ Genre	Year/ Année	1960	1963	1965	1975	1980
Cars/ Voitures particulières		4.500	5.500	6.300	8.800	10.200
Buses/ Autobus		100	250	350	560	700
Trucks, Vans/ Camions, Camionnettes		2.600	3.250	3.700	4.800	5.400
Total		7.200	9.000	10.350	14.160	16.300

1) 1960, 1963 and 1965 values have been estimated on the basis of information given by the Statistical Office, the Ministry of Economics and motor vehicle importers.

Les chiffres indiqués pour 1960, 1963 et 1965 ont été évalués à l'aide des informations fournies par le Bureau de Statistiques, le Ministère de l'Economie et les importateurs de véhicules.

Table 68:

Registration of Vehicles in Sierra Leone in the Year
1964 Classified by MakeRépartition des différentes marques des véhicules,
mises en circulation en Sierra Leone en 1964

(round figures/valeurs arrondis)

Type/ Genre Make/ Marque	Cars/Voitures particulières		Buses, Trucks, Vans/ Autobus, Camions, Camionnettes		Total	
	units/ nombre	%	units/ nombre	%	units/ nombre	%
British/ Britannique	580	33	620	71	1.200	46
BMC Austin	80		40		120	
Morris	70		20		90	
Ford (UK o.USA)	75		60		135	
GMC Vauxhall	55		-		55	
Bedford	5		300		305	
Roots Hillman	135		-		135	
Humber	25		-		25	
Singer	35		-		35	
Commer	20		10		30	
Rover	25		180		205	
Standard Triumph	25		-		25	
Others/ Autres	30		10		40	
French/ Française	430	25	140	16	570	22
Peugeot	320		-		320	
Renault	95		140		235	
Others/ Autres	15		-		15	
German/ Allemande	510	29	15	2	525	20
Mercedes-Benz	180		15		195	
Volkswagen	290		-		290	
Others/ Autres	40		-		40	
Italian/ Italienne	85	5	5	1	90	3
Fiat	85		5		90	
Japanese/ Japonaise	85	5	60	7	145	6
Hino	45		-		45	
Toyota/Toyopet	40		50		90	
Isuzu	-		10		10	
Others/ Autres	.		-		.	
Others/ Autres	60	3	30	3	90	3
Total	1.750	100	870	100	2.620	100

Table 69:

Car Import in Sierra Leone Classified by cc-Capacity

Importations de voitures en Sierra Leone, classés suivant les volumes de la cylindrée

(round figures/valeurs arrondis)

Year/ Année	1961		1962		1963		1964		1965	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
under/ moins de 1100 ccm	210	14	190	17	230	20	300	20	250	20
1100 to/à 1800 ccm	760	52	590	52	660	57	850	57	750	59
over/ plus de 1800 ccm	500	34	360	31	270	23	350	23	260	21
Total	1.470	100	1.140	100	1.160	100	1.500	100	1.260	100

Table 70:

Bus Park in Sierra Leone Classified by Number
of Seats

Autobus en circulation en Sierra Leone, classés
suivant le nombre de places

(round figures/valeurs arrondis)

Year/ Année	1 9 6 5	
	units/ nombre	%
Seat Capacity/ Nombre de places		
under/ moins de 20 seats/ places	250	72
20 to/à 29 seats/ places	50	14
30 to/à 40 seats/ places	-	-
over/ plus de 40 seats/ places	50	14
Total	350	100

Table 71:

Truck/Van Imports in Sierra Leone Classified by
Pay Load and Special Bodies

Importations de camions/camionnettes en Sierra Leone,
classés suivant la charge utile et les carrosseries
spéciales

(round figures/valeurs arrondis)

Year/ Année pay load/ charge utile	1960		1962		1963		1964	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
under/ moins de 1 t	150	30	180	29	140	26	170	19
1 to/à 3 t	170	33	160	26	190	35	330	36
over/ plus de 3 t	160	31	270	44	190	35	355	39
special vehicles/ Vehicules spéciaux	30	6	10	1	20	4	55	6
Total	510	100	620	100	540	100	910	100

Table 72:

Registration of Vehicles in Togo in the Years 1959
to 1965 and Forecast for 1975 and 1980

Immatriculation des véhicules au Togo de 1959 à 1965
et évaluations pour 1975 et 1980

(round figures/valeurs arrondis)

Year/ Année	1959	1960	1961	1962	1963	1964	1965	1975	1980
Cars/ Voitures particulières	420	470	420	505	415	470	535	620	680
Buses/ Autobus 1)	5	5	5	5	5	5	5	10	10
Trucks, Vans/ Camions, Camionnettes	300	340	400	380	300	310	400	410	440
Tractors/ Tracteurs routiers 2)	5	5	10	10	5	20	10	15	15
Trailers/ Remorques 2)	5	5	10	10	10	15	10	15	15
Total	735	825	845	910	735	820	960	1.070	1.160

1) estimated/
évalués

2) estimated for 1959 - 1962/
évalués pour 1959 - 1962

Table 73:

Automobile Park in Togo in the Years 1963 to 1965
and Forecast for 1975 and 1980¹⁾)

Véhicules en circulation au Togo de 1963 à 1965 et
évaluations pour 1975 et 1980¹⁾)

(round figures/valeurs arrondis)

Type/ Genre	Year/ Année	1963	1964	1965	1975	1980
Cars/ Voitures particulières		2.400	2.660	2.760	3.500	4.000
Buses/ Autobus		20	25	25	45	60
Trucks, Vans/ Camions, Camionnettes		2.050	2.110	2.160	2.300	2.400
Tractors/ Tracteurs routiers		45	55	55	70	100
Trailers/ Remorques		45	55	65	75	110
Total		4.560	4.905	5.065	5.990	6.670

- 1) 1964: New registration of all motor vehicles in running order, Therefore, only 10 per cent are subtracted from the official statistics of this year to obtain the real park. The 1963 and 1965 values are estimated on the basis of the average life of motor vehicles in Togo (5 to 6 years).

1964: Réimmatriculation de tous les véhicules en circulation; pour cette raison on n'a déduit que 10 % de la statistique officielle de cette année-là afin d'obtenir un tableau conforme à la réalité. Les chiffres de 1963 et 1965 sont des évaluations; on les a évalués en prenant un âge moyen des véhicules au Togo de 5 à 6 ans.

Table 74:

Registration of Vehicles in Togo in the Year 1964
Classified by Make

Répartition des différentes marques des véhicules,
mises en circulation au Togo en 1964

(round figures/valeurs arrondis)

Type/ Genre Make/ Marque	Cars/Voitures particulières		Trucks, Vans/ Camions, Camionnettes		Tractors/ Tracteurs routiers		Total	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
British/ Britannique	-	-	85	28	-	-	85	11
Austin	-		15		-		15	
Bedford	-		40		-		40	
Morris	-		5		-		5	
Rover	-		25		-		25	
French/ Française	305	64	155	51	15	75	475	59
Berliet	-		20		-		20	
Citroen	105		60		-		165	
Peugeot	75		35		-		110	
Renault	105		40		15		160	
Simca	20		-		-		20	
German/ Allemande	115	24	35	11	-	-	150	19
DKW	10		5		-		15	
Ford	15		-		-		15	
MAN	-		5		-		5	
Mercedes-Benz	15		15		-		30	
Opel	35		-		-		35	
Volkswagen	40		5		-		45	
Others/ Autres	-		5		-		5	
Others/ Autres	55	12	30	10	5	25	90	11
Total	475	100	305	100	20	100	800	100

Table 75:

Car Registrations in Togo Classified by cc-Capacity

Immatriculation des voitures au Togo, classés suivant
les volumes de la cylindrée

(round figures/valeurs arrondis)

Year/ Année	1 9 6 3		1 9 6 4		1 9 6 5	
	units/ nombre	%	units/ nombre	%	units/ nombre	%
cc-Capacity/ Volume de la cylindrée						
under/ moins de 1100 ccm	145	35	160	34	185	35
1100 to/à 1800 ccm	225	54	270	57	295	55
over/ plus de 1800 ccm	45	11	40	9	55	10
Total	415	100	470	100	535	100

Table 76: Bus Park in Togo Classified by Number of Seats
 Autobus en circulation au Togo, classés suivant
 le nombre de places

(round figures/valeurs arrondis)

Year/ Année	1 9 6 4	
	units/ nombre	%
Seat Capacity/ Nombre de places		
under/ moins de 10 seats/ places	5	20
10 to/à 19 seats/ places	10	40
20 to/à 40 seats/ places	5	20
over/ plus de 40 seats/ places	5	20
Total	25	100

Table 77:

Truck/Van Registrations in Togo Classified by Pay Load

Immatriculation des camions/camionnettes au Togo, classés
suivant la charge utile

(round figures/valeurs arrondis)

Year/ Année	1 9 6 3		1 9 6 4		1 9 6 5	
	units/ nombre	%	units/ nombre	%	units/ nombre	%
under/ moins de 1 t	100	34	100	33	145	36
1 to/à 2,9 t	70	24	80	26	90	23
3 to/à 5,9 t	50	16	40	13	60	15
6 to/à 10 t	75	25	85	27	100	25
over/ plus de 10 t	5	1	5	1	5	1
Total	300	100	310	100	400	100

Table 78:

Automobile Park in Togo Classified by Type of Engine

Véhicules en circulation au Togo, classés suivant le
type du moteur

(round figures/valeurs arrondis)

Year/ Année	1 9 6 3		1 9 6 4		1 9 6 5	
	Gasoline/ Essence	Diesel/ Gas-Oil	Gasoline/ Essence	Diesel/ Gas-Oil	Gasoline/ Essence	Diesel/ Gas-Oil
Cars/Voitures particulières	2.750	-	2.960	-	3.200	-
Buses/ Autobus	10	10	15	10	20	10
Trucks, Vans/ Camions, Camionnettes	1.720	480	1.815	525	1.960	550
Tractors/ Tracteurs routiers	10	35	15	40	15	40
Total	4.490	525	4.805	575	5.195	600

Table 79:

Registration of Vehicles in Upper Volta in the Years 1959
to 1965 and Forecast for 1975 and 1980

Immatriculation des véhicules en Haute-Volta de 1959 à 1965
et évaluations pour 1975 et 1980

(round figures/valeurs arrondis)

Year/ Année	1959	1960	1961	1962	1963	1964	1965	1975	1980
Cars/ Voitures particulières	300	250	340	510	570	550	550	850	1.000
Buses/ Autobus	5	5	5	10	20	30	5	30	35
Trucks, Vans/ Camions, Camionnettes	260	350	350	420	410	440	490	700	800
Tractors/ Tracteurs routiers	10	10	10	5	15	15	15	25	30
Trailers/ Remorques	10	10	15	25	15	20	10	25	25
Total	585	625	720	970	1.030	1.055	1.070	1.630	1.890

Table 80:

Automobile Park in Upper Volta in the Years 1961
to 1965 and Forecast for 1975 and 1980¹⁾

Véhicules en circulation en Haute-Volta de 1961
à 1965 et évaluations pour 1975 et 1980¹⁾

(round figures/valeurs arrondis)

Year/ Année	1961	1962	1963	1964	1965	1975	1980
Cars/Voitures particulières	1.940	2.060	2.220	2.330	2.420	4.000	4.800
Buses/Autobus	45	40	50	65	50	100	130
Trucks, Vans/ Camions, Camionnettes	2.010	2.030	2.050	2.080	2.160	3.100	3.600
Tractors/ Tracteurs routiers	60	55	60	60	65	90	120
Trailers/ Remorques	100	110	105	105	100	130	150
Total	4.155	4.295	4.485	4.640	4.795	7.420	8.800

- 1) In 1961 all cars in running order were newly registered. Therefore, the official 1961 figures are reliable. The values for 1962 to 1965 have been estimated on the basis of the annual registrations and the following average life: passenger cars, trucks, tractors: 5 years; buses: 3 years; trailers: 6 years.

En 1961, tous les véhicules en circulation ont dû être réimmatriculés. C'est pourquoi on peut se fier aux données officielles concernant cette année-là. Les chiffres concernant les années de 1962 à 1965 ont été évalués à l'aide des immatriculations annuelles et en tenant compte d'un âge moyen de:

- 5 ans pour les voitures particulières, les camions, les tracteurs routiers
- 3 ans pour les autobus
- 6 ans pour les remorques et semi-remorques.

Table 81:

Automobile Park in Upper Volta on December 31, 1965
Classified by Make

Répartition des différentes marques de véhicules en
circulation en Haute-Volta le 31 décembre 1965

(round figures/valeurs arrondis)

Type/ Genre Make/ Marque	Cars/Voitures particulières		Buses/ Autobus		Trucks, Vans/ Camions, Camionnettes		Tractors/ Tracteurs routiers		Total	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
American/ Américaine	50	2	6	12	195	9	7	11	258	6
Chevrolet	25		-		-		-		25	
Dodge	-		-		45		-		45	
International	-		5		45		7		57	
Willys Overland	-		-		45		-		45	
Others/Autres	25		1		60		-		86	
British/ Britannique	-	-	24	48	175	8	-	-	199	4
Rover	-		24		150		-		174	
Others/Autres	-		-		25		-		25	
French/ Française	2.130	88	18	35	1.750	81	55	85	3.953	84
Berliet	-		-		65		36		101	
Chausson	-		9		-		-		9	
Citroen	700		2		800		9		1.511	
Peugeot	800		1		450		-		1.251	
Renault	340		6		410		9		765	
Simca	270		-		-		-		270	
Others/Autres	20		-		25		1		46	
German/ Allemande	190	8	2	5	40	2	3	4	235	5
DKW	-		-		20		-		20	
Ford	25		-		-		-		25	
Mercedes-Benz	50		-		-		1		51	
Opel	75		-		-		-		75	
Volkswagen	25		2		-		-		27	
Others/Autres	15		-		20		2		37	
Italian/ Italienne	50	2	-	-	-	-	-	-	50	1
Fiat	50		-		-		-		50	
Total	2.420	100	50	100	2.160	100	65	100	4.695	100

Table 82:

Car Park in Upper Volta Classified by cc-Capacity

Voitures en circulation en Haute-Volta, classés
suivant les volumes de la cylindrée

(round figures/valeurs arrondis)

cc-Capacity/ Volume de la cylindrée	Year/ Année	1 9 6 1		1 9 6 5	
		units/ nombre	%	units/ nombre	%
under/ moins de 1100 ccm		630	33	920	38
1100 to/à 1800 ccm		1.080	55	1.260	52
over/ plus de 1800 ccm		230	12	240	10
Total		1.940	100	2.420	100

Table 83:

Bus Park in Upper Volta Classified by Number of Seats
Autobus en circulation en Haute-Volta, classés suivant
le nombre de places

(round figures/valeurs arrondis)

Year/ Annee	1 9 6 1		1 9 6 5	
	units/ nombre	%	units/ nombre	%
under/ moins de 10 seats/ places	6	14	4	8
10 to/à 30 seats/ places	19	43	35	69
over/ plus de 30 seats/ places	19	43	11	23
Total	44	100	50	100

Table 84:

Truck/Van Park in Upper Volta Classified by Pay Load and Special Bodies

Camions/camionnettes en circulation en Haute-Volta, classés suivant la charge utile et les carrosseries spéciales

(round figures/valeurs arrondis)

Year/ Année	1 9 6 1		1 9 6 5	
	units/ nombre	%	units/ nombre	%
under/ moins de 1 t	880	44	1.000	46
1 to/à 4,9 t	1.000	50	900	42
5 to/à 12 t	100	5	215	10
over/ plus de 12 t	5	.	5	.
special vehicles/ Vehicules spéciaux	25	1	40	2
Total	2.010	100	2.160	100

Table 85:

Tractor Park in Upper Volta Classified by HP-Capacity

Tracteur routiers en circulation en Haute-Volta, classés
suivant la puissance en cv

(round figures/valeurs arrondis)

Year/ Année	1 9 6 1		1 9 6 5	
	units/ nombre	%	units/ nombre	%
under/ moins de 170 HP/CV	30	40	20	25
over/ plus de 170 HP/CV	45	60	70	75
Total	75	100	90	100

Table 86:

Trailer Park in Upper Volta Classified by Pay Load

Remorques en circulation en Haute-Volta, classés
suivant la charge utile

(round figures/valeurs arrondis)

Year/ Année	1 9 6 1		1 9 6 5	
	units/ nombre	%	units/ nombre	%
under/ moins de 5 t	30	30	32	32
5 to/à 7,9 t	20	20	18	18
8 to/à 12 t	15	15	16	16
over/ plus de 12 t	35	35	34	34
Total	100	100	100	100



Table 87: Vehicle Demand in West Africa in the Year 1963 and Forecast for 1975 and 1980

Besoin en véhicules en Afrique de l'Ouest en 1963 et évaluations pour 1975 et 1980

	1963		1975		1980	
	Units/ Nombre	%	Units/ Nombre	%	Units/ Nombre	%
1 Dahomey Dahomey	1.220	2,6	1.630	2,2	1.830	2,1
2 Gambia Gambie	270	0,6	370	0,5	430	0,5
3 Ghana Ghana	9.110	19,1	9.050	12,2	10.200	12,0
4 Guinea Guinée	1.640	3,5	2.030	2,8	2.255	2,6
5 Ivory Coast Côte d'Ivoire	6.805	14,3	10.970	14,8	12.740	15,0
6 Liberia Libéria	3.000	6,3	3.650	4,9	3.760	4,4
7 Mali Mali	1.040	2,2	1.190	1,6	1.250	1,5
8 Mauritania Mauritanie	415	0,9	790	1,1	915	1,1
9 Niger Niger	770	1,6	1.130	1,5	1.270	1,5
10 Nigeria Nigeria	17.050	35,9	34.180	46,3	40.350	47,5
11 Senegal Sénégal	2.640	5,6	2.960	4,0	3.200	3,8
12 Sierra Leone Sierra Leone	1.760	3,7	3.300	4,5	3.750	4,4
13 Togo Togo	735	1,6	1.070	1,4	1.160	1,4
14 Upper Volta Haute-Volta	1.030	2,1	1.630	2,2	1.890	2,2
West Africa Afrique Occidentale	47.485	100	73.950	100	85.000	100



Table 88: Import of Vehicles in West Africa in the Year 1963 and Forecast for 1975 and 1980

Importations de véhicules en Afrique de l'Ouest en 1963 et évaluations pour 1975 et 1980

	1963		1975		1980		
	Quantity/ Quantité	Value/ Valeur (Million)	Quantity/ Quantité	Value/ Valeur (Million)	Quantity/ Quantité	Value/ Valeur (Million)	
	(t)	\$	(t)	\$	(t)	\$	
1 Dahomey	Dahomey	1.300	2,0	1.800	3,0	2.100	3,5
2 Gambia	Gambie	300	0,4	400	0,6	500	0,7
3 Ghana	Ghana	13.000	20,0	13.000	21,0	14.500	24,0
4 Guinea	Guinée	2.300	3,5	2.800	4,5	3.100	5,0
5 Ivory Coast	Côte d'Ivoire	7.600	12,7	12.000	22,0	15.000	26,0
6 Liberia	Libéria	5.000	8,0	6.000	10,5	6.500	11,0
7 Mali	Mali	1.500	3,0	1.800	3,5	1.800	3,6
8 Mauritania	Mauritanie	650	0,8	1.000	1,2	1.100	1,4
9 Niger	Niger	840	1,3	1.200	2,0	1.400	2,3
10 Nigeria	Nigeria	25.000	31,0	52.000	65,0	60.000	75,0
11 Senegal	Sénégal	4.300	5,7	5.000	7,0	5.300	7,5
12 Sierra Leone	Sierra Leone	2.500	3,7	4.800	7,0	5.500	8,0
13 Togo	Togo	1.000	1,0	1.400	1,4	1.500	1,5
14 Upper Volta	Haute-Volta	1.000	1,4	1.700	2,5	2.000	2,8
West Africa	Afrique Occidentale	66.290	94,5	104.900	151,2	120.300	172,3

1) Values for 1963 have been deferred from the official statistics when available.

Les valeurs indiquées pour 1963, ont été empruntées aux statistiques officielles dans la mesure où elles existaient.

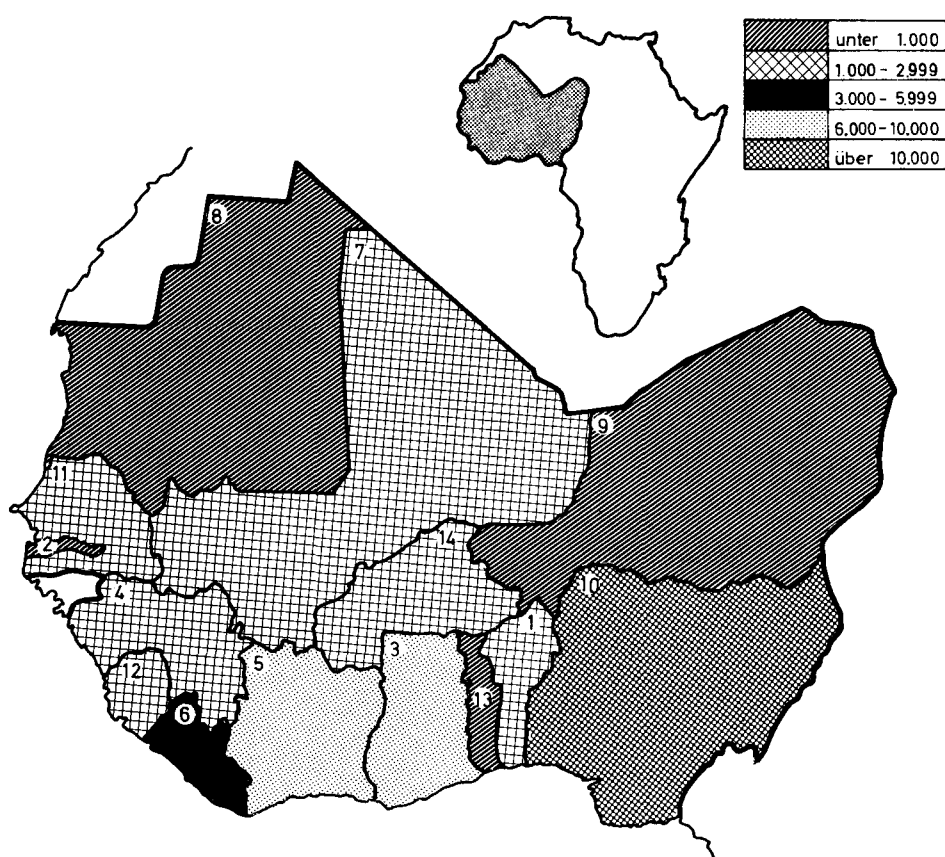


Table 89: Structure of the West African Vehicle Demand in 1963

Répartition des besoins de véhicules en Afrique de l'Ouest en 1963

	Cars/Voitures particulières		Buses/Autobus		Trucks, Vans/Camions, Camionnettes		Tractors/Tracteurs routiers		Trailers/Remorques		Total		
	Units/Nombre	%	Units/Nombre	%	Units/Nombre	%	Units/Nombre	%	Units/Nombre	%	Units/Nombre	%	
1 Dahomey	Dahomey	790	2,7	10	0,5	410	2,7	5	1,1	5	1,1	1.220	2,6
2 Gambia	Gambie	155	0,5	20	1,1	95	0,7	x	x	-	-	270	0,6
3 Ghana	Ghana	5.125	17,5	785	41,3	3.150	20,5	x	x	50	10,9	9.110	19,1
4 Guinea	Guinée	1.000	3,4	35	1,8	600	3,9	5	1,1	-	-	1.640	3,5
5 Ivory Coast	Côte d'Ivoire	4.300	14,7	40	2,1	1.850	12,0	295	63,5	320	69,5	6.805	14,3
6 Liberia	Libéria	2.010	6,8	220	11,6	730	4,7	40	8,6	-	-	3.000	6,3
7 Mali	Mali	640	2,2	10	0,5	370	2,4	10	2,1	10	2,2	1.040	2,2
8 Mauritania	Mauritanie	155	0,5	5	0,3	235	1,6	10	2,1	10	2,2	415	0,9
9 Niger	Niger	335	1,1	.	.	400	2,6	15	3,2	20	4,3	770	1,6
10 Nigeria	Nigeria	11.000	37,6	550	28,9	5.500	35,8	x	x	-	-	17.050	35,9
11 Senegal	Sénégal	1.645	5,6	140	7,4	770	5,0	65	14,0	20	4,3	2.640	5,6
12 Sierra Leone	Sierra Leone	1.160	4,0	60	3,1	540	3,5	x	x	-	-	1.760	3,7
13 Togo	Togo	415	1,4	5	0,3	300	1,9	5	1,1	10	2,2	735	1,6
14 Upper Volta	Haute-Volta	570	2,0	20	1,1	410	2,7	15	3,2	15	3,3	1.030	2,1
West Africa	Afrique Occidentale	29.300	100	1.900	100	15.360	100	465	100	460	100	47.485	100

. = less than 3 units/
 . = moins de 3 unités

x = contained under trucks/
 x = compris dans les camions

- = not available/
 - = inconnus

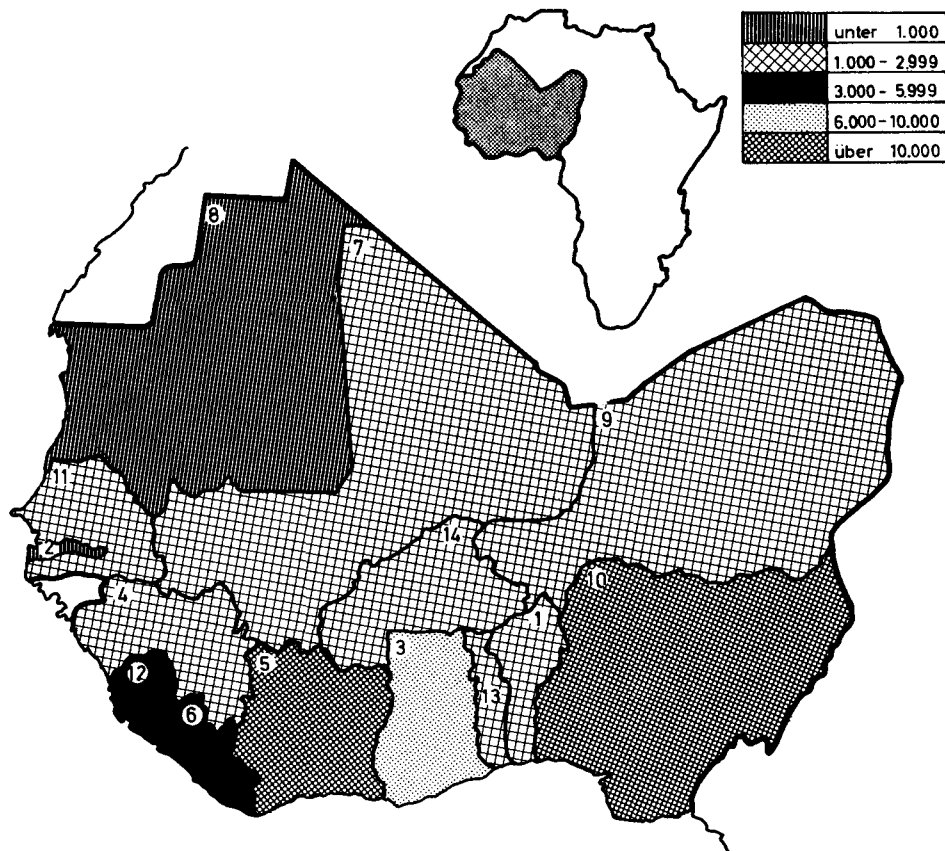


Table 90: Forecast of the Structure of the West African Vehicle Demand in 1975

Evaluation des besoins de véhicules en Afrique de l'Ouest en 1975

	Cars/Voitures particulières		Buses/Autobus		Trucks, Vans/Camions, Camionnettes		Tractors/Tracteurs routiers		Trailers/Remorques		Total		
	Units/Nombre	%	Units/Nombre	%	Units/Nombre	%	Units/Nombre	%	Units/Nombre	%	Units/Nombre	%	
1 Dahomey	Dahomey	1.050	2,1	30	1,1	520	2,8	10	1,4	20	2,2	1.630	2,2
2 Gambia	Gambie	220	0,4	20	0,7	130	0,7	x	x	-	-	370	0,5
3 Ghana	Ghana	5.300	10,4	900	32,3	2.700	14,6	x	x	150	16,8	9.050	12,2
4 Guinea	Guinée	900	1,8	30	1,1	1.080	5,7	20	2,8	-	-	2.030	2,8
5 Ivory Coast	Côte d'Ivoire	7.700	15,1	120	4,3	2.150	11,6	450	62,0	550	63,4	10.970	14,8
6 Liberia	Libéria	2.000	3,9	250	9,0	1.300	7,0	100	13,8	-	-	3.650	4,9
7 Mali	Mali	700	1,3	15	0,5	440	2,4	15	2,1	20	2,2	1.190	1,6
8 Mauritania	Mauritanie	400	0,8	10	0,4	350	1,9	15	2,1	15	1,7	790	1,1
9 Niger	Niger	500	1,0	10	0,4	550	3,1	35	4,8	35	4,0	1.130	1,5
10 Nigeria	Nigeria	27.000	52,8	980	35,3	6.200	33,6	x	x	-	-	34.180	46,3
11 Senegal	Sénégal	1.850	3,6	180	6,3	850	4,6	40	5,5	40	4,6	2.960	4,0
12 Sierra Leone	Sierra Leone	2.000	3,9	200	7,2	1.100	6,0	x	x	-	-	3.300	4,5
13 Togo	Togo	600	1,2	10	0,3	410	2,2	15	2,1	15	1,7	1.070	1,4
14 Upper Volta	Haute-Volta	850	1,7	30	1,1	700	3,8	25	3,4	25	2,9	1.630	2,2
West Africa	Afrique Occidentale	51.090	100	2.785	100	18.480	100	725	100	870	100	73.950	100

x = contained under trucks/
x = compris dans les camions

- = not available/
- = inconnus

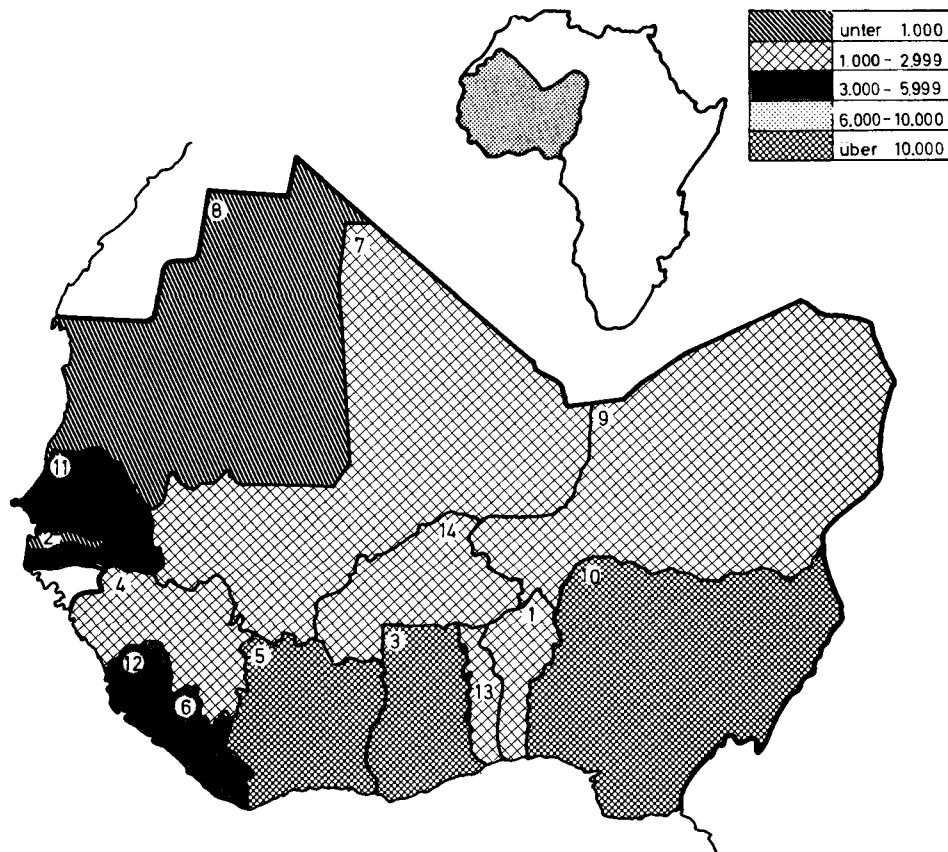


Table 91: Forecast of the Structure of the West African Vehicle Demand in 1980

Evaluation des besoins de véhicules en Afrique de l'Ouest en 1980

	Cars/Voitures particulières		Buses/Autobus		Trucks, Vans/Camions, Camionnettes		Tractors/Tracteurs routiers		Trailers/Remorques		Total		
	Units/Nombre	%	Units/Nombre	%	Units/Nombre	%	Units/Nombre	%	Units/Nombre	%	Units/Nombre	%	
1 Dahomey	Dahomey	1.200	2,0	40	1,3	560	2,9	10	1,2	20	1,9	1.830	2,1
2 Gambia	Gambie	270	0,5	20	0,6	140	0,7	x	x	-	-	430	0,5
3 Ghana	Ghana	6.000	10,0	1.000	31,5	3.000	15,4	x	x	200	19,3	10.200	12,2
4 Guinea	Guinée	1.000	1,6	30	1,0	1.200	6,2	25	2,9	-	-	2.255	2,6
5 Ivory Coast	Côte d'Ivoire	9.200	15,2	140	4,4	2.200	11,3	550	64,0	650	63,0	12.740	15,0
6 Liberia	Libéria	2.000	3,3	260	8,2	1.390	7,1	110	12,8	-	-	3.760	4,4
7 Mali	Mali	750	1,2	15	0,5	450	2,3	15	1,7	20	1,9	1.250	1,5
8 Mauritania	Mauritanie	475	0,8	10	0,3	400	2,0	15	1,7	15	1,4	915	1,1
9 Niger	Niger	580	1,0	10	0,3	600	3,1	40	4,7	40	3,9	1.270	1,5
10 Nigeria	Nigeria	33.000	54,6	1.150	36,3	6.200	31,8	x	x	-	-	40.350	47,5
11 Senegal	Sénégal	2.000	3,3	200	6,3	900	4,6	50	5,8	50	4,8	3.200	3,8
12 Sierra Leone	Sierra Leone	2.300	3,7	250	7,9	1.200	6,2	x	x	-	-	3.750	4,4
13 Togo	Togo	680	1,1	10	0,3	440	2,3	15	1,7	15	1,4	1.160	1,4
14 Upper Volta	Haute-Volta	1.000	1,7	35	1,1	800	4,1	30	3,5	25	2,4	1.890	2,2
West Africa	Afrique Occidentale	60.455	100	3.170	100	19.480	100	860	100	1.035	100	85.000	100

x = contained under trucks/
x = compris dans les camions

- = not available/
- = inconnus



Table 92: Automobile Park in West Africa in the Year 1963 and Forecast for 1975 and 1980

Nombre de véhicules en circulation en Afrique de l'Ouest en 1963 et évaluations pour 1975 et 1980

	1963		1975		1980		
	Units/ Nombre	%	Units/ Nombre	%	Units/ Nombre	%	
1 Dahomey	Dahomey	5.910	2,7	12.390	3,5	15.000	3,6
2 Gambia	Gambie	1.550	0,7	2.180	0,6	2.540	0,6
3 Ghana	Ghana	47.660	21,2	52.500	14,9	59.100	14,1
4 Guinea	Guinée	10.380	4,6	12.320	3,5	14.370	3,4
5 Ivory Coast	Côte d'Ivoire	25.600	11,4	53.150	15,0	66.050	15,7
6 Liberia	Libéria	9.600	4,3	15.000	4,2	18.200	4,4
7 Mali	Mali	5.050	2,2	5.940	1,7	6.580	1,6
8 Mauritania	Mauritanie	3.085	1,4	4.740	1,3	5.470	1,3
9 Niger	Niger	3.515	1,6	6.350	1,8	7.560	1,8
10 Nigeria	Nigeria	64.700	28,7	134.000	38,0	162.000	38,6
11 Senegal	Sénégal	29.785	13,2	27.100	7,7	30.400	7,3
12 Sierra Leone	Sierra Leone	9.000	4,0	14.160	4,0	16.300	3,9
13 Togo	Togo	4.560	2,0	5.990	1,7	6.670	1,6
14 Upper Volta	Haute-Volta	4.485	2,0	7.420	2,1	8.800	2,1
West Africa	Afrique Occidentale	224.880	100	353.240	100	419.040	100

Table 93:

Car Demand in West Africa in the Year 1963 and Forecast for 1975 and 1980 Classified by cc-Capacity

Besoin en voitures en Afrique de l'Ouest en 1963 et évaluations pour 1975 et 1980, classé suivant les volumes de cylindrée

(round figures/valeurs arrondis)

Year/ Année cc-Capacity/ Volume de la cylindrée	1 9 6 3								1 9 7 5								1 9 8 0							
	under/ moins de 1100 ccm		1100 to/à 1800 ccm		over/ plus de 1800 ccm		Total		under/ moins de 1100 ccm		1100 to/à 1800 ccm		over/ plus de 1800 ccm		Total		under/ moins de 1100 ccm		1100 to/à 1800 ccm		over/ plus de 1800 ccm		Total	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
Dahomey	300	4,9	250	1,4	240	5,4	790	2,7	400	3,2	400	1,3	250	3,2	1.050	2,1	500	3,3	500	1,4	200	2,1	1.200	2,1
Gambia/Gambie	30	0,5	115	0,6	10	0,2	155	0,5	55	0,4	145	0,5	20	0,3	220	0,4	70	0,5	175	0,5	25	0,3	270	0,4
Ghana	285	4,6	4.370	23,5	470	10,2	5.125	17,5	530	4,2	4.240	13,8	530	6,8	5.300	10,4	600	3,9	4.800	13,5	600	6,3	6.000	10,1
Guinea/Guinée	300	5,0	500	2,7	200	4,3	1.000	3,4	270	2,1	450	1,5	180	2,3	900	1,8	300	2,0	500	1,4	200	2,1	1.000	1,6
Ivory Coast/Côte d'Ivoire	1.700	27,7	2.200	11,9	400	8,6	4.300	14,7	3.100	24,7	3.850	12,5	750	9,6	7.700	15,1	3.700	24,4	4.650	13,0	850	8,9	9.200	15,1
Liberia/Libéria	240	3,9	1.150	6,2	620	13,3	2.010	6,8	500	3,9	1.000	3,2	500	6,4	2.000	3,9	500	3,3	1.000	2,8	500	5,2	2.000	3,3
Mali	260	4,2	260	1,4	120	2,6	640	2,2	300	2,4	300	1,0	100	1,3	700	1,3	320	2,1	320	0,9	110	1,1	750	1,2
Mauritania/Mauritanie	80	1,3	40	0,2	35	0,7	155	0,5	200	1,6	100	0,3	100	1,3	400	0,8	260	1,7	110	0,3	105	1,1	475	0,7
Niger	100	1,6	170	0,9	65	1,4	335	1,1	150	1,2	250	0,8	100	1,3	500	1,0	170	1,1	290	0,8	120	1,2	580	1,0
Nigeria	1.700	27,7	7.400	40,0	1.900	40,9	11.000	37,6	5.500	43,8	17.000	55,4	4.500	57,7	27.000	52,8	7.000	46,3	20.000	56,1	6.000	62,8	33.000	54,4
Senegal/Sénégal	565	9,1	880	4,7	200	4,3	1.645	5,6	650	5,2	980	3,2	220	2,8	1.850	3,6	700	4,6	1.060	2,9	240	2,5	2.000	3,3
Sierra Leone	230	3,8	660	3,6	270	5,8	1.160	4,0	400	3,2	1.200	3,9	400	5,1	2.000	3,9	450	2,9	1.400	3,9	450	4,7	2.300	3,6
Togo	145	2,4	225	1,2	45	1,0	415	1,4	220	1,7	340	1,1	60	0,8	620	1,2	240	1,6	370	1,0	70	0,7	680	1,1
Upper Volta/Haute-Volta	200	3,3	310	1,7	60	1,3	570	2,0	300	2,4	465	1,5	85	1,1	850	1,7	350	2,3	550	1,5	100	1,0	1.000	1,6
Total	6.135	100	18.530	100	4.635	100	29.300	100	12.575	100	30.720	100	7.795	100	51.090	100	15.160	100	35.725	100	9.570	100	60.455	100

Table 94:

Bus Demand in West Africa in the Year 1963 and Forecast for 1975 and 1980 Classified by Number of Seats
 Besoin en autobus en Afrique de l'Ouest en 1963 et évaluations pour 1975 et 1980, classé suivant le nombre de places

(round figures/valeurs arrondis)

Year/ Année Seat Capacity/ Nombre de places	1963								1975								1980							
	under/ moins de 10 seats/ 10 places		10 to/à 30 seats/ 30 places		over/ plus de 30 seats/ places		Total		under/ moins de 10 seats/ 10 places		10 to/à 30 seats/ 30 places		over/ plus de 30 seats/ places		Total		under/ moins de 10 seats/ 10 places		10 to/à 30 seats/ 30 places		over/ plus de 30 seats/ places		Total	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
Dahomey	-	-	10	0,6	-	-	10	0,5	5	4,6	20	0,9	5	1,3	30	1,1	5	3,8	30	1,2	5	1,2	40	1,3
Gambia/Gambie	2	4,1	16	1,0	2	1,1	20	1,1	3	2,8	15	0,7	2	0,5	20	0,7	3	2,3	15	0,6	2	0,5	20	0,6
Ghana	40	81,6	735	44,1	10	5,3	785	41,3	80	74,1	780	34,0	40	10,5	900	32,3	100	75,1	850	32,6	50	11,7	1.000	31,5
Guinea/Guinée	x	-	25	1,5	10	5,3	35	1,8	x	-	15	0,7	15	3,9	30	1,1	x	-	15	0,6	15	3,5	30	1,0
Ivory Coast/Côte d'Ivoire	5	10,2	25	1,5	10	5,3	40	2,1	15	13,9	75	3,3	30	7,9	120	4,3	20	15,0	90	3,4	30	7,0	140	4,4
Liberia/Libéria	x	-	220	13,2	-	-	220	11,6	x	-	240	10,5	10	2,6	250	9,0	x	-	250	9,6	10	2,3	260	8,2
Mali	x	-	10	0,6	-	-	10	0,5	x	-	10	0,4	5	1,3	15	0,5	x	-	10	0,4	5	1,2	15	0,5
Mauritania/Mauritanie	x	-	4	0,2	1	0,5	5	0,3	x	-	8	0,3	2	0,5	10	0,4	x	-	8	0,3	2	0,5	10	0,3
Niger	-	-	(2)	0,1	-	-	(2)	-	3	2,8	2	0,1	5	1,3	10	0,4	3	2,3	2	0,1	5	1,2	10	0,3
Nigeria ¹⁾	x	-	440	26,3	110	58,5	550	28,9	x	-	780	34,0	200	52,6	980	35,3	x	-	920	35,2	230	54,0	1.150	36,3
Senegal/Sénégal ¹⁾	x	-	110	6,7	30	16,0	140	7,4	x	-	145	6,1	35	9,2	180	6,3	x	-	160	6,1	40	9,4	200	6,3
Sierra Leone	x	-	50	3,1	10	5,3	60	3,1	x	-	180	7,9	20	5,3	200	7,2	x	-	230	8,8	20	4,7	250	7,9
Togo	2	4,1	3	0,2	-	-	5	0,3	2	1,8	6	0,2	2	0,5	10	0,3	2	1,5	6	0,2	2	0,5	10	0,3
Upper Volta/Haute-Volta	x	-	15	0,9	5	2,7	20	1,1	x	-	20	0,9	10	2,6	30	1,1	x	-	25	0,9	10	2,3	35	1,1
Total	49	100	1.663	100	188	100	1.900	100	108	100	2.296	100	381	100	2.785	100	133	100	2.611	100	426	100	3.170	100

x contained in the category 10 to 30 seats/
 x compris dans le groupe des autobus de 10 à 30 places

1) Categories: up to 20 seats and more than 20 seats/
 1) groupes jusqu'à 20 places et de plus de 20 places

{ } Values under 5 are rounded for adding up
 { } Valeurs inférieures à 5 arrondies pour faire le total

Table 95:

Truck/van Demand in West Africa in the Year 1963 and Forecast for 1975 and 1980 Classified by Pay Load
 Besoin en camion/camionnettes en Afrique de l'Ouest en 1963 et évaluations pour 1975 et 1980, classé suivant la charge utile
 (round figures/valeurs arrondis)

Year/ Année pay load/ charge utile	1963								1975								1980							
	under/ moins de 1 t		1 to/à 5 t		over plus de 5 t		Total		under/ moins de 1 t		1 to/à 5 t		over/ plus de 5 t		Total		under/ moins de 1 t		1 to/à 5 t		over/ plus de 5 t		Total	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
Dahomey	170	4,7	150	2,4	90	1,6	410	2,7	210	4,9	180	2,6	130	1,8	520	2,8	230	5,0	190	2,6	140	1,9	560	2,9
Gambia/Gambie	35	0,9	40	0,7	20	0,4	95	0,7	50	1,2	45	0,6	35	0,5	130	0,7	55	1,2	45	0,6	40	0,5	140	0,7
Ghana	950	26,1	1.500	24,3	700	12,6	3.150	20,5	800	18,4	1.100	15,7	800	11,1	2.700	14,6	900	19,6	1.200	16,3	900	12,0	3.000	15,4
Guinea/Guinée ¹⁾	-	-	400	6,5	200	3,6	600	3,9	-	-	670	9,6	410	5,7	1.080	5,7	-	-	730	9,9	470	6,2	1.200	6,2
Ivory Coast/Côte d'Ivoire	850	23,3	800	13,0	200	3,6	1.850	12,0	1.000	23,1	950	13,6	200	2,8	2.150	11,6	1.000	21,8	1.000	13,6	200	2,7	2.200	11,3
Liberia/Libéria ²⁾	115	3,2	115	1,9	500	9,0	730	4,7	210	4,9	210	3,0	880	12,3	1.300	7,0	225	4,9	225	3,1	940	12,5	1.390	7,1
Mali	110	3,0	150	2,4	110	2,0	370	2,4	90	2,1	240	3,4	110	1,5	440	2,4	90	2,0	250	3,4	110	1,5	450	2,3
Mauritania/Mauritanie	100	2,8	60	1,0	75	1,4	235	1,6	150	3,5	90	1,3	110	1,5	350	1,9	170	3,7	100	1,4	130	1,7	400	2,0
Niger	200	5,5	100	1,6	100	1,8	400	2,6	250	5,8	130	1,9	170	2,4	550	3,1	270	5,9	140	1,9	190	2,5	600	3,1
Nigeria	275	7,6	2.200	35,7	3.025	54,4	5.500	35,8	300	7,0	2.350	33,6	3.550	49,7	6.200	33,6	300	6,5	2.350	31,8	3.550	47,1	6.200	31,8
Senegal/Sénégal ²⁾	410	11,3	140	2,3	220	4,0	770	5,0	470	10,8	170	2,4	210	2,9	850	4,6	500	10,9	180	2,5	220	2,9	900	4,6
Sierra Leone ³⁾	140	3,8	190	3,1	210	3,8	540	3,5	300	7,0	400	5,7	400	5,6	1.100	6,0	300	6,5	450	6,1	450	6,0	1.200	6,2
Togo ⁴⁾	100	2,8	120	1,9	80	1,4	300	1,9	140	3,2	170	2,4	100	1,4	410	2,2	150	3,3	190	2,6	100	1,3	440	2,3
Upper Volta/Haute-Volta	185	5,0	200	3,2	25	0,4	410	2,7	350	8,1	290	4,2	60	0,8	700	3,8	400	8,7	310	4,2	90	1,2	800	4,1
Total	3.640	100	6.165	100	5.555	100	15.360	100	4.320	100	6.995	100	7.165	100	18.480	100	4.590	100	7.360	100	7.530	100	19.480	100

1) Trucks classified in categories: under 4 tons and over 4 tons
 Vans indicated under trucks (1 to 4 tons)/
 Camions répartis en groupes de moins de 5 t et de plus de 4 t
 Camionnettes comprises dans les camions de 1 à 4 t

2) Trucks classified in categories: under 4 tons and over 4 tons/
 Camions répartis en groupes de moins de 4 t et de plus de 4 t

3) Trucks classified in categories: under 3 tons and over 3 tons/
 Camions répartis en groupes de moins de 3 t et de plus de 3 t

4) Trucks classified in categories: under 6 tons and over 6 tons/
 Camions répartis en groupes de moins de 6 t et de plus de 6 t

Table 96:

Tractor and Trailer Demand in West Africa in the Year 1963 and Forecast for 1975 and 1980

Besoin en tracteur routiers et remorques en Afrique de l'Ouest en 1963 et évaluations pour 1975 et 1980

(round figures/valeurs arrondis)

Year/ Année Type/ Genre	1963						1975						1980					
	Tractors/ Tracteurs routiers		Trailers/ Remorques		Total		Tractors/ Tracteurs routiers		Trailers/ Remorques		Total		Tractors/ Tracteurs routiers		Trailers/ Remorques		Total	
	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%	units/ nombre	%
Dahomey	5	1,1	5	1,1	10	1,1	10	1,4	20	2,2	30	1,9	10	1,2	20	1,9	30	1,9
Gambia/ Gambie	x	x	-	-	-	-	x	x	-	-	-	-	x	x	-	-	-	-
Ghana	x	x	50	10,9	50	5,4	x	x	150	17,3	150	9,4	x	x	200	19,3	200	10,9
Guinea/ Guinée	5	1,1	-	-	5	0,5	20	2,8	-	-	20	1,3	25	2,9	-	-	25	1,3
Ivory Coast/ Côte d'Ivoire	295	63,5	320	69,5	615	66,6	450	62,0	550	63,4	1.000	62,6	550	64,0	650	63,0	1.200	63,5
Liberia/ Libéria	40	8,6	-	-	40	4,3	100	13,8	-	-	100	6,3	110	12,8	-	-	110	5,8
Mali	10	2,1	10	2,2	20	2,2	15	2,1	20	2,2	35	2,2	15	1,7	20	1,9	35	1,9
Mauritania/ Mauritanie	10	2,1	10	2,2	20	2,2	15	2,1	15	1,7	30	1,9	15	1,7	15	1,4	30	1,9
Niger	15	3,2	20	4,3	35	3,7	35	4,8	35	4,0	70	4,4	40	4,7	40	3,9	80	4,4
Nigeria	x	x	-	-	x	x	x	x	-	-	x	x	x	x	-	-	x	x
Senegal/ Sénégal	65	14,0	20	4,3	85	9,2	40	5,5	40	4,6	80	5,0	50	5,8	50	4,8	100	5,0
Sierra Leone	x	x	-	-	x	x	x	x	-	-	x	x	x	x	-	-	x	x
Togo	5	1,1	10	2,2	15	1,6	15	2,1	15	1,7	30	1,9	15	1,7	15	1,4	30	1,9
Upper Volta/ Haute-Volta	15	3,2	15	3,3	30	3,2	25	3,4	25	2,9	50	3,1	30	3,5	25	2,4	55	2,9
Total	465	100	460	100	925	100	725	100	870	100	1.595	100	860	100	1.035	100	1.895	100

x = contained under trucks/
x = compris dans les camions

- = not available/
- = inconnus