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UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org

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CITROEN IN LATIN AMERICA 2/

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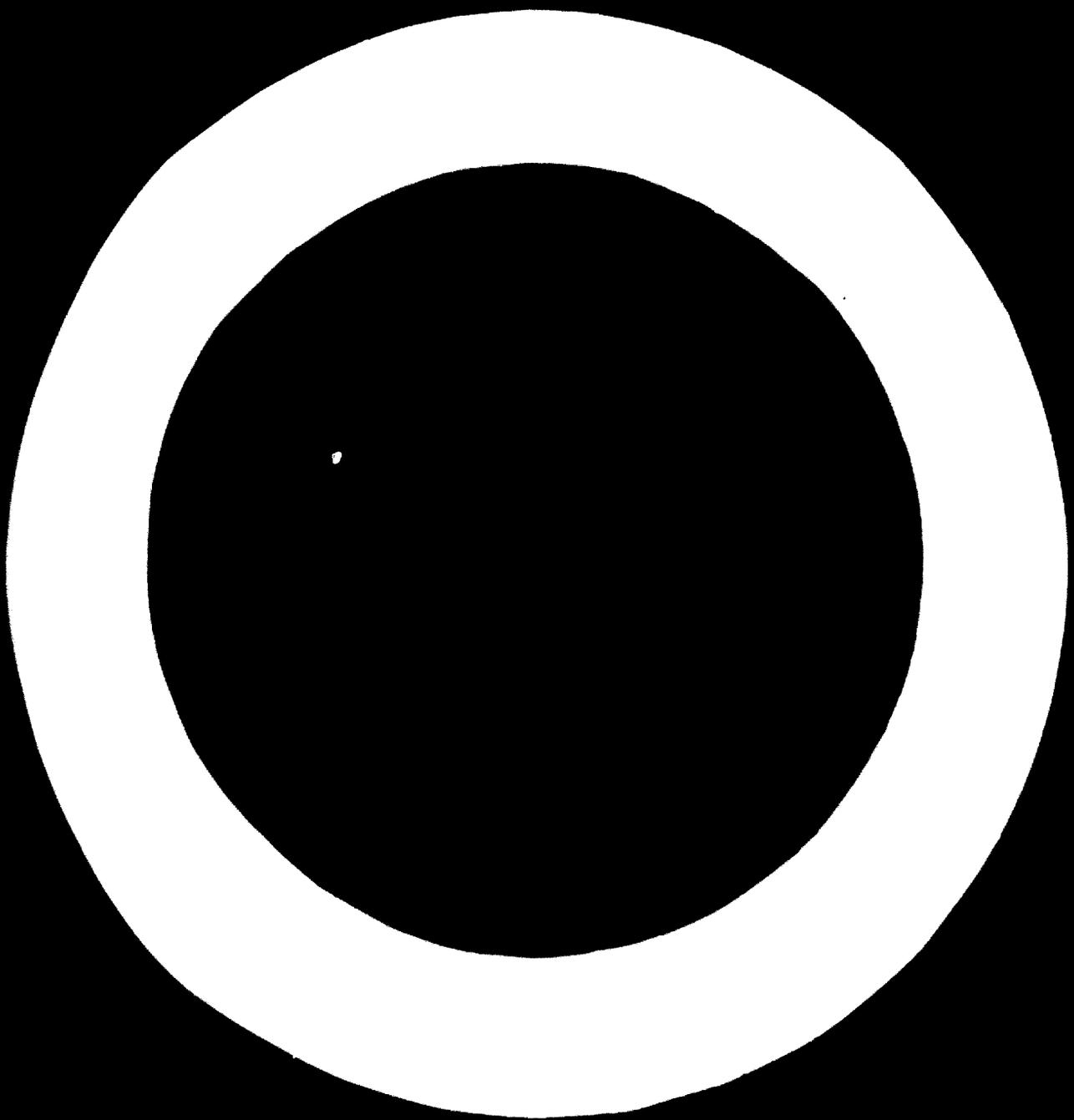

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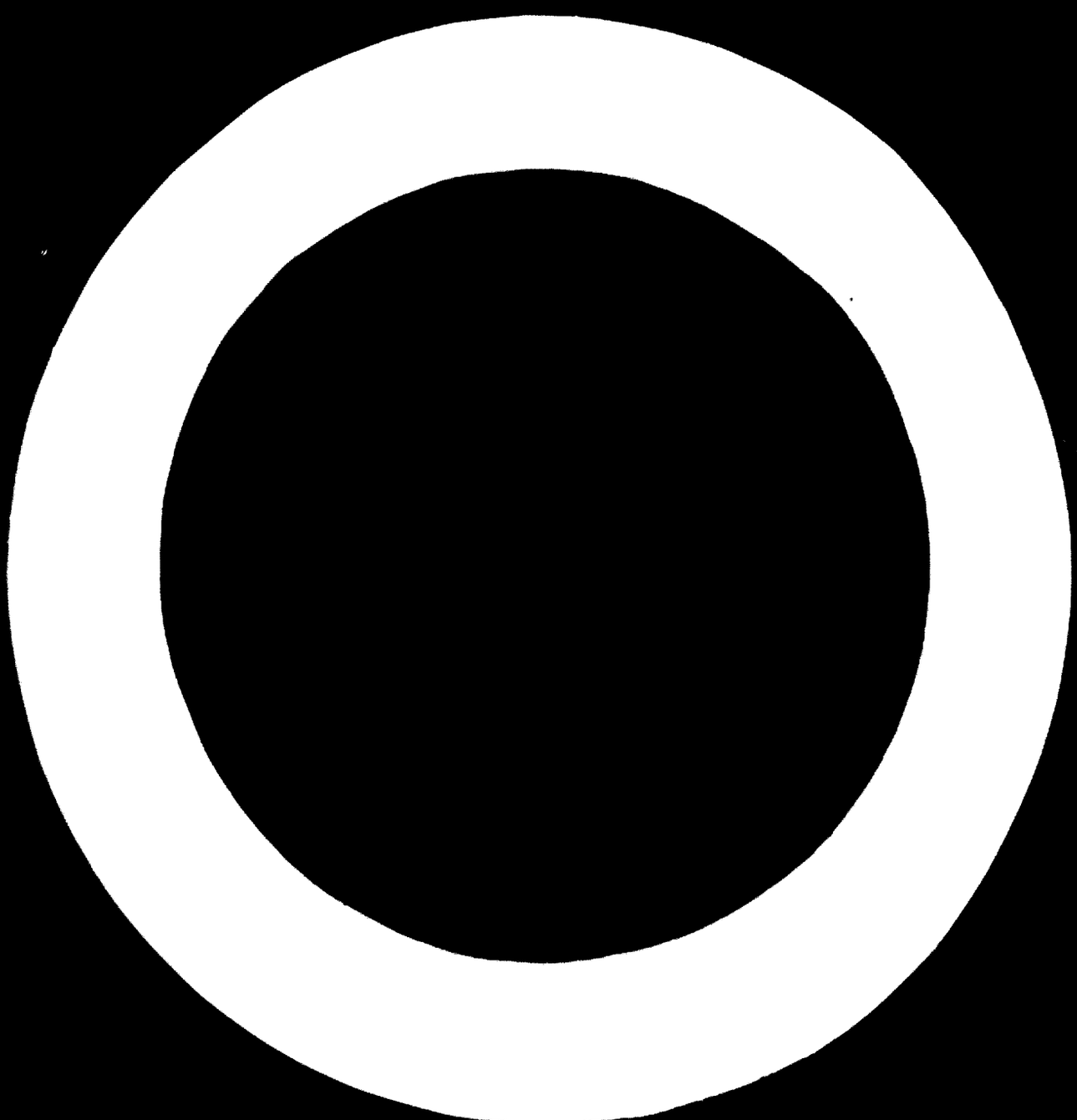


CITROEN IN LATIN AMERICA

I. INTRODUCTION

Two subsidiaries of Citroën France in Latin America are currently producing popular vehicles of the French 2/3 CV type: 1/

Citroën Argentina in Argentina

Citroën Chilean in Chile

This case study is a simple description of how Citroën established itself in these two countries and the results obtained.

The following main guidelines were laid down in 1959 for the installation of plants:

To produce a popular car at least equal in quality to that produced in France, at a minimum cost.

To ensure the degree of national integration imposed by existing regulations.

To select investments strictly with a view to eliminating all unnecessary expenses in obtaining the requisite quality and price under satisfactory working conditions.

To turn domestic industries to the best possible account by helping them to develop.

For the two countries to co-operate with each other, despite all difficulties, in line with the economic agreements linking them within the framework of ALALC.

To adapt the French vehicle to local conditions of use and market requirements.

In 1959, while envisaging the prospects for Latin America, we considered that industries should be so planned as to meet existing requirements, and that it was more profitable to establish a plant which would be fully utilised than to keep in operation a large-scale plant that would use only a small proportion of its capacity.

1/ Official French rating.

/II. CITROEN

II. CITROEN ARGENTINA

1. Background

In 1959 the Executive established the bases for a motor-vehicle industry in Argentina.

By virtue of Decree N° 12 267 of 30 September 1959, Citroën was authorised to establish an industry in Argentina, which thus became Citroën Argentina S.A.

Successive decrees authorised the "radication" 2/ of foreign capital, which up to 31 December 1969 totalled 9.2 million dollars.

The counterpart shares allotted to companies which have "radicated" such capital amount to a value of 5 million dollars.

The authorised capital of Citroën Argentina is 3 000 million old pesos.

In July 1970 the radication of capital plus domestic contributions amounted to:

Subscribed capital	1 500 million old pesos
Paid up capital	1 454 million old pesos

After Decree N° 12 267 was published in 1959, and taking advantage of the great enterprise and high level of technology of the Argentine firm Pfaff-Bromberg, of Jeppenner, a start was made on the assembly of vehicles with imported components in a workshop owned by the above firm, which became a pilot workshop for Citroën Argentina.

In 1960, motor-vehicles were produced in a larger pilot workshop which Pfaff-Bromberg made availabe to Citroën Argentina. Domestic components were incorporated in these vehicles, and Pfaff-Bromberg soon started manufacturing parts in its own workshops

In September 1960, Citroën Argentina began to produce motor-vehicles in its own plant in Buenos Aires, where it still operates today.

2/ Contributions of means of production not subject to customs duties or cash payments; in exchange, the contributing company or companies received shares in the Argentine firm. These means, of course, are not available in Argentina.

/The premises

The premises formerly occupied by the pilot workshop in Jeppener is now producing metal parts, while Pfaff-Bromberg is continuing to develop its production for Citroën Argentina.

At present, more than 350 machine-tools, which form part of the Citroën "radication" of capital, are producing about 200 parts and/or components in the Pfaff-Bromberg workshops.

This firm endeavours to utilize its equipment at full capacity by manufacturing for other motor-vehicle plants (Fiat, Peugeot).

The fact that production started in a pilot workshop pending the establishment of the Citroën Argentina Plant enabled us to make progress in improving the quality of domestic parts and in local integration.

2. Vehicles produced

(a) Models

February 1960	AZL Saloon	(2 CV) with a 12 HP SAE engine
February 1960	AZU Van	(2 CV) with a 12 HP SAE engine
April 1964	Same models	(2 CV) with a 14 HP SAE engine
October 1965	Same models	(2 CV) with an 18 HP SAE engine
October 1965	AZAM Saloon	(2 CV) with an 18 HP SAE engine
September 1969	Same models	(2 CV) with an 18 HP SAE engine
September 1969	AX Saloon	(3 CV) with a 32 HP SAE engine
March 1970	AK Van	(3 CV) with a 32 HP SAE engine
September 1970	Proposed production of AMF Break	(3 CV) with a 35 HP SAE engine

/(b) Prices of

(b) Prices of vehicles produced to date

	Argentina				France			
	Price excluding taxes a/		Sales price b/		Price excluding taxes		Sales price	
Model	Pesos	Dollars	Pesos	Dollars	Francs	Dollars	Francs	Dollars
AZAM (2CV)	5 708	1 427	8 640	2 160	4 401	793	6 743	1 215
AX (3CV)	5 950	1 487,50	9 650	2 412	4 767	859	7 283	1 312
AK (3CV)	5 200	1 300	9 170	2 292.50	4 917	886	7 082	1 276

a/ In France: "gross price excluding taxes" ("export agent" sales price). In Argentina the drawback, the refund of internal taxes and the sales tax are all deducted. In certain cases, if exports are considered as supplementing production, the Argentine price can be reduced by deducting overheads, amortization, etc.

b/ Sales price to the public in the country of origin.

(c) Production from 1960 to 1979

See table in annex.

3. Items manufactured by Citroën Argentina plants in Buenos Aires and by its principal sub-contractors

(a) Citroën plant in Buenos Aires

The most important mechanical parts produced by this plant include:

Motor base

Cylinder-heads

Suspension arm

Flywheel

Coupling lever

Centrifugal clutch gear wheel

As far as the body is concerned, its work includes:

Body assembly

Floor assembly

/Door assembly

Door assembly

Trim

General assembly of vehicles

(b) Jeppener plant

The most important mechanical parts produced by this plant include:

Front cross member

Rear cross member

Gear-box casing

Differential casing

Engine cylinder

Braking cylinders

Master cylinder

Starter crown wheel

Valve levers

Intake and exhaust pipes

Rear gear-box cover

Control lever

Forks

King pins

Front hubs

Rear hubs

Brake drums

Steering shaft

Steering column

Front and rear seats

Various parts of suspension housing

(c) Other plants

The main sub-contractors are responsible for the following:

Bevel gearing

Tyres

Stampings

/Clutch

Clutch (complete unit)
Electrical instruments
Finish
Screws, bolts
Fuel pump
Starter
Alternator
Dynamo
Regulator
Battery

4. Capacity to produce different models

The present production capacity of the Buenos Aires plant is 6 vehicles per hour. With two working shifts totalling seventeen hours a day, its output is 25 000 vehicles in a year of 250 working days.

It can produce either a single model or several of the range of models currently being manufactured.

5. Description of plants

A brief description of the Citroën Argentina plants and the main sub-contractors is given below.

(a) Citroën Argentina plant in Buenos Aires

Citroën Argentina S.A. started operating in the pilot workshop in Jeppener, in the province of Buenos Aires, on the premises of the firm Pfaff-Bromberg.

Towards the middle of 1960 an industrial establishment was purchased in the city of Buenos Aires (Zepita 3220).

This plant consists of three main buildings of the following dimensions:

Buildings	Land area	Built area
South	35 000	32 000
North	35 000	28 000
East	8 000	8 000
Total	78 000	68 000

/The plant

The plant is completely equipped with up-to-date facilities for manufacturing, and for controlling its own production and the reception of parts from suppliers. The following description is given of some of its most important features.

South building. The manufacture of bodies, painting and assembly are all concentrated in this building. Body welding takes up an area of over 7 000 m^2. There are facilities for phosphatic treatment and painting by complete immersion, consisting of six 30 000 litre tanks and a drying oven operating at 120°C. The painting is done by immersion in another tank of the same capacity, followed by drying in an oven at 130°C.

The painting facilities comprise:

An area for rubbing down and preparing the metal surface;

A paint-spraying room with regulated temperature and humidity;

A 40 metre tunnel-type oven at 130°C.

Two automatic assembly-lines are used, one 62 metres and the other 120 metres.

The vehicle is then completed and checked on a third 65 metre finishing line.

This building also has space for checking, reception of materials, storerooms, etc.

North building. The following metal parts are produced in this building: motor base, cylinder-heads, clutch, suspension, etc. A special feature of these production lines is that each machine is equipped with very precise self-controlling devices so that the operative himself can control each operation.

Assembly of mechanical components: engine, gear-box, suspension, steering, etc.;

Engine test beds;

Horse power rating test room (Fronde brake);

Workshop for machine-tool maintenance and the manufacture of tool outfits and appliances;

/The laboratory,

The laboratory, dining-room and kitchens are in a separate building;
The administration offices are in a 1 250 m^2 two-storey building.
East building. The following services operate in this building:
Spare parts department;
Repairs and after-sales department;
Sales department.

The Buenos Aires plant obtains high-tension electric power from the public system. High tension power is also distributed inside the plant, providing energy to six transformer substations.

(b) Pfaff-Bromberg plant in Jeppener

Area:

Land (industrial sector and area used for living quarters)	206 113 m^2
Area of industrial sector	47 583 m^2
Built area of industrial sector	17 000 m^2

On the available land there are not only industrial buildings but also 67 houses and 5 flats for workers' families, and buildings with bedrooms for bachelor staff members. Other buildings include a canteen, a medical consulting room, and dormitories for bachelor staff members.

Ten houses have been built for the staff and six others are in course of construction on 8 000 m^2 of land owned by the company in the town of Coronel Brandsen, 14 kilometres away.

The built area in the industrial sector comprises a number of buildings used for:

Security, galvanizing, power plant, tool room, forging, manufacture of seats, stores, manufacture of mechanical parts, heat treatment, carpentry, administration and laboratory, general management, caretaker's room and cloakrooms.

6. Investment

The total investment from 1960 to 1969 consisted of:

	Dollars
Imported facilities	7 987 800
Domestic facilities	11 802 700
Total	19 790 500

The domestic investment calculated for accounting purposes in Argentine pesos were converted into dollars at the average rate for each year.

/VEHICLES PRODUCED

VEHICLES PRODUCED

Year	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970 (proposed)
Total production capacity (vehicle per hour)	1.5	3	4	6	6	6	6	6	6	6	6
Actual productions:											
AZL	741	3 491	4 581	2 427	5 766	3 822	1 262	1 793	779	736	900 AMP
AZLM	-	-	-	-	-	981	4 272	6 228	8 849	10 588	4 424
AK	-	-	-	-	-	-	-	-	-	1 200	10 661
AZU	197	826	895	541	1 181	842	680	507	2 386	2 956	2 914 AK
Total	938	4 267	5 476	2 968	6 947	4 645	6 214	2 228	12 012	15 280	18 899
Cumulative production	938	5 205	10 681	13 589	20 536	25 181	31 395	40 623	52 635	67 915	86 814

III. CITROEN CHILENA

1. History

In 1958, Mr. José Llorente founded the Importadora J. Llorente company, consisting mainly of a motor-vehicle assembly plant, in the free zone of Arica. The generous temporary tax exemptions available in this free zone were designed to attract motor-vehicle assembly plants and electronic industries. The plant produced about a hundred plastic-bodied passenger cars.

In 1959, plans were made to assemble a cab-chassis Citroën 2CV delivery van (AZU), transformed into a two-door, four-seater vehicle serving as a pick-up van (open bucket trunk). The manufacturing plan, containing technical and financial references and a nationalisation programme, was finally adopted.

In 1960, financial difficulties with regard to the implementation of the plan resulted in most of the shares in Importadora J. Llorente being turned over to two new associates under whom the company made great commercial strides between 1961 and 1964, embarking upon new techniques which enabled it to cater to the requirements of an avid clientele and a hungry market.

In 1962, Decree N° 835 (30 June 1962) was issued establishing a programme of local integration (national content), set at 50 per cent of the f.o.b. value in the country of origin and based on integration and assembly coefficients to be determined annually.

In 1964, faced with the growing difficulty of meeting the minimum national content requirements, the associates transferred their majority share in the firm and their manufacturing authorization to Citroën Chilena.

From then on, the firm began a new lease of life under Citroën France in which the technical assistance afforded between 1961 and 1964 now became technical and commercial management. Further study was made of the possibility of meeting national content requirements by means of compensated exchanges which were then permitted under the existing bilateral agreement between Chile and Argentina.

Towards the end of 1964, Citroën Chilena sent its first exchange parts to Citroën Argentina for control and acceptance.

/From 1965

From 1965 onwards, the existence of Citroën Chilena was tied up with that of Citroën Argentina.

Because of the distance separating the general headquarters in Santiago de Chile from the plant in Arica, a Technical Office was set up in Arica to handle industrial management so as to ensure better administration.

In 1968, special studies revealed that, in order to satisfy real and potential increasing national content requirements, minimum quality standards, growing demand and the increasingly important multinational exchange agreements, it would be necessary to plan a major industrial expansion. This eventually materialized in April 1970. The extension of the Arica plant was to be used for producing stamped and forged parts and certain mechanical units.

In 1970, work started on the industrial extension which, judging from the present rapidly developing economic situation, should very quickly become both profitable and efficient.

2. Vehicles produced

(a) Models

In 1959	AZL saloon	(2CV) with 12 HP SAE engine
In 1964	AZL saloon	(2CV) with 14 HP SAE engine
In 1965	AZL saloon	(2CV) with 18 CV SAE engine
	AZU delivery van	(2CV) with 18 CV SAE engine
In 1969	AZL saloon	(2CV) with 18 CV SAE engine
	AZAM saloon	(2CV) with 18 CV SAE engine
	AZU delivery van	(2CV) with 18 CV SAE engine
In 1970	AZAM saloon	(2CV) with 18 HP SAE engine
	AX saloon	(3CV) with 32 HP SAE engine
	AK delivery van	(3CV) with 32 HP SAE engine
	AZU delivery van	(3CV) with 18 HP SAE engine

/(b) Prices

(b) Prices of current vehicles

	CHILE				FRANCE			
	Price excluding taxes a/		Sales price b/		Price excluding taxes		Sales price	
Model	Escudos	Dollars	Escudos	Dollars	Escudos	Dollars	Escudos	Dollars
AZAM (2CV)	29 334	2 399	42 731	3 494	4 401	793	6 743	1 215
AZU (2CV)	27 522	2 250	40 250	3 292	4 573	824		

a/ Price at which vehicles can be exported.

b/ Sales price to the public.

(c) Production from 1959 to 1970

Model	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
AZL	546	1 020	1 187	2 192	1 936	1 533	1 347	720	1 620	1 980	45	
AZAM											2 025	900
AX												1 875
AZU							3	630	315	855	1 260	855
AK												525
Total	546	1 020	1 187	2 192	1 936	1 533	1 350	1 350	1 935	2 835	3 330	4 155
Cumulative total	546	1 566	2 753	4 945	6 881	8 414	9 764	11 114	13 040	15 884	19 214	23 369

/3. Items

3. Items manufactured by the Citroën Chilena plant

Arica plant

Body:

- Roof hood
- Boot
- Boot door
- Rear part of the body
- Body side
- Bonnet
- Seats
- Side bonnet panel
- Floor
- Accelerator pedal
- Accelerator pin
- Wiring
- Headlamp bracket
- Petrol tank
- Front and rear mudguards

Plus general assembly of the vehicle.

4. Production capacity of the various models

At present, the Arica plant has a potential production capacity of 3 vehicles per hour which, with two teams working 17 hours per day for 250 working days per year, would mean a possible annual production of 12 240 vehicles.

Although relatively little investment would be required to attain this production level, the chances of doing so are restricted by the low industrial potential of local suppliers.

These production figures are valid either for a single model or for several models within the range currently being manufactured.

5. Description of the plant

(a) The Arica plant

The Arica plant is located on a piece of land with a surface area of:

34 000 m^2

/The total

The total built-on surface area is :

19 500 m^2

Installed capacity is 3 500 kva.

(1) Original building:

This building is used for the following operations:

- welding, painting and assembly of vehicles
- manufacture of cables
- annex: storerooms, compressed air and industrial gases centre, and administrative offices

The total covered area is 6 660 m^2.

(2) New building

This is at a very advanced stage of construction and already partly serviceable. It will be used for the following operations:

- stamping body sections
- forging
- machining and assembling mechanical parts
- equipment, maintenance
- control, metrology, laboratories

The total covered area is 11 340 m^2.

(3) Services and administration building:

- cloakrooms, toilets, dining room
- administration: management, accounts, planning, methods, etc.

The total covered area is 750 m^2.

(b) <u>The Santiago supply centre (San Nicolas)</u>

The total covered area of this centre, located in Santiago, is 1 020 m^2. It contains:

- Supplies department
- Reception department
- Suppliers' accounts department
- Storeroom and despatch department.

/6. Investments

6. Investments

Up to 1969, investments amounted to approximately 1 200 000 dollars.

The current industrial expansion programme represents an investment of about 4 000 000 dollars which, by 1971, will bring the total invested up to 5 200 000 dollars.

IV. LATIN AMERICAN INTEGRATION

A. Compensation - Complementarity

It was in 1963 that, in view of production possibilities in Chile, Citroën decided that, from the point of view of a manufacturer, it was impossible to justify the investment that would be needed to attain the local integration percentage required by the Chilean Government.

The Chilean Government then agreed to consider products imported from ALALC countries as national parts, provided that in return Chile was able to export goods equal in value to those countries.

In 1964, with the agreement of the Chilean and Argentine Governments, Citroën began compensation operations. As was done by Mr. Beckel at Karlovy-Vary, tribute must be paid to the Governments that first introduced this form of co-operation.

Each vehicle consists of:

- a proportion of parts imported from Europe
- a proportion of national parts produced by one of the countries at a rate sufficient to satisfy domestic requirements
- a proportion of Latin American national parts produced by both countries at a combined rate sufficient to permit the exportation of part of them to the other country
- a proportion of Latin American parts entirely imported from the other country.

/These proportions,

These proportions, considered in terms of their equivalent French value, can be expressed as a percentage of the ex-France price of the complete vehicle 3/.

B. Citroën Argentina

1. Argentine integration

The evolution of the local integration percentage of Citroën Argentina between 1960 and 1965 is as follows:

Model	1960	1961	1962	1963	1964	1965
AZL	37.6	43.2	57.2	72.5	88.3	92.6
AZU	37.6	43.2	52.0	71.9	87.9	92.6

In 1970, expressed as a percentage of the total wholesale price, excluding taxes, of the complete vehicle, local integration was as follows:

	Model		
	AZL/A53	AK/H28	AZAM/H28
Parts imported from Europe	6.58	7.96	7.43
Non-exported Argentine parts	68.44	38.75	40.11
Latin American Argentine parts	21.55	50.29	48.61
Chilean parts	3.43	3.00	3.15
Total	100.00	100.00	100.00
Total Argentine parts	89.99	89.04	88.72

3/ This corresponds to the Export Agent price and is not subject to French taxes and duties, i.e. the wholesale price exclusive of all taxes.

2. Items manufactured on a compensation basis

The items manufactured by Citroën Argentina to satisfy the requirements of both Argentina and Chile are as follows:

(a) Manufactured items

Floor unit
Side panels
Door frames
Doors
Apron unit
Suspension arms
Flywheel
Coupling level

(b) Assembled items

Front axle unit
Rear axle unit
Suspension housing unit
Motor and gear-box unit
Set of pedals

3. Investment

As a result of its compensation arrangements with Chile, Citroën Argentina has cut down or postponed its investment programme. In the case of the AMF station wagon alone, investment was cut by about 300 million Argentine pesos (750 000 dollars), not including a roughly similar reduction in investment by the local suppliers.

4. Production costs

In certain cases the increased orders necessary to satisfy the combined requirements of Argentina and Chile under the compensation arrangement have enabled the Argentine suppliers to reduce their sales price to Citroën Argentina.

/Certain specific

Certain specific cases of price reductions are given below:

Part No.	Description	Price for Argentina (new pesos)	Price for Chile (new pesos)	Reduction (percentage)
A 721-120/120a	Centre bracing	1.83	1.62	11.5
A 721-122/122a	Centre bracing	1.56	1.34	14.10
VAZ 852-2	Bonnet (M.C.)	21.00	19.50	7.14
AM 721-83	Front mudguard	1.00	0.90	10.00
A 381-2	Mitre socket	2.28	0.64	71.92
A 324-9a	Spring	1.77	1.33	24.85
480-S	Screw	0.40	0.28	30.00
620-002	Bearing	4.59	3.90	15.03
10-482	Bearing	8.26	7.02	15.01
89-964	Bearing	10.63	9.35	12.04
AZ 565004	Windscreen wiper	44.37	36.48	17.78
AZ 564-50e	De-icer	8.00	5.34	33.25
AZ 535-1b	Regulator	17.45	13.09	24.98
s/n°	Clutch and clutch plate unit	51.92	24.00	53.77
V 416-04	Wheel	14.00	10.80	22.85
A 344-01	Mitre wheel gearing	76.20	35.00	54.06

Production costs have also been reduced as a result of adding the parts required by Citroën Chilena to the items manufactured by Citroën Argentina. Parts of mechanical units produced by Argentina for both countries have in fact cut costs by about 6 per cent.

From 1967 and 1970, the complementarity arrangement between Argentina and Chile made it possible partly to offset the higher price of supplies by increasing the demand for them.

/It must

It must be remembered that, during the period in question, wholesale prices in the rural sector rose from a level of 3% to [illegible] whereas the prices of vehicles did not vary to any great extent. This tendency of inter-sectoral prices to remain stable was not due entirely to exports to Chile, but there can be no doubt that these along with the increase in Argentina's own production, were largely responsible.

C. Citroën Chilena

1. Chilean integration

Between 1966 and 1969, strictly Chilean national integration, expressed as a percentage of the total wholesale price, excluding taxes, of the complete vehicle, was as follows:

Model	1966	1967	1968	1969
AZL	37%	37%	[illegible]	36%

In 1970 local integration was as follows:

	Model AZL
Parts imported from Europe	31%
Non-exported Chilean parts	35%
Latin American Chilean parts	6%
Chilean parts	28%
Total	100%
Total Chilean parts	41%

/2. Items

2. Items manufactured on a compensation basis

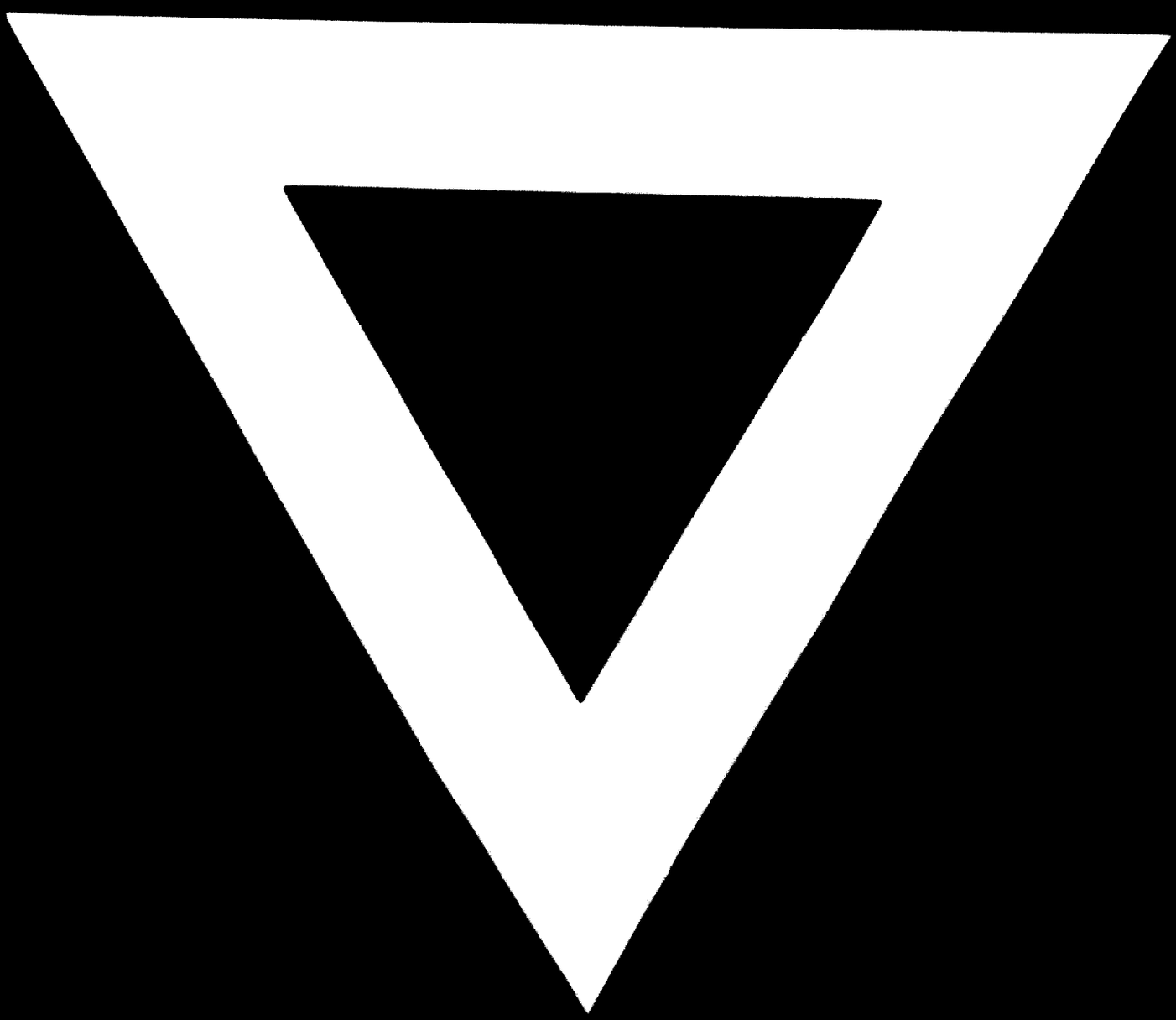
The following items were manufactured by Citroën Chilena to satisfy the requirements of both Chile and Argentina:

Ventilator - plastic parts
Side bonnet panels, floor, sheet metal parts
Headlamp brackets
Electric wiring
Petrol tank
Forging

3. Investment

As a result of its compensation arrangement with Argentina, Citroën Chilena has cut down or postponed its investment programme.

It can be estimated that, to attain a production rate of 30 vehicles per day, or 7 000 per year, with a national content of 75 per cent and under existing economic conditions in Chile, some 9 million dollars would have had to be invested to satisfy Chile's requirements alone, quite apart from those of Argentina.



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