

Revised Requirements. Programme-Italy/Road Transport/

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10000/148/923
from: July '45

TRANSPORTATION SUB-COMMISSION
Roads Division

Ref: AC/9/5/Tn5

31 July 1945.

SUBJECT: Revised Requirements Programme -- Italy (Road Transport).

TO : Director, Tptn. S/C
(Thru Planning Staff)

1. In accordance with your directions the following report is submitted on the above subject. The report deals with requirements of trucks, tyres, tyre manufacture materials, tyre repair materials, raw materials and coal for the manufacture of trucks and spare parts.

TRUCKS.

2. Existing C.C./S. approvals.

Existing C.C./S. approvals and shipping programmes cover the provision of the following trucks:

(a) Central Southern Italy and Islands.

	Lift (tons)	CAL or LAC	Source
550 x 3 ton (400 operable)	1650	CAL 1329	U.K.
550 x 2 1/2 " (350 operable)	2052	CAL 1589	U.S.A.
200 x 1 1/2 " (ex Turkish stock-pile)	450	CAL 1582	U.S.A.
<u>1300</u>	<u>4152</u>		

(b) Northwest Italy.

1700 x 1 1/2 ton (new)	5825	CAL 954	U.S.A.
1100 x 1 1/2 " (reconditioned)	2475	LAC 95	U.S.A.
500 x 1 1/2 " (new)	1125	"	
260 x 10 " (reconditioned)	2600	"	U.S.A.
<u>3500</u>	<u>10,025</u>		

(c) Total Italy

4880
14,137

Above lifts are calculated on a factor of 1.5 for U.S. 1 1/2 and 2 1/2 ton trucks.

5. Additional Requirements above Existing Approvals.

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	<u>Lift (tons)</u>	<u>CAL or LAC</u>	<u>Source</u>
550 x 3 ton (400 operable)	1650	CAL 1329	U.K.
550 x 2½ " (350 operable)	3062	CAL 1329	U.S.A.
300 x 1½ " (ex Turkish stock-pile)	450	CAL 1352	U.S.A.
<u>1300</u>	<u>4162</u>		

(b) Northwest Italy.

1700 x 1½ ton (new)	3825	CAL 954	U.S.A.
1100 x 1½ " (reconditioned)	2475	LAC 95	U.S.A.
500 x 1½ " (new)	1125	"	
250 x 10 " (reconditioned)	2500	"	U.S.A.
<u>5525</u>	<u>10,025</u>		

(c) Total Italy

<u>4860</u>	<u>14,187</u>
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Above lifts are calculated on a factor of 1-5 for U.S. 1½ and 2½ ton trucks.

3. Additional Requirements above Existing Approvals.

(a) Central Southern Italy and Islands.

- (1) "Programme of Essential Italian Imports 1945" dated 25 March 1945, submitted to C.C./S., contained a request for an additional 20,000 tons road lift in Category A. This is subject to reduction for lift estimated for industries and activities changed to Category B.

- (11) 1,000 tons required as replacement vehicles salvaged from original 1100 vehicles transferred from US stocks: (CAL 1329. 52 x 3 ton (Br) -- 156 tons and 200 x 2½ (US) tons -- 750 tons. Total 906 tons released from theatre stocks).

(b) Northwest Italy.

Present estimated requirements MIL. Existing approvals sufficient.

(c) Northwest Italy.

8,000 tons.

(d) Total Category A Requirement.

Total requirement is now 24,000 tons less 906 tons released from theatre stocks -- 23,094 tons.

4. C.C./S. approved the release of 4,000 x 2 1/2 ton "war weary" trucks from theatre stocks in CAL 1406. This will provide a lift of 15,000 tons based on a factor of 1.5. A balance of 8,094 tons still remains to be approved.

5. In CAL 1413 (Items 1 and 2 of requisition M38 296 Ord) C.C./S. advised that the 4,000 trucks approved in CAL 1406 are considered to meet total lift requirement above existing approvals for Italy. Any reduction of lift due to changes in supplies from Category A to Category B is considered by C.C./S. to meet in full requirement of 3,000 tons for M.E. Italy (see para 1(a) IAC 1207). It is now understood from A.F.H.Q. that C.C.S. have approved release of sufficient trucks to provide a 20,000 ton lift after cannibalization and rebuild.

6. To produce the 20,000 ton lift A.F.H.Q. propose to release on a basis of 5 trucks to produce 3 runners after cannibalization and rebuild by Italian Industry. It should be possible for Italian Industry to rebuild these vehicles and to produce many of the spare parts. It may be necessary to import certain parts which cannot be manufactured or obtained by cannibalization. This procedure would be more economical than importing new trucks.

7. Total Lift requirement was previously stated as 37,137 tons. Against this a total of 34,137 tons has been approved. In view of the number of civilian trucks available in North Italy and anticipated transfer of captured enemy vehicles, which will be transferred to the Italian Government, it is considered that existing approvals will satisfy in full the essential economic transport requirements of Italy provided that:

(a) Sufficient tyres and spare parts are forthcoming for civilian trucks now available in Italy. (See paras. 10, 11, 12 and 13)

(b) An adequate supply of coal and raw materials is made available for the manufacture of trucks, parts, tyres and for tyre repair in Italy. (See paras. 11, 12 and 13)

(c) Trucks to meet the 20,000 tons lift can be rebuilt and put into service. (See para. 9(a))

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5. In CAL 1413 (Items 1 and 2 of requisition MAS 293 Ord) C.C./S. advised that the 4,000 trucks approved in CAL 1406 are considered to meet total lift requirement above existing approvals for Italy. Any reduction of lift due to changes in supplies from Category A to Category B is considered by C.C./S. to meet in full requirement of 3,000 tons for N.E. Italy (see para 1(a) LAC 1207). It is now understood from A.F.H.Q. that C.C.S. have approved release of sufficient trucks to provide a 20,000 ton lift after cannibalization and rebuild.

6. To produce the 20,000 ton lift A.F.H.Q. propose to release on a basis of 2 trucks to produce 2 runners after cannibalization and rebuild by Italian Industry. It should be possible for Italian Industry to rebuild these vehicles and to produce many of the spare parts. It may be necessary to import certain parts which cannot be manufactured or obtained by cannibalization. This procedure would be more economical than importing new trucks.

7. Total lift requirement was previously stated as 37,187 tons. Against this a total of 34,187 tons has been approved. In view of the number of civilian trucks available in North Italy and anticipated transfer of captured enemy vehicles, which will be transferred to the Italian Government, it is considered that existing approvals will satisfy in full the essential economic transport requirements of Italy provided that:

- (a) Sufficient tyres and spare parts are forthcoming for civilian trucks now available in Italy. (see paras. 10, 11, 12 and 13)
- (b) An adequate supply of coal and raw materials is made available for the manufacture of trucks, parts, tyres and for tyre repair in Italy. (see paras. 11, 12 and 13)
- (c) Trucks to meet the 20,000 tons lift can be rebuilt and put into service. (see para. 9(e)).
- (d) Supplies of spare parts for all trucks sold to the Italian Govt., beyond the capacity of Italian Industry to manufacture, are made available for purchase by the Italian Government through commercial channels. (see para. 9)

CONTROL VEHICLES.

8. Requisitions for 325 jeeps and 200 motorcycles were approved by C.C./S. in LAC 95 and 96 and have arrived in Italy. Balance of 95 jeeps and

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200 motorcycles are not yet covered by C.C./S. approval. These vehicles are considered essential to efficient control of civilian transport by the Italian Government.

SPARE PARTS.

9. Vehicles from U.S.A. and British Sources.

- (a) 550 x 3 ton trucks (Br.) A 50 day scale will be made available by A.F.H.C. After consumption of this stock trucks will be virtually worn out and Italian industry must produce any further parts required.
- (b) 550 x 2½ ton trucks (U.S.) A 60 day limited scale will be made available by A.F.H.C. After consumption same principle as in sub para. (a) above applies.
- (c) 500 x 1½ ton (ex Turkish stockpile).

A 6 month's supply has been received in Italy and partially consumed. The Italian Govt. must place requisitions for any further needs with C.C./S. for supply on a commercial basis.

(d) Imported Trucks.

A 6 months supply of parts for the 550 imported trucks was approved by C.C./S. and is being imported. Requisitions for a further 6 months supply will be submitted to C.C./S. for approval, by the Truck Maintenance Group. Any further supplies should be imported on a commercial basis or manufactured in Italy.

10. Civilian Trucks.

Limited stocks are held by manufacturers in the North. Existing stocks of raw materials and present supply of coal will permit an additional limited quantity to be manufactured. To enable new trucks and parts to be manufactured in the quantities necessary to maintaining the existing number of trucks in service, an additional supply of coal and raw materials is required by Italian industry. An estimate by Industry Sub-Commission of requirements for a six months period is given at APPENDIX A.

TYRES.

11. Vehicles from U.S. British Sources.

- (a) 550 x 3 ton (Br.), 550 x 2½ ton (US) and 500 x 1½ ton (ex-Turkish stockpile)

Source of supply will now be from releases of tyres made to the Italian Government or from manufacture by Italian industry.

(b) Imported Trucks.

principle as in sub para. (a) above applies.

(c) 200 x 1 1/2 ton (ex Turkish stockpile)

A 6 months supply has been received in Italy and partially consumed. The Italian Govt. must place requisitions for any further needs with C.C./S. for supply on a commercial basis.

(d) Imported Trucks.

A 6 months supply of parts for the 3560 imported trucks was approved by C.C./S. and is being imported. Requisitions for a further 6 months supply will be submitted to C.C./S. for approval, by the Truck Maintenance Group. Any further supplies should be imported on a commercial basis or manufactured in Italy.

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TYRES.

11. Vehicles from U.S. British Sources.

(a) 550 x 3 ton (Br.), 550 x 2 1/2 ton (US) and 200 x 1 1/2 ton (ex-Turkish stockpile)

Source of supply will now be from releases of tyres made to the Italian Government or from manufacture by Italian Industry.

(b) Imported Trucks.

1050 tyres, received against M03274 Ord. have been released for usage ~~on~~ the 3300 x 1 1/2 ton trucks. Further needs must be met from supplies approved by C.C./S. for release to the Italian Government or from manufacture from Italian Industry.

(c) 4,000 "war weary" trucks.

All needs must be ~~met~~ ^{met} from supplies approved by C.C./S. for release to the Italian Government or from manufacture by Italian Industry.

(a) Jeeps and Motorcycles.

100 tyres have been supplied ex 22,108 tyres released under LAC 40 and LAC 58. No tyres have been released for motorcycles. Additional requirements to be met as in para. (c) above.

12. Civilian Requirements for Italian Government Territory.

(a) "Programme of Essential Italian Imports 1945 - Materials for Tyre Industry -- Programme 1-b dated 24 March 1945" contains justification for new tyres and materials already requisitioned. Included in the Programme are requisitions AC-ORD-92-45 and MCS-892 Ord. providing materials for the manufacture of 60,000 tyres Sept. to Dec. 45.

(b) The Civilian Tyre Programme may be summarized as follows: (page 12 of a/m Imports Programme)

Total Tyre Requirements to 31 Dec. 45	539,000
Production in Italian Government Territory	
New tyres	81,800
Re-treaded tyres	90,000
Finished tyres -- "First Aid" Programme	296,300
TOTAL	468,100
Deficit on Requirements.	59,900

The deficiency of 59,900 tyres will be supplied by the new tyre repair plant, for which material and machinery are requisitioned in AC-ORD-92-45.

(c) Approval of AC-ORD-90-45, which requisitions 296,300 tyres, and immediate shipment to Italy are urgently required. These tyres are urgently required to put only essential trucks and cars on the road which are now or will be off the road before new tyres produced in Italy or re-treaded tyres are available.

(d) 22,108 tyres were requisitioned in LAC 40/7-7-44 and LAC 58. 50.8.44 for all of Italy and apportioned 30% to AMG and 50% to Italian Government Territory. 11,000 have been received and have been issued both to A.C. for organic transport and to the Italian Govt. for civilian vehicles. These tyres are not included in 1945 requirements.

(e) No further tyres or materials are required for Italian Government Territory in 1945 (Until existing requisitions have been met and production commenced it is not considered

the manufacture of 60,000 tyres Sept. to Dec. 45.

(b) The Civilian Tyre Programme may be summarized as follows:
(page 12 of a/m Imports Programme)

Total Tyre Requirements to 31 Dec. 45	-	<u>539,000</u>
Production in Italian Government Territory		
New tyres	81,800	
Re-treaded tyres	90,000	171,800
Finished tyres -- "First Aid" Programme		<u>396,500</u>
		<u>488,100</u>
Deficit on Requirements.		<u>62,900</u>

The deficiency of 62,900 tyres will be supplied by the new tyre repair plant, for which material and machinery are requisitioned in AC-ORD-92-45.

(c) Approval of AC-ORD-90-45, which requisitions 296,500 tyres, and immediate shipment to Italy are urgently required. These tyres are urgently required to put only essential trucks and cars on the road which are new or will be off the road before new tyres produced in Italy or re-treaded tyres are available.

(d) 22,108 tyres were requisitioned in LAC 407-7-44 and LAC 38. 50.8.44 for all of Italy and apportioned 50% to AMO and 50% to Italian Government Territory. 11,000 have been received and have been issued both to A.C. for organic transport and to the Italian Govt. for civilian vehicles. These tyres are not included in 1945 requirements.

(e) No further tyres or materials are required for Italian Government Territory in 1945 (Until existing requisitions have been met and production commenced it is not considered useful to estimate 1946 requirements at this stage.)

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13. Civilian Requirements for Northern Italy.

(a) The Manufacture.

(i) It is estimated that 30,000 civilian trucks exist in North Italy (Piedmonte, Lombardia, Emilia, Venezia, Liguria). Firelli estimate that tyre requirements for a 6 months period will be 33,000 tyres and 75,000 tubes.

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(ii) Production of tyres in N. Italy is at present nil. Pirelli and Michelin cannot commence to manufacture tyres on an industrial scale due to lack of coal and raw materials. Pirelli can produce 1,000 tyres with existing small stocks of materials on receipt of coal allotted.

Michelin cannot commence any production due to lack of raw materials.

(iii) Under normal conditions the monthly production of truck tyres in the Pirelli and Michelin plants totals about 45,000 tyres and 40,000 tubes. 6 months production would amount to 270,000 tyres and 240,000 tubes. Requirements of raw materials for this scale production is given at APPENDIX B, Part I.

Present requirements for civilian trucks are 55,000 tyres and 75,000 tubes for 6 months or a little under 1/3 of potential production. In addition to civilian trucks, however, tyres will be required for some 8860 trucks sold to the Italian Govt. from U.S. and British sources. Approximately 1/4 of tyres and tubes needed for 30,000 civilian trucks will be required for the 8860 trucks or 21,250 tyres and 18,750 tubes.

(iv) Total needs for 30,000 and 8860 trucks are approximately 105,000 tyres and 94,000 tubes or about 40% of potential production. It is therefore recommended that requisitions should now be placed on the basis of 40% of amounts given in Appendix B, Part I.

(b) Tyre Repairs and Retread.

(1) It is estimated that Pirelli and Michelin plus smaller repair shops could repair and retread, about 22,500 - 30,000 tyres in 6 months. Materials required for repair and retread of 1,000 tyres are set out in APPENDIX B, Part II.

(ii) Due to the very large number of tyres now in need of repair in the North, it is recommended that sufficient material, based on Appendix B, Part II, be requisitioned for at least 22,500 tyres.

14. Conclusions.

A recent survey of tyre production facilities by Industry S/C indicates that large scale operations can begin immediately. Production capacity of 4,000 tyres and tubes per day is possible when materials are supplied.

totals about 45,000 tyres and 40,000 tubes. 6 months production would amount to 270,000 tyres and 240,000 tubes. Requirements of raw materials for this scale production is given at APPENDIX B, Part I.

Present requirements for civilian trucks are 85,000 tyres and 75,000 tubes for 6 months or a little under 1/3 of potential production. In addition to civilian trucks, however, tyres will be required for some 8850 trucks sold to the Italian Govt. from U.S. and British sources. Approximately 1/4 of tyres and tubes needed for 30,000 civilian trucks will be required for the 8850 trucks or 21,250 tyres and 18,750 tubes.

- (1v) Total needs for 30,000 and 8850 trucks are approximately 106,000 tyres and 94,000 tubes or about 40% of potential production. It is therefore recommended that requisitions should now be placed on the basis of 40% of amounts given in Appendix B, Part I.

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- (i) It is estimated that Firelli and Michelin plus smaller repair shops could repair and retread, about 22,500 - 30,000 tyres in 6 months. Materials required for repair and retread of 1,000 tyres are set out in APPENDIX B, Part II.

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14. Conclusions.

A recent survey of tyre production facilities by Industry S/C indicates that large scale operations can begin immediately. Production capacity of 4,000 tyres and tubes per day is possible when materials are supplied.

Commerce S/C state that present demands for tyres amount to 3197 100,000. Raw material as requisitioned is sufficient to put 171,000 tyres at A.O. disposal. No further requisitioning of materials is planned by Commerce S/C until first production with materials now on requisition is completed.

It is assumed that part of the materials requisitioned for the South will on arrival be diverted for use in the North. To enable maximum possible production to commence by the end of 1945, it is recommended that materials mentioned in paras. 13 (a) (iii) and 13(b) (i) be requisitioned immediately in view of the delay experienced in shipment of materials for which requisitions have already been approved.

Until existing requisitions have been met and production commenced it is not considered useful to estimate 1946 requirements at this stage.

For the Chief:



G. FERNIQUE
Lt. Colonel, R.A.

Copies:- Munster Div.

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APPENDIX "A"

ESTIMATED MATERIAL REQUIREMENTS FOR VEHICLE & SPARE PARTS MANUFACTURE OVER A SIX MONTHS PERIOD

MATERIALS	QUANTITY	
	Ton.	
Iron scrap for steelworks	"	43000
Pig iron for steelworks	"	20000
Hematite pig iron for foundry	"	5000
Phosphoric pig iron for foundry	"	300
Sundry iron alloys for steelworks & foundry	"	3700
Aluminium 1st smelting 99.5/99%	"	600
" 2nd "	"	900
Electrolytic copper in bars & cathodes	"	600
Nickel in cathodes and grains	"	150
Electrolytic & finest zinc	"	200
Tin	"	60
Pig lead	"	850
Antimony	"	70
Cadmium	"	1,5
Polished iron sheets for drawing	"	3000
Magnetic tin plate	"	200
Block steel for moulds	"	200
High speed steel for tools	"	75
Nickel-Chrome alloy for electric resistors	"	10
Gas coal	"	36000
Steam coal	"	30000
Primary anthracite	"	3000
Blast furnace and gas coke	"	20000
Tar	"	120
Naphtha for furnaces and boilers	"	5000
Petrol	Lt.	750000
Gasoil	Lt.	900000
Petroleum	"	100000
Denatured alcohol	"	30000
Mineral oils B1 and B2 types standard, selected, distilled	Ton.	
Oil for transformers	"	742
Bright stock	"	24
Cylinder Oils	"	100
Foundry mineral oils	"	35
Linseed oil	"	23
Colza seed oil, Rapsoil, Corn oil	"	200
Castor oil	"	125
Animal oils	"	5
Oleine	"	18
Timber in plants and boards, resinous and latifolius	m3	16
Ply wood	m2	18000
		70000

MATERIALSQUANTITY

Cellulose	Ton.	80
Wool	"	15
Cotton	"	50
Flock Silk	"	35
Hemp	"	140
Jute	"	30
Animal Hair	"	50
Tanned leather, raw	"	50
Leather, sides	"	25
Fibrous asbestos	"	50
Mica	"	5
Buna & Para Rubber	"	60
Avebene collignol	"	100
Fire proof materials	"	3400
Graphite or graphited electrodes	"	470
Electrode paste	"	400
Graphite melting-pots	"	20
Spathflour	"	175
Sodium silicate	"	35
Theesodic phosphate	"	5
Sodium cyanide	"	10
Caustic soda	"	25
Solvay Soda	"	70
Emery, Alundum, and Carborundum grinding whls	"	50
Abrasive cloth	m2	15000
" paper	shaets	200000
Glass	m2	20000
Coal	ton.	60000

VARIOUS IRON ALLOYS FOR STEEL WORKS & FOUNDRY
FOR THE PERIOD

BREAKDOWN OF "SUNDRY ALLOYS" ITEM ON MAIN LIST

Manganese iron 10 + 12%	Ton.	1660
Silco manganese 45 + 50%	"	510
Refined manganese iron 80 + 90%	"	32
Manganese iron 75 + 80%	"	230
" " 25 + 50%	"	40
" " for foundry 18 + 20%	"	130
Silicium " " 75 + 80%	"	140
" " " 45 %	"	20
" " " 10 + 12%	"	310
Refined chrome iron 0 0,5/2%	"	430
" " " 60%	"	30
Vanadium iron	"	5
Tungsten iron	"	27
Chrowite	"	180
Titanium	"	6

RAW MATERIAL FOR LUBRICANTS FOR THE PERIOD

	Ton	367
Normal Oil B1	"	173
" " B2	"	50
Selected Oil B1	"	62
" " B2	"	58
Distilled Oil B1	"	32
" " B2	"	24
Oil for transformers	"	35
Bright stock - cat. 1	"	65
" " "	"	35
Saturated steam cylinder oil	"	11
Bush oil	"	4
Frostproof Oil	"	2
Petroleum	"	6
Steam turbine oil viscosity 50° Engler 4.8/5 inflammability P.M. not under 170° demulsibility max 210°	"	200
Linseed Oil	"	125
Maize, Colza, and sundry Seed Oils	"	5
Castor Oil	"	13
Nests-foot Oil	"	3
Fish oil	"	2
Wool grease	"	16
Olein		

RAW MATERIALS FOR LACQUERS FOR THE PERIOD

	kg.	20.000
Natural and synthetic Resins	"	26.000
Nitrocellulose	"	10.000
Plasticisers	"	30.000
Drying vegetable oils	"	800
Castor Oil	"	42.000
Aliphatic Solvents	"	4.000
Turpentin spirit	"	80.000
Benzole	"	30.000
Xylol	"	140.000
Acetates	"	8.000
Heavy Solvents for M.O.	"	10.000
Ethyl Alcohol	"	1.000
Metal Salts Pb., Co, Mn		

APPENDIX "B" -
Part I

PRINCIPAL MATERIALS REQUIRED FOR ONE MONTH PRODUCTION
(45,000 truck tyres and 40,000 inner tubes)
(Quantities expressed in tons)

<u>materials to be imported</u>	<u>Approximate quantities</u>
Natural rubber	117
Synthetic rubber, Buna S3 or S (+)	693
Synthetic rubber, Buna S R (+)	7
Dry latex (natural latex or synthetic latex Igetex S)(+)	16
Resorcin	2
Plastikator 32	16
Kautschol	16
Naphtholene	72
Cumene Resins, softening point 64°-65°C	16
Paraffin, m.p. 52°-54°C	5
Pine tar	138
Carbon black, type OK 4 or Micronex	29
Soft carbon black, P. 1250	2
Lamp black	81
Petrol and benzole	23
Cotton fibre	1800
Coal	
<u>Materials of national production</u>	
Raw sulphur	18
Zinc oxide	32
Formaldehyde	5
Aldolalfenaflylamine	2
Neozone D	5
Stearic acid	16
Reclaimed rubber	7
<u>(Materials of national production - Contd.)</u>	
Rayon staple fibre (raw)	9
High strength rayon (°°)	288
Steel wire for bead rings	45
Brass for valves	4

(+) Should it not be possible to receive synthetic rubber and latex from Germany, similar quantities would have to be imported from the U.S.A.

(°°) For the production of the above quantity of high strength rayon about 350 tons of cellulose, type Super V S (Alpha 92 cellulose content 89/90%) have to be imported.

APPENDIX "B"

Part II

AVERAGE REQUIREMENTS OF THE PRINCIPAL RAW MATERIALS NECESSARY FOR RETREADING OR REPAIRING 1000 TRUCK TYRES

(Quantities expressed in tons)

<u>Materials to be imported</u>	<u>Approximate Quantities</u>
Natural rubber	0.280
Synthetic rubber, Buna S3 or S (+)	3.800
Carbon black, type CK 4 or Micronex	2.000
Soft carbon black, F. 1250	0.100
Plestatikator	0.160
Naphtholene	0.310
Solvent benzine	0.700
<u>Materials which in normal conditions can be obtained in Italy</u>	
Reclaimed rubber	1.400

(+) Should it not be possible to receive synthetic rubber from Germany, similar quality would have to be imported from the U.S.A.

