European Communities

EUROPEAN PARLIAMENT

Working Documents

1973-1974

4 June 1973

DOCUMENT 85/73

Report

drawn up on behalf of the Committee on Regional Policy and Transport

on the improvement of traffic infrastructures across the Alps

Rapporteur: Mr. Luigi NOE'

PE 31.959/fin.

English Edition

By letter of 7 February 1972 the Transport Committee requested authorization to draw up a report on the improvement of traffic infrastructures across the Alps.

At its sitting of 9 February 1972 the European Parliament authorized the Transport Committee to prepare a report on this subject. At its sitting of 13 March 1972 the European Parliament asked the Economic Affairs Committee for its opinion (newly formed as the Committee on Economic and Monetary Affairs on 13 March 1973).

The Transport Committee appointed Mr NOE' rapporteur at its meeting of 25 February 1972.

At its meeting of 2 March 1973 the committee discussed the draft report and adopted the motion for a resolution and the explanatory statement.

The Committee on Regional Policy and Transport formed on 13 March 1973 discussed and unanimously adopted the motion for a resolution and the explanatory statement at its meeting of 23 May 1973.

The following were present : Mr JAMES HILL, chairman; Mr KOLLWELTER and Mr SEEFELD, vice-chairmen; Mr NOÈ, rapporteur; Mr AIGNER, Mr ARISSTO, Mr BEYLOT, Lord BRECON, Mr COLIN, Mr DELMOTTE, Mr EISMA, Mr GIRAUD, Mr GULDBERG, Mr HERBERT, Mr JOHNSTON, Mr MITTERDORFER, Mr MURSCH, Mr PÊTRE, Mr POUNDER and Mr SCHWABE.

The opinion of the Committee on Economic and Monetary Affairs is attached.

CONTENTS

A

The Committee on Regional Policy and Transport hereby submits to the European Parliament the following motion for a resolution, together with explanatory statement

MOTION FOR A RESOLUTION

on

the improvement of traffic infrastructures across the Alps

The European Parliament,

- having regard to the report of the Committee on Regional Policy and Transport (Doc. 85/73);

1. Expresses concern at the periodic congestion of road and rail traffic crossing the Alps;

2. Notes that the inadequacy of Alpine traffic infrastructure entails heavy costs for transport between Italy and the other Community countries and therefore inhibits the potential growth of trade between these territories;

3. Notes also that although it is the Community's aim either to transfer industries from zones of excessive concentration north of the Alps to regions suffering from structural unemployment or, at the very least, to divert an increasing proportion of growth to the south, this process is being hampered by the obstacle to traffic presented by the Alps;

4. Notes with concern that the difficulties facing traffic crossing the Alps may put the southernmost Member State of the Community at a disadvantage in the course of the restructuring process;

5. Considers that vigorous measures must be taken to remedy the shortcomings encountered in customs operations and in the organization of traffic;

6. Asks in particular that the improvement of traffic infrastructures across the Alps be treated as a European priority;

7. Calls for immediate steps to open negotiations with the appropriate authorities in the Member States and with the authorities in Switzerland, Austria and Yugoslavia, in order to:

   a) jointly discuss the general problem of road and rail traffic across the Alps with due regard for Community requirements;
   b) compile a list of common priorities;
   c) provide for joint financing procedures;

8. Stresses that these plans should cover not only highways in passes and tunnels, and stretches of railway tracks in the mountains and railway tunnels, but also access roads in the pre-Alps north and south;

9. Asks that priority be given to the railway projects;

10. Asks that a detailed study be made of the prospects for establishing links across the Alps for the future network of new high-speed trains such as hover and magnetic suspension trains;

11. Considers that plans for new railway tracks and roads must take into account a future extension of the network of oil pipelines across the Alps;

12. Considers it necessary for economic reasons and hence in the interests of integration, to devote greater attention to the legitimate structural interests of the Alpine region when planning the necessary improvement of traffic infrastructures across the Alps;

13. Regards the specific development of traffic facilities in this area as an essential prerequisite for the development of existing or establishment of new undertakings;

14. Instructs its Chairman to forward this resolution and the committee's report to the Council and Commission of the European Communities.

B

EXPLANATORY STATEMENT

I. HIGH INFRASTRUCTURE INVESTMENTS TO OVERCOME NATURAL OBSTACLES TO TRAFFIC IN THE EUROPEAN COMMUNITY

1. The territory of the European Community is split up by a number of natural traffic barriers which necessitate particularly high expenditure on transport infrastructures if some of the Community's most important aims, as formulated in the Preamble to the EEC Treaty and in Article 2 thereof, are to be achieved: balanced trade, harmonious development of the economies, reducing the differences existing between the various regions and of the backwardness of the less favoured regions (Preamble), harmonious development of economic activities within the Community, balanced economic expansion, closer relations between the Member States (Article 2).

2. The major natural obstacles consist of high mountain ranges and of straits which must be crossed by means of tunnels or bridges or other expensive civil engineering works.

We shall not concern ourselves in the following with the natural traffic obstacles presented by big rivers such as the Rhine or the Seine and by highlands such as the Massif Central. There is a difference of some magnitude between the cost of overcoming these obstacles and the ones mentioned in the following section.

3. At the present stage of the discussion and of technical possibilities there are no immediately practicable plans for road or rail connections with the islands of Ireland, Corsica and Sardinia. Considerable progress has been made, however, with the following projects for establishing rail or road connections across straits:

- tunnel under the Channel,
- tunnel and/or bridge across the Öresund,
- bridge across the big Belt,
- bridge across the Fehmarn Belt,
- bridge across the Straits of Messina.

From the point of view of the Community's inland transport, highest priority must be given to four of these projects, while the various Öresund projects (tunnels and/or bridges from Helsingör, via the island of Hven and/or the island of Amager to Sweden) are of the greatest importance to traffic bound for the Scandinavian peninsula.

4. Of the mountains which constitute a natural obstacle to traffic, the Alps stand unrivalled in Europe. The straits (except Öresund) will be crossed by bridge or tunnel at one point only, but the Alps form an 1100 kilometre long barrier which completely cuts off Italy from the rest of Europe; this barrier can, however, be crossed and tunnelled through at a number of different points.

In the case of the other high infrastructure investments, a list of priorities need only be drawn up if these projects are to be financed by the Community; in planning routes through and across the Alps, however, the Community should play an active part right from the start, since the various alternative possibilities to be considered involve in each case several Member States and third countries.

5. The compilation of a separate report such as the present on passages across the Alps is therefore justified.

II. THE SITUATION WITH REGARD TO COMMUNITY POLICY IN THE FIELD OF TRANSPORT INFRASTRUCTURE PLANNING

6. From the moment the European Economic Community started up its activities the EEC Commission at the time expressed the view that joint planning was needed for transport projects requiring major investment[1]. The European Parliament has always supported this view and has in fact extended it by recommending that not only the main lines of communication but also the gaps in the transport network at the Community's internal frontiers should be given priority treatment[2].

7. The Council of Ministers, however, whittled down the Commission's proposals for joint action in the field of transport infrastructures to a mere procedure for consultation. The result was 'Council Decision of 28 February 1966 instituting a procedure for consultation in respect of transport infrastructure investment'[3].

---

1 See EEC Commission's Memorandum on Basic Guidelines for Common Transport Policy, Doc. 105/61.

2 Report on behalf of the Transport Committee on the Problems of the European Transport Network by Mr Ernst Müller-Hermann, rapporteur, Doc. 90/1960-61, 17 November 1960.

Report on behalf of the Transport Committee on the proposal from the EEC Commission to the Council (Doc. 30-II/1964-1965) for a decision on the Community's action in the field of transport infrastracture investment, rapporteur: Mr H.S. Seifriz, Doc. 7/65, 17 March 1965.

3 OJ 42, 8 March 1966, p. 583

8. This procedure for consultation, however, is proving increasingly inadequate as it does not really give the Commission any power to act.

Article 1 of the decision requires Member States merely to notify the Commission of 'investment projects of Community interest before they are carried out'. In the case of major investments such as Alpine tunnels even more than other transport investments, Community interest should begin to assert itself at a far earlier stage than just before the project's implementation. Obviously negotiations are much more difficult if they only start once a Member State has decided to make a certain investment.

In the event of a conflict of interests, which would only become apparent at this stage, the planning work sometimes of decades might have to be abandoned and started all over again.

9. A further indication of the inadequacy of the current procedure for consultation, and one which becomes particularly apparent in the case of Alpine crossings, is the fact that the Community cannot negotiate effectively with third countries by this process. Cooperation should begin at a far earlier stage, especially in the case of transport planning in Switzerland and Austria on which the Community is so dependent for a considerable part of its internal transport.

The fact that an inadequate procedure has become law does not, however, exclude the possibility of the Community applying a more effective procedure in special cases.

III. THE NEED FOR AN OVERALL PLAN FOR THE ALPINE REGIONS

10. Your committee therefore invites the Commission of the European Communities to draw up without delay an overall plan for Alpine crossings.

11. This plan should cover all modes of transport, i.e. both rail and road traffic with and without loading onto trains. Plans for oil pipelines across the Alps must also be taken into account, since their presence might have repercussions on the rail and road transport of petroleum products. (See Diagram III)

The development of air traffic over the Alps should also be taken into account since it influences particularly passenger rail traffic and to a lesser degree private road traffic.

12. If the European Community is to concern itself with Alpine crossings, this must not simply take the form of intervention by the Brussels Commission in individual bilateral negotiations. Many of the Alpine passes are in competition with one another, and consequently it is most important that negotiations do not take place separately for individual Alpine regions. The major transport links hitherto negotiated separately in most cases, should be negotiated jointly:

France - Italy
France - Switzerland - Italy
Germany - Switzerland - Italy
Germany - Austria - Italy
Austria - Italy
Germany - Austria - Yugoslavia

13. Some might consider that the two last-named traffic links should not be directly included in the overall plan since they do not constitute internal Community traffic; however, the Community is an open community which pursues a common external economic policy. Its ties with Austria and Yugoslavia are particularly close because of its trading agreements with these two countries. The most convincing argument for including these two links, however, is the fact that they are in keen competition with other Alpine crossings. The projected plans could have a profound effect on the regional structure of the countries involved (this becomes evident if one considers for instance the significance of such plans for the port of Trieste).

In any case, the Community should contribute towards rationalizing competition between the various links, which starts already at the planning stage, avoiding uneconomical methods of competition and achieving harmonization and synchronization of the different projects.

14. The joint overall plan should be based on a thorough cost analysis and take into account not only transport and communications but also the overall development of the Alpine region and the repercussions for the Community's regional development.

IV. THE IMPLICATIONS OF ALPINE CROSSINGS FOR THE COMMUNITY'S DEVELOPMENT POLICY

15. The problem of major investments for transport infrastructures in the Alps should not be seen in too narrow a context. It is not just a question of exceptionally high expenditure on a few provinces; the entire regional structure of the Community must be taken into consideration.

16. Conversely the interests of the smaller areas, in other words the Alpine

region proper, should not be sacrificed to those of North-South long-distance traffic. This means that in developing long-distance communications, consideration must be given to the possible 'siphoning' effects and to the interests of the areas crossed. Furthermore, the long-distance communications system should be completed by local cross-connections.

(a) Observations on North-South traffic in the Community

17. The basic concept of the European Economic Community is the achievement of more rational production by creating a larger market. This involves larger enterprises and restructuring the European economic area. However, a larger market can only arise if trade is physically possible, i.e. if not only customs barriers but also traffic barriers are eliminated. The barrier presented to traffic by the Alps hampers the exchange of goods between the large areas of industrial concentration of the Community and Italy, the very country in the Community which lags furthest behind in development and prosperity and suffers most from structural unemployment. Although it is true that some of the smaller industries live off a local market and are thus not affected by transport costs, it is obvious that reduction in these resulting from improvement of Alpine routes would benefit the development of Italy as a whole. Such a favourable development south of the Alps would in turn open up new markets and create new incentives for further development of the economy north of the Alps.

18. Besides this development, which will automatically ensue from improved Alpine routes, a link also exists with the Community's active regional policy. It is the declared policy of the Community to transfer industries from zones of excessive concentration in the north-west, which attract an increasing amount of foreign labour, to the south, which still suffers from structural unemployment. That industry should be brought to the people and not people to industry, is the Community's motto.

But this policy too is hampered by the barrier of transport costs. A firm based in the north-west of Europe which contemplates setting up a branch in the Mediterranean area will have to take transport costs very closely into account in its plans. The more infrastructures are extended, the greater will be the savings in time and money and the more inclined firms will be to move to the south.

19. Such transfers of industry result not only in an exchange of goods but frequently also in intensive passenger traffic between the different branches of undertakings. The time factor is often a vital one for the journeys of engineers, skilled workers, accountants and auditors.

20. For the tourist, too, time is a factor to be considered alongside cost. The increasing flow of tourists travelling south from northern countries in search of sun and recreation consists more and more of people with limited time at their disposal. The barrier presented by the Alps becomes an ever worsening problem, particularly when hour-long traffic jams become a regular occurrence during the peak holiday season.

21. However much the Community, as an outward-looking community, must bear in mind the welfare of neighbouring third countries, it is nonetheless clear that of all the Mediterranean areas which benefit alike from tourism and the relocation of industry, Italy is put at particular disadvantage by the barrier presented by the Alps.

22. For all these reasons, the question of Alpine crossings is an important one for the Community's regional policy.

(b) Observations on the regional structure of the Alpine area

23. Alpine crossings also play a special role in regional policy for the Alps in a narrower sense.

In the Alps are found some of the most backward regions in the Community, some of which are even threatened by a decrease in their economic activity and in their population.

24. The construction of a new north-south link may well prove to be a considerable advantage to the Alpine regions themselves since it will provide direct access to the industrial centres of the Community.

It should not be forgotten, however, that there may also be disadvantages in a major line of communication crossing a region - it may produce a 'siphoning' effect which must be taken into account.

25. It is therefore vitally important that in planning major lines of communication, an answer should be found to local traffic problems and that both aspects should be harmoniously combined in an overall plan.

26. In particular, the various Alpine areas must be properly linked up with the long-distance communications system and adequate cross-connections provided between the North-South routes. In short, the need is for simultaneous development of Alpine crossings and of lateral communications in the valleys running parallel to the main ridge of the Alps.

27. The development of major lines of long-distance communication will involve the Alpine areas in certain sacrifices: the dislocation of hitherto connected areas, the spoiling of the countryside, noise and air pollution. Such sacrifices can only be demanded if the new transport facilities bring increased prosperity.

28. Although only those projects for improving North-South lines of communication are dealt with below, this should not be taken to mean that these communications should not be treated in the requisite overall plan in conjunction with projects for improved regional facilities, particularly those

running parallel to the main Alpine ridge.

V. EXISTING ALPINE CROSSINGS AND THEIR SHORTCOMINGS

29. This section contains a survey of existing Alpine crossings and their shortcomings; the main proposals for improvement are discussed in Section VI.

(a) Rail (See Diagram I)

30. The main ridge of the Alps is crossed by the following seven rail routes[1]:

1. Marseilles - Genoa

(Marseilles - Toulon - Les Arcs - St. Raphael - Cannes - Antibes - Nice - Monaco - Ventimiglia - San Remo - Savona - Genoa)
Coastal line

2. Lyons - Turin

(Lyons - Amberieu - Culoz - Aix-les-Bains - Chambéry - Montmélian - Modano - O Bussoleno - Turin)

Fréjus Tunnel (Mont Cenis)

Length 13.6 km, highest point 1296m,
Steepest gradient 30.2°/oo, opened 1871.

3. (Lausanne - Basel) - Berne - Milan

(Bern - Spiez O Brig O + Iselle - Domodossola - Arona - Gallarate - Rho - Milan)

Lötschberg Tunnel

Length 14.6 km, highest point 1240m,
Steepest gradient 27°/oo, opened 1913.

Simplon Tunnel

Length 19.8 km, highest point 704m,
Steepest gradient 25°/oo, (on the south side - much less on the north side), opened 1906.

4. (Basel) - Zurich - Milan

(Zurich - Zug - Arth-Goldau O Bellinzona - Lugano - Chiasso + Como - Milan)

---

[1] Key to symbols: O tunnel between stations mentioned
+ international frontier between stations mentioned.

St. Gotthard Tunnel

Length 15.0 km, highest point 1151m,
Steepest gradient 27.6°/oo, opened 1882.

5. Munich - Verona

(Munich - Rosenheim - Kufstein - Wörgl - Jenbach - Innsbruck + Brenner - Franzensfeste - Bolzano - Trento - Rovereto - Verona)

Brenner Pass

Highest point 1372m,
Steepest gradient 25°/oo, opened 1867.

6. Salzburg - (Udine) - Ljubljana

(Salzburg - Bischofshofen - Schwarzach - St. Veit - Badgastein - O Mallnitz - Spittal - Villach - Rosenbach O + Jesenice - Ljubljana)

Tauern Tunnel

Length 8.6 km, highest point 1226m,
Steepest gradient 26.6°/oo, opened 1909.

Karawanken Tunnel

Length 8 km, highest point 638m,
Steepest gradient 26°/oo, opened 1906.

7. Vienna - (Ljubljana)-Udine

(Vienna - Baden - Wiener Neustadt - Bruck - Leoben - Unzmarkt - St. Veit an der G. - Klagenfurt - Villach - Arnoldstein + Tarvis - Udine)

Semmering Pass

Highest point 900m, opened 1854.

Pontebba Pass

Highest point 817m,
Steepest gradient 22.1°/oo, opened 1879.

31. The rail routes across the Alps listed above have a number of shortcomings.

In many cases, the maximum altitude of these routes, even where tunnels have been built, is too high. Five of the railway lines reach altitudes of more than 1000m above sea level. This results inevitably in steep gradients of between $25^{o}/oo$ and $30^{0}/oo$, which limit speed and increase energy consumption. Speed is also limited by the tight radii of the bends which range between as little as 240m and 350m on the different lines. Operation is further restricted by the fact that on several of the Alpine railways long sections of line are only single-track.

32. A special problem arose with electrification. While the Italian railways (FS) use three-phase current of 3000 V and 16 2/3 Herz, the French railways (SNCF) use direct current of 1500 V, the Swiss (SBB), German (DB) and Austrian railways (OBB) single-phase alternating current of 15000 V and 16 2/3 Herz and the Yugoslavian railways (JZ) 3000 V direct current.

These differences between the power supplies necessitate a change of locomotives, usually on the mountain ridge.

33. The biggest drawback lies of course in the large gaps in the route network. There are obvious gaps particularly between the coastal line and the Fréjus Tunnel and between the Gotthard and Brenner, obliging traffic to make long detours.

This also results in a heavy concentration of traffic on existing lines, with the result that they have nearly all reached the limits of their capacity. During the holiday season and a peak travelling times there is consequently always the possibility of traffic congestion.

34. Major traffic congestion last occurred around 1 August 1972. The Italian railways had to cut down severely the amount of freight they accepted for carriage and at certain times even refused to take on any at all. Acceptance quotas had to be agreed between FS, DB and OBB. The German railways issued acceptance numbers to freight agents. This state of affairs is obviously detrimental to trade growth.

Outwardly, the cause of transport backlogs on the Italian side is often the bottleneck created by customs clearance formalities or a strike. Basically, however, the problems stem from the transport infrastructure.

(b) Roads (see Diagram II)

35. A great many roads cross the Alps. There would, however, be little sense in including them all in this study. Many Alpine roads are wonders of engineering and hold great attraction to tourists and motoring enthusiasts. But only those which remain open all year round and carry traffic reasonably quickly across the Alps are relevant to intensive economic relations.

36 . Application of these criteria shows that there are few satisfactory roads across the Alps today:

1. Marseilles - Genoa (E 1)
   Coast road

2. Marseilles - Turin (E 1 - N 204 - N 20 - E 21)

   Tenda Tunnel
   Length 3.2 km, highest point 1316m,
   Steepest gradient 8 per cent .

3. Valence - Turin (93-94-24- E 13)

   Montgenèvre Pass
   Highest point 1854m,
   Steepest gradient 8 per cent .

4. Lyons - Turin (E 13)

   Vehicles carried on rail trucks through Fréjus Tunnel.

5. Geneva - Milan (E 21 b - E 21)

   Mont-Blanc Tunnel
   Length 11.6 km, highest point 1381m,
   Steepest gradient 5 per cent, opened 1965

6. Lausanne - Milan (E 21 a - E 21)

   Great St. Bernard Tunnel
   Length 5.8 km, highest point 1915m,
   Steepest gradient 11 per cent, opened 1964.

7. Berne - Milan (6 - 72 - 9 - 33)

   Vehicles carried on rail trucks through Lötschberg and Simplon tunnels.

8. Zurich - Milan (E 60 - E 9)

   Vehicles carried on rail trucks through St. Gotthard Tunnel

9. St. Gallen - Milan (E 61 - E 9)

   San Bernardino Tunnel
   Length 6.6 km, highest point 1650m,
   Steepest gradient 6 per cent, opened 1967.

10. Munich - Verona (E 6)

Brenner Pass

Highest point 1374m,

Steepest gradient 13 per cent, continuous motorway(except for a short section near Bressanone)since 1972.

11. Salzburg - Ljubljana (E 14 - E 94)

Vehicles carried on rail trucks through Tauern Tunnel

Loibl Tunnel (road tunnel)

Length 1.5 km, highest point 1067m,

Steepest gradient 17 per cent,

or vehicles carried on rail trucks through Karawanken Tunnel.

12. Vienna - Udine (E 7 - E 14)

Semmering Pass

Highest point 985m,

Steepest gradient 6 per cent.

37. The above list does not include one route although it has been made passable all the year round by building a road tunnel, i.e. the Salzburg - Lienz road which runs through the Felbertauern Tunnel but comes to a dead end in east Tyrol in the winter and is consequently of little interest to through-traffic between the Federal Republic and Italy.

38. The Alpine roads listed above are termed 'satisfactory' with one important reservation: only those roads built to motorway standards meet modern traffic requirements. If this criterion is applied, only the Brenner crossing has so far been built to satisfactory specifications.

39. The remaining crossings must be assessed with reference to the gaps in the motorway network. In this connection it should, however, be mentioned that motorways are currently being extended very rapidly towards the Alpine passes. Nonetheless some palpable gaps still remain; it is particularly regrettable that the St. Gotthard road tunnel currently under construction is not being built as a four-lane motorway but as a two-lane road.

40. Apart from the actual mountain stretches, there is a serious lack of motorway connections in the approaches to the Alps, particularly in the north.

VI. THE MAIN IMPROVEMENT PROJECTS FOR NORTH-SOUTH TRAFFIC

(a) Railways (see Diagram IV)

1. Repair of the (Nice) - Ventimiglia - Breil - Cuneo - Turin line (through the Tenda Tunnel)[1]

41. At the request of the Italian Government which wanted to increase the number of transport routes between the Mediterranean coast and the Po plain through Piedmont, it was decided to repair the Cuneo-Ventimiglia line on which many civil engineering works were destroyed in 1940. An agreement on this subject was reached through diplomatic channels on 24 June 1970; under this agreement the French railway company SNCF is to participate in the repair of the section of line on French territory (at the expense of both countries, the French contribution being limited to a lump sum payment of 6m French francs) and also in the subsequent running of the line which will be operated solely for the account of the Italian state.

42. The line through the Tenda Tunnel situated in the extreme North of the French section of the route provides an additional railway crossing between France and Iraly. The line will be linked up by a branch at Breil and Nice and will relieve the load on the routes through Modana and Ventimiglia.

2. Improvement of the Lötschberg line by the construction of a Lötschberg base tunnel

43. One possibility for improving the Lötschberg line is the construction of a new tunnel with a length of 28.10 km between the Kander valley and the Rhone valley[2].

The Lötschberg base route is a section of the Basle-Berne-Thun-Brig-Domodossola-Milan transit line.

From Spiez station, a new second track runs through a second Hondrich tunnel 30m east of the existing tunnel and links up with the double track already built between the southern end of the tunnel and Frutigen.

---

[1] Based on information provided by the Commission of the European Communities. See also: Senato della Repubblica, 6th Legislature, Doc. No. 643.

[2] The following information has been taken from 'Eisenbahntunnel durch die Alpen. Schlussbericht der Kommission der Eidgenössischen Verkehrs- und Energiewirtschaftsdepartmements', Annexed Documents, Berne 1971, Vol. 1, p.49.

The new line between Frutigen station at 779.25 m above sea level and Raron at 638.5 m above sea level is 34.96 km long. The highest point of the northern section of the base tunnel is 830.00 m above sea level. The Lötschberg base line shortens the Frutigen-Brig route by 10.1 km and brings the highest point of the line down by 410m to 830 m above sea level. The maximum geometrical gradient of the base line is 10.5 °/oo. Allowing for the maximum gradient of 15°/oo on some short sections of the Thun-Frutigen access route and the geometrical gradient of 9.9°/oo in the south-north direction of the southern tunnel section, the mean gradient of the Thun-Brig line is approximately 13°/oo.

This project would entail extensive enlargement work at Domodossola station which could not handle the additional traffic in its present form.

44 . A construction time of 9 years and a cost of 660 m Swiss francs (on a 1965 price base) are estimated.

3. Improvement of the St. Gotthard line by the construction of a Gotthard base tunnel or Gotthard-West base tunnel

45 . A final decision has not yet been taken between the two alternative projects for improvement of the Gotthard line but opinions seem increasingly to favour the eastern base tunnel.

A base tunnel with a length of 45.07 km culminating at an altitude of 548 m slightly to the east of the present tunnel or a base tunnel to the west with a length of 48.52 km culminating at 676m could be built.

46 . The eastern tunnel[1] would necessitate the construction of a new line with a total length of 60 km between Erstfeld and Biasca. This would shorten the present route by 30 km. The maximum gradient would only be 10°/oo while the maximum altitude would be 603m lower than for the present tunnel.

A construction time of 10 years and a cost of 1110 m Swiss francs (on a 1965 price base) are estimated.

47. While the Gotthard base tunnel would form part of the existing rail route between Arth-Goldau and Bellinzona, the Gotthard-West base tunnel would create a new route from Zug to Locarno via Lucerne,

[1] Loc. cit. p.62

rejoining the existing line just south of Bellinzona[1].

The new line would be 141.84 km long. In addition a 28.17km long spur between Interlaken and Meiringen would have to be converted to normal gauge. Apart from the base tunnel, 33.4 km of twin track and 3.3 km of single track tunnel would also have to be built.

The gradient would reach a maximum of 10°/oo. A construction time of 10 years and a cost of 2475 m Swiss francs (on a 1965 price base) have been calculated for this project.

48. The main advantage of this second project would be that a new line from Berne to Chiasso would be created in addition to the Zürich-Chiasso line.

The disadvantage of the second project is its high cost, higher maximum altitude and the fact that despite the heavy expenditure it still emerges in the congested Chiasso area in the south.

4. Construction of a new Würzburg-Ulm-Lindau-Bregenz-Landquart-Chur-Chiavenna-Milan (Bergamo-Brescia) line (Splügen Tunnel)

49. A new 45.2 km long tunnel is to connect Thusis with Chiavenna to the north of Lake Como[2].

This project is the only one which would effectively relieve the overloaded Gotthard line.

The improvements to the Lötschberg and Gotthard lines will not fundamentally alter the congestion of the Dommodossola and Chiasso area.

50. All other projects for railway tunnels emerging at their southern end in the congested Chiasso area should therefore be discounted. The Splügen project will also relieve the Milan area, since some of the traffic would bypass Milan in a wide southerly arc through Bergamo and Brescia.

51. The Splügen railway would come fully into its own if the northern link routes were substantially improved. Although an adequate transport volume is already available for this route under present conditions, it should logically be completed by a continuous rail route from the Bregenz/Lindau area to Ulm and Würzburg. This line is planned by the

---

[1] Loc. cit. p. 56

[2] Loc. cit. p. 73

Deutsche Bundesbahn if the Splügen tunnel is built and would be extremely desirable to relieve the rail route following the Rhine to Basle and the other North-South lines in Southern Germany.

52. The Splügen line as such would run west of Chur in the Rhine valley and reach the west bank of the Hinter-Rhine through a 3.5 km long tunnel; the northern entry to the 45.22 km long Splügen base tunnel would be situated between Thusis and Sils. The southern entry would be located on the north-east edge of the town of Chiavenna.

If Switzerland subsequently carries out the GRITI project, the Thusis tunnel could be used and a branch line built from the Splügen route to Bellinzona.

The total length of new track required for the Splügen project as such would be 130.60 km with a maximum altitude of 677 m above sea level. The maximum gradient would be $10^{0}/oo$ and in the tunnel itself only $8.75^{0}/oo$.

53. A construction time of 10.5 years and a cost of 2100 m Swiss francs (on a 1965 price base) are estimated.

If at some future date the Lake of Como is linked by inland waterway to the Adriatic, container traffic might build up to a considerable extent through the new Splügen tunnel to the Lake of Constance which is to be linked in turn with the Rhine.

5. Improvement of the Brenner route

54. For the Brenner route there are also plans to build a new line on a lower level with a number of long tunnels. This line would enable higher speeds to be reached.

6. Improvement of the Tauern line

55. In order to ease Balkan traffic it is planned to improve the routes through the Tauern tunnel and the Karawanken tunnel (further electrification and two-track construction). The building of new track and tunnels in the eastern Alps, however, is not envisaged at the present time.

7. General notes on the rail projects

56. The road tunnels which are now under construction or planned have come in for a great deal of public discussion. It must, however, be stressed that rail connections are still of much greater importance to the regional development of the Community as a whole or of individual areas.

Rail lines still have a greater impact than roads or even motorways on the development of structures.

It must also be remembered that each new rail tunnel creates a new capacity for the transport of motor vehicles and therefore a new road link. For this reason priority must be given to railway projects.

57. A second mistaken concept which is widely held must also be corrected. For understandable reasons, public interest concentrates on the actual tunnel construction projects which are impressive feats of engineering and are often accompanied by dramatic events while they are being built.

But an Alpine crossing does not only consist of a tunnel; its quality is also dependent on the gradients, radius of curves and other technical characteristics of the access inclines. Finally the importance of a tunnel for effective transport connections between the countries north and south of the Alps is also dependent on the development of access routes in a broad surrounding area and links with major traffic centres. This factor was mentioned in the case of the Splügen project but the implications for each individual project cannot be discussed in detail in this report.

58. Finally the following factors are particularly relevant to rail routes:

Even the biggest tunnel project will be of little help unless appropriate organizational measures are taken to accelerate traffic.

The bottleneck at customs is unfortunately a problem which cannot be solved by building tunnels: long drawn-out strikes by railway or customs employees cannot be resolved by civil engineering works.

Pessimistic observers have therefore said that the Gotthard base tunnel is liable to become Switzerland's biggest rail siding. Efforts to improve customs clearance procedures and labour relations are therefore a matter of urgent priority.

59. Your committee also wishes to draw attention to the following problem:

Previous plans have been based on the assumption that trains would operate on the mountain routes and through tunnels at a speed of up to 100 or 120 kph.

In recent years, however, experiments with speeds as high as 200 kph have given promising results. As the planned base tunnels will substantially improve gradients, trains can be expected to cross the Alps at high speeds in future.

In addition Alpine crossings cannot be excluded from route plans for future high speed services working on the air cushion or linear induction principle. These developments should therefore already be allowed for when tunnels are planned.

According to expert information obtained by your rapporteur trains can operate in twin track tunnels at speeds of up to about 200 kph. If speeds are to be raised above this level, a separate tunnel must be provided for each track.

This would increase costs considerably. However, ultra-high speed trains could reduce their speed to below 200 kph in tunnels.

60. It should also be noted that the prices quoted above on a 1965 price base have probably already almost doubled.

(b) Roads (See Diagram V)

61. A large number of projects for the improvement of Alpine passes are at present in varying stages of planning or completion. The following observations are confined to routes which provide a new road link.

1. Project for a road tunnel between the Tenda Tunnel and Mont Cenis

62. A number of competing projects are intended to close the relatively wide gap between the Tenda Tunnel and Mont Cenis (Fréjus tunnel, see 2 below): they are known (from south to north) as the Mercantour tunnel, Larche tunnel, La Croix tunnel, Mont-Genèvre tunnel and Echelle tunnel. So far the Italian and French Governments have not been able to reach agreement on the priority to be given to the different projects.

2. Fréjus tunnel

63. A road tunnel with a length of 12 km at an altitude of 1200 m will run parallel to the rail tunnel of the same name and enable road traffic to move freely in winter without transferring to rail trucks.

The construction time is estimated at 5 years and the cost as 550 m FF.

3. St. Gotthard road tunnel

64. A 16 km long road tunnel is now under construction at an altitude of 1100 m under the St. Gotthard. It was due to be opened in 1977 but this date will probably not be met on account of geological difficulties. Unfortunately the tunnel has not been planned as a motorway tunnel on the Swiss side so that it may soon create a bottleneck if the access roads on both sides are developed to motorway standard.

4. Splügen tunnel

65. The rail tunnel under the Splügen pass could, if a motor vehicle transport service were provided, create a completely new road link which would have the advantage over the other projects in that its southern exit would not be situated in the congested Chiasso area. A road tunnel could follow the same route at a higher altitude (culmination 1450 m) [1].

5. Tunnel under the Stilfser-Joch

66. A tunnel here would provide a continuous motorway from Ulm via the Fernpass and the Reschenpass to Milan. This tunnel will reach a height of 1350 m at its highest point and have a length of 15.8 km. The cost of construction is estimated at 140,000 million lire (according to prices as of end of 1972). [2]

6. Plöcken tunnel

67. A tunnel here would bring out the full advantages of the Felbertauern tunnel. The road through the Felbertauern tunnel from the north ends at Lienz in East Tirol and is of no importance to international North-South traffic. The Plöcken tunnel would create a new link between Salzburg and Udine and be extremely important for the port of Trieste. No detailed plans have as yet been prepared.

7. Katschberg tunnel

68. The Katschberg tunnel and a motorway from Salzburg to Villach are under construction. The tunnel is to be opened to traffic in 1974. No essentially new link across the Alps will thereby be created, but traffic between Salzburg and Villach will be greatly improved compared with the present route necessitating the transport of cars by train through the Tauern tunnel.

---

[1] Ulisse Decensi: 'La strada dei promessi sposi'. (The Chiavenna-Milan motorway which would enable full benefit to be drawn from this new Alpine route runs through the scene of Manzoni's famous novel: 'I promessi Sposi' (The Betrothed).)

[2] See 'Autostrasse Mailand-Ulm. Projekts-Broschüre', published by the Amt der Tiroler Landesregierung, Innsbruck, 1973.

8. General notes on road projects

69. The observations made on the rail tunnels also apply to road projects. It is not sufficient to construct a tunnel through the mountains: the access inclines and roads leading to the principal traffic centres to the north and south of the Alps must also be developed.

To achieve a smooth flow of traffic, the mountain and tunnel sections must also be developed to motorway standards.

70. While motorways are being built at an impressive rate on the main ridge of the Alps there are serious gaps in the motorway system between France and Switzerland and between Switzerland and Germany. To the south there is a similar gap between Italy and Yugoslavia.

(c) Conclusions

71. Your committee cannot indicate a position on the relative priority of one improvement project as against another. It wishes, however, to stress that it is in the interest of Europe not only to improve existing crossings but above all to create new links which, like the Splügen project and a road tunnel through the southern Alps, will considerably relieve the load on the old routes and bring about a structural improvement.

72. The diagrams on the following pages simply give an overall picture of the traffic links and projects discussed in this report and do not indicate any order ofpriority in respect of importance or urgency.

I

Skematisk fremstilling af de eksisterende jernbanelinier over Alpernes hovedkæde
Schematisierte Darstellung der bestehenden Eisenbahnlinien uber den Alpenhauptkamm
Diagram of existing rail routes through the Alps
Schéma des voies ferrées transalpines existantes
Rappresentazione schematica delle linee ferroviarie transalpine esistenti
Schematisch overzicht van de bestaande spoorlijnen over de hoogste Alpenketen

Signaturforklaring / Legende / Kev / Legende / Leggenda / Legende

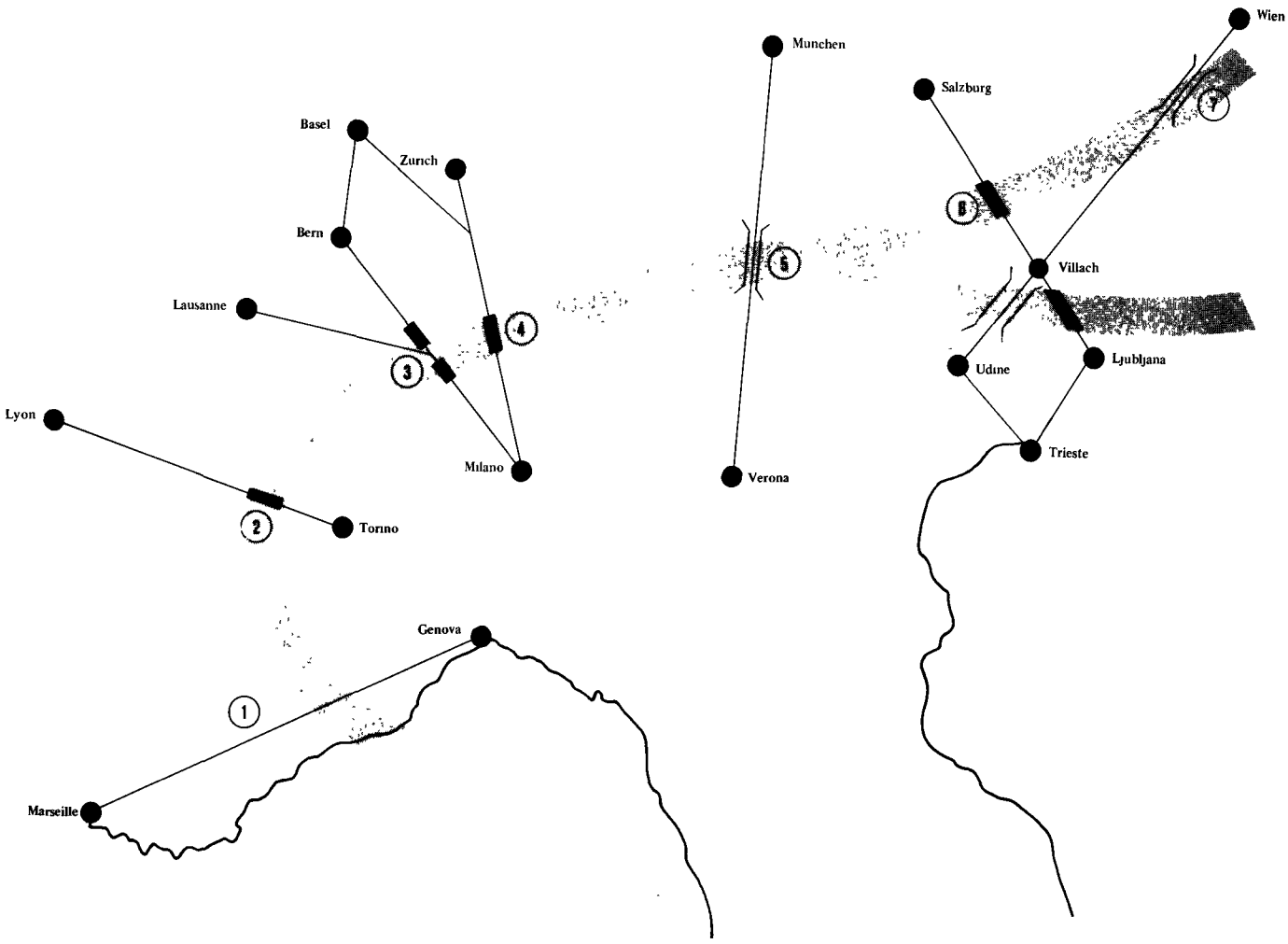
Alpernes hovedkæde
Alpenhauptkamm
Main ridge of the Alps
Axe principal des Alpes
Rilievo alpino
Hoogste Alpenketen

Jernbanelinier
Eisenbahnlinien
Rail lines
Voie ferrée
Linea ferroviaria
Spoorweg

Jernbanetunnel
Eisenbahntunnel
Rail tunnels
Tunnel ferroviaire
Galleria ferroviaria
Spoorwegtunnel

Pas
Passe
Passes
Col
Passo
Pas

Tallene henviser til teksten, afsnit V (a)
Die Zahlen verweisen auf den Text, Abschnitt V (a)
Figures refer to text, sec V (a)
Les chiffres renvoient au texte, Titre V (a)
I numeri rinviano al testo, parte V (a)
De cijfers verwijzen naar de tekst, Deel V (a)



Kommentar / Erläuterung / Note / Commentaire / N B / Toelichting

Byerne er placeret topografisk rigtigt, strækningerne er stærkt skematiseret
Die Orte liegen topographisch richtig, die Strecken sind stark schematisiert
The position of the towns is topographically correct, the routes are approximate
Les localités sont indiquées à leur endroit topographique exact, les parcours des voies ferrées sont fortement schématisés
La posizione topografica delle località è esatta Le linee sono rappresentate in maniera molto schematica
De topografische ligging van de plaatsen is juist, maar de trajecten zijn sterk schematisch weergegeven

II

Skematisk fremstilling af de eksisterende veje, der hele året kan passeres over Alpernes hovedkæde
Schematisierte Darstellung der bestehenden ganzjährig befahrbaren Strassen uber den Alpenhauptkamm
Diagram of existing roads across the Alps open throughout the year
Schema des routes transalpines praticables toute l'année
Rappresentazione schematica dei transiti stradali transalpini esistenti aperti tutto l'anno
Schematisch overzicht van de bestaande autowegen over de hoogste Alpenketen, die gedurende het gehele jaar berijdbaar zijn

Signaturforklaring / Legende / Key / Légende / Leggenda / Legende

Alpernes hovedkæde
Alpenhauptkamm
Main ridge of Alps
Axe principal des Alpes
Rilievo alpino
Hoogste Alpenketen

Vejtunnel
Strassentunnel
Road tunnels
Tunnel routier
Galleria stradale
Wegtunnel

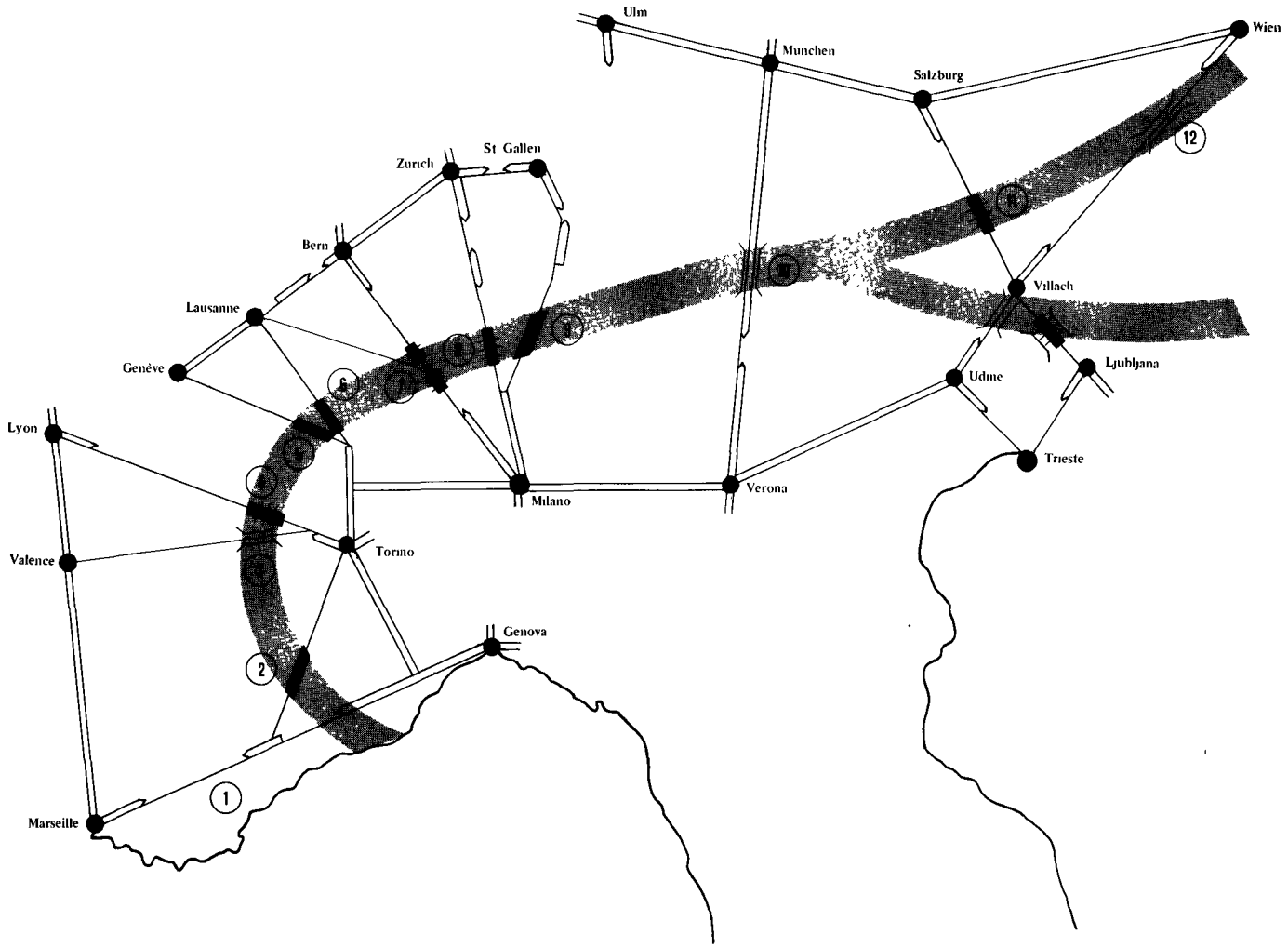
Tallene henviser til teksten, afsnit V (b)
Die Zahlen verweisen auf den Text, Abschnitt V (b)
Figures refer to text, sec V (b)
Les chiffres renvoient au texte, Titre V (b)
I numeri rinviano al testo, parte V (b)
De cijfers verwijzen naar de tekst Deel V (b)

Veje
Strassen
Roads
Route
Strada
Autoweg

Jernbanetunnel med biltog
Eisenbahntunnel mit Autoverladung
Rail tunnels with motor vehicle transport facility
Tunnel ferroviaire avec transbordement des automobiles
Galleria ferroviaria con autotrasporto
Spoorwegtunnel voor auto-trein

Pas
Passe
Passes
Col
Passo
Pas

Motorveje
Autobahnen
Motorways
Autoroute
Autostrada
Autosnelweg



Kommentar / Erläuterung / Note / Commentaire / N B / Toelichting

Byerne er placeret topografisk rigtigt strækningerne er stærkt skematiseret
Die Orte liegen topographisch richtig, die Strecken sind stark schematisiert
The position of the towns is topographically correct, the routes are approximate
L'emplacement des localites est topographiquement exact les routes sont fortement schematisees
La posizione topografica delle localita e esatta I percorsi sono rappresentati in maniera molto schematica
De topografische ligging van de plaatsen is juist, maar de trajecten zijn sterk schematisch weergegeven

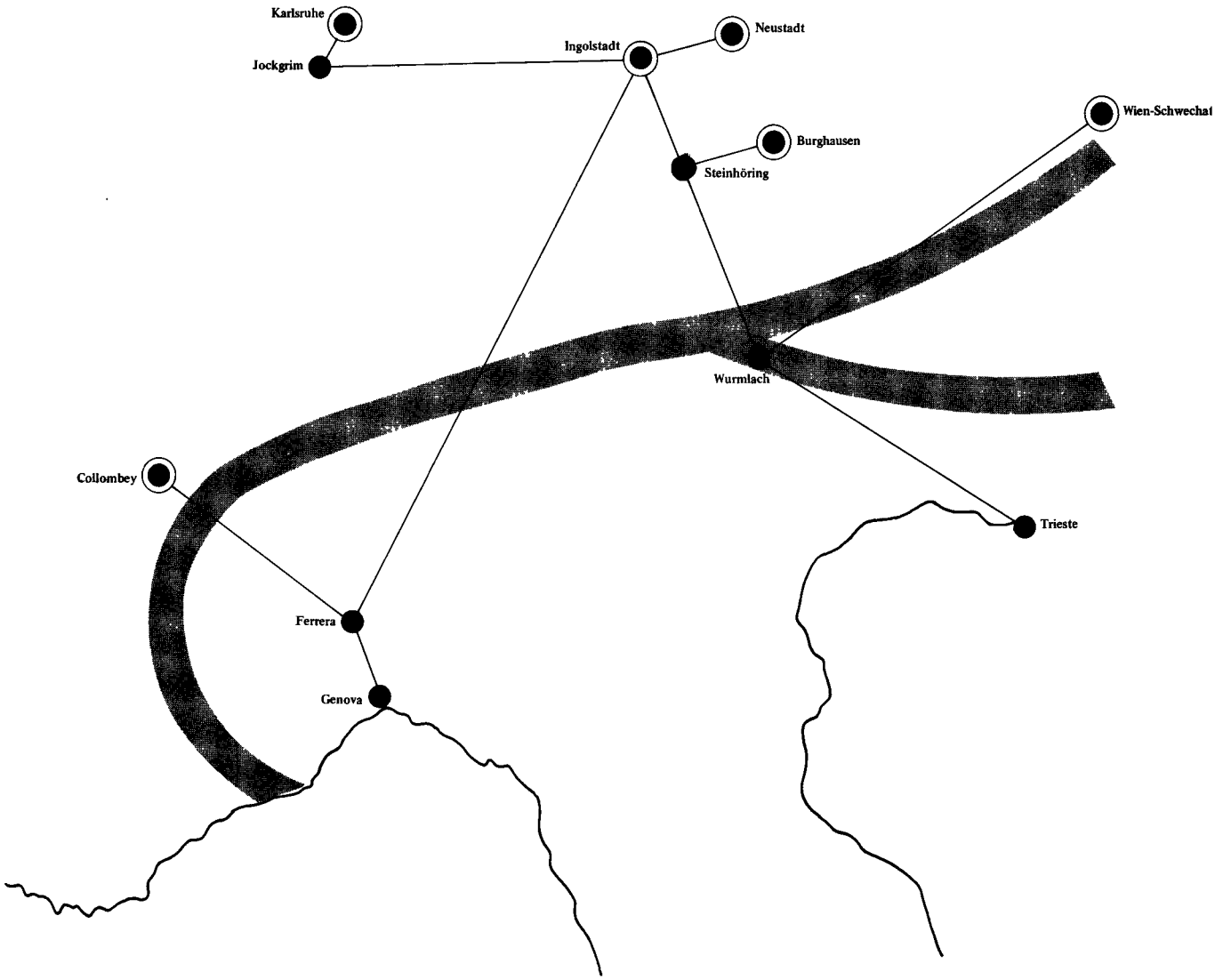
Alpeovergange De eksisterende råolieledninger over alpernes hovedkæde
Alpenübergänge Die bestehenden Rohölleitungen über den Alpenhauptkamm
Existing oil pipelines across the main ridge of the Alps
Traversées alpines : oléoducs transalpins existants
Passagi alpini gli oleodotti transalpini esistenti
Wegen over de Alpen Bestaande pijpleidingen voor het vervoer van ruwe olie over de hoogste Alpenketen

Forklaring / Legende / Key / Légende / Leggenda / Legende

Alpernes hovedkæde
Alpenhauptkamm
Main ridge of Alps
Axe principal des Alpes
Rilievo alpino
Hoogste Alpenketen

Råolieledninger
Rohölleitungen
Oil pipelines
Oléoducs
Oleodotti
Pijpleiding voor ruwe olie

Tilsluttede raffinaderier
Angeschlossene Raffinerien
Connected refineries
Raffineries raccordées
Raffinerie collegate
Aangesloten raffinaderijen



Kommentar / Erläuterung / Note / Commentaire / N B / Toelichting

Byerne er placeret topografisk rigtigt, stærkningerne er stærkt skematiseret.
Die Orte liegen topographisch richtig, die Strecken sind stark schematisiert
The position of the towns is topographically correct, the routes are approximate
L'emplacement des localités est topographiquement exact, le tracé des oléoducs est fortement schématisé
La posizione topografica delle località è esatta I percorsi sono rappresentati in maniera molto schematica
De topografische ligging van de plaatsen is juist, maar de trajecten zijn sterk schematisch weergegeven

IV

Skematisk fremstilling af de vigtigste projekter til at forbedre jernbaneoverførsler over Alpernes hovedkæde
Schematisierte Darstellung der wichtigsten Projekte zur Verbesserung der Eisenbahnübergange über den Alpenhauptkamm
Diagram of main projects for improvement of rail routes through the Alps
Schéma des principaux projets d'amélioration des voies ferrées transalpines
Rappresentazione schematica dei principali progetti di miglioramento dei transiti ferroviari transalpini
Schematisch overzicht van de belangrijkste projecten ter verbetering van de spoorwegen over de hoogste Alpenketen

Signaturforklaring / Legende / Key / Légende / Leggenda / Legende

Alpernes hovedkam
Alpenhauptkamm
Main ridge of Alps
Axe principal des Alpes
Rilievo alpino
Hoogste Alpenketen

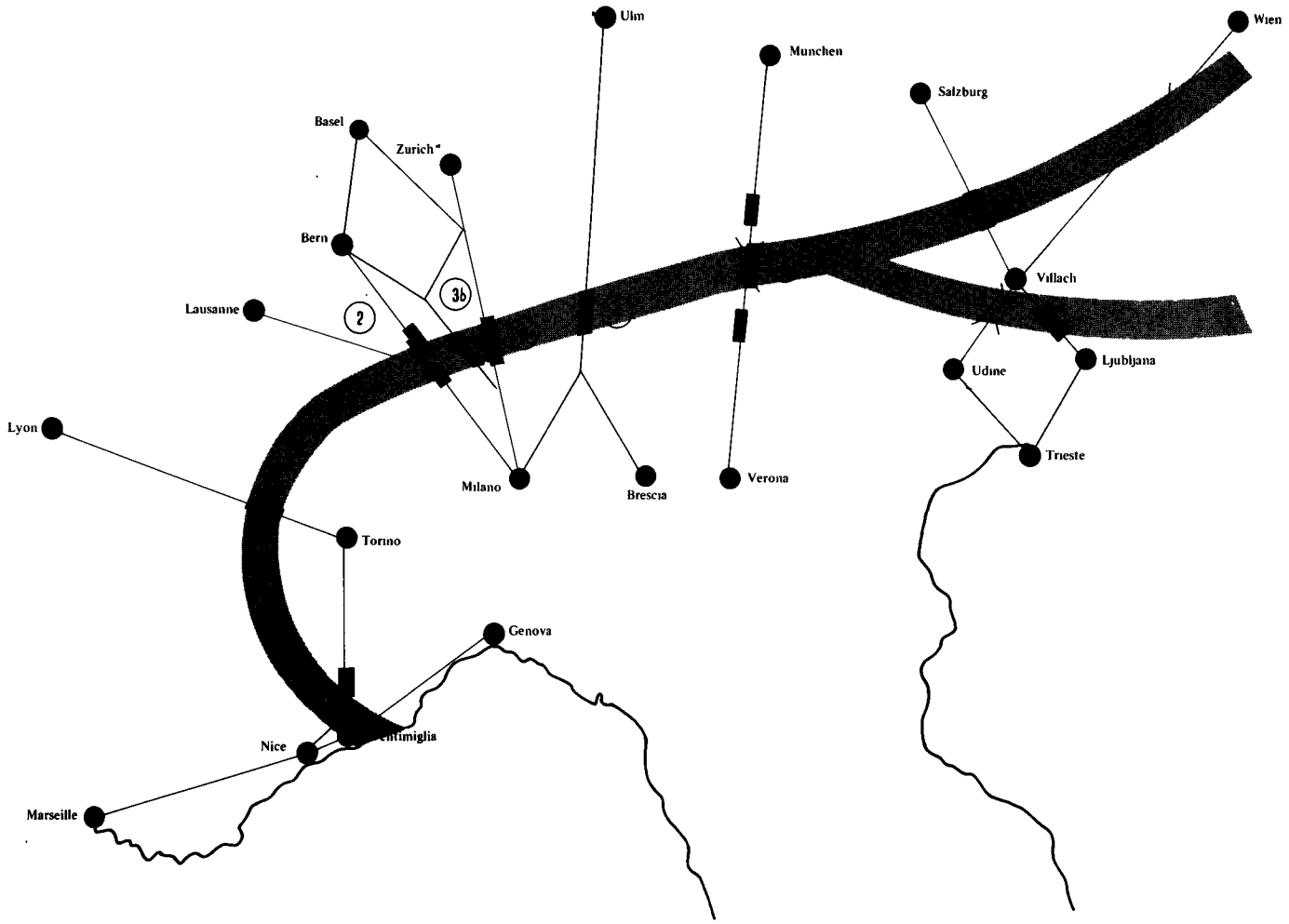
Jernbanelinier
Eisenbahnlinien
Rail lines
Voie ferrée
Linea ferroviaria
Spoorweg

Jernbanetunnel
Eisenbahntunnel
Rail tunnel
Tunnel ferroviaire
Galleria ferroviaria
Spoorwegtunnel

Pas
Passe
Passes
Col
Passo
Pas

Projekter er indtegnet med rødt
Projekte sind rot eingetragen
Projects are shown in red
Les projets sont tracés en rouge
I progetti sono indicati in rosso
Projecten zijn in rood aangegeven

Tallene henviser til teksten, afsnit VI (a)
Die Zahlen verweisen auf den Text, Abschnitt VI (a)
Figures refer to text, sec VI (a)
Les chiffres renvoient au texte, Titre VI (a)
I numeri rinviano al testo, parte VI (a)
De cijfers verwijzen naar de tekst, Deel VI (a)



Kommentar / Erläuterung / Note / Commentaire / N B / Toelichting

Byerne er placeret topografisk rigtigt, strækningerne er stærkt skematiseret
Die Orte liegen topographisch richtig, die Strecken sind stark schematisiert
The position of the towns is topographically correct, the routes are approximate
L'emplacement des localités est topographiquement exact les tracés sont fortement schematisés
La posizione topografica delle località è esatta Le linee sono rappresentate in maniera molto schematica
De topografische ligging van de plaatsen is juist, maar de trajecten zijn sterk schematisch weergegeven

V

Skematisk fremstilling af de vigtigste projekter til forbedring af vejoverførsler over alpernes hovedkæde
Schematisierte Darstellung der wichtigsten Projekte zur Verbesserung der Strassenübergange über den Alpenhauptkamm
Diagram of main projects for improvement of road routes through the Alps
Représentation schématique des principaux projets d'amélioration des routes transalpines
Rappresentazione schematica dei principali progetti di miglioramento dei transiti stradali transalpini
Schematisch overzicht van de belangrijkste projecten ter verbetering van de autowegen over de hoogste Alpenketen

Signaturforklaring / Legende / Key / Légende / Leggenda / Legende

Alpernes hovedkæde
Alpenhauptkamm
Main ridge of the Alps
Axe principal des Alpes
Rilievo alpino
Hoogste Alpenketen

Veje
Strassen
Roads
Route
Strada
Autoweg

Motorveje
Autobahnen
Motorways
Autoroute
Autostrada
Autosnelweg

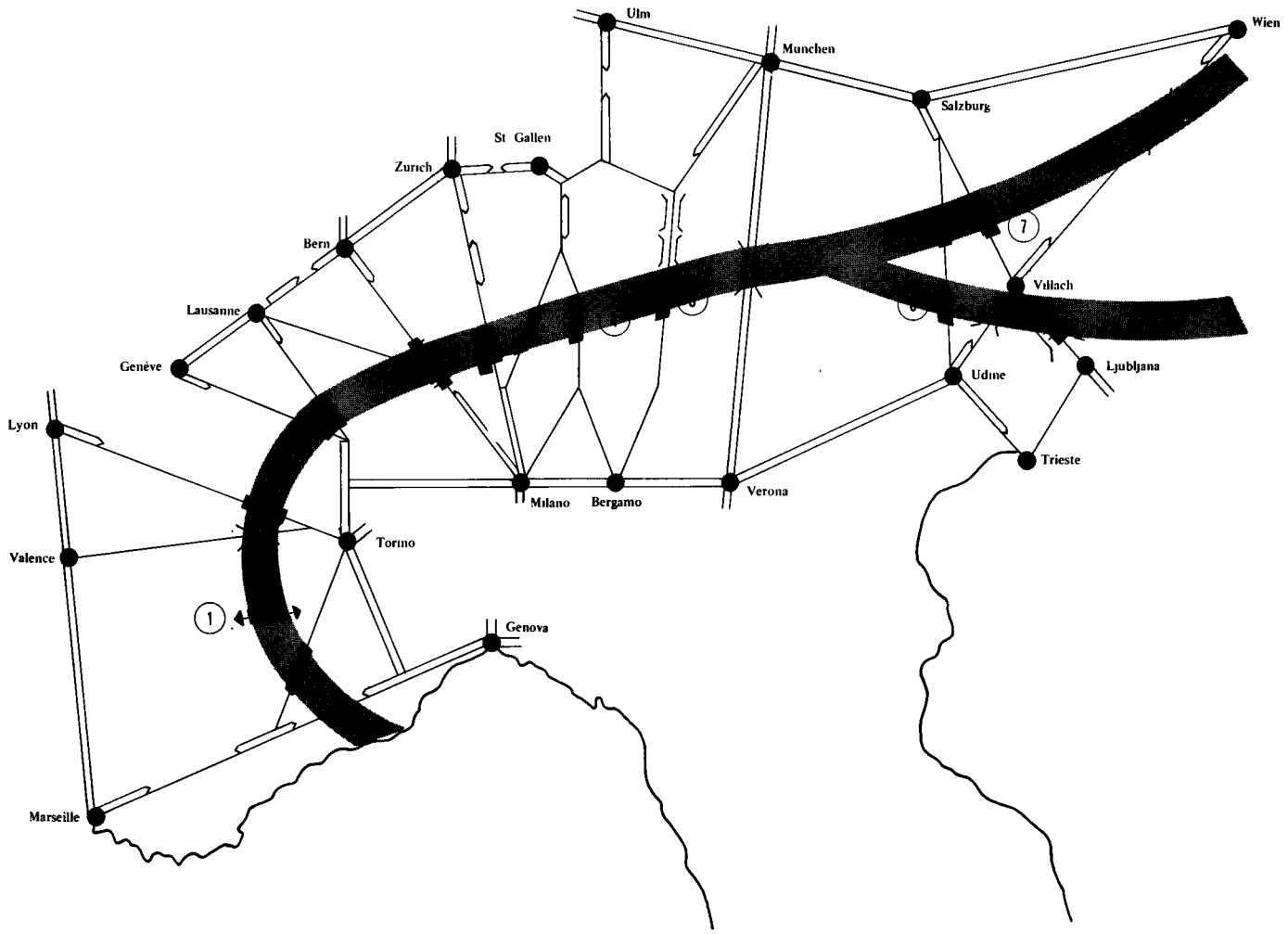
Vejtunnel
Strassentunnel
Road tunnels
Tunnel routier
Galleria stradale
Wegtunnel

Jernbanetunnel med biltog
Eisenbahntunnel mit Autoverladung
Rail tunnels with motor vehicle transport
Tunnel ferroviaire avec chargement des automobiles
Galleria ferroviaria con autotrasporto
Spoorwegtunnel met auto trein

Pas
Passe
Passes
Col
Passo
Pas

Tallene henviser til teksten, afsnit VI (b)
Die Zahlen verweisen auf den Text, Abschnitt VI (b)
Figures refer to text, sec VI (b)
Les chiffres renvoient au texte, Titre VI (b)
I numeri rinviano al testo, parte VI (b)
De cijfers verwijzen naar de tekst, Deel VI (b)

Projekter er indtegnet med rødt
Projekte sind rot eingezeichnet
Projects are shown in red
Les projets sont marqués en rouge
I progetti sono indicati in rosso
Projecten zijn in rood aangegeven



Kommentar / Erläuterung / Note / Commentaire / N B / Toelichting

Byerne er placeret topografisk rigtigt strækningerne er stærkt skematiseret
Die Orte liegen topographisch richtig, die Strecken sind stark schematisiert
The position of the towns is topographically correct the routes are approximate
L'emplacement des localités est topographiquement exact, les tracés sont fortement schématisés
La posizione topografica delle località è esatta I percorsi sono rappresentati in maniera molto schematica
De topografische ligging van de plaatsen is juist maar de trajecten zijn sterk schematisch weergegeven

Opinion of the Committee on Economic and Monetary Affairs

Draftsman of the opinion: Mr K. MITTERDORFER

On 23 March 1972 the Committee on Economic and Monetary Affairs appointed Mr Mitterdorfer draftsman.

The committee considered the draft opinion at its meeting of 4 May 1973 and adopted it unanimously.

The following were present: Mr Lange, chairman; Mr Bos and Sir Brandon Rhys Williams, vice-chairmen; Mr Mitterdorfer, draftsman of the opinion; Mr Arndt, Mr Artzinger, Mr Burgbacher, Mr Flämig (deputizing for Mr Kater), Mr Harmegnies, Mr Johnston, Mr Krall, Mr Leonardi, Mr Normanton, Lord Reay, Mr Starke and Mr Yeats.

1. In its report of May 1970 the Economic Affairs Committee indicated very clearly the ancillary function of the transport policy in relation to a Community structural policy, pointing out especially that the Community's structural policy aims must first be defined before traffic policy measures can be introduced to create the conditions necessary for a balanced development of the various economic areas in the Community.

2. Applied to the Alpine regions, which are predominantly concerned with agriculture and forestry, this means that, besides the more important North-South and South-North lines of communication in the Alpine regions, the transport policy would have to create the necessary conditions for adequate cross links between the traffic routes which have existed for centuries. Taken notably in conjunction with an additional road from Ulm to the Brescia area, leading through the Fern valley and the Reschen pass, after crossing the Stilfserjoch, these cross links should provide the necessary basis for the creation in the Alpine economic area of effective structural conditions geared to the needs of a modern industrial society.

3. By opening up the Alpine area from East to West or from West to East - this applies to the Central and Eastern Alps in particular - it should be possible to bring the Alpine areas, through which goods and people used to make a hurried way, into contact with modern industrial development. The attraction of the industrialcentres north and south of the Alps might be made stronger still by a one-sided expansion of the existing inadequate North-South lines of communication based on siting policy considerations. The danger is that the sharp difference inthe level of prosperity and the structural imbalance between the industrial centres of the North and South of the Community and the Alpine areas will be even further aggravated. Increasing difficulties, in the form of over-urbanization, overloaded infrastructure, saturation of the housing market, pressure on the environment and social inequality, might well arise in the large built-up areas such as Munich and Milan. It is therefore essential that the Alpine area should be considered as a single economic area and its all-too-readily neglected special structural problems resolved at an early juncture.

4. The Committee on Economic and Monetary Affairs therefore invites the Committee on Regional Policy and Transport to take the following points into consideration in its proposal for a resolution:

The European Parliament,

.....

.....

1. Calls attention to the special economic structure of the Alpine area;

2. Regards the opening up of this area with special reference to transport policy as an essential condition for the development of existing or the creation of new industries, in accordance with the requirements of the modern industrial society;

3. Warns against the possible depletion of mountain areas and the serious effects this would have on structural policy if stress were laid solely on the development of existing North-South lines of communication;

4. Considers it essential, when planning the necessary improvements to trans-alpine transport infrastructure to give greater consideration to the due structural interests of the Alpine area, on economic as well as integration policy grounds;

5. Requests that additional development of North-South road links should be accompanied by greater development of traffic routes parallel to the main Alpine ridge in order to relieve existing transport routes;

6. Requests the Council and the Commission to take immediate steps to reduce the structural imbalance and the disparities in living standards between the Alpine regions and the industrial areas of the Community through appropriate proposals and especially decisions to implement economic and monetary union.