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INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
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CROSS-HAULS AND ROUNDABOUT ROUTING OF COAL AND
COKE IN EUROPEAN RAIL TRANSPORT

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Existing Cross Hauls of Solid Fuel by All-Rail Routes in Europe
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CROSS-HAULS AND ROUNDABOUT ROUTING OF COAL AND
COKE IN EUROPEAN RAIL TRANSPORT

Summary

Avoidable cross-hauls of coal and coke, intensified by roundabout routes, are imposing a heavy strain on European rail transport.

Instead of traversing the shortest lines of least cost, European coal and coke move along international routes shaped by balance of payments pressure interacting with bilateral exchanges of rolling stock. Wasteful flows of traffic thus develop. Ruhr coal is moving to Austria and Eastern Germany, e.g. by all-rail hauls which cross those of Silesian coal in transit to France and Switzerland. Austria is getting American coal all-rail from Italian ports simultaneously with a counter-haul of Silesian coal all-rail to Italy. Coal cars are running between Poland and Western Europe along circuitous routes to by-pass Eastern Germany.

Great savings of locomotive fuel, freight cars, and train personnel can and should be realized by better routing of coal and coke traffic. The Inland Transport Committee of ECE has recently urged some specific correctives. Suppressing a few cross-hauls alone would save 18,000 tons of locomotive coal a month, free 8,000 freight cars, and disengage 790 transport workers.

The necessary reforms cannot be realized until and unless the European economies clear away existing bilateral barriers to the convertibility of currencies and the transfer of rolling stock across frontiers. Rational routing of rail traffic is essential to the success of ERP. It presupposes, however, an ERP revival of multilateral intra-European payments.

Scope of Present Analysis

This study considers coal and coke traffic only. It does so because (1) Europe needs to move all the solid fuel she can as fast as her mines produce it; (2) Today, as pre-war, coal and coke comprise a major part of European railway freight.^{1/} It further concentrates on international long-hauls of coal and coke across Europe as opposed to local border traffic. Such long hauls comprise a small part of the total transport of solid fuel along Europe's railroads, waterways, and coastal lanes,^{2/} but they measure a marginal freight which is indispensable to the full functioning of Europe's productive resources. It averages about 553,000 tons a month, of which 85 percent moves all-rail.^{3/}

Long-haul coal traffic moving all-rail now averages 468,000 metric tons a month.^{4/} About 75 percent starts in the Ruhr, 18 percent in Silesia, and 7-8 percent at Trieste (ex-U.S. ports). About 48 percent goes to Austria, 34 percent to Eastern Germany (primarily Berlin) and 18 percent to France, Switzerland, and Italy.

Cross-Hauls

Continental Europe's railroads are wasting fuel, equipment, and labor through avoidable cross-hauls of coal and coke. Such is the opinion

^{1/} In Bizone Germany, e.g. about 40-45 percent of all freight traffic. See Monthly Statistical Bulletin of the Control Commission for Germany (British Element), Vol 2, No. 12 - December 1947, Table 78.

^{2/} Of all solid fuel dispatched from mines in Bizone Germany, e.g. only 30 percent goes outside the Bizone by any means of transport, op. cit. Table 54.

^{3/} ITC estimate as set out in Appendix, Table 1.

^{4/} ibid

of ITC experts after a close study of current traffic.^{1/} They criticize specifically, such all-rail cross-hauls as Ruhr coal for Berlin and Austria counter to like Silesian fuel for France and Switzerland; American coal for Austria via Italian ports counter to like Silesian fuel for Italy. From the viewpoint of transport efficiency, France should be importing no solid fuel all-rail except from neighboring sources such as the Ruhr; and Austria none all-rail except from Silesia. Switzerland should be getting all the coal and coke she can by Rhine barges upstream from the Ruhr; Italy all she can, by ocean colliers carrying American fuel out of the Middle Atlantic, and/or Ruhr fuel out of Rotterdam - Antwerp, and/or Polish fuel out of the Baltic.

ITC's specific proposals for reforming all-rail cross-haulage are summarized in Tables 1, 2, and 3. They aim to re-route 309,000 metric tons of solid fuel a month out of 458,000 tons now moving all-rail. Resulting economies of railway fuel, equipment, and labor are summarized in Table 4. Above all, 18,000 tons of locomotive coal a month, 3,000 freight cars, and 790 train and engineer workers would be freed for other purposes.

Cross-hauls of coal and coke in Europe can and do arise from rational as well as irrational causes. Each European coal basin yields and each European economy needs certain specific qualities, e.g., of coking, steam-raising, and gas-making fuel in certain specific ratios of product-mix. Conceivably, as argued before ITC, the needs of Italian foundries and gas works can best be met by gas-coal from Silesia, of Austrian

^{1/} See Economic Commission for Europe, Inland Transport Committee, Cross-Haulage of Solid Fuel, (1948).

blast furnaces by coke and coking coal from the Ruhr, of bunker depots in the North Sea, Mediterranean, and Baltic by steam-coal from South Wales. So far as quality and product-mix occasion the cross-haulage of solid fuel in Continental Europe, it strengthens and improves the international division of labor.

Unfortunately, most of the cross-hauling now common arises from abnormal causes. It stems from financial difficulties such as foreign exchange shortages, inconvertible currencies, and bilateral clearings, accentuated in certain cases by faulty techniques for the exchange of rolling stock across frontiers.^{1/} Coal and coke move as they do in Continental Europe mainly because imports of Ruhr coal have to be paid for in the scarcest of all currencies, U.S. dollars; because Poland is a party to various trade agreements within whose framework Silesian coal can be procured bilaterally; because the U.S. Government is willing to finance heavier imports of American coal for the relief of certain countries than of others; because special arrangements exist between the occupation authorities for delivering Ruhr coal to Eastern Germany, etc.

Balance of payments pressure is thus the basic cause of cross-haulage of solid fuel.^{2/} As a complicating factor, there is the routing of coal and other traffic to accord with the readier transfer of freight cars across certain frontiers than others.^{3/}

1/ Analysis which follows largely based on ECE discussion as abstracted, e.g. in Reports of First and Second Session of ITC.

2/ cf. Economic Commission for Europe, Inland Transport Committee, Routes for International Traffic, Jan. 9, 1948; and House Select Committee on Foreign Aid, Transportation as it Affects the European Recovery Program, Feb. 7, 1948, p.57.

3/ See Routes for International Traffic, op. cit., as well as Reports of ITC Sessions.

Pre-war, European railways received and returned rolling stock more or less automatically under RIV rules. No distrust arose as to the possible hoarding of cars; on the contrary, car-owning countries had an incentive to let go surplus cars since they received rent for them from the car-using countries. There was an equal incentive to return cars promptly. Profitability of use thus helped to determine the distribution of cars in line with urgency of need. Today, pending the imminent return of RIV in Western and Central Europe alone, freight cars are exchanged by a kind of bilateral barter such that every country tries to balance her car deliveries to each neighbor with her car receipts from each. Transfers within Western Europe are coordinated loosely through a Wagon Exchange Commission at Paris; within Eastern Europe, through a similar body at Prague. Inter-regional transfers, however, have to be negotiated separately between each set of railways. No transit freight can move across Western Germany until and unless approved by BIDAC. This is an ECE body which works up, month by month, a schedule for rail and water transit North-South as well as East-West through the occupation zones.^{1/} The countries concerned with sending and receiving the cars submit formal bids to be allowed to do so. The occupation authorities accept or reject specific bids as they see fit.

Roundabout Routing

European transport wastes also arise from roundabout routing. Coal, coke, and other bulk freight are being hauled internationally over much

^{1/} See, e.g. Economic Commission for Europe, BIDAC Meeting, Minutes of Meetings held at Geneva on 20th and 21st January, 1948.

longer stretches of rail than necessary. At the same time, motive power is forced to work against steeper grades and wider curves than ordinarily prevail on the more direct routes. Such is the informed opinion of ECE's experts.^{1/} As a rule, according to ITC, international rail runs in Europe have lengthened substantially over pre-war. They have done so mainly because of the need to by-pass currency, freight car, and through tariff difficulties in North-South as well as East-West transit across Germany. The Warsaw - Brussels run thus traverses 1828 KM indirectly via Prague instead of 1350 KM directly via Frankfurt-on-Oder.^{2/} The rail haul Prague - Utrecht now stretches 1052 KM over an indirect route via Mainz instead of 950 KM over a more direct route via Magdeburg.^{3/} Much of the all-rail traffic between Switzerland and the Netherlands has been diverted from a shorter run along the right bank of the Rhine to a longer run along the left bank.^{4/} Although coal cars between Poland and France run over a reasonably good route through Czechoslovakia and Southern Germany, no use is made of alternative, perhaps better, pre-war routes through Eastern Germany.^{5/}

This analysis must not be construed to imply that direct routes are necessarily better than indirect routes from the viewpoint of railroad operating efficiency. In Europe as elsewhere, the optimum routing of

1/ Analysis which follows largely based on Routes for International Traffic, and Reports of the Second Session of ITC.

2/ Routes for International Traffic, p.9.

3/ op. cit., p.8.

4/ E/ECE/TRANS/SR2/2, Feb. 4, 1948, p. 16.

5/ Routes for International Traffic, p.9.

rail traffic depends on other essential factors as well as length of haul; e.g. the desirability of moving cars so as to tap the largest traffic, work against the easiest grades and curves, permit the maximum use of solid trains on through runs, and minimize marshalling and disassembly at freight yards. As a temporary factor in Europe today, war damages on certain rail stretches are still not completely repaired; e.g. the delayed reopening of the Baltic train ferries in Eastern Germany and various bottlenecks on the most direct runs between Hamburg and Prague.^{1/}

These complexities are genuine and substantive. Yet it remains true that freight car runs in Europe today are mainly shaped by the need to avoid balance of payments strain intensified by faulty interchange of rolling stock. Indirect routing thus motivated is necessarily less efficient than direct routing.

Corrective Measures via ITC

ITC is doing all it can to reduce avoidable cross-hauls and roundabout routing of solid fuel in European rail traffic. It is recommending specific patterns to reroute traffic. It is pressing for through-tariffs, transit agreements, prompt repair of bottleneck facilities, etc. Thanks to ITC's intervention, RIV rules for the interchange of rolling stock will resume in Western and Central Europe this spring if other countries pay off their freight car debts to the Bizone in the interim.

Above all, the ITC experts are aware of the urgent need to divert as much bulk freight as possible from railroads to inland waterways and

^{1/} Routes for International Traffic, pp. 4, 5, 6, 8.

coastal lanes. In this spirit, for example, they are urging heavier use of the Rhine, Danube, Elbe, and Mittelland Canal, and the re-equipment and modernization of port facilities at Gdansk, Gdynia, and Szczecin. The existing strain on Europe's railroads would be greatly eased, as they suggest, by shipping most of the Ruhr's coal exports along the Rhine as pre-war, increasing current deliveries down the Danube of Ruhr coal for Austria, reactivating the Mittelland Canal as a main artery of bulk freight across Germany, and stepping up to pre-war pitch the use of the Elbe for Czechoslovak foreign trade and the Baltic ports for Polish coal exports to Western and Mediterranean Europe.

Yet the basic problem to be overcome far transcends the competence and powers of ECE. It is a problem of so operating Europe's productive resources that each country accumulates enough foreign exchange to make all currencies readily convertible. Multilateral payments must resume - a primary task of ERP - before the routing of European rail traffic can be rationally reshaped.

Table 1

ITC ANALYSIS OF CURRENT LONG-HAUL DELIVERIES OF
EXPORT FUEL VIA SPECIFIED MEANS OF TRANSPORT

- thousand metric tons a month -

		- Now Routed -				
Origin - Destination	Total	All Rail	Rail and Danube	Rail and Coastal Shipping	Rail, Coastal Shipping and Rhine	
<u>Silesia</u>						
France	35	28	0	7	0	
Switzerland	50	35	0	0	15	
Italy	<u>53</u>	<u>20</u>	<u>0</u>	<u>33</u>	<u>0</u>	
Total	138	83	0	40	15	
 <u>Ruhr</u>						
Austria	220	190	30	0	0	
Berlin	<u>160</u>	<u>160</u>	<u>0</u>	<u>0</u>	<u>0</u>	
Total	380	350	30	0	0	
 <u>Trieste (ex-USA)</u>						
Austria	<u>35</u>	<u>35</u>	<u>0</u>	<u>0</u>	<u>0</u>	
GRAND TOTAL	553	468	30	40	15	

Source: Economic Commission for Europe, Inland Transport
Committee, Cross-Haulage of Solid Fuel,
January 10, 1948, p.5.

Table 2

ITC PROPOSALS FOR REFORMING ALL-RAIL CROSS HAULAGE
OF SOLID FUEL*

<u>Import Market</u>	<u>Average Monthly Import (Thousand Metric Tons)</u>	<u>Present Source (All Rail)</u>	<u>Proposed New Source</u>	<u>Proposed New Routing</u>
France	28	Silesia	Ruhr	All-rail
Switzerland	35	Silesia	Ruhr	Upstream, Rhine
Austria	77	Ruhr	Silesia	All-rail
Austria	35	Trieste and Venice (ex-USA)	Silesia	All-rail
Berlin	114	Ruhr	Silesia	All-rail
Italy	20	Silesia	(Ruhr: (((or USA (Downstream, Rhine to Rotterdam; coastal shipping to Genoa. Ocean-shipping to Genoa.
Total	309	.	.	.

*See maps

Source: Economic Commission for Europe, Inland Transport Committee, Cross-Haulage of Solid Fuel, January 10, 1948 - p.6.

Table 3

ITC SCHEDULE OF REROUTED LONG-HAUL DELIVERIES OF EXPORT
FUEL VIA SPECIFIED MEANS OF TRANSPORT

-thousand metric tons a month-

<u>Origin - Destination</u>	<u>Total</u>	<u>All Rail</u>	<u>Rail and Danube</u>	<u>Rail and Coastal Shipping</u>	<u>Rail & Coastal Shipping & Rhine</u>	<u>Rhine or Rhine - Coastal Shipping</u>
<u>Silesia</u>						
France	7	0	0	7 <u>a/</u>	0	0
Switzerland	15	0	0	0	15 <u>a/</u>	0
Austria	112	112	0	0	0	0
Berlin	114	114	0	0	0	0
Italy	<u>33</u>	<u>0</u>	<u>0</u>	<u>33 a/</u>	<u>0</u>	<u>0</u>
Total	281 <u>b/</u>	226	0	40	15	0
<u>Ruhr</u>						
Austria	142	113 <u>c/</u>	30 <u>c/</u>	0	0	0
Berlin	46	46 <u>d/</u>	0	0	0	0
Italy	20	0	0	0	0	20 <u>e/</u>
France	28	28	0	0	0	0
Switzerland	<u>35</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>35</u>
Total	272 <u>f/</u>	187	30	0	0	55
GRAND TOTAL	553	413	30	40	15	55

a/ All or part of which is subject to possible displacement by Ruhr coal via the Rhine.

b/ Maximum schedule; might decrease to 226,000 tons a month through displacement by Ruhr deliveries to France, Switzerland, and Italy.

c/ Subject to possible diversion from all-rail to rail-Danube depending on availability of tugs and barges.

d/ Subject to possible diversion over the Mittelland Canal depending on repair of latter.

e/ Or, if necessary, ocean-borne deliveries from USA.

f/ Minimum schedule; might increase to 327,000 tons a month through displacement of Polish deliveries to France, Switzerland, and Italy.

TABLE 4

ITC ESTIMATE OF SAVINGS TO BE REALIZED BY REFORM
OF SOLID FUEL CROSS-HAULS a/

Coal for steam locomotives	18,000 metric tons a month <u>b/</u>
Tractive power for electric locomotives	1,800,000 KWH a month <u>c/</u>
Serviceable freight cars	3,000 cars
Serviceable steam locomotives	150 locomotives
Serviceable electric locomotives	14 locomotives
Locomotive engineers and firemen	750 skilled workers <u>b/</u>
Trainmen and brakemen	40 skilled workers <u>b/</u>

a/ Potential economies from rerouting traffic as shown in Table 2.

b/ Adjusted for additional coal and staff to move Ruhr coal up the Rhine to Switzerland.

c/ Equivalent of 700 metric tons of coal a month.

Source: Economic Commission for Europe,
Inland Transport Committee,
Cross-Haulage of Solid Fuel,
January 10, 1948, p.7.

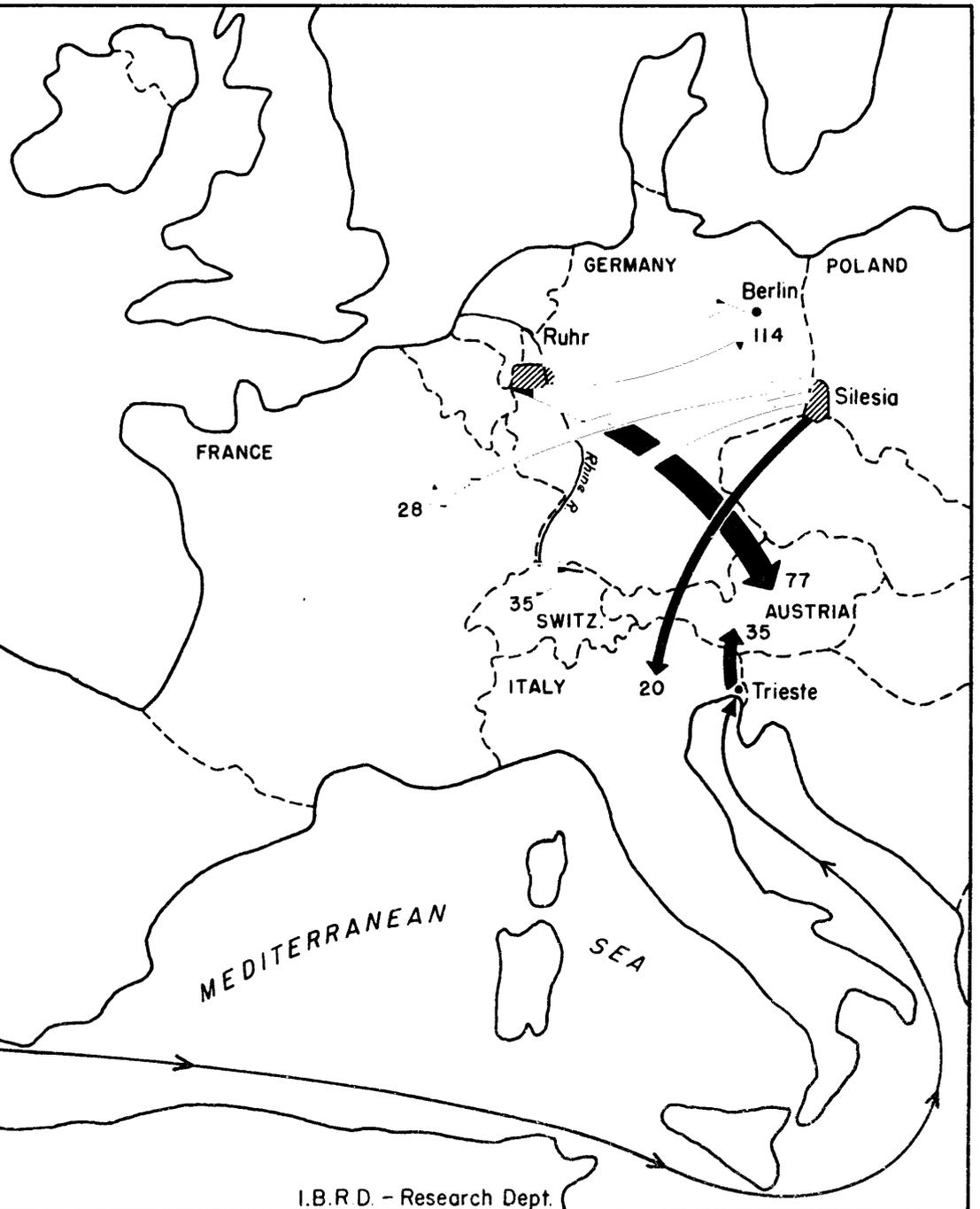
EXISTING CROSS HAULS OF SOLID FUEL BY ALL-RAIL ROUTES IN EUROPE *

ATLANTIC OCEAN

*Figures represent monthly imports
in thousands of metric tons*

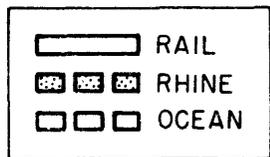
OCEAN-BORNE FROM U.S.A.

* Routing of 309,000 metric
tons a month (See Table 2)



ROUTING PROPOSED BY ITC TO REFORM CROSS HAULAGE OF SOLID FUEL IN EUROPE *

ATLANTIC OCEAN



Figures represent monthly imports in thousands of metric tons

*Routing of 309,000 metric tons a month (See Table 2)

