THE EUROPEAN IRON AND STEEL SITUATION

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I. Current Production Levels

Steel production in Europe as a whole has reached a rate of about 61 million tons per year which is about 85 percent of the 1937 level of production. Excluding Russia and Western Germany, production in the remaining countries is about 6 percent higher than the 1937 level. Production in Germany has lagged far behind the remainder of the countries, current output being at only about 30 percent of 1937. The Saar has recovered somewhat more than the Bizonal Area in Germany, the current rate being about 40 percent of prewar. Recovery in some of the important steel producing countries has been to substantially higher levels than the average. In Czechoslovakia, Sweden and Great Britain, current rates are 16 to 18 percent higher than prewar. Postwar Poland is producing steel at a rate 30 percent higher than the Poland of 1937 but, taking into account changes in boundaries, postwar production is approximately at the 1937 level. The remaining important producers, Belgium, France, Italy and Luxembourg, have a less favorable position, the rate of production having recovered to only slightly below prewar levels. In some of the steel producing countries of Eastern Europe, production has expanded substantially as a result of setting into effect rational plans for increased industrialization. In general, the output of these countries, however, is still not an important factor in total European production.

II. Factors Affecting the Expansion of Production

Following the end of the war in 1945, the rate of recovery of the European steel industry was surprisingly rapid. In 1946, production averaged about 75 percent of 1937. The rate of expansion, however, began to decrease in the Fall of 1946 and by the close of 1947 an increase of only 10 percent over 1946 had been realized. Experience in 1948 to date shows that the increase in capacity for the current year will probably be less than obtained in 1947. Several factors are controlling the further expansion of the industry, the more important ones being an absolute shortage of coke and a relative shortage of scrap metal. In the problems relating to both of these shortages, Germany occupies a key position.

(a) Coke - Prior to the war, Germany produced about 40 million tons of coke per year, of which about 9 million tons were exported. Of this total, about 90 percent was produced in the Ruhr, Aachen and Saar areas. Current production in these areas of metallurgical coke is at an annual rate of about 17 million tons per year, of which less than 4 million tons are available for export. The disappearance of some 5 million tons of German coke and a general shortage of coking coal has produced a gap which is difficult to close. In particular, low exports of British coal have had a substantial influence in retarding steel production in Western Europe, exports from the U.K. running only about 20 percent of the 1937 level and little of this coal is effective for steel production. Moreover, with the
exception of Poland, output of coal in Europe is still well below prewar levels. In spite of the efforts of the European Coal Organization, plus imports of American coal and expanding Polish coal exports to the remainder of Europe, it has not been possible to relieve the shortage of coke and this shortage currently constitutes the most important deterrent to an expansion of the European iron and steel industry. The countries most affected by the shortage of coke are those which prior to the war were dependent upon Germany for all or a portion of their supplies, the most notable being France, Belgium and Luxembourg. In these countries, the predominant process for producing steel is the basic Bessemer or Thomas method, which requires a very high proportion of pig iron produced from domestic ores and coke. In an effort to compensate for the shortage of coke, these countries are utilizing 20 to 25 percent of scrap metal in the blast furnaces, a practice not followed prior to the war to any extent. This has resulted in increasing pressure on the already tight supply of scrap metal and the shortage of coke has, in effect, created a shortage of scrap not so much because scrap is in absolute short supply but because the ratio of scrap used in steel at the present time is abnormally high.

The situation, however, is gradually becoming easier. Production of coking coal and coke is increasing throughout Europe and E.C.E. allocations of German and Polish coking coal and coke are now on the basis of unused blast furnace capacity. This system of allocating is most beneficial to France, Belgium and Luxembourg who are producing at rates not only below prewar production levels, but even further below prewar capacity, since 1937 output, though highest of the thirties, was still considerably below prewar capacity. Production in these countries during the second quarter of 1948 was approximately 5 to 10 percent above the levels of the first quarter.

It has also been suggested by the E.C.E. Steel Subcommittee that the short supply of metallurgical coke can be eased to some extent by the shipment of relatively small tonnages of U.S., U.K. and Polish non-coking coals to Germany as a replacement for metallurgical coke which is currently being used for domestic and similar purposes. This procedure, if put into effect, will enable the current supply of coking coal to be used more advantageously and will substantially increase the tonnage of coke going to the steel industry.

(b) Scrap - Due to the shortage of coke and resulting shortage in pig iron in most of the steel producing countries of Europe, scrap metal is in very tight supply, since it is used alternatively as a substitute for pig iron in the production of steel. Although a number of European countries, notably Italy and France, had substantial stocks of scrap immediately following the war, most of the unusual sources such as battle field scrap, rubble and war materials have been practically exhausted. Trade in scrap has suffered substantial adjustments and as a result, France, Belgium and Luxembourg, all large exporters of scrap prior to the war, are now net importers. Similarly, the United States, which was also a large scrap exporter before the war, has become a net importer due to the unprecedented high steel production and relatively low scrap returns from domestic collections. The one remaining source of scrap in Europe is Germany but,
todate, it has not been possible to move substantial quantities of German scrap
into European trade channels. A number of explanations have been given for this
condition, the most reasonable one being that German scrap dealers have nothing
to gain by selling scrap for German Marks. It is possible that the currency
reform in Germany, plus the current campaign of the British steel industry to
force the movement of German scrap into export channels, will be successful
but it is not possible to tell what the net effect of these efforts will be at
the present time. It has not been possible to obtain full information con-
cerning the actual increase in consumption of scrap in Europe. It is known,
however, that in France and the Low Countries it is currently common practice
to charge 20 to 25 percent of scrap in the blast furnaces, whereas before the
war a maximum of about 6 percent was charged on the average. Italy, Czechoslo-
vaki, and the U.K. are all consuming much larger proportions of scrap in
the production of steel than during the prewar years. Rough calculations
indicate that the increased scrap consumption in Europe over the 1937 rate is at
a minimum of about 5.5 million tons per year.

(c) Iron ore - In addition to the increased dependence of the iron and steel
industry of Europe on scrap metal, there has been a substantial shift from low
grade to high grade ores, this again being the direct result of the coke shortage
since pig iron can be produced with 15 to 20 percent less coke when using high
grade ores than is possible with low grade ores such as are obtained in the
Lorraine Basin in France. Information is available on the production of the
various grades of ore in Europe but such information can be misleading unless it
is carefully interpreted. Before the war, Germany was the largest importer of
high grade ore as well as an important consumer of low grade ore from Luxembourg
and France. Currently, by virtue of the low rate of operations in Germany,
demands for foreign ores have been relatively small. On the other hand,
countries like Belgium, Luxembourg, France and the U.K., which before the war
had consumed the low grade ores of the Lorraine Basin almost exclusively, and in
the case of Britain domestic ores of approximately the same quality, have all
appeared as customers for high grade ores, particularly from Sweden, and have
simultaneously reduced their consumption of low grade materials. The result has
been a marked reduction in the production of low grade ores and a less marked
decline in the production of high grade ores since, for various reasons, the
demands of the new customers are still not equal to those of prewar Germany.
As a result, Sweden, which before the war produced about 15 million tons of high
grade ore per year almost entirely for the export market, now produces at an
annual rate of only about 9 million tons. Other high grade ore producing-
exporting areas, of which Algiers and Spain are the most important, currently
account for a production of about 500,000 tons per month as compared to a
prewar output of about 600,000 tons per month. Current export availabilities
are, however, about 200,000 tons lower since Spain has increased her output
of pig iron over prewar levels.

The shift towards high grade imported ores is all the more striking, since it
is compounded of several unusual elements. The first is the appearance of new
customers for Swedish ore at a time when foreign exchange shortages have led
these same countries to curtail buying abroad as much as possible. Moreover,
while Swedish ore is less expensive to process than the domestic ores, its
"first cost" is so high that these countries found it more profitable to use
their own low grade ores before the war. The result has been an increase in
the unit cost of producing steel but total profits have also been higher due
to the increased production obtained per ton of coke.
The net effect of the shortage of coke has been a reduction in the amount of pig iron used per ton of crude steel by about 7 percent and an increased ratio of the use of high grade ores to low grade ores of about 2.2 percent. Comparable figures are given in Table 2.

(c) Short term prospects - Prospects for increasing the production of crude steel in Europe are fairly good if only moderate increases are envisaged. Large scale increases would be possible only if supplies of metallurgical coke are proportionately increased and this does not seem probable over the short term. It is our opinion, therefore, that the present trend will continue with increased consumption of scrap if available and increased use of high grade ores as compared with low grade materials.

Although the proposition that Europe's shortage of steel could be alleviated by expanding Germany's production is a very attractive one, the net gain to Europe from such a course is less than would appear at first sight, except on items which are now being produced to capacity in other countries. Increased production in Germany to rates of 6 to 7 million tons of crude steel per year requires imports of substantial quantities of Swedish ore but more ore to Germany will mean less coke to France and the Low Countries and, therefore, competition will develop between these countries and Germany for the production of Swedish ores. This competition, it should be noted, is in a true sense a competition for a limited quantity of ore since, although Swedish ore production is only about two-thirds of the prewar level, shortages of mining equipment, transport, and harbor facilities will place obstacles in the way of expansion of Swedish production to prewar levels. This condition has created some concern in Europe, particularly within the Subcommittee on Steel of the E.C.E. which has expressed the opinion that, while Sweden can probably meet 1948 commitments, "with the planned increase in steel production, the iron ore problem might well reappear in a more acute form in 1949."

In the race to preempt the market for Swedish ores by France and the Low Countries on the one hand and Germany on the other, the British steel industry will probably act more or less as a neutral, since its coal requirements are met by internal production and are not affected by E.C.E. allocations. However, domestic production of coke in Great Britain has been less than the requirements of the steel industry and, therefore, emphasis in the U.K. has been on increased utilization of scrap as well as the use of relatively high proportions of high grade ores. This situation, despite its departures from the 1937 structure of production and trade, is likely to last so long as coke and scrap remain short. Once, however, these shortages are removed, we may expect a return to prewar relationships, since once again it will be cheaper for France, Belgium, Luxembourg and Great Britain to use their own low grade ores. Knowledge of this can be expected to influence the attitude of the Swedish Government in allocating her output of ore for future years.
III. Finished Products

In regard to finished products, there are indications that European production of rails and other heavy items are reaching the levels of requirements. This is also true of some types of merchant steel. Existing shortages are confined largely to plates, sheets, tinplate and tubes which are in tight supply throughout the world. Some countries in an export position are tending to experience a reduction in trade due primarily to difficulties in payments. Belgium and Luxembourg are particularly affected. Italy has been building stocks of finished steel due to reduced internal demand.

IV. Export Markets

French exports of steel products, although recovered substantially from their postwar lows, are still less than 30 percent of prewar (1938) levels. (See Table 3). Most of the recovery, however, has been in exports to French overseas possessions, which currently are higher than prewar, whereas exports to foreign countries are less than 15 percent of prewar. In contrast, U.K. exports of finished products are now at the 1938 level, although still some 30 percent below the 1937 level. Belgium-Luxembourg, which are particularly dependent on export trade, have managed to recover to well above 1938 levels, but are still almost one-fourth below 1937 levels. Moreover, the continuation of high-level exports is uncertain and variable because of foreign exchange difficulties of their customers.

V. Long Range Programs

One gets the impression in Western Europe that the expansion programs are being postponed. Belgium and the Netherlands are proceeding on the basis that a surplus of hot strip will be available soon as a semifinished item on the market. The French are postponing the installation of a second strip mill. The emphasis with respect to capital expenditures is on cost reduction rather than increased capacity. Steel production in Czechoslovakia and Poland is ahead of the national plans. Uncertainties in markets for steel and fabricated items have slowed down modernization and expansion plans.

These uncertainties are not made any lighter by the existence of an important unknown factor in the European steel picture, namely, the Soviet Union. While her actual current output is unknown, it is estimated by us at something below 12 million tons of finished steel per year, or about the same output as in 1940. In view of the tremendous amount of destruction caused by the war and the increase in population since then, it does not appear likely that Soviet Russia will appear as an important exporter of steel for the next two or three years, despite the ambitious construction program envisaged under her Fourth Five-Year Plan, which would raise finished steel capacity to 18 million tons per year. On the other hand, by virtue of various bilateral agreements between Russia and the Eastern European countries, it may well be that this area will disappear as a market for Western steel in two to three years time. This belief is strengthened by the fact that the plans for Poland, Czechoslovakia, Bulgaria, Hungary and Yugoslavia all include sizable expansion of their own steel making capacity. Germany, which exported some 15 percent of its prewar iron and steel export items to this area, may, therefore, find these markets non-existent in the near future, and, if she is permitted to expand her steel production rapidly will become an important competitor of the remainder of Western Europe for other markets.
Table 1

PRODUCTION OF CRUDE STEEL IN EUROPE FOR SELECTED PERIODS
(Quantities in thousands of metric tons; index numbers, 1937 = 100)

<table>
<thead>
<tr>
<th>Country</th>
<th>Production (actual)</th>
<th>Index Numbers of Production</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1937</td>
<td>1946</td>
</tr>
<tr>
<td>Austria</td>
<td>650</td>
<td>187</td>
</tr>
<tr>
<td>Belgium</td>
<td>3870</td>
<td>2230</td>
</tr>
<tr>
<td>Czechoslovakia</td>
<td>2317</td>
<td>1668</td>
</tr>
<tr>
<td>France</td>
<td>7920</td>
<td>4404</td>
</tr>
<tr>
<td>Saar</td>
<td>2339</td>
<td></td>
</tr>
<tr>
<td>Western Germany</td>
<td>15584</td>
<td>2928</td>
</tr>
<tr>
<td>Hungary</td>
<td>665</td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td>2087</td>
<td>1172</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>2510</td>
<td>1296</td>
</tr>
<tr>
<td>Netherlands</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Norway</td>
<td>160</td>
<td></td>
</tr>
<tr>
<td>Poland</td>
<td>1443</td>
<td>1224</td>
</tr>
<tr>
<td>Rumania</td>
<td>242</td>
<td></td>
</tr>
<tr>
<td>Spain 3/</td>
<td>168</td>
<td>595</td>
</tr>
<tr>
<td>Sweden</td>
<td>1110</td>
<td>1212</td>
</tr>
<tr>
<td>U.K.</td>
<td>12984</td>
<td>12888</td>
</tr>
<tr>
<td>U.S.S.R.</td>
<td>17493</td>
<td></td>
</tr>
<tr>
<td>Yugoslavia</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>All other</td>
<td>131</td>
<td></td>
</tr>
<tr>
<td>Total:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excluding Germany 2/</td>
<td>38678</td>
<td>40804</td>
</tr>
<tr>
<td>and U.S.S.R.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Including Germany only</td>
<td>54262</td>
<td>45578</td>
</tr>
<tr>
<td>All European countries</td>
<td>71755</td>
<td>61028</td>
</tr>
</tbody>
</table>

1/ Monthly production expressed as an annual rate.

2/ Prewar figures for Germany cannot be made strictly comparable with those of the postwar period. The error is, however, small.

3/ Low level of 1937 reflects the Civil War in that country.
Table 2

**COMPARISON OF SELECTED RATIOS FOR THE EUROPEAN STEEL INDUSTRY**

<table>
<thead>
<tr>
<th></th>
<th>1937</th>
<th>1948</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of pig iron per ton of crude steel</td>
<td>79.8</td>
<td>72.8</td>
</tr>
<tr>
<td>Percent of rich ores to total ores</td>
<td>24.3</td>
<td>26.5</td>
</tr>
</tbody>
</table>

1/ Excluding U.S.S.R. and Western Germany.

Table 3

**PREWAR AND CURRENT EXPORTS OF FINISHED IRON AND STEEL PRODUCTS BY LEADING EUROPEAN PRODUCERS**

(In thousands of metric tons)

<table>
<thead>
<tr>
<th>Country of Export</th>
<th>1929</th>
<th>1938</th>
<th>1947</th>
<th>Most Recent</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom</td>
<td>2674</td>
<td>1087</td>
<td>947</td>
<td>1020</td>
</tr>
<tr>
<td>France</td>
<td>1429</td>
<td>834</td>
<td>190</td>
<td>636</td>
</tr>
<tr>
<td>Germany 1/</td>
<td>2055</td>
<td>1900</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>Belgium-Luxembourg</td>
<td>3543</td>
<td>1908</td>
<td>1942</td>
<td>2640</td>
</tr>
</tbody>
</table>

1/ Figures for 1929 include reparations deliveries.
2/ Excluding the Saar
3/ 1937
n.a. Data not available but known to be negligible.

**Source:** Current issues of Bulletin de la Chambre Syndicate de la Siderurgie; Statistisches Jahrbuch fur die Deutsche Eisen Und Stahlindustrie, issues of 1933 and 1938.