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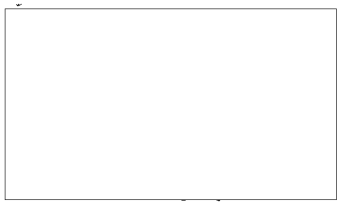
THE DEUTSCHE REICHSBAHN



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HANDBOOK (C)

RAILROAD SYSTEM OF EAST GERMANY (C)

JANUARY 1958

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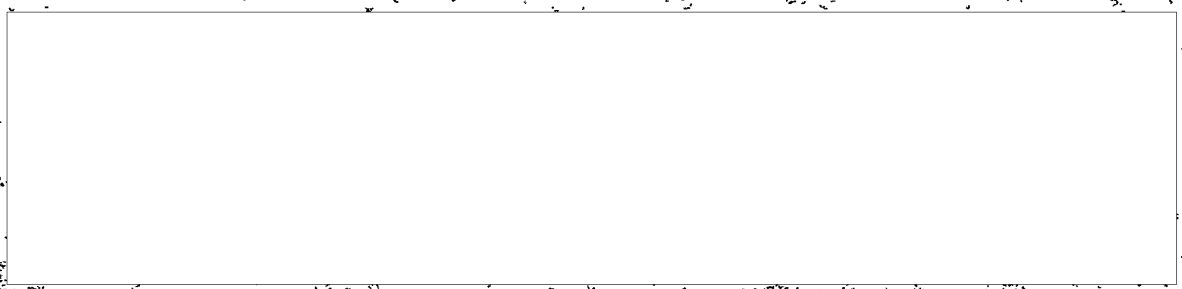

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DEUTSCHE REICHSBAHN

HANDBOOK (C)

RAILROAD SYSTEM OF EAST GERMANY (C)

HEADQUARTERS

UNITED STATES ARMY EUROPE

OFFICE OF

THE ASSISTANT CHIEF OF STAFF, G-2 INTELLIGENCE

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FOREWORD

This handbook provides a ready source of basic information and reference data concerning the railroad system of East Germany.

It is designed to acquaint intelligence personnel and others with the Deutsche Reichsbahn and to facilitate estimates and planning tasks involving rail transportation in East Germany.

Periodic revision of this handbook will be undertaken as required by future developments. Persons having valid information at variance with its contents are requested to notify this office promptly so that correction can be made.

FOR THE ASSISTANT CHIEF OF STAFF, G-2

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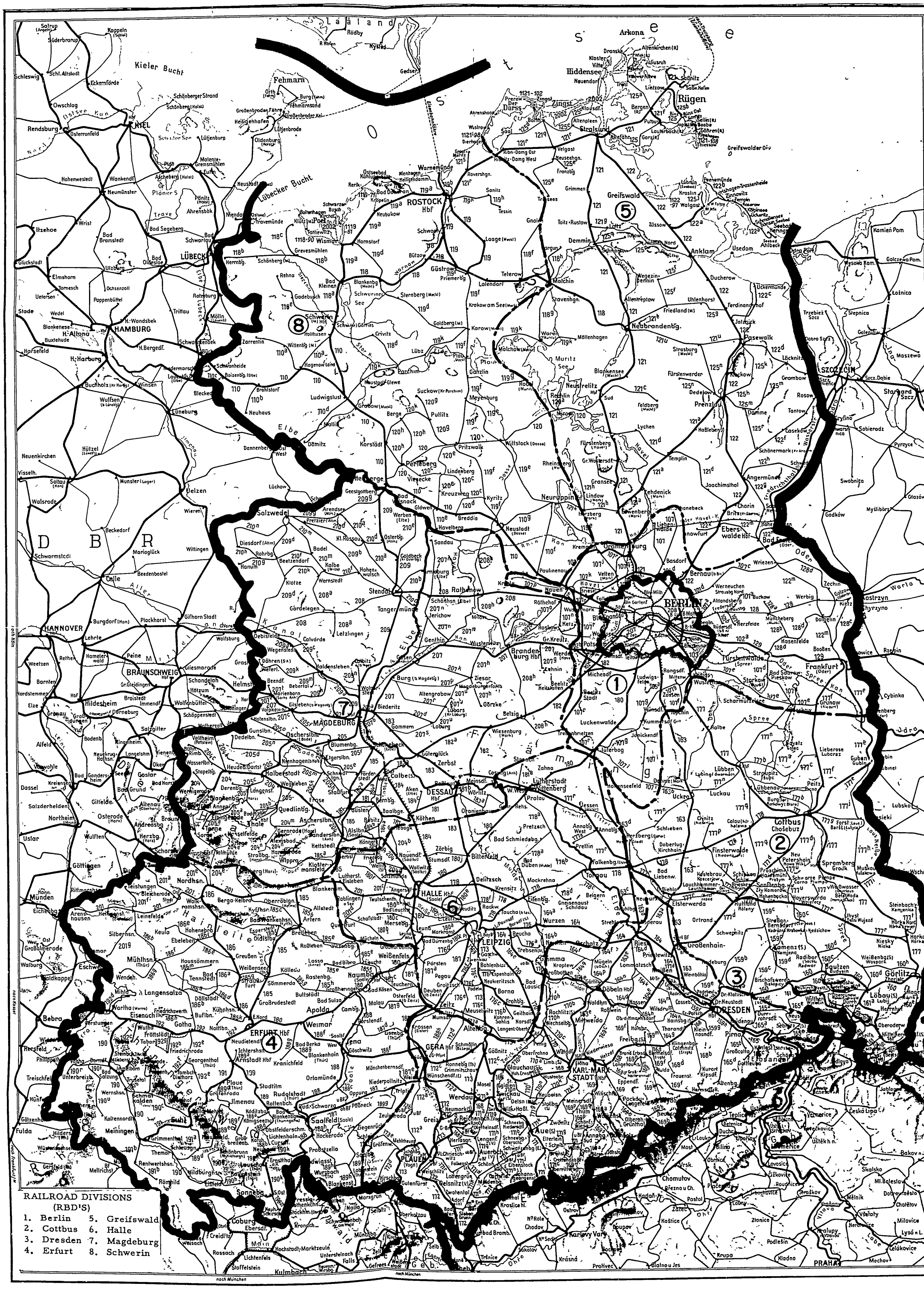
RAIL NETWORK OF EAST GERMANY



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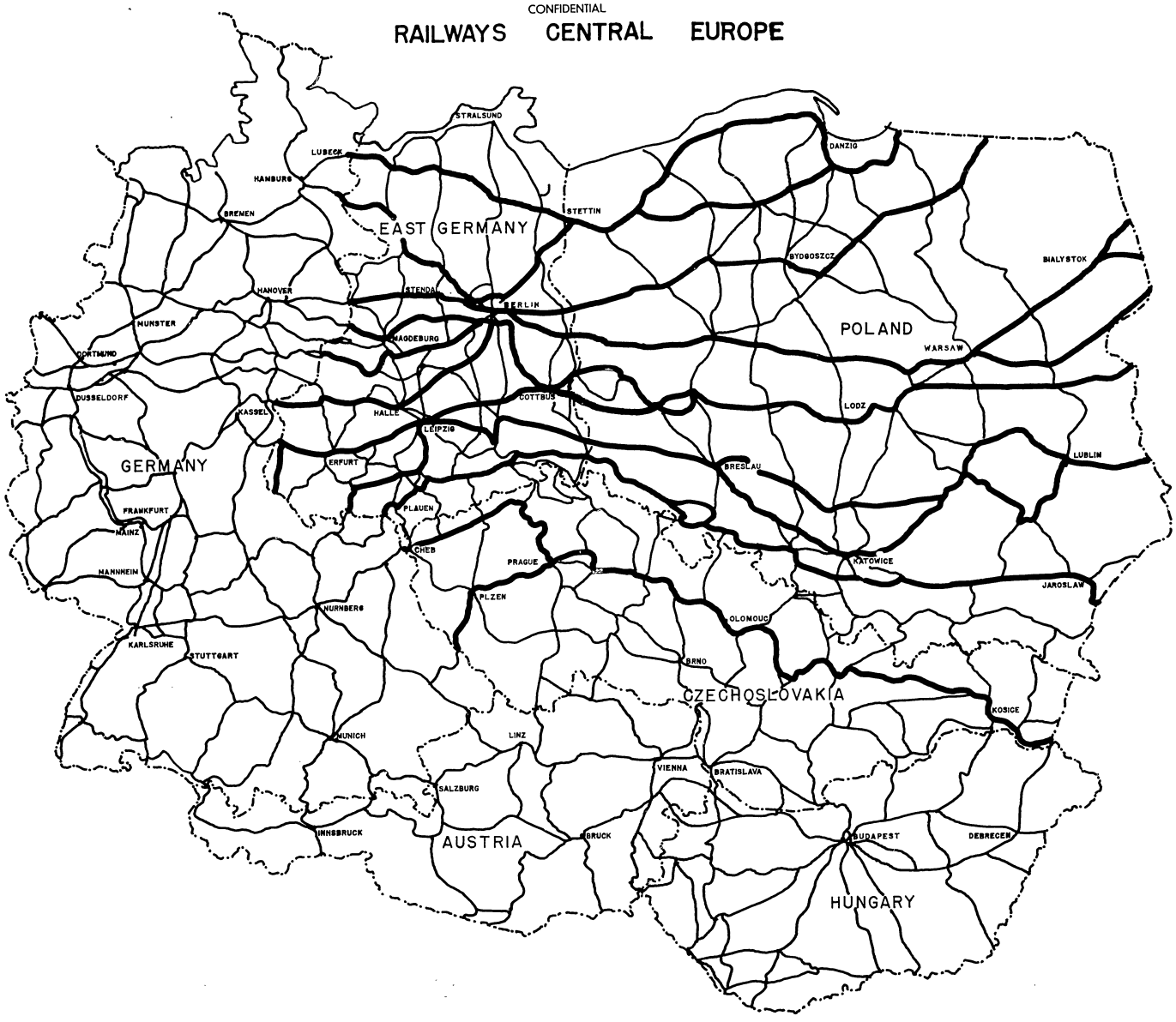
RAILWAYS CENTRAL EUROPE



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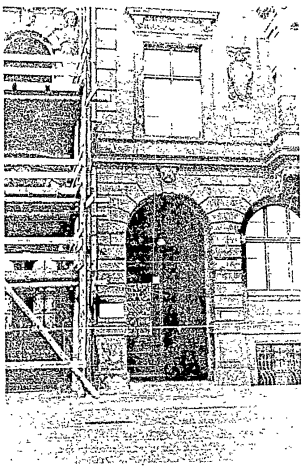
SECTION I

Organization of the Deutsche Reichsbahn



Main entrance to Ministry for Transport (MFV) 33- Vosstrasse, East Berlin

SECTION 1

ORGANIZATION OF THE DEUTSCHE REICHSBAHN

The Ministry of Transport (Ministerium fuer Verkehrswesen) of the Deutsche Reichsbahn.

From the time of the reorganization of the German railroads under the Weimar Republic in 1924, until the creation of the Federal German Republic (Bundesrepublik) in 1949, the German State railroads bore the official designation Deutsche Reichsbahn (DR). At the end of World War II, when Germany was divided into Zones of Occupation, to distinguish to which occupation area Reichsbahn rolling stock was assigned, an additional designator was added below the DR ownership symbol on the side of the car. Thus a car assigned to the U. S. Zone of Occupation bore the designation DR US Zone and to the Soviet Zone DR USSR Zone. When the U. S. and British Occupation Zones were merged into one economic area, the car designations were changed to DR Br -US Zone and the cars were popularly referred to as BUZ cars.

When the German Federal Republic came into being in 1949, that portion of the Reichsbahn operating in the three Western Allied Areas of Germany was renamed The Deutsche Bundesbahn (DB) or German Federal Railways. The East German area under the control of the Soviets and the German Democratic Republic continued to use the designation Deutsche Reichsbahn for that portion of the German railroads operating in that area. The ownership of German cars is now readily distinguishable, DB for West Germany, DR for East Germany, although traces of the old zone designations are still to be seen beneath the new symbols.

From the beginning of the Soviet occupation in 1945 until 1951, the Eastern part of the Reichsbahn was administered by the Main Administration for Transportation of the Soviet Military Administration for Germany. In 1951, when the East Germans were permitted the formation of a governmental structure of their own, the Main Administration for Transportation was dissolved as such and recreated as the East German Ministry for Transport. This Ministry consisted of three major General Directorates, namely the General Directorate for Railways (Generaldirektion Reichsbahn) , the General Directorate for Waterways (Generaldirecktion Wasserstrassen) and the General Directorate for Highways (Generaldirektion Strassenverkehr).

In April 1953, the Ministry for Transport was abolished, probably because of the growing importance of the railways as a common carrier, and because of the saving in personnel and expenditures resulting from the dissolution of two general directorates which had enjoyed co-equal status with the General Directorate for Railroads. In the 1953 shuffle, the General Directorate for Railroads was elevated to ministerial level and became the Ministry for Railroads (Ministerium fuer Eisenbahnwesen, abbreviated MFE). The General Directorates for Waterways and Highways were redesignated State Secretariates.

This organizational structure continued until November 1954 when the Ministry for Railroads was reorganized into the Ministry for Transport (Ministerium fuer Verkehrswesen, abbreviated MFV). It took until February 1955, however, before this reorganization was completed. The result was that the Ministry of Traffic was subdivided into three State Secretariates for rail, water and highways. On 1 August 1957, an administrative section for civil air was added to the Ministry but apparently with a lesser rank than a State Secretariate since its title is simply Main Administration for Civil Air (HV fuer Zivile Luftfahrt). The seat of this office is in Dresden-Klotzsche. The first MFV Minister was Erwin Kramer, an experienced railroader and friend of the Russians. Although his deputies, or State Secretaries as they are called officially (Szczepecki for Railroads, Salomon for Waterways, and Weiprecht for Highways) nominally are co-equals, the fact that the former head of the railroads became minister, insures that the railroads are accorded a favored position in all transportation matters.

As of 1 January 1958 there are rumors of another reorganization, at least in the State Secretariate for Railroads. What form this reorganization will take, if it does occur, remains to be seen. In view of increasing personnel shortages, it seems more likely that there will be a consolidation of certain offices, rather than any fundamental structural change in the Ministry of Transport.

Centralized Control - MFV

The organization of The Ministry for Traffic (MFV) exemplifies centralization of control both from an administrative and operational standpoint. So great is this centralization, that Ministry personnel have to render decisions on operational problems of the type that would normally be resolved at much lower levels, even in other European state-controlled systems.

The organizational structure of the MFV is reproduced in chart form at the end of this Section. Basically the administrative and/or operational offices are broken down as follows:

At the top comes Minister Kramer, his deputies (State Secretaries), and ministerial representatives for various Reichsbahn functions (Stellvertreter des Ministers). Adjacent to this office is the Bureau of the Minister, a relatively new section instituted early in 1957, which exercises over-all control of all Soviet and East German military rail movements; and the office of the Soviet advisor to the Reichsbahn.

Below this top echelon come the offices of the State Secretaries, or, for all practical purposes, the Main Administrations of the respective State Secretariates. In actual practice, however, the Main Administrations of the Reichsbahn are referred to as Main Administrations, MFV, not as SS Reichsbahn; similarly, a Main Administration of the Waterways or Highways is always identified as Main Administration Waterways MFV not SS Wasserstrassen or Strassenverkehr.

Despite all the various changes in nomenclature, from General Directorate for Railroads, to Ministry for Railroads, to State Secretariate, there has been little change in the organization of the Reichsbahn's Main Administration Offices, i.e., those referred to as ministerial level (more correctly State Secretariate Level). Thus one still finds the following Main Railroad Administrations (Hauptverwaltungen) of the MFV:

a. Main Administration for Operations and Traffic (HV-Betrieb u. Verkehr)

b. Main Administration for Motive Power (HV - Maschinenwirtschaft)

c. Main Administration for Rolling St ock (HV - Wagenwirtschaft)

d. Main Administration for Physical Plant (HV - Bahnanlagen)

e. Main Administration for Signals and Telecommunications (HV - Sicherungs u. Fernmeldewesen)

f. Main Administration for Repair Shops (HV - RAWen)

The Cross Departments (Querabteilungen)

In addition to the Main Administrations and, in some cases replacing former Main Administrations, are a group of so-called "cross departments", i.e., departments having to do with the affairs of several or all of the main administrations of the various State Secretariates. The most important of these are concerned with such matters as over-all planning, procurement of materials and supplies, finance, international traffic, schooling, statistics, legal matters and investments.

The Reichsbahndirektion (RBD)

The organizational structure at the so-called ministerial level is closely paralleled at the Division or Reichsbahndirektion (RBD) level. In place of the Bureau of the Minister for military movements, the corresponding office at the RBD level is called Bureau of the President (Buero des Praesidenten). The East German railroad system is geographically divided into 8 RBD's. In most Reichsbahn statistical reports they are listed in the following order:

RBD Berlin

RBD Cottbus

RBD Dresden

RBD Erfurt

RBD Greifswald

RBD Halle

RBD Magdeburg

RBD Schwerin

The Reichsbahnamt (RBA)

Each of the RBD's is further divided into operational districts or RBA's. The number of RBA's varies per RBD in accordance with size and density of stations. The basic administrative and operational offices characteristic of the RBD structure are found at RBA level, although at this level an individual office usually handles more than one main function.

The following is a list of the RBA's by RBD:

RBD Berlin	RBA 1	Berlin-Ostbahnhof
	RBA 2-3	Berlin- Gruenau
	RBA 4	Potsdam
	RBA 5-6	Berlin-Pankow
	RBA 7	Frankfurt/Oder

RBD Cottbus	RBA 1	Bautzen
	RBA 2	Cottbus
	RBA 3	Senftenberg
RBD Dresden	RBA 1	Dresden
	RBA 2	Karl Marx Stadt
	RBA 3	Zwickau
RBD Erfurt	RBA 1	Erfurt
	RBA 2	Meiningen
	RBA 3	Nordhausen
	RBA 4	Saalfeld
RBD Greifswald	RBA 1	Neustrelitz
	RBA 2	Pasewalk
	RBA 3	Stralsund
RBD Halle	RBA 1	Halle
	RBA 2	Leipzig
	RBA 3	Lutherstadt
	RBA 4	Wittenberg
RBD Magdeburg	RBA 1	Aschersleben
	RBA 2	Magdeburg
	RBA 3	Stendal
RBD Schwerin	RBA 1	Guestrow
	RBA 2	Rostock
	RBA 3	Wittenberge

The Stations (Bahnhoefe-BHFE)

The nadir of the system is, of course, the individual yard and/or station. In a much more simplified form all administration and operational functions characteristic of the higher echelons are to be found at the station level. The station master, together with the station dispatcher, has over-all responsibility for all station activites.

The Dispatcher System (Dispatcherleitung)

During the years 1953-55 an important change in operational structural occurred throughout the Reichsbahn organization. This was the introduction of the Dispatcher system at each echelon. Under the Dispatcher concept responsibility for the unimpeded flow of all traffic is vested in one man, namely the Dispatcher. Prior to the introduction of the system, train movement control was vested in the train control offices (Zugleitungen). Unlike the Dispatcher, these offices controlled movements only and had no vested authority over the heads of motive power and rolling stock. The Dispatcher today is supreme authority not only for the actual movements, but also, which is equally important, for the proper allocation of all cars and locomotives.

The Dispatcher system represents a separate chain of command from the Ministry down to the smallest station. Its action and decisions, although organizationally it is merely another section of the respective operations and traffic (Betrieb und Verkehr) offices, are not subject to veto by any other part of the administration, including even the presidents of the RBD's. Presumably only the Minister or the State Secretary could contrevene an order of the Chief Dispatcher. The Dispatchers have their own rapid communication system independent of the regular Reichsbahn Basa communications systems. In brief, the Dispatcher system is the nerve center of the whole Reichsbahn system today.

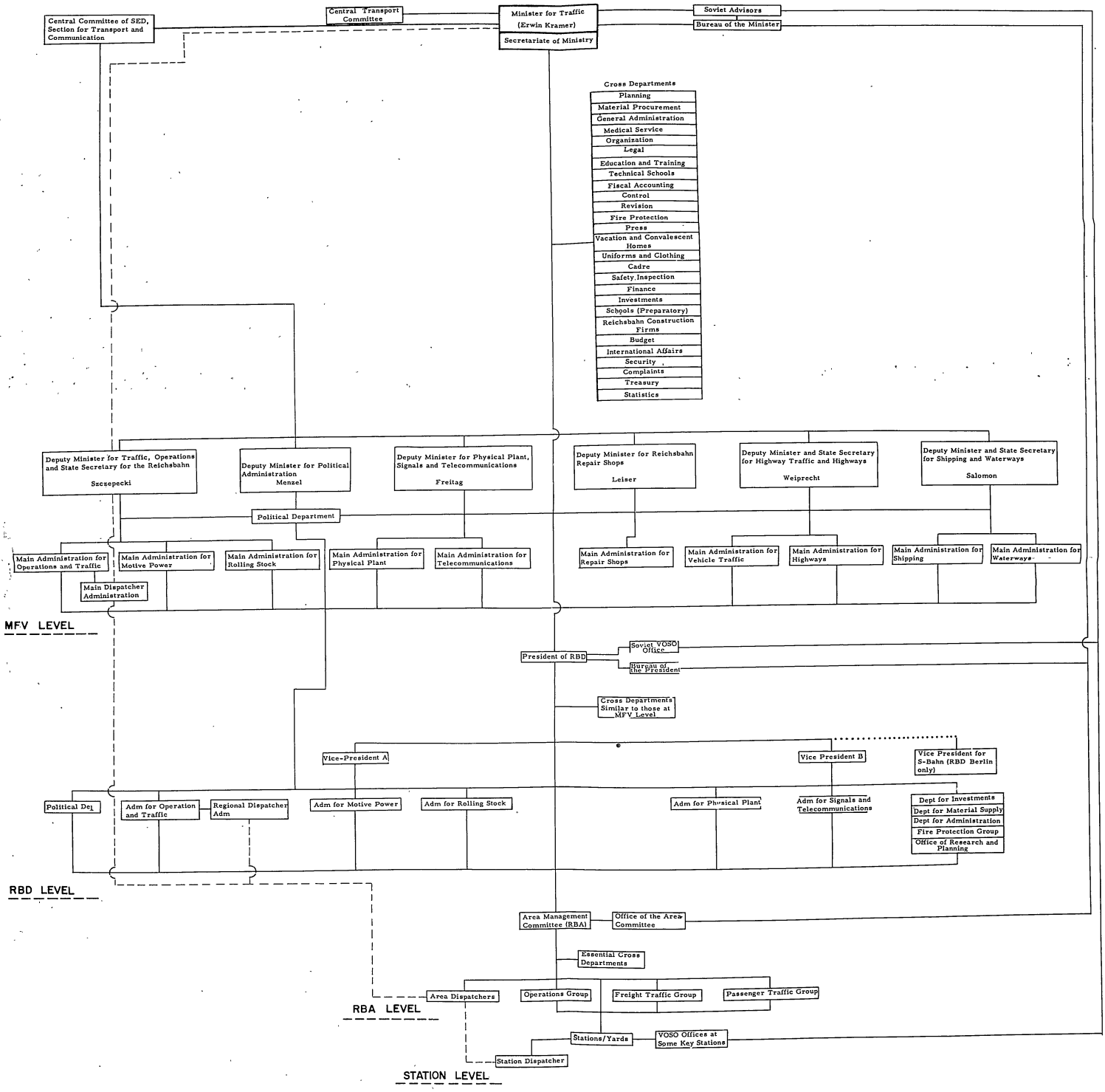
Other Noteworthy Developments since 1954

Late in 1955 the Tank Car Routing Office, which, organizationally, was an independent office directly under the Minister, was dissolved and its functions incorporated into the Main Administration for Rolling Stock (HVW). Toward the end of 1957 there was a further reorganization, wherein the Chief Dispatcher office assumed the movement control over tank cars, and the remaining functions connected with tank car use continued to be retained by the HVW. In so far as organizational efficiency with respect to tank car management is concerned, it is not likely that further reorganization in this field will be necessary.

RAW Blankenburg/Harz was closed out as a railroad repair shop during the last quarter of 1957. It is to become the main research and testing shop (REW) of Reichsbahn equipment and technical devices.

To cope with the expanding electrification program a new office entitled Oberste Bauleitung fuer Elektrifizierung (Supreme Electrical Construction Management) was created in October 1957 and placed under the direct control of the Minister for Traffic. The precise duties and responsibilities of this office are not yet known.

ORGANIZATIONAL STRUCTURE OF THE EAST GERMAN MINISTRY FOR TRAFFIC



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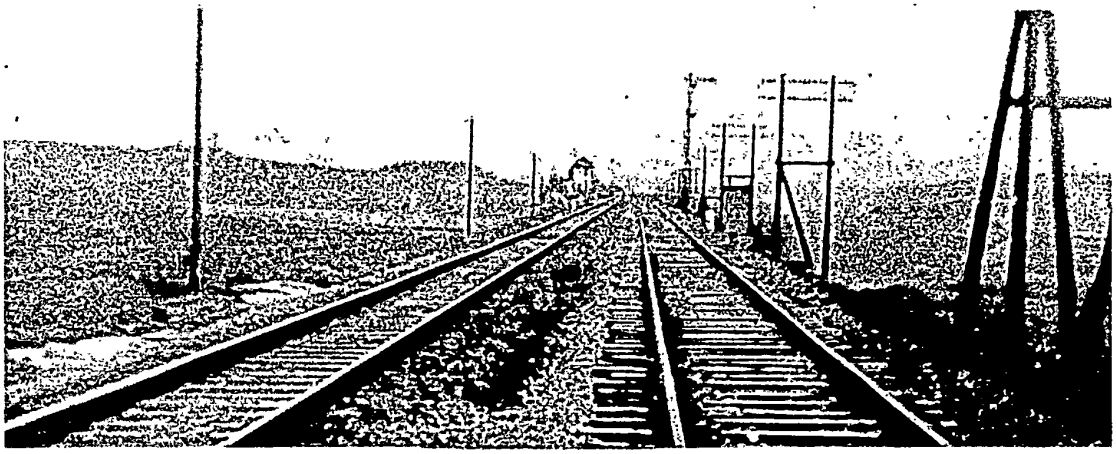
SECTION II

Reichsbahn Route and Line Systems



with

Tonnage Capacities of Principal East – West Lines

SECTION II

REICHSBAHN ROUTE AND LINE SYSTEM

1. GENERAL CHARACTERISTICS. The route and line system of the Deutsche Reichsbahn affords a relatively dense rail network. There is a pronounced emphasis on east-west lines even though several of primary importance operate in a north-south axis. The greater portion of the principal lines either radiate from Berlin or pass through it, providing direct rail routes between that city and all sections of East Germany.

The extensive post-war dismantling program carried out by the Soviets substantially reduced the pre-World War II line density of the Reichsbahn. Despite this reduction, all major cities, industrial areas, mining regions, Baltic coastal areas, and inland ports are served by at least one line of the system.

Direct international rail connections are in effect between East Germany and Poland, Czechoslovakia, and the German Federal Republic, (GFR). International traffic is maintained over all of these connections, but the bulk of such East German rail traffic is limited to shipments to and from the USSR and the Soviet satellite states. Rail traffic between East Germany and Austria is accomplished via Czechoslovakia.

Indirect international connections are made with Denmark and Sweden via Baltic train ferries through the East German ports of Warnemuende and Sassnitz.

Rail traffic between East and West Germany passes regularly through four major border crossing points and also makes irregular and less frequent use of three minor border connections. The major crossing points into West Germany are:

a. Between Schwanheide (East) and Buechen (West) on the line Wittenberge-Hamburg.

b. Between Marienborn (East) and Helmstedt (West) on the line Magdeburg-Braunschweig.

c. Between Wartha (East) and Bebra (West) on the line Eisenach-Bebra-Fulda.

d. Between Probstzella (East) and Ludwigstadt (West) on the line Saalfeld-Nurnberg.

The three minor border connections are at the following points:

a. At Ellrich (East) on the line Nordhausen-Northeim.

b. At Oebisfelde (East) on the line Stendal-Hannover.

c. At Gutenfuerst (East) on the line Plauen-Hof-Regensberg.

Rail traffic between East Germany and Poland passes regularly through eight border crossing points; with two additional lines (Muskau-Tupice and Wriezen-Godkow) available, but not in use. Those in regular use are:

a. Between Grambow (East) and Szczecin-Gumience (Poland) on the line Rostock-Pasewald-Szczecin (Stettin).

b. Between Tantow (East) and Szczecin-Gumience (Poland) on the line Berlin-Szczecin.

c. Between Kietz (East) and Kostrzyn (Kuestrin) (Poland) on the line Berlin-Bydgoszcz.

d. Between Frankfurt/Oder (East) and Slubice (Poland) on the line Berlin-Warsaw-Brest.

e. Between Guben (East) and Gubin (Poland) on the line - Leipzig-Lodz.

f. Between Forst (East) and Zasieki (Poland) on the line Cottbus-Wroclaw (Breslau) - Katowice.

g. Between Horka (East) and Wegliniec (Poland) on the line Magdeburg-Wroclaw.

h. In mid-1957, the border crossing point on the Neisse River between Goerlitz (East) and Zgorzelec (Poland) was finally opened but for passenger train traffic only.

Those available but not in use are:

a. Between Muskau (East) and Tupice (Poland).

b. Between Wriezen (East) and Godkow (Poland).

Rail traffic between East Germany and Czechoslovakia passes regularly through the four border crossing points listed below:

a. Between Zittau (East) and Juikov (Czech) on the line Goerlitz-Prague.

b. Between Ebersbach (East) and Jirikov (Czech) on the line Goerlitz-Prague.

c. Between Bad Schandau (East) and Decin (Czech) on the line Dresden-Prague.

d. Between Radiumbad Brambach (East) and Vojtanov (Czech) on the line Leipzig-Plauen-Cheb-Plzen.

2. TERRAIN CHARACTERISTICS. The arrangement of the Reichsbahn route and line system has not been influenced to any major extent by terrain considerations. There are no extensive areas within East Germany to which rail access has been denied because of terrain features or characteristics unfavorable to line construction or operation.

With the exception of the extreme south and southwest of East Germany the entire system is characterized by relatively level lines or gentle gradients. In the area south of Magdeburg and west of the Saale River the lines have a greater incidence of curves and grades than in other sections. Even in that district, however, gradients are generally not severe nor are line curvature radii unduly acute.

3. TRACK MILEAGE. In 1945, the Soviets began an extensive program of line dismantling within their zone of occupation. This program was pressed vigorously for two years, then relaxed and finally brought to its conclusion in 1948. During this three year period one track was removed from most of the double tracked lines, several single track lines were either partially or totally dismantled, and a number of both major and minor yard and station installations had part of their track system removed.

The rails and track fittings removed during this process of dismantling were shipped to the USSR or its satellite countries as reparations. Reserve stocks of rails held in Reichsbahn storage depots were likewise confiscated and sent to the Soviet Union.

Of the approximately 13,000 kilometers (8,000 miles)of Reichsbahn standard-gauge tracks, about 11,700 kilometers (7,200 miles) or 90% are still single-track. The remaining 10%, or about 1,300 kilometers (800 miles), is double-track, of which about 1,150 kilometers are distributed along eleven sections ranging in length from 46.7 kms (Marienborn-Magdeburg-Biederitz) to 185 km (Berlin-Halle-Gross Korbetha). The remaining 150 km consists of ten short stretches (4-16 kilometers) from which the track was never removed or which represent fragments of abandoned or thus far incomplete programs for the re-double-tracking of major sections. Due to the lack of funds and materials, the restoration of the second track has proceeded very slowly and for the same reasons there is little prospect that it can be speeded up in the near future. It is remarkable that there is still no east-west line that is double-tracked throughout. The shortest route, and the most vital from a military viewpoint, leading from the Polish border at Frankfurt/Oder through or around Berlin and via Magdeburg to one of the easternmost points on the western border, still has a single-track stretch of 108 kilometers between Potsdam and Biederitz (east of the Elbe River, opposite Magdeburg), or 40% of the total route. No plans for the restoration of the second track on this very important stretch have thus far become known.

4. RIGHT OF WAY CHARACTERISTICS. The lands, tracks, and structures which constitute the Reichsbahn physical right of way are considered state-owned and controlled by the East German Government (Deutsche Demokratische Republik).

The principal characteristics of the Reichsbahn right of way are as follows:

a. Gauge of track: Standard European - 4 feet, 8 1/2 inches (1435 mm). The mileage of narrow-gauge track is insignificant.

b. Rail. Most of the rail used throughout East Germany is in 15 meter lengths weighing 49.05 kilograms per meter or 98.88 pounds per yard. This rail is designated as type S-49. Although the quality of pre-1945 rail was good, rail being produced in East Germany at present is poor and its rate of deterioration is rapid. Erratic variations in rail base dimensions of as much as 10 mm result from low standards of manufacture.

c. Ballast. Reichsbahn track ballast is generally of crushed stone ranging in size from 1.25 inches in cross section to 2.75 inches. The quality is good and the supply adequate. Gravel ballast is used extensively only on narrow-gauge lines handling light traffic.

d. Cross ties. The major portion of all Reichsbahn lines are laid with wood ties. Both hard wood and the less desirable soft woods are used. The relatively few sections of track which have steel ties merely survive from the pre-1945 era. Some sections of the right of way are laid with reinforced concrete ties. Normal tie spacing throughout the Reichsbahn is about 1600 ties per kilometer of track or 2560 per mile.

5. CONDITION OF OPERABLE LINES. Although the right of way of the Deutsche Reichsbahn prior to World War II was considered one of the best physical railroad plants in the world, it is now, after twelve years of operation under Soviet control, in rather poor condition by West German standards. Heavy damage sustained during the war years, confiscation under Soviet reparations policy, and constant heavy use of the system since the close of the war, together with general neglect and inadequate maintenance have resulted in a general deterioration.

6. TONNAGE CAPACITIES OF PRINCIPAL EAST-WEST LINES. There are currently nine principal east-west rail routes across East Germany. Three of these routes are exclusively single tracked. The remaining six are composed of both single and double tracked segments of varying length. None of the nine principal routes are double tracked throughout their entire length.

The nine principal east-west routes are shown in the following table:

ESTIMATED MAXIMUM SUSTAINED MILITARY CAPABILITY-PRINCIPAL EAST-WEST ROUTES

NUMBER	ROUTE	TRAINS PER DAY EACH DIRECTION	METRIC TONS PER TRAIN	ROUTE CAPACITY IN METRIC TONS
1.	Stettin Neubrandenburg Lubeck Hamburg	15	750	9000
2.	Stettin Eberswalde Berlin Wittenberge Hamburg	15	750	9000
3.	Kuestrin Berlin Rathenow Stendal	18	750	13500
4.	Frankfurt/Oder Berlin Potsdam Magdeburg (together with)	36	750	27000
5.	Frankfurt/Oder Berlin Zerbst Aschersleben			
6.	Guben Cottbus Berlin Wittenberg Halle Nordhausen	17	750	13500
7.	Forst Cottbus Falkenberg Leipzig Erfurt Wartha	17	750	13500
8.	Horka Hoyerswerda Riesa Leipzig Gera Saalfeld	17	750	13500
9.	Gorlitz Dresden Chemnitz Plauen	15	750	13500
TOTAL		150		112500

Latest USAREUR estimates place the sustained military capacity of the nine principal east-west routes at one hundred and fifty (150) 120-axle trains per 24 hour day in each direction with an average payload per train of 750 metric tons. This gives an estimated tonnage capacity for the nine lines of approximately 112,500 metric tons per day in each direction.

7. Establishment of direct Soviet military control over Reichsbahn operations.

The exercise of direct control by Soviet military authority over Reichsbahn operations would, in itself, do little toward attaining the maximum potential capacity of the main strategic lines. Such control established in conjunction with measures such as double-tracking of main east-west lines, improvement of right of way, line structures and terminal facilities, however, would be quite effective. Key personnel could be replaced by selected replacements when necessary, thus assuring that operating schedules and performance standards established by the Soviets would be enforced. Direct military control would also reduce the danger of sabotage against Reichsbahn installations. Taken together, these measures of military control would definitely assist in any attempt to attain maximum yield from the strategic lines.

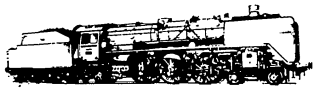
8. Major water barriers affecting East-West movement. The major water barriers which could affect east-west movement over the principal Reichsbahn routes are the Oder and Neisse Rivers which form most of the present boundary between Poland and East Germany; the Elbe River which flows diagonally across East Germany from the Czech border southeast of Dresden in a northwesternly direction to the port of Hamburg in West Germany; and the Saale River which is in the southwestern part and flows generally northward to its confluence with the Elbe River near Barby, between Dessau and Magdeburg.

These four rivers have innumerable crossing sites in the Reichsbahn line system. Damage to many of these bridges during World War II was particularly heavy, a great number of the Reichsbahn bridges having been completely destroyed. A sufficient number of these have been restored to provide all required river crossings for the present Reichsbahn line system. Not all, however, have been replaced with permanent structures. A good many of the river crossing sites are now bridged with structures of a temporary nature.

Interdiction of the principal east-west lines, by destroying the rail bridges over the four major water barriers and preventing their restoration by re-attack at proper intervals would seriously reduce their capability for being used effectively in support of a major military operation.

SECTION III

Reichsbahn Motive Power



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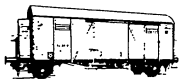
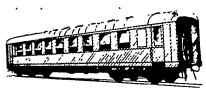


Rolling Stock



SECTION III

REICHSBAHN MOTIVE POWER AND ROLLING STOCK

1. GENERAL. The motive power and rolling stock of the Deutsche Reichsbahn can be described as being limited as to inventory and only fair to poor as to quality and condition.

Inventories represent pre-World War II production generally, with the age of most equipment being from 30 to 35 years.

No new locomotives have been added to the Reichsbahn inventories since 1944 with the exception of those pieced together from the war-damaged park (Schadlokpark) and the following new series:

Series 23: passenger, total weight in working order 87.1 metric tons; 2 built in 1956/57; 45 more planned by 1960 to replace series 38.

Series 25: passenger; total weight in working order 86 metric tons; 2 built in 1954/55; built to replace type 38, but apparently discontinued in favor of the series 23.

Series 50^{40}: modification of the series 50 and 52; 2 built in 1956; apparently discontinued in favor of planned purchases from Czechoslovakia. However, Czechoslovakia later announced their inability to furnish. No other known plans for manufacture or purchase of badly needed heavy freight locomotives through 1965.

Series 65^{10}: passenger, tender; total weight in working order 120 metric tons; 29 built in 1955, and 24 in 1956. Apparently chosen to replace several comparable series, as 10 more are planned by 1960.

Series 83^{10}: switching, tender; total weight in working order 1[illegible]3 metric tons; 26 built in 1955. No further production planned through 1965.

No new freight cars were added to the Reichsbahn inventory from 1945 to 1950. From 1950 to the present, however, new freight cars of various types have been built in East German car manufacturing plants and imported from Soviet Bloc countries, thus increasing the freight car pool. 1700 of these are the RRym 80-ton 6-axle, heavy duty flats, built during 1952-53 at the direction of the Soviet Union; 300 are SSy 50-ton flats; and the rest are of miscellaneous types including potash cars and coal dust container cars. 300 additional RRym cars were scheduled for production during 1957. This goal will undoubtedly be achieved.

Between 1951 and 1953, the Reichsbahn purchased 40,000 ex-German war-captured freight cars from the USSR.

These post-war additions have raised the Reichsbahn daily working car park to its present figure of from 110,000 to 125,000 cars, dependent upon seasonal demands.

2. DEUTSCHE REICHSBAHN LOCOMOTIVES

a. Age and condition of prevailing types. Steam-operated locomotives are virtually the sole motive power resource of the Deutsche Reichsbahn. The ages of these locomotives range from 1 to 55 years, the average age being 38 years.

The majority of Reichsbahn locomotives were designed for freight service and the average age of locomotives in this category is 32 years; of these, however, 756 are Series 52, long distance, heavy duty locomotives which are comparatively new, having been built during 1943 and 1944. These ages indicate that at least the freight handling capability of the Reichsbahn is not particularly hampered by over-age, time worn freight locomotives. Their numbers are limited, however, and it is this insufficient quantity rather than age that presents a serious operating problem as far as freight handling is concerned. This freight handling obstacle is further aggravated by the general inferior condition of the freight locomotive pool due to the lack of proper maintenance, resulting principally from shortages of essential materials. This is also generally true of the Series 01 and 03 high performance passenger locomotives. These were built in 1925-1937 and while they are still relatively young in age and service, their condition has also suffered from improper maintenance.

While this comparatively low age is especially true of the Series 52 freight locomotives and the Series 01 and 03 passenger locomotives, most of the other types of locomotives in the Reichsbahn inventory do not reflect comparable young age or short period of service.

The following table gives the approximate age spread with the number of locomotives by series:

AGE SPREAD IN YEARS	NUMBER OF LOCOMOTIVES	SERIES
40-55	1600	17, 18, 55, 70/71, 74, 75, 89, 91, 92, 94, 98
35-40	1925	19, 38, 56, 57, 58, 78 93, 99
30-35	100	39, 54, 95
25-30	175	07, 24, 43, 62, 64, 79, 80
20-25	650	01, 03, 44, 60/61, 84, 86
13-20	1225	23, 41, 42, 50, 52
1-5	105	25, 50, 65, 83, 99

As the ages and lengths of service of the older locomotives increase, they require more frequent repair. Their normal overhaul becomes necessary after a much shorter interval than called for in normal overhaul scheduling. In addition to this increased incidence of overhaul, the work required also becomes more extensive both in nature and scope as they progress in age and length of service.

The general condition of Reichsbahn locomotives, regardless of age, would be much better than at present if the existing standards and rate of maintenance, repair, and overhaul were to be improved.

The present condition of Reichsbahn locomotives can be summarized generally as being only fair to poor, with the following categories of condition prevailing:

(1) a number of freight and passenger locomotives of relatively low age, in good to fair condition and maintained properly.

(2) a number of freight and passenger locomotives of relatively low age, but in poor condition.

(3) a large number of locomotives of greater age and length of service, in fair to poor condition and requiring maintenance more frequently than it can be performed.

(4) a considerable number of the oldest locomotives which require very frequent repair, and come up for general overhaul more often than normal overhaul scheduling provides.

b. Reichsbahn locomotive inventories. The entire locomotive inventory of the Deutsche Reichsbahn amounted to approximately 5,988 steam locomotives of all types as of 1 February 1957, of which all but 253 are standard gauge. This total includes those actually in operation, those in reserve, those undergoing or awaiting repair, and those in the war-damaged pool (Schadlokpark), the latter composed of both German war-damaged locomotives and foreign locomotives damaged during World War II while in German possession, and too badly damaged to be returned to their former owners.

Of this inventory, only about 4,190 can be considered as the actual operable standard guage locomotive pool of the Reichsbahn or the total number which could be used for operations at any one time.

For potential military operational planning purposes it can be considered that only about 1,500 of the heavier locomotives of the series 44, 50, 52 and 58 would be available at any one time for heavy military trains, i.e., gross load 1250-1800 metric tons. Other series of freight and passenger locomotives could be used for lesser loads and for the return of empty trains.

The following table shows the approximate status of Reichsbahn standard gauge locomotives as of 1 February 1957:

AVAILABLE FOR DAILY OPERATION	IN RESERVE	UNDERGOING OR AWAITING REPAIR	DAMAGED PARK	TOTAL POOL
3,815	375	1,335	210	5,735

c. Type designations of Reichsbahn locomotives. Type designations of Reichsbahn locomotives are determined primarily by the category of service for which they were designed. There are four of these basic service categories - - express passenger (schnellzug), passenger (personenzug), freight (gueterzug), and switching (rangier). In addition to these conventional types, type designations are also accorded passenger tender and freight tender locomotives, which are designed and constructed with an integral, built-in tender instead of having a separate, coupled tender as do conventional types. Due to their reduced coal and water capacity, when compared to conventional types, these tender locomotives are usually limited to shorter hauls and lighter trains when used in road service. Most of the Reichsbahn switching locomotives are of the tender type.

d. Series (Baureihe) designations of Reichsbahn locomotives. Each class of Reichsbahn locomotives is designated by a numerical Series, or Baureihe (construction series) number. As a particular class of locomotives was designed and constructed, it was assigned a Series number, which was retained by that class alone and as modifications or adaptations of that class were built, sub-number Series designations were used to retain the identity of that class. When designs or construction were sufficiently different from an already established Series so as to no longer conform to the basic characteristics of the prototype, a new Series designation was given. An example of the sub-Series designation is a Series 38 $^{2-3}$ locomotive (1910), which is a Series 38 locomotive, having certain characteristics different from the original Series 38 $^{10-40}$ (1906), but achieved through modification or adaptation of the basic design of the prototype, and not by original design.

The following are the locomotive Series designations of the Reichsbahn locomotive by type: (older series having less than 10 locomotives are omitted)

Express passenger locomotives: Series 01 and 03

Passenger locomotives: Series 23, 25 and 38

Freight locomotives: Series 41, 42, 43, 44, 50, 50^{40}, 52, 55, 56, 57 and 58

Passenger tender locomotive : Series 64, 65^{10}, 74, 75 and 78

Freight tender locomotive: Series 80, 83^{10}, 86, 89, 91, 92, 93, 94, 95 and 98.

e. Special locomotive designations.

(1) Brigade locomotives. "Brigade" or "column" locomotives is the former designation of approximately 375 of the best quality, high performance locomotives of the 01, 50, and 52 Series which were formerly set aside by Soviet directive to the MFV for use at the discretion of and under the exclusive control of Soviet authority. When known as the brigade pool, this group of locomotives was composed of 21 Series 01 high speed passenger locomotives; 87 Series 50, and 267 Series 52 high performance, dependable freight locomotives of which about 130 were maintained in a "cold" reserve status by direction of the Soviets and known as the SKK reserve (in German Sowjetische Kontrol Kommission, or Soviet Control Commission).

About the middle of 1954 the separate "brigade" or "column" pool was abolished and all of its locomotives, except the SKK reserve, were merged with the common Reichsbahn operational pool and reserves. This "cold" SKK reserve, now known as MFV reserve, (Ministerium fuer Verkehrswesen or Ministry for Traffic) has gradually been reduced until mid-August 1957 it was varying between 50 and 60 locomotives, which are still maintained as a reserve for use only by, or with, the permission of the Soviets.

(2) Coal dust (Kohlenstaub) burning locomotives. Some 100 Reichsbahn locomotives of types 17, 44, 52 and 58 have to date undergone necessary modification to enable them to operate on coal dust fuel, obtained by crushing soft brown coal to a fine amorphous powder in a grinding mill. The limited number of crushing plants and coal dust transport cars, together with the present unperfected method of crushing, which does not produce dust of the desired fineness, are the major factors now preventing increased utilization of brown coal dust as locomotive fuel. On the whole, their performance is said to be satisfactory, but the saving in fuel is offset by the cost of grinding the coal. The fact that about 40% of them have been awaiting or undergoing repairs also indicates that the incidence of breakdowns is much higher than for ordinary steam locomotives, for which the corresponding percentage is now about 28%.

f. General characteristics of the Reichsbahn locomotives.

The following pages show the general characteristics of the principal and some of the less common types of locomotives in use throughout the Deutsche Reichsbahn system.

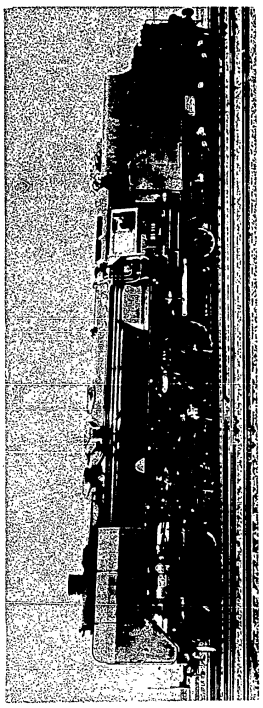


Figure No. 4

SERIES 01 EXPRESS PASSENGER, STEAM HIGH SPEED, LONG DISTANCE PASSENGER

Wheel Order	4-6-2 (2'C1')	Water capacity	32, 000-38, 000 liters
Total weight in working order	108, 900-114, 300 kgs	Year built	1925-1937
Axle pressure	19, 700-114, 300 kgs	Total number in Reichsbahn	
Working weight on drivers	59, 200-60, 200 kgs	as of 1 Feb 57	65
Gross trailing load at 80 km/hr	1305 - m tons	Number in operating condition	
Coal capacity	10 m tons	as of 30 Apr 57	51

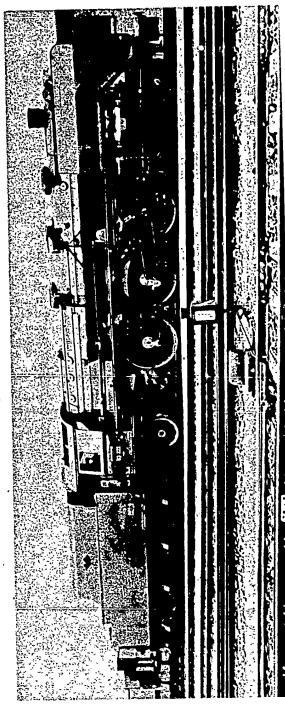


Figure No. 5

SERIES 03 EXPRESS PASSENGER, STEAM HIGH SPEED, LONG DISTANCE PASSENGER

Wheel order	4-6-2 (oo000o) (2-C-1)	Water capacity	30, 000-34, 000 liters
Total weight in working order	100, 300-103, 040 kgs	Year built	1930-1937
Axle pressure	18, 100-18, 330 kgs	Total number in Reichsbahn	
Working weight on drivers	54, 300-54, 980 kgs	as of Feb 57	96
Gross trailing load at 80 km/hr	1040 m tons	Number in operating condition	57
Coal capacity	10 m tons		

REMARKS: This series and the series 01 locomotives are the principal high speed, express passenger locomotives used by the Reichsbahn.

Figure No. 6

SERIES 25 EXPRESS PASSENGER, STEAM HIGH SPEED, LONG DISTANCE PASSENGER

Wheel order	2-8-0 (o0000) (1-D)	Water capacity	30, 000 liters
Total weight in working order	86, 100 kgs	Year built	1954
Axle pressure	17, 600 kgs	Total number in Reichsbahn	2
Working weight on drivers	70, 400 kgs	Number in operating condition	2
Gross trailing load	680 m tons	as of 1 Apr 57	
Coal capacity	12 m tons		

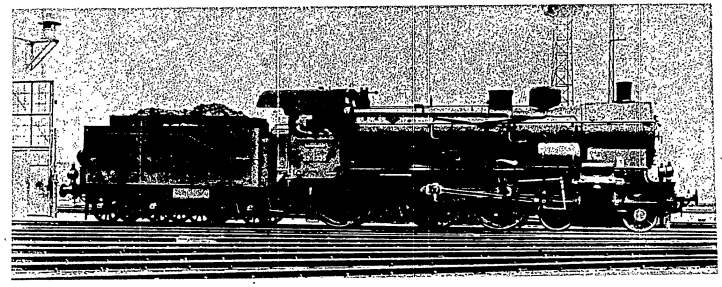


Figure No. 7

SERIES 38	PASSENGER, STEAM	LONG AND MEDIUM DISTANCE PASSENGER	
Wheel order	4-6-0 (oo000) (2-C)	Water capacity	21, 500-31, 500 liters
Total weight in working order	73, 300-78, 200 kgs	Year built	1906-1910
Axle pressure	15, 700-17, 200 kgs	Total number in Reichsbahn as of 1 Feb 57	713
Working weight on drivers	47, 100-51, 600 kgs	Number in operating condition	472
Gross trailing load at 70 km/hr	860-950 m tons		
Coal capacity	7 m tons		

REMARKS: This is the most common series of Reichsbahn passenger locomotives.

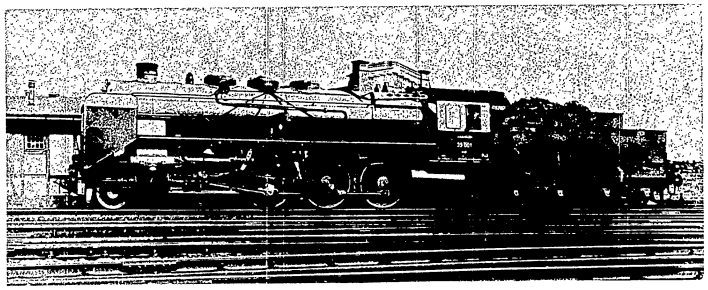


Figure No. 8

SERIES 39	PASSENGER, STEAM	LOCAL AND MEDIUM DISTANCE PASSENGER	
Wheel order	2-8-2 (o0000o) (1-D-1)	Water capacity	31, 500 liters
Total weight in working order	110, 400 kgs	Year built	1922
Axle pressure	18, 900 kgs	Total number in Reichsbahn as of 1 Feb 57	85
Working weight on drivers	75, 700 kgs	Number in operating condition as of 1 Apr 57	34
Gross trailing load at 75 km/hr	1, 130 m tons		
Coal capacity	7 m tons		

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Figure No. 9

SERIES 41	FREIGHT, STEAM	LONG AND MEDIUM DISTANCE HEAVY FREIGHT	
Wheel order	2-8-2 (o0000o) (1-D-1)	Water capacity	32, 000-34, 000 liters
Total weight in working order	101, 900 kgs	Year built	1934
Axle pressure	17, 500-19, 500 kgs	Total number in Reichsbahn as of 1 Feb 57	112
Working weight on drivers	70, 000-78, 000 kgs	Number in operating condition	72
Gross trailing load at 50 km/hr	2420 m tons		
Coal capacity	10 m tons		

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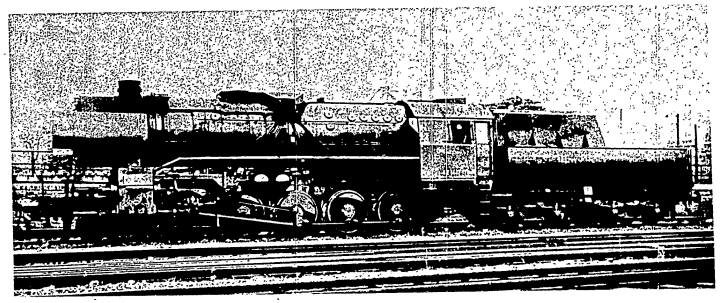

Figure No. 10

SERIES 42	FREIGHT, STEAM	LONG AND MEDIUM DISTANCE HEAVY FREIGHT	
Wheel order	2-10-0 (o00000) (1-E)	Water capacity	26, 000 liters
Total weight in working order	88, 050 kgs	Year built	1944
Axle pressure	17, 000 kgs	Total number in Reichsbahn as of 1 Feb 57	37
Working weight on drivers	76, 500 kgs	Number in operating condition as of 1 Apr 57	26
Gross trailing load at 50 km/hr	Estimated, 2, 000 m tons		
Coal capacity	8 m tons		

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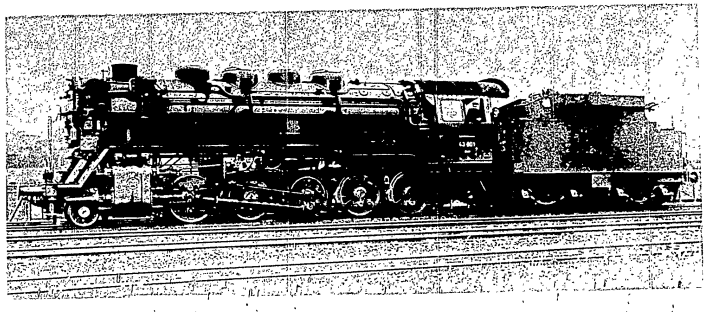

Figure No. 11

SERIES 43	FREIGHT, STEAM	LONG AND MEDIUM DISTANCE HEAVY FREIGHT	
Wheel order	2-10-0 (o00000) (1-E)	Water capacity	32, 000-34, 000 liters
Total weight in working order	110, 800 kgs	Year built	1926
Axle pressure	19, 300 kgs	Total number in Reichsbahn as of 1 Feb 57	34
Working weight on drivers	96, 500 kgs	Number in operating condition as of 1 Apr 57	21
Gross trailing load	Estimated 2, 000 m tons		
Coal capacity	10 m tons		

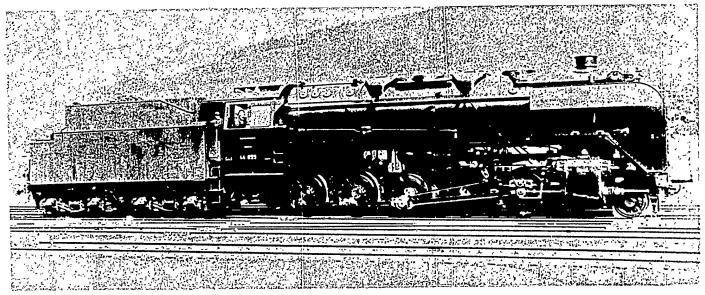

Figure No. 12

SERIES 44	FREIGHT, STEAM	LONG AND MEDIUM DISTANCE HEAVY FREIGHT	
Wheel order	2-10-0 (o00000) (1-E)	Water capacity	30, 000-34, 000 liters
Total weight in working order	114, 110 kgs	Year built	1925-1936
Axle pressure	19, 800 kgs	Total number in Reichsbahn as of 1 Feb 57	326
Working weight on drivers	99, 400 kgs	Number in operating condition	210
Gross trailing load at 50 km/hr	2, 510 m tons		
Coal capacity	10 m tons		

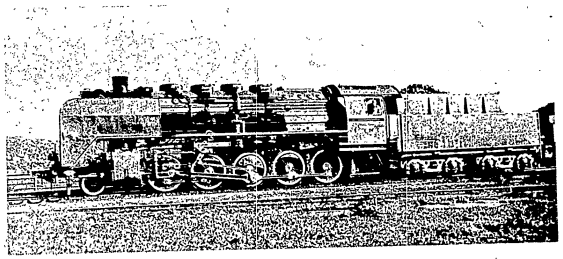

Figure No. 13

SERIES 50	FREIGHT, STEAM
Wheel order	2-10-0)o00000) (1-E)
Total weight in working order	88, 050 kgs
Axle pressure	15, 000 kgs
Working weight on drivers	76, 550 kgs
Gross trailing load at 45 km/hr	2, 410 m tons
Coal capacity	8 m tons

LONG DISTANCE, FAST, AND HEAVY FREIGHT	
Water capacity	26, 000 liters
Year built	1939
Total number in Reichsbahn as of 1 Feb 57	326
Number in operating condition	269

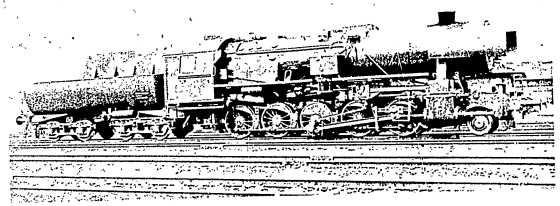

Figure No. 14

SERIES 52	FREIGHT, STEAM
Wheel order	2-10-0 (o00000) (1-E)
Total weight in working order	85, 300-86, 100 kgs
Axle pressure	15, 300-15, 400 kgs
Working weight on drivers	76, 300-76, 900 kgs
Gross trailing load at 50 km/hr	2, 000 m tons
Coal capacity	8-10 m tons

LONG DISTANCE, FAST, AND HEAVY FREIGHT	
Water capacity	26, 000-30, 000 liters
Year built	1942
Total number in Reichsbahn as of 1 Feb 57	756
Number in operating condition	559

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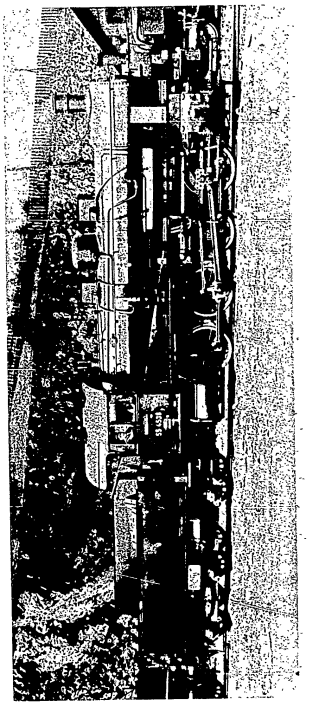

Figure No. 15

SERIES 55	FREIGHT, STEAM	SHORT AND MEDIUM DISTANCE FREIGHT	
Wheel order	0-8-0 (0000) (D)	Water capacity	12,000-16,500 liters
Total weight in working order	52,600-67,700 kgs	Year built	1893-1918
Axle pressure	13,200-17,500 kgs	Total number in Reichsbahn	
Working weight on drivers	52,600-67,700 kgs	as of 1 Feb 57	275
Gross trailing load at 50 km/hr	1,730 m tons	Number in operating condition	
Coal capacity	5-7 m tons	as of 1 Sep 56	161

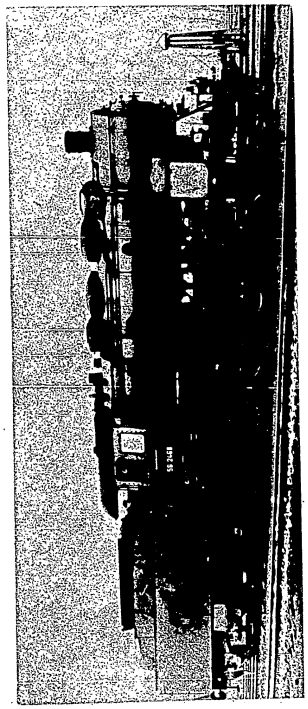

Figure No. 16

SERIES 56	FREIGHT, STEAM	SHORT AND MEDIUM DISTANCE FREIGHT	
Wheel order	2-8-0 (o0000) (1-D)	Water capacity	16,500-20,000 liters
Total weight in working order	83,700-84,300 kgs	Year built	1919-1922
Axle pressure	17,500-17,700 kgs	Total number in Reichsbahn	
Working weight on drivers	69,900-70,700 kgs	as of 1 Feb 57	148
Gross trailing load at 50 km/hr	1,820-1,900 m tons	Number in operating condition	
Coal capacity	6-7 m tons	as of 1 Sep 56	94

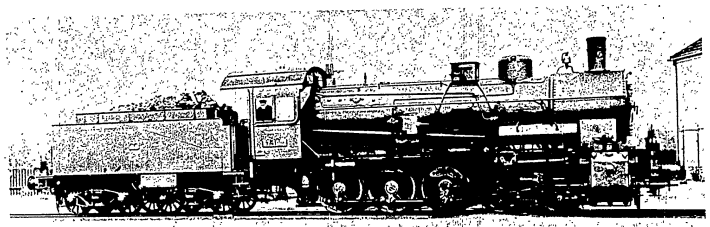

Figure No. 17

SERIES 57	FREIGHT, STEAM
Wheel order	0-10-0 (00000) (E)
Total weight in working order	76, 600 kgs
Axle pressure	15, 300 kgs
Working weight on drivers	76, 600 kgs
Gross trailing load at 45 km/hr	1, 790 m tons
Coal capacity	5-7 m tons

SHORT AND MEDIUM DISTANCE FREIGHT

Water capacity	16, 000-16, 500 liters
Year built	1910
Total number in Reichsbahn as of 1 Feb 57	109
Number in operating condition as of 1 Sep 56	72

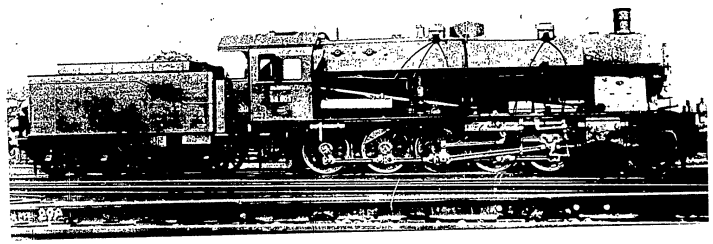

Figure No. 18

SERIES 58	FREIGHT, STEAM
Wheel order	2-10-0 (o00000) (1-E)
Total weight in working order	95, 700-98, 800 kgs
Axle pressure	16, 500-16, 700 kgs
Working weight on drivers	82, 500-84, 300 kgs
Gross trailing load at 50 km/hr	2, 030 m tons
Coal capacity	6-7 m tons

LONG DISTANCE HEAVY FREIGHT

Water capacity	20, 000-21, 500-31, 000 liters
Year built	1915-1917
Total number in Reichsbahn as of 1 Feb 57	482
Number in operating condition	289

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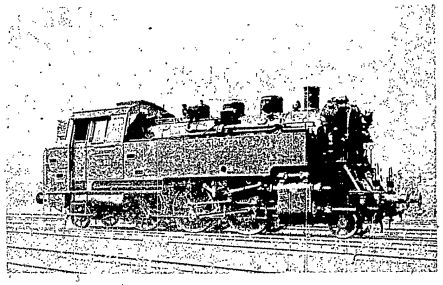

Figure No. 19

SERIES 64	PASSENGER, TENDER, STEAM	PASSENGER, LOCAL AND SHORT HAUL	
Wheel order	2-6-2 (o000o) (1-C-1)	Water capacity	9,000 liters
Total weight in working order	74,900-75,200 kgs	Year built	1926-1940
Axle pressure	15,200 kgs	Total number in Reichsbahn	
Working weight on drivers	45,500-45,700 kgs	as of 1 Feb 57	117
Gross trailing load at 65 km/l r	860 m tons	Number in operating condition	74
Coal capacity	3 m tons		

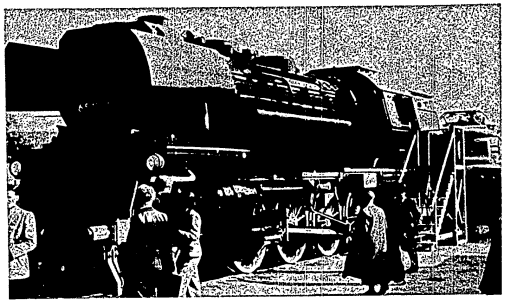

Figure No. 20

SERIES 65[10]	EXPRESS PASSENGER, TENDER, STEAM	HIGH SPEED, LOCAL PASSENGER	
Wheel order	2-8-4 (o0000-oo) (1-D-2)	Water capacity	16,000 liters
Total weight in working order	120,000 kgs	Year built	1955/56
Axle pressure	17,500 kgs	Total number in Reichsbahn	
Working weight on drivers	70,000 kgs	as of 1 Feb 57	51
Gross trailing load at 80 km/hr	Estimated 680 m tons		
Coal capacity	9 m tons		

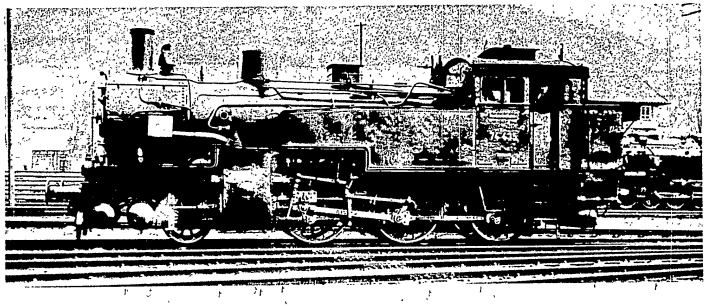

Figure No. 21

SERIES 74	PASSENGER, TENDER, STEAM	LOCAL HEAVY PASSENGER	
Wheel order	2-6-0 (o000) (1-C)	Water capacity	7,400 liters
Total weight in working order	62,600-67,200 kgs	Year built	1903-1907
Axle pressure	15,670-16,700 kgs	Total number in Reichsbahn	
Working weight on drivers	47,000-50,100 kgs	as of 1 Feb 57	312
Gross trailing load at 50 km/hr	1,340 m tons	Number in operating condition	225
Coal capacity	2.5 m tons		

REMARKS: Over-age and costly to maintain.

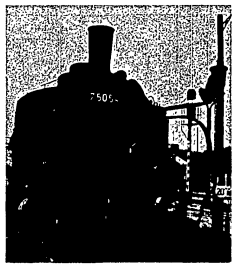

Figure No. 22

SERIES 75	PASSENGER, TENDER, STEAM	LOCAL PASSENGER	
Wheel order	2-6-2 (o000o) (1-C-1)	Water capacity	2,500 liters
Total weight in working order	76,700-82,000 kgs	Year built	1911-1917
Axle pressure	15,900-16,500 kgs	Total number in Reichsbahn	
Working weight on drivers	47,700-49,500 kgs	as of 1 Feb 57	120
Gross trailing load at 50 km/hr	1,200 m tons	Number in operating condition	81
Coal capacity	2.5 m tons		

REMARKS: Over-age and costly to maintain.

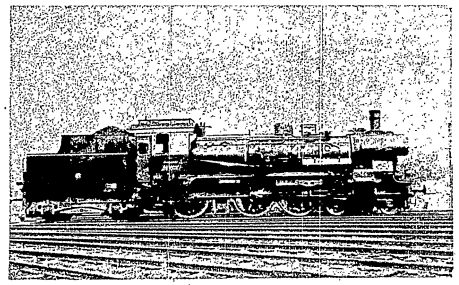

Figure No. 23

SERIES 78	PASSENGER, TENDER, STEAM	LOCAL AND MEDIUM DISTANCE PASSENGER	
Wheel order	4-6-4 (oo000oo) (2-C-2)	Water capacity	12, 000 liters
Total weight in working order	105, 000 kgs	Year built	1912
Axle pressure	17, 000 kgs	Total number in Reichsbahn	
Working weight on drivers	51, 100 kgs	as of 1 Feb 57	49
Gross trailing load at 55 km/hr	1, 415 m tons	Number in operating condition	29
Coal capacity	4, 5 m tons		

REMARKS: Over-age and costly to maintain.

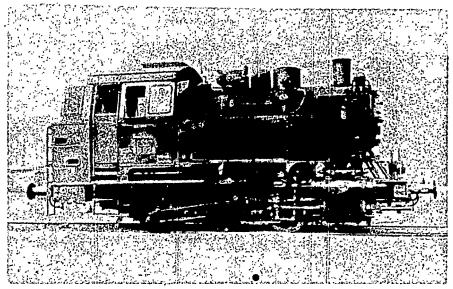

Figure No. 24

SERIES 80	FREIGHT, TENDER STEAM		SWITCHING
Wheel order	0-6-0 (000) (C)	Water capacity	5, 000 liters
Total weight in working order	54, 400 kgs	Year built	1926
Axle pressure	18, 100 kgs	Total number in Reichsbahn	
Working weight on drivers	54, 400 kgs	as of 1 Feb 57	15
Gross trailing load at 35 km/hr	1, 380 m tons	Number in operating condition	
Coal capacity	2 m tons	as of 30 Apr 57	14

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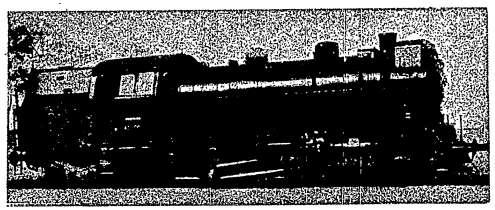

Figure No. 25

SERIES 83[10]	FREIGHT, TENDER, STEAM	LOCAL FREIGHT AND PASSENGER ON SECONDARY LINES, AND SWITCHING	
Wheel order	2-8-4 (o0000oo) (1-D-2)	Water capacity	19,000 liters
Total weight in working order	103,000 kgs	Year built	1955
Axle pressure	15,000 kgs	Total number in Reichsbahn as of 1 Feb 57	26
Working weight on drivers	60,000 kgs	Number in operating condition as of 1 Apr 57	11
Gross trailing load at 35 km/hr	Estimated 1,500 m tons		
Coal capacity	9 m tons		

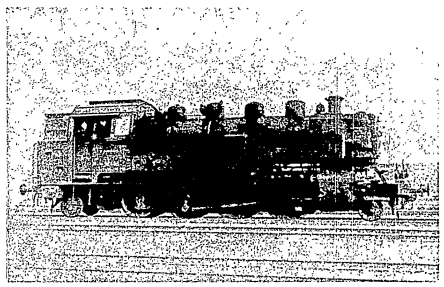

Figure No. 26

SERIES 86	FREIGHT AND PASSENGER, TENDER, STEAM	LOCAL FREIGHT AND PASSENGER ON SECONDARY LINES, AND SWITCHING	
Wheel order	2-8-2 (o0000o) (1-D-1)	Water capacity	9,000 liters
Total weight in working order	87,300-88,500 kgs	Year built	1927-1938
Axle pressure	14,850-15,100 kgs	Total number in Reichsbahn as of 1 Feb 57	164
Working weight on drivers	59,400-60,600 kgs	Number in operating condition as of 1 Apr 57	117
Gross trailing load at 45 km/hr (freight train)	1,665 m tons	Coal capacity	4 m tons
Gross trailing load at 55 km/hr (passenger)	1,285 m tons		

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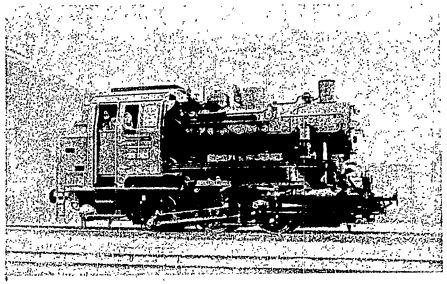

Figure No. 27

SERIES 89	FREIGHT, TENDER, STEAM		SWITCHING
Wheel order	0-6-0 (000) (C)	Water capacity	3, 800-4, 000-5, 000 liters
Total weight in working order	33, 400-42, 000-48, 000 kgs	Year built	1895-1901-1920
Axle pressure	11, 000-14, 000-16, 300 kgs	Total number in Reichsbahn as of 1 Feb 57	229
Working weight on drivers	33, 400-42, 000-48, 000 kgs		
Gross trailing load at 35 km/hr	Estimated 700-1000 m tons	Number in operating condition as of 1 Apr 57	164
Coal capacity	1-1. 5-2 m tons		

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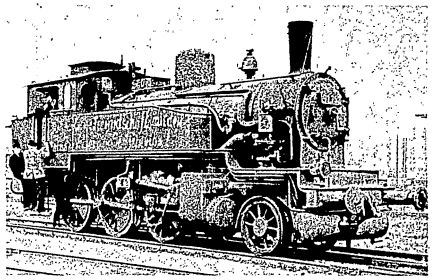

Figure No. 28

SERIES 91	FREIGHT AND PASSENGER TENDER, STEAM	LOCAL FREIGHT AND PASSENGER AND SWITCHING	
Wheel order	2-6-0 (o000) (1-C)	Water capacity	4, 300-7, 000 liters
Total weight in working order	46, 100-59, 900 kgs	Year built	1901-1907
Axle pressure	12, 000-15, 000 kgs	Total number in Reichsbahn as of 1 Feb 57	158
Working weight on drivers	36, 100-45, 000 kgs		
Gross trailing load at 35 km/hr	Estimated 500-700 m tons	Number in operating condition	96
Coal capacity	1, 5-2 m tons		

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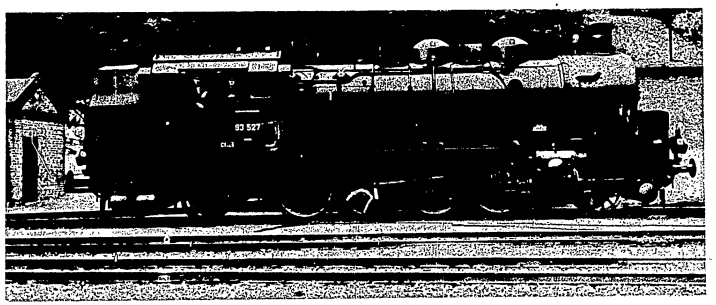

Figure No. 29

SERIES 93	FREIGHT AND PASSENGER, TENDER, STEAM	LOCAL FREIGHT AND PASSENGER AND SWITCHING	
Wheel order	2-8-2 (o0000o) (1-D-1)	Water capacity	11, 000-14, 000 liters
Total weight in working order	97, 600-104, 000 kgs	Year built	1914-1918
Axle pressure	15, 800-17, 500 kgs	Total number in Reichsbahn as of 1 Feb 57	283
Working weight on drivers	63, 400-70, 000 kgs	Number in operating condition as of 4 Apr 57	164
Gross trailing load at 40 km/hr	2, 070 m tons		
Coal capacity	4-4.5 m tons		

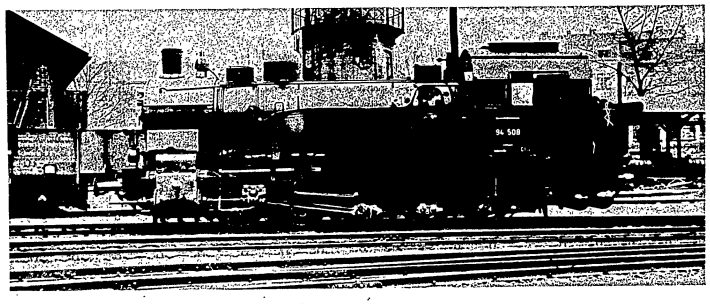

Figure No. 30

SERIES 94	FREIGHT AND PASSENGER TENDER, STEAM	LOCAL, FREIGHT AND PASSENGER	
Wheel order	0-10-0 (00000) (E)	Water capacity	7, 000-8, 500 liters
Total weight in working order	75, 600-79, 400 kgs	Year built	1907-1918
Axle pressure	15, 100-15, 900 kgs	Total number in Reichsbahn as of 1 Feb 57	361
Working weight on drivers	75, 600-79, 400 kgs	Number in operating condition	213
Gross trailing load at 50 km/hr	1, 370 m tons		
Coal capacity	2-3 m tons		

REMARKS: This is one of the more common series of Reichsbahn tender locomotives. Over-age and costly to maintain.

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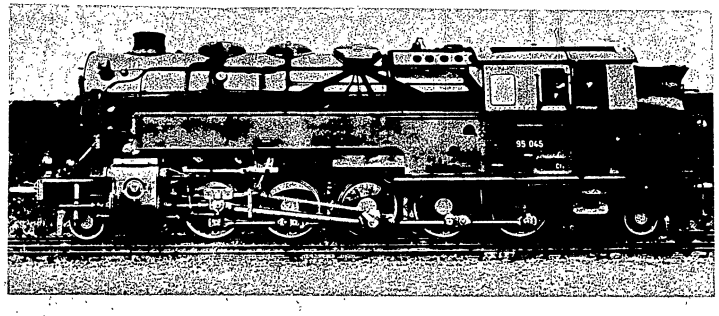

Figure No. 31

SERIES 95	FREIGHT, TENDER, STEAM	SHORT DISTANCE HEAVY FREIGHT	
Wheel order	2-10-2 (o00000o) (1-E-1)	Water capacity	12, 000 liters
Total weight in working order	127, 400 kgs	Year built	1922
Axle pressure	19, 000 kgs	Total number in Reichsbahn	
Working weight on drivers	95, 300 kgs	as of 1 Feb 57	33
Gross trailing load at 50 km/hr	2, 060 m tons	Number in operating condition	20
Coal capacity	4 m tons		

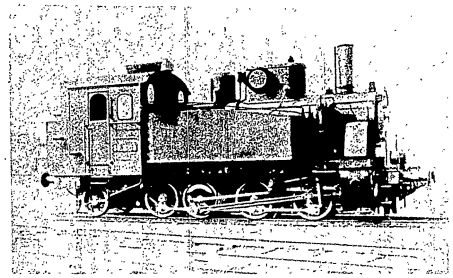

Figure No. 32

SERIES 98	FREIGHT, TENDER, STEAM	LOCAL, LIGHT FREIGHT, "CITY WORK"	
Wheel order	0-8-2 (0000o) (D-1)	Water capacity	Estimated 4, 500 liters
Total weight in working order	Estimated 50, 000 kgs	Year built	1929
Axle pressure	Estimated 12, 000 kgs	Total number in Reichsbahn	
Working weight on drivers	Estimated 45, 000 kgs	as of 1 Feb 57	53
Gross trailing load	Estimated 700 m tons	Number in operating condition	41
Coal capacity	Estimated 2 m tons		

3. DEUTSCHE REICHSBAHN FREIGHT CARS.

a. GENERAL. The Reichsbahn owns approximately 142,765 freight cars of all types of which at least 15,000 are normally in transit outside East Germany, both in Eastern and Western European countries; from 5,000 to 20,000 are usually awaiting or undergoing repairs; from just a few cars to as many as 10,000 normally are in reserve; and the remainder are in daily operation throughout the Reichsbahn system. Those in reserve are placed at stations throughout East Germany and used to meet exceptional operational demands.

The condition of this freight car pool is generally only fair, requiring constant regular and stop-gap maintenance and repair to keep the maximum number in operating condition.

The greater portion of the Reichsbahn freight car pool dates from well before World War II with only a relatively small number of new cars added since 1945.

b. GENERAL CATEGORIES OF FREIGHT CAR TYPES. Reichsbahn freight cars fall generally into four type categories. These are:

(1) covered cars (Gedeckte Wagen)

(2) open cars (Offene Wagen)

(3) tank cars (Kesselwagen)

(4) service cars (Dienstwagen)

The four principal types contain various groups. The covered car category includes box cars, top loading box cars, refrigerator cars, and livestock cars. Open cars include gondolas and flat cars of all species. Characteristics of the most important groups within the four principal types are discussed in subsequent paragraphs.

c. TYPE AND GROUP DESIGNATION OF REICHSBAHN CARS BY SYMBOL.

Reichsbahn freight cars are designated and identified as to type, group, and characteristics by a code system of letter symbols, utilizing single upper-case letters, double upper-case letters, or a combination of either in conjunction with lower-case letters.

All 2 and 3 axle freight cars are indicated by a single upper-case letter symbol denoting the group of that car. A double upper-case letter symbol (RR, SS, TT, etc) denotes a car which has four or more axles. The lower-case letters appearing in conjunction with upper-case letters (group designating symbols) denote special features or characteristics applicable to that particular car.

To illustrate this system designation, let us consider the Glt cars (Golf Lima Tango). The upper-case letter G denotes a box car, the lower-case letter l (Lima) denotes a particular characteristic, in this case it indicates a minimum loading surface area of 26 square meters, while the lower-case letter t (Tango) further denotes a distinguishing feature of the car, that of having end doors. Glt, then, when used as a freight car symbol, denotes a box car having a minimum loading surface area of 26 square meters . with end doors.

The tables appearing on the following pages list the letter symbols and the characteristics and distinguishing features which they denote as used in the Reichsbahn system of coded freight car designations, and the car number groupings.

TYPE SYMBOLS OF REICHSBAHN FREIGHT CARS: Translated from Deutsche Reichsbahn GuterwagenVorschriften.

GROUP SYMBOL	TYPE NUMBER	LOADING WEIGHT (MET TONS)	NUMBER OF AXLES	DESCRIPTION
G	01-01-01 through 13-99-99 and 20-01-01 through 20-49-99	15*	2(or 3)	Boxcar with flat roof or vault roof.
GG	15-01-01 through 15-99-99, and 20-50-01 through 20-99-99	variable	4	Boxcar with vault roof
Gk	17-01-01 through 17-99-99	15*	2	Refrigerator car
H	68-01-01 through 68-99-99	15*	2	Flat car with iron side stakes and pivoted bolster.
K	21-01-01 through 21-99-99	15*	2	Boxcar with hinged roof.
KK	22-01-01 through 22-99-99	30 or more	4	Boxcar with hinged roof.
O	24-01-01 through 46-99-99; 48-01-01 through 49-99-99 and 83-40-07 through 83-99-99	15*	2	Tipping gondola with walls more than 40cm high.
OO	47-01-01 through 47-99-99	30* or more	4	Gondola, non-tipping.
R	61-01-01 through 62-99-99	15*	2	Flatcar with wooden or iron stakes, removable sides and end walls 40 cm high, minimum loading length 10.1 m.

GROUP SYMBOL	TYPE NUMBER	LOADING WEIGHT (MET TONS)	NUMBER OF AXLES	DESCRIPTION
Ro	63-01-01 through 63-99-99	15*	2	Flatcar without stakes
RRy(m)	60-01-01 through 60-99-99	80	6	Flatcar with hinged sides, 2 trucks adaptable to standard and Soviet gauge wheelsets
S	64-01-01 through 64-99-99	15*	2	Flatcar with iron stakes, removable end walls up to 40 cm high, loading length 13 m. *
SS	65-01-01 through 65-39-99; 65-80-01 through 65-99-99; 66-60-01 through 66-99-99; and 67-01-01 through 67-99-99	35	4 or more	Flatcar with iron stakes, loading length 15 m *
SSy	65-40-01 through 65-79-99	50-80	4-6	Heavy-duty flatcar, trucks adaptable to standard and Soviet gauge whee lsets
T	18-01-01 through 18-99-99	15*	2	Refrigerator car
TT	19-01-01 through 19-99-99	variable	4	Refrigerator car
V	23-01-01 through 23-99-99	15*	2	Cattle car with lath sides
X	89-01-01 through 90-99-99	15*	2	Railroad work flat cars, non-tipping
Z	50-01-01 through 50-69-99; 51-01-01 through 51-69-99; 52-01-01 through 52-39-99; 52-50-01 through 52-69-99; 52-80-01 through 52-96-66; 53-01-01 through 53-19-99; 53-30-01 through 53-39-99; 53-50-01 through 54-08-99; 54-10-01 through 54-14-99; 54-20-01 through 54-24-99; and 54-30-01 through 54-32-99.	15*	2 or 3	Tankcars

GROUP SYMBOL	TYPE NUMBER	LOADING WEIGHT (MET TONS)	NUMBER OF AXLES	DESCRIPTION
ZZ	50-70-01 through 50-99-99; 51-70-01 through 51-99-99; 52-40-01 through 52-49-99; 52-70-01 through 52-79-99; 52-97-01 through 52-99-99; 53-20-01 through 53-29-99; 53-40-01 through 53-49-99; 54-09-01 through 54-09-99; 54-15-01 through 54-19-99; 54-25-01 through 54-29-99; and 54-33-01 through 54-99-99	20-60	4	Tankcars

(*) (Deviations from the loading weights, etc., marked with an asterisk are indicated by the addition of the small letters listed in the following table: e.g., Gmhs = (G) "2 - axled boxcar, (m) with a loading weight of 20 metric tons, (h) steam heating pipes, and (s) suited for trains with speeds up to 100 kms, per hour.")

ACCESSORY SYMBOLS (Modifying the meaning of the group symbols listed in the preceding table)

ACCESSORY SYMBOL	IN CONNECTION WITH THE GROUP SYMBOLS:	MEANING
a	SS	Open brakeman's stand, hinged downdrop platform handrail.
b	G, R and T	Ferry cars
c	O	Wooden walls, 130-190 cm high.
d	Z and ZZ	Heating coil or heating vat.
e	all	Wired for electric heating.
f	G	Containers for live fish
	T	For sea fish only.
	O and OO	Revolving and tipping tailboards for transporting vehicles.

ACCESSORY SYMBOL	IN CONNECTION WITH THE GROUP SYMBOLS:	MEANING
g	V	4 tiers for transporting small livestock.
	T	For frozen goods only.
gg	T	For dry ice and frozen goods only.
h	all	Steam heat pipes.
hh	G and GG	Steam heat pipes and steam heat installations.
i	Z and ZZ	Container car with lining.
k	G	Refrigerator car of old design.
	O	Vat car (2 or 3 removable vats).
	OO	Carriers for larger containers.
	S	Loading length less than 13 meters
	SS	Loading length less than 15 meters
	T and TT	Refrigerating machine car (refrigerator car with cooling machine for producing cold air).
kk	O	Carriers for small containers.
ko	Z	Coal dust tank cars
l	G	Loading area at least 26 sq meters
	O	Loading length at least 10 meters
	SS	Loading length 18 meters.
ll	G	2 cars closely coupled together, to form a so-called "light freight-train unit" (Leichgueterzugeinheit, abbreviated to "Leigenheit").
m	G, K, O, R and S	Loading weight 20 metric tons.
mm	K, O and R	Loading weight more than 20 metric tons.
n	T	Not suited for frozen goods.
	O and OO	Side boards only 40-80 cm high.

ACCESSORY SYMBOL	IN CONNECTION WITH THE GROUP SYMBOLS:	MEANING
o	R	Without side or end walls.
	T	Without meat hooks.
p	G	Weight 16 metric tons; 3 axle.
	O	Non-tipping.
q	all	Without through-traction attachment.
r	G, V, O and R	Adapted to either standard or Soviet-gauge wheelsets.
s	G, T, R and SSy	Suited for trains with speeds up to 100 kms per hour.
	GG and TT	Suited for trains with speeds up to 120 kms per hour.
t	G and GG	End-wall doors.
	KK	Self-unloading car, hopper or saddle.
	O	Self-unloading car, with inclined bottom, bottom trapdoors; some also with hoppers.
	OO	Self-unloading car, with inclined bottom and side trapdoors.
	X	Bottom trapdoors; some also with hoppers, downdrop hinged side walls and removable end walls.
	S and SS	Well car, length not expressed by accessory letters.
trieb	GG	Self-driven freight car (Guetertriebwagen).
u	G	Unsuited for troops.
u	O	Unsuited for out-size vehicles.
v	G and GG	Stable car; compartment for attendant.
	T	With electric ventilators.

ACCESSORY SYMBOL	IN CONNECTION WITH THE GROUP SYMBOLS	MEANING
w	G, GG, V, O and X	Loading weight less than 15 metric tons.
	OO	Loading weight less than 30 metric tons.
	SS	Loading weight less than 35 metric tons.
	Z and ZZ	Tank car only for white fuels.
y	SS	Heavy-duty flatcar, loading weight 50 metric tons; loading length 8.8 meters, 9.5 m or 10.25 meters; open brakeman's stand; hinged down-drop; platform handrail; trucks adapted to both standard and Soviet-gauge wheelsets.
ym	RR and SS	Heavy-duty flatcar; loading weight more than 50 metric tons; loading length 11.2 meters (or 11.9 meters); open brakeman's stand, hinged downdrop platform handrail; trucks adapted to both standard and Soviet-gauge wheelsets.
z	O and OO	Car for transportation of ore.

Special type cars and ordinary group cars of recent construction are numbered as follows:

(1) Self-unloading cars of Ot, OOt and KKt types are numbered 55-01-01 through 55-99-99.

(2) Refrigerator cars of Gk, Gkk, Gf, T, and Th types are numbered 56-01-01 through 56-99-99.

(3) Special use cars (vat, container, gas transport) are numbered 57-01-01 through 57-99-99.

(4) Cars of O, X, R, S, and SS type, new construction, are numbered 58-01-01 through 58-99-99.

(5) Cars of G, GG and K type, new construction, are numbered 59-01-01 through 59-99-99.

On the following railroad service cars, (1) through (14) the first digit of the serial part of the number (after the first hyphen) designates Reichsbahndirektion (RBD) Berlin (1). For service cars of other RBD's the number would be as follows:*

Cottbus	2
Dresden	3
Erfurt	4
Greifswald	5
Halle	6
Magdeburg	7
Schwerin	8

*Example: Although the block of assigned numbers for 4-axle cars in (1) below are listed as 71-10-01 through 71-13-99 and 73-10-01 through 73-13-99, in actuality this would refer only to RBD Berlin, while for RBD Erfurt and Magdeburg the block of numbers would begin with 71-40-01 (or 73-40-01), and 71-70-01 (or 73-70-01) respectively.

(1) Crew cars, including kitchen, washroom, dwelling, office, recreation, courier, equipment and workshop cars for construction trains, work trains, auxiliary trains, locomotive crews, etc.

4-axle	71-10-01 through 71-13-99 and 73-10-01 through 73-13-99.
2 and 3 axle	71-14-01 through 71-18-99 and 73-14-01 through 73-19-99.

(2) People's Police (VP) escort cars, 2-axle — 71-19-01 series*

(3) Cars of the Reichsbahn-Bau-Union (a semi-autonomous agency for railroad construction) — 74-15-01 series*

(4) Equipment cars, workshop cars, tool cars, repair cars, lighting and power plant cars, welding, sandblast, tower, profile (clearance measuring), fire extinguishing, fumigating, scaffolding, mountain braking and overpass cars.

4-axle	75-10-01 through 75-13-99
2 and 3 axle	75-14-01 series*

(5)	Testing, measuring, medical, instruction, experimental, bridge-testing, trolley-wire testing and line-running cars	
	4-axle	77-10-01 through 77-13-99
	2 and 3 axle	77-14-01 through 77-15-99
	Sprinkling cars for exterminating weeds	77-16-01 through 77-16-99
	Cars for auxiliary trucks and wheelsets	77-17-01 through 77-17-99
	Cars for current converters	77-18-01 series*
(6)	Heating boiler cars	
	4-axle	78-12-01 through 78-12-99
	2 and 3 axle	78-13-01 series*
(9)	Crane cars, track cars, switch crane cars	79-10-01 through 79-10-99
	Crane protecting cars, escort cars, track laying cars	79-11-01 through 79-11-99
	Snow slingers (Schneeschleudern)	79-12-01 through 79-12-99
	Snow plows	79-13-01 through 79-13-99
		79-14-01 through 79-14-99
	Gauging cars	79-15-01 through 79-15-99
	Gauging equipment cars	79-16-01 through 79-16-99
	Crane weighing car	79-17-01 series*
(10)	Service freight cars (4-axle) of the type GG, OO, SS and others	81-10-01 through 81-11-99
	Service freight cars (2 and 3 axle) of the types G, V and K	81-12-01 through 81-13-99
	Same, of the types H, R, S and O, except slag, garbage and debris cars	81-14-01 through 81-15-99
	Service cars of type O, made of steel, for slag (including locomotive ashes)	81-16-01 through 81-17-99

	Same, made of wood, for garbage and debris	81-18-01 series*
(11)	Tankcars for liquid manure	82-10-01 through 82-14-99
	Container and cement cars	82-15-01 through 82-16-99
	Gas tankcars and gas cars	82-17-01 series*
(12)	Ballast cars with side unloading	83-10-01 through 83-14-99
	Same, with bottom unloading	83-15-01 series*
(13)	Cars for narrow-gauge vehicles (i.e., cars and locomotives)	84-10-01 series*
(14)	Water, carbide sludge and lime sludge cars, insofar as made from former tenders	85-10-01 series*

*unable to determine extent of block of numbers assigned; most, however, are probably very limited, as inventories of these types are usually small. Definitely not beyond a 19 for a second group of numbers (74-19-99) as 74-20-01 would indicate same block of numbers within RBD Cottbus.

REMARKS: 1. Insofar as the railroad service cars correspond to the types of cars in general use, the numbers of these types are placed in parenthesis beneath the type number of the service cars, e.g., 75-74-83 is a G-Car (boxcar) of type 05.
(05)

Operable freight cars with reduced loading weight:

Open cars, former Om, whose loading weight has been reduced to 15 tons (O) 92-01-01 series.

Open cars, former O, whose loading weight has been reduced to less than 15 tons (Ow) 93-01-01 series.

All other cars (Rw, Sw, etc.) 94-01-01 series.

Cars which are only conditionally usable: may be put into trains with a maximum speed of up to 55 km. per hr. (usual type symbols) 00-01-01 series.

d. INVENTORY OF FREIGHT CAR POOL AS OF 15 SEPTEMBER 1956

		Total by type		Total
(1)	Covered cars			
	Boxcars (2 and 4 axle)	37, 215		
	Refrigerator cars	1, 083		
	Cattle	131		
		38, 429		38, 429
(2)	Open Cars			
	Gondolas (2 and 4 axle)	65, 551		
	Flatcars			
	Type R (2 axle)	10, 065		
	Type RRym (6 axle)	1, 700		
	Type S (2 axle)	1, 699		
	Type SS (4 and 6 axle)	2, 508		
	Type H (with bolsters for lumber, etc.)	1, 009		
		82, 532		82, 532
(3)	Tank cars			
	ZW (types O and I for POL)	2, 633	(See footnote on tank car inventory following paragraphs)	
	Zko (coal dust)	404		
	Z (other cargoes)	10, 285		
		13, 322		13, 322
(4)	Service cars			8, 482
		Grand total		142, 765

e. INVENTORY OF TANKCARS AS OF 30 MAY, 1957, IN TERMS OF DOUBLE AXLES:

TYPE	Zw (POL)	Z	Zko	TOTAL
Working pool:	1, 971	7, 274	525	9, 770
Non-working pool:	821	4, 449	60	5, 330
Total pool **	2, 792	11, 723	585	15, 100
Composition of the non-working pool on 30 May 1957:				
Being cleaned	58	194	0	252
Awaiting or undergoing repairs at RAW's and Bww's	191	977	52	1, 220
Operational reserve	73	687	0	760
Factory cars (attached to refineries, etc)	0	726	8	734
Permanently ear-marked for use abroad (*)	499	1, 865	0	2, 364
Total non-working park	821	4, 449	60	5, 330
Average turn-around time (in days)	4.9	6.6	6.5	6.4
Daily working park (=working park ÷ turn-around time planned)	299	1, 122	108	1, 529

(*) "staendiger Auslandsbestand" (permanent foreign-country pool); treated as belonging to the "non-working pool" (Nichtarbeitender Kesselwagenpark) because not available for work within the Reichsbahn system.

(**) Although available information gives POL tankcars as including only 0(zero) and I types, in actuality, for potential military support planning purposes, at least 35% of the Z car pool could also be used for the transport of white products.

The following table gives a further breakdown of the three (3) main types of tank cars, and their characteristics:

Type ZW: Sub-type 0 (zero). Aluminum color, heating coils, series 50-00-00 for white products.

Sub-type I. Aluminum color, without heating coils, series 51-00-00, for white products.

Type Z: Sub-type II. Black, with and without heating coils, series 52-00-00, for crude oil and tars.

Sub-type III. Black metal or ceramic brown, with and without heating coils, series 53-00-00, for acids, lyes, and related chemicals.

Sub-types IV b, c, and d. Various colors and shapes of containers for liquid gas, series 54-00-00 through 54-34-99.

Type Zko: Sub-type IV a. Black metal containers, usually three, for coal dust only.

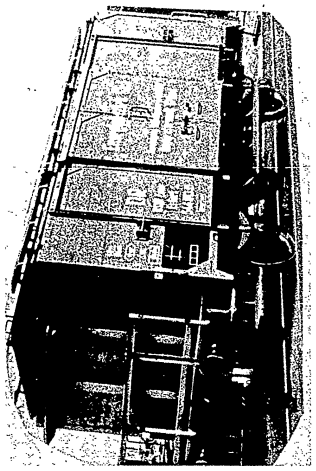

Figure No. 33

TYPE: BOX CAR SYMBOL: "G"

CHARACTERISTICS

Number of axles	2 and 3	Inside length	7, 72-7, 92 meters
Light weight	10, 5 m tons	Inside width	2, 69-2, 76 meters
Loading space	45, 7-50 cu meters	Inside height of walls	2, 14-2, 15 meters
Loading area	21, 3 sq meters	Inside height of middle of ceiling	2, 24-2, 25 meters
Normal capacity	15 m tons	Doors, width	1, 5 meters
Maximum capacity	17, 5 m tons	Doors, height	2 meters

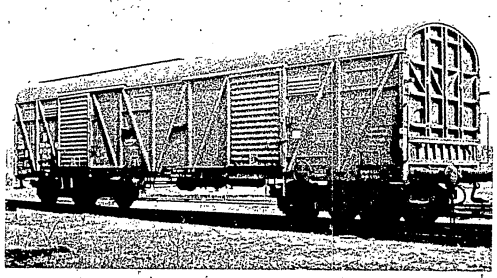

Figure No. 34

TYPE: BOX CAR SYMBOL: "GGhs"

CHARACTERISTICS

Number of axles	4	Inside length	15.52-16.62 meters
Light weight	21.74-22.7 m tons	Inside width	2.69 meters
Loading space to wall height	90.17-93.5 cu meters	Inside height of walls	2.127-2.1 meters
Loading space to seiling height	114.5-118.4 cu meters	Inside height of middle ceiling	2.845-2.72 meters
Loading area	41.7-44.8 sq meters	Doors, width	2 meters
Normal capacity	15 (*)-50 m tons	Doors, height	2 meters
Maximum capacity	15.75 (*)-52 m tons		

REMARKS: The 15-01-01 series (formerly marked "Dresden") have a normal capacity of only 15 tons, and a maximum capacity of 15.75 tons. The remainder, bearing the block of serial numbers beginning with 15-20-01, have a capacity of 50/52 tons.

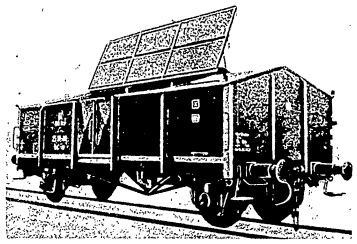

Figure No. 35

TYPE: TOP LOADING BOX CAR WITH HINGED ROOF

SYMBOL: "K"

CHARACTERISTICS

Number of axles	2	Load limit	17.5 m tons
Light weight	8-10 m tons	Inside length	5.225-6.8 meters
Loading space	21.6-27.9 cu meters	Inside width	2.8 meters
Loading area	14.9-19 sq meters	Inside height	1.685 meters
Capacity	15 m tons	Doors, width	1.5 meters

REMARKS: These cars are used extensively to transport grain.

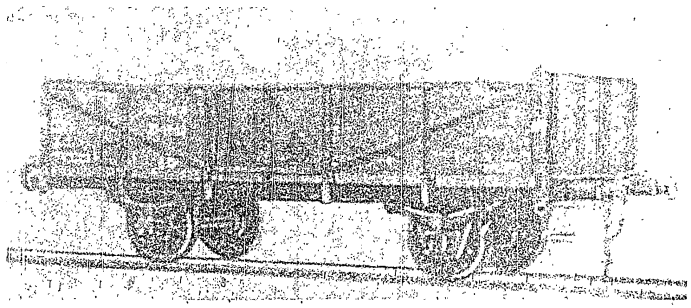

Figure No. 36

TYPE: 2-AXLE GONDOLA SYMBOL: "O"

CHARACTERISTICS

Number of axles	2	Loading area	14.9-18.4 cu meters
Light weight	8.5-9.5 m tons	Capacity	15 m tons
Loading space	18.4-19.4 cu meters	Load limit	15.75 m tons

REMARKS: This is the most common type of gondola car used by the Reichsbahn. Most cars of this type, except the self-discharging type, do not have side doors as shown in the accompanying illustration.

Figure No. 37

TYPE: 4-AXLE GONDOLA SYMBOL: OO

CHARACTERISTICS

Number of axles	4	Loading area	variable
Light weight	20-23 m tons	Capacity	at least 30 m tons
Loading space	33-91 cu meters	Load limit	at least 31.5 m tons

REMARKS: The characteristics of the "OO" cars vary considerably. The "OOt" cars (self-discharging, with slanting bottom and side trapdoors), have a capacity ranging from 55/57 through 55.5/58.8 to 58/60 tons.

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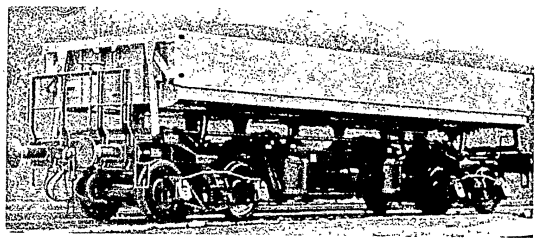

Figure No. 38

4-Axle self-unloading hopper car in normal position

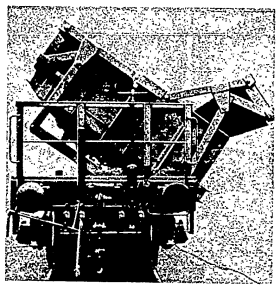

Figure No. 39

4-axle self-unloading hopper car in 40° unloading position

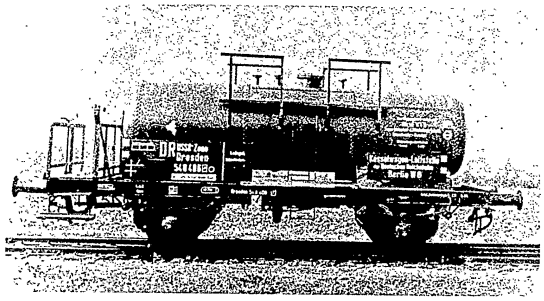

Figure No. 40

2-axle tank car for sulphuric acid

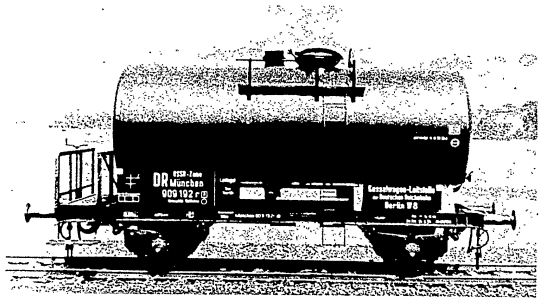

Figure No. 41

2-axle tank car for tars

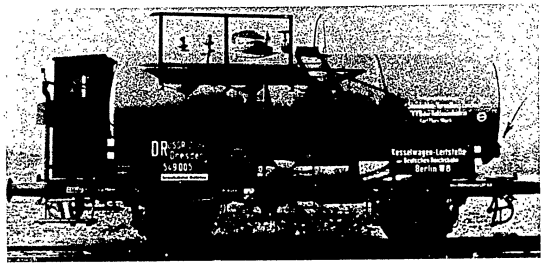

Figure No. 42

2-axle tank car for industrial oil

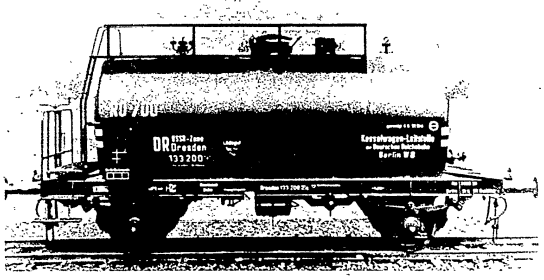

Figure No. 43

2-axle tank car for crude oil

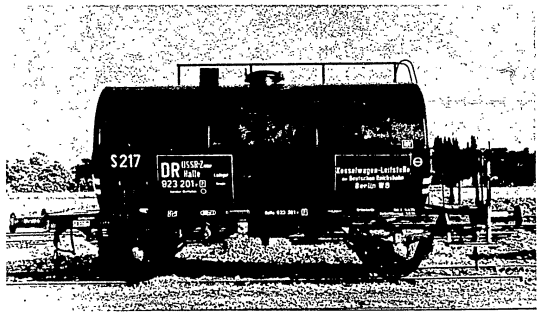

Figure No. 44

2-axle tank car for gasoline

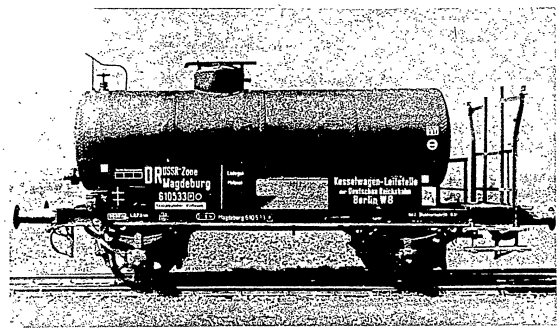

Figure No. 45

2-axle tank car with heating arrangement for molasses

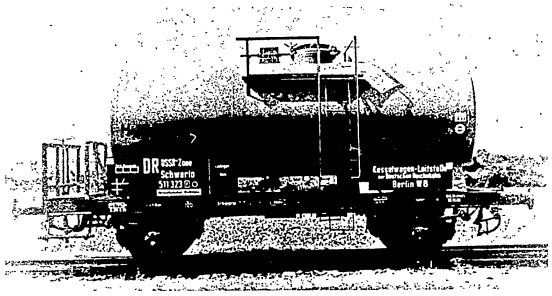

Figure No. 46
2-axle tank car for inflammable liquids other than gasoline

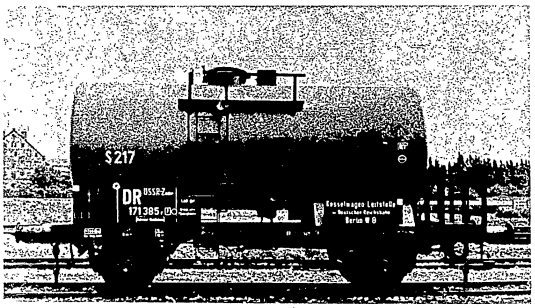

Figure No. 47
2-axle tank car for gasoline or Diesel oil

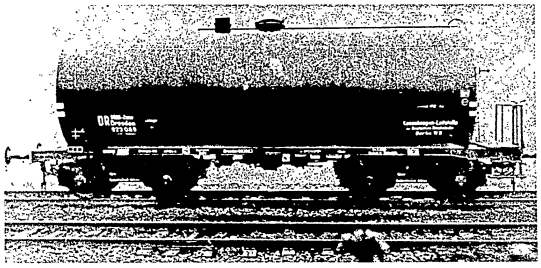

Figure No. 48
4-axle tank car for crude oil

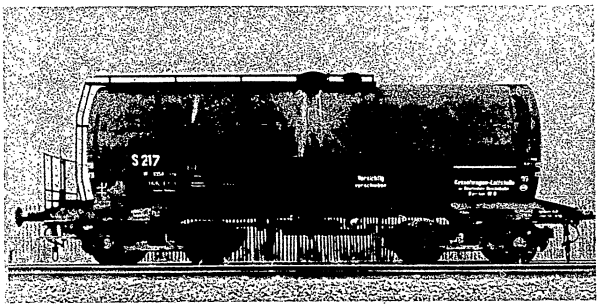

Figure No. 49
4-axle tank car for inflammable liquids other than gasoline

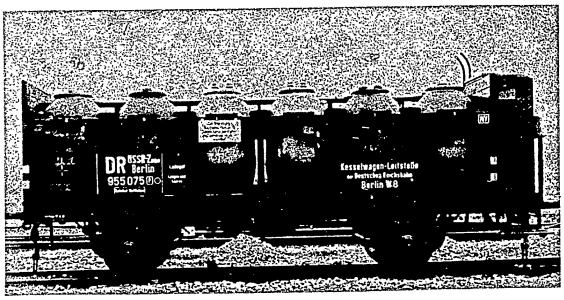

Figure No. 50

2-axle, 20 ton, 12 reservoir container car for lyes and acids

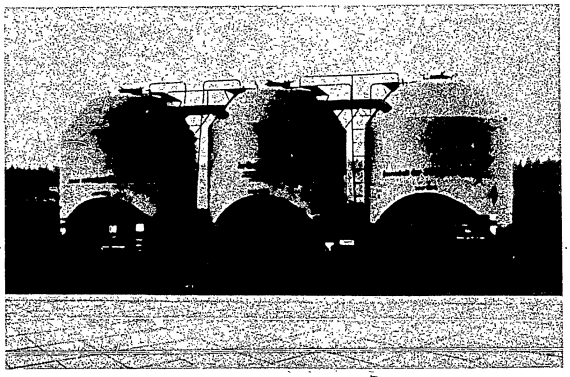

Figure No. 51

3-axle, coal dust container car

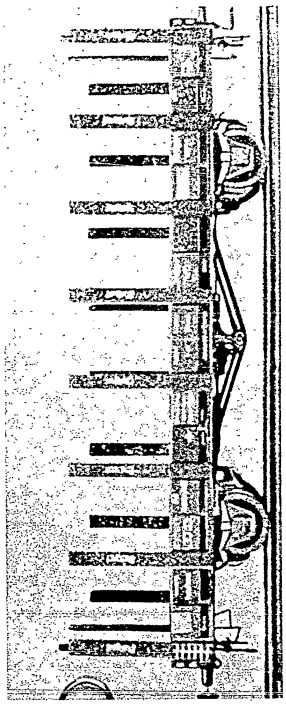

Figure No. 52

TYPE: LIGHT DUTY FLAT CAR SYMBOL: "R"

CHARACTERISTICS

Number of axles	2	Capacity	15 m tons
Light weight	9, 7-10, 5 m tons	Load limit	15, 75 m tons
Loading space	10, 8 cu meters	Loading length	10, 12 meters
Loading area	27 sq meters	Loading width	2, 67 meters

REMARKS: Low-sided flat car with wooden side-stakes (stanchions), removable side and end walls 40 cm high.

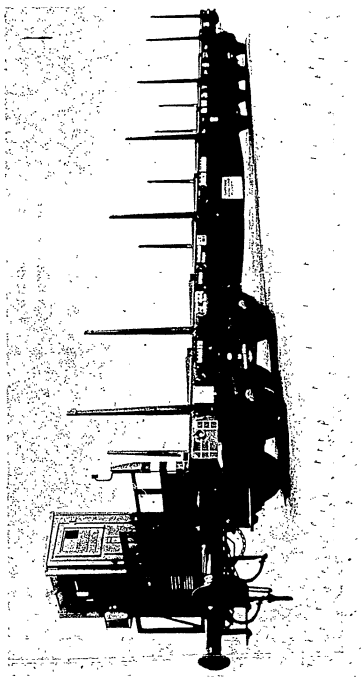

Figure No. 53

TYPE: 4-AXLE, HEAVY DUTY FLAT CAR

SYMBOL : SS

CHARACTERISTICS

Number of axles	4	Load limit 31,5-36,75 m tons
Light weight	19-20,5 m tons	Loading length 15-15,06 meters
Loading area	41,25-42,3 sq meters	Loading width 2,75-2,82 meters
Capacity	30-35 m tons	

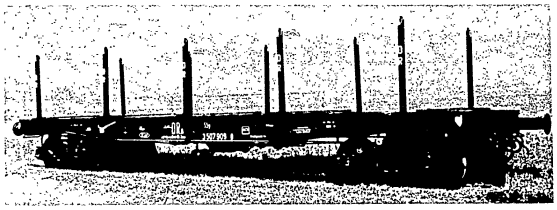

Figure No. 54

4-axle flat car, Symbol SSy

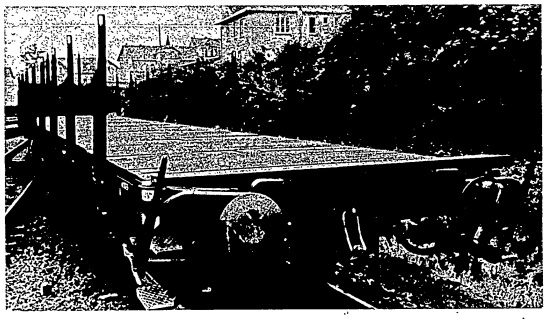

Figure No. 55

4-axle flat car, Symbol SSla

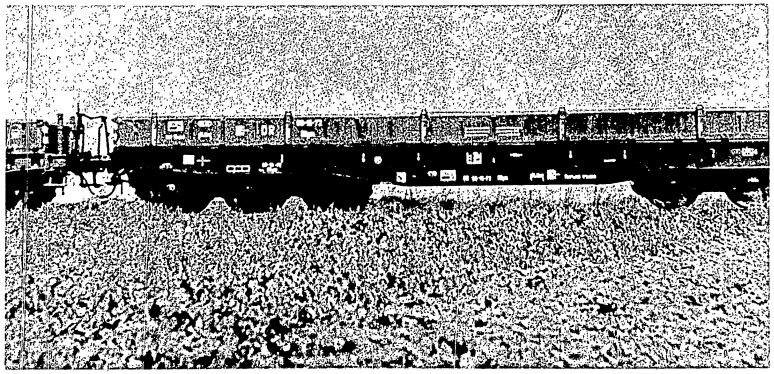

Figure No. 56

TYPE: 6-AXLE, HEAVY DUTY FLAT CAR

SYMBOL: RRym

CHARACTERISTICS

Number of axles	6	Load limit	89. m tons
Light weight	32 m tons	Loading length	14. 36 meters
Loading space	23 cu meters	Loading width - w/sides up	2. 79 meters
Loading area	38. 3 sq meters	-w/sides down	2. 96 meters
Capacity	80 m tons		

REMARKS: 1700 of these cars were built for the Reichsbahn, 1952-53, at the direction of Soviet military authority. This car is the principal means of transporting the Soviet 51-ton JS-3 tank. 300 more were scheduled for completion in 1957.

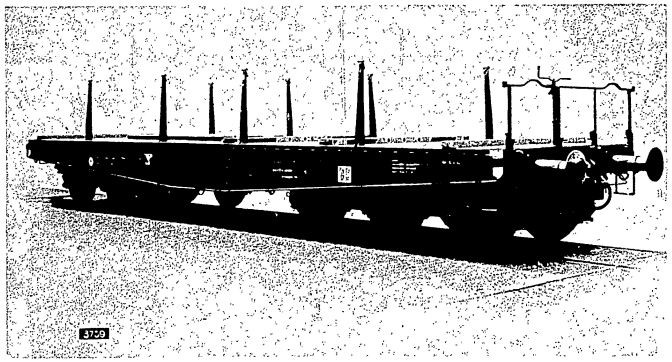

Figure No. 57

TYPE: 6-AXLE, HEAVY DUTY FLAT CAR

SYMBOL: SSyms

CHARACTERISTICS

Number of axles	6	Load limit	83 m tons
Light weight	22 m tons	Loading length	11. 2 meters
Loading area	35. 3 sq meters	Loading width	3. 15 meters
Capacity	80 m tons		

REMARKS: This type 6-axle heavy duty flat car and its ability to handle heavy loads is of major importance in consideration of military rail movements.

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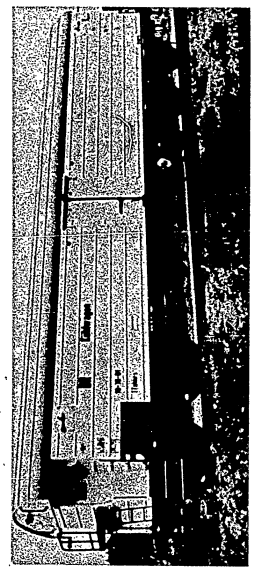


Figure No. 58

TYPE: REFRIGERATOR CAR SYMBOL: TTnhhrs

CHARACTERISTICS

Number of axles	4	Inside length	5,93-7,105 meters
Light weight	26 m tons	Inside width	2,18 meters
Loading space	27,7-33,4 cu meters	Inside height	2,106 meters
Loading area	12,9-15,5 sq meters	Doors, width	1,113 meters
Capacity	36 m tons	Doors, height	1,696 meters
Load limit	38 m tons		

REMARKS: Not suited for frozen goods, adaptable to either Soviet-gauge or standard wheelsets, suited for trains with speeds up to 120 kms per hour.

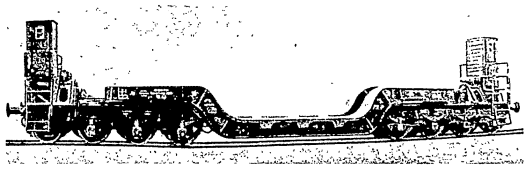


Figure No. 59

3-axle, 120 ton, depressed-center frame special flat car

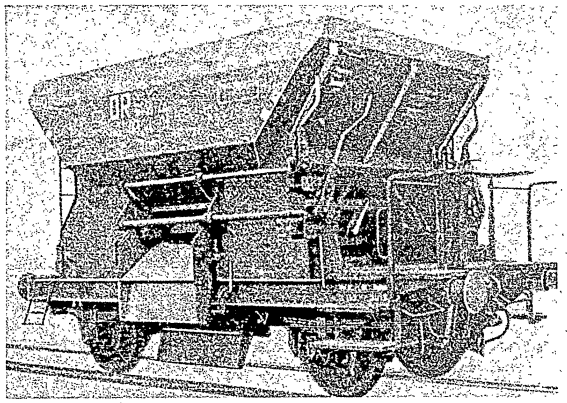


Figure No. 60

2-axle, Otmm, self-discharging hopper car

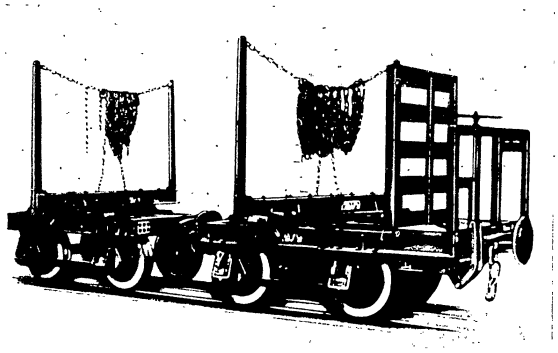


Figure No. 61

4-axle flat car with pivoted bolsters

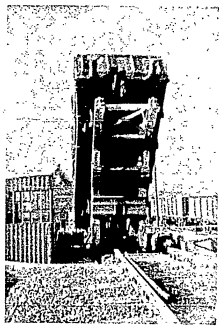


Figure No. 62

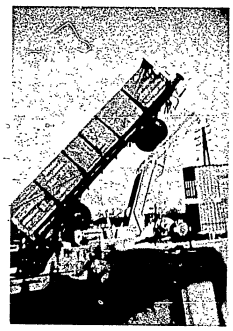


Figure No. 63

2-axle end discharge gondola being unloaded by mechanical tilting apparatus

4. REICHSBAHN PASSENGER CARS. Reichsbahn passenger cars include a limited number of First class passenger cars (sleeping cars), a few combination First and Second class cars, some combination Second and Third class cars, and a considerable number of Third class cars. The latter class is by far the most common type of passenger equipment in use by the Reichsbahn today. This type of car is used extensively in long distance inter-city service and exclusively in suburban and commuting service.

With respect to the type of trains for which they are adapted, these passenger cars are classified as follows:

Express (Schnellzug)	320
Fast Long-distance train (D-Zug)	966
Fast train (Eilzug)	164
Local train (Personenzug)	6,881
	8,331
Baggage cars	1,356
Service cars	1,810
	11,497

Travel by rail is by far the most common means of travel in East Germany, and countless numbers of East German citizens use the passenger facilities of the Deutsche Reichsbahn each day.

General condition of Reichsbahn passenger cars is only fair. The passenger car inventory is adequate to normal domestic needs .

The following photographs illustrate representative types of Reichsbahn passenger cars.

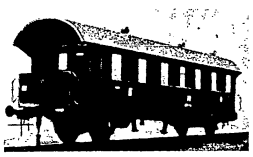


Figure No. 64

Third class coach. This is the most common type in use today for inter-city and local traffic.

Figure No. 65

Combination 1st and 2d class coach, for long distance and international trains

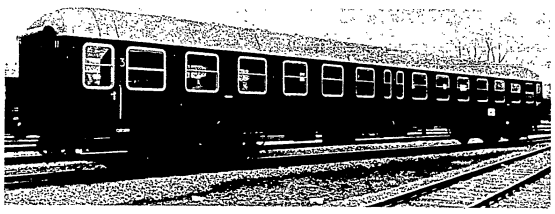


Figure No. 66

Third class coach, for long distance trains

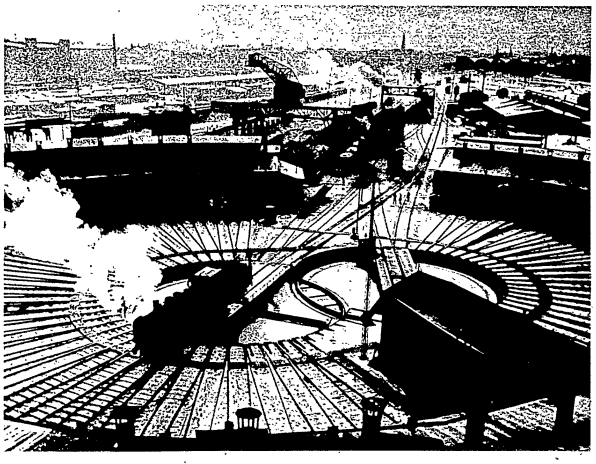
Figure No. 67

4-unit double deck passenger train, for commuter service in industrial areas. Provides a total of 436 seating places and 470 standing places.

SECTION IV

Reichsbahn

Equipment Maintenance



and

Repair Installations

SECTION IV

EQUIPMENT MAINTENANCE AND REPAIR INSTALLATIONS

1. MOTIVE POWER MAINTENANCE AND REPAIR. Deutsche Reichsbahn locomotives are subject to the operational control of the RBD to which they are assigned. They are further assigned internally by the controlling RBD to specific Bahnbetriebswerke (Bw's) for line operation from those Bw's and for between-run servicing and periodic maintenance. The Bw to which they are assigned normally continues to be their permanent home station unless they are transferred to another RBD. Such transfers of locomotives from one RBD to another are relatively infrequent. However, when they do occur, both administrative and operational control is relinquished by the losing RBD and assumed by the other.

Servicing, normal maintenance, and minor repairs are handled by these home station Bws. Major repairs and locomotive overhaul, however, are not attempted by the Bw's, but are performed at the locomotive repair shops (RAW's) established for that purpose.

2. THE LOCOMOTIVE BAHNBETRIEBSWERK (Bw). The locomotive Bw is an installation to which Reichsbahn locomotives are assigned which performs the servicing and lower echelon maintenance required to keep them in operating condition. This includes washing, coaling, sanding, watering, lubricating, cleaning of fires at the ash pits, flue and smoke box cleaning, replenishing lubricant stocks and wiping waste, and filling running lamps. Bw service also includes the maintenance, repair, or replacement of minor locomotive parts. Maintenance of this nature is normally handled as long as it does not entail major repair tasks. Bw's are not normally equipped to handle major locomotive repairs.

There are upwards of one hundred locomotive Bw's in the Reichsbahn system. Each of the RBD's has a number of locomotive Bw's proportionate to the route mileage, volume of traffic, and number of assigned locomotives within its operational jurisdiction. The Bw's are generally well distributed throughout each RBD, their proximity to each other being determined largely by the route density of the RBD

The locomotive Bw's normally consist of locomotive servicing facilities, tracks, turntables, locomotive sheds, cranes and hoists, axle changing equipment, welding equipment and facilities, air compressors, and an electrical shop.

The following paragraphs describe the various locomotive servicing facilities normally common to locomotive Bw's:

a. Coaling (bituminous coal and brown coal briquettes). A coaling plant in a locomotive Bw has facilities to:

(1) Unload the coal from rail cars as it is received at the Bw.
(2) Store the coal until it goes to the coal bunkers.
(3) Fill loading bunkers or tipples from stockpiles or storage sites.

(4) Deliver the coal from the loading bunker to the locomotive, or directly from stock piles or storage site to the locomotive.
(5) Protect coal stocks from theft throughout all stages of handling.

Coal is usually delivered to the coaling plant of a Bw in gondola type cars of 20 to 30 ton capacity. It is unloaded mechanically from the cars on the unloading track to the storage piles or cribs by means of a crane with some type of clam-shell bucket. Bws having trestle tracks over storage or unloading bins can handle self-discharging (bottom delivery or tilting) cars which permit discharge of the coal by gravity flow from the cars directly into the bins, thereby eliminating one phase of the handling process.

Types of coal bunkers from which coal is discharged into the tender of the locomotive vary considerably, as do the means of filling the bunkers from coal piles or storage sites. A feature common to all coaling plant bunkers, however, is their elevated position above the locomotive, permitting gravity flow delivery from the bunker into the locomotive by means of inclined or vertical chutes. Coaling bunkers may be either stationary structures or massive self-propelled ones capable of travel on gantry rails. This latter type can move readily along the coaling track from point to point. They are not as commonly used as stationary bunkers.

Several methods are employed to raise the coal from ground or storage level to the elevated hoppers of the bunkers. The more common methods are to either make use of a crane working between the stockpile and the bunker in full or half-sweep or to utilize a mechanical conveyor system or a vertical hoist. A typical example of the former method is illustrated below.

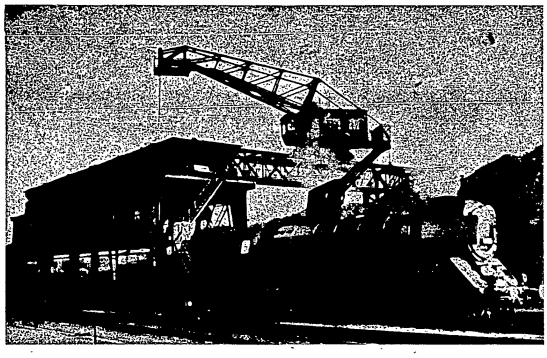


Figure No. 68

Some Bw coaling plants have no bunkers or tipples- the coal being loaded into the locomotive tender directly from cars or storage sites by means of cranes, conveyors, or hoists. This is usually a much slower process than by delivery from the bunker, but it is by far the most prevalent method of coaling throughout the Reichsbahn system.

Regardless of the coaling method used, all coal is weighed or measured as it is delivered to the locomotive. Weighing or measuring devices register the quantity of coal delivered to the locomotive and records are maintained to show the exact tonnage going to each.

The number of locomotives which can be coaled in the Bw coaling plants range from twelve per day in the smaller Bws up to ninety per day in the larger, well-equipped coaling plants.

The photographs below show two common methods by which coal is handled in a Bw coaling plant.

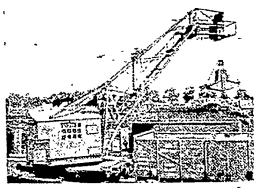


Figure No. 69

Locomotive being coaled directly from a car

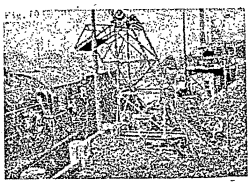


Figure No. 70

Locomotive being coaled directly from a Bw coal stockpile

b. Coaling (brown coal dust - kohlenstaub). Special coaling plants are necessary for coaling locomotives which are fired with brown coal dust. This type of fuel can not be handled through bunkers or by conventional materials handling equipment in the manner of bituminous coal or brown coal briquettes. Instead, it is forced through pipe lines and hoses by pneumatic pressure at approximately thirty pounds per square inch, much as liquid fuel is pumped through similar lines.

Brown coal dust is produced in crushing plants by pulverizing soft brown coal to a fine dust. These crushing plants are sometimes located within a Bw but more frequently are located at a distance from the Bw great enough to require transportation of the coal dust to the Bw by rail. In such cases, the coal dust is piped by pneumatic pressure into special coal dust container cars (Kohlenstaub-transportwagen (Zko) at the crushing plant and moved by rail to the consignee Bw. Here, pneumatic pressure is again employed to force the dust from the container cars into the locomotive tank. Where the crushing plant is located within the Bw, filling lines connect the crushing mill with special storage containers, each having a capacity of approximately forty five cubic meters. These containers are fed by filling lines from the mill under thirty pounds per square inch pneumatic pressure and may be tapped off for locomotive fueling simultaneously as they are being filled from the crushing mill.

The transfer of brown coal dust from containers to the locomotive is a comparatively simple task and requires little equipment. Pipe, fittings, valves, hose and hose fittings, plus an air compressor net with adequate working pressure is all that is needed. Only thirty minutes are required to fill the coal tank of a locomotive, including the time spent in connecting and disconnecting the hose lines. This is somewhat less than the average time required to coal a conventional coal burning locomotive in most Bws.

The manner in which a locomotive is fueled from coal dust container cars is illustrated below.

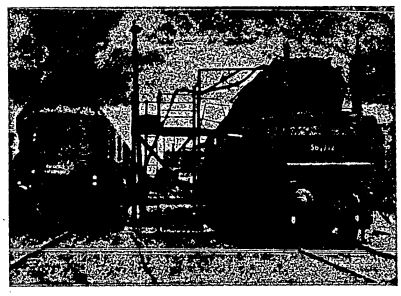


Figure No. 71

c. Fire cleaning and ash pit servicing. Cleaning the locomotive fire, removing dead ashes from the firebox and combustion residue from the smoke box, and blowing debris from the flues is done at the Bw ash pits. This operation is called "ausschlacken" or "slagging", and is normally completed in about thirty minutes. The locomotive grates dump the dead fire and debris into a pit beneath the locomotive where it is quenched with water. Dust and soot from the smoke box is removed at the same time and is also dumped into the pit.

Ash pits are emptied by various means. The more common are the use of a crane hoist and a bucket, or by using a conveyor hoist. Ashes and debris are removed from the ash pits, loaded into cars on nearby tracks and hauled away for disposal.

At most Bws, locomotives are coaled before they are sent to the ash pits.

The illustration below shows a simple Bw ash pit and the drawing on page 90 shows a more elaborate arrangement found in some Bws. The latter type can service two locomotives at one time.

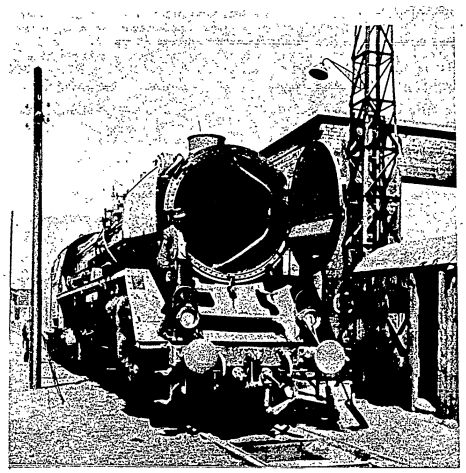


Figure No. 72

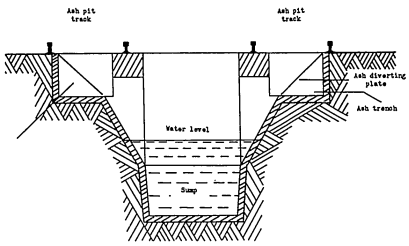


Figure No. 73

d. Watering. Locomotives are supplied with boiler water at the Bw by means of water points similar to watering penstocks used by railroads in the United States. An example of a Reichsbahn penstock is shown in the photograph below.

Most locomotive Bws have facilities for boiler water analysis and water treatment for the neutralization of harmful salts and the removal of other injurious substances. Formation of boiler scale, with its resultant low steaming efficiency and tube damage or deterioration, can be materially reduced by proper water analysis and treatment, and this process is an important phase of locomotive servicing at a Bw.

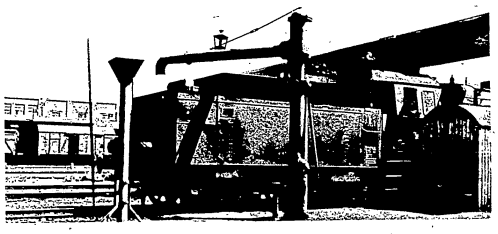


Figure No. 74

e. Sanding. Bw locomotive servicing also includes the replenishment of the stock of traction sand in the locomotive sand domes. The most common method of handling this operation is illustrated in the photographs on the next page. The sand is stored in a sand house either underground or on the surface, dried in drying ovens before delivery to the locomotive to prevent undue cohesion or lumping, and to remove moisture subject to freezing at low temperatures with resultant clogging of the sand system, and driven through a line under air pressure to an elevated sand tower head and delivered from there to the locomotive by force of gravity.

Figure No. 75

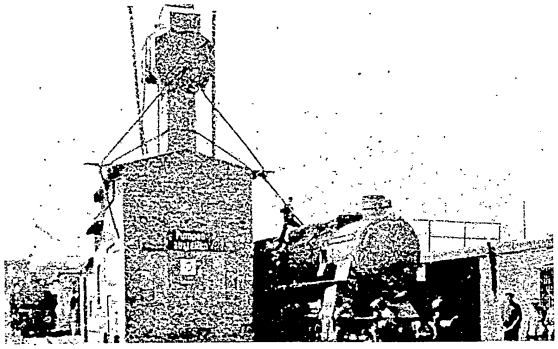


Figure No. 76

f. Washing. Bws operate locomotive washing facilities to keep the locomotives free from dirt, oil, rust, or other material which might be harmful to their metallic or painted surfaces. A variety of substances are used to assist in rapid and effective washing including water, steam, soap, detergents, chemicals, abrasive agents, etc.

Washing is usually the last step in Bw servicing, thus eliminating exposure of a newly cleaned locomotive to the dust and dirt which always attends the coaling and slagging operations.

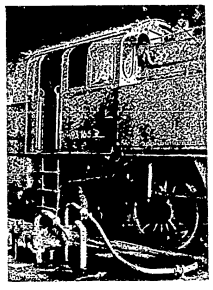


Figure No. 77

A Bw locomotive washing stand.

g. Bw locomotive maintenance and repair operations. Locomotive Bw's perform lower echelon maintenance and minor repairs to assigned locomotives in addition to the servicing already discussed. While no major repair or rebuilding of locomotives is normally undertaken by the Bw, all maintenance and repair tasks which entail no extensive specialized, or protracted operations or require no equipment and machine tools normally reserved to a major repair or erection shop, are performed by the Bw.

The principal types of work performed in locomotive Bw maintenance shops include pipe-fitting, blacksmithing, carpentry, millwright work, welding, painting, electrical system repair, lubricating, and replacement of minor parts.

3. THE LOCOMOTIVE REICHSBAHNAUSBESSERUNGSWERK (RAW). The Reichsbahnausbesserungswerk (RAW) is a major Reichsbahn installation in which locomotives undergo rebuilding, major repairs, or maintenance and repair operations surpassing the normal capability of a locomotive Bw.

There are twelve locomotive RAW's in the Reichsbahn system. They are distributed, with respect to location, among seven of the eight RBD's. RBD Greifswald does not have a locomotive RAW within its district of administration. RAW's are nominally designated according to their location, taking their name from the city in which they are located. Designations of the twelve RAW's within the Reichsbahn system and the RBD's in which they are located are as follows:

RAW Chemnitz	RBD Dresden
RAW Cottbus	RBD Cottbus
RAW Dresden	RBD Magdeburg
RAW Halle	RBD Halle
RAW Leipzig	RBD Halle
RAW Meiningen	RBD Erfurt
RAW Schlauroth	RBD Cottbus
RAW Schoenweide	RBD Berlin
RAW Stendal	RBD Magdeburg
RAW Templehof	RBD Berlin
RAW Wittenberge	RBD Schwerin
RAW Zwickau	RBD Dresden

a. Administration of the locomotive RAW's. The administration of the locomotive RAW's is the concern and responsibility of the Main Administration for Repair Shops (Hauptverwaltung fuer Reichsbahnausbesserungswerke) within the Ministry for Traffic.

The actual scheduling of locomotive repairs in RAW's is controlled by the locomotive Service Department (Abteilung fuer Lokomotivendienst) of the Main Administration for Locomotives (Hauptverwaltung fuer Maschinendienst). This ministry level department schedules all RAW repair on locomotives, issuing instructions to the RBD involved, stipulating to which RAW they are to be sent, when they are to go, the nature and extent of the repairs, and the limiting budgetary considerations pertaining to the repair schedule.

b. Locomotive RAW operations. The scope of RAW locomotive repairs is defined by category. These repair categories are designated by the symbols LO, L2, L3, L4, GR, and EI. The L categories are the more common, the bulk of all RAW work falling into those categories. The GR and EI categories are somewhat special and work of this type is scheduled and budgeted separately from the L categories.

GR means Generalreparatur (general repair). This special category applies to the extensive repair or erection work required to restore a locomotive of inferior condition to an approximate state of new locomotive performance standards. Eleven of the locomotive RAW's perform this type of repair operations.

The repair symbol EI means Ersatzinvestition (Replacement investment) and applies to RAW production accomplished through salvage from or restoration of inoperable locomotives in the war-damaged locomotive pool (Schadlokpark). Any locomotive, otherwise lost to service, which is added or returned to the operable pool through salvage or cannibalization of war-damaged locomotives is included in this replacement investment program and is restored under the EI repair category symbol.

An explanation of each repair category and the nature and scope of the work it entails appears in the following tabulation.

SYMBOL	NORMAL INCIDENCE	SCOPE OF OPERATION
LO	Irregular intervals, when required	Accomplished in all RAW's, minor damages repaired in any railroad shop, not necessarily in a large plant. (Exchange of bearings, cylinders, wheel bands, etc).
L 1	Same as LO	Heavier damages than LO but still not requiring heavy equipment.
L 2	Every 18 months; sooner if required	Typical of this class is the removal of locomotive wheels and axles for repair. Damaged pipes are repaired or changed, boiler leaks, new bearings installed and engine overhauled. Minor checks given to driving mechanism.
L 2 k	When required	In addition to wheel removal, requires either lifting or complete removal of boiler even though only the inside of the boiler needs repairs.
L 3	Intermediate check at 3 year interval	Boilers rigidly tested, dismantled and, if necessary, replaced. Drive axles turned down and built up; boilers removed, boiler stays replaced new pipes installed, drive rods replaced, cylinders over-hauled. Complete disassembly and overhaul, but paint not removed except on the boiler.
L 4	Main check, at 5-6 year intervals	Engine completely checked and repaired. Worn parts replaced, including wheel rims, bearings, brake parts, control levers, instruments, grates, and smokestacks. Turning down of axles. Complete overhaul to tender, including water tanks, coal bins, axle wheelsets, and bumpers. Paint removed by sand-blasting and chemicals from all parts of disassembled locomotives.

SYMBOL	NORMAL INCIDENCE	SCOPE OF OPERATION
GR	General repair	Any work required to restore a locomotive to new condition and performance standards.
EI	As directed by MFV	Addition or return to operable pool of a locomotive previously lost to service.

c. Characteristics of individual locomotive RAW's. The following paragraphs describe the characteristics of the individual locomotive RAW's, their locations, the locomotive series which they normally handle, production figures and employee strengths, based upon the analysis of numerous fairly reliable reports received during the years 1954-1957.

(1) RAW CHEMNITZ located in Chemnitz (now called Karl Marx Stadt) (UTM US 5333) is also referred to as the "Wilhelm Pieck" RAW. Repairs are performed on series 03, 18, 38, 39, 41, 43, 44, 52, 64, 74, 75, 80, 86, 89, 94 and 98 locomotives. The least amount of locomotives serviced was expected to reach 40 per month, however, a maximum of 20-25 is considered about average. Approximately 1,200 persons are employed, of whom 40% are estimated to be women.

(2) RAW COTTBUS located in that city (UTM VT 5334). Repairs are performed mainly on series 52, 55 and 56, with repairs also done on series 38, 43, 54, 74, 89, 94 and 96 locomotives. A monthly normal rate of 28-30 locomotives is maintained with difficulty, requiring about 3,000 workers (20% women), including approximately 150 apprentices (20% women). Repairs are sometimes delayed as much as 3 weeks due to shortages of material.

(3) RAW DESSAU located in Dessau/Sued (UTM UT 1046) repairs locomotives of motive power type other than standard gauge steam locomotives, employing a work force of approximately 650 persons.

(4) RAW HALLE is located in the northeastern suburbs of the city Halle, (UTM TT 9110). Repairs are performed on series 19, 38, 52, 55, 56, 64, 71, 73, 74, 80, 93, and 94 locomotives. An estimated 30-35 locomotives are repaired per month. During June 1956, 30 - L 4 repairs were accomplished. The RAW employes approximately 2,500 persons.

(5) RAW LEIPZIG also referred to as "Einheit" is located in Leipzig (UTM US 1791) near the rail station Leipzig/Paumsdorf). Repairs are performed on series 02, 03, 04, 38 and 57 locomotives. Normal output is estimated at 46 locomotives per month although this figure reportedly is seldom realized due to the lack of materials and parts. Personnel employed amount to approximately 2,400.

(6) RAW MEININGEN located in the northern part of that city (UTM PB 0103) has one department that repairs only 01 series locomotives, and maintains 25-30 intact locomotives on the RAW sidings, without assigned home, to replace those under repairs. Repairs are performed on series 03, 39, 44, 55, 56, 58, 61, 62, 75, 78, 92, 95 and 99 locomotives. A monthly average of 35 locomotives are estimated to be repaired including about 10 GR's; 75% are series 44, locomotives. The most frequent repairs involve the replacement of cylinders. An average backlog of 60 locomotives awaiting repairs would be considered normal. Approximately 2,500 to 3,000 persons of both sexes are employed.

(7) RAW SCHLAUROTH located in that city (UTM VS 9466) is one of the smaller locomotive RAW's with no normal capacity established. The RAW performs repairs on series 01, 86, 89, 91, 92 and 99 locomotives. The RAW has been known to repair 16 locomotives during a month and employs approximately 660 persons.

(8) RAW SCHOENWEIDE located in the Schoenweide district of Berlin (UTM UU 9119) devotes its maintenance and repair operation to the S-Bahn system. Its labor force is estimated to be approximately 5,000 employees.

(9) RAW STENDAL located in that city (UTM PD 9332) performs repairs on series 17, 23, 24, 38, 42, 50, 52, 64 and 91 locomotives. The RAW has been known to repair 58 locomotives, series 42, 50 and 52 in a month (Nov 53), utilizing approximately 4,000 employees.

(10) RAW TEMPLEHOF is located in the Templehof district of Berlin (UTM UU 9119). Repairs are performed on series 74, 75, 78, 92 and 98 locomotives. The RAW has been known to repair 32 locomotives series 74, 92 and 98 in a month and employs approximately 1,600 persons.

(11) RAW WITTENBERGE located in that city (UTM PD 8576) performs repairs on series 38, 57, 64, 80, 91 and 99 locomotives. The RAW has an estimated repair capacity of 12 locomotives per month and employs approximately 2,000 persons.

(12) RAW ZWICKAU frequently referred to as RAW "7 October", is located in that city (UTM US 2321). Repairs are performed on series 12, 18, 19, 38, 43, 44, 56, 58, 64, 84, 86 and 89 locomotives. The RAW has been known to repair 57 locomotives, series 56, 58, 86, 38, 43 and 44, during one month, and employs approximately 2,000 persons.

NOTE: RAW Blankenburg located at Blankenburg (Harz) (UTM) PC 3540 performs repairs to series 86, 89, 98 locomotives. A small RAW with a capacity of 7 to 8 locomotives per month, employing approximately 1,200 persons. Lack of nuts and bolts and other materials is reportedly so common at this RAW that workers waste up to 50 hours each per month, and cannibalization of locomotives awaiting repairs is a common practice. This RAW was dissolved in 1957, and its work taken over by RAW Potsdam. The site will be used for research and testing of Reichsbahn equipment and technical devices. It is now designated as an REW (Reichsbahnentwicklungswerk).

All RAW's experience difficulties due to shortages of materials and parts which in turn delay the return of locomotives to service. To accomplish repairs, cannibalization of motive power, or the "borrowing" of parts from other locomotives awaiting repairs, is considered a common practice. For example, a boiler will be taken from a locomotive awaiting parts so as to release a locomotive for service that only requires a boiler replacement. The same method is applied when other parts are needed and as a result many deadline locomotives are left standing on RAW tracks awaiting repair and replacement parts. Also, there are occasions when an RAW can not repair a locomotive because of lack of materials and Bw's having the needed materials are then assigned the repair task. Each installation engages in the production of furniture and other household items during slack periods in order to maintain its working force, when and if materials and parts become available. Because of the inconsistent rates of performance, no current production capabilities are available to establish a firm "norm".

4. FREIGHT CAR MAINTENANCE AND REPAIR. Deutsche Reichsbahn cars are assigned for operating service and control in much the same manner as its locomotives. Assigned to RBD's for operational control, they are further assigned to freight car RAW's for home stations. Maintenance and repair is provided by the RAW's assisted by their freight car Betriebswagenwerke (Bww's). These Bww's are subsidiary and subordinate to the freight car RAW's insofar as maintenance and repair functions are concerned. There are about 140 in the Reichsbahn system divided among 14 freight car RAW's.

While locomotive operation can be limited to service runs to and from their home Bw's, such operational restriction is not possible in freight car operation. System-wide circulation of freight cars is common practice in Reichsbahn freight traffic. In such practice, freight cars operate throughout the system without stringent regard for home station assignment. Reichsbahn car service regulations require, however, that all freight cars be loaded home in all cases where traffic conditions permit.

5. THE FREIGHT CAR BETRIEBSWAGENWERKE (Bww's). Freight car Bww's are freight car maintenance and repair shops established throughout the Reichsbahn system. They perform the lower echelon maintenance and repairs necessary to keep the freight cars in operating condition. This minor repair service is usually provided only to cars assigned for home station to the parent RAW of the Bww.

The system-wide circulation of RAW-assigned freight cars mentioned in the preceding paragraph tends, however, to prevent repairs by a Bww from being limited strictly to cars assigned to its parent RAW. To be kept operational, freight cars frequently require emergency repairs. When of true emergency nature, these repairs are usually accomplished at the nearest Bww capable of making them.

As an example, a freight car assigned to RAW Dresden and normally accorded maintenance service at Bww Bautzen might be "shopped" for emergency repairs while in service near Neuruppin, a point considerably distant from its home RAW and within an entirely different RBD. Inasmuch as the need for emergency repair arose at Neuruppin, and that Bww being capable of providing it, the repairs would be performed there despite the actual home assignment of the car being the parent RAW of Bww Bautzen. This is true of all Bww repair shops-emergency repair service being provided to all cars coming to them on that basis irrespective of their home station assignment.

Routine maintenance and non-emergency minor repairs, however, are the responsibility of, and are provided by, Bww's within the jurisdiction of the RAW of home station assignment.

Maintenance and repair services performed by Bww's are limited generally to those jobs which do not require extensive, specialized, or protracted operations, or demand use of equipment and machine tools normally reserved to freight car RAW's.

6. THE FREIGHT CAR REICHSBAHNAUSBESSERUNGSWERKE (RAW's). Freight car RAW's are Reichsbahn installations in which major repairs, overhaul, rebuilding, or other types of freight car maintenance surpassing the normal capability of the Bww's are performed on Reichsbahn freight cars. When such repairs are needed, the car is withdrawn from service, sent to the RAW to which it is assigned and returned to service at its home station upon completion of the scheduled repairs.

In the Reichsbahn system there are twenty major freight car repair plants, consisting of RAW's (Reichsbahnausbesserungswerke), Wa's (Waggonausbesserungswerke) and other repair and manufacturing plants.

FREIGHT CARS		TANK CARS ONLY
RAW Berlin	RAW Eberswalde	RAW Jena
RAW Brandenberg	RAW Magdeburg	RAW Niedersachswerfen
RAW Potsdam	RAW Malchin	Waggonfabrik Quedlinburg
RAW Tempelhof	WA Hoyerswerda	Reparaturwerk Magdeburg
RAW Gruenwald	WA Friedland	Kuehltransit Leipzig
RAW Dresden	WA Perleberg	
RAW Zwickau		

a. Administration of the freight car RAW's. Freight car RAW's, like the locomotive RAW's, are administered by the Main Administration for Repair Shops within the MFV.

The scheduling of freight car repair operations by RAW's, however, is controlled by the Freight Car Department (Hauptabteilung Gueterwagen) of the Main Administration for Rolling-stock. This ministry level department schedules major car repairs to be performed by the RAW's, issues instructions to the RBD involved concerning which cars are to be dispatched to the designated RAW, when they are to be sent, and stipulates the nature and extent of the repairs to be made.

b. Freight car RAW operations. The RAW to which a freight car is normally assigned for major repairs is determined by the type of car involved. RAW's are established and designated to handle specific car types. Cars scheduled for overhaul or repair in an RAW are sent by the controlling RBD to the appropriate RAW which handles that specific type of car. This specialization in specific car types by the various plant is illustrated by the type of cars handled by RAW Magdeburg. This RAW performs major repairs on all "G" group cars of the 05, 06, 07 series; "Gm" group cars of the 11 and 12 series, "Gl" cars of the 12 series; "Glt" cars of the 13 series; "Ot" cars of series 45 and "Ok" and "Okk" cars of the 46 series. The Reparaturwerk Magdeburg performs major repairs on all "Z" group cars numbered 52-30-00 through 52-39-99 of the series.

The various types of freight cars handled by the individual RAW's are shown in the table below.

The major repairs performed in freight car RAW's are those required to restore freight cars to good operating condition whether their state of disrepair has resulted from age and service, or from damage sustained by accident, or by operational deterioration. Such repairs range from work done on frames, wheel sets, draft gear, buffers and assemblies, brake systems, and superstructures, to complete overhaul or rebuilding of inoperable cars from the wheels up.

FREIGHT CAR RAW REPAIR ASSIGNMENT BY CAR TYPE

	CAR GROUP AND SERIES
Berlin, RAW	GK 17, T 18, TT 19, On 49, R, Rm 61, Rmm, Rb 62, Ro 63, SSt 66, H 68.
Brandenburg, West, RAW	Gw 01, G 02, Gm 10, Owp 24, Op 25, Om 33, O 34, Omm 40, On 48, X 90.
Chemnitz (Karl-Marx Stadt), RAW	Pwg 88 (including Saxon and South German types and others with metal hinges).
Dresden, RAW	K, Km, Kmm 21, O 30, O 31, Omm 39, Omm 43.
Eberswalde, RAW	Om 37, Om 38, Om 4, RR 60, S, St, Sk, Sm 64, SS 65, Omt 83 (reconstructed from Bitterfeld 37 series).
Friedland, Wa	XX 90, OO, OOk 47, narrow gauge only.
Grunewald, RAW	O 29
Hoyerswerda, WA	O 26, Om 36.

	CAR GROUP AND SERIES
Jena, RAW	Zw, ZZw 50, Z, ZZ 51, ZZ 52-40-00 through 52-49-99, ZZ 52-70-00 through 52-79-99, ZZ 52-97-00 through 52-99-99, ZZ 53-20-00 through 52-29-99, ZZ 53-40-00 through 53-49-99 (All Kesselwagon)
Leipzig, Kuehltransit Verkehrs, A.G.	Z 52-15-00 through 52-17-99, Ot, OOt, KKt 55, Gk, Gf, T 56; Special 57, O, X, R, S, 58, G, K, 59, Z, ZZ 54-10-00 through 54-29-99.
Magdeburg, RAW	G 05, G 06, G 07, Gm 11, Gl 12, Glt 13, Ot 95, Ok, Okk 46.
Magdeburg, Kesselwagen Reparaturwerk (tank car repair)	Z 52-30-00 through 52-39-99
Malchin, RAW	Op 27, X 89
Niedersachswerfen, RAW	Z 52-50-00 through 52-69-99, Z 52-80-00 through 52-96-99, Z 53-01-00 through 53-19-99, Z 53-30-00 through 53-39-99 (All Kesselwagens)
Perleberg	Narrow gauge only
Potsdam, RAW	G 03, V 23, G 04, GG 15, GGl1 20
Quedlinburg Waggonfabrik	Z 52-01-00 through 52-14-99, Z 52-18-00 through 52-29-99, Z 53-50-00 through 53-89-99, Zko, ZZko 54-01-00 through 54-09-99, Z 54-30-00 through 54-32-99 (Kessel-Topf and Kohlenstaub-wagen)
Tempelhof, RAW	SS 65 (except SSy), SS 67
Zwickau "7 October", RAW	KKt 22, Oc 28, 01, Oml 32, Om 35, Omm 42 Omm 44, OOt, OOnt 47 (reportedly also repairing considerable numbers of Z and Zw, ZZ and ZZw)

c. Volume of RAW freight car repair. The current shortage of car parts, raw and finished materials, and low production generally throughout the GDR metals industry, seriously affect the volume of repair work turned out by the freight car RAW's. Although the existing plant facilities for freight car maintenance and repair in the GDR are somewhat limited, these installations could more nearly meet the current Reichsbahn car repair requirements if badly needed parts and materials were available to them in quantities even reasonably sufficient to their needs.

The Reichsbahn attempts to maintain a daily "working" pool of at least 120,000 freight cars of all types. This, however, depends largely upon the RAW capability to perform car repairs in such volume and at a rate which will keep the number of inoperable cars awaiting repair at a minimum level and return repaired cars to the "working" pool in the minimum time.

Freight car repair backlogs at the repair plants, however, have usually prevented the Reichsbahn from realizing the desired 120,000 car daily "working" pool. Due to a wholly inadequate volume and rate of RAW repair output, the working car pool has fluctuated between 105,000 and 125,000.

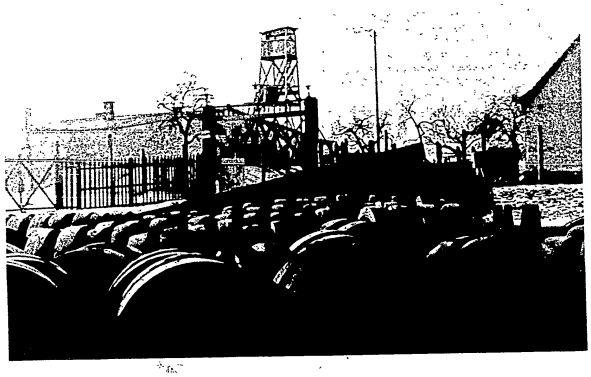
7. PASSENGER CAR MAINTENANCE AND REPAIR. Seven passenger car RAW's and two Wa's furnish the maintenance and repair services required to keep the passenger and baggage cars of the Reichsbahn in operating condition. Repair work in these plants ranges in scope from normal operating repairs to complete overhaul and rebuilding. Conversion of passenger cars from one type to another and special adaptation to diversified uses is also performed.

The designation and locations of the Reichsbahn passenger car repair plants are as follows:

RAW Chemnitz	RAW Halberstadt	WA Perleberg
RAW Gotha	RAW Wittenberge	
RAW Delitzsch	RAW Greifswald	
RAW Leipzig	WA Friedland	

SECTION V

Operating Fuels



and

Maintenance Materials

SECTION V

OPERATING FUELS AND MAINTENANCE MATERIAL

1. OPERATING FUELS AND ELECTRIC POWER

a. Propulsion types of Reichsbahn motive power. Motive power of the Deutsche Reichsbahn is limited to the three following propulsion types:

(1) Electrically-driven locomotives deriving power from an external source.

(2) Diesel-electric or gasoline-powered locomotives.

(3) Coal-fired, steam-driven locomotives.

b. Electric power. The use of transmitted electricity to drive Reichsbahn motive power is limited to the Halle-Magdeburg line, and the Bitterfeld-Dessau line. Plans are in effect to complete the electrification of the Halle-Bitterfeld-Leipzig triangle in 1958-59. In addition to these lines there are electrically powered passenger cars (Triebwagen) operating over the lines of the Stadtbahn (S-Bahn), which serves Berlin and its environs.

c. Petroleum fuel. The use of diesel or gasoline-powered locomotives by the Reichsbahn is limited to a very small number of self-powered cars in intercity operation over a relatively few lines, and to switching and terminal operations at only a small number of points. This limited use of diesel and gasoline-powered locomotives obviates any major requirement by the Reichsbahn for petroleum products as operating fuel.

d. Coal

(1) Types of coal:

(a) Brown coal (Braunkohle) from domestic resources represents the largest percentage of coal used by the Reichsbahn since deposits of brown coal are abundant and widely distributed throughout East Germany. In its natural state, brown coal is high in moisture, containing as much as 60% in some instances, and is subject to rapid deterioration; thus most of this coal used by the Reichsbahn is in the form of briquettes.

(b) Brown coal briquettes require about 2.6 tons of raw brown coal to make one tone of briquettes. Briquettes are formed by the crushing of brown coal into uniform size, heat drying, and applying pressure to a mold form. Transformation of brown coal into briquettes decreases the moisture content and increases the heat content ton-wise. Stockpiles of this fuel are also subject to rapid deterioration, and unless care is exercised when stored, the briquettes are also subject to being crushed.

(c) Bituminous (Steinkohle) coal from domestic sources is extremely limited, therefore the Reichsbahn supply is also limited. East Germany's dependence upon imports from Poland, USSR, and Czechoslovakia often causes the Reichsbahn to revert to the sole use of brown coal primarily in briquette form. Although this type of coal is termed "hard coal", (true anthracite is practically non-existent in East Germany) by comparison it is more equivalent to soft coal found in the USA. However, the calorific value is varied and usually lower. The moisture content averages between 6-13% and often contains foreign matter which also lowers the quality.

(d) Magerkohle (Low grade Anthracite). During the early part of 1957 the Reichsbahn, because of the requirements of industry for Polish bituminous coal, began to also use a low grade anthracite coal (Magerkohle). Because of its granular form and high ignition point, the Reichsbahn reportedly has had difficulty firing this coal, with a resultant loss of locomotive steam pressure.

(2) Briquette unit tons (BUT) or Brikett-Einheit-Tonnen (BET) is the term used by the Reichsbahn in conjunction with planned or actual locomotive coal consumption. Due to the wide difference in the calorific values of the types of coal used to fire locomotives, the Reichsbahn converts the actual tonnages of coal into briquette unit tons. Each coal, based upon experience factors, is given a corresponding value to briquettes. Briquettes being one (1.0), bituminous coal is valued at 1.5 or 1 1/2 times higher in calorific value. USSR Magerkohle is valued at 1.0, while raw brown coal, being less in calorific value, is appraised at .4. By taking the actual tonnages of each type of coal and multiplying this by its own value, the sum total of all coal would be the BUT's on hand. The Reichsbahn, knowing the rate of consumption of its locomotives and the density of traffic planned, divides the planned consumption figure into the total stockpiles of BUT's, thus arriving at the number of days' supply of coal on hand. Since conditions may vary at any time during the plan, the number of days' supply on hand fluctuates.

(3) Consumption Requirements, as mentioned above, are a constantly changing factor. The total daily locomotive consumption rate varies between 20,000-25,000 BUT's, with brown coal briquettes comprising the greater portion of coal used. The introduction of larger amounts of bituminous coal increase the BUT totals, making it more advantageous to the Reichsbahn to obtain larger stocks of bituminous coal. Aside from the fact that bituminous coal is the ideal fuel for their operations, less storage space and transportation costs are required. On the other hand, raw brown coal and briquettes create storage problems, and due to the volume required per one BUT, are costly to transport, particularly when the Reichsbahn operates between 3,100-3,300 locomotives daily.

(4) Firing of locomotives using briquettes or a combination of coals forced the Reichsbahn to modify most of its locomotives. A few locomotives were modified to burn brown coal dust, but these are in the minority. The majority of locomotive fire boxes, previously designed to burn bituminous coal, have been equipped with a dead fire box to prevent loss of ignited fuel and obtain a better distribution of combustionable air through narrowed grates. When brown coal or briquettes are mixed with bituminous coal without the converted grates the brown coal and briquettes disintegrate when ignited, drop through the grates and burn or rot wooden ties. Also, the brown coal sparks emitted through the stack have caused numerous field and forest fires. The excessive amount of ash and coal dust plagues the populated route of the rail line, not to mention the greater physical effort required by the fireman to satisfy the larger requirements of coal to maintain proper steam pressure. Therefore, locomotives are issued fuel based upon the classification of their trains. For example, Soviet interest and international trains are issued a greater proportion of bituminous than regular freight and passenger trains, which operate almost exclusively on briquettes.

e. Reserve coal stocks. As long ago as 1953 the Soviets requested that the Reichsbahn maintain at least an eight day reserve supply of coal as an operational margin of safety. This request was the basis for the MFV directive to maintain such a level; however, the required flow of traffic placed the amount of coal needed for this reserve far beyond the capability of the East German Ministry for Fuel and Power to supply the Reichsbahn. During the year 1955 the Reichsbahn was to learn this fact well since at no time did the reserves ever rise above 6.4 days supply. The situation was no better during the early part of 1956 even though brown coal was predominately used throughout the system. During the winter months of 1956 the situation became worse when coal levels dropped to a low of 2.2 days in November and only averaged 3.5 days for the month. During this time some stations were reported to be completely out of coal and locomotives were unable to operate. The needs of industry for rail transportation and the devastating effects upon the economy of East Germany when rail operations are curtailed, undoubtedly awakened the Ministeries concerned and also gave the Reichsbahn additional leverage to exert pressure for a more equitable and realistic share of coal. As Polish hard coal imports increased in the early months of 1957, so did the East German brown coal mining production. These two sources of supply, with the approval of the Ministries, started the Reichsbahn coal reserves climbing to unprecedented high levels. Previously, the Reichsbahn never attained a higher level than the October 1952 level of 12.5 days supply. By 26 March 1957 the reserve had gradually risen to about 8 days, or the goal established by the Soviets. This increase was brought about by the low volume of civilian and military traffic, heavy coal imports from Poland and Czechoslovakia, plus good weather which enabled the East Germany brown coal production to increase. It was not considered likely at that time that the reserve would increase significantly; however, by 24 April the reserve supply had risen to about 16 days, placing the Reichsbahn in a position to support sustained military rail movements for better than two weeks, a position believed to be the minimum rail transportation requirement for the initiation of hostilities. However, as reserve stocks continued to rise (23.4 days on 22 May) and additional information was gathered it was determined that the coal reserves had been built up as an economic factor since industrial stocks, power plants and state reserves increased as well as the Reichsbahn reserves. Reserves continued to rise each month until an unequaled level of 31.4 days was attained on 8 July, falling off to about 25 days during August 1957. With minor fluctuations, this level has been maintained through November 1957; and it is believed that every effort will be made to continue in this favorable position.

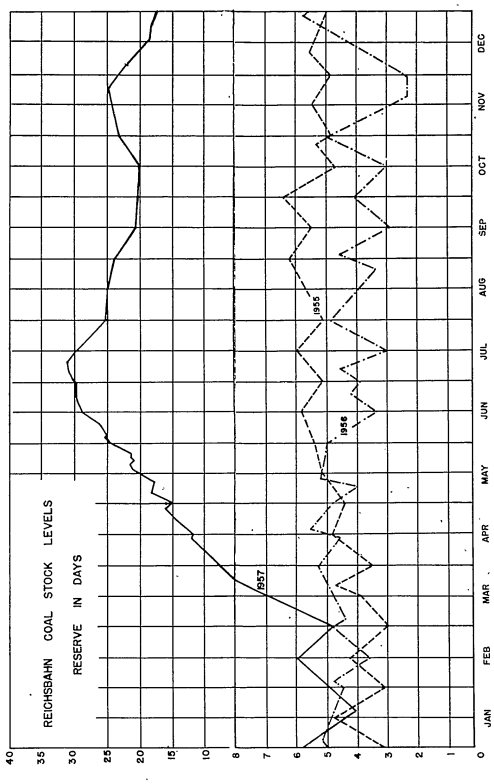


Figure No. 78

2. MAINTENANCE MATERIAL

a. Locomotive parts. Normal Reichsbahn procedure pertaining to locomotive parts supply calls for advance procurement and stocking at locomotive RAW's of a parts inventory based upon anticipated requirements. Under this arrangement the volume and types of RAW repairs scheduled by the Main Administration for Locomotives determine the nature and quantities of locomotive parts to be kept on hand for normal needs or to be obtained by special procurement.

This normal procedure, however, has not been possible under post-World War II conditions. Most locomotive parts are not available in sufficient quantities to permit stocking. The maintenance and repair schedules of the locomotive RAW's and Bw's are continuously disrupted by critical shortages of castings, forgings, tubing, and similar semi-finished metal products essential to locomotive upkeep. Salvage of parts from locomotives, many of which also are awaiting repair and return to service, is frequently the only source of essential parts available for the work at hand. This is particularly true of such locomotives parts as boiler and flue tubes, main and side rods, and driving-wheel tires.

Many locomotive repair parts are readily adaptable to shop fabrication by RAW craftsmen. Considerable quantities of such parts are produced in this fashion. As shortages of parts normally obtained from outside sources became increasingly acute, such local manufacture in RAW shops was expanded to include a wider diversity of items and their output increased. The scope of this RAW fabrication of locomotive parts depends largely upon the availability of machine tools and material.

Until requisite types and alloys of steel, and a supply of copper and the non-ferrous alloys become available in quantities far greater than at present, the existing acute shortage of locomotive repair parts will prevail.

b. Car repair parts. Car maintenance and repair operations performed at the car Bww's and RAW's also require an extensive and varied assortment of car parts and materials. The principal items include buffer components such as housings, shafts, heavy springs, and fittings; coupling devices; chain and chain components; brake parts and fittings; car frame members; wheel sets; and many other parts mainly in the form of special castings and forgings. Various materials other than specific parts also are needed in quantity. These materials include lumber, car hardware, sheet steel, plates, rolled shapes such as round and flat bars and angle iron, and assembly hardware such as nails, screws, and bolts.

The existing acute scarcity of materials is felt heavily by the freight car RAW's, as well as by their normal suppliers, and production of car parts suffers generally. The supply of freight car repair and replacement parts has been reduced to a wholly inadequate figure. As with locomotive parts, little improvement can be expected in the near future.

c. Cross ties. The Reichsbahn used three types of cross ties both in the construction of new track and for tie replacement. Ties of rolled or pressed steel, reinforced concrete, and treated wood were used. Steel is no longer used due to the higher priority needs of industry, and limited use of concrete ties is practiced on pre-selected stretches of main lines and within stations. The fact that these are no longer confined to merely station and yard areas, where reduced speeds are the rule, seems to indicate growing confidence in this type of tie, though criticism is still heard. Present use, therefore, is limited principally to wooden ties produced within East Germany and supplemented by imports. In 1956 a total of only 152, 346 ties were furnished to the Reichsbahn and during the first five months of 1957 only 72, 100 wooden ties were delivered to the Ties Depot and Treatment Plant at Zernsdorf. By 1956 the tie shortage had become so critical that an experimental plant for the pressing of ties from waste wood was built at Klosterfelde, north of Berlin. This plant was to turn out 100, 000 ties in 1957. But the alleged "epoch-making" success with them has been so short-lasting that their use has now been prohibited for the time being "except for experimental purposes by special direction of the Ministry for Traffic", or for testing on private sidings. Wooden ties are very difficult to obtain in Germany in spite of the high percentage of forest land, most being imported from such countries as Rumania and Brazil. Tie-treating facilities are also inadequate. Present cross ties supply, therefore, does not meet the demand for either new construction or normal maintenance replacement.

d. Rail. The proper maintenance of existing Reichsbahn track and construction of new trackage has been seriously handicapped by the critical shortage of suitable rail. Rail production in East Germany is well under the current requirements and this situation is not alleviated by the amounts of imported rail and fittings. Total imports and East German production of rails for Reichsbahn usage amounted to 71, 031 tons in 1956 and were considered insufficient for maintenance, even if there had been no requirements for new trackage. During the first five months of 1957 the Reichsbahn received the following amounts of rail:

From USSR (Type R 50, weighing 50 kg per meter)	8, 773 metric tons
From Czechoslovakia (Type S 49, weighing 49 kg per meter)	984 metric tons
From the West, via Holland	1, 036 metric tons
From rail plant Maxhuette at Unterwellenborn (including 7, 602 tons Class I rail)	13, 353 metric tons
	24, 146

Imports during this period from the Soviet Union reached a high of 2, 304 tons in February, but fell to 1, 227 in May, the lowest monthly shipment thus far in 1957, and considerably lower than in any month of 1956, when 4, 386 tons arrived from USSR in April and 3, 742 in May.

Domestic production during this same period remained in the usual monthly range of 2,000 to 3,500 tons. According to one report, the plant management itself admitted that only 36% of its rails could be used by the Reichsbahn, while about 25% had to be re-melted and the remainder used for structural purposes or factory sidings. The rails stored in the eight RBD's at the end of each month varied between 3,330 and 3,518 tons, including between 1,797 and 1,915 tons of 15 meter lengths. However, it is possible that a good part of these are salvaged rails, so these figures may be no certain indication of the rate of turnover in the stock of rails received during a month. On the other hand, rail renovation plans have long been in arrears, so that depot stocks at a month's end could represent total retracking capability. Demands of the national economy for steel, and export commitments to the Soviet Bloc, permit only a minimum portion of East German ingot production to be allocated to rail manufacture-- an amount insufficient at best to meet normal rail requirements of the Reichsbahn.

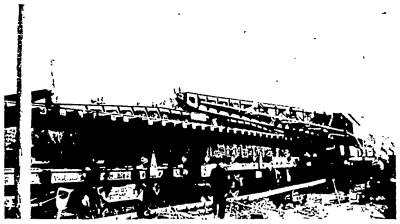


Figure No. 79

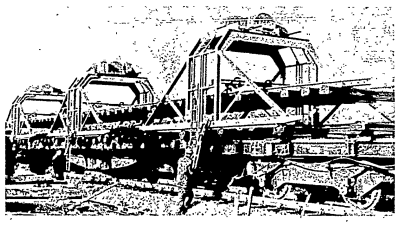


Figure No. 80

The special track laying equipment shown above is reported as having been instrumental in completion of a stretch of rail line ahead of planned schedule. A gantry crane lifts a girder that is attached to 90 foot sections of prefabricated track and swings the sections into place upon prepared road beds. The girder is attached to the track sections to prevent buckling during the process. Overhead transporters traveling on rollers fastened to the beds of the flat cars move the track sections up to the crane.

SECTION VI

Reichsbahn

Operational Procedures

SECTION VI

REICHSBAHN OPERATIONAL PROCEDURE

The Technical Plan (Der Technische Plan)

The day to day operations of the Reichsbahn devolve from a work requirement, which is laid down monthly by the traffic Ministry, commonly referred to as the Technical Plan. Shortly before the beginning of each month this plan is sent out by teletype to each of the RBD's in concise form. It is essentially a statement of what freight traffic achievements are expected of each. In brief the Plan states:

a. The number of cars (usually in terms of double axles, i.e., 2-axle cars) each RBD is to load daily.

b. The number of cars each RBD is to unload daily.

c. The number of cars both empty and loaded which is to be moved daily between the RBD's.

d. The total number of cars to make up the working car pool.

e. The number of cars to be engaged in international traffic.

A typical Technical Plan for the entire Reichsbahn reads as follows:

	Loadings	Unloadings	Inter-RBD	Working Car Pool	Transit Traffic
Daily:	38,500 d/a	36,800 cars	55,000 cars	124,000	6,000
				(57,000 empty)	
				(67,000 loaded)	

To some extent the Technical Plan is made up on the basis of experience, i.e., the requirements of corresponding months in the past. On the other hand, anticipated requirements, which may vary greatly, must be incorporated. For example, the Soviets may decide to hold maneuvers at a different time than is usual. The Technical Plan would reflect this.

In another sense the Technical Plan is a translation of the over-all East German Economic Plan (Wirtschaftsplan); and each succeeding year can be expected to reflect the increasing demands of the East German economy on the rail transportation system. The difference between the increasing demands of the economy and what the Reichsbahn knows from experience it can accomplish is becoming a perpetual nightmare to Reichsbahn planners. This is so because the Reichsbahn no longer has sufficient trackage, reserve cars and personnel to fulfill adequately even current requirements. Thus it is no surprise that the Technical Plan has not been consistently fulfilled for the past two years, and that much effort is now going into ways and means of shifting more of the transport burden to waterways and highways.

The Technical Plan is decided on each month after the individual RBD's have formulated their own requirements. Their requirements are worked out in the form of total tonnage by type cargo, and the number of cars required to move this tonnage. These RBD plans of course, are compiled on the basis of the prognostications of both the commercial shippers and the military. These RBD plans are often referred to as the RBD Transport Plan.

The Role of the Dispatcher

Up to 1954 the Reichsbahn was unable to load or unload more than an average of 31,000 cars a day. As indicated previously, this was insufficient to keep pace with growing economic requirements. Apart from the deficiencies of rolling stock, trackage, personnel problems and the faults of shippers and receivers, the lack of clear-cut movement control authority (there was constant friction between Zugleitungen, the Lokleitungen and Wagenleitungen, with each blaming the other for non-fulfillment of plans) appeared to be a deficiency that could be eliminated with good prospects of improving performance. This problem was evidently discussed with the Soviets, because shortly after Minister Kramer's return from a Moscow meeting in 1953, word went out from Berlin (proposed by Central Committee of the SED and approved 16 April 1953 by the GDR government) that the Dispatcher system, used so successfully in the Soviet Union (which in turn had adopted it from the States), would be introduced into East Germany as the panacea for the Reichsbahn's ills. There was much opposition to Kramer's order, but after the system was introduced and successfully tried out in RBD Erfurt in 1954, it gradually spread throughout the Reichsbahn, having been more or less completed by September 1955.

The result of the adoption of the Dispatcher system can be measured in terms of increased car loadings and unloadings which now average about 35,000 daily, or even several thousand more during peak periods. This achievement represents only a small gain when viewed in the light of the expanding economy, and not even the best Dispatchers can squeeze much more out of the Reichsbahn. If the rather system were to be restored to its pre-war conditions, then, of course, the Dispatcher system could insure success. That day, however, appears very remote so far as the Reichsbahn is concerned.

The Dispatcher system basically concentrates all operating authority in the hands of one entity. At the Ministerial level this is the Chief Dispatcher (Chefdispatcher) and his Main Dispatcher (Hauptdispatcher) organized into a Main Dispatcher Management or Hauptdispatcherleitung (HDL). At RBD level it is the Regional Dispatcher (Bezirksdispatcher) and his Head Dispatcher (Oberdispatcher). These officials make up the Regional Dispatcher Management or Oberdispatcherleitung. At RBA level comes the Area Dispatcher (Amtsdispatcher) and his Brigade Dispatcher (Brigade Dispatcher), They comprise the Area Dispatch Management or (Amtsdispatcherleitung (DL) Lastly, at the station level, comes the Station Master (Dienstvorsteher) and his station Dispatcher (Bahnhofsdispatcher).

The organizational structure of the Dispatcher system of the Reichsbahn is reproduced at the end of this Section as a ready reference to the following description of the work of the Dispatchers at Ministerial level. This level has been chosen for description because it reflects and incorporates the work of all subordinate dispatchers, and illustrates the over-all importance of the top echelon to Reichsbahn operation as a whole. Of course, the functions handled by the Chief and Main Dispatchers are likewise performed by all the lower echelons of Dispatchers, but in decreasingly limited scope.

The Chefdispatcher

The Chefdispatcher Section of the Hdl operates eight hours daily, seven days per week. Its duties are functional or directive, in contrast to the Hauptdispatcher (Main Dispatcher) section, which is operational. The Chefdispatcher Hans Maeder, is responsible for all operational activities of the DR. He is further responsible for establishing the monthly technical plan of the DR in collaboration with the Central Transport Committee (ZTA) of the Ministers Council of the GDR. The Chefdispatcher issues daily orders and briefings concerning the operational tasks of the current day to the Bezirkdispatcher (District (Rbd) Dispatcher) of the Odl of each of the eight Rbds. These orders and briefings are issued daily at 0740 hours during a 20-minute conference, which is conducted over a telephone-line hookup, all Bezirkdispatchers participating. The Chefdispatcher decides on matters concerning the utilization, increase, or decrease, of the rolling stock reserves, and motive power. At 0900 hours, daily, the Chefdispatcher conducts a conference at his office with the department heads of the Hdl's corresponding Chefdispatcher Section. This conference is also attended by a representative of the HV Maschinenwirtschaft (Maintenance of Locomotives) of the Staatssekretariat fuer Operation Dienst der DR MFV; a representative of the HV Wagenwirtschaft (Maintenance of Rolling Stock) of the Staatssekretariat fuer Operativen Dienst der DR, MFV; a representative of the Staatssekretariat fuer Kraftverkehr (State Secretariat for Automotive Traffic), MFV; and a representative of the Staatssekretariat fuer Schiffahrt (State Secretariat of Navigation), MFV. The daily agenda of the conference are the dispatching operations and requirements for the current day, and a preview of the dispatching operations which may be expected the following day.

The Hauptdispatcher does not participate in this conference, but is briefed after it, by the Chefdispatcher, concerning all details with respect to the operational service.

In order that the Chefdispatcher may properly discharge his duties, his section is subdivided into the following departments:

Referent fuer Fahrdienst (Specialist on Train Movement Control)

The current Referent fuer Fahrdienst is Karl Lehmann. The department controls the movements of all passenger and freight trains. This includes marshalling yards, operations, train movements across the GDR border, and the movement of special government trains (VIP). The Referent fuer Fahrdienst handles all complaints pertaining to timetable schedules or movement of trains. In this connection, he makes suggestions to the timetable department (Fahrplanwesen) of the HV Betrieb und Verkehr (Main Administration for Operations and Traffic). The Referent fuer Fahrdienst is the first deputy of the Chefdispatcher, and as such, is supposed to be fully informed, so that he can replace the Chefdispatcher for an extended period of time if necessary. The Referent fuer Fahrdienst and the Chefdispatcher participate in meetings of the ZTA, since he is familiar with the traffic requirements of the Five Year Economic Plan and knows freight requirements details resulting from trade agreements between the GDR and other countries.

Referent fuer Wagendienst (Specialist on Rolling Stock)

The current head of the department is Guenther Westphal. The department supervises the supplying of the Rbds with the required rolling stock. In addition, the Referent fuer Wagendienst prepares a monthly statistical operational activities report (Leistungsermittlungsbericht) for the Chefdispatcher. The statistical form covers only the operations from the first day of each month to the 25th day inclusive. This report serves as a basis for preparing the Technical Plan of the DR. The Referent fuer Wagendienst is the person who actually prepares and is responsible for the monthly technical plan which the Chefdispatcher signs. The Referent fuer Wagendienst and the Referent fuer Wagenregulierung (Regulating flow of Empty Cars) collaborate to establish the monthly technical plan concerning the adjustment of the number of freight cars which will be available to each of the Rbds. The Referent fuer Wagendienst is kept informed about the number and types of all freight cars of the DR and their distribution to Rbds. He is also informed on number and types of cars which are requested by the Rbds for military transports.

Referent fuer Lokbetriebsdienst (Specialist on Locomotive Operations)

The present Referent fuer Lokbetriebsdienst is Konrad Jeschonnek. He is kept informed about the operational locomotive pool, broken down by types and Rbds; the number of damaged locomotives and those undergoing repair; the number of locomotives in reserve at the various Rbds; the total number of locomotive operation hours broken down to Rbds; the amount of coal reserves by Rbds; the daily coal consumption in tons by Rbds.

Referent fuer Wagenregulierung (Specialist on Empty Car Movement Flow)

Richard Gisa heads this office. He is responsible for the proper distribution of the rolling stock among the various Rbds. To discharge his responsibilities he collaborates with the Referent fuer Wagendienst. Gisa is informed on the needs for empty cars for each Rbd, on the number and types of cars of the DR, broken down by Rbds, and on the number of loaded and empty cars within the DR at any time. He is informed on all details of the Technical Plan, and on the construction of new cars by type and number. He possesses the same degree of knowledge concerning military transports as the Referent fuer Wagendienst.

Auswerter (Evaluator)

The present evaluator is Rudolf Leonhard. He is the efficiency expert on all operational matters and, therefore, is informed on all statistical and/or operational reports. He prepares the monthly, quarterly, and annual analytical reports and statistics.

Sachbearbeiter fuer Unregelmaessigkeiten und Statistik (Specialist on Irregularities and Statistics)

The Sachbearbeiter, Wilhelm Sabadill, is assistant to the evaluator and is equally well informed on all operational matters of the dispatcher service. He handles complaints and prepares statistics on irregularities concerning loadings, time schedules, and other operational activities.

The Main Dispatcher and Assistants

The Hauptdispatcher (Main Dispatcher)

The office of the Hauptdispatcher works 24 hours daily. There are four Hauptdispatcher who work, consecutively, eight hours each, followed by a 24-hour rest period. The Hauptdispatcher section is the operational section. The Hauptdispatcher receives his briefing and required orders from the Chefdispatcher. While on duty, the Hauptdispatcher is responsible for supervising the entire operational service of the DR. He assists, or gives advice to, the Oberdispatcher (Regional Dispatcher) of each of the eight Rbds. In cases of irregularities, and operational difficulties, he takes measures to avoid threatening emergencies, or remedies operational troubles by adopting such measures as detouring trains, directing rolling stock from one Rbd to another, or drawing on the rolling stock reserve. He is personally responsible for the handling of all special government trains (VIP). One hour after the start of his shift, the Haupt-dispatcher conducts a conference with the Oberdispatchers of the eight Rbds via telephone hookup. The Oberdispatchers give oral reports on the probable activities which are expected during the next eight hours, including actual or expected difficulties, and on locomotive requirements. Unloadings are reported separately by the Oberwagendispatchers (Regional Car Dispatchers) of the Odl to the Hauptwagendispatcher (Main Car Dispatcher) of the Hdl. After the conference the Hauptdispatcher gives a short briefing to the Chefdispatcher (only during daytime). Every 24 hours the Hauptdispatcher Section renders a statistical report on the operational activities of the day. The report is made to the Chefdispatcher, Hdl. The form on which the report is made is called "Arbeitsblatt des Hauptdispatchers" (Work sheet of the Main Dispatcher).

To discharge his duties efficiently the Hauptdispatcher has the following assistants:

Hauptlokdispatcher (Main Locomotive Dispatcher)

His duties are analogous to those of the Rererent fuer Lokbetriebs-dienst, except that they are operational. The Hauptlokdispatcher makes a daily report concerning the operation of locomotives. The report in statistical form, is called "Arbeitsblatt des Hauptlokdispatchers" (Work Sheet of the Main Locomotive Dispatcher).

Hauptwagendispatcher (Main Car Dispatcher)

The duties of the Hauptwagendispatcher are analogous to those of the Referent fuer Wagendienst and the Referent fuer Wagenregulierung, except that again they are operational. The Hauptwagendispatcher has assistants for Bezirk I (Zone I), which comprises Rbd's Schwerin, Magdeburg, Erfurt, and Halle; and Bezirk II, which comprises Rbd's Berlin, Cottbus, Greifswald, and Dresden. He has an assistant for special RR cars and refrigerator cars, an assistant for loading accessories (Lademittel) and two assistants for tank cars. The two assistants for tank cars, and the Hauptwagendispatcher are informed in detail on the daily utilization of all types of tank cars. The Hauptwagendispatcher and his two assistants for tank cars are further informed on the loading stations, the load, types of cars, and the destination within the GDR and foreign countries.

Hauptueberwacher I (Main Controller I)

Hauptueberwacher I supervises the traffic operations (Fahrdienst) in Bezirk I.

Hauptueberwacher II (Main Controller II)

Hauptueberwacher II supervises the traffic operations in Bezirk II.

Hauptueberwacher III (Main Controller III)

Hauptueberwacher III handles special trains, such as international or interzonal trains, fast freight trains, and all postal trains. He also keeps a list of the rolling stock reserves.

Operational Reports

The following are the principal reports rendered to the Main Dispatcher and his assistants, and which are incorporated into his daily work sheet. The frequency with which reports are rendered to the Main Dispatcher and the nature of these reports illustrates how daily operations are conducted:

Rueckstaumeldung (Train Delay Report)

Reports rendered from Rbds at 0600, 1600 and 2200 hours giving the number of trains which are delayed, the destination (Zielbahnhof) and their freight (Gutart).

Unbespannte (Trains without Locomotive)

Reports by Rbds rendered at 0600, 1400 and 2200 hours concerning:

1. regularly scheduled (timetable) trains which have been delayed for more than one hour because a locomotive was not available,

2. the number of special trains which have been made up by Rbds, and for which a locomotive will not be available for the next six hours,

3. the number of special trains which have arrived in an Rbd from other Rbds, and for which a locomotive is not available for the next 60 minutes.

Gleisbesetzung (Track Utilization)

Rbd reports rendered at 0600, 1400 and 2200 hours, showing the total number of trains which are standing on the receiving tracks of the marshalling yards.

Loklage (Locomotive Report)

Rbd reports rendered at 2200 hours, showing the number of locomotives and number of trains used for Soviet military transports (BHK) for the past 24 hours. The number left of the slash is the number of locomotives, the number to the right of the slash is the number of trains.

Weiterleitung (Forwarding)

Rbd reports rendered at 0600, and 1400 hours, giving the number of trains which have been forwarded to the next Rbd:

1. from 2201 hours previous day, to 0600 hours, current day.

2. from 2201 hours previous day, to 1400 hours, current day.

3. the number of trains which are expected to be forwarded for the period from 2201 hours, previous day, to 2200 hours, current day.

Allgemeine Betriebslage (General Operational Situation)

Rbd reports rendered at 0600, 1400 and 2200 hours, consisting of a short general statement concerning special operational occurences.

Verspactungsmeldung (Train Delays)

Rbd reports rendered at 0600, 1400 and 2200 hours showing the delays in timetable schedules in passenger and freight expressed in percentages of punctuality and in total minutes, and the over-all percentual average of punctuality and over-all delays in minutes for the DR.

Auslastung der Durchgangszuege (DG) (Utilization of Through-Trains)

Rbd reports rendered for the periods from 2200 hours previous day to 0600 hours current day, from 0600 to 1400 hours, and from 1400 to 2200 hours. The reports contain the total number of complete freight trains which have been forwarded from one marshalling yard to another without accepting or delivering cars en route. The total is broken down into the number of through-freight trains which carried a 100% load according to the timetable schedule (Buchfahrplan), the number which carried a load between 90% to 99% of the planned freight, and the number of trains which carried a freight below 90% of the planned (scheduled) freight.

Wagenregulierung (Car Flow)

Rbd reports rendered at 0600, 1400, 1800 and 2200 hours. The reports are divided into a section for box cars (G-Wagen), and a section for gondola cars (O-Wagen), contains:

1. the total number of empty cars which one Rbd must forward to another for the 24-hour period from 2201, previous day, to 2200 hours, current day. The number is written in blue pencil.

2. the number of cars which have been delivered up to the time of the report and the percentual relation to the over-all delivery.

3. space for remarks, stating reasons for not fulfilling the delivery plan.

Example 1: Train Nr 19812, made up of 60 box cars, was delivered at 2200 hours plus ten (2210 hours) current day, that is,10 minutes after target time. The number of cars which an Rbd has failed to deliver is written in red pencil, the number of cars delivered in excess of the plan is written in blue pencil.

Example 2: Rbd Greifswald has to deliver 60 cars to Rbd Magdeburg. The remark states that the Referent fuer Wagenregulierung rescinded the order at 0900 hours. The number (blue pencil) is stricken from the record.

Kohlebestandsmeldung (Report on Available Coal)

The report is divided into the section Halle and Cottbus. Reports by these two Rbds are rendered at 0600, 1000, 1400, 1800 and 2200 hours. The red-figured columns show the total number of empty cars which were demanded by the coal mines. The other columns show:

1. the number of empty cars which have been delivered to the mines during intervals between reports,

2. the number of empty cars which are available at the mine stations at reporting time,

3. the number of cars which are rolling toward the mine stations at reporting time,

4. the number of loaded cars which have been sent to forwarding tracks during period from 2201 hours, previous day, up to the time of the report,

5. the number of cars, which were not loaded by the mines during the period from 2201 hours, previous day, up to the time of report,

6. the number of empty cars which were not delivered to the mines in time for loading during the period from 2201 hours, previous day, up to the time of reporting,

7. the number of empty cars which were cancelled by the mines from 2201 hours, previous day, up to the time of the report,

8. the number of empty cars which were additionally ordered during time from 2201 hours, up to the time of the report.

Ausgang von Leerwagen an PKP (Empty Cars Forwarded to Polish Railways)

Reports by the border stations are rendered at 2200 hours. Columns are provided for various types of Polish cars and cars of the DR. Report concerns the number of cars which crossed the border to Poland during the 24 hour period from 2201 hours, previous day, to 2200 hours, current day.

Wagenhilfe (Car Aid)

The report shows, separately, the number and types of empty cars to and from other countries during the 24hour period from 2201 hours, previous day to 2200 hours, current day. The report by border station includes the number of cars to and from Poland.

Beladung (Daily Loadings)

Rbd reports rendered at 2200 hours. The Rbds report on the total number of loadings for the 24hour period from 2201, previous day, to 2200 hours, current day. Several sections are provided for loading of coal, fertilizer and for seasonable items, of prime interest, such as grain, potatoes, and sugar beets. These itemized loadings are also contained in the total number of loadings. The columns show:

1. the number of cars on double-axle basis which should be loaded according to the monthly technical plan. They are written into the report in blue pencil.

2. the number of cars on double-axle basis which had to be loaded during the past 24 hour period to make up for shortages in the monthly technical plan. These figures are operative figures (operative Zahlen) and are written into the report in red pencil.

3. the total number of cars on double-axle basis which the GDR economy required for loading for the past 24-hour period.

4. the total number of empty cars (on double-axle basis) which have been made available for loading during the past 24 hour period.

5. the total number of cars (including coal, and other items) on double-axle basis, which have actually been loaded during the past 24-hour period, up to 2200 hours.

Entlade Plan (Unloading Plan)

Rbd reports rendered at 2200 hours, unloading operations for the past 24 hours. The columns show:

1. the number of cars to be unloaded according to the monthly technical plan. The number is written onto the report in blue pencil.

2. The number of cars that had to be unloaded during the past 24 hour period. This number is an operative figure which is computed by dividing the number of loaded cars which were available at 2200 hours of the previous day (beginning of the past 24 hour period) by the Messzahl (local turn-around time) valid for each of the Rbds. The numbers are written in red pencil.

3. the number of actual unloadings.

4. the number of cars which have become available for unloading during the 24 hour period, previous to 2200 hours of the current day.

5. the number of loaded cars at 2200 hours of the previous day (Ortsfrachtenbestand).

6. the number of cars which were loaded in the local Rbd and which will also be unloaded within this local Rbd (Beladung fuer den eigenen Bezirk: loadings for own district).

7. the number of loaded cars on double-axle basis which arrived in the local Rbd during the past 24 hour period from other Rbds,

8. the column quotes the total number of loaded cars (on double-axle basis) (Gesamtbestand) which were available for unloading in the local Rbd within the past 24 hours. It is the total of the columns 5, 6, and 7 above.

9. the column shows the number of loaded cars on double-axle basis which are expected to be available at 2200 hours of the current day. This number is considered a Richtzahl.

10. the column shows the actual number of loaded cars on double-axle basis at 2200 hours of the current day.

11. the column shows the numerical difference between the two columns above.

Plan der Beladenen Bestaende fuer fremde Bezirke (Plan of Loaded Cars for Other Districts

This report shows, written in blue pencil, the maximal number (Richtzahl) of cars which may be in a local Rbd for forwarding to other Rbds. The number of loaded cars (double-axle basis) actually in the local Rbd at 2200 hours, current day, is quoted next. The column below shows the difference between the Richtzahl and the actual number of cars. Only the difference which exceed the Richtzahl are of interest.

Plan der Beladenen Bestaende fuer Ausland (Plan of Loaded Cars for Foreign Countries

The column quotes numbers analogous to those in the plan above, but for foreign countries.

Plan der Weiterleitung (Transit Plan)

This report quotes the directive figures (Richtzahl), in blue pencil concerning the number of loaded and empty cars which must be forwarded over the border line of the local Rbd. Operative figures, in red, are imposed by Hdl in case the default, when the number of cars defaulted will be added to the next day; or in case of Rbd in question cannot possibly fulfill the directive (Richtzahl) figure, because there are not enough cars available. In such a case the operative figure for the next day will be lowered. Finally the actual delivery figures are shown:

1. the number of cars, loaded with grain, which enter the GDR via the border stations Guben and Frankfurt/Oder,

2. the number of cars loaded with coal which entered the GDR from Poland during the 24 hour period prior to the 2200 hour report. The number of cars are broken down into Polish (PKP) and DR cars.

This report, subdivided into Rbds, constitutes a control of the oertliche Umlauf (Local Turn-Around Time), the Bezirksumlauf (District Turn-Around Time), and the G-Wagen Umlauf (Box Car Turn-Around Time) on a Reichsbahn level figures. A plus mark designates that the turn-around time was exceeded, while a minus mark indicates that the turn-around time remained below the actual operational figures of the Technical Plan. The reports are also due daily at 2200 hours.

Zuglaufstoerung (Train Movement Disturbances)

Rbd reports rendered at 2200 hours. The report section consists of three columns:

1. Column a, designating broken rails,
2. Column b, designating damaged locomotives,
3. Column c, designating overheated frozen axles.

The figures to the left of the slash in each column are the number of cases. The figures to the right of the slash are the total delays in minutes. The bottom line gives the total of cases and delays in minutes for the DR.

In those cases when the RBD renders the report to the Hdl., it is to be understood that the RBD report in turn is a compilation of data submitted by the RBA's, which have compiled the various station and yard reports as a basis for the RBA report.

A brief word should be said about the operations of the Main Administrations. Although the Dispatcherleitung seems to be a thingapart and substantially self-sufficient, it is organizationally only a part of the Main Administration for Operations and Traffic (HVBuV). Furthermore, its main concern is the make-up of all trains required, when required, and the movement of these trains on schedule. The remainder of the work of the HVBuV consists of working out schedules for these trains and for sending appropriate operational messages for the actual movement of these trains. The remaining HV are the house-keeping Administrations. They keep track of the locomotives and rolling stock, assign them "home stations", repair and maintain them, fuel them, and keep the lines, signals and telecommunications (without which movement would be impossible) in operating condition. All these HV's render appropriate performance reports which eventually are published as period anaylses and/or achievement reports.

The Daily Situation Report (Lagehericht)

The Shift Reports

At the beginning of each shift - in most Dispatcher's offices there is a 4 shift day covering the 24 hour period - the respective regional Dispatchers phone in the accomplishments of the previous shift to the Hdl . All through the preceding shift reports have been filtering in from the area Dispatchers for this report. Any unusual occurrence or difficulty is of course phoned in immediately to the Hdl , so that, generally speaking, the Hdl has its finger on the operational situation at all times.

The Conference Call

As indicated in the discussion of the work of the Dispatchers, every morning between 0700-0800 hours, there is a conference call involving the Chef Dispatcher and his assistants, and the Regional Dispatchers and their assistants, during which the accomplishments of the previous day are discussed, the work to be done for that given day outlined, and, in so far as practical, preparations are made for the following day's work. The highlights of this conference are sent telegraphically to all RBD's. The RBD dispatchers in turn hold a later conference call with the Brigade-dispatchers and they, in turn, with the stations in their respective areas. Special non-scheduled conference calls may be made, and frequently are called, at such times as the operational situation threatens to get out of hand and quick decisive action must be taken.

Operational Regulations

In Section VII the rules and regulations which govern Reichsbahn operations, operating procedures, and reporting are discussed at some length. Even the Dispatchers in their efforts to achieve greater accomplishments realize that the physical operation of trains, the loading and unloading of cars, and the work of the yards must be conducted in accordance with these rules.

Basic Reichsbahn Regulations.

Generally speaking basic Reichsbahn operational procedures are outlined in a book called the Dienstvorschriften and its Annexes. This is the railroader's Bible at all echelons and in every conceivable phase of operations. Supplementing it are the passenger and freight train schedule booklets (Buchfahrplaene and Bildfahrplaene) and the basic signal and block operation regulations (Signalbuch).

Special Reichsbahn Regulations

There are all manner of special regulations pertaining to individual phases of operations. They implement the basic policies and guide lines laid down in the Dienstvorschrift. A full treatment of the most important ones is given in Section VIII. Generally speaking they pertain to such aspects as numerical designation of freight offices, stations, routing procedures, telegraphic procedures and symbols, special loading instructions, and reporting procedures.

International Regulations

There is a special group of agreements and regulations pertaining to international rail traffic between East Germany and other Soviet Bloc countries. They lay down the procedures to be followed in operating both military and commercial trains across international borders. A fuller treatment of this whole subject is contained in Headquarters USAREUR publication "Soviet Control of Military Rail Movements Between the USSR-GDR and Within the GDR" (S) dated August 1957.

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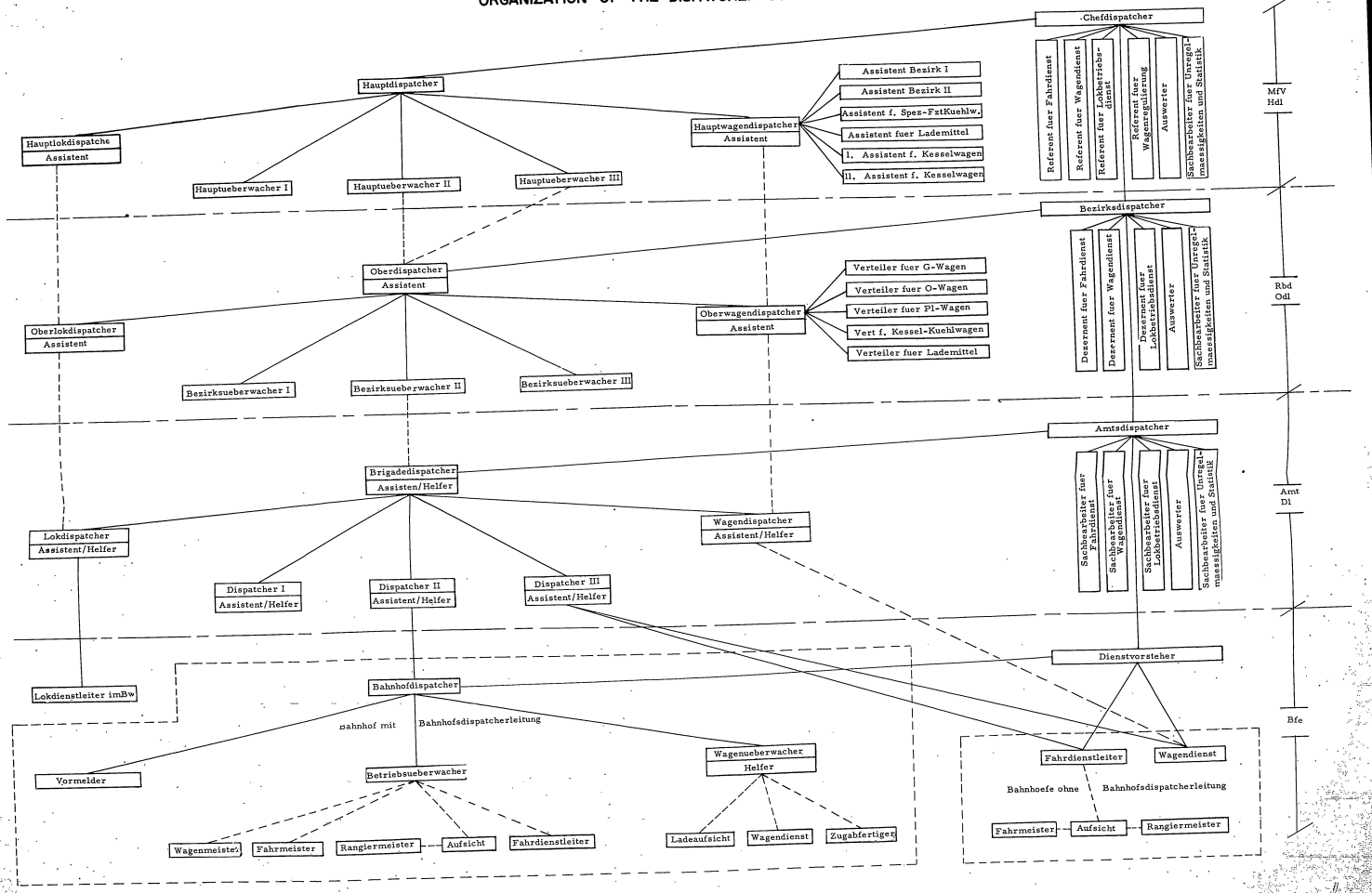
ORGANIZATION OF THE DISPATCHER SYSTEM



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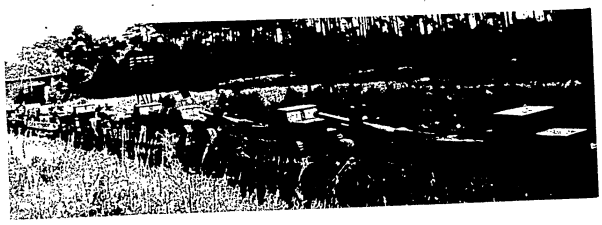
SECTION VII

The Deutsche Reichsbahn—Soviet Relationship



with

A Soviet Equipment Railcar Loading Chart

and

Photographic Examples of Soviet Loading Practices

SECTION VII

THE DEUTSCHE REICHSBAHN-SOVIET RELATIONSHIP

1. SOVIET INFLUENCE ON REICHSBAHN AFFAIRS.

The positive Soviet influence typical of the administration of other governmental affairs in East Germany similarly affects the management and operation of the Deutsche Reichsbahn. Patterned to conform to Soviet interests, the administrative and operational policies and procedures of the Reichsbahn are now largely imitative of railroad practices in the Soviet Union.

2. SOVIET LIAISON WITH THE REICHSBAHN

The Soviet Embassy and the Group of Soviet Forces, Germany (GSFG) are the two Soviet agencies which maintain administrative and operational liaison with the Reichsbahn. These agencies are potent forces with the Reichsbahn and are responsible for insuring (1) prompt compliance with Soviet requests for rail transportation and (2) conduct of Reichsbahn operational practices in strict conformance with Soviet desires of the moment.

During the period 1945-1949 there were two separate transportation offices dealing with the Reichsbahn. One was known as the transport group of the Soviet Military Administration for Germany (SMAD), the first Soviet Military occupation authority in Germany. The other was the Military Communications Service (VOSO) organization, the regular military transport movement branch of the Soviet Armed Forces. The functions of the former were confined to policy, exploitation, and the dismantling of the East German railroads, and the movement of commercial interest trains. The latter's activity was confined strictly to the movement of military trains both within East Germany and between East Germany and the USSR. The transport group of the SMAD (renamed Soviet Control Commission in 1949, Soviet High Commission in 1953) remained at all railroad levels in East Germany until mid-1954, at which time the transport group at lower levels at least was ordered dissolved and its functions turned over to the VOSO. It is not definitely known whether or not some of these transport personnel are still supervising the dispatch of certain commercial shipments locally, e.g., uranium. However, it is known that by mid-1954 the majority of SHC transport personnel had been withdrawn from local levels and presumably returned to the Soviet Union.

3. CONTROL OF REICHSBAHN AFFAIRS BY THE SOVIET EMBASSY IN EAST GERMANY

With the advent of the Soviet Embassy as the highest Soviet advisory and policy making agency dealing with the East Germans, the implication was that the SHC and its functions had ceased. It is strongly believed, however, that in actuality the transportation staff of the SHC and possibly some of its other staffs became the Transportation Division of the Soviet Embassy. This Transportation Division is presumed to handle all matters which involve participation by the Embassy in Reichsbahn affairs. Dealings of the Embassy as such with the Reichsbahn pertain chiefly to affairs of a political and economic nature.

Concerned primarily with the shaping of Reichsbahn policies and the regulation of its operations insofar as they affect Soviet interests, the Soviet Embassy Transportation Division accords particular attention to the administrative matters evolving from commercial shipments by rail to the USSR, the expediting of economically important imports such as grain, raw iron ore, coal, etc., from the USSR, and insuring that military requirements are met. In addition, this Transportation Division carries out Moscow's instructions on policy matters affecting the Reichsbahn, e.g., introduction of the Dispatcher System, allocation of train paths to the Western Allies between West Berlin and West Germany, and reduction of, or increase, in rail communications available to the West.

4. THE SOVIET ARMY

Somewhat in contrast to the primarily commercial and policy making interests of the Soviet Embassy, the dealings of the Soviet Army with the Reichsbahn consist principally of transportation matters of a military nature. The liaison and control which these dealings entail is maintained directly with the Reichsbahn through the VOSO organization. A detachment of VOSO makes up a staff section of Headquarters GSFG at Wuensdorf. VOSO has always been responsible for the physical control of actual troop and supply movements both within East Germany and between East Germany and the rest of the Soviet Bloc.

The VOSO organization in East Germany, in addition to its headquarters at Wuensdorf and possibly a small staff at Karlshorst in conjunction with the Embassy staff, is sub-divided into Transport Command Directorates called SKU's (Sovetskoye Komandaturnoye Upravleniye) located at ministerial level and at the headquarters of each of the eight RBD's (Reichsbahn Direction). In addition, members of these SKU's may be stationed at important RBA's, at permanent supply installations, at main East German rail border crossing points, in regularly used passenger railroad stations servicing Soviet leave personnel, and anywhere else the situation dictates, i.e., during the annual moves to training areas they would most probably be at local station level, depending on where the main movements and unloading activities are concentrated.

The strength of the VOSO group of GSFG Headquarters is not accurately known, but probably amounts to about 50 people at least. The usual strength of each VOSO group at Reichsbahn Ministerial level and at each RBD is from 10-14 officers, 1 to 5 Soviet interpreters and widely varying numbers of enlisted personnel to assist each of these officer groups.

The method of moving Soviet supplies by rail (probably at least 90% are moved by this means) is briefly as follows: During the last 10 days of each month a plan is prepared on the estimated daily average utilization of rolling stock by type car for each RBD in East Germany. This plan is based on what the various GSFG troop unit and supply services estimate they will need during the ensuing month. Both intra-zonal and international rolling stock needs are included in the plan. It is presumed that this plan is approved in final form by the Transport Group of the Soviet Embassy at Karlshorst, and then made known to the East German Minister of Traffic and the state Secretary for Railroads. The details

of the plan as they affect each RBD are thereafter made known to the VOSO group at GSFG Headquarters Wuensdorf and at RBD level. The VOSO groups in turn acquaint the proper East German railway officials, the RBD President, the Operations and Traffic Department,and the Car Distribution Offices, with their planned needs.

While this plan serves as a long range guide, the rolling stock does not actually become available to a Soviet unit desiring to move until the unit transportation officer puts in a specific request to the VOSO group of his respective RBD, who in turn must get approval from Wuensdorf. This request must usually be made about 3 days in advance of the time when the rolling stock is actually wanted. Once the request is approved (usually a matter of a very few minutes), the RBD VOSO and requesting unit are notified and, at the same time or shortly thereafter, the proper East German railroad officials are notified as to how many cars by type will be needed, as well as the station to which they are to be sent and the time at which they are to arrive. Supplemental requests or cancellations must sometimes be made and in each case the same procedure as for a regular request must be gone through. It frequently happens that cancellations are made the same day on which the rolling stock was originally to be used. This is usually too late for the Reichsbahn to change its movement orders and hence the result is very uneconomical utilization of rolling stock.

From the foregoing it appears that the VOSO system can be considered adequate in its present form to insure that peace-time Soviet rail movements are fully realized. It is believed that the present strength of the VOSO organization is not adequate in East Germany for war-time operations, and that this organization would have to be greatly augmented to insure the unimpeded movement of military trains across this territory during any large scale Soviet Military offensive.

SOVIET EQUIPMENT RAIL CAR LOADING CHART

The following chart shows the number of Soviet weapons, vehicles, and equipment which can be loaded on the various types of Reichsbahn flat cars. Only those cars on which each weapon or vehicle can be loaded most economically has been indicated. This does not, however, preclude other type cars from being used, particularly during an all-out offensive.

FOOTNOTES

a. Three (3) pieces of equipment are loaded on two (2) flat cars. If only one item is loaded per flat car, then a smaller vehicle could also be loaded.

b. Additional smaller item(s) of equipment can be loaded.

c. In loading this equipment the barrels of the guns, howitzers and mortars are crossed, and when possible the trails are overlapped also.

Percentage of over lap is:	
Guns	50%
Howitzers	33%
Mortars (large caliber)	50%
Mortars (small caliber)	33%

d. Because of the small loading space required by this piece of equipment, it could be loaded into the trucks or used to fill in small spaces left on the railroad cars after larger pieces of equipment have been loaded.

e. Exact dimensions and/or weight not known. Data shown is estimated.

ITEM	LENGTH (FT)	WIDTH (FT)	HEIGHT (FT)	WEIGHT SHORT TON	R-FLAT, 2X 33'/17 S/T	S-FLAT, 2X 42' /17 S/T	SS-FLAT, 4X 46' /39 S/T	SSla-FLAT, 4X 59'/44 S/T	SSym-FLAT, 4X 34'/55 S/T	SSym-FLAT, 6 X 36'/88 S/T	RRym-FLAT, 6X 47'/88 S/T
	1	2	3	4	5	6	7	8	9	10	11
					FREIGHT CAR						
MORTARS [c]											
82 mm [d] w/limber	5.0	2.5	2.5	123 lbs	-	-	-	-	-	-	-
120 mm M-1938 w/limber	8.0	7.0	3.0	.45	7	9	-	-	-	-	-
120 mm M-1943 w/limber	8.0	7.0	3.0	.45	7	9	-	-	-	-	-
160 mm M-1943 w/limber	12.5	7.0	5.0	1.2	4	6	-	-	-	-	-
160 mm M-1953 w/limber	15.0	7.0	5.0	1.5	3	4	-	-	-	-	-
240 mm M-1953 w/limber	20.0	7.0	8.0	2.5	2	3	-	-	-	-	-
ARTILLERY [c]											
76 mm Div Gun M-1942	17.0	8.0	5.0	1.2	4	5	5	-	-	-	-
85 mm Div Gun M-1945	27.0	8.0	5.0	1.9	2	3	3	-	-	-	-
122 mm Gun M-1931/1937 1954/D-74 (1955)	35.0	8.5	9.3	4.5	1	1[a]	1[a]	-	-	-	-
122 mm Howitzer M-1938	20.0	8.0	6.0	3.1	2	3	3	-	-	-	-
122 mm Howitzer M-1955	34.0	7.0	9.5	8.7	1	1[b]	2	-	-	-	-
130 mm Gun [e]	35.0	8.5	9.3	4.5	1	1[a]	1[a]	-	-	-	-
152 mm M-1943	26.0	8.0	6.0	4.0	2	2	2	-	-	-	-
152 mm D-20	30.0	7.3	8.0	4.0	1	2	2	-	-	-	-

	1	2	3	4	5	6	7	8	9	10	11
152 mm Gun Howitzer M-1937	26.0	8.0	6.0	7.9	1	1[a]	2	-	-	-	-
210 mm Gun M-1930/40	34.4	7.2	9	60.0	(Three 2-axle flats and one 2-axle box required for each gun)						
ANTI-TANK ARTILLERY [c]											
57 mm Gun M-1941/43	24.0	8.0	4.5	1.8	2	4	4	-	-	-	-
85 mm Aux Powered Gun D-48	27.0	8.0	5.0	2.5	2	3	3	-	-	-	-
100 mm Field Gun M-1944	34.0	8.0	4.5	3.8	2	2	2	-	-	-	-
100 mm Field Gun M-1955	32.0	8.0	6.0	4.0	2	2	3	-	-	-	-
ANTI-AIRCRAFT ARTILLERY											
14.5 mm Heavy MG (AA) ZPU-2	13.0	6.0	7.4	1.0	3	4	-	-	-	-	-
14.5 mm Heavy MG (AA) ZPU-4	13.0	6.0	7.4	1.3	3	4	-	-	-	-	-
37 mm Automatic AA Gun M-1939	16.0	8.6	8.0	2.2	2	3	3	-	-	-	-
57-mm AA Gun S-60	16.0	8.6	8.0	3.9	2	3	3	-	-	-	-
85 mm AA Gun M-1938/1944	23.0	8.6	10.0	4.7	1[a]	2	2	-	-	-	-
100 mm AA Gun KS-19	28.0	8.6	10.0	17.5	1	1[a]	2	-	-	-	-
122 mm AA Gun M-1955	45.3	10.0	13.8	32.5	-	-	1	-	-	-	-
SELF-PROPELLED ARTILLERY											
SU-76 Gun	15.0	9.0	6.9	12.3	1[b]	-	3	-	-	-	-
SU-100 Assault Gun	19.7	10.0	7.5	33.1	-	-	1[b]	-	1[b]	2	2
JSU-122 Assault Gun A-19 S	19.7	10.0	7.5	32.8	-	-	1[b]	-	1[b]	2	2
JSU-122 Assault Gun D-25 S	22.3	10.0	8.2	50.6	-	-	-	-	1[b]	1[b]	1[b]

	1	2	3	4	5	6	7	8	9	10	11
JSU-152 Assault Gun	22.3	10.0	8.2	50.6	-	-	-	-	1[b]	1[b]	1[b]
TANKS											
T 34/85 Medium	24.7	9.7	7.8	34.1	-	-	1[b]	-	1[b]	1[b]	2
T 54/100 Medium	19.7	10.6	7.7	36.0	-	-	-	-	1[b]	1[b]	2
JS-2/JS-3 Heavy	22.3	10.0	8.2	50.6	-	-	-	-	1[b]	1[b]	1[b]
Amphibious Tank/ 76 mm	22.0	10.5	7.0	20.0	-	-	2	-	1[b]	-	2
T-10 Heavy [e]	25.0	10.0	8.8	55.0	-	-	-	-	1[b]	1[b]	1[b]
ZSU-57-2 Anti-Aircraft/Twin 57 mm [e]	17.0	10.6	7.7	36.0	-	-	-	-	1[b]	2	2
T-44 Medium	24.7[e]	10.2	7.8[e]	35.0	-	-	1[b]	-	1[b]	1[b]	2
ARMORED CARS											
BA 64 Car	11.7	5.8	6.3	2.6	3	3	4	5	-	-	-
BTR 40	16.4	6.5	5.6	4.7	2	2	2[b]	3	-	-	-
BTR 50 Carrier, Amphibious, Tracked [e]	22.0	10.5	7.0	20	-	2	2	2	-	-	2
BTR 152	22.1	7.5	8.0[e]	7.0	1[a]	1[a]	2	2[b]	-	-	-
BTR 152	22.1	7.5	6.7	7.0	1[a]	1[a]	2	2[b]	-	-	-
ROCKET LAUNCHERS											
82 mm on 6 x 4 truck	22.8	7.7	10.5	6.0	1[a]	1[a]	2	2[b]	-	-	-
132 mm M-13 on 6 x 6 truck	22.8	7.7	10.5	7.1	1[a]	1[a]	2	2[b]	-	-	-
140 mm BM-14 on 6 x 6 truck	22.8	7.7	10.5	6.0	1[a]	1[a]	2	2[b]	-	-	-
200 mm M-1954 on 6 x 6 truck	22.8	7.7	10.5	6.0	1[a]	1[a]	2	2[b]	-	-	-
240 mm BM-24 on 6 x 6 truck	22.8	7.7	10.5	6.0	1[a]	1[a]	2	2[b]	-	-	-

	1	2	3	4	5	6	7	8	9	10	11
300 mm M-31 on 6 x 6 truck	22.8	7.7	10.5	6.0	1[a]	1[a]	2	2[b]	-	-	-
AMPHIBIOUS VEHICLES											
K-61 Carrier, full track	30.0	12.0	7.0	25.0	(requires special routing due to width)						
MAV-69 Truck 1/4 ton 4 x 4	15.2	5.3	5.7	2.2	2	2	3	4	-	-	-
BAV truck 2 1/2 ton 6 x 6	31.0	8.0	8.8	7.2	1	1[b]	1[b]	-	-	-	-
MOTORCYCLE											
M-72	7.3	3.0	3.4	.25	16	21	-	-	-	-	-
Sidecar	6.3	3.3	3.0	.12	16	21	-	-	-	-	-
PRIME MOVERS											
Full track M-1950	21.7	9.8	9.7	17.0	1	1	2	2	-	-	-
6 road wheels	13.7	8.5	6.7	6.0	2	3	3	4	-	-	-
8 road wheels M-1954	19.0	9.0	10.0	10.0	1	1	2	3	-	-	-
Tractor, F. T., YA 12 or 13	16.0	7.8	8.1	7.2	2	2	3	3	2	-	-
Tractor, F. T., Stalinet 60	11.5	7.8	9.0	11.5	1	-	3	4	3	-	-
Tractor, F.T., Stalinet 65	13.3	7.9	9.1	12.4	1	-	3	4	2	-	-
Tractor, F.T., Stalinet 80	14.0	8.0	9.0	12.6	1	-	3	4	2	-	-
Truck-tractor 6 x 4 YaAz-210D	24.2	8.6	8.5	11.0	1	1[a]	2	2	-	-	-
Truck-tractor 6 x 4 YaAz-210D	24.2	8.6	8.5	11.0	1	1[a]	2	2	-	-	-
Truck-tractor 6 x 4 YaAz-210G	24.2	8.7	8.5	12.8	1	1[a]	2	2	-	-	-
F. T. YA 14	8.3	8.0	7.5	9.0	-	-	4	5	4	-	-

	1	2	3	4	5	6	7	8	9	10	11
RECOVERY VEHICLES											
Retriever, Tank and Assault Gun	19.7	9.8	8.0	20.0	-	-	2	2	1	-	2
SEMI-TRAILER											
POL	20.0	7.8	7.7	3.4	1	2	2	3	-	-	-
TRUCKS											
Cargo, 4 x 2, GAZ-51	18.1	7.2	7.0	3.0	1[a]	2	2	3	-	-	-
Ambulance, 4 x 2, GAZ-55	25.8	6.4	7.3	2.6	1	1[a]	1[a]	2	-	-	-
Cargo, 4 x 4, GAZ-63	17.5	7.2	7.2	3.6	2	2	2	3	-	-	-
Jeep, 4 x 4, GAZ-67 B	11.0	5.6	5.6	1.5	3	4	4	-	-	-	-
4 x 4, GAZ-69, 5 Pass	12.5	5.8	6.1	1.7	2	3	3	-	-	-	-
4 x 4, GAZ-69A, 8 Pass	12.7	6.1	6.7	1.7	2	3	3	-	-	-	-
Cargo, 4 x 2, ZIS-150 B	22.1	7.8	7.1	4.3	1[a]	1[a]	2	2	-	-	-
Cargo, 6 x 6, ZIS-151	22.8	7.7	7.5	6.0	1[a]	1[a]	2	2	-	-	-
Cargo, 4 x 2, MAZ-200	25.0	8.7	8.0	6.8	1	1[a]	1	2	-	-	-
MISCELLANEOUS EQUIPMENT											
Field Kitchen	10.0	7.7	6.0	.75	5	7	-	-	-	-	-
Trailer, Cargo, 4-wheel	20.0	7.7	6.0	1.5	1[a]	2	-	-	-	-	-

The following photographs show typical loading methods used by the Soviets in transporting vehicles, weapons, equipment and troops on Reichsbahn rolling stock.

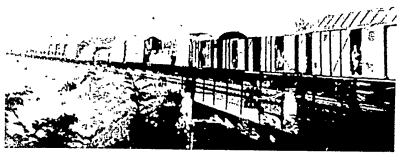


Figure No. 82

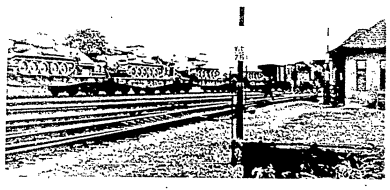


Figure No. 83

Soviet T-34 tanks loaded on 4-axle, 50-ton "SSy" type flat cars

Figure No. 84

JSU-122 self propelled guns on 4-axle "SSy" type flat car

Figure No. 85

3-100 mm AT guns, 1944, loaded on each "S" type flat car

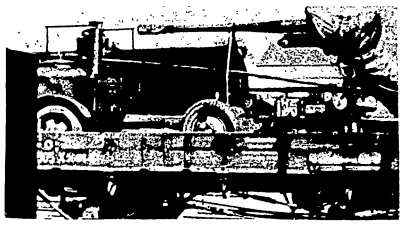


Figure No. 86

One 85mm AA gun, 1943, and one piece of field kitchen equipment loaded on an "R" type flat car

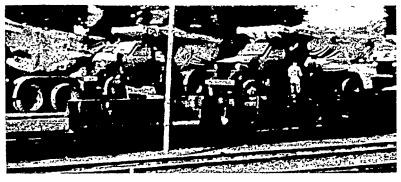


Figure No. 87

One 132mm Rocket Launcher loaded on an "R" type flat car

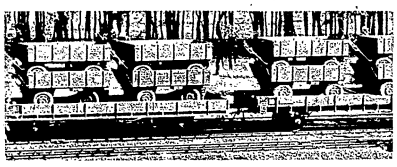


Figure No. 88

Four 2-axle, 2 ton, trailers loaded on one "Ro" type flat car by "nesting"

Figure No. 89

Z-150 trucks loaded "piggy-back" on "R" type flat cars

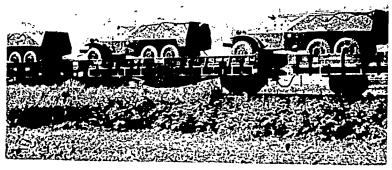


Figure No 90

BTR-152 APC's "straddle" loaded between two "R" type flat cars

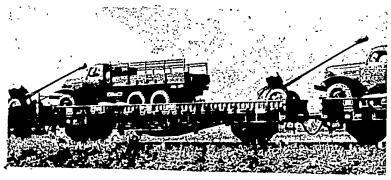


Figure No. 91

One 85mm gun, D-44, and one Z-151 truck loaded on an "R" type flat car

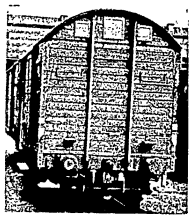


Figure No. 92

"Ms" car-end view showing louvres for ventilation

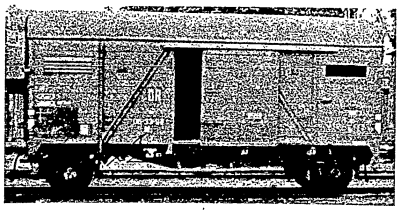


Figure No. 93

"Ms" Box car converted to troop carrier

Ms car (Mannshaftswagen) Box cars permanently converted to troop carriers by the installation of folding bunks to accommodate 32 troops. All of the 06 and 07 series, involving some 5,000 - 6,000 cars, were scheduled for permanent conversion. Most of these are believed to be completed. When not in use as troop cars, they can be used in normal traffic, with the exception of certain commodities.

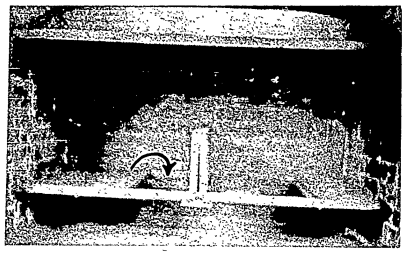


Figure No. 94

"Ms" Car - Inside view, showing upper and lower built-in plank bunks. Right side is ready to be used for seating. Explanation for conversion of left side for seating: Center plank is swung 180° clockwise, thereby providing two benches facing each other (see arrow). Top bunk is made ready for use by dropping the end nearest the end wall into a horizontal position.

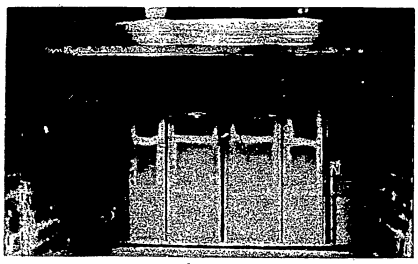


Figure No. 95

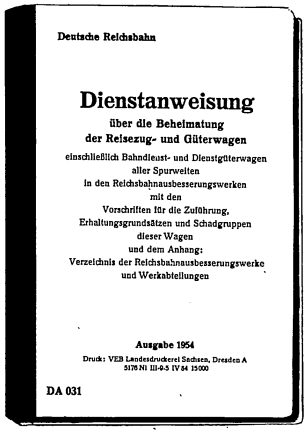
Lower bunk when folded against the end wall of car so that car can be used for transporting normal cargo. Presumably the upper bunk is either dropped against folded lower bunk, forming solid ends, or left in horizontal position.

SECTION VIII

Technical Documents

and

Publications



Deutsche Reichsbahn

Dienstanweisung

über die Beheimatung der Reisezug- und Güterwagen

einschließlich Bahndienst- und Dienstgüterwagen aller Spurweiten in den Reichsbahnausbesserungswerken mit den Vorschriften für die Zuführung, Erhaltungsgrundsätzen und Schadgruppen dieser Wagen und dem Anhang: Verzeichnis der Reichsbahnausbesserungswerke und Werkabteilungen

Ausgabe 1954

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SECTION VIII

TECHNICAL DOCUMENTS AND PUBLICATIONS

Like most European railroad systems, the Reichsbahn operates on the basis of a mass of rules and regulations laid down in a multitude of service manuals, book schedules, special operating regulations, and a miscellany of operational guides and training booklets pertaining to just about every facet of the system. Rather rigid adherence to these rules and regulations is thus required for the successful operation of such a centrally controlled and rule-bound system. This results in an almost complete loss of operational flexibility, a factor which becomes especially significant in analyzing daily Reichsbahn achievements or estimating future capabilities.

For the transportation intelligence analyst or collector concerned with this area, familiarity with the contents of these publications is indispensable to a comprehensive understanding of the system, as well as in the evaluation of most of the raw information collected on the subject.

For ease of presentation, Reichsbahn publications and documents have been divided into five categories, i.e., Basic Operational Manuals, Special Operational Regulations, International Railroad Regulations, Instructional Manuals, and Daily Operational Work Sheets and Reports. Where practicable, the main purpose of the document is given, together with a brief description of the contents, and the frequency of issue.

CATEGORY I

BASIC REICHSBAHN OPERATIONAL DOCUMENTS

TITLE	PRINCIPAL USE AND/OR USERS	CONTENTS	FREQUENCY
1.a. Fahrdienst-vorschriften (FV)	Basic regulation manual for all types train and/or car operations anywhere in the Reichsbahn.	General introduction to operations, definitions of physical plan, rolling stock, trains, and schedules; the conduct of operations at the individual stations, and/or offices; special loading regulations for fragile, inflammable or explosive cargoes; train movement; special trains; cancellations of trains; yard operations; making up trains including brake considerations; section gang operations; annex giving samples of main documents operating personnel are concerned with.	As required; latest issue available this Hq is 1 Nov 54.
b. Anhang zu den FV und Signalbuch (AzFV).	Listing of permissible speeds per line and shorter than normal distances between signals.	Locates slow-down point by kilometer point, distance affected by slow-down, curves whose radii limit speeds; gives maximum permissible speed; gives block distance when this distance shorter than normal.	As required; one for each RBD; latest issues available this Hq are: Berlin 1957 (parts I & II), Dresden 1955; other RBD's not available.
2.a. Dienstvor-schrift fuer die Ermittlung der Betriebsteist-ungen (VBL).	Statement of kind and frequency of operational reports to be rendered.	Reporting of train trips and ton kilometers hauled; of locomotive runs, fuel consumption and norms; of border traffic; of RAW output; of yard work; of passenger traffic; annexes giving sample of reports and including numbering system of RBD's, RBA's and train categories.	As required; latest issue available this Hq is 1 April 1955.
b. Anhang III zu den VBL (AzVBL).	RBD line designator; distance calculator.	Numerical designation of each line in each RBD; list of stations per line; telegraphic abbreviation of each station; distances in kilometers between stations.	As required; one for each RBD; latest issue available this Hq are: Berlin 1956 Cottbus 1955 Dresden 1955 Erfurt 1952 Greifswald 1955 Halle 1955 Magdeburg 1955 Schwerin 1955.

3.a. Gueterzug-bildungsvor-schrift; Teil I: Gueterwagen-dienst im Binnenverkehr (GWV 1).	Basic reference for car types, car numbering systems, and car operations.	Use of Reichsbahn cars; ordering and reporting cars; car distribution; movement of empty cars; siding cars; loading/unloading time limits; loading aids; grain partitions, chucks, ramps, car maintenance book; special type cars; rental of cars; search for cars; tank cars; car traffic report; technical plan; loading/unloading report; car park report; border traffic report; car inventory; annexes containing samples of all report forms, car tags, bills of lading, etc.; and list of Reichsbahn cars by type, number, span, and specifications; European railroad state ownership abbreviations by country.	As required; latest issue available this Hq is 1955.
b. Teil II: Gueterwagen-dienst im Verkehr mit fremden Bahnen (GWV II).	Guide to use of cars in international traffic.	RIV agreement and member countries; PPW agreement and member countries; car identification by owner country; rental rates, use of cars belonging to another country; special car loans to another country; treatment of damaged cars; list of border crossing points; load clearance diagram.	As required; latest issue available this Hq is October 1956.
c. Teil III Vorschriften fuer die Uebergangs-bahnhoefe (GWV III).	Guide to exchange of cars at frontier crossing points.	Acceptance and transfer of cars; use of transfer list; waybills; train manifests and consists; annexes showing forms of documents used in accepting/transferring cars at borders.	As required; latest issue available this Hq is October 1956.
4. Personen-wagenvor-schriften (PWV).	Used to make up passenger trains.	Forming scheduled trains; forming special trains including vacation trains; car numbering; car markings; car abbreviations.	As required; latest issue available this Hq is 1 May 1957.
5.a. Gueterzug-bildungs-vorschriften (GZV).	Reference book for forming and scheduling trains.	Train numbering system; numbering of special trains (varies by RBD); routing of scheduled trains indicating transfer possibilities and type cars per train, plus maximum train length, RBD Berlin shows list of trains involved in border crossing traffic.	As required; one for each RBD, latest issues available this Hq are: RBD Berlin, 29 Sept 57; RBD Halle, 30 Sept 56; RBD Dresden 30 Sept 57, RBD Cottbus, 30 Sept 56; other RBD's not available.

b. Zugbild-ungsbehelf (ZbB).	Gives numerical designation of stations. Used in conjunction with 5 a above.	Lists by number the principal stations in each RBD. These numbers indicate directional routing on car way bill.	As required; one for each RBD; latest issues available this Hq are: RBD Berlin, 29 Sept 57. Other RBD's not available.
c. Gueter-zugbildungs plaene (GBP).	Used in conjunction with 5 above. Determines path for any given train.	Lists each possible train path and corresponding train number.	As required; one for each RBD. None available to this Hq.
6. Uebersicht "La" Teil, A, B, C.	Used by locomotive engineers to determine permissible train speeds on any given run.	Each line slow-down point listed, together with permissible speed at such point and reason for reduced speed; indicates opening of new lines, as well as closure of lines for repairs; indicates whether many lines are single or double and whether electric or steam; indicates bridges under repair; and other major repairs to lines.	Weekly; one for each RBD. Current issues available this Hq.
7. Bildfahr-plan (BlFP).	Used by train schedulers.	A line time (24 hour) graph for each train path, together with train number, cross-overs, and connections with other trains.	Semi-annual, with each schedule change. One issued per line per RBD. None available to this Hq for several years.
8. Buch-fahrplan (BaFP).	Used by train schedulers.	Gives in written form train path of all scheduled trains; gives train number, type of train, route, maximum speed, gross load, and type of locomotive to haul train.	Semi-annual, with each schedule change. One issued per line per RBD, both for freight and passenger, and freight/passenger combined. A few 1957-58 copies available to this Hq.

CATEGORY II

SPECIAL REICHSBAHN SERVICE REGULATIONS

1. Block-und Stellwerksdienst (BluStV).	Regulations reference for signal and block personnel.	Types of blocks and control towers; maintenance of the signalling system; operating the Reichsbahn signal and block system. Samples of reporting forms used.	As required; latest issue available to this Hq, 1 March 1955.
2. Signalbuch (SB).	Signal reference for all railroaders.	Classification of semaphore signals; pictures of semaphore signals and their significance; train signals.	As required; latest issue available to this Hq, 1950.
3. Verzoichnis der telegraphischen Rufzeichen und Abkuerzungen.	Writing railroad telegrams.	Lists all Reichsbahn stations with their telegraphic abbreviations; gives kilometric location of stations; contains list of generally used railroad abbreviations other than for stations.	As required; one for each RBD; latest issues available to this Hq; RBD Berlin 1 Dec 1949; RBD Cottbus, 15 Dec 1955; RBD Dresden, 1 Sept 1951, other RBD's not available.
4. Sammlung betrieblicher Vorschriften fuer den RBD (SbV).	Ready title reference for all operational regulations.	Lists titles of main subjects in operations and where to find them.	As required; one for each RBD; latest issues available to this Hq; RBD Greifswald, 1 July 1947; RBD Berlin, 1 Jan 1957; others not available.
5. Bedienungs und Sicherheitsvorschrift Kessel, Traph, und Kohlenstaubwagen der DR (BSV Kwg).	Standard reference for tank cars.	Types; numbering series; technical description; movement regulations; loading/unloading regulations; home stations of each type car; repair schedule.	As required; latest issue available this Hq, 1 Nov 1955.

6. Befoerderungsbuch (Bef 1) RBD --.	Forwarding of express goods.	Routing of express freight plus list of local and long distance connecting trains.	As required; one for each RBD; latest issue available this Hq, RBD Berlin 22 May 1955, other RBD's not available.
7. Bahnhofsfahrordnung Bahnhof--. (Bhfo).	Train density reference for any given station.	Lists all scheduled trains for each major station, plus times of arrival and departure and destination of train.	Semi-annual with each schedule change. Small selection of 1957-58 booklets available to this Hq. Special Ordnungen may be issued for such events as vacation trains, political rallies, etc.
8. Winterarbeitsordnung zur Verhuetung von Betriebsstoerungen durch Frost und Schnee.	Section gang manual.	Outlines protective measures against cold weather, fog, and snow conditions to be taken in all installations, along lines, and with locomotives and rolling stock.	As required; latest issue available to this Hq; 1 Oct 1953.
9.a. Oberbauvorschriften (Obv).	Section gang manual.	Specifications of road bed; specifications for manufacture of all parts of a rail line; maintenance of right of way.	As required; latest issue available to this Hq, 1954.
b. Anhang zu den Obv (AzObv).	Section gang manual.	Types of rails, ties, and switches, and specifications thereof; distances between ties. Construction details of Reichsbahn roadbed, track, and switch laying.	As required; latest issue available to this Hq, 1954.
10. Merkblatt Fuer das Richtpunktverfahren.	To explain directional routing to Reichsbahn employees.	Principles of direction routing (routing by station number); responsibilities of engineers, yard men, and freight dispatchers in directional routing.	As required; latest issue available to this Hq, 1 July 1954; changes in station numbering system, 1957 (See ZbB).

11. Nummernverzeichnis der Geschaefts-stellen der RBD--.	Used for fiscal accounting and general report purposes.	Numerical designation of main administration offices in each RBD (includes stations, RAW's Bw's).	As required; one for each RBD; latest issues available to this Hq, all RBD's, 1 April 1955.
12. Bahnhofs-nummern-verzeichnis.	Used by freight dispatch offices to indicate routing in circle on car way bill.	Believed to contain general instructions on routing freight, and to indicate how numbering system derived. Probably contains same listing of stations/ dispatch offices as in the Anhang.	Not available to this Hq.
13. Anhang zum Bahnhofs-nummern-verzeichnis fuer Leitungs und Lade-vorschriften.	Used by freight dispatch offices to indicate routing in circle on car way bill.	Alphabetic listing of all stations, freight dispatch offices, and/or loading points; numerical designation of routing by RBD, RBA and station.	As required; latest issue available to this Hq, 3 Jun 1956.
14. Vorschriften fuer die Befoerderung von Personen, Reisegepaeck und Expressgut (PBV I and II).	Guide to sale of tickets, and conditions for movement of passengers, baggage, and express goods.	General contract conditions, ticket sales; free rides; reserving seats; ticket charges en route; annexes showing samples of various tickets and reports on passenger traffic.	As required; latest issues available to this Hq, Part I- June 1954, Part II 1 Jan 55.
15. a. Merkheft ueber den Verkehr der Nationalen Volksarmee fuer die Zugbegleiter und Bahnhofs-schaffner.	Guide to movement of East German Army personnel and equipment.	Carrying of troops and rail documents necessary therefor; freight movement papers; train guards; annexes showing sample movement papers.	As required; latest issue available to this Hq, 1 Jan 57; supplement , 1 Aug 1957.

b. Tarif-Abfertigungs-und Abrechnung-sbestimmungen fuer den Militaer-verkehr (Militaer-tarif).	All rail movements connected with EGA military movements.	Regulations governing movement of EGA personnel and equipment within East Germany; samples of documentation to be used.	As required; latest issue available to this Hq; 1 Jan 1957.
16. Dienstanweisung ueber die Beheimatung der Reisezug- und Gueterwagen.	Guide to repair of rolling stock .	Type, serial spread, home repair shops of all rolling stock, both freight and passenger .	As required; latest issue available to this Hq; 1954.
17. Interzonen-verkehr-Wagenreihung (ZpA).	Guide to forming interzonal passenger trains.	Train make-up by car type for each of the interzonal trains.	As required; latest issue available to this Hq; 15 July 1954 (later issue exists, but not available to this Hq).
18. Vorlaeufige Dispatcherdienstvorschriften Teil V. (DIV)	Manual for dispatchers.	Description of the dispatcher system including organization and operations. Work sheet of the main locomotive dispatcher.	As required; latest issue available to this Hq, 1 Oct 1956 (other 4 parts not available to this Hq).
19. Dienstvorschrift fuer die Behandlung und Unterhaltung der Dampflokomotive im Betrieb (DvLok).	Guide for locomotive repair personnel.	Parts of a locomotive; care of a locomotive before a trip , during a trip, and after a trip ; general locomotive maintenance . Rerailing locomotives and tenders; treatment of cold reserve locomotives.	As required; latest issue available to this Hq, 1 Jan 1953.

20. Verzerrte Bahnhofs-plaene.	Guide to yard layout and capacity.	Diagram of each rail yard per RBA, (diagrams not to scale, but actual track length over-printed); ramps, watering points, power plant, station, platforms, switches also shown.	As required; one for each RBA; latest known issue 1953. Only RBA 1, 4 and 6 of RBD Berlin available to this Hq.
21. Entfernungs-zeiger fuer den Fahrkarten-verkauf.	Used by passenger train conductors and ticket takers.	Gives tariff km distances between stations.	As required; one for each RBD; latest issues available to this Hq, RBD Berlin,1 Feb 56; RBD Halle, 1 May 52. Remaining RBD's not available.
22.a. Vorschrift fuer die Verkehrs-statistischen Arbeiten der Aeusseren Dienststellen (Versta G).	Used by statistics compilers at lower than ministry levels.	Probably outlines methods of reporting freight (G) statistics at station, RBA and RBD level and shows samples of report to be used.	None available to this Hq.
b. Anhang 1 zur Versta G.	Used by freight dispatchers.	List of freight dispatcher offices and administrative location of each.	As required; latest issue available to this Hq, 1 Jan 55.
23. Begriffs-bestimm-ungen fuer die Leistungen der Wagen-wirtschaft.	Used by yard personnel, Bww, and RAW personnel.	Factors which are to go into reports on the care of passenger and freight cars, plus maintenance schedules.	As required; latest issue available to this Hq, 1955.
24. Bahnbetriebs-unfallvor-schrift (Buro).	Used by all railroad personnel involved in handling and reporting accidents.	Protection of trains; wrecker trains; reporting accidents; reporting responsibilities of RBD's, RBA's, RAW's; annex showing report forms.	As required; latest issue available to this Hq, 1953.

25. Statistischer Nachweis (St8).	Used by railroad construction planners.	Lists number of stations/and or stops per RBD, with some description of fixed facilities such as lighting, water spouts, and cranes.	Yearly; latest issue available to this Hq, 1955.
26. Statistischer Nachweis (St6B).	Used by rail communications planners.	Lists number per RBD of Basa, Kleinbasa, and OB phones, switchboards, and connections with other communications systems.	Yearly; latest issue available to this Hq, 1955.
27. Zusam-menstellung ueber den Bestand und Bedarf an Reisezug-Trieb-, Steuer und Beiwagen der RBD--- (ZpZ).	Used by inventory checkers , RAW's and Bww's.	Lists by type and number all passenger cars available to the RBD's.	As required; one for each RBD; latest issue available to this Hq, RBD Berlin, 29 Sept 57; other RBD's not available to this Hq.
28. Vorschriften fuer die Befoer-derung von Personen, Reisege-paeck und Expressgut im Berliner S-Bahn-verkeher (PBV S-Bahn).	Used by S-Bahn operations personnel.	Contains all regulations for movement of passengers and freight via S-Bahn system.	As required; latest issue available to this Hq, 1 Sept 1956.
29. Verfuegungen und Mitteil-ungen des MFV, Teil Deutsche Reichsbahn.	Keeps Reichsbahn employees abreast of administrative changes.	Gives administrative changes and administrative instructions of the various main administrations (HV) of the MFV; gives some personalities heading these HV; publishes a lost and found column.	Weekly; good sampling 1957 available this Hq.
30. Betrieb-liche Mitteil-ungen.	Keeps RBD employees informed of operational changes.	Gives changes in operational procedures. For example, RBD Berlin recently published issue indicating maximum train length in meters for certain stations.	As required; by each RBD; fair sampling of RBD Berlin available this Hq.

31. Amtliches Kursbuch der Deutschen Reichsbahn.	Used for civilian passenger service.	Gives main international and interzonal passenger train schedules; passenger train schedules by line in East Germany; index of stations; map showing line numbers in East Germany; map showing international rail connections.	Semi-annual; latest issue available to this Hq, Winterfahr-plan 29 Sept 57- 1 June 1958.
32. Gueter-kursbuch Deutsche Reichsbahn.	Used for commercial freight service.	List of freight stations; train schedule by station number designator; official international border crossing stations; list of fast freight trains; list of stations which can ice reefers; list of stations which can care for live-stock.	Semi-annual; latest issue available to this Hq, 29 Sept 57- 1 June 1958.
33. Fahrt Frei.	Railroaders' newspaper.	Propaganda themes, outstanding operational and construction achievements; personal citations; general European railroad news.	Weekly; good sampling 1957 available this Hq.
34. Deutsche Eisenbahn Technik.	Technical journal for railroaders.	Articles of research and development nature on motive power, rolling stock, installations, communications and operations.	Monthly; latest issue available to this Hq, Nov 1957.
35. Der Operative Dienst.	Operations journal for railroaders.	Articles on variety of phases of car and locomotive operations.	Monthly; latest issue available to this Hq, Nov 57.
36. Signal und Schiene.	Communications and road-bed journal for railroaders.	Articles on Basa system, dispatcher system, and maintenance of right-of-way.	Monthly; latest issue available to this Hq, Nov 57.
37. Die Werkstatt	Technical journal on repair of cars and locomotives.	Articles on RAW, Bw/Bww practices and improved methods; discussion of technical improvements on cars and locomotives.	Monthly; latest issue available to this Hq, Nov 57.

38. Verzeichnis der Durchlass-faehigkeit der Strecken.	Used by train schedule planners, and freight/ passenger movement requirement planners and evaluators.	Gives per line per RBD following data: whether line is single or double track, length in Km; series locomotive best suited to line; grade; block system and number of blocks; maximum speed; maximum number of axles; maximum gross load; passing facilities; running time between blocks; maximum train pair density per line.	As required; (Probably annually); latest issue available this Hq, 1952.

CATEGORY III

INTERNATIONAL SERVICE AND TARIFF REGULATIONS
(INCLUDING THOSE AFFECTING SOVIET MILITARY TRAFFIC)

1. Vorschrift-ueber Mili-taertransporte fuer die Sowjet-truppen in Transit ueber die Bahnen der Vulksrepublik Polen.	All rail personnel connected with Soviet military movements.	Regulations governing movement of military transports; responsibilities of each rail system; method of computing costs.	As required; latest issue available to this Hq, 1 Oct 1956. (supersedes 1950, 1954 and 1955 editions).
2. Vorschriften ueber die Abfertigung, Befoerderung und Abrechnung des sow. Personen, Gepaeck-, Expressgut-, und Gueter-verkehrs in der DDR.	All rail personnel connected with Soviet military movements.	Regulations governing movement of Soviet passenger and baggage in East Germany and/or exiting East Germany, including tariff fees.	As required; latest issue available to this Hq, 15 July 1954.
3. Dienst-vorschrift ueber die Beschaffung und Lagerhaf-tung des Ausruestungs und Befestig-ungsmaterials fuer Militaer-transporte.	All rail personnel connected with Soviet military movements.	Describes procedures for ordering military car equipment, and storage of this equipment.	As required; latest issue available to this Hq, 1 July 1956.

4. Deutsch-Tschecho-slowakische Eisenbahn-grenzvereinbarung.	Used by freight and yard dispatchers.	Lists official crossing points and their limitations; responsibilities of each rail system; transfer procedures.	As required; latest issue available to this Hq, 3 June 1956.
5. Vorschriften ueber die Benutzung von Wagen im internationalen Personen und Guterverkehr (PPW).	Used by freight and yard dispatchers.	Describes regulations governing international rail traffic between East Germany and the other European satellites.	As required; latest issue available to this Hq, 1 Jan 1954.
6. Abkommen ueber den Internationalen Eisenbahn-Gueterverkehr (SmbS).	Used by all personnel connected with international traffic.	Gives the terms of the international rail freight traffic agreement between Soviet Bloc countries; describes transfer procedures and documentation necessary.	As required; latest issue available to this Hq, 1 Jan 1956. (supersedes 1951 and 1954).
7. Abkommen ueber den Internationalen Personen-verkehr (SMPS).	Used by all personnel connected with international traffic.	Gives the terms of the international passenger/baggage/ express freight agreement between Soviet Bloc countries.	As required; latest issue available to this Hq, 1 Jan 1956.
8. Einheitlicher Transittarif zum Abkommen ueber den Internationalen Eisenbahn-Gueterverkehr.	Used by finance people connected with international freight charges.	Gives freight tariff rates by km and tonnage in each country which is member of the SMGS; lists types of commodities acceptable in international freight.	As required; latest issue available to this Hq, 1 Jan 1956.

9. Dienst-fahrplan fuer Sowjetische Transit-Personen-u. Gueterzuege.	Used by Polish, Soviet and Reichsbahn pereonnel connect ed with international freight and passenger traffic.	Printed trilingually (German, Polish, Russian); lists train schedules and train numbers between East Germany and the USSR; lists coaling points and watering points along lines used; gives kilometer distances; lists USSR transloading stations involved in this traffic.	Semi-annually; latest issue available to this Hq, 23 May 1954.
10. Uebereinkommen ueber die gegenseitige Benutzung von Guterwagen im Internationalen Verkehr (RIV).	Used by railroad personnel connected with international freight traffic between Western and Eastern Europe.	Outlines the regulations pertaining to movements of freight cars across international boundaries; gives samples of documentation required for such movement.	As required; latest issue available to this Hq, 1 Jan 1948.
11. Uebereinkommen ueber die gegenseitige Benutzung von Personenwagen im internationalen Verkehr (RIC).	Used by railroad personnel connected with international passenger traffic between Western and Eastern Europe.	Outlines the regulations pertaining to movement of passenger cars across international boundaries; gives samples of documentation required for such movement.	As required; latest issue available to this Hq, 1 Jan 1948.
12. Begrenzungs-linien der Wagen im Internationalen Verkehr.	Used by railroad personnel connected with international freight traffic between Western and Eastern Europe.	Lists the lines in each RIV member country which can be used in international freight traffic; gives the maximum permissible axle pressure for these lines; lists names of railroad divisions per country; gives any pertinent clearance specifications per line. (Member countries of RIV are: Germany, Austria, Hungary, Belgium, Bulgaria, Denmark, France, Greece, Italy, Luxemburg, Norway, Netherlands, Rumania, Poland, Yugoslavia, Sweden, Switzerland, Czechoslovakia and Turkey.	As required; latest issue available to this Hq for all countries, 1954.

CATEGORY IV

REICHSBAHN TRAINING MANUALS AND TERMINOLOGY REFERENCE BOOKS

TITLE	CONTENTS
1. Die Signale und Kunzeichen der Deutschen Reichsbahn. A. Neumann-1950.	Colored illustrations of all Reichsbahn signals with brief description and proper abbreviation.
2. Die Dampflokomotiven der Deutsche Reichsbahn. Wendler-1952 and 1955.	Brief history of the development of the steam locomotive; description of most of the Reichsbahn locomotives together with pictures.
3. Probleme des Dispatcherdienstes bei der DR. Author collective.	Free discussion of the dispatcher system, reasons for its introduction, and benefits to be derived there from.
4. Der Verkehr.	Discusses the task of the Deutsche Reichsbahn in relationship to the 1951-1955 First Five Year Plan.
5. Die betriebliche Arbeit des Bahnhofvorstehers. K. Gollasch - 1954.	Discusses in detail the responsibilities and work of the station master.
6. Einfuehrung in den Eisenbahndienst. H. Ulrich-1951.	Introduction to railroading as practiced by the Reichsbahn. Brief history of railroading. Brief description of main phases of railroad operations.
7. Einfuehrung in den Betriebsdienst. G. Friedrichs - 1953.	Detailed discussion of operations (Betrieb), forming of train, switching (classification), and running of trains.
8.a. Ueberblick ueber den Verkehrsdienst. H. Ulrich - 1953.	Detailed discussion of what constitutes traffic (Verkehr) in the Reichsbahn. The more important topics treated are tariffs, passenger traffic, express traffic, freight traffic, and the necessary movement documentation for each type traffic.
b. Verkehrsdienst. Stufe I H. Ulrich - 1953. Stufe II/III H. Keil-1954.	Discussion of all phases of freight dispatching and legal aspects of same. Definitions of the economic plan, the transport plan and the technical plan. Documents most frequently used.
c. Verkehrsdienst. Stufe III. J. Dasse - 1953.	Discussion of local and international tariffs, both freight and passenger.
9. Der Ermittlungsdienst. Stufe III. R. Wiesner - 1951.	Samples of commonly used report forms, primarily in connection with freight traffic and train movements.

10. a. Dampflokomotiven Lokomotivkunde. R. Rudolph - 1943.	Development of the steam locomotive; main war-time Reichsbahn types; brief discussion of parts of a locomotive; illustrations.
b. Lokomotivkunde. H. Erler-, 1953.	Detailed discussion of the development of the steam locomotive; illustrations.
c. Lokomotiv-Betrieb. P. Kalinowski- 1952.	Care and repair of locomotives at a Bw, including coaling, slagging, watering, and sanding.
d. Lokomotiv-Betrieb. P. Kalinowski - 1951.	Description of roundhouses (Bw) and equipment used at a Bw; illustrations.
11. Einfuehrung in die Wagenarten der Deutschen Reichsbahn. W. Ohme - 1954.	Discusses all types of Reichsbahn cars including the RRym, includes treatment of brakes, couplings, trucks, greasing, axles and chassis; richly illustrated.
12. Das Fahrplanwesen der Deutschen Reichsbahn. G. Friedricks - 1953.	Discusses in detail, train scheduling, and the use of train schedule books (Buchfahrplaene); illustrations.
13. Der Bildfahrplan. R. Rudolph-1944.	Discusses the use of the graphic train schedule (Bildfahrplan); illustrated.
14. Bilden der Zuege. R. Rudolph-1942.	Describes how to form freight and passenger trains, including what regulations one has to bear in mind in so doing.
15. Das Bilden der Zuege. H. Albrecht - 1953.	Discusses much the same material as given in 14 above, but more emphasis on the importance of braking power and the formulae for determining this.
16. Rangierdienst. Stufe I. Author collective 1956. Stufe II. Author collective 1955.	Discusses aspects of switching and classification within yards.
17. Zugfahrdienst. H. Hahn - 1957.	Detailed description of the running of a train, from departure from station of origin to end of run.
18. Weichen und Kreuzungen. K. Bach 1951.	Detailed description of switches and cross-overs in use by Reichsbahn, including types of switches and nomenclature for each; illustrations.

19. Das Eisenbahn Signalwesen. A. Neumann-1953.	Detailed description of signals used for Reichsbahn operations, including nomenclature and color illustration.
20. Stellwerks und Blockanlagen. R. Rudolph-1943.	Discusses components of the electric bloc system; illustrations.
21. Fernmeldeanlagen. Heft I. Author collective-1951. Heft II. H. Burkhardt-1951.	Discusses components of the Reichsbahn telecommunications system, including BASA.
22. Vermessungskunde. R. Rudolph-1945.	Describes surveying techniques for new construction of Reichsbahn buildings, as well as right-of-way.

CATEGORY V

DAILY OPERATIONAL WORK SHEETS AND REPORTS

There are a number of work sheets and/or special reports maintained on a daily basis at ministerial (MFV), rail divisional (RBD), and station level which reveal a comprehensive picture of Reichsbahn operations. The data contained in these reports are invaluable not only from the standpoint of determining the probability of the imminence of hostilities, but also for routine, comparative analytical purposes. A brief description of the most important of these reports is given below:

MFV LEVEL

1. Arbeitsblatt des Hauptdispatchers.	Gives per RBD coal levels, locomotive reserve, Soviet use of locomotives and trains; number of trains each direction crossing GDR frontiers; international coal car traffic; fulfillment of the technical plan.
2. Arbeitsblatt des Hauptlokdispatchers.	Contains record of un-scheduled trains, many of which are military; locomotive reserve figures by RBD; coal reserves by RBD; record of train delays; detailed account of use of locomotives throughout the Reichsbahn.
3. Arbeitsblatt des Hauptwagendispatchers.	Contains record of car utilization by Soviets and EGA; international car traffic by type car; technical plan fulfillment; coal loadings; working car park, reserve car park by type; repair park.
4. Der Lagebericht.	Commentary on fulfillment of transport plan for previous day with instructions for current days work; also includes the "Regulativ"; points up reasons for poor situation at any time.

RBD LEVEL

1. BHK Anforderungen.	Record of number and type cars ordered by Soviets on daily basis; station of origin and destination; transport number.

2. Corresponding copies of the three Arbeitsblaetter and the Lagebericht are maintained in each RBD. Although they are insufficient to provide a comprehensive picture of Reichsbahn operations, they are of value in the absence of any MFV records.

STATION LEVEL

1. Frachtbrief or Frachtkarte.	Bill of lading for cargo shipments, either commercial or military. Military Frachtbriefe, in addition to listing consignor, consignee, number of car or cars, car number, cargo, cargo weight, station of origin and destination, also gives military transport number and train number.
2. Vormeldungsempfangbuch	Station record of trains which are to pass through and which have been accepted for any given station; record of train number, consist, axles, weight and cargo; cargo of military trains normally given only as "Military Goods" without further breakdown.
3. Versandbuch.	Station record of departing loaded trains; contains data similar to Vormeldungsbuch. There is some evidence that some border stations, notably Frankfurt/Oder, keep a separate Versandbuch containing only military shipments with transport numbers.
4. Hauptzettel fuer Frachtgutladungen, or Frachtgutladung (Vorrangswagen).	Car way bill; may give station of origin and destination, and car routing; may contain military transport number; gives car number, weight of car, weight of load, and total weight.

GLOSSARY OF REICHSBAHN TERMINOLOGY

This glossary lists German words, terms, and abbreviations which appear frequently in intelligence material pertaining to the Deutsche Reichsbahn together with appropriate translation, explanation, or equivalent English terminology.

GERMAN TERM AND ABBREVIATION	ENGLISH EQUIVALENT
Abgangsbuch fuer den Gueterverkehr	Dispatch book for freight traffic
Abteilung (Abt)	Railroad department or section
Achsdruckverzeichnis (Achs-V)	Axle pressure index
Alarmbereitschaft	General Reichsbahn alert
Amtsvorstand (Av)	Chief of a Reichsbahnamt
Anschlussstelle (Anschl)	Railroad spur or siding
Aufsicht (Aufs)	Yard, station, train or crew supervisor. Train safety controls at stations.
Absender	Shipper
Ausschlacken	The servicing performed at an ash pit of a locomotive Bw
Auftrag	Order
Bahn, Bahnen	Railroad, railroad system
Bahnanlagen (Ba)	Railroad installation lay-out; railroad yards
Bahnbetriebswerk (Bw)	Locomotive servicing and maintenance shop; locomotive round-house
Bahnhof (bf)	Railroad station and/or railroad station and yards
Bahnhofbuch	Railroad station book; station list
Bahnselbtanschlussanlage (Basa)	Automatic dial telephone system of the Deutsche Reichsbahn
Baureihe	Locomotive and/or freight car construction series designation
Bedarfszug (B)	Scheduled train to be run only as needed
Bedarfsgueterzug (B)	An unscheduled freight train

Befoerderung	Movement
Befoerderungsauftrag	Movement order
Befoerderungsplan	Movement plan
Befoerderungsschein	Movement order or movement manifest
Befehlsstellwerk (Befstw)	Main signal tower
Begleiter	Guards
Begleitpapiere	All the papers necessary for the transfer of a transit train
Begleitwagen	Guard or escort car
Betrieb (B)	Operations
Betriebswagenwerk (Bww)	Shop for maintenance and minor repairs on freight cars
Betriebsschutz (Ba)	Railroad police service; railroad installation security guard
Betriebsueberwachung (Bue)	Assistant to the division superintendent
BHK (Behoerde Hoher Kommission)	Soviet High Commission
Bildfahrplan	A graph diagram of the train schedules of a Buchfahrplan
Besatzung	Occupation
Bestimmungsbahnhof	Station of destination
Brandschutz (Bra)	Railroad fire protection service
Bremse	Brakes
Bremsdienst	Brake and brake gear inspection and repair service
Bremsdienstvorschrift (Brevo)	Brakeman's manual
Buchfahrplan	Booklet containing scheduled freight trains per a given line

Deutsche Demokratische Republik (GDR)	German Democratic Republic; the Soviet Zone of Germany
Dienstgueterzug (Dstg)	Work or maintenance train
Dienststelle	Any railroad or military office, bureau or headquarters
Dienstvorsteher	Station master
Dispatcherleitung	Train control office
D-Zug	Express passenger train, schnellzug
Dezernent (Dez)	Chief of a railroad administrative department ; technical expert or advisor
Dienststellenvorsteher (Dvst)	Chief of a railroad operational office
Durchgangsgueterzug (Dg)	Through freight train
Durchgangsgueterzug fuer Besatzung (Dgb)	Through freight train for an occupation force
Eilgueterzug (E G-Zug)	Express freight train
Eilzug (E-Zug)	Express train
Empfangsbahnhof	Receiving station
Eisenbahnverkehrskasse (EKV)	Central Finance Office of the Ministry for Railroads
Eisenbahn Verkehrsordnung	Railroad freight and passenger traffic manual
Fahrdienst Vorschrift	Railroad traffic directive
Fahrdienstleiter (FDL)	Railroad traffic superintendent
Fahren auf Sicht	Line-of sight method of train dispatching
Fahrplan (Fpl)	Railroad train schedule, time-table card used by operating crews
Fahrplannummer (Fplnr)	Individual train schedule number issued by the Scheduling Section of the Ministry for Traffic
Frachtbrief	Bill of lading
Frachtbriefdoppel	Duplicate bill of lading

Frachtkarte	Lading card, abbreviated form of the Frachtbreif
Fahrzeug (Fz)	A railroad car, any vehicle
GSFG	Designation of the Soviet Group of Occupation Forces, Germany
Gepaeckwagen	Baggage car
Gleis (Gl)	Track
Grenzabkommen	Border agreement
Grenzbahnhof	Border station
Grenzuebergang	Border crossing point
Gruppenleiter (Gri)	Chief of an operations group at Reichsbahnamt (Rba) or RBD level
Gueter	Freight
Gueterbahnhof	Railroad freight station
Gueterabfertigung	Freight dispatch or freight dispatch office
Gueterbefoerderungsschein	Freight movement manifest
Gueterwagenleerzug aus gedekten Wagen (LGG)	Empty freight train consisting of box cars
Gueterwagenleerzug aus offenen Wagen (LGO)	Empty freight train consisting of open cars
Gueterzug	Freight train
Gueterwagen	Freight car
Gueterwagenvorschrift (GWV)	Rolling stock equipment register
Gueterzuglokomotive (G)	Freight locomotive
Gueterzugtenderlokomotive	Freight locomotive with a built-in coal tender. These are generally used in yard and local service.
Haltepunkt (Hp)	Point on a railroad line where trains stop to receive or discharge passengers or for any other operational reason

Hauptverwaltung (HV)	Main Administration (Usually of the MFV)
HV-Maschinendienst	Main Administration for locomotives
HV-Betrieb und Verkehr	Main Administration for operations and traffic
HV-Reichsbahnausbesserungswerke	Main Administration for repair shops
HV-Wagenwirtschaft	Main Administration for rolling stock
HV-Bahnanlagen	Main Administration for physical plant
Hauptwagenzettel	(Main) Way bill
Kesselwagen (Kew)	Tank car
Kesselwagenleitstelle	Tank car control office of the East German MFV
Kohlenstaub	Brown coal dust used as locomotive fuel
Kohlenstaubtransportwagen (ZKO)	Special container car used for transporting brown coal dust
Kursbuch	Passenger train schedule book (passenger train time table)
Lademittel	Empty cars for loading; cars which maybe used by more than one railroad if needed
Ladung	Load
Laenge ueber die Puffer (Luep)	Total length of a freight car
Leichter Gueterzug (Leig)	Light freight train
Lokdienst (ld)	Locomotive crews; locomotive servicing
Lokheizer (Lokh)	Locomotive fireman
Lokfuehrer (Lokf)	Locomotive engineer
Lokleitung (Lokl)	Dispatcher in a locomotive maintenance shop; locomotive dispatch system
Lokomotive (Lok)	Locomotive
Lokomotivenzug (Lz)	Train consisting of one locomotive or one locomotive hauling one or more cold locomotives

Mannschaftswagen	Troop cars, usually modified box cars
Marketenderwaren	PX supplies
Masse	Literally "Mass" term often used to designate uranium ore shipment
Militaergut	Military goods (can be anything from Class I through VI)
Ministerium fuer Eisenbahnwesen (MFE)	Ministry for Railroads in the GDR government
Motorkleinwagen (Mkl)	Gasoline-powered handcar used by track inspection and maintenance crews
Munition	Explosives or ammunition
Nachschub	Supply
Nachschubszug	Supply train
Neubauamt (Nba)	Railroad construction office
Nahgueterzug (N)	Local freight train
Oberverkehrsueberwachung (Ovue)	Main traffic control office of the MFE or a Main traffic control office of an RBD
Offener Wagen	Open car, either gondola or flat
Panzerpendel	Tank shuttle train (usually heavy duty flat car train)
Pendelzug	Shuttle train
Personenbahnhof	Passenger station
Personenwagen	Passenger coach
Personenzug	Passenger train
Personenzuglokomotive	Passenger locomotive
Personenzugtenderlokomotive	Passenger locomotive with a built-in coal tender -- usually used in local service
Platte or Plattenwagen	Flat car
Polnische Staatsbahn (PKP)	Polish State Railway system

Praesident (Pr)	President - as of an RBD
Pruefungsamt (Pa)	Inspection bureau
Rampe	Loading ramp or platform
Rangieren	Shunt, switch about, make-up a train, classify cars
Rangiermeister (Rgm)	Yard master, switching foreman
Rangierbahnhof	Classification (shunting) yard
Rangieraufseher (Rga)	Chief switchman or yard foreman
Rangierbahnhof (Rbf)	Classification yard
Rangierer (Rg)	Switchman, yard crewman
Rangierlokomotive	Switching locomotive
Reichsbahnamt (Rba)	Railroad office subordinate to an RBD. Each RBD has several Rba's
Reichsbahnausbesserungswerk (RAW)	Locomotive or car shops for major repair, overhaul, or rebuilding
Reichsbahndirektion (RBD)	A division, district, or directorate of the Deutsche Reichsbahn. There are eight RBD's in the Reichsbahn subordinate to the MFV through the Main Administration. They are the operating divisions of the rail system
Richtbahnhof	Station with numerical designation
Richtpunktverfahren	Directional (by numerical designation) train routing procedure
Schnellzuglokomotive (S)	High speed express passenger locomotive
Signal und Fermeldemeisterei	Signal and telecommunications maintenance section
Sonderzug (Sdz)	Special train ; non-scheduled train
Strecke (str)	Section or sector of track or line
Streckendispatcher	Line dispatcher

Technische Leitung (TL)	Technical (Engineering and Drafting) Office
Transit-Militaer-Gueterzug	Transit military freight train
Transit-Militaer-Reisezug	Transit military passenger train
Transitzug	Transit train, crossing international boundaries
Transportkommandant	Transport commander, transport guards (usually Soviet)
Transportleitung	Reichsbahn transport control group assisting VOSO (SKU) in dispatching and receiving Soviet military trains
Transportnummer	Transport number
Transport Polizei (Trapo)	Transportation police- a uniformed branch of the East German security forces
Transportueberwachung	Reichsbahn transport control group assisting VOSO (SKU) in dispatching and receiving Soviet military trains
Tschechoslowakische Staatsbahn (CSD)	State Railways of Czechoslovakia
Uebergabe	Transfer (of freight, of trains)
Uebergabebahnhof	Transfer station
Uebergang	Crossing
Uebergangspunkt	Crossing point
Umschlag	Transloading (from rail to rail, from ship to rail and vice-versa)
Umsteigen	Change from one car to another, or from one train to another
Umbesetzt	Unattended; no one on duty
Ungarische Staatsbahn	Hungarian State Railways
Unterbezirkvorstand der Industriegewerkschaft Eisenbahn (UBW)	Chief of a railroad labor union in an RBA

Verkehr	Traffic
Verkehrsueberwachung (Vue)	Traffic control
Versandbuch	Freight dispatch book
Verschiebebahnhof (Vbf)	A switching yard
Verzeichnis	List; telephone directory
Vormeldungsbuch	Record of train arrivals on basis of advance notice
Vorschrift	Regulation
Vorzug	The first section of a train being operated in more than one section, the first "cut" of a train that is split for any purpose and intended to be reunited
Voennoe Sooboschennoe (VOSO)	Military communications service
Wache	Guard
Wagenliste	Car manifest
Wagenbehandlungvorschrift (WBV)	Railroad car utilization manual or guide
Wagendienst (Wgd)	Freight car dispatching or servicing office
Wagendienstleiter (Wgdl)	Chief car dispatcher or car service supervisor
Wagenmeister (Wgmstr)	Car inspector-inspects cars for visible defects upon arrival at a terminal or prior to departure from a classification yard
Wagennummer	Car number
Zentralvorstand der Industriegewerkschaft Eisenbahn (ZVE)	Central committee of a railroad labor union in an RBD or the MFV
Zettel	Sticker, way bill list
Zug	A train
Zugdispatcher	Train dispatcher
Zugfueher	Railroad train conductor, train chief
Zugliste	Train manifest

Zugmelder	Railroad telegrapher in a block tower
Zugmeldung	Announcement of arrival of trains
Zugmeldestelle	Block signal tower with an assignment telegrapher
Zugschaffner	Railroad brakeman on a passenger train head end brakeman on a freight train
Zugsicherer	Freight train flagman safety man
Zugueberwachung	Train traffic supervision office
Zugbildungsplan	Train consist plan

CONVERSION TABLES

WEIGHT

UNIT	LONG TONS	METRIC TONS	SHORT TONS	KILO-GRAMS	POUNDS
One long ton	-----	1.016	1,12	1.016	2240
One metric ton	.9842	-----	1,1023	1.000	2204.6
One short ton	.8929	.9072	-----	907.2	2000
One kilogram	-----	-----	-----	-----	2.2046
One pound	-----	-----	-----	.4536	-----

VOLUME

UNIT	CUBIC FEET	IMPERIAL GALLONS	U.S. GALLONS	LITERS	QUARTS
One cubic meter	35.31	219.945	264.154	1,000	1,056.5
One cubic foot	-----	6.229	7.481	28.32	29.92
One imperial gal	.16504	-------	1.201	4.546	4.804
One U. S. Gallon	.13368	.8327	--------	3.785	4.000
One liter	.03552	.6214	.2642	-----	1.0567
One quart	-----	.2082	.25	.9462	------

1 cubic inch - - - - - -	16.39 cubic centimeters
1 cubic foot - - - - - - -	.03 cubic meters
1 cubic yard - - - - - - -	.76 cubic meters

LINEAR MEASURE

UNIT	NAUTICAL MILES	STATUE MILES	KILO-METERS	METERS	YARDS	FEET	INCHES	CENTI-METERS
1 nautical mile	-----	1,1516	1.8532	1853.2	2026.8	6080.3	72,963	185,325
1 statue mile	.8684	-----	1.6093	1609.3	1760	5280	63,360	160,933
1 kilometer	.5396	.6214	-----	1000	1093.6	3281	39,370	100,000
1 meter	-----	-----	-----	-----	1.0936	3.281	39.37	100
1 yard	-----	-----	-----	.9144	-----	3	36	9,144
1 foot	-----	-----	-----	.3048	.3333	----	12	30.48
1 inch	-----	-----	-----	-----	-----	.0833	----	2.54
1 centimeter	-----	-----	-----	.01	-----	.0328	.3937	-----

MISCELLANEOUS FACTORS

1 U. S. gallon of gasoline weighs 6,1 lbs
1 U.S. gallon of Diesel fuel weighs 6.9 lbs
1 cubic meter of gasoline weighs 1, 611.3 lbs
1 U.S. gallon of water weighs 8 lbs
1 55 gallon barrel of gasoline weighs 335.5 lbs
1 short ton of gasoline equals 5.96 barrels

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