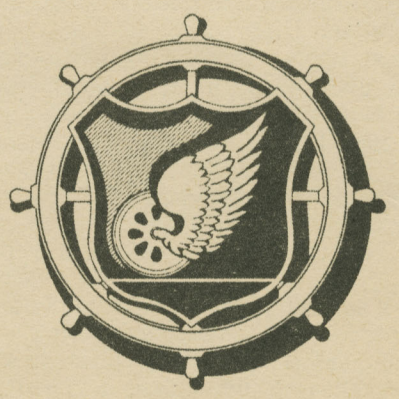
The UNITED STATES ARMY Transportation Corps EXHIBIT



Chicago Railroad Fair
Chicago, Illinois
1948

DEUTSCHE - REICHSBAHN
(GERMAN STATE RAILWAY)
2-10-0 L-42 FREIGHT LOCOMOTIVE

The following information and description of the German locomotive on exhibition at the Chicago Railroad Fair, has been compiled from translated German engineering papers supplemented, where necessary, by measurements of the locomotive parts at Camp Patrick Henry, Virginia, and calculations and studies of available drawings by the Transportation Board at the New York Port of Embarkation.

Attention is drawn to the lack of efforts to finish parts other than those most essential, which marks this locomotive as strictly an "Austerity" type along with its predecessor, the L-52.

This freight service class 42 locomotive manufactured by Henschel and Sohn, Kassel, Germany, in 1944, had never been produced in quantity previously. It is a heavy type, comparable in performance with the class 44, which was built and used before the war. Some engineers were of the opinion that it was intended to replace class 52, but it is more probable that both classes were to continue in production during the war period. The design of class 42 locomotives embodied all the economies in time and material that were attained in the production of class 52, and many of the defects of the latter were eliminated. The class 42 locomotive represents the latest type German war locomotive.

BOILER.

The boiler is capable of a continuous performance of about 1700 HP. The boiler barrel is made up of two shell courses to which a round external firebox is joined. The design of the boiler is based on up-to-date experience, heavy bracing being applied throughout. A dome, housing the saturated steam regulator, is mounted on the boiler.

The firebox made of special quality steel is completely welded. The fire-

box crown has been arranged comparatively low, resulting in a large steam space. The arched crown-sheet joins the side sheets by curves of large radii.

Seamless drawn steel tubes and flues are rolled and welded into the firebox tube plate, but rolled only into the smokebox tube plate.

Further items of equipment are: a Marcotty type firedoor, screw operated drop grate, steam turret in front of cab with check valve, blow-off valve of the Gestra type.

The locomotive has a bar frame stiffened by two frame plates in the front, the buffer beam, the connecting piece between the cylinders, the forward firebox support, the drag box and by further sturdy frame stays.

DRIVING GEAR AND VALVE GEAR.

Rod ends are drop-forged and welded to rod body of double T section iron. Needle lubricators are stamped out of sheet metal and welded to rod ends. Main and side rod bearings are bushings of a three-material compound.

The cylinders have cast-on exhaust chambers and are fitted with standard type piston valves and Winterthur bypass valves.

A Bosch lubricator has been provided for cylinder and piston valve lubrication.

The locomotive has Walschaert valve motion with pendulum suspension of the combination lever. Reversal is effected by operating the reverse screw.

The boiler carries a sand box of ample capacity, having 8 sand pipes on each side. The sanding gear is air operated.

GENERAL EQUIPMENT.

Knorr air brakes are installed, acting on the front of each double wheel.

The locomotive is supplied with a turbo-generator of 0.5 kilowatts for electric lighting.

The engine is fitted with a Deuta speed indicator of the non-recording type.

TENDER.

The locomotive is coupled to a two-truck tender without underframe. The water tank is semi-circular, curved plates forming the front and rear end. The

tank is welded throughout and all trucks are built-up of pressed plates, welded throughout.

SPECIFICATION DATA.

Type	2-10-0 L-42
Class	Guterzug-Lok
Service	Freight
Builder	Henschel & Sohn, Kassel
Date Built	1944
Gauge	56 1/2"
Type of Fuel	Coal
Weight Locomotive, Working Order	342,400 pounds
Weight Tender, Working Order	127,200 pounds
Tractive Effort	56,000 pounds
Steam Pressure	227 lbs./sq. inch
Maximum Speed	50 m.p.h.

HOSPITAL UNIT CAR
UNITED STATES ARMY MEDICAL CORPS
CONTINENTIAL UNITED STATES

DESCRIPTION.

a. GENERAL. The Hospital Unit Car used by the United States Army Medical Corps for the transportation of casualties is of all-steel standard passenger car construction. The overall length of the car is 84 feet 6 inches between the pulling faces of the coupler when the car is coupled, 10 feet wide over the side sills, and 13 feet 6 inches from the top of the rail to the roof sheet. The approximate weight of the unit is 164,000 pounds. The car is mounted on six-wheel trucks employing both elliptic and coil spring suspension and is operated on standard gage railroads within the limits of the continental United States. Complete facilities are provided for 36 patients with additional accommodations for the medical staff and other personnel. The car is air conditioned throughout and is divided into three main sections. The first section, a ward in the center of the car, has 36 bunks arranged in tiers of three. Six of these bunks, separated from the others by a sterilizing unit and toilet compartment, are equipped with metal window screens and are designed for occupancy by mental patients or attendant personnel attached to the Hospital Unit. The second section, at one end of the car, contains a completely equipped kitchen and receiving room for patients. The third section, at the opposite end of the car, contains separate compartments for occupancy by a nurse and a doctor. It also has a toilet compartment, a shower bath, closet space, and the electrical control board.

(1) CAR LIGHTING ELECTRICAL SYSTEM. The car electrical system furnishes power for all electric services required. It consists of a generator, a battery, wiring, controls and electrically-operated units.

(2) STANDBY ELECTRICAL SYSTEM. A standby electric circuit, installed to conserve the battery when the car is in a yard, is equipped with 110V

or 220V single phase 60 cycle AC standby lines.

(3) VENTILATING SYSTEM. The ventilating system circulates and renews the air within the car.

(4) AIR COOLING SYSTEM. The air cooling system, used during the summer months to cool the air distributed by ventilating system, is a standard railroad ice-activated type, thermostatically controlled by the temperature control system.

(5) TEMPERATURE CONTROL SYSTEM. The temperature control system controls and regulates the heating and cooling of the hospital car. It consists of four heating relays, one cooling relay, four heating thermostats, and one cooling thermostat, which operate automatically or upon demand.

(6) STEAM HEATING SYSTEM. The car is heated by a steam zone system. Steam is supplied to such various auxiliary units as the sterilizer, the hot water heater, and the coffee urn from the steam train line.

HOSPITAL, KITCHEN CAR
UNITED STATES ARMY MEDICAL CORPS
CONTINENTIAL UNITED STATES

The hospital kitchen car is a complete kitchen unit used for storing and preparing food for passengers in hospital cars and hospital trains. This car was especially designed and constructed for the Medical Department, United States Army and is equipped with the most modern equipment available. Food can be prepared to feed 250 people per meal in this kitchen car. Construction and design is such that adequate storage space is also available.

Two No. 5 coal-burning Army field ranges are installed for the cooking and warming of food. The hot water backs in the ranges provide hot water for the hot water tanks at the range-end of the car. Coal-burning ranges are used in preference to other types of fuel heated ranges because of the availability of coal at most railroad stations.

Interior fixed kitchen equipment consists of an ice chest, refrigerator, two sinks, bread locker, utensil cabinet, meat cutting table, cook's work table, storage shelves, vegetable bin, garbage cans, wood basket and coal bin.

Necessary cooking utensils, cook's aprons and caps, food trays, silverware and cleaning supplies are supplied in accordance with Medical Department Equipment List.

This car is also equipped with a steam system for heating the car and the circulating water; two air pressure water supply systems, for both hot and cold water; electrical system and ventilating system.

UNITED STATES ARMY
TRANSPORTATION CORPS

MOBILE RAILWAY MACHINE SHOP UNIT

For active field service in foreign theaters this Machine Shop Unit is practical and is the first step of actual development of Mobile Railway Repair Shops.

This car contains an electric generator set designed to furnish power to drive the various machines and furnish light on the job site. The car is equipped with the following power driven machines and hand tools:

14"	shaper	1	250# anvil
8"	electric lathe	1	lathe centering machine
14"	engine lathe	1	8" bench grinder
8"	bench lathe	1	horizontal metal band saw
1	bench drill	1	air compressor
22"	drill press	1	gas generator battery charging unit
6"	bench grinder	1	generator set for lights and power
2	50-ton self lowering jacks	1	work bench and hand tools
1	5-ton track jack	1	fire extinguisher
1	1/2 ton chain hoist	1	Acetylene welding outfit