

Insiderwissen: Leslie Ashwell Woods Schnittzeichnungen

Wer über „Inside Information“ verfügt, hat Experten- und Hintergrundwissen, nicht direkt offensichtliche Informationen zu einem Sachverhalt. Der Illustrator Leslie Ashwell Wood besaß offensichtlich solche Kenntnisse und wußte sie in seinen Zeichnungen zu nutzen. Der gefeierte Schnittbildkünstler wurde wohl um 1903 in Nord-London geboren.



Leslie Ashwell Wood (ca. *1903-†1973)

Ashwell Wood war eine vielseitige Persönlichkeit und erhielt eine formale Ausbildung in Kunst, Ingenieurwesen und Naturwissenschaften – eine einzigartige Kombination zu Beginn des 20. Jahrhunderts. Seine Karriere begann 1936 bei Fairey Aviation, wo er sich als ausgebildeter Zeichner und technischer Illustrator hervortat. Zu seinen Aufgaben gehörte die Erstellung technischer Zeichnungen bzw. Blaupausen, die eine dreidimensionale Darstellung auf einer zweidimensionalen Seite ermöglichten.

Die früheste ihm zugeschriebene Zeichnung „Keeping the Shipping Channels Clear“, findet sich auf der Rückseite von „Modern Wonders“ vom 18. Dezember 1937.

Vermutlich war Leslie Ashwell Wood während des Krieges für das Informationsministerium tätig. Sein unverwechselbarer Illustrationsstil zeichnete ihn als den am längsten tätigen Cutaway-Zeichner bei der wöchentlich erscheinenden Jungenzeitschrift „EAGLE“ aus. Seine akribisch detaillierten und mit Anmerkungen versehenen Skizzen enthielten häufig die bekannten „Cutaway“-Ansichten, die nicht nur künstlerisch präzise waren, sondern komplexe Szenen anschaulich erklärten. Er schaffte es, solche Illustrationen innerhalb von etwa einer Woche zu recherchieren, zu entwerfen, zu malen und abzuliefern. Er starb 1973 in London.

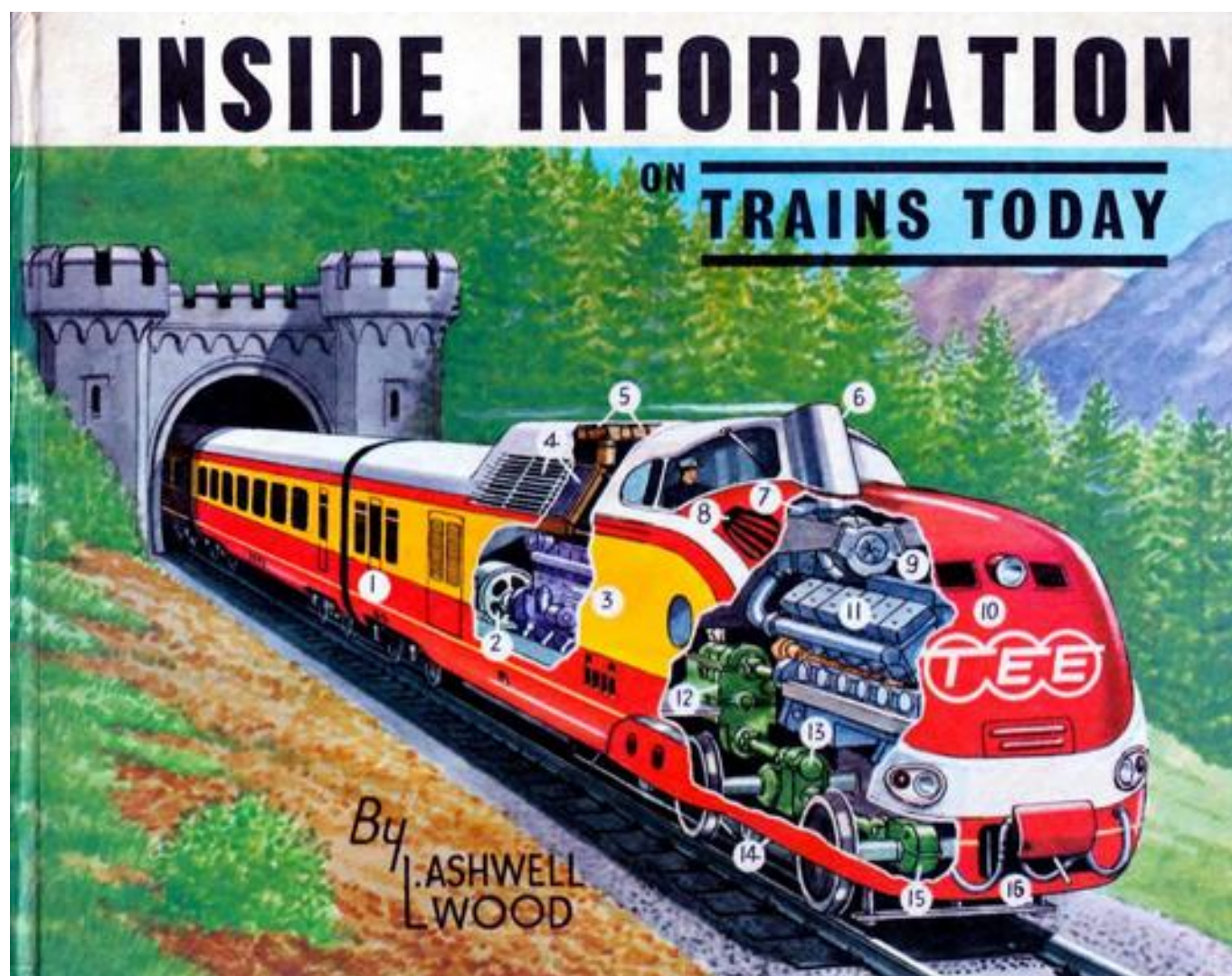
Leslie Ashwell Wood galt mit einem Honorar von 42 £ pro Schnittzeichnung als einer der bestbezahlten Künstler bei EAGLE. Bei der Anfertigung von Cutaways für EAGLE begann er mit äußerst detaillierten Bleistiftskizzen, wobei unklar bleibt, ob er direkt darüber malte oder sie lediglich als Vorlage verwendete. Auch die Texte hat er wohl selbst verfaßt. Militärische Motive zogen die unerwünschte Aufmerksamkeit der Behörden auf sich, die einen Verstoß gegen den „Official Secrets Act“ („Gesetz zum Schutz von Staatsgeheimnissen“) befürchteten. Ashwell Wood mußte mehrfach nachweisen, daß er keine Vorschriften verletzt hatte. Er gilt als der produktivste Cutaway-Zeichner für EAGLE und steuerte fast zwei Drittel der rund 960 Cutaways bei, die in dieser Wochenzeitschrift veröffentlicht wurden.

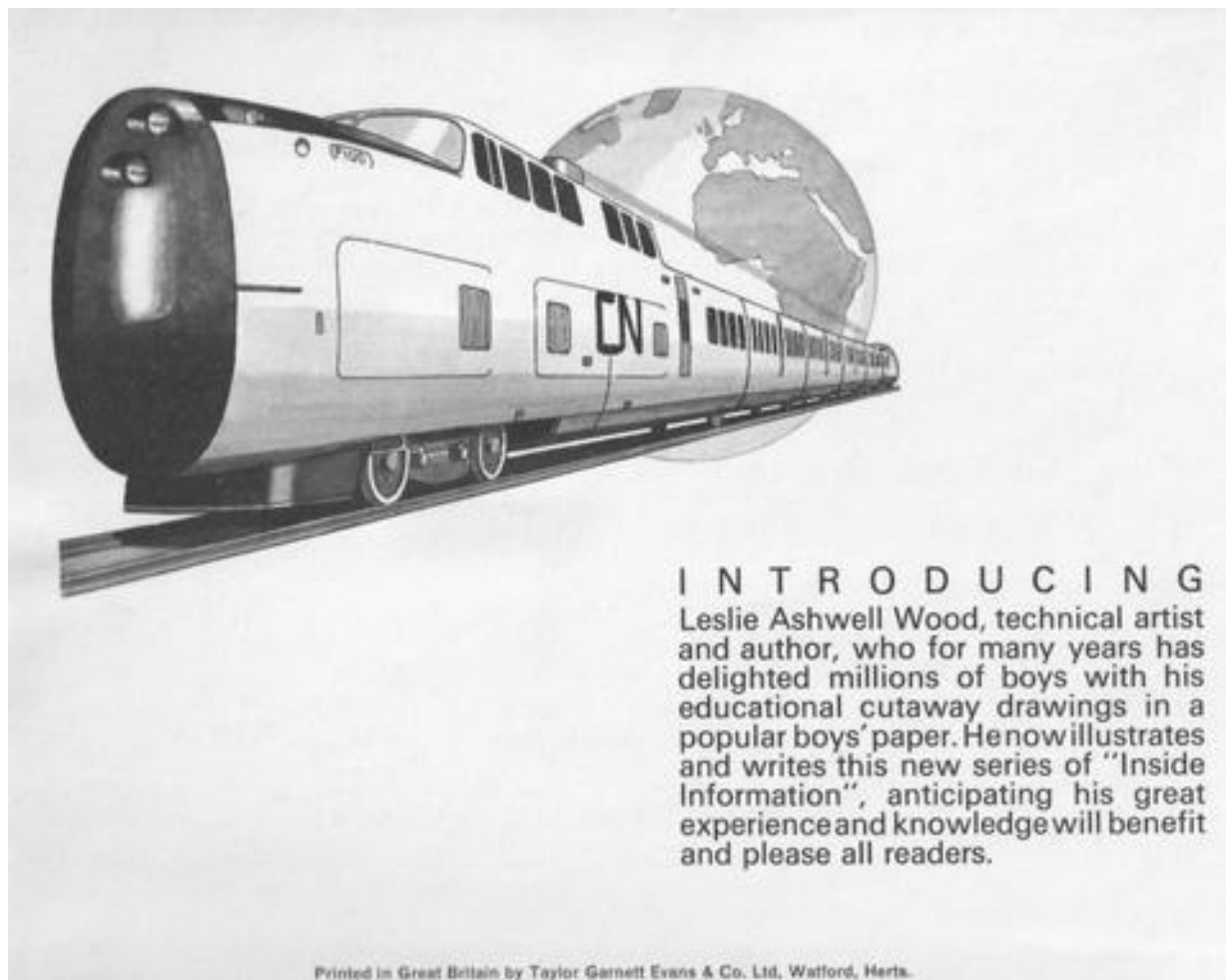
Im Buch „The Children's Wonder Book in Colour No. 2“ von 1948 illustrierte Ashwell Wood „Die größten Lokomotiven der Welt“. Eine Zeichnung zeigt gleich vier aufgeschnittene moderne Dampflokomotiven der vier großen Bahngesellschaften Großbritanniens.



“Crack Locomotives on Four Main Lines of British Railways”

1969 erschien in der Reihe Benwig Books bei Taylor Garnett Evans in Watford das Kinderbuch „**Inside Information on Trains Today**“. Auf dem Titelbild prangt der bekannte deutsche „Trans-Europa-Expreß“





Leslie Ashwell Wood hat Millionen Jungen mit seinen lehrreichen Schnittzeichnungen in populären Jungenzeitschriften erfreut. Die 1969 neue Reihe „Inside Information“ sollte ebenfalls alle Leser begeistern.

TRAINS TODAY & TOMORROW



NEW high speed trains are under construction throughout the World and the idea that Railways are fading away is far from the fact. Britain's electric system on the Birmingham, Manchester and Liverpool network is well ahead with Electric Locomotives capable of 100 miles per hour. In this book, some of the most up-to-date Locomotives are presented in a novel way. They have been cutaway to show their "inside" features, which are numbered and described without being too technical.

HOW IT ALL STARTED

The Stockton and Darlington Railway's first Engine "Locomotion" was built in 1825. It weighed 8 tons and hauled a load of 50 tons at 5 miles per hour on a level track.

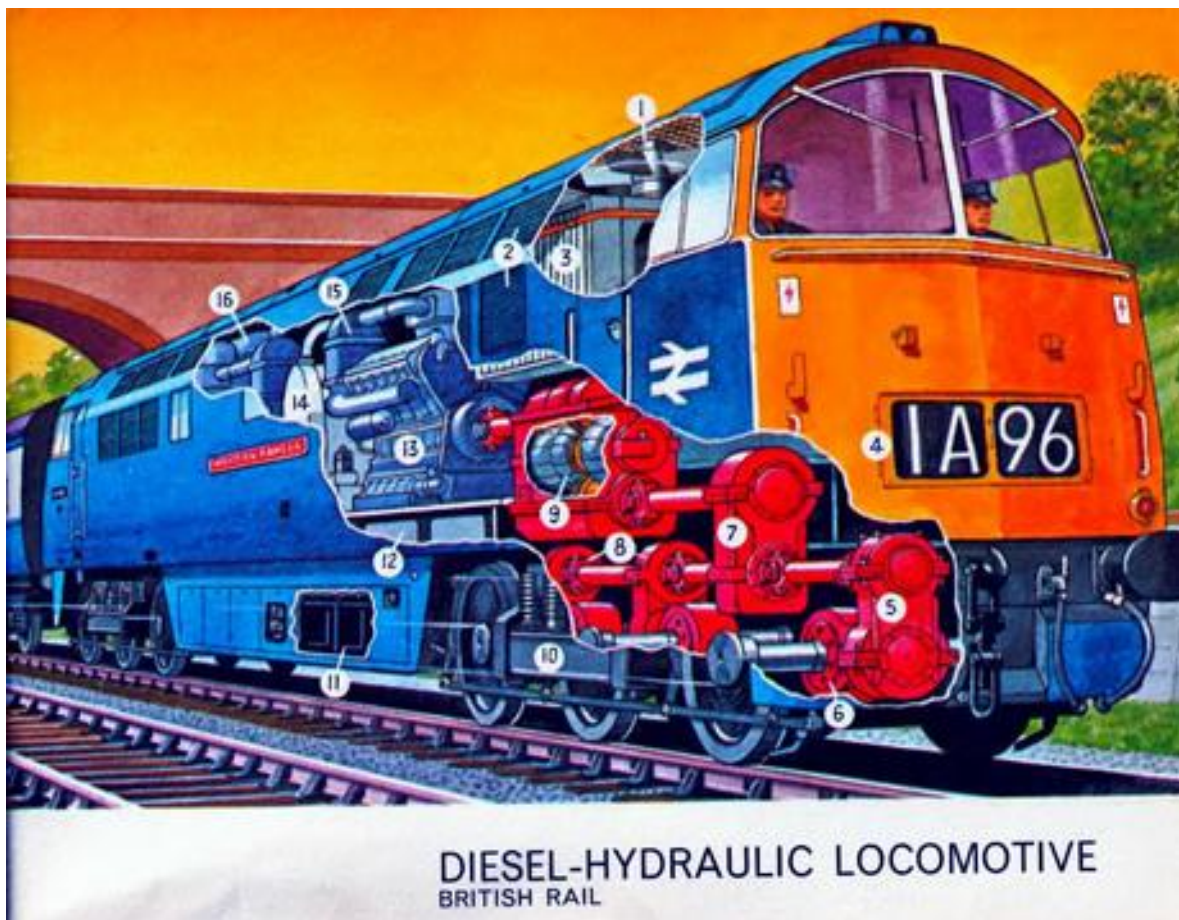
Neue Hochgeschwindigkeitszüge wurden in der ganzen Welt konstruiert. Einige der modernsten Triebfahrzeuge sollten auf neue Weise präsentiert werden, indem Schnittzeichnungen ihr normalerweise von außen nicht sichtbares Inneres offenlegen und erklären.

Was einst 1825 mit der Eisenbahn von Stockton nach Darlington begann, sollte sich fortsetzen mit modernen Dampf-, Diesel- und Elektrolokomotiven.

AWAY TO THE WEST COUNTRY

POWERFUL diesel-hydraulic locomotives draw some of the famous trains on the Western Region of British Rail. Diesel-hydraulic means the diesel engine drives the wheels via an hydraulic (fluid) transmission box. The type, shown opposite, is the class 52 "Western". Each locomotive has a name beginning with Western. These C-C wheel arrangement, 2,700 h.p. twin-engine locomotives weigh 108 tons. The V-12 cylinder Bristol Siddeley Maybach diesel engines, 1,350 h.p. each, drive the two sets of bogie wheels through a hydraulic converter transmission box, plus final reduction gearing to each axle. Top speed 90 miles an hour. Length 68 feet. An oil fired boiler supplies steam heating for the train. Vacuum and compressed-air brakes are fitted.

KEY TO NUMBERED PARTS
 (1) One of four fans drawing cooling air through the engine cooling radiators. (2) Air intake grill. (3) Radiators. (4) British Rail code indicators. (5) Helical gear drive to final drive. (6) Bevel and crown wheel final drive to front axle, all the axles are driven this way. (7) Intermediate gearbox. (8) Shaft drive and gearboxes to the other axles. (9) Triple-converters of hydraulic drive. (10) Six-wheeled bogie frame. (11) Batteries. (12) Fuel tanks. (13) V-12 cylinder Bristol Siddeley Maybach diesel engine, 1,350 h.p. (14) Oil fired train heating boiler. (15) Exhaust driven engine air supercharger. (16) The other engine and drive is exactly similar. The driver's cab layout is the same each end.



Baureihe 52, dieselhydraulische Lok der British Rail Western Region

FASTEST TRAINS IN THE WORLD

ONCE every hour of the day a blue and ivory "bullet" streaks along the tracks of Japan's New Tokaido Line at 130 miles an hour. It does the 320 mile journey between Tokyo and Osaka in three hours. The Hikari Express, shown opposite emerging from the Bentanyama tunnel near Kozu, has no locomotive. Instead of which, powerful electric motors, totalling 8,000 h.p. are mounted on the axles of all the carriages. They take current at 25,000 volts from an overhead wire supported by pylons along the track. The driver's cab above the bullet-nose contains the brake and speed controls and a maze of electronic circuits. Throughout the hundreds of miles of specially laid track, the train's speed is regulated by an automatic electronic system controlled at Tokyo station.

KEY TO NUMBERED PARTS

(1) Driver's cab, the only time the driver uses the controls is when the train is starting or coming to a slow halt. (2) Electronic cabinet and circuits. (3) Between the rails and every concrete sleeper there is a rubber cushion. (4) Leading wheels and electric propulsion motors. (5) Entire track is built on concrete pylons. (6) Electric motor drive. (7) Air intakes. (8) Air-conditioning equipment. (9) Suspension wire. (10) Telephone lines. (11) Pantograph picks up current from the contact wire. (12) Contact wire carrying 25,000 volt current. (13) Contact cable suspension. (14) Insulators. (15) Luxury seating in air-conditioned coaches. (16) Electric motor drive. Alongside the track is an electric cable.



HIKARI EXPRESS
JAPANESE NATIONAL RAILWAYS

Zu den schnellsten Zügen der Welt zählte selbstverständlich der Hikari Express der Japanese National Railways.

100 M.P.H. INTER-CITY EXPRESSES

THE vast and successful electrified main line routes of British Rail between London, Birmingham, Manchester and Liverpool bring these cities nearer to each other in journey time. A complete overhead contact wire system of 25,000 volts is installed. There are two main types of support for the overhead contact wires—a lattice girder type for a four-track main line and a cantilever pylon type, shown opposite, for a two track line. Operating the high-speed trains on these routes are electric locomotives capable of 100 miles an hour. One of the latest types is Class 86, wheel arrangement BO-BO, weighing 81 tons 2 cwt, they are fitted with AEl electrical equipment and four traction motors developing 3,500 h.p. One 875 h.p. motor driving each axle.

KEY TO NUMBERED PARTS

(1) Suspension wire. (2) Contact wire carrying 25,000 volt alternating current. (3) Register arm keeps the contact wire in line. (4) Insulators. (5) Pantograph picks up the current from the contact wire. (6) Cooling oil tank. (7) Pantograph lowered. (8) Rectifier changes the 25,000 volt alternating current to direct current for traction motors driving the locomotive. (9) Transformers. (10) Control cabinet and electric circuits. (11) Bonding for track circuit system connected to all electric signal box. (12) 875 h.p. traction motor driving the wheel axle through reduction gearing. (13) Four wheel bogie frame. (14) Air-brake cylinders. (15) Power and vacuum brake connections. (16) British Rail code.



Elektrolok der British Rail für den Intercity-Express-Verkehr auf Hauptstrecken.

BY TRAIN TO THE CLOUDS

AN amazing railway which climbs up mountains by means of spiral tunnels is the line between Bergun and Preda, Switzerland. Three completely spiral tunnels and four viaducts across the river Albula have been built to achieve an altitude of 1,368 feet between the two stations only $3\frac{1}{4}$ miles apart as the crow flies. The train actually travels $7\frac{1}{4}$ miles in making the ascent at an average incline of 1 in 29. After leaving this scene, shown opposite, the train continues its climb to St. Moritz, which is 6,000 feet above sea level. The 50 ton locomotives of the Rhaetian Railway can be used as 1,050 h.p. diesel-electric or 915 h.p. direct current electric from overhead wires. The railway uses the metre gauge track, 3 ft. 3 $\frac{1}{2}$ ins.

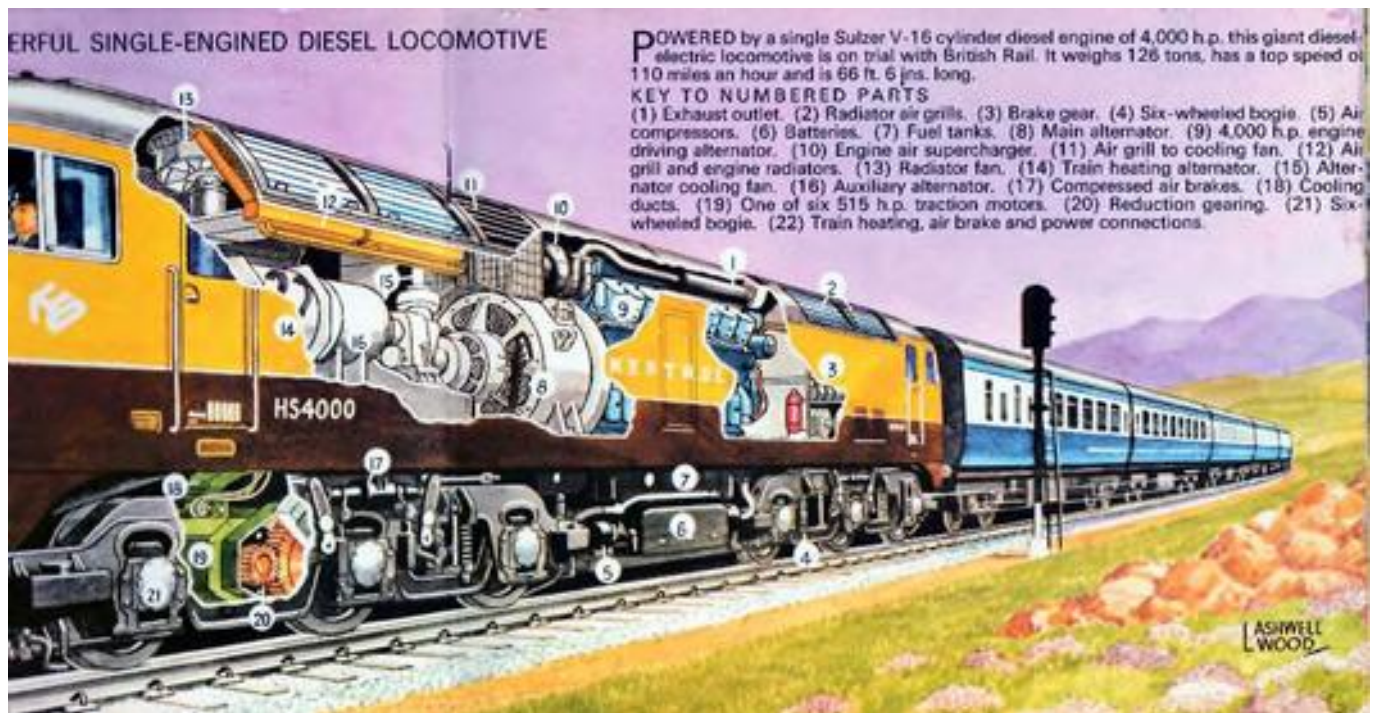
KEY TO NUMBERED PARTS

(1) Ascending from Bergun, the train crosses the first viaduct. (2) Rugneix Tunnel, the first spiral. (3) Tunnel exit, the train has climbed 80 feet. (4) Second viaduct and loop line over the valley. (5) Toua Tunnel, second spiral. (6) Tunnel exit 75 feet higher up. (7) Third viaduct and loop line over the other side of the valley. (8) Small straight-through tunnel. (9) Electric locomotive and coaches of the Rhaetian Railway. (10) Fourth viaduct. (11) Tunnel entrance. (12) Zuondra Tunnel, the third spiral immediately above the Toua Tunnel. (13) Tunnel exit. (14) Train continues to climb to Preda and then on to St. Moritz. (15) Motor road through the valley. (16) The Albula River.



SWISS SPIRAL TUNNELS
RHAETIAN RAILWAY, SWITZERLAND

Per Zug zu den Wolken – das ermöglicht die Rhätische Bahn in der Schweiz mit ihren Kehrtunneln.



British Rail HS4000 „Kestrel“ war eine einmalig gebaute, dieselelektrische Versuchslokomotive und galt 1967 als die stärkste einmotorige Diesellokomotive der Welt.

SPECIAL EXPRESSES ACROSS EUROPE

THERE are 27 Trans Europe Expresses running in the high speed luxury TEE system linking 8 countries and serving 100 towns and cities over a network of 115,000 miles of railway. The fastest of the Trans Europe Expresses is the "Brabant" from Paris to Brussels, averaging 83 miles an hour. Other TEE's go to Milan in Italy, Hamburg in Germany, Geneva in Switzerland, Madrid in Spain and so on. Shown opposite is the Hamburg-Zurich express "Helvita" of the German Federal Railway. It is a 7-car trainset drawn by a 1,100 h.p. diesel-hydraulic locomotive, Class 601. The MAN diesel engine gives a top speed of 95 miles an hour. Weight of locomotive 62 tons. Length 63 feet. An auxiliary diesel engine drives a 260 volt electricity generator for train supplies.

KEY TO NUMBERED PARTS
 (1) Compartment for railway crew and customs officers. (2) 260 volt generator and air-conditioning equipment. (3) 250 h.p. diesel engine driving the generator. (4) Air intake grills and cooling radiators for both engines. (5) Fans drawing air through the radiators. (6) Streamlined exhaust funnel. (7) Engine exhaust outlet. (8) Air grill to supercharger. (9) Exhaust driven engine air supercharger. (10) Streamlined outer casing and headlamps. (11) V-12 cylinder, 1,100 h.p. MAN diesel engine. (12) Triple converters of hydraulic drive. (13) Reduction gear drive to rear axle. (14) Four wheeled bogie frame. (15) Reduction gear drive to front axle. (16) Automatic coupling.



DIESEL-HYDRAULIC LOCOMOTIVE
 GERMAN FEDERAL RAILWAY

27 TEE-Züge verbanden 8 Länder und bedienten 100 Städte auf einem Schienennetz von 115.000 Meilen.

LATEST TURBINE TRAINSET

A COMPLETELY new idea in railway travel is the gas-turbine "Turbo-train" introduced by Canadian National Railways. These trains will operate non-stop over the 335 mile run between Montreal and Toronto, as shown opposite, making the trip in just under four hours. Top speed will be 95 miles an hour with an average speed of 85 miles an hour. Each trainset is made up of 6 cars with a domed power car each end to push and pull. There are two gas turbine, or jet engines in each power car, with an additional turbine in one car for electrical supplies. The engines power the wheel axles directly through mechanical gear drive and burn ordinary diesel fuel. Each engine produces 400 h.p. giving a total of 1,600 for the train, on four driving axles.

KEY TO NUMBERED PARTS
 (1) Code headlamps. (2) Clam-shell doors open out for coupling up. (3) Automatic coupling. (4) Reduction gear drive to front axle. (5) Reduction gear drive to rear axle. (6) Multi-speed gear box with fluid transmission. (7) Reduction gear drive to gear box. (8) Air intake to engines, both sides. (9) Pratt and Whitney ST6 gas turbine engines. Modified versions of the successful aircraft engines. (10) Jet exhaust pipe. (11) Electricity generator driven by a third gas turbine engine. This supplies the heating and air-conditioning equipment. (12) Stairs to upper deck. (13) Exhaust outlet, both sides. (14) Passengers observation Saloon. (15) Entrance door. (16) Streamlined cars of aluminium construction.



TURBO-TRAIN
 CANADIAN NATIONAL RAILWAYS

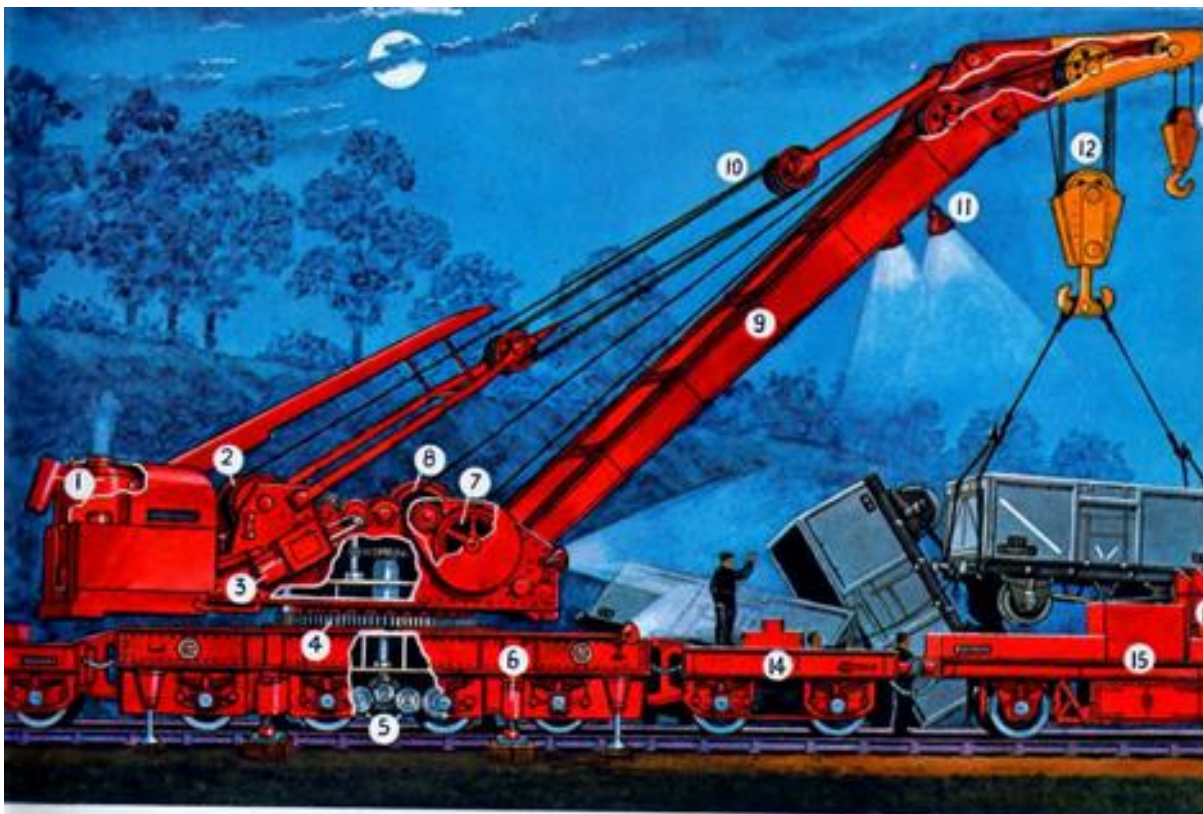
Der damals neueste Gasturbinen-Zug der Canadian National Railways CNR.

BREAKDOWN CRANE IN ACTION

WORTHY of inclusion in this book of trains is the work done in all weather conditions by the breakdown crane. Apart from being called out at all hours for accidents and derailments these cranes are used for track lifting, bridge raising and general maintenance. Shown opposite is one of the 75-ton steam breakdown cranes of British Rail, they can lift a load of 75 tons, within a radius of 21 feet, with supporting jacks extended. Steam is quickly raised by a water tube boiler at the rear, this supplies steam to two cylinders at the sides which drive all the gears and hoisting drums. The engineers' train generally consists of the crane with weight relieving bogies each end, a match truck for supporting the crane jib when travelling, a van for stores and a coach for the breakdown crew.

KEY TO NUMBERED PARTS

(1) Steam raising boiler, the hinged chimney is lowered for passing under bridges. (2) Derrick drum for raising and lowering the crane jib. (3) Steam powered cylinder and valve gear, each side. (4) Turntable with roller bearings. (5) Crane travel gear drive. (6) Four supporting jacks for heavy loads, these are extended outwards from the sides. (7) Main hoist drum and gear drive. (8) Auxiliary hoist drum. (9) Crane jib. (10) Wire ropes for derricking or raising and lowering the jib. (11) Floodlights, a generator supplies the lights and power tools. (12) Main hoist. (13) Auxiliary hoist for light loads. (14) Weight relieving bogie. (15) Match truck with water tank. (16) Support for crane jib when lowered.



75-TON BREAKDOWN CRANE
BRITISH RAIL

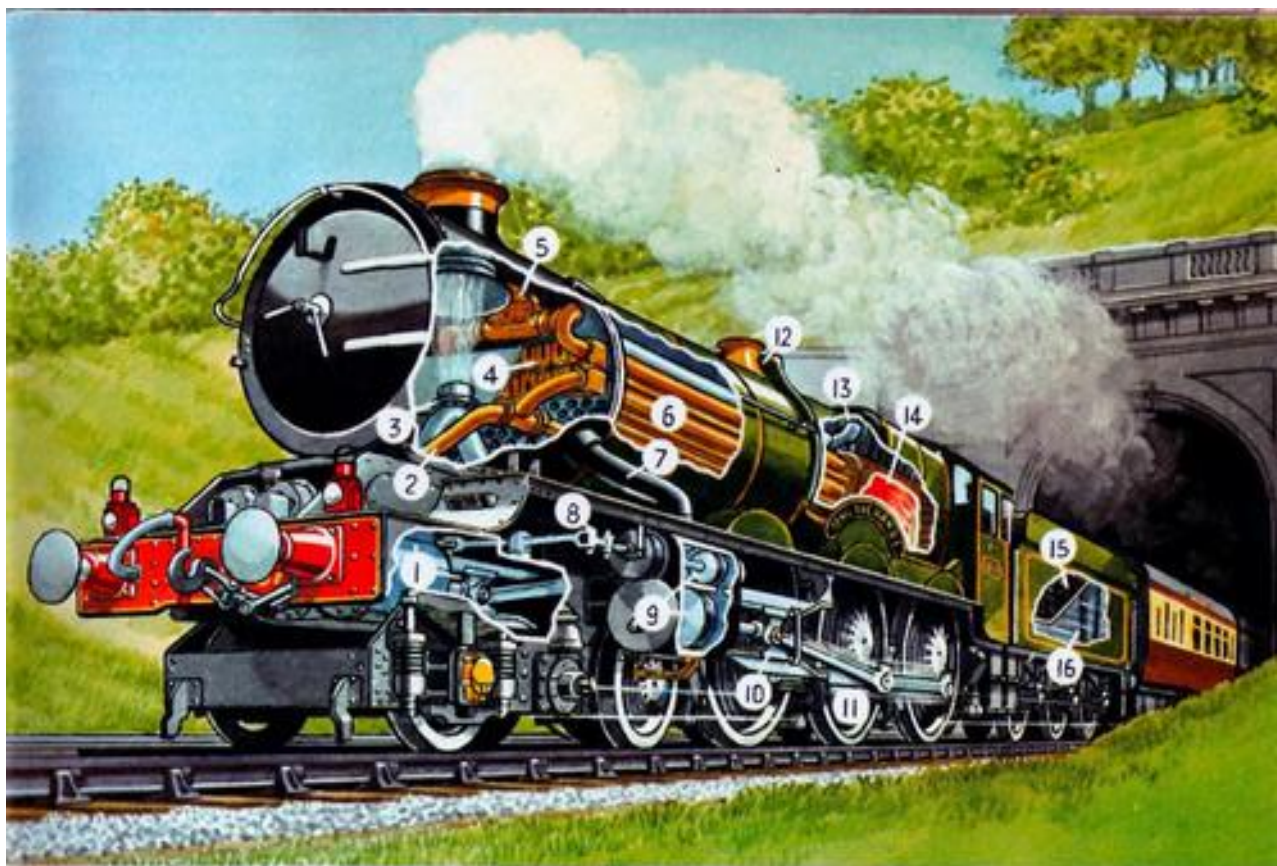
Ein 75-Tonnen-Hilfszug-Drehkran der British Rail. Der dampfbetriebene Kran kann bis zu 75 Tonnen heben.

END OF THE LINE FOR STEAM

ALL the speed and new methods of propulsion brings sad memories among many railway enthusiasts who mourned the death of steam on Britain's main lines in 1968. So out of respect it is fitting to include in this book one of the last steam monarchs. The locomotive in question being one of the famous King class of Western Region shown opposite, emerging from the Box Tunnel. These handsome steam locomotives were the most powerful in Great Britain. Thirty were built at the Swindon works. They were 68 ft. 2 ins. long and weighed, with tender, 135 tons 14 cwt. They had four cylinders, two inside and two outside the frames supplied with superheated steam at a pressure of 256 pounds per sq. in. Driving wheels were 6 ft. 6 ins. diameter.

KEY TO NUMBERED PARTS

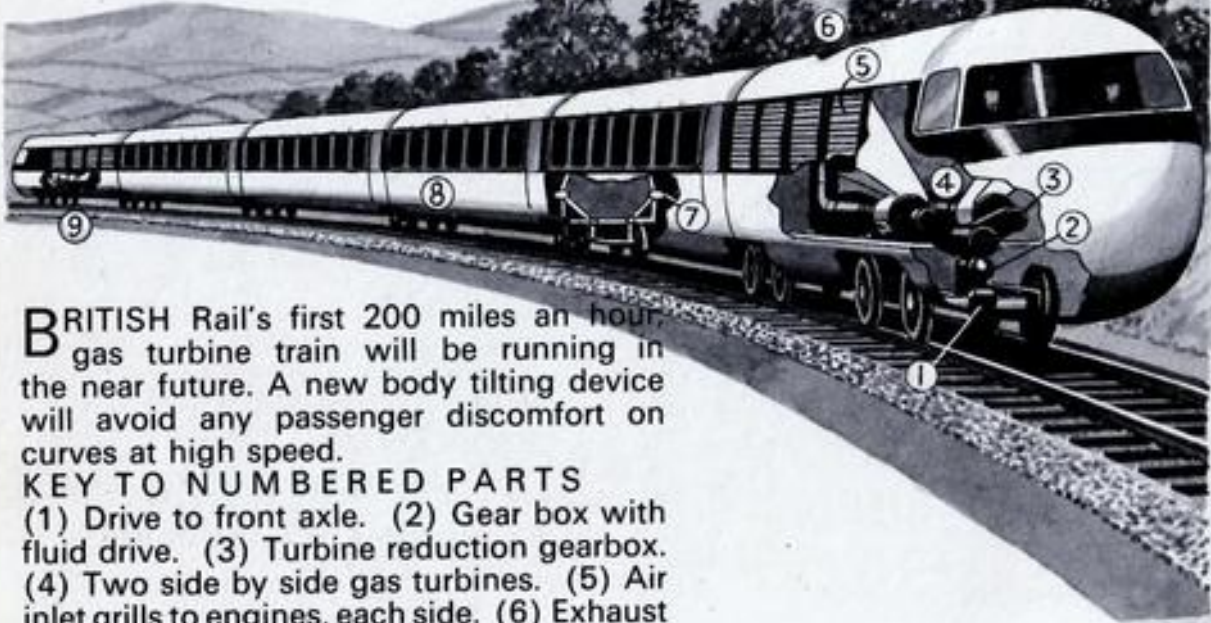
(1) Inside cylinder block. (2) Superheated steam pipe to inside cylinders, each side. (3) Exhaust blast pipe. (4) Superheater headed from which the steam is doubled back into the superheater boiler flues. (5) Regulator valve operated from the cab and controlling the steam supply from the boiler. (6) Fire tubes and superheater flues. (7) Superheater steam pipe to outside cylinders, each side. (8) Rocker arm operating piston valves. (9) Outside cylinder piston and valves. (10) Piston rod crosshead and slide bars. (11) Driving wheels and connecting rod. (12) Safety valves. (13) Steam entry to regulator valve. (14) Outer end inner firebox. (15) Coal supply—6 tons. (16) Water supply 4,000 gallons.



"KING" CLASS STEAM LOCOMOTIVE
BRITISH RAIL

Das Aus für die Dampflokomotiven kam in Großbritannien am 11. August 1968. Selbst modernste Maschinen kamen nach kurzer Lebensdauer aufs Abstellgleis.

WHAT OF THE FUTURE



B RITISH Rail's first 200 miles an hour gas turbine train will be running in the near future. A new body tilting device will avoid any passenger discomfort on curves at high speed.

KEY TO NUMBERED PARTS

(1) Drive to front axle. (2) Gear box with fluid drive. (3) Turbine reduction gearbox. (4) Two side by side gas turbines. (5) Air inlet grills to engines, each side. (6) Exhaust outlet. (7) Hydraulic tilting gear. (8) Stream-lined coaches. (9) Power unit—other end.

Wie steht es um die Zukunft? 1969 sah man voraus, daß Großbritanniens Gasturbinen-Züge mit Neigetechnik mit 200 Meilen pro Stunde verkehren würden. Nur auf der Strecke High Speed 1 (HS1), die London über den Kanaltunnel mit Paris und Brüssel verbindet, fahren 2026 die Eurostar-Züge im regulären Betrieb mit bis zu 300 km/h. Im Inland nutzen zudem die Regionalzüge der Klasse 395 (Javelin) diese Strecke, erreichen dort aber maximal 225 km/h (140 mph). Das restliche Inlandsnetz (200 km/h): Auf allen anderen wichtigen Hauptstrecken (wie der East Coast Main Line oder West Coast Main Line) liegt das Tempolimit im regulären Betrieb historisch und signalbedingt bei 200 km/h (125 mph). Zwar sind moderne Züge wie der Hitachi Azuma (Class 800/801) technisch für 225 km/h ausgelegt, die Streckeninfrastruktur und die klassischen Streckensignale lassen dieses Tempo im Alltag jedoch meist nicht zu. Zukunftsausblick: Im Bau befindet sich derzeit die neue Hochgeschwindigkeitsstrecke High Speed 2 (HS2) von London nach Birmingham. Die Züge dafür sollten ursprünglich bis zu 360 km/h erreichen, allerdings gibt es aktuelle politische Debatten, die geplante Höchstgeschwindigkeit aus Kostengründen leicht zu senken...

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