

BRITISH RAILWAYS - WESTERN REGION

BRITISH RAILWAYS ROLLING STOCK
CLASSIFICATION & LAYOUT DIAGRAMS
FOR WESTERN REGION LOCOMOTIVES

THIS BOOKLET LISTS ALL LOCOMOTIVE CLASSES GIVING THE CLASS NUMBER, THE RANGE OF LOCOMOTIVE NUMBERS APPLICABLE TO EACH CLASS AND AN INDICATION OF THE BUILDER AND POWER EQUIPMENT INSTALLED. DETAILED LAYOUT DIAGRAMS OF WESTERN REGION MAIN LINE LOCOMOTIVES ARE ALSO INCLUDED.

C.M. & E.E. Training School
SWINDON
MARCH, 1971
1st Edition

ROLLING STOCK CLASSIFICATION

DIESEL LOCOMOTIVES

Class	Number Range	Builder	Engine	h.p.	Transmission	
01	2954 - 2955	Barclay	Gardner	153	Mechanical	
02	2850 - 2869	Yorkshire Eng.Co.	R.R.	170	R.R.	
03	2000 - 2199 2372 - 2399	B.R.	Gardner	204	Mechanical	
04	2200 - 2341	Drewry	Gardner	204	Mechanical	
05	2400 - 2409	Barclay (0-6-0)	Gardner	204	Mechanical	
06	2410 - 2444	Barclay (0-4-0)	Gardner	204	Mechanical	
07	2985 - 2998	Ruston & Hornsby	Paxman	275	A.E.I.	
08	3000 - 3116 3127 - 3136 3167 - 3438 3454 - 3472 3503 - 3611 3652 - 3664 3672 - 3718 3722 - 4048 4095 - 4098 4115 - 4186 4191 - 4192	B.R.	E.E.	350	E.E.	(20 mph)
09	3665 - 3671 3719 - 3721 4099 - 4114	B.R.	E.E.	350	E.E.	(27 mph)
10	3137 - 3151 3439 - 3453 3473 - 3502 3612 - 3651 4049 - 4094	B.R.	Blackstone	350	G.E.C.	
11	12033 - 12138	L.M.S.	E.E.	350	E.E.	
12	15211 - 15236	S.R.	E.E.	350	E.E.	
13	4500 - 4502	B.R.	E.E.	700	E.E.	
15	8200 - 8242	B.T.H.	Paxman	800	A.E.I.	Type 1
17/1	8500 - 8585	Clayton	Paxman	900	G.E.C.	
17/2	8586 - 8587	Clayton	R.R.	900	G.E.C.	
17/3	8588 - 8616	Beyer Peacock	Paxman	900	C.P.	
20	8000 - 8199 8300 - 8327	English Electric	E.E.	1000	E.E.	

Class	Number Range	Builder	Engine	h.p.	Transmission	
22	6307 - 6356	N.B.L.	M.A.N.	1100	Voith	Type 2
23	5900 - 5909	English Electric	Napier	1100	E.E.	
24/1	5000 - 5049	B.R.	Sulzer	1160	A.E.I.	(Weight 80 ton RA6)
24/2	5050 - 5150	B.R.	Sulzer	1160	A.E.I.	(Weight 74 ton RA5)
25	5151 - 5299 7500 - 7677	B.R./Beyer Peacock	Sulzer	1250	A.E.I.	
26/1	5300 - 5319	B.R.C.W.	Sulzer	1160	C.P.	(Weight 78 ton RA6)
26/2	5320 - 5346	B.R.C.W.	Sulzer	1160	C.P.	(Weight 73 ton RA5)
27	5347 - 5415	B.R.C.W.	Sulzer	1250	G.E.C.	
29	6100 - 6103 6106 - 6107 6112 - 6114 6116 6119 6121 6123 - 6124 6129 - 6130 6132 - 6133 6137	N.B.L.	Paxman	1350	G.E.C.	
31/1	5500 - 5517 5519	Brush	E.E.	1470	Brush	
31/2	5518 5520 - 5699 5800 - 5862	Brush	E.E.	1470	Brush	

Class	Number Range	Builder	Engine	h.p.	Transmission	
33/1	6500 - 6510 6512 6515 6518 6522 - 6524 6526 6530 6534 6537 6539 - 6579 6581 - 6585	B.R.C.W.	Sulzer	1550	C.P.	Type 3 (Std)
33/2	6511 6513 - 6514 6516 - 6517 6519 - 6521 6525 6527 - 6529 6531 - 6533 6535 - 6536 6538 6580	B.R.C.W.	Sulzer	1550	C.P.	(Push-Pull fitted)
33/3	6586 - 6597	B.R.C.W.	Sulzer	1550	C.P.	(Hastings Line Gauge)
35	7000 - 7100	Beyer Peacock	Maybach	1700	Mekydro	
37	6600 - 6608 6700 - 6999	English Electric	E.E.	1750	E.E.	
40	200 - 399	English Electric	E.E.	2000	E.E.	Type 4
42	803 - 829 831 - 832 866 - 870	B.R.	Maybach	(2000 (2200	Mekydro	
43	833 - 865	N.B.L.	M.A.N.	2200	Voith	
44	1 - 10	B.R.	Sulzer	2300	C.P.	
45	11 - 137	B.R.	Sulzer	2500	C.P.	
46	138 - 193	B.R.	Sulzer	2500	Brush	
47	1500 - 1701 1707 - 1999 1100 - 1111	Brush/B.R.	Sulzer	2750	Brush	

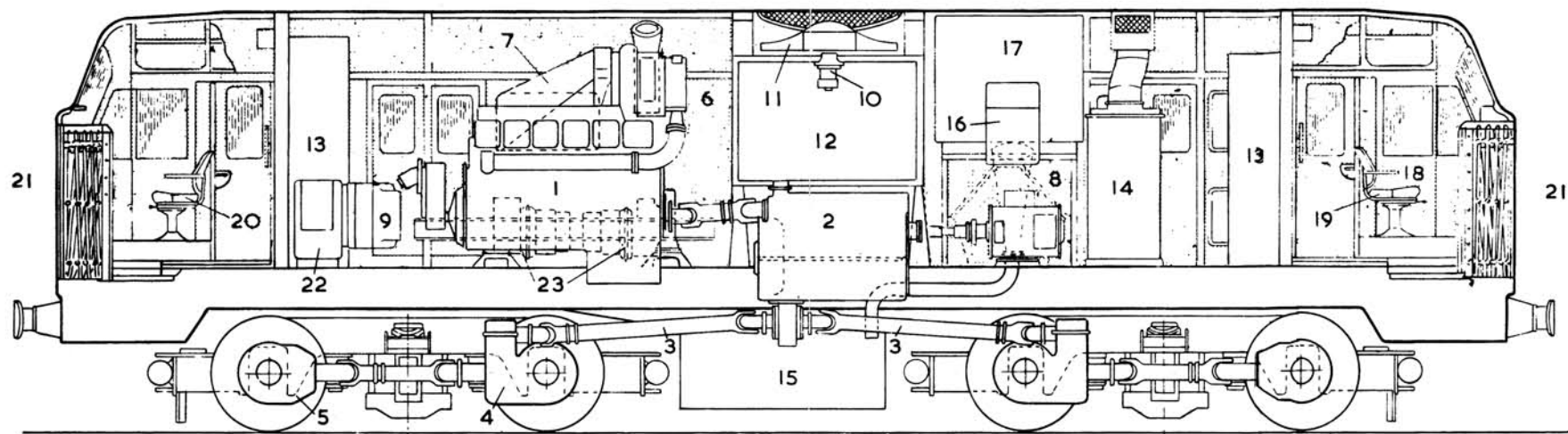
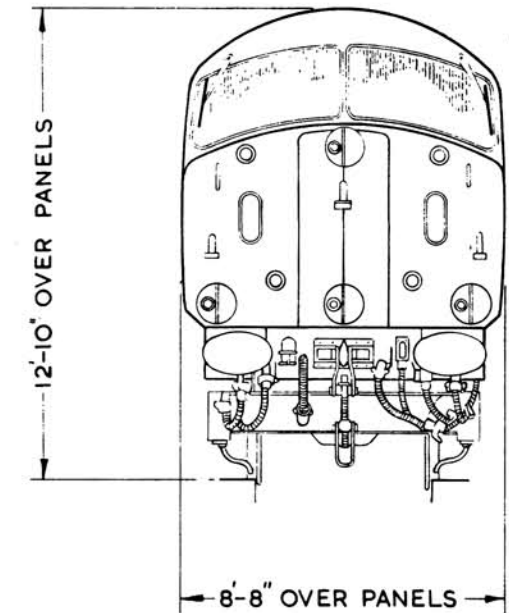
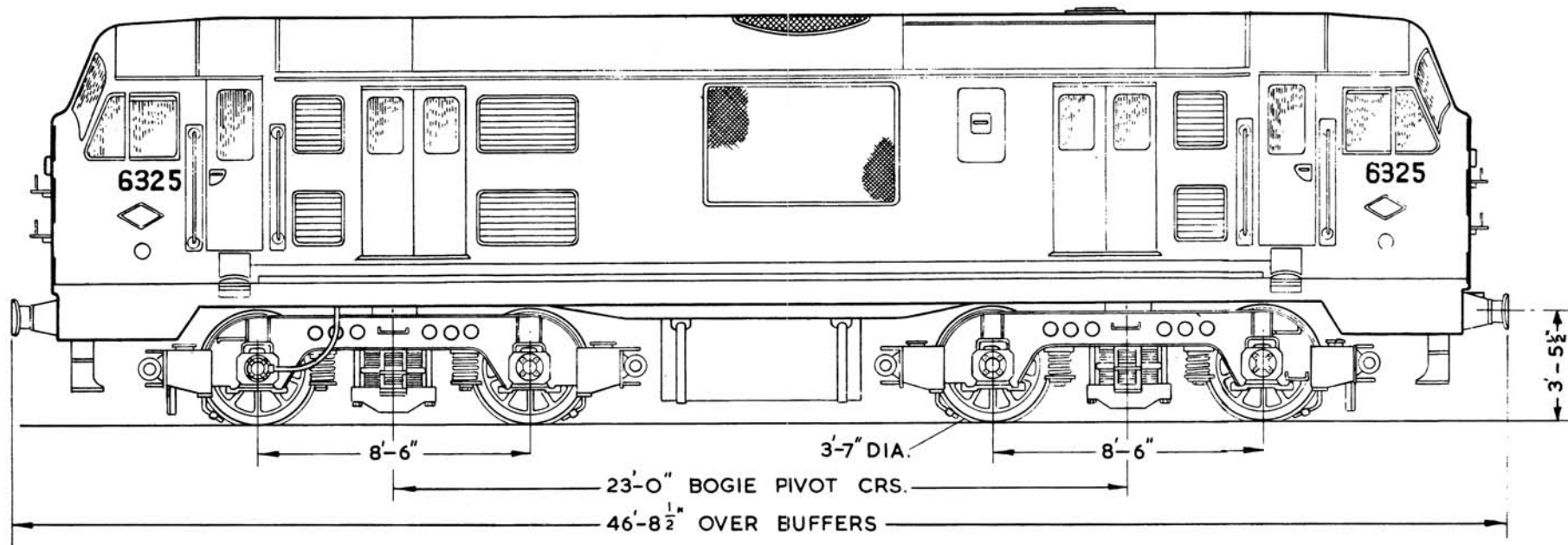
Class	Number Range	Builder	Engine	h.p.	Transmission	
48	1702 - 1706	Brush	Sulzer (V)	2650	Brush	Type 4
50	400 - 449	English Electric	E.E.	2700	E.E.	
52	1000 - 1073	B.R.	Maybach	2700	Voith	
53	1200	Brush	Maybach	2800	Brush	
55	9000 - 9021	English Electric	Napier	3300	E.E.	Type 5

ELECTRIC LOCOMOTIVES

Class	Number Range	Builder	Traction Equipment	h.p.	Line Voltage	Former Regional Code
71	E5000 - 5014	B.R.	E.E.	2500	750v d.c.	HA
73/1	E6001 - 6006	B.R.	E.E. (Electro-Diesel)	1600/ 600	750v d.c.	JA
73/2	E6007 - 6049	English Electric	E.E. (Electro-Diesel)	1600/ 600	750v d.c.	JB
74	E6101 - 6110	B.R.	E.E. (Electro-Diesel)	2500/ 650	750v d.c.	HB
76	26000 - 26057	B.R.	Metro Vic	1868	1500v d.c.	EM1
81	E3001 - 3023 E3096 - 3097	B.R.C.W.	A.E.I.	3300	25kv a.c.	AL1
82	E3046 - 3055	Beyer Peacock	A.E.I.	3300	25kv a.c.	AL2
83	E3024 - 3035 E2098 - 3100	English Electric	E.E.	3300	25kv a.c.	AL3
84	E3036 - 3045	N.B.L.	G.E.C.	3300	25kv a.c.	AL4
85	E3056 - 3095	B.R.	A.E.I.	3300	25kv a.c.	AL5
86	E3101 - 3200	B.R./English Electric	A.E.I./E.E.	3600/ 4000	25kv a.c.	AL6
87	E3201 - 3233	B.R.	E.E./A.E.I.	5000	25kv a.c.	

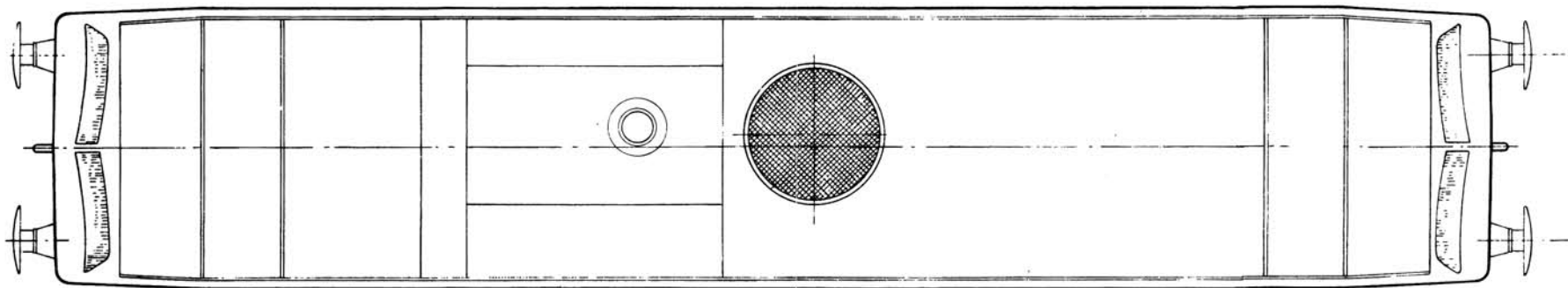
1100 HP NBL TYPE 2 BB DIESEL HYDRAULIC LOCOMOTIVE
CLASS 22

Engine	(No. make and type (No. of cylinders & cycle (Max Cont. Rated Output	- One, NBL-MAN L.12 V18/21 BS - 12 Cylinders, 4 stroke - 1100 HP at 1530 rpm
Transmission	(Type and Other (Particulars	- Voith-North British LT 306r
Performance	(Max. Tractive Effort (Cont. Tractive Effort	- 40000 lb at 27.6% adhesion - 30000 lb at 8 mph
Braking	(Type (For Loco (For Train (Brake Force (% of loco (weight in (working (order	- Air - Vacuum - 74.18%
Speed	(Max. Permitted Service Speed	- 75 mph
Curve	(Min. Rad Curve (without (gauge widening (at dead slow (speed	- 4½ chains - 4½ chains
Train Heating Equipment	(Boiler Make and Type (Steaming Capacity	- Clayton RO-100 - 1000 lb/Hour
Tank Capacities	(Engine Fuel) (Boiler Fuel) (Boiler Water	- 450 galls - 500 galls

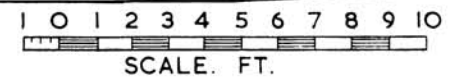


TYPE 2 DIESEL HYDRAULIC LOCOMOTIVE

1. N.B.L./M.A.N. ENGINE
2. N.B.L./VOITH HYD. TRANSMISSION
3. CARDEN SHAFT DRIVE
4. PRIMARY GEARBOX
5. SECONDARY GEARBOX
6. TURBO-CHARGER
7. ENGINE AIR DUCT
8. DYNOSTARTER
9. SERCK FAN PUMP
10. SERCK FAN MOTOR
11. COOLING WATER FAN
12. RADIATORS
13. CONTROL CUBICLE
14. TRAIN HEATING BOILER
15. WATER TANK
16. WATER TANK FILLER
17. FUEL TANK
18. CONTROL DESK
19. DRIVERS SEAT
20. ASSISTANTS SEAT
21. FLEXIBLE GANGWAY
22. COMPRESSOR
23. EXHAUSTERS



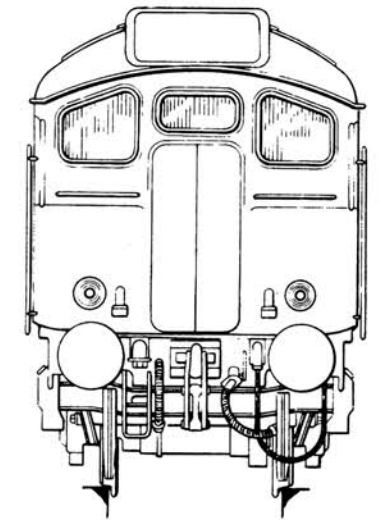
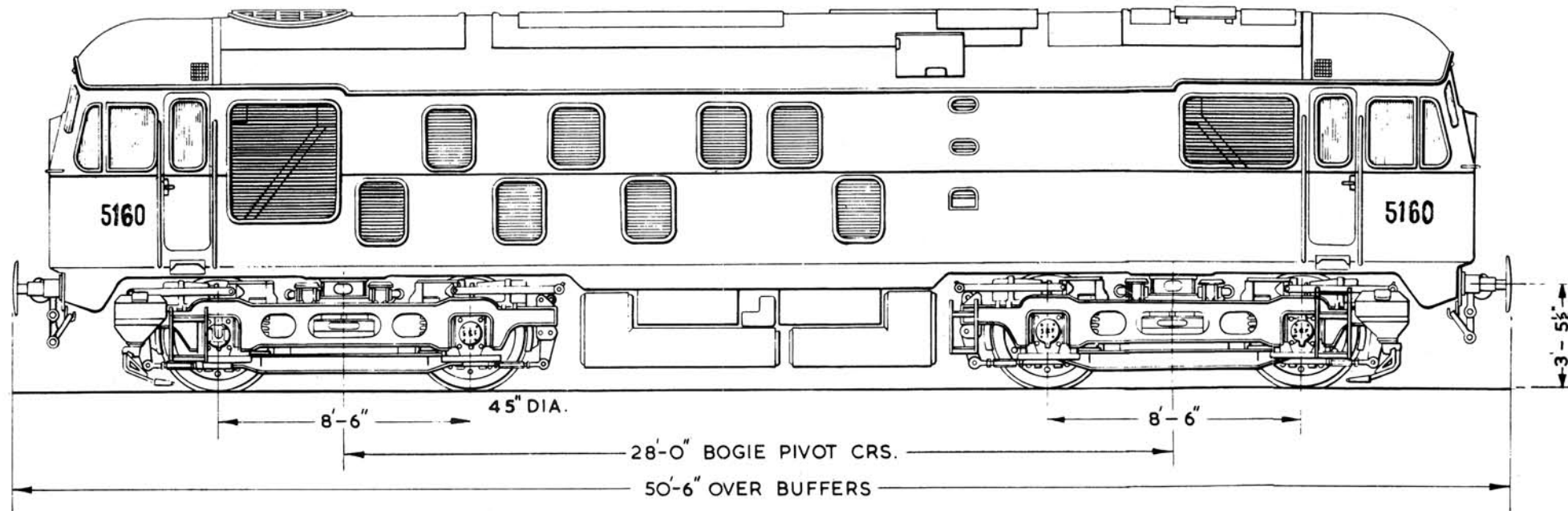
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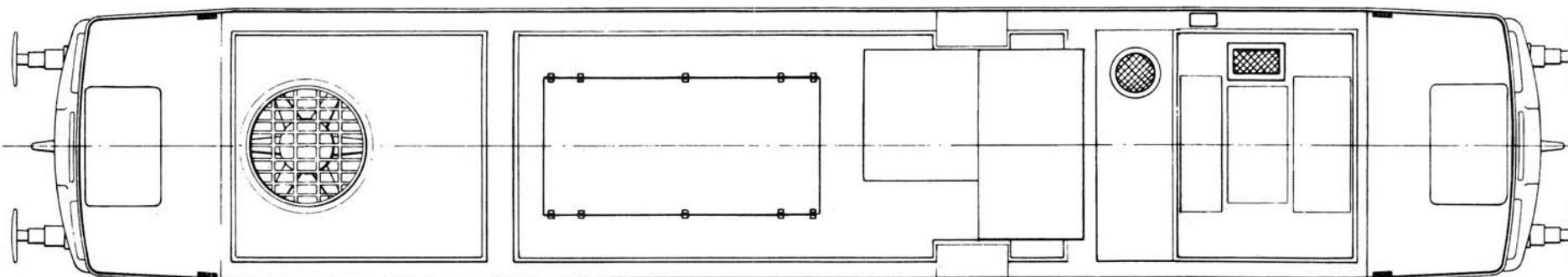
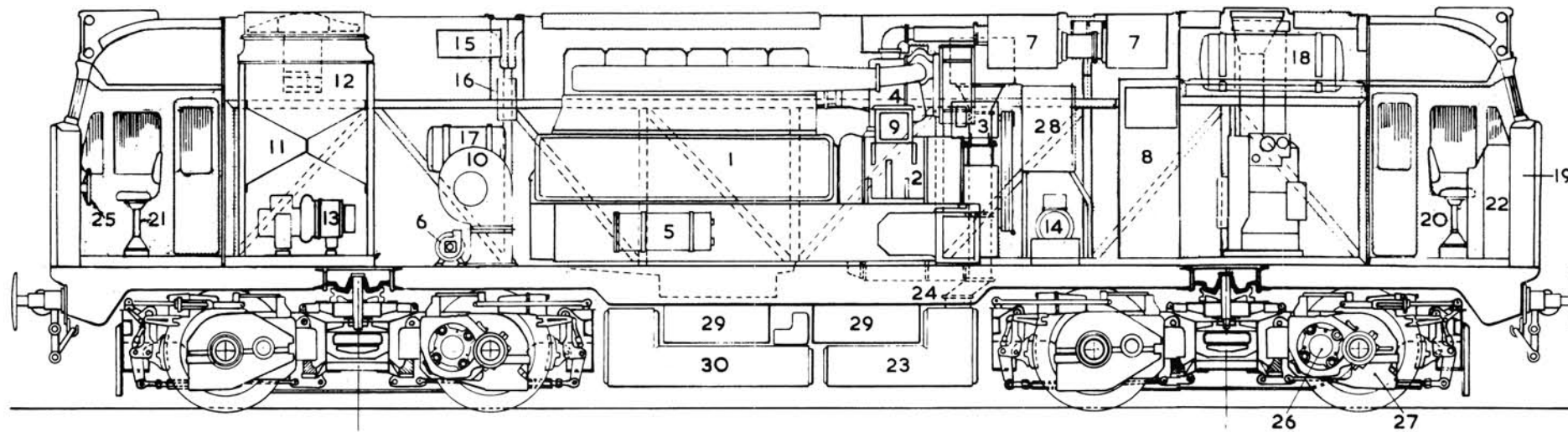
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1250 HP BR TYPE 2 BB DIESEL ELECTRIC LOCOMOTIVE
CLASS 25

Engine	(Make and Type (No. of Cylinders and Cycle (Max Cont. Rated Output	- Sulzer 6 LDA 28-B - 6 cylinder, 4 stroke - 1250 HP at 750 RPM
Main Generator	(Make and Type	- AEI RTB 15656
Traction Motors	(Make and Type (No. (Type of Suspension (Type of Gear Drive	- AEI 253 AY - Four - Nose - Single Reduction
Performance	(Max Tractive Effort ((Cont. Tractive Effort ((Rail HP at Cont. Rating (Full Engine Output	- 45000 lbs at 28.1% adhesion at 2340 amps main generator - 20800 lbs at 17.1 mph at 1300 amps main generator - 949 HP - Available between 7.0 & 77.5 mph
Braking	(Type (For Loco (For Train (Brake Force (% of Loco (weight in (working order	- Air - Vacuum - 87.9%
Speed	(Max Permitted Service Speed	- 90 mph
Curve	(Min Rad Curve (Without gauge (widening at (dead slow (speed	- 4 $\frac{1}{2}$ chains
Train Heating Equipment	(Boiler Make and Type (Steaming Capacity	
Tank Capacities	(Engine Fuel (Boiler Fuel (Boiler Water	- 560 galls



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TYPE 2 DIESEL ELECTRIC LOCOMOTIVE

1. SULZER 6 LDA 28B DIESEL ENGINE
2. MAIN GENERATOR
3. EXCITER
4. PRESSURE CHARGER
5. LUB. OIL FILTER
6. FUEL, OIL AND WATER PUMPS
7. ENGINE SILENCER
8. ELECTRICAL CUBICLE
9. VOLTAGE REGULATOR
10. MOTOR BLOWER SET.
11. RADIATOR
12. RADIATOR FAN AND MOTOR
13. EXHAUSTERS
14. COMPRESSOR
15. AUX. FUEL AND WATER TANK
16. INSTRUMENT PANEL
17. CONTROL RESERVOIR
18. MAIN RESERVOIR
19. FLEXIBLE GANGWAY
20. DRIVERS SEAT
21. ASSISTANTS SEAT
22. DRIVERS CONTROLLER
23. WATER TANK, 450 GALL.
24. WATER FILLER DUCT
25. HANDBRAKE
26. TRACTION MOTORS
27. REDUCTION GEAR CASE
28. BRAKE GEAR CUBICLE
29. BATTERY BOX
30. FUEL TANK

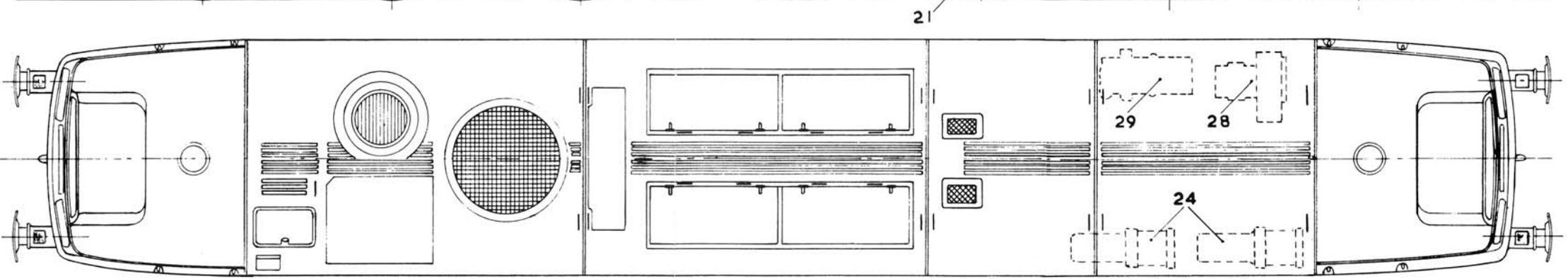
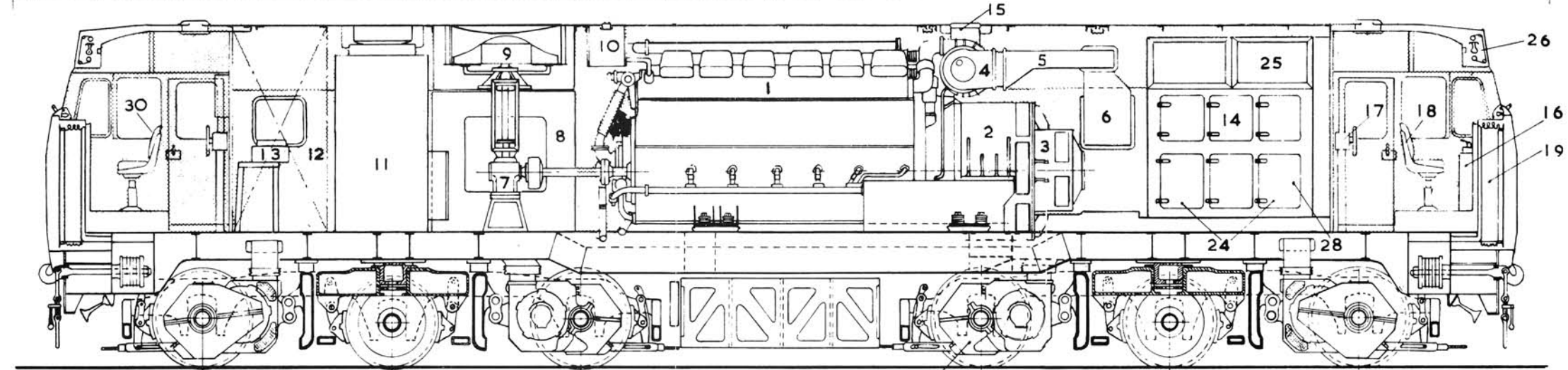
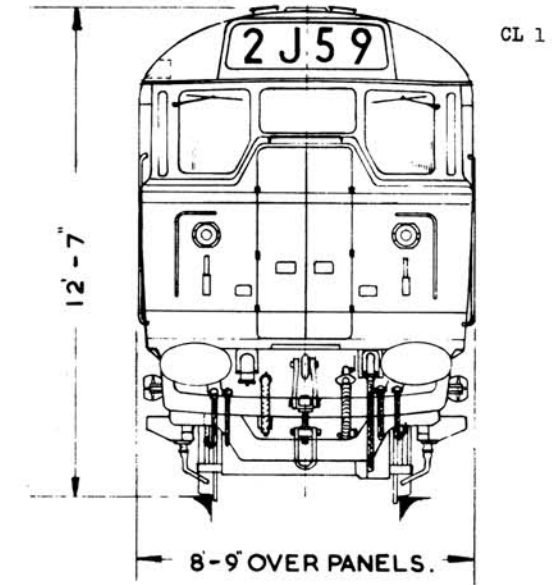
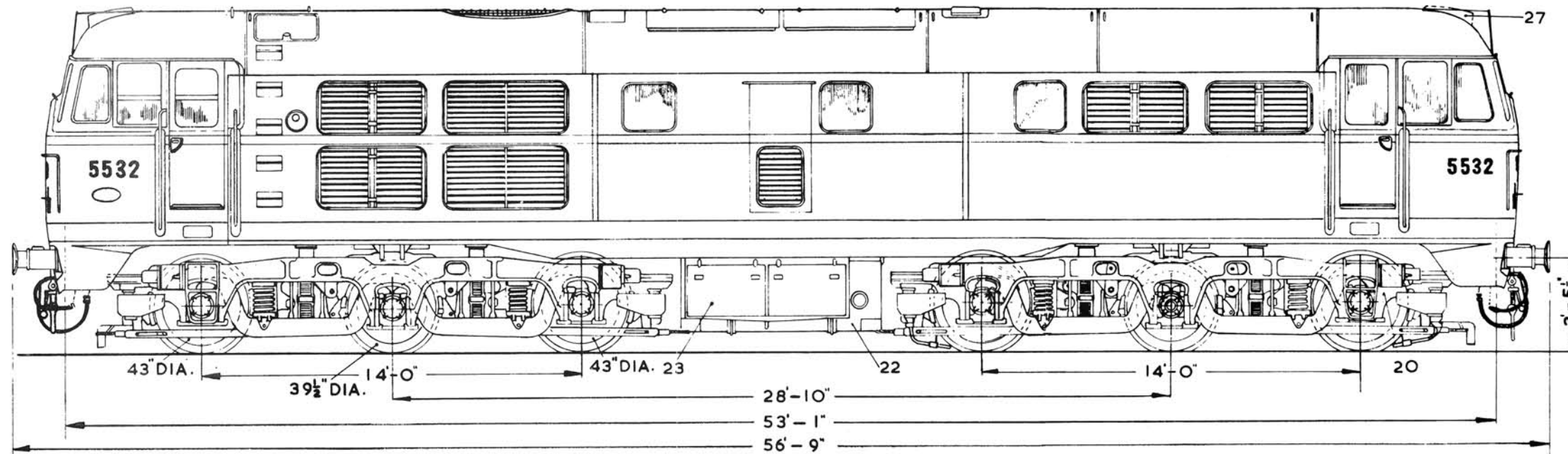
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1470 HP BRUSH TYPE 2 AIA-AIA DIESEL ELECTRIC
LOCOMOTIVE CLASS 31/1 & 2

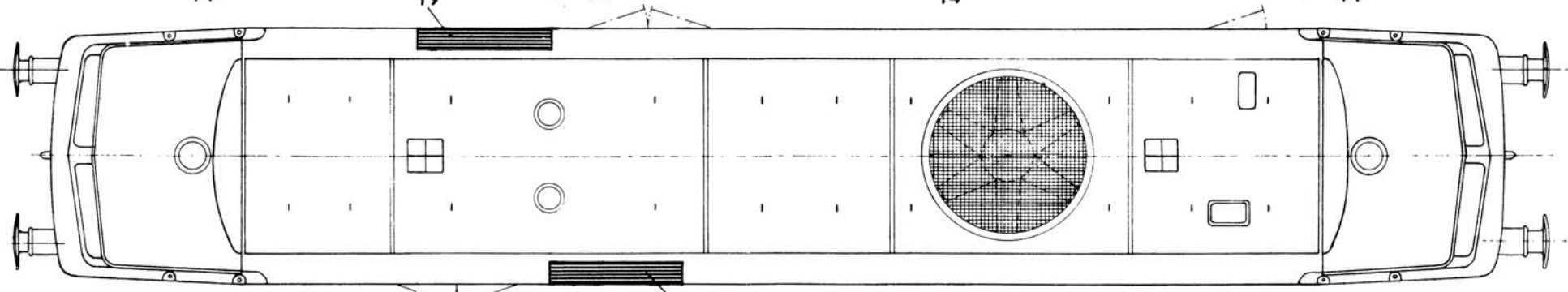
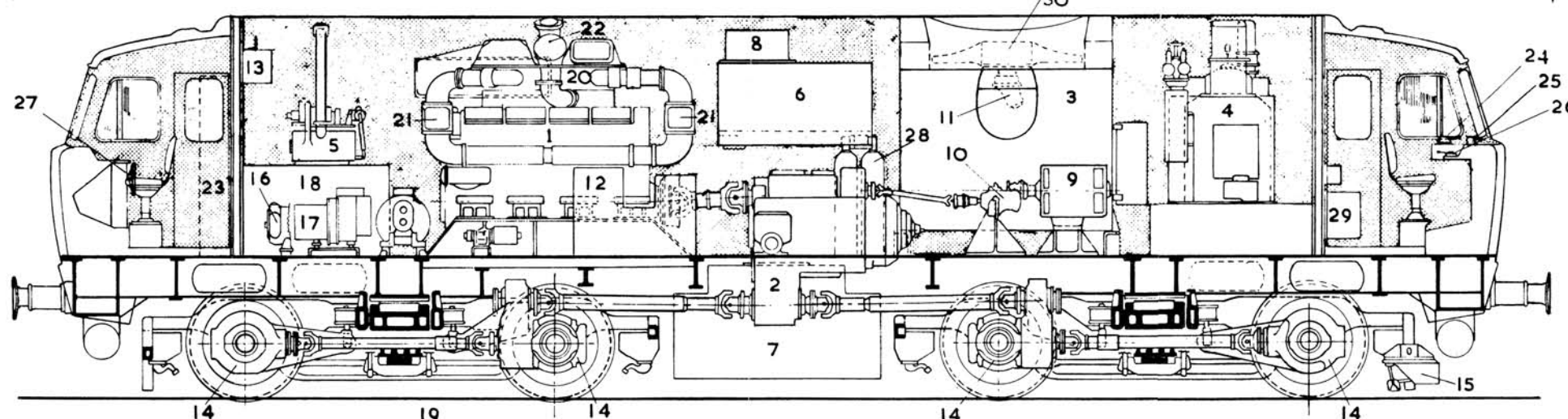
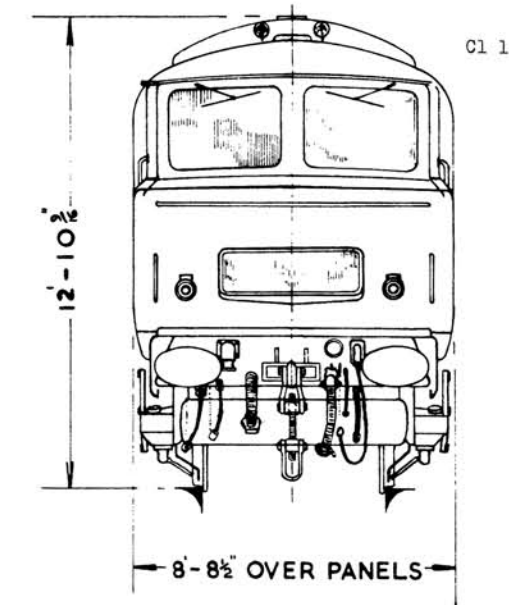
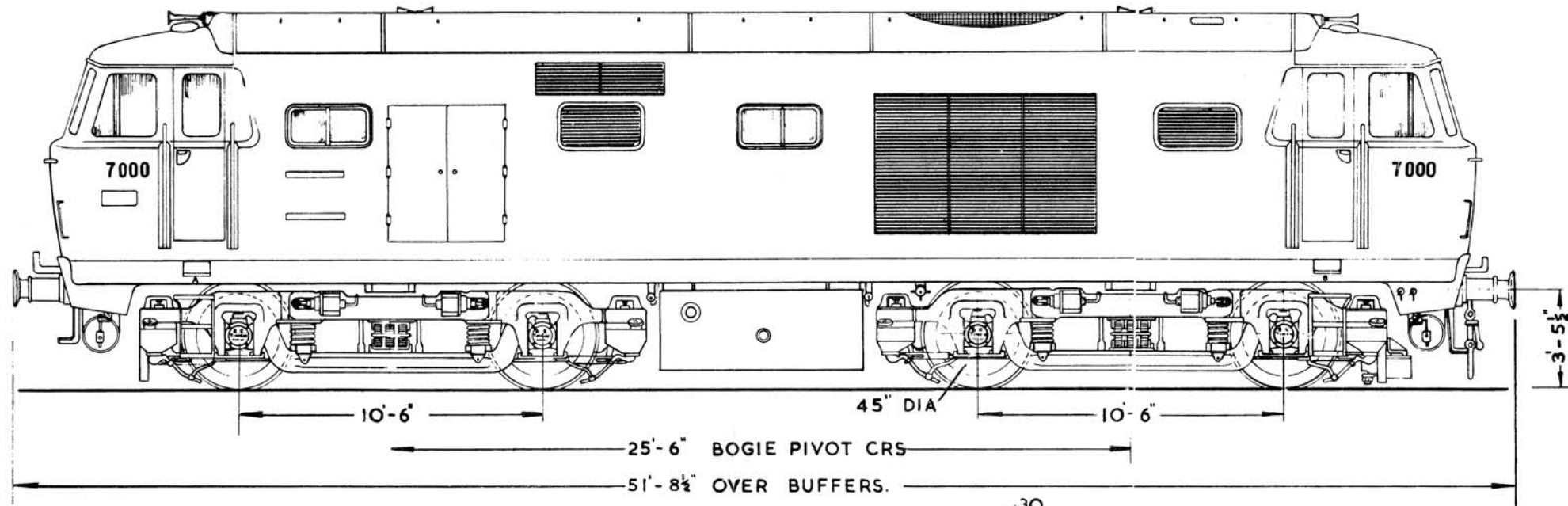
Engine	{ Make and Type { No. of cylinders & cycle { Max. Cont. Rated Output	- English Electric 12 SVT - 12 cylinders, 4 stroke - 1470 HP at 850 RPM
Main Generator	Make and Type	- Brush TG 160-48
Traction Motors	{ Make and Type { No. { Type of Suspension { Type of Gear Drive	- Brush TM 73-68 - Four - Nose - Single Reduction
Performance	{ Max. Tractive Effort { Cont. Tractive Effort { Rail HP at Cont. Rating { Full Engine Output	- 42800 LB at 25.3% Adhesion at 2000 amps Main Generator - 22250 LB at 19.7 MPH at 1200 amps Main Generator - 1170 HP - Available between 9 and 62 MPH
Braking	{ Type { For Loco { { For Train { Brake Force (% of Loco weight in working order	- Straight Air & Auto Air - Auto Air & Air Cont. Vac. - 76.5%
Speed	Max. Permitted Service Speed	- 80 MPH
Minimum Radius Curves	{ Horizontal without gauge { widening { Horizontal with $\frac{3}{4}$ ins gauge { widening { Vertical Convex { Vertical Concave	- 4-5 chains - 4-15 chains - 6 chains - 8 chains
Train Heating Equipment	{ Boiler Make and Type { Steaming Capacity	- Spanner Swirlyflow - 1500 LB/HOUR
Tank Capacities	{ Engine Fuel { Boiler Fuel { Boiler Water	- 550 gallons - 100 gallons - 600 gallons



- TYPE 2 DIESEL ELECTRIC LOCOMOTIVE**
1. DIESEL ENGINE
 2. MAIN GENERATOR
 3. AUXILIARY GENERATOR
 4. H.S.B.T. TURBO-CHARGER
 5. CHARGE AIR INTAKE
 6. AIR FILTERS
 7. RADIATOR FAN DRIVE
 8. RADIATOR PANEL
 9. RADIATOR FAN
 10. WATER HEADER TANK
 11. TRAIN HEATING BOILER
 12. BOILER WATER TANK
 13. CREWS HOT PLATE AND OVEN
 14. CONTROL CUBICLE
 15. EXHAUST OUTLETS
 16. MASTER CONTROLLER
 17. HANDBRAKE HANDLE
 18. DRIVERS SEAT
 19. GANGWAY CONNECTION
 20. COMMONWEALTH BOGIE
 21. TRACTION MOTORS
 22. FUEL TANK, MAIN
 23. BATTERIES
 24. EXHAUSTER
 25. RESISTANCES
 26. HEAD CODE COMPT.
 27. VENTILATOR
 28. TRACTION MOTOR BLOWER
 29. COMPRESSORS
 30. ASSISTANTS SEAT

1700 HP HYMEK TYPE 3 B-B DIESEL HYDRAULIC
LOCOMOTIVE CLASS 35

Engine	(No. Make and Type (No. of Cylinders & Cycle (Max. Cont. Rated Output	- One, Maybach MD 870 - 16 Cylinders, 4 Stroke - 1700 HP at 1500 RPM
Transmission	Type and other particulars	- Mekydro K.184u
Performance	{Max. Tractive Effort {Cont. Tractive Effort	- 46600 LB at 27.6% adhesion - 33950 LB at 12.5 MPH
Braking	{Type {For Loco {For Train {Brake Force (% of Loco (Weight in (Working order	- Air - Vacuum - 73.3%
Speed	Max. Permitted Service Speed	- 90 MPH
Curve	Min. Rad. Curve {Without {gauge {widening {At dead slow - {speed	- 4 chains - 4 chains
Train Heating Equipment	{Boiler Make and Type {Steaming Capacity	- Spanner and Stone Vapor OK 4616 - 1500 and 1750 LB/HOUR
Tank Capacities	(Engine Fuel) (Boiler Fuel) (Boiler Water	- 800 gallons - 800 gallons



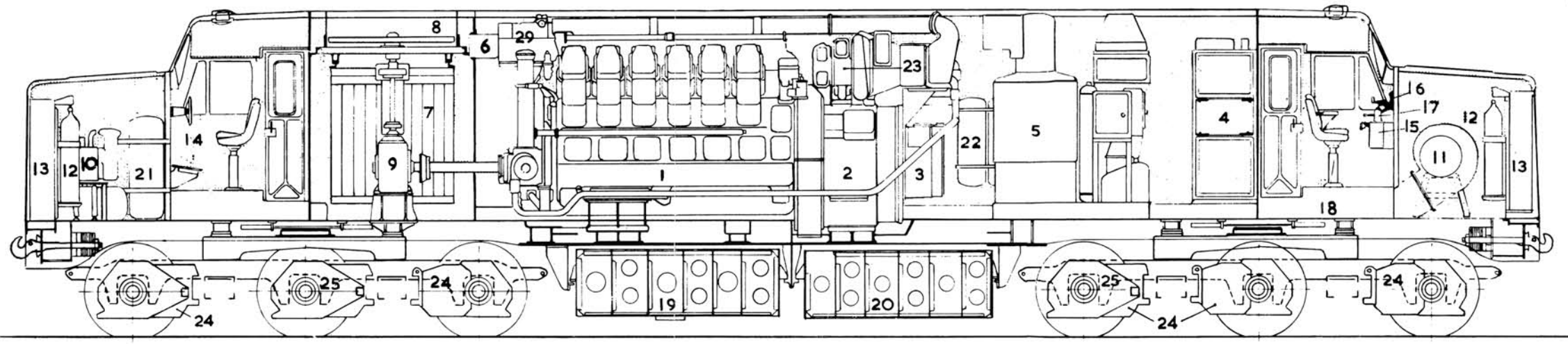
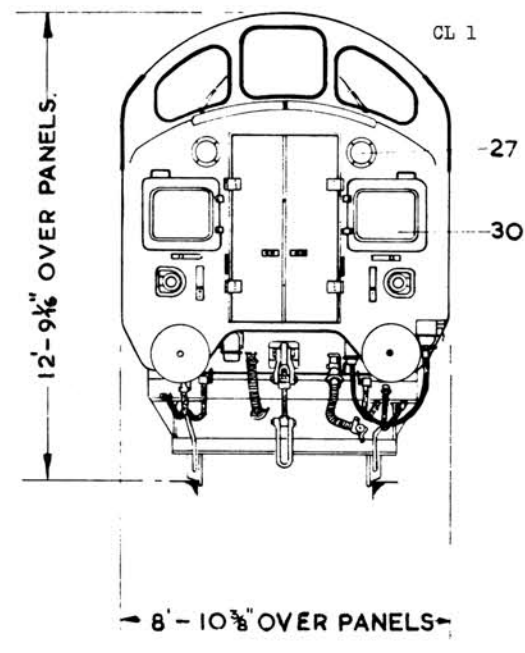
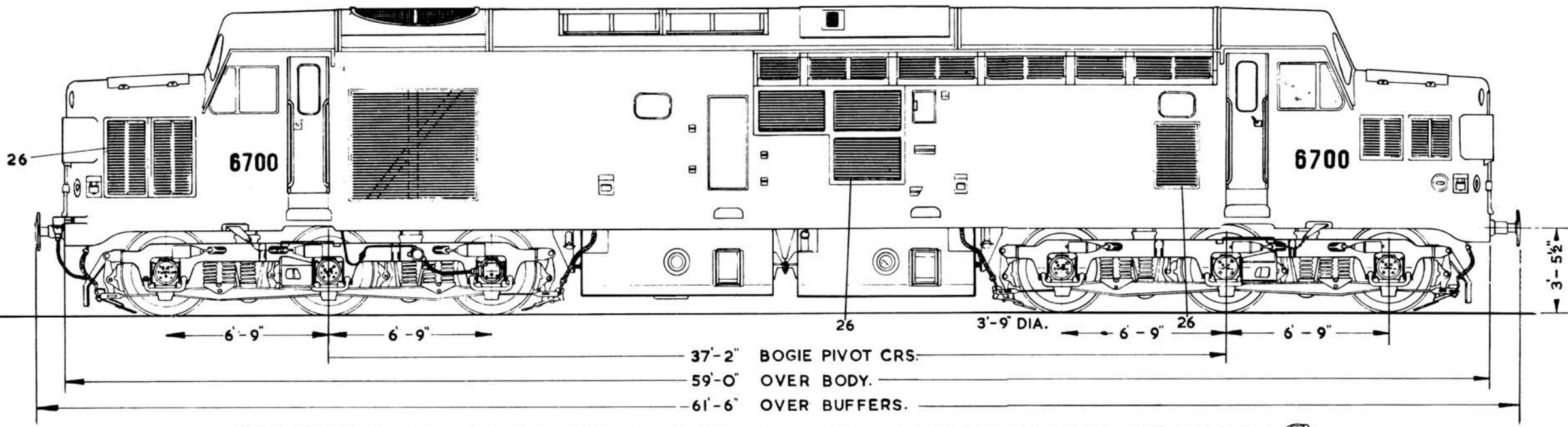
SCALE 1 0 1 2 3 4 5 6 7 8 9 10 FT.

- TYPE 3 DIESEL HYDRAULIC LOCOMOTIVE**
1. MAYBACH 1700 B.H.P. ENGINE
 2. TRANSMISSION
 3. SERCK COOLING GROUP
 4. TRAIN HEATING BOILER
 5. VAPOR WATCHMAN
 6. WATER TANKS
 7. MAIN FUEL TANKS
 8. RESERVE FUEL TANK
 9. DYNOSTARTER
 10. SERCK FAN PUMP
 11. SERCK FAN MOTOR
 12. ENGINE INSTRUMENT PANEL
 13. AUTO VOLTAGE REGULATOR
 14. AXLE DRIVES
 15. A.T.C.
 16. AIR COMPRESSOR
 17. EXHAUSTERS
 18. BATTERIES
 19. AIR INTAKE FILTERS
 20. TURBO CHARGERS
 21. INTER COOLERS
 22. EXHAUST SILENCER
 23. CONTROL CUBICLE
 24. VACUUM BRAKE VALVE
 25. AIR BRAKE VALVE
 26. CONTROLLER
 27. BRAKE HANDWHEEL
 28. CO2 FIRE EXTINGUISHERS
 29. SHORE SUPPLY UNIT
 30. RADIATOR FAN

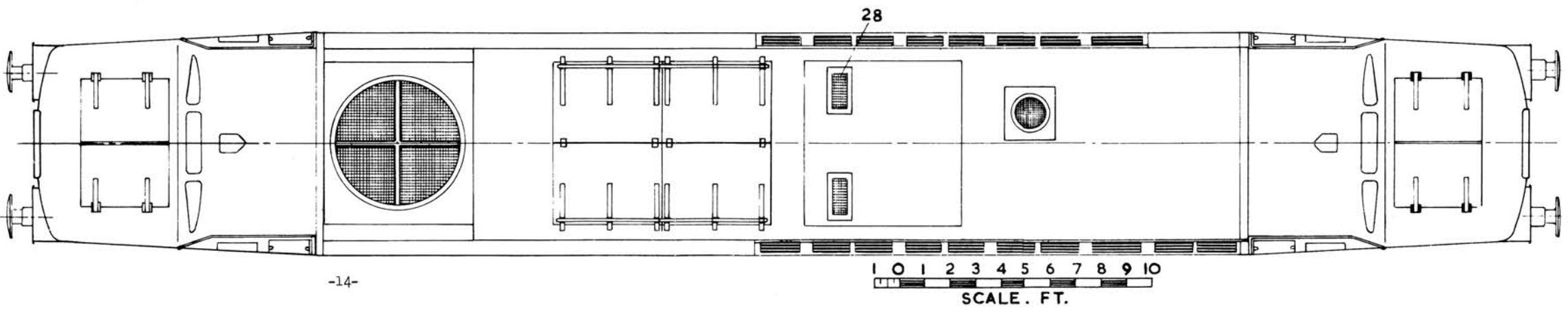
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1750 HP E.E. TYPE 3 C-C DIESEL ELECTRIC LOCOMOTIVE
CLASS 37

Engine	(Make and Type (No. of Cylinders & Cycle (Max. Cont. Rated Output	- English Electric 12CSVT - 12 Cylinders, 4 Stroke - 1750 HP at 850 RPM
Main Generator	Make and Type	- English Electric Type EE 822/10G
Traction Motors	(Make and Type (No. (Type of Suspension (Type of Gear Drive	- English Electric EE538/A - Six - Nose - Single reduction
Performance	(Max. Tractive Effort (Cont. Tractive Effort (Rail HP at Cont. Rating (Full Engine Output	- 55500 LB at 24.1% adhesion at 2600 amps Main Generator - 35000 LB at 13.6 MPH at 1800 amps Main Generator - 1250 HP - Available between 10 and 79 MPH
Braking	(Type (For Loco (For Train (Brake Force (% of Loco (weight in (working order	- Air and Auto Air - Vacuum and Air Cont. Vacuum - 82.5%
Speed	Max. Permitted Service Speed	- 90 MPH
Curve	Min. Rad. Curve (without gauge widening (At dead (slow speed	- 4 chains - 4 chains
Train Heating Equipment	(Boiler Make and Type (Steaming Capacity	- Clayton RO 2500 Mk 1 - 2500 LB/HOUR
Tank Capacities	(Engine Fuel (Boiler Fuel (Boiler Water	- 830 gallons - 120 gallons - 800 gallons

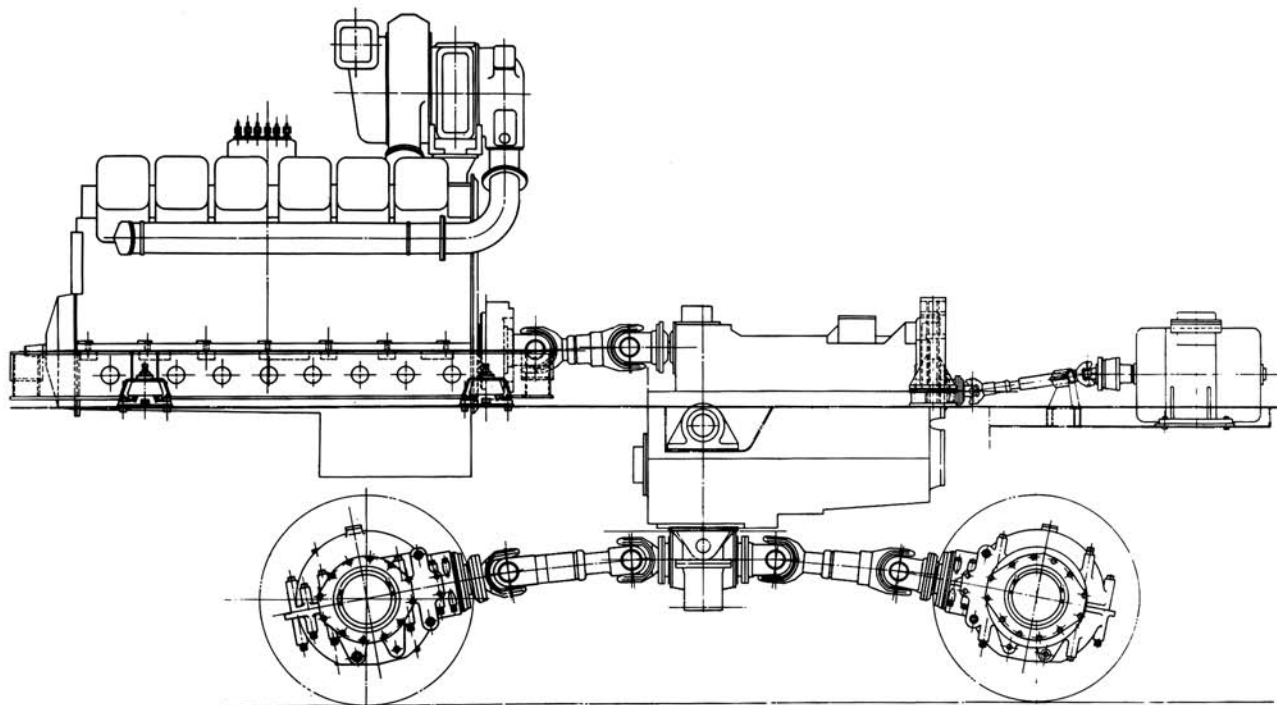


- ### TYPE 3 DIESEL ELECTRIC LOCOMOTIVE
1. ENGINE 12 CSVT
 2. MAIN GENERATOR
 3. AUXILIARY GENERATOR
 4. MAIN EQUIPMENT FRAME
 5. TRAIN HEATING BOILER
 6. RADIATOR HEADER TANK
 7. RADIATORS
 8. RADIATOR FAN
 9. RADIATOR FAN DRIVE
 10. COMPRESSOR
 11. TRACTION MOTOR BLOWER
 12. CO2 BOTTLES
 13. FLEXIBLE GANGWAY
 14. HANDBRAKE
 15. CONTROLLER, MASTER
 16. VACUUM BRAKE VALVE
 17. AIR BRAKE VALVE
 18. DRIVERS SEAT
 19. FUEL TANK 920 GALL.
 20. WATER TANK 800 GALL.
 21. MAIN RESERVOIRS, AIR
 22. SUPPLY RESERVOIRS
 23. TURBO-BLOWERS
 24. TRACTION MOTORS
 25. GEAR CASE
 26. AIR FILTERS
 27. HORNS
 28. ENGINE EXHAUSTS
 29. EMERGENCY FUEL TANK
 30. ROUTE INDICATORS



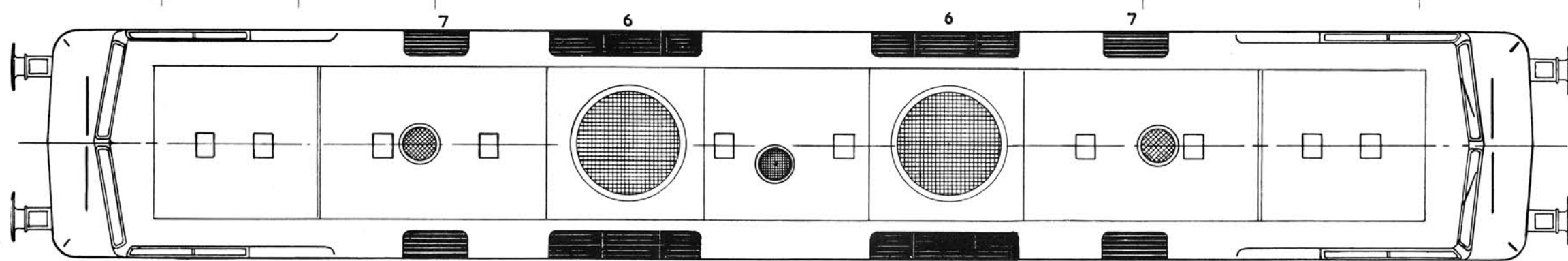
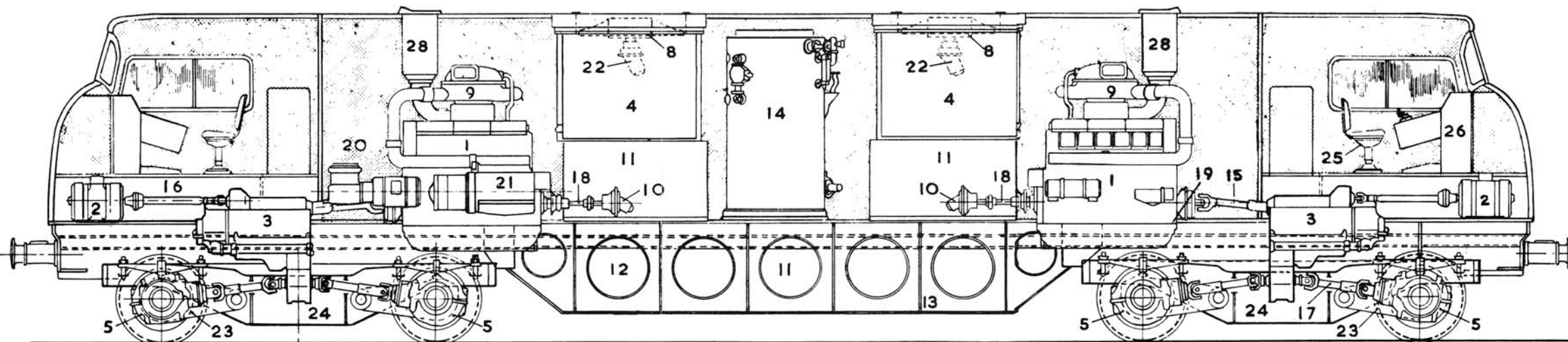
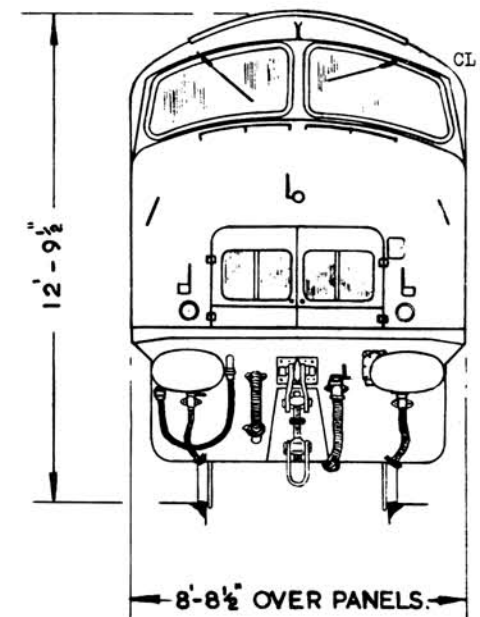
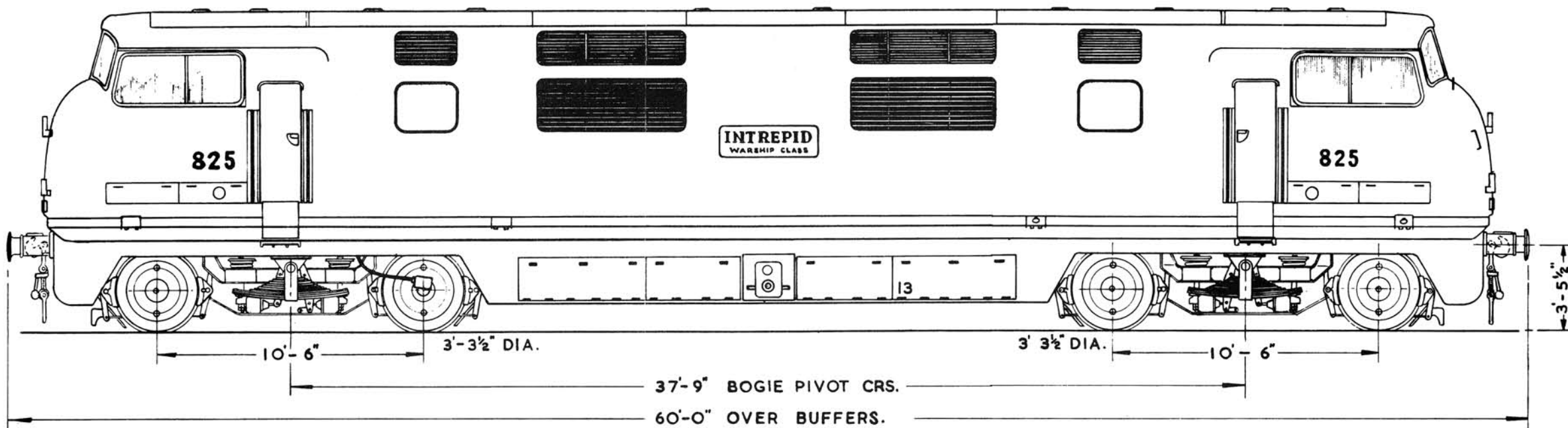
2200 HP B.R. TYPE 4 B-B DIESEL HYDRAULIC LOCOMOTIVE
CLASS 42

Engine	(No. Make and Type (No. of Cylinders & Cycle (Max. Cont. Rated Output	- Two, Maybach MD 650 - 12 Cylinders, 4 Stroke - 1135 HP at 1530 RPM
Transmission	Type and other particulars	- 4 Speed Mekydro K104U
Performance	{ Max. Tractive Effort { Cont. Tractive Effort	- 48600 LB at 27.6% Adhesion - 46700 LB at 10.7 MPH
Braking	{ Type (For Loco { (For Train { Brake Force (% of Loco { (weight in { (working order	- Air - Vacuum - 69.72%
Speed	Max. Permitted Service Speed	- 90 MPH
Curve	{ Min. Rad. Curve { without { gauge { widening { At dead { slow speed	- 4½ chains - 4½ chains
Train Heating Equipment	{ Boiler Make and Type { Steaming Capacity	- Spanner Swirlyflow - 1500 LB/HOUR
Tank Capacities	{ (Engine Fuel) { (Boiler Fuel) { (Boiler Water	- 800 gallons - 940 gallons



TRANSMISSION ARRANGEMENT FOR THE
2200 HP NBL TYPE 4 B-B DIESEL HYDRAULIC LOCOMOTIVE
CLASS 43

Engine	(No. Make and Type (No. of Cylinders & Cyle (Max. Cont. Rated Output	- Two NBL-MAN L12 V18/21 BS - 12 Cylinders, 4 Stroke - 1100 HP at 1530 RPM
Transmission	Type and Other Particulars	- Voith-North British LT 306r
Performance	(Max. Tractive Effort (Cont. Tractive Effort	- 49030 Lb at 27.6% Adhesion - 37000 Lb at 14 MPH
Braking	(Type (For Loco (For Train (Brake Force (% of Loco weight in (working order	- Air - Vacuum - 69.1%
Speed	Max. Permitted Service Speed	- 90 MPH
Curve	Min. Rad. Curve (without (gauge (widening (At dead (slow speed	- 4½ chains - 4½ chains
Train Heating Equipment	(Boiler Make and Type (Steaming Capacity	- Stone Vapour OK 4616 - 1750 Lb/Hour
Tank Capacities	(Engine Fuel) (Boiler Fuel) (Boiler Water	- 800 galls - 940 galls



- TYPE 4 DIESEL HYDRAULIC LOCOMOTIVE**
1. MAYBACH 1135 B.H.P. ENGINE
 2. DYNOSTARTER
 3. MEEHYDRO TRANSMISSION
 4. SERCK RADIATOR
 5. MAYBACH FINAL DRIVE
 6. RADIATOR AIR INTAKE
 7. AIR INLET
 8. RADIATOR FAN
 9. PRESSURE CHARGER
 10. BEHR SERCK FAN PUMP
 11. WATER TANK
 12. FUEL TANK
 13. BATTERIES
 14. TRAIN HEATING BOILER
 15. PRIMARY CARDAN SHAFT
 16. CARDAN SHAFT-DYNOSTARTER
 17. CARDAN SHAFT FINAL DRIVE
 18. DRIVE TO SERCK PUMP
 19. VIBRATION DAMPER
 20. COMPRESSOR
 21. EXHAUSTER
 22. FAN MOTOR
 23. PIVOTED AXLE ARM
 24. WELDED BOGIE FRAME
 25. DRIVERS SEAT
 26. CONTROL CABINET
 27. ROUTE INDICATOR
 28. ENGINE SILENCERS
 29. HORNS



2500 HP B.R. TYPE 4 IC-CI DIESEL ELECTRIC LOCOMOTIVE
CLASS 45

Engine	(Make and Type (No. of Cylinders & Cycle (Max. Cont. Rated Output	- Sulzer 12 LDA 28 B - 12 Cylinders, 4 Stroke - 2500 HP at 750 RPM
Main Generator	Make and Type	- Crompton Parkinson CG 426 A1
Traction Motors	(Make and Type (No. (Type of Suspension (Type of Gear Drive	- Crompton Parkinson C 172 A1 - Six - Nose - Straight Spur
Performance	(Max. Tractive Effort (Cont. Tractive Effort (Rail HP at Cont. Rating (Full Engine Output	- 55000 LB at 22.1% - Adhesion at 4200 amps - Main Generator - 30,000 LB at 25 MPH - at 2670 amps Main Generator - 2000 HP - Available between 12 and 82 MPH
Braking	(Type (For Loco (For Train (Brake Force (% of Loco (weight in (working order	- Straight Air and Auto Air - Auto Air and Air Cont. Vac. - 77.6%
Speed	Max. Permitted Service Speed	- 90 MPH
Min. Rad. Curves	(Horizontal without gauge (widening (Horizontal with $\frac{5}{4}$ ins gauge (widening (Vertical Convex (Vertical Concave	- 5 chains - 4.65 chains - 23 chains - 24 chains
Train Heating Equipment	(Boiler Make and Type (Steaming Capacity	- Stone Vapor OK 4625 - 2750 LB/HOUR
Tank Capacities	(Engine Fuel) (Boiler Fuel) (Boiler Water	- 840 gallons - 1040 gallons

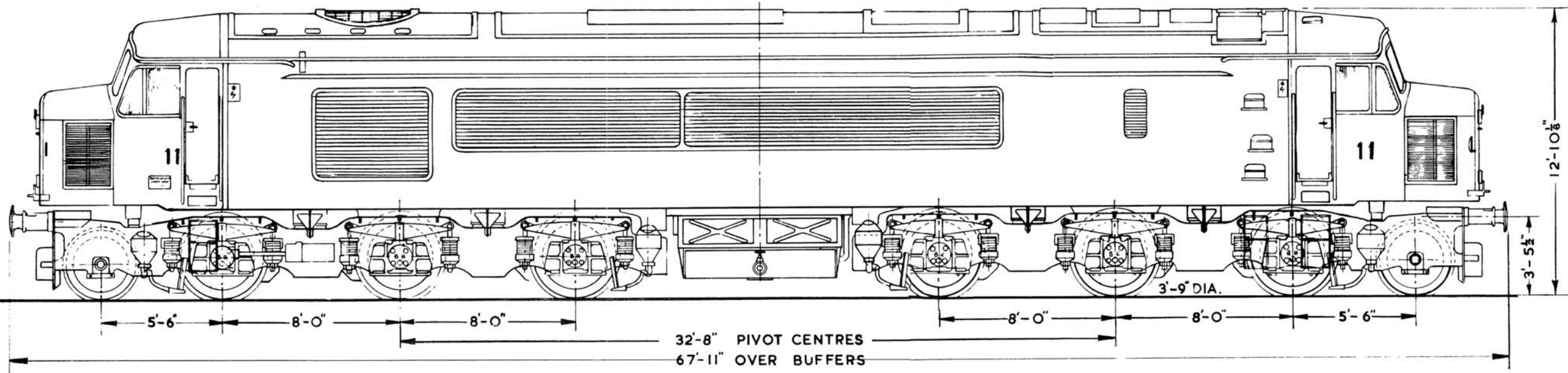
2500 HP B.R. TYPE 4 IC-CI DIESEL ELECTRIC LOCOMOTIVE
CLASS 46

Engine	(Make and Type (No. of Cylinders & Cycle (Max. Cont. Rated Output	- Sulzer 12 LDA 28 B - 12 Cylinders, 4 Stroke - 2500 HP at 750 RPM
Main Generator	Make and Type	- Brush EE Co. Ltd. TG 160-60
Traction Motors	(Make and Type (No. (Type of Suspension (Type of Gear Drive	- Brush EE Co. Ltd. TM 73-68 Mk. III - Six - Nose - Straight Spur

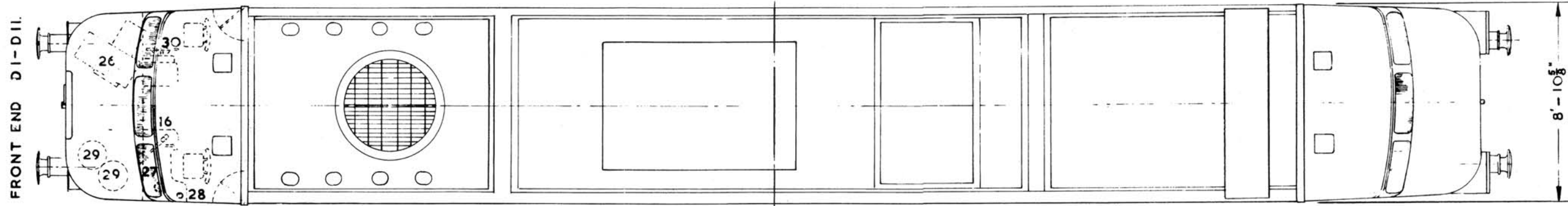
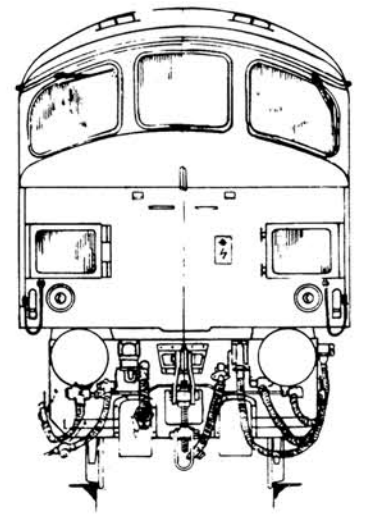
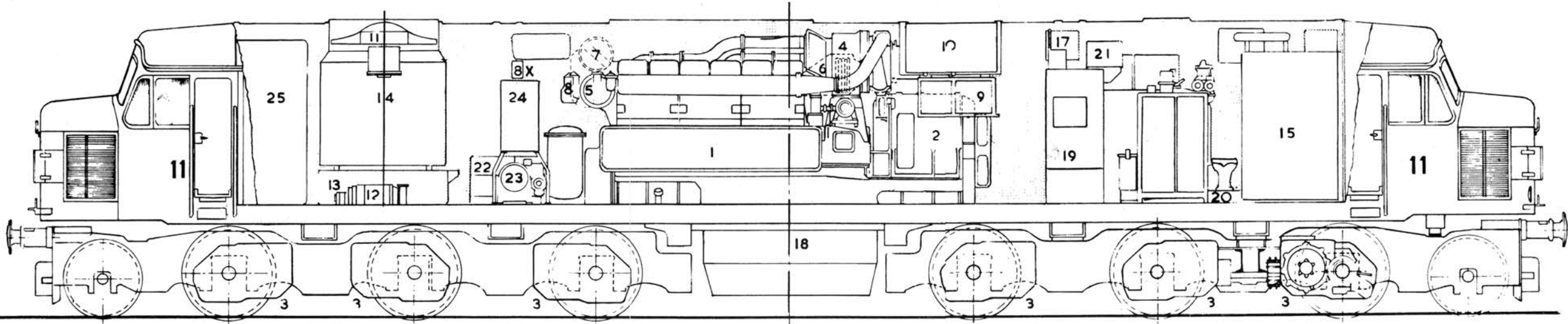
Performance	(Max. Tractive Effort (Cont. Tractive Effort (Rail HP at Cont. Rating (Full Engine Output	- 55,000 LB at 28.1% Adhesion at 33,000 amps Main Generator - 31,600 LB at 23.3 MPH at 2,100 amps Main Generator - 1962 HP - Available between 11.2 and 85 MPH
Braking	(Type (For Loco (For Train (Brake Force (% of Loco weight in working order	- Straight Air and Auto Air - Auto Air & Air Cont. Vac. - 76.6%
Speed	Max. Permitted Service Speed	- 90 MPH
Min. Rad. Curves	(Horizontal without gauge widening (Horizontal with $\frac{3}{4}$ ins gauge widening (Vertical Convex (Vertical Concave	- 5 chains - 4.65 chains - 23 chains - 24 chains
Train Heating Equipment	(Boiler Make and Type (Steaming Capacity	- Stone Vapor OK 4625 - 2750 LB/HOUR
Tank Capacities	(Engine Fuel (Boiler Fuel (Boiler Water	- 835 gallons - 1040 gallons

TYPE 4 DIESEL ELECTRIC LOCOMOTIVE

1. DIESEL ENGINE
2. MAIN AND AUXILIARY GENERATORS
3. TRACTION MOTORS
4. PRESSURE CHARGER
5. LUB. OIL FILTER
6. INTERCOOLER. D11 ETC.
7. HEAT EXCHANGER D11 ETC.
8. ENGINE INSTRUMENT PANEL D11 ETC.
9. ENGINE AIR FILTER
10. EXHAUST SILENCER
11. RADIATOR FAN
12. COMBINED PUMP SET
13. CONVERTER SET
14. RADIATOR PANELS
15. BOILER WATER TANK
16. MASTER CONTROLLER
17. VOLTAGE REGULATOR
18. BATTERY BOXES
19. MAIN CONTROL CUBICLE
20. W.C.
21. RESISTANCE FRAMES
22. AIR COMPRESSOR
23. EXHAUSTER
24. BRAKE GEAR CUBICLE
25. MAIN FUEL TANK
26. TRACTION MOTOR BLOWER
27. VACUUM BRAKE VALVE
28. AIR BRAKE VALVE
29. AIR RESERVOIRS
30. HAND BRAKE

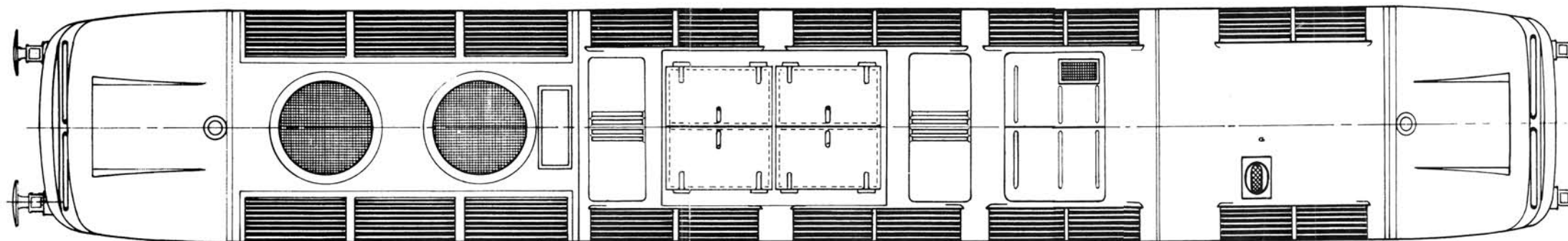
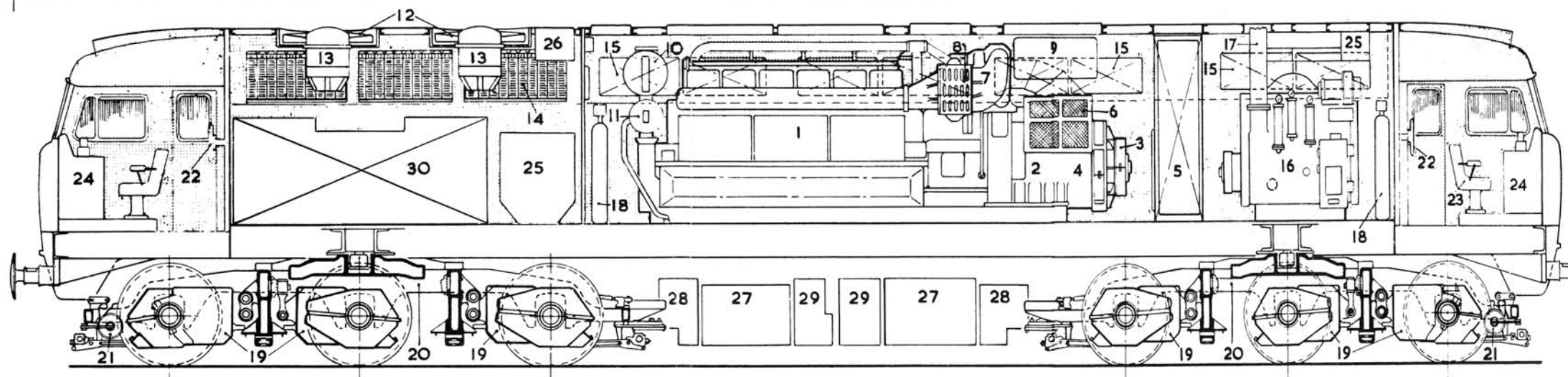
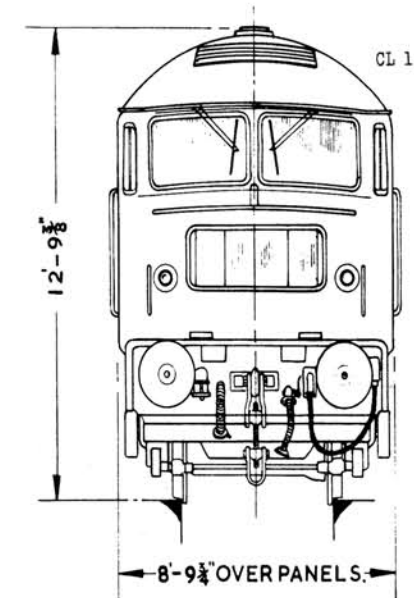
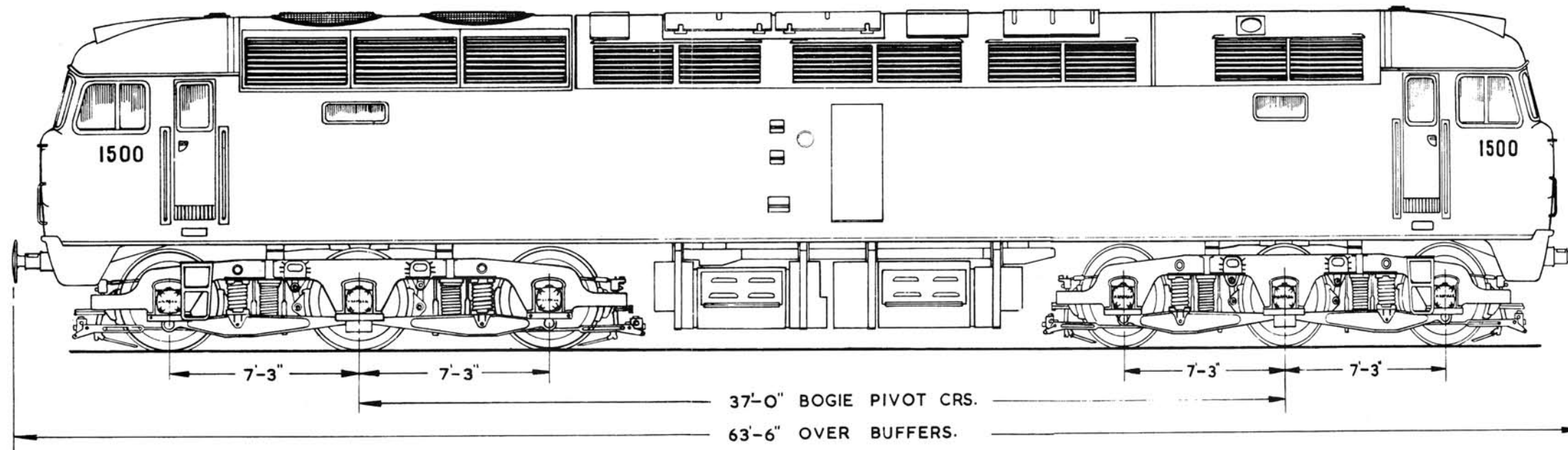


**TYPE 4
DIESEL ELECTRIC
LOCOMOTIVE**



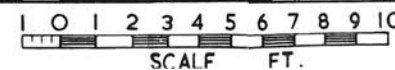
2750 HP BRUSH TYPE 4 C-C DIESEL ELECTRIC LOCOMOTIVE
CLASS 47

Engine	(Make and Type (No. of Cylinders & Cycle (Max. Cont. Rated Output	- Sulzer 12 LDA 28C - 12 Cylinders, 4 Stroke - 2750 HP at 800 RPM
Main Generator	Make and Type	- Brush TG 172-50 Mk. I
Traction Motors	(Make and Type (No. (Type of Suspension (Type of Gear Drive	- Brush TM 64-68 Mk. IA - Six - Nose - Straight Spur
Performance	(Max. Tractive Effort (Cont. Tractive Effort (Rail HP at Cont. Rating (Full Engine Output	- 62,000 LB at 23.8% Adhesion at 7800 amps Main Generator - 30,000 LB at 27 MPH at 4260 amps Main Generator - 2160 HP - Available between 12.8 and 85 MPH
Braking	(Type (For Loco (For Train (Brake Force (% of Loco (weight in (working order	- Straight Air and Auto Air - Auto Air and Air Cont. Vac. - 85%
Speed	Max. Permitted Service Speed	- 95 MPH
Curve	Min. Rad. Curve (without (gauge (widening at (dead slow (speed	- 4 Chains
Train Heating Equipment	(Boiler Make and Type (Steaming Capacity	- Clayton, Spanner Mk. III or Stones - 2500, 1850 or 2750 LB/HOUR
Tank Capacities	(Engine Fuel) (Boiler Fuel) (Boiler Water	- 810 gallons - 1250 gallons



TYPE 4 DIESEL ELECTRIC LOCOMOTIVE

1. SULZER MAIN ENGINE
2. MAIN GENERATOR
3. AUXILIARY GENERATOR
4. TRAIN HEATING GENERATOR
5. MAIN CONTROL CUBICLE
6. AIR INLET FILTER BOX
7. TURBO-CHARGER
8. CHARGE AIR INTERCOOLER
9. SILENCER AND EXHAUST OUTLET
10. LUB. OIL HEAT EXCHANGER
11. LUB. OIL FILTER
12. RADIATOR FANS
13. ELECTRIC MOTORS FAN
14. ROOF MOUNTED RADIATORS
15. AIR FILTER PANELS
16. TRAIN HEATING BOILER
17. BOILER FLUE OUTLET
18. FIRE EXTINGUISHER CO2 BOTTLES
19. TRACTION MOTORS
20. CAST STEEL BOGIES
21. AIR BRAKE CYLINDERS
22. HANDBRAKE
23. DRIVERS SEAT
24. DRIVERS CONTROL DESK
25. RESISTOR UNITS
26. RADIATOR HEADER TANK
27. BATTERIES
28. FUEL OIL ENG. FEED TANK
29. BOILER WATER TANK
30. MAIN FUEL TANKS

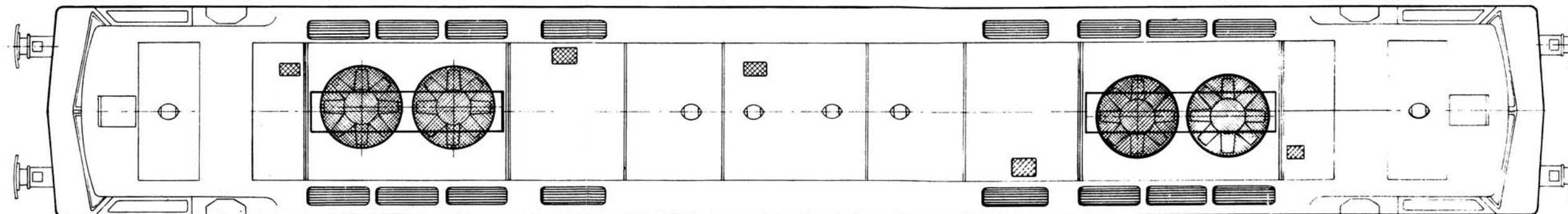
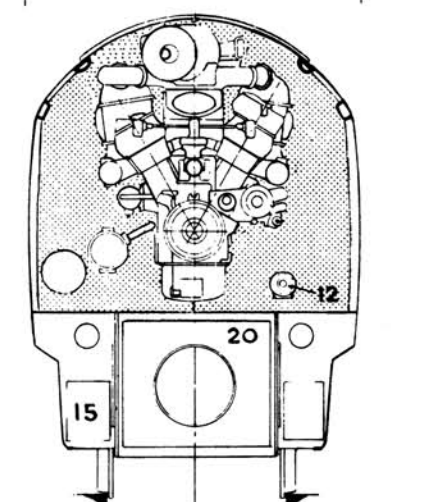
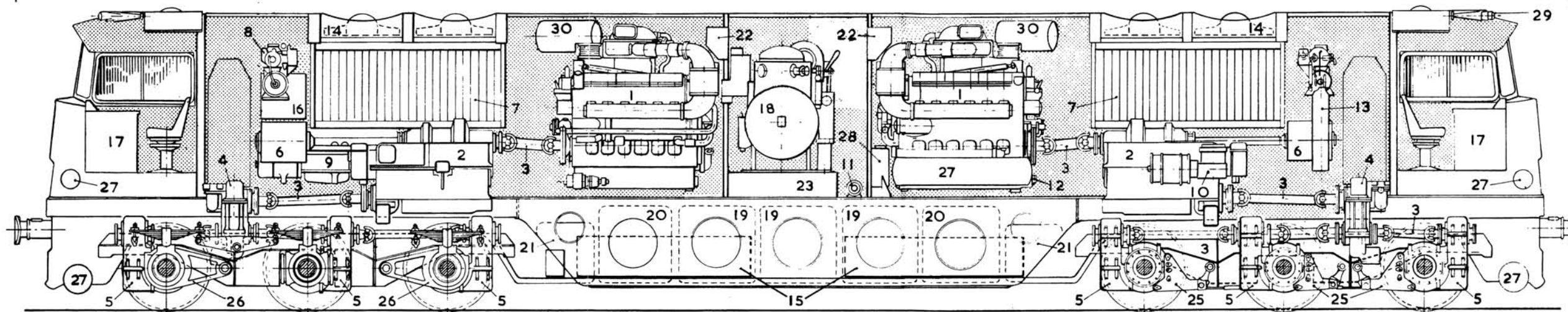
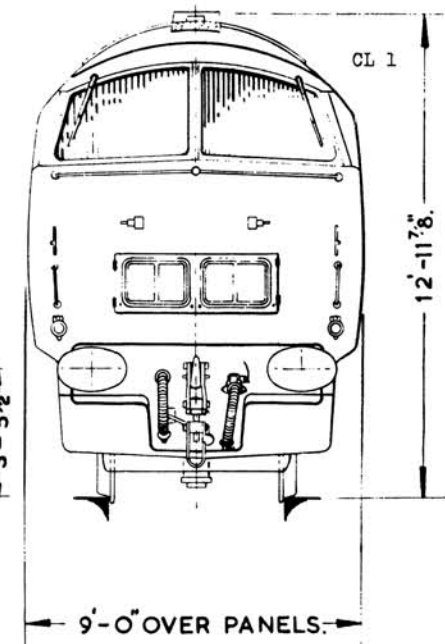
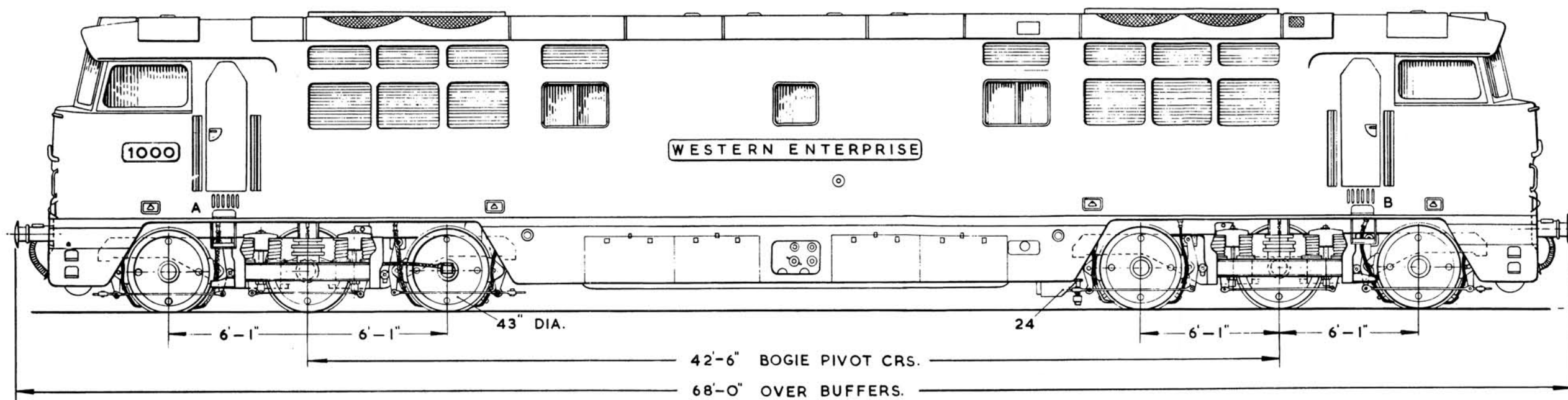


2700 HP B.R. TYPE 4 C-C DIESEL HYDRAULIC LOCOMOTIVE
CLASS 52

Engine	(No. Make and Type (No. of Cylinders & Cycle (Max. Cont. Rated Output	- Two, Maybach MD 655 - 12 Cylinders, 4 Stroke - 1350 HP at 1500 RPM
Transmission	Type and other Particulars	- Voith L6-30rV
Performance	(Max. Tractive Effort (Cont. Tractive Effort	- 66,770 LB at 27.6% Adhesion - 45,200 LB at 14.5 MPH
Braking	(Type (For Loco ((For Train (Brake Force (% of Loco (weight in (working order	- Straight Air and Auto Air - Auto Air and Air Cont. Vac. - 75.87%
Speed	Max. Permitted Service Speed	- 80 MPH
Curve	Min. Rad. Curve (without (gauge widening (at dead slow - (speed	- 4½ Chains - 4½ Chains
Train Heating Equipment	(Boiler Make and Type (Steaming Capacity	- Spanner Swirlyflo - 1500 LB/HOUR
Tank Capacities	(Engine Fuel) (Boiler Fuel) (Boiler Water	- 850 gallons - 800 gallons

TYPE 4 DIESEL-HYDRAULIC LOCOMOTIVE

1. MAYBACH 1350 BHP ENGINE
2. VOITH HYD. TRANSMISSION
3. CARDAN SHAFTS
4. INTERMEDIATE GEAR BOX
5. FINAL DRIVE GEAR BOX
6. DYNOSTARTER
7. SERCK COOLER GROUP
8. VAPOR WATCHMAN
9. WESTINGHOUSE EXHAUSTER
10. LAYCOCK COMPRESSOR
11. VARLEY FUEL PUMP
12. VARLEY LUB OIL PUMP
13. FIRE EXT. EQUIPMENT
14. SERCK-BEHR FANS
15. BATTERIES
16. DEPOT SUPPLY UNIT
17. CONTROL CABINET AND DESK
18. SPANNER BOILER MK. III
19. WATER TANK
20. FUEL TANK
21. FUEL TANKS, 136 GALLONS
22. FUEL TANKS, 20 GALLONS
23. WATER TANKS, 170 GALLONS
24. A.T.C. SHOE APPARATUS
25. TORQUE ARMS
26. AXLE GUIDE LINKS
27. RESERVOIR
28. ALFLOC TANK
29. WARNING HORNS
30. ENGINE SILENCER



**TYPE 4
DIESEL HYDRAULIC
LOCOMOTIVE**

