OECD Approval No. 645

Test in accordance with the OECD standard code for the official testing of agricultural tractors

Report on test of Massey-Ferguson 260 Tractor



Manufactured by	Massey-Ferguson Manufacturing Co., Banner Lane, Coventry, Warwickshire.
Test No.	R79/2/7017/OECD
Report No.	664
Date	April, 1979

THE BRITISH SOCIETY FOR RESEARCH IN AGRICULTURAL ENGINEERING

National Institute of Agricultural Engineering
Wrest Park Silsoe Bedford MK45 4HS

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TABLE OF CONTENTS

	Page No.
SPECIFICATION OF TRACTOR	1
CONDITIONS DURING TEST	5
FUEL AND LUBRICANTS USED IN TESTS	6
COMPULSORY TESTS	
1 Main power take-off performance	7
2 Drawbar performance	11
3 Turning space and turning circle	12
4 Location of centre of gravity	12
5 Braking	12
6 Measurement of ambient noise emitted by the tractor	13
7 Noise measurement at the driver's ear level	13
8 Power lift and hydraulic pump performance	14
OPTIONAL TEST	
9 Performance at engine crankshaft	17
REPAIRS AND ADJUSTMENTS DURING TESTS	21
REMARKS	21

SPECIFICATION OF TRACTOR

Manufacturer:	Massey-Ferguson Manufacturing Company, Banner Lane, Coventry, Warwickshire.
Submitted for test by:	The manufacturer
Selected for test by:	The manufacturer with the agreement of the testing station
Place of running-in:	Coventry
Duration of running in:	50 hours

Tractor

Make:	Massey-Ferguson
Model:	M.F. 260
Type:	Four wheel, rear wheel driven, unit construction
Serial No:	304048

Engine

Make:	Perkins
Model:	AD4 203
Type:	4-stroke, direct injection diesel
Serial No:	203 UA 137603
Cylinders:	4 cylinders, vertical, in-line, 91.4mm (3.6in) dia bore x 127mm (5.0in) stroke, capacity 3333cm^3 (203in^3), compression ratio 18.5:1 (nominal), replaceable dry cylinder liners, overhead valves
Fuel system:	A.C. Delco mechanical fuel feed pump with hand primer C.A.V. paper element filter with sediment bowl on pressure side of feed pump; fuel tank capacity 67.3L (14.8 U.K.gal); C.A.V. distributor type DPA 3240 F 968 injection pump, Serial No. R 5560OXT, manufacturer's production setting 11.54-11.99 l/h (20.3-21.1 pt/h) at 2000 rev/min engine speed and 63°C (145°F) cambox temperature; C.A.V. type BDLL 150S 6554 injector nozzles, injection pressure 18.75 MPa (185 atm), pump delivery starts 26° before T.D.C.

Governor:	C.A.V. mechanical, incorporated in fuel injection pump, governed range of engine speed 700 to 2200 rev/min, rated engine speed 2000 rev/min
Air cleaner:	Lautrette, 3-stage paper element filter, situated forward of radiator, centrifugal pre-cleaner above bonnet
Lubrication system:	Forced feed from eccentric rotor pump with metal strainer in sump; full flow replaceable element filter; total oil capacity 7.1 l (12.5 pt), recommended oil S.A.E. 20W/30, viscosity 54 cSt at 50°C (122°F), oil and filter change period 250 hours
Cooling system:	Water cooled, pressurised at 69 kPa (10 lb/in^2), thermosyphon assisted by centrifugal pump, 394 mm (15.5 in) dia 4-blade belt driven fan, thermostat for temperature control, cooling water capacity 11.4 l (20.1 pt)
Starting system:	Electrical, Lucas M50G solenoid-engaged starter motor, operable only when high-low gear selector lever is in neutral position, C.A.V. MKIII C Thermostart manifold flame-type cold starting aid
Exhaust:	Silencer vertical on left-hand side of engine

Electrical system

Voltage:	12, negative earth
Generator:	Motorola, 55 amp alternator
Battery:	Lucas ATV 17T-8 lead-acid, 110 Ah at 20-hour rating

Transmission

Clutch:	Laycock, single plate, 305 mm (12.0 in) dia, dry, pedal operated
Gearbox:	Own make, 8 forward and 2 reverse speeds, comprising 4 forward and 1 reverse speed constant mesh gearbox with high-low range epicylic gear at output end
Rear axle and final drives:	Own make, crown wheel and pinion and differential and epicyclic reduction gear final drives, pedal-operated self-disengaging differential lock
Oil capacities:	Gearbox and transmission housing 40.4 l (71.1 pt), recommended oil S.A.E. 20W/30, viscosity 54 cSt at 50°C (122°F): final drives 1.7 l (3.0 pt) each, recommended oil S.A.E. 90, viscosity 115 cSt at 50°C (122°F), oil change period 500 hours, main transmission filter change period 250 hours

Gear	Number of engine revolutions for one revolution of driving wheel	Nominal travelling speed for 2000 rev/min rated engine speed,* km/h	(mile/h)
Forward			
L 1	238.86	2.02	(1.26)
L 2	162.86	2.96	(1.84)
L 3	119.23	4.05	(2.52)
L 4	88.83	5.43	(3.37)
H 1	59.71	8.08	(5.02)
H 2	40.71	11.85	(7.36)
H 3	29.81	16.19	(10.06)
H 4	22.21	21.73	(13.51)
Reverse			
1	175.38	2.75	(1.71)
2	43.85	11.00	(6.84)

* Calculated with a tyre rolling radius of 640 mm (25.2 in)

Power take-off

At rear of tractor in vertical centre plane, height above ground 515mm (20.3in), distance behind rear axle centre 295mm (11.6in), 6-spline, 34.9mm (1.3/8in) dia, to I.S.O. standard, independent of main clutch, selected by hand-lever and engaged by hydraulically operated multi-plate clutch, proportional engine speed giving 641 rev/min at 2000 rev/min rated engine speed, 540 rev/min (standard p.t.o. speed) at 1684 rev/min engine speed, direction of rotation clockwise viewed facing driving end

Power lift

Own make, live hydraulic, 4-cylinder scotch yoke pump with suction side control, driven from forward end of p.t.o. shaft independent of main and p.t.o. clutches; oil supplied from transmission housing to ram cylinder and external tapping; Category 1 or 2 implement linkage, top link sensing, draught, position and pressure control, selective response on drop

Drawbar

Swinging drawbar, vertical height to centre of clevis 279mm (11.0in) and 429mm (16.9in), changed by inverting drawbar, distance behind rear axle centre 537mm (21.1in) and 651mm (25.6in), distance behind p.t.o. 241mm (9.5in) and 356mm (14.0in), lateral adjustment 207mm (8.1in) and 390mm (15.4in), pivot position 130mm (5.1in) forward of rear wheel centre, drawbar pin hole 26mm (1.0in) dia

Steering

Burman, recirculating ball worm and nut type, double drop arms and drag links, power assisted, DBA engine driven gear pump supplying oil to twin rams.

Brakes

Girling, oil-immersed, multi-disc on differential half shafts, independent or combined pedal-operated, hand lever with ratchet operating both brakes for parking.

Wheels

Steering wheels:

Two at front, Goodyear Super Rib 7.50-16 cross-ply tyres, 6-ply rating, maximum permissible mass on each tyre 745 kg (1640 lb) at 280 kPa (41 lb/in^2), track width 1397 mm (55.0 in) by 102 mm (4.0 in) steps to 1907 mm (75.0 in), changed by extending axle

Driving wheels:

Two at rear, Goodyear Traction Sure Grip 14.9/13-28 cross-ply tyres, 6-ply rating, maximum permissible mass on each tyre 1610 kg (3550 lb) at 140 kPa (20 lb/in^2), track width 1321 mm (52.0 in) by 102 mm (4.0 in) steps to 2239 mm (88.0 in), changed by reversing wheels, rims and discs

Wheelbase:

2193 mm (86.3 in)

Seat

Fritzmeier, upholstered pan, coil spring and swinging arm suspension with hydraulic damping, range of adjustment 160 mm (6.3 in) forwards and backwards, 60 mm (2.4 in) upwards and downwards

Lighting

Unrestricted beam angle of headlight in plan view 144°

	Height above ground of centre mm	(in)	Size, mm	(in)	Distance from outside edge of tractor at 1423 mm (56.0 in) wheel track to centre, mm	(in)
Headlights	800	(31.5)	125	(4.9)dia	786	(30.9)
Side lights	1470	(57.9)	75 35	(3.0)X (1.4)	169	(6.7)
Rear lights	1420	(55.9)	80 45	(3.1)X (1.8)	239	(9.4)
Reflectors	1070	(42.1)	50	(2.0)dia	292	(11.5)

Number of grease points

Whole tractor: 13

CONDITIONS DURING TEST

Masses

Tractor (without driver but with tanks full)

	Front kg (lb)	Rear kg (lb)	Total kg (lb)
Without ballast	857 (1889)	1332 (2937)	2189 (4826)
With ballast	1209 (2665)	3059 (6744)	4268 (9409)

Ballast

	Number of weights	Total mass, kg (lb)	Water, kg (lb)
Front wheels	Nil	Nil	Nil
Rear wheels	24	1280 (2822)	510 (1124)
Additional	8	289 (637)	Front frame and weights

Track setting during tests

Front - 1397 mm (55.0 in)

Rear - 1423 mm (56.0 in)

Overall dimensions

	Length, m (in)	Width, m (in)	Height, m (in) To top of exhaust pipe	Height, m (in) To top of steering wheel
With ballast	4.07 (160)	2.70 (106)	2.10 (83)	1.55 (61)
Without ballast	3.62 (143)	1.85 (73)	2.10 (83)	1.55 (61)

Minimum ground clearance 290 mm (11.4 in) to underside of drawbar frame.

FUEL AND LUBRICANTS USED IN TESTS

Fuel	Diesel oil to Class A2 British Standard 2869: 1970, specific gravity 0.849 at 15°C (59°F), viscosity 2.90 cSt at 50°C (122°F), Cetane No.55.0
Oil	
Engine and transmission:	Agricastrol M.P. S.A.E. 20W/30, viscosity 54 cSt at 50°C (122°F)
Final drives:	Mobilube GX S.A.E. 90, viscosity 115cSt at 50°C (122°F)

COMPULSORY TESTS

1. MAIN POWER TAKE-OFF PERFORMANCE

Date and location of tests: 12th September 1978, N.I.A.E., Silsoe, Bedford, UK.

Type of dynamometer: Water brake, Heenan and Froude

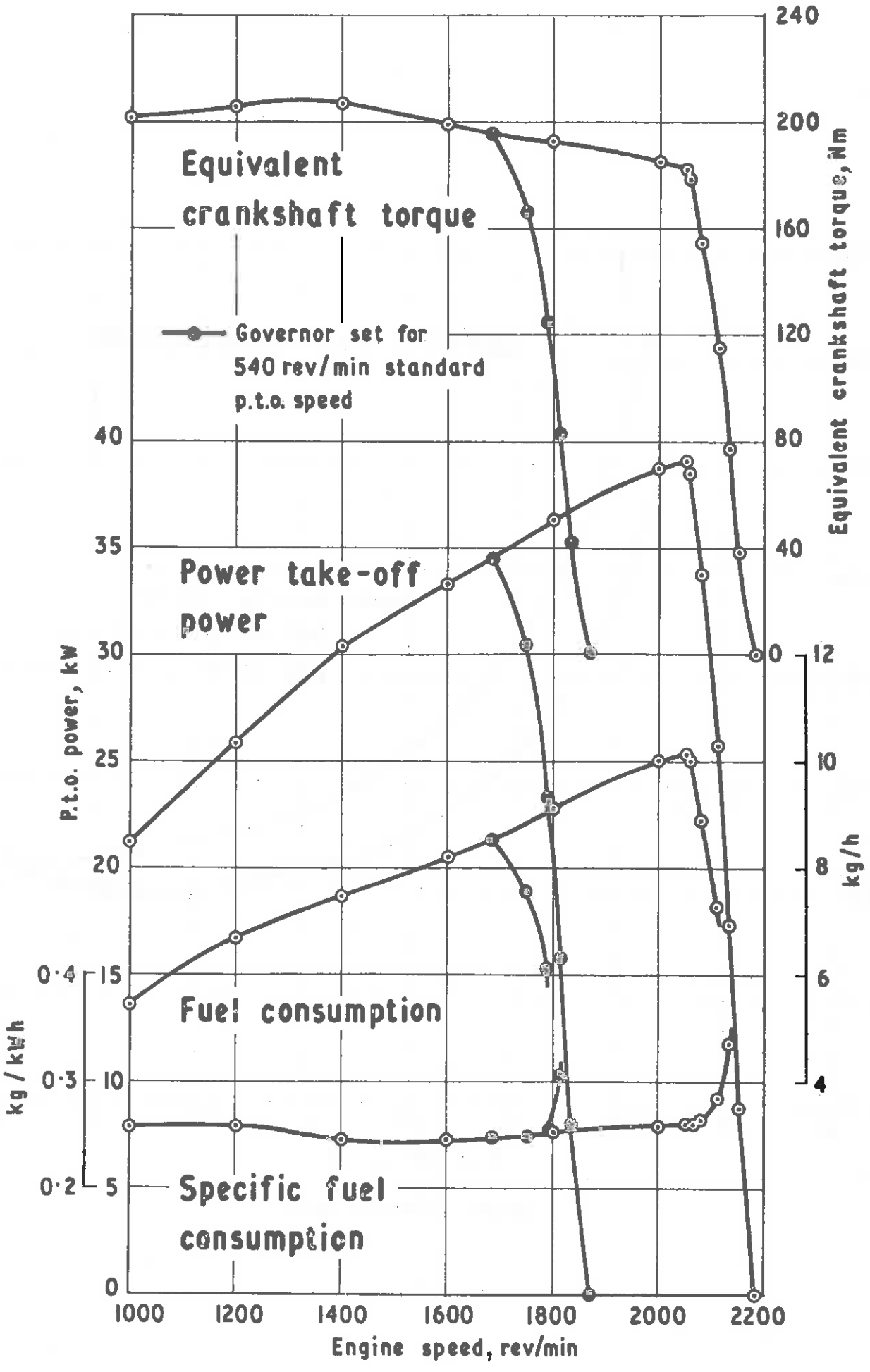
Power, kW (hp)	Speed, rev/min		Fuel consumption,			
	Engine	P.t.o.	l/h (UKgal/h)	kg/h (lb/h)	kg/kWh (lb/hph)	kWh/l (hph/UKgal)
Maximum power - 2 hour test						
39.0 (52.3)	2050	657	11.94 (2.63)	10.14 (22.35)	0.260 (0.427)	3.27 (19.9)
The speed recommended by the manufacturer for drawbar work						
38.7 (51.9)	2000	641	11.80 (2.60)	10.02 (22.09)	0.259 (0.426)	3.28 (20.0)
Part loads						
(1) 85% of the torque obtained at maximum power						
33.6 (45.1)	2079	667	10.45 (2.30)	8.87 (19.55)	0.264 (0.434)	3.22 (19.6)
(2) Unloaded						
0	2183	700	3.64 (0.80)	3.09 (6.81)	-	-
(3) 50% of the torque defined in (1)						
17.3 (23.2)	2138	686	6.87 (1.51)	5.83 (12.85)	0.337 (0.554)	2.52 (15.4)
(4) Maximum power						
39.0 (52.3)	2050	657	11.94 (2.63)	10.14 (22.35)	0.260 (0.427)	3.27 (19.9)
(5) 25% of the torque defined in (1)						
8.7 (11.7)	2150	690	5.22 (1.15)	4.43 (9.77)	0.509 (0.837)	1.67 (10.2)
(6) 75% of the torque defined in (1)						
25.7 (34.5)	2114	678	8.56 (1.88)	7.27 (16.03)	0.283 (0.465)	3.00 (18.3)

Power, kW (hp)	Speed, rev/min		Fuel consumption,			
	Engine	P.t.o.	l/h (Ukgal/h)	kg/h (lb/h)	kg/kWh (lb/hph)	kWh/l (hph/UKgal)
Part loads, the governor hand lever in the position corresponding to the standard p.t.o. speed at full load (540 rev/min).						
(1) 85% of the torque obtained at maximum power						
30.5 (40.9)	1751	562	8.90 (1.96)	7.56 (16.67)	0.248 (0.408)	3.43 (20.9)
(2) Unloaded						
0	1871	600	2.83 (0.62)	2.40 (5.29)	-	-
(3) 50% of the torque defined in (1)						
15.8 (21.2)	1817	583	5.68 (1.25)	4.82 (10.63)	0.305 (0.501)	2.78 (16.9)
(4) Maximum power						
34.5 (46.3)	1684	540	10.04 (2.21)	8.52 (18.78)	0.247 (0.406)	3.44 (21.0)
(5) 25% of the torque defined in (1)						
8.0 (10.7)	1837	589	4.24 (0.93)	3.60 (7.94)	0.450 (0.740)	1.89 (11.5)
(6) 75% of the torque defined in (1)						
23.4 (31.4)	1789	574	7.22 (1.59)	6.13 (13.51)	0.262 (0.431)	3.24 (19.8)

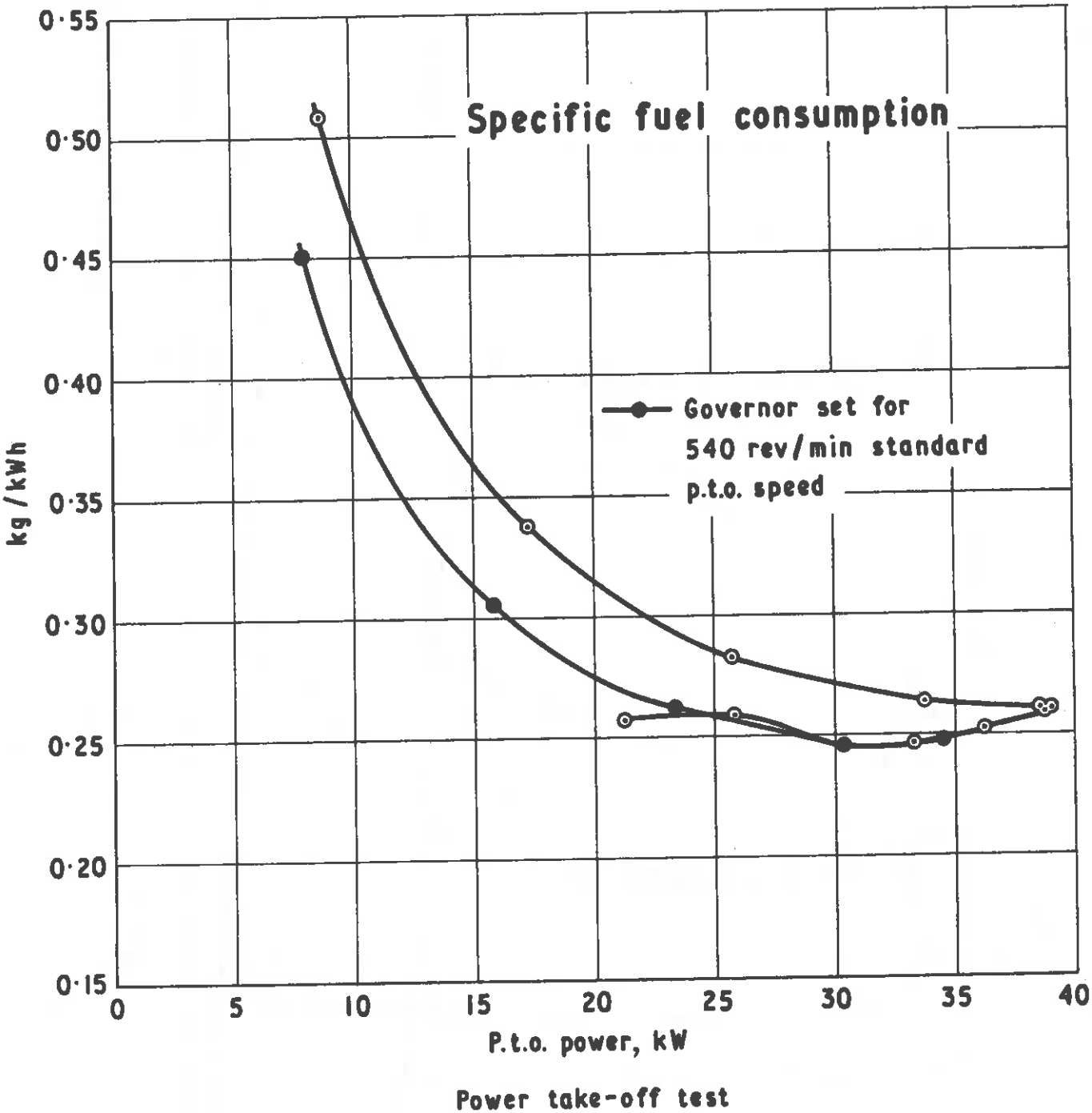
Standard specific fuel consumption, kg/kWh (lb/hph)

(a) 0.264 (0.434) (b) 0.337 (0.554) (c) 0.248 (0.408) (d) 0.305 (0.501)

No load, maximum engine speed		2183 rev/min	
Equivalent crankshaft torque at maximum power		181.7 Nm	(134.0 lb ft)
Maximum equivalent crankshaft torque		208.0 Nm at 1350 rev/min engine speed	(153.4 lb ft)
Mean atmospheric conditions	temperature	19°C	(66°F)
	pressure	1023 m bar	(30.21 in Hg)
	relative humidity	66%	
Maximum temperature	coolant	90°C	(194°F)
	engine oil	103°C	(217°F)
	fuel	32°C	(90°F)
	air intake	23°C	(73°F)



Power take-off test



Power take-off test

2 DRAWBAR PERFORMANCE Date of tests: 17th October - 3rd November 1978 Type of track: Concrete Height of drawbar above ground 358mm (14.1 in)

Gear	Power, kW (hp)	Drawbar pull, kN (lb)	Speed, km/h (mile/h)	Engine speed, rev/min	Wheel slip, %	Specific fuel consumption, kg/kWh (lb/hph)	Specific fuel consumption, kWh/l (hph/UKgal)	Temperature, °C(°F) Coolant	Fuel	Engine	Atmospheric conditions Temperature, °C (°F)	Relative humidity, %	Pressure, m bar (in Hg)
(i) MAXIMUM POWER (ballasted)													
L1	*16.8 (22.5)	33.4 (7510)	1.81 (1.12)	2130	15.0	0.452 (0.743)	1.88 (11.5)	54 (129)	20 (68)	84 (183)	8 (46)	74	1021 (30.15)
L2	*24.1 (32.3)	33.4 (7510)	2.60 (1.62)	2088	15.0	0.373 (0.613)	2.28 (13.9)	61 (142)	26 (79)	90 (194)	8 (46)	87	1006 (29.71)
L3	30.7 (41.2)	31.3 (7040)	3.53 (2.19)	2050	13.5	0.326 (0.536)	2.60 (15.9)	71 (160)	26 (79)	92 (198)	12 (54)	68	1021 (30.15)
L4	31.5 (42.2)	22.7 (5100)	5.00 (3.11)	2050	9.4	0.317 (0.521)	2.68 (16.3)	71 (160)	31 (88)	98 (208)	13 (55)	68	1021 (30.15)
H1	32.0 (42.9)	15.0 (3370)	7.68 (4.77)	2050	6.5	0.312 (0.513)	2.72 (16.6)	71 (160)	31 (88)	94 (201)	13 (55)	78	1021 (30.15)
H2	31.0 (41.6)	9.7 (2180)	11.51 (7.15)	2050	4.6	0.330 (0.543)	2.57 (15.7)	72 (162)	21 (70)	86 (187)	14 (57)	69	1021 (30.15)
(ii) FIVE HOUR TEST AT 75% OF PULL AT MAXIMUM POWER													
L4	24.8 (33.3)	17.0 (3820)	5.25 (3.26)	2088	7.3	0.325 (0.534)	2.61 (15.9)	67 (153)	31 (88)	96 (205)	14 (57)	70	1022 (30.18)
(iii)‡ FIVE HOUR TEST AT PULL CORRESPONDING TO 15% WHEELSLIP IN TEST (i)													
L2	-	33.4 (7510)	2.69 (1.67)	-	-	-	-	70 (158)	35 (95)	99 (210)	18 (64)	82	1020 (30.12)
(iv) MAXIMUM POWER (unballasted)													
L3	*20.1 (27.0)	20.0 (4500)	3.62 (2.25)	2108	15.0	-	-	56 (133)	24 (75)	83 (181)	11 (52)	88	1021 (30.15)
L4	*26.8 (35.9)	20.0 (4500)	4.82 (3.00)	2073	15.0	-	-	61 (142)	26 (79)	88 (190)	12 (54)	89	1021 (30.15)
H1	33.2 (44.5)	15.8 (3550)	7.56 (4.70)	2050	9.3	-	-	71 (160)	24 (75)	84 (183)	13 (55)	89	1021 (30.15)
H2	33.6 (45.1)	10.5 (2360)	11.52 (7.16)	2050	5.2	-	-	69 (156)	22 (72)	81 (178)	12 (54)	89	1021 (30.15)

Total oil consumption during ten hours duration of tests (ii) and (iii) 26.5 g/h (0.058 lb/h)

*Maximum power available at 15% wheelslip

‡Test (iii) was carried out with additional ballast and the results for power, slip and fuel consumption have no practical significance

3. TURNING SPACE AND TURNING CIRCLE

Details of wheel equipment: As in specification, without ballast

Track of wheels: front - 1397 mm (55.0 in)

rear - 1423 mm (56.0 in)

	With brakes		Without brakes	
	Right-hand	Left-hand	Right-hand	Left-hand
Radius of turning space, m (in)	3.63 (143)	3.72 (146)	3.85 (152)	3.91 (154)
Radius of turning circle, m (in)	3.53 (139)	3.62 (143)	3.75 (148)	3.81 (150)

4. LOCATION OF CENTRE OF GRAVITY

Height above ground, mm (in)	637 (25.1)
Distance forward from the vertical plane containing the axis of the rear wheels, mm (in)	841 (33.1)
Distance from the median plane of the tractor, mm (in)	0

5 BRAKING

Date of tests: 30th and 31st October 1978

Type of track: Concrete

Type of decelerometer: Moto Meter, recording type

Mass of ballasted tractor 4268 kg (9409 lb)

Cold brakes

	Tractor without ballast		Tractor ballasted	
Travelling speed of tractor, km/h (mile/h)	23.0	(14.3)	23.0	(14.3)
Maximum deceleration, m/s^2 (ft/s^2)	4.9	(16.1)	5.3	(17.4)
Stopping distance, m (ft)	4.6	(15.1)	4.0	(12.8)
Force on brake pedal, N (lb)	420	(94)	670	(150)
Force exerted on the brake pedal to achieve a deceleration of 2.5 m/s^2 (8.2 ft/s^2), N (lb)	170	(38)	350	(79)

Brake fade characteristics (hot tests)

		Tractor without ballast	Tractor ballasted
Maximum deceleration hot/cold	%	102	100
Stopping distance cold/hot,	%	100	98
Force on pedal cold/hot,	%	95	100

Parking brake

Efficacy of handbrake: Satisfactory facing up and down slope of 16%

Pull on handbrake: 378 N (85 lb)

6. MEASUREMENT OF AMBIENT NOISE EMITTED BY THE TRACTOR

Date of tests: 1st December 1978

Type of sound level meter: Bruel and Kjaer 2209

Type of track: Concrete

Results of tests:

Gear: H 4

Travelling speed before acceleration: 17.3 Km/h (10.8 mile/h)

Sound level: 90 dBA

7. NOISE MEASUREMENT AT THE DRIVER'S EAR LEVEL

Date of tests: 1st December 1978

Type of sound meter: Bruel and Kjaer 2209

Type of track: Concrete

Results of tests:

Gear	Travelling speed, km/h (mile/h)	dBA
H1	7.8 (4.8)	96

8. POWER LIFT AND HYDRAULIC PUMP PERFORMANCE

Date of tests:	8th - 11th December 1978	
Hydraulic fluid		
Make and type:	Agricastrol MP S.A.E. 20W/30	
Viscosity:	54 cSt at 50°C	(122°F)
Type of linkage lock for transport:	Hydraulic	
Opening pressure of the cylinder over pressure relief valve (manufacturer's figures):	22.4 MPa	(3250 lb/in^2)
Pump characteristics		
i) Opening pressure of relief valve:	20.1 MPa	(2920 lb/in^2)
Sustained pressure of the open relief valve:	22.4 MPa	(3250 lb/in^2)
ii) Pump delivery rate at minimum pressure and rated engine speed:	17.9 l/min	(3.9 gal/min)
iii) Pump delivery rate at maximum hydraulic power:	17.8 l/min	(3.9 gal/min)
Delivery pressure:	20.1 MPa	(2920 lb/in^2)
Power:	6.0 Kw	(8.0 hp)

Linkage geometry when connected to the standard frame, mm (in)

	Maximum mechanical advantage	Minimum mechanical advantage
Projected length in side view		
Lower links	952 (37.5)	952 (37.5)
Lift arms	267 (10.5)	267 (10.5)
Lift rods	612 (24.1)	612 (24.1)
Top link	735 (28.9)	713 (28.1)
Distance of lift rod connection point from pivot point of lower link	427 (16.8)	427 (16.8)
The following dimensions are given relative to the rear wheel centre line, situated 640 mm (25.2 in) above the ground level		
Lower link pivot point	32 (1.3) forward, 212 (8.3) below	32 (1.3) forward, 212 (8.3) below
Top link pivot point	186 (7.3) behind, 205 (8.1) above	216 (8.5) behind, 132 (5.2) above
Lift arm pivot point	196 (7.7) forward, 233 (9.2) above	196 (7.7) forward. 233 (9.2) above
Maximum and minimum height of lower link hitch points	218 (8.6) above, 526 (20.7) below	218 (8.6) above, 526 (20.7) below
Height of lower link hitch points when locked in transport position	Any height within lift range	Any height within lift range

Power lift performance

Lifting height in relation to a horizontal line through the lower link pivoting point			mm (in)	-340 (13.4)	-280 (11.0)	-200 (7.9)	-100 (3.9)	0	+100 (3.9)	+200 (7.9)	+300 (11.8)	+400 (15.7)	+500 (19.7)	+590 (23.2)
Lifting force with the pressure at maximum hydraulic power (20.1 MPa (2920 lb/in^2) calculated from measurements made at maximum pressure (22.4 MPa (3250 lb/in^2), kN (lb)	At the hitch points		max. mech advantage		13.3* (2990)	14.2 (3190)	15.1 (3390)	15.9 (3570)	16.4 (3690)	16.7 (3750)	17.0 (3820)	17.6 (3960)		
	On the frame		max. mech. advantage		13.1 (2940)	13.3 (2990)	13.5 (3030)	13.6 (3060)	13.5 (3030)	13.1 (2940)	12.8 (2880)	12.4 (2790)	11.9* (2680)	
			min. mech. advantage	11.2 (2520)	11.5 (2590)	11.9 (2680)	12.1 (2720)	12.1 (2720)	12.0 (2700)	11.6 (2610)	11.2 (2520)	10.9 (2450)	10.4 (2340)	10.3* (2320)

* Maximum force exerted throughout whole range

Force at which front of tractor is calculated to lift with maximum allowable front ballast is in excess of measured values

OPTIONAL TEST

9. PERFORMANCE AT ENGINE CRANKSHAFT

Date and location of tests: 4th September 1978, N.I.A.E. Silsoe, Bedford, U.K.

Type of dynamometer: Water brake, Heenan and Froude.

Power, kW (hp)	Speed, rev/min	Fuel consumption, l/h (UKgal/h)	kg/h (lb/h)	kg/kWh (lb/hph)	kWh/l (hph/UKgal)
Maximum power - 2 hour test					
42.6 (57.1)	2080	12.19 (2.68)	10.35 (22.82)	0.243 (0.400)	3.49 (21.3)
The speed recommended by the manufacturer for drawbar work					
41.6 (55.8)	2000	11.81 (2.60)	10.03 (22.11)	0.241 (0.396)	3.52 (21.5)
Part loads					
(1) 85% of the torque obtained at maximum power					
36.7 (49.2)	2112	10.38 (2.28)	8.81 (19.42)	0.240 (0.395)	3.54 (21.6)
(2) Unloaded					
0	2183	3.09 (0.68)	2.62 (5.78)	-	-
(3) 50% of the torque defined in (1)					
18.8 (25.2)	2165	6.49 (1.43)	5.51 (12.15)	0.293 (0.482)	2.90 (17.7)
(4) Maximum power					
42.6 (57.1)	2080	12.19 (2.68)	10.35 (22.82)	0.243 (0.400)	3.49 (21.3)
(5) 25% of the torque defined in (1)					
9.5 (12.7	2180	4.68 (1.03)	3.97 (8.75)	0.418 (0.687)	2.03 (12.4)
(6) 75% of the torque defined in (1)					
28.0 (37.5)	2143	8.41 (1.85)	7.14 (15.74)	0.255 (0.419)	3.33 (20.3)

No load, maximum engine speed 2183 rev/min

Crankshaft torque at maximum power 195.4 Nm (144.1 lb ft)

Maximum crankshaft torque 217.0 Nm (160.1 lb ft) at 1350 rev/min engine speed

Mean atmospheric conditions temperature 19°C (66°F)

pressure 1011 m bar (29.85 in Hg)

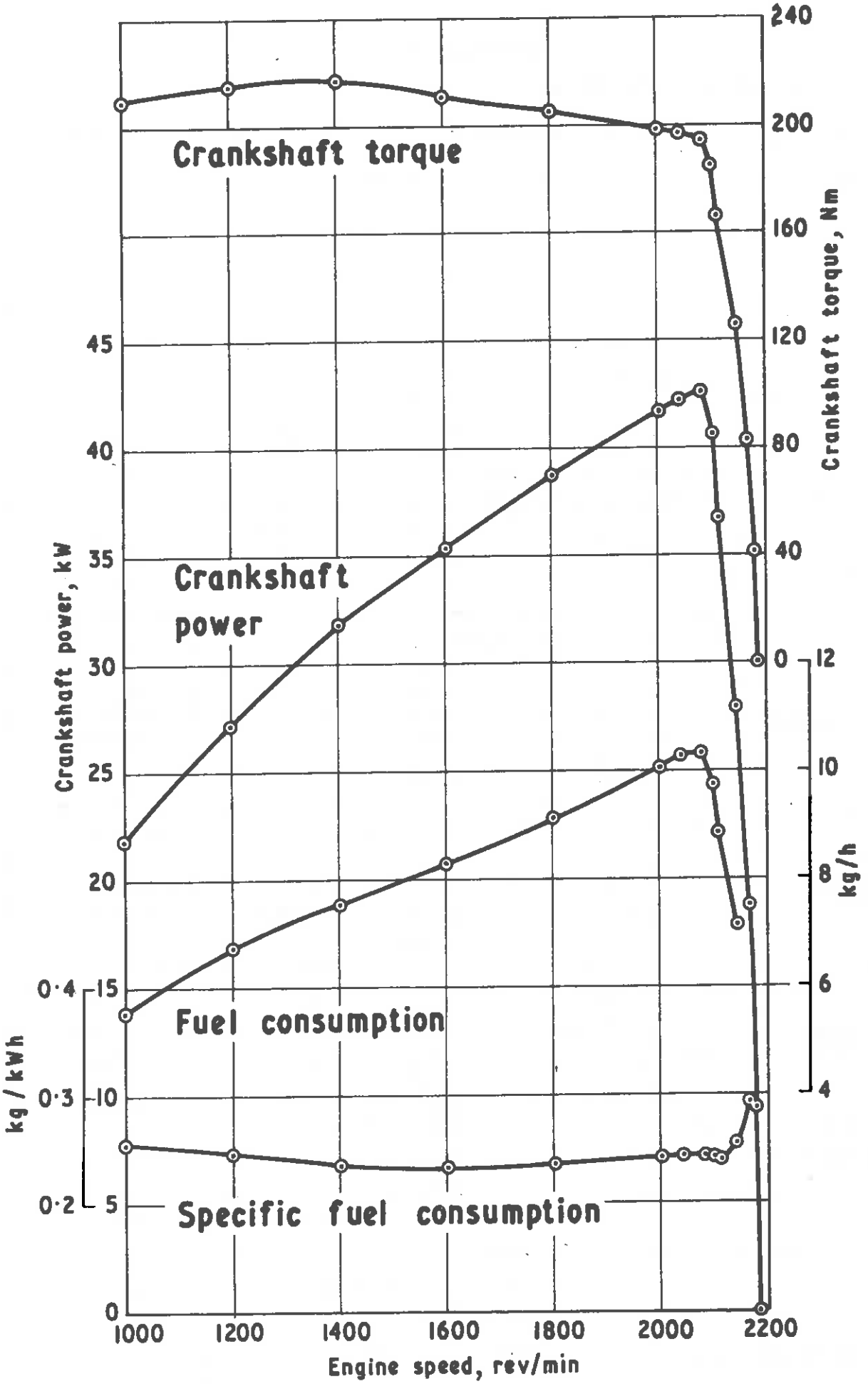
relative humidity 75%

Maximum temperature coolant 91° C (196°F)

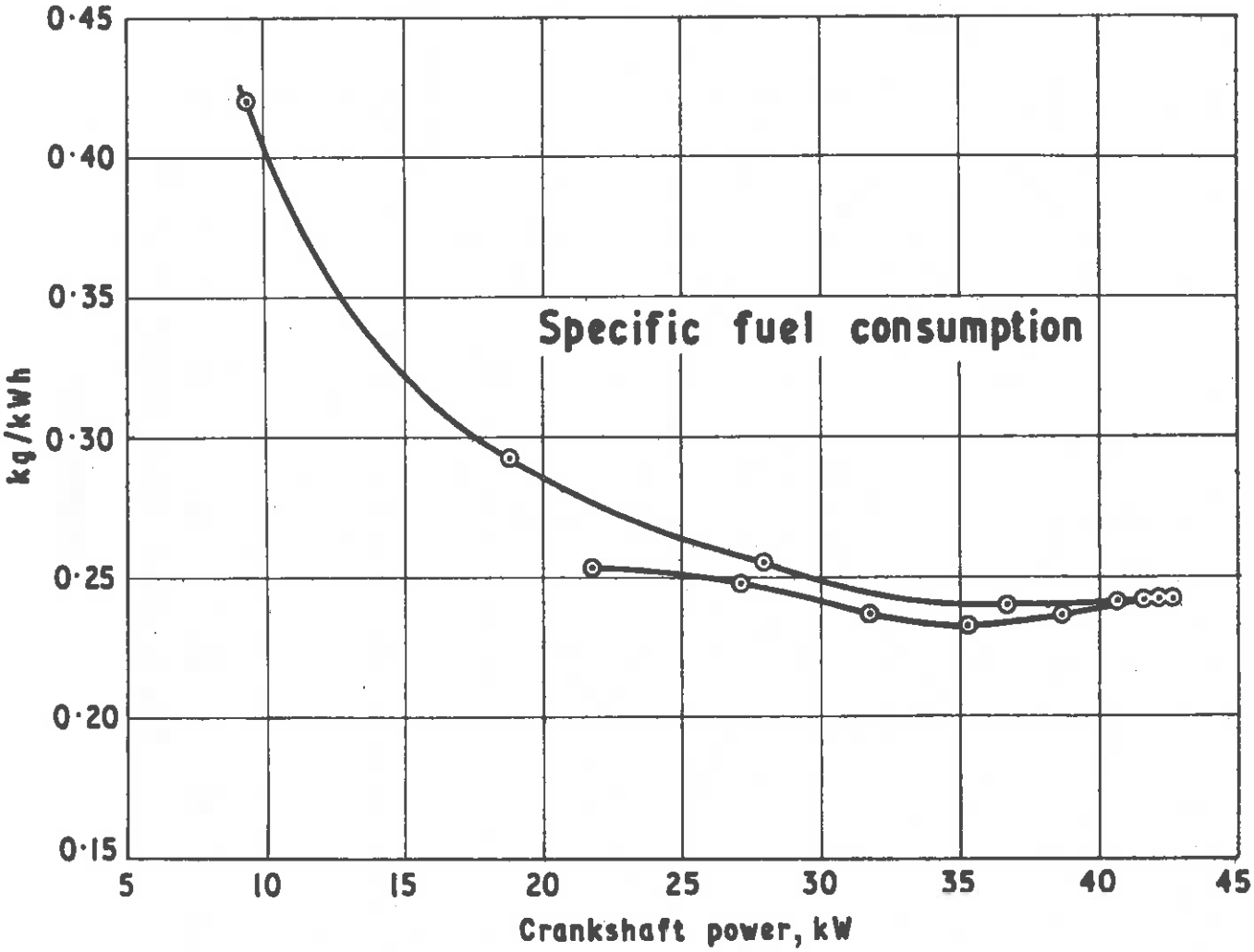
engine oil 109°C (228°F)

fuel 33°C (91°F)

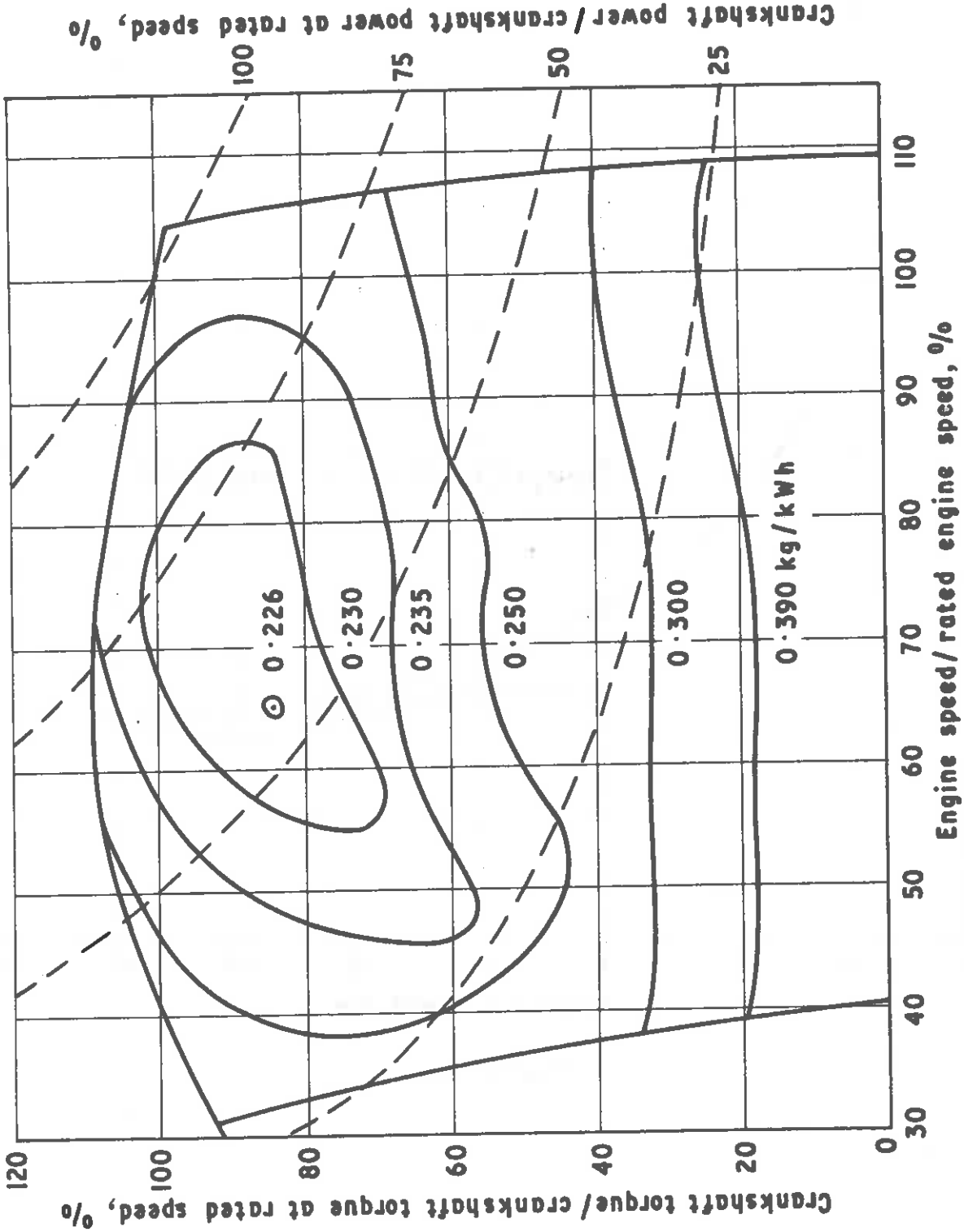
air intake 23°C (73°F)


Crankshaft torque
Crankshaft power
Fuel consumption
Specific fuel consumption
Crankshaft power, kW
Crankshaft torque, Nm
kg/h
kg/kWh
Engine speed, rev/min
0
5
10
15
20
25
30
35
40
45
80
120
160
200
240
4
6
8
10
12
0·2
0·3
0·4
1000
1200
1400
1600
1800
2000
2200

Engine test


Specific fuel consumption
kg/kWh
0·45
0·40
0·35
0·30
0·25
0·20
0·15
5
10
15
20
25
30
35
40
45
Crankshaft power, kW

Engine test


Crankshaft power / crankshaft power at rated speed, %
100
75
50
25
Crankshaft torque / crankshaft torque at rated speed, %
120
100
80
60
40
20
0
Engine speed / rated engine speed, %
30
40
50
60
70
80
90
100
110
⊙ 0·226
0·230
0·235
0·250
0·300
0·390 kg / kWh
Engine test

REPAIRS AND ADJUSTMENTS DURING TESTS

During the hydraulic left performance test, the draft control linkage was adjusted to allow full hydraulic pressure to be maintained.

REMARKS NONE

Test carried out by: N. R. Baker and P. C. Seward

Officer in charge: D. W. Smith

Signed: Head of tractor Department

for the Director

Date: 21st June 1979