

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

Report on test of

Massey-Ferguson 265 Tractor with
Independent Power Take-Off.



Manufactured by

Massey-Ferguson Manufacturing Company,
Banner Lane,
Coventry,
Warwickshire.

Test No.

R78/2/7019/O.E.C.D.

Date

September, 1978.

THE BRITISH SOCIETY FOR RESEARCH IN AGRICULTURAL ENGINEERING

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

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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. 265
Type: Four-wheel, rear wheel driven, unit
construction
Serial No.: H 141111

Engine

Make: Perkins
Model: A4 236
Type: 4-stroke, direct injection diesel
Serial No.: 236UA 119378L
Cylinders: 4 cylinders, vertical, in-line, 98.4 mm
(3.9 in) dia bore x 127 mm (5.0 in)
stroke, capacity 3863 cm³ (236 in³),
compression ratio 16:1(nominal), replace-
able dry cylinder liners, overhead
valves
Fuel system: A.C. Delco mechanical fuel feed pump with
hand-primer, C.A.V. paper element filter
with transparent sediment bowl between
feed and injection pumps; fuel tank
capacity 79.6 l (17.5 UK gal); C.A.V.
distributor type DPA 3241 F 350 injection
pump, Serial No. R26078ZS, manufacturer's
production setting 12.8 - 13.5 l/h
(22.6 - 23.8 pt/h) at 2000 rev/min engine

Fuel system continued:

speed and 63 °C (145 °F) cambox temperature; C.A.V. type BDLL 150S 6561 injector nozzles, injection pressure 17.73 MPa (175 atm), pump delivery starts 23° 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 gear 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 50 kPa (7 lb/in²), thermosyphon assisted by centrifugal pump, 394 mm (15.5 in) dia 4-blade belt driven fan, thermostat for temperature control, cooling water capacity 14.2 l (25.0 pt)

Starting system:

Electrical, Paris Rhone D114154 solenoid engaged starter motor, operable only when high-low gear selector lever is in neutral position, C.A.V. Thermostart MK IIIC manifold flame type cold starting aid

Exhaust system:

Silencer vertical above bonnet on right-hand side

Electrical system

Voltage:

12, negative earth

Generator:

Motorola 9AR 2549F alternator

Battery:

Fulmen FC388X, lead-acid, 120 Ah at 20-hour rating

Transmission

Clutch:

Laycock, single plate, dry, 305 mm (12.0 in) dia, pedal operated, for transmission only

Gearbox:

Own make, sliding gear, 8 forward and 2 reverse speeds, comprising 4 forward and 1 reverse speed gearbox with high-low range epicyclic gear

Rear axle and final drives:

Own make, crown wheel and pinion with differential and epicyclic gear final drives; pedal operated differential lock

Oil capacities:

Transmission 32.4 l (57.0 pt), recommended oil S.A.E. 20W/30, viscosity 54 cSt at

Oil capacities continued

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, 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				
Low	1	238.86	2.19	(1.36)
	2	162.86	3.22	(2.00)
	3	119.23	4.40	(2.73)
	4	88.83	5.90	(3.67)
High	1	59.71	8.78	(5.46)
	2	40.71	12.87	(8.00)
	3	29.81	17.58	(10.93)
	4	22.21	23.59	(14.66)
Reverse				
	1	175.38	2.99	(1.86)
	2	43.85	11.95	(7.43)

* Calculated with a tyre rolling radius of 695 mm (27.4 in)

Power take-off

At rear of tractor in vertical centre plane, height above ground 560 mm (22.0 in), distance behind rear axle centre 295 mm (11.6 in), 6-spline, 34.9 mm (1³/₈ in) dia to I.S.O. Standard, engaged by hand-lever operating 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

Belt pulley

Available, not fitted

Power lift

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

Drawbar

Swinging drawbar, vertical height to centre of clevis 330 mm (13.0 in) and 483 mm (19.0 in) changed by inverting drawbar, distance behind rear axle centre 536 mm (21.1 in) and 651 mm (25.6 in), distance behind p.t.o. 241 mm (9.5 in) and 356 mm (14.0 in), lateral adjustment 222 mm (8.7 in) and 393 mm (15.5 in), pivot position 130 mm (5.1 in) forward of rear wheel centre, drawbar pin hole 26 mm (1.0 in) dia

Steering

Cam Gears, worm and peg type, single drop arm and drag link

Brakes

Girling, oil immersed multi disc on inner high speed axle 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/in²), track width 1371 mm (54.0 in) by 102 mm (4.0 in) steps to 1779 mm (70.0 in), changed by extending axle

Driving wheels:

Two at rear, Goodyear Traction Sure Grip 16.9/14-30 cross-ply tyres, 6-ply rating, maximum permissible mass on each tyre 1900 kg (419 lb) at 130 kPa (19 lb/in²), track width 1421 mm (56.0 in) by 102 mm (4.0 in) steps to 2135 mm (84.0 in), changed by reversing wheels and offset lug rims

Wheelbase:

2223 mm (87.5 in)

Seat

Fritzmeier, upholstered pan, helical spring suspension with hydraulic damping, adjustable for driver's weight; range of adjustment 200 mm (7.9 in) forwards and backwards

Lighting

Unrestricted beam angle of headlight in plan view 131°

	Height above ground of centre, mm (in)	Size, mm (in)	Distance from outside edge of tractor at 1523 mm (60.0 in) wheel track, to centre, mm (in)
Headlights	835 (32.9)	124 (4.9) dia	601 (23.7)
Side lights	1513 (59.6)	80 (3.1)x 50 (2.0)	308 (12.1)
Rear lights	1472 (58.0)	80 (3.1)x 50 (2.0)	325 (12.8)
Reflectors	1075 (42.3)	51 (2.0) dia	395 (15.6)

Number of grease points

Whole tractor: 11

CONDITIONS DURING TESTS

Masses

Tractor (without driver but with tanks full)

	Front, kg (lb)	Rear, kg (lb)	Total, kg (lb)
Without ballast	963 (2123)	1428 (3148)	2391 (5271)
With ballast	1445 (3186)	3681 (8115)	5126 (11300)

Ballast

	Number of weights	Total mass, kg (lb)	Water, kg (lb)
Front wheels	None	None	None
Rear wheels	32	1741 (3838)	616 (1358)
Additional	8	378 (833)	Front frame and weights

Track setting during tests

Front - 1371 mm (54.0 in)

Rear - 1523 mm (60.0 in)

Overall dimensions

	Length, m (in)	Width, m (in)	Height, m (in)
With ballast	4.14 (163.0)	3.32 (130.7)	2.47 (97.2)
Without ballast	3.72 (146.5)	1.96 (77.2)	2.48 (97.6)

Overall height to top of exhaust pipe

Minimum ground clearance 330 mm (13.0 in) to underside of drawbar frame

FUEL AND LUBRICANTS USED IN TESTS

Fuel: Diesel oil to Class A2 British Standard 2869: 1970, specific gravity 0.837 at 15 °C (59 °F), viscosity 2.34 cSt at 50 °C (122 °F), Cetane No. 52.7

Engine oil: Agricastrol M.P. S.A.E. 20W/30, viscosity 54 cSt at 50 °C (122 °F)

Transmission oil: Agricastrol M.P. S.A.E. 20W/30, viscosity 54 cSt at 50 °C (122 °F)

Final drives: Mobilube S.A.E. 90, viscosity 115 cSt at 50 °C (122 °F)

COMPULSORY TESTS

1. MAIN POWER TAKE-OFF PERFORMANCE

Date and location of tests: 17th April 1978, N.I.A.E., Silsoe, Bedford, U.K.

Type of dynamometer: Water brake, Heenan and Froude

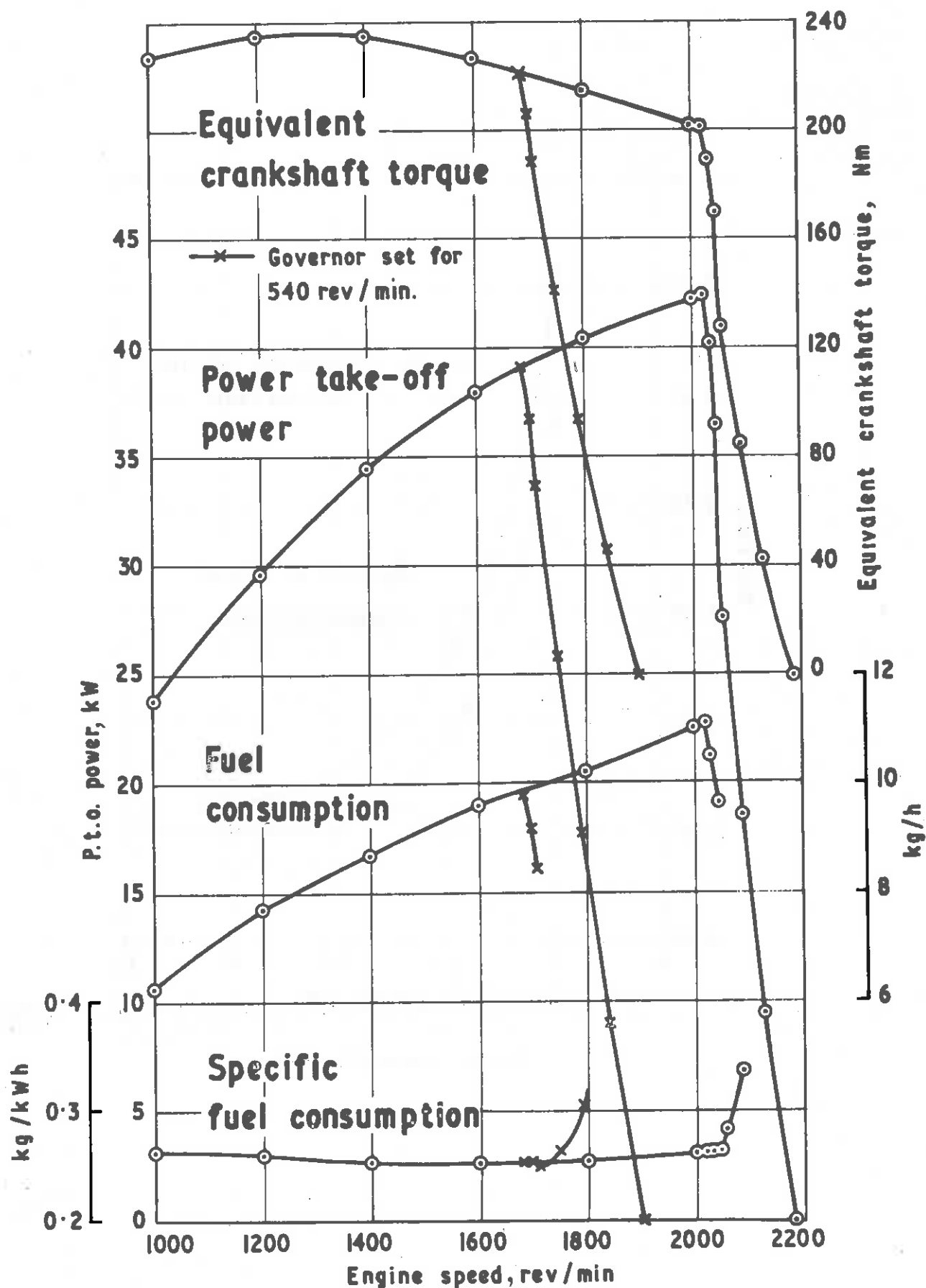
Power, kW (hp)	Speed, rev/min		Fuel consumption,			
	Engine	P.t.o.	l/h (UKgal/h)	kg/h (lb/h)	kg/kWh (lb/hph)	kWh/l (hph/UKgal)
Maximum power - 2 hour test						
42.5 (57.0)	2020	648	13.31 (2.93)	11.14 (24.56)	0.262 (0.431)	3.19 (19.4)
The speed recommended by the manufacturer for drawbar work						
42.3 (56.7)	2000	641	13.19 (2.90)	11.04 (24.34)	0.261 (0.429)	3.21 (19.6)
Part loads, governor control set for maximum speed						
(1) 85% of the torque obtained at maximum power						
36.5 (48.9)	2042	655	11.55 (2.54)	9.67 (21.32)	0.265 (0.436)	3.16 (19.3)
(2) Unloaded						
0	2183	700	3.95 (0.87)	3.31 (7.30)	-	-
(3) 50% of the torque defined in (1)						
18.5 (24.9)	2086	669	7.54 (1.66)	6.31 (13.91)	0.339 (0.557)	2.47 (15.1)
(4) Maximum power						
42.5 (57.0)	2020	648	13.31 (2.93)	11.14 (24.56)	0.262 (0.431)	3.19 (19.4)
(5) 25% of the torque defined in (1)						
9.5 (12.7)	2124	681	5.75 (1.26)	4.81 (10.60)	0.506 (0.832)	1.65 (10.1)
(6) 75% of the torque defined in (1)						
27.6 (37.0)	2058	660	9.37 (2.06)	7.84 (17.28)	0.284 (0.467)	2.95 (18.0)

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						
33.7 (45.2)	1708	548	10.07 (2.22)	8.43 (18.58)	0.250 (0.411)	3.35 (20.4)
(2) Unloaded						
0	1902	610	3.11 (0.68)	2.60 (5.73)	-	-
(3) 50% of the torque defined in (1)						
17.7 (23.7)	1796	576	6.48 (1.43)	5.42 (11.95)	0.306 (0.503)	2.73 (16.6)
(4) Maximum power						
39.1 (52.4)	1684	540	11.72 (2.58)	9.81 (21.63)	0.251 (0.413)	3.34 (20.4)
(5) 25% of the torque defined in (1)						
9.1 (12.2)	1843	591	4.78 (1.05)	4.00 (8.82)	0.440 (0.723)	1.90 (11.6)
(6) 75% of the torque defined in (1)						
25.9 (34.7)	1748	561	8.11 (1.78)	6.79 (14.97)	0.262 (0.431)	3.19 (19.4)

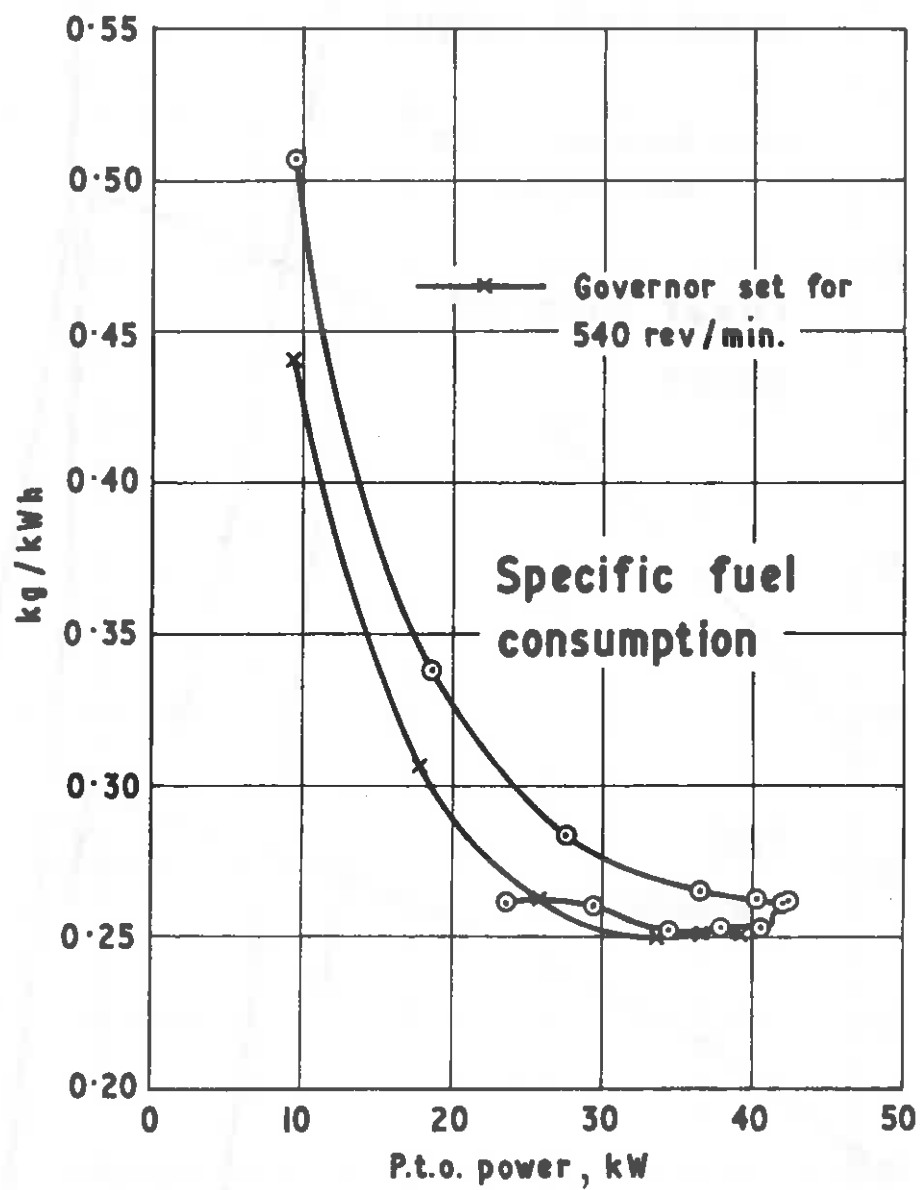
Standard specific fuel consumption, kg/kWh (lb/hph)

(a) 0.265 (0.436) (b) 0.339 (0.557) (c) 0.250 (0.411) (d) 0.306 (0.503)

No load, maximum engine speed	2183	rev/min
Equivalent crankshaft torque at maximum power	200.7	Nm (148.0 lb ft)
Maximum equivalent crankshaft torque	236.0	Nm (174.1 lb ft) at 1300 rev/min engine speed
Mean atmospheric conditions	temperature	18 °C (64 °F)
	pressure	1018 mbar (30.06 in Hg)
	relative humidity	43 %
Maximum temperature	coolant	102 °C (216 °F)
	engine oil	116 °C (241 °F)
	fuel	40 °C (104 °F)
	air intake	33 °C (91 °F)



Power take-off test



Power take-off test

2. DRAWBAR PERFORMANCE Date of tests: 7th-21st June 1978 Type of track: Concrete Height of drawbar above ground: 428 mm (16.9 in)

Gear	Power, kW (hp)	Drawbar pull, kN (lb)	Speed, km/h (mile/h)	Engine speed, rev/min	Wheel-slip, %	Specific fuel consumption,		Temperature, °C (°F)		Atmospheric conditions			
						kg/kWh (lb/hph)	kWh/l (hph/UKgal)	Coolant	Fuel	Engine oil	Temperature, °C (°F)	Relative humidity, %	Pressure, m bar (in Hg)
(i) MAXIMUM POWER (ballasted)													
L1	20.0* (26.8)	38.0 (8540)	1.89 (1.17)	2085	15.0	0.419 (0.689)	2.00 (12.2)	84 (183)	29 (84)	98 (208)	16 (61)	89	1011 (29.85)
L2	28.8* (38.6)	38.0 (8540)	2.73 (1.70)	2057	15.0	0.346 (0.569)	2.42 (14.8)	86 (187)	28 (82)	101 (214)	17 (63)	79	1011 (29.85)
L3	35.4 (47.5)	33.8 (7600)	3.77 (2.34)	2024	12.5	0.301 (0.495)	2.78 (16.9)	87 (189)	27 (81)	95 (203)	15 (59)	78	1015 (29.97)
L4	36.6 (49.1)	24.9 (5600)	5.29 (3.29)	2022	8.7	0.304 (0.500)	2.75 (16.8)	88 (190)	31 (88)	102 (216)	16 (61)	68	1015 (29.97)
H1	36.8 (49.2)	16.3 (3660)	8.13 (5.05)	2025	5.7	0.310 (0.510)	2.70 (16.5)	88 (190)	33 (91)	103 (217)	16 (61)	68	1015 (29.97)
H2	36.0 (48.3)	10.7 (2410)	12.11 (7.53)	2020	3.9	0.315 (0.518)	2.66 (16.2)	87 (189)	34 (93)	102 (216)	16 (61)	68	1015 (29.97)
(ii) FIVE HOUR TEST AT 75% OF FULL AT MAXIMUM POWER													
L4	28.7 (38.5)	18.7 (4200)	5.53 (3.44)	2055	5.8	0.295 (0.485)	2.84 (17.3)	85 (185)	39 (102)	108 (226)	17 (63)	60	1015 (29.97)
(iii) FIVE HOUR TEST AT FULL CORRESPONDING TO 15% WHEELSLIP IN TEST (i)													
L2	-	38.0 (8540)	2.83 (1.76)	-	-	-	-	86 (187)	33 (91)	108 (226)	15 (59)	72	1021 (30.15)
(iv) MAXIMUM POWER (unballasted)													
L2	16.8* (22.5)	21.3 (4790)	2.84 (1.77)	2092	15.0	-	-	83 (181)	34 (93)	101 (214)	17 (63)	69	1003 (29.62)
L3	22.3* (29.9)	21.3 (4790)	3.77 (2.34)	2071	15.0	-	-	84 (183)	31 (88)	100 (212)	17 (63)	69	1003 (29.62)
L4	29.7* (39.8)	21.3 (4790)	5.02 (3.12)	2044	15.0	-	-	86 (187)	35 (95)	106 (223)	17 (63)	69	1003 (29.62)
H1	37.7 (50.6)	17.0 (3820)	7.98 (4.96)	2026	8.9	-	-	88 (190)	33 (91)	106 (223)	17 (63)	69	1003 (29.62)
H2	37.7 (50.6)	11.2 (2520)	12.12 (7.53)	2025	5.1	-	-	88 (190)	30 (86)	101 (214)	17 (63)	69	1003 (29.62)

Total oil consumption during ten hours duration of tests (ii) and (iii) 39.6 g/h (0.087 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 - 1371 mm (54.0 in)
rear - 1523 mm (60.0 in)

	With brakes		Without brakes	
	Right-hand	Left-hand	Right-hand	Left-hand
Radius of turning space, $\frac{m}{(in)}$	3.39 (133)	3.46 (136)	3.69 (145)	3.76 (148)
Radius of turning circle, $\frac{m}{(in)}$	3.28 (129)	3.35 (132)	3.58 (141)	3.65 (144)

4. LOCATION OF CENTRE OF GRAVITY

Height above ground, mm (in)	749 (29.5)
Distance forward from the vertical plane containing the axis of the rear wheels, mm (in)	879 (34.6)
Distance from the median plane of the tractor, mm (in)	0

5. BRAKING

Date of tests:

15th - 20th June 1978

Type of track:

Concrete

Type of decelerometer:

Moto Meter, recording type

Mass of ballasted tractor:

5126 kg (11300 lb)

Cold brakes

	Tractor without ballast	Tractor ballasted
Travelling speed of tractor, km/h (mile/h)	24.1 (15.0)	23.3 (14.5)
Maximum deceleration, m/s^2 (ft/s ²)	4.3 (14.1)	4.4 (14.4)
Stopping distance, m (ft)	5.9 (19.4)	5.9 (19.4)
Force on brake pedal, N (lb)	445 (100)	560 (126)
Force exerted on the brake pedal to achieve a deceleration of 2.5 m/s^2 (8.2 ft/s ²), N (lb)	271 (61)	365 (82)

Brake fade characteristics (hot tests)

Maximum deceleration hot/cold, %	100	100
Stopping distance cold/hot, %	100	103
Force on pedal cold/hot, %	100	100

Parking brake

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

Pull on handbrake:

258 N (58 lb)

6. MEASUREMENT OF AMBIENT NOISE EMITTED BY THE TRACTOR

Date of Tests: 23rd June 1978
 Type of sound level meter: Bruel and Kjaer 2209
 Type of track: Concrete
 Results of tests:
 Gear: H4
 Travelling speed before acceleration: 18.1 km/h (11.2 mile/h)
 Sound level: 87 dBA

7. NOISE MEASUREMENT AT THE DRIVER'S EAR LEVEL

Date of tests: 23rd June 1978
 Type of sound level meter: Bruel and Kjaer 2209
 Type of track: Concrete

Gear	Travelling speed, km/h (mile/h)	dBA
H1	8.1 (5.0)	97

8. POWER LIFT AND HYDRAULIC PUMP PERFORMANCE

Date of tests: 11th and 12th July 1978

Hydraulic fluid
 Make and type: Agricastrol M.P. 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 figure): 22.4 MPa (3250 lb/in²)

Pump characteristics

- i) Opening pressure of relief valve: 19.4 MPa (2810 lb/in²)
- Sustained pressure of the open relief valve: 22.1 MPa (3210 lb/in²)
- ii) Pump delivery rate at minimum pressure and rated engine speed: 18.3 l/min (4.0 gal/min)
- iii) Pump delivery rate at maximum hydraulic power: 18.0 l/min (4.0 gal/min)
- Delivery pressure: 19.4 MPa (2810 lb/in²)
- Power: 5.8 kW (7.8 hp)

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

	Maximum mechanical advantage	Minimum mechanical advantage
Projected length in side view		
Lower links	953 (37.5)	953 (37.5)
Lift arms	267 (10.5)	267 (10.5)
Lift rods	612 (24.1)	612 (24.1)
Top link	736 (29.0)	715 (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 695 mm (27.4 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	270 (10.6) above, 480 (18.9) below	270 (10.6) above, 480 (18.9) 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)	-300	-260	-240	-160	-80	0	+80	+160	+240	+320	+440	+480	+540	+600
		(11.8)	(10.2)	(9.4)	(6.3)	(3.1)		(3.1)	(6.3)	(9.4)	(12.6)	(17.3)	(18.9)	(21.3)	(23.6)
Lifting force with the pressure at maximum hydraulic power (19.4 MPa (2810 lb/in ²)) calculated from measurements made at maximum pressure, kN (lb)	At the hitch points		*11.8 (2650)	12.1 (2720)	13.2 (2970)	14.0 (3150)	14.7 (3300)	15.4 (3460)	15.8 (3550)	16.2 (3640)	16.5 (3710)	17.2 (3870)			
	On the frame			12.4 (2790)	13.1 (2940)	13.4 (3010)	13.6 (3060)	13.7 (3080)	13.6 (3060)	13.3 (2990)	13.0 (2920)	12.5 (2810)	12.3 (2770)	12.0*	
		10.7 (2410)	11.0 (2470)	11.2 (2520)	11.6 (2610)	11.8 (2650)	12.0 (2700)	12.0 (2700)	11.9 (2680)	11.7 (2630)	11.5 (2590)	11.0 (2470)	10.9 (2450)	10.7 (2410)	10.4* (2340)

*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 TESTS

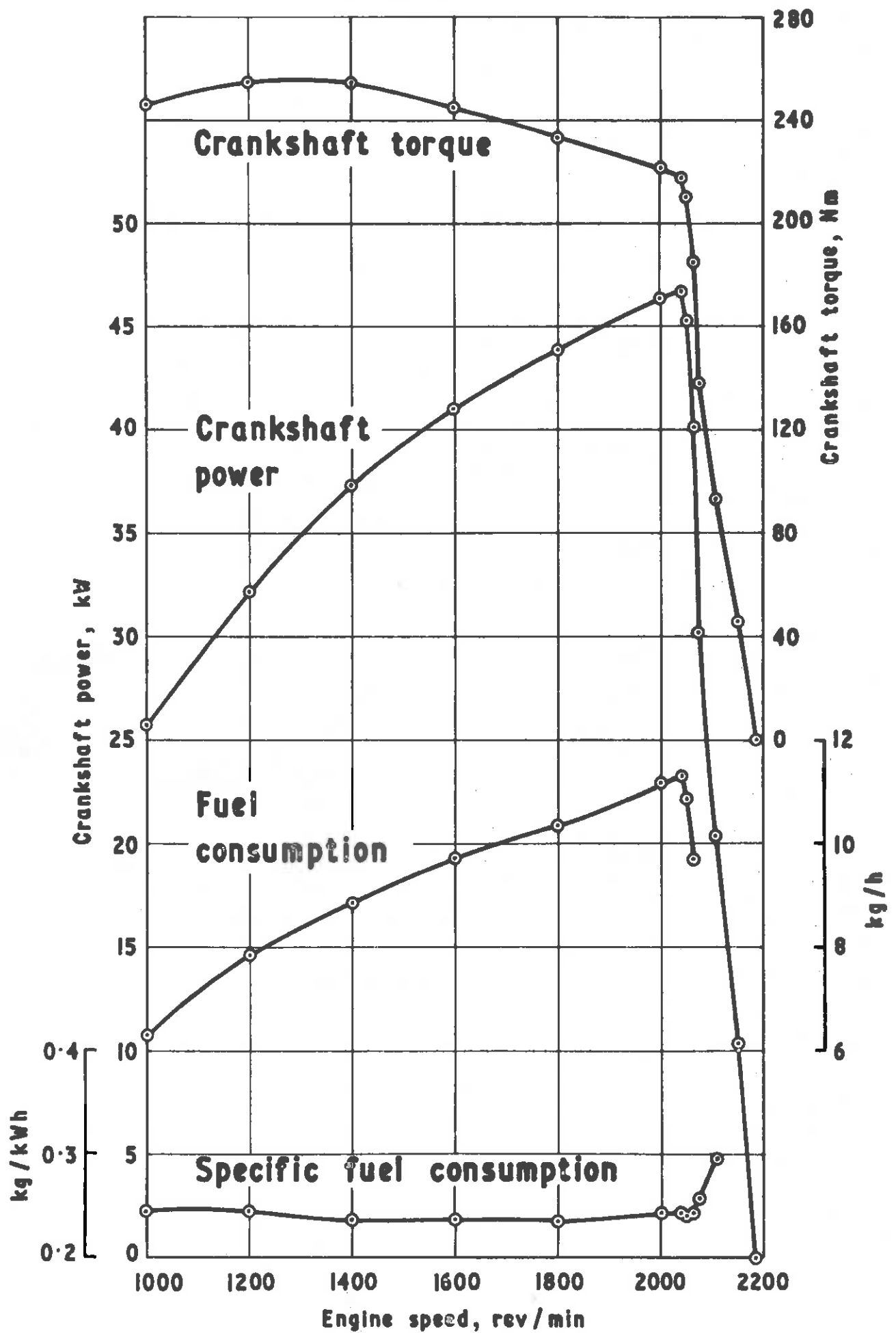
9. PERFORMANCE AT ENGINE CRANKSHAFT

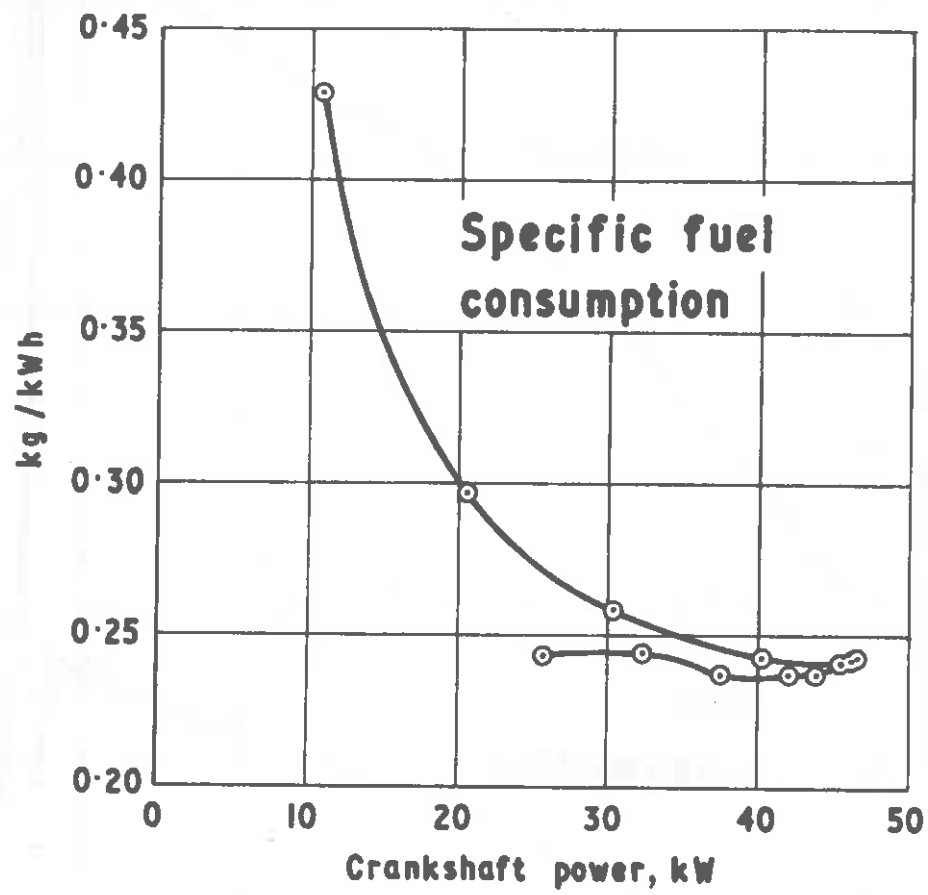
Date and location of tests: 6th April 1978, N.I.A.E., Silsoe, Bedford, U.K.

Type of dynamometer: Water brake, Heenan and Froude

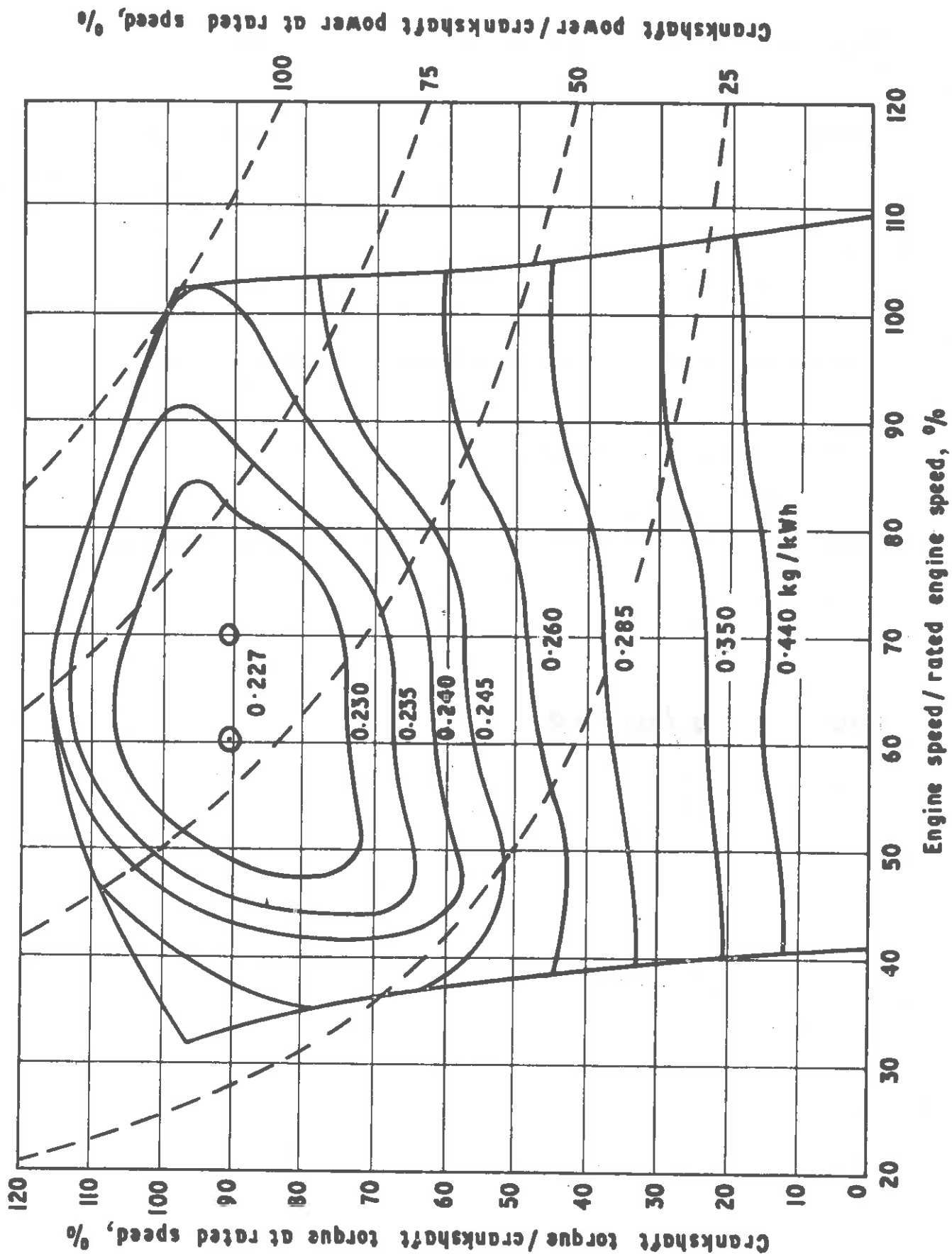
Power, kW (hp)	Speed, rev/min	Fuel consumption,			
		l/h (UKgal/h)	kg/h (lb/h)	kg/kWh (lb/hph)	kWh/l (hph/UKgal)
Maximum power - 2 hour test					
46.6 (62.5)	2040	13.48 (2.97)	11.28 (24.87)	0.242 (0.398)	3.46 (21.1)
The speed recommended by the manufacturer for drawbar work					
46.4 (62.2)	2000	13.36 (2.94)	11.18 (24.65)	0.241 (0.396)	3.47 (21.2)
Part loads					
(1) 85% of the torque obtained at maximum power					
40.1 (53.8)	2063	11.59 (2.55)	9.70 (21.38)	0.242 (0.398)	3.46 (21.1)
(2) Unloaded					
0	2183	3.95 (0.87)	3.31 (7.30)	-	-
(3) 50% of the torque defined in (1)					
20.4 (27.4)	2106	7.24 (1.59)	6.06 (13.36)	0.297 (0.488)	2.82 (17.2)
(4) Maximum power					
46.6 (62.5)	2040	13.48 (2.97)	11.28 (24.87)	0.242 (0.398)	3.46 (21.1)
(5) 25% of the torque defined in (1)					
10.4 (13.9)	2150	5.33 (1.17)	4.46 (9.83)	0.429 (0.705)	1.95 (11.9)
(6) 75% of the torque defined in (1)					
30.2 (40.5)	2075	9.31 (2.05)	7.79 (17.17)	0.258 (0.424)	3.24 (19.8)

No load, maximum engine speed	2183 rev/min
Crankshaft torque at maximum power	218.1 Nm (160.9 lb ft)
Maximum crankshaft torque	256.0 Nm (188.8 lb ft at 1300 rev/min engine speed)
Mean atmospheric conditions	temperature 18 °C (64 °F)
	pressure 1025 m bar (30.27 in Hg)
	relative humidity 34%
Maximum temperature	coolant 100 °C (212 °F)
	engine oil 117 °C (243 °F)
	fuel 38 °C (100 °F)
	air intake 32 °C (90 °F)





Engine test



REPAIRS AND ADJUSTMENTS DURING TESTS:

None

REMARKS:

None

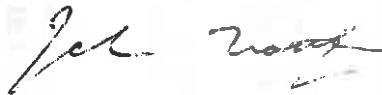
Test carried out by: F. Thistlethwaite and P.C. Seward

Officer in charge: D.W. Smith

Signed:



Head of Tractor Department



for the Director

Date:

2/10/78

