OECD APPROVAL # 1541
(Restricted code)
Date of approval: 2 December 1994

NEBRASKA TRACTOR TESTING LABORATORY
DEPARTMENT OF BIOLOGICAL SYSTEMS ENGINEERING
INSTITUTE OF AGRICULTURE AND NATURAL RESOURCES
UNIVERSITY OF NEBRASKA - EAST CAMPUS
LINCOLN, NEBRASKA 68583-0832, USA

REPORT ON TEST IN ACCORDANCE WITH OECD RESTRICTED CODE (CODE II)

OR THE OFFICIAL TESTING OF AGRICULTURAL TRACTORS

CASE INTERNATIONAL 7220 - MFWD (4WD)





MANUFACTURED BY: J.I. Case Company
700 State Street
Racine, Wisconsin 53404 USA
NEBRASKA TEST NO. 1682
Test date: 14 Sept. till 22 Sept. 1994

This test report provides the results of the tests conducted in accordance with the OECD Standard Test Code for the Official Testing of Agricultural Tractor Performance - C(87)53 Final-Annex II, Restricted Code.

This report has been approved by the OECD Coordinating Centre in Paris (CEMAGREF) on 2 December 1994.

Case International 7220 MFWD OECD test # 1541

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SPECIFICATIONS OF TRACTOR.

Manufacturers name/address	J.I. Case Company 700 State Street Racine, Wisconsin 53404, USA
Location of tractor assembly	J.I.Case Company 24th and Mead Streets Racine, Wisconsin 53404, USA
Submitted for test by	The manufacturer
Selected for test by	The manufacturer in agreement with the test station.
Place of running in	J.I. Case Racine Tractor Engineering, Racine, Wisconsin
Duration of running in	186 hours
Location of Test	Nebraska Tractor Test Lab. Lincoln, Nebraska, U.S.A.

SPECIFICATIONS OF TRACTOR

TRACTOR.

Make/Model/Type	Case International/7220-4/MFWD; Unit construction
Number of driving wheels	2 or 4
Serial number	*JJA0054562*
1st Serial number	*JJA0050001*

ENGINE.

Make	Consolidated Diesel Co
Model	6T-830
Type	Diesel, direct injection, turbocharged
Serial Number	*45002275*
Cylinders	
Number/disposition	6, in-line, vertical
Bore x stroke	114.0 mm x 135.0 mm
Capacity	8268 cm^3
Compression Ratio	17.3:1
Arrangement of valves	Overhead
Cylinder liners	Wet, replaceable
Turbo-charging	
Make/Model/Type	Holset/H1E/exhaust gas driven
Pressure	60-78 kPa-rated speed and load
Fuel System	
Feed system	Engine driven transfer pump
Make/Type/Model of filters	Fleetguard/FF5038, FF5052/ Spin-on cartridges

Number of filters	Two
Fuel tank capacity	259 l standard; 359 l optional
Make/Model/Type Injection Pump	Robert Bosch/A/in line
Pump Serial number	46202857
Production setting of pump Flow Rate (Rated Eng.Spd and full load)	30.0+/-1.5 kg/h
Make/Model/Type of injectors	Robert Bosch/J908507/17 mm or Stanadyne/J920526/17 mm
Injection timing	22° +\-2° BTDC; Lock timed at TDC +/- 2°
Injection pressure	20.50-21.30 MPa

Governor

Make/Model/Type	Robert Bosch/RSV/Variable speed/ Mechanical
Governed engine speed range	From 825 to 2530 rev/min
Rated engine speed	2200 rev/min
High-idle speed range	2450 +/- 80 rpm

Air Cleaner.

Pre-cleaner	(Integral with air cleaner)
Make/Model/Type	Nelson/711015A/Aspirated
Air intake location	Underhood; ahead of radiator
Main Cleaner	
Make/Model/Type	Nelson/711015A/Dry, dual element pleated paper
Location of main cleaner	Underhood
Maintenance indicator	Service indicator on digital instrument cluster

Lubrication system.

Type of feed pump	Full pressure, positive displacement.
Type of filters	Full flow/spin-on/dual filter
Number	One
Oil cooler	Water to oil intercooler

Cooling system.

Type of coolant	Liquid
Type of pump	Centrifugal,belt driven
Fan specification	Viscous drive fan
Number of fan blades	6
Fan diameter	600 mm
Coolant system capacity	25.5 liter
Type of temperature control	Two thermostats
Superpressure	103 kPa

Starting system.

Make/Model/Type	Nippondenso/4 kW/Solenoid engaged

Power Rating	4.0 kW
Cold starting aid	Ether spray in intake manifold
Safety device	Electrical lockout on gearshift and PTO controls
Electrical system.	
Voltage	12 Volt
Alternator	
Make/Model/Type	Bosch/N1/Alternator; belt drive
Power rating	110 Amp. at 1000-2200 rpm
Batteries	
Number & connection	2-12 V batteries in parallel
Rating	180 amp-hours per battery at 20 hour rating 950 Cold crank amps per battery 185 min. reserve cap/battery (SAE J537)
Exhaust system.	
Make/Model/Type	Nelson(muffler)/23839A/Vertical
Location	External muffler integral with vertical exhaust stack; right front corner of cab

TRANSMISSION TO WHEELS

Clutch. (travel)	
Make/Model/Type	Case International/multi-plate/ oil cooled
Number of plates	9 friction plates
Plate diameter	228.5 mm
Method of operation	Hydraulic, pedal actuated.
Gear Box.	
Make/Type	Case International/18 speed/ full powershift; mechanical
Arrangement	Countershaft with one 2-speed and two 3-speed powershift modules
Number of gears	18 forward, 4 reverse controlled by single hand lever
Available options	Creeper gear with 6 forward and 2 reverse speeds
Oil cooler	Air/oil in front of radiator
Rear axle and final drives.	
Make/model/Type	Case International; Crown wheel & pinion; differential and planetary reduction
Differential Lock	
Type	Hydraulic
Method of engagement	Electrical; switch on console
Method of disengagement	Electrical; switch on console or activating brake pedals.

Front Axle and final drives.

Make/Model/Type	Dana/070BP149-1/Crown wheel & pinion, differential & planetary reduction
Differential lock	
Type	Limited slip
Method of engagement	Self locking
Method of disengagement	Self unlocking

Total transmission ratios and travelling speeds (18 speed transmission)

Gear Number	Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed at rated engine speed of 2200 rev/min [km/h]
Forward		
1st	244.659	2.90
2nd	213.292	3.32
3rd	184.966	3.83
4th	161.252	4.40
5th	140.579	5.04
6th	122.556	5.79
7th	105.064	6.75
8th	91.594	7.74
9th	79.430	8.93
10th	69.246	10.23
11th	60.369	11.75
12th	52.629	13.46
13th	46.004	15.41
14th	40.106	17.68
15th	34.780	20.39
16th	30.321	23.39
17th	26.434	26.83
18th	23.045	30.77
Reverse		
R1	169.968	4.17
R2	148.178	4.79
R3	72.989	9.72
R4	63.632	11.15

Calculated with a tire dynamic radius index of 855 mm
ISO 4251/1-1992
Number of revolutions of front wheels for one revolution of rear wheels 1.3304

Total transmission ratios and travelling speeds (18 speed transmission plus optional 6 forward/2 reverse Creeper gears)
Not fitted on tested tractor.

Gear Number		Number of engine revolutions for one revolution of the driving wheels	Nominal travelling speed at rated engine speed of 2200 rev/min [km/h]
Forward			
1st	Creeper	840.621	0.84
2nd	Creeper	635.522	1.12
3rd	Creeper	483.015	1.47
4th	Creeper	360.988	1.96
5th	Creeper	272.911	2.60
6th	Standard	244.659	2.90
7th	Standard	213.292	3.32
8th	Creeper	207.420	3.42
9th	Standard	184.966	3.83
10th	"	161.252	4.40
11th	"	140.579	5.04
12th	"	122.556	5.79
13th	"	105.064	6.75
14th	"	91.549	7.74
15th	"	79.430	8.93
16th	"	69.246	10.23
17th	"	60.369	11.75
18th	"	52.629	13.46
19th	"	46.004	15.41
20th	"	40.106	17.68
21th	"	34.780	20.39
22th	"	30.321	23.39
23th	"	26.434	26.83
24th	"	23.045	30.77
Reverse			
R1	Creeper	583.994	1.21
R2	Creeper	250.784	2.82
R3	Standard	169.968	4.17
R4	"	148.178	4.79
R5	"	72.989	9.72
R6	"	63.632	11.15

Same dynamic radius as used on preceding table.
Same front to rear ratio as on preceding table.

POWER - TAKE - OFF.

Main Power-Take-Off.

Type	Independent
Method of engagement	Hydraulically actuated multi-plate wet clutch operated by hand lever, independent of main drive clutch.
Number of shafts	Two
Method of changing shafts	Separate shafts at fixed ratios

Power-Take-Off proportional to engine speed - 540 rev/min.

Location	Rear of tractor, vertical center plane.
Diameter of shaft	35 mm (ISO 500/1991)
Number of splines	6;(ISO 500/1991)
Height above ground	642 mm
Distance from median plane of tractor	0 mm
Distance behind rear axle	796 mm
PTO Speed at rated engine spd	533 rev/min
Engine speed at Std. PTO spd	2229 rev/min
Ratio of Engine rpm to PTO rpm	4.128:1
Maximum allowed power level	63 kW
Direction of rotation (viewed facing driving end)	Clockwise.

Power-Take-Off proportional to engine speed -1000 rev/min.

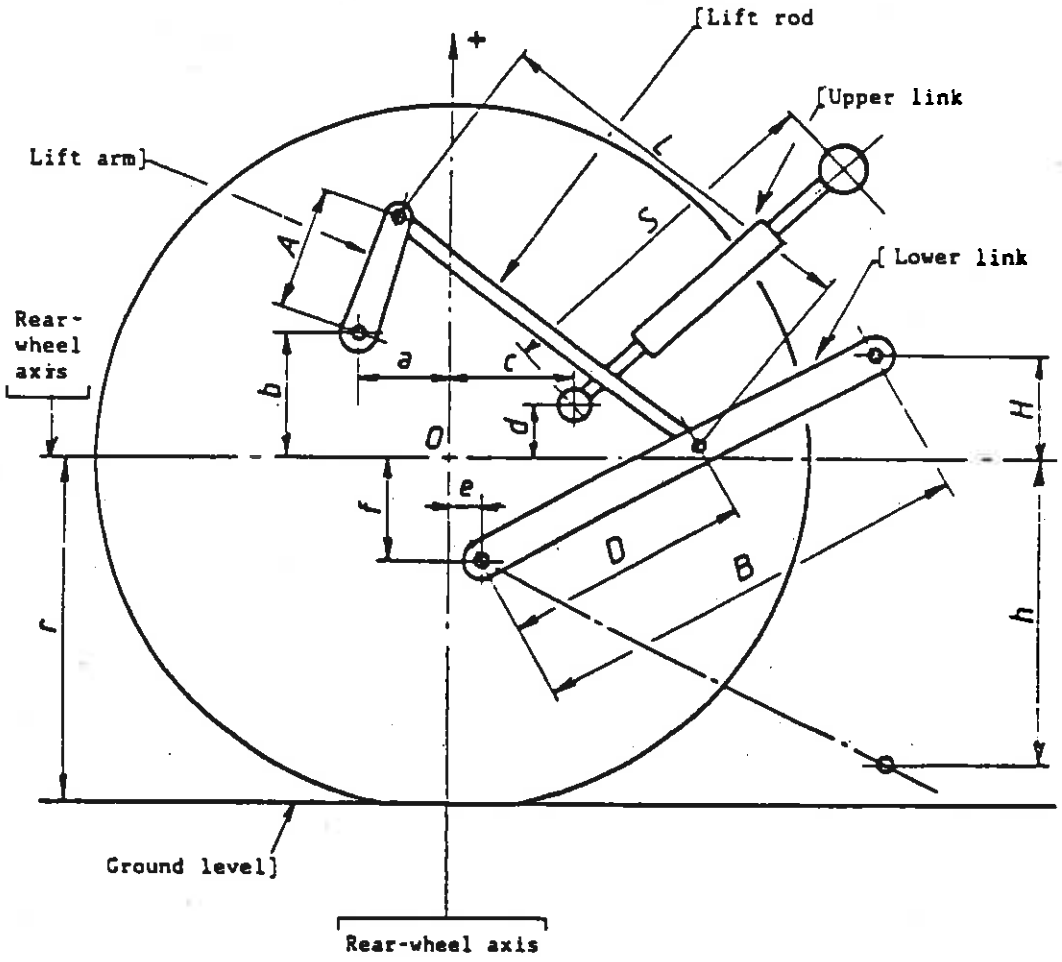
Location	Rear of tractor, vertical center plane.
Diameter of shaft	35 mm (ISO 500/1991)
Number of splines	21; (ISO 500/1991)
Height above ground	765 mm
Distance from median plane of tractor	0 mm
Distance behind rear axle	745 mm
PTO Speed at rated engine spd	1003 rev/min
Engine speed at Std. PTO spd	2193 rev/min
Ratio of Engine rpm to PTO rpm	2.193:1
Direction of rotation (viewed facing driving end)	Clockwise.

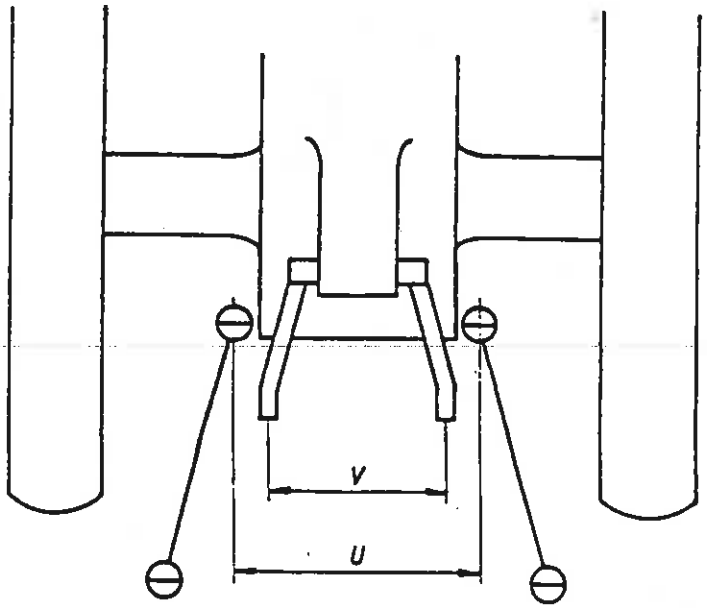
POWER LIFT.

Make/Type	Case international/3-point
Type of hydraulic system	Closed center, load sensing
Number/Type of cylinders	One internal, one external; single acting
Type of linkage lock for transport	Hydraulic, with locking notch on hand lever on console
Relief valve setting (High pressure standby)	18.27+/-0.35 MPa
Opening pressure of cylinder safety valve	19.65-20.34 MPa
Lift pump type	Axial piston, pressure and flow compensated
Power transmission to pump	Direct drive from transmission
Type/Number of filters	One Spin-on cartridge; Cleanable suction screen inside reservoir
Location of oil reservoir	Transmission housing
Number/Type/Location of tapping points	3 pairs of ISO standard couplings at rear of tractor
Max. oil volume available for external cylinders	8.5 liter

THREE POINT LINKAGE.

- Category 3
- Category adaptor None





THREE POINT LINKAGE. (Upper link in bottom hole on tractor)

- Category adaptor - None

Table 1.1 - *Linkage geometry dimensions.

			Dimension or range [mm]	Settings used on test [mm]
Lift category			III	same
Rear Tire - Radius Index	(r)		855	same
Front Tire - Radius Index	(r')		665	645
Length of lift arms	(A)		381	same
Length of lower links	(B)		861	same
Distance of lift arm pivot from: horizontal	(a)		364	same
rear wheel axis: vertical	(b)		422	same
Horizontal distance between the 2 lower link points	(u)		604	same
Horizontal distance between the 2 lift arm end points	(v)		737	same
Length of upper link	(S)	from	600	657
		to	831	
Distance of upper link pivot from horizontal	(c)		627	same
rear wheel axis: vertical	(d)		169	169
		and	250	
Distance of lower link pivot from: horizontal	(e)		455	same
rear wheel axis: vertical	(f)		332	same
Distance of lower link pivot points to lift rod pivot pts on lower links.	(D)		579	same
Length of lift rods	(L)	from	660	794
		to	866	
Height of lower hitch points relative to rear wheel axis In low position	(h)	from	378	604
		to	699	
In high position	(H)	from	3	104
		to	269	
Height above ground of lower hitch points when locked in transport position.		from	858	959
		to	1124	

*Assuming (r) with a dynamic tire index of 855 mm
ISO 4251/1-1992

SWINGING DRAWBAR.

Type	Swinging
Height above ground:	Maximum 514 mm Minimum 435 mm
Adjustments	Laterally adjustable with 3 fore-aft positions
Distance of hitch point from rear wheel axis, horizontal	
Position 1	1152 mm
Position 2	1254 mm
Position 3	1356 mm
Distance of hitch point from PTO shaft end	
1000 rpm PTO	
Vertically	253 mm
Horizontally	
Position 1	406 mm
Position 2	508 mm
Position 3	610 mm
540 rpm PTO	
Vertically	131 mm
Horizontally	
Position 1	356 mm
Position 2	458 mm
Position 3	559 mm
Lateral adjustment (center of clevis)	
Right hand & Left hand	
Position 1	210 mm
Position 2	228 mm
Position 3	246 mm
Distance of pivot point from rear wheel axle;horizontally	50 mm forward
Diameter of drawbar pin hole	42 mm
Maximum vertical permissible load (static)	
Positions 1 & 2	14.2 kN
Position 3	12.0 kN

STEERING

Make/Model/Type	Eaton/266-4101-001/ hydrostatic steering control unit.
Method of operation	
Pump(s)	Cessna main axial piston pump thru steering priority valve
Ram(s)	2 double-acting cylinders
Working pressure	16.203-16.892 MPa

BRAKES

Service brake.

Make/Model/Type	Case International/Oil immersed disc type
Method of operation	Hydraulic,operated by two pedals, separate or coupled.
Trailer brake	none

Parking brake.

Type	Transmission lock
Method of operation	Mechanical; Gear selector lever

WHEELS

Number.	
Front	Two; Driving and steering
Rear	Two or Four; Driving
Wheel base	3006 mm

Track width adjustment

	Inside distance [mm]	Outside distance [mm]	Adjustment method
Front	1527	2408	Reversing wheel rims and offset lug rims
Rear - Inner	1626	3175	Adjustable clamping
- Outer	2845	3251	edges on bar axle and offset lug rims

PROTECTIVE STRUCTURE

Make/Model/Type	Case International/CX-96/Cab
Manufacturer's name/address	J.I.Case Company 700 State Street Racine, Wisconsin 53404, USA
Protective device	Cab, 4-post with charpy v-notch certified material
Tiltable	No
OECD approval number	CSS 096/57

DRIVER'S SEAT

Make/Model/Type	Sears/SA12105/Air suspension or Sears/SA11035/Air suspension
Type of suspension	Air ride; fore-aft isolator; adjustable for weight. SA11035 has also a lateral isolator
Type of damping	Air damping

Range of adjustment	
Longitudinal	152.4 mm
Vertical	76.2 mm

LIGHTING.

	Height above ground of center [mm]	Size [mm]	Distance from outside edge of lights to median plane of tractor. [mm]
Headlights	1667	260.5x130.8	390
Rearlights	2104	100.0x 45.2	654
Reflectors-rear	2104	50.0x 45.2	554 and 704

TEST CONDITIONS.

Overall dimensions(unballasted).

Length [mm]	Width minimum [mm]	Width maximum [mm]	Height at top of protective structure [mm]	Height at top of exhaust stack [mm]
5056	2845	3793	3047	3022

Overall dimensions(ballasted).

Length [mm]	Width minimum [mm]	Width maximum [mm]	Height at top of protective structure [mm]	Height at top of exhaust stack [mm]
5310	3463	3869	3047	3022

Ground clearance (unballasted)	362 mm
Clearance-limiting part	3-point hitch sway blocks

Tractor Mass (with Cab, full fuel tank)

		Without driver [kg]	With driver [kg]
Unballasted	Front	2462	2477
	Rear	5407	5467
	Total	7869	7944
Ballasted	Front	2713	2728
	Rear	6374	6434
	Total	9087	9162

Ballast,

	Number of weights	Mass (total) [kg]	Water [kg]
Front-wts	3	143	----
-bracket	1	80	----
Rear -wts	4	273	----
-duals		722	----

Tire and track width specifications.

	Front	Rear
Make	Goodyear	Goodyear
Dimensions	14.9R30	20.8R38
Ply rating	3 star-134A8	2 star-153A8
Type	Radial	Radial
Max.load (tire manufacturer)	2270 kg/tire	3905 kg/tire
Max.load(tractor manufacturer)	2270 kg/tire	3905 kg/tire
Inflation pressure(tire mfr)	210 kPa	160 kPa
Dynamic Radius Index	665 mm	855 mm
Chosen track width - inner	1875 mm	1722 mm
- outer		3188 mm

Oils and Lubrication.

Capacity and change interval:

	Capacity liter	Oil change hours	Filter change hours
Engine (without filter)	19	250	250
Gear Box	172	1000	1000
Front axle	11.4	1000	----
Rear axle	Common with Gear box		
Hydraulic system	Common with Gear box		
Final drive-front	0.9 (each side)	1000	----
Final drive-rear	Common with Gear box		

Lubricant Specifications:

	Recommended	Used during test
Engine oil		
Type	Case IH NO. 1 SAE 15W-40	same
Viscosity	14.9 cSt at 100°C	
Classification	API SG/CD/CE	
Transmission oil		
Type	Case IH Hy-tran Plus	same
Viscosity	6.3 cSt at 100°C	
Classification	NA	
Hydraulic fluid		
Type	Case IH Hytran Plus	same
Viscosity	6.3 cSt at 100°C	
Classification	NA	
Front differential and final drive		
Type	Case IH 135HEP Gear Lube; SAE 85W-140	same
Viscosity	27 cSt at 100°C	
Classification	API GL-5 or MIL-L-2105D	
Grease		
Type	Case IH Hi-Temp EP	
Number of lube points	26	

Fuel

Type	Premier; Grade 2-D,in conformity with the national standard
Density (Pto test)	0.8334 kg/l at 15°C
(Drawbar test)	Same as PTO test
Cetane number	50.6
Viscosity	2.51 cSt at 38°C

COMPULSORY TESTS

1. MAIN POWER TAKE-OFF

Date: 16-Sep-94 Location: UNL Tractor Test Lab, Lincoln, NE, U.S.A.

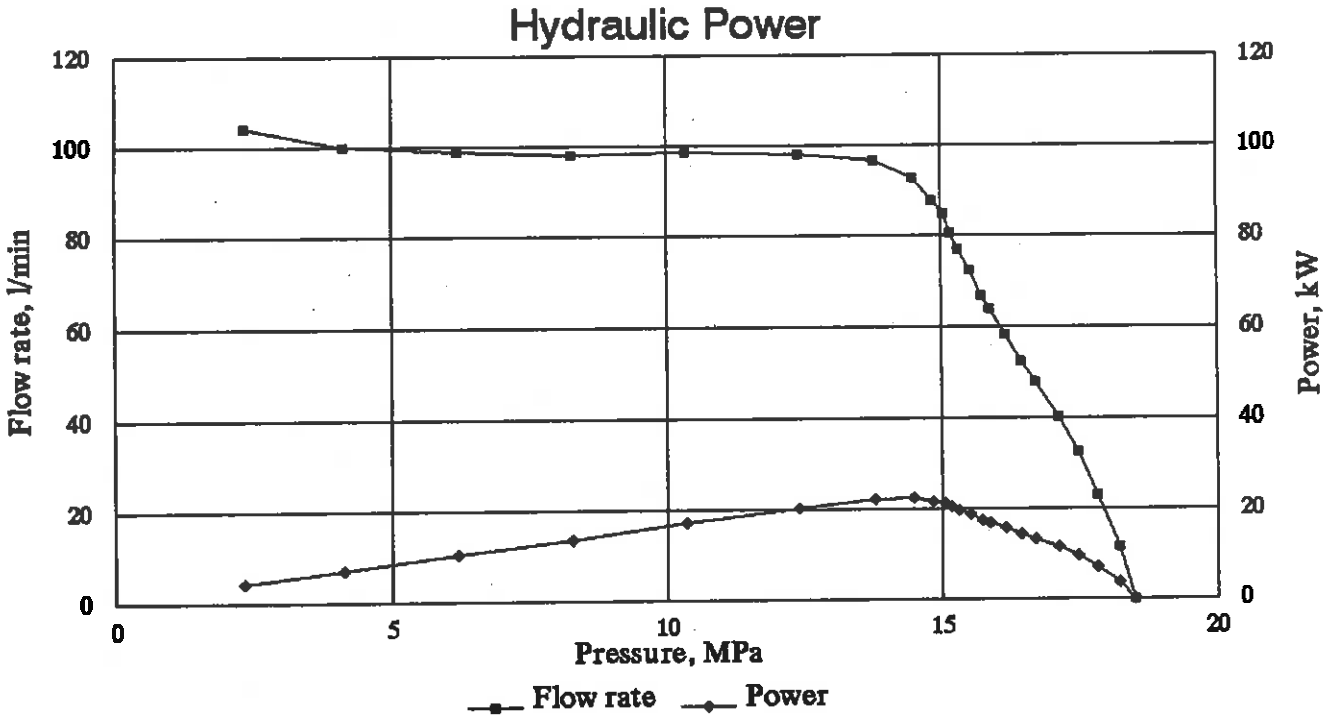
Type of dynamometer: Eddy current, Eaton Fuel density: 0.833 kg/l

Power kW *hp*	Eng rev/min	PTO rev/min	l/h *gal/h*	kg/h *lb/h*	kg/kW-h *lb/hp-h*	kW-h/l *hp-h/gal*
1.1 Maximum Power - 2 hours						
119.32	1901	867	32.83	27.36	0.229	3.63
160.01			*8.67*	*60.31*	*0.377*	*18.45*
1.2 Power at Rated Engine Speed - 1 hour						
116.33	2201	1004	34.38	28.65	0.246	3.38
156.00			*9.08*	*63.16*	*0.405*	*17.18*
1.3 Power at Standard Power Take-Off Speed - 1 hour						
116.33	2201	1004	34.38	28.65	0.246	3.38
156.00			*9.08*	*63.16*	*0.405*	*17.18*
1.4 Part Loads						
1.4.1 Torque at maximum power at rated engine speed						
116.33	2201	1004	34.38	28.65	0.246	3.38
156.00			9.08	63.16	0.405	17.18
1.4.2 85% of torque obtained in 1.4.1						
101.15	2260	1031	31.68	26.40	0.261	3.19
135.65			*8.37*	*58.20*	*0.429*	*16.21*
1.4.3 75% of torque defined in 1.4.2						
77.37	2301	1049	26.13	21.77	0.281	2.96
103.76			*6.90*	*48.00*	*0.463*	*15.03*
1.4.4 50% of torque defined in 1.4.2						
53.00	2337	1066	20.74	17.28	0.326	2.56
71.08			*5.48*	*38.10*	*0.536*	*12.97*
1.4.5 25% of torque defined in 1.4.2						
27.06	2374	1083	15.51	12.93	0.478	1.74
36.28			*4.10*	*28.50*	*0.786*	*8.85*
1.4.6 unloaded						
0.31	2406	1097	10.12	8.44	27.076	0.03
0.42			*2.67*	*18.60*	*44.513*	*0.16*
1.5 Part Loads at Standard Power Take-off Speed						
1.5.1 Torque at maximum power						
116.33	2201	1004	34.38	28.65	0.246	3.38
156.00			*9.08*	*63.16*	*0.405*	*17.18*
1.5.2 85% of torque obtained in 1.5.1						
101.15	2260	1031	31.68	26.40	0.261	3.19
135.65			*8.37*	*58.20*	*0.429*	*16.21*
1.5.3 75% of torque defined in 1.5.2						
77.37	2301	1049	26.13	21.77	0.281	2.96
103.76			*6.90*	*48.00*	*0.463*	*15.03*
1.5.4 50% of torque defined in 1.5.2						
53.00	2337	1066	20.74	17.28	0.326	2.56
71.08			*5.48*	*38.10*	*0.536*	*12.97*
1.5.5 25% of torque defined in 1.5.2						
27.06	2374	1083	15.51	12.93	0.478	1.74
36.28			*4.10*	*28.50*	*0.786*	*8.85*
1.5.6 unloaded						
0.31	2406	1097	10.12	8.44	27.076	0.03
0.42			*2.67*	*18.60*	*44.513*	*0.16*

No load maximum engine speed:	**2406 rev/min**	
Equivalent torque at rated speed:	**505 N.m**	***372 lb-ft***
Equivalent torque at maximum power:	**600 N.m**	***442 lb-ft***
(engine speed:	**1901 rev/min)**	
Maximum equivalent crankshaft torque:	**690 N.m**	***509 lb-ft***
(engine speed:	**1403 rev/min)**	
Mean Dry bulb:	**24 deg C**	***75 deg F***
Wet bulb:	**20 deg C**	***68 deg F***
Relative humidity:	**69 %**	
Pressure:	**97.86 kPa**	***28.90 in Hg***
Maximum Coolant:	**90 deg C**	***194 deg F***
Engine oil:	**112 deg C**	***233 deg F***
Fuel:	**59 deg C**	***139 deg F***
Air intake:	**27 deg C**	***80 deg F***
Transmission/hydraulic oil:	**56 deg C**	***133 deg F***
Intake manifold pressure at rated speed:	**83 kPa**	***12.0 psig***
Intake manifold pressure at maximum power:	**76 kPa**	***11.0 psig***

Hydraulic Power Test

Date of test: 27–Sep–94					
Location of test–City–State: Tractor Test Lab, Lincoln, NE, USA					
Tapping point used for test: Remote hydraulic outlets					
I. Sustained pressure with pump stalled:					
18.48 MPa					
2680 psi					
II. Pump delivery rate at minimum pressure and rated engine speed:					
104.1 l/min					
27.5 gpm					
III. Flow rate, pressure, power:					
90% of relief valve setting:					
	47.7 l/min	16.69 MPa		13.27 kW	
	12.6 gpm	*2420 psi*		*17.79 hp*	
Maximum hydraulic power:					
	92.7 l/min	14.48 MPa		22.38 kW	
	24.5 gpm	*2100 psi*		*30.02 hp*	
IV. Hydraulic fluid temperature at flow meter:					
66 C					
150 F					



2.2 POWER LIFT TEST. Cat III,
Upper link in bottom hole on tractor
Date of test: 21 July 1988

		Hitch points	Frame
Lower hitch points above ground - down position:	[mm]	261	238
Vertical movement: without load:	[mm]	708	810
Vertical movement: with load:	[mm]	653	755
Maximum corrected force through full range:	[kN]	39.8	38.4
Corresponding pressure:	[kPa]	17065	
Moment about rear axle:	[kN.m]	51.9	73.6
Maximum mast tilt angle:	[deg]	--	7.4

Lifting height relative to horizontal position of lower links.

	[mm]	-285	-262	-201	-100	-1
Corrected lift forces						
Hitch point	[kN]	--	39.8	42.5	46.9	50.1
at frame	[kN]	38.4	--	40.8	43.7	44.8

Lifting height relative to horizontal position of lower links.

	[mm]	104	200	299	391	469
Corrected lift forces						
Hitch point	[kN]	52.4	54.1	54.3	57.6	--
at frame	[kN]	44.7	44.1	--	41.6	41.7

OECD Drawbar Data (SI)

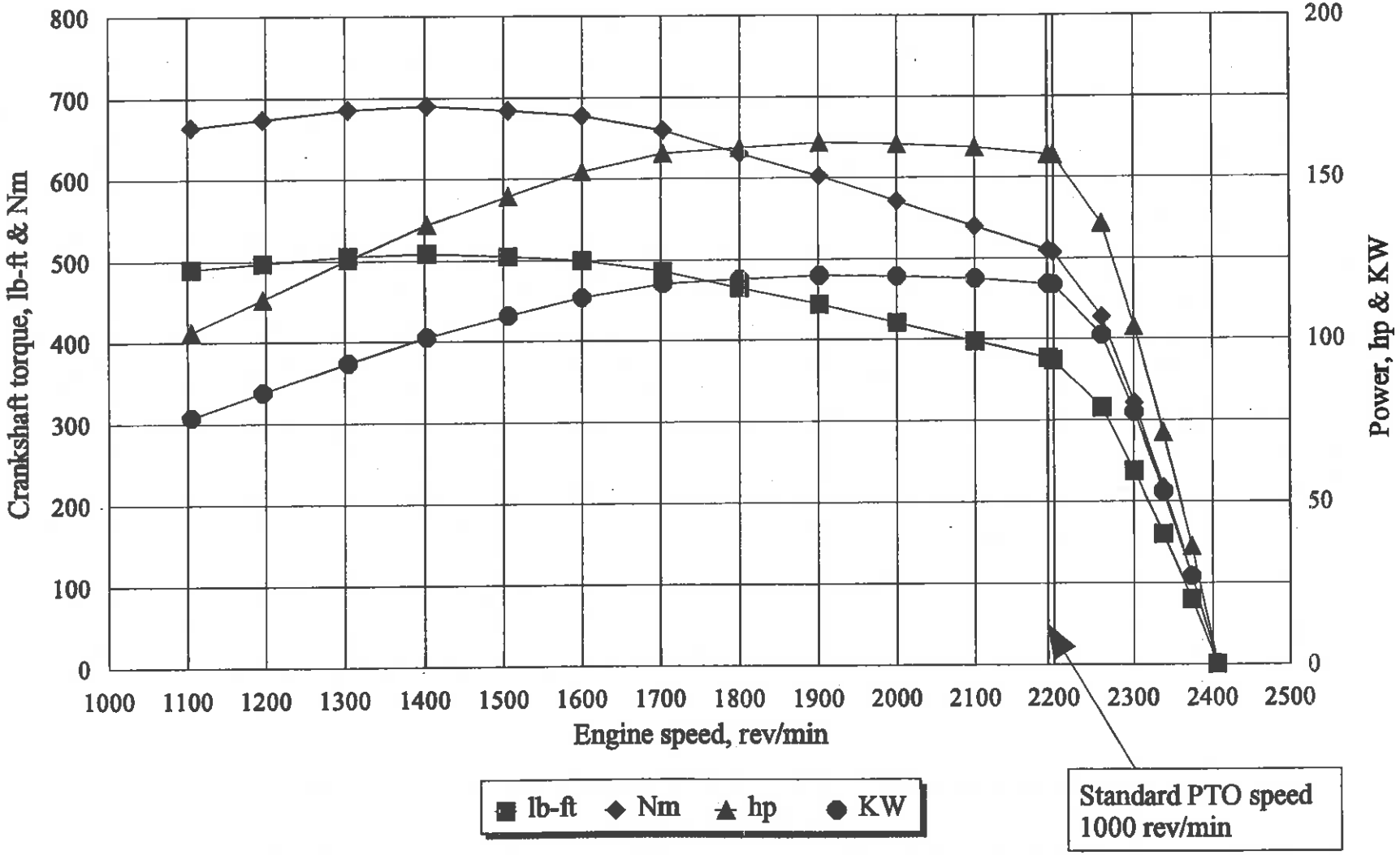
Date of tests:	21-Sep-94			Fuel density:		0.833 kg/l								
Type of track:	Concrete			Test number:		1682								
Gear	Power	Pull	Speed	Engine speed	Slip	SFC	SFE	Temperature, deg C					Rel hum-idity	Baro. Press
	kW	kN	km/h	rev/min		kg/kW.h	kW.h/l	Fuel	Coolant	Oil	Dry	Wet		kPa
I. Maximum Power (unballasted, 4wd at 1900 rev/min)					Tire pressure:		110 kPa, rear		110 kPa, front		Drawbar height:		394 mm	
3	73.65	75.79	3.50	2275	13.86%	0.339	2.46	59	87	110	18	15	76%	97.60
4	84.56	76.23	3.99	2252	13.53%	0.324	2.57	59	88	111	17	14	80%	97.60
5	95.22	72.76	4.71	2203	9.06%	0.303	2.75	59	88	112	19	16	72%	97.60
6	98.42	67.62	5.24	2079	6.53%	0.287	2.91	58	88	112	21	17	69%	97.60
7	100.80	62.18	5.84	1961	5.34%	0.275	3.03	58	90	112	24	18	56%	97.60
8	101.48	55.57	6.57	1904	4.19%	0.271	3.08	57	89	113	23	18	69%	97.60
9	101.71	47.87	7.65	1905	3.52%	0.270	3.09	57	89	113	23	18	57%	97.60
10	101.54	41.53	8.80	1900	3.02%	0.270	3.09	57	89	113	26	19	57%	97.60
11	99.28	35.19	10.16	1902	2.42%	0.276	3.02	58	89	113	26	19	57%	97.60
12	98.79	30.43	11.69	1901	2.16%	0.278	3.00	57	89	113	26	19	54%	97.60
13	98.45	26.46	13.39	1898	1.90%	0.275	3.03	58	89	113	26	20	58%	97.60
II. Part loads (unballasted, 4wd)														
II.1 in selected gear at maximum power														
8	99.63	46.78	7.67	2199	3.35%	0.287	2.90	59	88	113	22	18	66%	97.60
II.1.1 75% of pull at maximum power at rated speed														
8	78.17	35.12	8.01	2276	2.50%	0.311	2.68	60	88	112	27	20	52%	97.60
II.1.2 50% of pull at maximum power at rated speed														
8	53.77	23.49	8.24	2321	1.64%	0.360	2.31	60	87	111	27	20	52%	97.60
II.1.3 next higher gear at reduced engine speed, same pull and travel speed as II.1.1														
10	78.47	35.07	8.06	1730	2.42%	0.275	3.03	57	88	111	27	20	52%	97.60
II.1.4 next higher gear at reduced engine speed, same pull and travel speed as II.1.2														
10	53.88	23.46	8.27	1760	1.64%	0.306	2.72	57	87	108	27	20	52%	97.53
II.2 in selected gear nearest to 7.5 km/h														
9	100.27	41.05	8.79	2200	4.02%	0.288	2.89	60	88	113	8	7	93%	97.60
II.2.1 75% of pull at maximum power at rated speed														
9	79.10	30.79	9.26	2283	2.68%	0.310	2.69	61	88	112	8	7	93%	97.60
II.2.2 50% of pull at maximum power at rated speed														
9	54.04	20.50	9.50	2326	1.99%	0.363	2.29	60	87	111	8	7	93%	97.60
II.2.3 next higher gear at reduced engine speed, same pull and travel speed as II.2.1														
11	78.92	30.77	9.24	1732	2.59%	0.272	3.07	58	87	111	8	7	93%	97.60
II.2.4 next higher gear at reduced engine speed, same pull and travel speed as II.2.2														
11	54.23	20.51	9.51	1772	1.90%	0.308	2.70	55	86	108	8	7	93%	97.60

OECD Drawbar Data (US)

Date of tests:	21-Sep-94			Fuel density:		6.954 lb/gal								
Type of track:	Concrete			Test number:		1682								
Gear	Power	Pull	Speed	Engine speed	Slip	SFC	SFE	Temperature, deg F					Rel hum-idity	Baro. Press
	hp	lb	mph	rev/min		lb/hp.h	hp.h/gal	Fuel	Coolant	Oil	Dry	Wet		in Hg
I. Maximum Power (unballasted, 4wd at 1900 rev/min)					Tire pressure:		16 psig, rear		16 psig, front		Drawbar height:		15.5 in	
3	98.76	17038	2.17	2275	13.86%	0.557	12.49	138	189	231	64	59	76%	28.82
4	113.40	17138	2.48	2252	13.53%	0.533	13.06	139	190	232	62	58	80%	28.82
5	127.70	16357	2.93	2203	9.06%	0.499	13.94	138	190	233	66	60	72%	28.82
6	131.98	15202	3.26	2079	6.53%	0.471	14.75	137	191	234	69	62	69%	28.82
7	135.17	13980	3.63	1961	5.34%	0.452	15.39	138	194	234	76	65	56%	28.82
8	136.08	12493	4.08	1904	4.19%	0.445	15.61	135	193	235	73	64	69%	28.82
9	136.40	10762	4.75	1905	3.52%	0.443	15.68	134	192	235	74	64	57%	28.82
10	136.17	9336	5.47	1900	3.02%	0.443	15.69	135	192	236	78	67	57%	28.82
11	133.13	7911	6.31	1902	2.42%	0.453	15.35	136	192	236	78	67	57%	28.82
12	132.48	6842	7.26	1901	2.16%	0.457	15.21	135	192	235	79	67	54%	28.82
13	132.02	5950	8.32	1898	1.90%	0.453	15.36	136	193	235	79	68	58%	28.82
II. Part loads (unballasted, 4wd)														
II.1 in selected gear at maximum power														
8	133.61	10517	4.76	2199	3.35%	0.473	14.72	139	190	235	72	64	66%	28.82
II.1.1 75% of pull at maximum power at rated speed														
8	104.82	7895	4.98	2276	2.50%	0.512	13.59	140	191	234	81	68	52%	28.82
II.1.2 50% of pull at maximum power at rated speed														
8	72.11	5282	5.12	2321	1.64%	0.592	11.74	141	189	231	81	68	52%	28.82
II.1.3 next higher gear at reduced engine speed, same pull and travel speed as II.1.1														
10	105.23	7884	5.01	1730	2.42%	0.452	15.38	135	190	231	81	68	52%	28.82
II.1.4 next higher gear at reduced engine speed, same pull and travel speed as II.1.2														
10	72.25	5275	5.14	1760	1.64%	0.503	13.83	135	188	227	81	68	52%	28.80
II.2 in selected gear nearest to 4.6 mph														
9	134.46	9229	5.46	2200	4.02%	0.474	14.67	140	191	236	46	45	93%	28.82
II.2.1 75% of pull at maximum power at rated speed														
9	106.08	6921	5.75	2283	2.68%	0.509	13.65	142	191	233	46	45	93%	28.82
II.2.2 50% of pull at maximum power at rated speed														
9	72.47	4609	5.90	2326	1.99%	0.597	11.65	140	188	231	46	45	93%	28.82
II.2.3 next higher gear at reduced engine speed, same pull and travel speed as II.2.1														
11	105.84	6917	5.74	1732	2.59%	0.447	15.57	136	189	232	46	45	93%	28.82
II.2.4 next higher gear at reduced engine speed, same pull and travel speed as II.2.2														
11	72.72	4611	5.91	1772	1.90%	0.507	13.72	131	186	227	46	45	93%	28.82

Power and Equivalent Crankshaft Torque

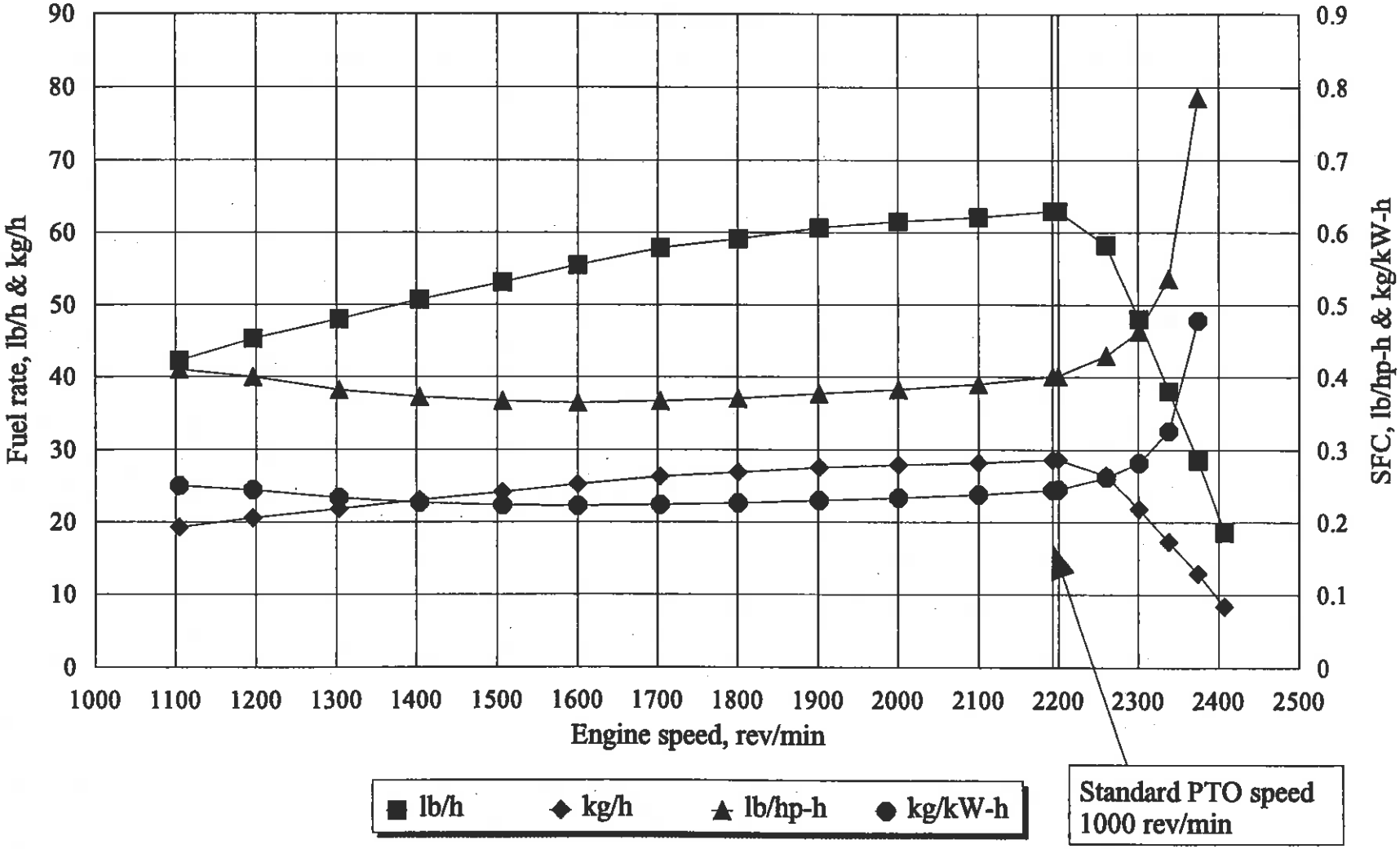
CASE I.H. 7220



Nebraska Test #1682

Specific Fuel Consumption and Fuel Rate

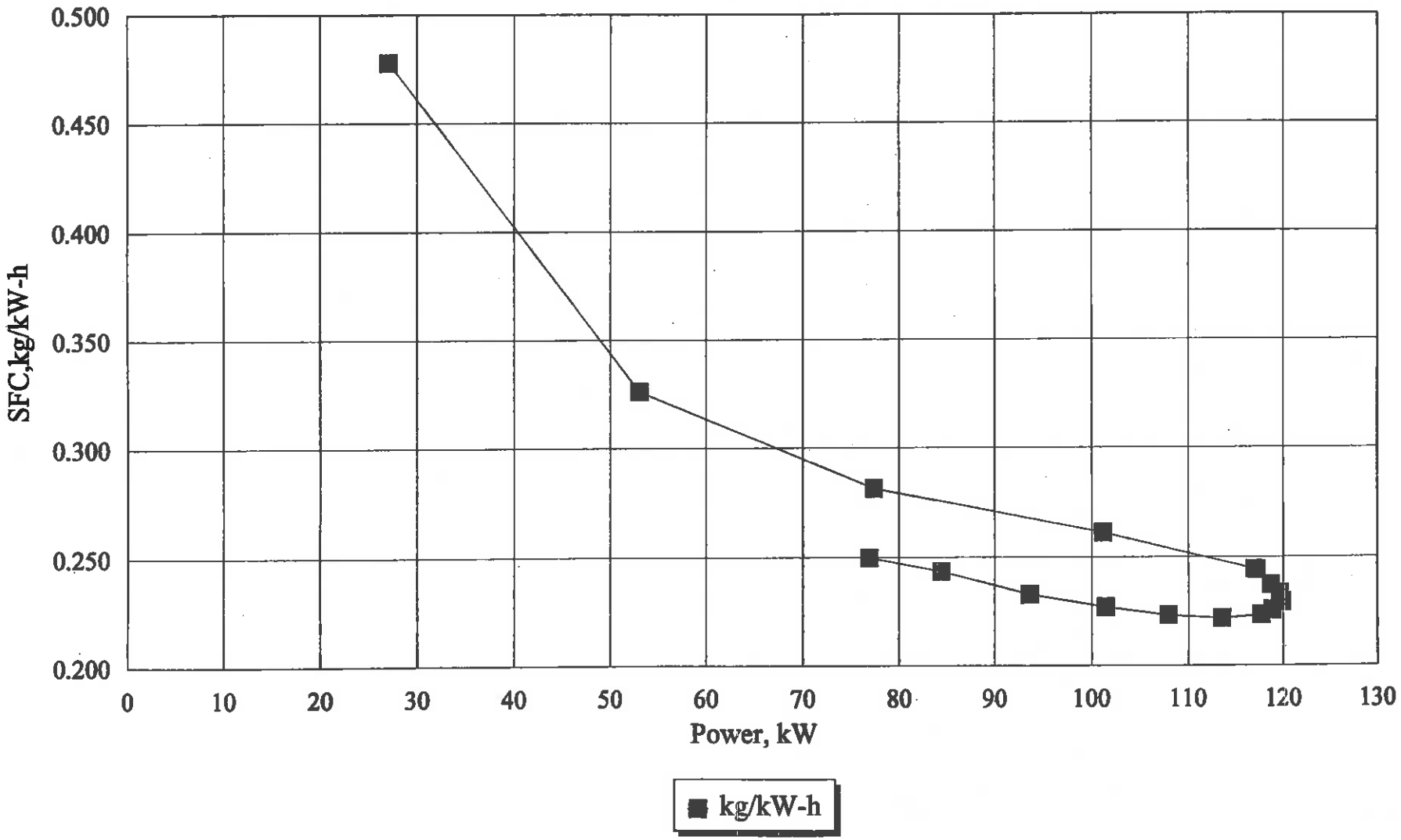
CASE I.H. 7220



Nebraska Test #1682

Power and Specific Fuel Consumption

CASE I.H. 7220



Nebraska Test #1682

OPTIONAL TEST - Ballasted, Front Drive Engaged

OECD Drawbar Data (SI)

Date of tests:		19,20-Sept-94		Fuel density:		0.833 kg/l.								
Type of track:		Concrete		Test number:		1682								
Gear	Power	Pull	Speed	Engine speed	Slip	SFC	SFE	Temperature, deg C					Rel hum-idity	Baro. Press
	kW	kN	km/h	rev/min		kg/kW.h	kW.h/l	Fuel	Coolant	Oil	Dry	Wet		kPa
I. Maximum Power (ballasted, 4wd at 1900 rev/min)					Tire pressure:		83	kPa, rear	110	kPa, front	Drawbar height:		432	mm
3 *	92.21	92.64	3.58	2221	9.73%	0.311	2.68	61	89	112	17	13	70%	98.48
4	97.20	86.89	4.03	2104	6.62%	0.291	2.86	60	89	112	20	16	64%	98.48
5	98.01	84.18	4.19	1901	6.14%	0.281	2.97	56	88	112	20	16	64%	98.48
6	101.07	74.36	4.89	1902	4.61%	0.273	3.05	54	88	113	20	16	64%	98.48
7	105.02	65.38	5.78	1904	3.44%	0.262	3.18	57	89	113	18	15	71%	98.04
8	103.87	56.13	6.66	1902	2.94%	0.263	3.16	58	89	113	19	16	72%	98.04
9	103.42	48.22	7.72	1903	2.42%	0.264	3.15	58	89	113	19	16	72%	98.04
10	103.06	41.83	8.87	1900	2.17%	0.265	3.14	57	89	112	19	16	72%	98.04
11	101.20	35.60	10.23	1900	1.64%	0.272	3.06	58	89	113	19	16	72%	98.07
12	100.20	30.76	11.73	1899	1.64%	0.273	3.05	57	89	112	19	16	72%	98.07
13	98.54	26.36	13.46	1900	1.38%	0.278	2.99	58	89	113	19	16	72%	98.07

Note: * Pull limited to avoid excessive tractor bouncing

OECD Drawbar Data (US)

Date of tests:		19,20-Sept-94		Fuel density:		6.954 lb/gal								
Type of track:		Concrete		Test number:		1682								
Gear	Power	Pull	Speed	Engine speed	Slip	SFC	SFE	Temperature, deg F					Rel hum-idity	Baro. Press
	hp	lb	mph	rev/min		lb/hp.h	hp.h/gal	Fuel	Coolant	Oil	Dry	Wet		in Hg
I. Maximum Power (ballasted, 4wd at 1900 rev/min)					Tire pressure:		12	psig, rear	16	psig, front	Drawbar height:		17	in
3 *	123.65	20826	2.23	2221	9.73%	0.511	13.60	142	192	233	62	56	70%	29.08
4	130.35	19533	2.50	2104	6.62%	0.478	14.53	140	192	234	68	60	64%	29.08
5	131.44	18924	2.60	1901	6.14%	0.461	15.07	133	190	234	68	60	64%	29.08
6	135.54	16716	3.04	1902	4.61%	0.449	15.49	130	191	235	68	60	64%	29.08
7	140.84	14699	3.59	1904	3.44%	0.431	16.13	135	193	235	65	59	71%	28.95
8	139.29	12620	4.14	1902	2.94%	0.433	16.06	136	192	236	66	60	72%	28.95
9	138.69	10841	4.80	1903	2.42%	0.435	16.00	136	192	236	66	60	72%	28.95
10	138.21	9404	5.51	1900	2.17%	0.436	15.95	135	193	234	66	60	72%	28.95
11	135.71	8003	6.36	1900	1.64%	0.448	15.53	136	192	236	67	61	72%	28.96
12	134.37	6916	7.29	1899	1.64%	0.449	15.47	135	192	234	67	61	72%	28.96
13	132.14	5927	8.36	1900	1.38%	0.458	15.19	136	192	235	67	61	72%	28.96

Note: * Pull limited due to excessive tractor bouncing

THREE POINT LINKAGE. (Upper link in top hole on tractor)

- Category adaptor - none

Table 1.1 - *Linkage geometry dimensions.

			Dimension or range [mm]	Settings used on test [mm]
Lift category			III	III
Rear Tire - Radius Index	(r)		855	same
Front Tire - Radius Index	(r')		665	645
Length of lift arms	(A)		381	same
Length of lower links	(B)		861	same
Distance of lift arm pivot from: horizontal	(a)		364	same
rear wheel axis: vertical	(b)		422	same
Horizontal distance between the 2 lower link points	(u)		604	same
Horizontal distance between the 2 lift arm end points	(v)		737	same
Length of upper link	(S)		600	657
		to	831	
Distance of upper link pivot from horizontal	(c)		627	same
rear wheel axis: vertical	(d)		169	250
		and	250	
Distance of lower link pivot from: horizontal	(e)		455	same
rear wheel axis: vertical	(f)		332	same
Distance of lower link pivot points to lift rod pivot pts on lower links.	(D)		579	same
Length of lift rods	(L)		660	794
		to	866	
Height of lower hitch points relative to rear wheel axis In low position	(h)		378	604
		to	699	
In high position	(H)		3	104
		to	269	
Height above ground of lower hitch points when locked in transport position.		from	858	959
		to	1174	

*Assuming (r) with a dynamic tire index of 855 mm
ISO 4251/1-1992

2.2 POWER LIFT TEST. Cat III,
Upper link in top hole on tractor - for dimensions see p.23
Date of test: 21 July 1988

	Hitch points	Frame
Lower hitch points above ground - down position: [mM[	261	279
Vertical movement: without load: [mm]	708	695
Vertical movement: with load: [mm]	653	650
Maximum corrected force through full range: [kN]	39.8	47.2
Corresponding pressure: [kPa]	17065	
Moment about rear axle: [kN.m]	51.9	90.4
Maximum mast tilt angle: [deg]	--	2.1

Lifting height relative to horizontal position of lower links.

[mm]	-262	-244	-201	-100	-1
Corrected lift forces					
Hitch point [kN]	39.8	--	42.5	46.9	50.1
at frame [kN]	--	47.2	48.7	50.4	51.5

Lifting height relative to horizontal position of lower links.

[mm]	104	200	299	391	406
Corrected lift forces					
Hitch point [kN]	52.4	54.1	54.3	57.6	--
at frame [kN]	51.3	51.0	48.9	--	50.0

Repairs: None
Remarks: None

Addendum Sheet for OECD Test # 1541
Case International 7220 MFWD (4WD)

Page 2:Fuel Density: 0.830 to 0.845 kg/l

Page 11: Protective Structure Approval Number CSS 096/65 or CSS 096/57

Page 16: Hydraulic Power Test: This hydraulic system does not use an accumulator. Opening and closing pressures of the unloading valve could not be measured.

OECD APPROVAL #1541 - CASE INTERNATIONAL 7220 MFWD DIESEL

OECD Drawbar Data (SI)

Date of tests:	21-Sep-94		Fuel density:		0.833 kg/l								
Type of track:	Concrete		Test number:		1682								
Gear	Power	Pull	Speed	Engine speed	Slip	SFC	SFE	Temperature, deg C					Rel hum-	Baro. Press
	kW	kN	km/h	rev/min		kg/kW.h	kW.h/l	Fuel	Coolant	Oil	Dry	Wet	idity	kPa
I. Maximum Power (unballasted, 4wd at 1900 rev/min)					Tire pressure:			110 kPa, rear		110 kPa, front	Drawbar height:			394 mm
*3	73.65	75.79	3.50	2275	14%	0.339	2.46	59	87	110	18	15	76%	97.60
*4	84.56	76.23	3.99	2252	14%	0.324	2.57	59	88	111	17	14	80%	97.60
5	95.22	72.76	4.71	2203	9%	0.303	2.75	59	88	112	19	16	72%	97.60
6	98.42	67.62	5.24	2079	7%	0.287	2.91	58	88	112	21	17	69%	97.60
7	100.80	62.18	5.84	1961	5%	0.275	3.03	58	90	112	24	18	56%	97.60
8	101.48	55.57	6.57	1904	4%	0.271	3.08	57	89	113	23	18	59%	97.60
9	101.71	47.87	7.65	1905	4%	0.270	3.09	57	89	113	23	18	57%	97.60
10	101.54	41.53	8.80	1900	3%	0.270	3.09	57	89	113	26	19	57%	97.60
11	99.28	35.19	10.16	1902	2%	0.276	3.02	58	89	113	26	19	57%	97.60
12	98.79	30.43	11.69	1901	2%	0.278	3.00	57	89	113	26	19	54%	97.60
13	98.45	26.46	13.39	1898	2%	0.275	3.03	58	89	113	26	20	58%	97.60
* Note: Slip within operation conditions of the test station.														
II. Part loads (unballasted, 4wd)														
II.1 in selected gear at maximum power														
8	99.63	46.78	7.67	2199	3%	0.287	2.90	59	88	113	22	18	66%	97.60
II.1.1 75% of pull at maximum power at rated speed														
8	78.17	35.12	8.01	2276	3%	0.311	2.68	60	88	112	27	20	52%	97.60
II.1.2 50% of pull at maximum power at rated speed														
8	53.77	23.49	8.24	2321	2%	0.360	2.31	60	87	111	27	20	52%	97.60
II.1.3 higher gear at reduced engine speed, same pull and travel speed as II.1.1														
10	78.47	35.07	8.06	1730	2%	0.275	3.03	57	88	111	27	20	52%	97.60
II.1.4 higher gear at reduced engine speed, same pull and travel speed as II.1.2														
10	53.88	23.46	8.27	1760	2%	0.306	2.72	57	87	108	27	20	52%	97.53
II.2 in selected gear nearest to 7.5 km/h														
9	100.27	41.05	8.79	2200	4%	0.288	2.89	60	88	113	8	7	93%	97.60
II.2.1 75% of pull at maximum power at rated speed														
9	79.10	30.79	9.25	2283	3%	0.310	2.69	61	88	112	8	7	93%	97.60
II.2.2 50% of pull at maximum power at rated speed														
9	54.04	20.50	9.50	2326	2%	0.363	2.29	60	87	111	8	7	93%	97.60
II.2.3 higher gear at reduced engine speed, same pull and travel speed as II.2.1														
11	76.92	30.77	9.24	1732	3%	0.272	3.07	58	87	111	8	7	93%	97.60
II.2.4 higher gear at reduced engine speed, same pull and travel speed as II.2.2														
11	54.23	20.51	9.51	1772	2%	0.308	2.70	55	86	108	8	7	93%	97.60

OECD Drawbar Data (US)

Date of tests:	21-Sep-94		Fuel density:		6.954 lb/gal								
Type of track:	Concrete		Test number:		1682								
Gear	Power	Pull	Speed	Engine speed	Slip	SFC	SFE	Temperature, deg F					Rel hum-	Baro. Press
	hp	lb	mph	rev/min		lb/hp.h	hp.h/gal	Fuel	Coolant	Oil	Dry	Wet	idity	in Hg
I. Maximum Power (unballasted, 4wd at 1900 rev/min)					Tire pressure:			16 psig, rear		16 psig, front	Drawbar height:			15.5 in
*3	98.76	17038	2.17	2275	14%	0.557	12.49	138	189	231	64	59	76%	28.82
*4	113.40	17138	2.48	2252	14%	0.533	13.06	139	190	232	62	58	80%	28.82
5	127.70	16357	2.93	2203	9%	0.499	13.94	138	190	233	66	60	72%	28.82
6	131.98	15202	3.26	2079	7%	0.471	14.75	137	191	234	69	62	69%	28.82
7	135.17	13980	3.63	1961	5%	0.452	15.39	136	194	234	76	65	56%	28.82
8	136.08	12493	4.08	1904	4%	0.445	15.61	135	193	235	73	64	59%	28.82
9	136.40	10762	4.75	1905	4%	0.443	15.68	134	192	235	74	64	57%	28.82
10	136.17	9336	5.47	1900	3%	0.443	15.69	135	192	236	78	67	57%	28.82
11	133.13	7911	6.31	1902	2%	0.453	15.35	136	192	236	78	67	57%	28.82
12	132.48	6842	7.26	1901	2%	0.457	15.21	135	192	235	79	67	54%	28.82
13	132.02	5950	8.32	1898	2%	0.453	15.36	136	193	235	79	68	58%	28.82
* Note: Slip within operation conditions of the test station.														
II. Part loads (unballasted, 4wd)														
II.1 in selected gear at maximum power														
8	133.61	10517	4.76	2199	3%	0.473	14.72	139	190	235	72	64	66%	28.82
II.1.1 75% of pull at maximum power at rated speed														
8	104.82	7895	4.98	2276	3%	0.512	13.59	140	191	234	81	68	52%	28.82
II.1.2 50% of pull at maximum power at rated speed														
8	72.11	5282	5.12	2321	2%	0.592	11.74	141	189	231	81	68	52%	28.82
II.1.3 higher gear at reduced engine speed, same pull and travel speed as II.1.1														
10	105.23	7884	5.01	1730	2%	0.452	15.38	135	190	231	81	68	52%	28.82
II.1.4 higher gear at reduced engine speed, same pull and travel speed as II.1.2														
10	72.25	5275	5.14	1760	2%	0.503	13.83	135	188	227	81	68	52%	28.80
II.2 in selected gear nearest to 4.6 mph														
9	134.46	9229	5.46	2200	4%	0.474	14.67	140	191	236	46	45	93%	28.82
II.2.1 75% of pull at maximum power at rated speed														
9	106.08	6921	5.75	2283	3%	0.509	13.65	142	191	233	46	45	93%	28.82
II.2.2 50% of pull at maximum power at rated speed														
9	72.47	4609	5.90	2326	2%	0.597	11.65	140	188	231	46	45	93%	28.82
II.2.3 higher gear at reduced engine speed, same pull and travel speed as II.2.1														
11	105.84	6917	5.74	1732	3%	0.447	15.57	136	189	232	46	45	93%	28.82
II.2.4 higher gear at reduced engine speed, same pull and travel speed as II.2.2														
11	72.72	4611	5.91	1772	2%	0.507	13.72	131	186	227	46	45	93%	28.82

OECD APPROVAL # 1541 - CASE INTERNATIONAL 7220 MFWD DIESEL

Tests conducted under the responsibility of
the NEBRASKA TRACTOR TESTING LABORATORY

OPTIONAL TEST - Ballasted, Front Drive Engaged

OECD Drawbar Data (SI)

Date of tests:	19,20-Sept-94	Fuel density:	0.833 kg/l
Type of track:	Concrete	Test number:	1682

Gear	Power	Pull	Speed	Engine speed	Slip	SFC	SFE	Temperature, deg C					Rel hum-	Baro. Press
	kW	kN	km/h	rev/min		kg/kW.h	kW.h/l	Fuel	Coolant	Oil	Dry	Wet	idity	kPa
I. Maximum Power (ballasted, 4wd at 1900 rev/min)					Tire pressure:			83 kPa, rear		110 kPa, front	Drawbar height:			432 mm
3 *	92.21	92.64	3.58	2221	10%	0.311	2.68	61	89	112	17	13	70%	98.48
4	97.20	86.89	4.03	2104	7%	0.291	2.86	60	89	112	20	16	64%	98.48
5	98.01	84.18	4.19	1901	6%	0.281	2.97	56	88	112	20	16	64%	98.48
6	101.07	74.36	4.89	1902	5%	0.273	3.05	54	88	113	20	16	64%	98.48
7	105.02	65.38	5.78	1904	3%	0.262	3.18	57	89	113	18	15	71%	98.04
8	103.87	56.13	6.66	1902	3%	0.263	3.16	58	89	113	19	16	72%	98.04
9	103.42	48.22	7.72	1903	2%	0.264	3.15	58	89	113	19	16	72%	98.04
10	103.06	41.83	8.87	1900	2%	0.265	3.14	57	89	112	19	16	72%	98.04
11	101.20	35.60	10.23	1900	2%	0.272	3.06	58	89	113	19	16	72%	98.07
12	100.20	30.76	11.73	1899	2%	0.273	3.05	57	89	112	19	16	72%	98.07
13	98.54	26.36	13.46	1900	1%	0.278	2.99	58	89	113	19	16	72%	98.07

Note: * Pull limited to avoid excessive tractor bouncing

OECD Drawbar Data (US)

Date of tests:	19,20-Sept-94	Fuel density:	6.954 lb/gal
Type of track:	Concrete	Test number:	1682

Gear	Power	Pull	Speed	Engine speed	Slip	SFC	SFE	Temperature, deg F					Rel hum-	Baro. Press
	hp	lb	mph	rev/min		lb/hp.h	hp.h/gal	Fuel	Coolant	Oil	Dry	Wet	idity	In Hg
I. Maximum Power (ballasted, 4wd at 1900 rev/min)					Tire pressure:			12 psig, rear		16 psig, front	Drawbar height:			17 In
3 *	123.65	20826	2.23	2221	10%	0.511	13.60	142	192	233	62	56	70%	29.08
4	130.35	19533	2.50	2104	7%	0.478	14.53	140	192	234	68	60	64%	29.08
5	131.44	18924	2.60	1901	6%	0.461	15.07	133	190	234	68	60	64%	29.08
6	135.54	16716	3.04	1902	5%	0.449	15.49	130	191	235	68	60	64%	29.08
7	140.84	14699	3.59	1904	3%	0.431	16.13	135	193	235	65	59	71%	28.95
8	139.29	12620	4.14	1902	3%	0.433	16.06	136	192	236	66	60	72%	28.95
9	138.69	10841	4.80	1903	2%	0.435	16.00	136	192	236	66	60	72%	28.95
10	138.21	9404	5.51	1900	2%	0.436	15.95	135	193	234	66	60	72%	28.95
11	135.71	8003	6.36	1900	2%	0.448	15.53	136	192	236	67	61	72%	28.96
12	134.37	6916	7.29	1899	2%	0.449	15.47	135	192	234	67	61	72%	28.96
13	132.14	5927	8.36	1900	1%	0.458	15.19	136	192	235	67	61	72%	28.96

Note: * Pull limited due to excessive tractor bouncing