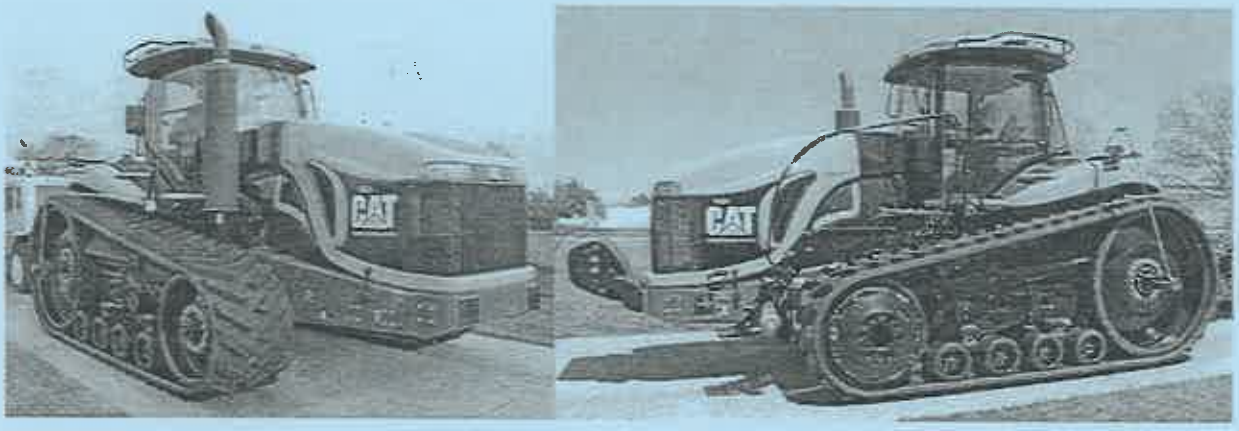
OECD APPROVAL NO. 2/2 076
CODE 2
DATE OF APPROVAL: 27 August 2003

NEBRASKA TRACTOR TEST 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 STANDARD CODE 2 FOR THE OFFICIAL TESTING OF AGRICULTURAL TRACTORS



CHALLENGER MT845
Rubber Tracklaying Tractor

MANUFACTURED BY:	**AGCO Corp** **4205 River Green Parkway** **Duluth, GA 30096**
NEBRASKA TEST NO.	**1824**
TEST DATES:	**April 23 – May 13, 2003**

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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, Code 2.

This report has been approved by the OECD Coordinating Centre in Paris on 27 August 2003 for the Challenger MT845 rubber tracklaying tractor with OECD Number 2/2 076.

No reproduction of this report or any part of it can be made without prior approval by the Nebraska Tractor Test Laboratory, Lincoln, Nebraska USA.

Dr. Leonard L. Bashford, Director
Nebraska Tractor Test Laboratory and
Chair, Nebraska Tractor Test Board

David L. Morgan, Assistant Director
Nebraska Tractor Test Laboratory

Brent T. Sampson, Test Engineer
Nebraska Tractor Test Laboratory

Date: DEC 1 8 2003

SPECIMEN TEST REPORT

Note: Units shown below, which appear in ISO 1000:1992, shall be stated and followed by national units in parentheses, if necessary.

C - Tractor manufacturer's name and address:	AGCO Corp. 4205 River Green Parkway Duluth, GA 30096
C - Location of tractor assembly:	12101 Barber Green Road DeKalb, IL 60115 USA
D - Submitted for test by:	Manufacturer
C - Selected for test by:	The manufacturer in agreement with the test station
D - Place of running-in:	Caterpillar Proving Grounds Peoria, IL USA
C - Duration of running-in:	74 hrs
C - Location of test:	Nebraska Tractor Test Laboratory University of Nebraska Lincoln, Nebraska 68583-0832 USA

1. SPECIFICATIONS OF TRACTOR

1.1 Identification

C - Make:	Challenger
C - Model:	MT845
C - Type:	Rubber track laying
C - Number of driving wheels:	Two rubber tracks
C - Serial N°:	AGCMT845TBBP30375
D - 1st Serial N°:	Confidential

1.2 Engine

C - Make:	Caterpillar
C - Model:	C-12
C - Type:	4-stroke diesel; direct injection; turbocharged; air to air aftercooled
C - Serial N°:	JAC00384

1.2.1 *Cylinders*

C - Number/disposition:	6 in line
D - Bore/stroke:	130 mm / 150 mm
D - Capacity:	11946 cm^3
D - Compression ratio:	16:1
D - Arrangement of valves:	Overhead
D - Cylinder liners (wet or dry):	Wet

1.2.2 *Supercharging*

C - Make:	Allied Signal Inc
C - Model:	GTA429402BS
C - Type:	Turbo (waste gated)
D - Pressure:	0.146 MPa @ Rated 2100 RPM 0.151 MPa @ Full power 1400 RPM

1.2.3 *Fuel system*

C - Fuel feed system:	Gear driven transfer pump
C - Make:	Caterpillar
C - Model:	190-3442
C - Type of fuel filter(s):	Primary: Caterpillar 1R0771, Radial seal, spin on water separator, 10 Micron paper element Secondary: Caterpillar 1R0762, Radial seal, spin on paper element, 2 Micron
D - Capacity of fuel tank:	Main Tank 1080 dm^3 Standard Optional: Modular tank 95 dm^3
C - Make:	Caterpillar
C - Model:	Not Applicable
C - Type of injection pump:	Caterpillar electronically controlled unit injector system
C - Serial N°:	None – pump is integral part of engine
- Manufacturer's production setting of injection pump	
C . Flow rate:	Rated = 70.0 dm^3/hr +/- 3.5 dm/hr Full load = 75.2 dm^3/hr +/- 3.5 dm^3/hr
D . Timing:	Variable, electronically controlled
D - Make:	Caterpillar
D - Model:	211-3035
D - Type of injectors:	Electronic controlled unit injectors
D - Injection pressure:	min 162.5 MPa, max 192.5 MPa
D - Make/Model/Type of carburetor:	None

1.2.4 *Governor*

C - Make:	Caterpillar
C - Model:	Adem III (Caterpillar #210-0849)
C - Type:	Electronic
C - Governed range of engine speed:	1000-2300 rev/min
C - Rated engine speed:	2100 rev/min

1.2.5 *Air cleaner*

- Pre-cleaner	
C . Make:	Donaldson
C . Model:	H002373 (Caterpillar #192-8979)
C . Type:	Strada Precleaner, scavaged

C - Type:	Strada Precleaner, scavaged
C - Location of air intake:	Front of vehicle, between radiator and hood
- Main cleaner	
C - Make:	Donaldson
C - Model:	B140310 (Caterpillar #192-8980)
C - Type:	Primary dry with safety
C - Location of air intake:	Front of vehicle, between radiator and hood
C - Maintenance indicator:	Restriction gauge on air intake near air cleaner

1.2.6 *Lubrication system*

D - Type of feed pump:	Gear pump
C - Type of filer(s):	Spin-on (Cellulose Media) Caterpillar 1R0716
C - Number of filters:	One

1.2.7 *Cooling system*

C - Type of coolant:	Liquid
C - Type of pump:	Gear driven impeller pump
- Specification of fan or blower	
C - Number of fan blades:	8
C - Fan diameter:	965.2 mm
D - Coolant capacity:	53 dm^3
C - Type of temperature control:	Thermostat
D - Superpressure system:	48.3 kPa

1.2.8 *Starting system*

C - Make:	Delco Remy America
C - Model:	42 MT
C - Type:	Solenoid engaged
D - Starter motor power rating:	5.6 kW
C - Cold starting aid:	Ether spray in intake manifold
C - Safety device:	Engine software

1.2.9 *Electrical system*

C - Voltage:	12V
- Generator	
C - Make:	Prestolite Electric CoMPany
C - Model:	8LHC
C - Type:	Brush type, clockwise rotation
D - Power:	1.92 kW at 2100 engine revs/min
- Battery of accumulators	
C - Number:	3
D – Rating:	950 Cold Cranking Amps, 180 Ah at 20 hours

1.2.10 *Exhaust system*

C - Make:	Fleetguard/Nelson industries
C - Model:	29424A, 295 mm O.D.
C - Type:	Aspirating
C - Location:	Muffler and exhaust pipe vertical next to front RH Cab A-Post

1.3 Transmission

1.3.1 *Clutch (travel and power take-off/travel alone)*

D - Make:	Caterpillar
D - Model:	Not applicable
D - Type:	Wet disc, integral with transmission, oil cooled
D - Number of plates:	6
D - Diameter of plates:	215 mm
C - Method of operation:	Electronic/ Hydraulic, pedal actuated

1.3.2 *Gear box*

D - Make:	Caterpillar
D - Model:	Not applicable
D - Type:	Direct drive, full powershift transmission
D - Description:	Six rotating countershaft clutches, two stationary planetary clutches

		Forward	Reverse
C	Number of gears	16	4
C	Number of ranges/groups	All gears accessible with the use of single hand lever	All gears accessible with the use of single hand lever
C	Total of arrangements	16	4

D - Available options: Not applicable

1.3.3 *Rear axle and final drives*

D - Make:	Caterpillar
D - Model:	Not applicable
D - Type:	Inboard single reduction, 3 planetary final drive with Caterpillar steering differential
D - Differential lock:	Not applicable

1.3.4 *Front axle and final drive* Not applicable

1.3.5 *Total ratios and traveling speeds*

	Gear No.	Number of engine revolutions for one revolution of the driving wheels	Nominal traveling speed (*)at rated engine speed of 2100 min^{-1} (rev/min) km/h
C	1	230.91	2.69
C	2	181.85	3.43
C	3	143.68	4.31
C	4	113.15	5.48
C	5	95.03	6.54
C	6	84.40	7.37
C	7	74.83	8.31
C	8	66.47	9.34
C	9	59.13	10.51
C	10	52.52	11.82
C	11	46.56	13.34
C	12	41.36	15.02
C	13	34.73	17.87
C	14	27.35	22.71
C	15	21.61	28.75
C	16LO	17.02	36.49
C	16HI[a]	17.02	40.00
D	1R	288.64	2.16
D	2R	118.78	5.22
D	3R	105.50	5.89
D	4R	43.42	14.30
(*) Calculated with a tyre dynamic radius index of 785 mm [a] Engine high idle increases to 2300 rev/min in 16HI			

- Number of revolutions of front wheels for one revolution of rear-wheels (For 4WD tractors only): Not applicable

1.4 Power take-off

1.4.1 *Main power take-off*

C - Type (independent, semi-independent or not independent):	Independent
C - Method of engagement (if necessary describe the type of clutch):	Multiple wet clutch electronic/hydraulic, independent of main drive clutch
C - Number of shafts:	1
C - Method of changing power take-off shaft ends and speeds:	None

1.4.1.1 Power take-off proportional to engine speed

Power take-off at 1000 min^{-1} (rev/min)

C - Location:	Rear of tractor, center plane
C - Diameter of power take-off shaft end:	44.45 mm
D - Number of splines:	20, in conformity with ISO 500:1991
C - Height above ground:	851 mm
C - Distance from the median plane of the tractor:	0 mm
C - Distance behind rear-wheel axis:	693 mm
C - PTO speed at rated engine speed (2100 rev/min):	1061 (rev/min)
C - Engine speed at standard power take-off speed:	1980 (rev/min)
C - Ratio of rotation speeds (engine speed/p.t.o. speed):	1.979 to 1
C - Power restriction:	None
D - Maximum torque transmissible:	4630 Nm
C - Direction of rotation (viewed from behind tractor):	Clockwise

1.4.1.2 D - Power take-off proportional to ground speed

Not applicable

1.4.2 D - *Optional power take-off*

D - Give the same description as for the main PTO. Not applicable

1.5 Hydraulic power lift

C - Make:	Caterpillar
C - Model:	Not applicable
C - Type of hydraulic system:	Closed center, load sensing
C - Type and number of cylinders (single or double-acting):	Two, single acting
C - Type of linkage lock for transport:	Hydraulic
C - Relief valve pressure setting (tolerance):	20 MPa +/- .2 MPa
D - Opening pressure of cylinder safety valve (if fitted):	22 MPa
D - Lift pump type:	Piston Pump
D - Transmission between pump and engine:	1.282 gear ratio
C - Type and number of filters:	Two, 5 micron filters
C - Site of oil reservoir:	Internal to main reservoir
C - Type, number and location of tapping points:	4 pairs of ISO-5675 standard couplings at rear of tractor
D - Maximum volume of oil available to external cylinders:	120 dm^3

1.6 Three point linkage

C - Category:	4N, in conformity with categories 4N of ISO 730-1:1994,Cor.1:1995 and ISO 730-2:1979.
C - Category adapter:	Quick attaching couple

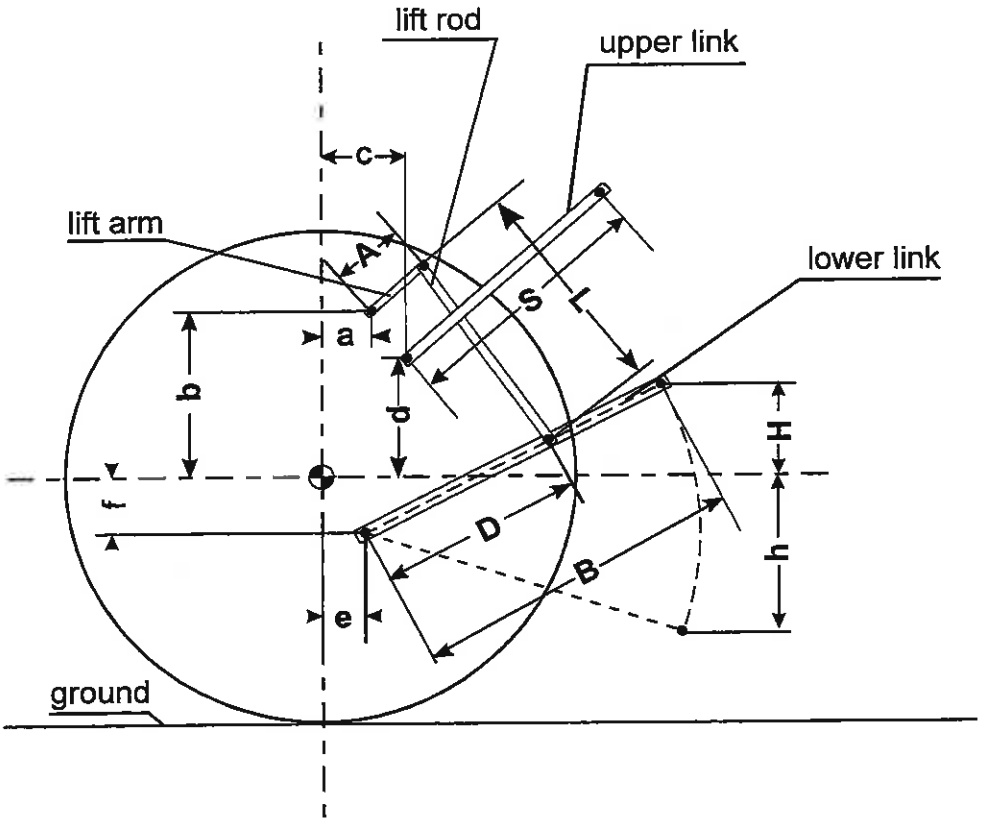


Figure 2.1
Lift test - Linkage Geometry

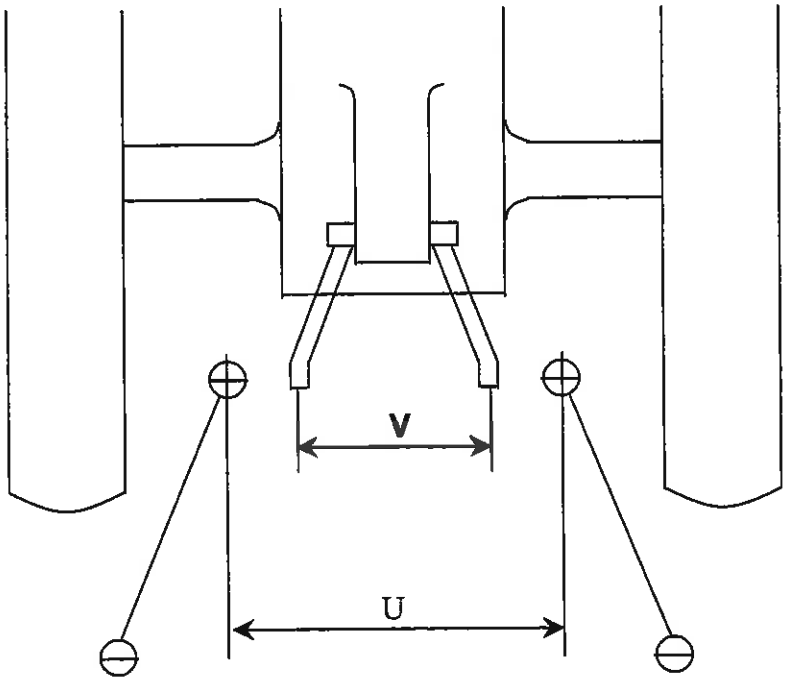


Figure 2.2
Lift test - Linkage Geometry

			Dimension or range	Settings used in test
			mm	mm
C	Length of lift arms:	(A)	550	550
C	Length of lower links:	(B)	929	929
C	Distance of lift arm pivot point from rear-wheel axis			
C	- horizontally:	(a)	-325	-325
C	- vertically:	(b)	1000	1000
C	Horizontal distance between the 2 lower link points:	(u)	740	740
C	Horizontal distance between the 2 lift arm end points:	(v)	800	800
C	Length of upper link:	(S)	735 to 850	768
	Distance of upper link pivot point from rear wheel axis			
C	- horizontally:	(c)	-585	-585
C	- vertically:	(d)	315	315
	Distance of lower link pivot point from rear wheel axis			
C	- horizontally:	(e)	- 440	- 440
C	- vertically:	(f)	-300	-300
C	Distance of lower link pivot points to lift rod pivot points on lower links:	(D)	737	737
C	Length of lift rods:	(L)	1325 to 1450	1421
	Height of lower hitch points relative to the rear-wheel axis			
C	- in low position:	(h)	517 to 692	653
C	- in high position:	(H)	235 to 365	298
C	Height above ground of lower hitch points when locked in transport position (*)		1108 to 1237	1181
(*) Assuming r = 883 mm				

Table 2.1
Dimensions of linkage geometry when connected to the standard frame

1.7	**Swinging drawbar**	
	C - Type:	Oscillating
	- Height above ground	
	C . Maximum:	500 mm
	C . Minimum:	500 mm
	C - Type of adjustment:	None
	C - Distance of hitch point from rear-wheel axis, horizontally:	1193 mm
	- Distance of hitch point from power take-off shaft end	
	C . Vertically:	370 mm
	C . Horizontally:	500 mm
	- Lateral adjustment (centre of clevis)	
	C . Right hand	740 mm
	C . Left hand	740 mm
	C - Distance of pivot point from rear-wheel axis, horizontally:	250 mm
	C - Diameter of drawbar pin hole:	52 mm
	D - Maximum vertical permissible load:	44.44 kN
1.8	**Trailer hitch**	Not applicable
1.9	**Holed drawbar**	Not applicable
1.10	**Steering**	
	D - Make:	Caterpillar
	D - Model:	Not applicable
	D - Type:	Differential steer
	- Method of operation	
	D . Pump(s):	Rexroth piston pump and Rexroth motor, electro hydraulic valve controlled by steering wheel
	D . Ram(s):	Not applicable
	D - Working pressure:	46.3 MPa

1.11 Brakes

1.11.1 *Service brake*

D - Make:	Caterpillar
D - Model:	MT800
D - Type:	Internal wet disc, oil cooled, hydraulically boosted, located in steering differential
C - Method of operation:	Manual pedal and power brake modulating valve
D - Trailer braking take-off (hydraulic or air brake):	None on North America machines

1.11.2 *Parking brake*

C - Type:	Internal wet disc
C - Method of operation:	Spring applied, Electronic/hydraulic release, switch operated

1.12 Wheels

- Number	
C - Front:	One – driving and steering
C - Rear:	One – driving and steering
D - Wheelbase:	Not applicable
D - Track width adjustment:	Manual adjustment with gauge adjusting tool

		Minimum	Maximum	Adjustment
		mm	mm	method
D	Front	2286	3048	Sliding hub on axle
D	Rear	2286	3048	Sliding hub on axle

1.13 Protective structure

C - Make:	Caterpillar/Crenlo
C - Model:	188-9166
C - Type:	4-post ROPS
C - Manufacturer's name and address:	Pre-production Airflow Streamlines Main Road Far Cotton Northampton NN4 8ES United Kingdom Production Crenlo Inc 1600 4th Ave NW Rochester, MN
- Protective device	
C - Cab/frame/ rollguard/ other:	Cab/frame
C - Tiltable/not tiltable:	Not tiltable
- OECD approval	
C - Approval number:	4/0708
C - Date of approval:	21 February 02
C - Nos. of minor modification certificates, if any:	N/A

1.14 Seat

1.14.1 *Driver's seat*

C - Make:	Sears
C - Model:	SA 18603
C - Type:	Air Seat
C - Seat and steering wheel reversible:	No
C - Type of suspension:	Air
C - Type of damping:	Adjustable damper
- Range of adjustment	
D - Longitudinally:	152 mm
D - Vertically:	172 mm
C - Safety belt:	Yes

1.14.2 *Optional driver's seat(s)*

D - Make:	Not applicable

1.14.3 *Passenger seat*

C - Location:	Left side of cab
C - Capacity (number):	One

1.15 Lighting

		Height above ground of centre	Size	Distance from outside edge of lights to median plane of tractor
		mm	mm	mm
C	Headlights	1830	460 x 120	460
C	Sidelights	1580	110 x 110	1580
C	Rearlights	2080	600 x 100	1030
C	Reflectors	2060	230 x 110	1510

2. TEST CONDITIONS

Separate tables may be added to report other test conditions or equipments.

2.1 Overall dimensions

	Length	Width		Height at top of	
		minimum	maximum	protective structure	exhaust pipe
	mm	mm	mm	mm	mm
Unballasted	6111	3588	4160	3485	3480

2.2 Ground clearance (unballasted tractor): 345.4 mm

- Clearance-limiting part: Drawbar

2.3 Tractor mass

Mass (with cab):

	Without driver	With driver
	kg	kg
Unballasted		
Total	18901	18976
Ballasted		
Total	22423	22498

Ballast Added (1)	Number of Weights	Total Mass	Liquid
		kg	kg
Front (weight support)	1	490	-
Front (weights)	36	2041	-
Front (front idler weights)	25	991	-

2.4 Track specifications

Track materials	Rubber covered steel cables
Track width and base	762 mm, 3110 mm
Dynamic radius (rolling radius)	785 mm
Track support system	Eight rubber midwheels
Treadbars	Rubber
Number of treadbars per metre	9.8
Height, width and length	75 mm 64 mm 378 mm
Other specifications	

2.5 Tyres and track width specifications

Track width: 2654 mm

2.6 Fuel

- Type: Diesel Fuel, Grade 2-D, in conformity with national standard.
- Density at 15°C: 0.837 g/cm^3

2.7 Oils and lubricants

2.7.1 *Capacity and change interval*

	Capacity	Oil change	Filter change
	dm^3	h	h
Engine	34	250	250
Gear box *	246*	1000*	250*
Front axle	N/A	N/A	N/A
Rear axle	N/A	N/A	N/A
Final drive (front)	N/A	N/A	N/A
Final drive (rear) *	246*	1000*	250*
Hydraulic system *	246*	1000*	250*
Steering system *	246*	1000*	250*
* Common with gear box and rear axle.			

2.7.2 *Specifications (SAE, API, CCMC, ACEA, Mil.L, ISO)*

	Recommended	Used during test
Engine oil . Type: . Viscosity: . Classification:	Caterpillar Fluids SAE 10W30 API-CH-4/SJ	Caterpillar Fluids SAE 10W30 API-CH-4/SJ
Transmission oils . Type: . Viscosity: . Classification:	Caterpillar MTO Fluids SAE 10W30	Caterpillar MTO Fluids SAE 10W30
Hydraulic fluid . Type: . Viscosity: . Classification:	Caterpillar MTO Fluids SAE 10W30	Caterpillar MTO Fluids SAE 10W30
Steering oil . Type: . Viscosity: . Classification:	Caterpillar MTO Fluids SAE 10W30	Caterpillar MTO Fluids SAE 10W30

2.7.3 *Grease*

- Number of lubrication points: Eight, 3pt hitch models only

3. COMPULSORY TESTS RESULTS

3.1 Main power take-off

- Date and location of tests: 23-Apr-03 Nebraska Tractor Test Laboratory, Lincoln, NE, USA
- Type of dynamometer bench: Eaton

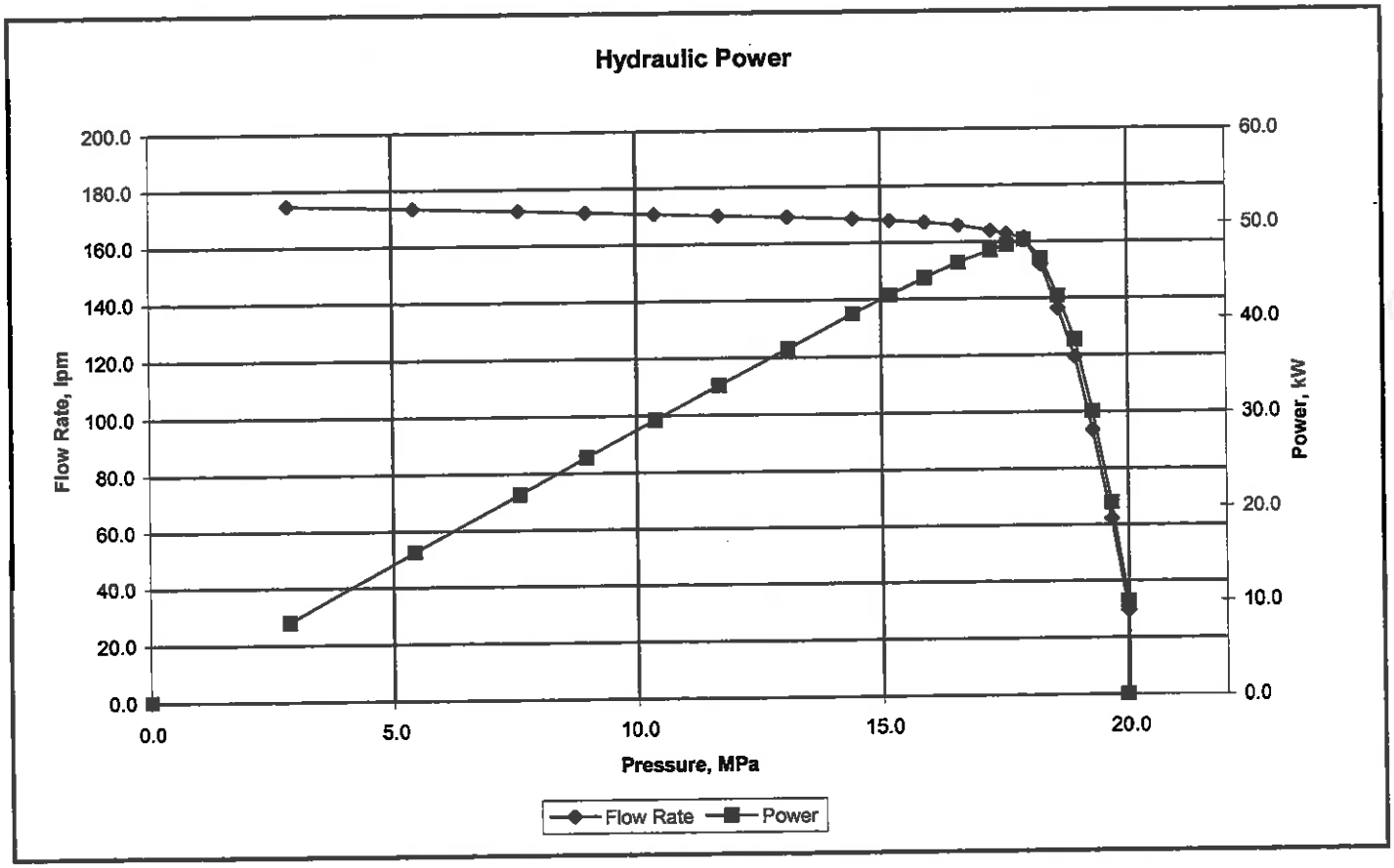
Power	Speed		Fuel consumption			Specific energy
	Engine	PTO	Hourly		Specific	
kW	rev/min		kg/h	l/h	g/kWh	kW-h/l
3.1 MAXIMUM POWER - TWO HOUR TEST						
293.16	1700	859	63.55	75.96	217	3.86
3.1.2 POWER AT RATED ENGINE SPEED						
251.86	2100	1061	58.97	70.49	234	3.57
3.1.3 STANDARD POWER TAKE-OFF SPEED (1000 +/- 25 rev/min)						
272.43	1980	1000	61.29	73.26	225	3.72
3.1.4 PART LOADS						
3.1.4.1 the torque corresponding to maximum power at rated engine speed						
251.86	2100	1061	58.97	70.49	234	3.57
3.1.4.2 85% of torque obtained in 3.1.4.1						
223.82	2195	1109	54.70	65.39	244	3.42
3.1.4.3 75% of torque defined in 3.1.4.2						
167.80	2197	1110	43.68	52.21	260	3.21
3.1.4.4 50% of torque defined in 3.1.4.2						
111.90	2197	1110	34.29	40.99	306	2.73
3.1.4.5 25% of torque defined in 3.1.4.2						
55.95	2197	1110	23.54	28.14	421	1.99
3.1.4.6 unloaded						
1.58	2197	1110	13.88	16.59	8807	0.09
3.1.5 PART LOADS AT STANDARD POWER TAKE-OFF SPEED (1000 +/- 25 rev/min)						
3.1.5.1 the torque corresponding to maximum power						
272.43	1980	1000	61.29	73.26	225	3.72
3.1.5.2 85% of torque obtained in 3.1.5.1						
231.86	1983	1002	52.66	62.95	227	3.68
3.1.5.3 75% of torque defined in 3.1.5.2						
173.92	1982	1002	42.18	50.42	243	3.45
3.1.5.4 50% of torque defined in 3.1.5.2						
115.95	1982	1002	33.07	39.52	285	2.93
3.1.5.5 25% of torque defined in 3.1.5.2						
57.97	1982	1002	20.82	24.89	359	2.33
3.1.5.6 unloaded						
1.42	1983	1002	10.75	12.85	7556	0.11

- No load maximum engine speed: 2197 rev/min
- Torque (equivalent crankshaft) at rated speed:
  - At rated engine speed 1145 Nm
  - At 2-hour test 1647 Nm
- Maximum torque (equivalent crankshaft): 1797 Nm
  (engine speed: 1400 rev/min)

Mean atmospheric conditions:		
Dry bulb	24	°C
Pressure	97.5	kPa
Relative Humidity	58	%
Maximum temperatures:		
Coolant	88	°C
Engine oil	124	°C
Fuel	50	°C
Engine air intake	31	°C

3.2 Hydraulic Power

Date of Test:	29-Apr-03	Challenger MT 845	
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:		
	19.99 MPa		
	2900 psig		
II.	Pump delivery rate at minimum pressure:		
	174.5 l/min		
	46.1 gpm		
III.	Flow rate, pressure, power:		
	90% of relief valve setting		
	161.3 l/min	17.93 MPa	48.2 kW
	42.6 gpm	*2600 psig*	*64.6 hp*
	Maximum hydraulic power:		
	161.3 l/min	17.93 MPa	48.2 kW
	42.6 gpm	*2600 psig*	*64.6 hp*
IV.	Hydraulic fluid temperature at flow meter:		
	62 °C		
	143 °F		
	This hydraulic system does not use an accumulator. Opening and closing pressures of the unloading valve could not be measured.		



3.2.2 POWER LIFT TEST Category IVN w/Quick coupler
Date of test: 22 August 2002. (Data taken from test conducted on Challenger MT 855 which is mechanically identical)

	Hitch points	Frame
Lower hitch points above ground - down position:	229 mm	214 mm
Vertical movement - without load:	951 mm	1069 mm
with load:	861 mm	965 mm
Maximum corrected force exerted through full range:	98.5 kN	93.1 kN
Corresponding pressure:	18.0 MPa	18.0 MPa
Moment about rear axle:	134.8 kNm	184.2 kNm
Maximum mast tilt angle	--	8.3 degrees

Lifting height relative to horizontal position of lower links.

mm	-375	-360	-300	-200	-99	2	100	200	301	406	501	590
Corrected lift forces												
At the Hitch point kN	--	- 98.5	-108.9	-126.5	-139.6	-151.3	-161.9	-168.0	-177.6	-188.8	-198.2	--
At the Frame kN	-93.1-	--	-103.9	-116.8	-129.2	-137.1	-142.3	-146.2	-150.8-	--	-150.8	-149.7
Corresponding pressure 18.0 Mpa												

OECD Drawbar Data (SI)

Date of tests: 01,02,05-May-03 | Fuel density: 0.837 kg/l
Type of track: Concrete | Test number: 1824

3.3.1 Maximum power in tested gears (unballasted, CRWL) | Tire pressure: TRK kPa, rear / TRK kPa, front | Drawbar Height: 546 mm

Gear	Gear Designation	Power	Drawbar pull	Speed	Engine speed	Slip	Fuel		Temperature			Atmospheric conditions		
							SFC	SFE	Fuel	Coolant	Oil	Temperature	Relative humidity	Pressure
		kW	kN	km/h	rev/min	%	kg/kW.h	kW.h/l	°C	°C	°C	°C	%	kPa
*2	2	150.54	169.41	3.20	2199	11	0.333	2.51	50	86	103	13	83	95.8
*3	3	190.90	172.91	3.97	2160	11	0.313	2.67	47	86	103	13	83	95.8
4	4	213.22	156.97	4.89	2014	7	0.287	2.91	49	86	107	12	77	97.8
5	5	236.29	151.63	5.61	1922	6	0.266	3.14	50	86	106	12	77	97.8
6	6	244.63	143.97	6.12	1846	6	0.258	3.24	50	86	107	12	77	97.8
7	7	246.06	138.13	6.41	1702	5	0.258	3.25	51	87	108	17	66	97.4
8	8	251.08	122.79	7.36	1705	3	0.252	3.32	51	86	109	16	65	97.4
9	9	251.25	108.16	8.36	1703	2	0.251	3.34	50	86	109	16	69	97.4
10	10	253.78	96.55	9.46	1699	1	0.249	3.36	50	87	109	14	73	97.4
11	11	249.72	83.81	10.73	1703	1	0.256	3.27	52	87	109	17	66	97.4
12	12	250.09	74.60	12.07	1699	1	0.255	3.28	52	87	109	18	67	97.4
13	13	247.45	61.76	14.42	1701	1	0.258	3.25	52	87	109	18	67	97.4

* Note: Slip within operating procedures of testing station.

3.3.2 Fuel consumption

3.3.2.1 In selected gear at maximum power at rated engine speed.														
10	10	216.61	66.29	11.76	2099	1	0.276	3.03	52	86	108	18	67	97.4
3.3.2.1.1 75% of pull at maximum power at rated engine speed														
10	10	171.66	50.08	12.34	2199	1	0.311	2.69	52	86	106	17	61	97.9
3.3.2.1.2 50% of pull at maximum power at rated engine speed														
10	10	114.73	33.42	12.36	2199	0	0.366	2.29	53	86	104	18	50	97.9
3.3.2.1.3 Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.1.1														
11	11	171.26	49.97	12.34	1949	0	0.294	2.85	53	86	106	17	57	97.9
3.3.2.1.4 Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.1.2														
11	11	114.56	33.37	12.36	1949	0	0.345	2.42	53	86	103	18	50	97.9
3.3.2.1.5 Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.1.1														
12	12	171.30	50.04	12.32	1729	1	0.278	3.01	53	86	105	18	54	97.9
3.3.2.1.6 Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.1.2														
12	12	114.54	33.40	12.34	1729	0	0.319	2.62	52	86	102	19	51	97.9
3.3.2.2 In selected gear nearest to 7.5 km/h at rated engine speed.														
6	6	222.17	111.23	7.19	2096	2	0.270	3.10	51	86	107	16	69	97.4
3.3.2.2.1 75% of pull at maximum power at rated engine speed														
6	6	176.98	83.42	7.64	2199	1	0.290	2.88	49	86	105	13	78	97.8
3.3.2.2.2 50% of pull at maximum power at rated engine speed														
6	6	118.47	55.58	7.67	2199	1	0.333	2.51	50	85	103	15	69	97.8
3.3.2.2.3 Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.2.1														
7	7	176.91	83.47	7.63	1948	1	0.273	3.06	50	86	105	13	73	97.8
3.3.2.2.4 Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.2.2														
7	7	118.45	55.59	7.67	1949	1	0.312	2.68	50	85	102	16	65	97.8
3.3.2.2.5 Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.2.1														
9	9	176.91	83.51	7.63	1539	1	0.258	3.24	49	87	103	14	73	97.8
3.3.2.2.6 Higher gear at reduced engine speed, same pull and travel speed as 3.3.2.2.2														
9	9	118.53	55.65	7.67	1539	1	0.282	2.97	49	86	100	16	65	97.9

OECD Drawbar Data (SI)

Date of tests: 01,02,05-May-03							**Fuel density:**	0.837 kg/l						
Type of track: Concrete							**Test number:**	1824						
4.1 Maximum power in tested gears (unballasted, CRWL)							**Tire pressure:**	TRK kPa, rear		TRK kPa, front		**Drawbar Height:**	546 mm	
Gear	**Gear Designation**	**Power**	**Drawbar pull**	**Speed**	**Engine speed**	**Slip**	**Fuel**		**Temperature**			**Atmospheric conditions**		
							SFC	**SFE**	**Fuel**	**Coolant**	**Oil**	**Temperature**	**Relative humidity**	**Pressure**
		kW	**kN**	**km/h**	**rev/min**	**%**	**kg/kW.h**	**kW.h/l**	**°C**	**°C**	**°C**	**°C**	**%**	**kPa**
*2	2	149.69	169.01	3.19	2199	11	0.334	2.50	50	86	103	13	83	95.8
*3	3	187.58	170.14	3.97	2164	11	0.316	2.65	49	86	104	13	83	95.8
4	4	207.71	143.67	5.20	2095	5	0.290	2.88	50	86	107	12	82	97.8
5	5	218.30	124.05	6.34	2100	3	0.276	3.04	51	86	107	17	66	97.4
6	6	222.17	111.23	7.19	2096	2	0.270	3.10	51	86	107	16	69	97.4
7	7	220.44	96.86	8.19	2098	1	0.270	3.10	50	86	108	15	69	97.4
8	8	220.11	85.49	9.27	2100	1	0.272	3.08	50	86	108	13	78	97.4
9	9	216.83	74.82	10.43	2099	1	0.274	3.05	53	86	108	18	67	97.4
10	10	216.61	66.29	11.76	2099	1	0.276	3.03	52	86	108	18	67	97.4
11	11	208.34	56.47	13.28	2099	1	0.287	2.91	52	86	107	18	67	97.4

*** Note: Slip within operating procedures of testing station.**

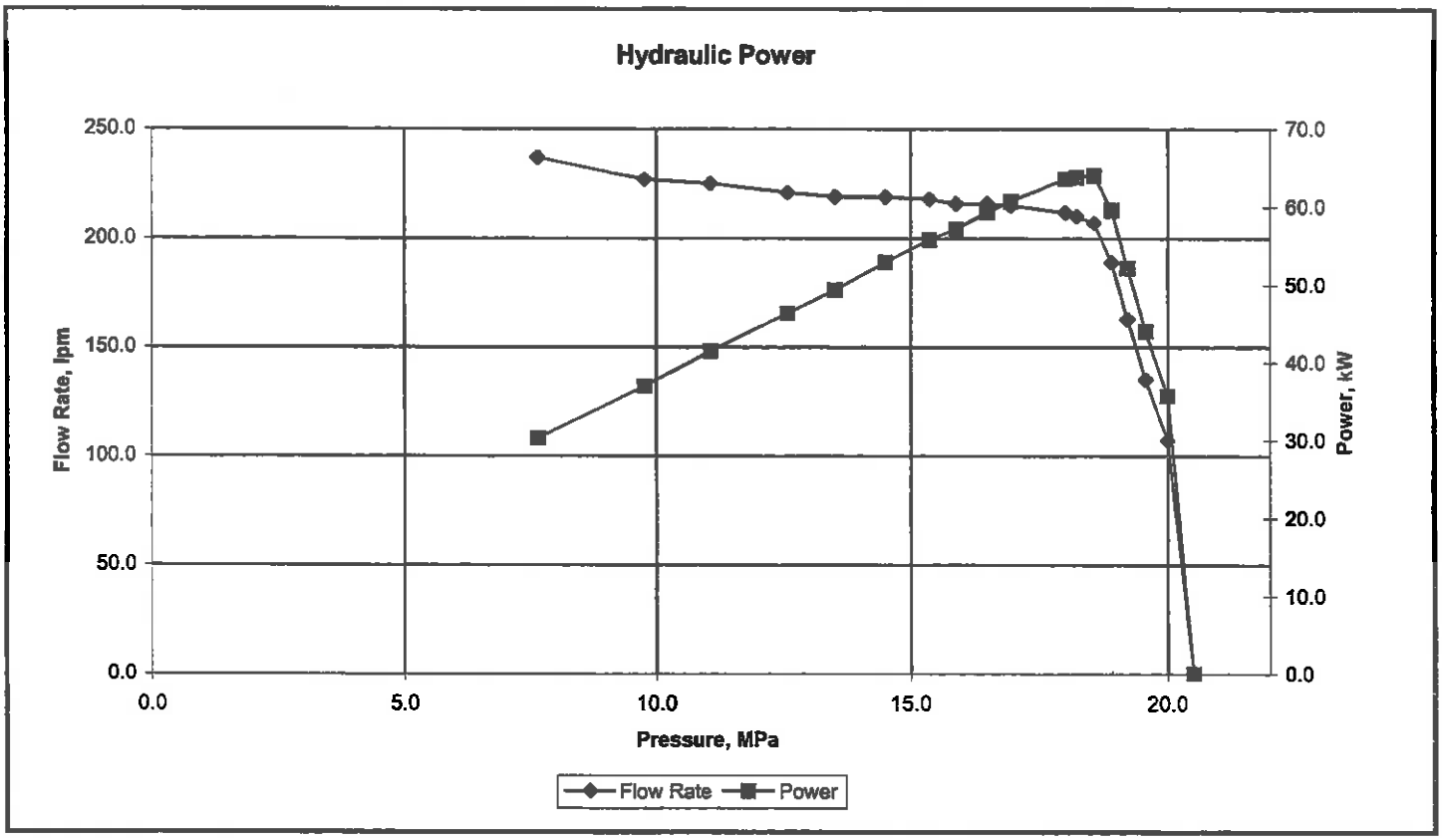
OECD Drawbar Data (SI)

Date of tests: 09-May-03						Fuel density: 0.837 kg/l								
Type of track: Concrete						Test number: 1824								
4.2 Maximum power in tested gears (ballasted, crwl)						Tire pressure: (trk) kPa, rear (trk) kPa, front					Drawbar Height: 572 mm			
Gear	Gear Designation	Power	Drawbar pull	Speed	Engine speed	Slip	Fuel		Temperature			Atmospheric conditions		
							SFC	SFE	Fuel	Coolant	Oil	Temperature	Relative humidity	Pressure
		kW	kN	km/h	rev/min	%	kg/kW.h	kW.h/l	°C	°C	°C	°C	%	kPa
*2	2	192.18	221.09	3.13	2167	12	0.308	2.71	47	85	103	12	82	96.5
3	3	215.59	206.46	3.76	2008	9	0.286	2.92	50	86	105	12	82	96.5
4	4	237.13	192.10	4.44	1821	7	0.269	3.11	50	87	108	12	83	96.5
5	5	250.43	175.15	5.15	1739	5	0.253	3.31	50	87	107	13	78	96.6
6	6	255.36	159.95	5.75	1704	4	0.250	3.35	51	87	108	13	78	96.6
7	7	253.80	139.04	6.57	1702	3	0.248	3.37	51	87	108	14	78	96.6
8	8	256.90	124.33	7.44	1698	2	0.245	3.42	51	87	108	14	74	96.7
9	9	254.46	108.75	8.42	1701	1	0.248	3.38	52	87	109	15	69	96.7
10	10	255.33	96.58	9.52	1702	1	0.248	3.37	51	87	108	16	70	96.8
11	11	249.18	83.45	10.75	1701	1	0.256	3.27	52	87	109	16	70	96.8
12	12	248.43	73.95	12.09	1698	1	0.256	3.27	52	87	109	16	70	96.9
13	13	248.41	61.91	14.44	1701	1	0.257	3.26	51	87	108	17	70	96.9

* Note: Slip within operating procedures of testing station.

4.3 Hydraulic Power (High Flow Pump - three inlets, three outlets - test data from Challenger MT865)

Date of Test:	23-Oct-02	Challenger MT 865	
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:		
	20.51 MPa		
	2974 psig		
II.	Pump delivery rate at minimum pressure:		
	237.0 l/min		
	62.6 gpm		
III.	Flow rate, pressure, power:		
	90% of relief valve setting		
	207.0 l/min	18.57 MPa	64.1 kW
	54.7 gpm	*2693 psig*	*85.9 hp*
	Maximum hydraulic power:		
	207.0 l/min	18.57 MPa	64.1 kW
	54.7 gpm	*2693 psig*	*85.9 hp*
IV.	Hydraulic fluid temperature at flow meter:		
	77 °C		
	170 °F		
	This hydraulic system does not use an accumulator. Opening and closing pressures of the unloading valve could not be measured.		



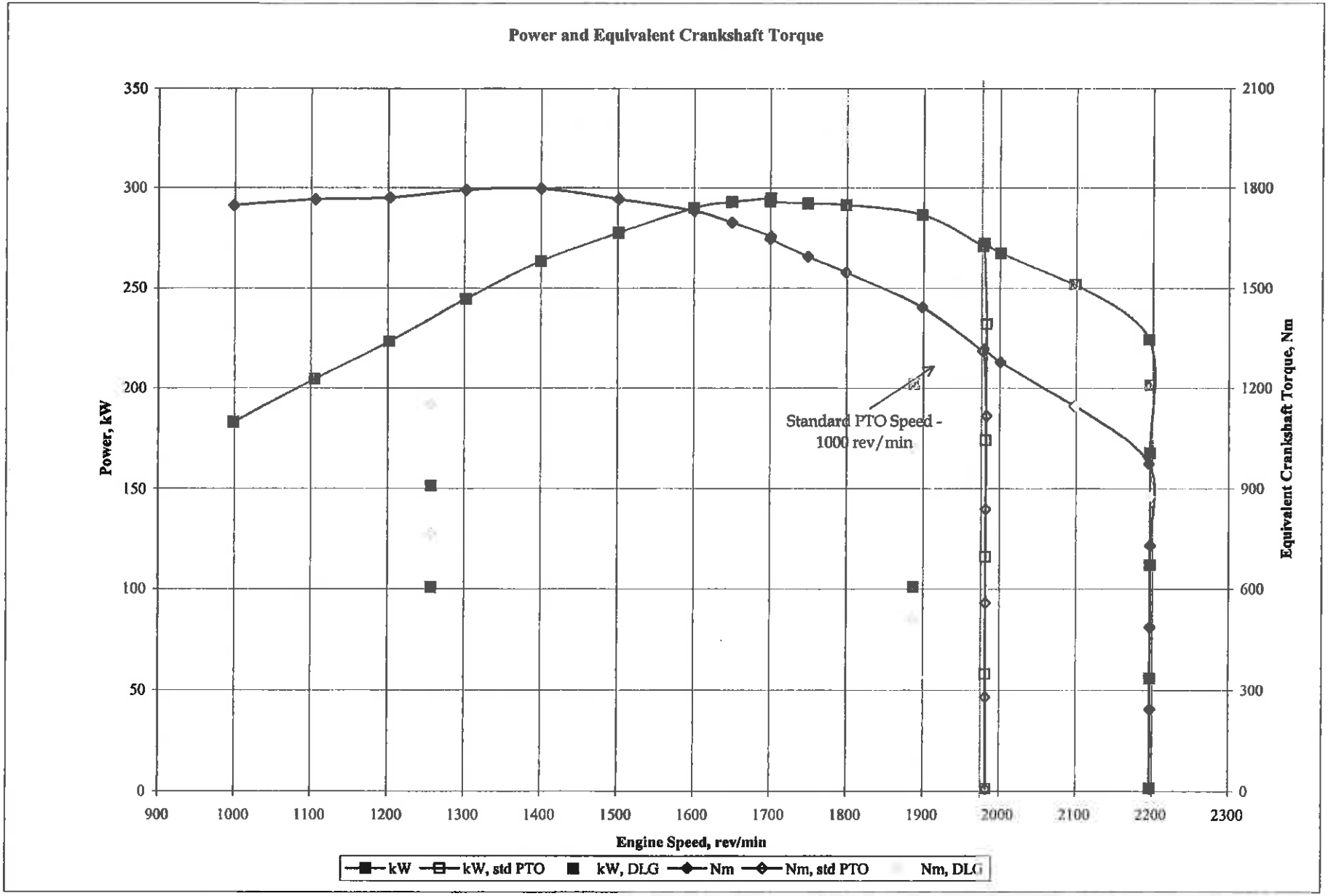
4.4 Measurement of Noise Level at Operator's Ear*

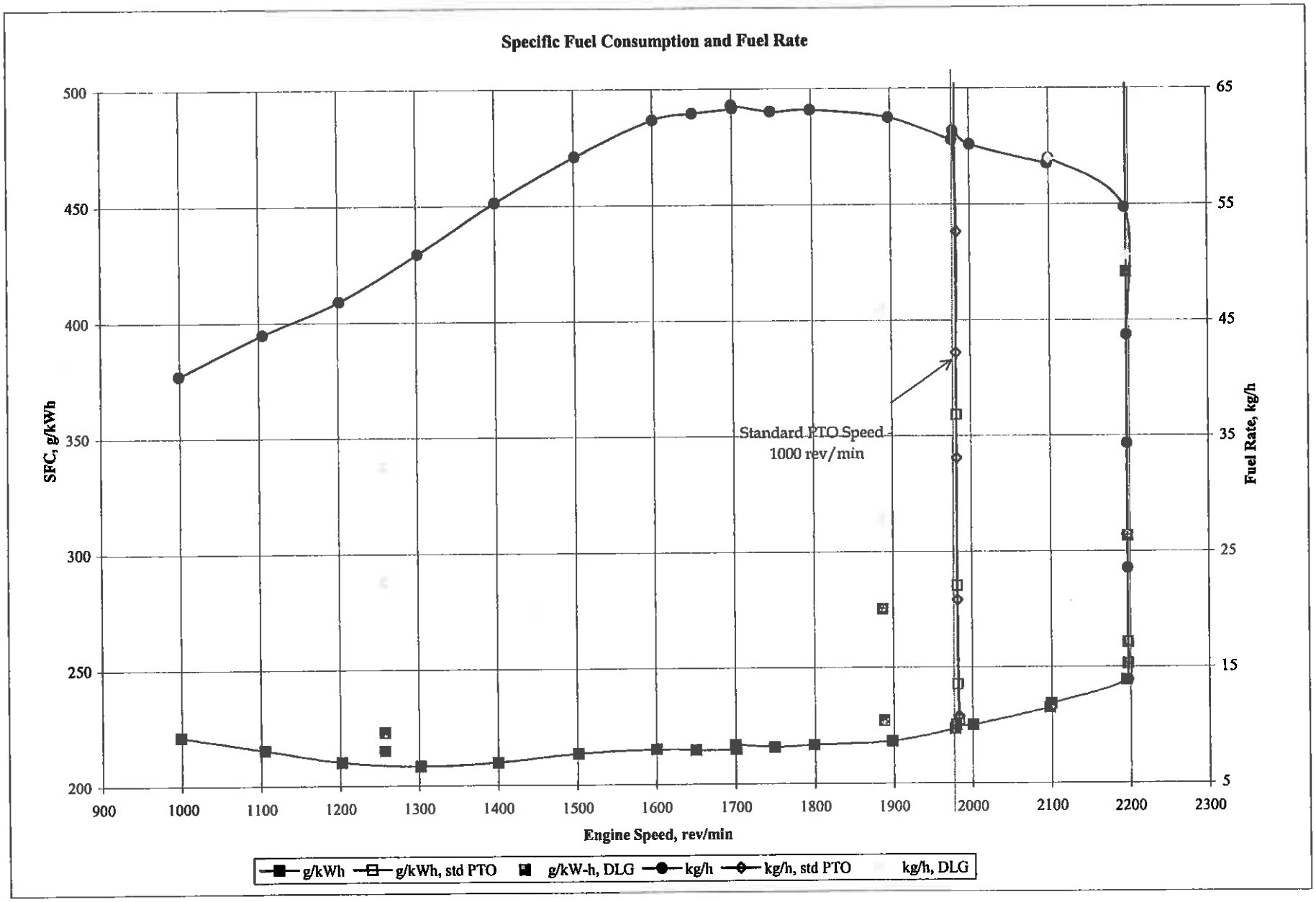
-- Date of Test	May 2, 3003
-- Location of Test	Nebraska Tractor Test Laboratory
-- Sound Level Meter	Bruel and Kjaer 2236
-- Type of Track	Concrete Oval
-- Gear Number	6
-- Drawbar Load	None
-- Noise at Operator Ear	73.6 dB(A)

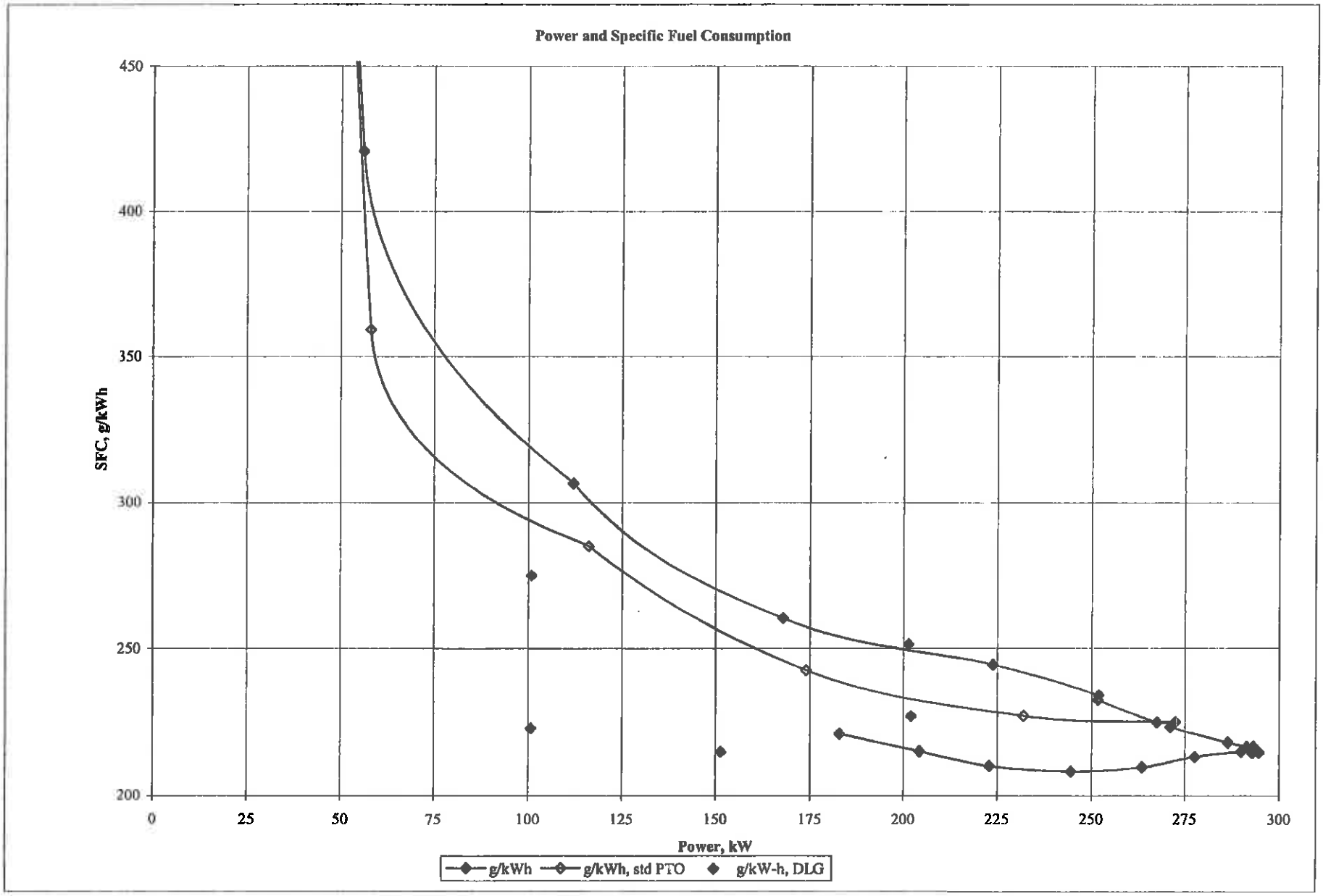
* Note: Nebraska tractor test station guidelines.

5. Repairs and Adjustments: None

6. Remarks: The minimum atmospheric pressure of 96.6 kPa was not available for all times that official testing was conducted.


Power and Equivalent Crankshaft Torque
Power, kW
Equivalent Crankshaft Torque, Nm
Engine Speed, rev/min
Standard PTO Speed - 1000 rev/min
kW
kW, std PTO
kW, DLG
Nm
Nm, std PTO
Nm, DLG
350
300
250
200
150
100
50
0
2100
1800
1500
1200
900
600
300
0
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300


Specific Fuel Consumption and Fuel Rate
SFC, g/kWh
Fuel Rate, kg/h
Engine Speed, rev/min
Standard PTO Speed
1000 rev/min
500
450
400
350
300
250
200
65
55
45
35
25
15
5
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
g/kWh
g/kWh, std PTO
g/kW-h, DLG
kg/h
kg/h, std PTO
kg/h, DLG


Power and Specific Fuel Consumption
SFC, g/kWh
450
400
350
300
250
200
0
25
50
75
100
125
150
175
200
225
250
275
300
Power, kW
g/kWh
g/kWh, std PTO
g/kW-h, DLG