

# 613C-II

## Wheeled Tractor Scraper

Airborne Scraper and Water  
Distributor System (ASWDS)



### Engine

Caterpillar®	Cat® 3116 Diesel Engine	
Heaped Capacity	11 yd <sup>3</sup>	8.4 m <sup>3</sup>
Gross Power (Standard)	187 hp	140 kW
Rated Load	26,400 lb	11,975 kg
Net Power (Standard)	175 hp	131 kW
Operating Weight	33,650 lb	15,264 kg

# 613C-II Wheeled Tractor Scraper

*Offering world class performance, value and reliability.*

## MISSION CAPABLE



*613C-II Scraper in action.*

The ASWDS Wheeled Tractor Scraper is a highly productive tractor which pulls a self-elevating 11 cubic yard scraper bowl. It provides soldiers unsurpassed operational readiness for the construction of airfields, roads, landing zones, defensive berms, anti-tank ditches and other key military construction missions.

The ASWDS Scraper works together with Cat track-type tractors, motor graders and compactors in cut and fill operations to allow the Army to rapidly complete horizontal construction projects.

The scraper elevator can efficiently prepare soil from the cut area for more effective compaction at the fill area, providing improved performance and durability of the project.

The self-mobile tractor is well balanced so the scraper can be easily detached and replaced with a water distributor as part of the overall Airborne Scraper & Water Distributor System. Successful construction of roads, airfields, and berms require the cut and fill ability of the scraper as well as the soil stabilization of the water distributor.

The Caterpillar 613 C-II elevated scraper gives the military maximum flexibility to move large quantities of earth over long distances. The two-speed elevator drive and high hydraulic horsepower provide maximum loading performance over a wide range of material conditions. The elevator flights break up material during loading and unloading, which helps to reduce fill area workload. The angled ejector top plate aids in retaining loads for maximum productivity and minimum spillage while hauling.

## DEPLOYABILITY

The ASWDS tractor and scraper bowl is designed to incorporate transportability features for rapid deployment and maximum flexibility in many operational scenarios. The sectionalized configuration and modifications provide substantially improved all-weather mobility for low-velocity airdrop (LVAD), air assault and C-130 drive-on/drive-off inter-theater air transport in Iraq, Afghanistan, Kosovo and other theaters worldwide. Caterpillar's dealers, in these countries and worldwide, stand ready to support military deployments.

- MIL-STD-209 Slings & Tie Downs
- C-130 Drive-on/Drive-off
- CH47 Helicopter Lift Capable (sectionalized, 2 lifts)
- Low CH47 Low Velocity Air Drop (LVAD) Capable
- Self deployable with convoy speed of 20 mph
- Fresh water fordable to 1M depth
- Travel range of 200 miles
- Ease of disassembly and assembly
- Blackout lighting for night operations
- Rifle Bracket
- Storage for combat gear
- CARC Paint
- NATO Compatible Auxiliary Power
- Transportability box with parts, tools and instructions for all transport configuration conversions



*Transportability Box provides the parts and tools required to convert the ASWDS into each of its transport configurations.*

## Integrated Logistical Support

*Caterpillar implements a multi-pronged effort to support its products in anticipation of any military operation anywhere in the world.*

### PARTS

Caterpillar and its worldwide dealer network maintain the largest and most comprehensive parts distribution system in the industry. Parts are quickly available to units at CONUS and OCONUS locations in support of Operation Iraqi Freedom and Operation Enduring Freedom contingency areas. Caterpillar's Defense and Federal Products Department works with deploying units and contingency location dealers to establish a parts stockage to more closely align with deploying units construction equipment in theatre.

- Parts Push Packages - Cat D&FP can tailor suitable "push" packages for upcoming deployments
- Caterpillar and its dealers have established special parts consignments in Iraq, Kuwait and Afghanistan to support the military's fight against the Global War on Terrorism (GWOT).
- Caterpillar dealers stock recommended Cat remanufactured parts that will save time and money. Reman parts are included in military parts manuals for the new Caterpillar 613C-II.
- The Army's Corporate to Corporate parts program with Caterpillar maximizes the benefits of Caterpillar's Commercial Parts Distribution System.

### SERVICE

Nearly 3,000 Cat distribution centers, dealers and rental stores are ready worldwide to provide maintenance services, parts and service support on an as-required or indefinite delivery basis.

Cat dealers also may supplement military capabilities through:

- **Pre-deployment Checkout and Inspections** – Cat Technical Analysis (TA) II prepares the unit for 1,000 to 1,500 hours of wrench-free operation during contingency operations, or alternately may be used to refine the "push package" of serviceable level parts deployed with the unit
- **Blanket Purchase Agreements (BPA)** – a contract to purchase parts and service directly from the local Cat dealer, reducing the time required for individual procurement contracts and reducing equipment downtime
- **Service Life Extension Program (SLEP)** – rebuild a machine for a second life at a fraction of the cost of new machine with the rebuild completed within 60 days of approval around the world.



*Caterpillar Kuwait dealer, Al Bahar, executing SLEP repairs on D7G*



*Low velocity air drop of a sectionalized 613C-II.*

### Warranty

A globally supported warranty offers "bumper-to-bumper" parts and service coverage for 18 months. The warranty is supported worldwide; CONUS, OCONUS or in contingency areas. Cat dealers supplement the warranty by providing real time Contractor Logistical Support.

### Manuals

The ASWDS program provides superior operational readiness with modified commercial manuals which provide military manual detail to support 2-level maintenance. Expanded 3-column troubleshooting, comprehensive remove & replace and disassembly & assembly instructions minimize the potential for failures.

### Training

Training modules based on military manuals offer safe and effective operation and maintenance. A distance learning package reinforces the operator's skill set.

In addition to operator training, Caterpillar Defense and Federal Products Division provides maintenance training as well as technical support for safe and effective operation.

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## GRADEABILITY/RIMPULL/SPEED

To determine gradeability performance, read from the gross weight to the percentage of total resistance.

Total Resistance = Actual Percent Grade + Percent of Rolling Resistance

From this weight-resistance point, read horizontally (left or right) to the curve with the highest obtainable gear, then down to the corresponding speed. Useable rimpull will depend upon the traction available and the weight on drive wheels.

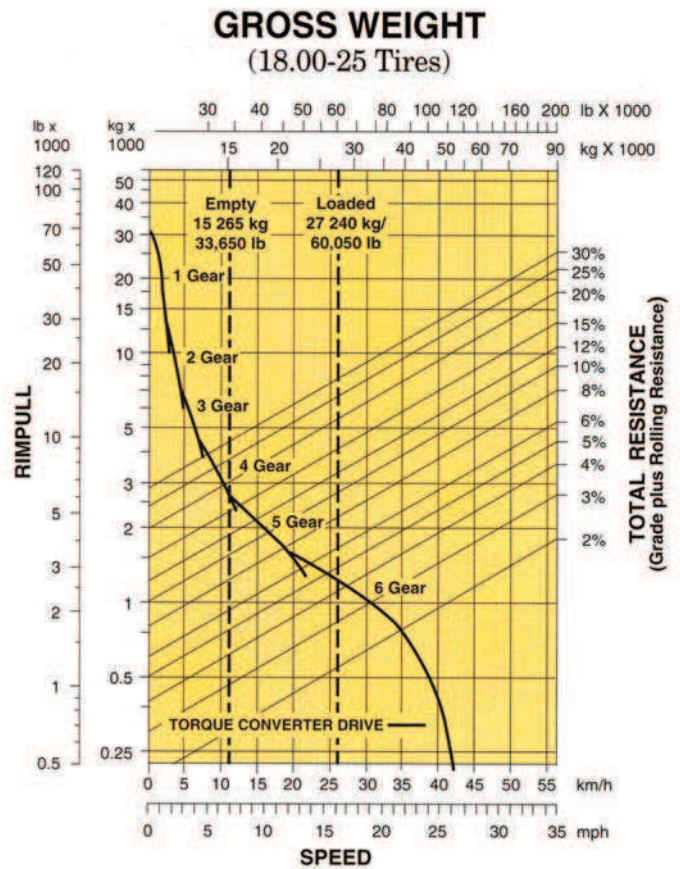
### Use of Retarder Curves

The following explanation applies to retarder curves for Wheel Tractor-Scraper and Articulated Trucks.

The speed that can be maintained without use of service brake) when the machine is descending a grade with retarder fully on can be determined from the retarder curves in this section if gross machine weight and total effective grade are known.

**Total Effective Grade (or Total Resistance)** is grade assistance minus rolling resistance.

10 kg/metric ton (20 lb/U.S. ton) = 1% adverse grade.

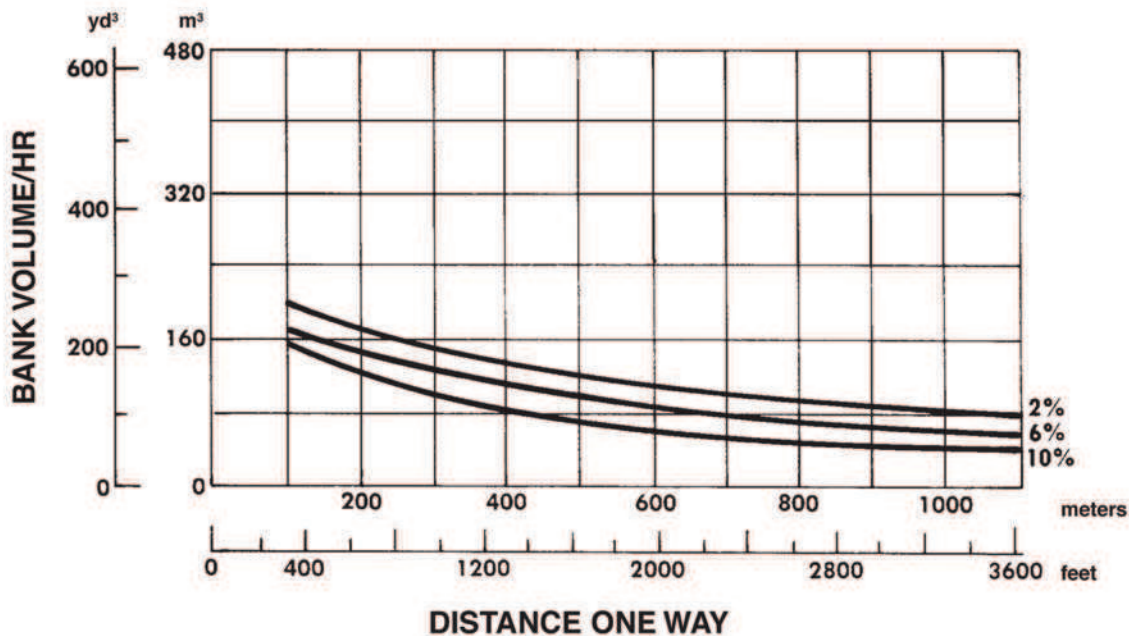


613C II Scraper executing a Low Velocity Air Drop from a C-130.

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## DISTANCE vs. PRODUCTION

- CONDITIONS: Flat haul. Percentages shown are rolling resistance only.  
 100% efficiency (60 min hour).
- Material: 1780 kg/m<sup>3</sup> (3000 lb/yd<sup>3</sup>).
  - Payload: 11 975 kg, 6.7 Bm<sup>3</sup> (26,400 lb, 8.8 BCY).
  - Empty weight: 14 970 kg (33,000 lb).
  - Fixed time: 1.6 min.



## TYPICAL FIXED TIMES FOR 613C-II

Self Loaded

Load Time – 0.9 Minutes

Maneuver & Spread – 0.7 Minutes

## USE OF TRAVEL TIME CHARTS

The following explanation applies to travel time charts for Wheel Tractor-Scraper, Construction & Mining Trucks and Articulated Trucks.

One-way travel time can be determined from graphs on the the following pages when one-way travel distance and total resistance (expressed in percent) are known. 10 kg/metric ton (20 lb./U.S. ton) equals 1% equivalent grade.

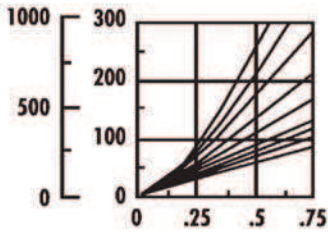
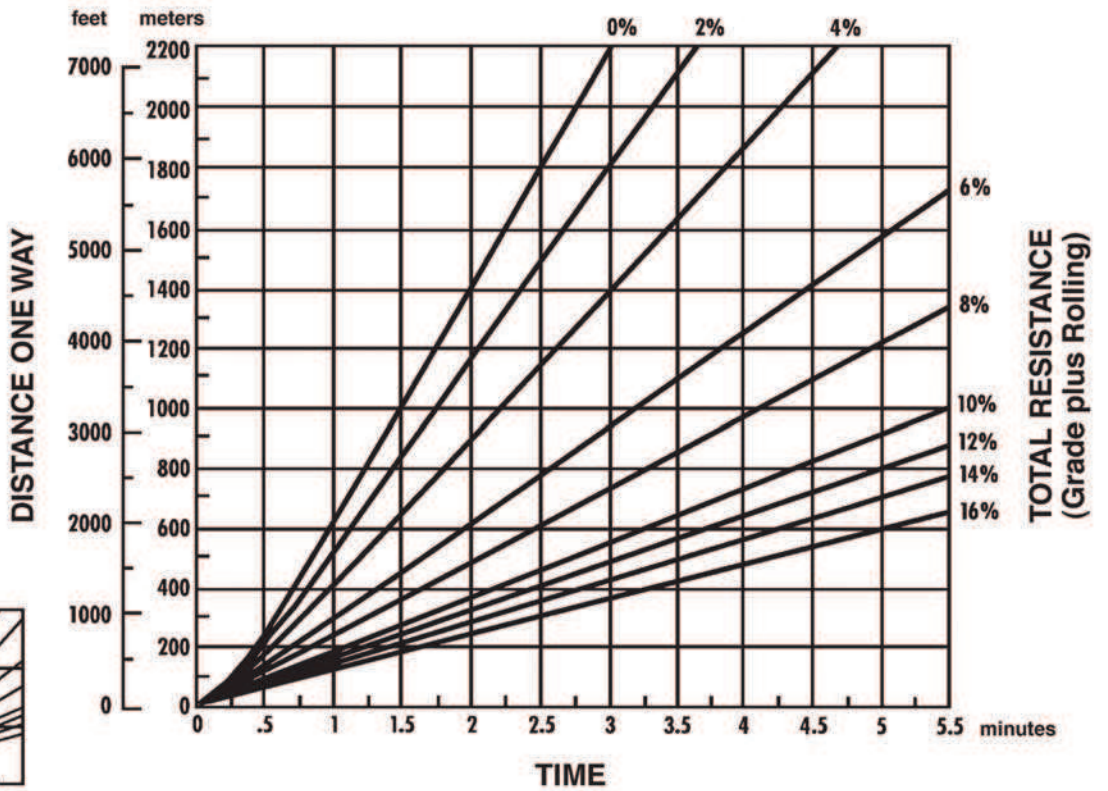
If total resistance is negative (grade assistance greater than rolling resistance) machine may accelerate downhill requiring the use of retarder or brakes. Travel time charts cannot be used in these cases. Consult respective machine retarder curve to establish maximum safe downhill speed.

Two graphs are given for each hauling unit: one for the machine carrying its rated payload and one for the empty machine.

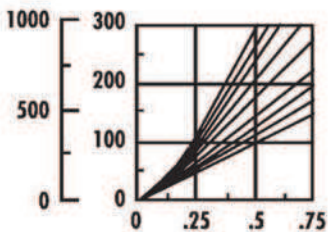
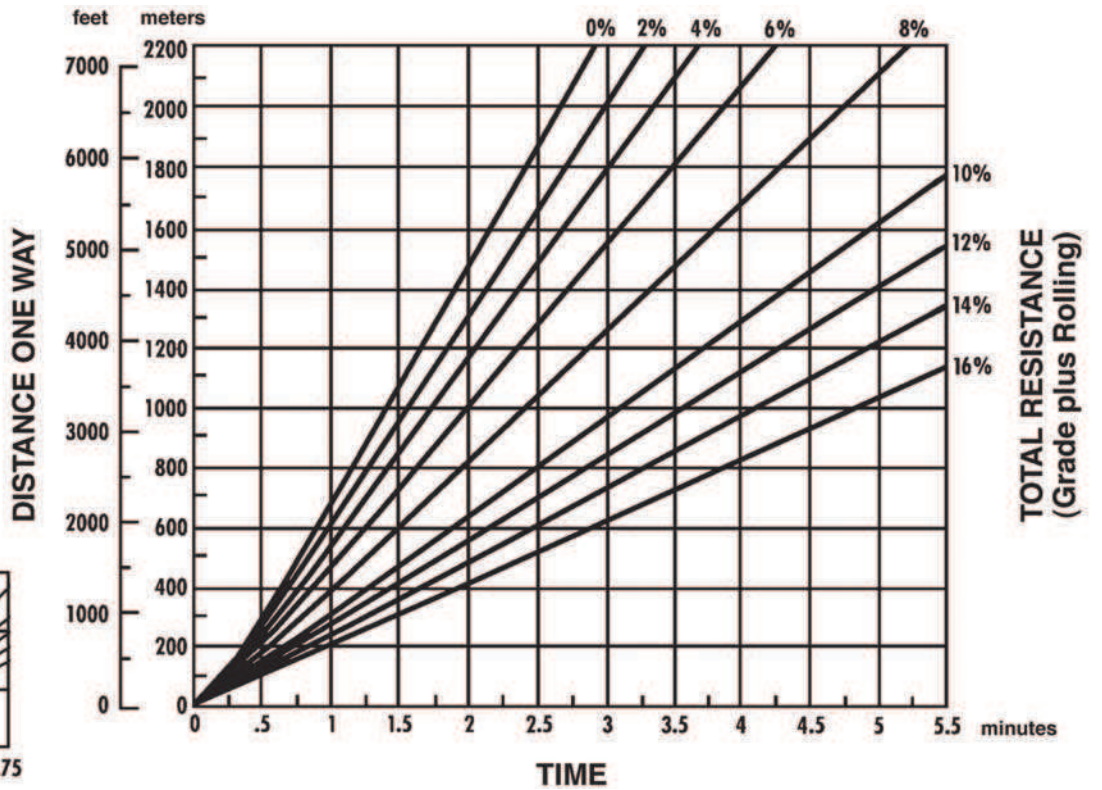
Travel times were derived using Caterpillar Machine Simulation Program and standard tire inputs. Travel times for machines equipped with (larger) optional tires vary slightly.

**NOTE:** Empty Weights shown on the Wheel Tractor-Scraper charts includes ROPS Canopy. The travel times will remain within acceptable limits when applied to a non-ROPS equipped machine. When calculating TMPH loadings any additional weight must be considered in establishing mean tire loads.

**TRAVEL TIME – Loaded**  
 • 23.5R25 Tires



**TRAVEL TIME – Empty**  
 • 23.5R25 Tires



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## ASWDS STANDARD EQUIPMENT

### Powertrain

- Air Cleaner Service Indicator
- Brakes
  - Caliper Disc (front & rear)
  - Parking
  - Secondary
- Crankcase Guard
- Differential Lock
- Fan (engine) Suction
- Fuel Pump (electric)
- Muffler
- Precleaner, Air Cleaner
- Tires – 23.5R25
- Transmission, Powershift

### Electrical

- Alternator, 50-amp
- Batteries (2)
  - 100 amp-hr, 700 cca
- Electrical System
  - 24-vlt, E3 Capable
- Starting Electric

### Safe & Effective Operation

- Canopy, ROPS
- Highway Lights, Tractor
  - Directional/Hazard
- Highway Lights, Scraper
  - Directional/Hazard
  - Stop/Tail
- Seat
  - Multi-adjustable
  - Air/Hydraulic Suspension
- Seat Belt (3")
- Steering Wheel
  - Tilt and Telescopic
- Windshield
  - Tilt-out, Tinted
  - Washer and Wiper

### Service/Maintenance

- Alarm, Back-up
- Electronic Monitoring System
- Gauges
  - Air Pressure
  - Engine Coolant Temperature
  - Fuel
  - Speedometer
  - Tachometer with Electric Hour Meter
  - Torque Converter
  - Oil Temperature
  - Grease Zerks Clustered on Tractor

## MILITARY MODIFICATIONS

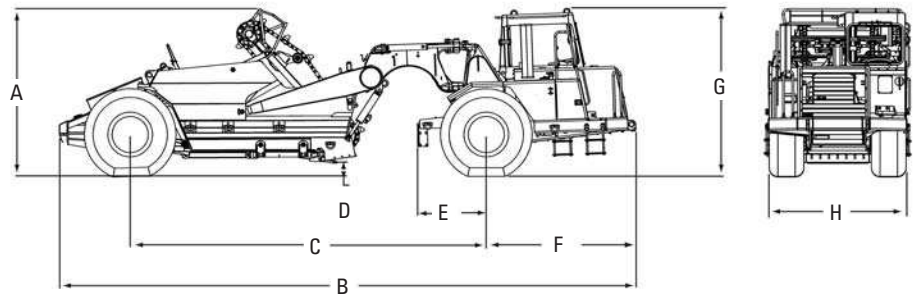
- C-130, C-17 and C-5 Air Transportable
- C-130 Air Droppable
- CH-47 Slingload
- Transportability Box
- Fresh Water Fordable to 1M Depth
- MIL-STD-209 Sling and Tie Down Provisions
- NATO Compatible Auxiliary Power
- Removable Cab
- Storage – Military Combat Gear
- Blackout Lights
- Blackout Light Switch, Digital
- Rifle Rack
- CARC Paint

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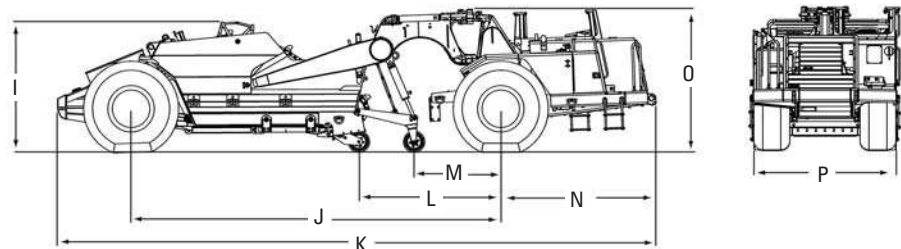
## DIMENSIONS

	Inches	Millimeters		Inches	Millimeters		Inches	Millimeters
A	116	2950	I	87	2210	Q	116	2950
B	399.5	10150	J	247	6270	R	49	1250
C	247	6270	K	399.5	10150	S	152	3860
D	9	230	L	95	2410	T	221	5610
E	47.5	1210	M	58	1470	U	285.5	7250
F	103.5	2630	N	103.5	2630	V	55.5	1412
G	116.5	2960	O	95.5	2430	W	114.5	2910
H	101.5	2580	P	101.5	2580	X	95.5	2430

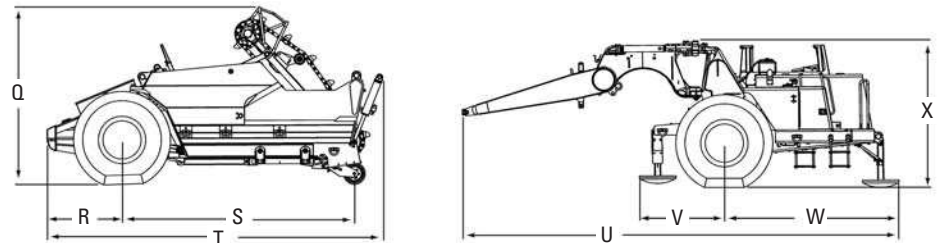
### Operational Mode Dimensions



### C130 RO/RO Air Transport Mode Dimensions



### Helicopter Airlift Transport Mode Dimensions



For more complete information, contact:  
**Caterpillar Defense and Federal Products**  
 e-mail: [army@cat.com](mailto:army@cat.com)  
 or visit us on the web at [www.catdfp.com](http://www.catdfp.com)

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