4139-AD1

#1456

ALTOM Transport, Inc.

TRAILER	LOCATION	DATE	HUB READING
T217	Cufkin TX	11/30/2017	111 23

ITEMS TO INSPECT	X NO DEFECT	IDENTIFY & SPECIFY DEFECT
General: Inspect For Cracks/Unusual Wear/Rust/Broken-Missing parts/Leaks/Looseness/Corrosion/Appearance/Decals	TS	
Coupling: Inspect upper plate and kingpin. Check mounting bolts	TS	
Landing Gear: Check Ease of Operation/Sand Shoes/Crank Handle/Shafting and grease.	TS	
Lights/Light Receptacle/Reflectors/Wiring/Light Bezel and Mounting	TS	
Brakes: Inspect lining. Indicate condition. Check air holes and chamber mounts. Check air tanks for rust. -Drain tanks	TS	
Tires: Check for bulges/Uneven Wear/gouges/Mismatch of more than 4/32 for Duals. Indicate condition. Check inflation. Check Tire Inflation System if	TS	
Check ABS System	TS	
Wheels and Bearings: Check for broken, missing lugs. Check oil level in hubcaps. Check seals for leaks or dampness	TS	
Under frame and cross members.	TS	
Suspension, Springs: Check Integrity/Leaf Springs/Air Bags & Bases/Torque-Trailing Arm Bushings/Air Leaks/Ride Height	TS	
Fenders and brackets: Check for dents and cracks.	TS	
Mud Flaps: Indicate missing or torn. Check for cracked mount brackets	TS	
License Plate: Indicate dirty or bent. Check for license plate light. Install backing plate if necessary.	TS	
Bumper: Inspect for dents and rusting mounts or packing	TS	
Grease Unit	TS	
Check DOT Tape Sides/Bumper/Top Rear-note if peeling or missing.	TS	
Damage: Indicate same if any.	TS	
Decals: Check VIN-P-UC-T and annual-Note due dates	TS	VIK-5/22 PML-5/22
Hose Tubes & Latches/Hose Troughs/Drain Tubes/Hoses/Caps-Cables-Plugs	TS	
Service Air Off Filter/Temperature & Air Guages	TS	
Ladder, Catwalk/Supports and all attaching structure.	TS	
Placard Mounts-Mounting/Holders and Clips	TS	
Cabinet and Mounting/Cabinet Latches/Door and Door Hinge	TS	
Check Hydraulic Operation/Check Fluid Condition at Internal Fusible/Flush if Contaminated/Fill with Hyd Oil Only		
Overfill Protection: Check Operation/Check for Necessary Power and Permit Lights/Check Ground-Diode on Thermistor & Optic Sockets		
Aluminum trailer except elliptical DO NOT CAUSTIC WASH decals front, both sides rear of spill dam and each compartment dome lid	TS	
check battery status and reporting of tracking unit orb com	TS	Normal 7.49

TANK PM SHEET

FMCSA - PERIODIC INSPECTION

CERTIFICATION

This vehicle has passed an inspection in accordance with 49 C.F.R. Part 396 and must be reinspected during or before the same calendar month one year after the date shown below. Information on the contents of the inspection report can be obtained by contacting the owner/lessee.

Sticker Installation Date: 11 / 30 / 217

ADDITIONAL COMMENTS

Plate # 577 681

Vin# 026000

ALTOM Mechanic: [signature]

FORM #SASA - TANK PM SHEET2

ALTOM Transport, Inc.

EXTERNAL VISUAL INSPECTION

DATE 5-3-17
TRAILER # T217 SERIAL OR VIN # 31-26000 MFG: POLAR
DATE OF MFG. 8/2002 HEAD & SHELL MATERIAL 5454 CERT. DATE 8/2002
DOT SPEC. # 407 MAWP/DESIGN PRESS. 25 psi. TEST PRESS. 45 psi.
COMPARTMENT SIZES, F to R: 1. 9000 2. N/A 3. N/A 4. N/A 5. N/A
MINIMUM THICKNESS: HEADS .228 SHELL .194 CARGO TANK LINED: ___YES; ✓ NO
CARGO TANK INSULATED: ___YES; ✓ NO CORROSIVE SERVICE: ___YES; ✓ NO
CARGO TANK IS IN SPECIAL OR DEDICATED SERVICE: ___YES; ✓ NO
UPPER COUPLER REMOVED: ✓ YES; ___ NO (Required every two years for tank in corrosive service)
PRESSURE RELIEF VENT(S) REMOVED, INSPECTED & TESTED: ✓ YES; ___ NO
(Required annually for tank in corrosive service) IF TESTED, ENTER THE RESULTS BELOW.

VENT	COMP. 1	COMP. 2	COMP. 3	COMP. 4	COMP. 5
Design PSI	25	/	/	/	/
Open PSI	32	N/A	N/A	N/A	N/A
Reseat PSI	28	/	/	/	/

INSPECTION STEPS	COMPLIES	NOT ACCEPTABLE	CORRECTIVE ACTION
1) Data Plate: Tank attachment, entries legible, no paint or corrosion.	✓	___	___
2) Shell and Heads: Condition of welds, dents, gouges or abrasion.	✓	___	___
3) Upper Coupler Assembly: Condition of plate—corrosion, deformation, and lubrication, bolt tightness, king pin wear and tightness	___	___	✓
4) Bolted attachments: Piping brackets and supports, valve installations, valve operator installations, dust cap retainers	✓	___	___
5) All major appurtenances and structural attachments. All tank to frame and suspension system attachments, frames, cross-members, outriggers and bolsters.	✓	___	___
6) Piping and all valves , adapters and dust caps: Leakage, attachments, handles and levers, cables, air or hydraulic lines, shear sections, all gaskets or O-rings.	✓	___	___
7) Internal valve operation: Three means of closure (normal, thermal, and remote). Function check operator and remote. Check cable adjustment, condition of cables. Interconnection with load/unload vents—brake interlocks, lubrication points.	✓	___	___

ALTOM Transport, Inc.

8) Manhole Assembly area: Evidence of leakage, warping, corrosion or impact damage to manholes and fill covers, weld collars, gaskets, overturn damage protection devices, damping rings, condition of latches, hinges and all bolted connections, drains and all welds ..... ✓ ___ ___
Vents removed, inspected and tested: ✓ Yes; ___ No

9) Placards: Check for location, condition and color ..... ✓ ___ ___

CORRECTIVE ACTION FOR NON-ACCEPTABLE CONDITIONS:
Upper Coupler Was Corroded - Replaced with New

Was thickness testing performed on corroded or abraded areas? N/A Yes; N/A No

Is a sketch included to show areas? N/A Yes; N/A No

Were welded repairs made to the cargo tank wall? N/A Yes; N/A No
Is a sketch included to show area (s)? N/A Yes; N/A No
Was the welded repair pressure tested after welding? N/A Yes; N/A No: Pressure applied N/A

✓ Cargo tank meets the DOT specification number listed in this report.
___ Cargo tank does not meet the DOT specification number listed in this report.

✓ marking applied to the tank: Month – Year – letter "V"

Andy Willis	CT 13028	5-3-17
Registered Inspector	Registration Number	Date

ALTOM Transport	N/A
Company Name	National Board Number

Cargo Tank Owner Acceptance:

[signature]	5-15-17
Cargo Tank Owner, or Representative	Date

✓ Cargo tank returned to service.

___ Cargo tank removed from service

ALTOM Transport, Inc.

LEAKAGE TEST REPORT HYDROSTATIC/PNEUMATIC METHOD

(In Accordance with 49CFR Part 180 Para. 180.407[h])

Customer ALTOM Transport Date: 5-10-17

MC/DOT No. 407 Manufacturer: Polar

Unit No. T217 Year of Mfr.: 2002

VIN No. 1PMA3442631026000 MAWP/Design Pressure 25

Special Service of the Cargo Tank No

Cargo Tank in Corrosive Service ☐ Yes ☑ No

	Capacity	"K" Test Pressure
Comp. 1	9000	20
Comp. 2	N/A	N/A
Comp. 3	N/A	N/A
Comp. 4	N/A	N/A
Comp. 5	N/A	N/A

Material:
Insulated ☐ Yes ☑ No
Lined ☐ Yes ☑ No

The following must be completed for each compartment. Red flag all vents removed or rendered inoperative. Replace vents after completing test.

	Acceptable	Nonacceptable (See Remarks)
With valves closed and manhole cover open, start filling the tank and check all exterior surfaces for leaks. Install test fitting into manhole assembly, clean out, or any other top opening. With manhole cover and internal valve in the closed position, and discharge valve open, gradually pressurize cargo tank to 80% of MAWP. Hold pressure long enough to ensure zero leakage from manhole cover, internal valve seat, etc.	☑	☐
Close discharge valve and open internal valve. Stabilize internal pressure at 80% of MAWP (required leakage test pressure). Hold at zero pressure drop for 5 minutes.	☑	☐

Remarks: Over fill probe housing leaked a - Replaced O-ring -- No Leaks

Vaccum Break leaked a little - Replaced gasket - No Leaks

Defects found, location, and corrective action:

Were welded repairs made to the cargo tank wall? N/A Yes N/A No
Was the cargo tank pressure tested after welding? N/A Yes N/A No

☑ Cargo tank meets the DOT specification requirements listed on this report.
☐ Cargo tank does not meet the DOT specification requirements listed on this report.
☑ Month - Year - 'K' Marked on Cargo Tank

Person performing test

Andy Willis	CT 13028	5-10-17
Registered Inspector	Registration Number	Date
ALTom Transport	N/A	
Company Name	National Board No.	

Cargo Tank Owner Acceptance:
☐ Cargo tank removed from service
☑ Cargo tank returned to service

	5-15-17
Cargo Tank Owner	Date

ALTOM Transport, Inc.

INTERNAL VISUAL INSPECTION REPORT

(In accordance with 49 CFR Part 180 Para. 180.407(e) and 180.417)

Cargo Tank Owner ALTOM Transport Date 5-9-17
Owner's I.D. No. T217 Name of Tank Mfgr. POLAR
Manufacturer Serial No. 31-26000 Year of Tank Mfg. 2002
MC/DOT No. 407 MAWP 25
Minimum Thickness Heads .228 Shell: Top .194 ; Side .194 ; Bottom .209

Cargo Tank is Insulated ☐ Yes ☑ No Cargo Tank is Lined ☐ Yes ☑ No

Cargo Tank is used in Special or Dedicated Service ☐ Yes ☑ No _____

Cargo Tank Transports Corrosive Materials ☐ Yes ☑ No

Capacity by Compartment

Comp. 1 9000 Comp. 2 N/A Comp. 3 N/A Comp. 4 N/A
Comp. 5 N/A Comp. 6 N/A

	Disposition	
	Acceptable	Non-acceptable (See remarks)
Inspect entire surface for corrosion, abrasion, dents, pitting or distortion (special attention to tank heads and shell area covered by the upper coupler)...	☑	☐
Inspect gauging devices for vertical alignment and tightness.....	N/A	N/A
Inspect areas around piping, sumps, valves, for foreign material that could prevent proper functioning.....	☑	☐

Remarks:

Thickness testing performed on corroded or abraded areas ☑ Yes ☐ No

Sketch included to show area(s) ☐ Yes ☑ No

Were repairs made by welding ☐ Yes ☑ No

Nat. Bd. "R" Stamp No. N/A ASME "U" Stamp No. N/A

Sketch enclosed to show welded area(s) ☐ Yes ☐ No

Was the repaired compartment pressure tested ☐ Yes ☐ No

☑ Cargo tank meets the requirements of the DOT specification identified in this report.

☐ Cargo tank fails to meet the requirements of the DOT specification identified in this report.

☑ Marking applied Month - Year – Letter 'T'

ALTOM Transport Lufkin
Facility Performing the Test

Andy Willis — Registered Inspector

CT 13028 — Registration No.

5-9-17 — Date

✓ Cargo tank returned to service.

___ Cargo tank removed from service.

[signature] — Cargo Tank Owner Acceptance

5-15-17 — Date

Close internal valve, leaving discharge valve open. Close manhole cover and install test fitting at top of tank. Induce air, or an inert gas to 50% of test pressure and hold. Gradually increase pressure in stage of 10% of test pressure until test pressure reached. Hold for 5 minutes with ZERO drop in pressure. Reduce pressure to MAWP, maintain at MAWP and using a soap water solution, inspect entire tank surface and all fittings for leaks..... ☑ ☐

Upper coupler must be dropped to inspect the frame, crossmembers and area of shell and heads that may be covered by the upper coupler. Upper Coupler removed..... ☑ ☐
☑ Yes ☐ No

Remark:

Were weld repairs made to the cargo tank shell or heads ☐ Yes ☑ No
Affected Compartment Pressure Tested After Weld Repair ☐ Yes ☐ N/A
Nat. Bd. "R" Stamp No. N/A ASME "U" Stamp No. N/A

☑ Cargo tank meets the requirements of the DOT Specification identified in this report.
☐ Cargo tank fails to meet the requirements of the DOT specification identified in this report.
☑ Marking applied Month - Year - Letter 'P'.

Andy Willis
Registered Inspector

CT 13028
Registration Number

5-5-17
Date

Cargo Tank Owner Acceptance

5-15-17
Date

ALTOM Transport, Inc.

UPPER COUPLER INSPECTION FORM

CUSTOMER ALTOM Transport TRAILER # T217 DATE 5-12-17
SERIAL# 31-26000 DOT/MC# 407 MFG POLAR
YR OF MFG 2002 MATERIAL 5454 CAPACITY 9000 Gallons
NO. OF COMPARTMENTS 1 LINING TYPE N/A
INSULATED YES (NO) LINED YES (NO)
MAWP 25 DESIGN PRESSURE 45

1 Remove upper coupler (required)

Inspect Upper Coupler:	OK	REPAIRED
a. For bowing wear	✓	
b. Excessive road spray or sediment accumulation	✓	
c. Tightness of bolts	✓	
d. Cracks around plate perimeter, and beneath and round King Pin	✓	
e. Gauge King Pin with NO GO guage (replace at 3/32" wear)	✓	
2 Reinstall upper coupler with Grade 8 bolt.	✓	

Remarks: Upper Coupler was badly corroded- Replaced with a New Upper Coupler

I certify that the above information is true:

Andy Willis 5-12-17
Name of person performing inspections Print Date

Andy Willis 5-12-17
Name of person performing inspections Signature Date

Signature Owner or Rep

Disposition of cargo tank:

✓ Cargo tank returned to service
____ Cargo tank withdrawn from service

THIS FORM MEETS OR EXCEEDS ALL OF THE REQUIREMENTS OF U.S. D.O.T. REGULATIONS 49 CFR 180.407/180.417

ALTOM Transport, Inc.

4242 S Knox Ave
Chicago, IL 60632

Method 27 - DETERMINATION OF VAPOR TIGHTNESS OF GASOLINE DELIVERY TANK USING PRESSURE - VACUUM TEST

EPA 40FR PART 60 DOT 49CFR [180.407(b) and 180.417]

Cargo Tank Owner ALTom Transport Date 5-8-17
Owner's I.D. No. T217 MC/DOT No. 407 Year of Mfg. 2002
Manufacturer Name POLAR
Manufacturer Serial No. 1PMA3442631026000
Cargo Tank is jacketed _____ Yes ___—___ No Cargo Tanks is lined _____ Yes ___—___ No
Cargo Tank Transports Corrosive Materials _____ Yes ___—___ No

MAWP 25

TEST PROCEDURE

1. Open and close each dome cover.
2. Connect static electric ground connections to cargo tank. Attach vapor return hose(s) to vapor return line.
3. Attach the test cap to the end of the last vapor recovery hose. Test cap should have a pressure/vacuum inlet, manometer inlet pressure regulator or ball valve. A relief valve would insure safety.
4. Close all discharge valves and open all internal valves.
5. With regulator or ball valve in the closed position, attach pressure source to pressure/vacuum inlet.
6. Slowly open the pressure inlet valve (regulator or ball valve) and slowly pressurize the cargo tanks to 18" or water Column.
7. Close the shut off valve and allow the pressure in the tank to stabilized, adjusting the pressure if necessary to maintain pressure of 18" water column. When the pressure stabilizes, record the time and initial pressure.
8. At the end of 5 minutes, record the time and final pressure.
9. Repeat steps 7 through 9 until the change in pressure for two consecutive runs agrees with 18"+0/-1" criteria. Calculate the arithmetic average of the two results.
10. Compare the average measured change in pressure to the allowable pressure change +0/-1" water column. If the delivery tank does not satisfy the vapor tightness criterion, repair the source of leakage and repeat the pressure until the criterion is met.
11. Disconnect the pressure cource from the pressure vacuum inlet and slowly open the shut off valve to bring the tank to atmospheric pressure.
12. Connect the vacuum source to the pressure vacuum inlet.
13. Open the valve in the test cap. Slowly evacuate the tank to 6" water column.
14. Close the valve and allow the pressure in the tank to stabilize, adjusting the pressure if necessary to maintain +0/-1" vacuum pressure. When the pressure stabilizes, record the time and initial vacuum.
15. At the end of 5 minutes, record the time and final vacuum.
16. Repeat steps 14 through 16 until the change in vacuum for two consecutive runs agrees with criteria 6"+0/1". Calculate the arithmetic average of the two results.
17. Compare the average measured change in vacuum to the allowable vacuum change, +0/-1" water column. If the delivery tank does not satisfy the vapor tightness criterion specified in the regulation, repair the sources of leak and repeat the vacuum test until the criterion is met.
18. Disconnect the vacuum source from the pressure vacuum inlet and slowly open the valve to bring the tank to atmospheric pressure.

19. Connect the pressure source to the pressure vacuum inlet, pressurize the cargo tank to just above 18" of water column (W.C.) When the pressure reaches 18" W.C., close the vapor valves. Bleed the pressure from the vapor line to zero pressure. Close the valve on the vapor line test fitting and begin timing the test. At the end of 5 minutes, the allowed pressure built up in the vapor line is 5" W.C. If it exceeds 5", repair or replace vapor valve(s) and repeat test.

TEST RESULTS			TEST RESULTS		
Pressure Test No. 1		Time	Pressure Test No. 2		Time
Start Pressure	18 " W.C.	1:30	Start Pressure	18 " W.C.	1:45
Finish Pressure	18 " W.C.	1:35	Finish Pressure	18 " W.C.	1:50
Change	0 " W.C.		Change	0 " W.C.	

Measured Change From Test 1 to Test 2= 0 " W.C.
Calculate the Arithmetic Average of the Two Tests= 18 " W.C.

Vacuum Test No. 1		Time	Vacuum Test No. 2		Time
Start Pressure	- 6 " W.C.	2:00 pm	Start Pressure	- 6 " W.C.	2:10 pm
Finish Pressure	- 5.9 " W.C.	2:05 pm	Finish Pressure	- 6 " W.C.	2:15 pm
Change	- 1 " W.C.		Change	0 " W.C.	

Measured Change From Test 1 to Test 2= - 1 " W.C.
Calculate the Arithmetic Average of the Two Tests= 5.95 " W.C.

Measured increase in vapor vent test 0 " W.C.
Repairs Required for Compliance:

____ Yes (see area marked Description of Defects and Corrective Action) ✓ No

Were repairs made by welding to the cargo tank shell or heads ____ Yes ✓ No
Nat. Bd. "R" Stamp No. N/A ASME "U" Stamp No. N/A
Description of Defects and Corrective Action:

✓ Cargo tank meets the requirements of the DOT specificication identified in this report.

____ Cargo tank fails to meet the requirements of the DOT specification identified in this report.

✓ Marking applied Month - Year - K - EPA27

Facility Conduction Test ALTOM Transport Lufkin TX

Andy Willis	CT 13028	5-8-17
Registered Inspector	Registration Number	Date

	5-15-17
Cargo Tank Owner Acceptance	Date

FORM 0585A - METHOD 27 TESTING

T217

DEPARTMENT OF TRANSPORTATION

CERTIFICATE OF COMPLIANCE

ISSUED BY POLAR TANK TRAILER, INC.

CARGO TANK MOTOR VEHICLE MANUFACTURER REGISTRATION IDENTIFICATION NUMBER CT-0016

This certifies that the new Polar tank identified below was designed, constructed and tested in accordance with the Department of Transportation Motor Vehicle Cargo Tank Specifications No. D.O.T. 407 for cargo tank used for the transportation of classified liquids.

Vehicle Type: SEMI-TRAILER TANK Capacity: 9000 U.S. GALLONS Date Shipped: _____

Year Fabricated: 2002 Serial No. 31-26000

Manufactured by Polar Tank Trailer, Inc. RR 1, HOLDINGFORD MN 56340-9773

CERTIFICATION

☒ Cargo Tank Complies to Specifications No. ~~D.O.T. 407~~ as Shipped.
CERTIFICATION DATE: 08/02

☐ Cargo Tank Complies to Specifications No. _____
Except Those Items Listed.

_____
Authorized Signature

Robert E Wolchmann
Authorized Signature

POLAR TANK TRAILER, INC.

ITEMS NOT INSTALLED AT TIME OF SHIPMENT

above items installed: _____
Date

By: _____
Firm Authorized Signature

F021 12-1-93

CALIBRATION CHART BLE CONICAL SYMMETRICAL

** UL ALLONS ** CPT

COMPARTMENT LENGTH	96.500	END HEAD DIAMETER	73.606
CENTER DIAMETER	76.231	HEAD GALLONAGE	241.
INCREMENT	.250	MANHOLE OFFSET	18.000

	0 FT	1 FT	2 FT	3 FT	4 FT	5 FT	6 FT
.00	1.	199.	557.	981.	1412.	1791.	2046.
.25	2.	205.	566.	991.	1420.	1798.	2049.
.50	2.	212.	574.	1000.	1429.	1804.	2052.
.75	3.	218.	583.	1009.	1438.	1811.	2055.
1.00	5.	225.	591.	1018.	1446.	1818.	2058.
1.25	6.	231.	600.	1027.	1455.	1825.	2060.
1.50	8.	238.	608.	1036.	1463.	1831.	2063.
1.75	10.	244.	617.	1045.	1472.	1838.	2065.
2.00	12.	251.	625.	1054.	1480.	1844.	2067.
2.25	14.	258.	634.	1063.	1489.	1851.	2068.
2.50	17.	265.	642.	1073.	1497.	1857.	2070.
2.75	20.	272.	651.	1082.	1505.	1864.	2071.
3.00	23.	279.	660.	1091.	1514.	1870.	2072.
3.25	26.	286.	668.	1100.	1522.	1876.	2072.
3.50	29.	293.	677.	1109.	1530.	1882.	
3.75	32.	300.	686.	1118.	1538.	1888.	
4.00	36.	307.	695.	1127.	1547.	1894.	
4.25	40.	314.	703.	1136.	1555.	1900.	
4.50	43.	321.	712.	1145.	1563.	1906.	
4.75	47.	329.	721.	1154.	1571.	1912.	
5.00	51.	336.	730.	1163.	1579.	1918.	
5.25	55.	343.	738.	1172.	1587.	1924.	
5.50	59.	351.	747.	1181.	1595.	1929.	
5.75	64.	358.	756.	1190.	1603.	1935.	
6.00	68.	366.	765.	1199.	1611.	1940.	
6.25	73.	373.	774.	1208.	1619.	1946.	
6.50	77.	381.	783.	1217.	1627.	1951.	
6.75	82.	389.	792.	1226.	1635.	1956.	
7.00	87.	396.	801.	1235.	1643.	1962.	
7.25	92.	404.	810.	1244.	1651.	1967.	
7.50	97.	412.	819.	1253.	1658.	1972.	
7.75	102.	420.	828.	1262.	1666.	1977.	
8.00	107.	427.	837.	1271.	1674.	1982.	
8.25	112.	435.	846.	1280.	1681.	1986.	
8.50	117.	443.	855.	1289.	1689.	1991.	
8.75	123.	451.	864.	1298.	1697.	1996.	
9.00	128.	459.	873.	1307.	1704.	2000.	
9.25	134.	467.	882.	1316.	1712.	2005.	
9.50	139.	475.	891.	1324.	1719.	2009.	
9.75	145.	483.	900.	1333.	1726.	2013.	
10.00	151.	491.	909.	1342.	1734.	2017.	
10.25	156.	499.	918.	1351.	1741.	2021.	
10.50	162.	508.	927.	1360.	1748.	2025.	
10.75	168.	516.	936.	1368.	1755.	2029.	
11.00	174.	524.	945.	1377.	1763.	2033.	
11.25	180.	532.	954.	1386.	1770.	2036.	
11.50	186.	541.	963.	1394.	1777.	2040.	
11.75	193.	549.	972.	1403.	1784.	2043.	

TOTAL TANK VOLUME 2072. GALLONS

MEASUREMENT ADJUSTMENT FOR MANHOLE OFFSET 1.000

THIS CHART IS BASED ON THEORETICAL DIMENSIONS. AN ACTUAL WATER CALIBRATION MAY BE NECESSARY FOR GREATER ACCURACY.