

ASCENDANT ACCESS LTD

OPERATING MANUAL

A17-12 TRUCK MOUNT

SERIAL No A17-12

DATE OF
MANUFACTURE:-

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SECTION1 Specification and description.

TECHNICAL SPECIFICATION

17-12 TRUCK MOUNT

GENERAL

This is our multi-purpose 17m maximum working height access platform mounted onto a free issue vehicle of 3500kg GVW and approximately 3.8 m wheelbase.

The telescopic boom arrangement gives excellent controllability when manoeuvring.

The design concept includes for oversized structural elements coupled to sensitive, direct hydraulic, controls making the machine feel safer and simpler than its contemporaries when being operated whilst requiring the minimum of maintenance.

The unit is generally as shown on our enclosed drawings but specifically as described below:

PERFORMANCE

SWL	230kg
Max working height	17m
Max platform height	15m
Max. working outreach	12.2m
Cage dimensions	0.73m x 1.3m x 1.1m high
Cage rotation	120 deg.
Closed height	3.1m
Closed width	2.1m
Travelling length	7.5m
Weight of unit	1500kg excluding vehicle (approx.)

CAGE

Formed from structural quality 25mm dia. aluminium tubes the top rail is set back from the front of the cage providing finger protection and also presenting a flush face for the cage easing the problems associated with carrying large, flat objects e.g. overhead signs.

Having an uninterrupted plan area of 0.73m x 1.3m the assembly is suitable for 2 men and tools working.

The cage features a 150mm high kickboard and a mesh floor. Powered 120-deg. rotation will be incorporated.

BOOMS

A three stage telescopic boom forms the general concept of this particular unit. The boom is driven in and out via a single telescope ram and system of wire ropes. Cage levelling is effected via a closed loop master/slave hydraulic cylinder arrangement complete with a manual trimming valve. The boom sections are formed from prefabricated folded sections seam welded together to produce an 8 sided box.

TURRET

Two substantial prefabricated box sections form the upright portion of this assembly giving the platform substantial lateral rigidity. An oversized pin sits between the booms and the turret. A large slewing ring, driven by a hydraulic worm gearbox and pinion connects this unit to the chassis.

CHASSIS

Formed into a box from deep folded channels, this unit features high torsional resistance combined with lightweight. Powered horizontal and vertical jacks are incorporated along with a none-slip deck. An "A" frame mounted behind the cage provides a stowing point for the booms during transport.

CONTROLS

The machine is fitted with ½ H-type jacks that are controlled from the lower floor position. The jacks are fail safe in principle preventing the platform from operating unless all 4 are in firm contact with the supporting surface.

Basket controls of the direct hydraulic proportional type, duplicated at the base, give very smooth control of the platform throughout its operating range. Engine start/stop is provided at each operating location.

EMERGENCY CONTROLS

Manual rotation and main boom down can be effected at the base and a manually operated hand pump is included to return the boom to the transport position.

JACKING

Near sided – allows maximum working load at full outreach through 170 deg rotation on fully jacked side. Jack spread 2.8m

INTERLOCKS

- Booms cannot be raised until jacks are correctly deployed.
- Jacks cannot be operated unless booms are in transport position.
- PTO cannot be engaged unless handbrake is on.
- If engine is running starter cannot be engaged from the platform.
- A warning and system shut-down will be provided should the cage be overloaded.

In addition to the above warning lights are provided indicating:

- Booms not stowed.
- Jacks not stowed.
- “Light” leg.

HYDRAULICS

The hydraulic system is of failsafe design throughout with direct mounted load control valves fitted to all cylinders as a precaution against hose failure.

The hydraulic power take off on the vehicle draws from a large capacity hydraulic oil tank.

Filters are provided for suction, and return lines. Pressure limiting valves are provided where appropriate.

SAFETY

The machine is designed in accordance with the requirements of the European machinery directive and will be provided with a “CE” mark.

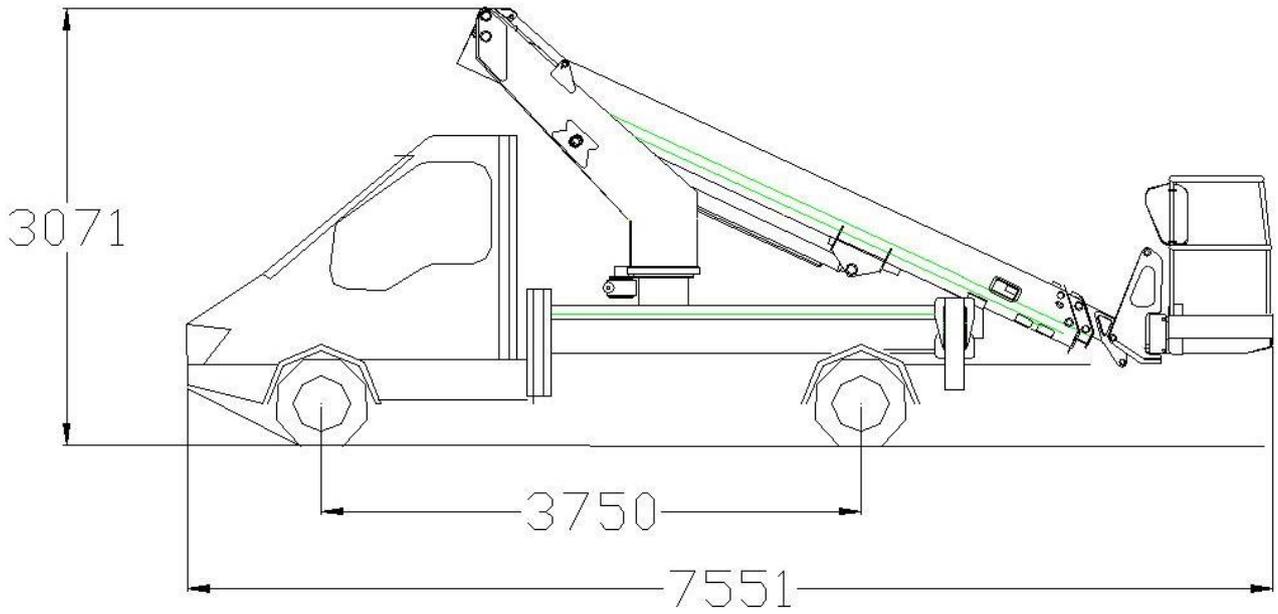
Testing of the unit will include a 125% overload test with the machine set up in its most unfavourable condition and a witness certificate provided.

STEELWORK PROTECTION

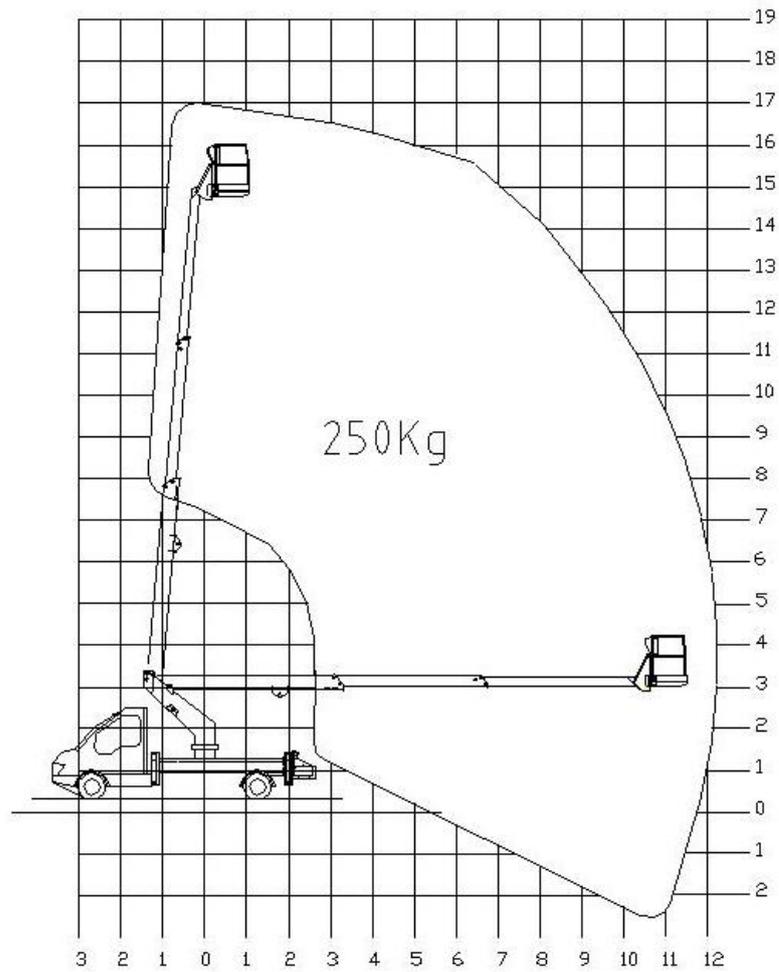
All steelwork will be shot blasted prior to painting primer/undercoat and gloss finish. Typical paint thickness 90 to 110 microns.

PINS, BUSHES AND FITTINGS

All pins are stainless steel running in bushes that can be greased. All fittings, nuts and bolts are plated against corrosion.



17-12 GENERAL ASSEMBLY



17-12 WORKING ENVELOPE

SECTION2

Safety section

THIS SECTION OF THE MANUAL CONTAINS GENERAL SAFETY INFORMATION FOR ALL PERSONS WHO HAVE ACCESS TO THE MACHINE (MACHINE OPERATIVES, MAINTENANCE PERSONNEL, ETC).

TO ALL PERSONNEL:

Before the machine is unloaded from the transportation and unpacked, and before it is released into service, ASCENDANT ACCESS LTD recommend that this safety section should be read and fully understood by all individuals involved.

GENERAL SAFETY COMMENTS

NOISE

During normal operation the maximum sound level will not exceed 85 Dba.

THE OPERATOR

- *Must be medically fit and have good eyesight and hearing. Any medical condition that may effect the safe use of this access platform must be reported e.g. epilepsy heart disease etc.*
- *Must have a good head for heights.*
- *Must have been trained in the safe use of access platforms, hold a current certificate and be fully conversant with the content of this manual.*
- *Must be very aware of the safety requirements concerning the persons working with them and the persons in the general vicinity of the access platform.*
- *Must not use this piece of equipment for any purpose other than that for which it was intended*
- *Must carry out the necessary pre-start checks as described in the operating section of this manual and must not operate the platform should it not be in first class condition.*

WARNINGS

DO NOT operate this platform:

- *On surfaces that are sloping, not hard standing or slippery without adequately supporting the platform. The 17-12 has been designed to work on surfaces with a minimum bearing strength of 50N/cm²*
- *With items likely to increase the wind loading on the platform above acceptable levels e.g. notice boards etc.*
- *With any equipment in the cage likely to increase the working height or outreach e.g. ladders.*
- *For any special purpose that may produce special loads or forces. Any such application must be discussed with the manufacturer and their approval given.*
- *Near or close to live electrical conductors. The minimum safe distance for the 17-12 is 26.7m measured from the centre of rotation of the platform to the power lines. It is the operator's responsibility to ensure this safe distance is maintained.*
- *Should it be necessary to work closer to the power lines then the operator must ensure that the power has been switched off before attempting to work, a written permit to work must be obtained from owners of the power cables or the responsible Persons.*
- *Unless there is a current certificate of safe use of the platform issued by a competent person.*
- *Into the path of oncoming traffic when working on a public highway.*

MAXIMUM WIND SPEED

BEAUFORT WIND SPEED SCALE

The Beaufort wind speed scale is accepted internationally and is used in communicating weather conditions. It consists of numbers 1 to 17 each representing a certain velocity of wind at 10m above the ground in open conditions.

DESCRIPTION OF WIND	SPECIFICATION FOR USE ON LAND	SPEED (m/s)
0 CALM	Calm, smoke rises vertically	0-0.5
1 LIGHT AIR	Direction of wind indicated by smoke but not by weather vanes	0.6-1.5
2 LIGHT BREEZE	Wind felt on face, leaves rustle, ordinary vanes moved by wind.	1.6-3.0
3 GENTLE BREEZE	Leaves and small twigs in constant motion, wind extends light flag.	3.5-5.0
4 MODERATE BREEZE	Raises dust and loose paper, small branches are moved.	6.0-8.0
5 FRESH BREEZE	Small trees in leaf begin to sway, wavelets form on inland waterways.	9.0-10.0
6 STRONG BREEZE	Large branches in motion, umbrellas used with difficulty.	11.0-13.0
7 NEAR GALE	Whole trees in motion, inconvenience felt when walking into wind.	14.0-17.0
8 GALE	Breaks twigs off trees, generally impedes progress.	18.0-21.0
9 STRONG GALE	Slight structural damage occurs. (chimney pots and slates removed).	22.0-24.0

Approximate corrections for wind speeds at other heights: 2m subtract 30%, 3m subtract 20%, 6m subtract 10% 15m add 10% and 30m add 30%

The maximum wind speed for safe operation of 17-12 is 12.5m/s (Beaufort scale 6)

1. SAFETY

Please read Section 2(SAFETY) of this manual.

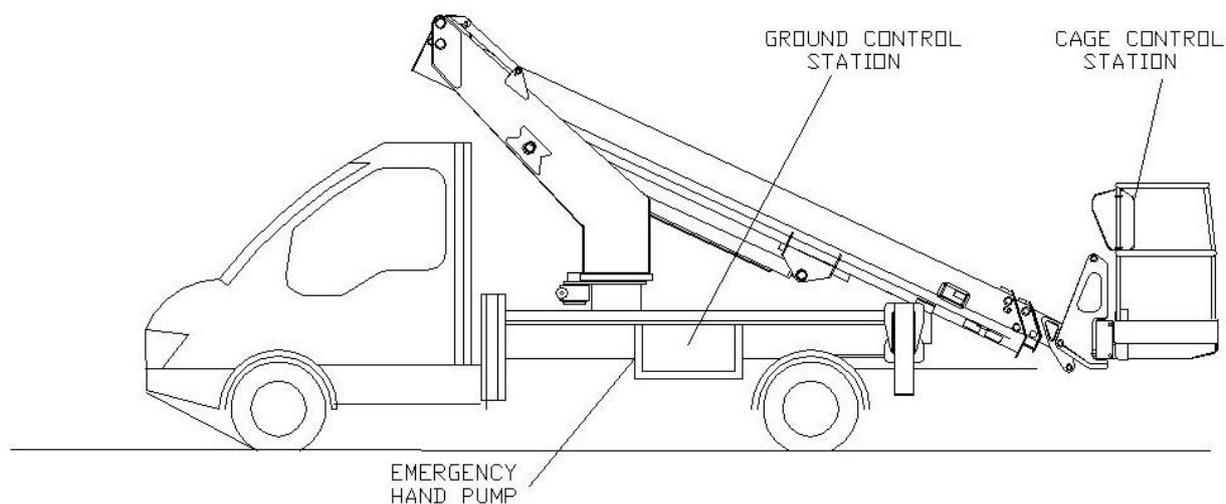
2 PRE-START CHECKS

The following pre-start checks must be carried out before operating the platform.

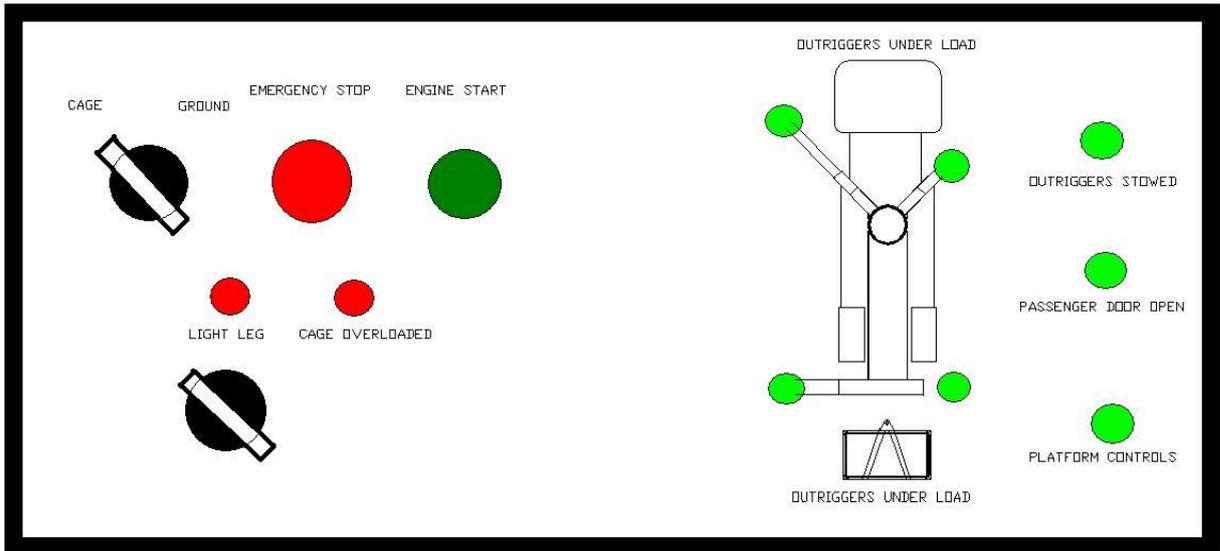
- Hydraulic fluid
The oil level in the tank must be full when the platform is in the transport position.
- Cut out switches
All cut-out and safety switches must be working correctly.
- Emergency stops
Check that the emergency stops are operating correctly and that they are all in the run condition.
- Damaged/loose fittings
Inspect the machine to ensure there are no signs of damage or loose hoses and fittings.
- Vehicle
Check that there is enough fuel in the vehicle for a full shifts work.

Do not attempt to set up the machine on steep slopes, ramps or soft ground.

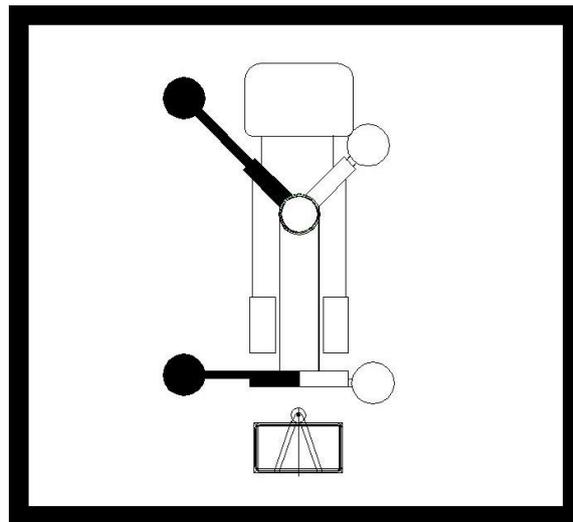
- Park the vehicle in an appropriate location, remove from gear, apply the handbrake and engage the PTO.
- Ensure that the working area of the platform is coned off.
- Ensure that the platform is switched on (located on the vehicle dashboard).
- Leave the vehicle cab and go to the ground control station.



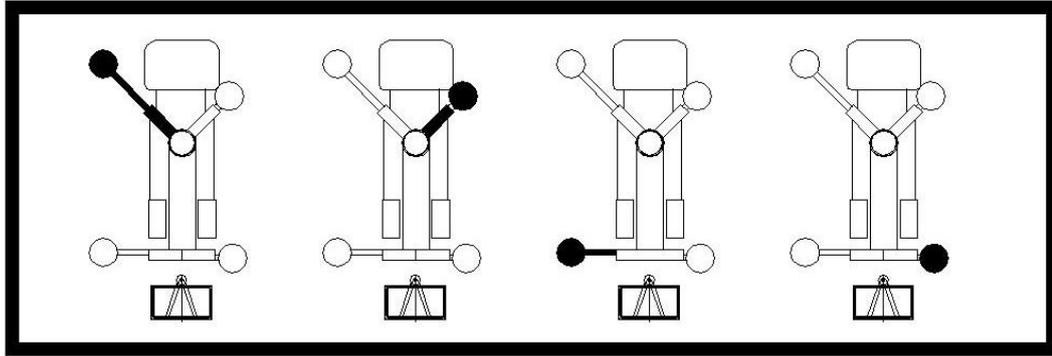
CONTROL STATIONS



GROUND CONTROL BOX

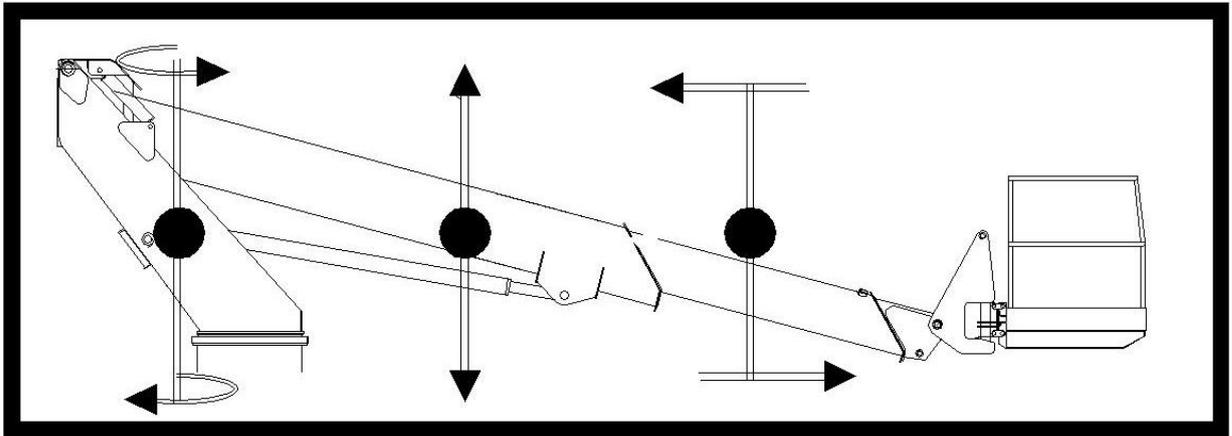
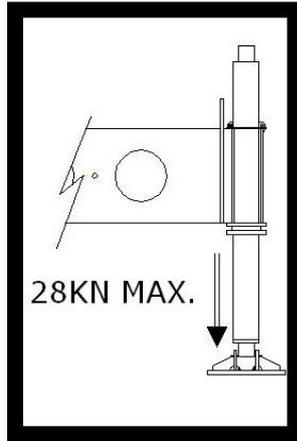


OUTRIGGER BEAMS CONTROL



OUTRIGGER JACKS CONTROL

- Deploy the outrigger beams
- (Note; the outrigger jacks **must be** in the stowed position before carrying out this operation.)
- (Note; the passenger door **must be closed** before carrying out this operation.)
- Operate the outrigger jack controls until all four feet are just touching the ground, then, simultaneously operate the front (cab end) jacks and then the rear until all jacks are in firm contact with the supporting surface, the chassis is level (according to the level gauge) and the wheels are approximately 5-10cm off the ground. (Four green “Outriggers under load” lights should show on the outrigger control box). A green “Platform controls” should also be lit.
- Check that the feet are in firm contact with the ground
- Remember the maximum load that will be imposed by the platform foot and **be sure** the surface you have set it up on can support it.



GROUND CONTROLS

- Telescope out the boom until it is possible to gain entry to the cage.
- The platform may now be operated from either the turret or the cage.

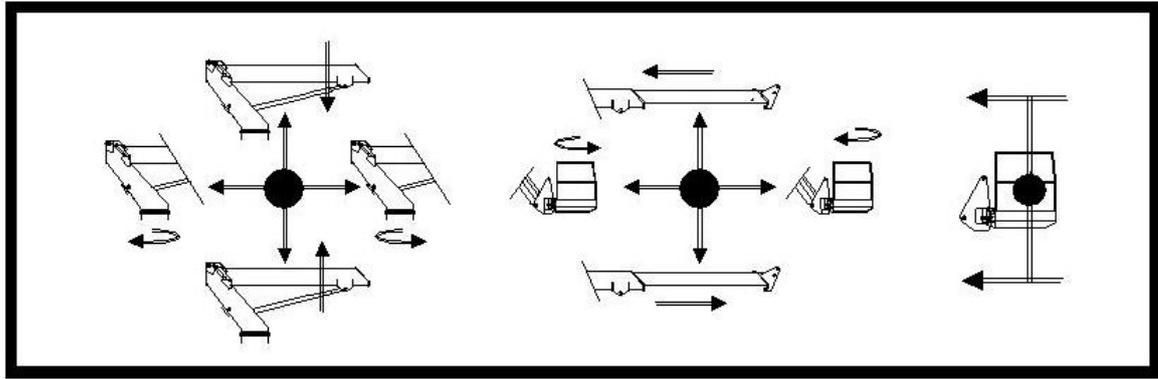
OPERATING THE PLATFORM.

ASCENDANT ACCESS LTD recommends the use of a safety harness. Harness anchor points are located in the cage.



This product features limited slewing ie it is possible to slew approx. **20 deg to the off-side and up to the rear of the cab on the near-side.**

- Select either ground or cage with the key switch situated on the ground control box.



MAIN BOOM
SLEWING

TELE BOOM
CAGE ROTATE

CAGE
TRIM

CAGE CONTROLS

The booms can now be operated freely by using the appropriate control lever.

WARNING Before raising. Ensure that there are no overhead obstructions.

Should the cage be overloaded a warning light will show and the platform controls will be disabled the platform cannot not be operated until the excess payload is removed.

- Vehicle engine remote stop and start is provided at all operating stations.
- The extending structure will also automatically stop if an outrigger jack becomes light and begins to leave the supporting surface. An override button is also provided should this condition occur and the platform *must be returned to the transport position and the outriggers reset.*
- Should the cage become out of level whilst operating it may be reset by operating the cage trim lever.

2. EMERGENCY CONTROLS

- Red emergency stop buttons are located on the platform in the cage and at the base to stop the platform in an emergency.
- An emergency hand pump is provided (mounted on the side of the ground control station) should all power fail. Simultaneous operation of this along with actuating the appropriate lever in the cage will bring the platform down.

3. STOWING.

- Telescope the boom fully in and line it up with the docking pocket. Lower the main fully boom. Telescope out until it is possible to leave the cage. Ensure the cage rotate is in its central position. Leave the cage. Return the telescope to the transport position.
- Fully raise the outrigger jacks. (note this will not be possible if the booms are not stowed).
WARNING do not attempt to retract the outrigger beams until the jacks are fully raised
- Fully retract the outrigger beams. The green “outrigger stowed” should show on the outrigger control box.
- Check that the “booms not stowed” and “outriggers not stowed” lights are out on the vehicle dash.
- Disengage the PTO
- Switch off the platform.
- The vehicle is ready to drive away.

SECTION4 Maintenance Schedule

4.1 General

4.2 Maintenance and lubrication schedule

4.3 Lubrication chart

4.4 Six monthly "LOLER" Check list

4.1 GENERAL

Before the PLATFORM is accessed for maintenance purposes, the operator should be informed of the intended action and suitable warning signs erected.

General tidiness should be considered a priority. Fluid spillage and debris should be cleaned up immediately to minimise the risk of slip, trip and / or fall. If the Platform is kept clean, it will make it easier to detect and rectify any faults that may occur.

For the long-term, efficient operation of this Platform to be a practical possibility, it is suggested that a planned maintenance scheme is adopted.

4.2 MAINTENANCE AND LUBRICATION SCHEDULE

The following page shows the recommended service schedule for the Ascendant 17-12 work platform. Explanation notes, where appropriate (marked thus*) follow the schedule. These notes must be read and understood.

Ascendant Access recommends that this inspection/ service work be carried out by competent personnel.

GENERAL MAINTENANCE

Daily Checks

- ∞ Hydraulic fluid. Top up the fluid level with the machine in the transport condition and on level ground. Use SHF 22 (ISO) or equivalent.
- ∞ Safety checks on platform control circuit (see below)

Weekly checks

- ∞ Apply grease to slew bearing and all grease nipples.
- ∞ Check boom pins/tie rods etc for damage.
- ∞ Check limit switch integrity.
- ∞ Check hoses and fittings for leaks/damage.
- ∞ Check cage overload system

6-monthly

A full technical inspection is to be carried out in accordance with the requirements of LOLER by a competent person and a certificate of safe use obtained.

A17-12 SERVICE SCHEDULE

Description	Servicing Interval			
	Daily	weekly	monthly	Six monthly
Sub-frame to vehicle fastenings*				x
Outriggers*				x
Slew drive*				x
Pins. Bushes and fastenings*				x
Leveling system*				x
Cage and attachments*	x	x	x	x
Instructions, warning labels	x	x	x	x
Oil level	x	x	x	x
Control boxes*			x	x
Slew Stops		x	x	x
Grease all points			x	x
Warning lights	x	x	x	x
Engine stop start	x	x	x	x
Emergency stops	x	x	x	x
Booms/ wear pads etc*				x
Limit switches			x	x
All interlocking functions*	x	x	x	x
Hydraulic oil level	x	x	x	x
Change all filters	initial after three months then every year			
Change hydraulic oil	every year			
Slew gearbox oil	initial after one year then every fifth year			
Hyd hoses and fittings			x	x
Electric cables			x	x

∞ **Sub-frame to vehicle mounting;**

Check integrity of all connections for tightness, corrosion, cracking etc

∞ **Outriggers;**

Check:

- Hose / cable runs for leaks and chaffing.
- Wear pad thickness and fixing.
- When deployed check for cracking etc at joints.
- Pins
- Proximity switches and limit switches for functionality

∞ **Slew drive;**

Check:

- General condition of driving and driven gears
- Gearbox oil level
- Slew holding down bolts have not stretched (if they have then all bolts must be replaced immediately by units provided by Ascendant Access).
- Re-torque holding down bolts. **Torque setting 100Nm.**
- Check wear on slew bearing by gently lowering the cage onto the ground with the boom telescoped out a little. Keep lowering gently whilst watching at the bearing for any “rocking”. Total movement at the front of the bearing is allowed to be 2mm or less. Any more than this then the bearing should be refurbished or replaced.

∞ **Pins, bushes and fastenings.**

- Check;
- All pins for freedom of movement, corrosion, lubrication, fastening etc.
 - All bushes for signs of wear or damage.

∞ **Leveling system.**

Check:

- The cage remains horizontal automatically whilst raising and lowering the main boom.
- Check trimming controls move the cage smoothly and slowly.
- With a load in the cage switch off the platform and operate the trimming valves. The cage should remain stationary.
- The cylinders, hoses for signs of corrosion, wear etc.

∞ **Cage and attachments**

Check;

- General condition of cage rails, access bar, floor and attachment to boom, especially the condition of all welded joints.
- Cage overload device.** With 270kg uniformly distributed in the cage the alarm should sound. Removing 20 Kg should make the alarm go off. Adjustment of the cage switch may be carried out (see cage switch ref 3.2.4).

∞ **Booms, wear pads etc.**

Check;

- General condition of all welded seams.
- Any signs of damage or distortion.
- With the booms telescoped out fully, horizontally, check for signs of distortion particularly at the boom junctions.
- Wear pads for excessive wear.
- The adjustable wear pads should be adjusted so that the gap between them and the highest point on the boom surface is not less than 2mm (it will be necessary to telescope out the boom until the highest point is located).
- Remove the rear cover and check the condition of all internal pins rope rollers etc. Check the condition of the cat-track and guides. Check that there is sufficient grease on the internal surfaces.

∞ **Wire rope inspection and adjustment.**

Generally the wire ropes require little maintenance during their lifetime but must be inspected every 500 hours or 6 months.

Ascendant Access recommends that the wire ropes be replaced after 10000 hours or 10years.

Inspection of the ropes and terminals can be carried out as follows.

Remove the boom rear cover

Telescope the boom out a little until the rope terminals become completely visible. Check for any signs of wear or distress in this connection.

Move to the front of the fixed boom and inspect the corresponding terminals on the retract assemblies through the apertures on the underside of the boom near the boom prop.

The opposite end of each rope is attached to the inner boom at the rear and should be visible with a torch and the booms telescoped out approximately 200mm

Telescope the boom out and with a torch at the rear of the boom assembly inspect the ropes for any signs of fretting or unwinding etc.

Tensioning of the ropes should not normally be required but great care must be taken to ensure that the ropes have equal tension applied to them. This can be affected by setting the spring stacks to exactly the same loaded length.

When tensioning the assemblies ensure that equal amounts of slack are taken up both the extend and retract assemblies. This will ensure the inner boom remains in the same relative position.

∞ **All interlocking functions.**

All limit switches installations must be checked for integrity. The following functional checks should then be carried out

SAFTEY CHECKS ON PLATFORM CONTROL CIRCUIT

With the vehicle parked, engine running, platform switched on and the platform in transport position check.

- ∞ Booms not stowed light is not on.
- ∞ Outriggers not stowed light is not on.

Engage the PTO.

Leave the cab and move to the boom controls (turret and cage).

- ∞ It should not be possible to operate the booms using the appropriate controls.

Move to the outrigger controls.

- ∞ The outriggers stowed light should be on.
- ∞ Deploy the outrigger beams and check that it is still not possible to operate the booms from either control station.

Jack up the machine as described in the operating instructions.

- ∞ The "Platform controls" light is lit at each control station.
- ∞ Each outrigger under load light is on. (ground control box).
- ∞ Check that it is possible to operate the booms from both locations.

Depress the emergency stop.

- ∞ It should not be possible to operate anything.
- ∞ The vehicle engine should stop

Release the stop.

With the booms lifted out of the prop a little (5-10 cm)

- ∞ Check that it is not possible to operate either the outrigger jacks or the outrigger beams.
- ∞ Check that the booms not stowed light is on in the vehicle cab.

At low level slew the booms in the direction of the offside (drivers side) The boom should stop rotating when it is approximately over the off-side rear leg. It should be possible to slew in the opposite direction. Now slew the boom in the direction of the cab. The boom should stop rotating when it is adjacent to the cab. It should be possible to slew in the opposite direction

If either of the above slew stops not work

DO NOT USE THE PLATFORM UNTIL THE FAULT HAS BEEN RECTIFIED.

Jack-up the machine so that the outriggers are not in firm contact with the supporting surface but all “outriggers under load” lights are on.

- ∞ From both the ground controls and the cage controls telescope the booms out over the side until a “light leg” light is shown
- ∞ All functions should stop but restarted by simultaneously engaging the over-ride key and operating the controls.

4.4 Six Monthly Thorough Examination Inspection Schedule Vehicle Mounted

Owner _____ Location _____ Date _____

Machine type _____ Serial No _____

Hour clock _____

ITEM	CHECK	S	U/S
Chassis			
Main frame/mountings	security / cracks / corrosion		
Outriggers	security / cracks / distortion		
	no hydraulic leaks		
	wear pad clearances		
	creep within specified limits		
PTO / engine / pump	mounting security and condition		
	no oil or fuel leaks		
	electrical cables and battery		
Cab/outrigger controls	mounting secure		
	all controls function correctly		
	all decals present & legible		
	warning lights operational		
	no hydraulic leaks		
	electrical cable installation		
Access to truck deck	ladders and grab handles secure & undamaged		
	decking plates security & condition		
Platform			
Boom Sections	no cracks / corrosion / damage		
Turntable	“ “ “		
Cage	“ “ “		
	attachment points		
	Access bar self closes		
	safety harness anchor points - security		
Pins / bushes/bearing	all locking devices secure		
	excessive wear		
	evidence of correct lubrication		
Boom tele ropes	condition / adjustment / lubrication		
Rope sheaves	“ “ “		
Wear pads	“ “ “		
Boom & tele cylinder's	Security / condition / no leaks / creep within limits		
Slew ring	all mounting bolts present and secure		
	bearing wear within limits		
	evidence of correct lubrication		
Slew motor	mounting / backlash / gear teeth condition		

**Six Monthly Thorough Examination Inspection Schedule cont'd
Vehicle mount**

ITEM	CHECK	S	U/S
Control Centres			
Cage and ground	enclosure condition & mountings secure		
	safety & operational decals presence & legible		
	warning lights operational		
	all controls function correctly		
Emergency Stop's	operate correctly & buttons latch in		
Cage leveling	automatic leveling system works correctly		
	manual system works correctly		
Emergency pump	operates all functions		
Safety Interlocks	check operation of all systems		
	outriggers stowed – legs up & beams in / out		
	individual outrigger ground pressure		
	boom raised interlock with outriggers operates		
	cage overload system works		
Jacking options	rotation stop function		
Hydraulic hoses	visual external inspection - no leaks or damage		
Hydraulic oil level	correct and condition of filler cap		
Electrical cables	visual external inspection		
Covers	condition and security		
Flashing lights	Presence and operate –		

NOTES:

All visual examinations carried out by opening the appropriate inspection covers.

Slew ring bolt security - visual check only.

(torque settings to be checked in accordance with the service manual)

S = serviceable

U/S = requires attention.

N/A = not applicable

SECTION5 Trouble shooting

It is recommended that faultfinding be only carried out by technically competent personnel. Whilst every effort has been made to ensure that these procedures are comprehensive they will not cover every eventuality

- Vehicle engine wont start
 - Check all emergency stops are in the platform run condition.
 - Refer to vehicle manufacturer trouble shooting guide.

- Outrigger beams will not operate
 - Check platform is switched on (located in vehicle cab).
 - Check PTO is engaged.
 - Check that booms are correctly stowed and that the limit switch has not malfunctioned (located behind cover on boom prop).
 - Check hydraulic oil level.

- Outrigger jacks will not operate
 - Check boom docking.
 - Check oil level in hydraulic tank.

- Booms will not operate
 - Check correct operating station has been selected. (switch located at turret control box).
 - “Platform controls” light on turret and cage control boxes should be lit.
 - Check that outriggers are correctly deployed (i.e. in firm contact with the ground and all indicator lights are correctly lit, (see operating guide)).
 - Check light leg indicator is not lit.
 - Check outrigger limit switches are operating correctly.

