MATILSA

COURSE OF SAFETY AND HANDLING OF ACCESS PLATFORMS

GIVEN BY MATILSA

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CONCEPTS OF WORKING HEALTH

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A. CONCEPTS OF WORKING HEALTH

1. DEFINITION OF WORKING HEALTH

According to W.H.O. (World Health Organization), Working Health is the field that ensures that the worker who works for other people maintains the correct levels of physical, mental and social health in his or her work place.

Physical or organic health that a person has as a result of the correct function of his or his/her cells, organs and biological systems.

Mental health, which assumes an intellectual and emotional balance.

The social health or welfare of the person in his or her social relations.

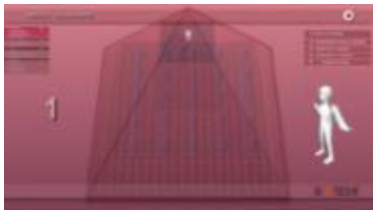
2. DEFINITION OF INCIDENT AND BREAKDOWN

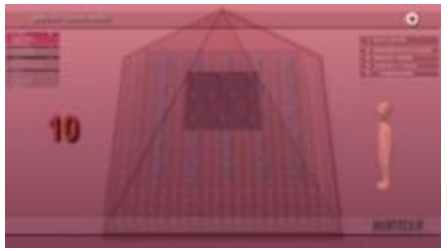
An incident is defined as every single abnormal event, not desired or wished for, that comes about in a sudden and unexpected manner breaking the normal activity of work. When we talk about incident this always refers to people, although incidents do not get to provoke harm to health. Breakdown is defined as every single incident that affects the good function of a machine or work tool. When we talk about breakdowns we are always referring to machines.

A. … CONCEPTS OF WORKING HEALTH (cont.)

3. DEFINITION OF ACCIDENT AND CAUSES

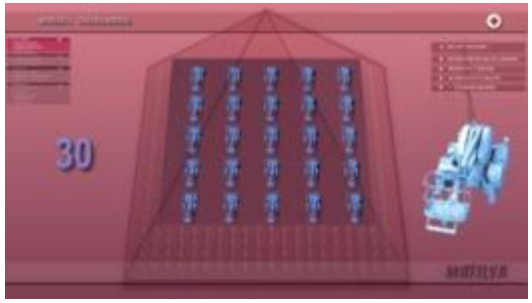
Accident is defined as bodily injury in which the worker suffers or as a result of the work that he or she carries out for somebody else If the accident is an event with physical damage, the incident, on the contrary, is an event that has not caused harm to the person, but could have done so if the conditions had been different.

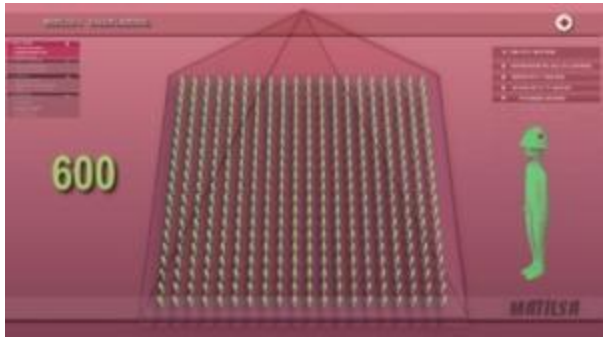




3.1. BIRD´S PYRAMID

Bird, who was an expert statistician, discovered that per every 600 occasions in which incidents without injury happen and that are not reported to the company, 30 incidents or breakdowns are produced with material damages, 10 with accidents that cause minor injuries and one accident that causes serious injury.

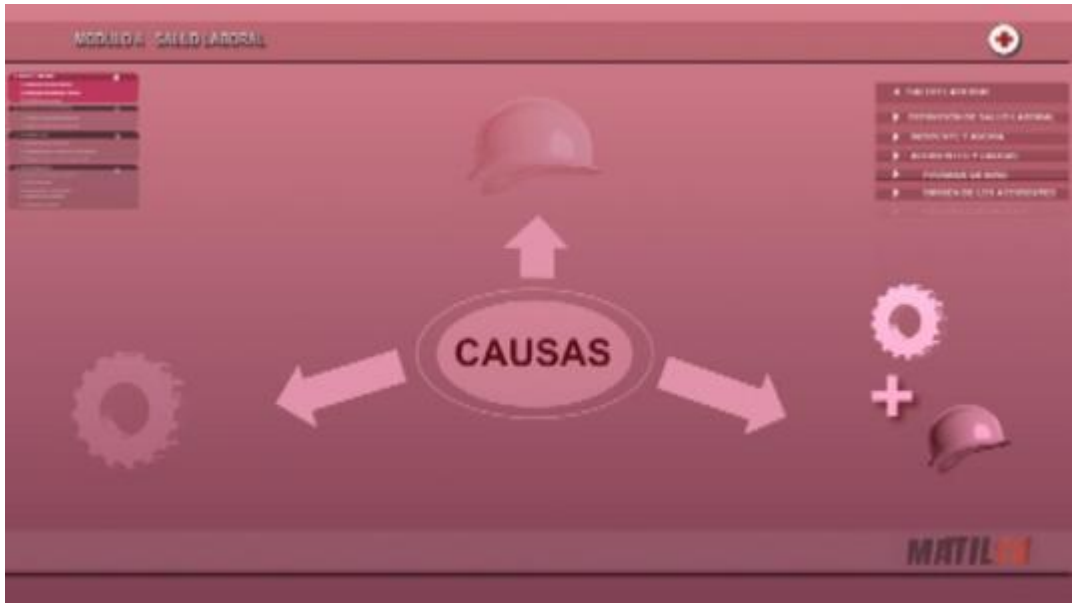




A. … CONCEPTS OF WORKING HEALTH (cont.)

3.2. THE ORIGIN OF THE ACCIDENTS

Accidents can be classified according to their causes thus:
a. Technical causes: these are failures of machines and equipments, together with events caused by operations which have been badly designed from the aspect of safety, etc. These causes are relatively easy to know and to control. The location of the failure is detected, and a technical measure is applied to correct or reduce it.
b. Human causes: these are those acts in which the workers, due to their lack of information, training, attention or interest, produce directly damaging effects.
c. Human and technical causes: these are simply a combination of the two aforementioned causes. That is to say, the existence of a technical failure plus an act of lack of attention or the technical failure linked to the lack of knowledge of the worker.



A. … CONCEPTS OF WORKING HEALTH (cont.)

3.3. RISK FACTORS

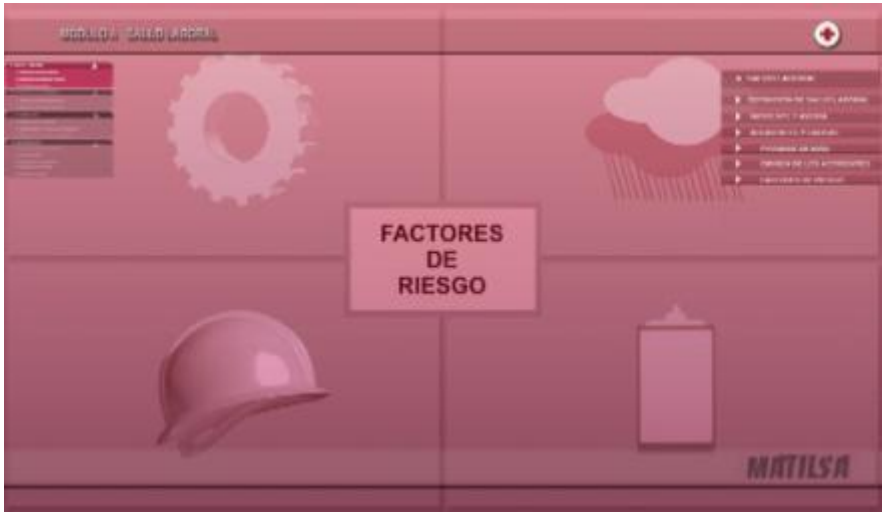
Some risk factors also exist that can cause a greater number of accidents. These factors can be classified according to their origin:

*__Material factors.__ Such as tools in bad condition, breakdowns etc..

* __Environmental factors.__ Caused by the conditions of the working surroundings: weather conditions, ground conditions etc..

* __Human factors.__ Caused by human error due to lack of information, bad working health etc …

* __Organizational factors:__ caused by organizational mistakes: that is to say by work being badly organized, personnel badly located, plans badly made or bad assignment of delivery times.



TYPES OF ACCESS PLATFORMS

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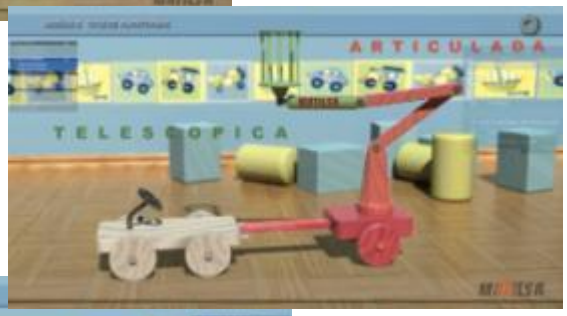
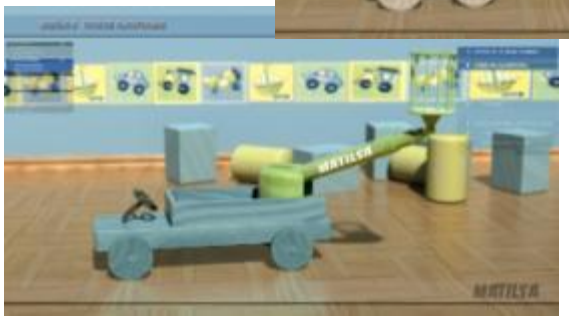
- 1. According to rising.
- 2. According to transfer.

B. TYPES OF ACCESS PLATFORMS

The access platforms can be classified by	
Their system of elevating:	Their system of transportation
Articulated type	Truck-mounted
Telescopic type	Self-propelled
And scissors type	Or trailer-mounted





B. ... TYPES OF ACCESS PLATFORMS (cont.)

B. 1 FEATURES OF THE DIFFERENT ELEVATING SYSTEMS

ARTICULATED PLATFORMS

Articulated come from the concept "articulation". An articulation is composed of two arms. In addition there are a large number of machines that have an arm within another one; these are known as telescopic systems; these higher sideways transferring to be carried out. These machines are called

TELESCOPIC ARTICULATED.

WORKING FEATURES

This kind of elevating allows for sideways transportation and is thus able to avoid obstacles that can be underneath the working area. In these, the tower group can turn left or right fully or partially 360 degrees.

MAIN TASKS THAT ARE PERFORMED

This system of elevating is used by:
* The assemblers of structures, since, specially at the start of the work there may be many trenches and obstacles.
* Maintenance on unstable ground
* Maintenance of gas/petrol stations, public and private lighting, pruning of plants in parks and gardens.
* Concrete works, projections, painting, cleaning…since generally speaking, the machine avoids damage from falling objects or materials, as happens with the scissor-type ones.
* Refurbishment of housing and industrial sites

To sum up, all those areas where access to the work site would not be possible due to obstacles which may be situated just bellow the point at which access is desired

B. … TYPES OF ACCESS PLATFORMS (cont.)

B. 1 … FEATURES OF THE DIFFERENT ELEVATING SYSTEMS (cont.)

TELESCOPIC PLATFORMS

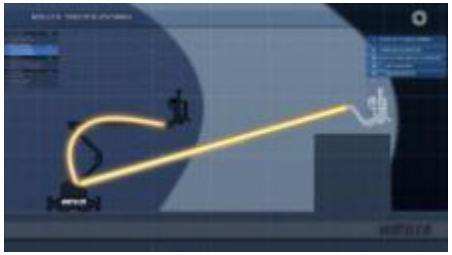
The elevating system of these platforms consists of a number of arms that are driven hydraulically by pistons, some housed within others. These platforms also normally carry a small arm called ” jib” which make them more versatile in the working area.

WORKING FEATURES

This type of machine is the tallest of the family of the self-propelled platforms. They allow sideways transportation at a greater height than the articulated ones, as they are able to avoid obstacles that are underneath the working area. Another advantage to this type of platform is that it allows the basket to be placed a few meters bellow the base of the machine. A clear example of this is the access to the hull of a boat anchored in a port; here there are areas that are underneath the level of the base of the platform. As is the case with the articulated ones, the tower unit may twist left or right fully or partially 360º. This allow us to work longitudinally without the need of varying the direction of the wheels. The weight of these machines is considerable, since they have to hold the lever that is exerted as the arms exit, apart from allowing to move with the basket up in full height.

MAIN WORKS THAT ARE PERFORMED

This system of elevating is used by:
*Structure assemblers, since as we mentioned before, the ground at he beginning of such works may be littered with trenches and obstacles.
In cases where these platforms are also aerials, it is advisable to use articulated platforms due to the combination of the arms.
*Refurbishment of housing or putting the final touches to new buildings.
* Maintenance of gas/petrol stations, lighting, parks and gardens.
* Maintenance of the hulls of boats at anchor.
* The telescopic type is also used frequently for works on public roads and streets due to the fact that when in working position and elevating, no arm comes out that may be hit by another moving vehicle.



B. … TYPES OF ACCESS PLATFORMS (cont.)

B. 1 …FEATURES OF THE DIFFERENT ELEVATING SYSTEMS (cont.)

SCISSORS TYPE PLATFORMS

The elevating system on these platforms consists of a mechanical unit activated by hydraulic cylinders, which allow basket of a surface of more or less 6 square meters to be elevated with a heavier load than the afore mentioned platforms. The height and width will depend on the type of work that they have to do. As a general rule the platforms for inner works and for the more common type of maintenance are the narrow machines of up to a minimum of 0.80 meters and a height of up to 15 meters. The heights of these machines may range from 4.5 meters up to 30 meters in height. These platforms go up vertically. Some models incorporate a supplementary platform that slides out of the front in order to avoid small obstacles of more or less 1.50 meters.

In a few cases, some manufacturers have incorporated a sideways transporting device of 0.8 meters.

WORKING FEATURES

This type of elevating allows material and more than two people to access the working area. It also allows us to carry out the transporting while the basket is up, although this will depend on the features of each individual machine
These platforms may also have hydraulic stabilizers to keep them level and to be able to raise the basket. As a general rule if the ground is level then it´s not necessary to use them, except on some models.

MAIN WORKS THAT ARE PERFORMED

This type of platform is used in all the works that, due to their nature, allow that a platform to be raised vertically without encountering any obstacle and which also need to go up with plenty of material. This elevating system is used by:
Assemblers of electrical premises, plumbing, fire systems, and cleaning on ordinary industrial sites.
In a word, it provides obstacle-free access to working areas.

B. … TYPES OF ACCESS PLATFORMS (cont.)

B. 2 FEATURES OF THE DIFFERENT TRANSPORTING SYSTEMS

TRUCK-MOUNTED PLATFORMS

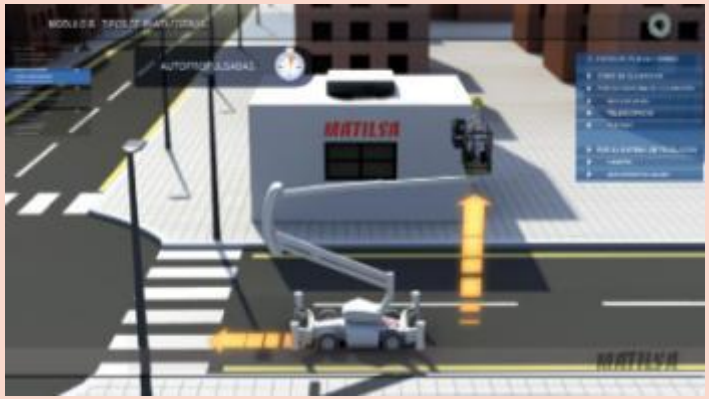
These platforms are mounted on a truck. It should be taken into account that as it carries an elevating platform, it does not allow an excessive load on the box, since the maximum allowed load is occupied by the platform itself. And the same goes for the amount of space.
The main headache for the manufacturers is the struggle against the weight giving a higher working height. This type of platform is used on works where the user is frequently on the road. Its special condition of being able to drive on a public road makes it an ideal machine for this type of work.

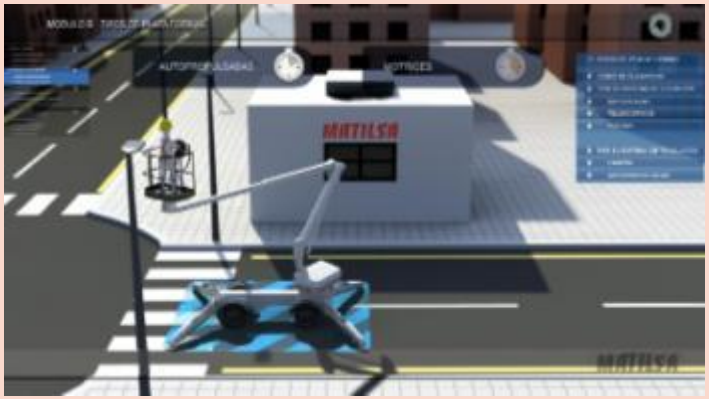
B. ...TYPES OF ACCESS PLATFORMS (cont.)

B. 2 FEATURES OF THE DIFFERENT TRANSPORTING SYSTEMS

SELF PROPELLED PLATFORMS

Self-propelled platforms are those that are able to be transported with the arms up and the operator controlling it from inside the basket.
There are other platforms on the market which do not allow for transport while in the raised position, these machines are called self-propelled.
They weigh less and therefore, depending on the height at which they are to boused, need stabilizers to increase the base area of the machine.
The time needed to elevate this type of machines is greater than with the self-propelled ones. With these machines only work in closed places is allowed, unless it is registered as a special vehicle for works on the public roads. These platforms maybe mounted on chains or on tires. This will depend on the type of ground, and on the fact that the platform with tires may be 4x4, that is, with traction on the four wheels, and/or with an oscillating axle, a system that allows the steering wheels to be left in contact with the ground, thus increasing the traction.
Depending on the features of each self-propelled platforms, a tilting device will limit the elevating. This problem may be solved by using self-propelled platforms which have built-in stabilizers to keep the machine level when the ground is uneven.



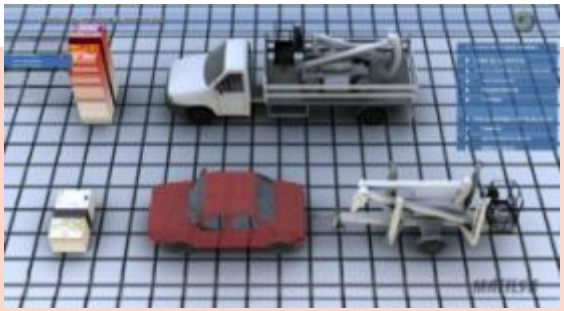


B. … TYPES OF ACCESS PLATFORMS (cont.)

B. 2 … FEATURES OF THE DIFFERENT TRANSPORTING SYSTEMS (cont.)

TRAILER-MOUNTED PLATFORMS

These are called trailer-mounted, because they may be towed by a vehicle by a vehicle by means of a ball hook or ring.
As with the working features, they are slower machines to be operated on than the self-propelled ones, due to the need to install stabilizers every time that the machine needs to be raised.
The saving on the transport of these machines is considerable, apart from the fact of giving us availability and not needing to depend on other means of transport.
Some trailer-mounted platforms can be turned into self-propelled ones by adding a part, which allows for the easy transport of the machine onto the building site by only one operator.
This half-trailer mounted platform must comply with the conditions and the features that the law stipulates.
As a general rule, every single half-trailer vehicle that exceeds 750 kilos should be registered to drive it on a public roads. Never the less, this depend on the legislation of each individual country.



DO YOU REMEMBER?

1. **What three types of platforms may we differentiate according to their features of elevation?**
   Articulated, telescopic and scissors-type

2. **For what kind of works are the articulated platforms recommended?**
   For every professional field that has to do works where it is necessary to avoid obstacles

3. **And the telescopic ones?**
   Exactly the same. Besides, in this case, they allow the basket to be placed some meters beneath the base of the machine. For example when it comes to the maintenance of anchored boats.

4. **What makes t a scissors platform different from an articulated or telescopic one?**
   The scissors platform can only be elevated vertically, and the articulated ones allow us to raise the basket and move it side ways thanks to its arms.

5. **What kind of platforms are there according to their transferring system?**
   Self-propelled, trailer-mounted and truck-mounted.

6. **Could you describe each one of them?**
   Self-propelled ones, whose transfer in height is carried out by means of an engine whether electrical or combustion, and may be controlled by the operator from inside the basket.
   Trailer-mounted ones, these may not be transported with theirs arms raised, but we do not need further transport to carry them from one place to another, since they may be hooked onto another vehicle.
   Truck-mounted ones, these do not allow us to transport ourselves when we work at heights. It truck must be used be used if it is necessary to do this.

RULES ABOUT SECURITY

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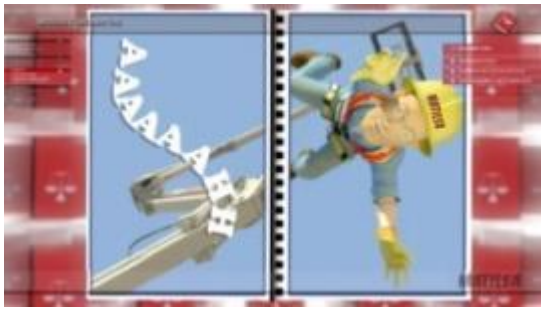
- Spirit of the law.
- Obligations in the information and training field
- Obligations according to general safety.
- Common elements to all platforms.
- Specifics of scissors-type platforms.

C. RULES ABOUT SAFETY

In this section we want to show you the main norms in "MINIMUM REQUIREMENTS OF HEALTH AND SAFETY FOR THE USE BY THE WORKERS IN WORK TEAMS and also regarding the DESIGN AND THE MANUFACTURINGOF MACHINES. In addition, we have added more safety characteristics to the platforms, which may be very useful.

Spirit of the law.

Without doubt, this is the one to avoid as far as possible, injuries to workers caused during the course of their work.



Obligations on the matter of training and information

The employer who hires a worker is obliged to train him/her and to inform him/her on risks and safety measures, always in writing. Nevertheless, in case of an accident that a worker may suffer, although he or she has been properly trained an informed, and to whom all the appropriate equipment has been given, a magistrate will determine who is responsible , whether it be the worker or the employer.

3. Obligations as with the general minimum safety measures on the access platforms so that the product may be validated with the CE marking.

3.1 Common elements regarding minimum safety

Electronic level

This consists of an electrical device, by means of which the platform is prevented from raising a worker on an uneven surface. The use of self-propelled platforms with incorporated stabilizers allow us to work under these conditions without any risk for the worker

Compulsory buttons

The machine will have to be equipped with some devices that prevent the platform from being set in motion by accident. This is intended to prevent the worker who is in the basket operating the controls involuntarily by fainting or through any other unintended action, thereby setting the machine in motion and possibly causing an accident. Each manufacturer may choose whether to set a "worker on board" pedal or a button placed on the transport controls or on the higher steering board. That is to say, it will be necessary, apart from moving the control, to press this button in order to set the machine in motion.

Automatic brakes

Their function is to brake the platform when the transporting control of the machine is turned off or if the machine is broken-down or has run out of fuel and we wish to move it by unlocking the brakes.

Unblocking braking device for self-propelled machines in general

The self-propelled system on these machines may be of two types:

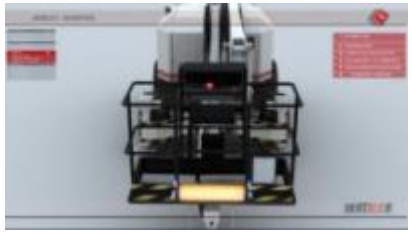
1. Hydraulic hydro motors. Thanks to a hydraulic circuit, the hydro motors create a circular movement that gives traction to the tires. The unblocking procedure consists of loosening the screws that are to be found on the lid of the transporting hydro motors and to turn them over onto this lid in order to unblock the machine. Then the machine may be retrieved from where it has broken down and may be a causing a hindrance.
2. By means of a differential group (or two, if the machine is 4x4)
For machines with differential groups-which normally carry the brakes with them -the procedure normally is to hit a device which projects out through the axle to unblock the brake, although the best thing is to look at the manufacturer´s instruction manual.

Acoustic and lightning warning signals

The access platforms will have compulsory acoustic bleepers that warn of the presence and the motion of the machine. The acoustic signal is located on the base of the machine since the warning signals is intended for passers-by. In cases where the machine is working in areas shared by other vehicles, it will also be necessary to install a rotating light signal to indicate its presence while parked at the work station.

Rated load in basket

The access platform should have an adhesive sticker on the access to the basket, in which it shows the maximum allowed load that may be elevated.



Risks of falling and cutting

The platform should carry adhesive stickers that warn of the dangers of cutting, falling or crushing.

Antireturn valves

These valves prevent the falling of the arm due to the breakage of some hydraulic component and consequent drop in the pressure of the circuit. The safety valves must always be located next to the hydraulic cylinder.

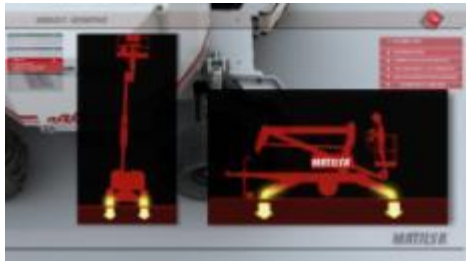
C. ... RULES ABOUT SAFETY (cont.)

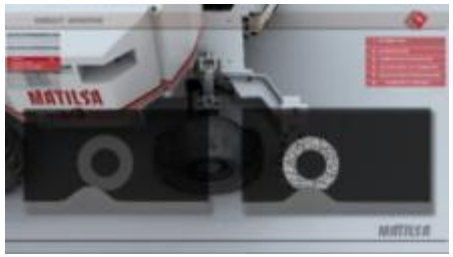
3. ... Obligations according to general safety (cont.)

3.1. ... Common elements regarding minimum safety (cont.)

Sturdy or filled tyres

The tyre will have to be sturdy or filled with polyuretane foam onthe self-propelled machines. This is on order to avoid a puncture causing the machine to over turn causing a worker to fall if being transported in the elevated position. However, the machines that need hydraulic stabilisers when elevating do not have to carry sturdy or filled tyres. Examples of such machines are the trailer or truck-mounted ones. The sturdy tyres are used for machines that work on compact and smooth grounds. Afilled tyre comes from a normal tubed tyre that is filled with rubber, thus creating another inner tyre. These filled tyres are used for machines intended to act similar to a landrover, thus allowing a better grip on the ground.





Manual pump of the emergency lowering

Several different models may be found, their location and the lowering systems depending on the manufacturer. The most frequent and the same time compulsory is on the base of the machine. This make it easy for the operator to remove anyone who has suffered an accident from by using the controls situated on the base of the platform. Additionally, during the use of the access platforms, apart from the personnel that handle the machine, there sould be personnel on site for possible emergencies. This may also be found on the board of controls in the basket. The lowering system may be by gravity or by the use of auxiliary pumps with 12 V power or manually operated. Its function is always to lower the platform when a breakdown is occurs or in case of power failure.

Ignition key

Normally located on the board of controls of the base of the machine, it may also be found on the basket as an auxiliary feature. On batteries or electrically operated machines, these are useful as one may choose where the machine is going to be operated from (either from the ground or from in the basket), apart from originating the contact. On diesel machines, they are useful for starting the combustion engine. Each manufacturer is free to situate it in the most convenient place

Permanent danger warning signal

These are adhesives stickers on the machine, mainly on the sides of the movements parts.

Dashboard loading controls in basket

For scissors type platforms the EC marking is compulsory and on platforms armed type it is compulsory for baskets with surfaces greater than 1 square meter. This device detects when the maximum load in the basket is over the limit, thus preventing it being raised until the necessary weight is removed and the load does not go over the indicated level.

Disconnecting batteries device

This is not compulsory, but it is convenient, in order to avoid involuntary movements in case of a breakdown or when the machine is at rest. It also means that the batteries will not be using up power when the machine is not in use for certain periods of time.

SAFETY HARNESSES

These are manufactured and designed so that the worker may use them with the aim of avoiding risks that have not been eliminated despite the collective protections

Suspended harness

It is formed by one or more flexible bands, and one or more connecting areas. Its function is to allow a worker to operate while suspended by keeping at least the upper part of the body and the head in an upright and stable position.

Holding harness

It is a component that surrounds the body, formed by ordered and connected elements in the right manner, united to an element of holding tight. Its function is to hold the worker in working position and to prevent that it reaches a point from where a fall may take place.

Falling Belt

This is a harness, with or without support, and a tightening element, that may be equipped with a falling softener support. Its function is to brake and to stop the fall, by trying to absorb to the maximum the energy that has been produced.

C. … RULES ABOUT SAFETY(cont.)

3. … Obligations according to general safety (cont.)

3.1. … Common elements to all platforms(cont.)

Holding tightening elements

These are components that allows the holding belt to be fastened onto a fixed structure. The element of holding tightness may consist of a band or a cord of synthetic fibers, or a steel cable.

C. … RULES ABOUT SAFETY (cont.)

3. … Obligations according to general safety (cont.)

3.2 Minimum safety measures that are only applied on the scissors-type platforms

Protection fences

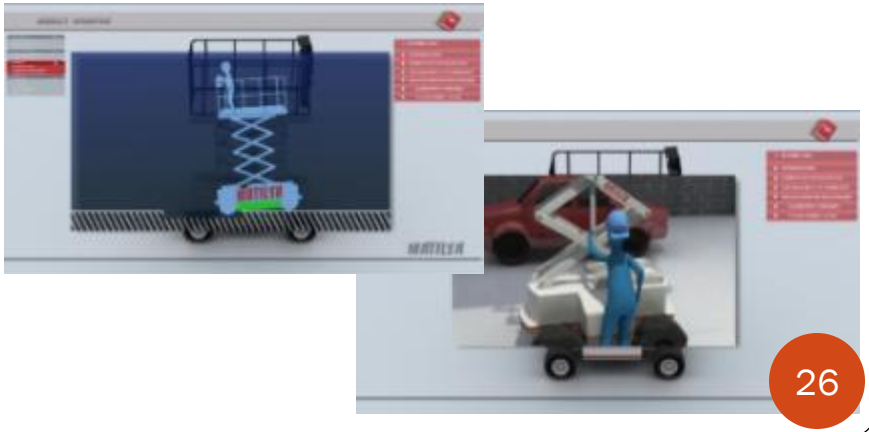
The protection fences prevent cuttings or crushings with the scissors from occurring.
For machines less that 1.200 meters wide the manufacturer may install an electrical device that stops the lowering about 50cms before its final position and waits there for three seconds so that the worker can inspect both sides of the machine to check if there is somebody who might be hurt before getting off.

Anti-overturning bars

These are located underneath the chassis. They extended when the platform is raised and replace the chassis, reducing the free height on the floor in such a way that if we Intend to move with the basket raised and the tyre enters a hole or a rough uneven surface, the system will mechanically go backwards by increasing the free height between the chassis and the floor.

Safety holder for the blocking of scissors lowering

This is a manually-operated holder that fixes the structure of the scissors when raised in order to avoid falls when it is being repaired, when the technician is inside the structure and as a result may be crushed and injured.



PROCEDURES AND SAFETY

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- 3. Transport with in the work place.
- 4. Settling and stabilisation of the work place.
- 5. Safety during handling
- 6. Routine checks.

D. PROCEDURES AND SAFETY

INTRODUCTION

The aim of this part of the course is to promote the understanding of the handling, operation and maintenance of the movable elevating work platforms. At the moment in Spain the law does not demand a qualified operator for this type of machinery, but as we become more and more participative within the European Union and the qualification demanded of the workers, this qualification will be sought to carry out works where the safety of third parties is in danger.

D. … PROCEDURES AND SAFETY (cont.)

1. QUALIFICATION AND RESPONSIBILITIES

TRAINING

The aerial platforms have two characteristics that stand out from the rest of the machinery for public works and construction.

* This is a machine used to carry out works at altitude. Its misuse may have negative consequences for the operators and third parties that are in and around the work area. The design and manufacture of this machine has been carried out with the purpose of avoiding accidents at work. We must be aware that if the consequences of the market have allowed users to have this kind of machinery, we are now responsible, for avoiding accidents at work when working at altitude, and are helped in this by essential training on risks and handling.
* This is used by a large variety of operators. The operator of a tower crane will always be the constructor, but the user of an access platform may be the constructor, followed by the painter, the body assembler, the electrician, the plumber even professionals as disparate as gardeners, television camera operators…, in a word, anyone who wants to be safely elevated a few meters from the ground.

HEALTH AND CAPACITY

If your job implies the use of access platforms, their operators are required to be in good health with regard to eyesight and hearing.

VERY IMPORTANT:
YOU MUSTNOT BE UNDER THE INFLUENCE OF ALCOHOL…OR ANY OTHER KIND OF DRUGS

Your firm and you yourself must take into account that the risks are for the users and third parties.

D. ... PROCEDURES AND SAFETY (cont.)

1. ... QUALIFICATION AND RESPONSIBILITIES...(cont.)

OPERATORS´RESPONSIBILITIES

1. His or her first concern should be safety in the handling of the access platform, the safety of the people that are working with you and the people that are within your working area.
2. You should follow the instructions of the manual given by the manufacturer and not exceed the working limits advised by the manufacturers themselves.
3. You should carry out routine checks on the machine, since its good condition will ease the risk of causing and suffering unnecessary accidents.

DO YOU REMEMBER ?

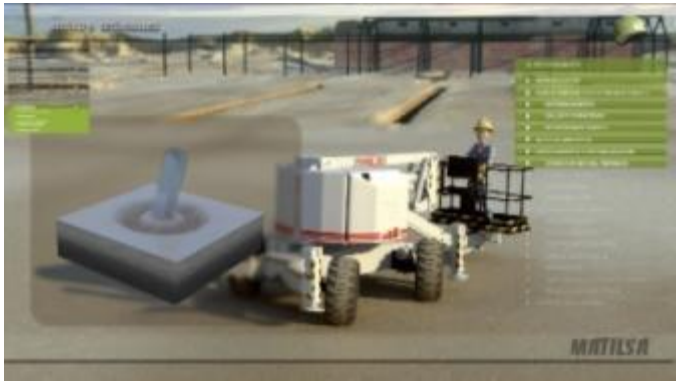
1. **Why are the aerial platforms different from the rest of the machinery used for public works and construction?**
   Because they carry out work at altitude with people inside and due to the wide variety of operators who handle them.
2. **What should we never do in order to be completely focused on using an aerial platform?**
   We should not be under the influence of drugs or alcohol.
3. **What three responsibilities does the operator have?**
   -Safety in the handling of the aerial platform
   -Following the handling instructions that appear in the manual published by the manufacturer.
   -Carrying out routine checks on the machine

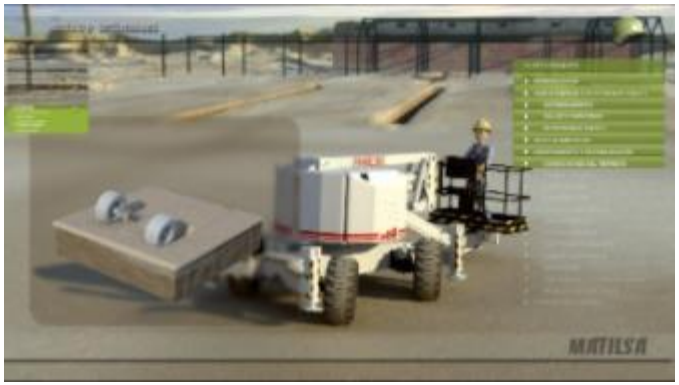
D. ... PROCEDURES AND SECURITIES (cont.)

2. TRANSPORT WITHIN THE WORK PLACE

1. Make sure that your platform meets the requirements for moving itself over the ground.
2. Before performing any movements you will have to avoid ramps, ditches, slopes or obstacles that may be a risk.
3. Get to know the direction in which the platform is going and avoid transporting until you have inspected the non-visible places. Use the tower rotation in the case of an articulated or telescopic tower. If, however, you are using one of scissors type move yourself within the platform, making sure that all sides of the ground are safe, in order to avoid accidents.

D. ... PROCEDURES AND SECURITIES (cont.)





3. SETTLING AND STABILIZATION OF THE WORKPLACE

The land where the platforms work has to be stable. A non-stable ground may cause an overturning accident. Here are some typical conditions of land that will have to avoid at all times:

a. Non-compacted ground Earth or other types of material that have been placed without being compacted. Ditches are usually in areas of work that could not be compacted and may bring about the lack of stability of the platform.
b. Bear in mind the weight of the machine since it may bring about the sinking of the grounds, and as a result of that, the falling of the platform.
c. Beware of sewages and waste pipes or other obstacles since the weight of the machine may cause a lack of stabilization.
d. Adverse weather conditions, such as rain, may cause the ground to be completely unstable. In this case we shouldn´t work even with the use of the stabilizers, since according to the type of the ground this will allow the stabilizers to sink into the ground, thus causing a lack of stabilization.
e. Frozen ground may look firm, but may break or defrost on the supporting points.

D. ... PROCEDURES AND SAFETY (cont.)

3. ... SETTLING AND STABILISATION OF THE WORKPLACE (cont.)

THE STABILISERS

The stabilizers are just auxiliary supports that help to give more stability to the machine and to allow the leveling when the machine is off balance due to the nature of the ground.
It is very common to see them on different kind of platforms.
Trailer –mounted machines, self-propelled with tires or crawler-type.
They can be flapped, telescopic, manual or automatic depending on the weight of the machine. Its geometry, sideways transporting and load in basket will vary according to the supporting surface.
It is recommended that all the machines for outer work have them as a safety feature for when its use is necessary. If they do not have them, failure of the tilting device or negligence on the part of the worker when bypassing the signal will enable them to raise the basket without its being properly stabilized and this may cause serious falls.

D. ... PROCEDURES AND SAFETY (cont.)

3. ... SETTLING AND STABILISATION OF THE WORKPLACE (cont.)

THE STABILISERS

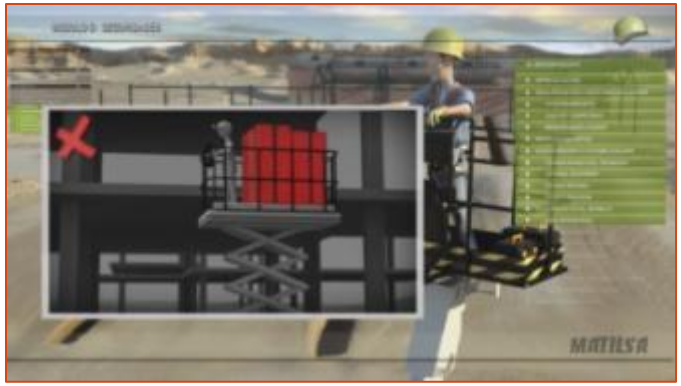
a. Before elevating the platform you should make sure that the stabilizers are creating a force against the floor and over the surface with the correct resistant.
b. We will stabilize the platform within the limits that the manufacturer stipulates.
c. If necessary, we will put some appropriate boards under the machine to increase the surface contact of the stabilizer with the ground.
d. You should never move onto another place of work with the stabilizer out and extended.

D. ... PROCEDURES AND SAFETY (cont.)

3. ...SETTLING AND STABILISATION OF THE WORKPLACE (cont.)

MAXIMUM AUTHORISED LOAD

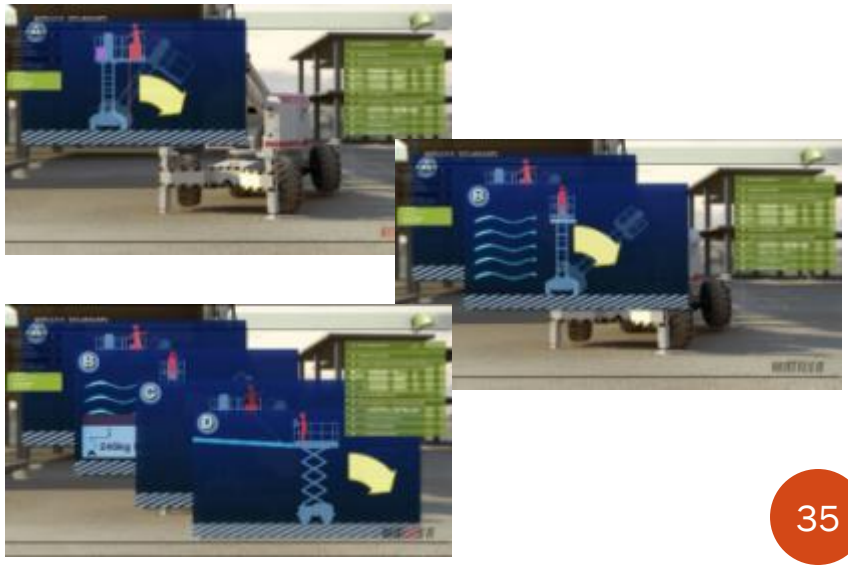
The maximum permitted load on the platform must be the one indicated by the manufacturer. This maximum load includes people and their tools. If the platform loses the maximum load device then we will make sure we turn it back on before gaining access to the platform. If the platform is bigger than 1 square meter then it should carry a loading device that prevents access. In this case it must not be manipulated to allow the elevating of more load than the recommended load.



WARNING!
Excess weight may cause serious accidents on the structure of the machine, for example when we do the maximum possible sideways transporting.

OTHER FACTORS

There are other factors that may reduce the stability of the platform and cause the overturning
A. Unequal distribution of the weight over the basket specially on the scissors type ones due to the sideways moving devices.
B. The use of the platform in strong winds. The maximum speed of the wind will be indicated by the manufacturer.
C. Unexpected impacts on the load due to falling objects.
D. Pushing against another structure may cause lack of stability.



D. ... PROCEDURES AND SAFETY (cont.)

3. ...SETTLING AND STABILISATION OF THE WORKPLACE (cont.)

DO YOU REMEMBER?

1. What aspects must be taken into account when it comes to moving with an access platform?
- Make sure that the features of the platform allow it to be transported on that ground.
- Before transporting, work on ramps as well as on ditches, slopes or obstacles that may be a danger should be avoided.
- Make sure of the direction in which we are going to move the machine, with the aim of not running anyboby over and check that the ground we are moving over is in good condition.

2. What conditions must the ground have so that the platform may be properly settled?
Make sure that the ground is well compacted, that the weight of the machine does not cause sinking into the ground, that there are no sewages or waste pipes, and beware of the weather conditions (rain, frozen ground, oils and grease)

3. What should we bear in mind when using the stabilisers on a platform?
That these are an indispensable

4. What is included in the expression: maximum load?
People and their tools in addition to loaded material

5. What other risks must we taken into account when it comes to use an access platform?
The unequal distribution of the weight on the platform, the use of the machine under strong wind conditions, the falling of objects from the machine and possible collisions with walls and other structures.

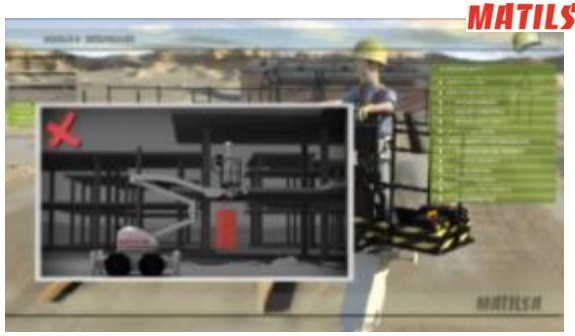
D. ... PROCEDURES AND SAFETY (cont.)

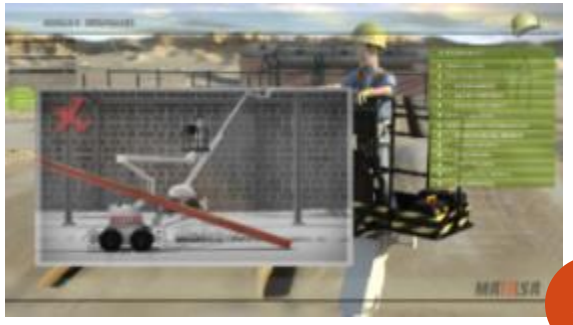
4. SAFETY DURING HANDLING

APPROPIATE USE OF THE PLATFORM

There are different aspects to be taken into account in order to appropriately use an access platform:

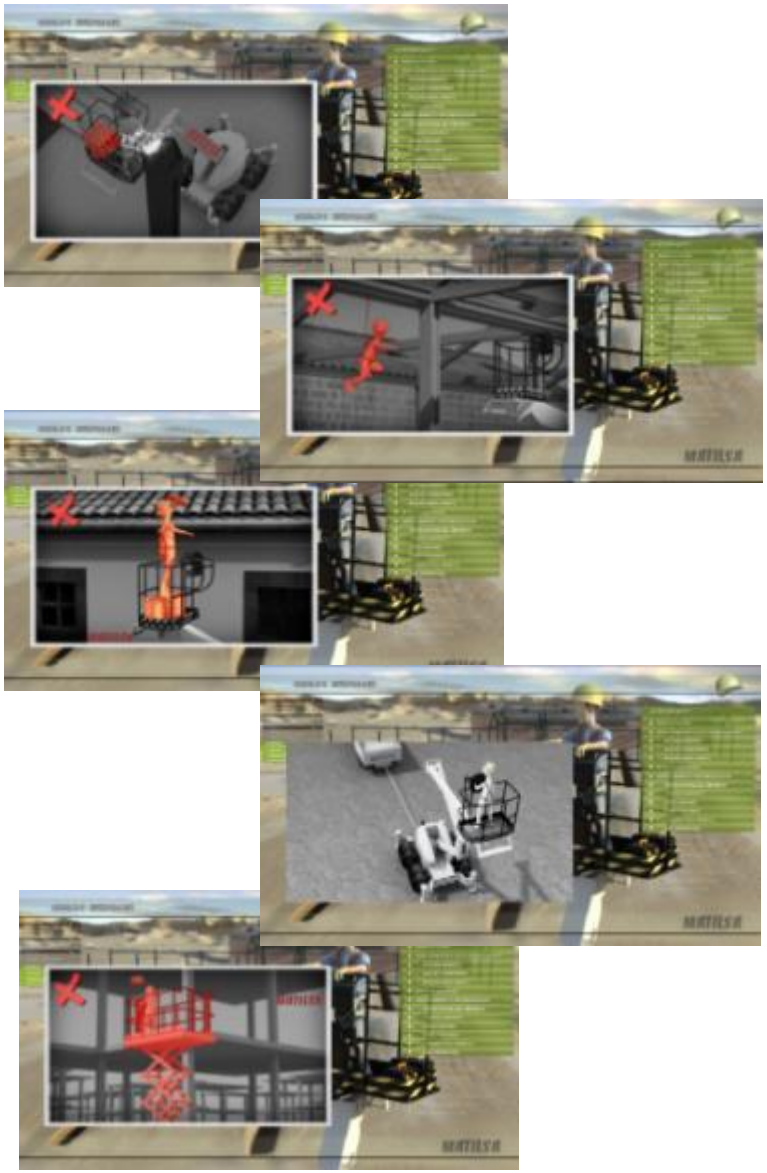
1. An access platform is designed for the access of people with their tools, without exceeding the weight indicated by the manufacturer.
2. It must not be used as a loading crane if is not homologated to do so, not even by placing chains underneath the platform.
3. It should not be used as a lift to raise people from one floor to another.
4. The handling of the platform from the basket or from the ground is your responsibility. Non-qualified or unauthorised people should not be permitted to interfere with the handling´s controls.
5. Handle the controls gently.
6. Never try to climb through the structure of the platform.
7. Never transport the machine in a public road, if is not homologated for such use.
8. If in your working area we come across other vehicles, make sure that you place cones or signals to prevent possible accidents. If in doubt consult your managers inmediately.
9. Do not lean on other structures or use the platform as an elevating hoist.
10. You should never modify or cancel the safety systems.





D. ... PROCEDURES AND SAFETY (cont.)

4. ...SAFETY DURING HANDLING (cont.)



...APPROPIATE USE OF THE PLATFORM (cont.)

11. Avoid damaging the machine with pieces of brickwork, painting, sand, red-hot pieces of iron or welding.
12. Do not use the platform as an earth connection when welding.
13. Every time we get on or off the platform, we should make sure that it does not constitute an obstacle in our work area.
14. When using a harness, you should never attach this to on structures that do not from part of the elevating platform.
15. You should never place stairs or other object in the platform to gain more access than the platform allows us. We should take into account that being inside the platform, the handrails protect us from falling onto the ground, since the minimum height of the handrails goes over the height on our waist. If we place a ladder or stairs inside, a fall would take us out outside the protection area of the handrails.
16. Do not use the machine as a towing vehicle for other vehicles.
17. The self-propelled platforms should not be towed away if the machine is not broken down. This may cause mechanical failures and constitute a danger for the person on the access platform.
18. As a general rule, it will not be possible to work safely with an access platform in winds of speeds greater than 12.5 mts per second. Its hould be taken into account that the scissors-type platforms have a bigger sailing effect than the articulated or telescopic ones.

D. ... PROCEDURES AND SAFETY (cont.)

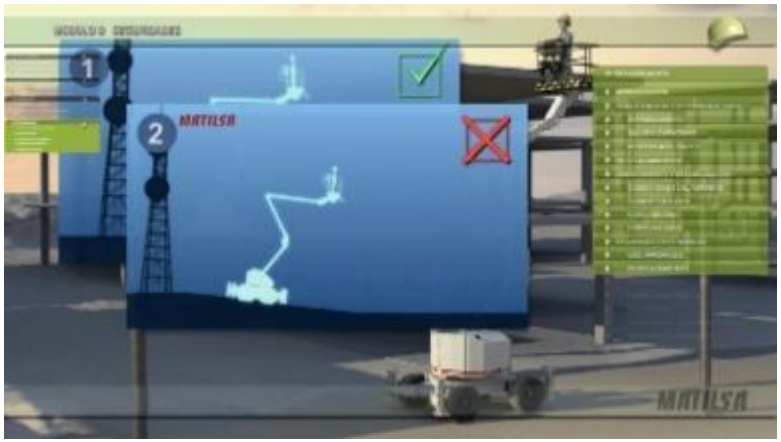
4. ...SAFETY DURING HANDLING (cont.)

TRANSPORTING WITH THE PLATFORM UP

We will only be able transport with machines designed to do so. These are the so-called self-propelled platforms, witch may do the transporting even in the up position.
Important points to be taken into account:
1. The transport of de platform will only be possible when the ground is steady and completely level. Uneven parts cause lack of stability when the machine is up may cause involuntary falls of the worker onto the ground.
2. Do not use the platform on slopes or hills.
3. When you do transfer material while up on the machine, it would be advisable to have somebody at ground level who can indicate the existence of any obstacles that can not be seen from on the platform.

Before doing the transporting, we will make sure to check:

1. That the stabilizers are neither out nor extended.
2. That the harness is properly tied up.
3. That care is taken with any cables or ropes being used.



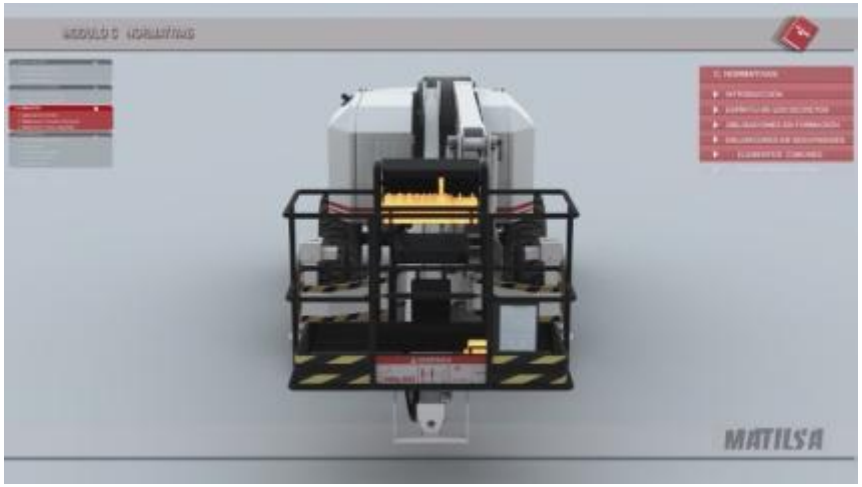
D. ... PROCEDURES AND SAFETY (cont.)

4. ...SAFETY DURING HANDLING (cont.)

AUXILIARY EMERGENCY CONTROLS

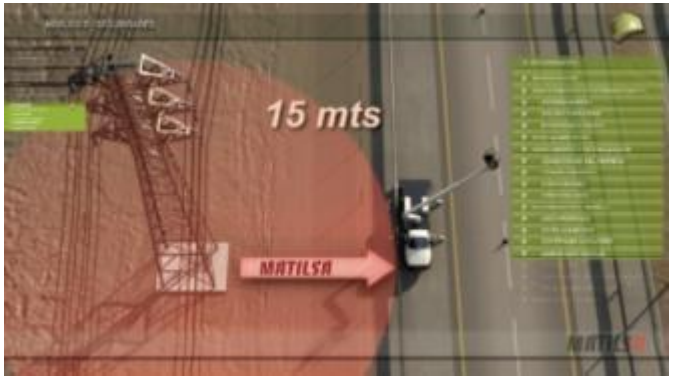
Before working with an access platform, you should know how to work the emergency lowering systems.
Ideally, another worker would be in the work area who also knows also the use of these emergency systems. To avoid these failing, you should not use them in the course of your normal activity with the machine. We could name the two systems to which the user has access to:

1. The stop, by means of the emergency button, located in the dashboards of controls.
2. The pump for the manual lowering in an emergency.



D. ... PROCEDURES AND SAFETY (cont.)

4. ...SAFETY DURING HANDLING (cont.)



WORKING OVER HIGH VOLTAGE LINES

While working with the platforms in populated areas, serious injuries may be caused by high voltage lines. The laws regarding this area particularly severe regarding the distances that we should keep from a high voltage line. The minimum distance that we will keep from a high voltage line will be of about 15 meters and about 9 meters in lines located over wooden poles. At present, there is measuring equipment that is placed in the basket and which constantly evaluates potentially dangerous proximity of high voltage power lines.

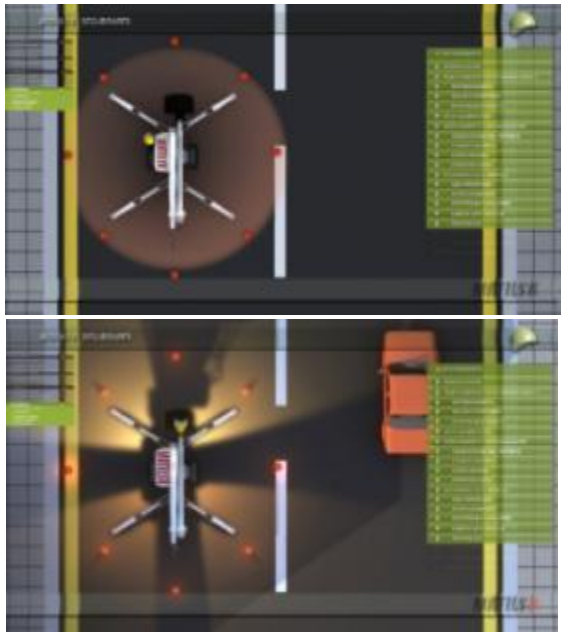
MINIMUM SAFE APPROACH DISTANCES TO ENERGIZED (EXPOSED OR INSULATED) POWER LINES AND PARTS	
Voltage Range	Minimum safe approach distance
0 – 300 v	Avoid contact
300 v – 50 kv	3 metres
50 kv – 200 kv	5 metres
200 kv – 350 kv	6 metres
350 kv – 500 kv	8 metres
500 kv – 750 kv	11 metres
750 kv – 1.000 kv	14 metres

D. ... PROCEDURES AND SAFETY (cont.)

4. ...SAFETY DURING HANDLING (cont.)

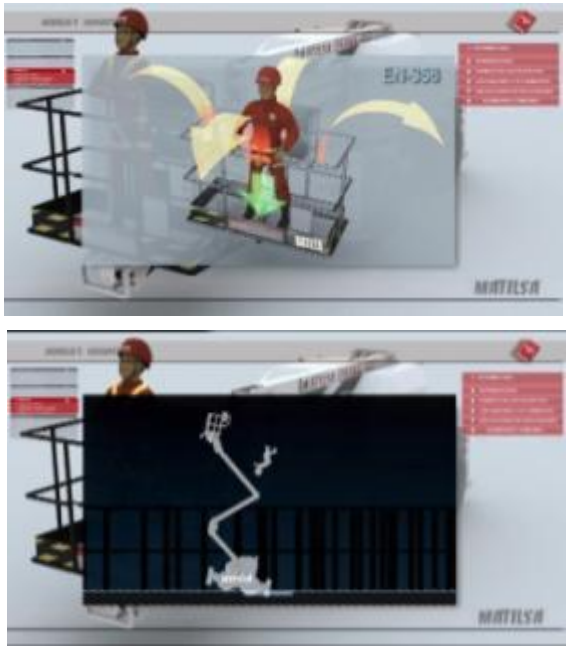
WORKING ON THE PUBLIC ROADS

When working on public roads, where others vehicles pass by, we should surround the working area with cones and visual signals. Besides these, it is compulsory to connect a rotating light on the vehicle. It is very important on articulated platforms to be careful that the arms that do not go over the area signaled by the cones, as the risk the platform hitting or being hit by other vehicle that are driving on that road. If we work in places where visibility is not good or out of direct sunlight, we should use light signals to indicate the danger.



USE OF SAFETY BELTS AND HARNESSES

The use of the safety belt and harness when working with an access platform may helo to avoid serious falls. The harness is an piece of equipment for personal use. The harness should be checked and adjusted to each individual´s size, otherwise serious injuries may be caused.
Mechanical failures may be produced or breakages of the ground that generate strong blows, capable of throwing us from the platform.

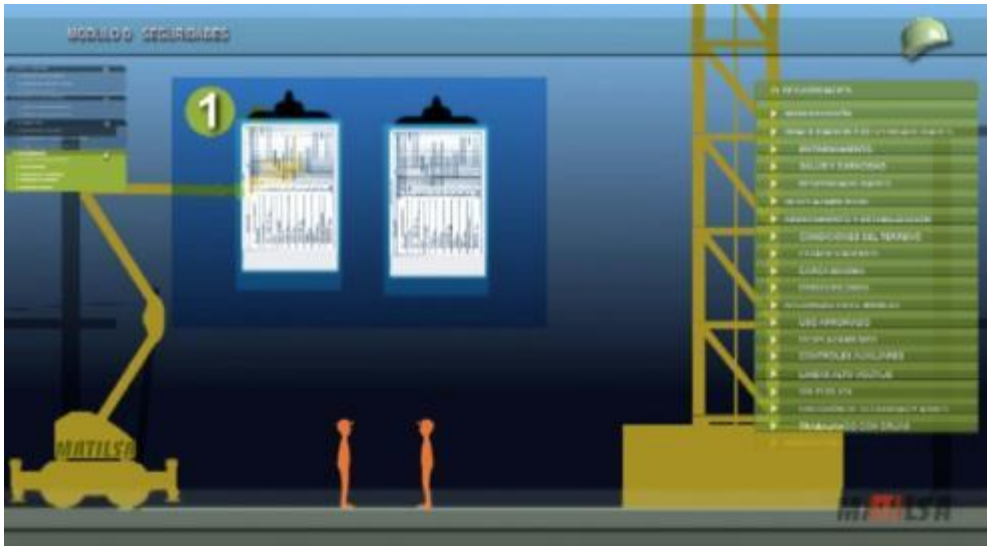


D. ... PROCEDURES AND SAFETY (cont.)

4. ...SAFETY DURING HANDLING (cont.)

HANDLING OF THE PLATFORMS TOGETHER WITH CRANES

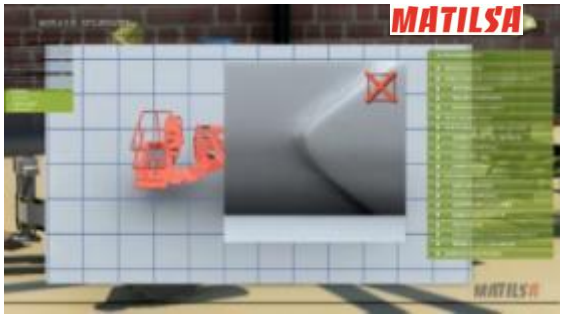
When an access platform is working with a crane, you should make a daily work plan sp that everyone knows the work system that you are going to carry out. Operators of this type of machinery in the same working area should be in continuous communication through radio or walkies talkies.

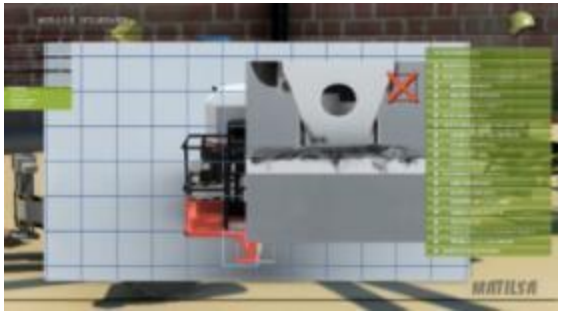


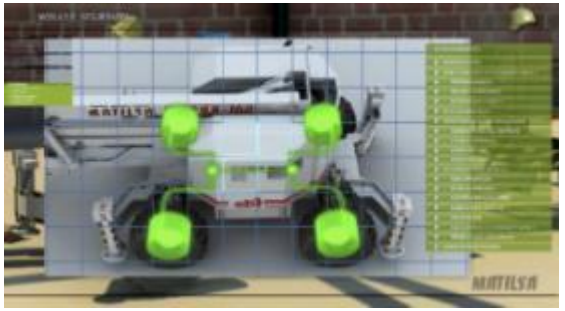
D. ... PROCEDURES AND SAFETY (cont.)

5. ROUTINE CHECKS

With the right maintenance and use of the platform, we will avoid risks at work. Likewise, with the rest of the working equipment, its condition has a big influence on the safety of the user.
A daily inspection will be due, thereby reviewing:
1. The structure in general and the welds of the platform.
2. We will avoid all type of grease at the access to the platform.
3. The braking system should work perfectly.
4. The acoustic lights, signals and safety devices must be in good condition.
5. The levels of oil, water of batteries, hydraulic oil and diesel oil will have to be checked.
6. The batteries will have to be free of all corrosion and with a suitable distilled water level before each load.
7. Avoid dripping hydraulic oil. This contaminates the surroundings and it soils the ground.
8. The communication system between the platform and the ground. This is logical in machines of such great height.
9. All the emergency systems.
10. All the movements of the joints, telescopic devices, steering etc.







DO YOU REMEMBER?

1. **In order to be able to move the platform being up, what kind of considerations must be taken into account regarding the ground?**
   To carry out the transfer only when the ground is firm and leveled, that the machine is not moved when is up on slopes or uphills and that, if possible, somebody from the ground indicate us if it is convenient or not to transfer the machine when is up.

2. **What auxiliary controls do we have a tour disposal for our security on the platforms?**
   The red button of emergency stop and the pump of manual lowering in case of a breakdown.

3. **What minimum distances of work must were spect when we are working close to the high voltage line or light poles.**
   The minimum distance that we will keep from a high voltage line will be about 15 meters and about 90 meters on lines located over poles of wood.

4. **Working on the public road, what security measures will we take?**
   To surround the working area with cones and visual signals. Connecting the rotary light.

5. **What daily inspection do we have to carry out with the platform before starting to work with it?**
   -Weld and structure
   -To avoid all type of grease to the access of the platform.
   -To watch the brakes
   -To watch the good state of lights and signals, oil, water of batteries, joints of the machine, to observe the possible hydraulic oil dripping.

6. **Why do you think that the use of harness when working in height is important?**
   Because it is a complement to the own securities that the machine has.