

## The Société Anonyme des Téléphériques Attelas

This year sees the commemoration of important events in Verbier. Téléverbier, operating the ski lift facilities at Bruson, La Tzoumaz, Thyon and Verbier, is celebrating its 70th anniversary. The beginnings and the birth of this company, which will become the largest operator of ski lifts in Romandie, is presented in the article of the Médran chairlift. Let's go back in time: we are in March 1953. The chairlift company is not yet two years old and its success pushes its director Rodolphe Tissières to extend the area to the summits of the famous mountains around Bagnes. Young and old quickly quarreled for a long time over the extension to be given to the area, which attracted more and more skiers: some recommended the development of the slopes of Attelas, others of Savoleyres.

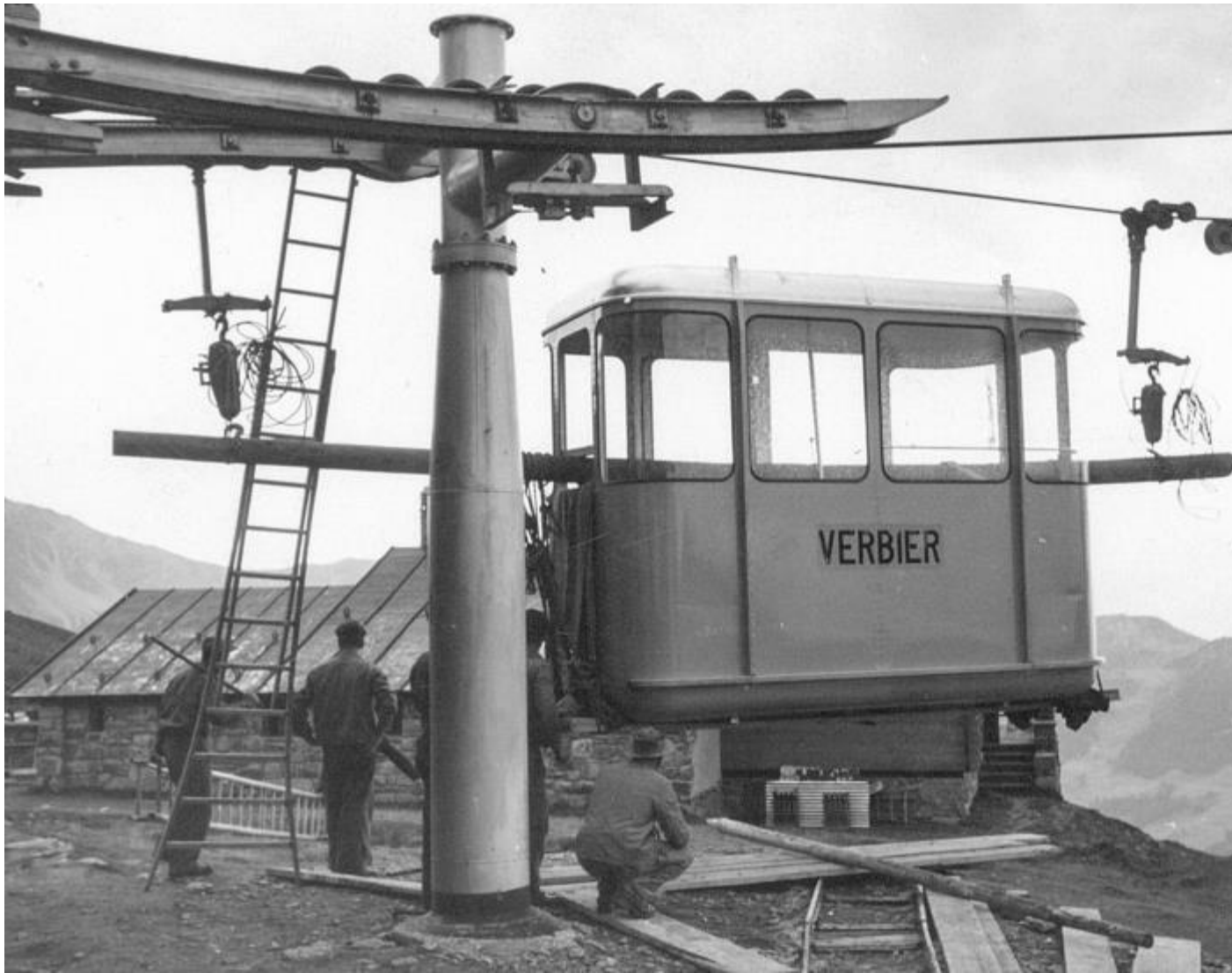
The elders prevail; in 1955, Giovanola developed a single-seater chairlift for the Savoleyres region, assisted the following year by a Müller roller ski lift. The manufacturer Von Roll of Bern thus obtained the time to develop a cable car going up to Attelas. To avoid endangering the first company in 1950, a second was created: the "Société Anonyme des Téléphériques Attelas". Once again, the Convicts went out of their own pocket to subscribe the 150,000 francs necessary for the construction of the installation and the site could start for an opening in December 1957.



*In the absence of a road going up to the Ruinettes, the new cabins of the Attelas cable car are transported by the Médran chairlift, here in summer 1957.  
(Téléverbier)*



*Two clamps are necessary for the good transport of the bucket. The latter is surprisingly held by the intermediary of a tree trunk.  
(Téléverbier)*



*Once in Les Ruinettes, the cabin is unhooked and stored in the vicinity while waiting to be finally linked to the final cable car.  
(Téléverbier)*

On December 14, 1957, the Attelas cable car opened to the public and now brings skiers and visitors to the Col des Vaux in barely 6 minutes. This installation is the first of its kind in French-speaking Switzerland to transport 30 people at an altitude of over 2,700 meters. Its particularly aerial line is made up of two spans, the first of which, with its 1325 meters in length, is particularly high. At the lower station, a 275 horsepower engine allows a speed of 9 m / s and allows 360 people per hour to climb to the top of the Attelas ridge. From there, skiers can take the 1,200-meter-long Médran and Creblet piste or continue towards Sion via the Chassoure, Tortin and Nendaz pass and enjoy a 2,200-meter descent. In summer, the cable car allows



*Les Ruinettes, still virgin at the end of the 1950s.  
(Téléverbier)*





*The departure station of the new cable car. Notice the small exit door from the platforms.  
(François Luisier Collection)*



*The second cabin of the Ruinettes-Attelas cable car.  
(François Luisier Collection)*



*And we fly away. Note the Müller ski lift bringing skiers to the Medran valley, installed in 1960.  
(Téléverbier)*



*Our journey continues and we see the heights of Bruson and the Mont-Blanc massif opposite.  
(François Luisier Collection)*



*In front of the Grand Combin seen from the north, the second cabin exceeds the only pylon of the line, with a height of 21 meters.  
(François Luisier Collection)*



*Travelers soon arrive at Les Attelas in a sumptuous setting in the Val de Bagnes.  
(François Luisier Collection)*





*The first vehicle from the platforms of the arrival station.  
(François Luisier Collection)*



*Arrival at Attelas. We observe the Grand Muveran passing the sea of clouds.  
(Téléverbier)*



*Les Attelas probably in the winter of 1958. We can observe the deviation of the carrying cables going beyond the station to be fixed around an anchor plate cast on the ground.  
(François Luisier Collection)*



*Overview of the Attelas ridge, the Chassoure ridge and the Rhône valley in the background.  
(François Luisier Collection)*

The opening of the Attelas cable car is only the first step in a vast project to go to Mont Fort. In 1959, the "Société Anonyme des Téléphériques Attelas" started operating a 2-seater chairlift going up from Lac des Vaux before the opening in 1960 of the Mont Gelé cable car and the Chassoure cable car. As the cable car company is long-lasting, it merged the same year with the "Société du Télésiège de Médran" to become the "Société Anonyme des Téléphériques de Verbier".

The growth in the number of travelers is pushing the cable car company to quickly double the Ruinettes-Attelas link. A cable car of the same model as the one already installed on the slopes of Chassoure opened in 1964 at Les Ruinettes. It is part of a vast project of several sections to link Le Châble to Tartin, and end as far as Sion. This new teleport has its departure adjacent to that of the cable car and inaugurates a massive concrete station bringing together the cash desks, dormitories and all mechanical installations.

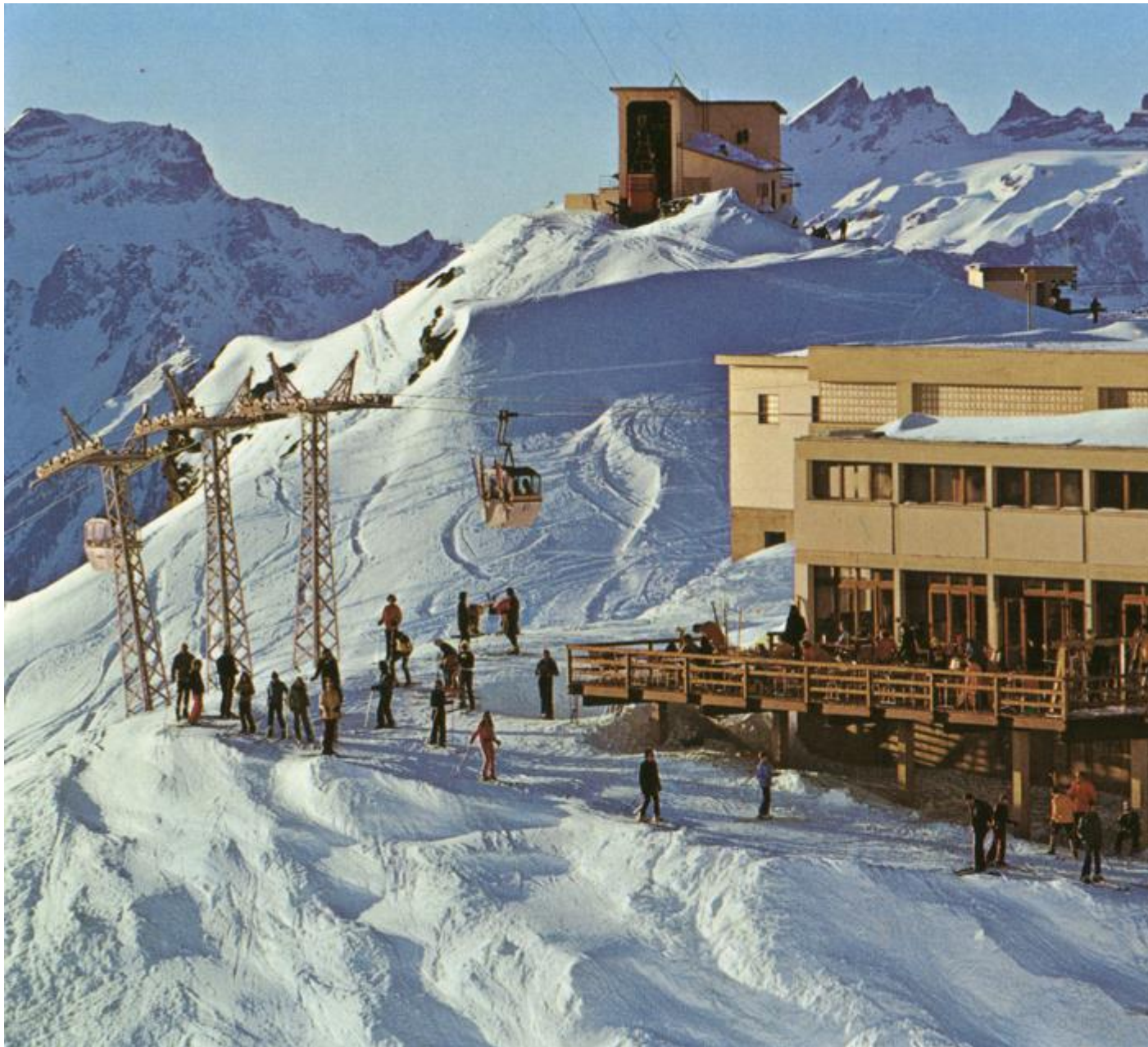


*The Ruinettes-Attelas gondola and its massive station supported by the cable car of the same name.  
(François Luisier Collection)*



*Same landscape from the cable car departure platforms.  
(François Luisier Collection)*





*The arrival of the gondola in Les Attelas and the Tête des Vaux chairlift station which can be recognized behind the arrival of the cabins. In the background is the Mont Gelé cable car and its red cabin with the arrival of the Giovanola Lac des Vaux chairlift to its right, all at the bottom of the Dents du Midi.  
(François Luisier Collection)*



*The two TRA and TAMG cable cars and the Lac des Vaux chairlift meet on the Crête des Attelas.  
(François Luisier Collection)*

Over the course of its life, the cable car will not change. Its low flow will be compensated by the Ruinettes-Attelas gondola, automated in 1975, and by the Städeli chairlift going up to Col des Vaux from the Médran valley in 1977. In the 1980s, the cabins, red and yellow, will be repainted in blue to use the color of the new name and logo of Téléverbier. In this period of renewal, all eyes are on the opening of the cable cars going up to Mont Fort.

At the same time, the historic Médran chairlift is taking its bow and giving way to the TGV des neiges (TCD6 Médran) in a program to modernize the original backbone of the area. The Attelas cable car is slowly but surely seeing its time. A transformation project into a massive Garaventa cable car like those of the Gentiannes was presented at the beginning of the 1990s, but an innovative solution already existing in Val Thorens was selected: the funitel. With its twenty detachable cabins capable of carrying more than 30 people each, this heavy installation allows a flow of 2000 people per hour. This new installation opened in 1995 and follows the same route as its predecessor. As for the latter,

Before giving way to the funitel report, we offer you a final selection of beautiful color photos:





*A beautiful red cabin facing the sea of clouds and the Mont Blanc massif.  
(François Luisier Collection)*



*Close setting on the latter in front of the Glacier de la Corbassière.  
(François Luisier Collection)*





*The first yellow cabin in front of the Marline and the amphitheater-shaped plateau isolating the village from the valley.*

*(François Luisier Collection)*

### General presentation of the installation

Author of this report: Artsinol

Section written on 11/17/2020 and updated on 12/07/2020

(Cached on 12/07/2020)

## **Situation on the slopes**



*Situation throughout the 4 Valleys*





*Situation in the Ruinettes sector*

This installation occupies a central position in the Verbier sector. It is mainly used as a continuation of the Médran cable cars to go up to Attelas, from where it is possible to access Mont Gelé or to descend the slopes of Lac des Vaux. The funitel is supported by the Attelas chairlift, which replaced the TCD4 of the same name. This chairlift is used by skiers to go up to the Col des Vaux after having taken the red slope starting from the arrival of the funitel, or having returned from La Chaux or Mayentzet. In the past, the Funitel was also used in summer, unlike in recent years, when the installation does not seem to open until winter.

## Technical characteristics

### Administrative characteristics

Funitel detachable CROIX DES RUINETTES - LES ATTELAS (commercially known under the name of "FUNISPACE")

Operator: Téléverbier SA

Manufacturer: Garaventa

Year of construction: 1994

### Operating characteristics

season: Winter

Capacity: 30 people per cabin

Capacity Theoretical: 2000 p / h

Speed: 6 m / s

Travel time: 6 minutes

## Geometric characteristics

Downstream altitude: 2201 m.

Upstream altitude: 2733 m.

Elevation: 532 m.

Developed length: 1561 m.

## Technical characteristics

Voltage location: Upstream

Type of voltage: Counterweight

Drive location: Downstream

Motors: DC DC with thyristor

Power: 2 x 490 kW

Starting: 2 x 680 kW

Reducers: Kissling

Number of pylons: 4 + 1 directly linked to the station upstream

Number of cabins: 20 Cabin

manufacturer: CWA

Direction of ascent: Right

Can be used downhill: Yes

Cable manufacturer: Fatzer

Cable diameter: 50 mm

Electronic equipment : Sisag (Frey until 2015)

## Funispace Infrastructures

This is the first funitel manufactured by Garaventa under Creissels license, a high-performance and wind-resistant solution which however requires large infrastructures. A funitel is an atypical and rare type of installation combining the advantages of cable cars and cable cars. It is a system initially developed in France by Réel and Creissels and based on the idea of the DMC Poma: a detachable cable car with two cables. This idea was taken up for the first time by Doppelmayr with his DLM: a close construction but with a larger line and cable spacing. A single copy will be built at the Gaislachkogel. The Funitel can be considered as an evolution of the DMC: a short line made up of four clamps and a cable distance greater than the width of the cabin considerably reduce the oscillations of the vehicle due to the wind. The use of two carrier-tractor cables 3.2 meters apart allows the use of several large skips and allows a much greater height of flight than single-cable gondolas. At the same time, Von Roll will offer a much better solution (in terms of energy and maintenance) with its 3S from Saas Fee, developed a few years earlier, with however lower wind resistance.

The funitel Garaventa adopts a downstream motor configuration and a counterweighted return-voltage upstream. The main features of this installation are the position of the garage placed between the launchers and speed bumps, the rails placed on the ground for the outline and the imposing mushroom-shaped pylons.

### The trip aboard the funitel

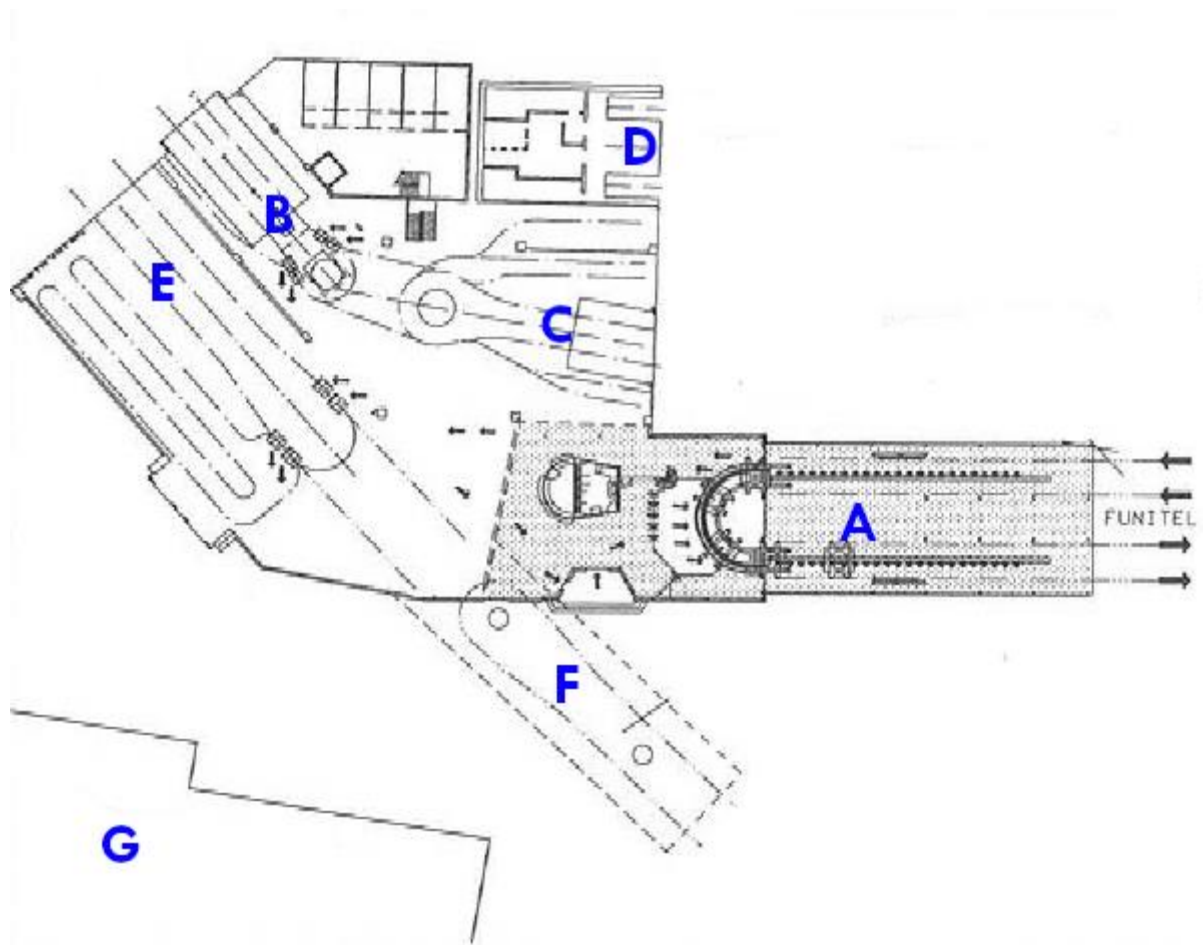
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(Cached on 12/07/2020)

## The lower station: Croix des Ruinettes

The **lower** station is located at 2203 meters at the place called Croix des Ruinettes. It is integrated into a large building resulting from the commissioning of multiple installations over the years. This complex houses the two parallel cable car stations of Médran, the funitel station and, built on the latter on the upper level, the boarding platforms of the "Chaux-Express" Telecombi. There are also the remains of the departure of the old 1957 cable car and the Attelas cable car. The latter operated alongside the Funispace until 2006, when it was replaced by the 6-seater chairlift.



The top view shows the Ruinettes complex during the construction of the Funispaces. It therefore differs from the current situation. The captions present:

- A : Downstream station of the funitel
- B : Upstream station of the Médran 2 cable car (1966-2001)
- C : Downstream station of the Les Attelas 2 cable car (1964-2006). It was formerly the second intermediate station of a single gondola from Châble aux Attelas, partially replaced in 2001.
- D : Downstream station of the first Attelas cable car (1957-1994)
- E : Upstream station of the Médran 1 gondola ( 1984)
- F : Former project for the second section of the Médran 1 cable car to reach the Col de Médran. The idea will materialize with the La Chaux Express telecombi.
- G : Restaurant des Ruinettes

The funitel station is of considerable size, due to the long launchers and retarders. The structure is made of sheet metal and glass. Inside the station, the mechanics are mostly blue. The queue is at the back of the platforms and boarding takes place on the contour. A control cabin, located behind the boarding station, controls the entire installation.





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General view of the Ruinettes complex with the funitel, the Mayentzet chairlift and the downstream station of the La Chaux Express teleport.

Note on the right the old departures, now glazed, of the Attelas cable car and cable car.



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*View from the Mayentzet chairlift.*





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*Similar point of view from the road.*





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*View from below. This concrete block served as the foundation of the second pylon of the old Attelas gondola.*



*The massive resort is still visible from the slopes.*





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*The departure station from Les Vacherets.*



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*The lower station under the telecombi boarding platform, accessible by an escalator. Behind the complex, you can see the two parallel cable cars of Médran.*





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*Entering and leaving the cabins.*



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Access to the Ruinettes stations.



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*Detail of the telecombi platform overlooking the funitel station.*





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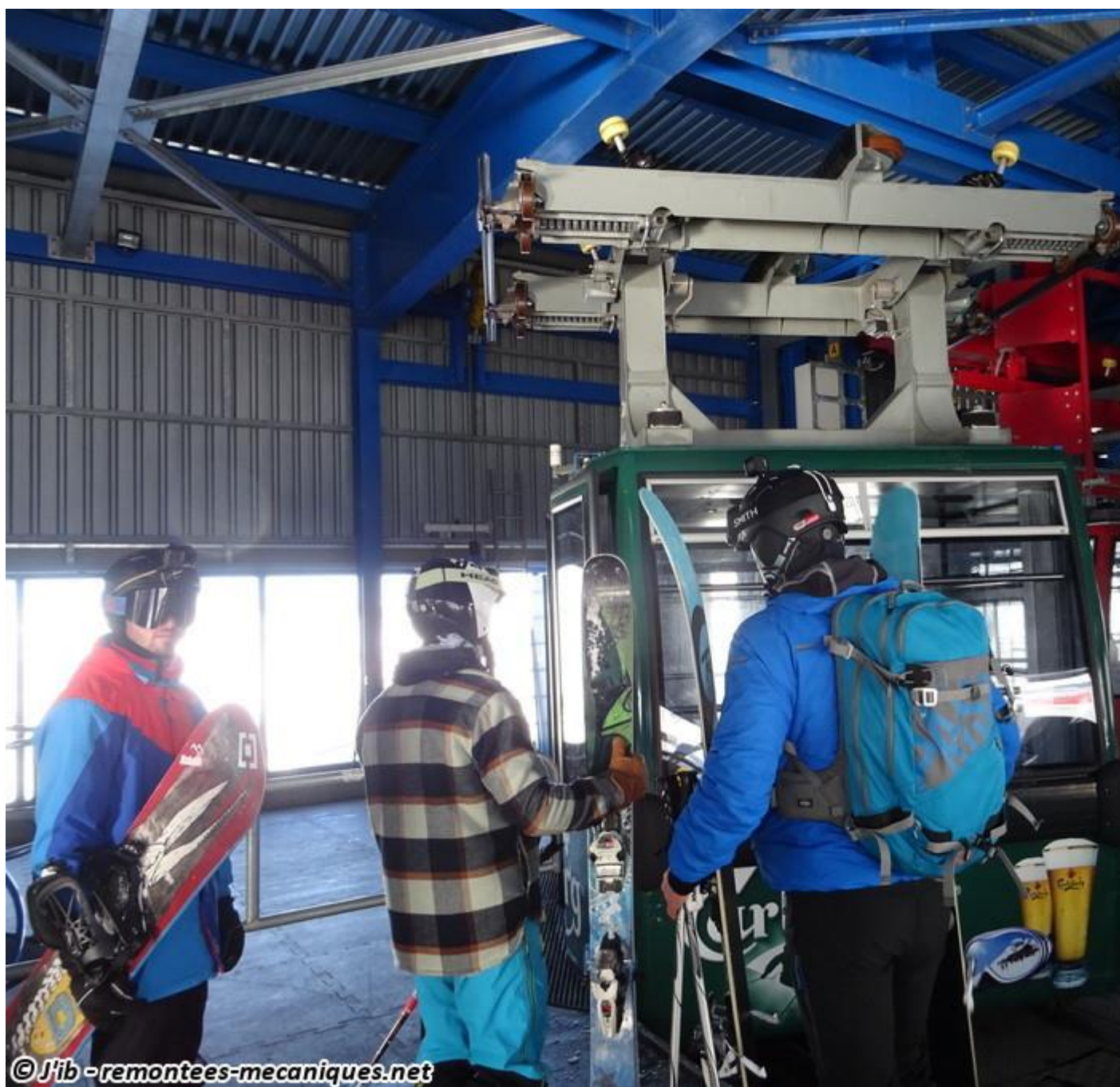
*Disembarkation point for the two Médran cable cars observed from the access to the funitel.*



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Access to the funitel.





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*Boarding cabins on the outline. Notice that the latter circulate using rails on the ground.*



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A cabin is about to leave the outline and enter the launcher. To the right of the photo is the cabin garage.

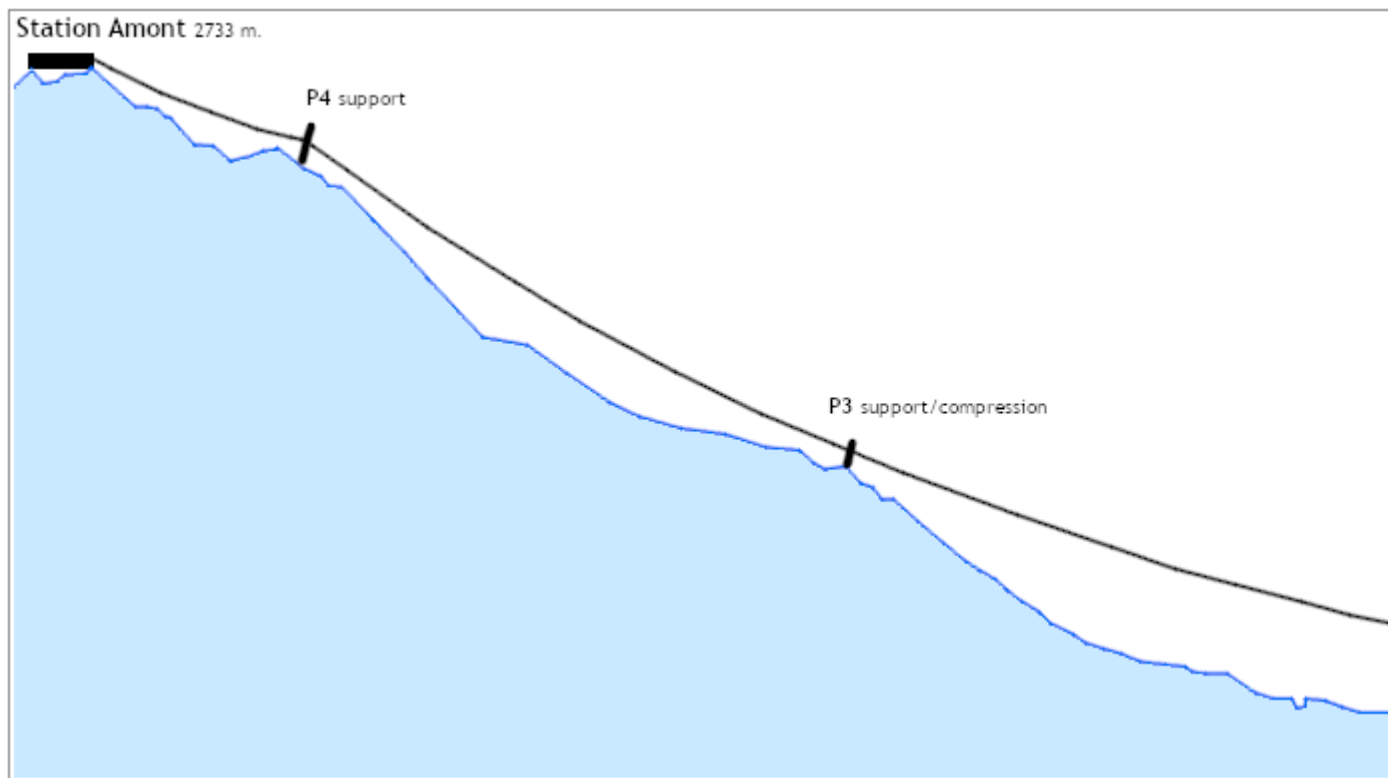




*Cab acceleration and cable deflection.*

## The line

The line, aerial and abrupt, redeems a vertical drop of 532 meters for a length of 1561 meters. It is supported by a first compression pylon, then by a support pylon before a third support-compression pylon, the fourth being again a support. The four pylons are made of galvanized lattice. The third is of the support-compression type in order to lower the line, reduce long spans and prevent the cable from lifting and derailing. The first part of the line flies over the Combe de Médran and passes the Mayentzet chairlift to begin the real ascent towards the Monts. The funitel offers a route guaranteeing a spectacular view of Verbier, which however implies a strong exposure to the wind. The entire line is however clearly visible from the valley.



*Line profile diagram.*



First pylon. Unlike Montana, this compression pylon is not linked to the departure station. This is explained by the fact that the line had to remain low enough at the exit of the station for the TCD4 of Attelas to be able to fly over it.





*Second pylon in front of the Mayentzet chairlift*



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*Flight over the Combe de Médran.*



*We continue our aerial journey and observe the Attelas chairlift on the right.*





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*The line is characterized by its declivity and its inhospitable rock desert.*





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*We approach the third pylon.*



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*Note the small size of the latter in order to lower the line and avoid being in the grip of strong winds.*





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*The line drops and takes a steep gradient.*



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*The cabin continues its spectacular journey.*





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*The fourth metal mushroom stands out in this wild landscape.*



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*This pylon resumes at about twenty meters the position of the old cable car pylon.*



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*Final litter before reaching the Attelas.*





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*Last straight line before rushing into the metal palace.*

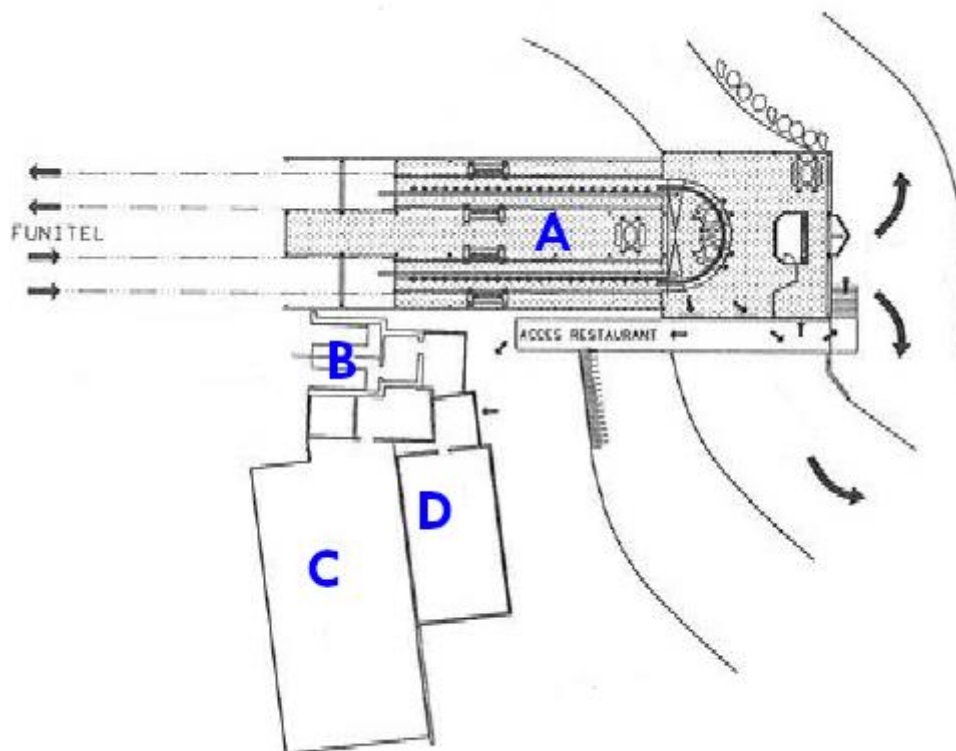


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*The ultimate support pylon, linked directly to the station, restores the line's horizontality.*

## The upper station: les Attelas

The upstream station, located 2,733 meters at the top of the Tête des Vaux, takes up the aesthetics of the departure station with its sheets covering the entire building. Inside, the mechanical structure wears a purple typical of the 1990s that can also be found at the funitel brother of Plaine Morte in Crans Montana. The upper station is particularly long and uses practically all the space available at this summit. The large arrival is built on a concrete base including the counterweight pit located at the restaurant. A thick solid placed at the level of the command post makes it possible to support the whole disembarkation platform. Between these two reinforced concrete elements, the station is suspended, because the ground in the past offered a passage to the skiers who disembarked at the top station of the



The top view shows the Attelas complex during the construction of the Funispace. It therefore differs from the current situation. The captions present:

- A : Upstream station of the funitel
- B : Upper station of the old Attelas cable car, which will later become an annex to the adjacent restaurant.
- C : Terrace of the restaurant "L'Olympique"
- D : Restaurant "L'Olympique"

The Attelas complex also includes a large restaurant, the lower station of the Mont Gelé single-track cable car and the upper station of the Lac des Vaux 1 chairlift. The arrival of the funitel is recognizable by its long series of supporting pebbles at the station entrance which straighten the cable and avoid the use of a large pylon.





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Arrival of a cabin.



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*Cabins on the edge and between the lanes of the vehicle garage.*





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*The outline from the exit of the building.*





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Control station.



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*Exit from the station.*



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*Rear view of the station.*





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*Beginning of the track in front of the exit of the building.*



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*Illustration from the right. The large concrete structure houses the counterweights and the safety winch.*



*From the track going down to Lac des Vaux.*





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*Profile view with the Grand Chavalard in the background.*



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*Side view, with next to the part of the restaurant which was the upper station of the old cable car.*



*A very heavy and massive structure to simply hold a series of pebbles.*

### Vehicles and clamps

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(Cached on 12/07/2020)

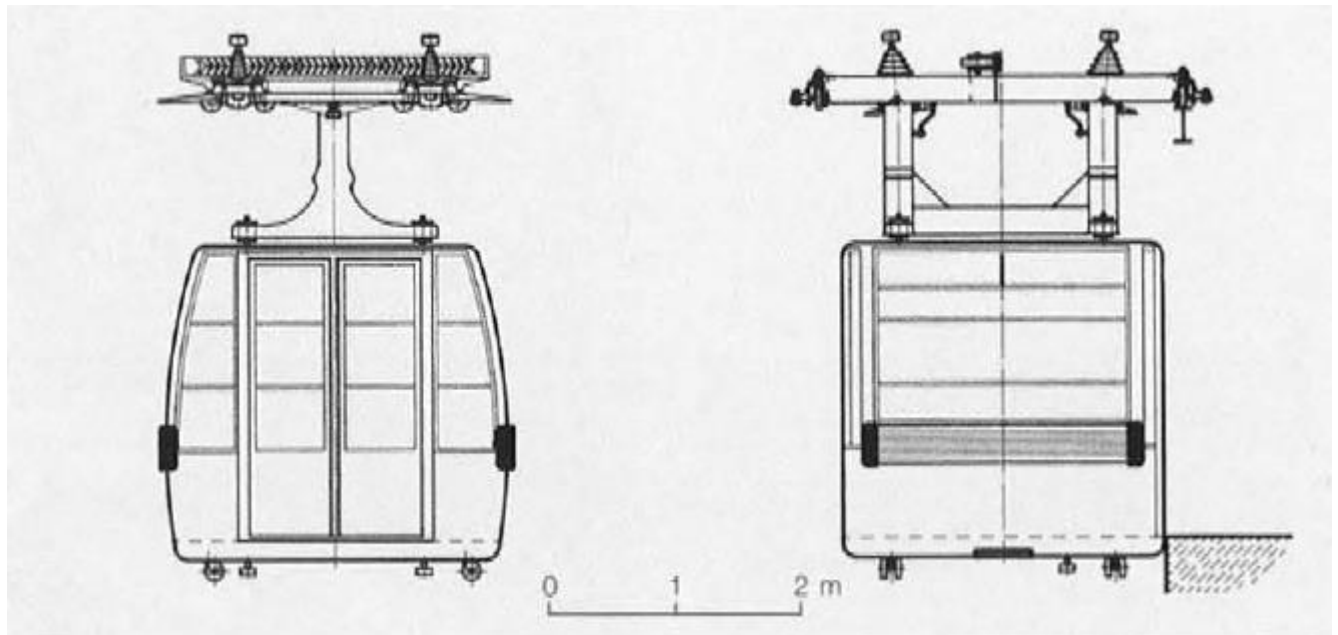
## The

## cabin

The cabins, designed exclusively for this type of installation, were supplied by CWA. The model is called "CWA Funitel" for simplicity. The cabin has a rather cubic shape with 4 wheels that slide on rails and two horizontal wheels that slide on a guide rail necessary to make a turn in the outline. The cabins, with a capacity of thirty people, are made of light alloy in order to reduce the weight of the cabin to 950 kg and 1240 kg for the cabin with suspension and clamps. At the front and at the rear there are two usual brackets (for mid-size transport



cabs) to hold the cab in an upright position. All cabins are equipped with a communication system which can be activated from the control room. Inside,



*Illustration of cabins and clamps*

At the beginning, there were only 15 cabins, and they had a blue livery with the old Verbier logo. In 2002, 4 new cabins were added. Later, some of them were repainted with a livery from a historic sponsor of Verbier, namely Carlsberg, which in addition to the 4 cabins will also sponsor the Jumbo and Mont-Gelé cable cars (the old and the current ). Later, it was decided to change the livery of all the cabins through various sponsorships that make the cabin park colorful.



*Three-quarter view of a cabin in line*



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*View of a cabin on the opposite side; in the background, we can see the Dents du Midi*





*Profile view of a cabin*



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*View from above of a "Carlsberg" cabin with the Esserts sector below*

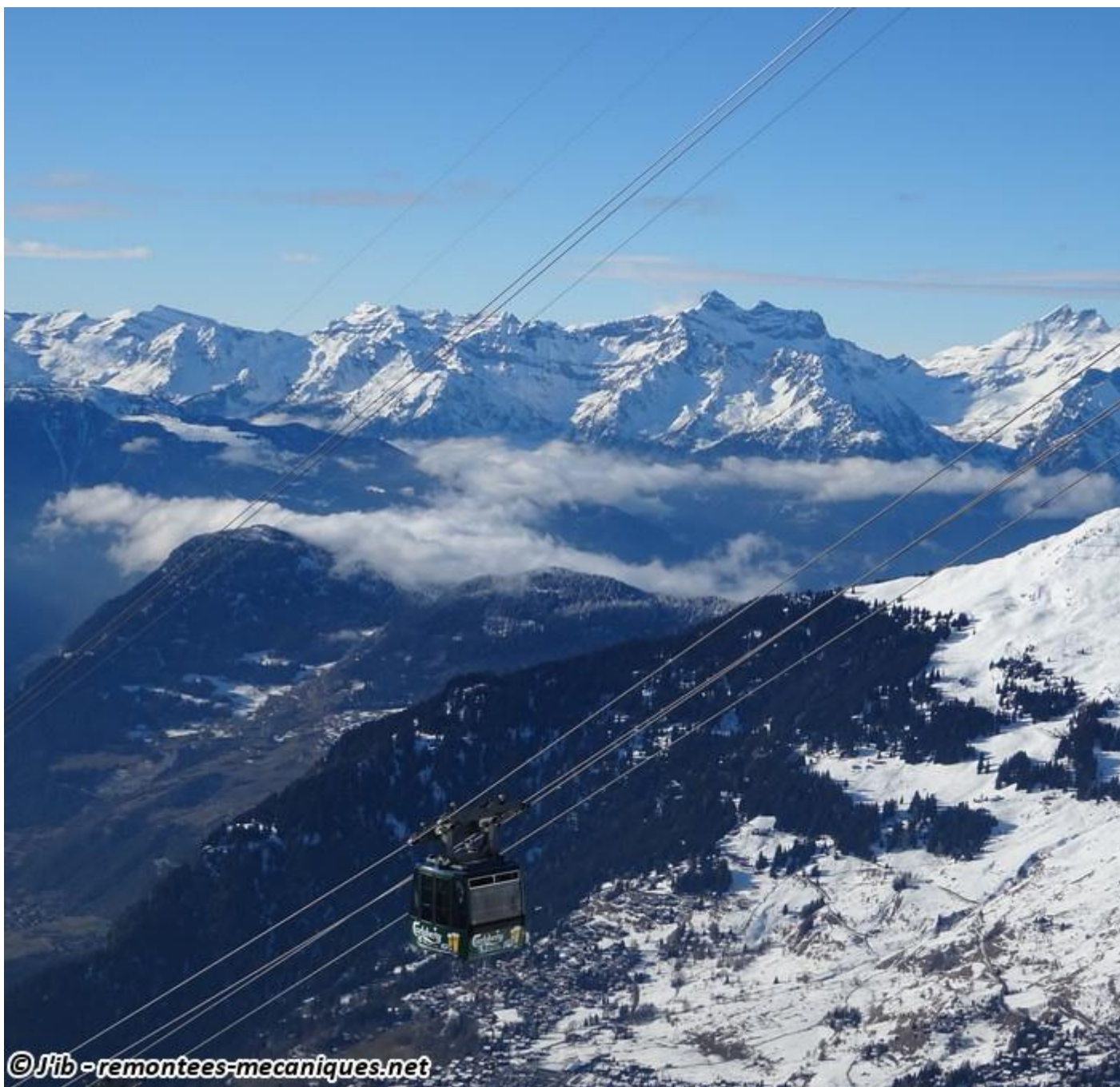




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*Sequence of colorful cabins*





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*The view from the line is sumptuous, as shown by this cabin with Verbier, the Tour Salière and the Dents du Midi behind it.*



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*In this photo you can also see the Pierre Avoi and the mountains of Fully*



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*Viewed from below, some of the cabins still have parts with the original blue paint.*





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*Profile view of one of the cabins with Verbier's most emblematic sponsor, "Carlsberg" beer*



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*Crossing of two Carlsberg cabins seen from below*



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*Crossing of two Carlsberg cabins seen from above*





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*Carlsberg cabin seen from the line*



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*Lower part of a cab seen from the line, the outline of the tire tracks are evident*



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*Despite the new liveries, the "Funispace" logo has been retained on some cabins.*





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*Cabin in line on a steeply sloping section*



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*View of a cabin from the descent, with the Ruinettes complex at the back*





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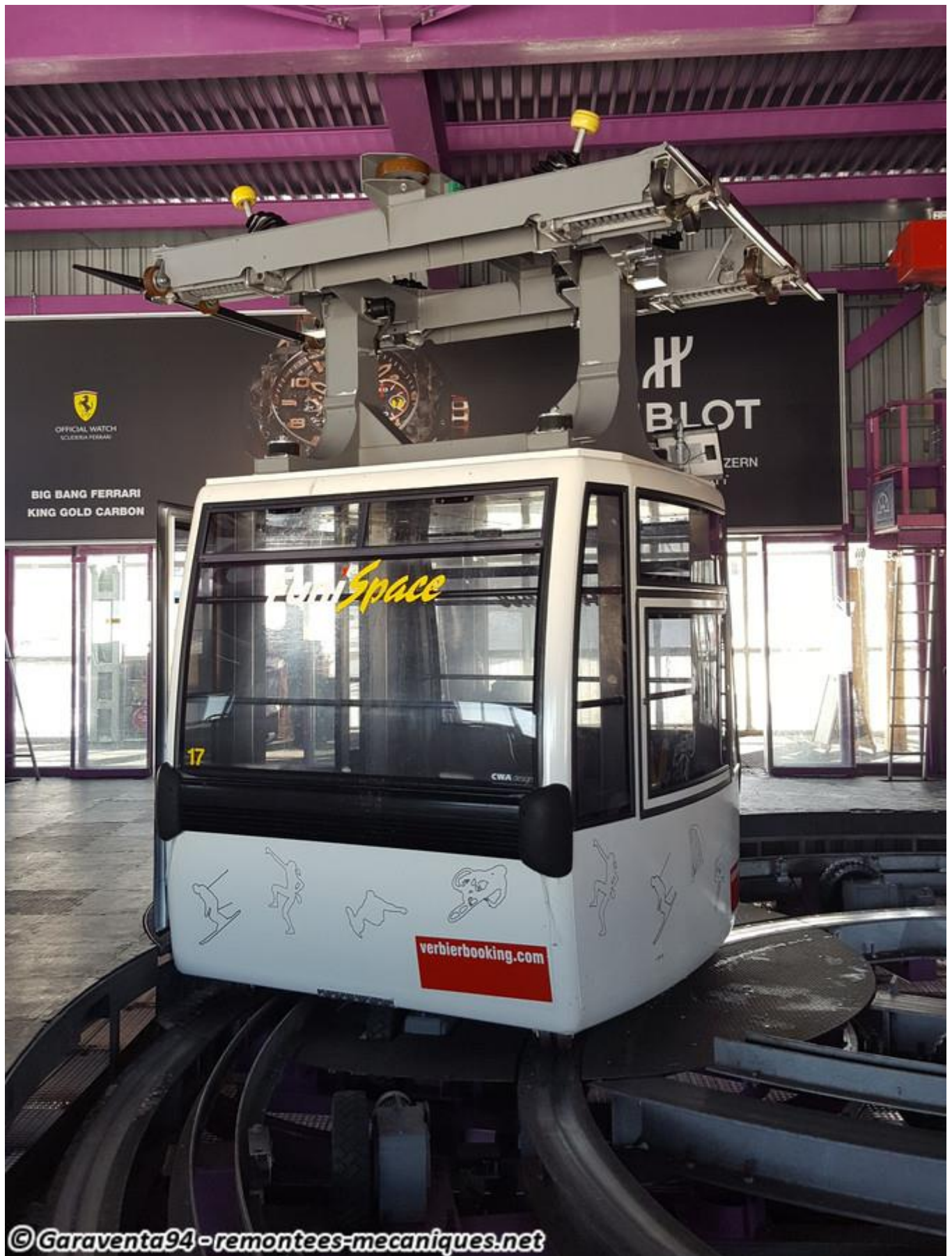
*View of a cabin with Mont Rogneux and Grand Laget behind it, from right to left*





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Cabin leaving the lower station



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Cabin in the outline ...





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... and then in the launcher





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Top view of a cabin in station





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*The service vehicle for transporting equipment*





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Side view



## The gripper

The hanger is made up of two arms with two grippers per arm and there is also a protrusion that is used to adhere to retarders and launchers. The suspension of the Funitel is identical to that of the Funitel de Péclet, but it is higher due to the line inclinations of up to 100%. The same model used in Val Thorens was also used for the grippers, i.e. a symmetrical opening model produced by Städeli, a company which had been merged shortly before into the Garaventa group.



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*In-line clamps*



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*Clamps in station*





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Clamp details





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Bottom view



*Opposite view*

### Technical presentation of the Funispace

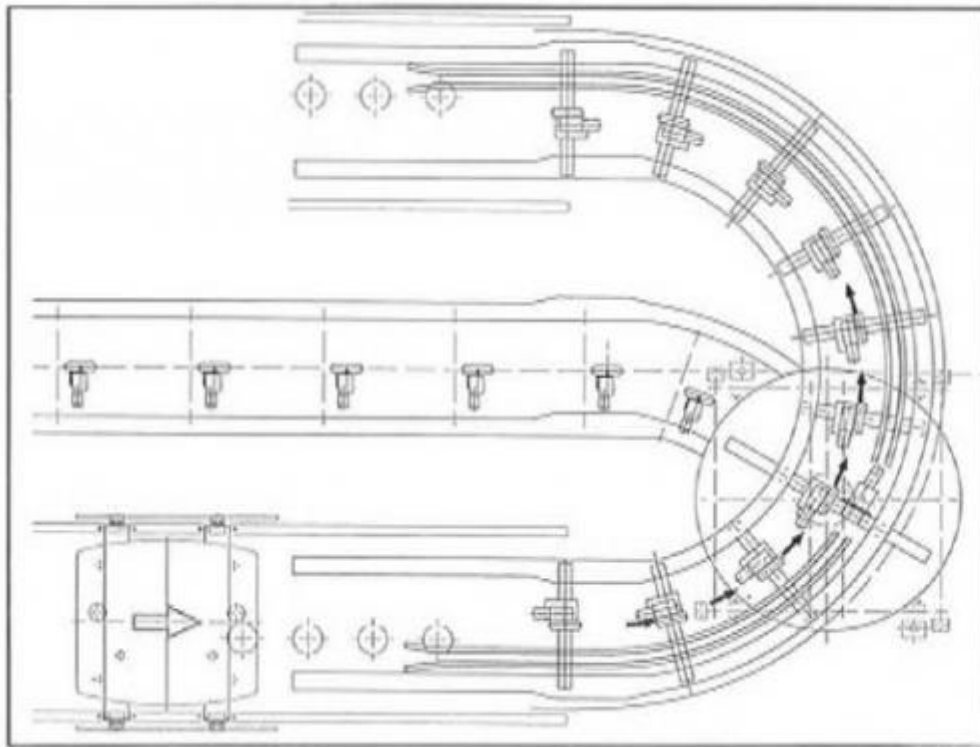
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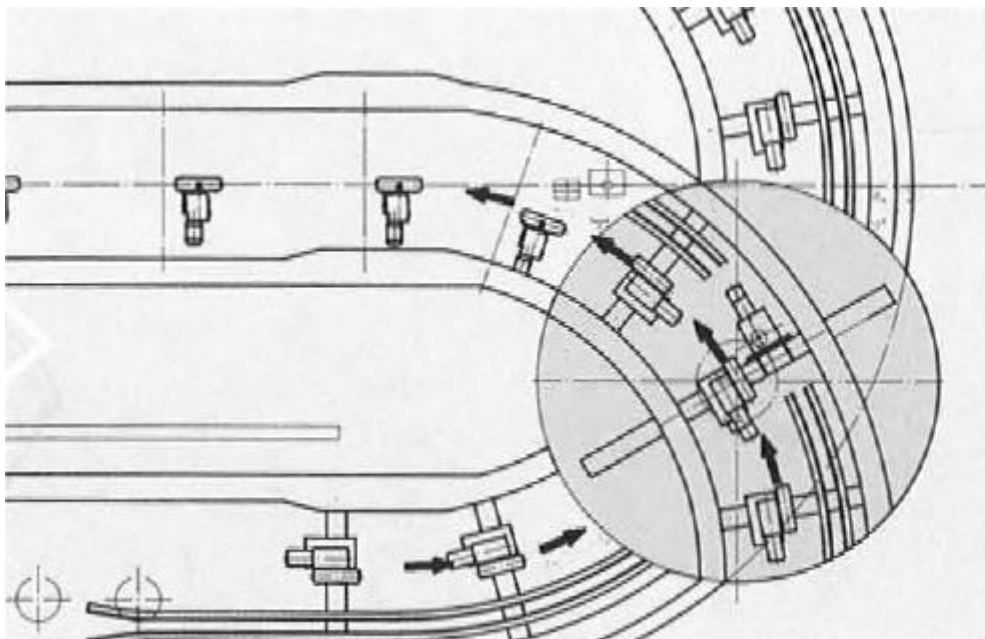
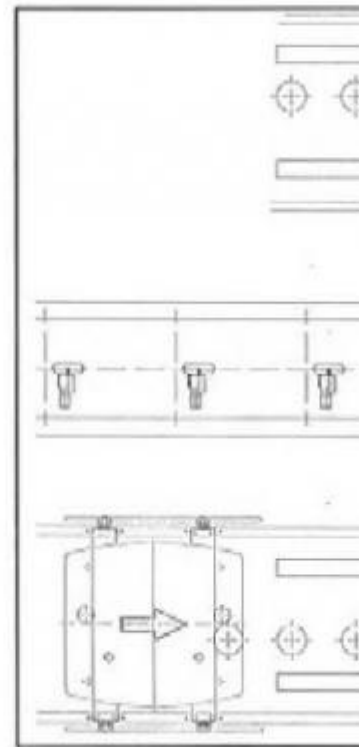
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## **Garage and storage of cabins**

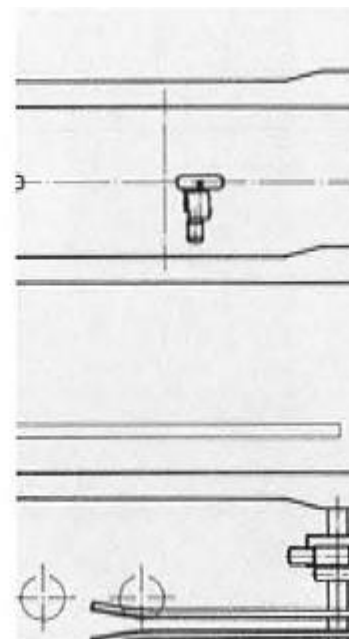
One of the features of the Funitel is how the contour works. It has a ground mechanism that consists of two rails on which the cabins slide, two guide rails that allow the cabs to turn around, which are pushed by a sequence of small tires driven by adjacent small motors, one per tire. The weight of the cabin allows good operation. Just before half of the outline there is a section of it capable of rotating on itself.



*Contour illustration*



*Mobile platform details*



This component is essential for the storage of the cabins in the "garage rail" located in the middle of the launchers. A cabin is placed in the middle of the moving platform, the platform tires stop and the platform begins to rotate, connecting to the garage rails. At this point, the siding tires start to move and the cab moves accordingly. The operation of leaving the garage is the same. This is a longer operation than simple storage, as this operation must be carried out for each cabin.





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Contour view



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*View of a rotating platform tire with its engine*





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View of a tire contour





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*View of the rotating platform*



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*Storage operation with the cab rotating with the platform*





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Entrance into the garage; as you can see it is not possible at the moment that another car can circulate in the contour



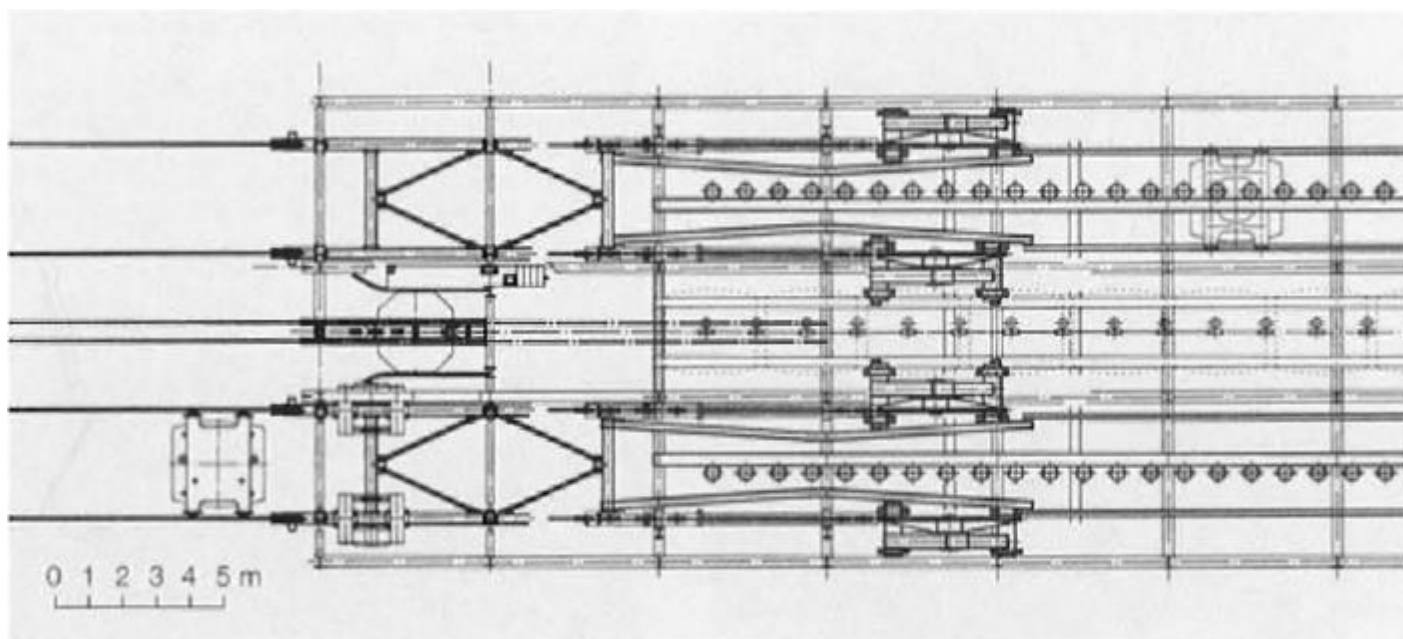


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*Cabin in the garage, already filled to the maximum*

## Launchers and retarders

Garaventa adopts a special system to slow down or start the cabin. At the entrance to the station, the opening of the 4 clamps is actuated by 4 levers which move horizontally, all while the clamps slide on two rails, one on each side. The slowing down is carried out by a battery of tires driven by two independent motors, which transmit the movement by means of a belt. The tire battery begins to move when a cab is about to enter the station, at an initial speed that will allow the cab to first slide as if it were still on the wire. When passing through the cabin, this battery will decelerate to slow down the cabin. Deceleration begins when the cab has separated from the cables. This very complex operation means that there needs to be a considerable distance between vehicles. The launch is similar but reversed, the cabin passes on a battery of tires which allows a speed equivalent to that on the contour. During the passage, it accelerates to drive the cabin at a speed equivalent to that of the cable when it is coupled to it.



*Graphic illustration of a station with the tires of the launchers*







*View of the retarder, with the guide rails for opening the doors in the foreground*



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*View of engine driving retarder tire battery*





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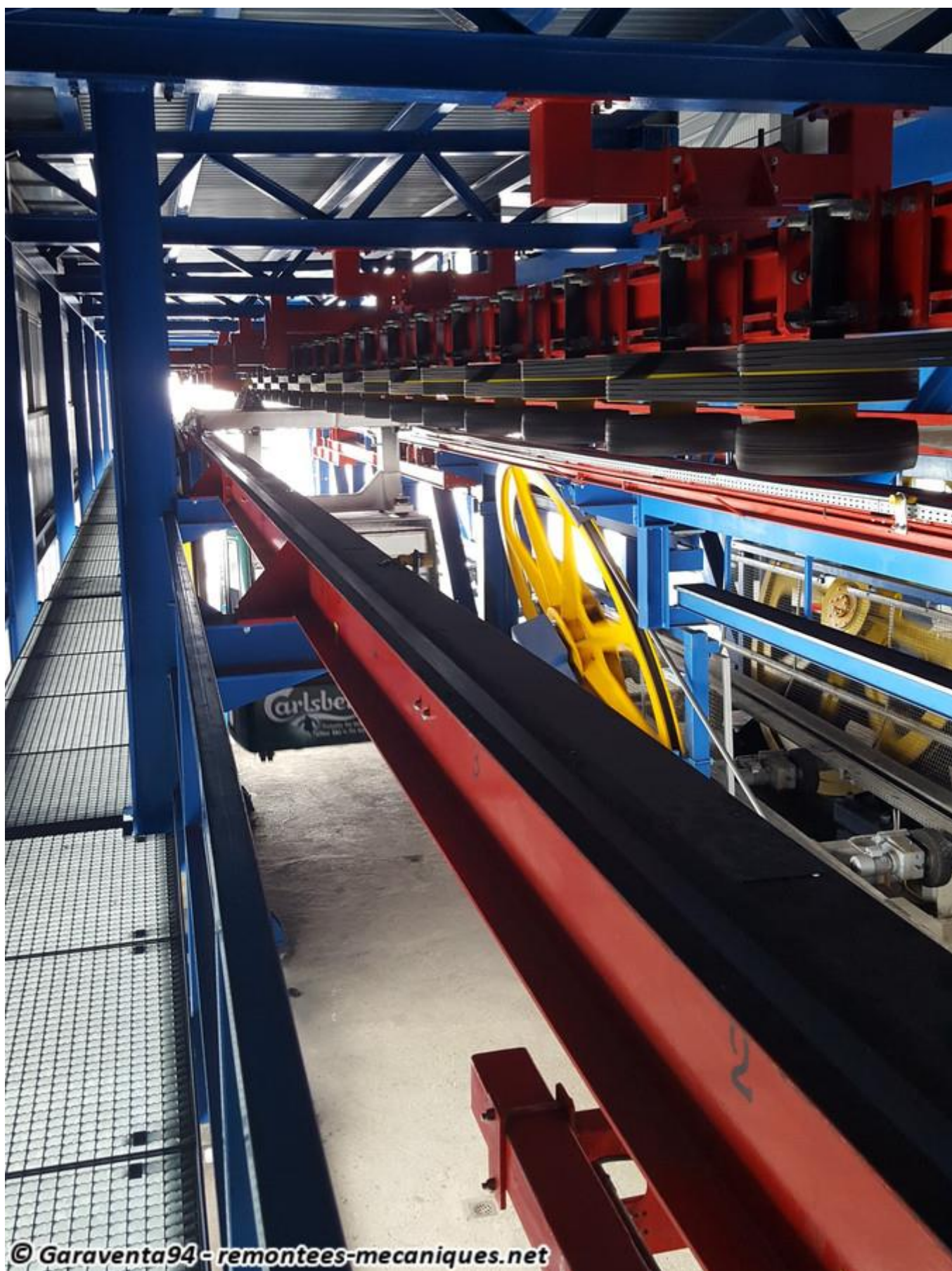
*After leaving the cabin, the cables go underground to reverse the strands. In the case of these first Funitels, the deflection is done by large pulleys.*





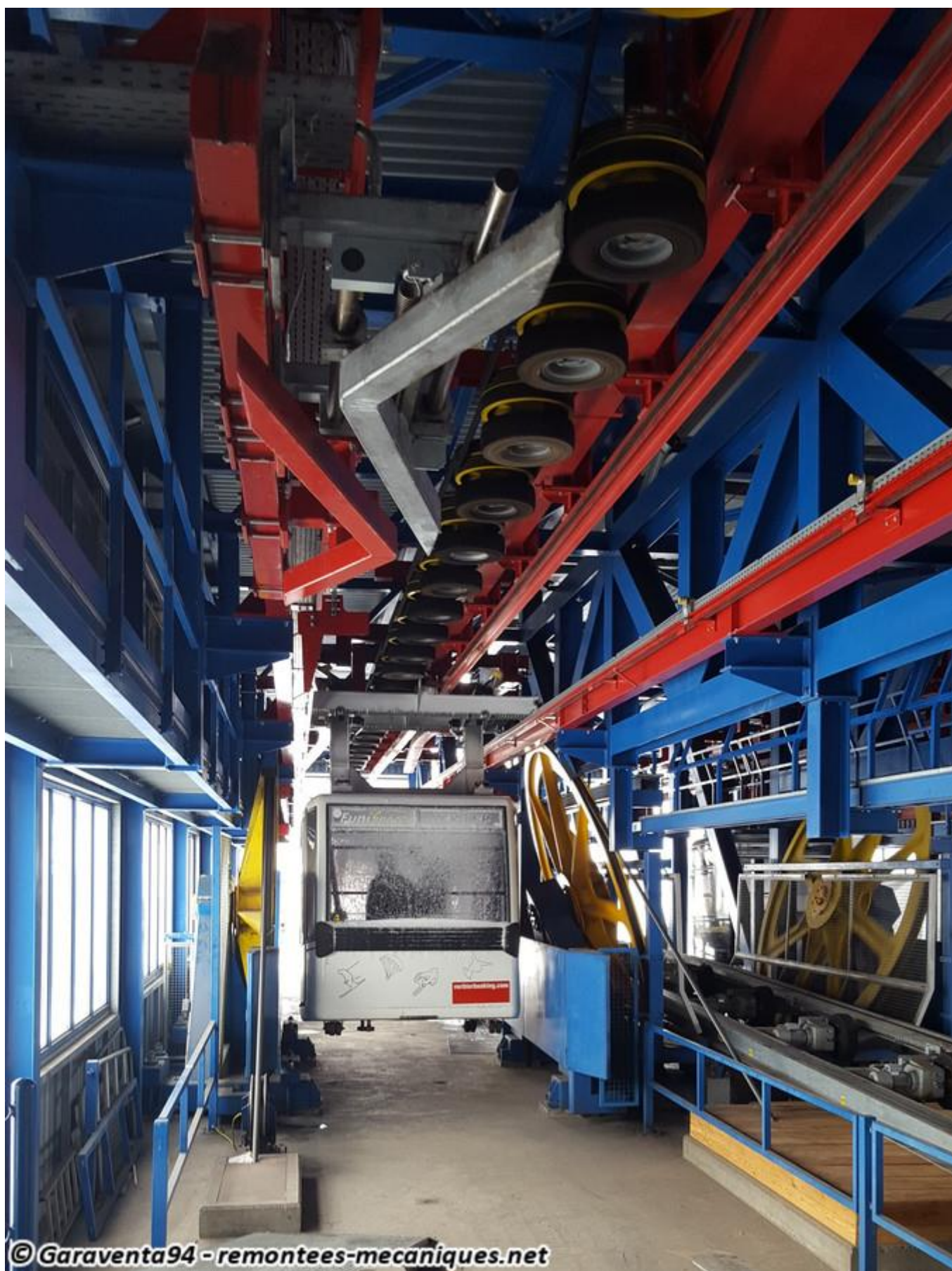


*View of the external deflection pulley on the launch track. The two curved rails seen above on the left actuate the closure of the clamp*



*View of the rails and the retarder tire bank as an arriving cab prepares to disconnect from the cable*

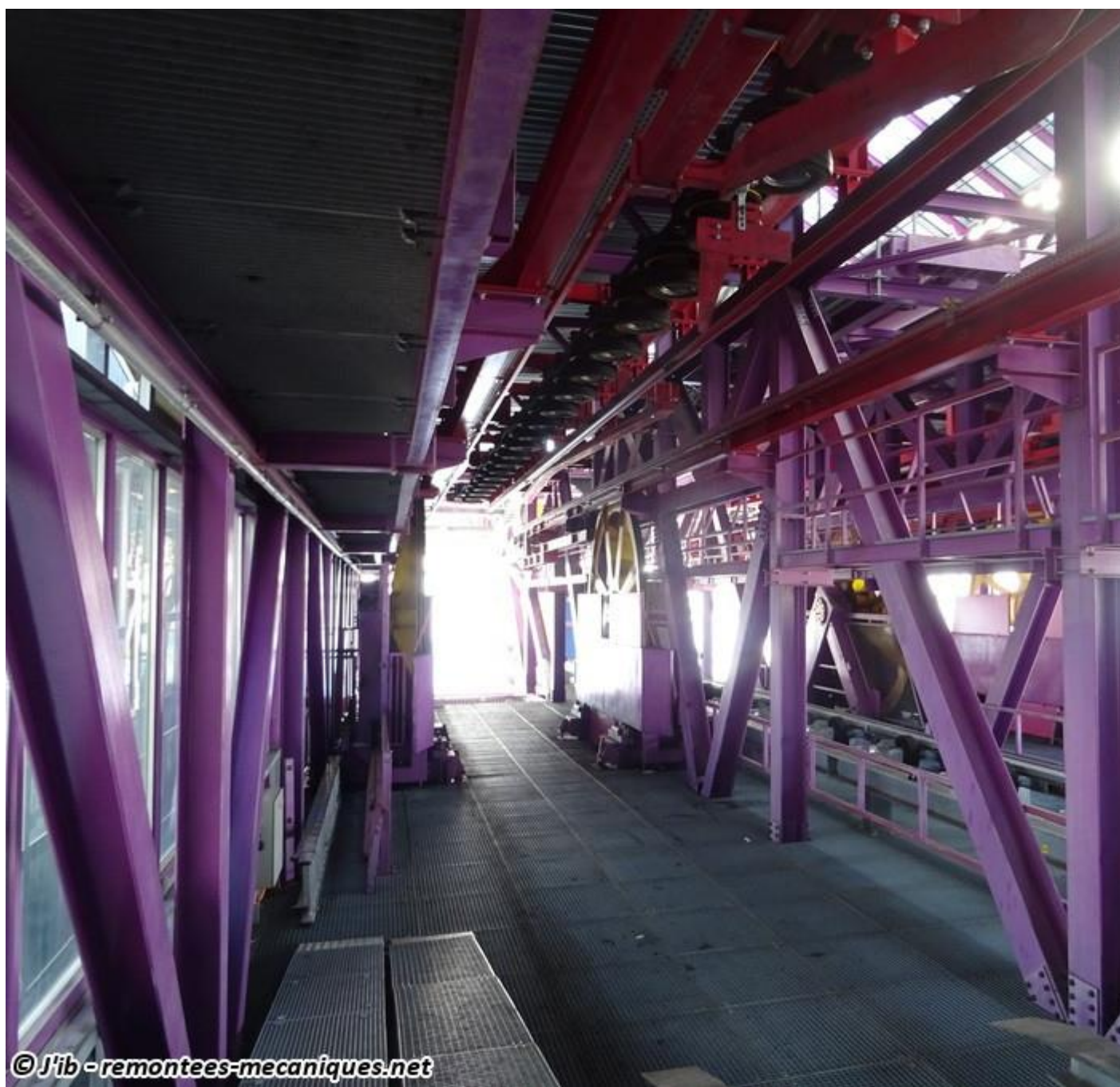




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*Cab slowing down*





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*Similar system in the upper station*



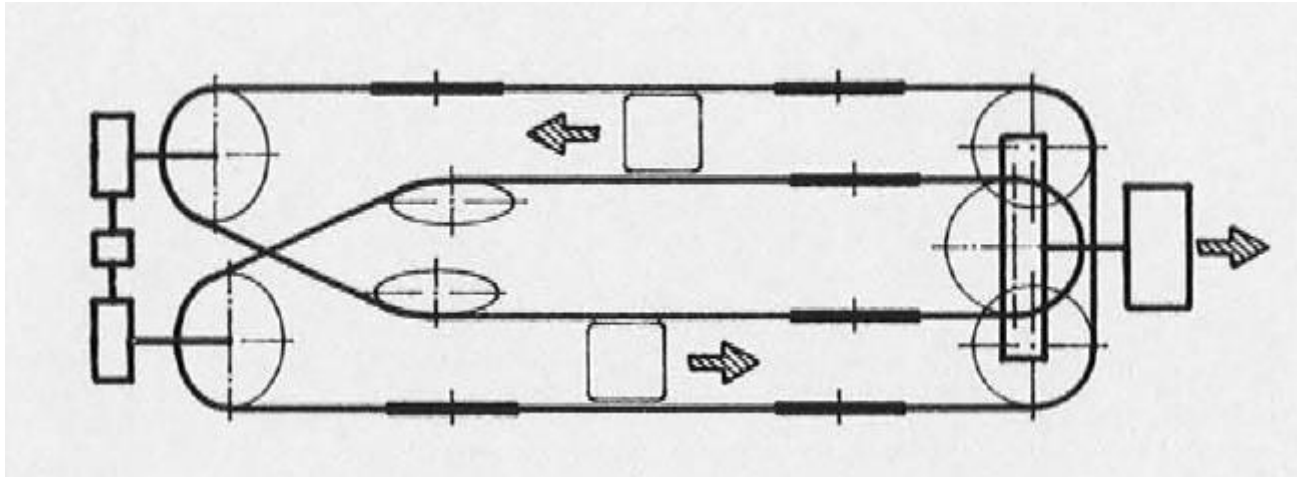
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*Speed reducer motor in the upper station*

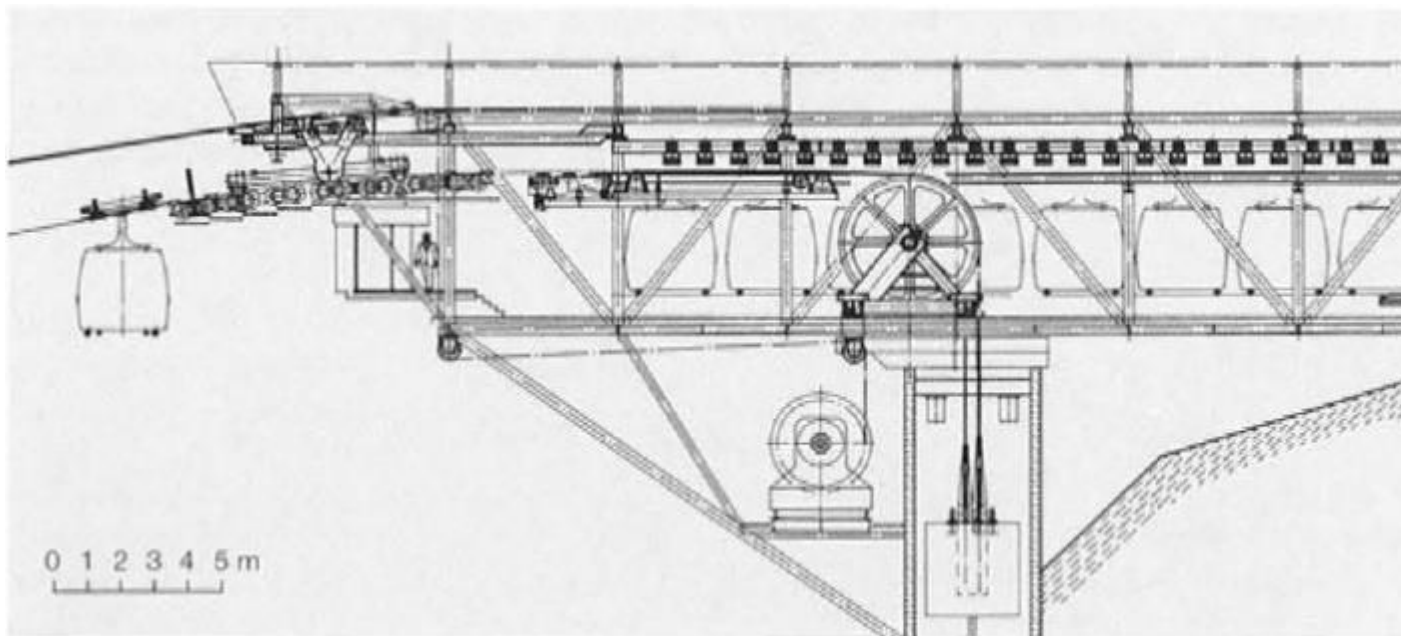
## System voltage

The Funitel has a unique dual loop cable passing 4 times on the course, a different solution of DMC, which makes it possible to simplify the voltage systems. The cable takes a "low, low, high, high" configuration (from left to right), the cabin then hangs on it twice at the same time. To do this, it is necessary to cross the two loops in one station and make them run parallel in the other.





*Cable and pulleys diagram*



*Illustration of the top station, pulleys and counterweights are in the shaft in the center*

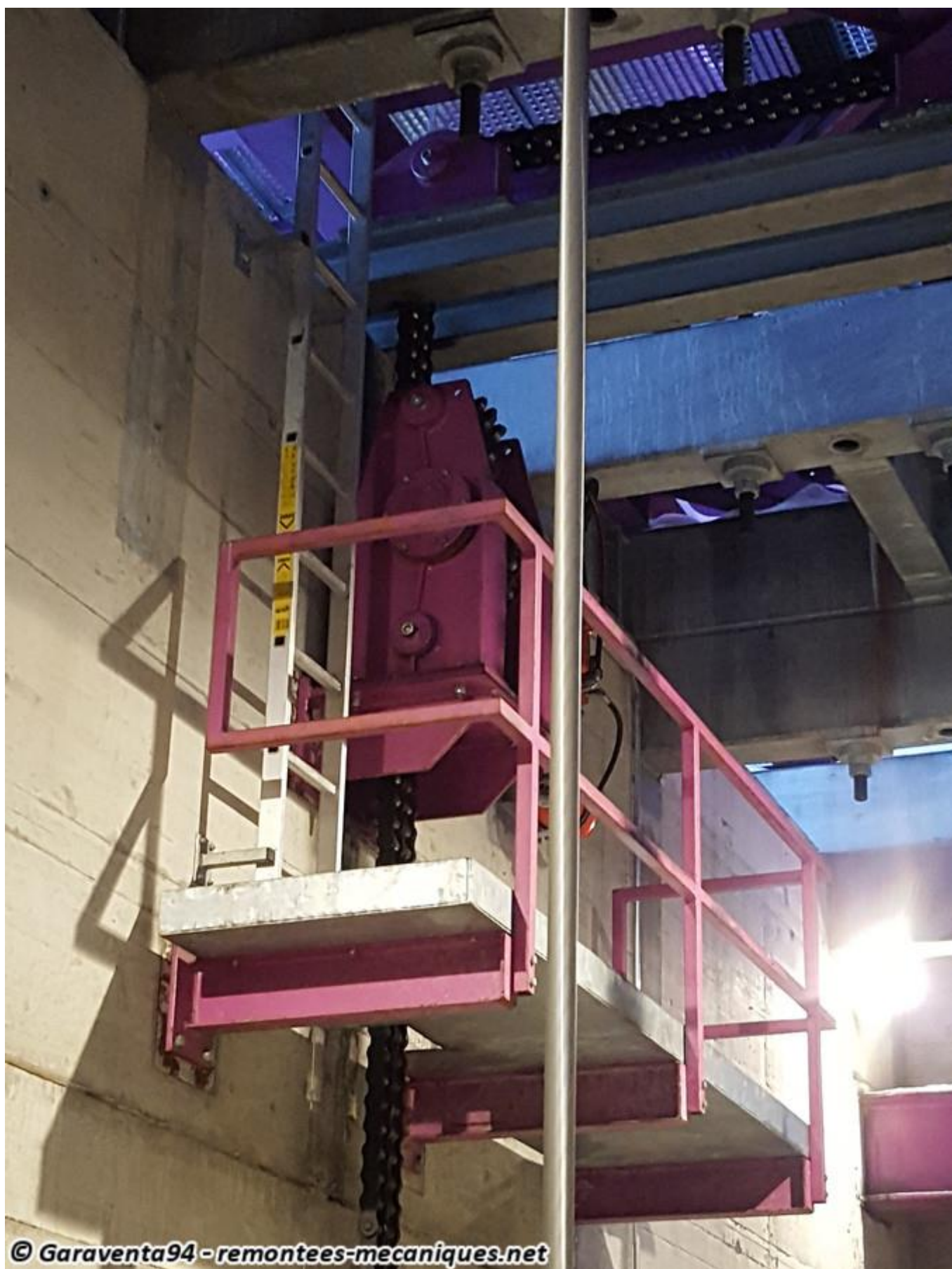
For the tension which is carried out upstream, we have a system with three pulleys which allows the cable to be reversed without crossing each other, we will therefore have two pulleys for the outer loop and one for the inner loop: they are all arranged vertically. and are fixed to two beams on which are anchored the reinforced concrete blocks which serve as counterweight (for a total weight of 160 tons). A special feature is the fact that such a tensioning system is more commonly adopted on two-way cable cars than on automatic systems. The system of beams and pulleys is placed on two vertical rails which block the horizontal movement allowing only vertical translation.





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View of the tension pulleys



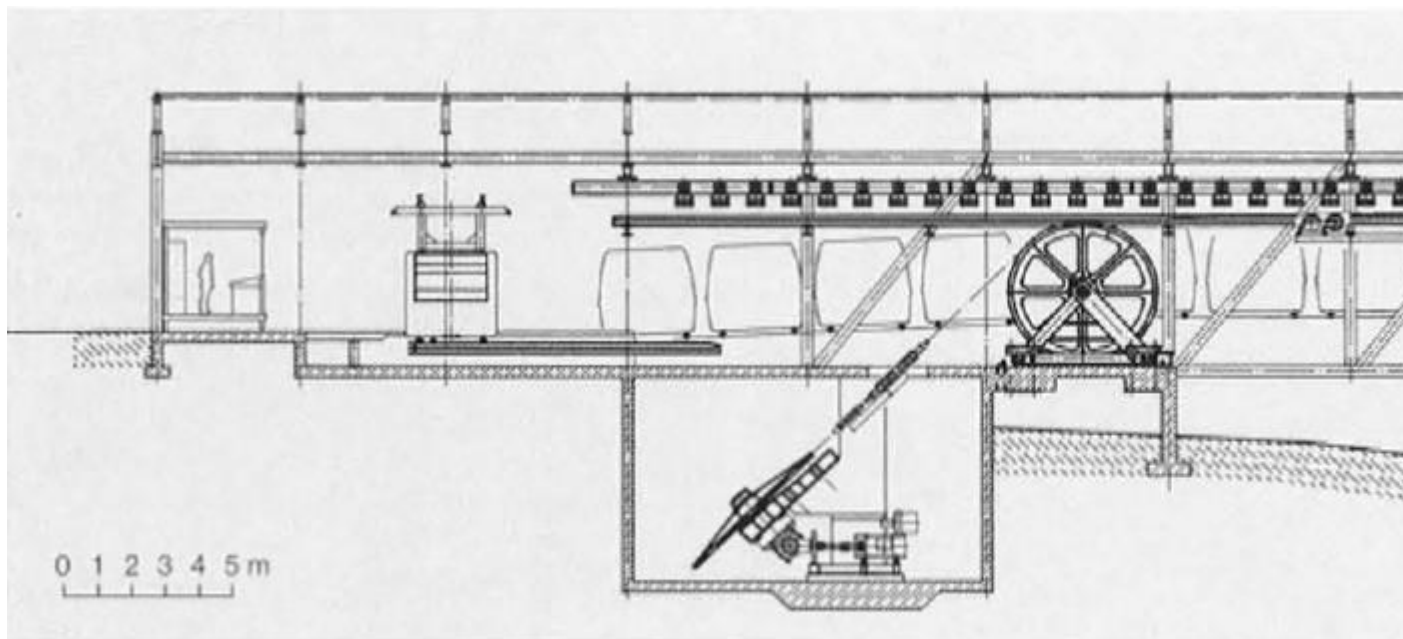
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*The swing damper*



## Motorization

The motorization takes place in the lower station. The system consists of two pulleys arranged obliquely which cross the cable in the 2 central passages. The crossing is possible thanks to two deviation bananas. The two pulleys, each equipped with its own winch, are fitted with a BBC thyristor direct current motor, which guarantees a power of 490 kW, for a total of the two motors of 980 kW. Between the two motors, there is a differential, fundamental for this system, which rectifies the speed so that the two drive pulleys rotate at the same speed. This last element makes it possible to compensate for the slight differences between the two drive units or the differences in diameter of the pulleys; the two pulleys drive are secured during braking because this inevitably produces friction differences which can only be controlled by a direct mechanical connection. Both pulleys are equipped with a service brake and a safety brake.



*Diagram of the lower station with the drive pulleys at the bottom*





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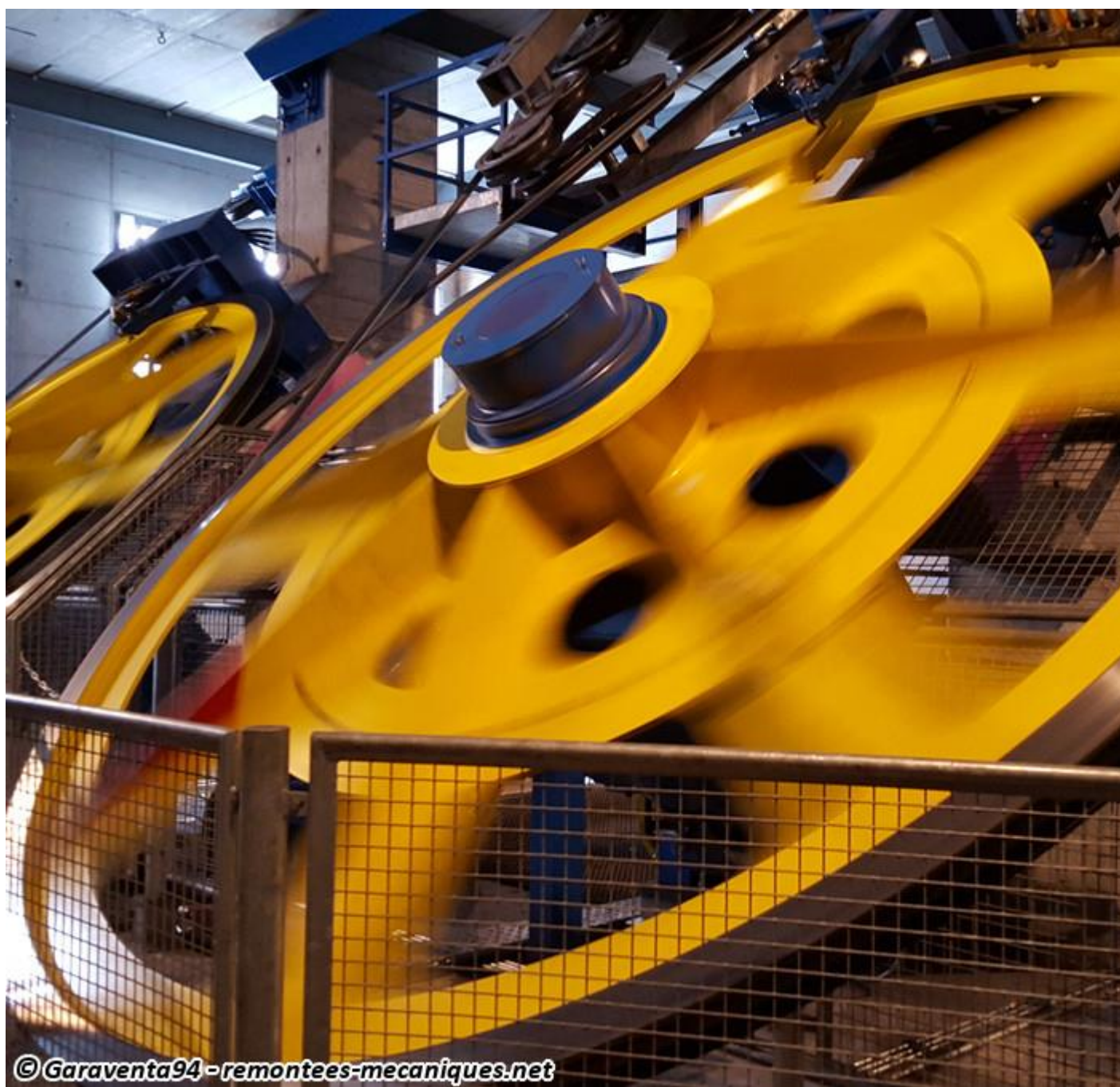
*View of the two drive pulleys*



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*View of the service brakes*

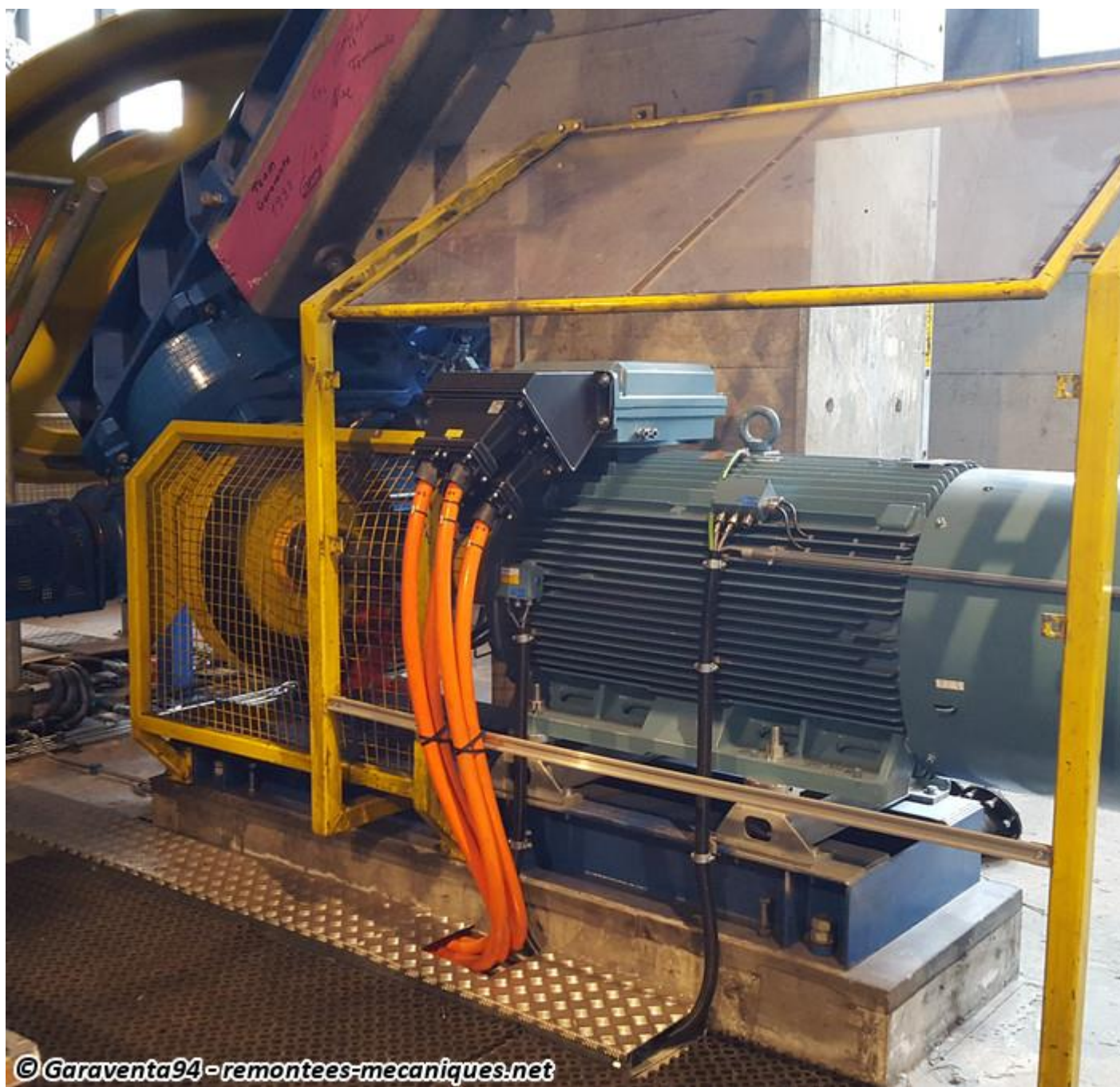




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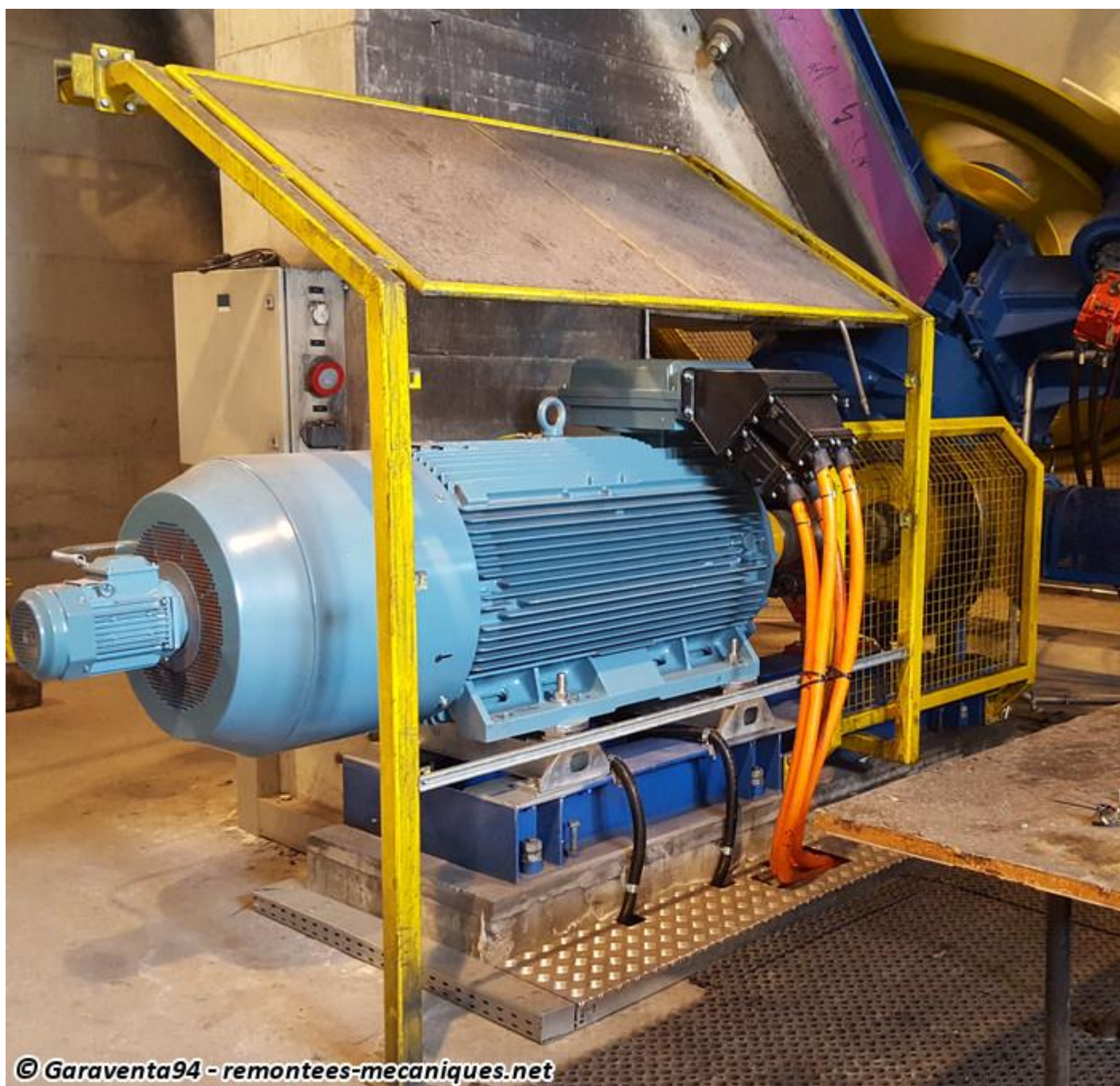
View of the left pulley





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Right engine view



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Left engine view





*Differential view*





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*View of the crossing of the cable, made by two sets of rollers*

## The lifeline

Author of this report: Artsinol

Section written on 11/17/2020 and updated on 12/07/2020

(Cached on 12/07/2020)

## Technical

## installation

The Funitel, with its complicated and very exposed passages, has a very special rescue system. First, there is a fairly traditional emergency drive: a diesel engine operates a hydraulic pump which operates 2 pairs of hydraulic motors which act on toothed rings placed inside the 2 drive pulleys. The system allows the cabins to be brought back to the station even if the failure affects a reduction gear and the latter cannot be used to continue operations. In the event that vehicles are completely blocked on the line, a rescue cable car (15 + 2 people) has been built in the middle of the line and in a high position with respect to the Funitel cables. On the pylons, this cable car passes through a central portal superimposed on the sleepers that support the Funitel tracks. It is a cable car with double carrying cables, with a single cabin with reciprocating operation. The traction cable is not looped but is stretched between the cabin and a winch upstream and between the cabin and a winch downstream. When one winch pulls the cabin on its own, the other acts as a counterweight by tensioning the cable and stabilizing the cabin itself. This configuration eliminates the need for a return cable and greatly reduces cable overlap issues. The cables carrying the lifeline are anchored near the first pylon, because the rescue cabin must not go further downstream than this pylon, which is easily accessible on foot from the lower station and in front of which evacuated passengers can land. Upstream, the supporting cables are tensioned by a hydraulic cylinder located in the structure of the station practically in the middle (in length and in width) of the roof. The downstream winch is placed in the engine room and driven by the same diesel engine that drives the back-up hydraulic motors, because if one system is working the other is not. Upstream, the winch is placed in the room which serves as a foundation,





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*The anchor downstream, at the foot of P1*



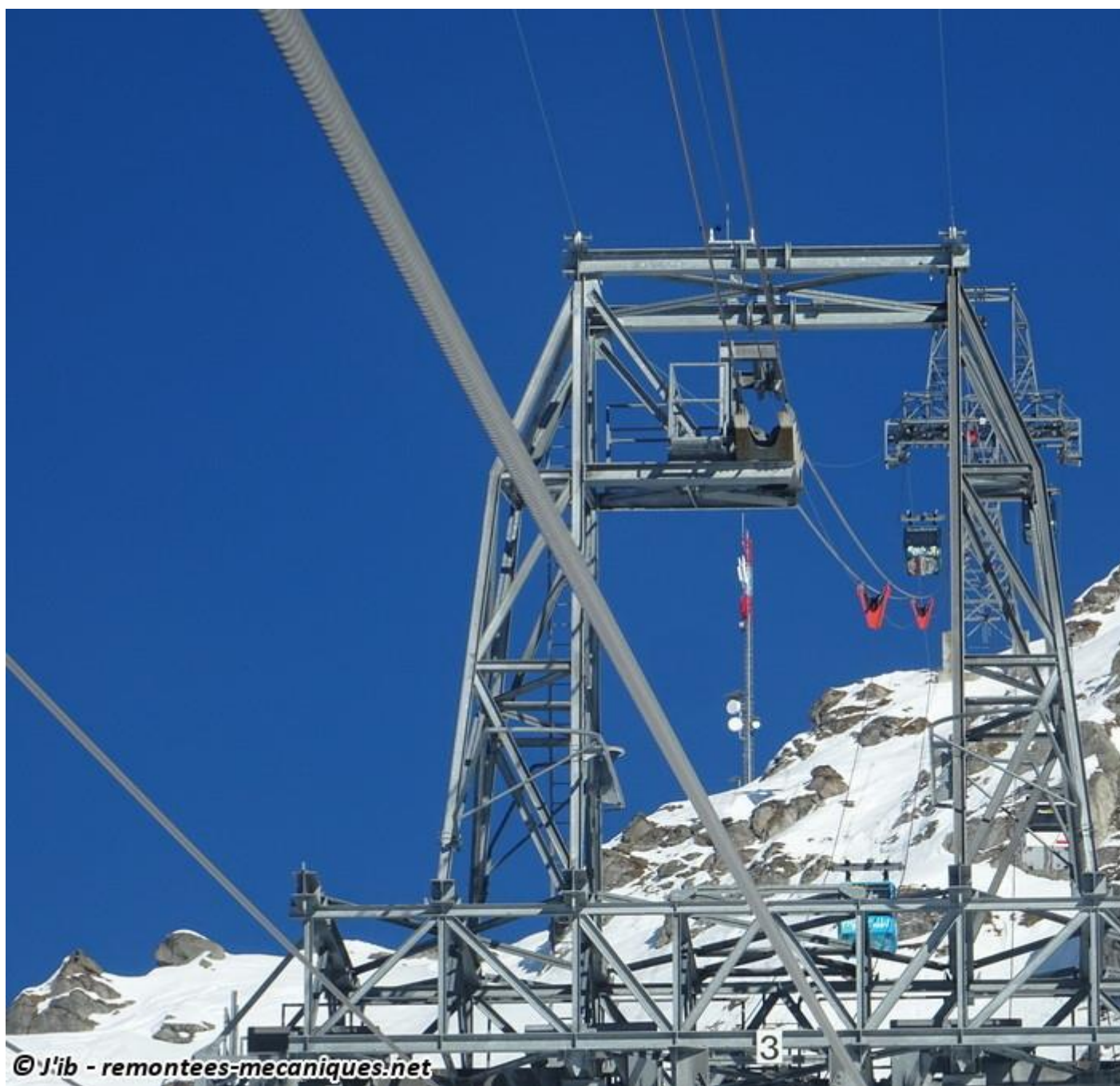
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*View from another angle*





*The shoe on the P3 from above*



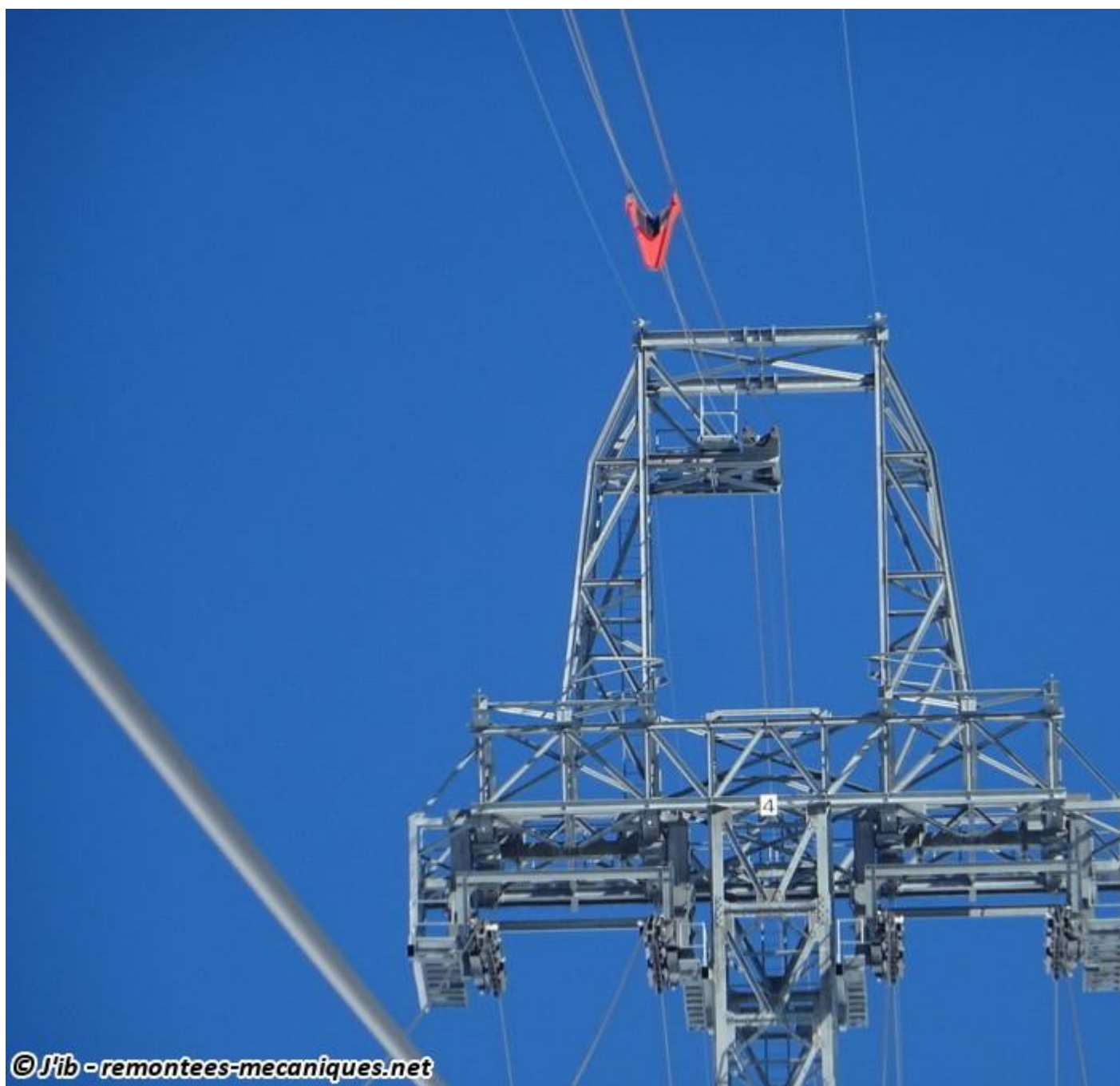
*The shoe on the P3 from the bottom*





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*Close-up, we notice the rollers (compression and support) for the retention of the traction cable*



*The shoe on the P4*





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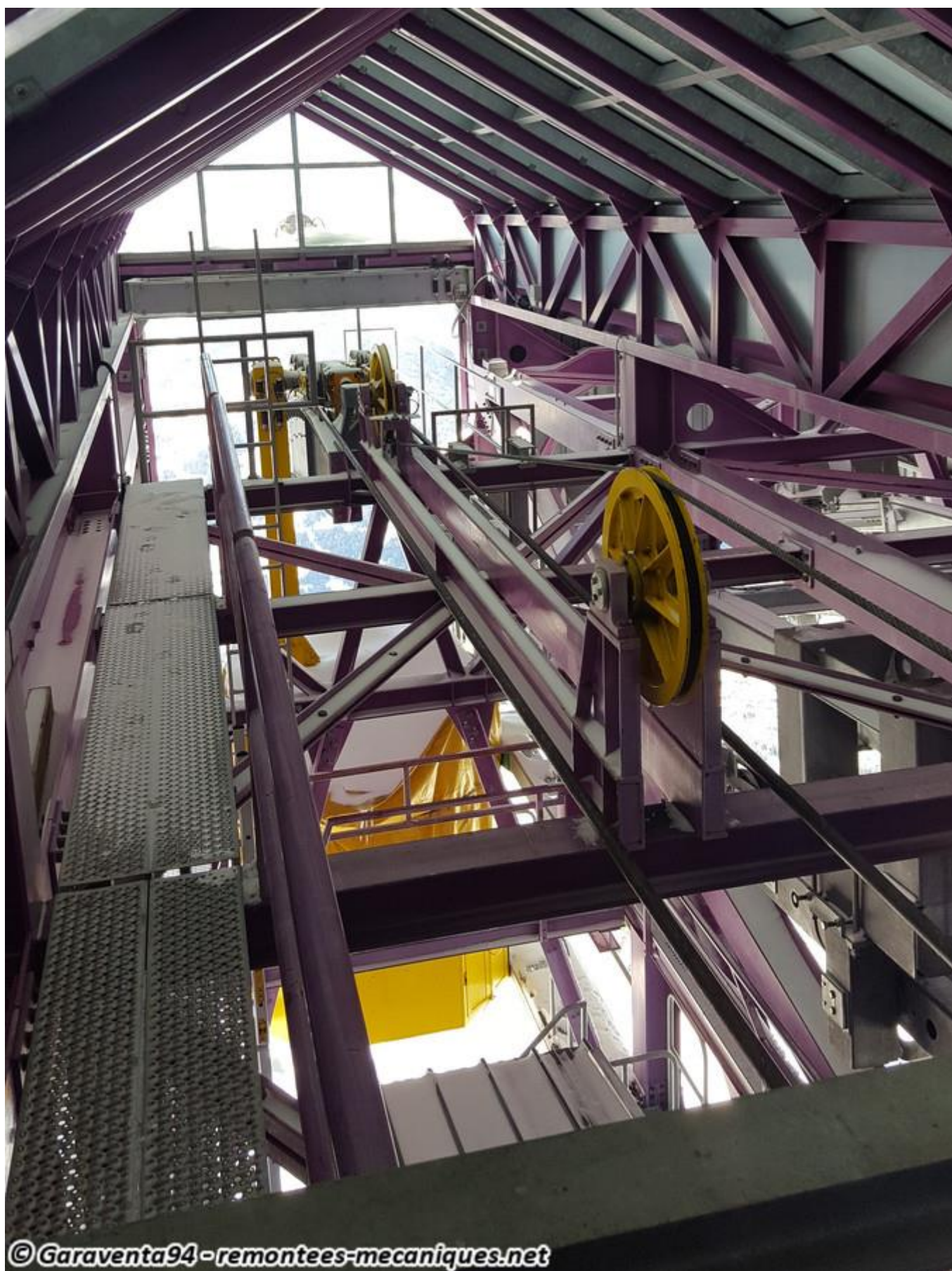
*The yellow tipper is placed in the middle of the launchers of the upper station*



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*Details on the trolley and the station shoe, looking downstream*





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*Tractor cable deflection pulleys*





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Tension cylinder which allows, depending on the situation, to lower the supporting cables of the emergency cabin





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Anchoring of supporting cables





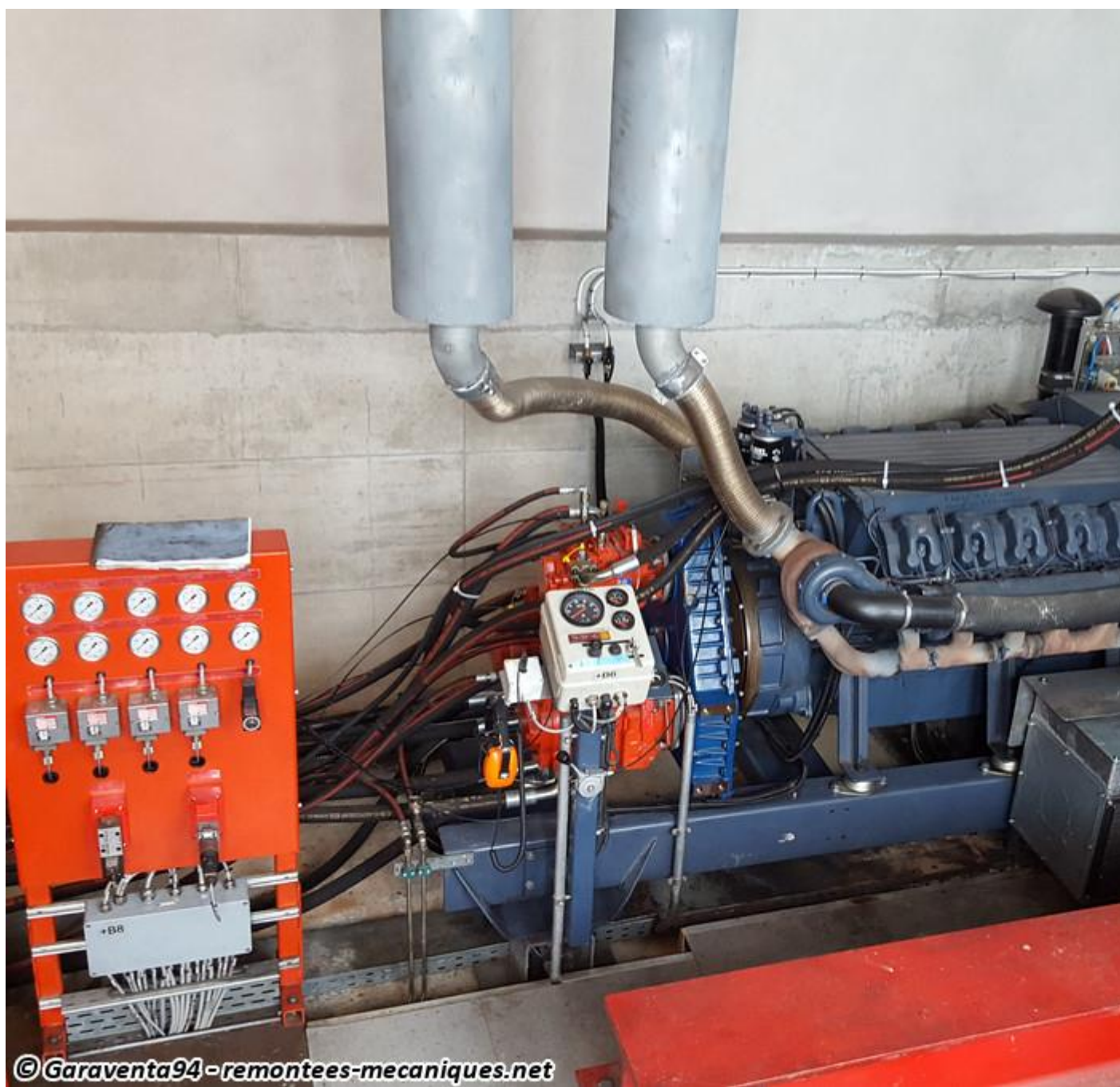
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*Passage of the traction cable and the tension cylinder*





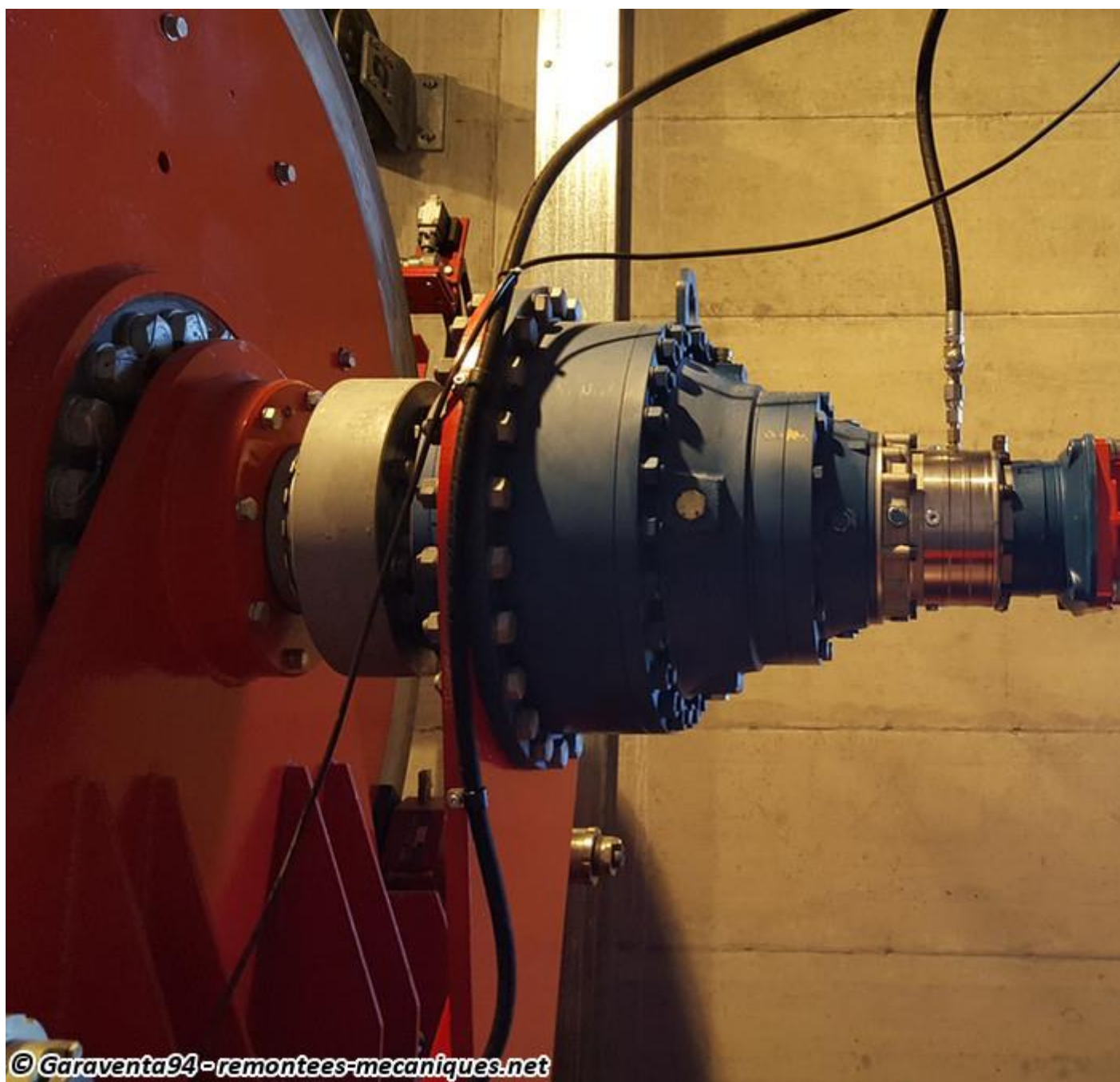
*Motorization of the downstream lifeline*



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Downstream thermal engine having a dual purpose: both standard emergency engine (drive on driving pulley) and drive for the rescue cable car





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*Upstream winch transmission*



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View of the upstream winch with the heat engine in the background





*Winch located upstream*

## The cabin

The 15-seater rescue vehicle is located at the entrance to the upper station. When the lifeline comes into service, there is a system to release the tension of the carrying cables in order to lower them, which brings the two lines closer together in the vertical plane. Once in the vertical plane of the cabin of the Funitel to be evacuated, the cabin of the rescue cable car can be detached from its suspension and lowered by means of a diesel-hydraulic winch until it is fixed to the cabin. clear out. The rescue team then opens the escape window from the outside and passengers move from one cabin to another in complete safety thanks to the presence of a gangway. Once this operation is completed, the two cabins are detached and the rescue cabin is raised to the aid of the mentioned winch and reconnected to its suspension. Depending on the position in which the recovery took place, the rescue team leader decides whether the cabin should be raised to the upper station

or lowered to the lower station. In the latter case, once they have reached pylon 1, the cabin is again detached from the suspension and lowered to the ground where the evacuated passengers descend.



*The cabin leaving the station*

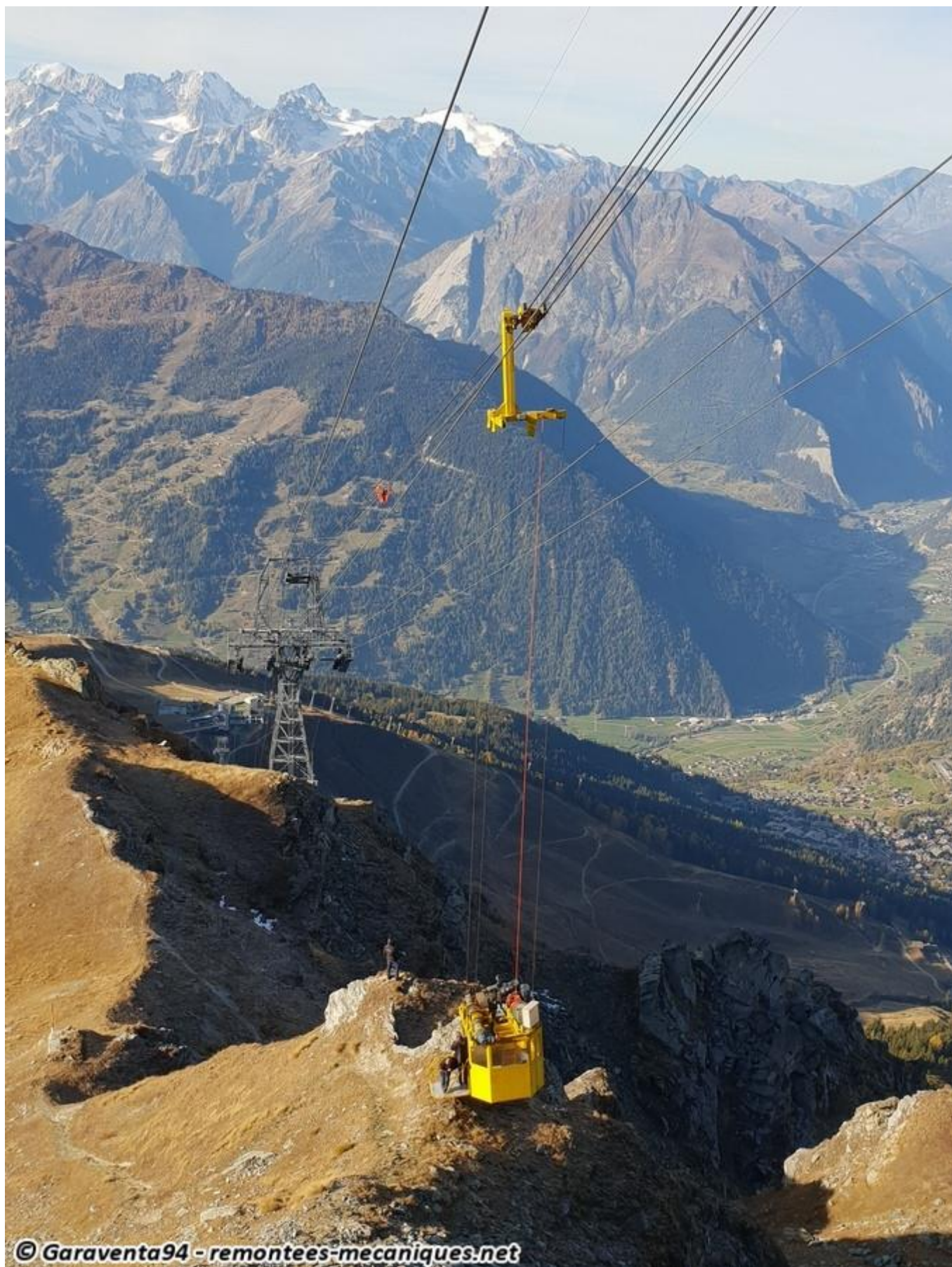




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*Lowering the cab*





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*Lowering the cab to the level of the last litter*





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Descent to P2

## Conclusions

Author of this report: Artsinol

Section written on 11/17/2020 and updated on 12/07/2020

(Cached on 12/07/2020)

## The Funitel from the slopes



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*The line seen from Vacherets*





*The upper part of the line seen from the lower station*



*The first large span, we see the Mayentzet and Attelas chairlifts*





*The P1 seen from above*



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*Profile view of the P1 from the ground*





*The P2 seen from the Vacherets*



*The P2 with the setting sun and the Mayentzet chairlift*





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*The P3 seen from afar, with the "La Chaux Express" tele-combi at the back*



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*The P4 with the passage of a cabin*





*The P4 seen from afar, with the Dranse valley behind*

## Conclusions and acknowledgments

The Funispace immediately became a symbol. From a historical point of view, it takes over one of the oldest lines of Verbier and the 4 valleys, with its origins far back in time. From a technical point of view, it represents a generational change. The Funitel was the ski lift that was missing at the time, and its success was already almost certain, as evidenced by the orders placed in Garaventa by Crans Montana, Verbier and Zermatt even before the presentation of the "Swiss" interpretation of the developed prototype. by Réel and Creissels.

Today, the large detachable installations developed at that time, namely the Funitel and the 3S, represent the top of the cable car market, as they are the only cable transport installations which, so far, do not seem to have any limit, both in terms of travel and performance.



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*Funispace, symbol of a change of generation*