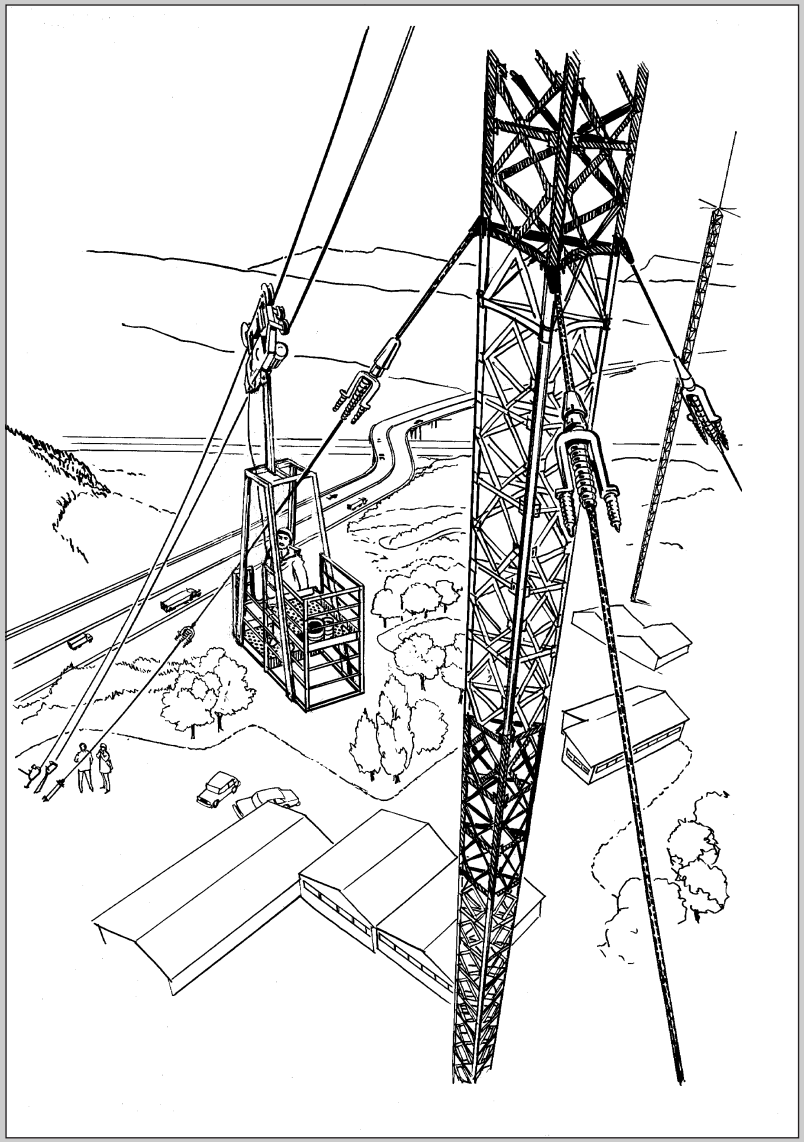
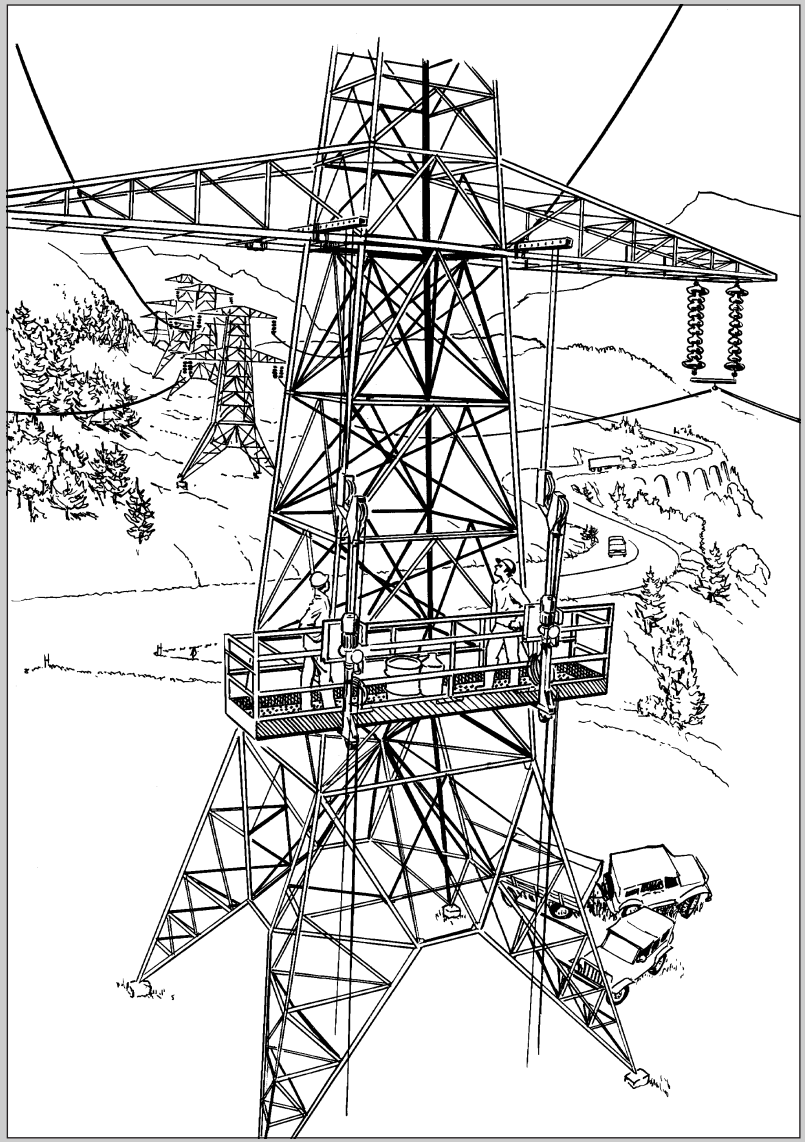
Transmission towers for radio/TV, antennas





Lifting of parabolic reflectors

Access equipment for radio antennas

Access for guy ropes

product information	lifting of parabolic reflectors	ref.: M-092 rev. no.: 1 date: 10/94 page: 1/1

RO62

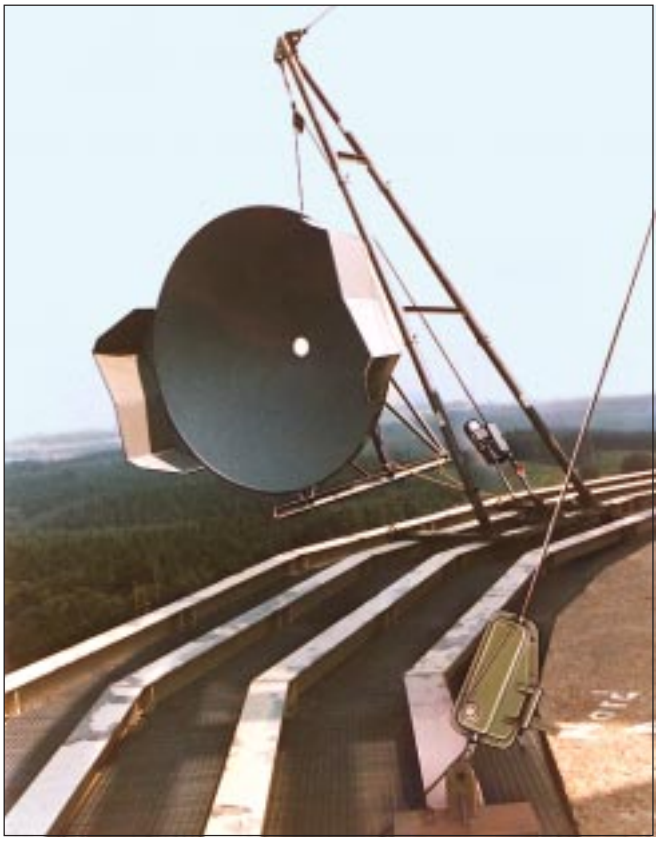
Application: Lifting of parabolic reflectors onto a radio transmitter tower
Site: Directional radio transmitter tower, Reken-Haltern/Germany.
Customer: SEL (Siemens-Elektrik-Lorenz),Stuttgart
Equipment: 1 motorised TIRAK T-510 with wire rope
1 manual TIRFOR TU-16

Description of application:

Problem:
Lifting parabolic reflectors to a height of 60 m (upper platform). Weight 475 kg. Until now, these elements were lifted by means of TIRFOR manual hoists.

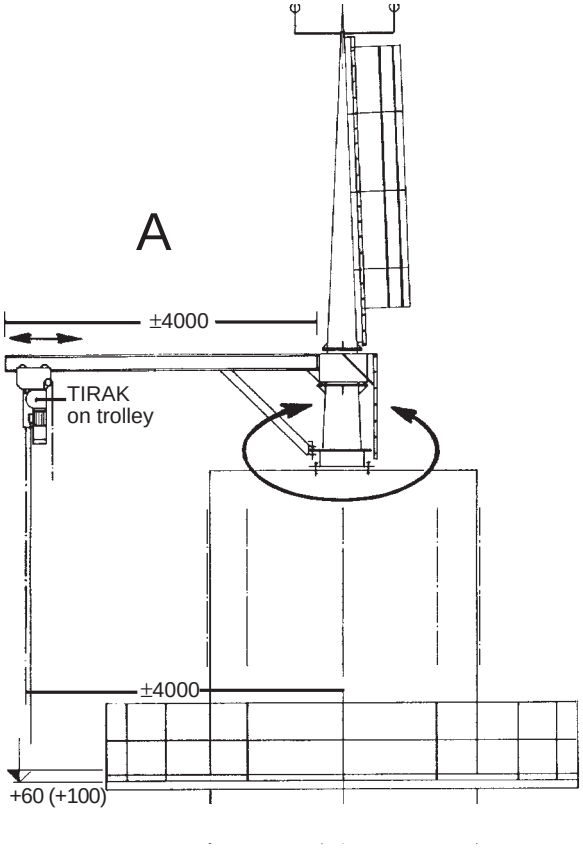
Solution:
The TIRAK T-510 is mounted on a bipod, the inclination of which is controlled by means of the manual TIRFOR TU-16. The main wire rope passes over a reversing sheave.
Preference has been given to the motorised TIRAK hoist because of its higher lifting speed and its ease of manoeuvring.

RO62.1



RO62.3

(project 80.11.14 – Casteau Shape)

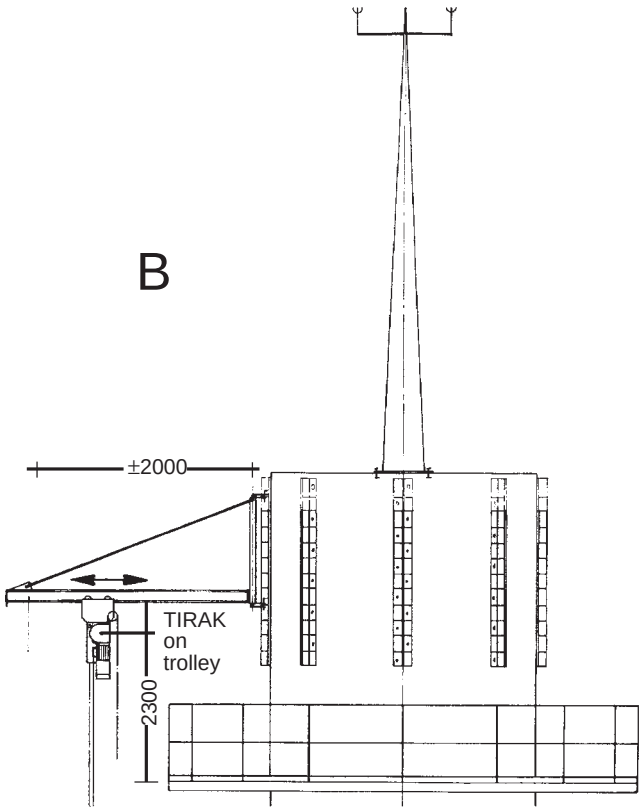


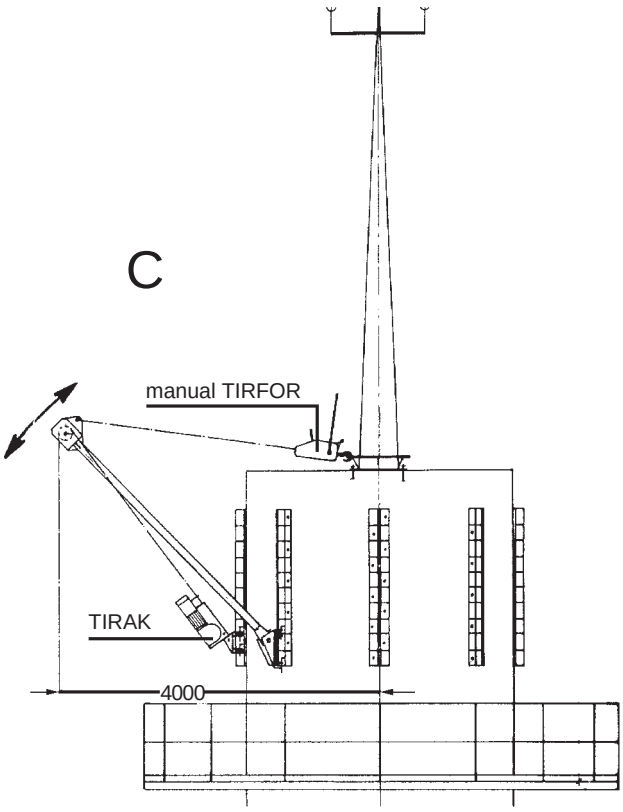
Different solutions are possible:

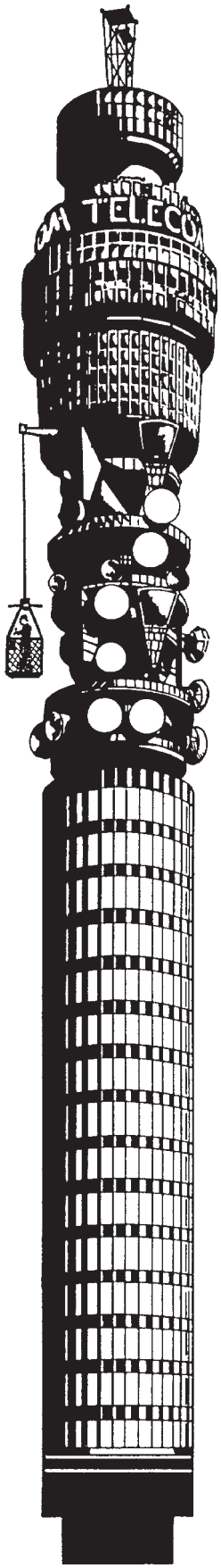
A) Rotating beam with TIRAK hoist attached on monorail by trolley

B) Fixed beam with TIRAK hoist attached on monorail by trolley

C) Bipod, lifted or lowered by manual TIRFOR







Application: Inspection and maintenance of transmitting reflectors
Site: TELECOM Tower, London
End User: BRITISH TELECOM, London
Contractorr: John Smith Cranes (Keighly) Ltd.
Equipment supplied:
– 1 MAGTRON 3000S system (1)
– 2 TIRFOR machines (8)
– 2 automatic BLOCSTOP safety devices (9)
– 2 secondary safety wire ropes (7)
– 2 powered wire rope reelers (10)

Description of application:

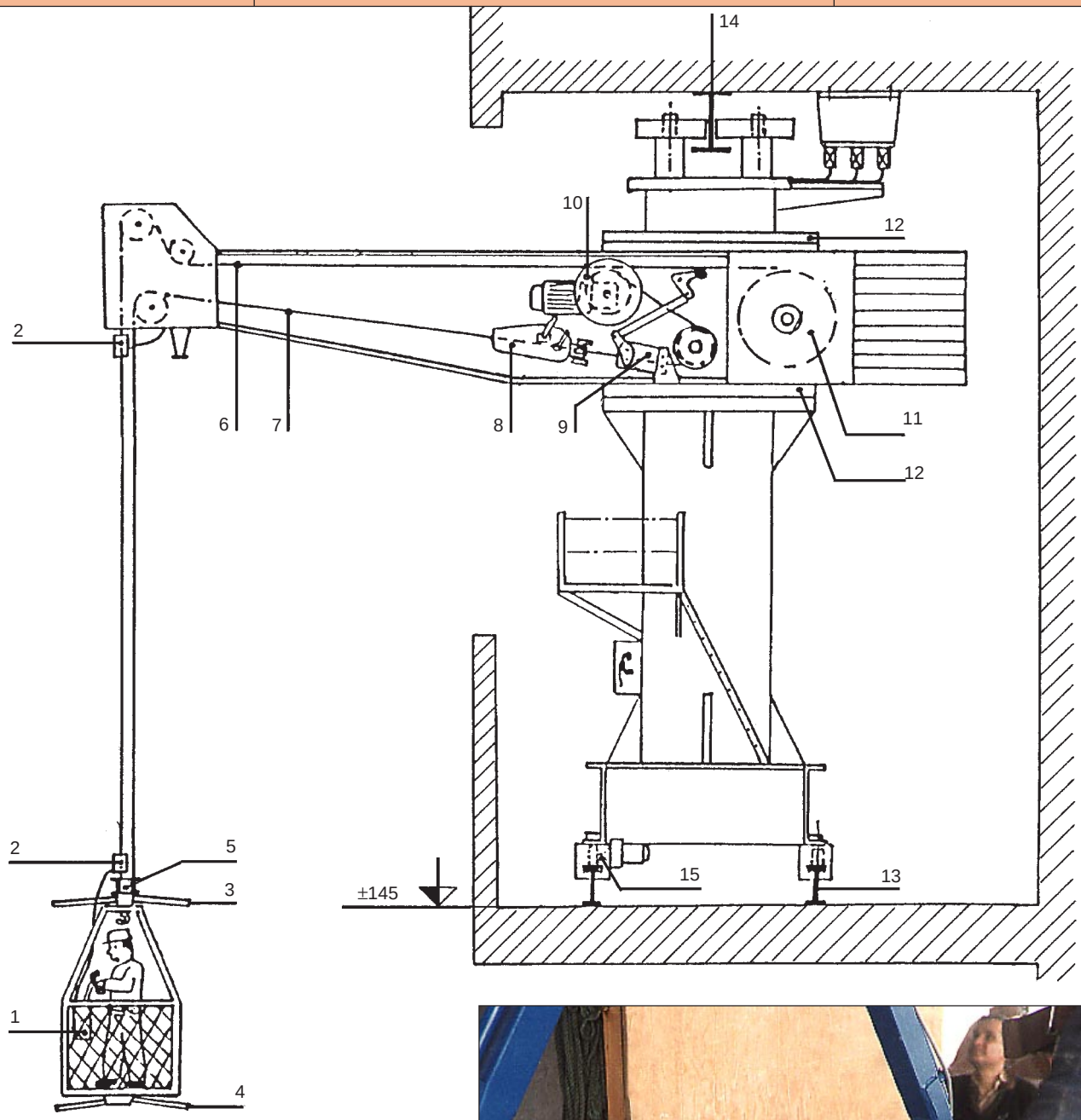
Problem:
British TELECOM needed a crane that could be converted into a high speed access cradle, for installation work on the transmitting reflectors, at between 110 m and 145 m height. In addition, there was the problem of controlling the cradle over such a long distance with the operator requiring full control over all 16 functions of the system as well as the provision of a communication link with the operator. A further problem was how to recover the cradle in the unlikely event of a power failure.

Solution:
John Smith Cranes (Keighley) Ltd were asked by British Telecom to solve this access problem. In turn the contractor approached TIRFOR Ltd for advice and assistance. TIRFOR Ltd proposed that the one-man cradle be fitted with the MAGTRON 3000S system (1) which is a patented impulse system to operate the controls and provide a telephone link for the cradle operator, using the lifting wire rope as the transmitting medium.

PA295

The cradle is normally lifted and lowered by two standard hoists (11), but TIRFOR Ltd also provided a secondary safety system, comprising 2 hand operated TIRFOR suspended cradle machines (8) and automatic BLOCSTOP safety devices (9).
Under normal operation the wire ropes passe freely through the jaws of the TIRFOR machines. In the unlikely event of a power failure or motor or electrical problems, or a lifting rope failure, the automatic BLOCSTOPs will lock onto the secondary safety wire ropes. The TIRFOR machines can then be engaged onto the ropes and the complete cradle lifted to safety.

Application completed by TIRFOR Ltd., Sheffield.



1. MAGTRON 3000S remote system
2. Transducer
3. Upper anti-collision bar
4. Lower anti-collision bar
5. Crossbar
6. Suspension wire rope
7. Safety wire rope
8. Manual TIRFOR machine
9. Automatic BLOCSTOP safety device
10. Motorised wire rope reeler
11. Hoisting rope drum
12. Slewing ring
13. Circular guide track
14. Circular guide rail
15. Gearmotor

PA295.1 - MAGTRON 3000S remote system

product information	access equipment for radio antennas	ref.: M-221 rev. no.: 1 date: 10/94 page: 1/1

PA173.4

Application: Work on a radio antenna
Site: Hosingen/Luxembourg.
Customer: Luxembourg broadcasting Co. RTL
Equipment:
- 1 special working platform with 4 motorised TIRAK T-500, 4 BLOCSTOP safety devices andlifting and safety wire ropes
- 1 ALTA 300 platform equipped with 2 motorised TIRAK T-1022, 2 BLOCSTOP safety devices and lifting and safety wire ropes

Description of application:
The teams responsible for the maintenance of the RTL antennas have become regular and faithful users of TIRAK and of ALTA platforms.
We show them on a radio antenna 300 m high situated in the Luxembourg Ardennes and on which deflectors are being placed.
The platform encircling the mast was purpose made by the customer. It is equipped with 4 TIRAK T-500 and 4 BLOCSTOP automatic safety devices.
Personnel access is via the ALTA platform equipped with TIRAK T-1022, speed 18 m/minute.

PA173.1

PA173.3

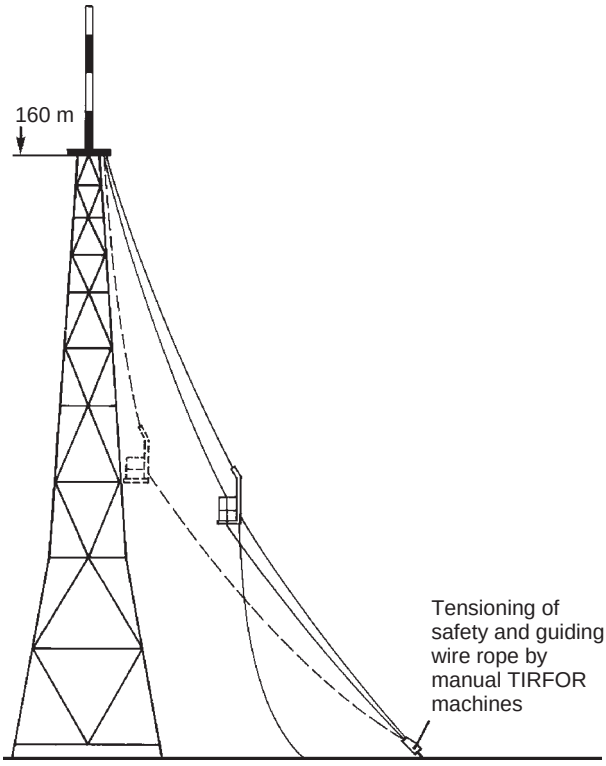
product information	access equipment for radio antennas	ref.: M-220 rev. no.: 1 date: 10/94 page: 1/1

PA165.11

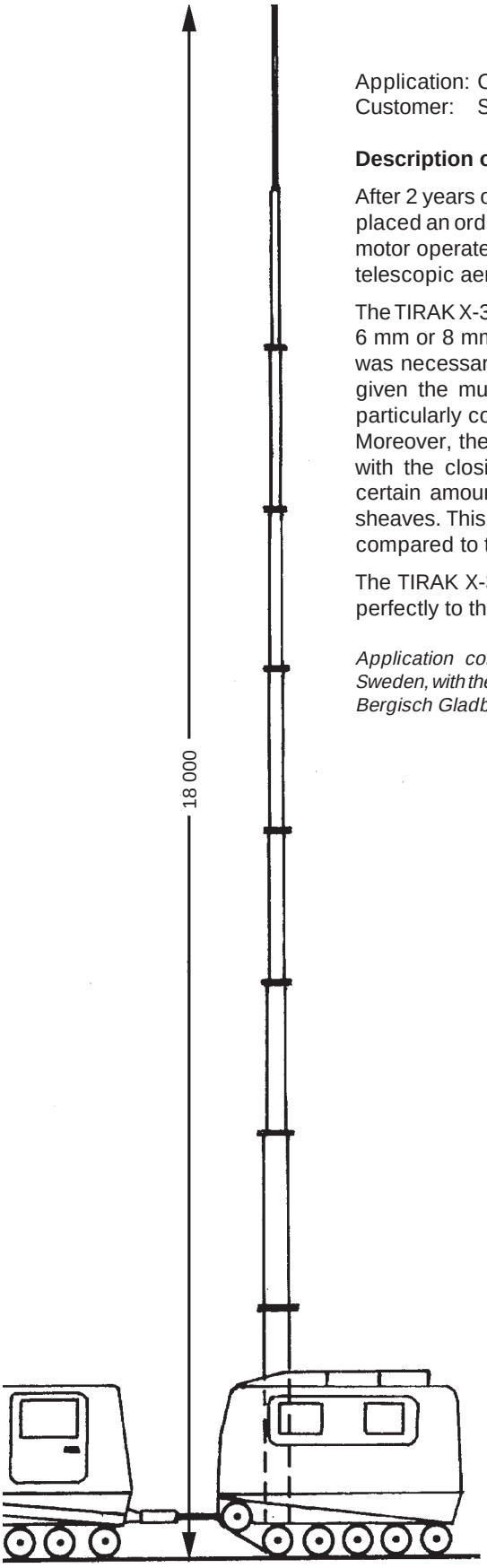
Application: Repair work on radio antennas
Site: Junglinster/Luxembourg.
Client: Luxembourg Broadcasting Co "RTL".
Equipment:
- 1 ALTA 300 platform fitted with 2 motorised TIRAK T-1022 (18 m/mn) hoists and 2 BLOCSTOP safety devices,
- 6x180 m suspension, safety and guiding wire ropes,
- 4 manual TIRFOR machines.

Description of application:
Because of the shape and the structure of the antennas, it is impossible to lift the platform vertically.
Therefore the safety wire ropes as well as 2 additional guiding ropes are fixed obliquely. The platform moves along them.
The safety and guiding wire ropes are tensioned between top and ground by means of manual TIRFOR machines, a solution which enables any part of the antenna to be reached from the platform when there is slack wire rope. The guiding ropes prevent any swinging and tilting of the platform.

PA165.7



product information	operating telescopic aerials	ref.: M-375 rev. no.: 1 date: 10/94 page: 1/1



Application: Operating telescopic aerials
Customer: Swedish Army

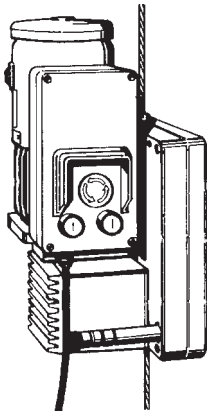
Description of the application:

After 2 years of studies and trials Swedish army has placed an order for TIRAK X-300 hoists with a 24 volt motor operated by battery, for the erection of 18 m telescopic aerials.

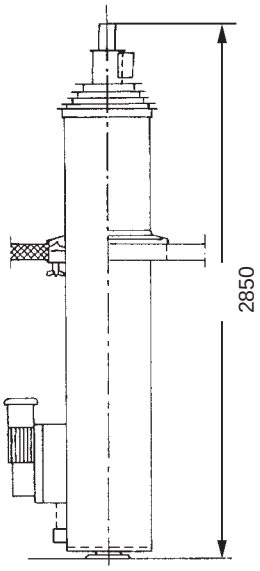
The TIRAK X-300 is designed in principle for use with 6 mm or 8 mm diameter wire ropes. In this case, it was necessary to use a 4 mm diameter wire rope, given the multiple sheaving to be achieved in a particularly confined space.
Moreover, the hoist required a symmetrical action, with the closing up of the aerial also needing a certain amount of effort because of friction in the sheaves. This TIRAK is a substantially modified unit compared to the standard.

The TIRAK X-300, being very compact, is adapted perfectly to this appliation.

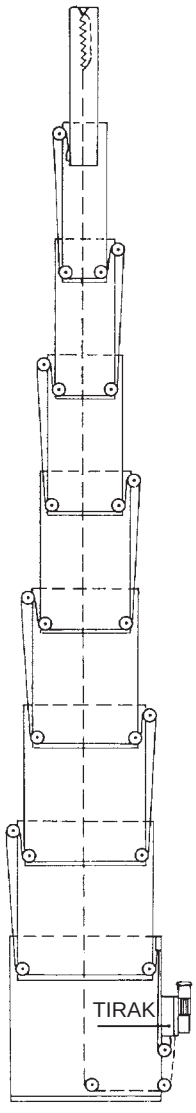
Application completed by the PMH Company, Ystad/ Sweden, with the technical assistance of GREIFZUG GmbH, Bergisch Gladbach.



TIRAK X-300 24 V battery operated



closed up position



multiple sheaving system

PA167

Application:	Inspection and maintenance of guy ropes of a radio tower
Site:	Radio tower of the "Finnish Broadcasting Company", height 320 m.
Client:	KUNETUOTE OY, Helsinki/Finland.
Equipement:	1 special double-deck platform 1 TIRAK T-1020 with wire rope, length 360 m 1 BLOCSTOP overspeed safety device with wire rope, length 360 m 1 generator 5 KVA

Description of application:

The special double-deck platform together with the TIRAK hoist are suspended from a beam which moves, on two trolleys, along the guy rope to be inspected.

The electric current is supplied by generator installed on the lower deck.

To comply with safety regulations, a BLOCSTOP overspeed safety device is mounted on the secondary safety rope as well as a manual TIRFOR.
This safety rope is tensioned on the ground by another TIRFOR machine.

Length of the ropes: 360 m.

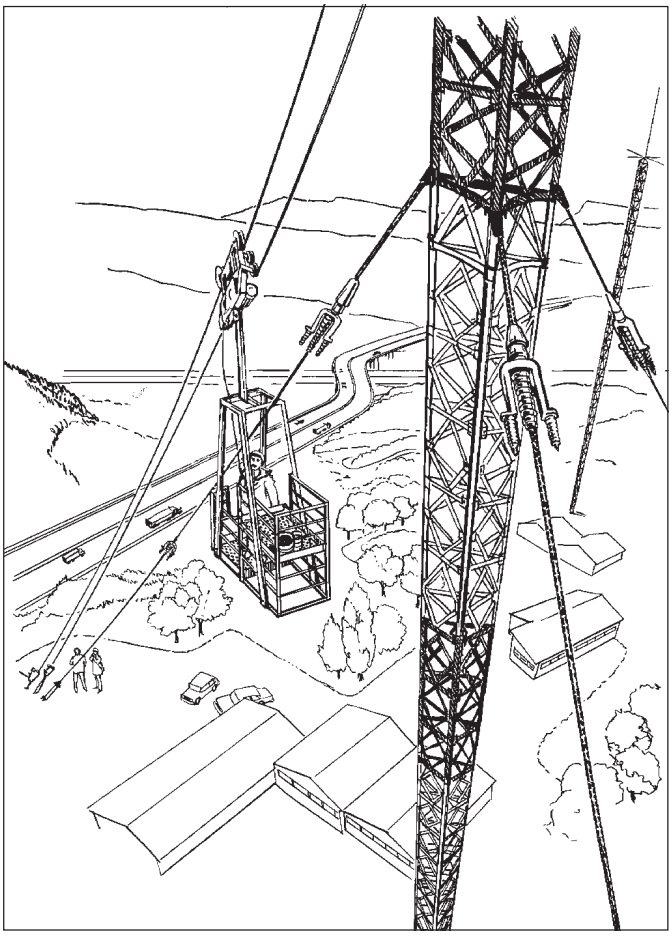
Thanks to its flexible construction the platform can be easily adapted to the inclination/tilting of the guy lines (angle from 25° to 60°).

PA165.7

product information	access equipment for guy ropes	ref.: M-078 rev. no.: 1 date: 10/94 page: 1/1

PA67.5

Application:	Inspection and maintenance of guy ropes
Site:	R.T.B. Tower (Radio Belgium), Wavre/Belgium
Customer:	Atelier de Constructions Métalliques Jambes, Namur/Belgium
Equipment:	1 special suspended platform 1 TIRAK T-1020 with wire rope 340 m long, Ø 9 mm 1 electric generator set



Description of application:

Problem:
Guy lines of 100 m to 240 m high RTB (Belgian Broadcasting Corp.) transmitter towers have to be inspected and serviced.

Solution:
A special platform suspended from a wire rope fixed to the tower and running parallel to the guy line (top guy lines are up to 340 m long). The platform is fitted with a TIRAK, which by means of a main wire rope also fixed to the mast, lifts the platform along the suspension wire rope.

The 2 level platform is fitted with a hinged guardrail to facilitate passage of insulators fitted on the guy lines, certain of which have a diameter of 800 mm.

The platform is lightweight and removable to allow transfer from one guy line to the other even on difficult terrain.

To simplify electrical supply problems, the platform is equipped with a 5 (KVA) electric generator. In case of failure of electric supply, descent can be controlled with the assistance of the TIRAK's centrifugal brake.