

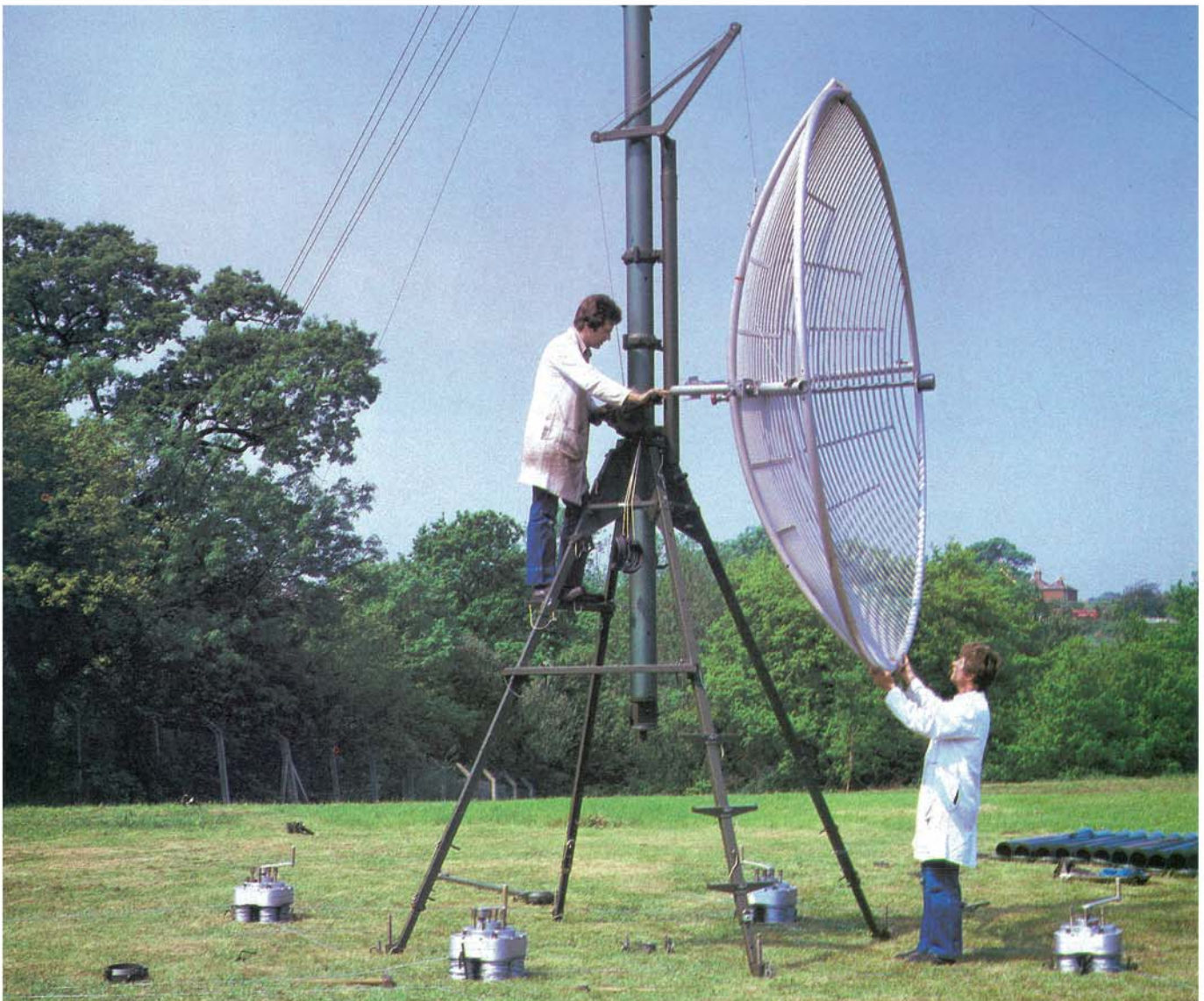
Series 90

Mechanically Erected Tubular Sectional Mast for the safe mounting of large antennas in all environments.

Introduction

Series 90 is, as its name implies, not one mast but a range of masts which may be erected using a set of standard parts on a building block principle. It has been developed from the highly successful Type 73 mast concept. That is to say it features a short parallel mast section, headloads are attached at ground level, the mast is lifted and extended from the bottom and, throughout erection, guys are safely controlled by mechanical hand operated fail-safe guy control

winches. The series features a headload capacity of up to 300 kg vertical top load and a maximum height capability of 40 metres. Torsional stiffness has received special attention, as has the physical problems of handling and attaching heavy antennas. Although designed as a transportable mast easy to erect and dismantle, Series 90 may also be used as a permanent mast for erection on sites where there is difficult access or other problems.



General Description

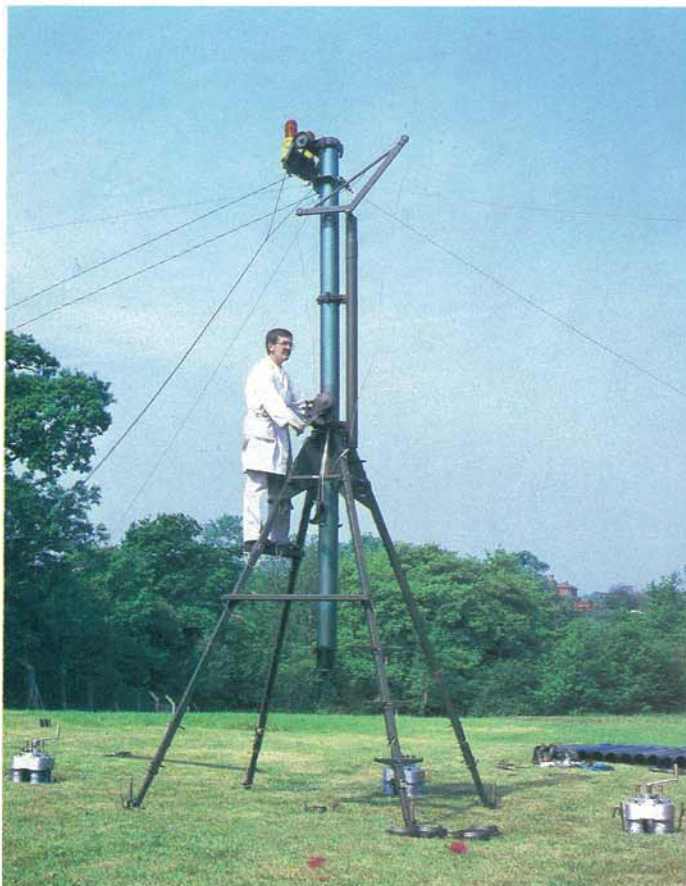
Series 90 Masts are built around a standard aluminium alloy tubular mast section 6 inches diameter with an effective length of 2 metres. Sections are joined together with a keyed spigot member and secured by means of an external clamp. The joint is free of all torsional play. The erection gear comprises a four legged mast section guiding unit generously provided with steps and working platforms. A crane is used to lift big antennas into position on the mast at ground level, ready for raising with the mast. The lifting hoist, common to mast erection and crane, has a double braking system, finger controlled and automatic.

Guying cables are handled by guy control units, spiked to the ground near the mast base. The guys are at 90° and normally are necessary at 10 metre intervals of height. Very large antennas may require closer guying. The guying cables are spooled off from the guy controllers, to pulleys at the pickets or anchor

blocks and from there to the mast itself. At the pickets an arrangement is provided for a permanent attachment of the guy cable after complete erection of the mast. When the mast is erected the complete erection gear and all the guy controllers may be removed from the site. This enables any number of masts to be erected and left erected, using only one set of erection gear and guy control units.

If required there is a special mast head obstruction light unit available which enables lamp maintenance to be carried out without climbing the mast. After erection the mast is turnable 360° to enable antenna direction to be adjusted. Multiple antennas may be individually adjusted in azimuth plus/minus 10° from ground level by use of a special antenna adaptor.

Mast retraction may be quickly accomplished by a procedure, the reverse of erection, with no sacrifice of safety.



Brief Specification

Mast Section

Heat treated light alloy to BS1471, 6082 TF. Machined and anodised to DEF STAN 03-25. Sections can be dyed green or gold-sand.

Section Joints

Massive cast aluminium alloy clamps and tubular joining spigot. Easy hand screw operation.

Erection Gear

Lifting hoist with pulley block, 1,000kg capacity. Legs are all steel. PTFE mast guiding surfaces. Crane for mounting antennas up to 250kg weight. Low pack-away volume.

Guy Controllers

Gear-box sealed against entry of water. Each guy cable is individually or collectively adjustable. Fail-safe design enabling mast erection to be halted at any stage with automatic safety. Quick coupling to or uncoupling from guy cable drums.

Guy Cables

4mm diameter galvanised cable 7/19 to BS3530 or equivalent. Permanently attached to drums which for mast erection or retraction are coupled to guy controller.

Antenna Attachments

Each mast section clamp has 4 holes tapped M12 for use with feeder or antenna mounting. The standard Series 90 antenna attachment which may be mounted on any section of the mast, provides a steel tube 3½" diameter × 1,600 mm long which is suitable for most parabolic dish antennas up to 3 metres diameter. An anti-torsion bar is incorporated.

Finishes

Paint: Yellow RAL 1007 or white RAL 9010 or military spec NATO green to DEF STAN 80-41. Other paint finishes are available.

Zinc Plate

All steel fittings are zinc plated and passivated to DEF STAN 03-20.

Anodising

Where appropriate aluminium parts are anodised to DEF STAN 03-25.

Performance

Number of operators 2 + 1 (per 10 metres height).
Examples: 20 metre mast 4 persons, 30 metre mast 5 persons.

Time to erect 20 metre mast with antenna 2 hours.

Time to lower and pack away 2 hours.

Maximum vertical headload: See table.

Maximum top horizontal side load: See table. (Guying as recommended).

Torsional stability: 1° per 10 metre height with torsional moment of 50 kg.m. (Example: 30 metre mast with standard 6 ft dish antenna in worst position. Maximum deflection in 120 km/hr wind approx. 1.5 degrees).

Improved stability may be obtained with extra anti-torsion guys. Maximum wind speed during mast erection: 25 to 80 km/hr depending on antenna.

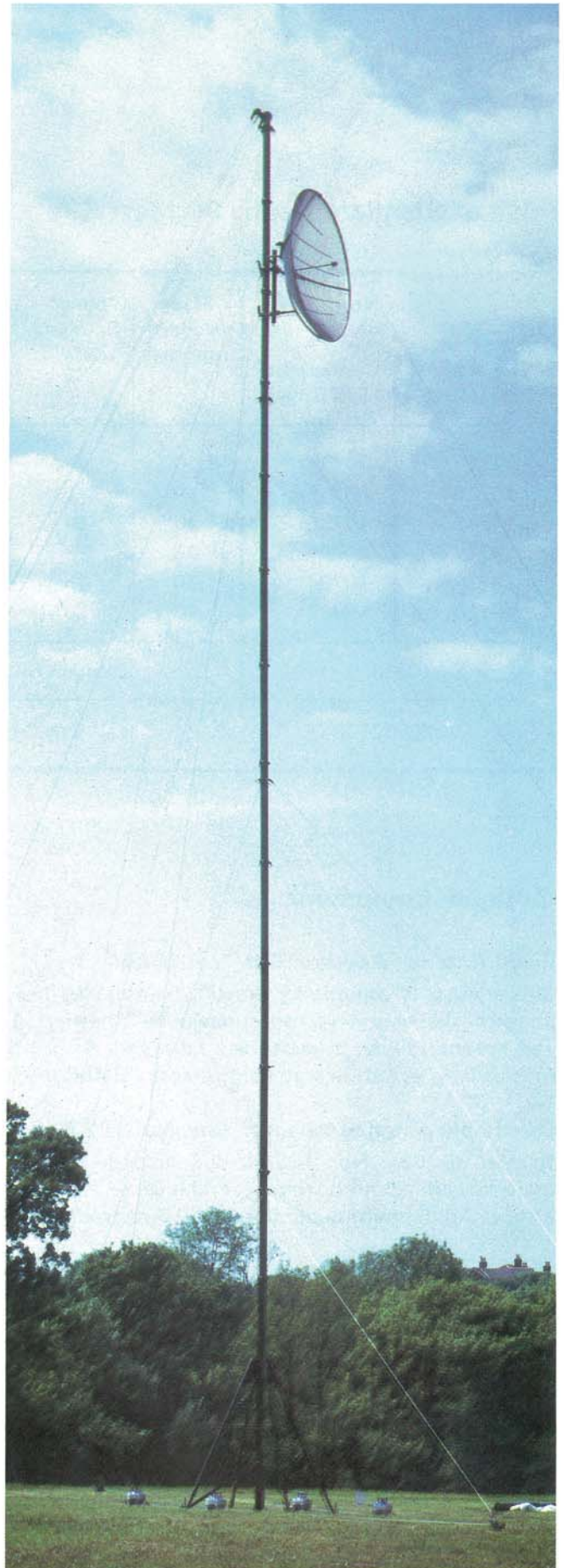


Table of Standard Series 90 Mast Kits

Kit Cat.No.		Mast Height (metres)	No. of Sections	No. of Guying Levels	Maximum Vertical Headload (kg)	Maximum Top Side Load (kg)	Approx. Weight of Mast Kit Excluding Pickets or Anchors (kg)
(for Prepared Foundations)	(for Unprepared Field Sites)						
10727	10798	10	5	1	300	560	115
10726	10797	16	8	2	280	500	180
10725	10796	20	10	2	250	450	205
10724	10795	24	12	3	230	400	255
10723	10794	30	15	3	200	300	320
10728	10793	40	20	4	100	200	385
10363		Erection Gear Complete					150
10362		Guy Controller					31

Optional Equipment

Fixed Antenna Adaptor Cat. No. 10364

This adaptor is suitable for most dish antennas up to 2 metres dia. or grid type antennas up to 3 metres dia. The antenna fixing provided is a tube 3½" dia. x 1,6 metres long. A torque stabilising arm is incorporated.

Directable Antenna Adaptor Cat. No. 10370

Similar to Cat. No. 10364 but arranged to be adjustable in azimuth from ground level by means of a rope. Adjustment is plus/minus 10 degrees.

Antenna Mounting Crane Kit Cat. No. 10730

With this kit, using the erection gear hoist, any antenna up to 150 kg weight can be lifted very easily and attached to the adaptor on the mast.

Obstruction Light Assembly Cat. No. 10367

This assembly incorporates two auto dusk-to-dawn switching and failure-changeover lamps 220 Volt x 111 watt, to ICAO standard. Assembly is lowered to ground level for maintenance.

Transport Case for Guy Controller Cat. No. 10368

This case provides storage and transport protection to a single guy controller.

Transport Case for Erection Gear Cat. No. 10369

This case provides storage and transport protection for one complete set of series 90 erection gear.

Mast Section Carrier Cat. No. 10729

This carrier provides storage and transport protection for 4 mast sections.

Feeder Cable Clamp Cat. No. 10359

A semi-universal clamp which may be used to secure feeder to the mast as required.

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All details given in this publication are approximate and may be subject to change without notice.

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