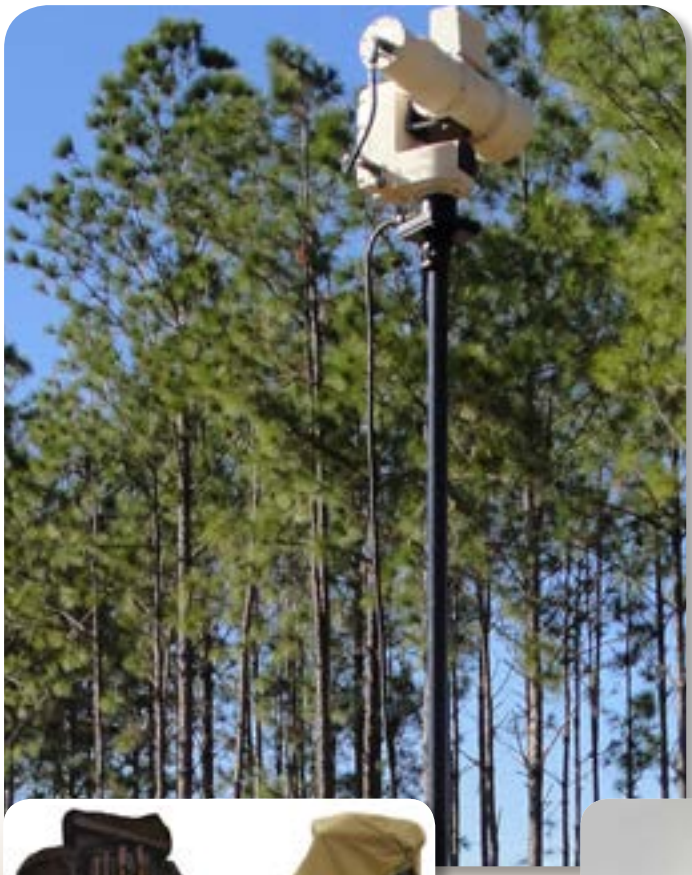
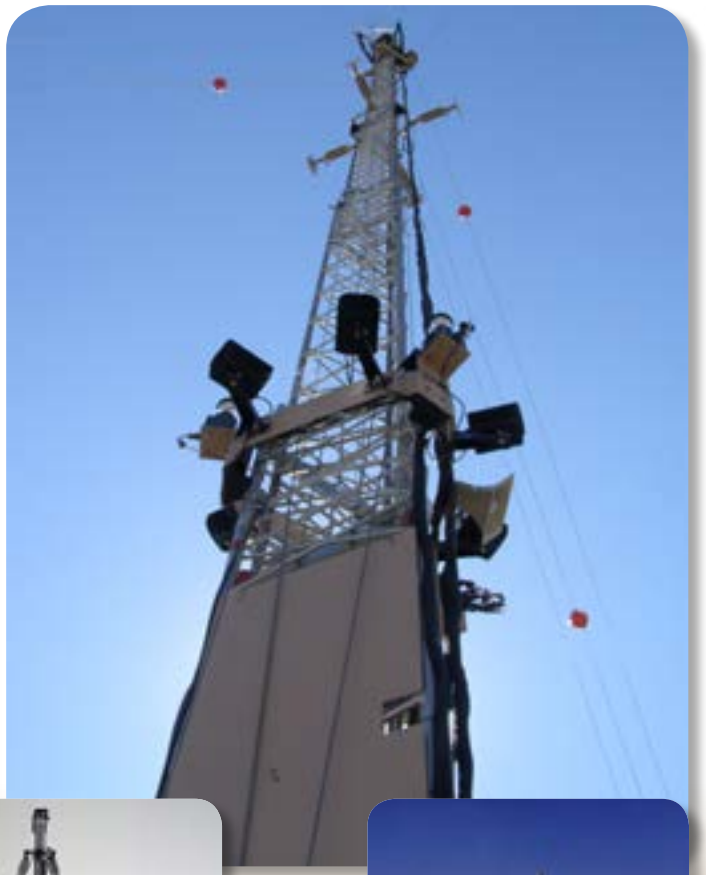
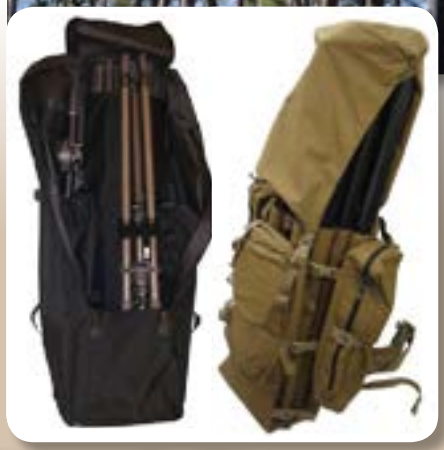






MOBILE / PORTABLE COMMUNICATIONS SOLUTIONS

WILL-BURT

MISSION CRITICAL SOLUTIONS

ASSURE · ASCEND · ACCELERATE

WWW.WILLBURT.COM

EXPEDITION™ SERIES · QEAM · PNEUMATIC HD LOCKING MAST · ITS · KVR

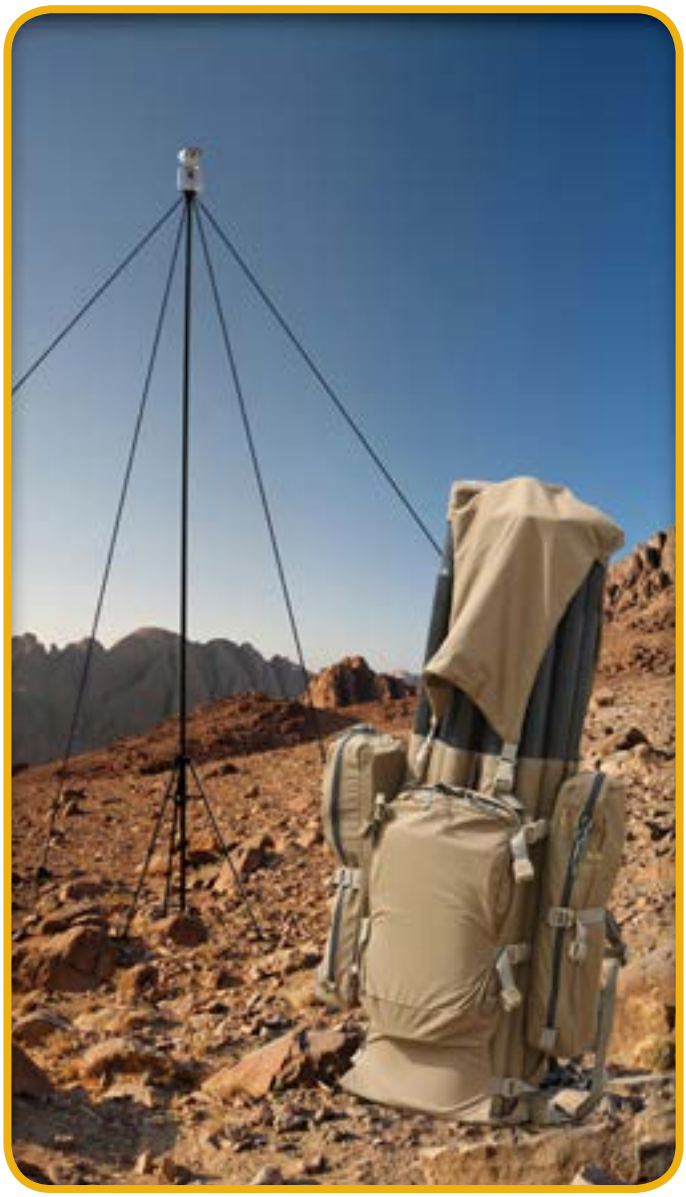
Will-Burt offers a broad selection of masts to elevate communications antenna payloads, each one designed to fulfill specific weight, height and transportability requirements. From the single-man portable Expedition Series to the trailer-mounted Integrated Tower Systems telescoping lattice tower, Will-Burt can meet your needs.

All Will-Burt masts and ITS towers are designed for rigidity and stability, assuring the optimal performance of military communications antennas. Our elevation solutions deliver high pointing accuracy and minimal twist, assuring critical point-to-point communication.

GET YOUR COMMUNICATION ANTENNA AN ADVANTAGE

Will-Burt's masts and ITS towers enable your communications antennas to perform at their highest capability with products that deliver according to your requirements:

- **Greater stability and rigidity**
- **Fast deployment and retraction time**
- **Tight deflection and minimal twist**
- **Large payload capacity**
- **Small space claim for vehicle installations**



INNOVATIVE CUSTOM SOLUTIONS

Will-Burt's specialized engineers can develop an elevation solution around your unique requirements.

CONTENTS

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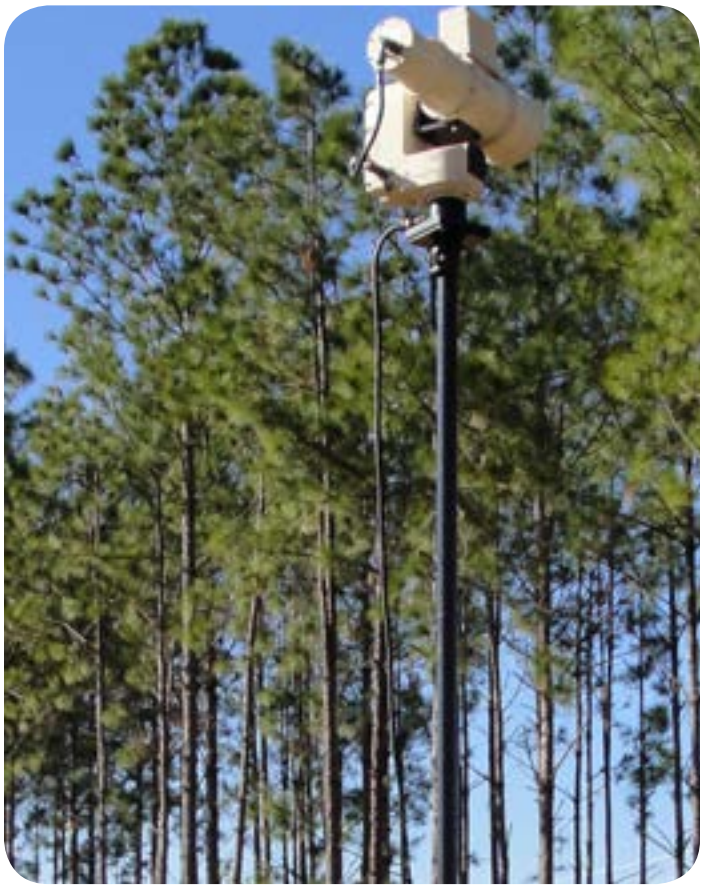
EXPEDITION™ SERIES

The lightest, most stable, single-man portable field mast in the world.



Better than Aluminum, the Expedition Series tripod and mast are constructed of carbon composite material, making the system:

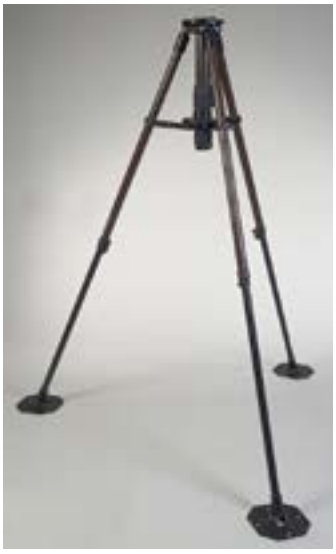
- **Lighter weight - easier to transport and deploy**
- **Stronger - more durable - won't bend or break**
- **Stiffer - more stable for payloads**

In addition, the Expedition Series mast has the following additional benefits vs. other portable masts:

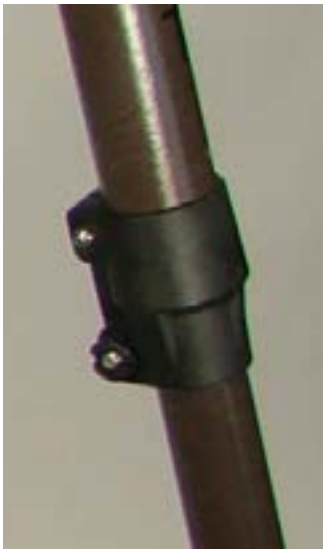
- **Quicker, easier set-up and retraction - faster deployment**
- **Easier transportability - two compact transport pack options allow you to select the best one to fit your deployment needs**

SPECIAL FEATURES

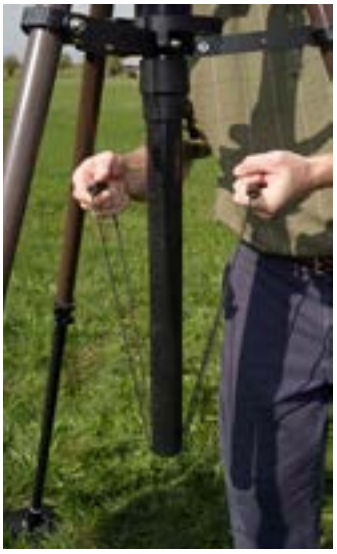
The Will-Burt Expedition Series offers a variety of added features for increased performance and convenience. The system can be deployed guyed or un-guyed depending on mission profile. It includes a 6 in (150 mm) diameter payload adapter. A custom payload interface can be designed to fit specific needs. Other key features include:



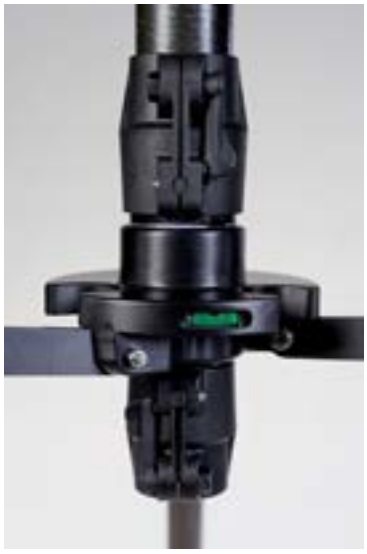
Large Adjustable Tripod: Permit fast deployment without over-tension.



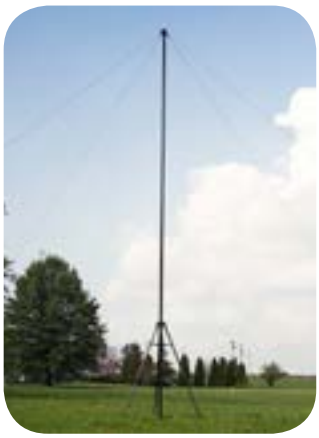
Friction Locks: Permit fast deployment without over-tension.



Ergonomic Tube Lifter: Facilitates easy payload elevation.



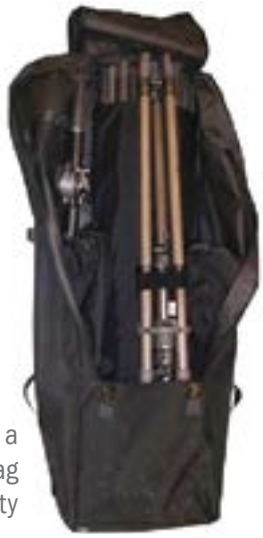
Two Highly Visible Bubble Levels: Enable easy leveling in seconds.



EXPEDITION SERIES RANGER

The Ranger™ Mast has a large tripod base, making the mast very stable. It is erected with 4 ft (1.2m) tube sections to heights from 8 to 60 ft (2.5 m to 18.3 m).

- **Easily transportable by 1-2 people**
- **Elevates up to 60 ft (18.3 meters)**

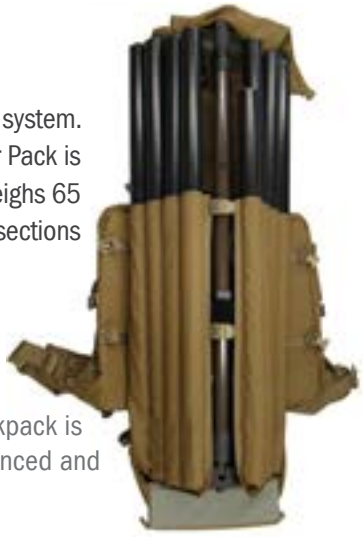


All components pack into a custom-made, transport bag featuring large, heavy duty wheels.

EXPEDITION SERIES RANGER PACK

The Ranger Pack™ is a single manportable backpack mast system. Incorporating the same stable tripod as the Ranger Mast, the Ranger Pack is designed to fit into a custom designed backpack. The total system weighs 65 lbs (30 kg and can be quickly deployed by extending 3 ft (1 m) tube sections to heights from 8 to 24 ft (2.5 m - 8 m).

- **Easily transportable by 1 person**
- **Elevates up to 24 ft (8 m)**
- **Lifts up to 50-lb (23 kg) payload**



Single-person backpack is ergonomically balanced and double stitched.

< LEARN MORE

Scan this code with your smart phone to get more information about the Expedition Series or go to http://www.willburt.com/masts/expedition

MIL-STD 810G QUALIFICATIONS

The Expedition Series mast meets the following MIL-STD 810G qualifications for dynamics and environmental testing:

HIGH TEMPERATURE
- Method 501.5 Procedure I & Procedure II, CAT A1

LOW TEMPERATURE
- Method 502.5 Procedure I & Procedure II, COLD C2

DUST
- Method 510.5 Procedure I

SAND
- Method 510.4 Procedure II

HUMIDITY
- Method 507.5

SOLAR RADIATION
- Method 505.5, Procedure II

SALT FOG
- Method 509.5

TRANSIT DROP SHOCK
- Method 516.6

EXPEDITION™ SERIES

EZ RAZE

Permits the easy elevation of multiple antennas and equipment via winch and cable system.

RIGID GUY COLLAR

Guy collar assembly that clamps anywhere on the mast and can be used at the top or mid-level.

SWIVEL 4-POINT GUY COLLAR

Assembly permits azimuth adjustment of masthead without moving guy ropes.

STUB PLATE

Aids in mounting payloads at center position on the mast.

BOLSTER PLATE

Assists mounting of devices using U or long bolts.

DUAL, TRI & QUAD ARM COLLAR

Helps mounting of 2, 3 or 4 devices to a single mast. *Quad Arm Collar shown.*

MULTI-USE ADAPTOR PLATE

Supports mounting various bolt patterns.

CUP HOLDER

Allows mounting of antennas or other devices that have an insulator bar or mounting arm. Accommodates round adapters up to 1.75" OD.

NATO PLATE

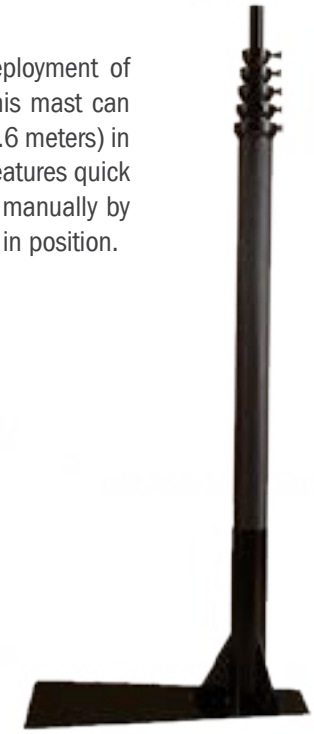
Facilitates mounting of standard NATO VHF whip antennas with a 4-bolt pattern.

EXTENSION ARMS

Permit horizontal adjustments of devices to achieve frequency separation and masthead weight balance. Available in 6 in., 12 in., 24 in. and 36 in. lengths.

HURRY-UP MAST

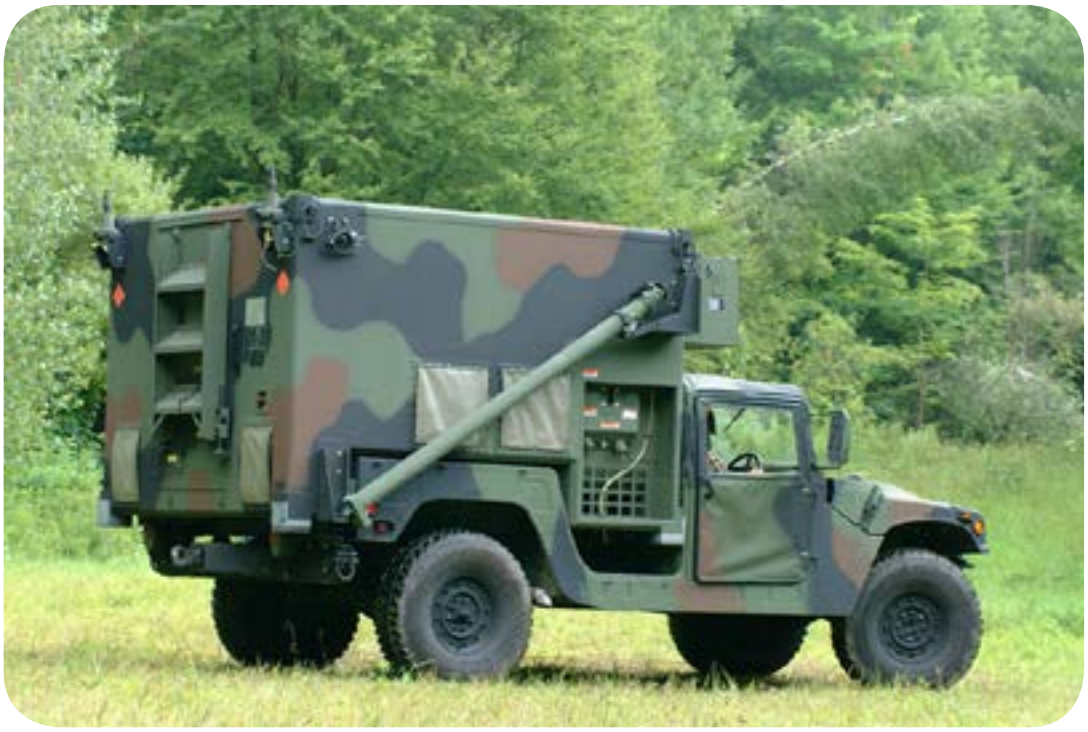
The Hurry-Up mast is ideal for fast deployment of lightweight antennas and equipment. This mast can be extended to a full height of 25 feet (7.6 meters) in one minute or less. The Hurry-Up mast features quick lock/release collars to extend the mast manually by pushing up the sections and fixing them in position.



- **Portable & Lightweight**
  Allows for easy transportation
  Weights less than 50 lbs (22.7 kg)
  Nested height 6 ft. (1.8 m)
- **Payload Capacity**
- Allows for payloads up to 20 lbs (9 kg)
- **Rigid azimuth locking collar**
  Quick direction adjustments
- **Black anodized finish**
  Corrosion resistant
- **Optional Features**
  Drive-on plate mounting
    - No guylines required

  Removable payload extension stub
    - Easy payload mounting

  External support brackets
    - Permanent vehicle mounting



Q★E★A★M
QUICK ERECTING ANTENNA MAST

CARBON FIBER COMPOSITE

Will-Burt's Quick Erecting Antenna Mast (QEAM) is a lightweight, high strength mast that offers a rigid, stable platform for elevating critical payloads. The QEAM may be field, vehicle, or shelter mounted. See vehicle mounting options on page 11.

SCREW DRIVE MODELS HDTM10C / TM15C

- **Maintains azimuth - minimal twist deflection**
  Reliable full-length external keyways
- **Positions payload at any height**
  Automatic locking collars - patented latch system
- **Manual mechanical drive**
  Reliable deployment without power
- **Automatic locking collars**
  Locks at any height desired
  Patented latch mechanism
- **Mechanical stops**
  Prevents over-extension
- **Full length keys on sections**
  Prevents twist
- **Maintenance free**
  Polymer drive nuts require no greasing
- **Built in cable management**
  Cable loops added at collars
- **Corrosion resistant**
  All parts are anodized aluminum & stainless steel
  Drive crank is a completely sealed mechanism

INCREASED PERFORMANCE AT HALF THE WEIGHT

The HDTM10 and TM15 QEAM masts have been upgraded to the HDTM10C and TM15C, delivering increased performance at half the weight.

UPGRADES:

- **Lighter weight – half the weight of the aluminum HDTM10**
  Carbon fiber composite construction vs. previous 6061 T6 aluminum
  A light-weight, high strength, aluminum alloy screw replaces the previous stainless steel drive screw
- **Greater durability, longevity, no maintenance**
  High strength polymer drive nuts at the base of each section replace the previous bronze drive nuts delivering better wear characteristics and eliminating the need for grease on the drive screw wand assemblies
- **Added stability**
  Four-way guying vs. the previous 3-way guying delivers greater stability in all directions

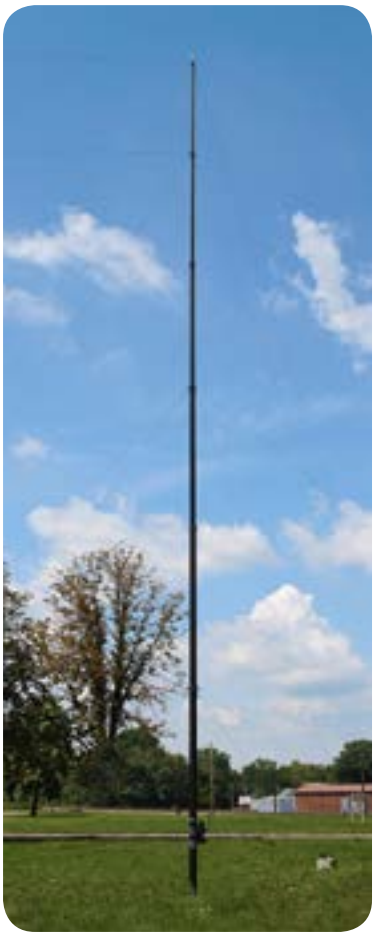
QEAM HDTM10C

QEAM TM15C

Accesory kit includes: base tube guylines (4), top guylines (1) measuring rope, HDTMC - 25.5 in. (650 mm); TM15C - 33.5 in. (850 mm) heated-treated steel guy stakes (8), sledge hammer, base plate, ground spikes (4), support stand, hand crank, (2) transport bags & instruction manual

Model	HDTM 10C (Carbon Fiber tubes)*	TM 15C (Carbon Fiber tubes)*
Extended Height	32.8 ft. / 10m	50 ft. / 15 m
Nested Height	8 ft / 2.4m	8 ft. / 2.4 m
Payload Capacity	75 lb. /34 kg	75 lb. / 34 kg
Weight (mast only)	55 lb. / 25kg	95 lb. / 43.1 kg
Weight (accessory kit)	2 @ 42 lb. / 19 kg each	2 @ 42 lb. / 19 kg each
Number of Sections	5	8
Deployment Time	2 persons, 8 min.	3 persons, 10 min.
Survival Wind Speed	80 mph / 128 kmph	80 mph / 128 kmph
Deployment Wind Speed*	25 mph / 40kph	25 mph / 40 kph
Operational Wind Speed	60 mph / 97kmph	60 mph / 97 kmph
Ice load	0.5 in. / 12mm	0.5 in. / 12mm
Guying	2 level / 4 way	3 level / 4 way
Surface mounting	±15° slope	±15° slope
Drive system	Screw drive	Screw drive
Finish	Standard Black	Standard Black
Typical Payload Sail Area*	6 sqft / 0.6 msq CD=1.5	6 sqft / 0.6 msq CD =1.5

*Must be guyed for wind speeds over 25mph / 40kmph

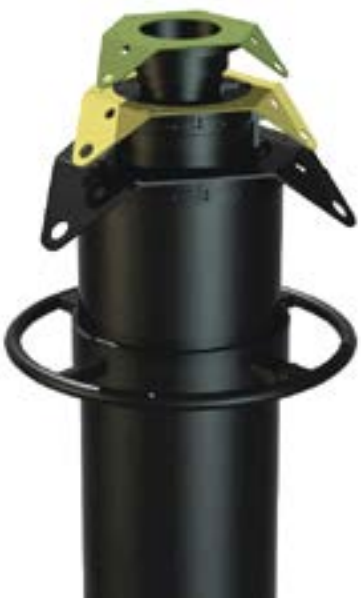


Q★E★A★M
QUICK ERECTING ANTENNA MAST

ALUMINUM STRAP DRIVE MODEL

Will-Burt's Strap Drive Quick Erecting Antenna Mast (QEAM) uses an internal strap wound between tube sections for mast elevation. Designed for manual operation, The Strap Drive QEAM has heavier payload weight-lifting capability, and is available in 21, 25 and 34 meter heights.

- **Easy manual crank up**
  No power supply needed
- **Automatic locking collars**
  Locks at any desired height
  Patented latch mechanism
- **Manual mechanical drive**
  Reliable deployment without power
  Standard ground mounting kits with guylines and transport bag included
- **Optional vehicle and shelter mounting kits available**



Aluminum Strap Drive Model	TM 21	TM 25	TM 34
Extended Height	68.9 ft. / 21 m	82 ft. / 25 m	112 ft. / 34 m
Nested Height	14.6 ft. / 4.45 m	14.8 ft. / 4.5 m	19 ft. / 5.8 m
Payload Capacity	180 lb. / 80 kg	150 lb. / 68 kg	110 lb. / 50 kg
Weight (mast only)	197 lb. / 90 kg	220 lb. / 100 kg	250 lb. / 113 kg
Weight (accessory kit)	245 lb. / 111 kg	275 lb. / 125 kg	275 lb. / 125kg
Number of Sections	6	7	7
Deployment Time	3 persons, 25 min	3 persons, 30 min	3 persons, 30 min
Survival Wind Speed	80 mph / 128 kmph	80 mph / 128 kmph	80 mph / 128 kmph
Deployment Wind Speed*	25 mph / 40 kph	25 mph / 40 kph	25 mph / 40 kph
Operational Wind Speed	60 mph / 97 kmph	60 mph / 97 kmph	60 mph / 97 kmph
Ice load	0.5 in. / 12 mm	0.5 in. / 12 mm	0.5 in. / 12 mm
Guying	4 level / 4 way	5 level / 4 way	5 level / 4 way
Surface Mounting	±15° slope	±15° slope	±15° slope
Drive system	Strap drive	Strap drive	Strap drive
Finish	MIL-A-8625 Type II, CL 2 Black	MIL-A-8625 Type II, CL 2 Black	MIL-A-8625 Type II, CL 2 Black
Typical Payload Sail Area*	6 sqft / 0.6 msq CD=1.5	6 sqft / 0.6 msq CD=1.5	6 sq ft / 0.6 msq CD=1.5

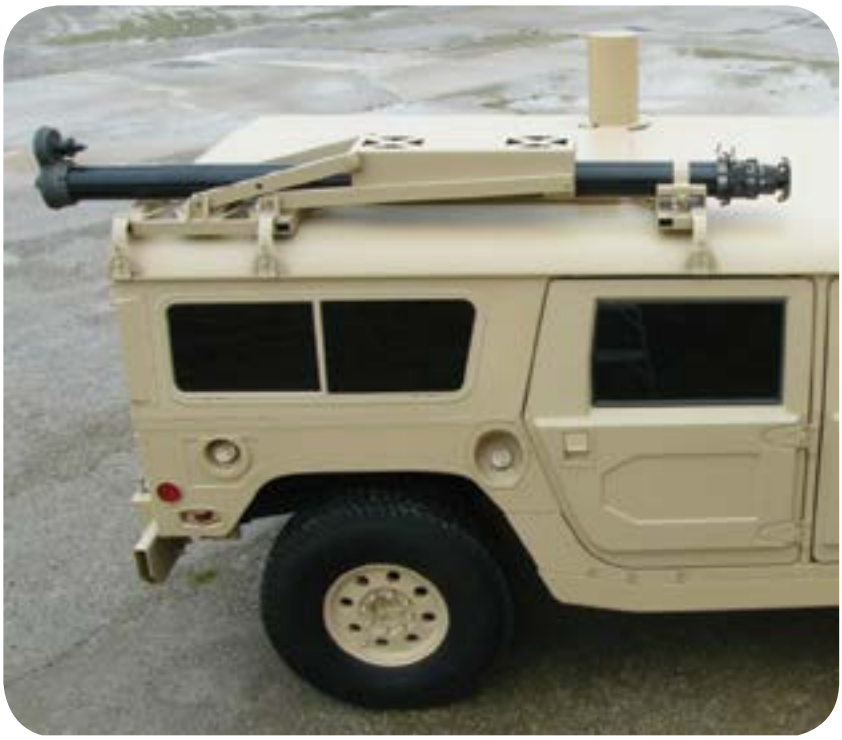
*Must be guyed for wind speeds over 25mph / 40kmph

Q★E★A★M
QUICK ERECTING ANTENNA MAST
TILT

Similar to the Stiletto Tilt system, Will-Burt's QEAM Tilt system is also ideal for applications where nested height and rapid deployment are critical factors. The robust design enables rapid tilting and locking of the mast. The low height of the Pneumatic Tilt makes it the ideal solution to overcome fixed and rotary aircraft interior height limitations (e.g. C-130), or in situations requiring a low center of gravity or concealment of the mast payload.

The palletized configuration also makes the system suitable for installation on various mission configured vehicle platforms such as trailers, pick-up trucks and flat bed transports including the FMTV.

A manual tilt system is also available for pneumatic masts that extend up to 42 feet.



Q★E★A★M
QUICK ERECTING ANTENNA MAST
ROOF TROLLEY

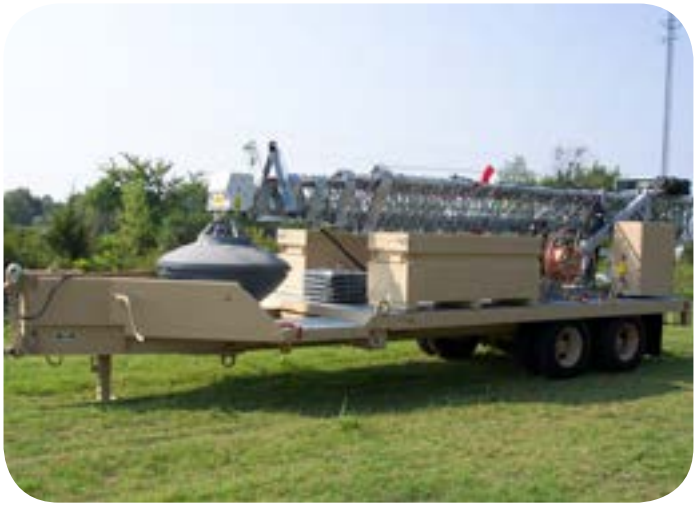
The Will-Burt Roof Trolley enables easy transport and deployment of the QEAM mast family. The Will-Burt Roof Trolley stores the QEAM mast for convenient transport atop the HMMWV or other vehicle roof. For deployment, the mast is tilted from the horizontal position on the roof to the vertical position by a single operator requiring minimal force, with the mast base firmly locked to the bumper-mounted support. Once secured in the vertical position, the payload is elevated by extending the mast.

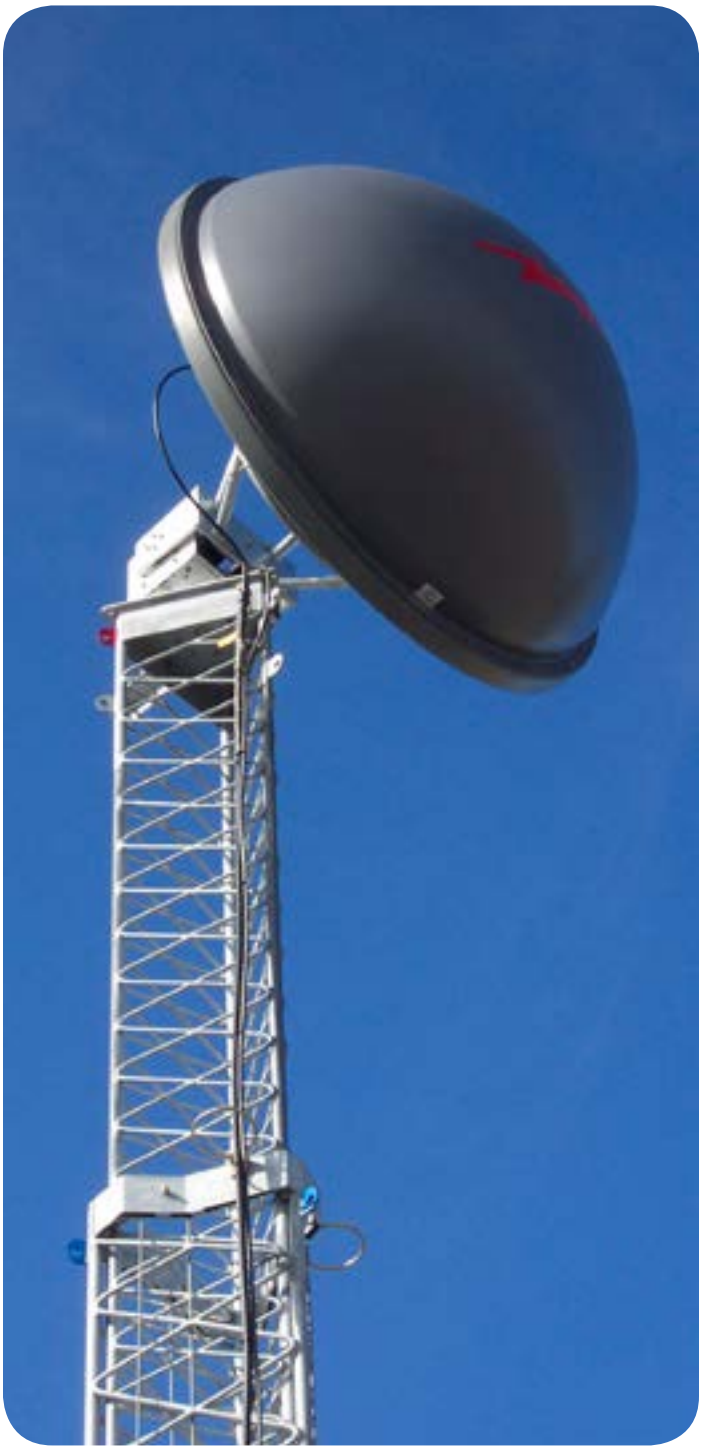
INTEGRATED ITS TOWER SYSTEMS™
A WILL-BURT COMPANY

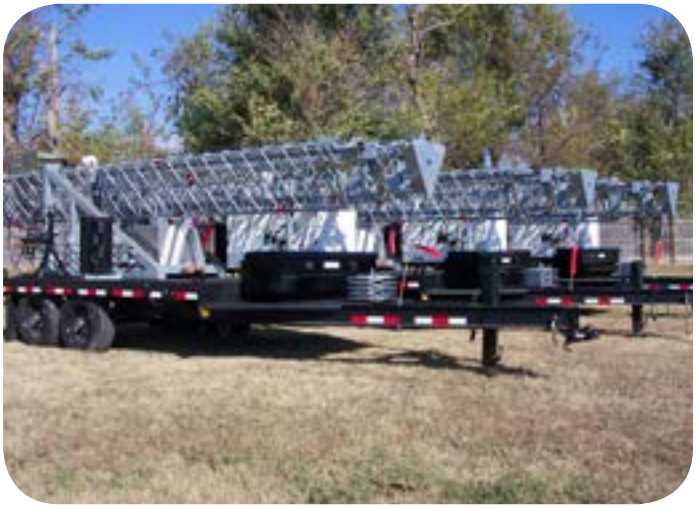
When situations require higher payload elevation and/or heavier payload capacity, Integrated Tower Systems self-supporting telescopic lattice tower structures deliver the ultimate in performance. ITS towers can elevate payloads from 38 feet to 106 feet standard, and customized to 130 feet.

- **Rigid, reliable**
  constructed of galvanized steel
- **Elevate payloads to higher heights**
  up to 130 feet, unguyed
- **Available in several configurations**
  trailer-mounted or truck-mounted

*** VISIT WWW.ITSTOWERS.COM FOR MORE INFORMATION**







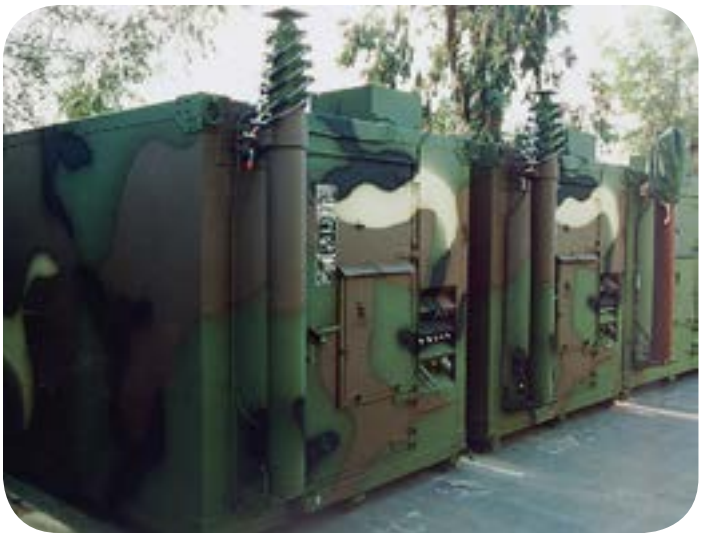
< LEARN MORE

Scan this code with your smart phone to get more information about ITS Towers or visit: http://www.willburt.com/itstowers

PNEUMATIC HD AND SHD LOCKING MASTS

Will Burt's locking pneumatic masts are ideal for military communications, elevated testing and mobile radar applications. When a mast deployment is needed for extended periods, locking collars allow the mast to remain extended indefinitely without air pressure. Guying is optional on Vehicle-mounted heavy-duty locking (HDL) models up to 60 feet (18 meters). Commercial-off-the-shelf (COTS) heavy-duty models are available. Super heavy-duty locking (SHDL) models feature greater unguyed heights and larger payload capacities. Standard models are shown below. Custom height and payload capacities are available upon request.

- **Two full-length external keys on mast sections with matching machined keyways on collars**
  Maintains directional azimuth
- **Low friction synthetic bearings**
  Protects mast sections and collars for smooth operation and long life
- **Mechanical Locking Collars**
  Supports high guying forces
- **Black Hardcoat and sealed aluminum surfaces**
  Meets MIL-A-8625 Type III, Class II
  Extends life of mast and protects against salt fog corrosion
- **External Wipers**
  Protects against sand and dust
- **Ruggedized Options**
  Optional finishes and features for military applications



Pneumatic HD Locking Mast MIL-STD-810F Qualifications
Solar Radiation: Per MIL-STD-810E, Method 505.3
Rain: Per MIL-STD-810E, Method 506.3
Humidity: Per MIL-STD-810E, Method 507.3
Salt Fog: Per MIL-STD-810E, Method 509.3
Sand and Dust: Per MIL-STD-810E, Method 510.3
The Pneumatic SHD and Pneumatic Non-Locking HD and SHD masts were qualified by similarity to the Pneumatic HD locking mast design.

HEAVY-DUTY SPECIFICATIONS

Specifications	10m	12.5m	18m	30m
Extended Height	32.8 ft. / 10 m	41 ft. / 12.5 m	59 ft. / 18 m	98.5 ft. / 30 m
Nested Height	7.5 ft. / 2.3 m	7.5 ft. / 2.3 m	10.4 ft. / 3.2 m	16.8 ft. / 5.1 m
Payload Capacity	150 lb. / 68 kg	150 lb. / 68 kg	200 lb. / 90 kg	200 lb. / 90 kg
Approximate Mast Weight	125 lb. / 57 kg	235 lb. / 107 kg	330 lb. / 150 kg	480 lb. / 218 kg
Tube Diameter	6.75-3" / 171-76 mm	9-3" / 229-76 mm	9-3.75" / 229-95 mm	9-4.5" / 114 mm
Maximum Operating Pressure	35 PSIG (2.4 bar)	35 PSIG (2.4 bar)	35 PSIG (2.4 bar)	35 PSIG (2.4 bar)

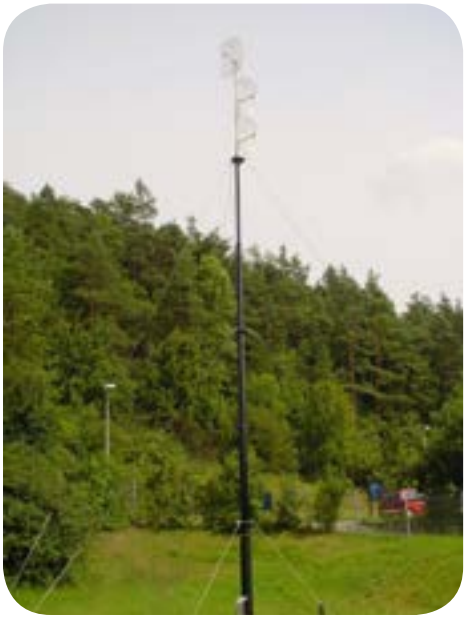
SUPER HEAVY-DUTY SPECIFICATIONS

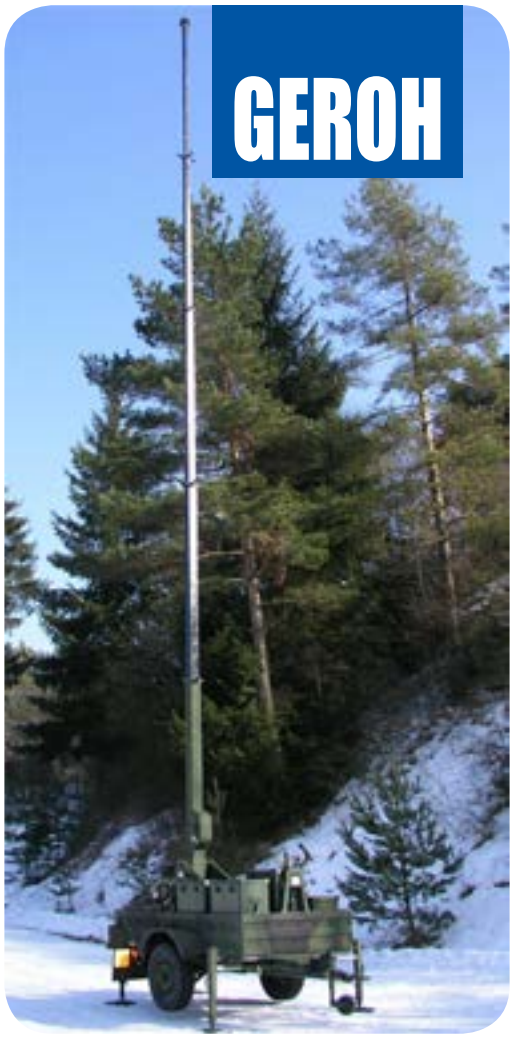
Specifications	15m	18m	23m	30m
Extended Height	49.2 ft. / 15 m	59.1 ft. / 18 m	76 ft. / 23.2 m	98.4 ft. / 30 m
Nested Height	9.2 ft. / 2.8 m	10.5 ft. / 3.2 m	11.1 ft. / 3.4 m	15.4 ft. / 5.1 m
Payload Capacity	450 lb. / 205 kg	450 lb. / 205 kg	200 lb. / 91 kg	450 lb. / 205 kg
Approximate Mast Weight	450 lb. / 205 kg	550 lb. / 227 kg	550 lb. / 249 kg	790 lb. / 361 kg
Tube Diameter	11.25-5.25" / 288-135 mm	11.25-5.25" / 288-135 mm	11.25-3.75" / 288-96 mm	11.25-5.25" / 288-135 mm
Maximum Operating Pressure	35 PSIG (2.4 bar)	35 PSIG (2.4 bar)	35 PSIG (2.4 bar)	35 PSIG (2.4 bar)

For additional sail area and wind speed capacities visit www.willburt.com

KVR™

The Geroh KVR mast is a heavy duty cable drive mast that can be elevated by manual crank or motor driven. The KVR represents an excellent addition to the Will-Burt mast line for additional selection in applications for a mechanical mast. The KVR lift heavy payloads for its weight, at up to 20 m (55 ft) and can be either vehicle, shelter, trailer or field mounted.





< *LEARN MORE*

Scan this code with your smart phone to get more information about Geroh products or visit: www.willburt.com/masts/geroh

*** WILL-BURT IS THE EXCLUSIVE U.S. ADISTRIBUTOR OF GEROH PRODUCTS.**

KVR SPECIFICATIONS

Specifications	2.5 KVR 3	4 KVR 3	6 KVR 5	8 KVR 5	10 KVR 6	12 KVR 6	14 KVR 5	17 KVR 6
Extended Height	8.2 ft. / 2.5 m	13.1 ft. / 4 m	19.6 ft. / 6 m	26.2 ft. / 8m	32.8 ft. / 10 m	39.2 ft. / 12 m	45.9 ft. / 14 m	55.7 ft. / 17 m
Nested Height	3.9 ft. / 1.2 m	5.5 ft. / 1.7 m	5.5 ft. / 1.7 m	6.9 ft. / 2.1 m	7.5 ft. / 2.3 m	8.5 ft. / 2.6 m	10.8 ft. / 3.3 m	11.1 ft. / 3.4 m
Payload Capacity	154 lbs. / 70 kg	143 lbs. / 65 kg	154 lbs. / 70 kg	154 lbs. / 70 kg	110 lbs. / 50 kg	110 lbs. / 50 kg	88 lbs. / 40 kg	132 lbs. / 60 kg
Approximate Mast Weight	66 lbs. / 30 kg	77 lbs. / 35 kg	110 lbs. / 50 kg	134 lbs. / 61 kg	187 lbs. / 85 kg	205 lbs. / 93 kg	187 lbs. / 85 kg	255 lbs. / 116 kg
Number of Sections	3	3	5	5	6	6	5	6

CONTACT YOUR SALES REPRESENTATIVE TODAY

The Will-Burt Company, located in Orrville, Ohio, is the world's premier manufacturer of telescoping mast and tower elevation solutions - the world's one stop shop offering virtually every payload elevation solution from one source - for military, fire, cellular broadcast, entertainment and other applications. Will-Burt also designs and manufactures military and other shelters made of all-composite materials that deliver higher performance at lower life cycle cost than metal or partial composite shelters. Intrusion and Access Control Solutions are offered under Will-Burt's LINX™ brand. Will-Burt is employee owned and has a strong commitment to the continuous improvement process set forth by its ISO 9001:2008 certified quality system.

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