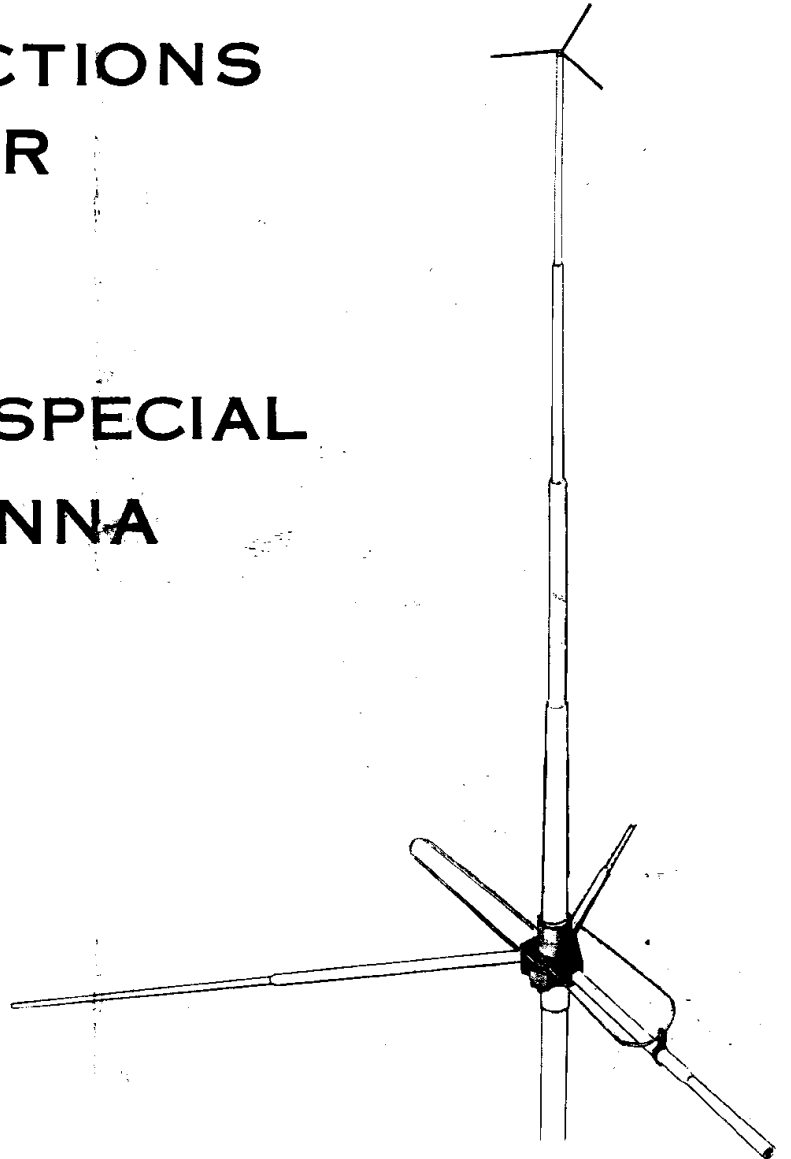


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**ASSEMBLY
INSTRUCTIONS
FOR**



**DEVANT SPECIAL
ANTENNA**



The high performance of your MOSLEY Antenna can only be achieved if the antenna is assembled in accordance with the instructions supplied. Substitution of materials or modification of design will materially lessen this performance.

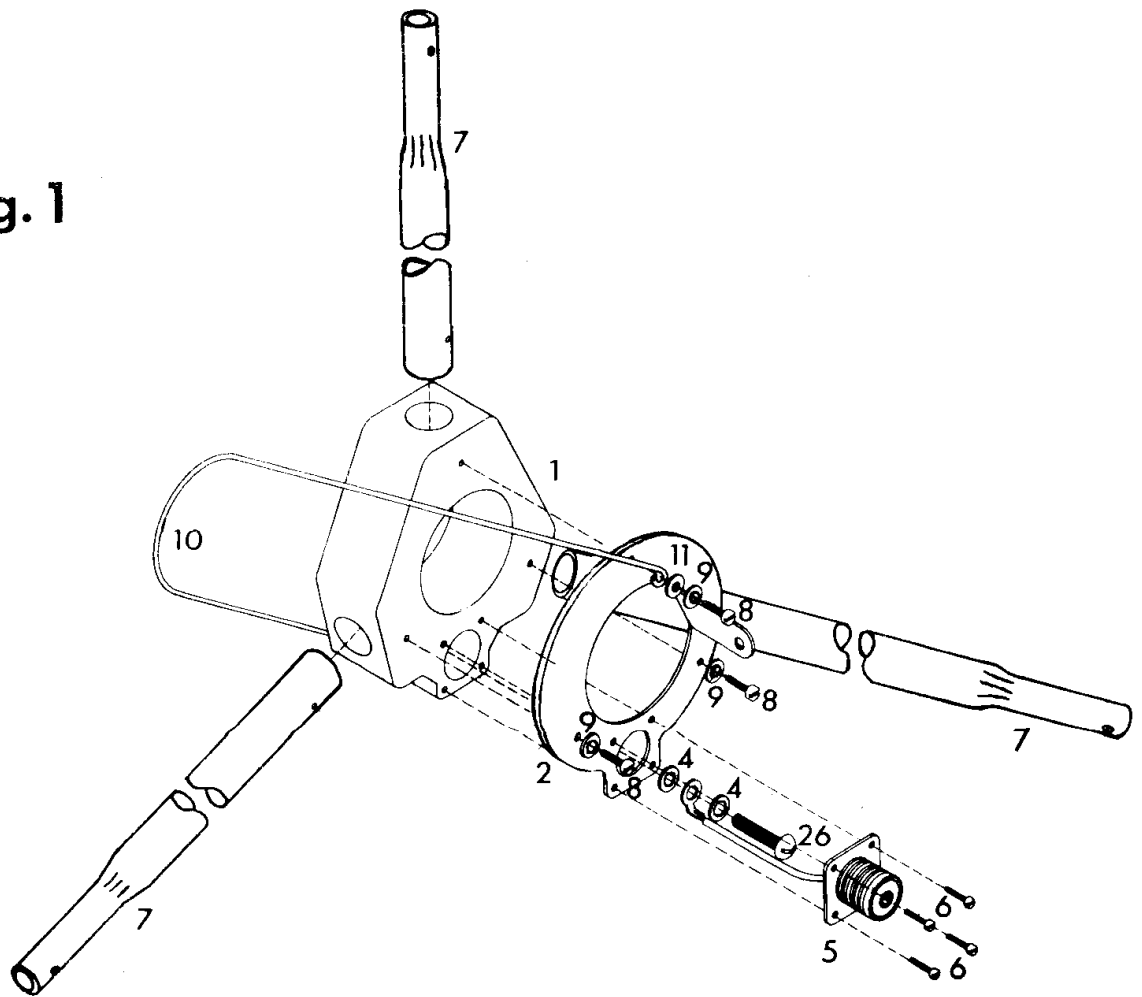
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The Devant Special antenna is a omnidirectional antenna with a gain of approximately 3.4 db.

PENETROX INSTRUCTIONS: Using fine grade sandpaper, roughen section of smaller diameter element tubing that telescopes into larger diameter tubing. Apply thin coat of compound to roughened surface and assemble. Penetrox should also be applied to screw heads, under coax connector and all electrical connections.

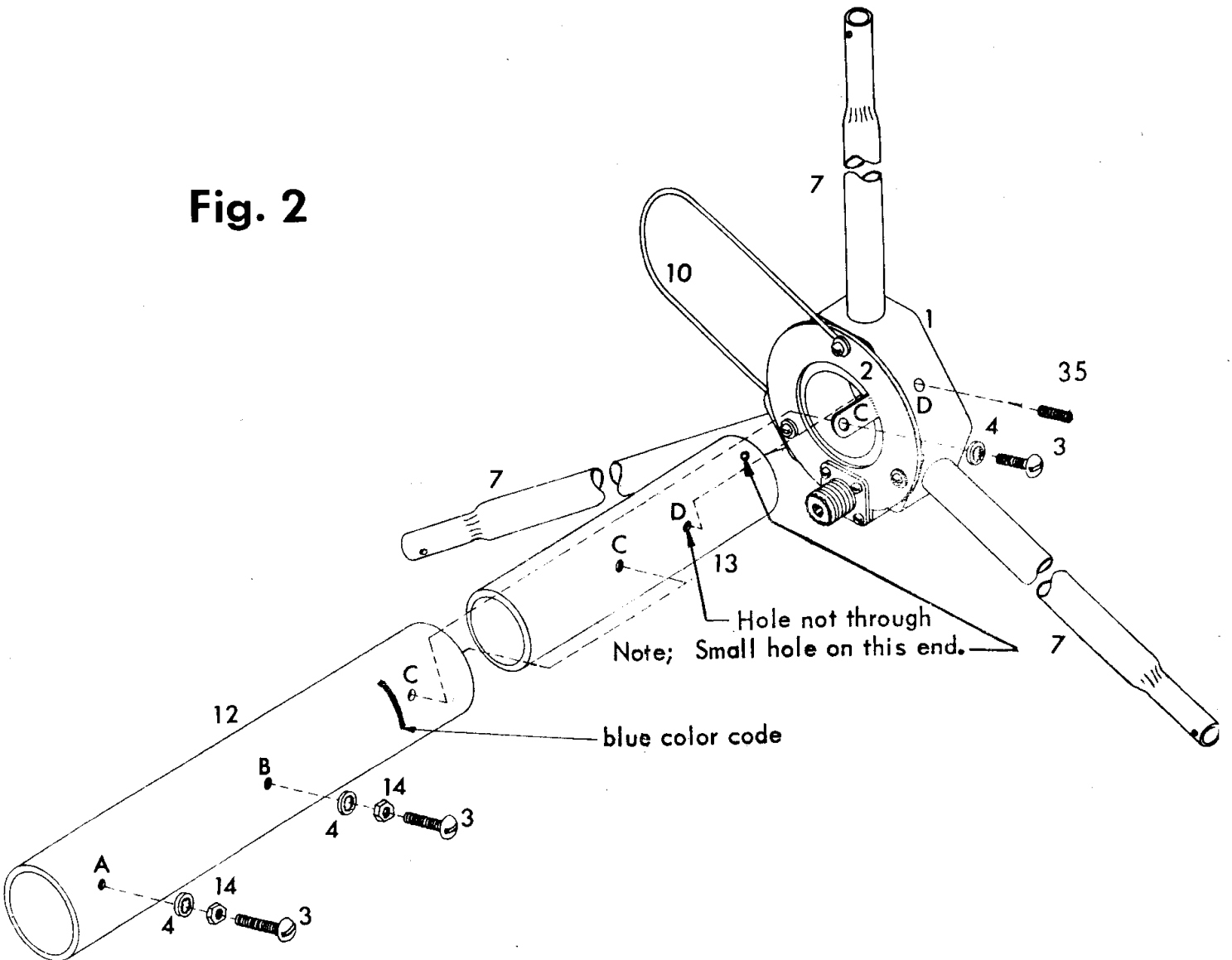
Fig. 1



ASSEMBLY INSTRUCTIONS SEE FIGURE 1.

Begin assembly by placing lockwasher (part no. 4), solder lug with wire and coax connector (part no. 5) and another lockwasher (part no. 4) on screw (part no. 26). Place screw (part no. 26) with lockwashers, solder lug and wire through $21/32$ " dia. hole in bottom of metal plate (part no. 2) and secure in small hole in center of $3/4$ " dia. hole in bottom of plastic base (part no. 1) as shown in figure 1. Align holes in metal plate (part no. 2), plastic base (part no. 1) with holes in coax connector (part no. 5) and secure with screws (part no. 6). Insert the three radials (parts no. 7) into holes in plastic base (part no. 1) and then align holes in radials and base. Secure the two bottom radials with screws (part no. 8) and lockwasher (part no. 9) as shown in figure 1. Secure the matching section (small) (part no. 10) to base assembly by placing screw (part no. 8) through lockwasher (part no. 9), flat washer (part no. 11) and hook eye on end of matching section (part no. 10) and secure in hole at top of base assembly as shown in figure 1.

Fig. 2



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ASSEMBLY INSTRUCTIONS SEE FIGURE 2

Place nut (part no. 14) about half way on screw (part no. 3), then through lockwasher (part no. 4) and loosely install in the holes labeled (A) and (B) on base mounting tube (part no. 12). Telescope base insulating tube (part no. 13) into plastic base (part no. 1), and align hole labeled (D) in base with flat area labeled (D) on insulating tube (part no. 13), and secure with set screw (part no. 35), see figure 2. Telescope the base mounting tube (part no. 12) with blue color code end onto base insulating tube (part no. 13). Align holes labeled (C) in tab on metal mounting plate (part no. 2). Secure this assembly with screw (part no. 3) and lockwasher (part no. 4), see figure 2.

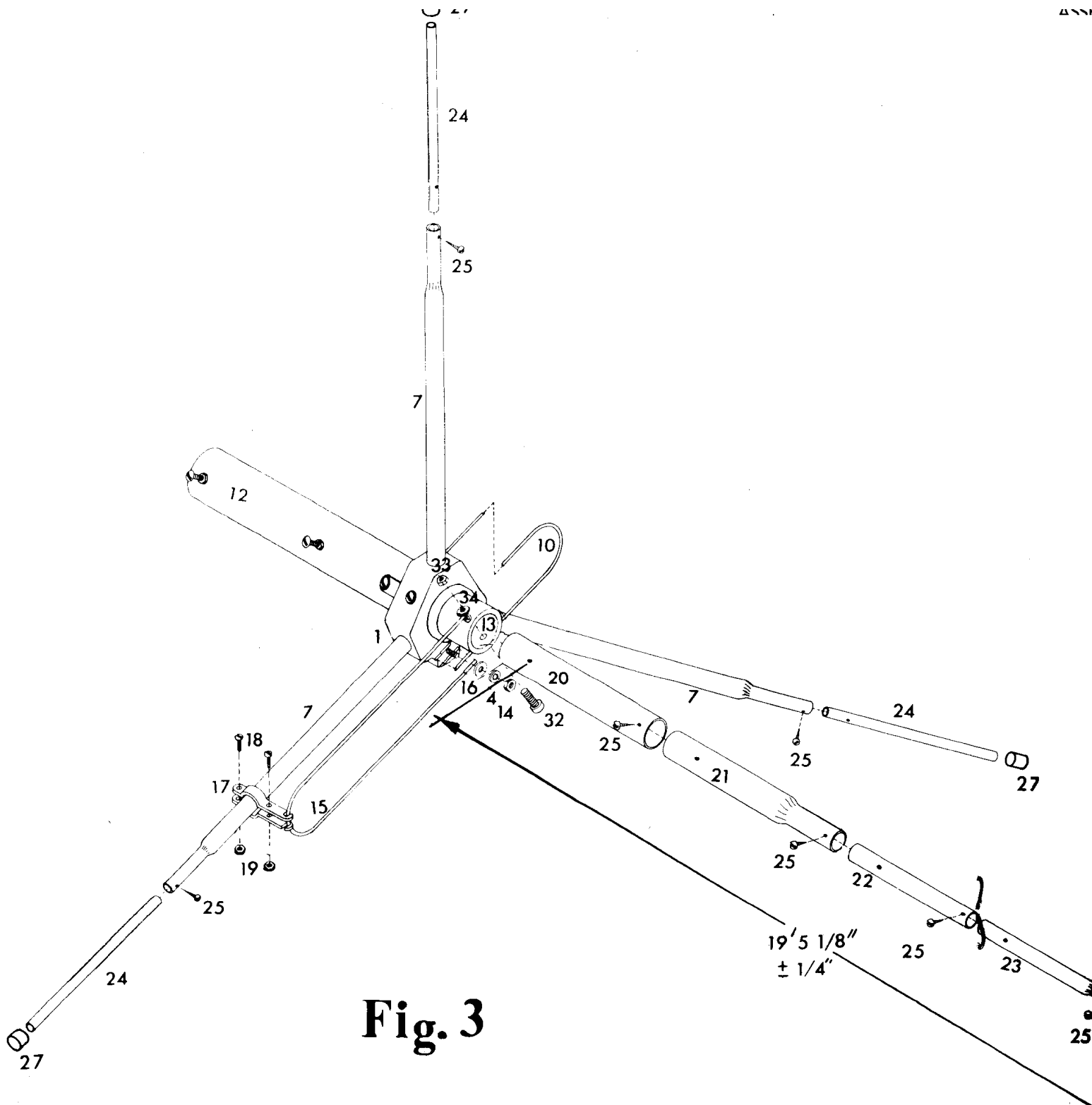


Fig. 3

19 5/8"
± 1/4"

ASSEMBLY INSTRUCTIONS SEE FIGURE 3.

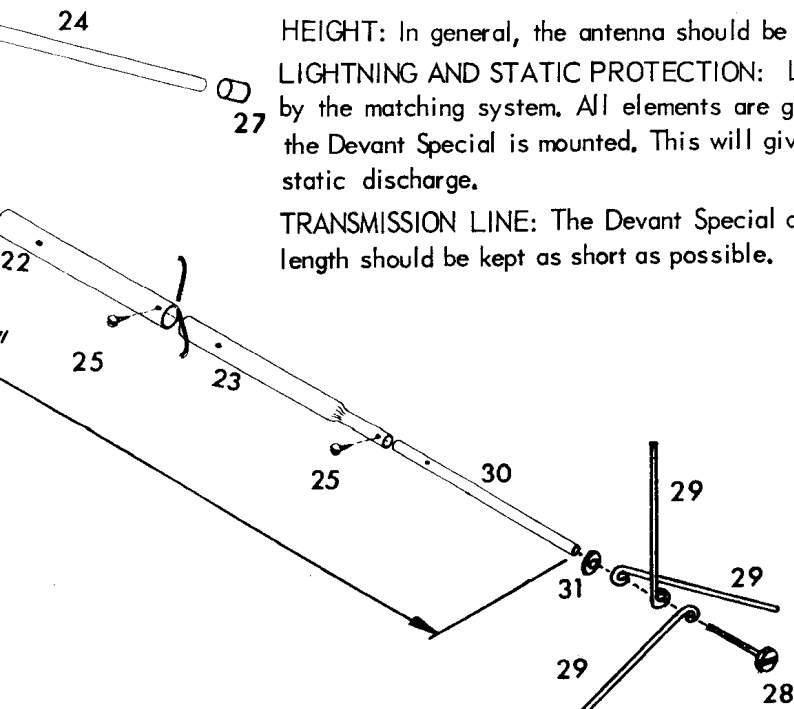
Telescope tube (part No. 20) into base insulator tube (part No. 13) and align 1/4" dia. through holes in tube (part No. 20) with 1/4" and 5/16" dia. holes into tube (part No. 13). Insert screw (part No. 32) through these aligned holes from side with 5/16" dia. hole making sure head of screw is recessed in 5/16" dia. hole in tube (part No. 13). Tighten screw, allowing aluminum tube (part No. 20) and insulator tube (part No. 13) to fit together securely (without wobbling). Place looped end of (large) loading section (part No. 15) on protruding end of screw (part No. 32), then flat washer (part No. 34) and secure with locknut (part No. 33) tightening adequately to insure good electrical contact. Place other end of loading section (part No. 15) between grooves to the bottom of plastic base (part No. 1) and other end of matching section (part No. 10) between the remaining grooves. Secure this assembly by placing flat washer (part No. 16), lockwasher (part No. 4) and nut (part No. 14) on end of screw which is protruding through base assembly. See figure 3. Place end of loading section (large)(part No. 15) in slots at top of insulating support clamps (parts No. 17). Place both halves of insulating support clamps (parts No. 17) around radial (part No. 7) and secure with screws and nuts (parts No. 18 and 19). See figure 3. Telescope large swage tubing (part No. 21) with swage end out into tube (part No. 20) align holes and secure with screw (part No. 25). Place tubing (part No. 22) into swage end of tubing (part No. 21) and secure with screw (part No. 25). Telescope small swage tubing (part No. 23) into tubing (part No. 22) and secure with screw (part No. 25). Place end extension tubing (part No. 30) into swage end of tubing and secure with screw (part No. 25). Telescope the three radial extensions (parts No. 24) into radials (parts No. 7) and secure with screws (parts No. 25). See figure 3. Place the caplugs (parts No. 27) on ends of element extensions (parts No. 24). Assemble top hat rods (parts No. 29) to top section of element (part No. 30) by placing screw (part No. 28) through hook eyes on end of top hat rods (parts No. 29), through flat washer (part No. 31) and into tapped end of element extension (part No. 30). The top hat rods should have the same angular spacing as the radials.

MOUNTING: The Devant Special antenna may be mounted on masts having a maximum pipe size of 1 1/4" (nominal diameter). The antenna should be mounted clear of all surrounding objects, such as power lines, trees and large metal objects.

HEIGHT: In general, the antenna should be mounted as high as possible. Check your citizens band rules.

LIGHTNING AND STATIC PROTECTION: Lightning protection and static drain is automatically achieved by the matching system. All elements are grounded and it is only necessary to ground the mast on which the Devant Special is mounted. This will give protection against lightning and static noise caused by some static discharge.

TRANSMISSION LINE: The Devant Special antenna is matched for 52 ohm coaxial cable. The coax cable length should be kept as short as possible.



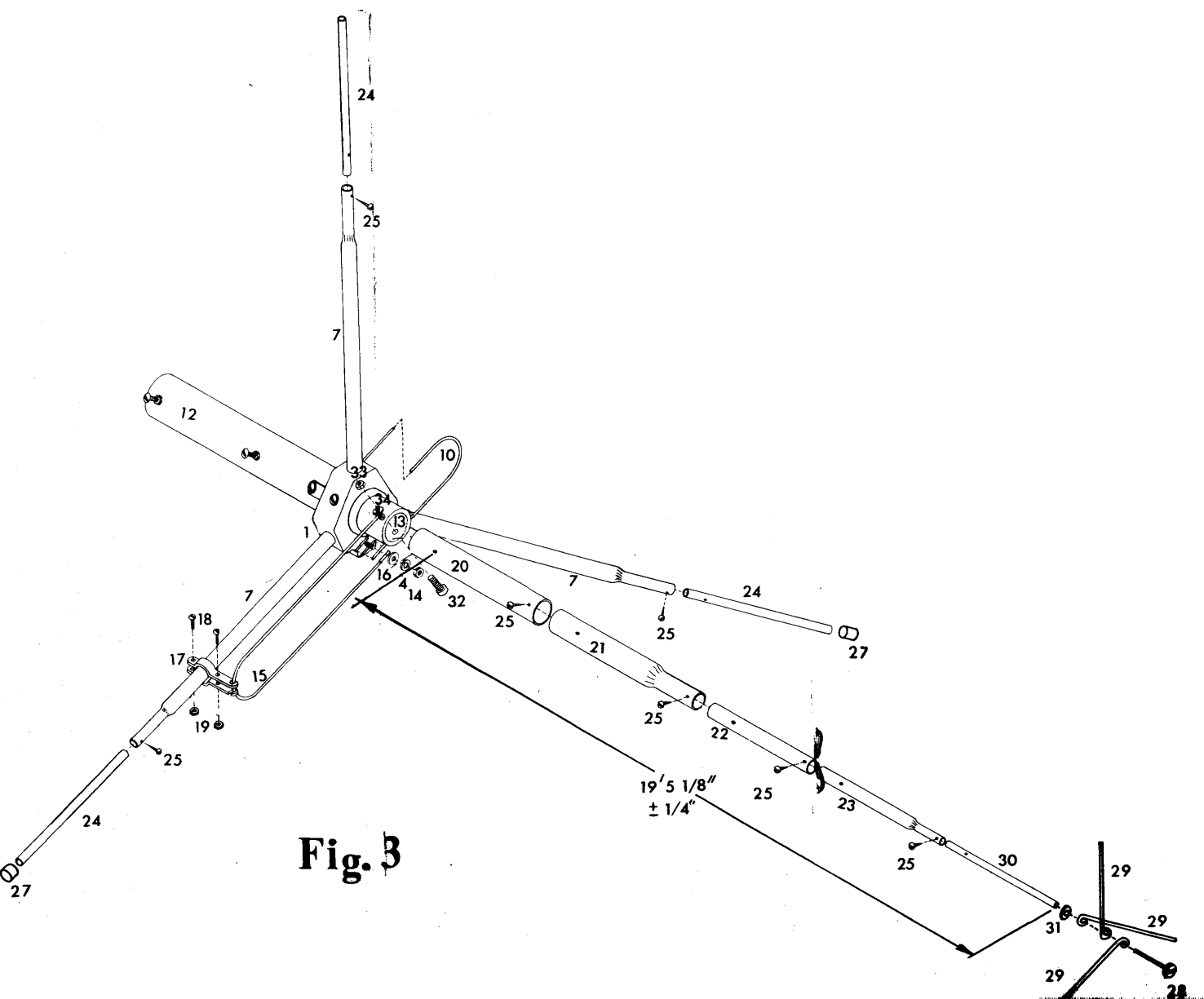


Fig. 3

PARTS LIST

PART NO.	MOSLEY PART NO.	QUAN	DESCRIPTION
1	1432	1	Plastic Base
2	1433	1	Metal Base Plate
3	1975	3	1/4-20 x 1" long screw
4	1019	6	1/4" Internal lockwashers
5	1435	1	Coax Connector Assembly
6	1289	4	No. 4 x 3/8" long screws
7	1437	3	5/8" OD Swage to 3/8" ID Aluminum Tubing
8	1012	3	No. 6 x 3/4" long screws
9	1385-1	3	No. 6 external Lockwashers
10	1483	1	Matching Section (small)
11	1382-1	1	No. 6 Flat Washer
12	1439	1	Base Mounting Tube
13	1440-1	1	Base Insulator Tube
14	1020	3	1/4-20 Nuts
15	1484	1	Loading Section (large)
16	1232	1	1/4" Flat washer
17	1108	2	Insulator support clamp
18	1230	2	6-32 Screws
19	1231	2	6-32 Nuts
20	1443-1	1	1 1/4" OD Aluminum tubing
21	1444	1	1 1/8" OD Swage to 3/4" ID Aluminum tubing
22	1445	1	3/4" OD Aluminum tubing
23	1446	1	5/8" OD Swage to 3/8" ID Aluminum tubing
24	1447	3	3/8" OD Aluminum tubing
25	1113	7	No. 6 x 3/8" long Sheet metal screws
26	1481	1	1/4-20 x 3/4" long machine screw
27	1423	3	3/8" Caplugs ±
28	1482	1	5/16-18 Truss head screw
29	1485	3	Top Hat Rod
30	1486	1	3/8" OD Aluminum tubing with one end tapped 5/16-18
31	1487	1	5/16" Flat washer
32	1696	1	10-32 X 2" Long Screw
33	1514	1	10-32 Locknut
34	1472	1	No. 10 Flat Washer
35	2054	1	Set Screw, 1/4"

NOTE: When ordering replacement parts from instruction sheet refer to FORM NO. C-147-D and MOSLEY PART NUMBER.

THE CB OPERATOR AND HIS ANTENNA PROBLEMS!

The most perplexing problems the CB Operator encounters usually involves his antenna. The experts in the field of antenna design and manufacture invite you, the CB'er, to take a short trip with us into this mysterious and fascinating world. Since this is to be only a short trip, explanations of all topics will not be possible.

Since most CB Operators work in an area other than radio; he usually bases his judgment on the words of another CB Operator. When he purchases, on recommendation, an antenna of the same make as his buddies and finds it apparently is not working as good, he is unhappy.

One possible reason for this is perhaps the immediate area surrounding the antenna. The manufacturer designs the antenna to be operated as high above ground as possible, therefore, in order to get best results, the antenna must be placed in an area closely representing that for which it was designed. This also includes being as far from surrounding objects as possible, for these objects may absorb power or cause serious detuning of the antenna.

Another possible improvement is an antenna of better design. The half wave dipole antenna is considered the basic antenna. Performance of other types are usually based on a comparison to the half wave dipole. Some manufacturers make comparison to a *theoretical antenna* known as an *isotropic source*. This source is not as good as the dipole and comparisons made by this method indicate better results than obtained when comparison is made to a dipole. This leads to incorrect information unless the method of comparison is stated. If the performance is stated as being compared to an *isotropic source*, subtract 2.14 db. to get the comparison of the antenna to a dipole.

By adding additional elements to work in conjunction with the dipole antenna a focusing or directing effect will be obtained. Along with this effect an increase in signal intensity in the direction of focus will be obtained. This gives the same result as if you had increased the transmitters power output. Typical antennas are the Mosley A-311, A-311-S and A-511-S.

Another method of directing or focusing the signal is to increase the length of the dipole. This advantage is incorporated in the *Perant Special* antenna system. In this instance the focusing effect does not take place in only one direction. The effect takes place in all directions around the antenna.

One area of antenna efficiency is the ability of the antenna to accept power. If the antenna will not accept nearly all available power it cannot function as well as if it had. Maximum transfer of power into the antenna occurs when the impedance of the antenna is equal to the characteristic impedance of the transmission line. Characteristic impedance of RG-8/U or RG-58/U is 52 ohms. When both the antenna and coax impedance is 52 ohms, maximum power transfer takes place. This efficiency is expressed as a ratio of impedance such as $52/52$, which equals $1/1$ or 1. If the impedance of the antenna is lowered to 40 ohms, maximum power transfer will not take place. This efficiency ratio is $52/40$, which equals 1.3. The degree of efficiency or mismatch of impedance is expressed in SWR or STANDING WAVE RATIO. In the latter case, the SWR is 1.3.

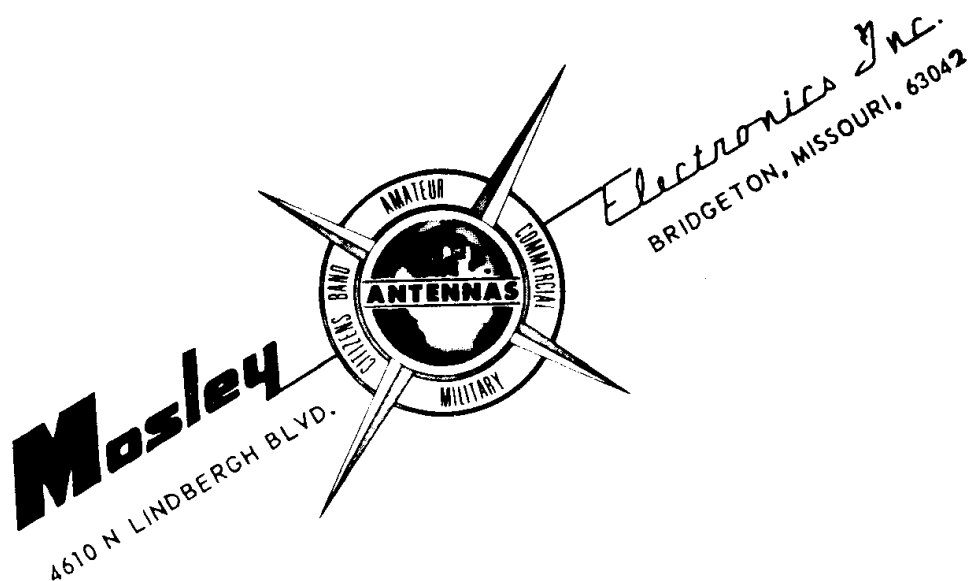
The expression "SWR" is not just a fancy group of words. It comes from the above explanation and a new wave which is generated when an "SWR" of more than one is obtained. Let's explore briefly the phenomenon of this new wave. . . .

. . . . In the above case where the SWR was 1.3, the transmitter emits a signal in the form of a sign wave which travels by way of the transmission line to the antenna. Since the antenna does not accept all of the original power, the power which has not been accepted returns to the transmitter by way of the same transmission line. Now, there are two sign waves of power on the same transmission line, each going in opposite directions. At various intervals along the transmission line these two sign waves will add together or subtract and give rise to the new sign wave. This wave does not move up and down the line as the initial and returning waves, thus, the term "STANDING WAVE". The magnitude and location of the standing wave on the transmission line depends on several factors one of which is the degree of mismatch.

Since the magnitude of the standing wave varies, it is possible to measure a good SWR at certain locations on the transmission line even though standing waves are present. In fact, a manufacturer can specify specific lengths of transmission line in order to present a good SWR reading. This does not correct an antenna mismatch which will still be present.

To obtain the true degree of mismatch or actual SWR, the SWR instrument should be placed at multiple coax distances of 12 feet from the antenna (for CB operations only). 12 feet of coax is a coaxial one-half wavelength and the impedance of the antenna is repeated every one-half wavelength along the coax line.

On the other hand, it is extremely difficult to obtain unity (1) SWR at all frequencies, therefore, certain allowable tolerances are considered within good practice. The normal allowable tolerance is to have an SWR of 1.5 or less. Under normal manufacturing tolerance and the variation of installation sites, the SWR of all Mosley antennas will be well within this range. Under these conditions the length of coax transmission line used will be of little concern.



MOSLEY Electronics, Inc.

The manufacturer warrants this antenna to be free from defects in material and workmanship. Any damage occurring through normal use of the antenna and due to defective material or workmanship will be repaired or the damaged part replaced free of charge for a period of one year from date of purchase. * Pack carefully and return postpaid to Mosley Electronics, Inc.



THIS GUARANTEE APPLIES ONLY TO THE ORIGINAL OWNER REGISTERED ON THE CARD BELOW. ANY MERCHANDISE THAT HAS BEEN REPAIRED BY AN UNAUTHORIZED PARTY, TAMPERED WITH OR ABUSED IS NOT COVERED BY THIS GUARANTEE.

To validate guarantee, detach stub, fill out card below and return.

PLEASE PRINT OR TYPE

Your name:

Call letters: Tel:

Address:

City: State: Zip:

Antenna model No.:

Date purchased:

Dealer name:

Dealer address: **13764**

GUARANTEE VOID UNLESS THIS REGISTRATION CARD IS RETURNED IMMEDIATELY

Form No. O-223-B Litho in U.S.A.

Keep this section for your record.

Antenna model No.

Date of purchase

Dealer from whom purchased

Mosley Electronics Inc. 4610 North Lindbergh Blvd., Bridgeton, Missouri 63044

**Place
Stamp
Here**

**MOSLEY ELECTRONICS, INC.
4610 North Lindbergh Boulevard
Bridgeton, Missouri 63044**