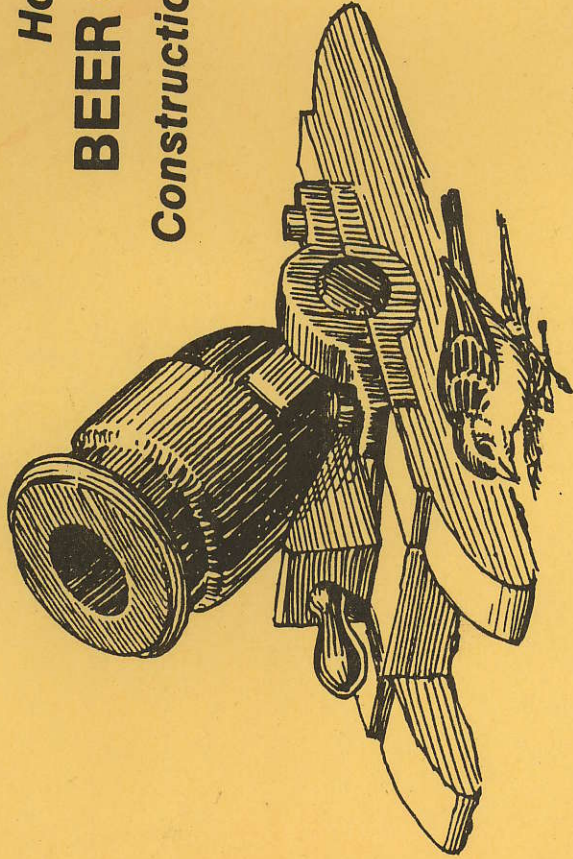


*How To Build A*  
**BEER CAN MORTAR**  
*Construction Plans and Parts List*



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## MORTARS

### Introduction

A well built mortar will provide many hours of safe entertainment and enjoyment. With a maximum range of nearly five hundred yards, it can shoot a beer can (filled with sand or gravel) with amazing accuracy. Many black powder clubs have added mortar firing to their list of contest events.

### Parts List

1. One piece 6" X 12" solid steel shafting
2. One 2" X 10" steel shaft
3. Two solid steel blocks - 3"x 4" X 2"
4. One 10" X  $\frac{1}{2}$ " threaded rod with two nuts
5. Eight - 2" - #10 wood screws
6. Four -  $4\frac{1}{2}$ " X  $3\frac{1}{2}$ " bolt and nuts
7. Four - 3" X #10 woodscrews
8. Six feet 2" X 4" fir or pine
9. Materials to construct carrying handles (optional)

NOTE: We can assume no responsibility for the manner in which the enclosed information is used.

To construct the barrel first locate a master machinist. He should accomplish the following work on the 6" X 12" steel shaft.

- a). Drill a pilot center hole and then enlarge it to 2  $\frac{3}{4}$ ". The enclosed drawings should be followed closely.
- b). Turn a bull nose on the butt end of the shafting (an alternate taper may be used with no functional effect).
- c). Mill a half round slot in the butt end of the shaft to accept the trunion shafting.
- d). Turn the outside diameter of the trunion smooth.

e). Arc-weld the trunion to the butt-end of the shaft.

f). Drill a 2" hole in the center of the 3" X 4" X 2" steel block. Drill a 2 3/8" holes through the shaft. Cut the pillow block in 1/2 and machine the surfaces flat.

g). Drill the small touch hole.

h). All metal work on the barrel (tube) is now complete. To prevent against rust, the barrel (tube) should be either browned, blued, or painted black. (The originals were painted black)

In constructing the wooden carriage, select the best grade of wood possible. Fir or pine are acceptable, but oak would be by far the best. Follow the enclosed diagrams carefully. All wood joints should be glued (as well as bolted) for extra strength. For the most protection, the wooden carriage should be sanded smooth and covered either clear varnish or paint.

#### Using The Beer Can Mortar

Always remember that your mortar is not a toy! Use good judgement and common sense when firing it. The following rules should be followed:

(1). Try to locate a source of cannon powder. If this can not be found, use FG or FFG powder. (Never use black blasting powder - it ignites too slowly for satisfactory results in our mortar)

(2). A full powder charge will fill the powder cavity completely. This should be completely safe in a properly designed and well built mortar. The mortar may be used with as little as 1/3 powder charge for firing.

(3). No wadding is necessary for use in our mortar. It comes out of the barrel burning and may set fire to the surrounding areas.

(4). Remember that mortars can be very dangerous when used improperly. NEVER, I repeat, never bend over and look into the barrel of a mortar. The temptation may be great, but keep clear of the muzzle at all times when loading or firing.

(5). For the best results, use dynamite fuse for igniting the mortar. Buy plenty and experiment with different lengths to determine the best burning time (experiment away from your powder and mortar).

(6). Beer and soda cans are the best and most practical projectiles you can use. Fill them with clean, dry sand. You must crimp or tape each can to insure that the sand does not trickle out. Though it would be far more expensive, you could have iron balls cast to fit the bore of your mortar. These balls, painted a bright colour, would be relatively easy to find if you have some capable spotters down range. If you are using actual cannonballs, try to avoid a very soft impact area. The ball may bury itself one or more feet deep on landing.

(7). After firing clean both the bore and powder chamber with black powder solvent. To accomplish this, you will need swabs of two different diameters. You can make your own swabs by nailing pieces of sheepskin or cloth bags to the end of a cut off shovel handle. When a thorough swabbing has been accomplished, you may clean the touch hole by running a small diameter brass rod through it.

Your complete firing sequence is as follows:

- (1). Swab bore with black powder solvent.
- (2). Swab powder chamber with black powder solvent.
- (3). Clean touch hole with brass rod.
- (4). Pour measured powder charge into cavity.
- (5). Insert dynamite fuse into touch hole.

(6). Check to see that your target area is clear and light fuse.

(7). Stand back and await detonation.

If for some reason, the flame goes down into the touch hole and does not ignite the charge - do not panic! Wait at least ten minutes before approaching the mortar. DO NOT LOOK INTO THE BORE FOR ANY REASON! Approach with extreme care. From one side, use the brass rod to clear the touch hole. Cut and insert a new fuse and try again. After five more minutes, if the mortar still has not gone off, you must have gotten hold of some bad powder. In this case take a small metal can full of water and pour it into the bore of the bore. BE CERTAIN TO KEEP CLEAR OF THE BORE AT ALL TIMES! Wait for five more minutes and then dump the entire mess out and begin over.

#### Aiming Your Mortar

With a little practice, you will be amazed with the range and accuracy you can achieve with the mortar. To increase your accuracy, you may want to experiment with a gunners quadrant similar to the one shown here. By using a constant powder charge and projectiles of uniform weight, you can experiment the angle in which the mortar (in degrees from the quadrant) is fired compared with the resultant range.

#### Bursting Projectiles and Impact Charges

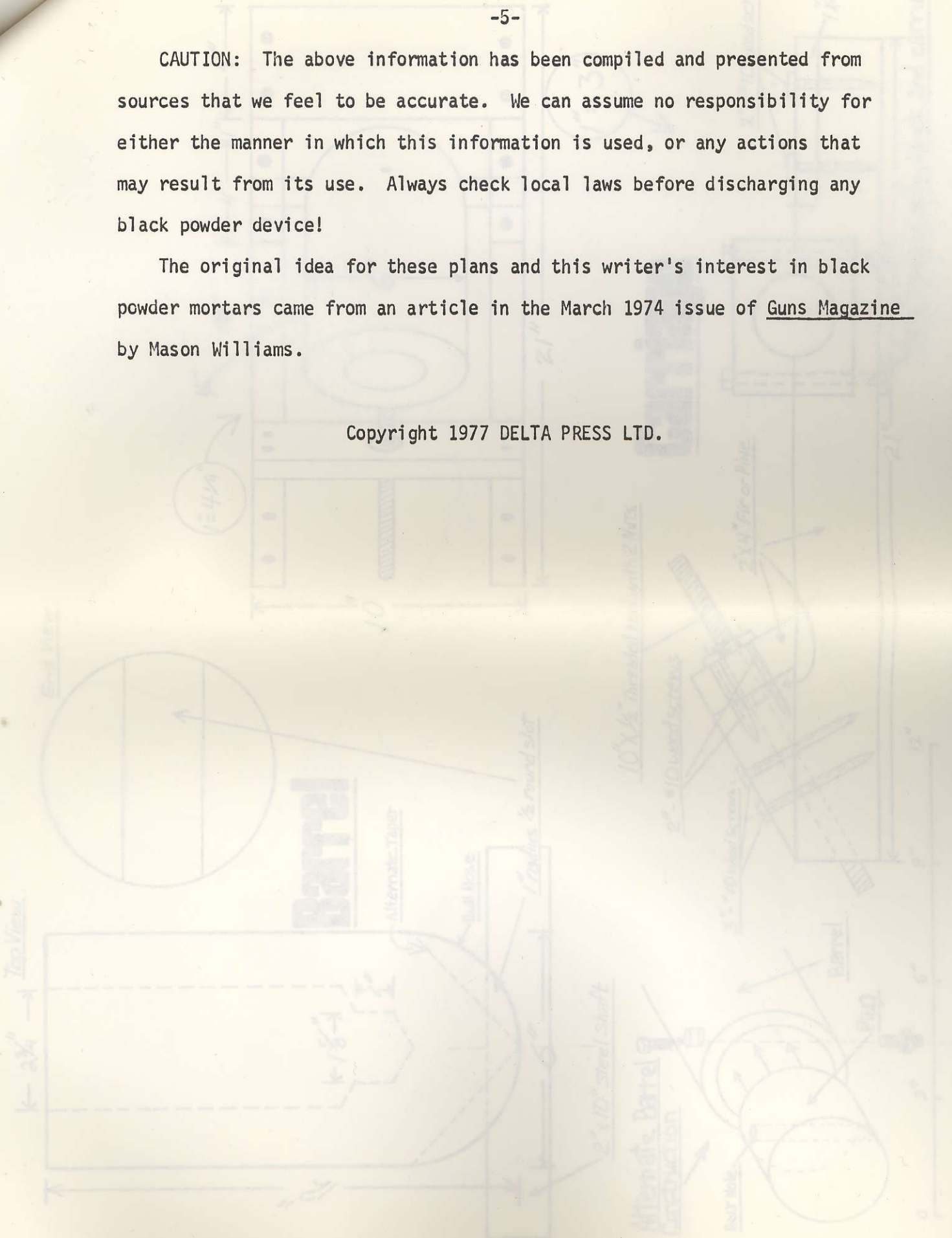
A bursting projectile is one that is set (usually by fuse or powder train) to burst in the air. An impact charge is one that is rigged to detonate when it contacts another object.

It is this writers opinion that both bursting projectiles and impact charges are inherently unsafe and not suitable for sport mortar firing. Of the injuries I know to have occurred while using sport mortars, almost all have been as a result of using bursting projectiles and impact charges.

CAUTION: The above information has been compiled and presented from sources that we feel to be accurate. We can assume no responsibility for either the manner in which this information is used, or any actions that may result from its use. Always check local laws before discharging any black powder device!

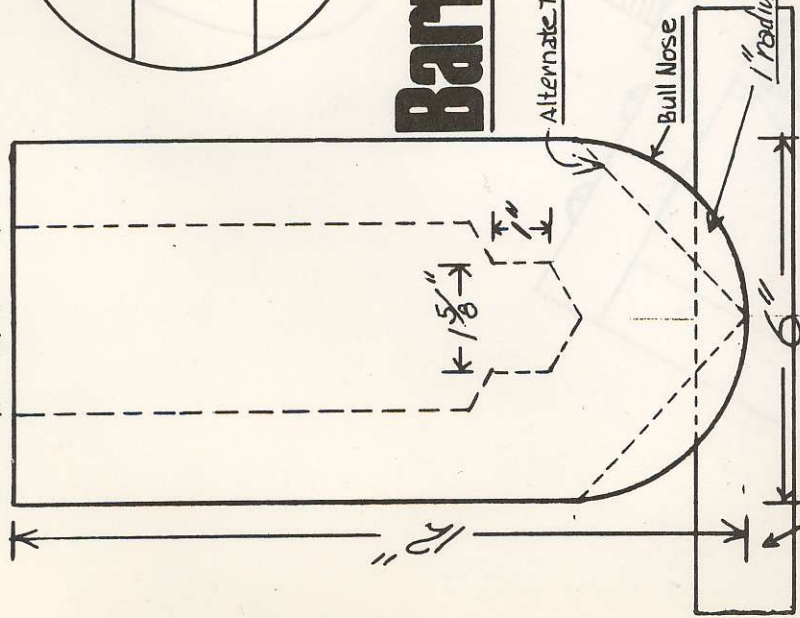
The original idea for these plans and this writer's interest in black powder mortars came from an article in the March 1974 issue of Guns Magazine by Mason Williams.

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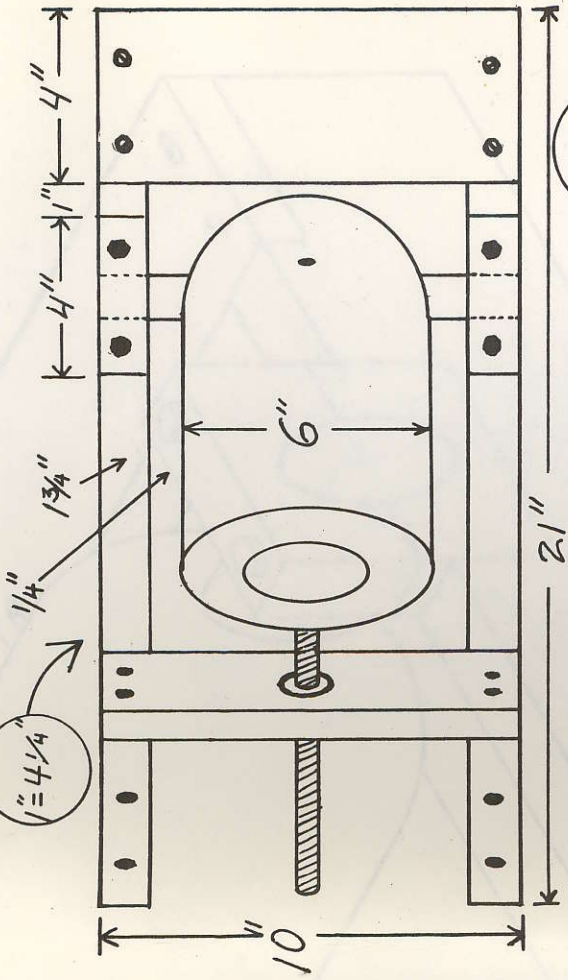
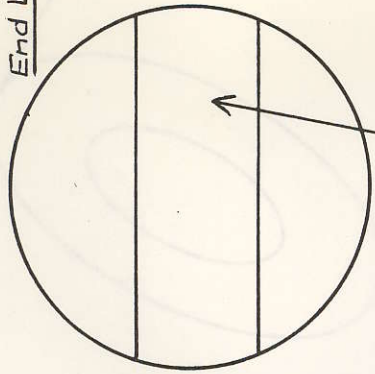
Top View

2 3/4"

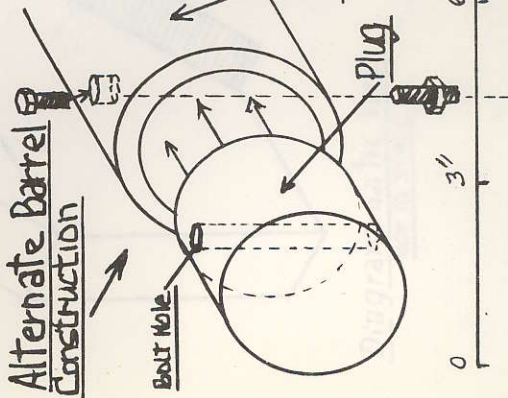


# Barrel

End View



# Alternate Barrel Construction

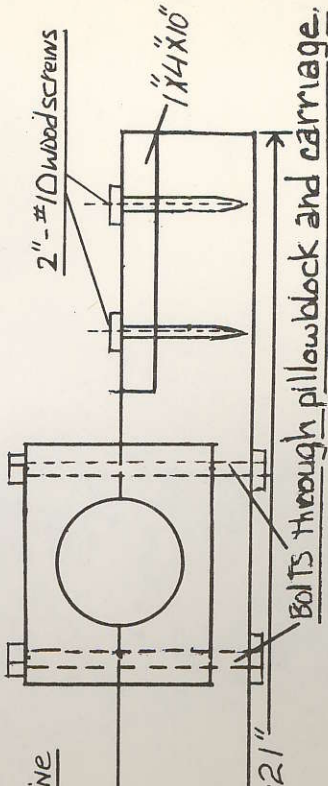


10" x 1/2" Threaded rod with 2 NUTS

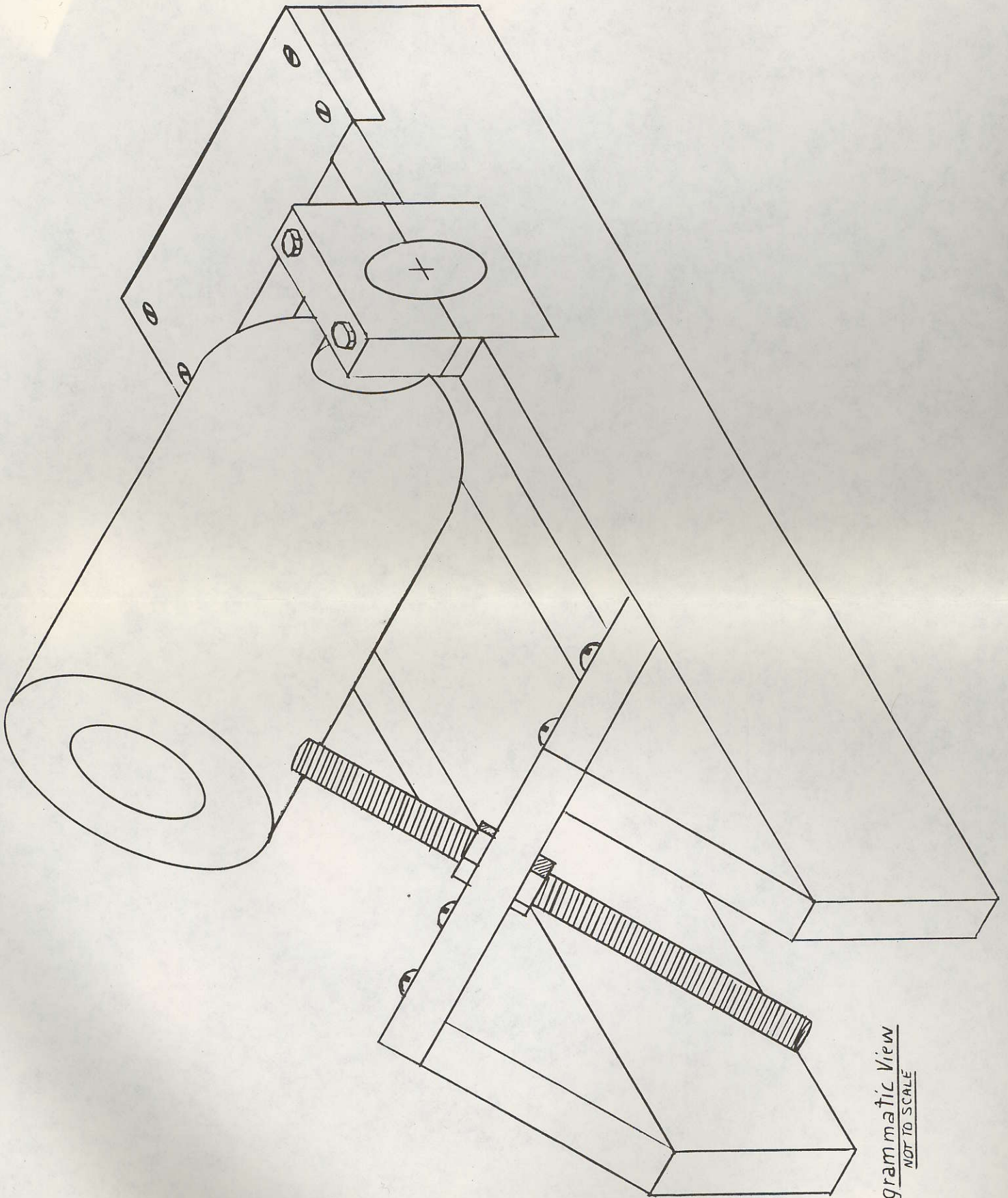
2" - #10 wood screws

2" x 4" Fir or Pine

# Carriage



2" x 10" Steel Shaft



Diagrammatic View  
NOT TO SCALE