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# NASA TECH BRIEF

## Langley Research Center



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### Multihead Measuring Tape

#### The problem:

The procedure to obtain a length and angle measurement on either wood or metal stock requires two separate operations. Each requires a different device and is thought to be too time consuming and error yielding.

#### The solution:

By using the multihead measuring tape, the procedure to obtain a length and angle measurement is reduced to one step, saving time and providing for greater accuracy. Additionally, the length and angle of the measurement can be locked in on the measuring device for repetitive measurements.

#### How it's done:

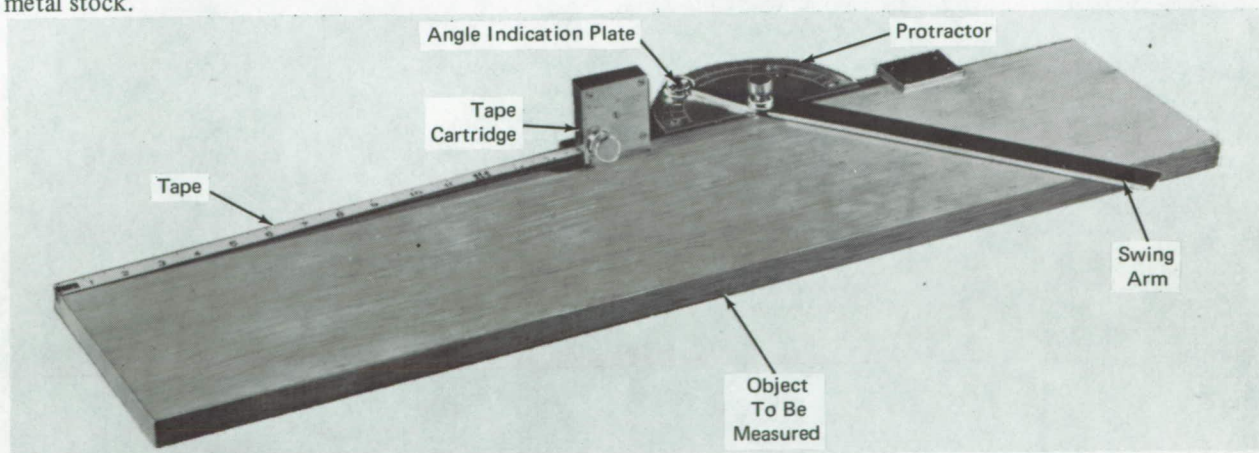
The multihead measuring tape (see illustration) consists of a measuring tape cartridge (for length) and a variety of angle measuring heads to which the tape cartridge is attached. The heads may be a framing square for measuring  $90^\circ$  or square angles on wood stock, a T-square for measuring  $90^\circ$  or square angles on metal stock, or a protractor, of sufficient size to insure reasonable accuracy, for measuring all angles on either wood or metal stock.

The application of the protractor head is simplified by the utilization of a sliding angular indication plate and swing arm assembly that enables the user to align on full increments at any angle. This eliminates the need to calculate fractions of an inch to achieve the desired angle.

The unit, tape cartridge and applicable head, is assembled by means of a magnet mounted flush on the bottom of the tape cartridge case to support the weight of the cartridge. Additionally, aligning pins (not shown), also mounted on the bottom of the case, absorb shear loads and insure correct positioning of the two components. This simple arrangement provides speedy assembly and disassembly.

All the components (tape cartridge, T-squares, protractor, etc.) are conventional industrial tools and retain their original, individual functions slightly modified for use as a component.

The multihead measuring tape can best be used for layout work or to determine and/or duplicate the length and angle of existing stock. Its other applications are almost unlimited.



Multihead Measuring Tape

(continued overleaf)

**Note:**

Requests for further information may be directed to:  
Technology Utilization Officer  
Langley Research Center  
Mail Stop 139A  
Hampton, Virginia 23665  
Reference: B73-10193

**Patent status:**

Inquiries concerning rights for the commercial use  
of this invention should be addressed to:  
Patent Counsel  
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