

ARCHITECTURAL STRUCTURES I: STATICS AND STRENGTH OF MATERIALS

ENDS 231

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SPRING 2007

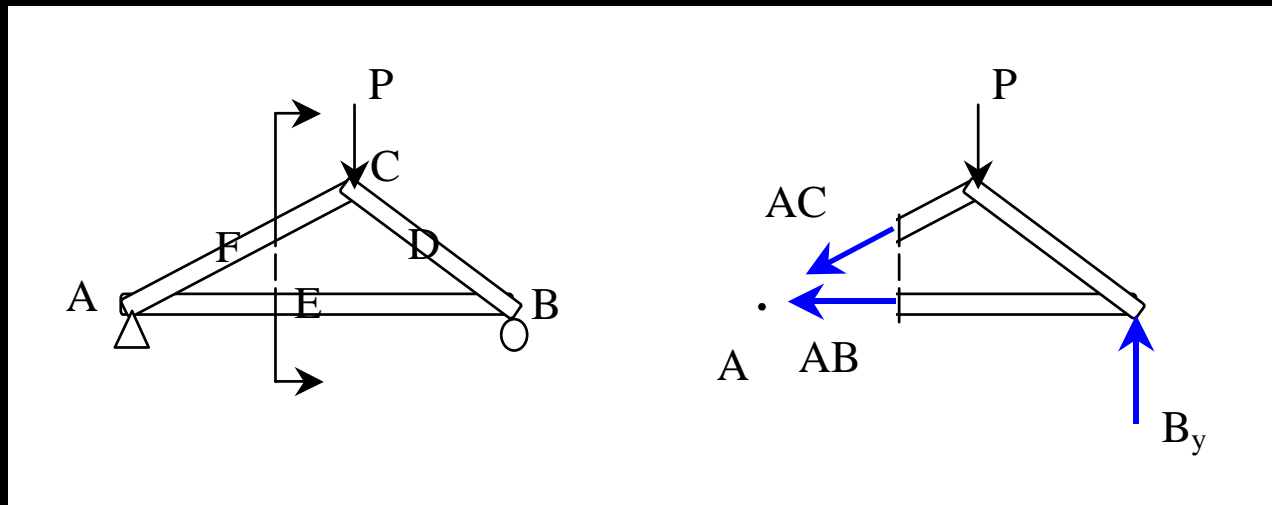
lecture
eight

**truss
analysis**



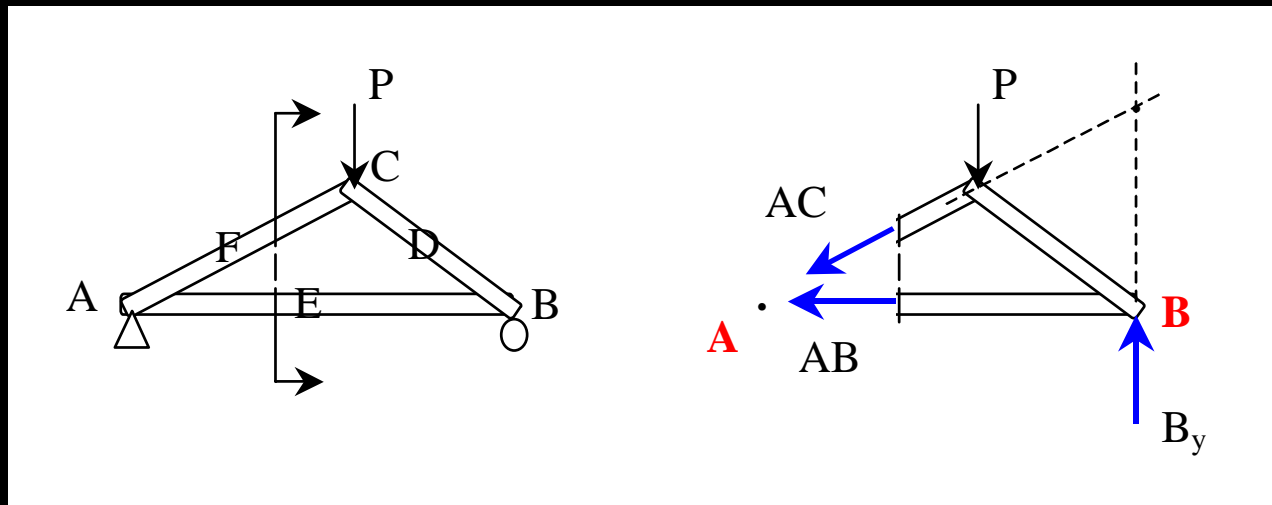
Method of Sections

- *relies on internal forces being in equilibrium on a section*
- *cut to expose 3 or less members*
- *coplanar forces $\rightarrow \sum M = 0$ too*



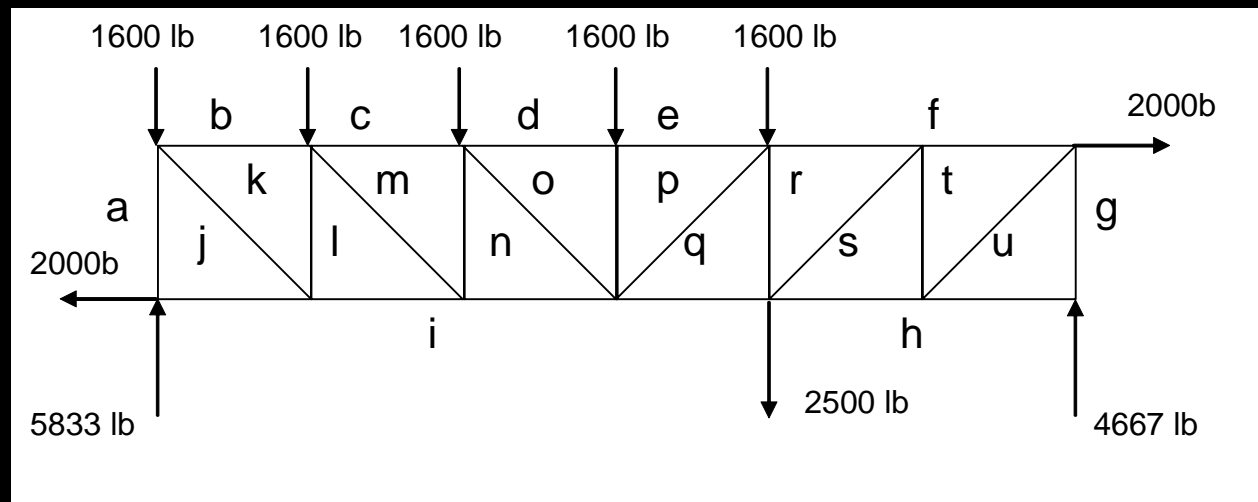
Method of Sections

- *joints on or off the section are good to sum moments*
- *quick for few members*
- *not always obvious where to cut or sum*



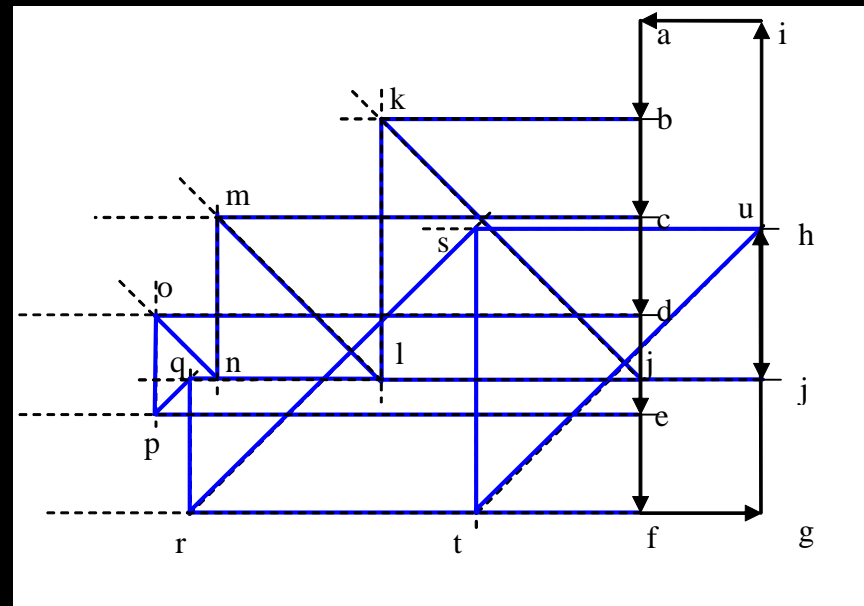
Graphical Analysis

- *lettering rules (Bow's notation)*
- *draw a force polygon of known loads and reaction forces*



Graphical Analysis

- draw reference directions for members and find intersections
- measure and determine C or T
- follow steps!
- learn by example



Other Trusses

- *compound truss*
 - *simple trusses with more links*
 - *might have pins in middle of members*
- *statically indeterminate*
 - *too many members*
 - *constrained*
 - *diagonal tension counters*

