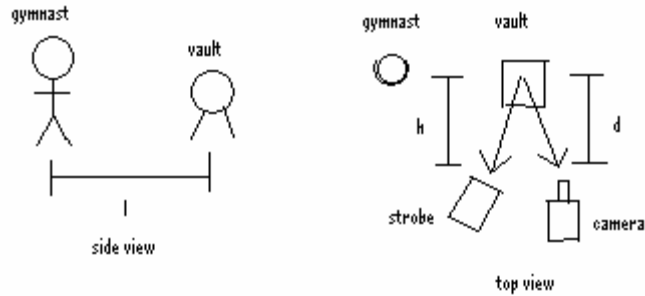


6.163, Strobe Project Laboratory  
Prof. James Bales  
**Lecture 2**

1. For next week's lab we will be conducting "The Practical Exercise" individually instead of performing the lab as a group (45 minutes per person)
  - a. The objective of the Practical Exercise is to determine how flat a water balloon gets as it bounces on a tabletop by photographing the balloon in its flattest position.
  - b. By 5pm the day before the lab, we must select the color of the water balloon, whether we want a black or white background, what type of trigger we want to use (based on the triggers we used in the Synch and Delay lab)
  - c. See handout on The Practical Exercise for more info.
2. The typed reports we turn in will be "Memos," not the traditional Lab Report.
  - a. We can therefore write in the first person ("I measured the...", "We took three photos of...")
  - b. This style of reporting our findings also corresponds to the style of the Lab Handouts—our lab group is a Research and Development group exploring different triggering methods, etc. and are reporting to a company or our boss instead of compiling our data into a third person perspective, passive tense lab report.
  - c. Remember that the memos should maintain the same verb tense—past tense.
  - d. Sections of the Memo—see Lab Memo Handout
    - i. The Summary section should state what you did in the lab session *specifically* in regards to the objective—but without measurements or details of what happened. It should also include any recommendations for the 'company' based on what you did.
    - ii. The Goals listed should be worded in such a way that the recommendations you make are based on the goals of the experiment.
    - iii. The Background section should explain anything that you knew before you walked into the lab; for instance, any answers to pre-lab questions, and the theory related to said pre-lab.
    - iv. The Procedure section explains what you did. Note: If several procedures were tested before one was chosen to use for the photos produced, only write about the procedure actually used. However, you must describe any procedure used to produce any photographs included in your Memo.

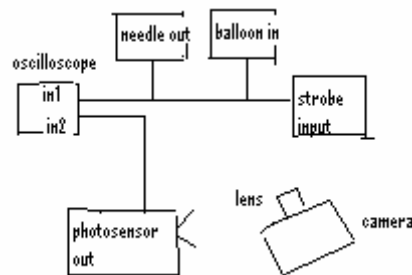
v. Diagrams can be either side view or top view, whichever will better portray the setup for your particular experiment:



-suggestion: Use side view to show distances between main objects in the photo, and use the top view to show the location of the camera, strobe, and any other equipment relative to the subject(s) of the photo.

-To create the diagrams, you can use drawing tools on the computer, or leave space in your printed Memo to draw diagrams in by hand—but be sure to use a straight edge if making sketches by hand.

-For wiring diagrams, be sure to label output/input connections:



Sample wiring diagram

vi. The Results section should only include what was found—*no* interpretation should be in this section, just observations. This shows what in the experiment is actually reproducible. (Measurements are results.)

vii. The Discussion section should have any data obtained through interpretation. This includes any derived quantities, or deductions. (Calculations are discussion.) The discussion should tie back to your goals. Include any potential sources of error—electronic, mechanical, or physical. Explain what about the experiment you would change if you did it again, and note if you didn't complete any portions of the lab.

-Measurements and Calculations can appear in a table together, but only write about each in their respective sections.

viii. Each photo print attached in your Memo is a numbered "Figure" and must have a caption below it. The print size should be the most effective size—if you want to show a sequence of a balloon popping, you might want three or four prints to fit on one page, for example.

ix. Any table that appears in your Memo should be mentioned in at least one sentence in the body of the text.

x. If you use any subheadings in any of the sections mentioned above, include a general overview before beginning with the subheadings.