Lecture 21 Case Construction

Steps:

I. Layout:
   Decide what components go where, mark with pencil.
   Welcome to use mine as model.
   But mine barely fits with new boards.
   Note: easy to cut boards down to fit if needed.
   Make banana inputs 3/4" spaced using ruler.

II. Drill holes:
   Use press.
   - wood back stop
   - safety goggles
   - clamp piece to hold bay hand for small (≤ 1/4") holes.
   - when placement is critical, start with small pilot hole.
   Can use battery holder as template.

III. Install components:
   Mostly held by nuts; tighten firmly with wrench.
   Screws & nuts for battery holders will be provided.
   LED glues into place with 5-minute epoxy.

One 11/26, right after break.

Last phase:
   - Solder board to case.
   - Test & debug.
   - Label & document.

One 12/13, reading day during finals.
(due before I get in on 12/14)
Talk about final phase now
Work days: Sunday 12/12, 12/19

Connecting board to case:
Follow circuit diagram

Notes:
- SPST switch has tricky connections, see handout
- Can use heat shrink tubing to insulate where needed
  - don’t overuse, hard to take off
- Need extra 1k resistor, not on parts list
  - can take from lab supply
- Need 2 9V batteries, get from store

Testing:
- I’ll check circuit gain, battery + ext. power operation,
  battery check
- When testing, make sure to attach reference input
  to ground

Documentation:
- All components on case clearly labelled
- Box itself labelled with a title (“Differential Amplifier”)
- Printout with circuit diagram, key specifications, &
  instruction for use. (Include explanation of reference input)

Doesn’t need to be long. Target audience = you
in two years.