

# Design Documentation in ME 2110

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# Organization

- What reports are for
- How to manage displays
- What information goes in reports
- What we mean by clear writing
- Example Summary for current project

# Technical Communication

- Reports use **Words** and **Figures**
- Figures display what you have done
- Words describe the figures
  - State what is significant about each display

# Readers Don't Already Know Everything

- **Label** things that are **significant**
- **Define** what you have **added**
- **State** conclusions that are important for the **project**

# Reports--I

Your reports display your thinking

- How you understand the customer's needs
- How you understand existing products
- How your work is novel
- How you have added value

# Reports--II

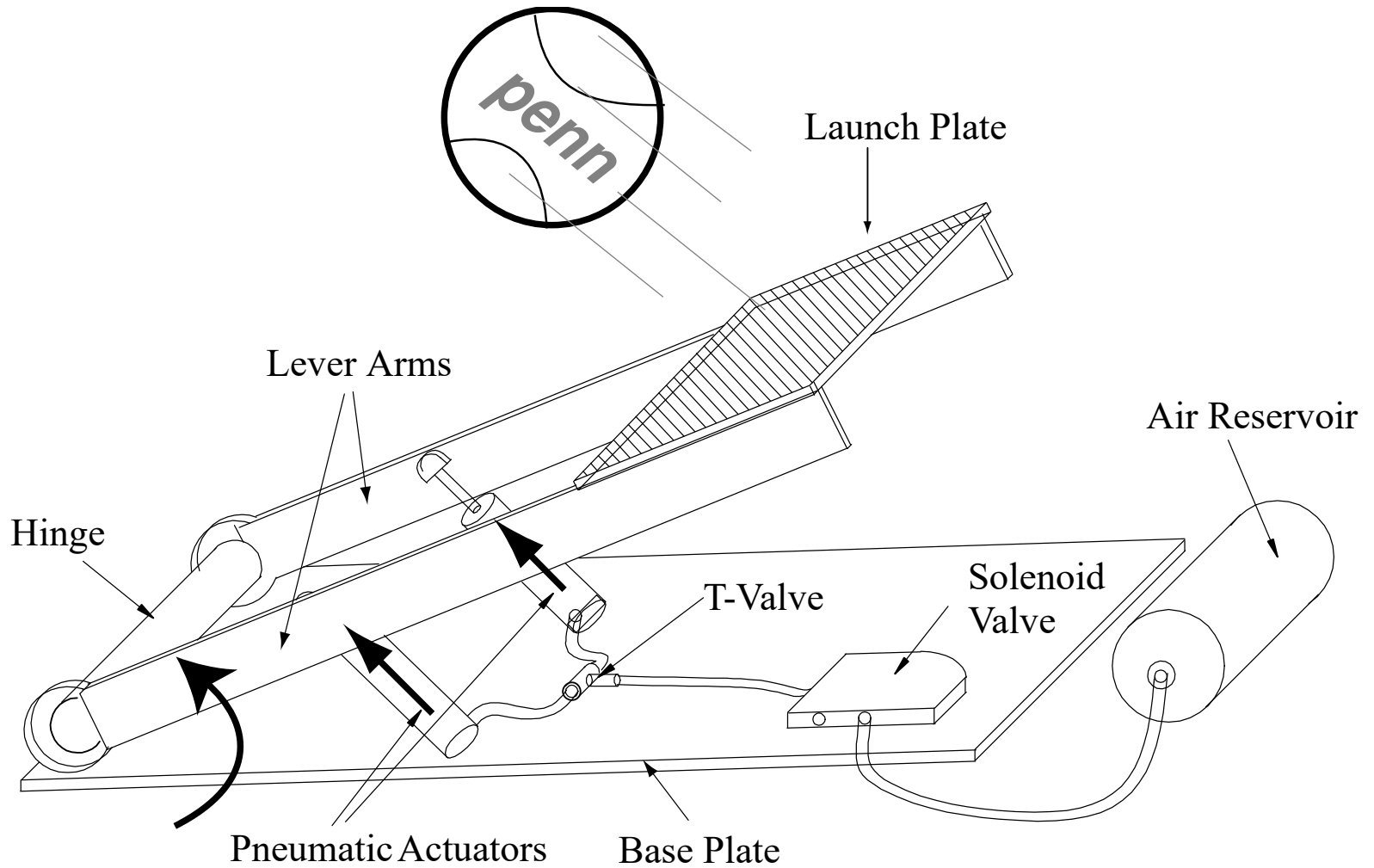
Readers make mistakes:

- They are in a hurry
- They have incorrect expectations
- They don't know things that you think are obvious
- They notice the wrong things

**You must provide a complete set of information**

# **How to display information in drawings**

# Drawings Require Labels





# All Displays Require Description

## *Description Statements*

- 1) Citation
- 2) Objective
- 3) Listing of labeled features
- 4) Explanation of operation
- 5) Other discussion (as needed)

*State potential challenges or actual results*

# Text Description of the Figure

- 1 Figure 9.3 is a concept drawing of an air powered catapult. It is
- 2 used to hurl tennis balls to the scoring zone of the design tournament field. The tennis balls are initially placed on a launch
- 3 plate, which is connected to a hinge by two lever arms. Two pneumatic actuators are attached to these arms and are anchored to a base plate. Hoses connect these actuators to a T-Valve, which is connected to an air reservoir through a solenoid valve. The solenoid valve is connected to a controller box, which is not shown. To fire
- 4 this catapult, the controller sends a signal to the solenoid valve. The valve opens to allow a burst of pressurized air to flow from the reservoir to the pneumatic actuators. The actuators extend, thereby forcing the lower arms and platform upward. This motion hurls the tennis ball towards the target.

# Labels coordinate with text discussion

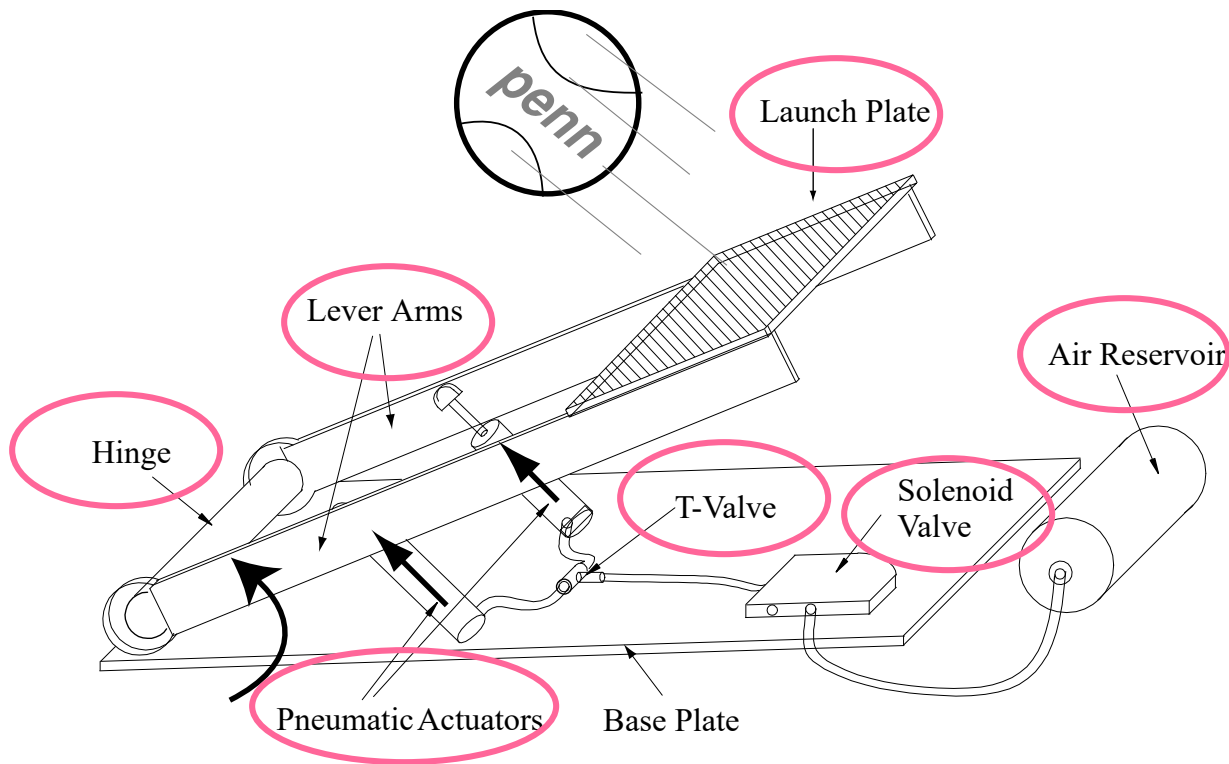


Figure 9.3 An Air Catapult

Figure 9.3 is a concept drawing of an air powered catapult. It is used to hurl tennis balls to the scoring zone of the design tournament field. The tennis balls are initially placed on a launch plate, which is connected to a hinge by two lever arms. Two pneumatic actuators are attached to these arms and are anchored to a base plate. Hoses connect these actuators to a T-Valve, which is connected to an air reservoir through a solenoid valve. The solenoid valve is connected to a controller box, which is not shown. To fire this catapult, the controller sends a signal to the solenoid valve. The valve opens to allow a burst of pressurized air to flow from the reservoir to the pneumatic actuators. The actuators extend, thereby forcing the lever arms and platform upward. This motion hurls the tennis ball towards the target. J. Donnell / ME 2110

# How to Think About Reports

- People read reports to learn what was accomplished
  - Some reports also present Recommendations
- Readers expect you to add value
- Your design steps aid you in adding value
  - What did you take away from each design tool?

# Typical ME 2110 Report Sections

- Abstract
- Introduction  
(The task and the design goal)
- Design Overview  
(Sometimes you present Results instead of a design)
- Discussion  
(How well does your design meet the goal?)
- Conclusions

# Displaying Illustrations

- Label the drawings / displays
- Number displays as figures
- Provide captions
- Cite and describe figures:  
“Figure 3 shows.....”

# More About Written Reports

- See Chapter 11 of the book
- An Example report is in Appendix A