Technical Report

General H.H. Arnold High School

Programs in Technology Education

0000	Name, Your	Robotics Technology	7
STUDENT #	LAST NAME, FIRST	COURSE	PERIOD

			Triphammers and Cams	25 Sep 01
COMP	TASK	SUBTASK	EXPERIMENT TITLE	DATE

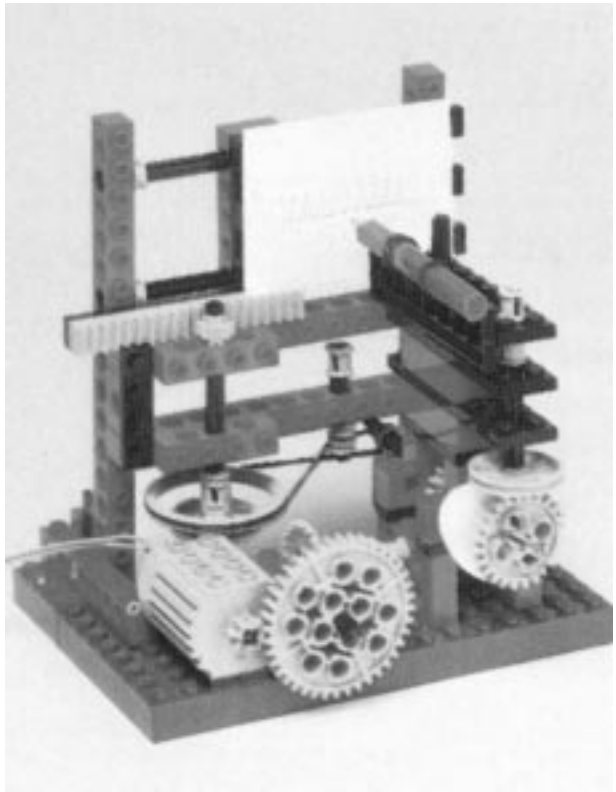
OBJECTIVE **(Step 1)**

Explain what it is that you're setting out to learn and how you're going to go about doing it.

In this experiment I will learn about triphammers and cams. I will identify their component parts and learn how their mechanisms work. I'll do this by building models of machines that use triphammers and cams. I'll show my proficiency by designing a machine that can be used as a test rig for cams.

SCHEMATIC/DIAGRAM **(Step 4)**

Be sure to select drawings that are pertinent to the experiment. Draw schematics or block diagrams instead of sketches or drawings. You must title your drawings and label their parts. Use a straight edge or template to make your drawings look more professional. Use a continuation sheet if necessary.

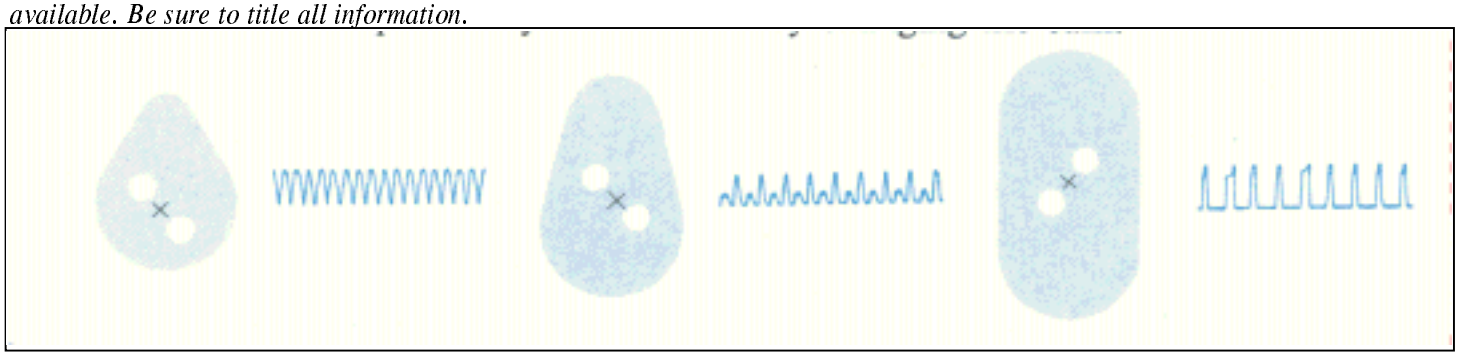


Cam Test Rig

a. Paper Transport
b. Cam and Valve
c. Rocker Arm with Pen

TABLES AND GRAPHS (Step 3)

Put the results of measured and calculated data in tabular form. You must also represent this information using a line, pie, or bar graph. Make sure you select an appropriate graph to reflect this data. You may use a parts lists if no other information is available. Be sure to title all information.



Graph 1 Cam Patterns

PROCEDURES (Step 2)

DO THE EXERCISE! Write down each procedure and record the results as you complete each step. Use bullet statements to describe each procedure. When you have completed the last procedure in the exercise ask your supervisor for an evaluation of your work. You must record one entry for every procedure in the exercise. You can use a continuation sheet if necessary.

1. Lay foundation for hammermill
2. Inst. crank wheel
3. Inst. crank gear and pivot
4. Inst. hammer and beam
5. Test/operate manual hammermill
6. Inst. belt and pulley
7. Inst. motor, belt, pulley, beam
8. Test/operate electric hammermill
9. Build foundation for hammermill
10. Inst. axles and gear
11. Inst. gear train and motor
12. Inst. beam and hammer
13. Test gear driven hammermill
14. Build cam operated valve
15. Test/operate cam operated valve
16. Design and build cam test rig
17. Test/operate cam test rig
18. Experiment Complete
19.
20.
21.
22.
23.
24.

THEORY OF OPERATION (Step 5)

Describe in detail what this exercise proves, how it works, why it's important, and what you have learned from conducting it. Finally, explain how doing this exercise helped you reach your objective. Complete the questions found at the end of the exercise and attach them to this report. Write the questions out in full.

In this experiment I learned about triphammers and cams. I built three models of triphammers using different transmissions. I learned that their component parts are the beam, crank wheel, crankshaft, dumpling, anvil, hammer, and cam. The crank wheel drives the cam which converts circular motion to up and down motion. I also built a model of a cam operated valve. The cam can be shaped like an oval. The valve rides on the edge of the cam as the cam spins. As a result, the valve is pushed up and down. Changing the shape of the cam (Graph 1.) changes the motion of the valve. Finally, I designed and built a machine Figure 1.) that draws the up and down motion of a cam as a line graph.