

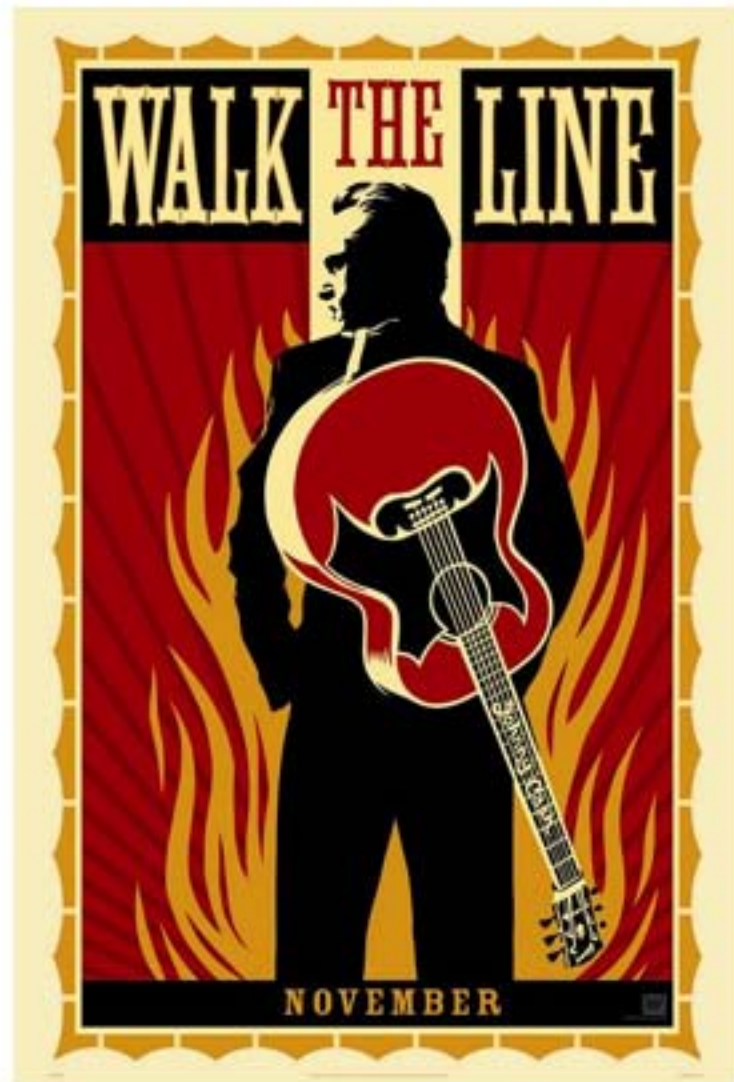
Poster Design Basics

- Assistant Professor of Art
Dave Brodeur



A.M. Cassandre (1920)

Image Dominant



Shepard Fairey (2004)

Text Dominant

ANHALTISCHER
KUNSTVEREIN
JOHANNISSTR. 13

GEMÄLDE AQUARELLE

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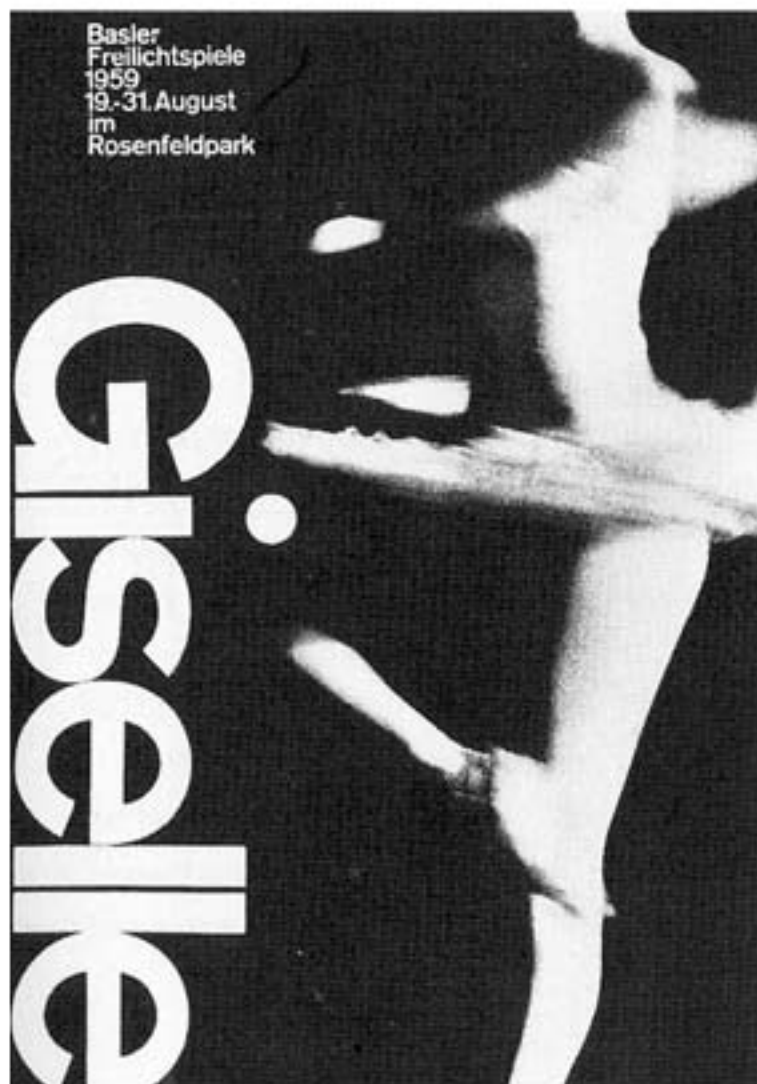
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	Mittwoch u. Sonntag 11 - 1
Eintritt:	Mitglieder: Frei
	Nichtmitglieder: 50 Pf.

Herbert Bayer (1920)

General Visual Communication Tips

- **Text + Image = Message** (economy of means)
- **Design, Don't Decorate** (is that gradient really necessary?)
- **Use Negative Space** (don't be afraid)
- **Be Concise With Text** (bullet points & edit, edit, edit)
- **Images Are Provocative** (this is not your term paper)
- **Know Your Audience** (are they as smart as you?)
- **Plan Ahead** (make thumbnail sketches before production)
- **Spellcheck!** (doh!)
- **Proof Color** (make small test prints)
- **Time to Print** (double the amount of time you need)

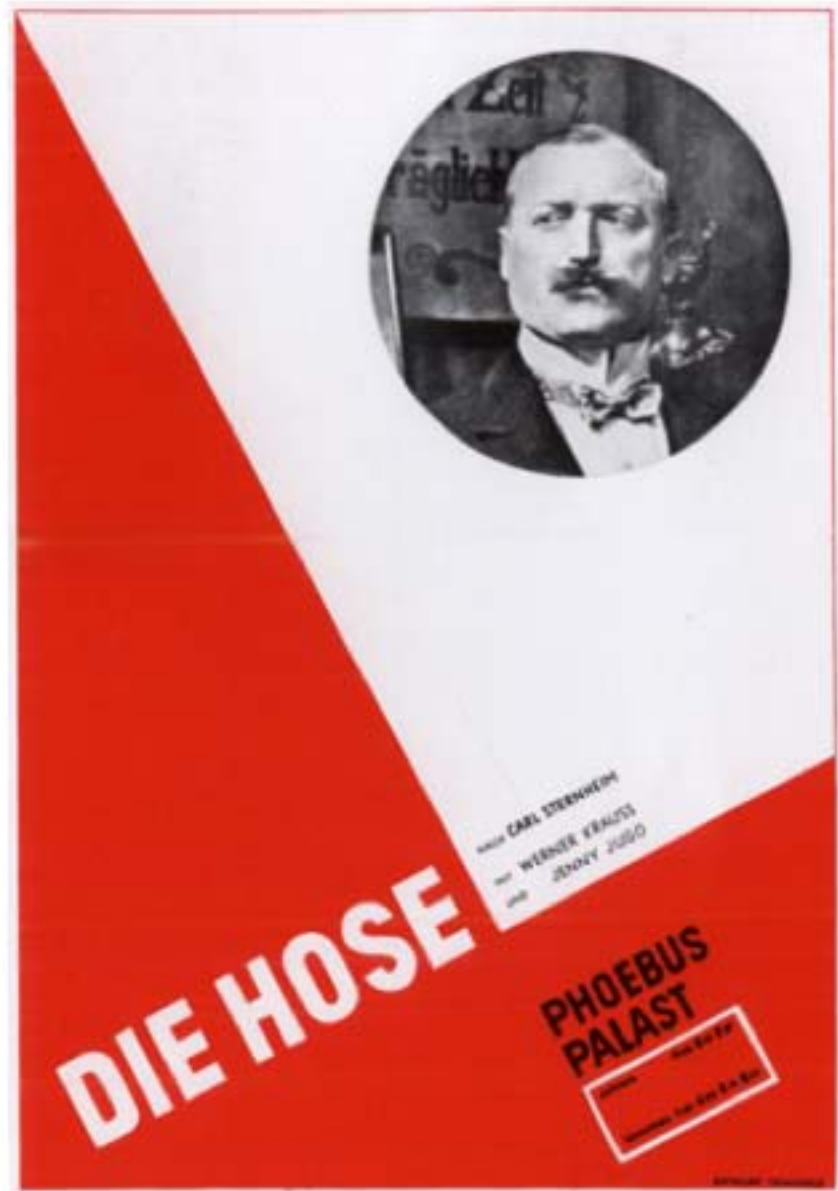
Balance of Text and Image



Armin Hofmann (1959)

Organization

- Visual Hierarchy
 - Focal Point
 - Flow Line



Jan Tschichold (1920)

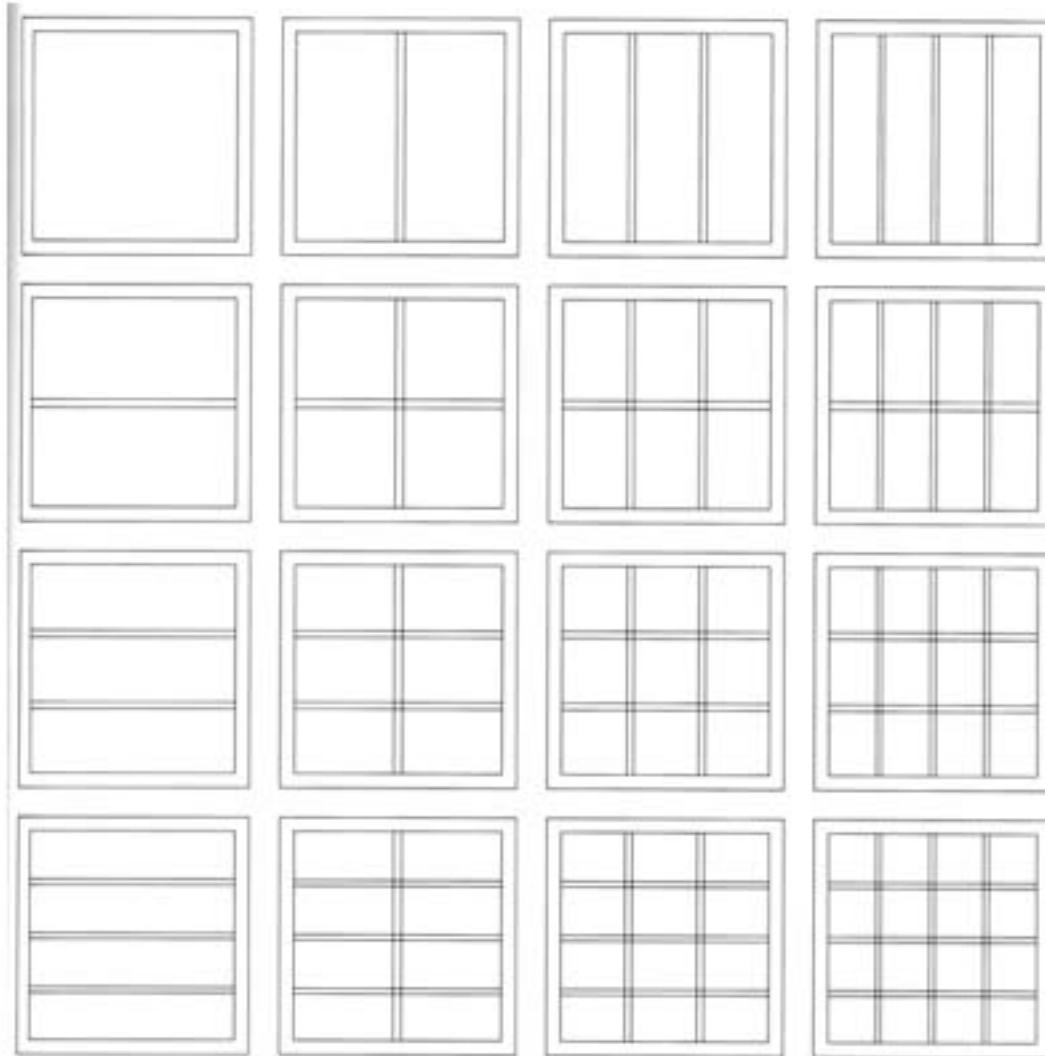
Herbert Bayer
(1920)



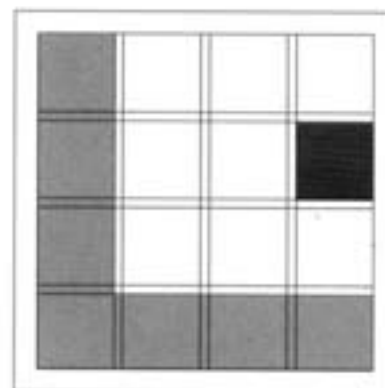
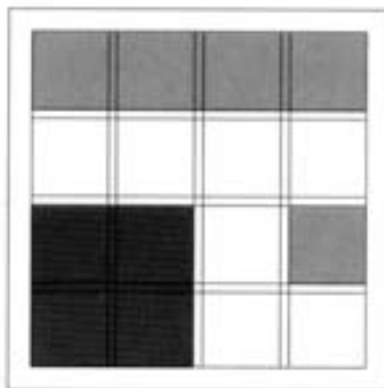
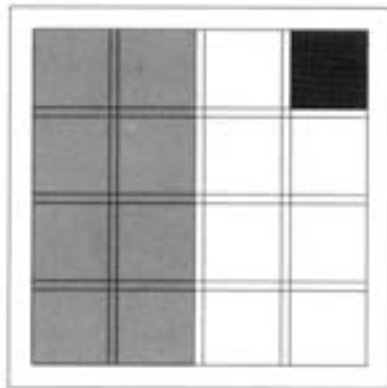
Organization

- Grid Systems
 - Horizontal Divisions
 - Vertical Divisions
 - Proportions

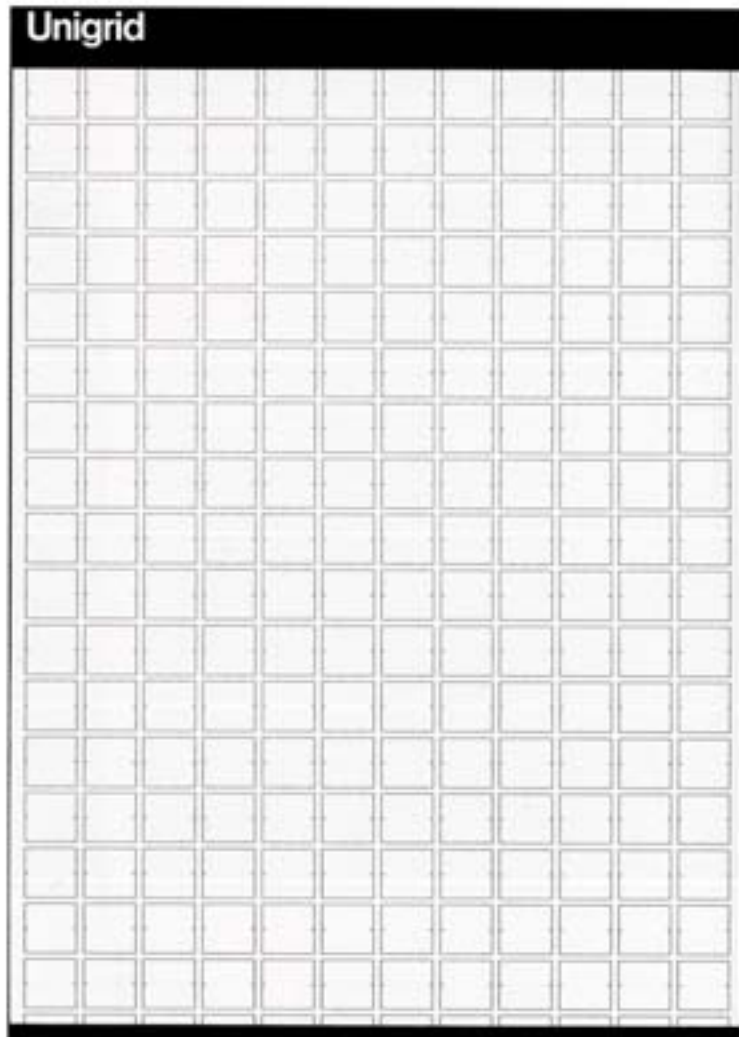
Possible Grid Systems



Creating Asymmetrical Balance



US National Park Service Unigrid System



The image shows a completed Unigrid grid for Big Bend National Park. The header is black with "Big Bend" in white. Below the header is a large photograph of a desert landscape with red rock formations. The grid is filled with text and images. The text is organized into sections: "The River", "The Desert", and "The Mountains". Each section contains a photograph of a natural feature, a small illustration of a plant or animal, and several paragraphs of text. At the bottom of the grid, there are several small photographs of colorful flowers and plants.

Typography

- Readability
 - Figure Ground
 - Typeface
 - Size
 - Leading
 - Line Length
 - Alignment
 - Margins
 - Color

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Typography & Readability

Figure Ground

**Positive and
Negative Space**

Typography & Readability

High Contrast

Low Contrast

Typography & Readability
Choosing Typefaces

Serif

vs.

Sans Serif

Typography & Readability
Choosing Typefaces

Too Much

VS.

Just Right

Typography & Readability
Choosing Typefaces

Avoid

Decorative
Typefaces

Typography & Readability *Type Size*

Too Big (48 Points)

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Typography & Readability

Type Size

Too Small (9 points)

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Typography & Readability

Type Size

Just Right (18 points)

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Typography & Readability

Line Length (Column Width)

Just Right (50 – 70 Characters)

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Typography & Readability

Leading (Line Spacing)

Too Much (18/48 points)

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Typography & Readability

Leading (Line Spacing)

Too Little (18/18 points)

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Typography & Readability

Line Length (Column Width)

Too Short (20 Characters)

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Typography & Readability

Line Length (Column Width)

Too Long (100 Characters)

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Typography & Readability

Leading (Line Spacing)

Just Right (18/24 points)

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Typography & Readability

Alignment

Flush Left

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Typography & Readability

Alignment

Centered

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Typography & Readability

Alignment

Flush Right

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Typography & Readability

Alignment

Justified

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Typography & Readability

Margins

Comfortable

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Typography & Readability

Margins

Uncomfortable

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Typography & Readability

Color

Monotone (Cold)

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Typography & Readability

Color

Contrast (Warm vs. Cold)

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Typography & Readability

Color

Avoid Complementary Colors

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Typography & Readability

Color

Avoid Blue/Black

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Color Gamut

RGB vs. **CMYK**

wide vs. narrow
monitor vs. print

Image File Resolution



300 pixels per inch (ppi) @ 100%



300 pixels per inch (ppi) @ 500%

Now only 60 ppi

Professional Template for a 48x36 poster presentation

Your name and the names of the people who have contributed to this presentation go here.

The names and addresses of the associated institutions go here.

About this template

This template was designed to produce 48x36 prints. You can modify it to resize to your poster size before you save it back to PosterPresentations.com to permit quality, seamless, full-size electronic printing.

By using this template, you will not be asked to pay for any of the valuable time and energy of paper placement or files, address labels, etc.

For a poster design beyond what we can offer, help! We'll be glad to help you with your poster design.

For a better understanding of the poster-making process, refer to the address labels and the help pages. We'll guide you through the poster-making process and answer most of your poster production questions.

You can access the online help from our [HelpDesk](#) page at [PosterPresentations.com](#). You can also access the help pages by clicking on the help icon in the top right corner of the poster-making process.

For a better understanding of the poster-making process, refer to the address labels and the help pages. We'll guide you through the poster-making process and answer most of your poster production questions.

Poster Basics - Poster Layout

Before using this template, you need to understand the content of the page. Keep the poster files saved to the poster folder.

The design template shows how to place the text, images, and graphics on the poster. You can modify the design to fit your needs. You can also modify the design to fit your needs. You can also modify the design to fit your needs.

When the design is complete, you can print the poster. You can also print the poster to a file. You can also print the poster to a file.

You can save the design as a file. You can also save the design as a file. You can also save the design as a file.

Repeat the process throughout the poster to create.



Text Boxes

For the template, you can use text boxes to add text. You can use text boxes to add text. You can use text boxes to add text.

Figure 4 shows a text box with a white background and a black border. You can use text boxes to add text.

Double-click on the text box in PowerPoint or when you paste a graphic to be placed in the text box. You can use text boxes to add text.



Figure 4

Changing the poster's column layout

Depending on how you layout your poster, you may want to change the column layout.

For a better understanding of the poster-making process, refer to the address labels and the help pages. We'll guide you through the poster-making process and answer most of your poster production questions.

Figure 5 shows a poster with a two-column layout. You can use text boxes to add text.



Figure 5

Customizing the template color schemes

For a better understanding of the poster-making process, refer to the address labels and the help pages. We'll guide you through the poster-making process and answer most of your poster production questions.

Figure 6 shows a poster with a color scheme. You can use text boxes to add text.

Figure 7 shows a poster with a color scheme. You can use text boxes to add text.

Figure 8 shows a poster with a color scheme. You can use text boxes to add text.



Figure 6

Figure 7

Importing Photographs

If a high-resolution image is the subject of your poster, you can use a high-resolution image. You can use a high-resolution image. You can use a high-resolution image.



When the photo is imported, you can use the photo. You can use the photo. You can use the photo.



Figure 9

Importing Tables & Graphs

Importing tables and graphs is easy. You can use tables and graphs. You can use tables and graphs.



For a better understanding of the poster-making process, refer to the address labels and the help pages. We'll guide you through the poster-making process and answer most of your poster production questions.

Research Poster Design Services

As you look for a poster, you can use our poster design services. You can use our poster design services. You can use our poster design services.

We'll be happy to provide you with our poster design services. You can use our poster design services.

- A Word document with all your text and graphics in a single PowerPoint document.
- Your logos, photos, charts, graphs and tables.
- Your address label.

Figure 10

You can use our poster design services. You can use our poster design services. You can use our poster design services.

Call us to learn more. We'll be happy to assist. You can use our poster design services.

How to order your poster for printing

We complete the poster design process for you. You can use our poster design services. You can use our poster design services.

How to order your printed poster. You can use our poster design services. You can use our poster design services.

You can email us at [PosterPresentations.com](#) or call us at 1-800-438-3884.

Contact Information

PosterPresentations.com
Creative Media Services, Inc. company

Heat Sources



Open Fire Stove



High Efficiency Cook Stove

Peltier



Seebeck Effect

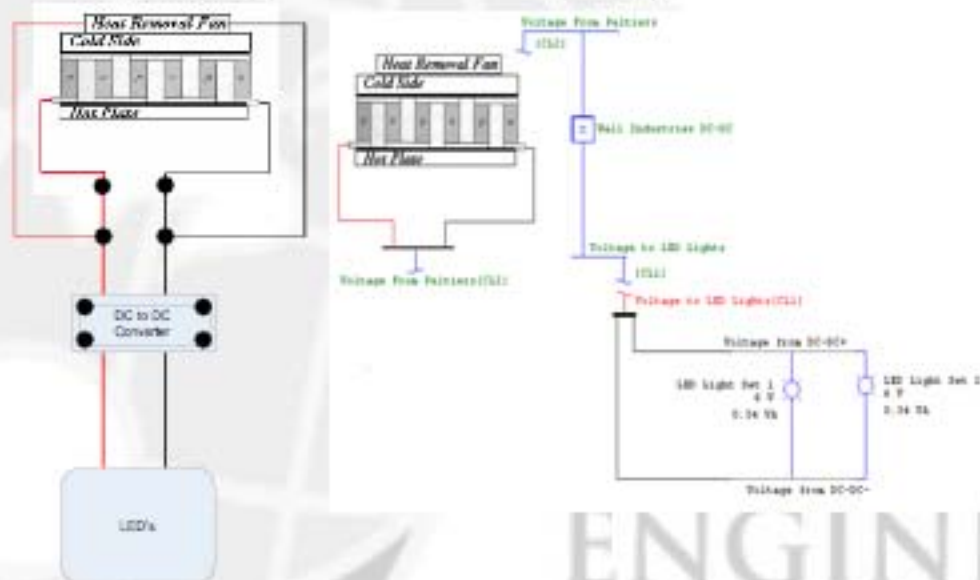
Is the ability to apply a hot temperature on one side of the peltier and a cold temperature on the other to produce a voltage out. Effectively, there should be a 79 degree Celsius temperature differential between the two sides to achieve maximum voltage output.

Superex Light

Emergency Light

Most of our components used in the emergency system were derived from a flashlight made by a company stationed in Canada called Superex. With their permission our team was able to assemble an emergency generator onto our prototype.

Conceptual Design



Description

The objective of this project was to determine if a mechanism powered by heat to light ultra bright LED's could be manufactured under \$90? Engineers Without Borders set up certain guidelines for this project which include, utilizing a peltier device without the assistance of a battery, building cost to stay under \$90, and the peltier's should produce enough power to light ultra bright LED's.

Components

Peltier Device

Peltier devices are made up of thermocouples arranged in rectangular form, and packaged between two thin ceramic plates. By creating a temperature differential the user is able to create a voltage from this mechanism.

DC to DC Converter
 This device will enable the user to step up the voltage. For this component our team used two converters one with an IC chip and another from Wall Industries.

Emergency System

An AC winding charger on the side of the box will enable the user to charge a lead acid battery that can be switched over to power the LED's.

LED Chandelier

Two different types of designs were used for this. For one of the designs yellow and green LED's were stacked to see how many we could light with a CPU Fan on at the same time. Then two LED chandeliers were also constructed with the emergency

Introduction

This document presents the design considerations and future implementations for the IEEE Competition: Basketball project. The IEEE student hardware competition will be a modified version of basketball played between two robots. The robots will compete to gather as many points as possible in a certain amount of time. The robots will be required to move, receive code, display code, request balls, catch the balls when dropped, shoot those balls in the hoop or not to score and repeat the sequence.

Research Highlights

After extensive research on several microprocessors that capable of external application interfacing, the Motorola 68HC11 was chosen to be the processing unit of the robot due to the small learning curve. The sensor inputs to the processor would be provided by OPB253A, reflective object sensors. An algorithm for the processor program was designed for the proper operation of the robot.

Motorola 68HC11

The 68HC11 is optimized for low power consumption and high-performance operation at bus frequencies up to 4 MHz. The CPU has two 8-bit accumulators (A & B) that can be concatenated to provide a 16-bit double accumulator (D). Two 16-bit index registers are present (X & Y) to provide indexing to anywhere in the memory map. Having the two index registers makes the 68HC11 very good for processing data. Although an 8-bit processor, the 68HC11 has some 16-bit instructions (add, subtract, 16 * 16 divide, 3 * 3 multiply, shift, and rotate). A 16-bit stack pointer is also present, and instructions are provided for stack manipulation. Typically multiplexed address and data bus.



OPB253A Reflective Object Sensor

The OPB253A sensor is an infra-red, sensor-based sensor. By applying 2V power to the sensor, it sends an infra-red signal and receives it after reflecting off a reflective surface.



Program Algorithm



The algorithm consists of several subroutines and interrupts calls from the sensors, in a continuous loop.

The robot would start if any of the sensors are activated. Then the robot would move from the starting position to the shooting position. From there, the robot would perform the same routine of shoot, request ball and ball drop constantly until the end of the game.

CONCLUSION

This project will demand a high load of work and require considerations but at the end there is a solid idea of how the requirements would be fulfilled.

Irwin Tools - XP550 One Handed Bar Clamp

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Introduction

Irwin Industrial Tools has presented a unique design challenge. The challenge was to improve the design of the XP550 One Handed Bar Clamp/Spreader by simplifying the design and reducing the production cost. The main objective set aside by Irwin was to reduce the total cost of the XP550 by 15%. While a redesign is the goal of this project, there are certain design specifications that are to be maintained.

Design Specifications

The following specifications were defined by Irwin Industrial Tools.

- Input Force of 150 lbs.
- Peak Load of 650 lbs.
- Holding Force of 550 lbs.
- Cycle Life Bar of 5000 Cycles
- Release Trigger Force of 33.7 lbs
- Equal Performance to Current Product
- Same Jaw Capabilities as Current

Prototype

The majority of the XP550 bar clamp is composed of plastic resin with glass fill. For observation purposes only, a model of the fixed jaw was fabricated using the University's Rapid Prototyping Machine. The concept model produced is for demonstrative purposes and is unable to meet the design loads of the clamp.

IRWIN
Industrial Tools

Force Trigger

- Constructed as one component whereas before it was composed of 7 components
- Possibly made from Nylon 6, 30% glass filled for final product
- Improved assembly time with the reduction of parts

Inner Workings

- Spring and lock pin were eliminated from the cage system
- Due to experimental testing, the power tabs needed to produce the required force were reduced to 3 power and 3 release

Support Bar

- Tapered and Rectangular cross sections are displayed for prototype alternatives
- A Rectangular cross section was found to outperform the other cross sections while adding more mass
- Cost was also reduced due to the elimination of the cold rolling that was needed to form the I-beam

Moveable Jaw

- Prototyped from ABS polymer
- New rifle safety pin used for quick change from clamp to spreader



Release Tab

- Utilizes first release tab to release clamp
- Made of one stamped piece of steel rather than a separate aluminum release trigger
- For demonstrative purposes, an extension was TIG welded onto the first existing release tab.
- Material is 1/8" steel and is same thickness of existing tabs



Cover Plate

- Material has been changed to Polypropylene 30% glass filled for off of steel product to save cost.
- Also prototyped from ABS
- Ribbing and FBA proves the plastic cover will work, but they need all screws



Cost Reduction

The final cost analysis is shown in the table below. This chart is based on the percentage of cost reduction in the 17" model.

Design Change	Percent Savings of Total Cost (%)
Cover Plate	1.62
Reduction of Tabs	2.25
Release Trigger	2.66
Bar Length Reduction	0.40
Reduction of Screws	
Handle	2.57
Cover	1.88
Rectangular Bar Shape	0.40
Change in Cage	
Lock Pin	0.69
Lock Spring	0.25
New Jaw	0.30
One Piece Force Trigger	4.66
Misc. Material Addition	4.95
Total	19.12

Experimental Testing

To determine the number of power tabs to be removed and still achieve the required force, the group performed multiple tests. The tests were performed by clamping a load cell in the jaws of the clamp and systematically reducing the number of tabs to observe the results. Irwin is performing further tests to determine the effects of this reduction on cycle life.

