

Invention Group

You are a **Developer of Plastic Bridges**

Your Background and Biography

As a structural engineer, you are always looking for new, innovative solutions to construction problems. And you believe thermoplastic timber is the best solution for America's infrastructure problem.

The desire to build and create drove you from an early age. While many children love Legos, your delight in creating with plastic building blocks surpassed that of all your friends. It surprised no one when you pursued a career in civil engineering. Now you work for a firm that provides plans and consulting on a wide range of construction projects throughout the United States and around the world. Over the years you have worked on many large-scale repair and construction projects, and you have become increasingly concerned about the state of bridges in the United States. Many of the bridges you work on are old and in precarious condition, and there is rarely enough money to adequately maintain them.

Most bridges are made out of wood, concrete, or steel. All of these materials have a limited life span, and the bridges must frequently be repaired or replaced at great expense to maintain safety standards. You know from experience that no one wants to pay to fix a bridge until the worst has happened. When thermoplastic timber arrived in the 1990s, you immediately recognized its potential for bridge building.

Thermoplastic timber, made from recycled plastic, is strong, durable, and environmentally friendly. It also holds up extremely well to the ravages of Mother Nature, making it a popular construction material for decks and other outdoor structures. The U.S. Army built the first thermoplastic bridge in 1998. The army engineers demonstrated the strength of the bridge by having a massive tank drive across it, and its durability is demonstrated by the fact that it has needed no upkeep or repair since its construction.

Since the development of the first thermoplastic bridge, you have promoted the technology. Your company has installed several plastic bridges, and you have worked to prove the safety and benefits of these bridges. Though thermoplastic timber is to you a modern marvel, concerns over the safety of plastic bridges have prevented them from being widely adopted. You want people to know that these bridges are safe and that plastics provide a solution to a wide range of engineering problems.

Your attitude toward the Environmental Protection Agency's new regulation is generally negative. While you recognize the problems of plastic waste, you see the benefits of plastics every day, and you worry about the effect of regulation. Your plastic bridges are permanent, not waste, and because they last so much longer than other bridges, they provide economic and environmental benefits. They are made of recycled plastic, and their overall environmental footprint is significantly smaller than that of other

building materials. Your goal is to encourage the government to invest in these new technologies rather than stifle innovation with costly regulations.

Your Mission

Your goal at this hearing is to convince the Regulators to include the Invention Group's recommendations in their final regulation. To make this argument effectively, you must

- Complete the assigned readings listed at the bottom of this page;
- Work closely with the other members of your group to develop clear answers to the Regulators' questions;
- Make use of as much specific information as possible to develop strong arguments that the many societal benefits of plastics outweigh the problems and that too much regulation may stifle innovation;
- Read as much as you can about your position and the positions of the other groups; and
- Complete written reflections on your character, interest group, and readings as assigned.

Your Victory Objectives

- **You will receive 10 points** if the Regulators select your group's proposal as the final regulation.
- The Regulators will rank the interest groups by how well their goals are represented in the final regulation. **You will receive between 1 and 5 points** based on how the Invention Group is ranked and how well the regulation reflects your goals.

Sources

Invention Group Sources

- Case Study: The Benefits of Plastic Innovation
- "Interview with Bob Kenworthy," video, vimeo.com/channels/465871

Your Individual Sources

- "Applying Recycled Plastic Lumber Technology to Short-Span Bridges," by George F. Assis, *STRUCTUREmag*, Oct. 2010.
- Select **one article** from the bibliography on *The Case of Plastics* website recommended for the Invention Group. Read the article and write two paragraphs summarizing the article and how it will be useful to you in the upcoming debate.