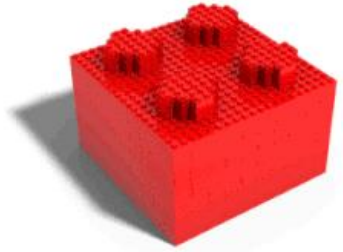

Blair Middle School
welcomes you to
The USS. Gerald R. Ford
CVN- 78

BMS - Ship Design Inc.

(Specializing in Innovative Ship Design and Modifications).



Our Staff

Management

Sales and Acquisitions

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Tori Hubbard

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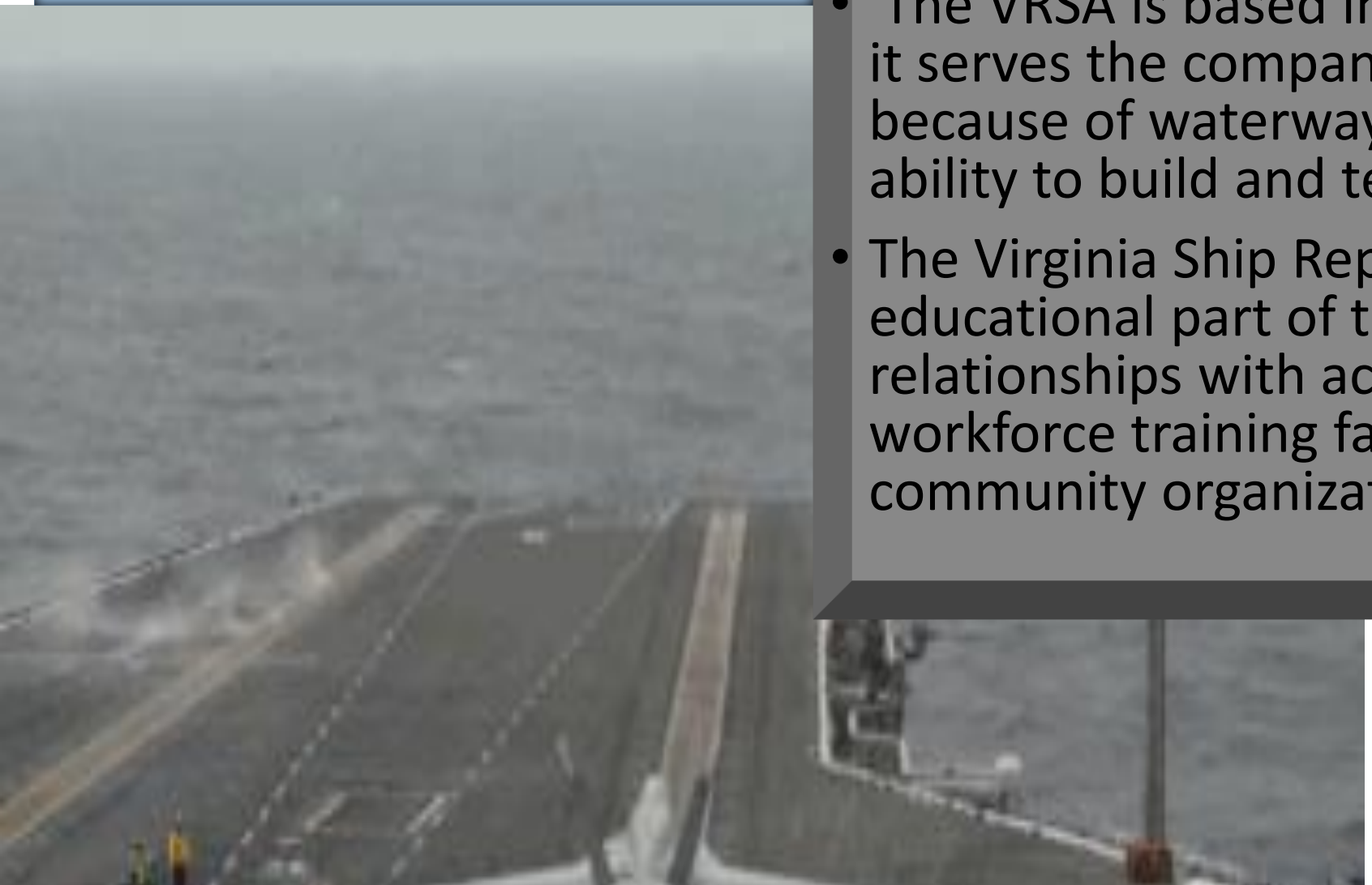
Introduction



- The Virginia Ship Repair Association partners with other organizations to inform the general public about job opportunities in the ship repair industry
- The VRSA is based in Hampton Roads, because it serves the companies that do business here because of waterways that allow them the ability to build and test large ships.
- The Virginia Ship Repair Foundation is the educational part of the VRSA. The VSRF has relationships with academic institutions, workforce training facilities, and other community organizations like schools.

The USS Ford is currently in production at Newport News Shipbuilding.

It is named after our 38th president.

Aircraft carrier are usually named after presidents with the exception of the USS Nimitz.

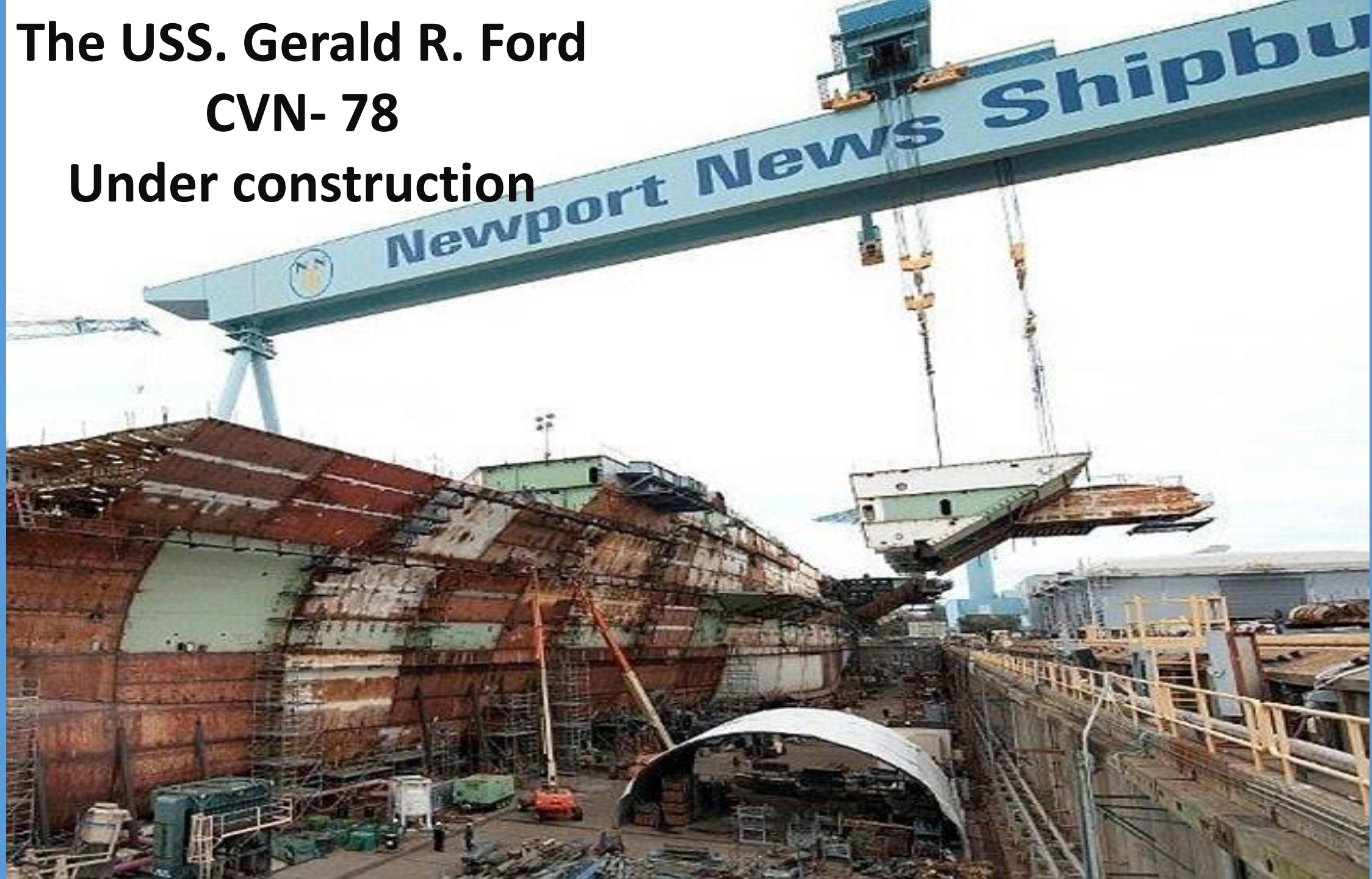
Congress decides the names and the numbers of aircraft carriers.

38.

The USS Gerald R. Ford

- **The USS Gerald R. Ford CVN-78.**
- **This one of the newest aircraft carriers being built. The Ford class aircraft carriers are replacing Nimitz class carriers that have been in use for decades. Ford carriers have technology that reduces the crew needed because it is more efficient. It is 1,106 feet long and 250 feet tall. It also has 25 decks based on that calculation, each deck would be approximately 10 feet high. Finding research on this ship was hard because some of the information about it is still top secret.**

The USS. Gerald R. Ford
CVN- 78
Under construction

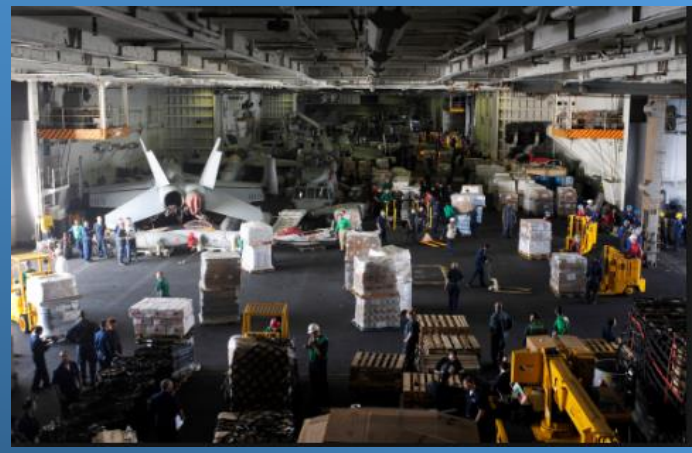


Hanger Specifications

Most aircraft hangers are three decks high, there are single deck compartments on each side. There are four elevators in the hanger to lift the aircraft to and from the flight deck.

The elevators are wide enough and powerful enough to move two jets at the same time. Each jet weighs 74,000 pounds. With these measurements, the elevators will easily transport modular containers systems.

A modular- multi purpose container system



A modular- multi purpose container system

- A modular container system that can be retro-fit at any time inside the aircraft hangar for multipurpose use. The module itself would be the shape and size of a metal cargo container.
- The power and water ports attached to the sides of the container connect to the ships systems. The inputs would be standard, but the port sensors would change the amplitude/water pressure to be compatible with whatever module is in the ship at the time.
- The inside of the module could be a medical bay, climate controlled storage, or anything else the ship might need to complete its mission.

How does the system work?

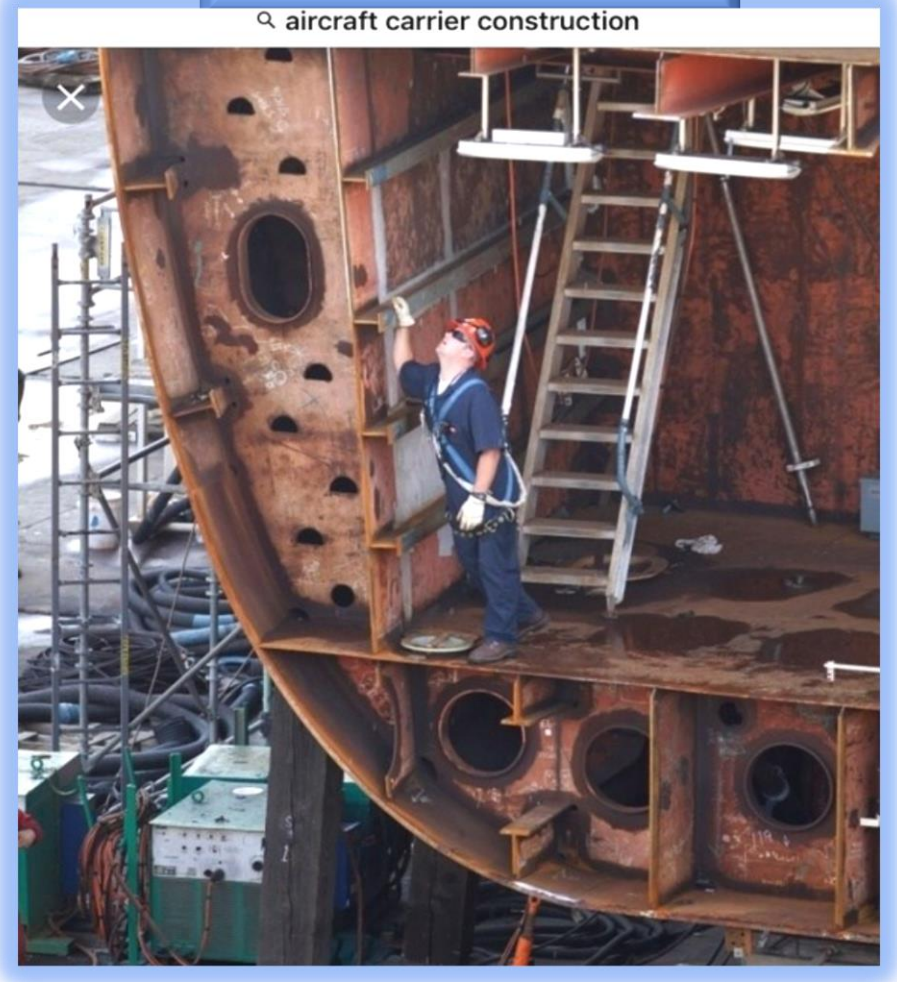
- To take the module in and out of the ship, we would use the elevators. There is 3,880 square feet of floor space in the elevator which is enough to transport the modules from the deck to the hanger.
- A rail system will move the modules into place. To hold the modules in place, we would install a locking system to the deck of the hanger bay. To stack modules (there is enough space for two), bolt the two together using the bolt anchors on the container itself.
- To reach the top container, ladders or steps access the doors. We estimate the size of the container to be 35 ft. (10.67 m) x 8 ft. (2.44 m) x 8 ft. 6 in (2.59 m).

Our jobs

The ship repair industry gives billions of dollars to our national economy and provides over 40,000 jobs.

The ship repair industry provides many jobs, but the 6 The jobs needed to install our innovation are:

- **Electrician**
- **ship-fitter**
- **Welder,**
- **pipe-fitter (plumber)**
- **project manager**
- **Rigger**



Electrician

- **An electrician specializing in wiring and installing the ships electrical systems. These systems include connecting telephones, intercoms, navigation, and computers. The electrician will wire the container when it is put in place. The typical entry-level education needed is a high school diploma. The starting is $51,880.**

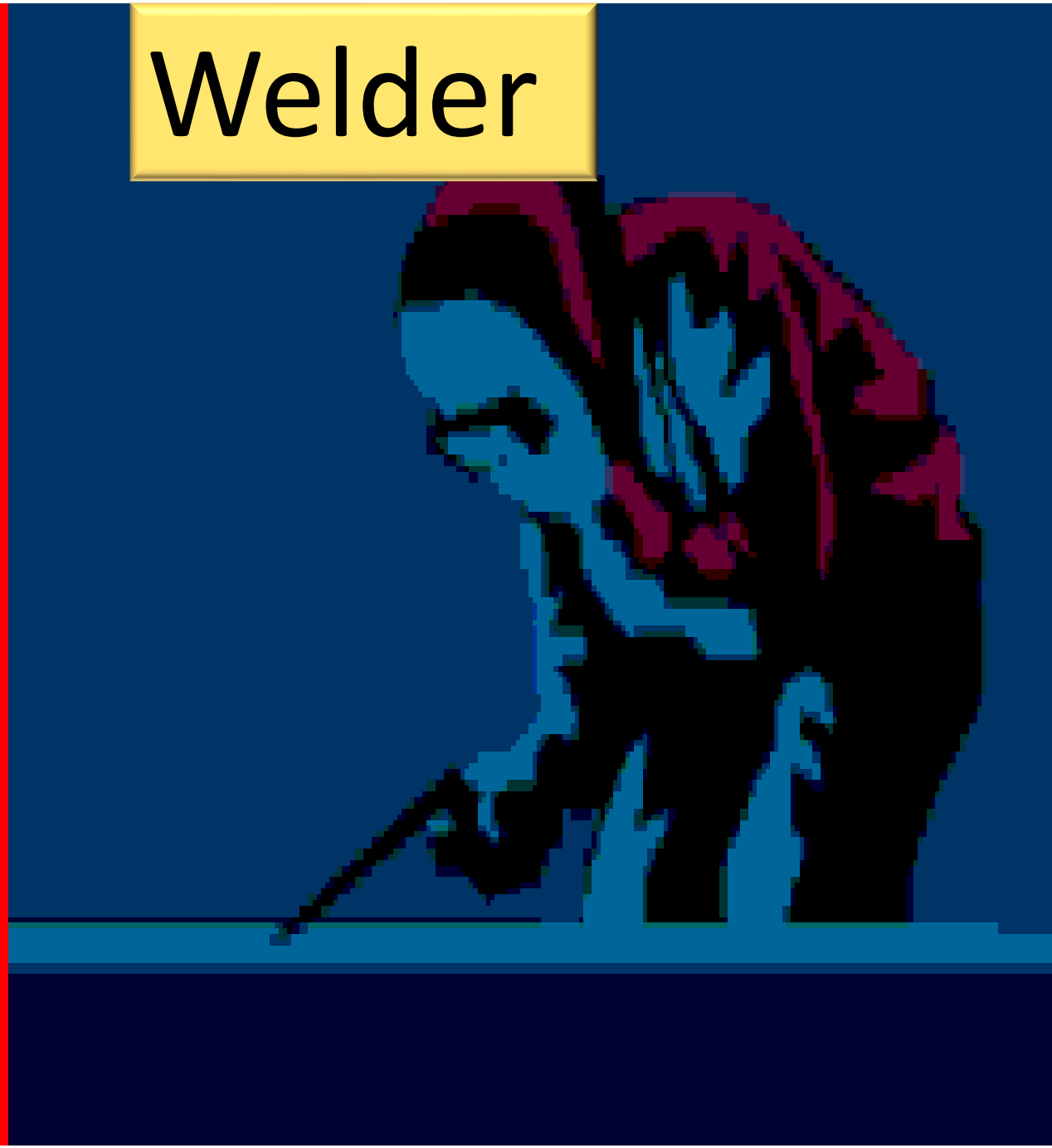
Ship-fitter

A ship-fitter to fabricate the locking system to hold the containers in place.

- The median salary is $40,811.
- A ship-fitter makes molds and patterns of parts for use in the construction of a new ship.
- The ship-fitter builds the walls and supports of the ship and works with the welder to join them together.

Welder

- A Welder is a person who repairs or joins metal together using intense gas and heat.
- A welder would join the locking system to the side and bottom of the hanger to keep the modules in place.
- These locking systems would be installed in the hanger during the construction of the ship.
- A high school diploma and training is needed to start welding and making $38,150 per year. This job outlook is projected to increase 4% from 2014 to 2024.



Pipe-fitter

- A pipe-fitter (plumber) installs and checks the fluid systems throughout the ship during construction.
- In our innovation, the pipe fitter would connect the pipes from the modules to the ship.
- Employment for pipefitters is projected to grow 12% from 2014 to 2024, faster than the average which make their salaries high at $50,000 or more.

Project Manager

- **The project manager coordinates the installation of the modules at various stages.**
- **He or she must have a degree related to marine construction.**
- **The beginning top salary is 87,000 yearly with expected growth in job opportunities of 7% by 2024.**

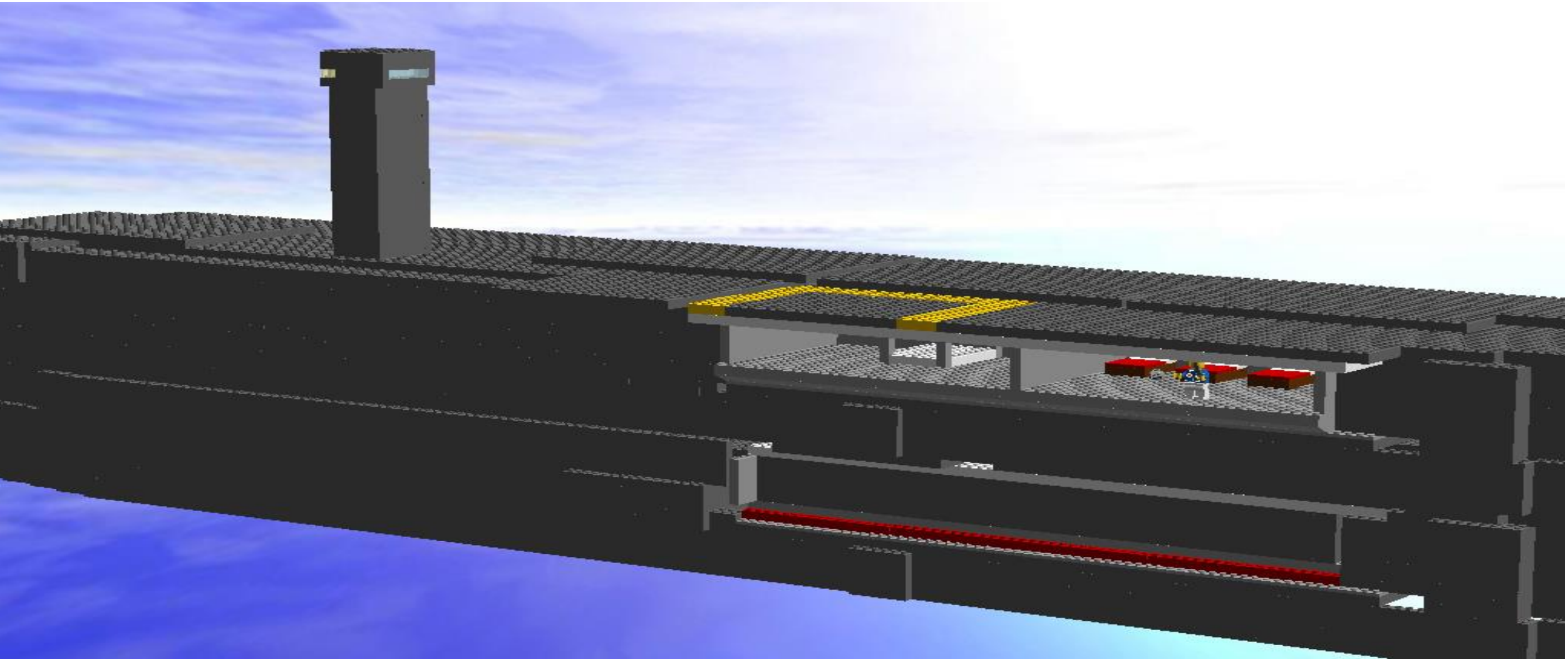
Rigger

- A rigger's salary starts at 43,000 annually. Riggers need a high school diploma, technical or apprenticeship training.
- A rigger assembles and installs cables and systems to lift heavy objects into place.
- Riggers will raise and lower the modules on and off the ship.

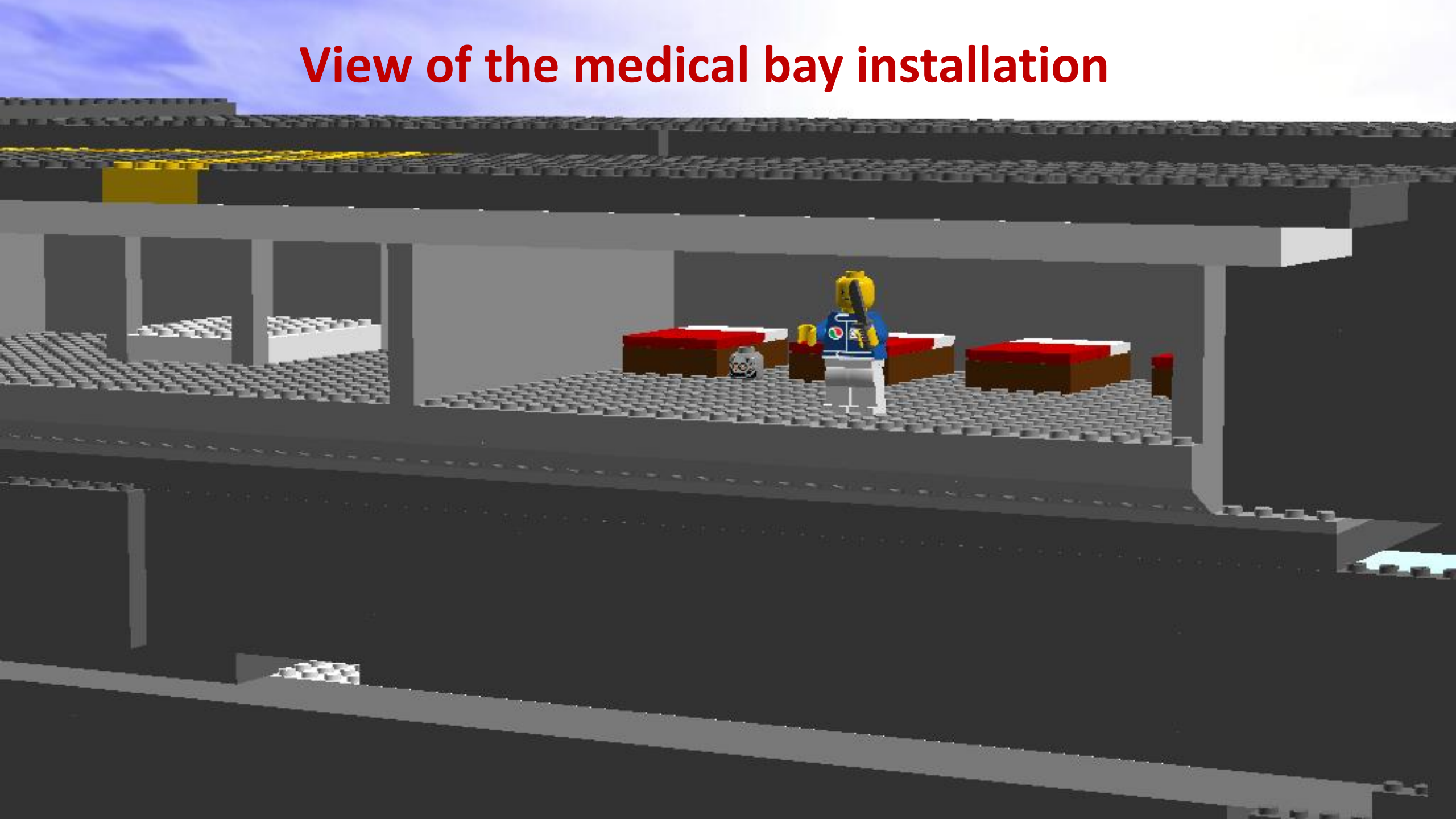
The need for riggers will increase each year as construction in all areas increases.


Side view of the module
On the port side of the ship

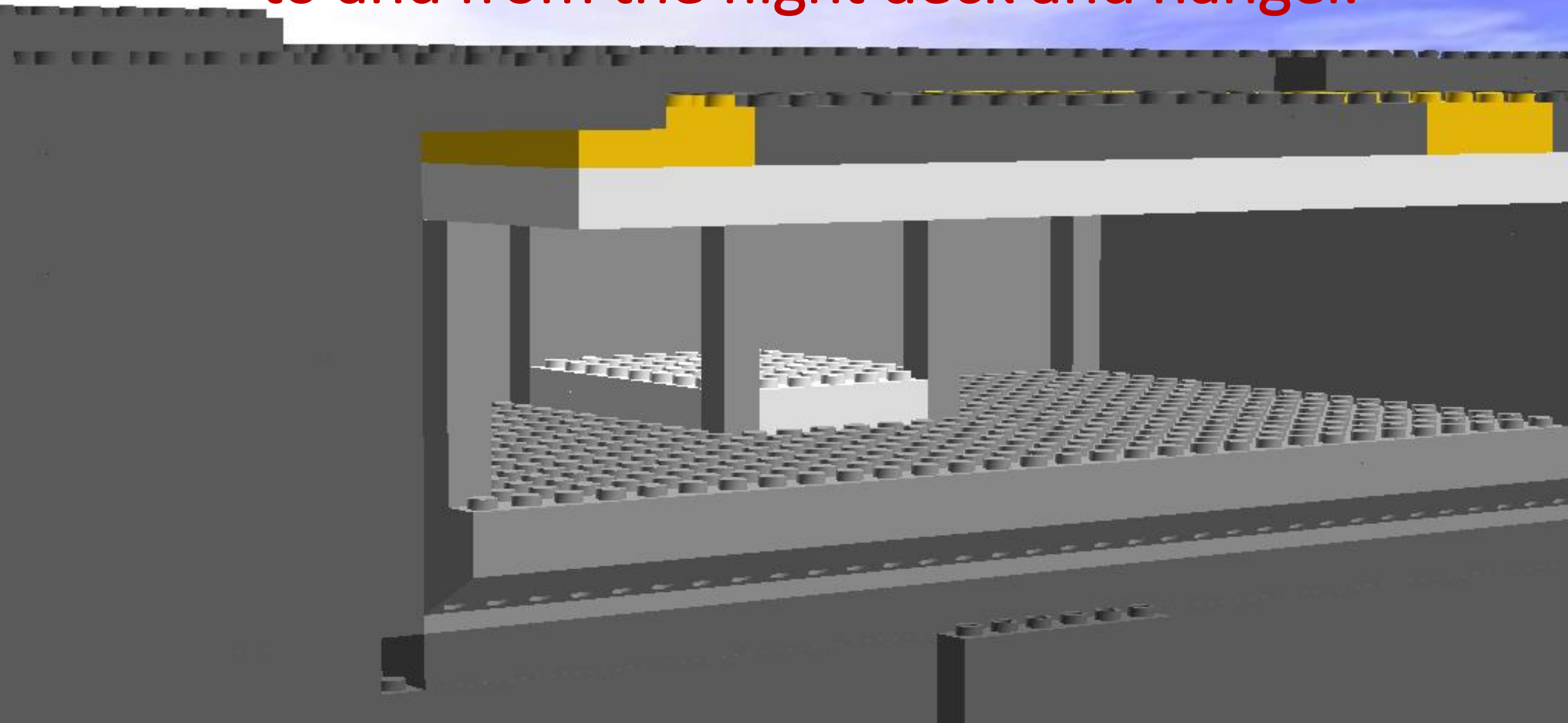
Our Lego Digital Design with the modules installed in the aircraft hanger of USS Gerald R. Ford CVN-78



View of the medical bay installation



View of the elevators that will lift the module to and from the flight deck and hanger.



Conclusion

We are glad the VRSA chose to do this competition. We liked staying afterschool and working on it. We had a few challenges trying to decide what our innovation would be. The first idea had been used before, so we had to pick something else.

Our technical advisor gave us some ideas to help us decide on the modular container system. We like the idea because the containers can be used for a lot of different things. There have been a lot of disasters lately and we like the idea of being able to provide humanitarian support to people throughout the world.

Ships are more that just war machines. In this project, we found out they can do good things for people too. We hope you enjoyed our presentation.

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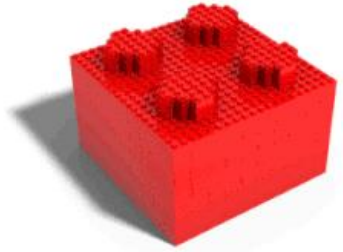

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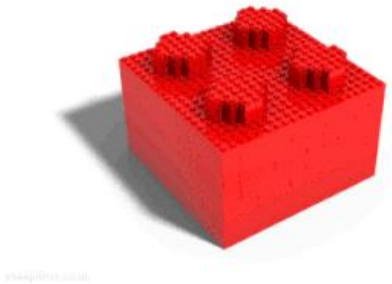

Our Staff

Advisor – CEO
Mrs. Nanette Dean

Senior Project Manager -
Mr. Paul Abramson

Technical Advisor and client
Mr. Mike Varner
Newport News Shipbuilding

Any Questions?