

# Project Management of Noah's Ark

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## Introduction

This paper will not be a religious dissertation. It will not attempt to prove or disprove whether or not the Bible account of Noah and the Flood are accurate. Instead it poses the question: "If there was a great flood (as described in the Bible and a number of other ancient writings), and a man named Noah, how did Noah, as the Project Manager, handle the Project Management aspects of building, supplying and operating the Ark?" Noah's Ark can easily be categorized as one of the most challenging undertakings of all time. How could anyone possibly have accomplished it? In the paper, various areas of Project Management, such as Scope, Schedule and Resources, will be examined. References from historical literature, ancient construction techniques, and the Bible itself will form the basis of the elements of Project Management areas reviewed, and the possible PM techniques employed.

"Noah, Build an Ark."

"Oh yeah, what's an Ark?"

Take yourself back 10,000 years or so. Noah being told to build the Ark was like you and me today being told to build a huge spaceship (large enough to carry 18,000 animals) to travel to a new Galaxy. Nothing to compare to it had ever been done before. While there were boats in the ancient world of his day, Noah must have been dumbfounded with the enormity of the vessel he was to build. What would it look like? Where would the materials come from? What resources would be available to help in the Project? How could so many animals be rounded up? Where and how would they be housed for the voyage? How can they be kept separate from one another? And (yuck), how about

the clean up and housekeeping needs of so many animals? Some of these questions the Customer would supply (like what size and materials). Many others, Noah would have to use good Project Management principles himself to solve.

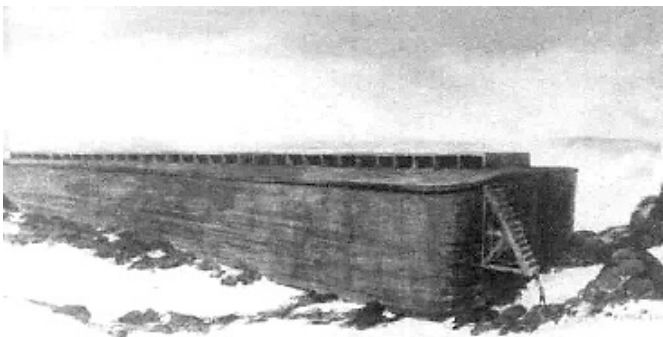
The Scope of the Project as given to Noah, was somewhat simple, but awe inspiring none the less: Qty 1, Sea Worthy Vessel. 300 Cubits (450 to 520 feet) long, 50 Cubits (75 to 85 feet) wide and 30 Cubits (50 to 60 feet) high. It is to be made out of "gopher" wood. Build three decks, a cover over it all and a window/opening (most believe this would have been an air vent opening near the top level). Take seven pairs of every "clean" animal and a pair (male and female) of every "unclean" animal. Take a pair (male and female) of every kind of bird. Provide space and food for all the animals, birds, and crew (in Noah's case, eight people). The Ark is to be made watertight by sealing it inside and out with "pitch."

"Because it's going to rain."

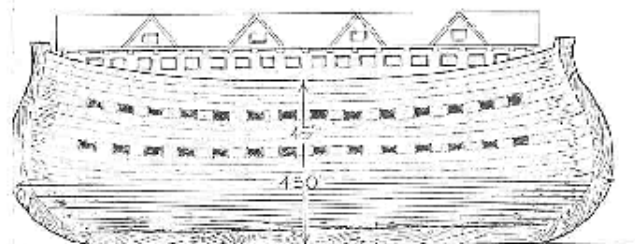
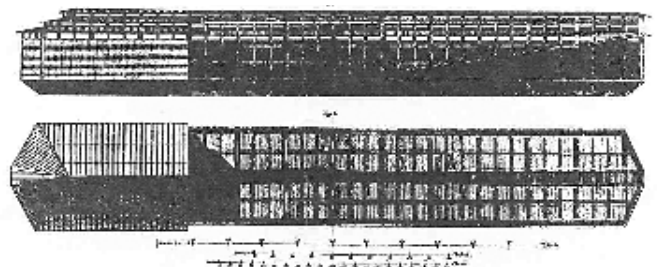
"Rain, what's that?"

Some believe that prior to the flood the earth was watered by internal springs and that there had not been anything like what we recognize as rain to that time. Perhaps that is why none of

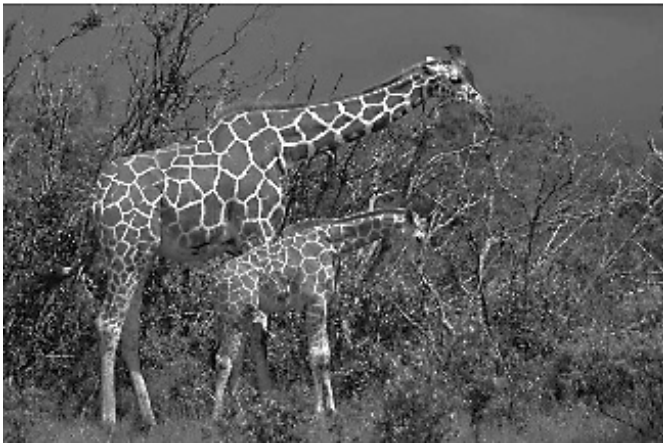
## Exhibit 1



## Exhibit 2



### Exhibit 3



Noah's neighbors joined in to help. Instead they ridiculed the effort. Hence, Noah the Project Manager could only muster three other men (his own three sons—say, is that where the TV show came from?) and their wives, to undertake the Project. The total resources available for the Project were four men and four women, all of whom were required to provide a livelihood for themselves while performing the Project work.

What did the Ark look like? Some picture a large banana shaped craft. Others a ship with a V-hull design. Still others think it was a barge like vessel. The barge design is most likely for a couple of Project Management reasons. A barge shape would provide substantially more capacity than the other proposed designs, and would be easier to assemble.

How long did it take to build the Ark? We can make an estimate by looking at the tasks in a proposed Project schedule. The first task was to assemble the equipment needed: saws, axes, drills, chisels, knives, etc. Next was to prepare pens and food storage for the animals prior to entering the Ark. Concurrent with this might be the felling of the trees and making them into boards. Considering the measurements of the Ark, it would re-

### Exhibit 4

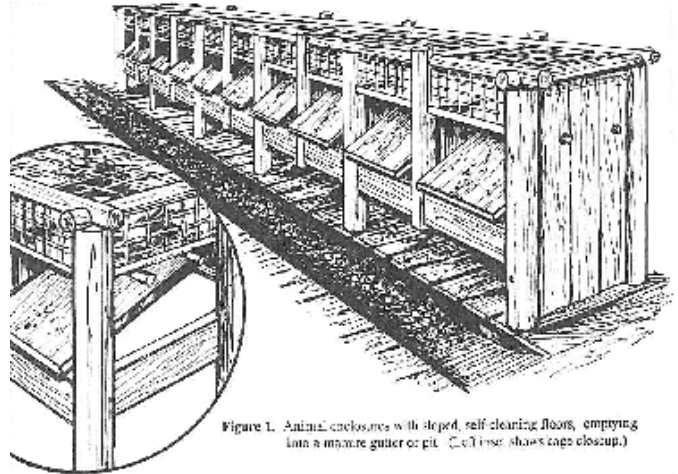


Figure 1. Animal enclosures with sloped, self-cleaning floors, emptying into a manure gutter or pit. (Coffey's Sheep Cage Enclosure.)

quire approx. 250,000 boards of 10-foot average length each to provide sufficient lumber.

No one knows for sure what gopher wood was. Some suppose it was a form of cypress. I think it was called gopher wood because Noah was probably always yelling to Ham, Sham and Japeth—"Go fer wood, go fer wood!"

If we assume that the wood was like a cypress, approximately 30,000 trees of an average height of 30 feet would be needed to provide the boards. Noah and his sons did not have a Home Depot to go to get the lumber. They had to locate, cut down and transport each tree individually. Considering the crude tools of the day and the limited transportation methods, they might not have been able to supply more than a couple of trees a day. The total time to fell and transport 30,000 trees could have required 50 years or so (two trees for every working day).

Cutting and shaping the trees into boards would itself require an enormous amount of time. Each board had to be precisely straight and exacting in length. There is also the likelihood that each board had to be shaped into some sort of tongue and groove arrangement. Although at this point they did not have to transport the wood, the mere labor to shape a quarter of a million boards could possibly have required two men 100 years or more. In our Project Schedule, this effort could begin concurrent with the felling of the trees (assuming that the work was divided between the men, and not worked in series—obviously a good PM technique).

Once the trees were provided, the men performing that task could have undertaken to do the assembly work (using the lumber the other men had already shaped). There would have been upwards of a million and a half connections required to assemble the Ark. What kind of connections were used? One possibility would have been nails (spikes), but acquiring (making) this many large nails would be a major undertaking in itself. Another more likely scenario would be shaping the boards into a tongue and groove arrangement with the boards angled to provide a

## Exhibit 5



pressure seal. Evidence of this type of assembly is found in a number of ancient writings. Even assuming tongue and groove assembly, the fitting together of all the boards could require up to 20 years to accomplish (as time goes on, more men are working this task as they finish other tasks).

In addition to the tasks already detailed, a number of other elements of the Project still had to be completed. The obtaining and applying the pitch (5,000 gallons likely required), building decks, pens, troughs, corralling and caring for the animals prior to the Flood, all had to be completed. Still needed was the obtaining and storing of food and supplies for an extended voyage for all the animals, birds and crew. All these tasks might go into the Schedule and add another 20 to 30 years to the undertaking. In total, the Project could have taken 100 to 120 years to complete. No wonder the neighbors ridiculed and harassed—it looked like Noah was spending his entire life on an Ark that would never be needed.

When planning the rounding up and caring for the animals, Noah could have used a noted PM technique—efficiency of scale. By choosing “juvenile” animals, a number of challenges of the Project could have been eased. Smaller animals would require less space and food and lessen the load bearing on the decks and hull. Obviously, the general maintenance and waste treatment needs would also be greatly reduced in this scenario.

To facilitate the feeding and clean-up, Noah may also have chosen to use gravity feed watering systems and gravity forced waste collection methods. The employment of these techniques might explain how eight total people could take care of approximately 18,000 animals for an extended voyage of one year’s length.

## Exhibit 6



### Project Trial Phase

Finally, the Ark is completed, just as dark storm clouds gather (the neighbors are not feeling so smug now). The animals, birds

and crew are all inside and now, like a huge facet, the skies pour down. Within minutes it seems, the floodwaters are 10 feet high and the Ark is beginning to float. Soon the Ark is riding on waters that have covered all the surrounding areas and claiming higher and higher every minute.

### **But the Project is a Success**

The Ark FLOATS, the seals hold, Noah, his family and all the animals are safe.

After a year in the Ark, it runs aground on a mountain and all the passengers, humans and animals come out.

### **Project Payoff**

Now Noah and his wife, his three sons and their wives, realize the 100+ years of backbreaking effort were worth it. They are all saved to begin the New World.

### **Project Celebration**

As any good Project Manager might, Noah throws a Project Close-Out Celebration for the whole Project Team.

Now Noah is ready for the next big Project—Rebuilding Civilization.

(For a Project Manager, being successful on one Project, means you get chosen for an even more challenging Project—Congratulations)

### **Resources Used**

The Ryrie Study Bible, Genesis  
The Picture Bible  
Noah's Ark, A Feasibility Study  
Miracles of the Ancient World  
Various World History References