



**WHICH JOB WOULD BE WORSE,  
BUILDING THE PYRAMIDS OR  
BUILDING THE PANAMA CANAL?**

**T**wo impressive engineering feats, two massive constructions projects, and two very dangerous jobs. But where would you rather toil, in the desert or in the tropics? Among the pharaohs or among the mosquitoes? Either way, Monday morning is going to be hell as you join with tens of thousands of your fellow sweaty laborers to complete one of history's most colossal human undertakings. Assuming you're not crushed by falling rock, that is.

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**Building the pyramids . . .**

No, extraterrestrials did not build the pyramids. If they had, you'd be out of a job. The largest pyramid, called the Great Pyra-

mid, was built by a huge (human) workforce for the Pharaoh Khufu around 2530 B.C.E., and was until the twentieth century the largest man-made structure on the planet. Debate continues over the socioeconomic status of those who built the structures—that is, were they slaves or were they paid workers?—but one thing's for certain: it wasn't a job for the weak, lazy, or cowardly. In other words, calling in sick is not an option.

Estimates of the number of workers who constructed the pyramids vary, and depend on assumptions about how long it took to build them. But they range from a few thousand workers toiling over decades to as many as twenty thousand in a shorter timeframe. No matter how many workers it took, the work was difficult. Some of the quarried stone blocks used in construction weighed hundreds of tons, and are thought to have been dragged up ramps by huge gangs of laborers pulling sleds. Working in brutally hot conditions, battling sandstorms, mishaps and injury, and overseers on a schedule, the laborers were not exactly enjoying union benefits. In addition to quarrying and dragging stone blocks and levering or lowering them into position, workers smelted copper for making cutting tools, carted softer stone and soil for ramps, chopped and dragged timber for scaffolding and sleds, and unloaded barges used to transport rock.

Were the laborers slaves who were mercilessly whipped if they didn't work fast enough? It's entirely possible. But current thinking is that they were young men who belonged to tribes or "castes" who would have had little choice but to work on any construction project to which they were assigned. Ancient Egyptian society is thought to have been essentially feudal, and peasants who were born into worker castes probably had little chance of escaping a life of labor. Strapping on the sandals every day

and wrapping some fish in papyrus for lunch would have been expected, natural, and unavoidable.

On the other hand, recent archeological evidence suggests that pyramid workers were relatively well fed (as, really, they would need to be), and dined on prime grilled meats, fresh fish caught in the Nile, and fresh bread baked into special loaves more than a foot long. Yum! And, of course, while the weather was undoubtedly hot, at least the sun was shining. If you weren't crushed by a falling stone block or worked to death, at least you could get a tan.

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### Or building the Panama Canal?

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The working conditions on the Panama Canal may have made constructing the pyramids look like building a sandcastle. Between the French and American efforts to open a shipping channel from the Atlantic to the Pacific Ocean, heat, humidity, landslides, and disease led to the deaths of at least thirty thousand laborers, with tens of thousands more sick or injured. In 1904, the average U.S. salary was twenty-two cents an hour. Unskilled laborers working on the canal made a whopping thirty cents. Per day.

By the time American work began on the Panama Canal in 1904, yellow fever—the disease that had wrecked French efforts to build a canal in Panama since 1880—had been linked to the *Stegomyia fasciata* mosquito, which thrived in and around human habitats. A mosquito-eradication program, successfully tested in Cuba several years before, was used in Panama and

succeeded in virtually eliminating the disease. Unlike yellow fever, however, malaria was carried by *Anopheles*, a different mosquito variety that was present in virtually infinite numbers in the Panamanian jungle. Worse, unlike yellow fever, malaria did not confer immunity on those who became infected but survived, making the disease harder to eradicate. In 1905, the first full year of work, it is estimated that 100 percent of those laboring on the canal contracted malaria within a month of starting work. How do you feel about those odds?

Workers during the French period faced other dangers. The dump sites for excavated rock and soil were too close to the cuts, leading to huge landslides during Panama's nearly daily rainstorms. The soil, which had a high clay content, was also sticky, and needed to be scraped off shovels and excavating equipment—grueling, backbreaking work. French hospitals in Panama, which had no screens on the windows, were essentially yellow fever and malaria factories, and many injured or ill workers who didn't yet have the diseases refused to visit them for fear of becoming infected.

Canal workers, however, were generally well treated and lived in relative comfort (some in perhaps better comfort than they enjoyed at home). Bakeries and cold storage facilities, complete with ice cream plants, were built on-site. Farms for growing fruit, fresh vegetables, and raising chickens (for eggs) were also added after the first few years. American and European workers could eat in restaurants or mess halls, though West Indian laborers typically had to do their own cooking. Provisions not available on-site were brought in regularly on the Panama Railroad. However, the railroad also did a brisk business in the other

**CHOICE BITS**

- \* The Greek historian Herodotus, writing in the fifth century B.C.E., estimated the labor force used to build the pyramids totaled one hundred thousand. However, his claim was made 2,700 years after the pyramids were built and was probably no more than an educated guess.
- \* The maximum number of workers on the Panama Canal during the American excavation period was about forty thousand, in 1913.
- \* Though about six thousand workers died under American supervision, most of the fatalities occurred during the earlier French excavation period, from yellow fever and malaria.

direction, shipping the cadavers of dead workers (often stuffed in barrels) to North American medical schools for dissection.



Which construction job would be worse, Egypt or Panama? The Egyptian workers got filet, the canal workers got ice cream. But though they probably had little choice of career, at least the ancient Egyptians only had to answer to the pharaoh. Canal workers had to face rough ridin' Teddy Roosevelt.