

ARCHAEOLOGY

Lifting Solar Boat Blocks

► WHEN MODERN scientists got their first peek into the stone resting place of the Cheops Solar Boat, a chain of speculation was started.

How, wondered the modern scientists, could the ancient Egyptians, with their limited equipment, have put those 40 20-ton blocks of native limestone on the shelf-like ledges above the boat with air-tight precision?

In speculating over the feats of the ancient Egyptians, the public lost sight of those of the modern Egyptians who removed the great blocks, according to John Dimick, director of the University of Pennsylvania's Egyptian project, who reports them for the first time in *Archaeology* (Summer).

Prof. Abdel Moneim Abubakr headed a committee of Egyptologists and engineers charged with solving questions concerning the boat and its preservation.

If Prof. Abubakr had had at his command a 20-ton motorized crane and had the problem been only that of moving 40 blocks of ordinary limestone, the task would have been simpler, Mr. Dimick said, but he had no such equipment.

Each of the huge blocks was a potential archaeological treasure. Many bear quarry marks, inscriptions, or the marks of ancient Egyptian kings. The ancient paint had become so perilously delicate that it would disappear forever at a touch.

Preparations for moving the blocks were

made only after careful planning and calculations. Mr. Dimick checked the Egyptian tables of engineer M. Salah Osman against American tables of stress and weight.

Limestone weights per cubic meter were 15% greater in the American tables than those given in the Egyptian tables. That resulted in an increased estimated weight per stone of a little more than a ton. The Egyptians, however, had developed lifting equipment with safety allowances ample even for the heavier estimate.

Heavy foundations or sills had been laid along the sides of the boat chamber a few feet from its edge. Using the random-sized timber available, strong scaffolding was built with side bracing and buttresses of lighter materials.

Light-weight rails were salvaged from a track used to cart away debris from the road-building operations. Axles and wheels were taken from an old dirt cart and re-assembled under a framework of heavy timbers to make a dolly. Chain hoists were suspended from the dolly.

The rope, the timbers, the chain, the dolly wheels and axles were checked against Mr. Dimick's manuals and found adequate.

Nevertheless, a breathless moment for Prof. Abubakr, Engineer Osman and Mr. Dimick came when the first strain was put on the improvised gear and the huge dead weight hung suspended over the Boat.

Science News Letter, July 30, 1955

TECHNOLOGY

Built-in Ash Tray

► WHEN A National Bureau of Standards scientist rolled and smoked a cigarette made with a new glass-fiber paper he and his associates developed, he discovered the cigarette had a built-in ash tray.

The paper would not burn, but held the ashes in place until he was ready to throw the cigarette away.

The new paper, made from glass fibers a fifty-thousandth of an inch thick, is also one of the best smoke filters. When used as a cigarette filter, it allowed only one smoke particle in 100,000 to pass through.

Its filtering properties make the paper ideal for gas masks and air conditioners.

In raw form, the paper looks like blotting paper. It has a smooth, almost silky texture and is crease-proof.

The paper is eight times as strong as previous glass papers and is prepared by the same process used to make newsprint. Since acid forms the gelatinous bonding holding the fibers together, the acid concentration must be carefully controlled in the manufacturing process.

Thin glass fibers are very flexible and not easily broken. The very fine threads for the paper are made by forcing molten glass

through tiny holes, then stretching the fibers in hot air.

The new paper is no good as paper. Using it would be like trying to write on a blotter, the scientists pointed out. It was developed by M. J. O'Leary, J. K. Missimer, J. J. Erving and R. B. Hobbs of the National Bureau of Standards for the Naval Research Laboratory.

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PSYCHIATRY

Mental Patient Obeys Commands of Television

► A MENTAL PATIENT with up-to-the-minute symptoms is reported at the Veterans Administration Hospital, Houston, Texas.

The case is that of a young man who calls himself a "television expert." He sits or stands before the television set for hours, imitating closely the performers' gestures and movements.

When commercials come on, he obeys the announcer's instructions literally. When

an announcer says, "Brush your teeth with — toothpaste," he rushes to the bathroom and brushes his teeth. When another announcer commands his audience to use a certain hair tonic, he scoops up water from a nearby fish bowl and sloshes it over his head in imitation of the announcer's movements.

The patient was found to have an old disease, schizophrenia, with modern adaptations of old symptoms known to doctors as "command-automatism and echopraxia."

The case was reported by Dr. Celestine Hay of the VA Hospital and Baylor University College of Medicine in the *American Journal of Psychiatry* (July).

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