

AERONAUTICS

New Lighted Guide Path

Fliers will know when they are on the glide path in this slope-line system, as it is called, by the appearance of the lighting units.

See Front Cover

► A NEW lighted guide path known as the slope-line system, to lead in-coming pilots directly down to the end of a runway, has now been accepted by the highest federal aviation approval committee and is scheduled to become widely, if not universally, used at American commercial airports.

This slope-line system was developed by the Civil Aeronautics Administration, particularly by the late A. J. Sweet, and H. J. Cory Pearson and M. S. Gilbert. Already in use at the Indianapolis airport, where CAA's aviation experimental station is located, it will be installed very soon by CAA at eight other commercial landing fields. These are at Boston, Philadelphia, Nashville, Chicago, Houston, St. Louis, San Francisco and Seattle. Federal funds for these installations are now available.

This system in appearance differs from those generally in use. It is relatively simple. When first proposed, the idea was ridiculed as impractical, but it works, and is probably superior to any other known approach lighting scheme.

Other systems include two long rows of lights, often in V-shape with the apex at the landing end of the runway. This system is composed of a series of lighting units in V-shape but the lights in each unit are aligned at right angles with the approach path. And they disperse their beams forward in a wide angle, not vertically upward as other lights do.

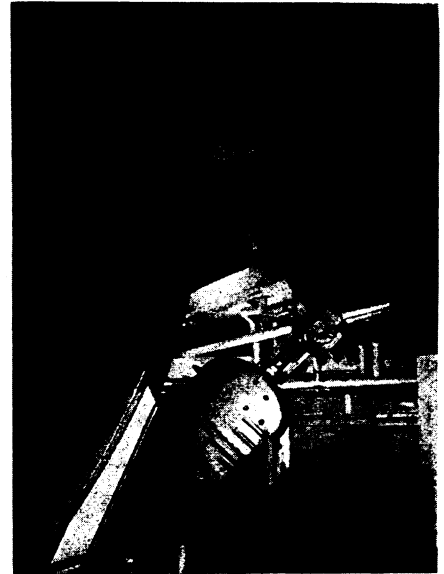
An approaching pilot, if directly on the

glide path, sees the lights as two almost continuous single lines, one to his right and one to his left. If not on the glide path, he sees broken lines arranged like the teeth on a saw. On the left side of the cover on this week's SCIENCE NEWS LETTER is shown the correct approach and on the right side the incorrect. This system not only provides him with two converging lines of light leading to the runway, but also gives him a glide path which he knows he is on by the appearance of the lighting units.

Each unit is made up of ten lamps in sealed-beam units similar to those used for headlights on automobiles. They are placed in an elongated box, 14 feet long, open to the front but not upward. The boxes and their lights are 100 feet apart, pointing inward, and at an angle of 45 degrees with the level earth. The glide path is the imaginary line connecting the intersection of these box-units with their opposite mates, if all were extended to meet like rafters on a roof over the center of the approach path.

If the lighting units were placed in parallel lines, this imaginary, apex-connecting line would be parallel to the ground. But they are not. At the outer end, they are perhaps 360 feet apart, and at the runway end, about 96 feet from each other. The result is that the imaginary line is much higher in the air at its outer extremity than near the runway. The lights must be so placed that the glide-path line approaches the landing strip at the proper slope for safe landing.

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QUINTUPLE SPEED OF SOUND

—the wind tunnel shown above, in which the remarkable air speed of more than five times the velocity of sound was obtained recently, is a modernized captured German supersonic tunnel now at the Naval Ordnance Laboratory, White Oak, Md. The high speed, equivalent to 3,960 miles per hour at sea level at ordinary temperatures, was obtained under a temperature of 377 degrees below zero Fahrenheit, in a 16-by-16-inch working section of the tunnel. The achievement is a world record for tunnels this size.

by Prof. Raymond A. Dart of Johannesburg that fossil remains of the creatures named *Australopithecus prometheus* represented a race of small, gracefully built ape-men weighing about a hundred pounds apiece, who knew the use of fire and of weapons and were in general much more human than they were first credited with being. (See SNL, Oct. 30).

The giant race will be known as Swartkrans Man, from the name of the cave where the jawbone and teeth were found. Age of the fossils is at present uncertain; estimates run from one-half million years to four million years.

Dr. Broom radioed to Wendell Phillips, leader of the University of California African Expedition who is now in Berkeley to report on the expedition's first 14 months of field operations: "On evidence to date, we can say that the new-type ape-man is larger than those previously known, that these ape-men are like man and were probably ancestral to him, and that they are not closely related to living apes."

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PALEONTOLOGY

Giant Ape-Man Fossils

► GIANTS as well as pygmies were among the weird population of ape-men who prowled South Africa's veldt in the dim geologic age before the emergence of man himself. Evidence for the existence there of a huge near-human being that was twice the size of a modern gorilla but much more man-like was reported to the University of California from one of the field parties of its African Expedition, by Dr. Robert Broom of the Transvaal Museum, who joined the University of California group last September.

Dr. Broom's find consists of the greater part of a lower jawbone containing three

premolars and four molars, together with a separate lower wisdom-tooth, two upper incisors and one upper eye-tooth. All the teeth are gigantic, slightly larger than those of the giant Java man, *Meganthropus*. A man proportioned to match the dimensions of the teeth would have to be two and one-half times as big as an average human being and at least double the size of a present-day gorilla. Yet the teeth are definitely human in shape, not gorilline. In this they resemble the giant teeth from Asia.

Discovery of this race of giant ape-men comes on the heels of the announcement