

- 20 3:51 a.m. Algol at minimum.
  - 23 12:40 a.m. Algol at minimum.
  - 25 7:00 a.m. Moon farthest, distance 251,400 miles.
  - 9:29 p.m. Algol at minimum.
  - 26 10:28 p.m. Moon in last quarter.
  - 28 10:03 a.m. Moon passes Mars.
  - 6:19 p.m. Algol at minimum.
  - 29 7:00 p.m. Venus behind sun.
- Subtract one hour for CST, two hours for MST, and three for PST.

Science News Letter, December 26, 1953

**MEDICINE**

**Exchange Resin Makes TB Medicine Easier to Take**

➤ AN ANION exchange resin is coming to the rescue of tuberculosis patients who find PAS, or para-aminosalicylic acid, hard to take.

The PAS is adsorbed on the resin and when the combination is swallowed, the hydrochloric acid in the stomach gradually displaces the PAS. As it passes into the intestine, it is absorbed by the body and carried in the blood just as efficiently as if it had been taken alone.

This new product was announced by its manufacturer, E. R. Squibb and Sons, who have trademarked it Rezipas.

Science News Letter, December 26, 1953

**AERONAUTICS**

**1,650 Miles Per Hour Sets New Speed Record**

➤ VIRTUALLY ON the eve of aviation's golden anniversary, the U. S. again focused world attention upon the skies. Air Force Maj. Charles E. Yeager rocketed to 1,650 miles an hour in the Bell X-1A research plane.

This world speed record of Mach 2.5—which is two and a half times the speed of sound—was chalked up Dec. 12 by the 30-year-old West Virginian.

The Air Force said that Yeager's flight was the "fastest known to have been attained by any aircraft or any human being anywhere in the world."

The rocket plane was powered by one engine rated at 6,000 pounds of thrust. The designed speed of the plane is 1,600 miles an hour, and apparently Maj. Yeager coaxed another 50 mph from the little craft. Its wings measure 28 feet, and its length is 35.5 feet.

Since it has merely a 4.2-minute "range," the X-1A was carried aloft in a B-29 Superfort, then released. The 1,650 mph speed record it subsequently established will not be officially recognized. International rules dictate that all planes trying for new speed records must take off from the ground under their own power.

Maj. Yeager later told newsmen that he expects his new speed record to be shattered soon by a new rocket plane, the steel-bodied Bell X-2. The X-2's steel construction is aimed at reducing some of the heat problems created by friction at such speeds.

Science News Letter, December 26, 1953

**ELECTRONICS**

**Optical Sensing Device**

Data reader, FOSDIC, capable of translating up to 10,000,000 answer positions per hour for use in electronic computers, built by National Bureau of Standards.

➤ A HIGH speed electronic device, called FOSDIC, that can read marks on census data sheets and feed the information directly to an electronic computer for processing has been built by the National Bureau of Standards.

Use of FOSDIC will provide an accurate, convenient method for mathematically treating much of the data obtained in a census count. It is expected to reduce greatly the large volume of paper work required to summarize census information.

Designed at Standards for the Bureau of the Census, FOSDIC may be generally applied to the processing of other types of information that must be handled in large quantities such as business and labor statistics.

As part of a program to speed up processing census data, the Census Bureau has been using UNIVAC, an electronic digital computer. This machine can process data much faster than it can be translated from the data sheets, so FOSDIC, a contraction for "Film Optical Sensing Device for Input to Computers," was designed to speed up the translation process.

The machine reads microfilm copies of census takers' documents and processes the information contained in the form of positioned marks into electrical pulses that are recorded on magnetic tape. The magnetic tape can then be used directly by the computing machinery.

Basically the instrument is built around a combination of two rather common electronic devices, consisting of a cathode-ray tube and an electric eye. In combination, these two devices can visually sense whether or not pencil or pen marks exist on particular spots of an answer form. Since FOSDIC utilizes an optical principle, marks may be made with any common type of pencil or pen.

When the original documents are micro-filmed, they do not have to be precisely aligned. Instead, an aligning index marker is printed on the form below each column of twelve possible answer positions. One column might contain answers to six yes-no questions.

When the device scans a census form, its beam moves across a page until it senses a mark indicating possible answers in the column above. FOSDIC then sends its scanning beam up the column, reading and recording out on the magnetic tape each tally mark. Upon completion of the column, the machine then searches for the next index.

To assure accuracy, FOSDIC keeps count of the number of columns read on each page. If for any reason a column is missed,

the device makes a record on the magnetic tape informing the computer that the preceding information is not trustworthy. Under laboratory test, FOSDIC has shown that it has nearly perfect performance when good marking and filming conditions exist.

Currently the equipment is designed to provide for a maximum of some 2,800 answer locations on each frame of 16mm microfilm—an area of about one-quarter square inch. Its speed corresponds to a reading transcription rate of about 60 document sides per minute, and the transcription accuracy appears to be equal to or better than that of a skilled human copyist.

FOSDIC was shown for the first time to scientists and engineers attending the Joint Computer Conference and Exhibition sponsored in Washington by the American Institute of Electrical Engineers, the Institute of Radio Engineers, and the Association for Computing Machinery.

Science News Letter, December 26, 1953

**ZOOLOGY**

**Unusual Rats Collected In Thailand for Museum**

➤ WEIRD RATS, some two feet long and colored orange, buff, yellow-brown and blue-gray, were among 2,000 mammals and birds collected in Thailand for the U. S. National Museum by H. G. Deignan, associate curator of birds at the Smithsonian Institution.

The rats were caught in a region of high limestone crags and forests north of the Chao-Phraya river delta.

Science News Letter, December 26, 1953

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