

Do You Know?

Horizontal *silos* are constructed either by digging huge trenches in the earth or by building side walls of lumber or earth on the surface.

Leading edges of the *wings* of a new U. S. supersonic jet fighter are so sharp they must be covered with rubber "gloves" to prevent ground crews from cutting themselves while the plane is being serviced.

The casings around frankfurters and sausages are sometimes made of *seaweed*.

Hippopotamus, elephant and buffalo *populations* in East Africa have reached record high levels.

Rubber used in the landing gear system of a modern jet bomber is sufficient to manufacture 100 automobile tires.

Less than one percent of the 35,000 species of *fishes* known in the world are now being utilized either as food or as oil, animal feed or fertilizer.

Just enough pruning to shape the tree and limit its height is best for *peaches*; they require the greatest possible leaf area for maximum yields.

A new jet fighter carries 104 air-to-air *rockets*.

The U. S. has more than 188,000 miles of *pipelines*.

A psychologist has devised a test of *compatibility*—how well people will work together in any small group with a job to do.

GEOPHYSICS

Effects of Atmosphere On Radio Propagation

See Front Cover

➤ TRACKING and radio guidance of long-range missiles and anti-missile devices require precise knowledge of the refractive effects of the earth's atmosphere.

Using the sun as the source of radio frequency energy, the Air Force Cambridge Research Center of the Air Research and Development Command is studying the atmosphere's effects on microwaves and meter wavelength radiation. Both the ionosphere and the troposphere produce refractive effects and scintillations, or "twinkling," on radio waves from the sun.

Shown on the cover of this week's SCIENCE NEWS LETTER is a multiple exposure photograph of the rising sun taken at five-minute intervals. It visually demonstrates the atmospheric effects, since the sun as it rises

appears to travel along an arc rather than along a straight line.

The amount of refraction is measured by timing the difference between the sun's crossing the pattern as recorded on the radio telescope and the time it should cross, according to spherical astronomy.

The absorption of the atmosphere as a function of angle of elevation and meteorological conditions is also determined.

Science News Letter, February 9, 1957

ASTRONOMY

New Comet Will be Visible to Naked Eye

➤ A BRIGHT new comet will be visible to the naked eye in late April and early May.

It may shine at zero magnitude, making it one of the most brilliant objects in the sky at that time. Known as Comet Arend-Roland, the object was discovered on Nov. 8, 1956, a correction of the Nov. 6 date originally reported. (See SNL, Dec. 1, 1956, p. 345.)

Since then astronomers both here and abroad have followed it with their telescopes and now have sufficient observations to plot its future path in the sky.

Although it can be seen by persons in the Southern Hemisphere before dawn during the first half of April, people in the Northern Hemisphere will not be able to look at it until the end of April and the beginning of May, after sunset. Then the comet will have passed between the earth and the sun.

Its brilliance will fade rapidly and it will disappear from naked-eye view by the first of June. During the last part of April it will appear very low in the northwest sky after sunset.

Science News Letter, February 9, 1957

MEDICINE

Broken Bones Need Gentle Handling

➤ THE POSSIBILITY of death from a fat embolism occurring after a broken bone can be markedly reduced by gentle handling and the use of a tourniquet, Dr. Leonard F. Peltier, head of orthopaedic surgery at the University of Kansas, told the American Academy of Orthopaedic Surgeons meeting in Chicago.

Fat embolism results from fat droplets which plug up blood vessels and it is sometimes fatal in long bone fractures. Bone is an ideal setting for this invasion of fat droplets into the general blood stream because of the bone's high fat content and large network of blood vessels.

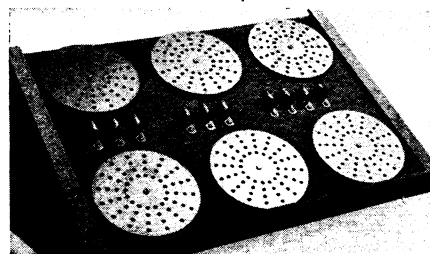
These droplets then travel quickly to the vessels of the lung and block off capillaries. Death from fat embolism shortly after injury is caused by heart failure due to mechanical blockage of the pulmonary vessels by emboli, Dr. Peltier reported.

The chances of fat embolism taking place can be reduced by keeping the patients quiet and not subjecting them to rough handling or unnecessary manipulation.

In surgery, a tourniquet should be used on the long bones whenever possible, he advised. This confines the fat particles and prevents occurrence of embolism.

Science News Letter, February 9, 1957

Can you think faster than this Machine?



Control Panel of GENIAC set up to do a problem in check valve research.

Be careful before you answer. GENIAC, the first electrical brain construction kit, is equipped to play tic-tac-toe, cipher and encipher codes, convert from binary to decimal, reason in syllogisms, as well as add, subtract, multiply and divide. Specific problems in a variety of fields — actuarial, policy claim settlement, physics, etc., can be set up and solved with the components. Connections are solderless and are completely explained with templates in the manual. This covers 33 circuits and shows how new ones can be designed.

You will find building and using GENIAC a wonderful experience; one kit user wrote us: "this kit has opened up a new world of thinking to me." You actually see how computing, problem solving, and game play (Tic-tac-toe, nim, etc.) can be analyzed with Boolean Algebra and the algebraic solutions transformed directly into current diagrams. You create from over 400 specially designed and manufactured components a machine that solves problems faster than you can express them.

SEND for your GENIAC kit now. Only \$19.95 with over four hundred components and parts, fully illustrated manual and wiring diagrams. We guarantee that if you do not want to keep GENIAC after one week you can return it for full refund plus shipping costs.

MAIL THIS COUPON ———
SCIENCE KITS, Dept. SL 27-B, Oliver Garfield Co.
126 Lexington Ave., N. Y.

Please send me:
1 GENIAC Electric Brain Construction Kit and Manual

\$19.95 (East of Mississippi)
\$20.95 (Elsewhere in United States)
\$21.95 (Outside the United States)

**URANIUM-TUNGSTEN-MERCURY
ZIRCONIUM-ZINC**

Prospecting Information! Latest News and Data on Equipment and Methods.

Ultra-Violet Products, Inc.
Dept. N, San Gabriel, Calif.
Please send me Prospecting information, description of equipment available, and name of nearest dealer.

Name _____
Address _____
City _____ State _____

**IF YOU'RE PROSPECTING FOR ANYTHING, YOU
NEED AN ULTRA-VIOLET MINERALIGHT**

HERE'S WHY! The Mineralight shows traces of uranium not sufficient to excite other responses, and detects minerals which are often found with uranium ore. By itself or teamed with a Geiger or Scintillation Counter, Mineralight is a must.

SEE THE MINERALIGHT IN ACTION

Your MINERALIGHT dealer can demonstrate the various models for you and give you complete information on Geiger counters, scintillation counters, and other prospecting equipment, as well as the latest data on uranium prospecting. See him today or write for valuable bulletin — "Uranium Prospecting with Magic Mineralight".

ULTRA-VIOLET PRODUCTS, INC.