



Christ had been born in the 28th year of the reign of the Emperor Augustus, and assumed that this reign started in the Roman year 727. Adding 28 years brought him to the year 754 A. U. C., so Dionysius took this as 1 B. C. in the new reckoning, and made the following year, 755 A. U. C., the year 1 A. D.

The monk was mistaken. It was in 727 that Augustus began his reign under that name, but he became emperor four years earlier. This was after the battle of Actium, which he, as the General Octavius, won against the armies of Antony and Cleopatra. After ruling for four years under his own name, he took the name of Augustus in 727 A. U. C. Though Dionysius' mistake has long been known, it would cause much confusion to correct it now, so we still continue with his system.

#### Time Table for December

Dec.	EST	
1	1:00 a. m.	Moon farthest, distance 251,900 miles
3	10:48 p. m.	Algol, variable star in Perseus, at minimum brightness
5	10:13 a. m.	Full moon
6	7:37 p. m.	Algol at minimum
	10:00 p. m.	Venus passes Jupiter
12	early a. m.	Meteors radiating from constellation of Gemini visible
	5:56 p. m.	Moon passes Saturn
	8:48 p. m.	Moon in last quarter
13	3:43 a. m.	Moon passes Mars
17	2:00 a. m.	Moon nearest, distance 226,500 miles
19	1:55 p. m.	New moon
21	11:24 p. m.	Sun farthest south, winter commences in northern hemisphere
22	3:21 a. m.	Moon passes Jupiter
	6:05 p. m.	Moon passes Venus
24	12:32 a. m.	Algol at minimum
	9:00 p. m.	Planet Uranus nearest, distance 1,669,000,000 miles
26	10:00 a. m.	Venus at greatest brilliancy
27	1:31 a. m.	Moon in first quarter
28	7:00 p. m.	Moon nearest, distance 251,400 miles
29	6:10 p. m.	Algol at minimum

Subtract one hour for CST, two hours for MST, and three for PST.

Science News Letter, November 26, 1949

#### ENGINEERING

### Air Compressor May Be New-Type Auto Engine

► AN AIR compressor from a German submarine may develop into a new type of automobile or truck engine, Stanford engineers assert. From pushing torpedoes to powering cars is an easy step. Its advantage over other engines is lightness, lack of vibration and low cost.

It is described by them as a "free piston" diesel compression. It will run on low grade oil. It can take 70 cubic feet of free air a minute and compress it to 3,000 pounds per square inch of compressed air. As an engine, it would produce hot gases, roughly at a pressure of 100 pounds per square inch, and these gases would drive a turbine which in turn would drive a shaft.

Tests on this former German U-boat compressor are being made by W. H. Chamberlain, graduate student in engineering. The work is sponsored by the Office of Naval Research. It is aimed at analyzing the thermodynamic and dynamic design aspects of both the air compressor and prime mover types of free piston systems.

The free piston engine is not new. It was invented by a Frenchman named Rault de Pescara some 20 years ago. He and other scientists in France are still carrying on extensive development work. It is the recent interest in this type of engine both in France and Germany that has inspired the American study.

The design of the engine is characterized by extreme mechanical simplicity, according to Prof. A. L. London of Stanford. Theoretically the free piston diesel-turbine prime mover has a higher thermal efficiency than the modern diesel.

Science News Letter, November 26, 1949

The Soviet port of *Murmansk* on the European Arctic coast is ice-free the year round because of the American Gulf Stream, part of which passes north of Norway into the Arctic Ocean.

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