

MEDICINE

Bleeding Disease Helped

There is now hope of saving victims of the strange Waterhouse-Friderichsen syndrome disease by prompt recognition plus intensive specific treatment.

► HOPE OF saving more victims of a strange, almost always fatal disease called Waterhouse-Friderichsen syndrome, is seen by Dr. H. B. Thomas, of York, Pa., and Dr. C. D. Leiphart, U. S. Public Health Service, New York City.

Prompt recognition plus intensive specific treatment are advised by the doctors in their report (*Journal, American Medical Association*, July 29).

The condition is one in which there is bleeding into the skin and internal organs, including the adrenal glands. Usually the patient seems to have a mild cold for a few days. Then suddenly he is very sick, with chills, sweating, fever, great weakness, general aching with abdominal pain or cramps and vomiting. Large black and blue spots, from the bleeding into the skin, appear very rapidly and the patient also becomes cyanotic. Death comes so quickly that the duration of the sickness is a matter of hours rather than days.

Cases of this strange illness are being reported more and more frequently. It is due, Dr. Thomas and Dr. Leiphart believe, to an overwhelming blood stream infection with a profound state of shock superinduced.

"Prompt, decisive and heroic measures" are called for in treating the condition, they state. Sulfadiazine, or as second choice sulfathiazole, should be given plus antimeningococcus serum. There should be no waiting to see whether the chemicals will be effective before giving the serum, and no waiting for blood cultures to identify the germ causing the trouble. Rapid diagnosis can be made by smears from the purple or black and blue spots where there is bleeding into the skin. Blood plasma, oxygen, adrenal cortex extract, fluids and salt should also be given to combat shock and keep up the patient's strength until the infection is overcome.

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ATTITUDE METER—This little gyro instrument tells the pilot which way is up and at what strange angle his plane is with reference to the surface of the earth. Thus, he can perform all aerobatic maneuvers without seeing the horizon.

angle indication. The lateral lubber line, also marked in alternate black and white, stretches across the center of the mask opening and provides the basic pitch index for reference to the pattern of the sphere.

The only operating knob or adjustment required by the pilot is that for the "target," a small circle which adjusts up and down to compensate for change in trim of the plane for level flight.

Gyroscopes are the heart of many of the instruments that go into the modern fighting plane. The B-25 Mitchell bomber contains about 128 instruments, while the Flying Fortress has 323. Five of the most important instruments depend upon gyros.

Most important of these is the automatic or gyropilot which enables our aircraft to maintain straight and level flight on a set course. Most automatic pilots contain two vacuum-operated gyroscopes which control the elevators, rudder, and ailerons, thus automatically changing the attitude of the plane itself. There are other types of automatic pilots that work on different principles.

The other gyro-operated instruments include the gyroscopic turn indicator, the gyro artificial horizon, the gyro compass and directional gyro.

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AERONAUTICS

Mechanical "Ear"

A flight instrument tells the pilot when his plane is right side up and enables him to perform perfectly executed loops and slow rolls.

► A NEW FLIGHT instrument that tells the pilot when his plane is right side up (or otherwise) has been announced. It gives him a visual indication of the position of his plane in relation to the earth's surface throughout all possible positions through which his plane can be maneuvered. In tests, pilots were able to perform perfectly executed loops and slow rolls under a blackout hood.

For the first time in aviation history it is now possible for pilots to perform all aerobatic maneuvers without visual reference to the earth's surface, reports the Sperry Gyroscope Company, designers and builders of the Sperry Attitude Gyro.

A gyroscope is the secret of the new attitude indicator. It is a balanced fly-

wheel electrically propelled at high speed around a vertical axis. Since the spinning gyro tends to remain in the same position and plane of rotation, the instrument provides a fixed reference pattern around which the airplane may be maneuvered in any direction.

The gyroscope, in this instance, is in the form of a stabilized sphere on which the reference pattern is marked with luminescent paint and is visible to the pilot through a masked opening in the front of the instrument case.

The upper half of the sphere is painted white, the lower half is black. Latitude lines in contrasting color, (white on black, black on white) are inscribed, with short 10 degree marks between, on the spherical surface. A vertical meridian line, also in contrasting color, gives roll