

AERONAUTICS

1700 Miles an Hour

Planes of that speed predicted for year 1960. Must have pencil-thin fuselage, sharp nose and thin wings. Engines must have more thrust.

► AIRPLANES able to fly at 1700-mile-an-hour rate may be feasible by 1960, it was predicted by Harold Luskin, Douglas Aircraft Company, at the meeting of the American Society of Mechanical Engineers in New York. His discussion was devoted primarily to power plants and design for that high speed.

He presented a paper prepared jointly by him and Harold Klein of the same company. Since the power required for flight depends upon the amount of drag to be overcome, the aerodynamicist's first task is to reduce drag to a minimum, he said.

This is accomplished by creating airplane "profile," or shape, which offers the least resistance to motion under the special conditions of supersonic speed. That is why supersonic planes must have pencil-thin fuselages, sharp noses and thin wings.

Even so, he continued, engines required to ram airplanes through the air at two and one-half times the speed of sound must produce three or four times as much thrust for their weight as engines acceptable for subsonic conventional aircraft. This goal is obtainable in the near future, he predicted, through improvements in jet engines and adding after burners.

Proper engine installation also is essential in order to realize supersonic flight, he stated. "Thrust actually developed by a turbojet engine depends not only on the engine design but also on the installation in the airframe."

Loss of efficiency resulting from improper air inlets is much more critical at super-

sonic speeds than at lower speed levels. An improper air inlet not only increases drag but results in a loss of jet thrust at high speeds. Adjustable inlet scoops which permit the jet engine to gulp only the amount of air needed at any given speed are needed. Engine cooling is another major problem at supersonic speeds.

Science News Letter, December 9, 1950

MEDICINE

Chemical Urethane Best for Bone Cancer

► THE CHEMICAL urethane is the "treatment of choice" for the bone marrow cancer, multiple myeloma, in the opinion of Drs. Richard A. Haines, William N. Powell and Herbert Bailey, of Temple, Tex.

At the meeting in St. Louis of the Southern Medical Association, they reported good results with this chemical in five patients.

One, treated for seven months, has had relief of bone pain and there is evidence that the neck vertebra, broken through the disease, is recalcifying. A second patient, treated with urethane, for over a year has had marked improvement of her anemia as well as relief from the "exquisite" bone pain. She has also returned to some of her household duties.

Besides the improvement in the patients' well being, the Texas physicians reported definite changes in the architecture of the myeloma cell during urethane treatment.

ACTH, famous anti-arthritis pituitary

gland hormone, helped one out of three myeloma patients treated.

Stressing the importance of early diagnosis of this cancerous disease, the Texas physicians said that complaint of bone pain was the most frequent early complaint, with anemia and albumin in the urine as the two most common findings from laboratory tests.

Science News Letter, December 9, 1950

SCIENCE NEWS LETTER

VOL. 58 DECEMBER 9, 1950 No. 24

43,200 copies of this issue printed

The Weekly Summary of Current Science, published every Saturday by SCIENCE SERVICE, Inc., 1719 N St., N. W., Washington 6, D. C., North 2255. Edited by WATSON DAVIS.

Subscription rates: 1 yr., \$5.50; 2 yrs., \$10.00; 3 yrs., \$14.50; single copy, 15 cents, more than six months old, 25 cents. No charge for foreign postage.

Change of address: Three weeks notice is required. When ordering a change please state exactly how magazine is now addressed. Your new address should include postal zone number if you have one.

Copyright, 1950, by Science Service, Inc. Reproduction of any portion of SCIENCE NEWS LETTER is strictly prohibited. Newspapers, magazines and other publications are invited to avail themselves of the numerous syndicate services issued by Science Service. Science Service also publishes CHEMISTRY (monthly) and THINGS of Science (monthly).

Printed in U. S. A. Entered as second class matter at the post office at Washington, D. C. under the act of March 3, 1879. Acceptance for mailing at the special rate of postage provided for by Sec. 34.40, P. L. and R., 1948 Edition, paragraph (d) (act of February 28, 1925; 39 U. S. Code 283), authorized February 28, 1950. Established in mimeographed form March 18, 1922. Title registered as trademark, U. S. and Canadian Patent Offices. Indexed in Readers' Guide to periodical literature, Abridged Guide, and the Engineering Index.

Member Audit Bureau of Circulation. Advertising Representatives: Howland and Howland, Inc., 393 7th Ave., N.Y.C., Pennsylvania 6-5566 and 360 N. Michigan Ave., Chicago. STATE 2-4822.

SCIENCE SERVICE

The Institution for the Popularization of Science organized 1921 as a non-profit corporation.

Board of Trustees—Nominated by the American Association for the Advancement of Science: Edwin G. Conklin, Princeton University; Karl Lark-Horowitz, Purdue University; Kirtley F. Mather, Harvard University. Nominated by the National Academy of Sciences: Harlow Shapley, Harvard College Observatory; R. A. Millikan, California Institute of Technology; L. A. Maynard, Cornell University. Nominated by the National Research Council: Ross G. Harrison, Yale University; Alexander Wetmore, Secretary, Smithsonian Institution; Rene J. Dubos, Rockefeller Institute for Medical Research. Nominated by the Journalistic Profession: A. H. Kirchofer, Buffalo Evening News; Neil H. Swanson, Baltimore Sun Papers; O. W. Riegel, Washington and Lee School of Journalism. Nominated by the E. W. Scripps Estate: H. L. Smithton, E. W. Scripps Trust; Frank R. Ford, Evansville Press; Charles E. Scripps, Scripps Howard Newspapers.

Officers—President: Harlow Shapley; Vice President and chairman of Executive Committee: Alexander Wetmore; Treasurer: O. W. Riegel; Secretary: Watson Davis.

Staff—Director: Watson Davis. Writers: Jane Stafford, A. C. Monahan, Marjorie Van de Water, Martha G. Morrow, Ann Ewing, Wadsworth Likely, Sam Matthews. Science Clubs of America: Joseph H. Kraus, Margaret E. Patterson. Photography: Fremont Davis. Sales and Advertising: Hallie Jenkins. Production: Priscilla Howe. In London: J. G. Feinberg.

Question Box

AERONAUTICS

How fast may planes travel ten years from now? p. 372

ASTRONOMY

What produces the twilight glow of early morning? p. 374

ENTOMOLOGY

How do bees fly a beeline? p. 376

MEDICINE

What is sweet aspirin? p. 379

What treatment cures severe burns? p. 373

Photographs: Cover, Naval Ordnance Laboratory; p. 371, Boeing; p. 373 Armour & Co.; p. 375, U. S. Army.

MILITARY SCIENCE

How would the character of the terrain affect a decision whether or not to use the atomic bomb? p. 371

PHYSICS

How can you make your own cloud chamber? p. 374

POMOLOGY

What is the advantage of the Cortland apple? p. 376

RADIO

How is three dimensional color television made possible? p. 377