

in Korea are hanging together better than the Russian jet.

The problem is wrapped up in what NACA scientists call "pitch-up." This is a force that can jerk control of the zooming jet fighter out of the hands of the pilot as his plane climbs sharply. It usually causes the plane to nose upward at an even sharper angle. The wings become severely overloaded and fail. The plane plunges to its destruction.

Swept-back wings of supersonic planes are particularly vulnerable to the vicious pitch-up condition. Both Soviet and American designers are scratching their heads over the problem.

"Fences" are put on the wings to combat pitch-up; the fences are merely thin bands of metal that divide the wing into sections. They minimize the danger of pitch-up, but do not cut it out completely. NACA scientists are searching for better designs and more "gadgets" like the fences that eventually may relegate this problem to aviation history.

A scale model of the world's fastest airplane, the Douglas D-558-2 Skyrocket, mounted for wind tunnel tests in the supersonic pressure tunnel at Langley Aeronautical Laboratory, is shown on the cover of this week's SCIENCE NEWS LETTER.

Supersonic speeds within the ability of the Skyrocket, which has flown 1,238 miles per hour at high altitude, can be duplicated in this wind tunnel. Seen through an open window, the test section of this wind tunnel is almost four and one-half feet square, and is one of the three largest supersonic wind tunnels in the United States.

To carry on its research program, Langley Laboratory has 20 wind tunnels of various sizes, three of which are for studies in the transonic range. The largest has a test section 16 feet in diameter, thus can accommodate relatively large models with extensive instrumentation.

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MEDICINE

Six Man-Like Women Restored to Femininity

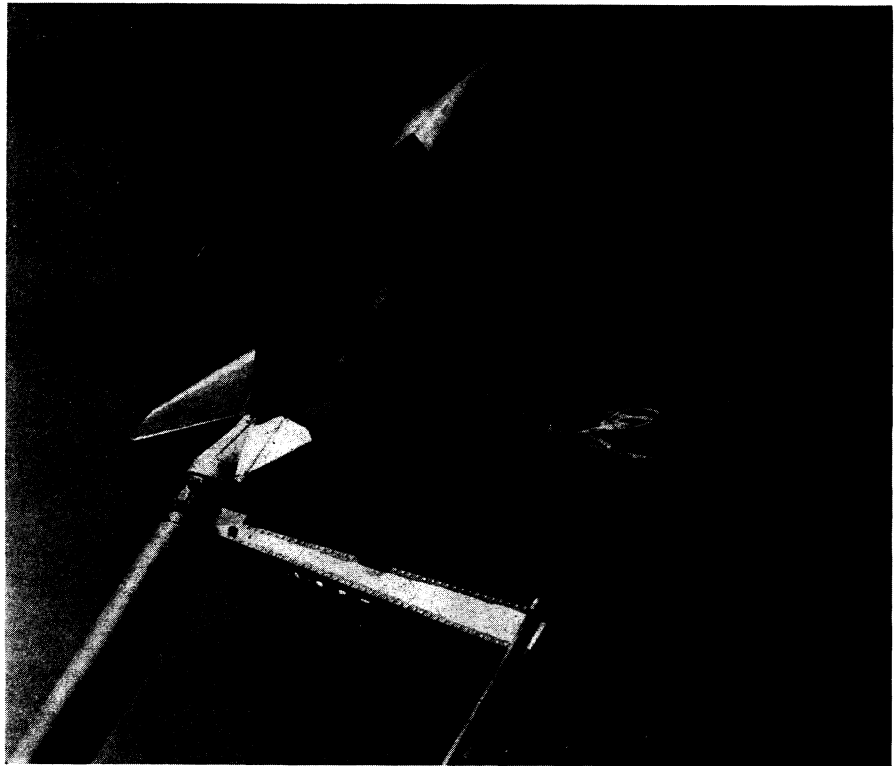
➤ SIX WOMEN who became manlike have been changed back to women again through a simple operation.

Physicians of the Tulane University Medical School, New Orleans, pointed out that in the ovaries of women there exist a few cells like those seen in the male testes. In a few cases, later in life, these cells grow into tumors which actually produce the male sex hormone in large amounts.

But, in six women treated at Tulane, production of this male sex hormone gave them beards, growth of hair on most of the rest of the body, development of male-like muscles of the arms and legs and deepening of the voices.

These tumors were removed. After the operation, the men-women became women again, Dr. William H. Sternberg of Tulane reported.

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LAUNCHING MODEL—This dynamic scale model of a new jet fighter, the Navy's F4D Skyray, was fired into the sky for a supersonic test flight to investigate drag, stability and control.

PSYCHIATRY

Analyze "Mind Washing"

Acceptance of parents' dictates in childhood conditions persons to surrender to superior power, thus possibly accounting for success of propaganda under pressure.

➤ ANY POW's who accepted Communist propaganda as a result of Soviet "mind washing" techniques were men who, as children, gave up the struggle to be themselves and abandoned themselves to the dictates of father or mother.

Having once been conditioned to surrender, psychologically, to a superior power, they were predisposed to do it again.

This interpretation of why, or on whom, Red "mind washing" succeeds was given by Dr. James Clark Moloney of Birmingham, Mich., at the meeting of the American Psychoanalytic Association in Los Angeles.

Soviet success in extorting "confessions" such as those of Cardinal Mindszenty and Robert Vogeler is based on the same psychological factors.

An interview with Mr. Vogeler, made in October, 1952, by a trained social worker acting for Dr. Moloney, confirmed Dr. Moloney's belief about the basis of the communist interrogation methods.

That Army psychiatrists will be able to unwash or rewash the minds of these

men was suggested, though not stated, in Dr. Moloney's report. Presumably this could be done by methods psychoanalysts use in obtaining "positive transference" in their patients.

The social worker who interviewed Mr. Vogeler for Dr. Moloney noted that he "seemed to relate himself easily and directly toward another person and that he displayed considerable relaxation. She detected no lingering nervousness which might have carried over from his traumatic (injurious) experience," Dr. Moloney reported.

"The interview with Robert Vogeler," Dr. Moloney stated, "presents clear evidence of the type of superego structure with which we are concerned."

(The superego is that part of the mind which acts as a monitor, or as some consider it, as the conscience, over thoughts and actions and to some extent feelings.)

"Several points should be emphasized," Dr. Moloney said. "First, Vogeler's father was German, a nationality group which puts great store by authoritarianism, espe-

cially of the father. However benevolent this authoritarianism may be in actual application, it includes a generally clear tendency to defer to the male parent as the final authority in all family matters, particularly in the disciplining of children. The father in this instance was a member of a Christian sect noted for rigidity and rather extreme deference to a still higher authority, God.

"One may suppose that Vogeler's French mother may have been capable of greater flexibility and freer emotional activity than the father, which may well have contributed to her son's generally adequate emotional adjustment. Yet his mother, too, belonged to a highly authoritarian religious group. It is interesting that both parents permitted their son to elect his own religious faith; and interesting that he did not depart far, choosing one also distinguished by clearly defined ritual and routine accession to the higher authority of God, Jesus Christ, and the Holy Ghost.

Reliance Upon Superego

"It is not surprising that Vogeler identified himself with the naval service, again an authoritarian milieu, both in obtaining an education and in pursuing for a time a naval career. The patriotism he developed to a considerable degree is but an extension of the superego involvement which must surely have resulted from the earlier familial and religious atmosphere."

"It is clear," Dr. Moloney said, "that he felt there were certain prescribed ways of life for him and the feeling implied is that at some point in his life he accidentally or unconsciously might have surrendered to self, rather than acceding as usual to authoritarian demands. The statements regarding conviction of support from a higher power than his own self-preservation mechanisms and the resorting to invocation of that support through prayer demonstrate again his habitual reliance upon superego forces, especially in times of stress.

"I feel these statements in no wise differ from what Mr. Vogeler himself believes. He said he had been susceptible to guilt-feelings insinuated by the communists and pointed out that his patriotic and religious orientation encouraged the guilt-feelings. Perhaps most significant is his own expressed recognition of a difference only in degree between himself and Mindszenty."

Sustain Highest Possible Pitch

"Though the interpretations to some extent may be conjectural, such an accusation cannot be made with reference to the methodology of the communists. Vogeler and other sources all show that the communists have employed, as do the Zennists, the technique of inducing exhaustion after a prolonged period of unrelenting application of intellect to a problem. Vogeler was kept at the highest possible pitch through application of stimulants, lights, noise and general badgering until he had reached a state of being completely exhausted, emo-

tionally and physically. Then he was allowed to relax. At this point, and not before, he gave up. While for him an actual theophany (flash of inspiration) did not occur, certainly the equivalent is evident in his memorizing and mouthing specious answers to specious questions. One cannot imagine more that a small portion of his normal intellect and reasoning power remaining at the time of his trial.

Only Real Authority

"By obeying the communists' orders to memorize, recite and sign the confession, Vogeler was merely acceding to the only authority which any longer seemed real to him. The authority of his captors for the moment served as the stern father, God, or military commander. To accede to them under such circumstances was identical with acceding to parent, priest, or other authority in normal life situations. This is not to say that he transferred his allegiance and became imbued with communist philosophy. Instead, he achieved a psychic transfer of the control of his self-system from the authoritarian superego-systems which had formerly governed it to this new power which now prevented his self-determinism.

"Consider Vogeler's situation in the light of what occurred with St. Paul: Saul had previously surrendered his self-system to the authoritarian-system represented by Jehovah and the dogma of Judaism. When his theophany occurred, Saul resolved his inner conflict, not by defeating the authoritarian or superego-system, not by trusting his self-system into control, but by substituting a new superego-system for the old, i.e., Christianity for Judaism.

No Uniformity of Response

"American intelligence officers have marked the amazing willingness of Japanese prisoners in World War II to answer honestly and without hesitation any and all questions put to them by their captors. Some Americans have believed such behavior to be the result of lack of preparation of Japanese soldiers for the eventuality of capture. On the contrary, it is a striking example of the ready accession to the demands of anyone in authority which is inculcated in every Japanese from early infancy onward—yet another example of the St. Paul-Vogeler type of psychic transfer from one superego-figure to another."

"I must, however, emphasize," Dr. Moloney said, "that there is no great uniformity in the response of their (the communists) victims. I postulate that the differences in the length of time it takes for the communists to reduce various victims to the point of confession, as well as the individual's choice of escape from the communist menace before capture, or suicide or escape after capture (or unsuccessful attempts at either) is the result of innate differences in the psychological makeup of the various individuals.

"Jan Masaryk, for example, may have elected suicide because of a well-developed

self-system and a clear understanding of reality. He may well have understood that martyrdom resulting from submission to interrogation and imprisonment could have value neither to his countrymen nor to himself. One-time Czech President Benes may have escaped from the range of the communists because he, too, was unwilling to surrender self to authority and because, realistically, he knew that he could best serve his people as a free man rather than as a prisoner of the communists.

"I have a strong feeling that even if Benes and Masaryk had been put through the type of interrogation to which Cardinal Mindszenty submitted, they might never have 'confessed.'"

It seems inescapable," Dr. Moloney concluded, "that groups of individuals predisposed to develop psychoneuroses from the traumata (emotional as well as bodily injuries) of war, especially enemy propaganda, would to a great extent be the same groups predisposed to react positively in response to the techniques employed by the communists to obtain false confessions."

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GENERAL SCIENCE

Award Top Prizes At Fourth Science Fair

► THE FOUR first prizes in the Fourth National Science Fair were awarded to: Doris Jean Hermes, 17-year-old student of Martinsville (Va.) High School; John D. Rather, Jr., 15, The McCallie School, Chattanooga, Tenn.; Patricia Ann Kirchoffner, 17, Devils Lake (N.D.) Central High School, and David Michael Young, 17, P. A. Allen High School, Bluffton, Ind.

Each first prize consisted of \$125 in scientific equipment. The Fair was held May 7-9 at the American Museum of Atomic Energy, Oak Ridge, Tenn., with 71 high school students competing for top honors.

Competition was so intense and close that six instead of the announced four second prizes, each of \$75 of scientific equipment, were awarded. These went to: Carolyn Evans, 17, Martinsville (Va.) High School; Larry Collins, 17, Classen Senior High School, Oklahoma City, Okla.; Albert C. Petersen, Jr., 17, Farmington (Conn.) High School; Stewart Tanner Trull, 17, Fountain Hill High School, Bethlehem, Pa.; Peggy Lenderking, 16, Martinsville (Va.) High School, and Travis Elton Stubblefield, 17, Denton (Texas) Senior High School.

Four third prizes, each consisting of \$50 in scientific equipment, were awarded to: Claire G. Vilandre, 18, Notre Dame High School, Central Falls, R.I.; Jasper Ivan Rhode, 18, Jefferson High School, Lafayette, Ind.; Martial Leon Thieboux, Jr., 16, Whittier (Calif.) High School, and Douglass Gray Saunders, 15, Oak Ridge (Tenn.) High School.

The National Science Fair is conducted by Science Clubs of America, a SCIENCE SERVICE activity, with newspapers cooperating.

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