

Philippines Will Not Build Nuclear Bombs

► THE REPUBLIC of the Philippines has no intention now or ever of building atomic or hydrogen bombs, President Ferdinand E. Marcos said in Washington, D.C.

Nuclear power should be used only for peaceful purposes, he stressed, and then only under United Nations regulations.

"The less nuclear bombs in the hands of anyone, the better," President Marcos stated in replying to a question from SCIENCE SERVICE asking whether the Philippine Government was interested in developing nuclear weapons. President Marcos told a news conference at the National Press Club that the U.S. Atomic Energy Commission is cooperating with experts in his country in developing peaceful uses of nuclear power for the benefit of all the people.

One result of his talks with President Lyndon B. Johnson, President Marcos said, will be a sharp increase in the amount of technical knowledge and know-how exported to the Republic by the United States.

He would like to see his country become the headquarters of an organization established to determine whether or not typhoons can be controlled and, if so, how.

"We are reaching the day when perhaps man will be able to control the weather," President Marcos said, "and this is one of the areas President Johnson and I talked about."

In a lighter vein, he noted that a Filipino Congressman had once introduced a bill outlawing typhoons.

BIOTECHNOLOGY

Men and Machines Add to Submarine Air

► THE CREW of a nuclear submarine has at least one thing in common with astronauts in space: the need for pure air. To get it, they must take care of not only the gases exhaled by themselves, but also of those given off by the machines themselves.

Nuclear submarines, as a result of their ability to stay submerged almost indefinitely without need for fuel, face a particularly critical problem. The U.S. Navy's answer, described to the American Institute of Chemical Engineers meeting in Atlantic City, N.J., includes a combination of adsorbents and catalysts.

While the men themselves exhale carbon dioxide, there are other "various off-gases from men and machines" that have to be removed from the submarine's atmosphere to make it breathable again.

To handle "a foul air mixture containing hydrogen, nitrogen, carbon monoxide, oxygen, carbon dioxide and

several freon gases," reported W. R. Calvert of the U.S. Navy Marine Engineering Laboratory, Annapolis, Md., the first step is to pass the mixture through chemicals whose crystals or particles will absorb most of the contaminants. Next, the hydrogen and carbon monoxide are catalytically combined into water and carbon dioxide which can then be removed.

In space the problem is even more severe. Without the pressure of an atmosphere pushing down on the surface, almost every material that has ever gone into space has been found to give off some kind of contaminant. Even in the slight (five pounds per square inch) pressure of a Gemini spacecraft cabin, which is about one-third that at sea-level, plastics, metals, even glass all release a few tiny particles or gases.

Space flights so far, which have already exceeded the length of a round-trip to the moon, have not presented any difficulty from this source. Manned flights to other planets, however, which will last months or even years, have necessitated laboratory research to minimize the contaminant-producing materials, thus easing the load on the spacecraft's air-purifying system.

TECHNOLOGY

Concorde Engine Goes Up And So Does the Cost

► ON THE SAME day as the first flight test of the power plant for the Anglo-French Concorde supersonic transport came the news that development costs for the aircraft will now amount to \$1.4 billion.

The original estimate for Concorde, when the project began in 1962, was \$420 million to \$480 million, to be borne equally by Britain and France. By 1964, this had risen to \$770 million, and by early this year the estimate was being quoted at \$970 million.

The vast latest bill is made up of \$1.03 billion for all work up to initial certification of the Concorde in 1971, another \$230 million for further development until 1973, and a "contingency" allowance of another \$140 million.

The increase to the latest figure is due to changes in the design, to wage increases and to underestimation in the earlier estimates. It also includes provision for further development of the project, not previously accounted for.

For its first flight test, an Olympus 593 power plant was bolted in a single belly-mounted nacelle under the bomb bay of a Vulcan jet bomber. Without the aid of the Vulcan's normal jet engines, the aircraft was able to fly at close to the speed of sound.

The Concorde is at present priced at only one-third of what it will cost to develop a U.S. SST. But there are still five years to go!

IN SCIENCE

MEDICINE

More Men Suffer From Pneumothorax

► PNEUMOTHORAX, a respiratory disorder is often seen in young adult populations.

Pneumothorax is the accumulation of air between the chest wall and lung—the pleural space. It is associated with varying degrees of lung collapse and is caused by air leaking out of a small tear in the lung surface.

"About five times as many men as women suffer from pneumothorax," Dr. John McMaster, director of the University of Wisconsin Center, reported. "The cause of pneumothorax is unknown as is the reason why more men are prone to the disorder than are women."

Sudden pain and some shortness of breath are the usual symptoms of pneumothorax, Dr. McMaster said. The condition often improves by itself as the lung gradually expands. Occasionally, however, the air must be aspirated from the pleural space by a needle or soft rubber tube inserted in the chest between the ribs.

Dr. McMaster recently completed a survey of common health problems on the UW Madison campus. The survey is representative of typical health problems among young adults across the nation.

MEDICINE

Heartburn Diagnosed By Easy X-Ray Test

► MILD GASTRIC discomfort, frequently called heartburn, is often difficult to diagnose, but when the irritation develops into a more serious matter, diagnosis and treatment are often available.

Now a simple X-ray test has been devised by a team of physicians from Johns Hopkins Hospital and University, Baltimore, Md., to help trace the source of the problem and permit ready treatment before the mild discomfort grows into a more serious problem.

More than 100 patients with symptoms of persistent heartburn, chest pain and regurgitation have been examined with this technique.

Drs. Martin W. Donner, Martin L. Silbiger, Perry Hookman and Thomas R. Hendrix of the departments of radiology and medicine, used X-ray movies to study the effect of acid-barium swallow on the patients.

Their research findings were reported in Radiology.

E FIELDS

PSYCHOLOGY

Passive Delinquent May End in Prison

► A PASSIVE, UNAMBITIOUS juvenile delinquent is somewhat more likely to end up in prison as an adult than an aggressive, defiant delinquent, a British study indicates.

A study of 200 boys first seen as delinquents 12 years ago is evidence of this. Their progress has been followed ever since.

Dr. T. C. N. Gibbens, an expert on forensic psychiatry at the Institute of Psychiatry in London, said that among the extensive cross-correlations made on the personalities and histories of these boys, one factor emerged which was "fairly strongly related to reconviction."

The boy with the worst chance of avoiding prison was characterized as having "an inadequate response to life." He was "helpless, unrealistic, lacking in energy, solitary, submissive, with weak sex interest, marked conflicts, and in the mentally abnormal group."

By contrast, Dr. Gibbens reported in the British Medical Journal, Sept. 17, 1966, "those rated as aggressive, over-assertive, realistic, extrovert and dynamic had a neutral or slightly favorable outlook."

Perhaps the latter qualities, if they are not excessive, enable a delinquent "to make his way in the world, to marry and to settle down," without graduating to adult crime, Dr. Gibbens suggested. On the other hand, a passive, unhappy delinquent, unable to meet normal challenges, may simply settle down in prison as an adult, accepting life there all too readily.

Dr. Gibbens noted there may be many other passive boys who cause trouble only after they reach adulthood and cannot support themselves.

"The implication," he said, "is that child-care services will need to pay attention to negative patterns of maladjustment as well as the positive ones which draw attention to themselves."

TECHNOLOGY

Building Material Made From Soil and Petroleum

► SOIL and petroleum are the bases of a new building material developed by Esso Research and Engineering Company, Linden, N.J.

The new material, known as BMX, can be used as a direct replacement for conventional masonry products such as concrete blocks and fired clay bricks. Raw materials for BMX are petroleum asphalt and natural soils that are not

generally useful for agricultural purposes. Chemical additives are often also used. Materials for making BMX are available in many parts of the world.

The immediate market for BMX, Dr. McNab said, is in the large and rapidly growing construction industries of the United States and Europe. A longer-range market would be in those areas of the world where the lack of suitable building materials has contributed to widespread inadequate housing.

BMX has been tested in brick and block form and in varying shapes and sizes. These tests showed that the material has the engineering properties associated with premium masonry products. It also has lower manufacturing and end-use costs.

In most locations, for example, blocks from the product are two to five cents cheaper than comparable grades of concrete blocks.

PSYCHIATRY

Psychotherapy Improves Patient's Earning Power

► PSYCHOTHERAPY shows results in terms that could hardly be more concrete—money.

The Postgraduate Center for Mental Health in New York reported that 450 outpatients increased their median income by \$28 per week after 57 sessions, roughly a year's therapy. By contrast, a similar group of people in the general population showed only a \$6-per-week rise, over the same period.

A non-profit clinic offering moderately-priced psychotherapy, the Postgraduate Center usually handles people in the lower-middle-income, \$90-per-week category. These include mostly white-collar workers, some students, teachers, and artists and a few manual and skilled workers.

Highest salary gains were recorded among patients over 38 years of age, which means, said research director Dr. Bernard F. Riess, that "we were not dealing with a young new-working population changing to better jobs."

In fact, the benefits of therapy showed up as salary increases on jobs already held, Dr. Riess reported.

He attributed the job improvement to increased self-acceptance and a greater ability to "fight for oneself."

Most of the patients could be characterized as "passive-aggressive" with an emphasis on the passive, Dr. Riess said. Since American society "tends to elevate aggression almost to a social good, passivity becomes a bigger problem" than it would otherwise be, he said.

A few in the study, for reasons as yet unknown, showed a decline instead of an increase in their pay. Dr. Riess thinks one answer may be that these patients traded an unsatisfactory but well-paying job for a more fulfilling occupation at lower pay.

PSYCHOLOGY

Parents May Make Healthy Children Ill

► PARENTS may be perpetrators of the so-called "vulnerable child" syndrome.

Dr. Harris C. Faigel of USAF Hospital, Andrews Air Force Base, Washington, D.C., reported in GP, September 1966, scientific publication of the American Academy of General Practice, that parents who have once feared for their child's life may, after the child recovers, unconsciously begin to create a "disease" more tragic than the original. Dr. Faigel, who operates an adolescent clinic, stated that, having expected their child to die, parents insulate themselves against more grief by treating the child as a sickly failure even after a complete recovery.

They "hold him at arms length," and "wrap him in a cocoon of protective overindulgence," he said. Children behave according to the way they are treated, Dr. Faigel contends, and such children are in real danger of developing the same emotional problems as truly handicapped children who are overprotected.

The "vulnerable child" syndrome is much easier to prevent than to correct, warns Dr. Faigel. To help parents avoid the syndrome, the doctor must make sure they understand the nature of the child's illness and be an expert at anticipating and drawing out hidden fears.

MEDICINE

Long Wait for Surgery With U.K. Health System

► A WAIT of up to seven years for certain kinds of surgery is casting a pall over Britain's National Health Service.

Patients, especially the elderly and those in need of surgery, will suffer and pressure on over-burdened family doctors will get worse as a result of cuts in hospital services, doctors working under the National Health Service forecast.

Medical opinion from many different quarters is unanimous about the effect of the cuts, which were announced by the Minister of Health.

One feeling is that reduction of already inadequate hospital facilities must increase the work of Britain's 23,000 general practitioners, many of whom are already overworked.

The waiting list of patients, which soared last year to well over half a million, is bound to rise more, the doctors believe. The big back-log is in general surgery, where already people may have to wait up to seven years to have varicose veins or hernias treated.

The Minister has left it to hospital administrators and consultants to work out how services shall be curtailed.