

PUBLIC HEALTH

Teach Your Children To Play Safely

► MILLIONS OF youngsters are now eagerly looking forward to the day when "school's out" and vacation starts. Lessons will be forgotten for the summer but safety lessons should be remembered. Parents who want to make vacation days safety days will follow these suggestions from the Minnesota Public Health Association:

Teach children the dangers of the street. Impress upon them the necessity of following traffic signals and of looking both ways before they cross the street.

Don't allow children to play in the street under any circumstances. There is a vacant lot or a playground in every neighborhood where children can play.

Forbid children to play near railroad tracks or crossings.

Teach children to pick up broken glass, rusty nails, rocks and sticks that might be lying around the yard. This simple precaution may prevent serious cuts and bruises.

Limit the use of matches to older children who are responsible. Teach children to strike matches away from themselves and to light fires with the wind blowing away from them. If, however, a child does play with fire and his clothes become ignited, he should be taught not to run, but to roll in the grass or on the pavement, or to wrap a coat or rug around him.

Swimming lessons are a good investment for children. Even if a child knows how to swim, he should not be allowed to go into the water alone.

Youngsters should realize that jumping in after a drowning victim is of no use unless the rescuer can swim well enough to keep the victim afloat or to bring him to safety.

As soon as they are old enough, children should be taught something about first aid. Even a seven-year-old can learn not to rub his eye when there is something in it, to stay out of the hot sun, unless he is protected from the rays, and to stay away from unfamiliar plants and weeds.

The most important rule of all is BE CAREFUL. Remember that every accident is caused by someone's carelessness.

Science News Letter, June 2, 1951

TECHNOLOGY

Air Jets Check Fabrics Rolling from Machines

► A CONSTANT check on the thickness of rubberized cord fabrics for automobile tires rolling from machines at 180 feet per minute is being made in England with two jets of air played on the moving fabric and a pressure measuring system in a pneumatic device.

This continuous pneumatic gaging system, developed by the British National

Physical Laboratory in Teddington, can also be used for the automatic gaging of wire, yarn and textile materials. It is of particular importance in the production of cord fabric for tires because this rubberized material is tacky and other methods of measuring its thickness present difficult problems.

In this continuous gaging device, the material under measurement is passed through a measuring head to which compressed air is supplied. The material restricts the outlet of the air, and the varying degrees of restriction as the material moves are reflected in variation of pressure in the pneumatic system. These variations are amplified and operate a recorder.

Science News Letter, June 2, 1951

INVENTION

Improve Magnetic Method Of Corrosion Detection

► IMPORTANT in oil production is an improved magnetic method of detecting corrosion in pipes underground, such as in the casing of an oil well. Joseph F. Bayhi, Tulsa, Okla., is the inventor. He received patent 2,553,350 with rights assigned to Standard Oil Development Company.

In this instrument, like in some other types, a bomb-like device holding a magnetic scanner is lowered into the well. In this, unlike in others, the signals produced by the scanner are unaffected by variations in the gap between the scanner and the walls of the pipe. The signals are produced by changes in the magnetic field caused by deformities in the pipe. The instrument invented by Mr. Bayhi will indicate corrosion either inside or outside the casing.

Science News Letter, June 2, 1951

GENERAL SCIENCE

Nine Years Draft Liability For Few Months Deferment

► AN ESSENTIAL worker in defense industry who receives an occupational deferment for a few months would find himself liable to the draft nine years longer than anyone else, if the House version of the draft bill is passed.

This was pointed out by the Engineers Joint Council, representing five large engineering societies, in a telegram to the Congressional conference committee on the draft bill. Under the House version, anyone receiving an occupational deferment would become liable for the draft until the age of 35, rather than 26. This would include college students.

The engineers council declared that few essential workers would ask for deferment under this provision and that this would seriously cripple defense industry. It asked that the Senate version of the bill, without this provision, be approved.

Science News Letter, June 2, 1951

IN SCIENCE

INVENTION

Barber May Now Sit While Cutting Hair

► THE BARBER, who has worked on his feet during the entire history of the modern barber shop, may now sit down while cutting his customer's hair, thanks to an inventor who received a patent from the government on a working stool for his comfort.

The stool is an adjustable one and can be raised to any desired height, moved inward and outward from the customer, and swung from the right side to the left side of the customer with the greatest of ease. It stands on its own support, which contains the adjustments. Its base is an extended affair that rests under the base of the customer's chair.

Inventor is George W. Booth, Charleston, W. Va. He received patent 2,553,545. Dentists can also use this swinging stool, he claims.

Science News Letter, June 2, 1951

ENGINEERING

Two-Cycle Engines Expand Use of Diesel Trucks

► USE OF the two-cycle principle in diesel engines for trucks, instead of the usual four-cycle principle, is responsible in large measure for the greatly increased number of diesel-powered trucks now in use, the Society of Automotive Engineers meeting in San Francisco was told.

Diesel truck sales totaled only 489 in 1938, the engineers were told by H. B. Ford of General Motors. During 1950, sales soared to 12, 669. Sales the present year are continuing on a high level and "the future heavy duty field looks predominantly diesel."

The adoption of the two-cycle principle presented many new problems. The two-cycle principle requires fuel injection to every cylinder each revolution of the crankshaft. Thus the injection system has to meter, time, build high pressure, and atomize twice as often as a four-cycle diesel at the same speed.

Another addition is the use of what Mr. Ford called the uniflow scavenging principle. In this, the piston uncovers ports in the bottom of the cylinder, allowing a fresh air supply under slight pressure to be forced through the cylinder. This pushes exhaust gases through two exhaust valves at the top of the cylinder. The valves are so timed that a quantity of scavenging air goes on past them and cools them.

Science News Letter, June 2, 1951

E FIELDS

RADIO

Community Antennas Bring TV Programs

► "TV-BLIND" valleys and the fringes of television areas are now receiving good reception on home television receivers with the use of community antenna systems. Try-outs have already been made in at least two Pennsylvania mountainous areas and satisfactory results are reported.

In this community antenna system, a television pick-up and distribution service is installed on a high mast on the highest nearby elevation. Coaxial cables are used to bring the received TV signals from the antenna and distribute them through the area to be served. Amplifiers are used in the distribution system to boost the strength of the signals. Lead-off lines from the coaxial cables bring the signals into the homes. On the antenna mast are separate elements tuned for each channel on which programs are available.

An RCA installation at Pottsville, Pa., is now in operation. It is the RCA Community TV "Antenaplex." More than 275 families are now subscribers. Programs are received from three stations in Philadelphia, 75 miles away. Good reception is reported. Subscribers pay an initial fee of \$135, and \$3.75 monthly. This Antenaplex is an expanded version of a type now used in hotels and apartment houses.

Jerrold Electronics Corporation of Philadelphia also has a successful installation at Lansford, Pa., in Panther Valley, 75 miles from the nearest TV stations in Philadelphia. It is called the Jerrold Mul-TV Antenna system. It is a version of the Jerrold master antenna installations in many hotels, apartment houses and other buildings. The manufacturers claim that, in addition to its use in TV-blind valleys, it can be used to receive, amplify and distribute TV programs to homes in prairie country from 75 to 125 miles from the nearest TV station.

Science News Letter, June 2, 1951

TECHNOLOGY

Cobalt and Platinum Make Powerful Small Magnet

► TINY MAGNETS containing cobalt and platinum, made by General Electric, are claimed to be the world's most powerful permanent magnets in small sizes. (See *SNL* May 26.) They are less powerful in large sizes than some magnets long in use.

Laboratory experiments with the new magnet in the size of an eraser on a lead pencil show that it has a lifting power 24 times as great as a similar sized Alnico-5

magnet. The latter is generally rated as the most powerful now in commercial use. The eraser-size new magnet has about eight times more resistance to demagnetization than the Alnico-5, it is estimated. This resistance to demagnetization enables the cobalt-platinum magnet to be more efficient in smaller sizes than any permanent magnet now in commercial use.

Other advantages of the new magnet are its ductility, or ability to be drawn into wire or thin sheets, and its comparative ease of machining. Alnico magnets are machined only with great difficulty.

Production of the new magnet will be limited by the present shortage of cobalt for non-defense purposes and the high cost of platinum. Scientists do not foresee it replacing presently used Alnico magnets, but believe it may be used in new applications for which existing magnets are not suitable.

Science News Letter, June 2, 1951

AERONAUTICS

Jet Airliners Go on Regular Service Soon

► JET AIRLINERS will go into regular service on the London-Rome-Cairo route sometime next winter, it has been announced. Despite the rearmament program, British Overseas Airways Corporation in London will switch from piston engines to 490-miles-per-hour De Havilland Comet Jets, of which 14 have been already ordered.

A British-built jet airliner has been in experimental use during the past year. It is the success of this airplane that is responsible for the coming use of jet airliners on regular scheduled service. Recently it flew a non-stop route from London to Cairo, 2,200 miles, in 5.5 hours, half the time required for piston-type transports.

Science News Letter, June 2, 1951

ARCHAEOLOGY

Spring in Panama Yields Tons of Fossil Bones

► A SPRING in Panama, that existed probably even in ice-age days, has yielded up about three tons of fossil bone remains of horses, deer and turtles much like the animals of the same families today.

Dr. C. Lewis Gazin, Smithsonian Institution curator of vertebrate paleontology, made the collection, assisted by Franklin L. Pearce, also of the Smithsonian Institution. The spring is near the town of Pese on the Azuero Peninsula in western Panama, and is believed to have existed as a water-hole for the animals of that region during ice-age times.

Several limb bones and other parts of the skeleton of a mastodon, gigantic elephant-like animal, are included in the collection. The specimens are to be divided between the U. S. National Museum and the National Museum of Panama.

Science News Letter, June 2, 1951

MEDICINE

Bone Grafts in Future Will Be More Successful

► BETTER BONES for grafting and more success with the grafts are coming in the future, it appears from studies reported to the American Academy of Orthopaedic Surgeons. Some bones undergo a period of "death and resurrection" when transplanted to a new location, Drs. Marshall R. Urist of Los Angeles and Franklin C. McLean of the University of Chicago reported.

These are bones stored under refrigeration in hospital bone banks and called devitalized grafts. When these were placed in the front part of the eyes of rats, the bone bits "died." A month or two later, however, blood vessels and other cells from the surrounding eye tissue invaded the "dead" bone grafts. The grafts then acquired the ability to make new bone.

Growing cartilage or material from a bony callus on a healing broken bone was more powerful than bone itself in making new bone, these doctors found from their rat eye window studies. Bone grafts taken from other parts of the animal's body possessed inherited powers to make new bone. And grafts made directly without storage under refrigeration took in less time.

Bone for grafting can be stored in germ-free containers at room temperature, instead of in refrigerators, if it is preserved by a freeze-drying method. This new development in bone banks was reported by Capt. F. P. Kreuz and Drs. George W. Hyatt, T. C. Turner and A. G. Marrangoni of the U. S. Navy Medical Corps at Bethesda, Md.

Storage in a deep freeze cabinet, now customary, keeps bone for from three months to a year. But with the new method the bone can probably be stored for several years. In this method the bone is frozen, to stop the growth of germs, and then dried in a vacuum, something like the freeze-drying method of preserving blood plasma.

Science News Letter, June 2, 1951

INVENTION

Tandem Rotor Helicopter With Two Rotors Patented

► THE TANDEM rotor helicopter manufactured by the Piasecki Helicopter Corporation, Morton, Pa., is further protected by patent 2,552,864 issued to Frank N. Piasecki of Lansdowne, Pa. An important object of the invention is to provide a rotary wing aircraft having two rotors, one at the front and the other at the rear of an elongated fuselage, which are mounted and geared together in a relationship so that the rotors may intermesh when flapping without danger of blade interference. Another object of the invention is to provide a new and improved drive system arrangement.

Science News Letter, June 2, 1951