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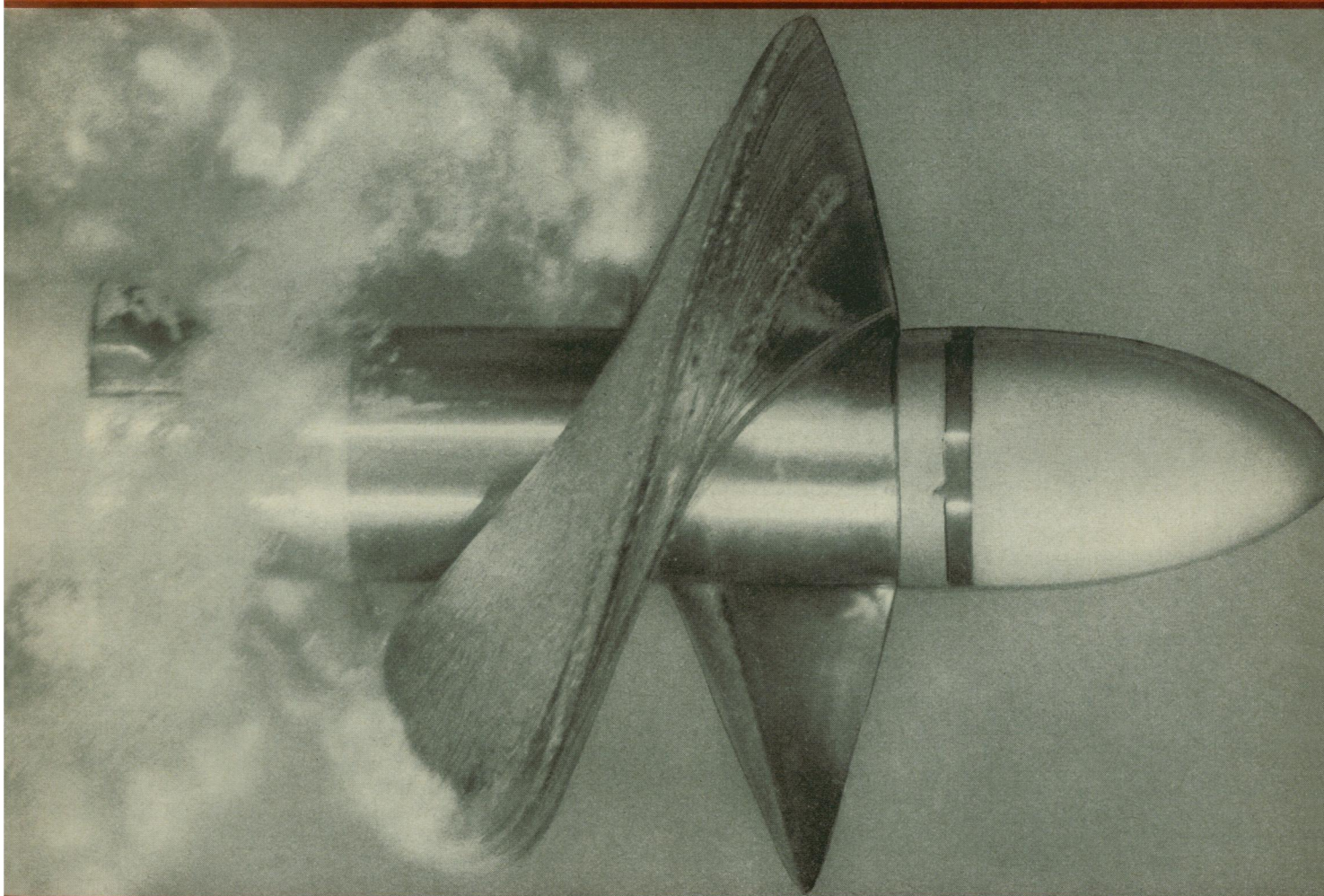
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SCIENCE NEWS LETTER

®

THE WEEKLY SUMMARY OF CURRENT SCIENCE



Ship's Super Prop

See page 169

A SCIENCE SERVICE PUBLICATION

Kodak reports on:

finding out whose lubricant is spattering . . . a ceramic magnet, a coil, a capacitor, a germanium diode, and some nylon bearings . . . color movie film that duplicates better

A venture in soap

Picture a large plant where each day they manufacture 10ⁿ miles of a certain critical material, 42 inches wide. Cleanliness is the watchword, of course. On an average of once in five years, however, a piece of the product is found in the course of its final inspection to have a small spot on it. There is some value in fixing the guilt, even though merciful disposition of the matter by simply slitting the throat of the superintendent of the offending division is considered poor industrial relations.

The little spot probably originated as a tiny particle of lubricant from somebody's machinery. Whose?

Thanks to an idea from the teeming brain of a young man whose father-in-law always knew he'd make good, the question can be answered. Each division's lubricants are tagged with a little characteristic soap in which the metallic element is a scarce and heavy one. When the spot alarm sounds, a quick excision is made and the mass spectrometer fingers the suspect.

We make the exotic soaps. A typical one is 2-ethylhexanoic acid indium salt. The light, branched-chain acid radical permits blending into almost any commercial lubricating oil or grease, with little effect on lubricating qualities at the level of 0.25%. We could make such soaps for anybody, from any element on the left side of the periodic table and from any reasonable acid he wants, including stearic.

This would be on the basis of our custom synthesis service, not as listed compounds like the other 3700-or-so Eastman Organic Chemicals. Let's keep it that way until a system of trace-coding for lubricants gets covered by international convention.

This isn't our first venture into soap. We can remember back to when we ground sodium ricinoleate by hand for the toothpaste trade. You can find out more about the custom service or get a copy of "Eastman Organic Chemicals List No. 41" by writing Distillation Products Industries, Eastman Organic Chemicals Department, Rochester 3, N. Y. (Division of Eastman Kodak Company).

This is another advertisement where Eastman Kodak Company probes at random for mutual interests and occasionally a little revenue from those whose work has something to do with science

4 twirls for 1/5 joule



Here is a new Kodak device, obtainable for only \$13.95 (list). It converts a twirl of your fingers into a half-million-erg jolt of d-c energy, four twirls for 200 watt-milliseconds. With a thousand ohms of load resistance, 63% of the four twirls-worth of energy is discharged within 150 milliseconds, in a surge that starts at 50 volts. The energy can be taken off from the socket in the hinged cover. To trip, you close circuit between the projecting screw at the left and the lower stud, first having wedged the knurled nut firmly to the left in its slot.

Don't complain that the device could be designed for better mechanical convenience. We are merely trying to be helpful. For commercial practicability, we have had to design the *Kodak Generator Flashholder* to the convenience of those who want to snap it onto a camera—almost any camera—for photoflash pictures that will never miss synchronization because of aged batteries.

For your part, you ought to be willing to put in a few minutes of junkbox-inspired inventiveness in adapting the gimmick to your own high scientific purpose. There is no need to write, wire, or phone. Just march down to the nearest camera counter.

A green look

We used to make a 16mm product designated Kodachrome Commercial Film. If you loaded it into a camera, exposed it according to directions, had it properly processed, and projected it, the result would look bad. The colors would be weak and washed out. The film

wasn't intended for projection. It was intended only to serve as an original from which numerous copies could be reproduced. The copies were excellent, much better than duplicates from the more familiar *Kodachrome Film*. Obviously, every movie studio had to have some of this, but who else?

Strange as it may seem to those who ignore certain long-range trends in the way man earns his daily bread, Kodachrome Commercial Film found many hundreds of customers.

Now we have something better for the same purpose. We have the new *Ektachrome Commercial Film, Type 7255*. It looks green in projection instead of just washed out.

Theory requires each of the three layers of the film to emerge from processing with its originally unexposed areas in a color complementary to the color to which that layer responds. Only theoretical dyes do this perfectly. Real dyes that can be formed *in situ* by combination of coupler compounds in the emulsion with the reaction products of the development process don't quite make it. It is possible, however, by fudging a little in the selection of all three dyes to play the errors off against each other and wind up convincing the color receptors in the human eye that nature is being simulated.

But the color receptors in a second piece of film are not the same as the color receptors in the eye. What convinces one does not convince the other. The film needs a little sharper gradient of response to red light than the eye needs. Thus it works out that what looks right to the film on which you are copying looks green to the eye.

What's the advantage of Type 7255 over Kodachrome Commercial? Improved speed, graininess, sharpness, latitude, and quality in the release prints. Who cares? Not just studios but movie technicians who learn such things from Eastman Kodak Company, Motion Picture Film Division, Rochester 4, N. Y., and work for organizations that understand how lucidly a 16mm projector can report on work in progress. Some R&D contracts even carry clauses specifying this form of lucidity.

Price stated includes Federal Tax and is subject to change without notice.

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This is the way you can join. Each member belongs to a club. Each club has a sponsor—a science teacher, parent, youth leader or professional scientist. The sponsor affiliates the club (see the coupon below) and receives all the free materials from SCA to keep the club informed and functioning.

Clubs can be small or large; size ranges from 3 to 700 members; average is about 25. Your club can be for boys and girls of any age, in or out of school.

Sponsors and members plan their programs together to suit the age and science interests of the group. SCA gives you many suggestions on what to do and how to do it.

TWO NATIONAL EVENTS are held each year especially for members of SCA. Your club can take part in both of them now or when your members are old enough.

The **Annual National Science Fair** (started in 1950) is held each spring in a different city. The NSF has been to Philadelphia, Pa., St. Louis, Mo., Washington, D. C., Oak Ridge, Tenn., Lafayette, Ind., Cleveland, Ohio, Oklahoma City, Okla., Los Angeles, Calif., and Flint, Mich. The boys and girls who show the best science exhibits in cooperating local science fairs get three-day all-expenses-paid trips to the National Science Fair, and a chance to compete there for honors and awards. Only sophomores, juniors and seniors in high school are eligible to go to the NSF but in most local science fairs boys and girls of all ages can compete for local honors. The host city for the NSF in 1959 is Hartford, Conn. In 1960 it is scheduled for Indianapolis, Ind.

The **Annual National Science Talent Search** (started in 1942) is held each year for seniors in high school who want to compete for \$34,250 in Westinghouse Science Scholarships and Awards for their college education. Annually an Honor Group is selected. Of these, 40 boys and girls, chosen as winners, also receive a five-day all-expenses-paid trip to Washington, D. C., to attend the Science Talent Institute. The 18th Science Talent Institute will be held in 1959. Experience in science clubs and participation in science fairs is great practice for those who are planning to compete in the STS when they are old enough.

20,000 Affiliated Clubs

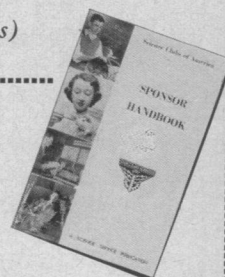
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