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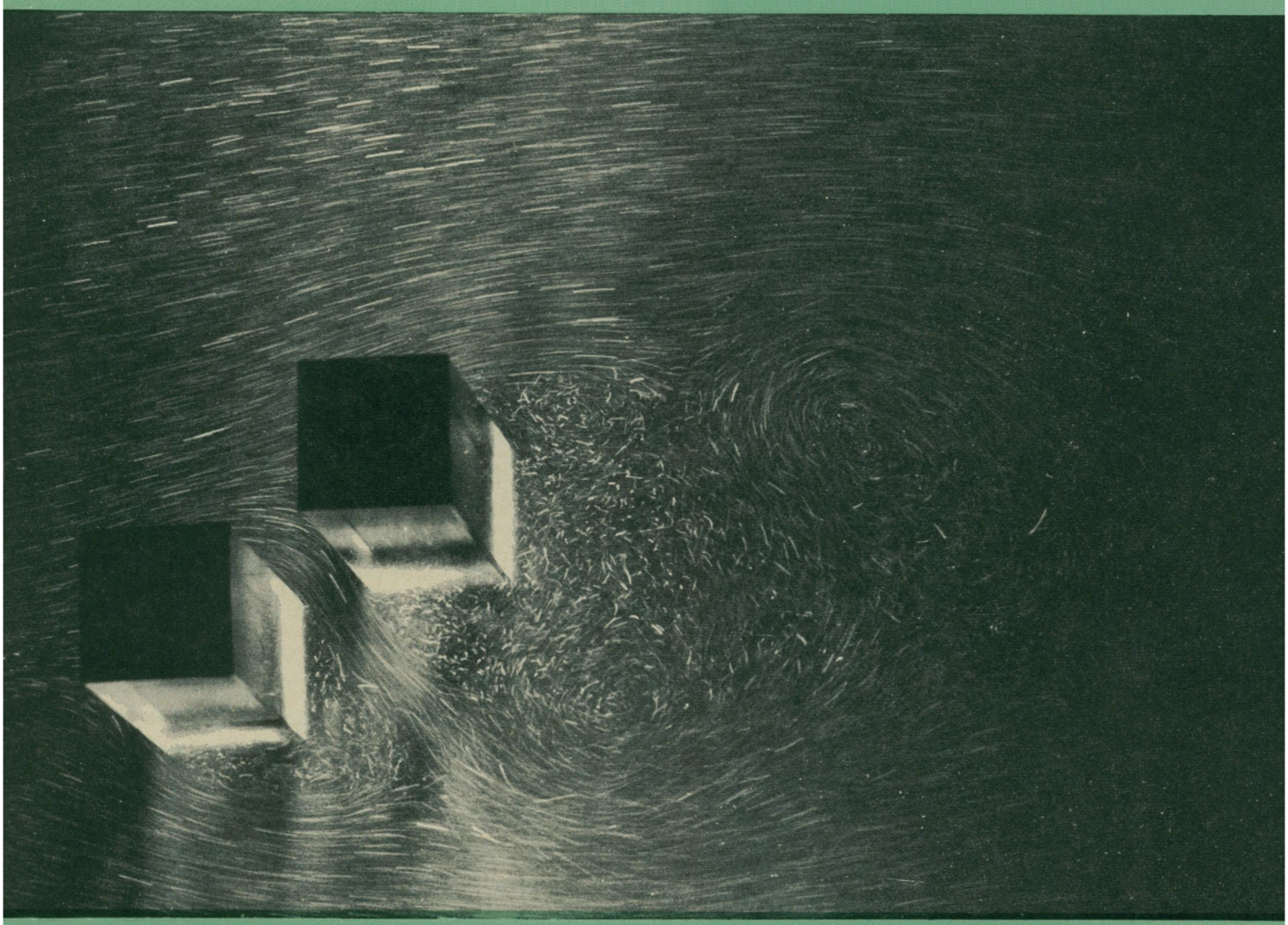
THE WEEKLY SUMMARY OF CURRENT SCIENCE



National Physical Laboratory

Wind Patterns

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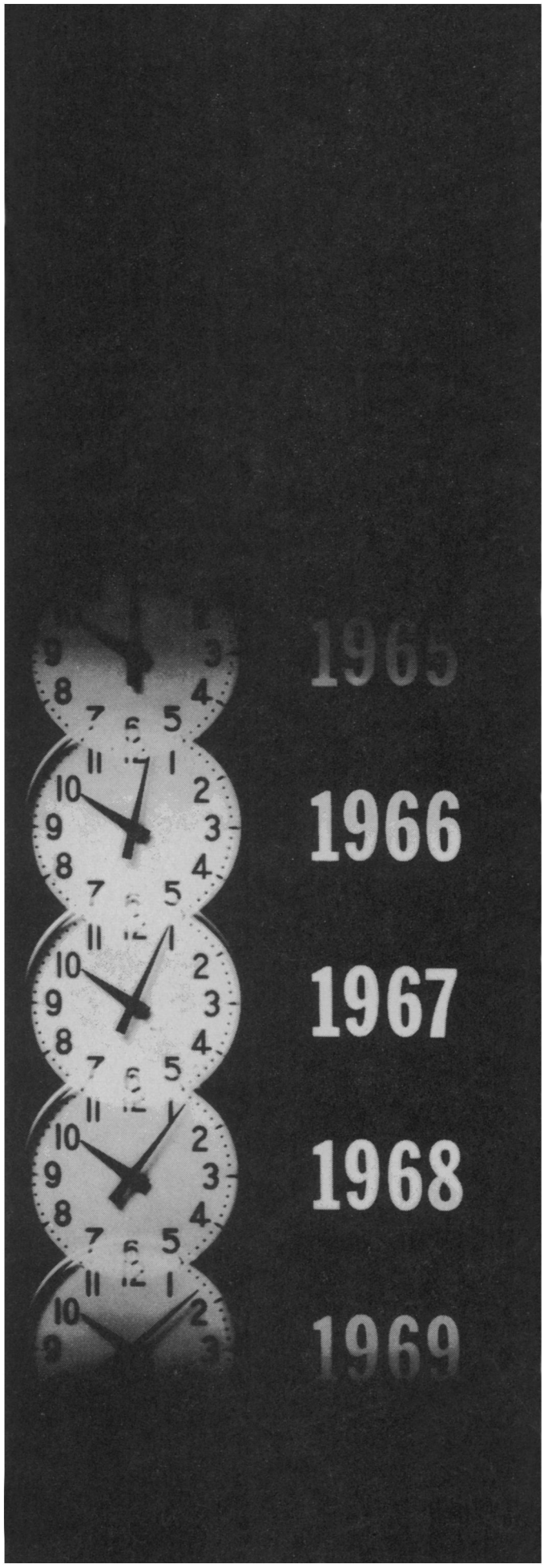

One of a series briefly describing GM's research in depth

How we compressed a year into two minutes

In the creative synthesis of ideas, an end product frequently becomes the point of departure for a fruitful new train of thought. Such was the case when one of our research chemists set out to unriddle the mechanisms of corrosion on chromium plated trim . . . and wound up with a new accelerated corrosion test 1000 times faster than CASS, a widely used standard we helped develop years ago.

Actually, CASS (copper modified acetic acid salt spray) provided just the tool we needed to demonstrate that corrosion on nickel-chromium plating is a cathodically limited electrochemical process. A paper describing this work won the American Electroplaters' Society's award for ". . . the best contribution to the knowledge and art of chromium plating during the year 1961-1962."*

Then a new thought: Could the reaction be accelerated by somehow overcoming the cathodic limitation? As it turned out, we got around the limitation completely by devising a test that required only the anodic reaction at the specimen surface. The resulting electrolytic corrosion test gives nickel-chromium plating the equivalent of a year's service exposure in just *two minutes*.

Such tests have led to major improvements in the service life of automotive trim . . . another example of the way research in depth leads to a better way.

*R. L. Saur, "Toward Protective-Decorative Chromium Plating," *Plating*, Vol. 48 (Dec. 1961) 1310-1319.

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