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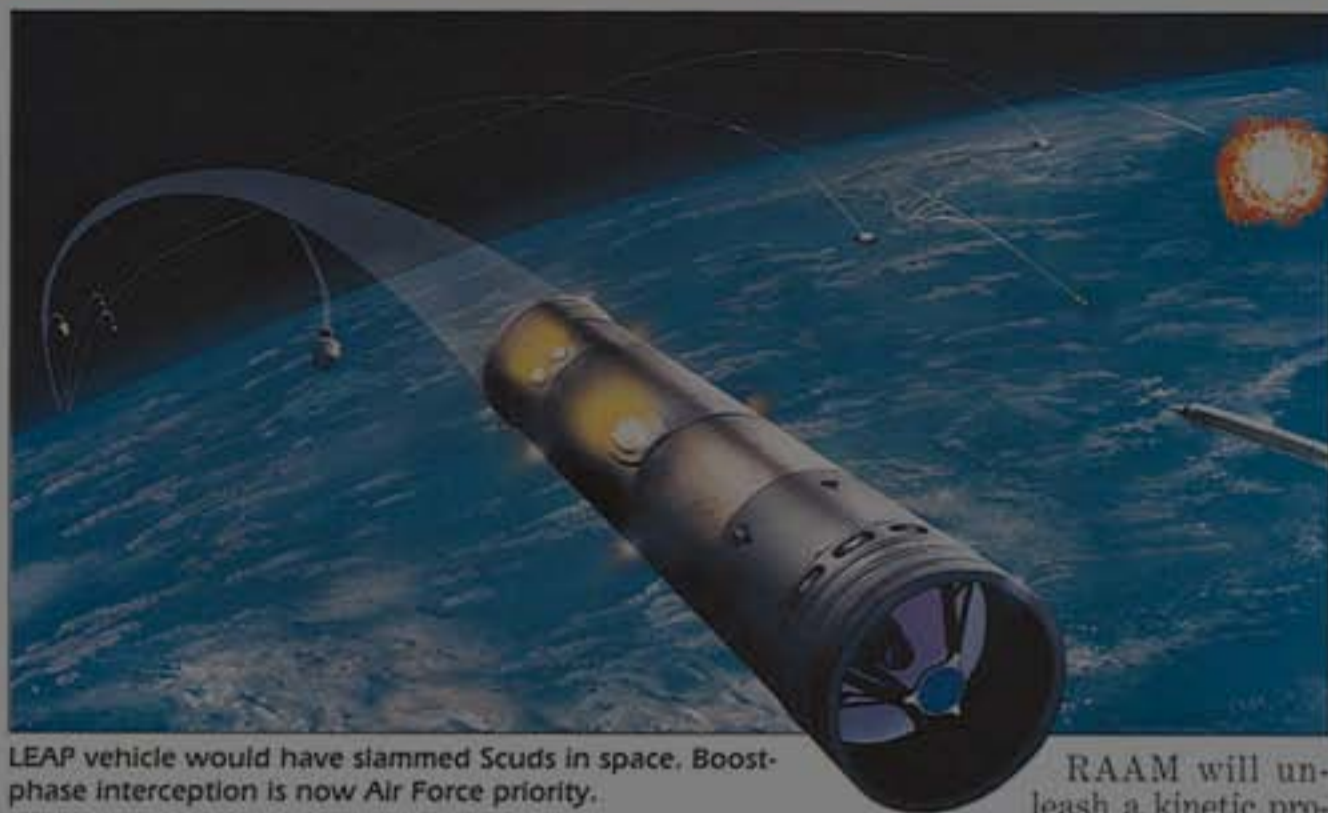
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## Scud-Buster With Mustard

SEATTLE, WA—Sheer kinetic energy remains the quickest solution to the tactical-missile threat, the Air Force reckons. With that in mind, officials had high hopes for a hybrid air-launched Scud-buster that would climb into space to pick off missiles. But now it looks as if planners will have to aim a little lower.

The original interceptor, conceived by Boeing, consisted of a supersonic Short-Range Attack Missile, or SRAM, tipped with a kinetic-kill vehicle. Originally designed to carry a nuclear warhead, the SRAM has proved capable of reaching space, where it would have released Boeing's Light-weight Exo-Atmospheric Projectile



LEAP vehicle would have slammed Scuds in space. Boost-phase interception is now Air Force priority.

(see Tech Update, page 26, Oct. '91). Instead, however, either a high-speed antiradiation missile or an AM-

RAAM will unleash a kinetic projectile. In this scheme, interception would occur below a 36-mile altitude—within 90 seconds of a Scud's launch.

## Crash Course In Anatomy

MILFORD, MI—General Motors safety engineers are inflicting damage more anatomically precise than ever on their long-suffering team of crash dummies.

They're putting foam-block inserts into the dummies' heads and abdomens to mimic facial bones and internal organs. In crash tests at the company's proving ground, the foam



GENERAL MOTORS PHOTO

sustains deflections that medical researchers can correlate to specific internal injuries. The facial inserts will aid refinement of airbag technologies, while the abdominal inserts will allow designers to tailor seatbelts more realistically.

Meanwhile, crash testers are also swinging a huge punching bag to simulate dangerous vehicle collisions with deer.

Crash dummy receives foam insert that will help engineers design safety systems to avoid internal injuries.

## Greenhouse-Effect Greenhouses

BANGOR, WALES—If global warming boosts our atmosphere's greenhouse effect, will plants go wild or will they wilt? To find out, the University of Wales' Institute for Terrestrial Ecology has set up a series of "solardomes."

Built of special glass that lets in the Sun's ultraviolet rays, the domes enclose different versions of future climate predicted by global-warming

models. Inside, the plants propagate under various temperatures and concentrations of carbon dioxide. Air monitors gauge levels of ozone, nitrogen oxides and water vapor.

The research effort dovetails with similar projects in the United States and abroad.

Solardomes hook up to ventilation system that controls mix of atmospheric gases under which plants are grown.



ORIGON PHOTO SERVICE PHOTO

## Manhole Maneuverer

OVERLAND PARK, KS—The next hard hat you see descending into an electric-utility manhole may belong to a robot. Kraft Telerobotics has developed the M5-A Scout to inspect underground transformer vaults if dangerous conditions are suspected. The machine can measure gases, detect temperatures and relay color video images to human co-workers on the surface.

Scout can maneuver through tight spaces, panning and tilting its color TV camera to inspect utility vaults.



(More Tech Update on page 32)