



U.S. Army

**MOBILE FLOATING ASSAULT BRIDGE**—A 334-foot span consisting of ten interior and two ramp bays of the mobile floating assault bridge supports a 47-ton tank and a 19-ton armored personnel carrier in tests at Fort Belvoir, Va. The bridge was erected in about 25 minutes by 36 men.

## TECHNOLOGY

## Railroads Fight Back

The railroad industry has produced a new brochure to tell its story, past and future, to the public in the face of criticism, competition and control.

### See Front Cover

► **FACED** with heavy criticism, competition and controls, the American railroad industry is fighting back to prove its capabilities as a transport leader—present and future.

To tell the railroad story, a new brochure, "Railroads Unlimited!" is expected to be distributed widely. Prepared by the Association of American Railroads, the magazine recounts the industry's progress and its plans for tomorrow.

This effort comes only a few days after key labor leaders sharply criticized rail management and urged the government to take over and operate the railroads. It comes after years of controversy over featherbedding, and after years marked by curtailed service, abandoned way stations, rusty tracks and weed-choked roadbeds.

On the brighter side, "Railroads Unlimited!" calls attention to these significant signs of progress:

1. Two "rack trains" daily out of Detroit, each carrying 1,800 new automobiles. More than 300 trucks would be needed to carry the same number of new cars.

2. Piggyback service for trailers between Chicago and Atlanta in 20 hours.

3. A coal shuttle train system using 351 units that move 2.5 million tons in one month.

4. A plan to double an existing 1,900-mile microwave communications system. This would almost blanket the Southeast with wireless replacements of older telegraph lines.

The cover shows an operator using an automatic retarder to motivate cars within the Markham Yard, Chicago, from a tower.

"These developments," the booklet reports, "are cited not as unusual occurrences in mid-century railroading but as typical examples of what the carriers are doing all across the country to clear the way for super railroads offering improved facilities, low transport charges and new levels of service to the factories, mines, farms and consumers of America."

The publication goes on to predict that the growth of the country will be accompanied by the growth of the railroads. Moreover, it states that while the movement of freight is the cornerstone of the industry, "the expanding travel market could hold promise of a comeback even for the hard-pressed passenger train."

A strong plea is made for reform in government regulation. Coupled with an industry promise to do its part "with all the resolution and strength" at its command is a hope for an end of controls.

"It simply makes no sense that an industry of such vast potentials continues to be hampered by restrictive regulation, (and) hurt by discriminatory taxation. . . ."

Rebirth of the railroads could be complicated by the effort to push forward with high speed commuter rail service. Tests are to be scheduled for prototype new cars and the project has support in the Congress and from the Administration.

At least several railroad leaders are known to feel that efforts to improve systems outlined by the Association in its publication should take precedence over futuristic programs requiring overhaul of not only equipment and procedures but the entire concept of railroading.

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## ENGINEERING

## Instant Bridge Travels With Troops

► A NEW MOBILE amphibious assault bridge-ferry featuring rapid assembly will be added to the U.S. Army's materiel.

Designed for assault operations, it will surmount inland water obstacles quickly and with few men. Only 12 men working six minutes is required for a 60-ton capacity ferry consisting of four units. A 400-foot bridge of 16 units can be built in 20 minutes.

The units, end ramps and interior decks are carried by an amphibious transporter-vehicle that can travel 35 miles per hour on land and 10.5 miles per hour in water.

The transporter-vehicle, powered by a 335 horsepower diesel engine, can go quickly from land to water.

Once in the water, the vehicles are maneuvered so that the units connect to form a bridge or ferry.

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## AERONAUTICS

## V/STOL Plane Challenges High-Speed Rail Transit

► RAPID TRANSIT commuter rail service, highballing with Administration and Congressional support, is being challenged by the railroad's most persistent competitor, the airplane.

The challenger is a new plane—the V/STOL (vertical/short take-off and landing)—and it is being advocated as the answer for efficient, rapid passenger service between cities about 100 miles apart.

Martin Goland, president of Southwest Research Institute, supported V/STOL over the railroad in testimony to the House Committee on Science and Astronautics.

"High speed ground transportation is still being seriously considered for passenger traffic between cities which are on the order of a hundred or more miles apart," he said.

He said that in areas with up to moderate traffic density, the arguments for air travel are conclusive. Although calling for more study of the best method in densely populated regions, he said he believes air will win out over rail.

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## TECHNOLOGY

## Control Handle Shaped Like Spaceship Itself

► ONE of the many control handles in spaceships like Gemini and Apollo will be shaped just like the spaceship itself.

The ship-shaped handle will be attached to the device that controls the three motions (yaw, pitch and roll) of the vehicle. Its purpose is to help astronauts visualize the orientation of the craft in space. The main axis of the control shaft will be parallel to the principal axis of the spaceship. When the pilot moves the handle, the attitude control jets will move the vehicle in a corresponding way.

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