



GUN WITH RADAR EYES—The gunner on the B-52, with the aid of a TV screen, can sight his guns from the front of the plane while two TV cameras in the back of the plane scan the sky for enemy planes. An electronic "brain" is also used which tells the gunner when to squeeze the trigger. With it only one gunner is needed, whereas formerly six gunners were needed on high altitude bombers.

ENGINEERING

TV Aids Gunner

► ONE OF THE LONELIEST flyers in the world will soon be able to join the rest of his crew, thanks to closed circuit television in the B-52, the nation's intercontinental jet bomber.

The lonely flyer is the tail gunner, whose vital job is to man the four radar-controlled 50-caliber tail guns of the B-52, the giant plane's only armament. At present he must spend his flight time completely isolated from the rest of the crew for hours at a time while watching a radar screen that signals him target warning and detection.

But a government contract calls for a redesigning of the B-52's presently used fire control system, shown publicly for the first time by its developer, the American Bosch Arma Corporation, at the Institute of Radio Engineers meeting in New York. The purpose of the new design is to relocate the

gunner in a more favorable environment, both physically and psychologically.

It will be done by the use of closed circuit television system which will replace the gunner's eye back in the tail of the plane. He will be moved up forward, near the rest of the crew, and will sight his guns with the aid of a television screen while, in the rear of the plane, two television cameras will continually scan the sky for enemy planes.

The B-52's fire control system uses an electronic "brain" which automatically tracks the oncoming target, figures its speed, distance, and approach, and then tells the gunner when to squeeze the trigger. It is standard equipment on all operating B-52's, the developers said.

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PSYCHIATRY

Child Snaps Back From Loss

► CHILDREN can snap back after a shattering experience better and quicker than has been supposed.

Results of a study of 38 refugee children, who had lost their mothers and had been transplanted to the United States where they were adopted into Massachusetts homes, were reported by Miss Constance Rathbun

and Miss Letitia Di Virgilio, social workers of the Boston Children's Service Association, and Dr. Samuel Waldfogel of the Judge Baker Guidance Center. They presented their report before the American Orthopsychiatric Association meeting in Chicago.

All the children at first felt an emotional shock over the experience of transplanta-

tion, some much more severely than others, but most of the children recovered their emotional balance rather quickly with what the scientists called "almost incredible resiliency."

The adjustment was not just on the surface. The children learned English quickly, made good progress in school, formed satisfactory friendships and displayed genuine affection for their new parents.

Of course, the scientists warn, there is still a possibility that if these children face new crises later or suffer new losses of their loved ones, it may reopen the old wounds and undermine their adjustment.

Nevertheless, it looks now as though the child who suffers extreme loss can recover far better than has been expected.

From faraway Israel comes evidence that intermittent mothering does not have long-lasting bad effects on babies. This evidence was reported to the same meeting by Dr. A. I. Rabin of Michigan State University.

Dr. Rabin made a study of babies brought up in the collective settlements (Kibbutz) of Israel.

In these settlements, the infant is placed in an "infant-house" in a room with three or four other babies where he is under the care of a nurse. During the first year, the baby's own mother feeds him. But in the second year even this care is taken over by the nurse. The baby then spends only about an hour a day with his parents. His home is in the "children's house."

Mental tests given by Dr. Rabin to one-year-olds showed that the Kibbutz babies have a lower level of development than have babies brought up in ordinary Israeli villages in the traditional family setting.

Tests of ten-year-olds, however, showed that those brought up in Kibbutz tend to make up the lag and there is even some evidence that they race ahead of the village children in mental development.

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PHYSICS

Gravity Shield Would Be of "Dubious Value"

► A GRAVITY SHIELD made of particles of negative mass would actually furnish very little, if any, protection from gravity's pull, a top expert on Einstein's theory of relativity reports in *Science* (March 15).

Dr. Peter G. Bergmann of Syracuse University, Syracuse, N. Y., believes that particles of negative mass very likely do not exist at all.

However, giving his imagination full reign, he supposes that particles such as protons but with negative mass might some day be discovered. He further supposes it is possible to put enough of the negative mass particles together to form an object large enough to be seen.

Only if such particles possess an electric charge, Dr. Bergmann concludes, could they be used for gravity shields, but even then they would be of "very dubious value."

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