MILITARY SCIENCE

Use of Atom Bomb

Decision whether to use this weapon must be based on information about concentration of Communist troops and nature of terrain as well as source of materiel.

➤ CONGRESSMEN, U. N. delegates, Defense Department officials are seriously discussing whether to use any of our stock of A-bombs against the Chinese Communists.

It is rumored that this country has a stock of from 350 to 400 A-bombs. If that is so, A-bomb production is probably between 10 and 20 per month. Recently, it has been announced that this production will be stepped up.

A-bombs can be used tactically or strategically—provided the target is worth the price of the A-bomb.

Tactically, it can be used against concentrations of troops in the field.

Military commanders will have to consider two factors:

1. How many troops there are per square mile.
2. What the terrain is like.

Only twice has the A-bomb been used in battle. In both cases it was used in crowded cities. At Hiroshima, the population was 35,000 per square mile. In the 4.7 square miles destroyed by the A-bomb, 15,000 per square mile were killed and 15,000 per square mile injured. At Nagasaki, the A-bomb destroyed only 1.8 square miles, but there, with a population density of 65,000 per square mile, 20,000 per square mile were killed and 22,000 per square mile injured.

The difference in the extent of the damage was because Hiroshima was built on flat ground while Nagasaki was hilly.

There are between 200,000 and 300,000 Chinese Communist and North Korean troops in northern Korea between the Manchurian border and the United Nations front lines. This is mountainous territory. Mountains and hills greatly diminish the effects of the A-bomb.

However, it is believed that 700,000 or more Chinese Communist troops are being held in reserve on the other side of the Manchurian border. These troops are, perhaps, much closer together—hence there are probably many more of them per square mile. Yet, once again, the terrain factor must be considered.

In Hiroshima and Nagasaki, it was not possible to determine precisely which of the three lethal effects of the A-bomb was responsible for killing those who died within 2,500 feet of ground zero. Any of the three effects would have been fatal. But, generally, 20% to 30% died from burns, 5% to 15% from radiation and the rest from blast.

This picture would change in the field, away from the buildings of a city. Some of the deaths from burns happened when buildings caught fire after falling around open fires. Many of the blast deaths were also indirect. from collapsing buildings, flying glass, etc.

Armies in the field are seldom housed in concrete buildings.

Unless the ground were extremely hilly, this, however, would mean less protection from gamma rays and from thermal radiation.

Therefore, if United Nations tactical planners can find a considerable number of troops concentrated within a few square miles of relatively flat land—the A-bomb would be the weapon. If, however, the troops are spread out and the terrain is hilly, more conventional weapons scattered over a wider area would be more effective.

In strategic planning, the generals are not out primarily to kill people. They wish to destroy the ability of a city to contribute to the enemy's war effort. This means they want to destroy factories, rail and wire communications centers, and governmental and military headquarters.

This was done to two cities in 1945. As has been previously noted, fire and air blast destroyed 4.7 square miles of the relatively flat Hiroshima and did decreasing damage from there on out to edge of damage.

It should be pointed out that most factories in Hiroshima escaped damage because they were built on the edges of the city. However, the killing and wounding of 140,000 persons meant that the factories could not open for want of workers.

Here again, planners rule out targets too small for efficient use of the A-bomb's great power. Cities under 50,000 usually cover too small an area. In the Far East, cities under 100,000 probably would not be developed enough industrially to be worth an A-bomb.

If the purpose of dropping a bomb is to cut rail or road communications—the A-bomb would be a singularly inappropriate weapon. Well placed conventional bombs, along the thin and narrow lines can do much more damage.

There are between 60 and 80 cities in China and Manchuria with more than 100,000 population. Planners will have to consider how much materiel is going to the Communist armies from these cities and how much is coming from Siberia. They will have to consider that the Chinese Communists lived for years—and grew in numbers, territory and power—without controlling any of China's major cities or any of her railroads.

Those factors, plus the number of A-bombs we have in stockpile and the possible future use for them, the expense in men and money of conventional bombing, will have to be considered carefully before any decision is to be made on strategic use of the A-bomb in the Far East.

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STEPPED UP PRODUCTION—Expanding activities in airplane plants, due to the world's unsettled conditions, are reflected in this Boeing plant at Wichita, Kans., where giant jet-propelled bombers for the Air Force are being made. Picture shows the B-47, 185,000-pound plane in the 600-miles-per-hour class. It is the Stratojet, an improved version of the plane that crossed the continent from Seattle to Washington, D. C., in three hours and 46 minutes.