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Los Angeles Times (1923-1995); May 1, 1956; ProQuest Historical Newspapers: Los Angeles Times
pg. A4

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Maj. Gen. N. F. Brentnall's testimony before a House subcommittee does something to refute the charges that our military people have been dragging their feet in developing intercontinental ballistic missiles. Gen. Brentnall, Assistant Chief of Staff for Guided Missiles, told the Appropriations Subcommittee on Air Force Affairs that hydrogen bombs light enough to be packed into the warheads of intercontinental missiles are certain to be made.

This portable hydrogen bomb seems to be the key to the intercontinental ballistic missile program.

Sen. Stuart Symington (D) Mo., and Sen. Henry Jackson (D) Wash., have hammered on the charge that the United States has lost the first phase of the ballistic missile race to Russia and have organized a searching inquiry into the Pentagon's weapons programs. Trevor Gardner, who was the Air Force Secretary's Special Assistant for Research and Development, resigned because, he said, the ballistic missile development program was not pushed at the highest priority rating, and his bitter accusations have centered the spotlight on Symington and Jackson.

Gardner's Point

None of the accusing gentlemen knows exactly what Russia has; in fact nobody knows except the Russians. However, President Eisenhower said last winter, shortly after Mr. Gardner's pyrotechnical resignation, that the Russians may be ahead of us in certain types of ballistic missile development. However, he did not say, and later evidence suggests that he did not mean to imply, that the Russians are ahead of us in an intercontinental ballistic missile program.

The alarm seems to be based on this information: that the Russians in 1955 were testing a ballistic missile with a range of 800 or perhaps 1500 miles. At the same time our only missile of this type was an Army development called the Redstone with a range of about 250 miles.

The Problem of Range

But range at this stage of development was not the central problem; accurate guidance, heat resistance and a nuclear charge of sufficient power were the chief considerations. There seems to be no evidence that the Russians were ahead except in the matter of distance—and even giving them 1500 miles, they were far from intercontinental effectiveness.

Now it is true that the Air Force, which carries the chief burden for development of intercontinental ballistic missiles, was cool toward the idea until about two years ago. One of the reasons was its high expenditures on strategic bombing, which, incidentally, would not be supplanted by ballistic missiles, at least for many years. The other reasons involved control of the missile and its warhead.

The pinpoint accuracy of aiming and control, which would be required with a fission warhead, seemed a fantastic goal. In order to be effective on a vital target, a missile with an "old-fashioned" fission-type atomic charge in its nose would have to be accurate within a few thousand yards at the end of a 5000-mile run! Technology simply was not up to this kind of magic; so the Air Force did not crowd the development hard, although it did not abandon it.

But then the hydrogen bomb began to evolve. About two years ago it was shown that a thermonuclear charge could be made to weigh only a few thousand pounds and yet would be thousands of times more powerful than any fission charge. With such a head, the accuracy requirement of the missile could be relaxed; instead of striking within a few thousand yards of the target center, the hydrogen bomb missile would be effective if it came down eight to 10 miles from the bull's-eye.

In February, 1954, a committee headed by the mathematician, Dr. John von Neumann, now a member of the Atomic Energy Commission, reported that the essential solutions of the international ballistic missile were theoretically in sight, although it predicted that the cost of the development would be greater than that of the Manhattan Project which produced the original atomic bombs. The committee recommended a great effort, and the effort, under the Air Force, began. By May, 1954, it was decided to pour funds into the project as swiftly as they could be used.

A Great Effort

This is the background of Gen. Brentnall's statement to the House subcommittee. The hydrogen bomb will be ready when the technologists have solved the problem of the carrier.

The critics will continue to complain, and this is not a bad thing, for their investigation will clarify some of the nicer points and in general, we think, reassure the public.

There can be no doubt that the intercontinental ballistic missile program is going ahead under a vast civilian-military organization that has not been equaled since the Manhattan Project. Some will say that it should have been started sooner, but there is merit in the Air Force argument that there was no point in rushing to build a missile without an effective warhead. Once the Pentagon was told it could have such a warhead the missile program got under way—within three months.

When the testimony is strained and refined that is what the Symington-Jackson investigation seems likely to show. It should always be borne in mind that they can discover what we did and are doing but that they cannot know what the Russians did or are doing.

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