

**ADC HISTORICAL STUDY NO. 14**

**HISTORY OF**

**AIR DEFENSE**

**WEAPONS**

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## CHAPTER SIX

### WEAPONS FORCE PLANNING

Progress toward a force which would be adequate to contend with the offensive threat posed by Soviet long-range bombers was evident at the end of 1954. Fifty-five squadrons of interceptors were manned, equipped and in place at that time. Growth to a force of 69 squadrons was approved.

#### INTERCEPTOR MISSILES.

New factors, however, began to enter ADC planning. One was BOMARC, the interceptor missile. This long-range missile had been under development for some time, and ADC knew that, eventually, it would be assigned to the air defense force. Since planning is necessarily hazy in the early stages of weapon development, ADC characteristically thought big. Planning in the 1952-54 period mentioned deployment of 53 BOMARC squadrons. In the light of subsequent cost estimates, this figure seemed fantastically large, but at the time, with only the threat in mind, the requirement was both sound and logical. By 1955, however, planning was beginning to take the shape of the more precise programming and USAF appeared inclined to establish 40 squadrons as the probable size of the BOMARC force. At about the same time, programming for the shorter-range TALOS missiles began to be taken seriously. TALOS was a Navy development originally designed for shipboard use. It was therefore expected to be effective at altitudes of 60,000 feet and at ranges of 50-150 miles. It therefore fell somewhere between the Army's NIKE and ADC's BOMARC. On 7 June 1955 USAF was designated as the service responsible for land-based TALOS. USAF was inclined to prepare for the deployment of eight TALOS squadrons, each with four detachments, although ADC was thinking in terms of as many as 53 squadrons in early 1955.

Since TALOS had a relatively short range, ADC first planned a chain of 32 detachments which generally supported SAC and AEC installations. As a beginning, ADC asked, early in 1956, that funds be provided for TALOS sites at Lockbourne AFB, Ohio; Bunker Hill AFB, Indiana; Peoria, Illinois; and Kirksville, Missouri. USAF approved this request and included it in the Military Construction Program (MCP) for Fiscal 1957 which it presented to Congress. Meanwhile, ADC had decided that the "chain" concept of TALOS deployment was not the proper one, and that TALOS should be sited in more direct support of SAC. It was therefore recommended, in March 1956, that the first four TALOS sites be located on four major SAC bases — Offutt, Barksdale, March, and Castle. Unfortunately, however, the 1957 MCP had already been presented to Congress, and changing the sites at that juncture would have been embarrassing. The matter was compromised by leaving the sites presented to Congress as the first four, with the sites subsequently recommended by ADC as the second four. By the end of May 1956, ADC TALOS

siting teams were ready to take the field, but their departure was delayed when a controversy erupted over the relative efficiency of the Air Force TALOS and the Army NIKE. Since it appeared that some sort of competitive test between the two air defense missiles would be required, siting was deferred indefinitely.

TALOS, as it turned out, proved to be a short-lived addition to the ADC arsenal. Secretary of Defense Charles E. Wilson settled the Army-Air Force controversy in November 1956 by issuing a decree which awarded all missiles having a range of less than 200 miles to the Army. TALOS fell within this category.

While TALOS was coming and going, ADC also busied itself with further planning for BOMARC. Since USAF appeared willing, in 1955, to support a program which called for 40 squadrons of BOMARC (120 missiles to a squadron for a total of 4,800 missiles), ADC reached a decision on the location of these 40 squadrons and suggested operational dates for each. The plan was as follows:

<u>Site</u>	<u>Operational Date</u> <u>(Qtr / FY)</u>
1. McGuire	1/60
2. Suffolk	2/60
3. Otis	3/60
4. Dow	4/60
5. Niagara Falls	1/61
6. Plattsburgh	1/61
7. Kinross	2/61
8. K. I. Sawyer	2/61
9. Langley	2/61
10. Truax	3/61
11. Paine	3/61
12. Portland	3/61
13. Hamilton	4/61
14. Oxnard	4/61
15. San Diego	4/61
16. Fort Ord	1/62
17. Bunker Hill	1/62
18. Greater Pittsburgh	1/62
19. Duluth	2/62
20. Sioux City	2/62
21. Grand Forks	2/62
22. Cut Bank	3/62
23. Opheim	3/62
24. Minot	3/62
25. Klamath Falls	4/62
26. Geiger	4/62
27. McConnell	4/62

28. Ardmore	1/63
29. Amarillo	1/63
30. Reese	1/63
31. Biggs	2/63
32. Laughlin	2/63
33. Williams	2/63
34. Ellington	3/63
35. New Orleans	3/63
36. Fort Campbell	3/63
37. Pinecastle	4/63
38. Tyndall	4/63
39. Charleston	4/63
40. Seymour-Johnson	1/64

As it was organizing siting teams for TALOS in the late spring of 1956, ADC was also thinking about establishing definite sites for the first 24 BOMARC units. USAF felt that this activity was premature, however, since no funds for BOMARC construction were included in the MCP for Fiscal 1957. During this waiting period, ADC recast its BOMARC plan to call for the initial placement of two flights (half a squadron) at each site. Later each location would support a full squadron of four flights (120 missiles).

Although it had appeared in 1955 that USAF was ready to support a force of 40 BOMARC squadrons, such was not the case in 1956. When the ADC plan for deployment of 40 squadrons was presented in September 1956, it was bluntly rejected by USAF as being far too costly. ADC, being concerned with defense and not cost, had blithely ignored the fact that 4,800 BOMARC missiles at 3.3 million dollars per missile would require an outlay in excess of 15 billion dollars, exclusive of the cost of building the shelters. USAF then proposed an alternative plan which would provide 22 squadrons with a total of 70 flights, or less than half of the 160 flights provided in the ADC plan. The deployment proposed by USAF placed BOMARC squadrons around the perimeter of the United States and limited those in Montana and North Dakota, along the southern border and in the southeast to two flights per squadron.

ADC made vigorous rebuttal to the USAF proposal, pointing out that even the 40 BOMARC squadrons contained in the ADC plan would provide only minimum defense coverage so far as ADC was concerned. Any reduction, therefore, was fraught with risks ADC did not want to accept. After more inconclusive discussion in late 1956, the matter of BOMARC deployment was taken out of ADC's hands. In December, USAF asked that the ADC plan be submitted to CONAD for approval and subsequent submission to the Joint Chiefs of Staff. Meanwhile, site surveys for 14 BOMARC installations were underway. CONAD took a position

somewhere between ADC and USAF. The joint command recommended, in January 1957, that 40 squadrons of BOMARC be deployed, but that each should have only two flights for a total of 80 flights. This compromise solution was accepted, at least temporarily, by both USAF and ADC. Other measures were also invoked in order to cut the immense cost of the BOMARC system. Siting was temporarily halted in April 1957 until USAF could be assured that all BOMARC units would be located on existing bases and would not require the purchase of additional land. Also, launchers were redesigned to permit more "austere" construction.

Actual construction of the first BOMARC sites began in late 1957. ADC was allocated 43 million dollars in the Fiscal 1958 MCP with which to build half-bases of 56 launchers (reduced from the earlier figure of 60 launchers) at McGuire, Suffolk, Otis and Dow. Initial effort was concentrated at McGuire, since it was scheduled to become operational 1 September 1959. From the beginning it was evident that the 43 million dollars was not going to be sufficient to build all four bases, since preliminary engineering estimates placed the cost of the McGuire and Suffolk sites at 38.5 million, leaving only 4.5 million for Otis and Dow. There was also an unexpected delay at McGuire when it required intervention by the Secretary of Defense to obtain Army permission (McGuire AFB is located on Fort Dix, an Army installation) for construction of BOMARC launchers.

Because of the great cost of the full BOMARC program, USAF continued to cast around for safe methods of reducing it. In December 1957, USAF wondered if the increased range of the IM-99B (over 400 miles as opposed to the approximately 200-mile range of the IM-99A) and a proposed advanced BOMARC known only as IM-X might not make it possible to reduce the number of proposed BOMARC sites. The scope of the proposed reduction was not given. ADC could not agree that any reduction was feasible, on the theory that the improved range of the advanced missiles would merely offer improved air defense coverage where it was vitally needed. ADC countered this proposal by recommending that BOMARC deployment be expedited rather than reduced. It was suggested that USAF seek a supplemental Fiscal 1958 appropriation to permit the construction of nine BOMARC bases, rather than the four presumably financed in the regular 1958 MCP. In addition, ADC recommended that each of these nine bases be equipped with 112 launchers instead of the 56 launchers authorized for the first four bases – a recommendation which ran counter to the CONAD-USAF-ADC BOMARC compromise reached early in 1957. Looking ahead, ADC also asked for funds for construction of 11 BOMARC sites in the Fiscal 1959 MCP. If this request was approved, a total of 20 BOMARC bases would be provided by 1958-59 Military Construction Programs.

The ADC request (subsequently supported by CONAD) hung fire through the spring of 1958, but eventually came to naught. Not only was the request for acceleration denied, but the BOMARC program for Fiscal 1959 was also cut. It was becoming painfully obvious that ADC was not going to get the 40 squadrons of BOMARC (112 launchers and 120 missiles to a base) as planned in 1955. It was also becoming evident that the 40 half-squadron compromise reached in early 1957 was a dead letter. In June 1958, USAF let it be known that it was prepared to ask

Congress for only 31 BOMARC bases. Two of these were to have 56 launchers and the remainder 28 launchers, which added up to a total program of 924 launchers and approximately 1,000 missiles. Construction of 10 additional bases was authorized for Fiscal 1959, for a total of 14.

As to the four bases financed with Fiscal 1958 funds, it was found possible to squeeze construction costs within the 43 million dollars appropriated by cutting the number of launchers at Otis and Dow from 56 to 28 and substituting less massive launchers for those originally specified.

By late 1958 it was time to think about the budget for Fiscal 1960 and the BOMARC construction it would buy. ADC/CONAD asked that 15 additional bases be constructed with 1960 money, bringing the 1958/59/60 total to 29 bases. The preliminary USAF reaction, stated in November 1958, was that no more than 12 bases could be worked into the budget. At the same time, there arose a difference of opinion between ADC and CONAD as to where the BOMARC bases should be located. CONAD believed that two bases should be located in Canada. ADC did not object to these proposed bases at North Bay and Ottawa, so long as they were merely added to the bases programmed for the United States. CONAD, however, suggested substituting the Canadian bases for those previously programmed for Bunker Hill and Youngstown (initially sited at Greater Pittsburgh).

Late 1958 was also the time for settling the problem of which bases should have the early-model IM-99A and which should have the fully developed IM-99B. Discussions of the matter in 1956 found ARDC holding the position that the first 12 bases should have IM-99A, the remainder IM-99B. ADC wanted the change made after the 10th base. As missile development proceeded and the years rolled by, the number of bases to receive the IM-99A grew smaller, because base construction was slower than missile development. In June 1958, USAF reduced the number of IM-99A bases to eight. The following September NORAD asked that the IM-99A bases be reduced to six, and JCS and USAF concurred. Then in December 1958 a reduction to five IM-99A bases was directed by USAF. No further reductions were made, although three of the five IM-99A bases were to be supplemented with IM-99B missiles. Only the bases at McGuire and Suffolk were to be limited to the IM-99A model.

At the end of 1958, ADC plans called for construction of the following BOMARC bases in the following order:

1. McGuire
2. Suffolk
3. Otis
4. Dow
5. Langley
6. Truax
7. Kinross
16. Malmstrom
17. Grand Forks
18. Minot
19. Youngstown
20. Seymour-Johnson
21. Bunker Hill
22. Sioux Falls

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|-------------------|----------------|
| 8. Duluth         | 23. Charleston |
| 9. Ethan Allen    | 24. McConnell  |
| 10. Niagara Falls | 25. Holloman   |
| 11. Paine         | 26. McCoy      |
| 12. Adair         | 27. Amarillo   |
| 13. Travis        | 28. Barksdale  |
| 14. Vandenberg    | 29. Williams   |
| 15. San Diego     |                |

But even this program proved optimistic. The value of the BOMARC as an air defense weapon was seriously questioned during congressional debate over the relative merits of the BOMARC and NIKE-HERCULES in the late spring of 1959. Actually, the debate was unrealistic, because the weapons were complementary rather than competitive. The NIKE-HERCULES was a point defense weapon of relatively short range, while BOMARC was a long-range area defense weapon. Nevertheless, the House voted to withhold all funds from BOMARC while the Senate took similar action with regard to NIKE-HERCULES. Its "feet held to the fire" by this striking difference of opinion within the Congress, the Department of Defense produced, in June 1959, a compromise Master Air Defense Plan. As a result, the BOMARC program was reduced to 18 sites, two of them in Canada, each site to have 56 launchers and 60 missiles, for a total of 1,080 missiles. This congressional action rendered academic discussion of such matters as the exact location of the BOMARC site in the Sioux City area. There just was not going to be a BOMARC squadron in the Sioux City area.

After going through the congressional wringer the ADC BOMARC program at the middle of 1959 was as follows:

<u>Priority Number</u>	<u>Site</u>	<u>Activation Date</u>	<u>Operational Date</u>
1	McGuire	Jan 1959	Sep 1959
2	Suffolk	Feb 1959	Dec 1959
3	Otis	Mar 1959	Mar 1960
4	Dow	Jun 1959	Jun 1960
5	Langley	Sep 1959	Sep 1960
6	Kinross	Mar 1960	Mar 1961
7	Duluth	Apr 1960	Apr 1961
8	Niagara Falls	May 1960	May 1961

9	Paine	Jul 1960	Jul 1961
10	Adair	Aug 1960	Aug 1961
11	Travis	Sep 1960	Sep 1961
12	Vandenberg	Oct 1960	Oct 1961
13	Malmstrom	Jan 1961	Jan 1962
14	Glasgow	Apr 1961	Apr 1962
15	Minot	May 1961	May 1962
16	Charleston	Jul 1962	Jul 1963
17	La Macaza (Canada)	Feb 1961	Feb 1962
18	North Bay (Canada)	Mar 1961	Mar 1962

The new program amounted to the first 18 sites of the old program, with three exceptions. The sites at Truax (No. 6), Ethan Allen (No. 9) and San Diego (No. 15) were replaced by Charleston and the two Canadian sites. The new program would provide only a perimeter of BOMARC defenses, from Charleston on the South Atlantic coast north through Langley, McGuire, Suffolk, Otis and Dow; then along the northern border of the nation at La Macaza, Niagara Falls, North Bay, Kinross, Duluth, Minot, Glasgow and Malmstrom. The west coast would be protected by four BOMARC locations running from Paine in Washington through Adair and Travis to Vandenberg in Southern California.

Although no funds were provided for additional BOMARC construction in the budget for Fiscal 1960, money for 14 sites had been provided in the 1958 and 1959 budgets, so there was no immediate shortage of construction funds. Since the Ethan Allen and Truax sites had been removed from the program, however, construction at these locations was halted.

The 18-site BOMARC program remained in effect through the early weeks of 1960 and was implicit in Air Force testimony before the House Appropriations Committee in January 1960. At that time, USAF asked that 421.5 millions be provided in the Fiscal 1961 budget for continued procurement of IM-99B missiles. USAF testimony also included the statement that a decision would be made by December 1960 as to whether or not additional funds would be required in future budgets. This was a cautious approach to the financing of the complete BOMARC program, but it was evidence that USAF intended to proceed.

All this was changed on 24 March 1960, however, when USAF returned to Congress to ask that the budget request of January be drastically revised. Among the changes requested was a



cut in IM-99B procurement from 421.5 million to 40 million, plus an emphatic statement that this would be the end of all BOMARC procurement. ADC had learned of this change of attitude as regards the IM-99B only the previous day, 23 March, when USAF announced that the IM-99B would be limited to seven sites -- Kincheloe, Duluth, Niagara Falls, Langley, Otis, La Macaza and North Bay. Each site was to be limited to 28 missiles, except where additional missiles could be recouped from the testing and training programs. All told, no more than 337 IM-99B missiles were to be bought, a far cry from the 4,800 missiles ADC had programmed in the mid-fifties and even from the 1,470 missiles (including 210 IM-99A missiles) contained in the current ADC program.

The reasons given by USAF for curtailment of the IM-99B were various. Increasing Soviet emphasis on inter-continental ballistic missiles, against which the BOMARC was impotent, was mentioned in the hearings of 24 March. Nagging technical difficulties which had continued to delay operational use of BOMARC were also given as a reason.

The necessity of diverting BOMARC production funds to projects of higher priority (such as the Atlas and Titan ICBM's) was underscored. The general impression left by USAF and Defense Department testimony was that BOMARC had been outdistanced in the technology race, but that it could be put to good use in defending the northeast United States against the still-potent Soviet bomber fleet.

It was the obvious ADC position, in view of the size of the BOMARC force currently programmed, that the reduction to seven IM-99B squadrons would result in totally inadequate deployment. At the same time that it announced the decision to limit the IM-99B to seven sites, USAF also pointed out that total cancellation of the IM-99B program would release approximately 255 millions allocated to the IM-99B in previous fiscal years, sufficient funds to buy three squadrons of F-106A interceptors or four squadrons of F-101B aircraft. Would ADC consider these aircraft an adequate substitute for the lost IM-99B missiles? The ADC answer was in the negative. In a 23 March reply that provoked considerable discussion in the committee hearings the following day, ADC contended that to provide the same coverage offered by the IM-99B, manned interceptors would have to replace the interceptor missiles on a one-for-one basis. Although General Thomas D. White, Air Force Chief of Staff, strongly supported the ADC position as the considered judgment of experts in the air defense field, members of the subcommittee were frankly skeptical.

As a result of this skepticism, no more money was provided for BOMARC. Therefore, when BOMARC deployment was completed in 1962, only 10 sites in the northeastern United States and the adjoining area in Canada were equipped with the missiles. Three sites — McGuire, Otis and Langley — had both IM-99A and IM-99B missiles. Two sites — Suffolk and Dow — offered only IM-99A weapons and three others — Niagara, Kincheloe and Duluth — were equipped exclusively with the IM-99B. The Canadian sites — North Bay and La Macaza — were

not operationally ready because of the continuing reluctance of the Canadian government to permit the storage of nuclear warheads in Canada. Ten sites and approximately 500 missiles, then, was the final extent of a program that once called, hopefully, for 40 sites and 4,800 missiles. Again, as in other instances, reality fell painfully short of plan.