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The Strategic Air Command

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**THE MISSILE PROGRAM**

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This document is classified ~~SECRET~~ due to the information it contains relative to the status, planning and developments in the guided missile field.

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- 2 Staff Memorandum 11-44, "SAC MIKE Office," Hq SAC, 29 Jan 1958.
- 3 DF, Adj to all Directorates, "SAC MIKE Offices and Personnel," 3 Feb 1958.
- 4 Address by General Power at the 25th Anniversary of the Founding of Barksdale AFB, 1 Feb 1958.
- 5 SAC Operational Plan SM-62-2 (SNARK), 8 Jan 1958.
- 6 Ltr, VCINCSAC to CofS USAF, "Low Level Attack Capability," 14 May 1958.
- 7 DF, D/Instls Eng to D/Eng, "Operational Snark Facilities," 15 Apr 1958.
- 8 DF, D/Ops to D/Instls Eng, "Operational Snark Facilities," 4 Apr 1958.
- 9 Ltr, Gen Curtis E. LeMay to Gen Power (Relative to facilities at Presque Isle), 20 Feb 1958.
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- 15 TWX, Hq USAF to CINCSAC, AFOOP 51284, "Co-Location of B-52/SM-73," 26 May 1958.
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- 19 Memo, D/Plns to Gen Westover, Hq SAC, "Status of the SM-73 (Goose) Program," 24 Apr 1958.
- 20 DF, DE to Gen Westover, "SM-73 (GOOSE) Program," 26 Jun 1958.
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- 23 SAC Programming Plan 12-58, "SM-75 Program (Thor for Four RAF Squadrons), " 23 Apr 1958.
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- 29 Memo, Secretary of the Air Force to the Secretary of Defense, "Future Deployments of the Intermediate Range Ballistic Missile," 27 Mar 1958.
- 30 Memo for Record, FS&FW Br D/Plns Hq SAC, "Site Survey Visit to Alaska for IRBM Deployment Sites," 4 Apr 1958.
- 31 Memo, Mr. W. M. Holaday to the Secretary of the Air Force, "Future Deployments of the JUPITER IRBM Squadrons," 9 May 1958.
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- 42 Memo, DPLC to Col Lyle D/Plns Hq SAC, "Summary of ICBM Site Selection Activities," 7 Feb. 1958.

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- 53 TWX, Hq USAF to CINCSAC, AFCCM 52641, "Denver/Titan Squadron Problem," 26 Jun 1958.
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- 60 Memo for Record, "GAM-63 Weapon System Phasing Group Meeting," 26 Feb 1958.
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- 74 Minutes of the WS-117L Site Selection Board, 11 Jun 1958.
- 75 Memo for Record, "Report of WS-117L Weapons System Phasing Group Meeting, 21 - 22 May 1958," 28 May 1958.

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INTRODUCTION

The Strategic Air Command's missile activities during the first half of 1958 were highlighted by efforts to speed up operational planning for the ballistic missile, the Hound Dog (an air-to-surface missile), and the WS-117L Advanced Reconnaissance System (for orbiting reconnaissance vehicles) programs. The first program reflected the implementation of some of the 14 measures taken by the Secretary of Defense, Mr. Neil H. McElroy, late in 1957 and early in 1958, to accelerate the development of those weapon systems deemed most vital to U. S. defense.

Although the decision to accelerate the ballistic missile program was made late in 1957, implementing actions continued during the early months of 1958. The transfer of the 1st Missile Division at Cooke AFB, Lompoc, California from ARDC to SAC effective 1 January 1958, required that the division be staffed by SAC personnel. The creation of an Office of Assistant CINCSAC (SAC MIKE), at AFEMD in Inglewood, California, also effective 1 January 1958, likewise required SAC staffing. The functions of the SAC MIKE office were defined in a SAC staff memo issued late in January. Initial

1. Actions Taken by the Office of the Secretary of Defense to Speed up the Missile Programs, 22 Jan 1958, Exhibit 1.
2. Historical Study No. 70, Vol I, pp 44; 68, filed in Hist Div Archives, Hq SAC.
3. SAC Staff Memo 11-44, "Administrative Practices," (SAC MIKE Office), 29 Jan 1958, Exhibit 2.

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staffing of this office had been completed by early February. <sup>4</sup>

The decisions to speed up the WS-117L and the Hound Dog programs were taken in February 1958 <sup>5</sup> and April 1958, <sup>6</sup> respectively. The former program, which was given the highest national priority, firmly placed SAC into the field of outer space operational planning. It was generally assumed that SAC would eventually be given operational control over orbiting reconnaissance vehicles. <sup>7</sup>

The acceleration of the foregoing missile and space systems, plus continuance of operational planning for other missile weapon systems, significantly increased the volume of SAC's financial and manpower resources devoted to the missile and space fields during the first half of 1958. Although SAC believed that the strain on its resources, as well as on other Air Force agencies, could be profitably lessened by cancelling several unwanted missile systems-- notably the Snark, RASCAL and Jupiter, higher level policy decisions required that they be integrated, if only in token fashion, into the SAC inventory. <sup>8</sup> Of particular concern to CINCSAC was the

4. IF, ADJ SAC to all Directorates, "SAC MIKE Offices and Personnel," 3 Feb 1958, Exhibit 3.
5. See p 70.
6. See p 59.
7. Interview, J. Van Staaveren, Historian with Col E. A. Vivian, Chief, FS&FW Section, D/Plns, Hq SAC, 18 Sep 1958.
8. For a detailed discussion of SAC's position with respect to the Snark, RASCAL and Jupiter weapon systems see Historical Study No. 70, Vol I, filed in Hist Div, Hq SAC; Interview J. Van Staaveren with Col E. A. Vivian, Chief FS&FW System D/Plns, Hq SAC, 18 Sep 1958.

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Chapter I

SURFACE-TO-SURFACE MISSILE WEAPON SYSTEMS

THE WS-103A SNARK SM-62

As a result of high level decisions taken late in 1957, the Snark program was limited to 51 production type missiles of which 30 would be used for operational purposes. This provided for a Snark operational force equal to two squadrons, each equipped with 15 missiles. In order to save manpower spaces and facilities, however, the two squadrons would be combined into a single unit and would be designated the 702d Strategic Missile Squadron upon activation at Presque Isle Air Force Base on 1 July 1959. The squadron would be placed under the operational control of Headquarters,<sup>13</sup> Eighth Air Force at that time.

The foregoing changes, which reduced the size of the Snark program from eight to two squadrons, required a complete revision of the Snark Operational Plan. The new plan, completed in January, contained more details than provided heretofore on Snark tactical and operational concepts. After being integrated into the EWP, Snark missiles would be used initially only against area type air power targets. They would be programmed to fly the Great Circle route within a 360 nautical mile corridor in order to reach their assigned targets. To avoid "traffic" congestion with manned bombers, special departure SOP's and/or specific corridors would be assigned to Snark

13. Historical Study No. 70, Vol I, p. 10, filed in Hist Div Archives, Hq SAC.

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missiles. Insofar as practical, missiles would not overfly friendly populations or heavily defended complexes en route to their targets. 14

Although the ultimate objective for all SAC strategic missiles called for an instantaneous salvo of all missiles upon the receipt of an execution order, the design of the Snark weapon system, as it existed in January, would preclude attainment of this goal. For planning purposes, however, three launching rates of in-commission missiles were possible, depending upon the makeup of the preflight console and an assured 24-hour per day manning of the Snark squadron. 15

The rates were as follows: 16

Category 1. Twenty percent of the missile inventory within three hours and the total inventory within 10 hours.

Category 2. Twenty percent of the missile inventory within one hour and the total inventory within four hours.

Category 3. Twenty percent of the missile inventory within 15 minutes and the total inventory within two hours and fifteen minutes.

It was deemed possible to obtain the launching rates of categories one and two on a continuing basis but not category three because of excessive manpower and spare parts costs. It could be

14. SAC Operational Plan SM-62-2, 8 Jan 1958, pp. 9-11, Exhibit 5.
15. On 21 January Hq USAF approved a 24-hour manning concept for the Snark squadron. TWI, Hq USAF to CINCSAC, AFOOP-OC 55429, 21 Jan 1958, filed in D/Plans, Hq SAC.
16. SAC Operational Plan 62-2, 8 Jan 1958, pp. 8-11, Exhibit 5.

maintained for short periods of tension, however, thereby providing  
17  
a temporary strategic advantage.

Four annexes to the Operational Plan contained detailed unit  
manning documents, maintenance procedures, supply policies and  
procedures, unit activation and training schedule, and a missile  
production and equipment delivery schedule for the Snark force. 18

Notwithstanding the decisions taken late in 1957 to establish  
only a small Snark operational force, various pressures continued to  
be exerted upon SAC and USAF to enlarge the Snark program. Hearings  
by the Senate Preparedness Investigating Subcommittee, which began in  
November 1957 and continued through January 1958, indicated considerable  
Congressional interest in the Snark weapon system for strategic purposes.  
Although General Nathan F. Twining, Chairman of the JCS, General Thomas  
D. White, Chief of Staff, Headquarters USAF, Mr. Donald A. Quarles, Deputy  
Secretary of Defense and Mr. Neil H. McElroy, Secretary of Defense,  
variously testified that the reduced output of Snark missiles was due  
to a lack of funds and/or because the Snark weapon system had been  
given a lower priority because of the more promising ICBM program, the  
wisdom of this policy was sharply questioned by members of the Sub-  
committee. Senators John Stennis of Mississippi and Prescott Bush of  
Connecticut clearly indicated that they considered the Snark to be a  
very good intercontinental missile and asked the Defense Department  
officials to reappraise their decision to reduce Snark production.

17. Ibid.  
18. Ibid.

Both Deputy Secretary Quarles and Secretary McElroy promised to  
19  
make this reappraisal. Their positions remained unchanged. How-  
ever in June, Senator Stuart Symington, another member of the Sub-  
committee, expressed to the Secretary of the Air Force, Mr. James  
H. Douglas, and the Defense Department's Director for Guided  
Missiles, Mr. William H. Holaday, his dissatisfaction with the low  
priority status given the Snark and the fact that production was  
20  
being limited to one missile per month.

Members of a House Subcommittee holding hearings on Defense  
Appropriations for FY 1959, also manifested interest in a larger  
Snark force. However, Lieutenant General John K. Gerhart, Deputy  
Chief of Staff for Plans and Programs, Headquarters USAF, explained  
in March that the Snark had a significantly less payload than a  
B-52, that it was a "one shot" weapon, and that it lacked the flexi-  
bility and the accuracy of a B-52. He also stressed the problems  
of budgetary restrictions and weapon system priorities as bearing on  
the decision to maintain a reduced Snark program. Questioned about  
the relative costs of a Snark and B-52 squadrons, General Gerhart  
indicated that a Snark squadron of 15 missiles plus military and  
other support costs was estimated at \$60,000,000 whereas a B-52  
squadron composed of 15 B-52 aircraft and KC-135 jet tankers plus  
military and other support costs was estimated at \$150,000,000.

19. Senate, Hearings on Inquiry Into Satellite and Missile Programs  
by the Preparedness Investigating Subcommittee of the Committee  
on Armed Services, 85th Congress, Part II, 1958, pp 1576; 1836-37;  
2049-58; 2072-78.
20. Senate, Hearings on Department of Defense Appropriations for 1959,  
by the Subcommittee of the Committee on Appropriations, 85th Cong,  
1958, pp 249; 418.

Both estimates were exclusive of construction costs.

Officials of the Northrup Aviation, Inc. (NAI), the prime contractor for the Snark, also continued to exert pressure on SAC, USAF, ARDC and other Air Force agencies to persuade them to invest in a larger Snark force. In January, the NAI officials proposed certain modifications on Snark missiles which would give them a low level attack capability. At the request of Headquarters USAF, both SAC and ARDC undertook studies of SAC's low level attack needs, costs, and the possible use of additional Snark missiles for this purpose.

22

As a result of these studies, SAC concluded that, because of the limitations of funds and because of the higher priority requirement for a SAC manned bomber force with supporting jet tankers, it would not be practical to augment SAC's low level capability with Snark missile units (this position also held with respect to the possible use of the shorter range surface-to-surface Matador missile for low level purposes). Money and manpower, SAC observed, could be better spent to meet the jet tanker force requirements prescribed in SAC's 1962 Force Requirements. Furthermore, a subsonic cruise missile

21. Hearings Before the Subcommittee of the Committee on Appropriations on Department of Defense Appropriations for 1959, Vol on Department of the Air Force, 85th Congress, Second Session, 1958, pp 39-44, filed in Hist Div Archives, Hq SAC.
22. TWX, Hq USAF to ARDC, AFDRD-SA 55935, 30 Jan 1958, filed in D/Plns, Hq SAC; DF, Missile Div D/Ops to D/Compt, "Supplemental Monthly Missile Report," 6 Feb 1958, filed in Mgt Analysis Div, D/Compt, Hq SAC.



would not meet the requirements of flexibility of employment, the "positive control" concept inherent in aircraft, and the desired end position for airborne alert.<sup>23</sup>

In March, NAI officials sought to induce the Air Force to purchase an additional 120 Snark missiles on the basis of an improved operational concept which would provide for a dispersed force (six missiles per site, in fixed launchers, with one missile per building), fast reaction plus incorporation of the low level attack capability which had been proposed in January.<sup>24</sup> As a result of this briefing, the Air Staff again asked SAC to examine the possibilities of expanding the Snark program.<sup>25</sup>

Although SAC recognized that the NAI's fast reaction concept (known as a Snark Maximum Attack Capability or a "SMAC" concept providing for a 100 percent salvo of the inventory vs the 20 percent salvo of the inventory provided for in the existing Operational Plan), would make the Snark weapon system more desirable, the proposed changes would also create many problems. Facilities would have to be redesigned, the established July

23. Ltr, VCINCSAC to CofS USAF, "Low Level Attack Capability," 14 May 1958, Exhibit 6.

24. DF, D/Plns to D/Compt, "Strategic Missile Monthly Report," 8 Apr 1958, filed in Mgt Analysis Div, D/Compt, Hq SAC.

25. DF, D/Instls Eng to D/Eng, "Operational Snark Facilities," 15 Apr 1958, Exhibit 7.

1959 BOD for the Snark force at Presque Isle AFB would slip, costs would greatly increase and additional funds would have to be taken from other higher priority and more desirable SAC weapons programs. As a consequence, CINCSAC concluded that:

1. Expansion of the Snark force beyond 30 weapons was not desirable.
2. Implementation of the 100 percent salvo operational (or SMAC) concept should be considered only if the Snark force was increased by the direction of Headquarters USAF. In this event, Headquarters USAF should permit the joint proposals of the WSP0, SAC and NAI on basing, BOD's and operational dates for the entire force to be configured to meet the SMAC concept.
3. Because construction at Presque Isle Air Force Base would begin in late May 1958 and continue on a very tight schedule throughout CY 1958 and 1959, no change should be made in the schedule. Thus, any decision to increase the Snark force should be made prior to the beginning construction date.

As Headquarters USAF took no further action on the SMAC concept, the Snark program remained unchanged in scope.

26. Ibid., D/Ops to D/Instls Engr, "Operational Snark Facilities," 4 Apr 1958, Exhibit 8.

27. Ibid.

28. Interview, J. Van Staaveren, Historian with Maj L. R. Harvey, D/Plns, Hq SAC, 6 Aug 1958.

The construction of adequate support facilities at Presque Isle Air Force Base was also a matter of concern to SAC during the first half of 1958, and constant difficulty was experienced in obtaining Headquarters USAF approval of funding for the desired facilities. This was because Presque Isle AFB would not become a "hard core" base (i.e., a base designed to become permanent and on which limited MCF funds could be spent on a continuing basis to convert it into a first class facility for follow-on weapon systems), and because the Snark weapon system had only a limited life expectancy. Although both CINCSAC and the Commander of the Eighth Air Force recommended during the reporting period that Presque Isle Air Force Base become a hard base installation with a follow-on mission, thereby assuring more adequate facilities, the Air Staff did not concur. They believed that the subarctic location of the base would create too many difficulties for sensitive missile components and that past experience indicated that this environment created troop morale problems, regardless of facilities provided. The Eighth Air Force Commander, however, believed that operational experiences at Northeast bases showed that a combination of good facilities and a good commander could insure good troop morale. Consequently, he urged in June that the Air Staff position be reconsidered. He also recommended that Presque Isle Air Force Base be placed under Loring Air Force Base in Maine and that future Air Division commanders become operationally responsible for both bomber and missile units in order to forge a strong bond between manned and

unmanned operational capabilities. No official action had been  
taken on these recommendations by the end of the month.<sup>29</sup>

By the end of June the Snark construction program at Presque  
Isle Air Force Base generally was proceeding on schedule although  
it was doubtful if SAC would be able to provide much better than  
World War II type of facilities for the 2,572 personnel (240 officers,  
2,088 enlisted and 244 civilians) who would be stationed there.<sup>30</sup>  
Early in July, SAC published a new programming plan which contained  
the latest refined activation, training, missile production and  
equipping schedules for the Snark program. The major Snark facility  
requirements were also listed.<sup>31</sup>

A communication from Headquarters USAF on 29 April resulted in  
several adjustments in plans to activate, transfer and reorganize  
Snark units. The essential changes were summarized and distributed  
to all SAC directorates early in May.<sup>32</sup>

Flight test of Snark missiles continued during the first half of  
1958 with at least one missile test conducted each month. The 54th and

29. Ltr, Gen Curtis E. LeMay to Gen Power, 20 Feb 1958, Exhibit 9; TWX,  
Comdr 8th AF to CINCSAC T/C 20783, 21 Jun 1958, Exhibit 10.

30. TWX, CINCSAC to USAFIR NER Boston, COMFTRGP 23, Presque Isle, Maine,  
DECM 5449, 7 May 1958, Exhibit 11; Interview, J. Van Staaveren,  
Historian, with Maj L. R. Harvey, D/Plns, Hq SAC, 8 Aug 1958.

31. SAC Programming Plan 17-58, "SM-62 Program," 9 Jul 1958, Exhibit 12.

32. DF, DPL to all directorates, "SM-62 Program," 8 May 1958, Exhibit 13.

the most successful of all Snark flights on 25 January provided the most severe exercise of the guidance system to date. The missile flew to Ascension Island (maximum range) and impacted one nautical mile short and one quarter nautical mile to the left of the desired impact area after a flight of eight hours and thirty-three minutes. Thereafter, various forms of malfunctioning marred Snark flight tests in the succeeding five months. A test on 14 February to Ascension Island was successful until the nose cone failed to release automatically and had to be released by command control. A flight on 8 March resulted in the loss of missile beacon and telemetry signals about 200 nautical miles from Ascension Island and the missile presumably destroyed itself. Telemetry was again lost about 3,800 nautical miles down range and the missile self-destroyed during a flight on 3 April. Two missiles were launched in May. The first, on 7 May, was successful except for failure of the automatic nose cone release near Ascension Island. When released by command control it was with an approximate 24 nautical mile error from the desired impact area. During second flight, on 28 May (and the last contractor flight type E Snark missile), the left pylon tank failed to release causing the missile to spiral and impact about 600 nautical miles down range. A test on 27 June represented the first all military launch of a phase VII equipment and suitability test missile by the 556th Strategic Missile Squadron at Patrick Air Force Base under the supervision of the AFMTC's 6555th Guided Missile Squadron. The launching was successful but the flight was terminated one hour later

because of power failure. Loss of power and pylon tank ejection occurred albst simultaneously. It was subsequently determined that this was caused by malfunctioning of ejection cartridges. Notwithstanding the difficulties experienced in the flight tests, <sup>33</sup> much valuable information was obtained.

THE WS-123A GOOSE SM-73

By the end of 1957, Headquarters USAF had approved three Goose sites, Ethan Allen Air Force Base, Vermont, Duluth Municipal Airport, Minnesota, and Otis Air Force Base, Massachusetts. Construction funds for FY 1958, however, were made available for only the first two Air Force bases. <sup>34</sup> On 13 February, Headquarters USAF approved three more Goose sites, Kinross, K. I. Sawyer, and Wurtsmith Air Force Bases, all in Michigan. Observing that four additional sites would have to be selected shortly if they were to be included in the FY 1960 MOP, Headquarters USAF waived its previously established requirement that Goose sites should be located north of 42 Degrees, 30 Minutes latitude, <sup>35</sup> provided that operating locations could be selected which would provide sufficient decoy penetration in support of the EMP.

33. DF's, Missile Div D/Ops to D/Compt, "Strategic Missile Monthly Progress Reports," Feb thru Jul 1958, filed in Mgt Analysis Div D/Compt, Hq SAC; Monthly Report, Hq 556th SMS, 25 Jul 1958, filed in Hist Div Archives, Hq SAC.
34. Historical Study No. 70, Vol I, pp 32-33, filed in Hist Div Archives, Hq SAC.
35. TWX, Hq USAF to CINCSAC, AFOOP-OP-U 56600, 13 Feb 1958, Exhibit 14.

Meanwhile, a Rand Corporation study was completed in February on hardening Goose sites. This study sought to determine the feasibility of providing greater operational flexibility for this weapon system by being able to establish a "hold" for Goose missiles, and to provide more selective integration of this weapon system with manned bomber waves. <sup>36</sup> A SAC war-game study completed in April, however, to determine the desirability of dispersing the Goose units to sites equipped with 48 missiles, and hardening the facilities to withstand 25 psi, led to the conclusion that dispersal and hardening were not feasible and that goose sites should not be located on SAC B-52 bases. <sup>37</sup> Headquarters USAF agreed. <sup>38</sup> Consequently, on 26 May it withdrew its approval of Goose on-base sites at Kinross, K. I. Sawyer and Wurtsmith Air Force Bases and authorized their resurvey to satellite Goose units around each of these bases. <sup>39</sup> On 4 June it formally established a new criteria for establishing Goose sites by directing SAC to amend paragraph 9A of its SM-73 Goose Operational Plan, then under revision, to read: "SM-73 units will be dispersed by squadrons and located on active USAF installations not considered priority targets,

36. DF, D/Plns to D/Compt, "Strategic Missile Monthly Report," 8 Apr 1958, filed in Mgt Analysis Div, D/Compt, Hq SAC.
37. DF, D/Plns to D/Compt, "Strategic Missile Monthly Report," 9 May 1958, filed in Mgt Analysis Div, D/Compt, Hq SAC.
38. Interview, J. Van Staaveren, Historian with Maj L. R. Harvey, D/Plns Hq SAC, 21 Aug 1958.
39. TWX, Hq USAF to CINGCSAC, AFOOP 51284, 26 May 1958, Exhibit 15.

or will be sited sufficiently remote from the support base to insure a separate target with neither susceptible to direct damage from a successful single weapon attack against the other." With the inclusion of this statement, Headquarters USAF also approved SAC's draft of its Revised Goose Operational Plan. <sup>40</sup>

A resurvey of Kinross, K. I. Sawyer and Wurtsmith Air Force Bases had not been completed by the end of June. Other areas surveyed but not selected during the reporting period included Suffolk County Air Force Base, Long Island, New York, Stewart Air Force Base, New York, L. G. Hanscom Air Force Base, Massachusetts, and a site about four miles from Presque Isle Air Force Base, Maine. <sup>41</sup> The first three Air Force bases were unsatisfactory for one or more of the following reasons: Existence of other high priority missions, no available land, dense population, overflight restrictions and civilian resistance. The site near Presque Isle was rejected because of the Snark mission given to that base and a desire by Headquarters USAF not to give it a hard core mission. <sup>42</sup>

In May, Headquarters USAF released 39 million dollars of FY 1959 funds for the Goose program to complete research and

- 40. TML, Hq USAF to CINCSAC, AFOOP-OC-B-3 51637, 4 Jun 1958, Exhibit 16  
See also SACOP 3-58, SM-73 Goose, 1 Jul 1958, p 18, Exhibit 17.
- 41. DF, Programs Div D/Plns to DE, Hq SAC, "Base Facilities SM-73," 13 May 1958, Exhibit 18.
- 42. DF, Programs Div, B/Plns to DE, Hq SAC, "Base Facilities, SM-73," 13 May 1958, Exhibit 18; See p. 12.



development, for an initial missile inventory, and for production tooling. The release of the funds was deemed significant by SAC in that it represented a turning point in the Goose program. It was the first money committed for the Goose weapon system beyond the research and development stage.<sup>43</sup> The production of Goose missiles, however, was not scheduled to begin until January 1960 and it would proceed initially at a slow rate. Production of 100 missiles per month would not be attained until September<sup>44</sup> 1961.

The development of the J-83 Goose engine by the Fairchild Corporation, the prime contractor, continued to slip behind schedule during the early weeks of the reporting period. However, in March it appeared that "shotpeening" or metal strengthening of the compressor system would remedy the slippage problem. The first YJ-83 engine, initially scheduled for delivery in December 1957, and the YJ-85 engine, an alternate Goose engine, passed their 15-hour Preliminary Flight Rating Test (PFRT) in May. A fully rated J-83 engine with 2,450 pounds of thrust was not expected to complete its qualification test until March 1959. Development of the subsystem (i.e., the electronic package) was progressing in a satisfactory manner. The ECM configuration for

43. DF, D/Ops to D/Compt, "Strategic Missile Monthly Report," 9 Jun 1958, filed in Mgt Analysis Div, D/Compt, Hq SAC.

44. Memo, D/Plns to Gen Westover, Hq SAC, "Status of the SM-73 (Goose) Program," 24 Apr 1958, Exhibit 19.

all Goose Missiles desired by SAC would include an "S" band jammer,<sup>45</sup>  
VHF jammer, a repeater, and chaff, including delayed opening chaff.

Considerable impetus was given to planning for the Goose force when SAC completed and issued on 1 July a completely revised and detailed Goose Preliminary Operational Plan, replacing the Preliminary Operational Plan issued on 29 May 1957.<sup>46</sup> As has been noted, a major change in the plan required the dispersal of Goose squadrons, their establishment on active USAF installations not considered priority targets, and placed sufficient distance from a support base to preclude destruction of both the support base and the squadron by a single enemy weapon attack.<sup>47</sup> The plan also contained detailed annexes of wing, group and squadron unit manning documents, training, logistical maintenance and supply policies, and installation and communication requirements.<sup>48</sup> Manpower estimates indicated that approximately 308 military personnel would be needed to man a Goose squadron.<sup>49</sup> Refinements of the new Operational Plan

- 45. Ibid.; DF's, D/Mat to D/Compt, "Monthly Reports on Strategic Missiles," 7 May 1958, 6 Jun 1958, 7 Jul 1958, filed in Mgt Analysis Div, D/Compt, Hq SAC.
- 46. Historical Study No. 70, Vol II, Exhibit 15, filed in Hist Div Archives, Hq SAC.
- 47. See p. 17.
- 48. SACOP 3-58 "SM-73 Goose Preliminary Operational Plan," 1 Jul 1958, Exhibit 17.
- 49. Ltr, Hq USAF to Comdr 8th AF, "Construction Requirements and Personnel Strengths to Support SM-73 Goose Missile Squadron," filed in Central files DE, Hq SAC.

could be expected, however, as the first Goose squadron was not scheduled to be activated until the third quarter of 1960, over two years from the end of the reporting period, June 1958.

At the end of the reporting period Goose planning called for a 10-squadron Goose force. Sites for six of the ten squadrons had been selected and approved by Headquarters USAF and sites for four squadrons remained undetermined. The six approved sites, the squadrons to be assigned to each one, and the proposed activation and operational dates for the 10-squadron Goose force were as follows:

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	<u>Site</u>	<u>Squadron</u>	<u>Operational Date</u>	<u>Activation Date</u>
1.	Ethan Allen AFB	508th SMS	1/61	3/60
2.	Duluth AFB	510th SMS	2/61	4/60
3.	Otis AFB	511th SMS	3/61	1/61
4.	Kinross AFB	509th SMS	4/61	2/61
5.	Wurtsmith AFB	708th SMS	1/62	3/61
6.	K. I. Sawyer	709th SMS	2/62	4/61
7.	Unknown	710th SMS	3/62	1/62
8.	Unknown	711th SMS	4/62	2/62
9.	Unknown	724th SMS	1/63	3/62
10.	Unknown	725th SMS	2/63	4/62

50. IF, DE to Gen Westover, "SM-73 (GOOSE) Program, 26 Jun 1958, Exhibit 20.

Five Goose flight tests were conducted during the reporting period. A flight on 31 January, designed to study launching, stability, performance and reflectivity, ended after radio control was lost. The missile flew two hours and 18 minutes and attained a maximum altitude of 25,000 feet. The test was considered partially successful. During a very successful flight on 18 March a Goose missile flew in a race track pattern for four hours and 58 minutes at speeds of .4 to .88 Mach, reaching a maximum altitude of 49,000 feet. A third flight attempt on 18 April failed completely when the missile impacted on the beach and exploded. The fourth test on 15 May lasted about two and a half hours. It was designed to test dynamic stability and performance of the missile at 20,000 to 48,000 feet and to gather flutter and vibration data during a high speed dive to impact. Gyro control was lost, however, after two hours and 25 minutes of flight and the missile impacted. Nevertheless, the test was considered partially successful. The last flight test of the reporting period, on 18 June, failed because of booster ignition malfunctioning. Fuel expansion during the subsequent delay caused skin separation on each wing of the Goose, thereby requiring either a wing change or factory repair. The test of 18 June comprised the tenth Goose flight test since the tests<sup>51</sup> began on 27 June 1957.

51. DF's, D/Ops to D/Compt, "Strategic Missile Monthly Reports," Feb thru Jul 1958, filed in Mgt Analysis Div, D/Compt, Hq SAC and in Hist Div Archives, Hq SAC; Historical Study No. 70, Vol I, p 34, filed in Hist Div Archives, Hq SAC.