

Headquarters  
AIR FORCE SYSTEMS COMMAND  
Andrews Air Force Base  
Washington 25, D.C.

DATE 13 Aug '62

MEMORANDUM FOR: Chief of Staff  
Hq USAF

The Secretary requested my comments on the program change on MIDAS. My comments, which I forwarded to the Secretary, are attached.



B. A. SCHRIEVER  
General, USAF  
Commander

8-21

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HEADQUARTERS  
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UNITED STATES AIR FORCE  
ANDREWS AIR FORCE BASE  
WASHINGTON 25, D. C.

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13 AUG 1962

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REPLY TO  
ATTN OF: MSFA

SUBJECT: DOD Program Change (4.4.040) on MIDAS (239A)

TO: Honorable Eugene M. Zuckert  
Secretary of the Air Force  
Washington 25, D. C.

C/S has noted

Dear Mr. Secretary

1. Secretary McNamara's Program Change Guidance of 6 August 1962 on the MIDAS Program has been carefully analyzed. I am, of course, deeply concerned about the impact that this course of action will have on the MIDAS Program. However, I feel an even greater concern about the broad implications with regard to our defense philosophy. Therefore, I am including my thoughts on both aspects in the hope that they will be of assistance in further discussions with the Secretary.
2. Of major concern is the sentence that states that early warning becomes less and less important as time goes by. This approach seriously limits the flexibility with which national strategy can be established and military forces utilized. It fails to recognize the deterrent value associated with unequivocal warning which is not attainable with radar type warning alone. It also gives no value to added warning associated with protection of the civilian populace.
3. I realize that the guidance goes on to say that the achievement of a technological capability for detection of missile and satellite launchings is desirable and suggests a research and development program to achieve this end. However, the objective of timely translation of this technology to a useful operational capability is lacking. Unless this technological effort can be oriented with this objective in mind the time when such technology could produce a useful capability will always remain in the distant and indefinite future.
4. With these thoughts in mind, I strongly believe that maximum warning is still a valid national objective. On this basis, the balance

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of this letter is specifically addressed to the place of MIDAS in achieving that objective.

5. From its inception the MIDAS Development Program has been based on first demonstrating the feasibility of detecting ballistic missiles by orbiting infrared sensors, then demonstrating that a practical and useful system could be evolved. The basic design parameters for the infrared sensors were chosen with extreme care and conservatism after several years of experiment and study. Since that time, measurements have shown conclusively that infrared radiation from ATLAS and TITAN I (LOX-RP propellants) missiles exceeds by at least a factor of ten the basic design sensitivity of the MIDAS sensors. Radiation from TITAN II missiles, using "storable" fuels exceeds MIDAS sensitivity by a factor of three or more.

6. Much has been said and much written to the effect that high altitude sunlit clouds and some particular cloud formations could result in "background clutter" which could obscure or "simulate" actual missile tracks. Most judgments of this nature have been based on theoretical extrapolations of limited data gathered by U-2 aircraft. Much actual data has now been gathered in orbit by DISCOVERER and MIDAS flights. These data show that very little "background clutter" exists under real conditions, except, perhaps, for a very small area in the direct azimuth of the sun. No background clutter whatsoever has been found in the data collected from the last MIDAS flight.

7. I believe that DOD is now in complete agreement with us that the MIDAS system is feasible and that the "simplified MIDAS" approach proposed will result in an acceptable reliability. Interest has now turned to the requirement for this system which had previously not been questioned.

8. The need for a MIDAS-type system is based upon unique capabilities which complement radar early warning systems, adding a great measure of confidence and credence to the total early warning picture. MIDAS yields additional warning time to that offered by radar defense nets. It employs an area of technology quite apart from radar techniques and functions from a different location and in a different way, thus significantly complicating an enemy's means to achieve surprise. Further, MIDAS can uniquely reveal with surety the geographic location from which a raid is launched. This feature is definitely valuable in deciding which potential enemy country committed the aggressive act or what specific enemy

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facility is still a threat. Finally, MIDAS lends itself uniquely to specialized surveillance of fluid situations such as limited warfare not only to detect missiles launched from within the zone of hostilities, but also, missiles launched from without into such zones.

9. I believe that it should be made eminently clear that radar is not an alternative to MIDAS in either an operational or technical sense. Regardless of the threat that is postulated, through the 1968 to 1970 period, MIDAS clearly complements any existing or proposed radar system that is accepted as being technically feasible. This is true even if the deficiencies and limitations of the present BMEWS are eliminated. As you know, these deficiencies include gaps against the detection of low angle ballistic missiles, inability to detect extremely high angle ballistic missiles and inability to detect missiles arriving from other than a northerly direction because of fixed location and orientation. The cost of various radar approaches to early warning against ICBM's, SLBM's and ERBM's were included in my letter to General LeMay of 23 March 1962, which resulted from our analysis of a memorandum from Mr. Gilpatric to the Joint Chiefs of Staff in February of 1962 on early warning requirements.

10. The flexibility inherent in the coverage afforded by MIDAS is an important consideration here. If the launch area of a potential enemy changes, fixed radars such as BMEWS lose their effectiveness. MIDAS will have the capability of detecting launches of liquid fuel missiles from any geographical area and with technical improvement could extend that detection to solid fueled missiles launched from subs, ships or land.

11. For these reasons, I strongly recommend that Secretary McNamara be urged to reconsider the approach he has outlined and to withhold his decision until significant actions now underway can be considered. These include the study of early warning requirements within the Air Staff which I understand is scheduled for completion on 15 August, and review later this month of the revised MIDAS development plans in response to the most recent guidance.

Sincerely

B. A. SCHRIEVER  
General, USAF  
Commander

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