

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON 25, D. C.



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REPLY TO
ATTN OF:

AFTAC/DXR

SUBJECT:

(U) B/20-4 System Expansion

TO: Special Assistant for Atomic Energy
and Outer Space (S/AE)
Department of State
Washington 25, D. C.

1/4/62

Starts

1. One of the assigned tasks performed by the USAF in the operation of the US Atomic Energy Detection System (AEDS) is the determination of plutonium equivalent production by the Sino-Soviet Bloc. This is accomplished by analysis and evaluation of atmospheric samples collected by the world-wide network of stations. To improve the reliability and to better definitize our estimates of Sino-Soviet Bloc plutonium equivalent production, the present network of facilities is being expanded. The major portion of this expansion program will be satisfied by collocation of the collection equipment with other facilities of the AEDS. This is not possible in all cases and installation of this equipment is required in locations where no AEDS operations are now conducted or are programmed. In these few cases we will need assistance of other US elements. Among the new areas being considered for expansion of this system are: Ceylon, Taiwan, Ivory Coast, Malagasy Republic and New Zealand.

2. The equipment we employ in this operation is called a B/20-4 atmospheric sampling unit or "heat exchanger." This equipment is installed in a cabinet which is approximately 7½ feet high, 1½ feet wide, 2 feet deep and weighs approximately 500 pounds. Cooling is provided by a recirculating water cooling system composed of a pump, radiator, and fan, which is located outside of the building in which the cabinet is located. Because the unit is compact, very little room is required for installation. Design of the unit requires 230 volts line to ground while its operation requires approximately 30 kilowatts electrical power continuously. It is preferable to draw atmospheric samples from the outside; however, room air may be used as sample air provided no excessive carbon contamination is present. A sample container of approximately 350 cubic centimeters volume is utilized for obtaining samples of rare gases and is removed from a quick disconnect fitting after one week's time, following which a new container is inserted. Samples are mailed to the US for delivery to the appropriate laboratory where analysis is undertaken. Operation and maintenance of B/20-4 equipment are very simple and involve only a few minutes workload per day. Operational and maintenance problems are normally resolved by one of our technical operations squadrons in

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the field. A B/20-4 facility has already been installed in the US Consulate in Hong Kong and has been operating for several months with no apparent problems.

3. As there are no AEDS units in the areas mentioned in paragraph 1 above, it is our proposal to utilize the facilities of Air Attache offices with the exception that in Ceylon we would use the facilities of the Naval Attache and in New Zealand the Army Attache. The Army, Navy, and Air Force have approved in principle the installation and operation of this equipment in their attache facilities, subject to availability of space. It appears that in some areas, particularly Ceylon, there are space limitations. Visual surveys have been scheduled in February 1962 for all the above areas except Malagasy Republic which will be surveyed in April 1962. Availability of space can best be determined during the survey by the visual survey officer. Since minor construction may be required for the installation of these facilities, it is assumed that approval of the Foreign Buildings Office will be required. We would appreciate your assistance in obtaining the necessary Department of State approval for the installation and operation of this equipment in US Consulates or Embassies as indicated above, providing of course such is feasible. It is assumed that the various military attaches have contacted their Chief of Mission relative to the B/20-4 requirement for their particular area.

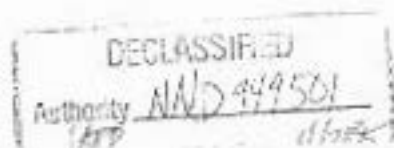
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