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22 August 1955

Pages 312 - 319, incl.

This document consist of 9 pages,
Cy: 1 of 1 Cys. Series: SA-1

NOTE BY THE SECRETARIES

to the

JOINT CHIEFS OF STAFF

on

STATUS OF THE XW-30 DEVELOPMENT PROGRAM

The enclosed memorandum by the Chairman, Military Liaison Committee to the Atomic Energy Commission, dated 12 August 1955, together with its attachment (Appendix), is referred hereby to the Joint Strategic Plans Committee for comment and recommendation.

RICHARD H. PHILLIPS,
R. D. WENTWORTH,
Joint Secretariat.

See N/H dated 10-27-55

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ENCLOSURE

DEPARTMENT OF DEFENSE
MILITARY LIAISON COMMITTEE

12 August 1955

MEMORANDUM FOR The Chairman, Joint Chiefs of Staff

Subject: Status of the XW-30 Development Program

Reference: Letter* for the Chairman, MLC, from the General Manager, AEC, on the above subject, dated 2 August 1955. (LXI-3268)

A copy of the referenced letter is forwarded to you for consideration. It is requested that you furnish to the Military Liaison Committee guidance on behalf of the Department of Defense regarding the questions raised by the Atomic Energy Commission in the last paragraph of this reference.

/s/ HERBERT B. LOPER
Chairman

* Appendix hereto

APPENDIX

UNITED STATES
ATOMIC ENERGY COMMISSION

Document No. LXI-3268
COPY NO.
Series "D"
2 August 1955

Honorable Herbert B. Loper
Chairman, Military Liaison Committee
to the Atomic Energy Commission

Dear General Loper:

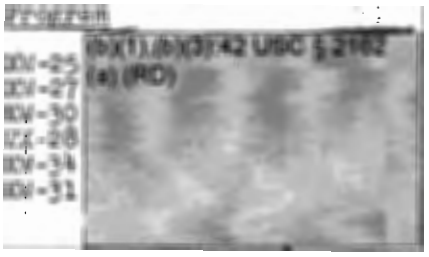
Your Serials 17641,* dated June 15 and 17655,* dated June 21, 1955, reaffirmed Department of Defense interest in the XW-30 development program and requested information regarding its current status.

The current status of the XW-30 is as follows: The major design features of the warhead, except for the HE system to be employed and the exact design of the pit, are now firm. Fabrication of test warheads is underway to meet early flight tests starting in November 1955. Prior to that time, HE and pit designs will have been firmed sufficiently to provide weight, center of gravity and moment of inertia data necessary for the specification of mock-up warheads for the flight tests. In accordance with the request of the Bureau of Ordnance, studies are in process pertaining to certain arming and safing functions of the adaption kit. Some modifications will be required to the basic concept of the XW-12/TALOS adaption kit due to the major technical difference between the XW-12 and the XW-30 warheads.

In view of several other weapon programs which can have approximately the same time scale, it is felt desirable to consider the over-all weapon program rather than the XW-30 specifically. Listed below are current estimates of dates at

* Not on file in Joint Secretariat

which the various programs now pending could reach operational availability if their order of completion were established as indicated. The operational availability date as used here is the date by which an initial quantity of weapons could be ready for delivery to the military. The assumed quantity for each weapon shown to the right of the operational availability date (OAD) amounts simply to an assumption of the number of weapons required to constitute a possible military capability. The right-hand column of the table (assumed WR production rate at operational availability) represents an assumption on the part of the Atomic Energy Commission as to a reasonable initial product rate, but it is contemplated that the ultimate or steady production rate might be somewhat greater than the figure shown.



Operational Availability Date	Initial WR	Assumed WR Production
7/57		
10/57		
1/58		
4/58		
7/58		
10/58		

The Atomic Energy Commission still ha under study the proposal that (b)(1),(pre-production XW-25 warheads be supplied by January 1, 1957. We will advise you of the feasibility of this approach by separate correspondence in the near future.

The order indicated in the above table reflects previous DOD statements of urgency associated with the XW-25 and recent guidance contained in your Serial 17678, dated June 29, 1955, which indicates that the TX-28 is not to interfere with the XW-25 or XW-30. Modifications in the relative order to suit military requirements are feasible, subject to the following technical considerations:

1. Production problems associated with (b)(1),(b)(3):42 USC § 2162 (a) (RD) (b)(3):42 USC §2162 (a) do not appear to permit achievement of operational availability for weapons with these features prior to January 1958. The XW-30, TX-28, XW-31, and the XW-34 have these features.

2. An additional limitation on the time phasing of the XW-34 results from the high shock resistance that is required in that weapon and the associated extensive test program that is necessary to prove it out. This would lead the Atomic Energy Commission to be reluctant to schedule operational availability of the XW-34 prior to April 1, 1958.

3. A listing of the XW-27 in October 1957 is based upon

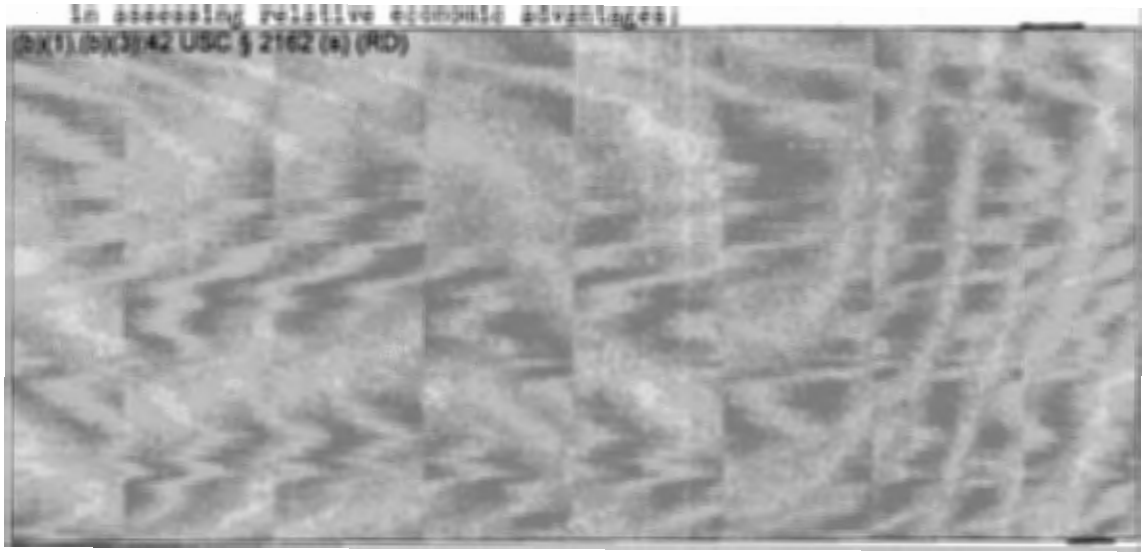
it would be relatively easy to complete the XW-27 development and have it out of the way before the earliest date at which any of the remaining systems could reach operational availability. The XW-27 program thus scheduled would be undertaken on a not-to-interfere basis with respect to the XW-25, XW-30, and TX-28 programs. Should it become evident at some future date that the XW-30 or the TX-28 design and production problems can be solved to permit an earlier operational availability date than January 1958, and should interference with these programs by the XW-27 develop as a result, we would notify you and request guidance. As noted in my letter to you containing a formal proposal for an XW-27 program an operational availability date of October 1957 is possible only for the warhead version of the XW-27 and that an operational availability date for a bomb version of the 27 would be considerably later and would involve interference with the other programs.

4. The XW-25, XW-30, and XW-31 schedules are vitally dependent upon the military's missile flight test schedules and upon missile performance. Depending upon specific technical problems of each missile - warhead marriage, from four to six successful flights are required before a design release can be given on the warhead. Thereafter, additional tests are required and the final flight tests normally are concluded about the same time as first production deliveries are made thus enabling flight-proof tests of production components and the check-out of final design changes.

The constant three month interval that has been used in spacing weapon operational availability dates may appear somewhat arbitrary but we believe that it represents an optimistic but responsible estimate of the developmental and productive capacity which the Atomic Energy Commission will be able to obtain during the next few years. Our reason for planning the program at uniform intervals is simply to smooth out the flow of information and material through the Atomic Energy Commission's system in the belief that an approximately uniform rate of introduction of new weapons will give maximum assurance of smooth and efficient operation. We adopt the estimate for the present that a new weapon can be delivered every ninety days after consideration of the following factors: the accelerated pace will represent a 100% increase over our past average of delivering only two new weapons per year; allowance must be made for the accomplishment of an ever growing number of improvement retrofits, warhead adaptations to missiles, and projects to achieve specialized ordnance characteristics. The validity of the prediction that four weapons per year will be the maximum practicable delivery rate in 1957 and 1958 will be checked as the programs proceed and adjustments made as necessary.

Our actions will be directed toward achieving the maximum possible developmental and productive capacity. Whether we can exceed the four per year which we now predict or in fact whether we can achieve the four per year cannot definitely be foretold at this time.

Should the release dates, even after the various programs are arranged in the order which the DOD regards as proper, be out of line with military planning, you may wish to consider acceptance of an interim warhead to permit deferment of either the XW-30 or the XW-31 program. Such a plan would take some load off our development and production facilities and would facilitate bringing into stockpile other competing weapons systems. We regard it technically feasible to use the XW-25 (unboosted) as either the TALOS-W or NIKE-B warhead in lieu of the XW-30 or XW-31 or both. It is also technically feasible to use the XW-30 as the warhead for NIKE-B as well as TALOS-W. In both cases the smaller interim warhead would be fitted so as not to compromise the design of the missile for the final warhead. A new warhead of the same size as the XW-25 but with a boosted nuclear system could be released by April 1958, and could serve as the warhead for TALOS-W and/or NIKE-B as well as for DING DONG. The three-month spacing between programs, however, would have to apply to this warhead along with the others. In considering these possibilities you may find the following oralloy costs useful



Based solely on economic grounds, you will observe that in general it is advantageous, even when development costs are considered, to tailor warheads to each weapon system when substantial quantities are involved. However, the use of interim warheads is attractive from the standpoint of conserving development and production effort.

We would greatly appreciate a statement of the sequence in which the programs under consideration should be arranged to best satisfy military needs. We also desire your comments on whether the resulting release dates, based on the assumptions explained herein, are acceptable to the Department of Defense. If they are not, we request your guidance with respect to which, if any, of the warheads should be designated to serve temporarily in more than one missile system. We also request your concurrence in discontinuing all development aimed at modifying and adapting the XW-7 warhead for use in NIKE-B in order that all warhead, adaption kit, and missile effort can be re-directed toward the earliest capability with an optimized weapon system. Your assistance in resolving these questions will be most helpful.

Sincerely yours,

/s/ K. E. FIELDS
General Manager

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27 October 1955

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NOTE BY THE SECRETARIES

to the

HOLDERS OF J.C.S. 2012/67

(Status of the XW-30 Development Program)

The study directed by J.C.S. 2012/67 is contained in J.C.S. 1823/226.

RICHARD H. PHILLIPS,

R. D. WENTWORTH,

Joint Secretariat.

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