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Copy 9 of 9

28 September 1966

MEMORANDUM FOR THE RECORD

SUBJECT : Pilot's Protective Assembly For the U-2R

Reference: Memorandum From D/R&D/OSA dated 19 Sept. 1966;  
Subject: U-2R Executive Committee Meeting No. 1.

1. With regard to paragraph 2a of the referenced memorandum, a clarification is in order as follows:

a. The standard USAF suit which would be most applicable to this program would be the David-Clark S-901J Pilots Protective Assembly (PPA) presently being used for the EARNING program. The basic USAF height-weight sizing tables result in twelve standard sizes. The four basic sizes (small, medium, large, and extra-large) are configured with torso, leg and sleeve segments that are either Regular, Long or Short, thus giving the total of twelve sizes. However, in the EARNING program, as would be the case in buying the same PPA for U-2R drivers, a better personal fit is obtained by what David-Clark calls "Customized Sizing". This approach consists of using the USAF height-weight tables to select the basic suit pattern but with additional personal measurements used to select appropriate torso, leg and sleeve patterns. Thus a driver who would fall into a Medium Regular PPA according to his height and weight can obtain proper fitting legs, torso and/or sleeves if his particular measurements are outside the limits for a standard Medium Regular garment. This approach would not involve any particular additional expense for our program since the patterns for the S-901 J PPA were developed and made for the EARNING program.

USAF review(s) completed.

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b. I do not feel that an "off-the-shelf" approach is either feasible or desireable, if this approach means simply choosing one of twelve standard sizes instead of the "customized sizing" approach. My experience with standard sizes for various USAF pressure suit programs in the past confirms the fact that nowhere near 100% of a pilot population will fall into the standard size range. This, in my opinion, has contributed to the poor acceptance by pilots in various past USAF pressure suit programs.

c. With regard to immediate procurement of PPA's for cockpit configuration studies, the only logical approach is to review the height/weight/measurements of all past and present Agency drivers and to select a mean and the two extreme sizes, procure three suits to fit these sizes, and then use drivers in these three sizes for configuration studies. This source of information is available at David-Clark for suitable analysis.

d. [redacted] suit sizes pose more of a problem to the "Standard Sizing" approach. I have asked [redacted] of the David-Clark Co. to review their records for past [redacted] who were out-fitted. This information may tell us whether we can expect present and future [redacted] to fall into the USAF Standard Size tables or not. If not, we may be able to utilize information previously gathered by Wright-Patterson AFB and David-Clark Co. [redacted]

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e. I do not feel that the economy and dollar-savings aspect of selecting S-901 J PPA's for the U-2R versus custom-fitted S-970 PPA's used for A-12 drivers is really significant or should be stressed. The significant savings of using either system for the U-2R is the fact that the developmental costs have already been paid for. Choosing the S-901 J PPA is the only available approach since it seems that LAC is going to use the SR-71 Ejection Seat, Oxygen System and Seat Kit in the U-2R which includes this PPA as an integrated system. If dollar savings are

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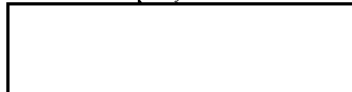


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in fact realized by buying the S-901 J instead of the S-970, this money would be well spent to purchase Pittsburgh Plate Glass (PPG) visors for the S-901 J PPA helmets at the time they are originally purchased. Reflectance will be just as great a problem in this aircraft as it has been in any other aircraft that the full pressure suit helmet has ever been worn in operationally. It is significant to note that the EARNING SPO at Wright-Patterson AFB has allocated funds for procuring 50 of these anti-reflectance PPG visors for use with their S-901 J PPA's in the SR-71.

f. Finally, there is one other aspect of "Standard Sizing (including Customized Sizing)", as used in the SR-71, versus "Custom Fitting", as used in the A-12, that should be considered. In buying a Standard or Customized Sized suit for a driver, he must accept or reject the assembly at the time of initial issue. If he later decides the assembly doesn't fit properly, a new suit would have to be purchased. Custom-fitted assemblies on the other hand would be adjusted, modified, etc., at a later date as part of the contract. This difference in "Customer-service" probably accounts for the majority of any price difference.



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