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8 Nov 1967

FY 1969 Budget Issue No. 2 - TAGBOARD Drones

Issue: Basically, the issue is whether to budget 12 or 0 Tagboard drones in FY 1969.

Discussion:Drones:

The current TAGBOARD drone production program consists of a retrofit of 15 drones initially procured under the old program, the FY67 procurement of 7 drones and the FY68 procurement of 12 drones.

Although the drone contractor, Lockheed, feels that two drones per month is a good minimum production rate, he will, in fact, be producing most of the 19 drones at a 1 1/3 per month rate. Furthermore, he plans to produce these drones on an 80% learning curve and has negotiated a contract based on this curve. In accordance with the recommendation from Director D, a FY69 drone buy of 16 could also be built at a 1 1/3 rate per month on an 80% learning curve. The estimated unit cost would be \$1.78 million, with an estimated total cost for 16 drones of \$28.50 million.

The contractor was asked for his estimate of costs associated with a FY69 production of 12, 8, and 6 drones corresponding to a monthly production rate of one, two-thirds, and one-half respectively. He has stated that, on a rough order of magnitude basis, a stretchout of the scheduled rate of 1 1/3 per month to one per month would not only nullify the learning curve at the point of rate change but would also cause an increase of 10 to 15% above the existing learning curve. He also feels that it would not be possible to achieve an 80% learning curve at this production rate but that after some time a curve of 90% could probably be reached. On this basis, it is estimated that the unit cost of twelve drones (the DNRO recommended budget) produced at a one per month rate would be \$2.08 million for a total twelve-drone buy cost of \$25 million.

Lockheed would not estimate on a production rate below one per month but did state that there would be a substantial increase in hours required per drone and in the unit cost per drone. Much of the increase would be in the indirect cost area because of the number of people, the space, and the equipment which would necessarily be tied up in support of the production of a small number of drones at a low and inefficient rate. This then poses a question, raised by Lockheed, as to whether Lockheed and its subcontractors would choose to tie up its facilities for a year or more at a low rate of production in the hope that the production rate in the following years would be substantially increased.

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Making the assumption that they would produce at a low and inefficient rate for at least a year, it is estimated that the unit cost of eight drones produced at a 2/3 rate per month would increase to \$2.86 million. The unit cost of six drones produced at a 1/2 per month rate would further increase to \$3.48 million. This equates to a total cost of \$22.9 million for an eight-drone buy and \$20.9 million for a six-drone buy.

Another possibility should be addressed; namely, the implications of stopping drone production for at least a year, and then reinstating production. In this connection, implications vary as to potential future operational requirements, training requirements, future production quantities, and status of the contractor's facilities.

It appears that the lowest economical production rate is 12 per year. If 4 are consumed in training each year, 8 additional would accrue to the "operational" inventory each year. If no future operational requirements were immediately evident, there would have to be a determination of provision for contingency operations. This is inherently the situation when a production gap is discussed at this time.

Using learning curve experience, it is estimated that the number of hours required to build drones after a production gap could be 50 to 75% higher than the hours required to build drones as a direct follow-on to the currently-approved FY1968 program, with a commensurate increase in unit cost. More importantly, however, are the implications of the production gap itself -- Lockheed Skunk Works other production business during this gap period will be at its lowest point for about 10 years (unless an F-12 production program is approved, which appears unlikely for some time). The SR-71 production ends in FY1968, and U-2R production ends in November 1968. Accordingly, there would be no other production business which would allow trained Tagboard personnel to be shifted to other production work for a gap period. The ability to recall skilled workers or to hire skilled labor off the street would be questionable, particularly if there was still an uncertain future to the program. Firing, rehiring and training costs would be incurred in any event. There would also be questions as to the status of production tooling, the availability of production space, and the willingness of the contractor and sub-contractor to undertake production on a potential "start and stop" program.

If a positive operational requirement materializes (reference the Sept 25, 1967 BYE 52692-67 to the Ex Com members, subject "Scenarios for Utilization of the TAGBOARD Drone) the TAGBOARD program could require more than 12 per year, and production could be increased at a lower unit cost. The chances of this operational requirement materializing appear to be more pronounced now than even three months ago, from the standpoint of North Viet Nam coverage, as potential vulnerability of the Oxcart or SR-71 manned aircraft increases. It is believed, therefore, that the FY1969 budget for 12 Tagboard should be approved. If a decision were made to not buy these 12, it would mean an interruption to the program,

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rather than merely a "production gap." To restart after the interruption would be uncertain, and in any event a very expensive exercise.

Drone Cameras:

Estimates have similarly been made as to the unit camera cost impacts if the buy sizes are 8, 6, 4, and 3 respectively. The estimated costs are as follows:

	Camera Quantity			
	<u>8</u>	<u>6</u>	<u>4</u>	<u>3</u>
Camera Unit Cost (Thousands)	225	225	240	276
Camera Total Cost (Thousands)	1,800	1,300	960	830

The increase in camera unit cost is not as extensive as for the drone, since the cameras are already essentially being produced by a job shop operation rather than on a production line.

A summary of FY69 program costs for the various options discussed above is attached herewith.

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TAGBOARD FY 1969 DRONE/CAMERA OPTIONS

	<u>16/8</u>	<u>12/6</u>	<u>8/4</u>	<u>6/3</u>
<u>Investment</u>				
Drones	\$28,500	\$25,000	\$22,900	\$20,900
Cameras	<u>1,800</u>	<u>1,350</u>	<u>960</u>	<u>830</u>
Subtotal	30,300	26,350	23,860	21,730
<u>Operating</u>	6,600	6,600	6,600	6,600
TAGBOARD TOTAL	<u>\$36,900</u>	<u>\$32,960</u>	<u>\$30,460</u>	<u>\$28,330</u>

Unit Costs

Drones	1,780	2,080	2,860	3,480
Cameras	225	225	240	276

Unit Cost Ratios

Drones	1.00	1.17	1.61	1.95
Cameras	1.00	1.00	1.07	1.23

Equivalents

Drones - 16 Base	16	14	13	11 3/4
Cameras - 8 Base	8	6	4 1/3	3 3/4

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