

Preliminary Schedules
for Blanket and Sunset Strip

The equipment visualized herein and on which the attached schedule is predicated, is not only complex within itself but poses complex interface problems requiring extensive coordination with other contractors. Such coordination largely must precede any detail design and engineering work. We anticipate that we would perform as much as possible of this coordination, team organization, etc., prior to formalization of the contract.

As discussed elsewhere, we believe that a modification of the normal organizational concept is necessary if such a schedule is to be feasible.

July 22, 1960

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Address reply to:

M. E. Anderson
Post Office Box 1071
Rochester 3, New York
July 22, 1960

The Honorable Joseph V. Charyk
Under Secretary of the Air Force
The Pentagon
Washington 25, D. C.

Dear Dr. Charyk:

As we agreed in your office on July 5, I am hand carrying to you further and more complete information on several of the items that we discussed at that time. We have prepared more accurate examples of the output photography for E-1 and E-2 of the Samos project and for the Blanket and Sunset Strip proposals. There are two sets of these simulations. One of them shows the expected end results with the scale factor relatively correct for the four systems. The other shows the expected results with a varying scale factor such that the image size is held constant. These examples were prepared using more accurate photographic techniques than for those that I left with you. They more closely simulate the expected photography, and I would suggest that you destroy the original set in favor of these now being delivered. All of the above examples are of a scene at Edwards Air Force Base. Inasmuch as the E-1 Samos program does not include stereo capability, the examples of E-1 are not in stereo, although there are duplicates of the same frame so that the view can be seen with both eyes.

For your further information we have also enclosed certain other examples of the expected output of both the E-1 and E-2 Samos projects which we will describe to you verbally.

You may recall that I was quite conservative in my statements in regard to the Sunset Strip proposal at the time of our meeting because we had not had the proper amount of time to be really sure of our predictions. Since then our people have more carefully studied the possibilities of this system, and we have assured ourselves that the concept is indeed technically possible as described in Technical Proposal for Recoverable Reconnaissance System, Volume II, Copy #1 which is enclosed.

Dr. Charyk

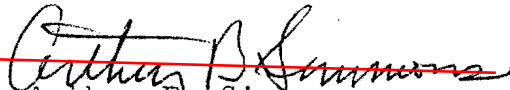
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We have also attached to this letter budgetary estimates of cost and delivery for both the Blanket and Sunset Strip projects. As we discussed, we have premised these on certain modifications of normal Air Force procurement and management practices. We are prepared to discuss the details of this with you in your office.

We have also rearranged and assembled data comparing certain characteristics of several current reconnaissance projects including those of Blanket and Sunset Strip. You may recall that I showed you a rough copy of some of this information during my visit with you. If, after we have described it to you, you wish a copy, we are prepared to leave it with you.

Very truly yours,


Arthur B. Simmons

ABS/MDG
Enclosures

Preliminary Schedule

25 July 1960

	FY												FY												FY				
	CY 1960						CY 1961						CY 1962						CY										
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M
1 Months after authorization					1	3	6	9	12	15	18	21	24	27	30	33													
2																													
3 PROJECT BLANKET																													
4																													
5 Preliminary Contractor Coordi-					X	XX																							
6 nation																													
7 Mock-Up Model:																													
8 Structural										1																			
9																													
10 Developmental Model:																													
11 Deliver to EK											1																		
12																													
13 Flight Test Models:																													
14 Deliver to customer														1		1	1												
15																													
16																													
17 PROJECT SUNSET STRIP																													
18																													
19 Preliminary Contractor Coordi-					X	XXXX																							
20 nation																													
21 Mock-Up Model											1																		
22																													
23 Developmental Model:																													
24 Deliver to EK														1															
25																													
26 Flight Test Models:																													
27 Deliver to Customer																						1		1	1	1	1		
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NOTE: The quantities shown are only suggested values and have been assumed for the purpose of a preliminary budgetary estimate.

SUGGESTED
ORGANIZATION
FOR A
SATELLITE SYSTEM

Satellite Systems are most complex undertakings - perhaps the most complex that man has seriously contemplated at the present time. With the exception of systems for purely scientific purposes, the urgency is such that all must be entered upon on a crash basis.

The Systems Manager-Prime Contractor-Sub method of organizing a program has certain disadvantages that are reasonably obvious and hence will not be discussed here. For those interested, a more detailed examination of such concepts is attached.

It is the purpose of this paper to propose an organizational concept which, it is hoped, avoids the deficiencies of the Systems Manager-Prime-Sub organization while utilizing the advantages. At least one crash program was carried to a successful completion on schedule by such an unconventional approach. This is the "team" concept of contractors in which the providers of important assemblies or subassemblies are so imbued with the imperative need for a successful program that they work together to solve their and each others problems and prevent interface interferences so that there is no need to establish one as "boss" or "prime". This is not to imply that each supplier of a nut or a bolt is a "prime" contractor. We envision three to six "associates" on the team each of whom is primarily responsible for an essential assembly or group of assemblies. These, in turn, can be relied on to pick subcontractors and suppliers in their field to provide the necessary components for their assemblies.

We envision the entire operation headed by a Project Director. This would be a very senior individual from the Government or on loan from Industry with broad managerial experience and a background of vision and success. His caliber must be sufficient to justify the confidence placed in him by the Secretary and the President.

A Coordinating Committee composed of a senior member of the Management of each contractor or associate should be formed to assist the Project Director to establish broad policies and coordinate intercompany relationships. They would adjudicate such infrequent clashes as might be expected occasionally from a group of dedicated people. Such a committee would operate both as a whole and by parts as required by specific problems.

Reporting directly to the Project Director would be a Project Control Group composed as necessary or desired of Civil Service, Military or of Civilians on loan from Industry. This

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group would not necessarily attempt to provide technical guidance - in fact, it might be better if they did not. They would, however, provide contractual, legal, security, materiel and administrative advice and control. They would act as liaison in obtaining information on the status and problems of the program and would keep the Project Director knowledgeable so that he, in turn, could keep the President and others informed through such channels as may be set up.

In addition to the associated contractors, another "associate" would be a team from the Military. This group would provide liaison with the Services, spell out operational needs, perform operational planning, arrange for such service personnel or facilities as may be required such as those to fire, track and recover.

Another team would be provided by the group or groups designated to exploit the information expected from the satellite system and who would be expected to provide the final product - intelligence.

Still another group that might be considered as part of the team is an organization already provided with the background material and studies to provide data without the need for individual team members recompiling it. Such an organization might come from one of the "Systems Manager (Non Profit)" type but would be used as consultants rather than in a managerial capacity.

Free communication on technical matters should be encouraged at all levels among members having mutual interests or interface problems. In addition, it is desirable to have liaison personnel resident at each company to provide contact in both directions, follow up on interface problems, etc.

It is believed that such an organization with the responsibility and authority to work toward an objective rather than to a set of established rules or restrictive and possibly unworkable specifications will encourage the best application of efforts and will result in the maximum accomplishment in the least time.

July 22, 1960

Advantages and Disadvantages
of Systems Manager-Prime-Sub
Organizations

The organizational concept of a prime contractor together with other manufacturers or suppliers as subcontractors has certain disadvantages. The prime contractor is most often selected on the basis of ratio of expenditures. This implies, and rightly, that his share of the undertaking is complex and requires unique or profound knowledge in his field. Nevertheless, there are other facets of the system which can be equally or more complex and which are essential to successful performance but which may cost only a few percent of the total cost of a system.

Furthermore, the skills and talents required for the production of successful components of a system very often require the giants of their respective industries. To subordinate one giant to another may not achieve cooperation on the part of the management of the subordinated company.

Where a crash program is involved, there is a tendency for a prime contractor to require unrealistic schedules on the part of his subs in order to make certain that all of the assemblies or subassemblies are available to him well in advance of the actual need for them. It can be argued that prime contractors require this extra lead time to make certain all items mate and that performance is as specified or required. But how much of this can be charged to lack of ability or to lack of performance on the part of the subcontractor, and how much to being penalized by inadequate instructions or supervision from the prime contractor? A satellite system is somewhat the reverse of the one horse shay - it should go together all at once.

Another weak point in the prime-sub relationship is that the prime may provide the only communication link between the customer and the sub. This can result in erroneous interpretation of what he is to do by the sub and an equally erroneous impression of what he is to receive on the part of the customer. In an effort to bridge this gap, the prime gathers into his fold various "experts" in the fields of his subcontractors. These experts usually do not have as much knowledge of the specialized fields of the subs they are "directing" in the name of the prime. We repeat - a satellite system is a most complex undertaking.

Normally, there is added to the prime-sub relationship a "Systems Manager". This Systems Manager is all things to all people. He represents the customer to the prime and the prime to the customer. He controls, audits, contracts, schedules, investigates, explains and fixes blame but mostly he produces paper work

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or, and worse, he requires paper work from others. Because he must be omnipotent, the Systems Manager must collect a complete staff of "experts" in all fields related to the system under consideration. These, of course, are in addition to the corps of report writers, report readers and the like that are necessary to support the Systems Manager concept. Some of these concerns have, without question, accumulated enormous amounts of technical data bearing on broad aspects of the problem and providing extensive background valuable in analysis of the problems. But satellite systems are composed of screws that stay tight, motors that run, relays that operate and interfaces that mate. The problems can be solved only by contractors, although they can be greatly assisted by data on such things as environment.

The Systems Manager concept can be provided in three ways:

1. Utilizing the prime as a systems manager.
2. Utilizing a service organization.
3. Utilizing a "non-profit" concern.

Utilizing the prime contractor as a Systems Manager may be hazardous because it gives the same man or men two hats to wear. He is at the same time a public servant and a member of a profit making organization. He is too close to one set of explanations and too far from another. There is the further danger that, in endeavoring to fill two jobs, his talents may be spread too thin to be successful at either.

A service organization acting as Systems Manager has an even more difficult role to fill and, usually, with less talent. Since the ultimate customer of a satellite system is normally one of the Services - the Air Force - a Systems Manager from the Service could reasonably be expected to know the customer's needs and requirements. He may also have an exceptional array of talent in the field most open to him - the engine. But the Service Organization cannot have nor hope to have the required technical skills for understanding and controlling all of the many technical minutiae required in a system. As a result there may be a tendency to solve by edict or sheer weight of manpower or money, problems which will bow only to technical competence or to tedious trial, experimentation and development. There may be an impatience which evolves an unrealistic schedule. A crash program with an unrealistic schedule will crash.

The third approach, that of a non-profit organization serving as Systems Manager, has the least to condemn it. This is true particularly if the concern is of reasonably long standing

and has accumulated a background of data on what has happened, what environments can be expected and has studied the past attempts or failures for their lessons. But in the final analysis what can they be expected to contribute except this guidance information that cannot come equally as well or better from specialist contractors?

July 22, 1960

