The "One-Pager": Methodology & Application, Experiences and Lessons Learned

by Tony E. Schoenfelder and James Wilcox

An article entitled, "'The One-Pager': Methodology & Application" appeared in the Spring 1995 (Volume 9) issue of this publication. The methodology of the One-Pager technique was described in some detail, as were applications in assessing a program's baseline plan and determining progress against the plan. This article will describe the application of the One-Pager in assessing planning alternatives, and will also share some experiences and lessons learned since early 1995. Although a careful review of the previous article would greatly assist the reader in deriving the maximum benefit from this article, the following excerpts will serve to recapitulate the objectives of the One-Pager technique:

- NASA program and project managers need a system that will facilitate timely, accurate top-down program/project assessments required to establish and/or assess the program's baseline plan, determine progress against the plan and assess planning alternatives.

- Cost, schedule and performance measurement systems must operate effectively and efficiently under constantly changing conditions. Existing NASA systems often fail to satisfy these requirements.

- Scheduling and performance measurement systems are often very detailed and generate vast amounts of data, but rarely in a form or format that is conducive to providing timely visibility into today's programs.

- Contractual arrangements between NASA and its contractors do not incentivize the contractors to provide good long-range schedule and cost planning.

- The One-Pager is a single chart that presents an integrated cost, schedule and content (metrics) display for a selected end item. The selection of candidates for One-Pagers is based on the principle that management attention should be focused on major drivers, i.e., those definitive end-items that exhibit one or more of the following characteristics: 1) high cost, 2) high technical risk, 3) high schedule risk, and 4) key integration intersection. There is generally a high correlation between risk (technical and schedule) and cost.

- Who performs the work has no bearing upon whether a system or subsystem is selected for a One-Pager.

- Deciding what not to include is perhaps the most difficult process. Since the objective is to focus management's attention on major drivers, minor products and processes should be reviewed on an exception basis only, and should not be included in a One-Pager.

Assessing Planning Alternatives

NASA programs and projects currently operate in an environment of increasing volatility and uncertainty. One consequence of this situation is the frequent need to engage in program/project replanning activities. Replans are often necessitated by budget reductions, content changes, unanticipated technical problems, schedule slips, cost overruns, or some unique combination of these events. One-Pagers, by virtue of their basic simplicity, facilitate timely, top-down replanning by capturing the critical elements of the project and providing a macro look at the programmatic impact of various changes.

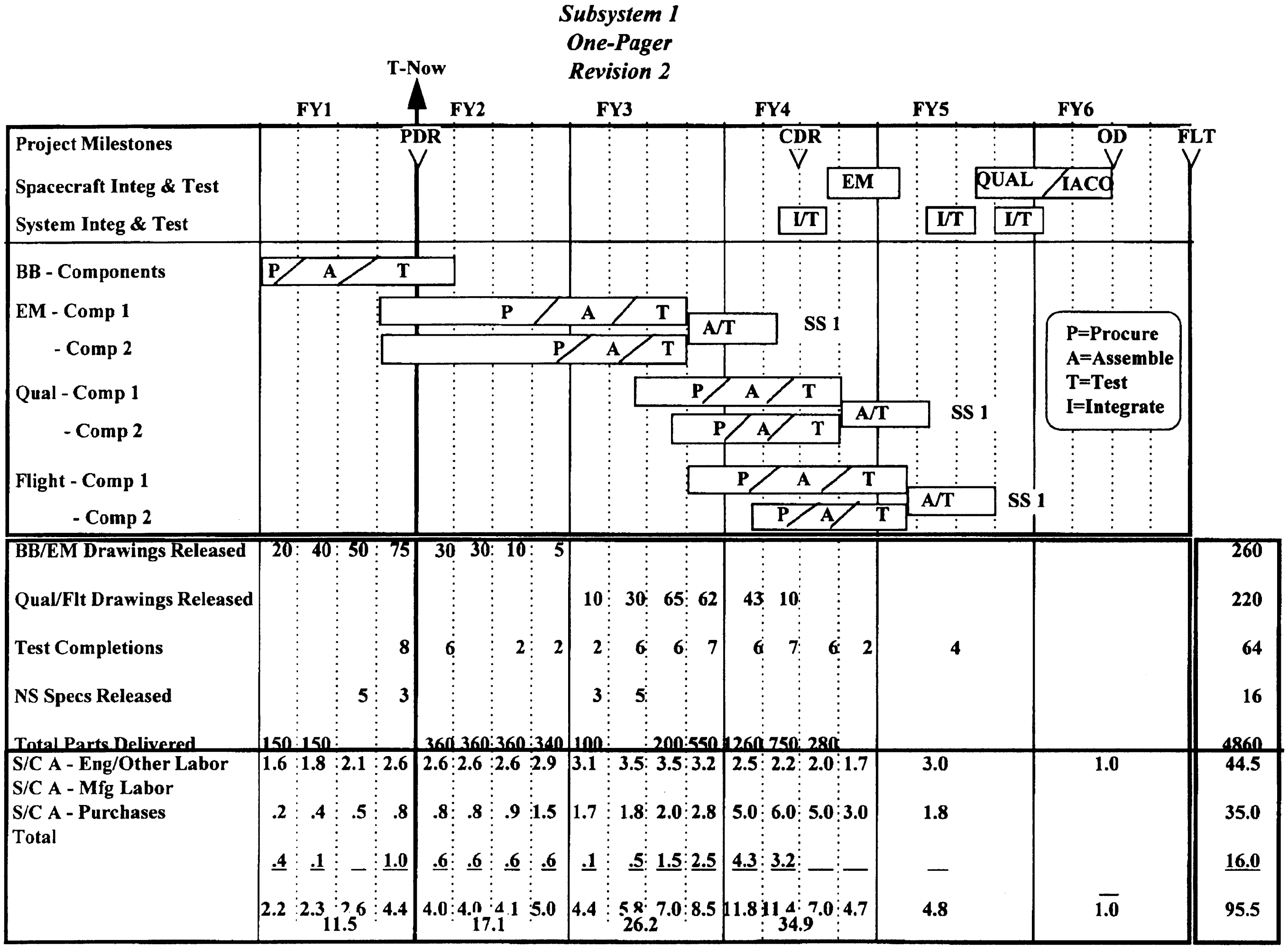


Figure 1. A Simple One-Pager.

Figure 1 was used in the previous article and represents a simple One-Pager for a fictitious spacecraft subsystem. We are currently at T-Now and have just completed the project Preliminary Design Review (PDR). Let us suppose that we have just been notified of the following circumstances, and have but a few hours to provide a credible response:

- Due to project-wide budget constraints, funding across the project will be reduced by approximately 20-25% for FY2 and FY3.

- At the same time, external pressures (from both Congress and our international partners) have dictated that the flight date be given only three months schedule relief.

The first step should be just a simple, overall assessment of the nature and magnitude of the problem and what it implies in terms of any proposed solution. Note in Figure 1 the FY3 4th quarter cost plan for $8.4M (approximately 12% of the $66M FY2/3 spending plan). Clearly, pushing a full three months of costs into the future will not solve the 20-25% reduction requirement, so we must consider other options, such as changes in program logic or content, schedule bar length squeezing and/or slack reduction.

Start first by identifying and considering those actions that can be taken at the project level, where the dollars involved are greater and more responsive to schedule movement. Then consider actions at the system and subsystem levels. Our ground rules indicated that we could give the flight date a maximum of three months schedule relief, so our first action should be to move the flight date three months to the right.

Our next action is also at the project level, but its genesis can be traced back to the early stages of creating this One-Pager. Remember that one of the first steps to be taken in building the baseline plan was to review the schedules, understand how they were developed and identify the underlying assumptions with respect to bar length, shifting, lead time, etc. This knowledge would aid in calibrating the overall risk inherent in the schedule rationale, and would identify areas where future actions might be taken. When we reviewed the underlying assumptions of this particular schedule, we learned that the spacecraft integration, assembly and check-out (IACO) was to be performed on a single-shift basis. Notice in the baseline schedule at the top of Figure 2 that the IACO bar length is eight months long. By adding a second shift and utilizing an accepted program analysis rule of thumb that a second shift is approximately 70% as efficient as the first, IACO is reduced to five months ($8 \div 1.7 = 5$). This IACO compression, in concert with the three-month slip to the flight date, yields a six-month slip to the start of IACO (See Figure 2, Rev. 1).

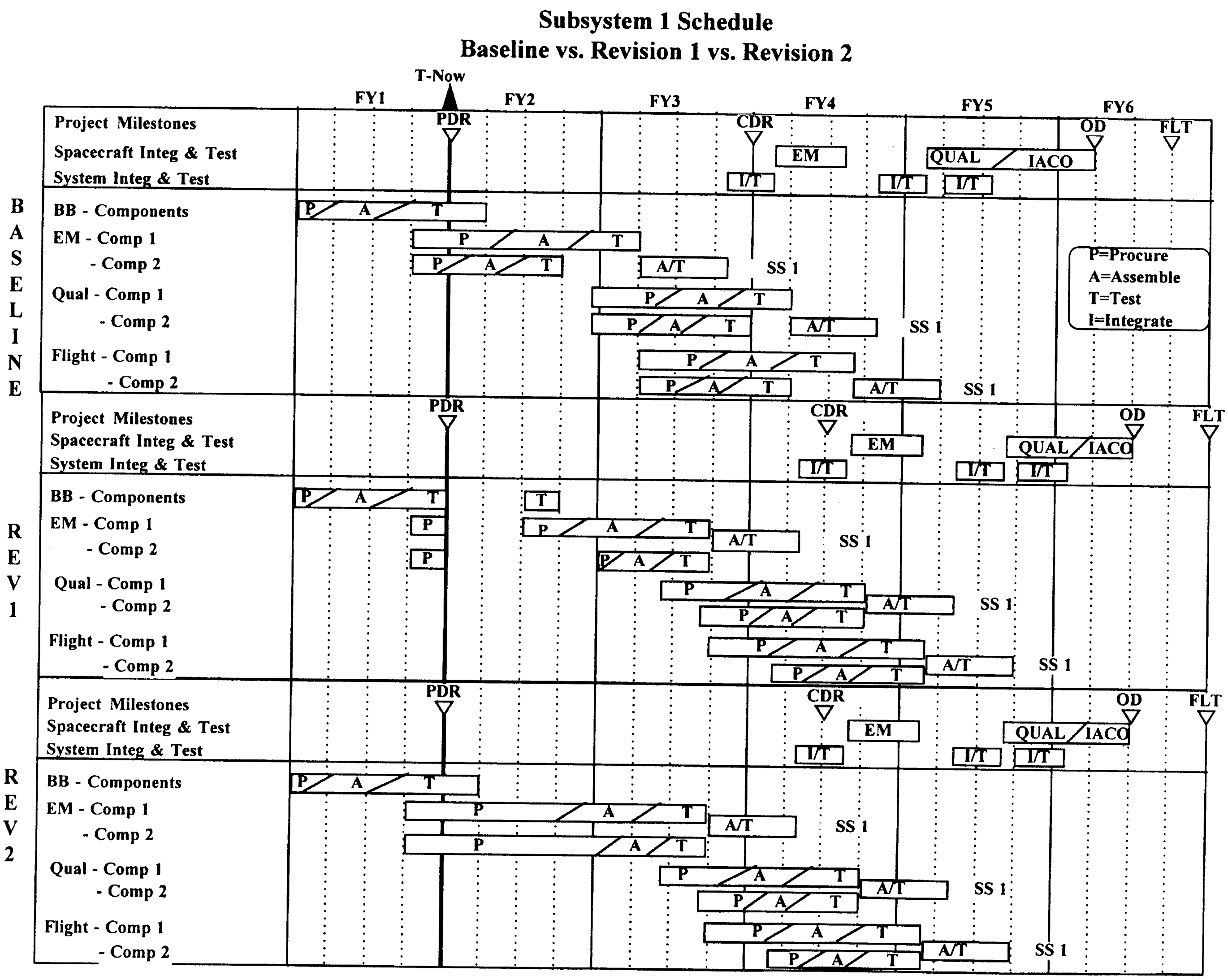


Figure 2. Baseline with two revisions.

The next steps should be taken at the system and subsystem levels. All of the system and subsystem activity bars should be moved six months to the right, retaining the same orientation to one another as in the baseline. No attempt should be made at this time to adjust bar lengths or take any other action which might call into question the validity of the exercise.

Notice in Figure 2, Baseline, that although the procurement activities for the various fidelities of both Components 1 and 2 begin at the same time (probably for the convenience of the procurement process), there is from three to six months' worth of slack between the completion of testing of the various fidelities of Component 2 and the beginning of Subsystem 1 assembly and test. This presents us with yet another opportunity to move scheduled activities. By simply moving the activity bars for the various fidelities of Component 2 to the right until all slack is removed (See Figure 2, Revision 1), we eventually move additional costs out of the constrained years.

Finally, notice in Figure 2, Revision 1, that there is an apparent gap of six months between the T-Now line at PDR and the future scheduled activities. From studying the completed schedule activities and metrics found on Figure 1, we observe the following:

- Subsystem 1 is well into its design phase.

- Roughly 70% of the breadboard/engineering model (BB/EM) drawings have been completed.

- The project PDR has just been completed.

- Specification releases and purchase orders for the engineering model part have been issued.

It would be too disruptive and inefficient to attempt to terminate the project and then restart it six months later. Our final action should be to stretch the engineering model schedule over the six-month gap and work at a lower spending rate (See Figure 2, Rev. 2). This maintains momentum on the breadboard and engineering model units, takes full advantage of relief to both qualification and flight hardware deliveries, and delays the buildup in both the engineering and manufacturing workforces.

The final step is to adjust the costs and the metrics to reflect the revised schedule. Figure 3 shows a One-Pager for Subsystem 1 which reflects all the changes made to accommodate the 20-25% budget reductions in FY2 and FY3.

An experienced analyst can easily adjust the baseline cost plan to both fit the new schedule restraints and provide a smooth transition from T-Now into the replan. An examination of Figure 3 will reveal the following:

- The total Estimate-at-Completion grows from $90M to $95.5M, reflecting a penalty of $5.5M due to schedule stretch and some disruption;

- The FY2 Engineering spending rate avoids the immediate FY2 build-up, while the peak activity moves into FY3. The brunt of the penalty falls in the Engineering/Other category;

- The Manufacturing spending rate avoids a build-up until FY3, and the peak activity moves completely out of the FY2/3 timeframe;

- The Purchasing replan maintains appropriate relationships between spending and scheduled procurement activities.

Figure 3 also shows the adjustments made to the baseline metrics plan to fit the new schedule. An experienced analyst can calculate a revised metrics phasing which retains the baseline metrics/schedule relationships. Note in Figure 3 that the revised metrics plan maintains continuity for engineering drawings and parts deliveries, and previous relationships, such as NS Spec Releases vs. the start of procurement for Qual units, remain in place.

Utilizing the methodology just presented, an experienced analyst could accomplish this replan in a cou-

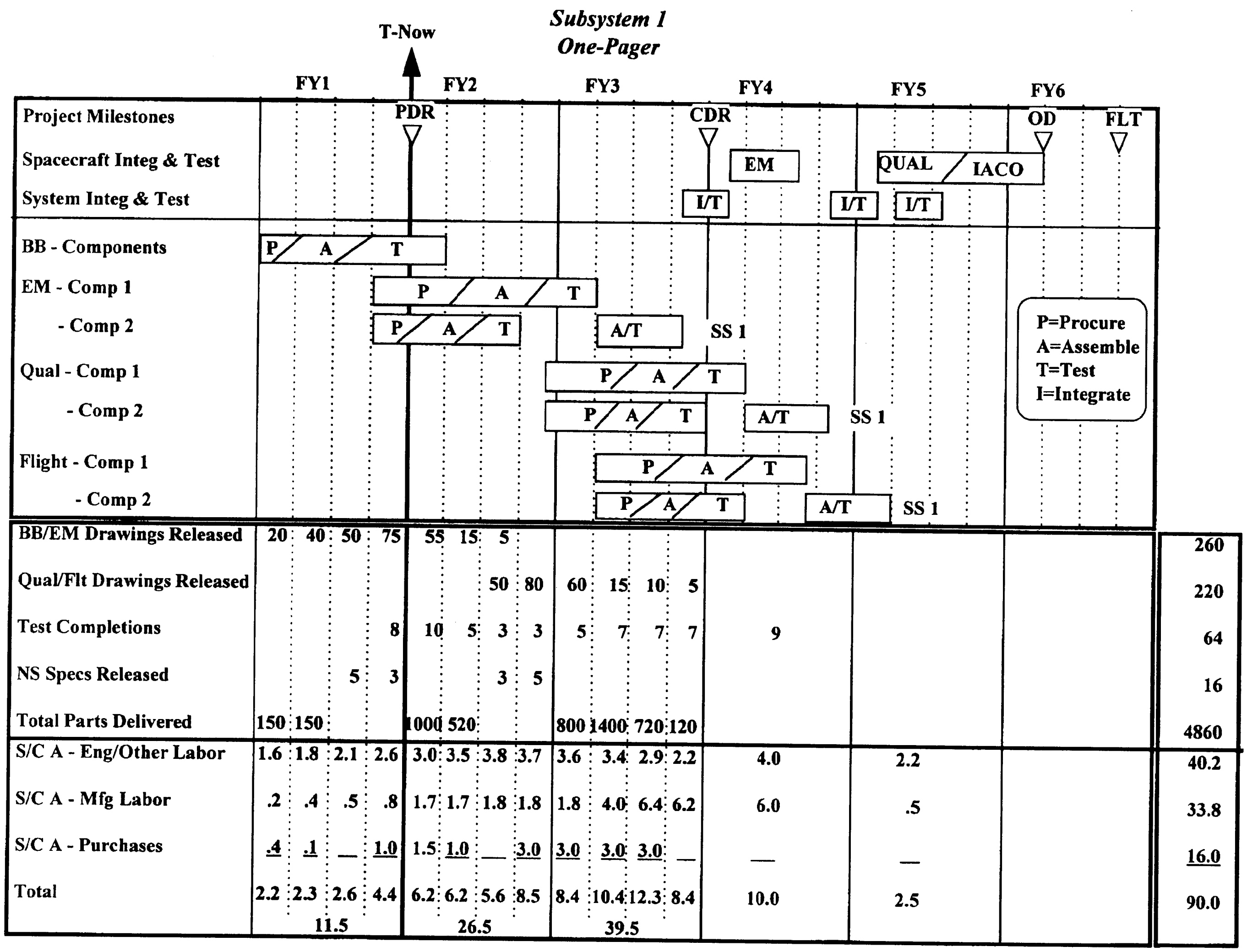


Figure 3. An adjusted One-Pager.

ple of hours, including consultation with a knowledgeable technical person. The accuracy would be entirely sufficient to support management-level decisions.

Experiences and Lessons Learned

Since Spring 1995, considerable effort has been expended in incorporating the One-Pager critical element analysis technique into several large applied technology projects. In addition, the One-Pager technique—whereby a template embodying a discrete set of selection criteria is used to identify activities to be tracked for each critical element—was used to produce an integrated schedule summary for a large spacecraft development project. The following lessons learned are the results of these and other experiences.

Lesson 1

The One-Pager itself has evolved into a One-Pager packet comprising four charts. These charts are, in the order in which they should be developed:

Step 1. Summary Level Logic Network

Step 2. Logic Network Description

Step 3. All-Year Cost, Schedule & Metrics

Step 4. Near-Term Cost, Schedule & Metrics

Step 1, developing the summary-level logic network, has proven to be the most difficult yet most important step toward successful implementation of the One-Pager approach. When the precursor to the One-Pager was developed, the originators of the technique were working in a large development project where the overall logic was identified and well understood. What they did not fully appreciate was that at the inception of a project, logic is developed from the top down, and is relatively simple and well understood by many. However, over an amazingly short period of time, as the major parts of a project are dispersed to different contractors and subcontractors, the overall logic flow becomes more complex, convoluted, and understood by only a few.

Developing the summary logic network as the first step in implementing the One-Pager approach enables all the project participants to see exactly how the major pieces fit together and relate to one another.

Project logic should be established from project inception through project completion, and should clearly and concisely outline how the project will converge on the final product. Figure 4 illustrates the relationships of design cycles, test cycles and project milestones for both a spacecraft development (Phase C/D) project and a pre-Phase C/D applied technology project. Note that both projects converge in the same manner, and that the same techniques can be applied to both. Note also that in both cases, the test programs related to each design cycle are the most concrete and easily communicated measure of the project plan, and thus should be highlighted in developing the summary project logic.

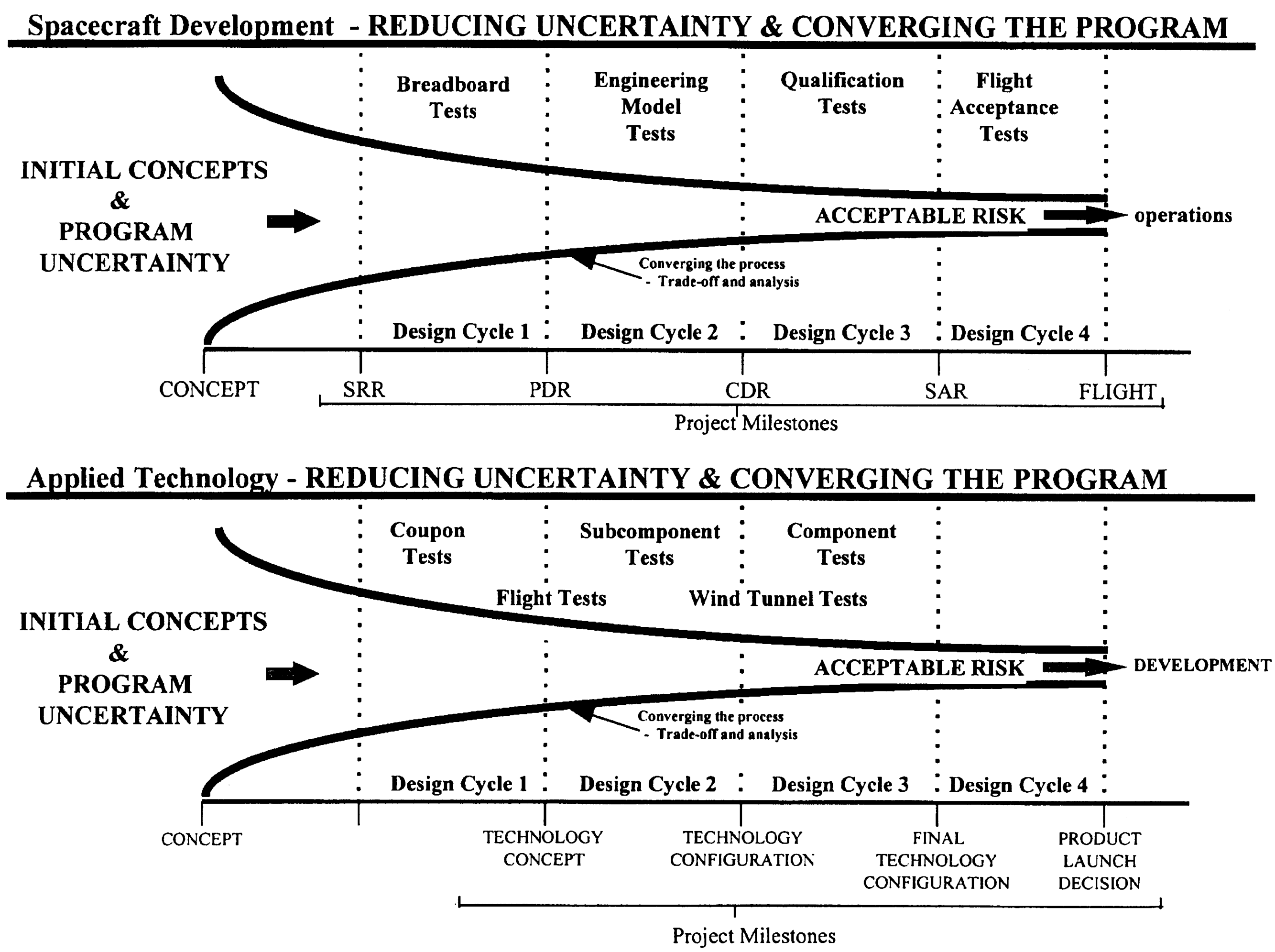


Figure 4. Project Logic.

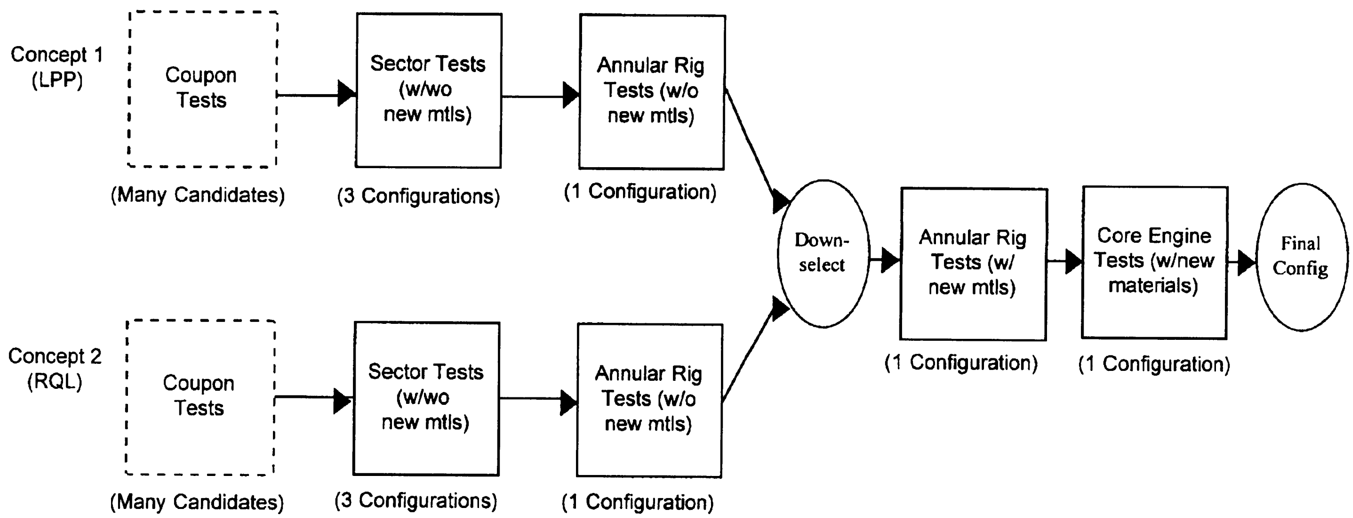


Figure 5. Logic Network.

Figure 5 displays a very top-level view of the logic network of an applied technology research project for an improved combustor. With only a cursory review, one can rapidly observe the following:

1. Two competing concepts will undergo the following test cycles:

   - Coupon testing

   - Sector testing with and without new materials

   - Annular rig testing without new materials

2. Following the test cycles and core combustor design, a downselect will occur.

3. The selected concept will then undergo the following test cycles:

   - Annular rig testing, with new materials

   - Core combustor testing

4. The final test cycles will validate that the concept is ready for the development phase.

Figure 6 is a slightly expanded version of this logic network at about the right level for One-Pager purposes. Each logic box or node is identified by a WBS-like number, the importance of which will become readily apparent.

Step 2, developing the logic network description, requires the identification of the key features of each box, including the products entering and leaving, the activities and/or tests performed there, and any other useful information concerning that box. Notice in Figure 7 that each logic description has a number that corresponds to a logic box found in Figure 6. By referencing the logic box number and consulting the associated logic description, it is possible to immediately find out what is occurring there. Notice also that special attention is devoted to describing the number of candidates tested in each cycle, the nature of the test programs, and the relationship of one logic box to others.

In addition to providing increased visibility and understanding, these summary logic networks have been shown to be excellent aids to communication. Discussions concerning some aspect of a project are considerably enhanced by using the appropriate logic network to provide much-needed context.

Steps 3 & 4, development of the All-Year and Near-Year Cost, Schedule and Metrics charts, were covered in extensive detail in the Spring 1995 issue of this publication. Therefore, no further discussion is offered herein except for the following: The basic

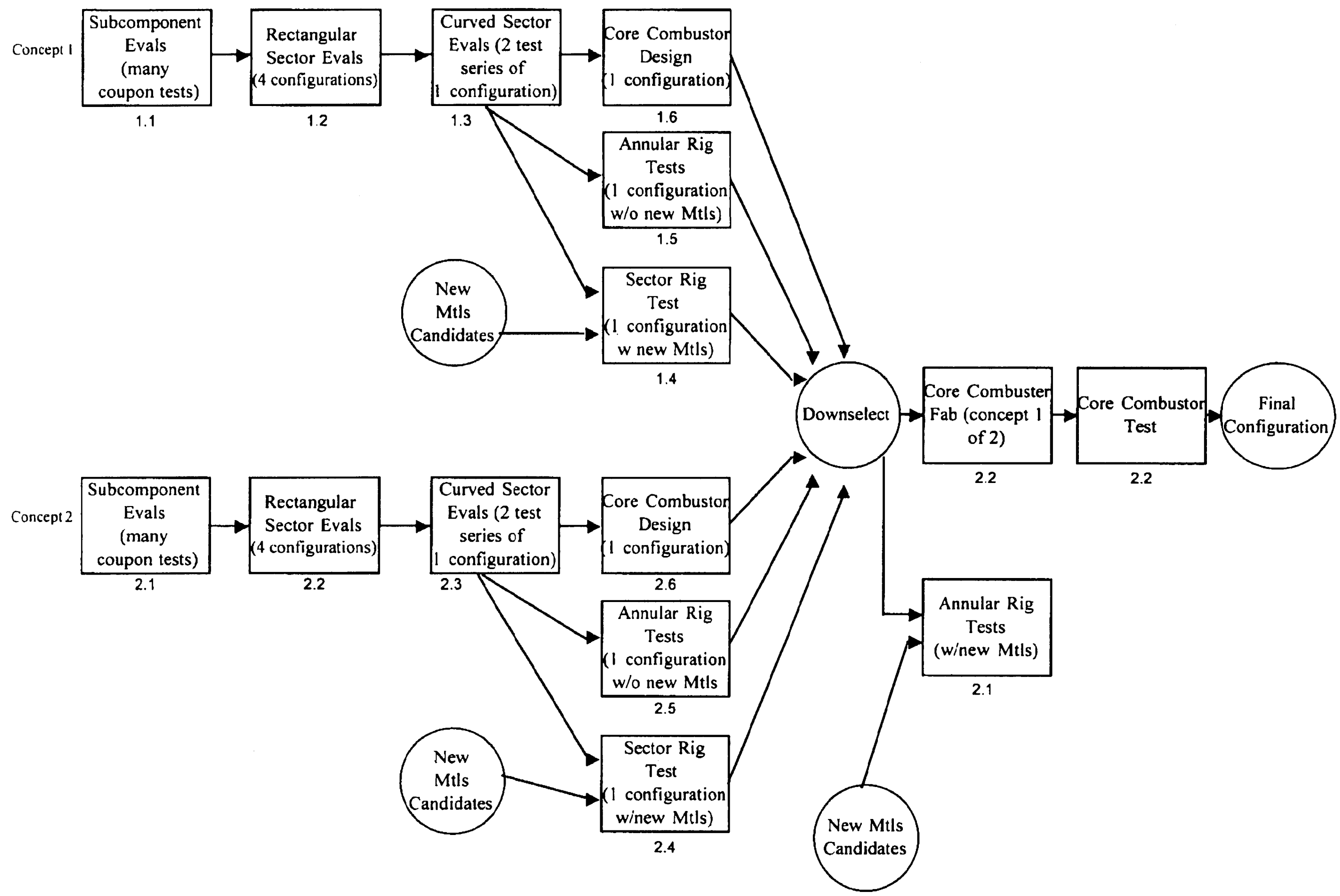


Figure 6. Logic Network expanded.

1.1 & 2.1 Subcomponent Evals
- Many coupons tested
- Feeds sector test program
- Continues during sector test prog
- Used for sector design refinement

1.2 & 2.2 Rectangular Sector Evals
- Combines components for integrated evals
- 4 configurations tested for each concept
- Primary feed to annular test program design
- Secondary feed to core combustor test program design
- Uses no new Mtls

1.3 & 2.3 Curved Sector Evals
- Added shape fidelity over rectangular evals
- Two test series of single configuration for each concept
- Feeds core combustor test program design

1.4 & 2.4 Sector Rig Tests
- Actual liner candidates from New Mtls program added to test configuration
- Feeds downselect decision

1.5 & 2.5 Annular Rig Tests
- Full up combustor components combined
- 1 Configuration tested for each concept
- w/o new materials
- Feeds downselect decisions

1.6 & 2.6 Core Combustor Design
- 1 Configuration for each concept
- Includes engine modification, systems integ & instrumentation design
- Feeds downselect decision

2.1 Annular Rig Tests
- Final liner from New Mtls program added to test configuration
- Feeds core combustor test program

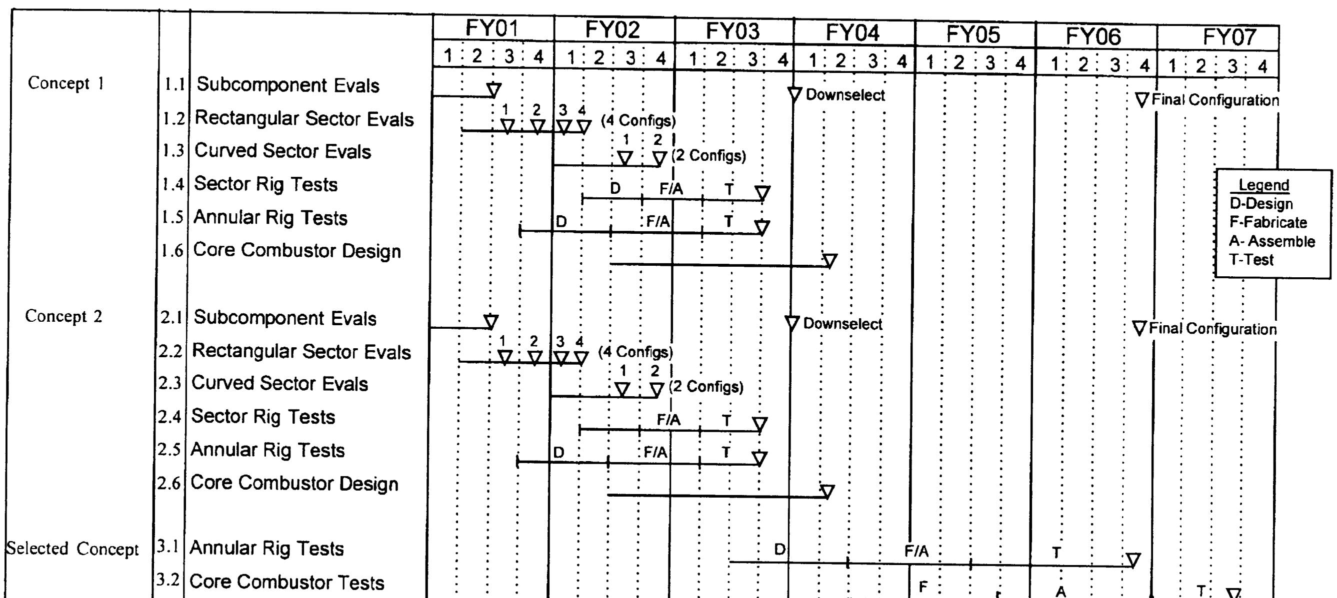
2.2 Core Combustor Tests
- Fab selected combustor concept
- Modify engine
- Includes test prep, core engine assy & instrumentation, test, and data analysis

Figure 7. Logic Descriptions.

One-Pager template for the Cost, Schedule and Metrics chart was originally limited to 20 lines of data. This was a deliberate act with a twofold purpose. First, in an effort to maintain the utility of the chart such that problem areas tended to "jump off the page," it was thought that more than 20 lines of data would present too much clutter. Second, it forced the person preparing the One-Pager to select wisely from among a large body of competing data. Experience has taught that up to thirty lines of data can be incorporated into the One-Pager without destroying its utility. Finally, we would like to emphasize that a good job of preparation in Steps 1 & 2 will make Steps 3 & 4 relatively simple to accomplish. An All-Year Cost, Schedule and Metrics chart is provided for your information in Figure 8. A Near-Year chart contains the same data, but covers only 18 months.

Lesson 2

The logic network you build and the schedules you select should focus on activities leading to a specific convergence or milestone. Activities describe the step-by-step process for arriving at a convergent point, e.g., design, fabrication and test, or design, code and test. By tracking activities, you can observe progress, anticipate problems and take appropriate early corrective action. If you limit your focus to delivery milestones, you will know if a milestone has been met only when the due date arrives. You will not know how well the milestone has been met until it is far too late. A review of one possible scenario of the combustor example illustrates the point (See Figure 9). In this scenario, the baseline plan called for coupon, sector and annular rig tests to be performed prior to downselecting a concept. The actual



	FY01	FY02	FY03	FY04	FY05	FY06	FY07	
Models Designed	8	4	2					
Models Fabricated	5	9						
Tests Completed	5	12	10					
Analyses Completed	2	13	12					
Simulations Completed	5	5	2					
1.0 Concept 1	6	10	5	1				22
2.0 Concept 2	6	10	5	1				22
3.0 Selected Concept			1	4	10	6	4	25
Total	12	20	11	6	10	6	4	65

Figure 8. All-Year Cost, Schedule and Metrics.

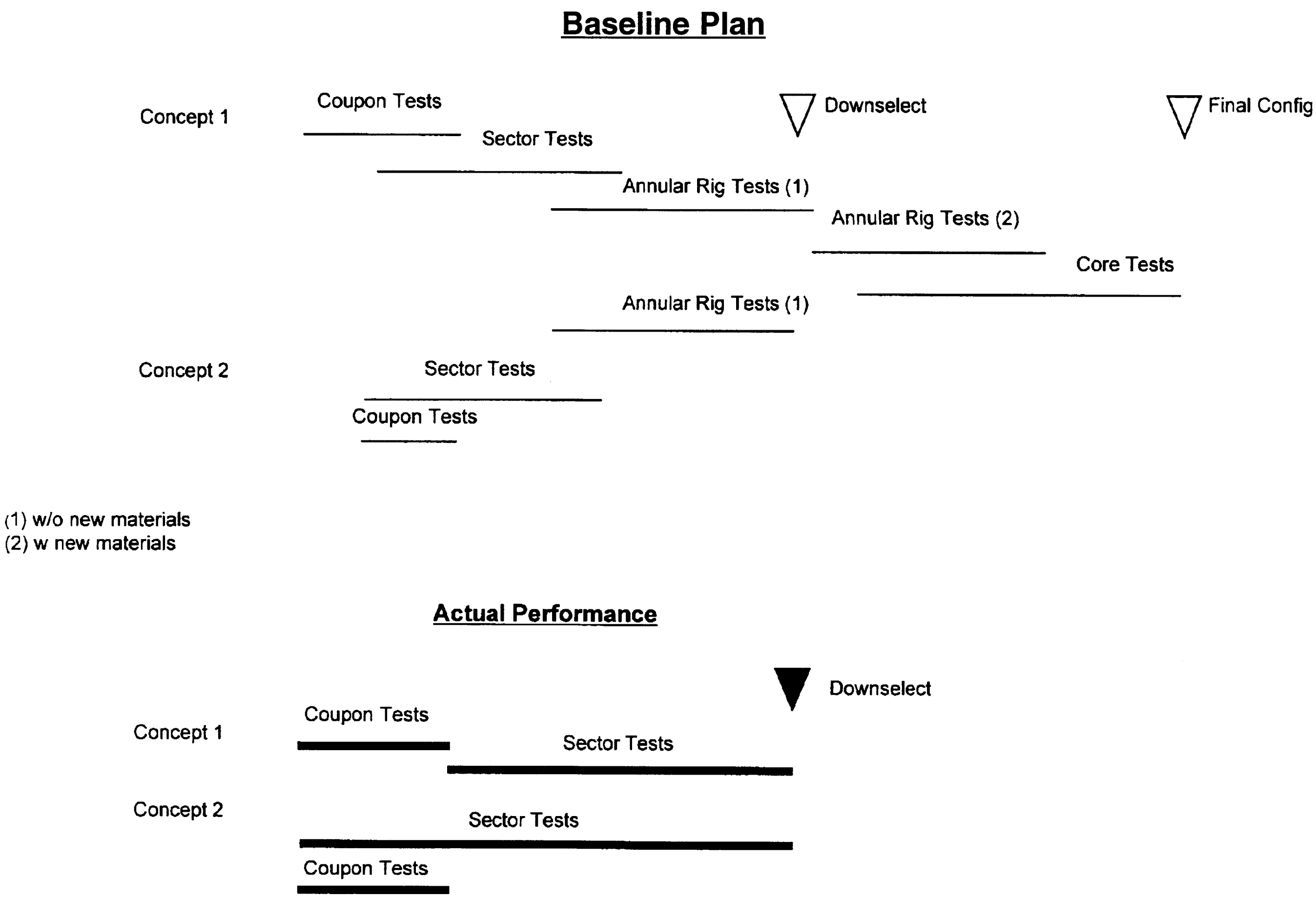


Figure 9. Baseline Plan vs. Actual Performance.

performance shows that the downselect milestone was met; however, the overall quality of the milestone was compromised because the annular rig tests were deferred into the future. Assuming that the dollars originally required to arrive at the compromised milestone were spent, achieving the final configuration milestone will likely require additional dollars and a longer schedule.

Lesson 3

Representatives of various project elements, e.g., IPT's, system and subsystem managers, contractors, etc., may on occasion insist that One-Pagers are of no added value to them and, in fact, intrude upon their autonomy. Accusations of micro-management have, at times, been hurled. If you are attempting to implement a One-Pager correctly, you are actually defining the information you need and the formats you will use at an intermediate level, not a lower level. You will be using existing data, and you do not care how the data is structured or managed below that intermediate level. You must carefully think through this entire issue before implementing a One-Pager, and you must be prepared to deal with some negative feedback. You need to be able to clearly describe what you are trying to accomplish and why. Samples of a completed product may often help to deflect or defuse criticism and turn it into support. Your success also depends upon the degree to which project management is convinced that this is the right way to go and lends its unqualified support.

Lesson 4

If you wait until a stable baseline is in place before you begin using the One-Pager to assess project status and performance, you may never start the process. Force yourself to start assessing project status and performance, and do not allow yourself to lose this discipline.

There is a need for both near-term and strategic performance measurement, and the two measurements have different objectives. Near-term performance measurement is performed either monthly or quarterly, and seeks to determine progress against the current baseline plan. Strategic performance measurement should be performed annually, and addresses macro performance over a period of at least a year. Strategic performance measurement also looks at the changes in both risk profiles and logic relationships, and seeks to assess their impact on overall program health.

The following example illustrates the dynamic nature of most projects and highlights the different objectives of near-term and strategic performance measurements.

Figure 10 displays a baseline program established at the beginning of FY96. There is an all-year baseline and a more detailed baseline for fiscal year 1996. During the first year, the FY96 baseline was replanned in December and again in March (See Figure 11). The actual cost and schedule status at the end of FY96 is also represented. Using the most current plan (3/96), the computations in Figure 11 suggest that the project should receive a good grade (B+), as the overall accomplishment ratio was .87. This is a perfectly valid measurement and is consistent with the manner in which formal performance measurement systems are supposed to work.

However, a strategic performance measurement taken annually would address the following questions:

- What was the earned value in a macro sense?

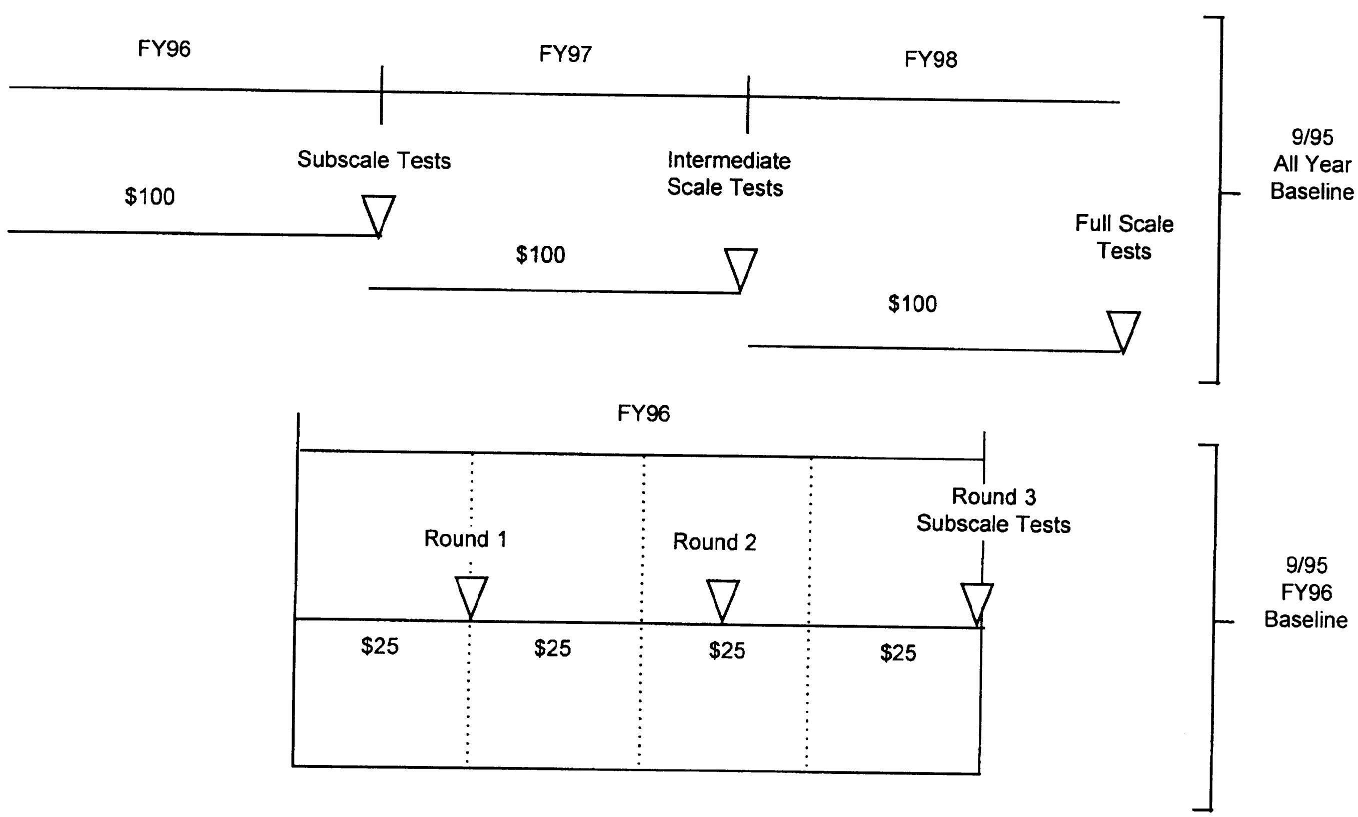
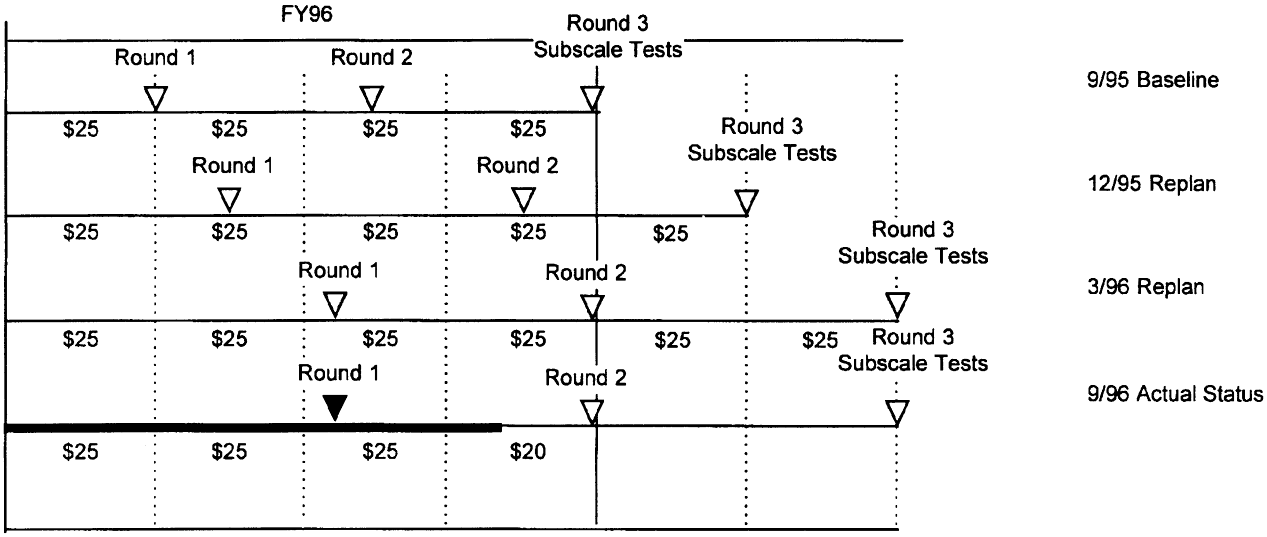


Figure 10. Near-Term and Strategic Performance Measurement.



The earned value computations for the end of FY96 should be based on the most current plan, i.e. the 3/96 plan, and would be computed as follows.

$$\text{Spending Ratio} = \frac{\text{Actual \$ Spent}}{\text{Planned \$}} = \frac{\$95}{\$100} = .95$$

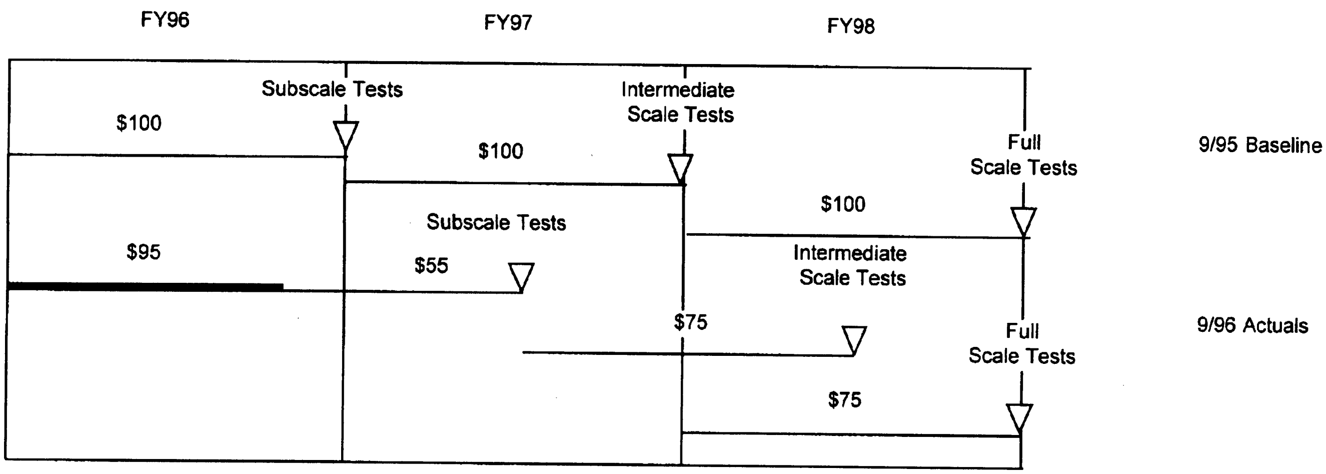
$$\text{Sch Accomplishment Ratio} = \frac{\text{Months Accomplished}}{\text{Months Planned}} = \frac{10}{12} = .83$$

$$\text{Overall Accomplishment Ratio} = \frac{\text{Sch Acc Ratio}}{\text{Spending Ratio}} = \frac{.83}{.95} = .87$$

Figure 11. Earned Value Computations.

- What programmatic objectives have been compromised by accommodating this year's problems?
- Has risk been added to the out-year plan by increasing parallelism and shortening time spans?
- Is the out-year plan still valid and achievable, or have cost and schedule been force fitted to an unachievable plan?

Figure 12 illustrates the strategic measurement of this project. Remember from Figure 11 that the baseline was replanned twice, such that the completion of the Subscale Tests now occurs 18 months from the start of the project rather than the original 12 months. A strategic look at schedule accomplishment at the end of FY96 would indicate that the project has only accomplished 10 months of what is now an 18-month plan, yielding a schedule accomplishment ratio of .56. The resultant macro overall accomplishment ratio of .60 is far removed from the B+ grade computed earlier. It is very important to periodically perform this kind of "conscience" check. Subtle problems can cause a project's schedules to drift to the right, yet the effects of this drift tend to remain undetected by near-term performance measurements, particularly in cases where the baseline is adjusted frequently. By forcing yourself to go through the analysis, you and the rest of the project will be in a position to address the schedule drift factor in a timely manner. Many projects have drifted into severe difficulty because they failed to take this kind of macro view.



$$\text{Spending Ratio} = \frac{\text{Actual \$ Spent}}{\text{Planned \$}} = \frac{\$95}{\$100} = .95$$

$$\text{Sch Accomplishment Ratio} = \frac{\text{Months Accomplished}}{\text{Months Planned}} = \frac{10}{18} = .56$$

$$\text{Overall Accomplishment Ratio} = \frac{\text{Sch Acc Ratio}}{\text{Spending Ratio}} = \frac{.56}{.95} = .60$$

Figure 12. Strategic Measurement.

Lesson 5

It would be wise to solicit help from someone who has prior experience in the execution of the One-Pager process, and it is mandatory that a knowledgeable project office civil servant be dedicated to the task of coordinating the One-Pager development process.

Putting a One-Pager system in place is not easy. It requires first that you understand and accept the philosophy that sometimes "less is more." You must also be able to identify and lay out logic flows, define templates and select appropriate schedule activities, and develop costs and metrics at the proper levels. You must, above all, have a clear vision of your ultimate destination, because you will be plowing through mountains of data in search of the right pieces. Someone who is experienced in this process would prove invaluable, because the exercise is quite different from anything most projects have done before.

Particularly during the early phases of establishing a One-Pager system, there is a great deal of coordination required. The right people must be made available at the right time, and encouraged to cooperate to the fullest. There must be a dedicated civil servant who has both the knowledge and the authority to ensure that the proper degree of cooperation and coordination occurs. Without this person, success will be difficult, if not impossible, to achieve.

Lesson 6

If your program/project is large, with many systems and/or subsystems, you might want to consider an additional step to help focus attention on the major drivers, i.e., those definitive end-items that exhibit one or more of the following characteristics:

1. High cost

2. High technical risk

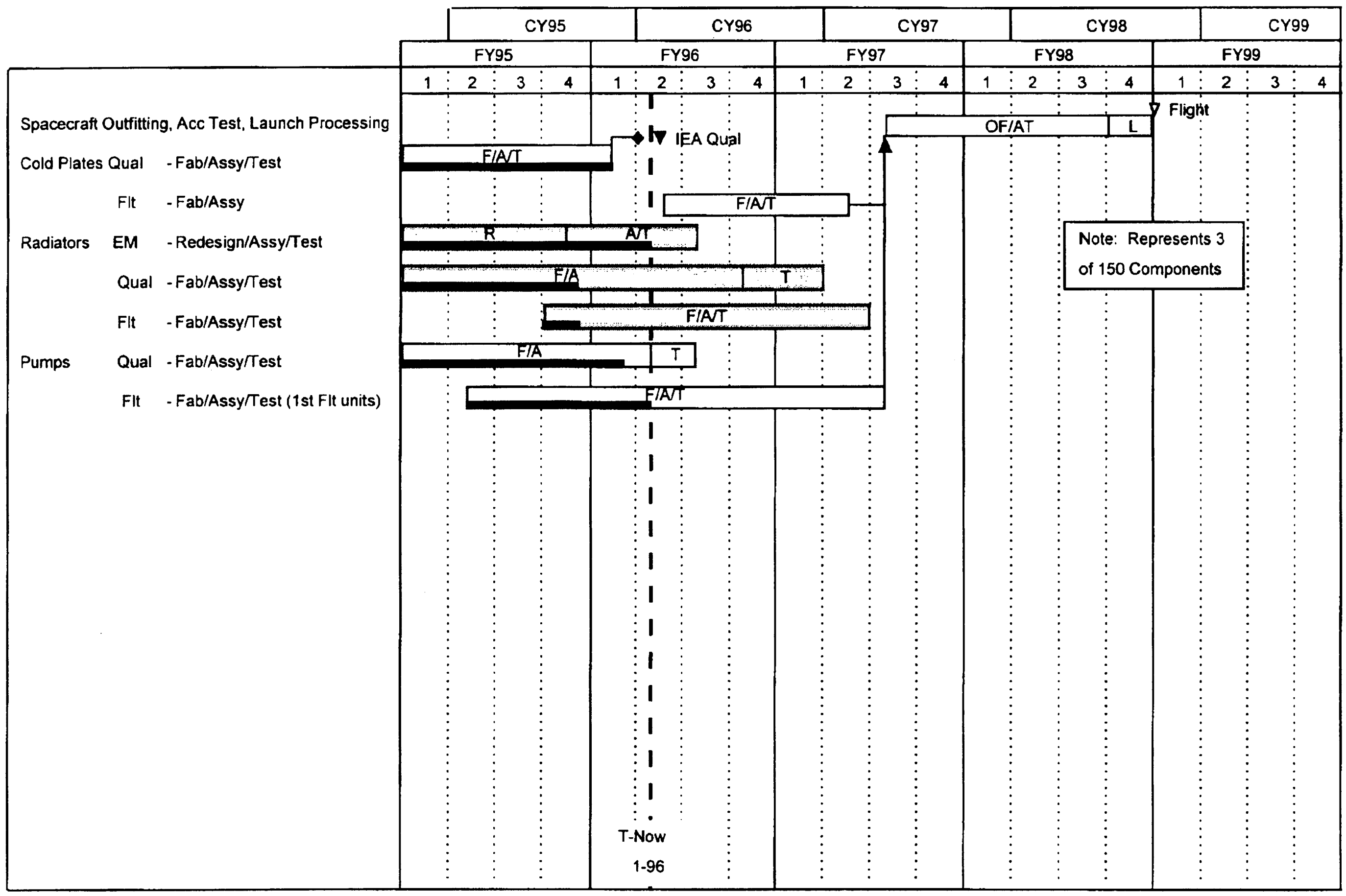


Figure 13. Thermal Control System.

3. High schedule risk

4. Key integration intersection

In a large program such as the Space Station development program, there may be as many as 1,000 major definitive end-items in the program. Using the One-Pager technique, you may have reduced the focus list to 150 end-items. A further narrowing of focus may be achieved by using standard risk criteria to rank each of the 150 end-items. Those items which receive high scores are singled out for special management attention in the normal course of providing program/project status and performance measurement. Figure 13 shows an example of a One-Pager-type schedule for a thermal control system. The radiator activity bars are darkened to indicate that they are critical path items. The heavy black line indicates progress as of T-Now.

Figure 14 shows the Critical Path Survey form with the six standard criteria. These criteria have been used to assess the risk in the ATCS radiator's path.

Experience has shown that, with the assistance of knowledgeable project personnel, a critical path survey can be done in relative short order with dependable results. The following is a brief discussion of what one should consider for each criterion:

- Design Difficulty
  - Has performance has been scaled up from a lesser design?
  - Are there complex or critical interfaces? If so, are there many?
  - Will this design have to satisfy a number of different users?
  - Is new technology required or involved in the design?

Item: ATCS - Radiators

Subsystem/Element Manager: John Jones

Months to 1st Flt Delivery: 15

Months to 1st Flt Nee: 15

(T-Now = 11/95)

Factor	Description	High Risk 3	Moderate Risk 2	Low Risk 1	Remarks
1. Design Difficulty	Significant increase in performance requirements of an existing technology and/or complex interfaces	Significant	(Moderate)	Little	Deployment mech, fluid lines
2. Historical Problem Area	Degree of past cost, technical or schedule	(Significant)	Moderate	Little	Large cost growth, schedule drift
3. Development Maturity	Degree of develoment program maturity vs flight delivery	(Little)	Moderate	Significant	Dev. model redesign; Tight Qual/Flt relationship
4. Status	Behind current schedule plan	Significant	(Moderate)	Little	Qual assy 3 months behind schedule
5. Workarounds	Relief available from extra shifts or alternate	(Little)	Moderate	Significant	Facility constraints
6. Slack	Time between need date and planned completion	(No or Negative)	Moderate	Significant	No planned slack

(Circle column 1, 2 or 3 for each factor)

Average Score: 2.6

Figure 14. Critical Path Survey.

- Historical Problem Area
  - To what degree have cost, schedule and/or technical problems occurred in the past? Is there a history of cost overruns, schedule drifts or requirements changes?
  - What is the performance capability of the contractor? Is this the A-Team? Is there a broad experience base?

- Development Maturity
  - How much parallelism is there with respect to engineering models, qual units, and flight hardware?
  - Is there a modified development template, such as protoflighting?
  - How does the build span (# of months) compare with hardware of similar type and complexity?

- Status - What is the actual schedule performance to date vs the current plan?
  - Risk ranking of 1 = low = 0 to 1 mos. behind
  - Risk ranking of 2 = mod = 2 to 3 mos. behind
  - Risk ranking of 3 = high = 4+ mos behind

- Workarounds - Are workarounds possible due to the availability of some or all of the following?
  - Additional shifts
  - Alternate logic
  - Schedule compression
  - Additional equipment or skills

- Slack - Does the planned completion date support the planned need date?
  - Risk ranking of 3 = high = 0 to 2 mos slack
  - Risk ranking of 2 = mod = 3 to 6 mos slack
  - Risk ranking of 1 = low = 7+ mos slack

A note of caution is in order: After you have obtained inputs from your various project sources, and before you assign final values to the different risk criteria, you must do a bit of reconciliation. For example, a structures engineer may rank the risk associated with the new design of a particular structure as high. Yet when compared to the high risk associated with the design of a new piece of complex avionics requiring new technology, the structures risk would not be of equal footing. You need to be the final arbiter to ensure that the final risk rankings of the various critical paths are balanced with respect to one another.

Please remember that warning signals do not always flow up to the project manager early enough to permit the most effective corrective action. In many cases, the contractor is incentivized to view the future in a dangerously optimistic fashion. It is up to you to establish the protocols to flush out problems in a timely manner. The small investment required of an approach like this will force improved communications and aid in setting the right agendas. On smaller projects, the project manager may do this kind of ranking in his or her mind, however, as the size and complexity of a project grow, the ability to comparatively analyze all components becomes virtually impossible without a communication aid of this type.

The One-Pager critical element analysis technique results in a packet comprising four charts for a selected end item:

1. Summary Level Logic Network
2. Logic Network Description
3. All-Year Integrated Cost, Schedule and Metrics display
4. Near-Term Integrated Cost, Schedule and Metrics display

The technique was designed to help management focus on key cost, schedule and technical drivers and serve as a common basis for communications. The products are simple in concept and appearance, are produced using a consistent methodology, focus at the subsystem or key ORU level, are done in the context of a hardware/integration/test "backbone," capture only the important "nuggets," and place the emphasis on "programmatics" (the interplay and relationship between the cost, schedule and technical aspects of a program). The One-Pager is not easy to develop, but is relatively easy to maintain, and once in place, will prove to be a powerful tool that will enable project managers to manage more effectively.