

RALPH J. STEPHENSON, P. E.
CONSULTING ENGINEER

May 9, 1975

Mr. Howard Lashman
Mr. E. Mitteldorf

Copies to: Mr. H. Dorfman
Mr. Marshall Goldman
Mr. R. A. Lander
Mr. E. N. Maisel
Mr. Larry Mowry

Subject: Meeting #2 re Cost Accounting System - Monday, May 5, 1975

Attending: Mr. Howard Lashman
Mr. E. Mitteldorf
Mr. Larry Mowry
Mr. H. Dorfman (part time)
Mr. Robert Lander (part time)
Mr. Ralph J. Stephenson

On Monday, May 5, 1975, we met to set out the preliminary structure for a cost accounting system in the E. N. Maisel/Malan organization. Our first efforts were to define the range of activity control that the system should encompass. Mr. Mitteldorf stressed that due to the nature of the Maisel/Malan organization it was a necessity to consider the total operation if a proper picture of money movement was to be obtained. He also stressed that any control and planning system must take into account the changing nature of the Maisel/Malan operation, namely extension into other kinds of development than K-Marts. There was general agreement on this and both Hy Dorfman and Bob Lander emphasized the need to follow costs from the earliest possible date on through to the logical investment end.

The third element stressed was that each development should be looked at as a total financial picture since it is as critical to isolate project financial characteristics as it is to isolate and identify the company financial picture. It could be said that the company financial picture shows the total financial strength while the project financial picture shows the individual component strengths that make up the entire picture.

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Bob Lander particularly stressed the importance of maintaining control over the early work done on any given project program.

Having set the broad range of the control system, we next engaged in a detailed discussion of what kinds of costs are incurred throughout the life of a development. Using the development team job responsibility manual, dated February 13, 1976, we discussed each activity in the pre-corporate development phase and established that most, if not all of those, were cost items that should be internally and externally identifiable and measurable. Next, using a K-Mart project as an example, we identified the major phases of the development on through to the maintenance and management process. Although a K-Mart project has some characteristics not shared with other kinds of development, it was considered a good basic starting point.

The phases in a K-Mart development can be translated into other terms to represent the phasing of a shopping center project or other kind of investment.

The phases isolated and identified in a K-Mart development were as follows:

- 1) Pre-corporate development committee (CDC)
- 2) Post CDC - pre-construction
- 3) Construction - pre-turnover
- 4) Construction - post-turnover
- 5) Warranty
- 6) Post warranty
- 7) Property management

Within each of these seven major phases are several cost sub categories. For instance, in the pre CDC phase, activities that incur internal and external costs for Malcol/Malin are:

- a) finding and selecting sites
- b) preparing preliminary plot plans
- c) conducting preliminary site inspections

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- d) gaining preliminary land control**
- e) obtaining flat and oblique aeriols**
- f) obtaining preliminary soil information**
- g) obtaining utility information and preparing the utility investigation report**
- h) preparing the competitive survey**
- i) making traffic counts**
- j) establishing the population and the market area**
- k) obtaining general information from Chambers of Commerce and other such organizations**
- l) preparing regional, area and site maps**
- m) assembling the map and market presentation**
- n) obtaining, reviewing and analyzing zoning ordinances**
- o) collecting tax data**
- p) preparing preliminary rezoning information**
- q) surveying water needs and availability**
- r) refining preliminary plot plans**
- s) completing the site selection**
- t) preparing final preliminary plot plans**
- u) selecting the site engineer**
- v) assembling comparative land costs**
- w) preparing site development costs**
- x) preparing preliminary building costs**

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- y) preparing CDC qualifications**
- c) obtaining all mortgage commitment details**
- aa) preparing rental submission**
- ab) making detailed soil borings and analysis**

The above categories are not necessarily the best nor most appropriate way to identify the nature of the cost in the pre CDC phase. It might be that the activities generally identified during that period could be more broadly classified, say such as by -

- real estate**
- site planning**
- building planning**
- utility investigations**
- software graphics**
- market analyses**
- development and building costs**
- traffic studies**
- general information collection**
- map preparation**
- engineering**
- financing**

The above merely classify the sub activities in a very broad fashion within the pre CDC period. Careful attention should be given these broad categories within each of the seven major groups so that time and costs can be properly assigned. It should be remembered that the entire purpose of this cash movement system is to improve the predictability of cash flow in, within and out of the Malcol/Malan organization so that internal financial goals

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can be met and external financial commitments and responsibilities are clearly identified far enough in advance to allow a profitable operation. One of the major responsibilities of those preparing this system will be to identify the sub functions within each phase so that the system is neither burdensome, nor too sketchy to be of use.

A system without adequate detail is best not imposed. One with excessive detail becomes impossible to use.

A very interesting feature evolved out of our pre CDC functional analysis. It was found that most pre CDC work would, by its nature, be assignable to a site and not to a specific project until near the end of the pre CDC period or in the post CDC period. Thus, a third category of cost isolation appears, that of assignment to site or to project.

We further discussed the post CDC - pre-construction period and identified the items below as belonging to this phase of the work as:

- a) obtaining CDC approval
- b) preparing architectural renderings if needed
- c) preparing environmental impact report if needed
- d) preparing summary pre construction report
- e) establishing construction cost targets in detail
- f) obtaining land control
- g) preparing post CDC evaluations and review
- h) recycling pre CDC activities where necessary
- i) making detailed review of total development budget

(This is a very critical step, according to Bob Lander, and should be given a high priority of attention at about this point in the project.)

- j) preparing and submitting prebid post CDC budget
- k) preparing working drawings and specs
- l) obtaining land rezoning where required

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- m) Soliciting sub trade proposals, revising budgets and awarding contracts
- n) Completing lease negotiations
- o) Closing on financing

(This list was not discussed as extensively as was the pro CDC list. I suggest careful attention be given the above items and the list extended so a clearer functional picture is obtained of the work actually done during the post CDC pre-construction period.)

During the pre-turnover and post-turnover construction period the functional elements of the cost control system are quite precisely defined by the network model used to plan and control the field operations. The trade breakdowns are well defined by the job cost analysis sheet containing the standard sub trade codes. Thus, the construction period is probably one of the better and more precisely defined money expenditure periods that a project passes through.

For this reason it was decided to first concentrate on establishing a cost control plan and system for the construction pre and post turnover periods. Mr. Mitteldorf felt this was an excellent idea since it also represents a period of somewhat funds which, of course, must be given a high priority of management attention. Therefore, Mr. Leshman and Mr. Mitteldorf agreed to immediately concentrate upon generating a money movement and control technique for the entire construction period. We tentatively agreed that the cash flow targets would be established by plotting the early and late finish estimated and projected values of work in place curve. This curve is derived from the network model with costs assigned to each task.

The second measuring curve will be the total cash actually paid out to external and internal sources, with the third control curve being the total cash paid to Mitsel/Balun in direct application to the job. Obtaining the first of these curves may take a little time since it requires establishing a cost on each element of the network and insuring that the total cost of all tasks is the same as the total estimated cost of the project. Mr. Meery will give this particular problem his close attention. The cost data will be developed in conjunction with the project manager.

Further details of the cost system will be prepared as the study and development of the technique proceeds.

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Summary

On May 8, 1975 key staff members of Malcol/Malin met to initiate discussions about a cash movement planning and control system for the entire organization. It was established that the typical K-Mart project, as well as other developmental programs, break into seven fundamental phases. For K-Marts these are as follows:

- Phase 1 - Pre CDC
- Phase 2 - Post CDC - pre-construction
- Phase 3 - Construction - pre-turnover
- Phase 4 - Construction - post-turnover
- Phase 5 - Warranty
- Phase 6 - Post warranty
- Phase 7 - Property management

Phases 1 through 6 generally move from beginning to end before the succeeding phase starts. However, the property management phase may extend throughout an entire program and beyond the post warranty period.

Next, we identified some of the functional activities that usually occur in the pre CDC, post CDC - pre-construction, and the construction periods. Out of this it appears one of our major efforts should be to evolve a simple but definitive classification system within each phase that allows accurate predictive budgeting and clearly identifiable incurred costs.

During the pre CDC and post CDC - pre-construction phases the sub function categories will probably describe administrative, technical, financial and real estate functions. During the construction period the breakdown will identify activities and subcontractors.

Due to the present committed nature of construction and because of the fairly extensive work already done in construction cost budgeting, it was decided to first tackle the construction phase, both pre and post turnover. Thus, our heavy early efforts will be applied to those two phases. Concurrently with this, consideration of the characteristics of each of the other phases will proceed.

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I suggest we set target dates for completing our work on each of these phases and will be in touch with Mr. Leshman and Mr. Mitteldorf regarding this matter in the near future.

In respect to projecting anticipated money movement, Mr. Mewry will address himself to the problem of assigning costs to each task in the critical path diagrams to obtain the estimated cumulative dollar value of chargeable materials and work in place through the project construction period. The system will take into account changes by identifying them as separate tasks, placed at the proper time position of the work in the diagram with the cost of the change given to the task.

The anticipated cash movement information is important as a standard of performance. It essentially becomes the base by which deviations from the standard (problems) are identified and solved.

Ralph J. Stephenson, P. E.

**RJS
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June 26, 1975

Mr. Howard Leshman
Mr. Donald Sharfman

Copies to: Mr. H. Dorfman
Mr. Marshall Goldman
Mr. R. A. Lander
Mr. E. N. Maisel
Mr. Larry Mowry

Subject: Meeting #3 re Cost Accounting System

Saturday, June 14, 1975

Attending: Mr. Howard Leshman
Mr. Donald Sharfman
Mr. Larry Mowry
Mr. H. Dorfman (part time)
Mr. Robert Lander (part time)
Mr. Ralph J. Stephenson

On Saturday, June 14, 1975, we met to continue structuring the cost accounting system for the E. N. Maisel/Melan organizations. The meeting of Monday, May 5, 1975, described in my memo of May 9, 1975 was reviewed to insure that the material discussed then was still pertinent. It was generally agreed it was, most particularly the statement on page 5: A system without adequate detail is best not imposed. One with excessive detail becomes impossible to use. All concerned feel this is a good guideline for continued development of the cost accounting system.

At this third meeting we concentrated on grouping activities that occur over the entire life of a project through all phases. After long discussion it was decided the following ten descriptions could be used within our present range of experience to describe nearly any technical operation an individual would be doing on any current type of project.

- | | | |
|-----|-----|-------------------------------------|
| 1) | RE | Real estate |
| 2) | SD | Site design |
| 3) | ICA | Information collection and analysis |
| 4) | QP | Graphic preparation |
| 5) | PA | Project administration |
| 6) | BE | Budgeting and estimating |
| 7) | FI | Financing |
| 8) | BD | Building design |
| 9) | FS | Field supervision |
| 10) | CM | Corporate management |

Considerable discussion time was spent identifying these ten major descriptions and they were further checked with Mr. Dorfman and Mr. Lander to determine whether, in their opinions, they fairly covered the total range of activities in both the E. N. Maisel and the Malan organizations. They agreed. However, we should exhaustively evaluate whether there might be other activities the firm does that are not identifiable within the above broad categories. We also should establish definitive guideline descriptions of each category with a listing of the sub-activities applicable within it.

It is expected each member of the staff will keep his time records relative to the above activities. This should not be an excessively difficult matter since for example, most field superintendents will use code 9 (field supervision) most of the time. Most project managers will be concerned with either project administration, budgeting and estimating, information collection and analysis, site design or building design. Whenever anyone is involved in work that does not fall within categories 1 through 9, it probably will be a corporate management function. An example would be the sessions on cost control upon which we are currently engaged.

Mr. Leshman, Mr. Shartman and Mr. Mowry will review the activity codes to see that they are inclusive enough. They should also be discussed with the project managers and other staff members to see that they are comprehensive without being burdensome.

Another element of cost identification deals with the project designation. There already exists in both organizations a system for numbering projects. In E. N. Mital, a four digit number showing the year of the project and the site number precedes two letters identifying the location. For instance, the work that would be done on a project starting in 1974 dealing with site #131 for Manchester, Missouri would have the designation 4131 MM. The 4 designates the year, the 131 designates the site number and the MM is for the town. In the Malin organization the alphabetical location code precedes the number. For instance, Fairview Heights might have the designation FV7428. This would signify that the project is Fairview Heights, begun in 1974 - note the first two digits of the number are the year - and it is project #28 in that year. Thus, we already have within the organizations an accepted project identification system. I suggest this system be reviewed before it is incorporated into the cost accounting framework.

The two other elements of the cost accounting system are the phase identification and the accounting control number. Phase identifications are:

- Phase 1 Pre CDC
- Phase 2 Post CDC - pre-construction
- Phase 3 Construction - pre-turnover
- Phase 4 Construction - post-turnover
- Phase 5 Warranty
- Phase 6 Post warranty
- Phase 7 Property management

An accounting control number was desired by Mr. Lachman and Mr. Sharfman. There are five of these:

- | | |
|----------|--------------------|
| 1 | Assets |
| 2 | Liabilities |
| 3 | Capital |
| 4 | Income |
| 5 | Expenses |

After discussing the identification elements in detail it was decided that the four basic elements described above, the project, the phase, the function, and the control number would give the accounting department an adequate set of information for them to establish and maintain a good cost accounting system. The only requirement imposed upon the staff would be to assign the proper project identification, the phase and the function. This should not be burdensome since normally these three elements are easily identified and people in the company usually work on the three of these together and in sizable blocks of time. The accounting department would add the accounting control number.

We next walked through several situations as to how time would be identified for unusual situations. For instance, if one of the general superintendents was asked to collect labor and material costs in Hayes, Kansas relative to a prospective site in the pre CDC period, it would be identified in the following manner:

Project:	4093 HK
Phase	1
Function	3

- This is a 1974 (Malcol) project, site 93 in Hayes, Kansas) phase 1 (Pre CDC), function 3 (information collection and analysis), accounting control 5 (expenses).

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Thus, the general superintendent could identify at the very least his function, with remaining information filled in at the office or if it was desired, he could actually determine the project designation, the phase he was involved in and the function. Thus, the system can be made rather simple to use and still be capable of providing a great amount of cost data that will help accomplish those goals we have set out to achieve.

The next part of our discussion revolved around a computer generated cost report that Mr. Leshman had put together for a hypothetical project. The cost report looks very good and I think will fulfill some of the demands being made upon accounting and budgeting by the corporations. I suggested Mr. Leshman add a column for the estimated amount to complete so that the project manager could show prior to report issue his evaluation of how much money would be required to complete each budgeted item. This should help avoid surprises such as occur where the project manager has not been required to either report or evaluate future cost projections.

In relation to this matter we also discussed the assignment of costs to network tasks that Mr. Mowry is presently working on. He will complete this work for the Fairview job and we will make a sample run to see what kind of cost document and reporting form can be best used. I shall continue to work directly with Mr. Mowry on this.

Meanwhile, Mr. Leshman, in conjunction with Mr. Sharfman, will review the ideas discussed in this session and move toward completing their recommendations relative to the new cost accounting system. I shall be in touch with Mr. Leshman shortly to set our next meeting.

Ralph J. Stephenson, P. E.

RJS
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July 23, 1975

Mr. Howard Leshman
Mr. Donald Sharfman

Copies to: Mr. H. Dorfman
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Mr. E. N. Maisel
Mr. Larry Mowry

Subject: Meeting #4 re Cost Accounting System
Tuesday, July 15, 1975

Attending: Mr. Howard Leshman
Mr. Larry Mowry
Mr. Ron Neuchterlein (part time)
Mr. Larry Raffler (part time)
Mr. Ralph J. Stephenson

Project: 75:33

On Tuesday, July 15, 1975 we met to review cost accounting system applications to building work. As a sample project we had selected the Fairview Heights K-Mart to test elements of the cash movement system. Mr. Mowry had, to the best of his current knowledge, allocated total building costs to each task in the network. This information was subjected to a data processing run which measured the estimated value of work in place (using the individual task cost assignments), during each month the job was to be in the field.

Two totals were prepared, one assuming that all tasks started at their early start dates and finished at their early finish dates. This provided a cumulative cash movement curve measuring the value of work in place under these conditions. The second curve assumed the tasks started at their late starts. The cumulative LS cash movement indicated how the estimated value of work in place would be if all tasks started at the latest allowable time. This set of measuring curves was described in my memo of May 9, 1975 on page 6, the third paragraph.

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The printout for these two curves was provided to Mr. Leshman and Mr. Mowry. It shows the amount of money to be expended in each month for each task according to the responsibility for the task. Presently our field network system does not use the same cost codes as are used for the accounting system since to this point there has been no requirement for correlating the two. If it is decided to go ahead with the cost analysis system as discussed, even on a tentative basis, it would be desirable to revise the current responsibility codes to conform to those being used in accounting. We shall review this.

Most of our early discussion at this meeting was between Mr. Leshman, Mr. Mowry and myself regarding the characteristics of the schedule cost analysis. There was general agreement it would be a desirable technique to implement.

As with any new system, it will take some review and discussion to bring into final form. To assist in initial evaluation, we asked Mr. Ron Neuchterlein and Mr. Larry Raffler to join us for part of the session and provide constructive comments regarding the method. There is legitimate concern that the assignment of costs to each task very early in a project might require more time than perhaps is justified. Mr. Neuchterlein suggested we evaluate the possibility of taking several sample jobs and determining the percentage of total cost that that task demanded. Thus, when a budget for presentation price was established for the job as a target, it would be possible to apply a conventional network run and set the overall anticipated cash flow without having to assign a detailed cost to each task at that early stage before contracts are let. I think this system has merit and we shall attempt to incorporate it into the overall technique. It became apparent early in our review that there are three basic estimates prepared for K-Mart projects. The initial estimate is used to set financing demands and is usually arrived at by a summary evaluation of the total job. The second estimate is prepared to buy out the project. If the early buying moves smoothly, it is possible the buying estimate will be identical to the initial estimate or financial estimate. The third estimate is that prepared once the job is bought out and all contracts are known. This is the contract estimate. Thus, we have a financial estimate which is the first one prepared; the buying estimate, the second; and the contract estimate, the third. For the financial and buying estimate cash flow, the percentage allocation could work very well. Once the job has been bought out, it would be desirable to convert the percentages into actual contract amounts.

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In relation to monthly draws of the job, it should be possible after some experience with the system has been obtained to prepare a draw based upon an evaluation of the percentage of each task complete. Since this is a relatively sophisticated application and might be subject to unpredictable errors, if used too early, it would be wise to wait until we have had some experience before using the percentage of tasks complete as a draw basis. However, the task percentage analysis should provide a good check on the monthly draws even in the early use of the technique.

It would be wise, if we are going to adopt this technique, to proceed slowly and to learn to handle one element of it at a time. This will allow project managers and superintendents to become familiar with how the method works without being subjected to heavy criticism for early inexperience in applying the technique.

A criticism that came out in the meeting was that it might possibly take too much of the project manager's time to work with such a technique. This matter was given extensive discussion time and the question really boils down to what the project manager's basic responsibility is. It is difficult to say without qualification that a project manager can handle only five jobs a year, eight jobs a year or three jobs a year. The critical point is to establish clearly what the responsibilities of the project manager are on each of his jobs. Thus, there is some legitimate concern since each project manager has his own style of handling a job. Nevertheless, the major reason for making the cost accounting system study was to put into work in the company a money management method that provides to the decision-making executives adequate information early enough so that major financial difficulties are avoided. This system must be one that does not require questions to be asked by management, but instead, will give management the answers before they have to ask the questions. This is a particularly critical element in today's and tomorrow's marketplace.

Mr. Neuchterlein agreed to take a 9000 series store and attempt to provide a cost breakdown for each task either on an actual or a percentage basis. We shall utilize this work in our next series of diagramming sessions for three or four of the 9000 series stores.

Several other elements were reviewed in our discussions. One of these revolved around change orders and purchase orders. Incorporating change orders into a network will be essential to properly incorporate cost changes into the network diagrams. This can be done in two basic ways. First, add the cost into the tasks affected or second, add in the change order as a

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change order task that moves concurrently with the tasks it affects. I tend to favor the latter since in this method the original cost of the task is identified and the impact of the change as a separate identifiable element is added. This, along with other matters described below, will be subject to further discussion before final decisions are made.

Another discussion concerned the role of the subcontractors in the assignment of costs to the tasks. I feel that since almost 100% of the construction work Malan does is brokered, that the subcontractors of Malan must be assigned a heavy responsibility for allocating total costs of their contract to the various tasks. When putting together the contract estimate, subcontractors should provide to the project manager the information about where and how much of their costs are to be allocated. Again, this will require conversation and discussion with subcontractors but this is no different than with any new technique being incorporated into the management process.

As has been pointed out frequently, we must be very careful about loading the line staff in the company with additional responsibilities and duties that do not directly contribute to the conventional low overhead operation which Malan strives to maintain. We should keep this in mind continually as we work through our cost accounting techniques.

As in our previous meetings, we all will strive to adhere to the concept that the cost accounting system must be simple, automatic and completely devoid of unusable details. This was the theme of our fourth meeting and I think offers a good guideline for future work. We shall proceed as outlined above and plan on having another review meeting sometime in the near future.

Meanwhile, Mr. Sharfman and Mr. Leshman will continue with their work on identifying costs as described in memos for meetings #2 and #3.

Ralph J. Stephenson, P. E.

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