

ASRCT—DRI Management Workshop No. 3

Report

on

The Applied Scientific Research Corporation of Thailand —  
Denver Research Institute  
1977 R & D Project Management Workshop

Bangkhen, Bangkok

6—16 December 1977

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Applied Scientific Research Corporation of Thailand  
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DENVER RESEARCH INSTITUTE  
1977 R & D PROJECT MANAGEMENT WORKSHOP

TRODUCTION

is is a report on the Applied Scientific Research Corporation of d (ASRCT) and the Denver Research Institute (DRI) R & D Project ent Workshop held at ASRCT from 6 through 16 December 1977. The p was financially supported by the Thai Government and the United States for International Development. The objective of this cooperative king was to increase the effectiveness of Thai management of R & D s through a management training workshop for senior management of & D and planning organizations.

e workshop was organized and conducted by ASRCT and DRI. Twenty partici- rom ASRCT, the Department of Science, the Department of Industrial on, the Office of the National Economic and Social Development Board, itary Research and Development Center, Mahidol University, the Office of form, and the Preserved Food Organization took part in the workshop. ment I is a list of participants.)

e DRI team was led by Dr. Ron Black and consisted of himself, Mr. James , Mr. Donald Evans, and Mr. Hale Wagner. In preparing and conducting the p they worked with Mr. Nitasna Pichitakul, Dr. Malee Sundhagul, and angsuda Singhaneti of ASRCT.

E WORKSHOP PROGRAM

e workshop focused on issues and problems facing the R & D project Participants examined questions of project management from the on of an idea to the commercialization or utilization of the project . The workshop agenda is given in Attachment II.

Several different techniques were employed to convey knowledge, stimulate thinking, develop management judgment, refine decision-making capabilities, and aid interpersonal communications. These included the following:

- The case study method as used in schools of business and management to develop management judgment, refine decision-making capabilities, aid interpersonal communications, and practice management techniques.
- Participatory lectures and discussions aimed at conveying knowledge of management principles where the participants were encouraged to contribute to the lectures based on their experience.
- Movies to demonstrate management practices of the successful application of research by institutes in less-developed economy environments.
- Group and individual exercises and problem-solving sessions aimed at further developing interpersonal communication, management judgment, and decision-making capabilities.

The techniques were employed in ways and combinations judged to have the greatest likelihood of achieving the project objectives. Effective utilization of these techniques was aided as a result of participant evaluative responses following each workshop session. See Attachment III for a copy of the form used.

Summaries of the major workshop sessions follow.

#### Workshop Introduction

Presented by Ron Black, 6 December

To set the "stage" for the workshop, the goal was defined as being to increase our effectiveness and efficiency as managers of R & D projects.

Workshop expectations and limitations were then noted:

- We expect to create an environment in which you will be able to learn and practice R & D project management.
- We expect to convey information to you on R & D project management principles, concepts, and techniques.
- We expect you to translate these lessons to the Thai setting.
- This is an educational workshop.

- We do not expect to solve your management problems but do expect you to use the tools and knowledge that will be conveyed during this workshop to more effectively approach these problems yourselves.

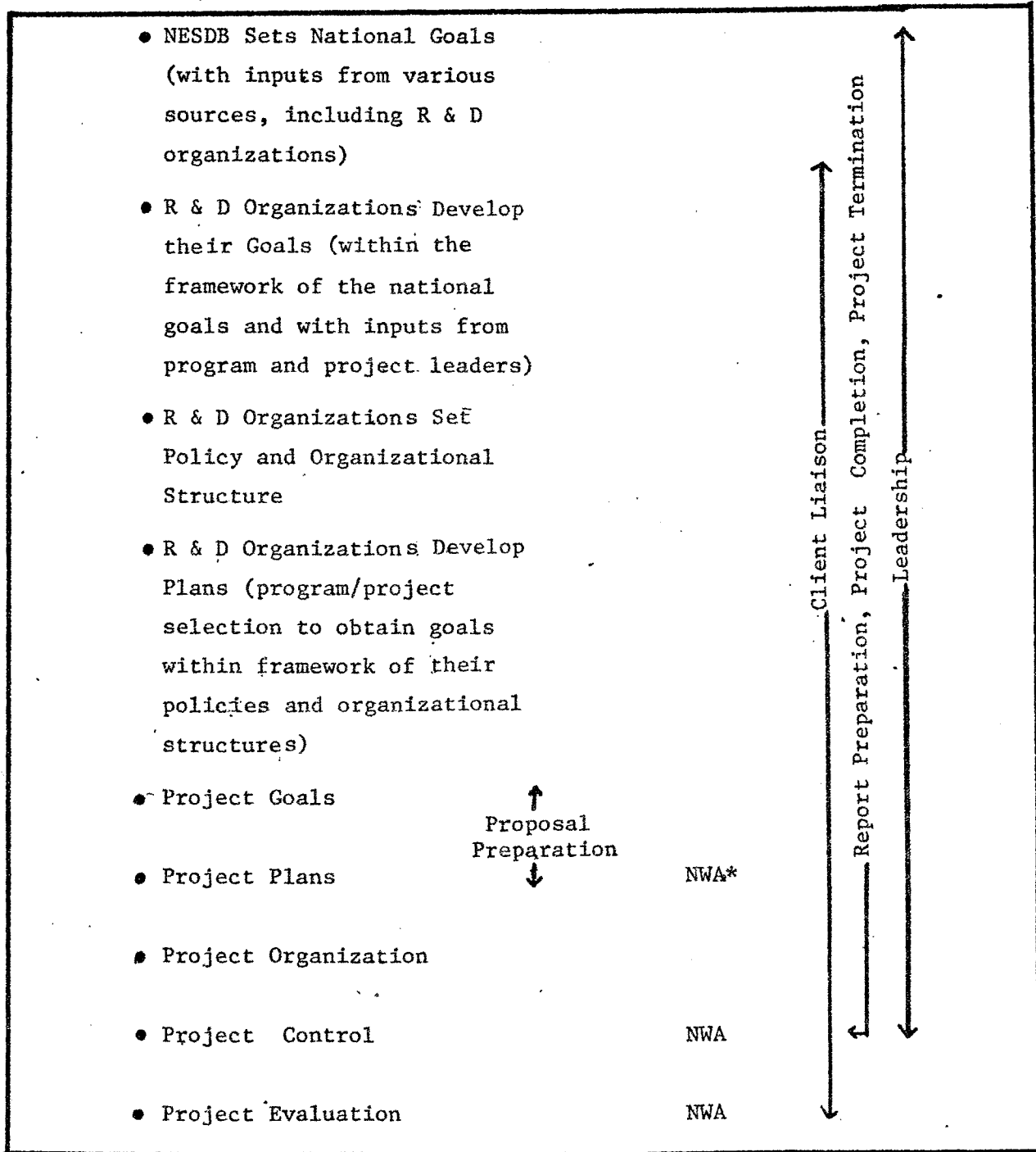
It was noted that the desired workshop environment and methodology were as follows:

- Interactive Environment
- Participative Lecturers
- Case Studies
- Exercises.

The hierarchy of workshop activities was then presented as shown in Figure I.

FIGURE 1

HIERARCHY OF WORKSHOP ACTIVITIES



\*NWA refers to network analysis.

Discussion of the IRRI Case

Presented by Ron Black, 6 December

The session was initiated by a discussion of how a project leader has and evaluates ideas. Some thoughts set forth were as follows:

How do you have good ideas?

- Contact with clients or users
- Contact with manufacturers or producers
- Contact with equipment/product distributors/traders
- Personal communication with your colleagues
- Reading trade magazines
- Reading professional journals
- Visiting trade fairs
- Participation in symposia, workshops, etc.
- Reevaluation of your own work.

How do you evaluate ideas?

- Can you summarize it?
- Is it in consonance with the National Development Plan?
- Does it fall within the existing objectives and plans for your institute and program?
- If not, is the idea of such merit that it warrants changing the plans?
- Is it technically feasible?
- Is it feasible from an engineering standpoint?
- Can you identify a market?
- What is the idea's overall economic feasibility?
- Can you identify a potential client?
- Will a client support research on the idea or must you wait until you have the results of the research and attempt to sell that?
- Can the client manage the operation?
- Does your institute have the capabilities to successfully conduct a project based on your idea?
- Is it financially feasible?
- Is it legal?
- Is it socially acceptable?

- Is it politically acceptable?
- Is it ethically marginal?
- What is the raw material availability?
- Could proprietary rights be maintained?
- For what period of time could a market advantage be maintained?
- Is there an environmental impact?
- Does reaching the goal require an advance in scientific knowledge?

Following this brief presentation and discussion, the participants turned to an examination of a case study based on the agricultural equipment development program of the International Rice Research Institute (IRRI). Some of the questions examined and resulting answers follow.

1. Q. What are the important criteria that a potential IRRI project must meet prior to its initiation?
  - A.
    - Have a market for it.
    - Design it so that it can be produced locally.
    - Keep it simple.
    - Keep it inexpensive.
2. Q. What is IRRI management's criteria for success?
  - A.
    - Whether or not the designs are used.
3. Q. What are the important factors that have led to the success of IRRI?
  - A.
    - Criteria of 1 and 2.
    - Pragmatic and businesslike approach to design and development, activities.
    - IRRI engineers are practical and know how to fix things.
    - Maintained a close relationship with local manufacturers.
    - Carrying the innovation process far enough that market uncertainties are diminished to acceptable proportions for the manufacturers to pick them up, more often than not providing a readily marketable piece of equipment. Sometimes includes purchasing few pieces of equipment.
    - Analysis of the market is a continuous process.
    - Awareness of most equipment concepts in the areas with which they are concerned.



- Firms that have produced IRRI equipment have also marketed and popularized it.
- Finding out what consumers can afford and what the characteristics of the equipment have to be to make it profitable to a manufacturer.
- Strong commercial orientation.
- Khan's long experience with farm machinery, much of it on the commercial side.
- Khan's leadership, enthusiasm, conceptual capabilities, including ability to eliminate non-commercial concepts.
- Providing leadership opportunities to the "right kind" of younger engineers and scientists.
- The quality of the staff.
- Lack of red tape and level of pay to a limited extent.
- Being technically capable of providing technical suggestion to staff members who become bogged down.
- Having a poor memory?
- Being attuned to the problems; not doing basic research.
- Being responsive to farmers' needs and what would be profitable for manufacturers.
- Not having to run after funds a large percentage of their time.
- Few constraints on their selection of projects.
- Use of pragmatic and flexible criteria for project selection.
- Nature of program and creditability of IRRI has allowed them to maintain a good staff despite low pay.
- IRRI's reputation.
- Relatively narrow focus of their program, leading to a concentrated effort.
- Communications within the department so that everyone knows what everyone else is doing.
- Minimized red tape.

4. Q. Why does IRRI management think some institutes have been less successful than IRRI and what are your opinions of their validity?

- A.
- Lack of leadership.
  - Leadership does not understand commercial operations.

- Leadership lacks a clear understanding of where their institute is heading.
  - Leadership lacks an understanding of the real needs that its institute should be addressing.
  - Institute does not take "product development" to the point that industry is capable of picking it up.
  - Engineers are interested in technologies per se and not in studying needs and then deliberately looking for answers to them.
5. Q. Would the IRRI approach to equipment design and development work in Thailand?
- A. For participant reflection.
6. Q. Would the IRRI approach work with other forms or fields of technology?
- A. For participant reflection.

#### Selection of Appropriate Technology

Presented by Nitasna Pichitakul, 6 December

The concept of technology as a part of social life utilized to improve the general quality of life was emphasized in the light of meeting the needs of the people to solve their social and economic problems. Several disadvantages of high technology were noted, namely the mass population migrations from rural to urban areas, widespread unemployment, unequal distribution of income/benefits, and environmental problems, social and cultural displacement and increased outside economic dependence.

It was noted that there is a need for technologies which are appropriate and adapted to existing local conditions, which promote autonomous social and economic development, which optimize local skills and other resources, which serve the people where they are and help solve unemployment problems by creating new jobs. Appropriate technology was then defined as technology which is most suitably adapted to the conditions of a given situation. It is compatible with the human, financial and material resources involved in its application and is noted, generally, to be labor intensive, simple, small-scale and low cost. The points of appropriate technology emphasized were that it should benefit the maximum number of people possible, not conflict with the local ecology, be acceptable to the people, and be generally appropriate to the users, the resource base, the indigenous economy, and the social and political structure.

Several options available for the development of appropriate technology were elaborated, namely, adopting or improving indigenous technology; accepting a foreign technology; reviving an old, indigenous technology; adapting or improving foreign technology; developing a new technology; and transferring technology within developing regions or countries.

A case study on mint oil production in Thailand was introduced and the background for the case developed. A set of criteria for selection of appropriate technology was discussed, and the results of such selection were enumerated. Comments were made on several inappropriate factories for mint oil production in Thailand in comparison to the effectiveness and suitability of the designs.

Project Selection  
and  
Demonstration of Project Selection Techniques  
Presented by James W. Frasché, 7 December

The session began with a discussion of the reasons for project management failure, showing that an unsound basis for selection is a major cause. The dominating factors in the selection process in industry (marketing, financial, technical) were described, as were the objectives (reducing operating costs, satisfying needs of various kinds, opening new areas of opportunity, etc.) of R & D projects. The characteristics of complexity and the essential nature of the selection process were emphasized.

Project/product life cycles were dealt with in detail, with the emphasis of the session pointing at the high rate of new product failure and the importance of the factors of obsolescence and competition in leading to the setting of effective and relevant criteria in the project selection process. These criteria (contribution to organizational objectives, etc.) were examined in terms of various operational, financial, production, technical, market and facilities constraints. The importance of and relationship between operational and organizational objectives were stressed.

A comparison of the different selection policies of various U.S. Government agencies and departments was analyzed and compared, and the importance of developing several alternatives for selection was pointed out. Various factors in the selection process were isolated and defined in terms of their quantifiability and problems in doing this were analyzed. To emphasize

this, several methods of selection available to management were presented, described, and discussed, including:

- Cash flow tables leading to present value analysis
- Discounted cash flow method
- Payback rate
- Q-sort for prioritizing alternatives
- Graphic formats for presenting credibility factors (commercial, technical, etc.) for rating and weighting.

Examples of each were drawn up, criticized, and discussed.

Introduction to Project Management  
and

Introduction to a Sample Case

Presented by Hale Wagner, 8 December

This section of the workshop was oriented to the introduction of the project management concept. Some historical developments were discussed, including the complex developments evolved in the aerospace industries, during and after World War II, as a result of the complexities encountered in the development of the sophisticated projects of that and subsequent time. Basic management concepts were discussed and related to the concept of the normal research project.

The considerations of the unique, well-defined, goal-oriented research projects were discussed, including specifically the life cycle of a project. The goal of project completion was discussed as opposed to a normal product type of management with a long-life expectancy.

Characteristics of the project environment requiring a centralized responsibility and authority and the reasons for these to be considered were reviewed. The independent nature of the phases of project life were considered, and a project was taken through a typical life cycle from the initiation of an idea through the proposal, the actual research, the project completion, and the necessity to maintain client relationships after actual completion. The basic managerial concepts of planning, organizing, motivating, directing, controlling, and the added element of evaluation were briefly discussed.

A sample project, which would be used as examples of the various concepts, was introduced. Elements of data to be used were also advanced.

### The Planning Process

Presented by Hale Wagner, 8 December

Definition of the process of planning and the systematic analysis by which an organization can become what it wants to be was reviewed, again in the relationship to a research project. An alternative to planning methods was discussed, as well as the basic relationship of planning to the elements of the managerial processes.

A set of planning specifications was advanced in order to better define the process. The importance of all the areas covered as related not only to the project but to the total institutional success was emphasized. Planning techniques were reviewed in general but emphasis was placed on the inter-relationships of time, money, and progress.

Operational program conditions for the sample case were established, and the basic techniques of PERT, networking, Gantt charting, as well as the time, dollar, and milestone relationships as portrayed on a standard X/Y chart, were reviewed in detail. A description of the PERT/networking/CPM methods was given using the sample case. An activity list of the sample case was shown and was related to a completed network for the project. The translation of the basic network to a time-based network was also demonstrated.

Milestones were defined and selected from the PERT chart. These integrating techniques were then related to the other planning elements which had been discussed.

Activity planning worksheets were made available, and a typical activity was detailed to indicate a method for identifying all the resources which should be considered. Development of the statistical time considerations and the importance of obtaining the estimates from the functionally responsible persons was also emphasized. Cost development and operational constraints were covered.

### Proposal Preparation and

### Proposal Writing Exercises

Presented by Donald D. Evans, 9 December and 15 December

Emphasis was placed on the importance of proposal preparation in terms of presenting to prospective sponsors a written document which is an outstanding representation of the capabilities of the research institution. The role of the

proposal as a sales or marketing aid was stressed. This lends emphasis to such proposal features as: tightly reasoned, logical presentation of project rationale; well-defined research methods; adequate explanation of costs, schedules and staffing patterns; and clear description of institutional capabilities.

A detailed discussion was developed of the typical, sequential research proposal contents, under the titles of representative sections: forward, summary, statement of problem, background discussion, project objectives, research methodology, project management plan, budget presentation, resumes of research staff and details of the research organization.

The participants were asked to study an actual research proposal recently submitted by an institution in Sri Lanka. Four "teams" were formed from among the participants which then separately met to discuss and evaluate the proposal in reference to the criteria and characteristics described during the preceding lecture. Rapporteurs of the four teams then presented their respective team analyses for discussion by the group, including the faculty.

These team identities were maintained for the purpose of preparation, over the ensuing several days, of proposals reflecting the principles which had been discussed. Each team was asked to consider the proposal concepts of its individual members and to select one which would become the subject of a joint effort at proposal preparation. These proposals were subsequently presented on the final day of the workshop. Each such presentation was evaluated by the other three teams, plus the faculty. Evaluation criteria used were those developed during the course of an earlier lecture, and quantitative measures were applied. The specific categories of evaluation were: problem definition, and importance, research methodology to be employed and its constraints, explanation of costs and schedules, and capabilities. At the conclusion of the presentations, and after the participants had prepared their individual quantitative evaluations, the faculty presented their individual assessments of the four proposals.

Materials utilized during the proposal phase comprised a series of vue-graph projections, provision of individual copies of a UN paper on proposal preparation for research institutes in developing countries, and copies of six illustrative proposals which had been submitted to ORI by LDC research institutions for consideration under its grant program.

### Development of Proposal Budgets

Presented by Hale Wagner, 13 December

The data developed in the planning process for the sample case were used to define a typical proposal budget. The use of the back-up work sheets was described in assuring total consideration of all the resources and cost elements of a proposal budget. Again, emphasis on obtaining the estimates from the functional elements was considered. Necessity for back-up data in other proposal segments was emphasized. Relationships of indirect cost were described and various methods of indirect cost allocation were reviewed. Format for budget presentation was discussed for various types of clients. Consideration for specifying the time the proposal was valid was given as was the necessity to include the economic factors on increasing personnel and material costs. The cost-sharing concept was explained and was related to the ASRCT position in the Thailand research setting.

### Network Analysis

Presented by James W. Frasché, 13 December

To emphasize points made in the workshop handout from Ron Black on network analysis and Hale Wagner's session addressing that management tool, the session centered around common mistakes made in constructing a network. These included elaboration and discussion of several rules in networking, namely:

- No activity can go backwards in time
- The length of the activity arrow has no correlation to time duration
- No activities can be left "dangling"
- Working backwards versus forwards in networking
- Usefulness in documenting conclusions in preparing a network
- Appropriate materials (blackboard, paper, etc.).

After discussing the difference between event-oriented and activity-oriented networks, the participants were freed to evolve a network analysis of their own group proposals with the workshop staff available for questions and comments.

### Indirect Costs

Presented by Hale Wagner, 14 December

With the interest exhibited in indirect cost in the proposal budget discussions, it was decided that a presentation of indirect cost techniques would be in order.

As an introduction to the subject, a chart of normal classifications of various expenses and their categorization as direct or indirect costs was reviewed. The financial data from the sample case was then used to work through an indirect cost case study. The methods of cost summarization and the reasons for using the different bases of allocation were shown. Methods of determining annual costs for capital resources were also reviewed. A brief indication of the costs allocated to self-liquidating centers was given.

#### Organizing

Presented by Hale Wagner, 14 December

Arranging to get the project accomplished through the process of organizing its resources was covered. Personnel resources and the importance of assigning authority commensurate with the necessary responsibilities were emphasized, as well as the development of lines of communication and the necessity to negotiate for the short-term commitments of personnel from other departments. The potential need for part-time employees and subcontracting and consulting were explained. The basic types of organization--functional, project, and matrix--were covered, and the advantages and disadvantages of each type of organization were discussed.

#### Controls

Presented by Hale Wagner, 14 December

A definition of management controls was given with their relationship to the planning process. The orientation of the control process to decision-making was explained. Methods of establishing standards, as identified in planning, were reviewed for financial, human, operational, and temporal parameters. Significance of being able to identify and correct deviations was emphasized.

The requirements for adequate controls were noted. Budgeting, as well as non-budgetary data elements, was reviewed in the context of the networks, scheduling charts, and a budget.

Management by objectives and management by exception were oriented to the control process. The effect of the lack of controls was noted.

#### Client Liaison

Presented by Malee Sundhagul, 14 December

Governmental agencies and ministries, various industries, businesses and associations, consulting agencies and research institutions were identified as



potential clients, and liaison through extension agents, personal contacts, interviews and visits, newsletters, brochures, and clubs and associations was discussed.

The various forms that assistance to potential clients might take were identified. Technical information, techno-economic evaluation and analysis, and standardization activities were discussed, as were possibilities in new product/process development, existing product/process improvement, product/process trouble-shooting, testing, and analysis.

The importance for mutual understanding through good client-contractor communications and cooperation and the need for earning respect and confidence of the client were emphasized along with the necessity for establishing a professional relationship incorporating appropriate consideration of ethics and confidentiality. Several recommendations for improving service were developed and discussed, including various policies and programs, the desirability of interdisciplinary skills, managerial centralization of services, expansion of services to the national level, the use of trade associations, cooperation with the cognizant planning agencies, and a productive relationship with the government.

#### In-Process Controls

Presented by Hale Wagner, 14 December

Using the planning tools developed for the sample case, a spot in time was selected for sample in-process evaluation. The exceptions to the plans were noted in the statistical data furnished through the management information system and the network was used to evaluate alternative courses of action. Re-scheduling of milestones was reviewed with the effect that the other planning data and alternate suggestions to rescheduling resources to meet the original schedule were made.

The importance of close client relationships was again noted. Contract implications and courses of action were indicated.

A sample of typical in-process information was also presented. Techniques of indicating progress by PERT were viewed with the simplistic utilization of this method as a communication media to all project and otherwise involved persons.

A quarterly review process was reviewed as a method to collect management control data.

Report Writing  
and  
Report Evaluation Exercises

Presented by James W. Frasc e, 14 December

General principles of report writing were explained in relation to recognizing the final report in its role as what is often the only tangible product of a research effort to satisfy the needs of the correctly identified report audience. The importance of initiating the report-writing activity at an early stage of the project was stressed in order to better satisfy the needs of the reader, promote clarity and organization, and select the appropriate report format.

Various report formats were presented and discussed, including a detailed breakdown and description of the component parts of the DRI report format from the cover, title page, forward, table of contents, and summary, through the elements of the report proper, to the appendix and bibliography.

Flexibility of the order of parts was stressed to better meet the needs of the reader and promote clarity in presentation of data. The role and organization of headings were discussed, as was the use of graphics, in detail. The importance of consistency and a systematic approach toward organization and presentation was accented.

Suggestions for scheduling and implementing the report-writing effort were presented, including the division of report-writing responsibilities, the role of the principal investigator, various types of review, client relations, and methods of report presentation and follow-up. Several examples of reports from DRI and other research institutes in the U.S.A. and elsewhere were presented as examples of appropriate and inappropriate report-writing techniques and approaches.

Project Completion

Presented by Hale Wagner, 15 December

The differences between project completion and project termination were defined. Early planning for the end of a project was detailed through a project close-out check sheet. Each element on the check sheet was reviewed for its importance and background need. Relationships of all the project resources throughout both the internal and external organizations were made, as

well as the initiation of future planning on related areas of research and potential market investigations.

### Project Termination

Presented by Hale Wagner, 15 December

Defined as stopping the research or project short of the originally stated aims. The reasons that the situation could occur were covered both from internal action as well as external decision. The areas where project termination was available were also discussed, including recognition of early project success, as well as recognition of, and many reasons for, termination because of project failure. Specific responsibilities of both the client and the contractor were delineated, as was the action to be taken. Termination claims and the necessity to make early and positive evaluation of a project's status--in time, money, and progress--were included.

Force majeure was also covered in a matter of definition, and the suggestion was made that these conditions be specified in the contracting process.

### Leadership and Motivation

Presented by Donald D. Evans, 15 December

This subject was introduced with caveats concerning the complexity and problems of precision in matters relating to the guidance of individuals in organizations. The time sequence of the development of leading theories in the motivation field was presented, and brief descriptions of the principle and analysis were discussed.

Specific subject areas presented and related included: theory X and Y concepts, the human needs hierarchy of Maslow, the "internal-external" differentiations of Herzberg, references to the behaviorist school and its influence on motivational practice in organizations, management-by-objectives applicability to research institutions, and discussion of the characteristics of professional research staff members.

A brief situational description was presented as the basis for discussion of interpersonal relationships in research institutions. Participants were involved in a discussion of possible initiatives and actions that might be taken in this case study situation. Differences of opinion were analyzed in

terms of possible differences between eastern and western cultural mileaux.

In conclusion, broad guidelines for effective motivation procedures were presented.

#### Project Evaluation

Presented by Hale Wagner, 15 December

The intricacies of evaluating a project were covered throughout its life cycle. Utilization of evaluation as a means to the goals of the institution, as well as, to the national needs, was covered as was the potential utilization of peripheral discoveries. Various techniques for front-end preparation for future evaluations were discussed using the concept of advanced specific funding for programs and definition of the inclusion of the scientific control group process. Methods to be used for social orientation, as well as the economic effects, were discussed for both the hard and soft sciences. A check list was developed to include dissemination of results.

### III. WORKSHOP CONCLUSIONS

#### General

There was wide agency and field of research representation of R & D management at the workshop. This was aimed at obtaining better synchronization and convergence of R & D efforts to serve national goals. It is believed that this, along with similar workshops, will also help pave the way for successful execution of cross-sectoral projects and programs. The broad representation further assisted in the creation of informal but effective inter-institutional and inter-agency linkages. It also had the advantage of acquainting the participants with a broad spectrum of approaches to and constraints on project management within Thailand and of introducing a broad spectrum of Thai management to approaches applied in other countries. The workshop initiated a process of establishing an environment in which more directed efforts of management assistance will meet with success in solving specific project management problems and in developing a common management vocabulary which will assist communications among the nation's institutions. Finally, it is believed that the participation of project management from a broad spectrum of institutions has aided in the generation of an esprit de corps among R & D managers in Thailand.

The general approach to project management seemed appropriate to the participants' needs. Although the long and intensive sessions every day that were necessary to cover the subject area put heavy pressure on the participants, they bore up well. The "ordeal" the participants underwent may have also aided in their esprit de corps.

### Specific

Several observations were made during the workshop concerning the way it was conducted, its content, and its acceptance by participants. First, the participants expressed a strong belief that the workshop had been a success and a desire for a feedback mechanism on each other's progress in employing modern R & D management techniques and practices. Second, participation in workshop sessions and exercises was active. Third, while work loads were quite heavy, participants bore up well under them. Fourth, the participants' capacity to absorb the substance of workshop sessions was demonstrated to be quite high by the results of workshop exercises. Finally, the use of examples and cases from the U.S. and less-developed economies of other parts of the world is a desirable teaching tool. However, the development of additional Thai cases and exercises would be beneficial.

### WORKSHOP RECOMMENDATIONS

The workshop conclusions lead to the following recommendations.

#### General

The development of R & D management is a continuous process. The R & D management course should therefore be institutionalized and held annually. This would provide for the systematic and planned increase in quantity and quality of R & D project managers.

In preparation for the planned 1978 workshop, the ASRCT and DRI project leaders should meet with NESDB and top ministerial officials concerned with planning of management training for the nation's scientists and engineers.

It is believed that there is also a need for the institutionalization of an R & D management development and training capability. This resource could continuously increase R & D management quality and capability and could develop new techniques and materials particularly appropriate for the Thai environment.

To ensure institutionalization it will be necessary to develop a Thai R & D management training cadre. It is proposed, therefore, that ASRCT either establish an R & D management research and training unit within its organization or, as an alternative, form a linkage with an institution already having management training capabilities such as the National Institute for Development Administration. The initial step should be the use of experienced R & D managers as lecturers and resource persons at future workshops organized by ASRCT.

#### Specific

The general nature of the R & D project management workshop should continue to be the workshop's format. Graduates from this course should participate in senior management workshops.

For future workshops, additional formal material based on Thai institutional experiences should be prepared. An early case should treat an example of successful project management.

Finally, the participants attending this ASRCT-DRI workshop should reconvene for a meeting in approximately six months. At that time, they should review the current workshop and the applicability of the techniques employed. This would, hopefully, lead to further suggestions for improving future workshops and the development of mechanisms and techniques applicable to their respective institutions and the Thai setting. The meeting should also serve to further cement the linkages established among the participants and their institutions.

Attachment I : List of Participants

THAI NATIONAL  
DOCUMENTATION CENTRE

LIST OF PARTICIPANTS  
 THE FIRST ASRCT DRI PROJECT MANAGEMENT  
 WORKSHOP  
 ASRCT, BANGKHEN, BANGKOK  
 DECEMBER 6-16, 1977

NAME MS. AMORNRAI SWATDITAT  
 Qualifications B.Sc. (Botany), M.S. (Food Technology), Ph.D. (Grain Science)  
 Position Director, Product Development Division  
 Office Applied Scientific Research Corporation of Thailand  
 Office Address 196 Phahonyothin, Bangkhen, Bangkok 9 Tel. 5791121-30  
 Home Address 75 Phomsri, Sukhumvit 39, Bangkok 11 Tel. 3915175

NAME MR. ANUCHA MOKKHAVESA  
 Qualifications B.A. (Political Science), M.P.A.  
 Position Acting Chief, Planning Division  
 Office Mahidol University  
 Office Address At Siriraj Hospital Tel. 4653011  
 Home Address 111 Soi Supharuam, Bangkok-Nonthaburi Rd. Tel. 5852010

NAME MR. CHALAT PATANOTHAJ  
 Qualifications B.Sc. (Gen.Sci.), M.S. (Pharm. Ad.)  
 Position Chief, Office of Planning & Project  
 Office Applied Scientific Research Corporation of Thailand  
 Office Address 196 Phahonyothin, Bangkhen, Bangkok 9 Tel. 5791121-30  
 Home Address Amornpan Nivej 9, 67/57 Soi Senanikom 1 Tel. -  
 Phahonyothin Rd.

NAME MR. CHALERMCHAI HONARK  
 Qualifications B. Arch., M.Sc. (Planning)  
 Position Chief, Humansettlement Research Division  
 Office Applied Scientific Research Corporation of Thailand  
 Office Address 196 Phahonyothin, Bangkhen, Bangkok 9 Tel. 5791121-30  
 Home Address 215 Soi Housing Bank, Phahonyothin Rd.  
 Bangkok 9 Tel. 5794585

NAME MS. CHALERMVAEN CHOOSUP  
 Qualifications B.Sc. (Chem.), M.S. (Library Science)  
 Position Director, Thai National Documentation Centre  
 Office Applied Scientific Research Corporation of Thailand  
 Office Address 196 Phahonyothin, Bangkhen, Bangkok 9 Tel. 5791121-30  
 Home Address 17/3 Soi Rungruang, Lad Prazo Tel. 2792724



NAME	MS. CHAROEN VALAISATHIEN	
Qualifications	B.Sc. (Pharm.)	
Position	Chief, Quality Control Unit	
Office	Preserved Food Organization	
Office Address	Factory Banpong, Rajburi	Tel. 2816603
Home Address	37 Soi Inthamara 35, Suthisarn Phayathai	Tel. 2770601
NAME	MS. KOBKUL SUWANASAI	
Qualifications	B.A. (Accounting), M.A. (Econ.)	
Position	Officer P.C. 6 (Analysis of Planning), National Accounts Div.	
Office	Office of the National Economic and Social Development Board (NESDB)	
Office Address	Krung Kasem Road	Tel. 2816633
Home Address	45/26 Soi Ngam Wongwan 1, Ngam Wongwan Rd.	Tel. 5791281
NAME	MS. LUMDUAN MAPRASERT	
Qualifications	B.Com. (Accounting), M.Sc. (Econ.), Ph.D. (Econ.)	
Position	Acting Director, Economic Research Department	
Office	Applied Scientific Research Corporation of Thailand	
Office Address	196 Phahonyothin, Bangkok 9	Tel. 5791121-30
Home Address	322 Raw Seubsiri, Prachathipok Rd.	Tel. 4662410
NAME	MS. NIPHAN RATANAWORABHAN	
Qualifications	B.Sc. (Zoology), M.S. (Zoology), Ph.D. (Entomology)	
Position	Director, Environmental Biology Division	
Office	Applied Scientific Research Corporation of Thailand	
Office Address	196 Phahonyothin, Bangkok 9	Tel. 5791121-30
Home Address	16/119 MuBan Sooksan, Tambon Talart Bangkhen	Tel. 5792673
NAME	MR. NIWAT BUNYARATABANDHU	
Qualifications	B.A. (Econ.), M.A. (Econ.)	
Position	MRDC Researcher	
Office	Military Research and Development Center (SCHs)	
Office Address	Soi Kloynamthai, Sukumvit 42 Bangkok	Tel. 3910111 Ext. 93
Home Address	656/8 Charansanitwong Rd. Bangkok 7	Tel. 4240670
NAME	MR. NOI PLYPHUE	
Qualifications	B. Arch.	
Position	Chief, Building Economic and Construction Management Div.	
Office	Applied Scientific Research Corporation of Thailand	
Office Address	196 Phahonyothin, Bangkok 9	Tel. 5791121-30
Home Address	50/19 Ramintra Rd., Bangkok 7	Tel. -
NAME	MS. PONPUN RATASIRAYAKORN	
Qualifications	B. Sc. (Commerce)	
Position	Chief, Budget Section	
Office	Applied Scientific Research Corporation of Thailand	
Office Address	196 Phahonyothin, Bangkok 9	Tel. 5791121-30
Home Address	161 M. 2 Sukhumvit Rd., Samrongnue Samuthprakarn	Tel. 3930274

**NAME** MR. PRAPANDH BOONKLINAJORN  
**Qualifications** B.S. (Agriculture), M.S. (Agronomy)  
**Position** Acting Director, Agricultural Research Department  
**Office** Applied Scientific Research Corporation of Thailand  
**Office Address** 196 Phahonyothin, Bangkok 9 Tel. 5791121-30  
**Home Address** 49/16 Senaniwet, Soi Senanikhom 1,  
 Bang Kapi Tel. -

**NAME** MR. RANGSAN PRISANAVANICH  
**Qualifications** B.Sc. (Ceramics), M.S. (Metallurgy)  
**Position** Engineer  
**Office** Industrial Service Institute  
**Office Address** Soi Klauynamthai, Rama 4 Rd., Bangkok 11 Tel. 3915722  
**Home Address** 4129 Rama 4 Rd., Phrakanong, Bangkok 11 Tel. 3924202

**NAME** MR. SIRI NANDHASRI  
**Qualifications** B. Eng. (Electrical), M.A. (Industrial Ed.)  
**Position** Acting Director, Testing & Standard Department  
**Office** Applied Scientific Research Corporation of Thailand  
**Office Address** 196 Phahonyothin, Bangkok 9 Tel. 5791121-30  
**Home Address** 34/17 Soi Chinaketr, Ngam Wongwan Rd. Tel. 5882320

**NAME** MR. SUTHIPORN CHIRAPANDA  
**Qualifications** B.Ec., Ph.D. (Agricultural Economics)  
**Position** Chief, Research & Planning Division  
**Office** Agricultural Land Reform Office  
**Office Address** 166 Pradipat Rd., Sapan Kwai, Bangkok Tel. 2785368  
**Home Address** 72/39 Soi Suthisarn 1, Phahonyothin Rd. Tel. 2780014

**NAME** MR. TAWESAKDI ROHITSUKH  
**Qualifications** B.S. (Pharm.)  
**Position** Chief, Business Management Division  
**Office** Applied Scientific Research Corporation of Thailand  
**Office Address** 196 Phahonyothin, Bangkok 9 Tel. 5791121-30  
**Home Address** 45 Wat Mahun Lane, Mahunop Rd., Bangkok Tel. -

**NAME** MS. UBOLSRI CHEOSAKUL  
**Qualifications** B.Sc. (Pharm.), M.N.S., S.M. (Hygiene), S.M. (Food Technology)  
**Position** Assistant Director, Industrial Research Department  
**Office** Applied Scientific Research Corporation of Thailand  
**Office Address** 196 Phahonyothin, Bangkok 9 Tel. 5791121-30  
**Home Address** 32 Sukhumvit 23, Bangkok 11 Tel. 3913516

**NAME** MR. VICHIEEN SAKORNMONKOL  
**Qualifications** B.S. (Chem.), M.S. (Biochem.)  
**Position** Director, Research Division  
**Office** Department of Science, Ministry of Industry  
**Office Address** Rama 6 Rd., Payathai, Bangkok 4 Tel. 2827295  
**Home Address** 47 Indamara Lane 39, Suthisarn Rd.  
 Payathai, Bangkok 4 Tel. 2771709

NAME	MS. WALAIRAT SUCHAT	
Qualifications	B.Sc. (Chem.)	
Position	Planning and Project Officer	
Office	Applied Scientific Research Corporation of Thailand	
Office Address	196 Phahonyothin, Bangkhen, Bangkok 9	Tel. 5791121-30
Home Address	198 Lad-Prao Rd., Bangkok 9	Tel. 2799385

Attachment II : Workshop Agenda

TENTATIVE AGENDA FOR ASRCT-DRI  
1977 PROJECT MANAGEMENT WORKSHOP

Tuesday, 6 December 1977

0830 - 0900	Workshop Introduction	Ron Black
0900 - 0930	Introduction of Participants	
0930 - 1030	The Project Concept (plus let participants read IRRI cases)	Ron Black
1030 - 1050	Coffee break	
1050 - 1130	Discussion of the IRRI Cases	Ron Black
1130 - 1200	Selection of Appropriate Technology	Nitasna Pichitakul

Wednesday, 7 December 1977

0830 - 1000	Project Selection Techniques	Jim Frasché
1000 - 1020	Coffee break	
1020 - 1200	Demonstration of Project Selection Techniques	Jim Frasché

Thursday, 8 December 1977

0830 - 0930	Introduction to Project Management	Hale Wagner
0930 - 1000	Introduction to and Des- cription of Sample Case	Hale Wagner
1000 - 1020	Coffee break	
1020 - 1200	The Planning Process	Hale Wagner

Friday, 9 December 1977

0830 - 0930	Proposal Preparation	Don Evans
0930 - 1000	Description of Proposal Writing Exercise	
1000 - 1020	Coffee break	
1020 - 1100	Proposal Selection Exercise	Participants
1100 - 1200	Proposal Writing Exercise	
1200 - 1300	Lunch	
1300 - 1500	Proposal Writing Exercise	
1500 - 1520	Coffee break	
1520 - 1630	Proposal Writing Exercise	

Tuesday, 13 December 1977

0830 - 0900	Development of Proposal Budgets	Hale Wagner
0900 - 1000	Budget Preparation Exercise	Participants
1000 - 1020	Coffee break/KIST film	
1020 - 1100	Network Analysis Exercise (their proposal)	Participants
1100 - 1200	Evaluating a Proposal with Network Analysis	Jim Frasc�

Wednesday, 14 December 1977

	Indirect Costs	Hale Wagner
0830 - 0900	Organizing	Hale Wagner
0900 - 1040	Controls	Hale Wagner
1040 - 1100	Coffee break	
1100 - 1200	Client liaison	Malee Sundhagul
1200 - 1300	Lunch	
1300 - 1420	In-Process Control	Hale Wagner
1420 - 1510	Report Preparation	Jim Frasché
1510 - 1530	Coffee break	
1530 - 1630	Report Evaluation Exercise	Participants and Jim Frasché

Thursday, 15 December 1977

1830 - 1925	Project Completion	Hale Wagner
1925 - 1020	Project Termination	Hale Wagner
1020 - 1040	Coffee break/IRRI and KIST films	
1040 - 1200	Leadership	Don Evans
1200 - 1300	Lunch	
1300 - 1350	Evaluation I	Don Evans
1350 - 1440	Evaluation II	Hale Wagner
1440 - 1500	Coffee break	
1500 - 1630	Evaluation Exercise (use selected participant proposals)	Participants Don Evans

Friday, 16 December 1977

0830 - 0920	Description of Proposal I, plus Evaluation by Team II	Participants
0920 - 1010	Description of Proposal II, plus Evaluation by Team III	Participants
1010 - 1030	Coffee break	
1030 - 1120	Description of Proposal III, plus Evaluation by Team IV	Participants
1120 - 1210	Description of Proposal IV plus Evaluation by Team I	Participants

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Attachment III : Session Evaluation Form



Session  
Evaluation Form

SESSION TITLE	RATING			
	Very good	Good	Satisfactory	Poor
Usefulness of session content to your interests and needs				
Quality of instruction (logic of presentation, depth, clarity, etc.)				
Applicability of training methods used (lecture, case study, group discussion, etc.)				
Usefulness of materials handed out				

Please list below any suggestion which might make this session more effective in the future :

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Name (optional) \_\_\_\_\_

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REPORT ON R & D PROJECT MANAGEMENT  
WORKSHOP.



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Report on R & D