

THE TRAINING FUNCTION AT MILLS: CURRENT PRACTICES AND FUTURE TRENDS

BRUCE K. PILLING AND NORMA WILEY

MILLS ARE SHIFTING TO INTERACTIVE, COMPUTER-BASED TRAINING METHODS WHILE ADOPTING A MORE FORMAL AND STRUCTURED APPROACH TO TRAINING.

LAST YEAR, TAPPI SURVEYED U.S. AND CANADIAN pulp and paper mills to learn about their current training practices and identify future trends. With responses from 96 mills, we obtained enough information to provide an overview of training budgets, the prevalent instructional techniques in use today, the organization of the training function, the nature and amount of training activity, the source of training materials, and important trends.

TRAINING BUDGETS

The funds allocated for training in 1995 varied widely, with some mills budgeting less than US\$ 20,000 and others spending US\$ 1 million or more. **Figure 1** shows the breakdown of training budgets for the responding mills. About half of the mills spend US\$ 250,000 or more on training.

Most mills (62%) allocated the same amount of money for training in 1996 as they did in 1995. However, nearly one-third spent more for training in 1996, and the average increase was a substantial 40%. Fewer than 10% of the mills scaled back their training programs in 1996, trimming their training budgets by an average of 25%. **Figure 2** shows information on projected 1997 training and development budgets. Nearly 40% of the mills planned on spending more for training in 1997 than they did in 1996. The average anticipated increase was 24%. Only 7% of the mills expected to spend less on training in 1997, and the average cutback was 24%.

INSTRUCTIONAL METHODS OF CHOICE

What types of instructional methods do mills currently use or plan to use within the next year? The questionnaire presented respondents with a wide range of train-

ing methods and asked them to identify those currently in use or planned for use in the coming year. Their answers are summarized in **Table I**. Videotapes and one-on-one instruction are the top choices and will remain so for the near future. However, many mills are planning to make greater use of CD-ROM, teleconferencing, and the internet as training tools in 1997.

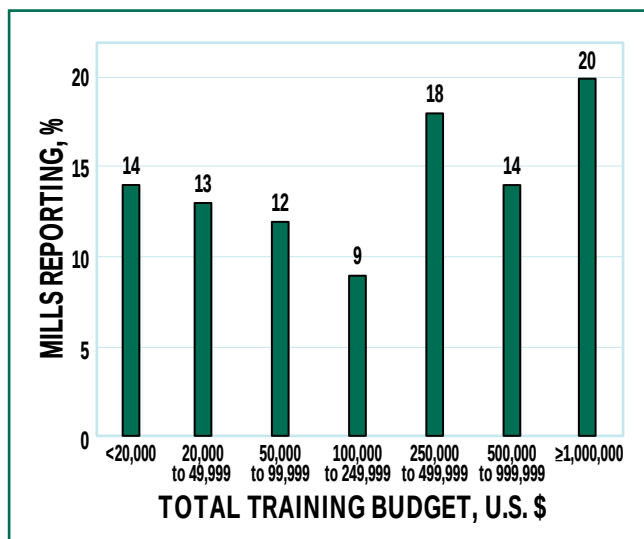
WHO'S THE TRAINER?

In most of the mills (52%), the training function is handled jointly by the training department in conjunction with the various operational departments in the mill. In 25% of the mills, each operational department is in charge of its own training, while 14% report that the training department is in charge of all training activities.

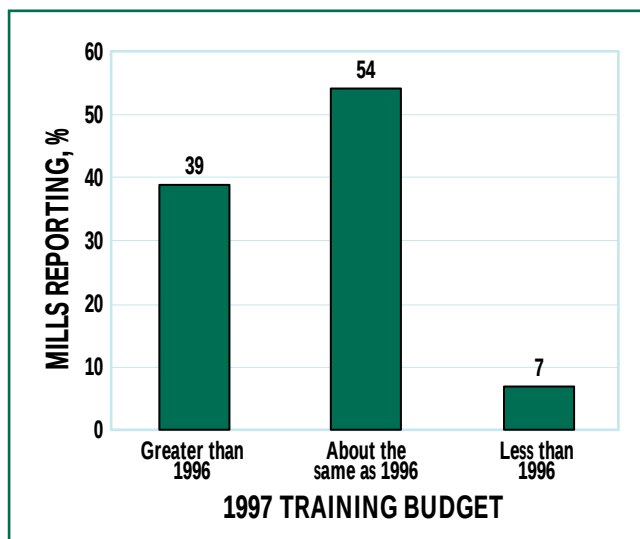
Mills average 1.6 full-time trainers and 1.4 part-time trainers, with 31% reporting no trainers on staff. On average, there were 81 employees per trainer (in mills with trainers). Operators and professional staff (e.g., line supervisors) are also involved in training, with an average of 12 operators and 7 professionals per mill having training responsibility. Of those mills with trainers, 54% indicate that trainers report to *both* the training manager and the supervisor for the specific functional area, while 26% report only to the training manager. Finally, the bulk (69%) of mill training is conducted by personnel outside of the human resources department.

TRAINING ACTIVITY

Figure 3 shows the average allocation of training resources in five categories. Operator training is the single largest item in the budget (40%), but overall, more resources are directed toward training of professional staff.



1. Excluding payroll for training personnel, what is your mill's total budget for all training and development?



2. Do you expect that your 1997 training and development budget will be:

As seen in **Table II**, nearly five times as many operators received training as professional staff. On top of that, the time devoted to training each operator averaged out at 36 hours, compared with 29 hours for professional staff.

Part of the disparity in the cost of training for operators and professionals may be explained by the source of programs and materials used in training (**Table II**). Mills rely more heavily on outside vendors to train professional staff. For operators, outside vendors accounted for only 25% of training materials, compared with 43% for professional staff. Moreover, the survey results showed that the typical professional staffer attends 2.3 off-site events per year, mostly short courses or conferences. The rate of attendance for operators is much lower, only 1.1 off-site events per year. Nearly one-third of the mills reported that they do not routinely pay to send operators to off-site events.

Differences in the content of training programs designed for professional staff and operators may further account for some of the disparity in training costs for the two groups.

TYPES, SOURCES, AND DELIVERY OF TRAINING MATERIALS

Respondents were asked to indicate the percentage of total time allocated to three types of training:

- Hard skills—task-oriented, such as equipment maintenance
- Soft skills—nontask-oriented, such as decision-making or communication
- Basic skills—reading, math, or computer use.

Figure 4 shows that for operators, 72% of training

time is dedicated to hard skills, 18% for soft skills, and 10% for basic skills. The mix for professionals is quite different, with soft skills receiving the most attention (54%), followed by hard skills (36%) and basic skills (10%). We also investigated the relative importance of cross-training for operators and professional staff. Cross-training accounted for 36% of operator training, while only 16% of professional staff received training to cover other jobs.

We also examined the origin of training materials—coming from either in-house staff, outside vendors, or both sources—for several types of training. In-house staff was the most popular source for training in quality control and customer relations. For sales training, an outside vendor was the preferred source. For all other topics investigated (technical, safety, environmental, and management/supervisory training), a combination approach was favored.

In terms of the actual *delivery* of *on-site* mill training, we examined the relative importance of several alternatives. These alternatives were in-house training personnel, equipment or chemical suppliers, corporate training, local colleges or universities, and other consultants or vendors. For operators, 64% of the training is delivered by in-house training personnel, followed by equipment or chemical suppliers (19%) and other consultants or vendors (14%). For professional staff, 45% of the training is provided by in-house staff, followed by outside consultants or vendors (25%), and equipment or chemical suppliers (18%). Corporate training is a relatively unimportant source, accounting for only 3% of training for operators and 12% for professional staff.

MAJOR PLAYERS IN THE TRAINING PROCESS

	Mill currently uses (%)	Not used currently plan to use within next year (%)	Does not use currently or plan to use in '97 (%)
Videotapes	91	1	8
One-on-one instruction	90	0	10
Noncomputerized self-study programs (program instruction, correspondence course)	44	6	50
CD-ROM	25	32	43
Audiotapes	33	2	65
Laser disc	17	5	78
Teleconferencing	8	15	77
Audioconferencing	7	3	90
Internet	7	18	75
Electronic performance support system (EPSS)	6	5	89
CDi	5	10	85
Intranet	3	10	87
Two-way compressed videoconferencing	3	5	92
Audiographics	2	4	94
Computer conferencing	2	10	88
Multimedia teleconferencing	1	9	90
Broadcasting	1	4	95
One-way videoconferencing	0	6	94

I. Training methods used or planned for use

	Avg. No. individuals trained	Avg. no. hours of training per employee	Source of programs/ materials	
			% provided by in-house staff	% provided by outside vendor
Professional	84.4	28.6	57	43.0
Operators	396.8	35.5	75	25

II. Training statistics for 1995

What is the role or involvement of supervisors, training managers, and trainers in various training-related activities? Respondents were asked to describe the level of involvement in training activities (determining specific training needs, evaluating training results, etc.) for each of the following groups.

- Supervisors—heavily involved in determining specific training needs (74% of the time), followed by justifying training to top management (58%), evaluating training results (57%), and approving attendance at off-site training activities (56%).
- Training managers—involved in the purchase of training materials (58%), determining whether to use in-house or outside suppliers (57%), general administration of training programs (55%), justifying training to top management (52%), evaluating training results (50%), and developing the training budget (50%).
- Trainers—involved in production and design of

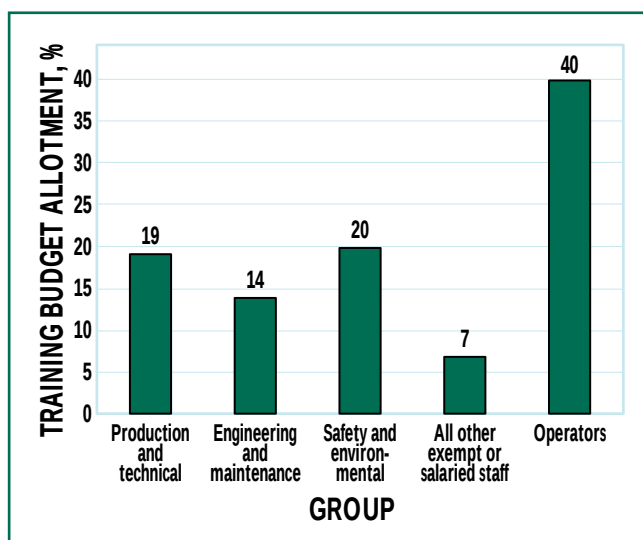
training materials (56%) and delivery of classroom instruction (57%).

MILL DEMOGRAPHICS AND TRAINING CHOICES

We collected information on several mill demographics, including location (United States 71%, Canada 29%); type of mill (pulp only 14%, paper only 43%, integrated 43%); mill size (under 100 employees 20%, 100–750 employees 50%, over 750 employees 30%); and union status (union mill 76%, nonunion mill 24%). We then investigated the separate impact of these demographics on several of the training variables.

Mill size exhibited a statistically significant impact on who conducts on-site training and on the types of instructional methods used. Findings suggest that small mills make more use of corporate training than large mills. With respect to instructional methods, large mills are more likely to use (or are planning to use) noncomputerized self-study programs, while smaller mills are less likely to use this approach. Bigger mills also are more likely to use teleconferencing and the internet.

Union status of the mill showed no statistically sig-



3. Of all the money your mill will spend on formal training this year, what percentage will go toward training for each group?

nificant impact on any of the training variables examined.

Mill location appeared to influence the origin of training materials, on-site training, and types of instructional methods used. Specifically, U.S. mills are more likely to rely on training materials provided by both in-house staff and outside vendors. Canadian mills are more likely to use outside vendors, and they are more likely to use (or are planning to use) noncomputerized self-study programs.

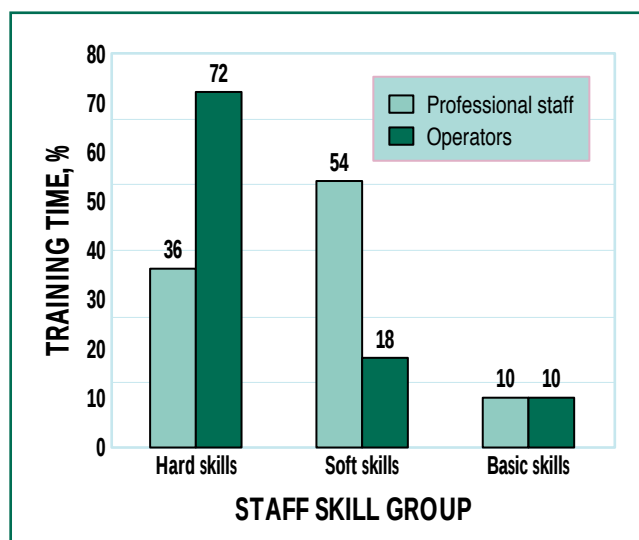
TRENDS

Several trends emerged from the analysis of the data. We provided respondents with an open-ended question, asking them to discuss trends in training practices at their mills over the next several years. A high percentage of respondents (84%) provided written comments. A content analysis of these answers, combined with other questionnaire data, helped us identify several significant training trends.

Interactive, computer-based learning

Almost half of the respondents who provided written comments noted that they were moving toward more interactive, computer-based training, including multimedia and CD-ROM. This trend would shift much of the training responsibility to the individual, since these approaches are self-paced. Typical written comments by respondents included:

- "The major shift will be to computer-based interactive training where operators essentially train themselves on specific areas of need."
- "Typical training manuals will be converted to electronic manual format for easier operator access combined with computer-based training."
- "There will be a major change in training delivery in



4. What types of skill training are offered for Professional Staff vs. Operators (% of time)?

our mill over the next year—going from the traditional method to an electronic delivery through PC throughout the complex. We are planning to produce our own computer-based training packages."

Increased structure and formalization

About 25% of the respondents spoke of a more formal and structured approach to performing the training function within their mills. Comments focused on the need to identify specific training needs, to develop more performance-based training, and to enhance documentation. Typical comments by respondents included:

- "More defined and documented training. More structure to operator training."
- "Greater emphasis on training and documentation. Training will be more specific (e.g., pending OSHA forklift guidelines.)"
- "More documentation of what is being trained—especially for PSM, OSHA, ISO, etc."
- "More needs analysis. Increased measurement of training effectiveness."

Increases in training and development expenditures

Earlier we presented data on training budgets, including changes from 1995 to 1996, and anticipated changes from 1996 to 1997. A synthesis of this information suggests that about one-third of the mills are significantly increasing their training budgets. At the same time, the majority of the mills did not allocate additional funds for 1995 to 1996, and likewise the majority of these mills does not anticipate an increase from 1996 to 1997.

- Comparing 1996 budget levels with those from 1995, 29 of the mills report an increase averaging 40%, while only eight of the mills report a decline in

training allocation from 1995 to 1996, averaging 25%.

- There were 38 mills that expected the 1997 budget to exceed the 1996 budget, and the average increase was 24%. Only seven mills anticipated cutbacks in the 1997 budget, with an average decrease of 24%.
- A large proportion of the mills reported no change in budget levels. For the 1995–1996 period, 60 mills indicated no meaningful change. For the 1996–1997 period, 50 do not anticipate a change.

Mill size (number of employees), mill location (Canada or the United States), and mill status (union or nonunion) did not exhibit any detectable influence on expected 1997 training and development budgets. Therefore, it is difficult to predict what types of mills anticipate budget increases in 1997.

RESEARCH PROCEDURES

A multipage survey was mailed to 736 mills in the United States and Canada. The sampling frame came from TAPPI database records of mill contacts. Respondents were prenotified by telephone (to identify an individual familiar with the training function and to solicit their cooperation) and then received the mailed questionnaire. A reminder postcard was mailed to the same list approximately 3 weeks after the initial mailing. We received 96 usable responses, for a response rate of 13%.

Our sample showed a high level of motivation in completing the questionnaire, since the information sought required them to look up facts and figures and to carefully consider their answers (e.g., budget expenditures and trends, average hours of training per individual, number of individuals trained, etc.). Also, 84% provided written comments concerning training practices at their mill. Additionally, since many of the participants held significant line responsibilities at the mill (e.g., plant manager, human resources director), they clearly had competing demands for their time.

Slightly more than half of the respondents had job

titles linking them specifically to the training function: 27% identified themselves as the manager of the training department, 27% indicated that they were a one-person training department, and 2% identified themselves as full-time trainers. The other respondents (44%) did not fit into these three categories. The majority of respondents in this last category had significant managerial responsibility, such as plant manager or human resource director.

SUMMARY

The training function at mills in the pulp and paper industry is typically performed jointly by specific operational departments and the training department. It is uncommon for the total training function to be performed exclusively by the training department. On average, most of the actual training (69%) is conducted by personnel outside of the human resources department.

The participants in this study revealed a trend toward more interactive, computer-based methods to deliver training materials. There is also a move toward a more structured and formalized approach to assess training needs and document results. Both trends likely reflect the natural desire to maximize the impact of training expenditures, thereby enhancing mill productivity. Interactive, computer-based training methods will facilitate self-paced individual instruction, shifting some of the training burden to the trainee and away from the line supervisor and/or the trainer. Increased formalization and structure in the training process should help mills to identify their training needs with greater accuracy and then verify that the training objectives have been achieved. **TJ**

Pilling, Ph.D., is an associate professor of marketing at Georgia State University, Atlanta, GA. Wiley is TAPPI's market research manager.