

# THE PROFESSIONAL ERGONOMIST

The Newsletter of the BCPE

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## PROFESSIONALISM REVISITED

By Jerry R. Duncan PhD CPE  
BCPE President

I'm sort of a pack rat when it comes to the printed word. I have boxes and boxes of books, journal articles, pamphlets, personal notes on all types of subjects that have interested me since elementary school. Each time that I've lifted and carried those boxed-up treasures during six relocations, I've considered my penchant for keeping "old" information as a character flaw that I should really try harder to correct. Recently, however, as I was browsing over this self-built, low-tech "information gravel road", I came across a pamphlet that my father gave to me probably 30 years ago. I'm glad I kept it because, in reading it again, I rediscovered statements similar to what I've been wanting to say in this newsletter about "professionalism" and what we as BCPE certificants can do together and what we can do independently to promote our profession. The pamphlet is called "The Second Mile: A Re-Survey" by William E. Wickenden. It was published in 1944 by the Engineers' Council for Professional Development as a means of presenting "the engineering profession to the young engineer". It is based on a speech delivered in 1941 by Mr. Wickenden, then President of the Case School of Applied Science (Case Institute of Technology), to the Engineering Institute of Canada. The following are some excerpts from his presentation that, I believe, are relevant today in our consideration of the evolving ergonomics

profession and view of professionalism. I've taken the liberty to change a few of his words to make them fit our contemporary context.

### "The Second Mile: A Re-Survey" by William E. Wickenden (ECPD, 1944)

#### Introduction

Every calling has its mile of compulsion, its round of tasks and duties, its code of personal relations, which one must traverse day by day to survive. Beyond that lies the mile of voluntary effort, where people strive for special excellence, seek self-expression more than material gain, and give that unrequited margin of service to the common good which alone can invest work with a wide and enduring significance. The best fun of life and most of its durable satisfactions lie in this second mile, and it is only here that a calling can attain to the dignity and distinction of a profession.

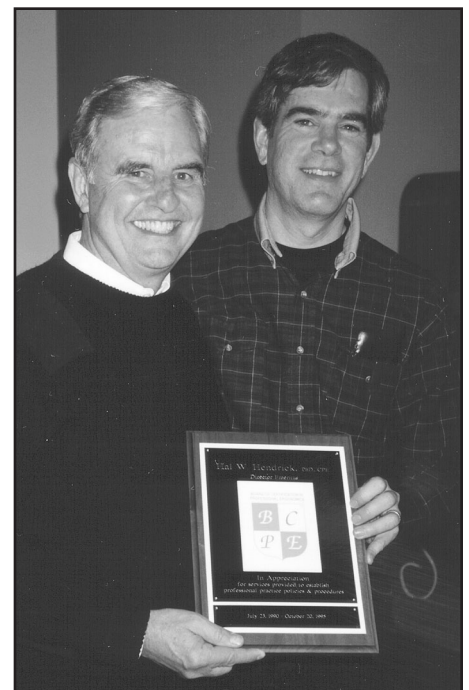
#### What Professions Have In Common

In searching for definitions of a profession you will probably find four kinds. One is likely to hold that the determining quality is an *attitude of mind*, that an altruistic motive can lift any honorable calling to the professional level. A second may say that it is a certain *kind of work*, one requiring special skill on a high intellectual plane. A

third may state that it is a special *order in society*, as the bar, the bench or the clergy. Still others insist that no work can be professional without a *confidential relationship* between a client and an agent, as that of patient to physician, litigant to lawyer, etc. None of these definitions is self-sufficient. Taken together, like the legs of a table, they give a profession a stable base of support.

#### The Individual and the Group

Suppose a person were to say, "I'll be a professional, but I'll do



Current President Jerry Duncan (right) presenting a token of appreciation to outgoing President Hal Hendrick for six years of diligent work on behalf of BCPE. Hal is now incoming President of HFES.

it myself; I hate organization dues and duties." One would be tempted to reply, "So you'll take the head, without the body which nourishes it." Or suppose another were to say, "Oh! I'll join all right, but I'll never do anything about it," to which a fair answer would be, "So you'll grasp the form and let the substance go." Full professional life can not be achieved in isolation;...it needs a culture medium in which to grow and flourish. Some aspects of professional life are essentially individual, while some are essentially group relations. What is the distinctive mark of the professional? First, we may say that it is a *type of activity* which carries high individual responsibility and which applies special skill to problems on a distinctly intellectual plane. Second, we may say that it is a *motive of service*, associated with limited rewards as distinct from profit. Third, is the *motive of self-expression*, which implies joy and pride in one's work and a self-imposed standard of excellence. And fourth, is a conscious *recognition of social duty* to be fulfilled among other means by guarding the ideals and standards of one's profession, by advancing it in public understanding and esteem, by sharing advances in technical knowledge, and by rendering gratuitous public service, in addition to that for ordinary compensation, as a return to society for special advantages of education and status.

Next, what attributes mark off the corporate life of a group of persons as professional in character? We may place first a *body of knowledge* (science) and of *art* (skill) held as a common possession and to be extended by united effort. Next is an *educational process* based on this body of knowledge and art, in ordering which the professional group has a recognized responsibility. Third is a standard of *personal qualifications* for admission to the professional group, based on character, training and proved competence. Next follows a *standard of conduct* based on courtesy, honor and

ethics, which guides the practitioner in relations with clients, colleagues and the public. Fifth, we may place a more or less formal *recognition of status*, either by one's colleagues or by the state, as a basis for good standing. And finally, there is usually an *organization of the professional group*, devoted to its common advancement and its social duty, rather than to the maintenance of an economic monopoly.

#### **What a Profession Must Guarantee**

When a layperson comes face to face with the complex and often terrifying specialization of professional skill and knowledge, that person is likely to be baffled or easily misled. To protect that layperson, the public wisely puts the burden of guaranteeing at least minimum standards of competence and ethics on the profession itself. The state may implement the obligation of a profession to guarantee competence by designating a group of its members to conduct professional examinations and to issue public licenses to those who pass them successfully, or it may leave professional bodies free to issue their own credentials. Both of these practices may exist side by side. In the end, it comes down to the same principle—a profession must guarantee to the public the trustworthiness of its practitioners.

#### **Professional Obligations**

Codes and police powers alone do not suffice to sustain the personal and corporate obligations of a profession any more than statutes and courts alone can assure the healthy life of a community. Equal importance attaches to the state of mind known as professional spirit which results from associating together people of superior type, and from the adherence to a common ideal which puts service above gain, excellence above quantity, self-expression above pecuniary motives and loyalty above individual advantage. No professional person can evade

the obligation to contribute to the advancement of the professional group. A person's skill is rightly held as a personal possession and when imparted to another justly deserves a due reward in money or in service. The person's knowledge, however, is to be regarded as part of a common fund built up over the generations, an inheritance which is freely shared and to which each is obligated to add; hence the duty to publish freely the fruits of research and to share the advances in professional technique. If the individual lacks the ability to make such contributions personally, the least that can be done is to join with others in creating common agencies to increase, disseminate and preserve professional knowledge and to contribute regularly to their support. That is the purpose to which a large share of the membership dues of professional societies is devoted.

#### **Does an Engineer (Ergonomist) Need the Profession?**

Engineers (ergonomists), in a society based largely on group relations, need their profession to safeguard their occupational and economic welfare. Engineers (ergonomists) need protection against unethical competition, against indiscriminate use of the title "engineer" ("ergonomist"), and against all influences which might undermine public confidence in their integrity and competence. The engineer (ergonomist) needs the benefits of prestige built up through group publicity. Engineers (ergonomists) need a collective instrument for shaping public policy in the realm of their responsibility. It is true that a professional organization is primarily a moral agency and not in itself an economic or political pressure group, but in the long run moral agencies are the more powerful and enduring.

#### **A Look Ahead**

Let us look into the next 50 years, which our present student engineers (ergonomists) are to

share in shaping. ...The engineering (ergonomics) profession ... can not afford to become either a narrow caste of highly skilled technicians or a free-for-all alumni association of engineering (ergonomics) graduates. It will probably never be able to define its boundaries precisely, nor become exclusively a legal caste, nor fix a uniform code of educational qualifications. Its leaders will receive higher rewards and wider acclaim. The rank and file will probably multiply more rapidly than the elite, and rise in the economic scale to only a moderate degree.

The engineer's (ergonomist's) job will be so varied, and will change so fast, and the tools will increase in variety and refinement with the advance of science, that no engineer (ergonomist) can hope to get a once-and-for-all education in advance. We should cease to think of education as a juvenile episode. We should expect to re-educate engineers (ergonomists) either continuously or at intervals throughout their active careers. ... This is no time for engineers (ergonomists) to wrap themselves in the mantle of isolation; let us get together and be about our common business."

### **A Visioning Process at the 1995 BCPE Mid-Year Meeting**

The Board, at its mid-year meeting in March, spent several hours of a very busy two-day agenda engaged in a visioning process, as Mr. Wickenden did for engineering in 1941, to take "a look ahead" at our profession and the BCPE. The visioning process helped us to assess our "current reality" and to define a "future vision". The objective of the process was to establish a collective, shared vision in order to (1) support goal-directed decisions for achieving our vision of the future, (2) design our organization to be compatible with our vision, and (3) stimulate thought and discussion of important issues and the different perspectives represented on the Board on those issues. The following are a few of the statements that resulted from that process and are included in our vision:

The BCPE:

- will be known as a principal force that has helped define and unify Ergonomics as a distinct, independent discipline and profession (has influenced establishing educational curricula, promoted public awareness of Ergonomics, established presence on World-Wide Web...), and as a leader in promoting the scientific basis for the practice of ergonomics.

- will be a self-sustaining, successful, not-for-profit business able to demonstrate measurable benefits of employing BCPE certified professional ergonomists.

- will use the knowledge and skills of certificants in developing and marketing new products and services.

- will provide a process by which certificants can be recognized for maintaining currency of their professional knowledge and skills.

- will regularly review and revise, as necessary, its mission and vision.

- will have contingency plans prepared for staff and operational changes that may occur.

Mr. Wickenden's address to the engineering community in 1941 indicates that the engineering profession faced similar struggles then as the ergonomics profession faces today. Our response should, in my opinion, be as he suggested: "Let's get together and be about our common business". We need your active support to help define and achieve our common professional goals. The BCPE exists solely to serve that purpose.

## **QUANTITATIVE PERFORMANCE ASSESSMENT WORKS**

The BCPE has administered its written examination twice: to 36 individuals at the HFES Annual Meeting in October 1994, and to 28 individuals throughout the U.S. and Canada on April 10, 1995 proctored by CPE/CHFPs who volunteered for the full-day task. We anticipate 42 people taking the exam in San Diego on October 8, just prior to the 39th Annual Meeting of HFES.

**Test Structure.** Table 1 (next page) summarizes the general results of test scores for the Fall '94 and Spring '95 sessions. The maximum possible score on the test is 300 points spread over three sections of 100 points, 120 points, and 80 points respectively. Section I is designed to measure "Fundamental Knowledge" of the field. Multiple-choice questions are based on common

ergonomics/human factors texts listed in the BCPE's *Information on Certification Policies, Practices & Procedures* (BCPE, 1995). Section II covers "Principles, Methods, and Techniques." One subsection tests fundamentals with which all ergonomists should be familiar for effective Ergonomic System Development. Another subsection allows examinees to choose from a set of problems that consist of analysis, design, and/or



The BCPE at its March '95 meeting in Denver, CO; (from left to right) Dave Cochran, Colin Drury, Harvey Cohen, Jerry Duncan, Valerie Rice, Dieter Jahns (ex officio), Hal Hendrick, Steve Casey, Doug Harris, Ulrika Wallersteiner (photo by our gracious hostess Mary Hendrick).



testing/evaluation as applied to various system contexts (e.g. industrial, office, consumer products, aviation, military, computers). Section III deals with "Ergonomic System Development" as a problem-solving and creative process. Realistic scenarios for professional involvement are posed from a variety of industries or systems. The examinee chooses two of the scenarios and develops a solution for issues raised in (or by) the scenario. In a sense, the answers provided by examinees should cover what could reasonably be expected to be contained in a project proposal by a professional ergonomist/human factors professional working for an employer or client.

Currently Sections II and III are in a mixed format of multiple-choice and brief-written answers. Other formats are being evaluated by the Test Development Working Group (TDWG) for consideration in future test revisions. It should be kept in mind that testing for professional-performance capabilities (competency) differs significantly from other (curriculum based) written tests people are generally familiar with (e.g. class room, GRE or SAT). "These (curriculum-based) tests measure our understanding of the material, based primarily on application of concepts (math) or recall of information (especially history). Competency-based certification examinations, on the other hand, measure the mastery of knowledge reflecting job content. Someone might be able to study

his/her way through a [math] test. Most people passing a certification examination are familiar and experienced in one component or another of the profession." (Barnhart, 1994 pg xxvi). Measuring competency does not equate with a guarantee for adequate job performance; other factors also play a role. Yet, testing is a very viable tool for achieving consistency-of-assessment with statistically quantifiable distributions and pass/fail criteria.

**Overall Test Scores.** As can be seen in Table 1, more people passed the examination in the Spring of 1995 than in the Fall of 1994, but the pass rates (or mean scores) were not significantly different. Part of this is due to some "retakes", some of this is due to revising the test based on the item analysis which is an ongoing process to maintain test validity and reliability, and some of it is due to simply random variation among test participants..

**Test Data Analysis.** The steps performed in this analysis are outlined in Figure 1. Step 1 involved the scoring of applicant educational experience on two scales. One scale (called "education") was a three-point scale for highest degree (BA: 1; MA: 2; PhD: 3). A second scale (called "relevance") was a four-point scale for the relatedness of the highest degree to the field of ergonomics (with HFES and IEA-listed degree programs at the high end of the scale). All item responses from all applicants were coded and entered

into a data base during Step 2. An initial item analysis of Section I and II responses was conducted in Step 3, the purpose of which was to determine the relationship between individual responses and overall section scores and identify questionable items. Step 4 involved an assessment of overall test scores with the criterion measures established in Step 1; and Step 5 was conducted to determine a cutoff score for the test. Supplemental item analyses were conducted in Step 6, and specific recommendations for improving particular items for the next version of the test were developed in Step 7.

The statistics reported below apply to the Fall 1994 examination only to simplify reporting. Not surprisingly, Section I scores are most closely related to Section II and least related to Section III. Section I scores (100 multiple-choice knowledge items) correlated with Section II scores (scenarios with mostly multiple-choice responses) at +.546. Section I and Section III scores (scored essay responses to selected scenarios) correlated at +.287. The correlation between Section II and III was +.354.

**Criterion/Test Relationships.** After examining various criterion measures and their relatedness to overall test scores, a single criterion measure consisting of a seven-point scale (the education score plus the relevance score) was selected as an appropriate and understandable measure with which to evaluate overall test scores. The correlation achieved (r) is +.61, very high for a test/criterion measure of this type. Given that the education/relevance criterion scale was actually ordinal and not interval or ratio in nature, this relationship was also examined with a nonparametric technique. The resulting Kendall tau "Z" score (corrected for ties) was 4.156, indicating a highly significant relationship.

Test scores also correlated very well with the criterion measure of education/highest college degree (r = +.535) and relevance of highest degree (r = +.521).

**Cutoff Score.** After carefully examining the criterion/test score relationship and the consequence of setting various cutoff scores, a cutoff of 159 (159 or higher) was selected. This resulted in a passing rate of

TABLE 1. BCPE Fall 1994 and Spring 1995  
Written Examination Results  
(Maximum Score Possible 300 points)

PASSING SCORE: 159 points

	Fall 1994	Spring 1995
Number of People Taking/Passing	36/20	28/20
% Passing	56%	71%
Scores' Range	91 points	117 points
Minimum Score	118	115
Maximum Score	209	232
Mean Score	162	177
Standard Deviation	25	31

SECTION RESULTS (MEAN/STANDARD DEVIATION)

I (of 100)	53.6/10.6	53.7/ 9.7
II (of 120)	64.4/13.8	71.3/15.8
III (of 80)	43.9/ 6.7	51.8/13.2

## BCPE Certification Exam Test Results (Version 1.1)

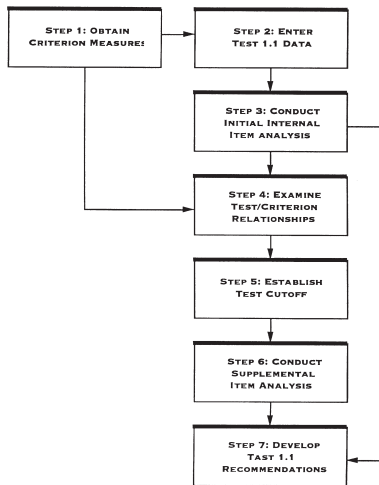


Figure 1. Major project tasks.

56%. This cutoff identifies two groups of examinees as measured on the education/relevance criterion measure. Those who passed tended to score higher on the criterion measure, and examinees who did not pass tended to score lower on the criterion measure. Although the sample size was limited, it appeared that we were dealing with a bimodal distribution; the cutoff score of 159 was felt to do the best job of splitting the overall distribution into two distinct groups.

**Conclusion.** The TDWG and Board directors have demonstrated that quantitative performance assessment within the field of ergonomics/human factors is possible and works well. We have a measurement tool for ourselves (as ergonomists) that is as valid and reliable as those tools we routinely apply to performance assessment of work systems involving other occupations. That is encouraging to know since some people claim ergonomics is too diverse for measurement. However, the BCPE will strive to continually improve its certification policies, procedures and practices. As agents of change, we are aware of our responsibilities to make change meaningful.

### References

- Author, (1995) *Information on Certification Policies, Practices & Procedures*, Bellingham, WA: Board of Certification in Professional Ergonomics, June.
- Barnhart, P.A., (1994) *The Guide to National Professional Certification Programs*, Amherst, MA: Human Resource Development Press, Inc. (Ph 1-800-822-2801)

## BCPE FINANCIAL UPDATE

The BCPE's finances are not exactly rosy, but we are making ends meet. The BCPE is supported primarily by the certificants. Certification maintenance fees account for 75% of revenues thus far this year. While income has been steady and there have been 46 new applicants for certification (22% of '95 income), overhead expenses are not always met, i.e. year-to-date rent has been subsidized to the tune of \$1,800 and the half-time salary of the Executive Director met at a 50% level. We have tried to maintain services to certificants and keep communications and publications at a quality level. As of August 31 total revenues for the year are: \$44,310. Total expenses have been: \$37,764. Major expenses yet to be met this year are production of the newsletter, the October Exam and, of course, office salaries, phones, postage, copying, equipment rental, etc. Overall, 1995 revenues are \$18,000 lower than 1994 revenues.

In an effort to generate more revenues, the Board voted to market the annual *BCPE Certificant Directory*, *BCPE's Policies, Practices and Procedures*, data searches, requests for regional lists/ labels. This year other income has accounted for approximately 3% of the above total revenues. Another decision of the Board was to raise in 1996 the annual certification maintenance fee to \$100, the exam fee to \$290.00 and to add the Associate Ergonomist (AEP/AHFP) level at \$100, with an annual maintenance fee of \$65.00 for the AEP/AHFP. A documents order form was generated to facilitate this new policy and is enclosed as an insert.

Certificants and future applicants for certification may wonder whether the fees increase is "worth it". First, the BCPE's fee structure is well in line with other widely recognized certification/licensing fees. Second, trying to apply a cost-benefit analysis to these fees (as people tend to do for membership fees of professional societies) is not quite appropriate. Membership organizations are designed and operated to serve members' needs for continuing education, for

keeping up with the state-of-the-art, for sharing the latest research discoveries and to provide a forum for career development issues. Revenue streams involve not just membership fees, but also publications sales, sponsors financial support, and surpluses from organizing technical meetings and workshops. Credible certification boards, on the other hand, are designed and operated primarily for competency assessment and quality assurance of individuals practicing the profession. In some instances, professional societies subsidize the operational expenses of related certification boards. That is not the case for the BCPE. In fact, BCPE only obtained an operating loan from HFES and needs to repay the \$15,000 balance, with 5% interest, by January 1997. Membership organizations can increase their revenues by lowering criteria for membership, and many (including HFES) have to the point where "professional membership" is no longer a valid indicator of professional stature. BCPE can not lower its certification criteria on the basis of financial considerations to "bring in" more applicant revenues from more people beyond the steps it has taken for the newly created "associate ergonomist" level of practice.

Most benefits derived from BCPE certification occur "behind the scenes" in that BCPE is becoming the recognized authority on the knowledge, skills and abilities that can be expected from professional practitioners of ergonomics. In the long run, BCPE and its certificants will strengthen the profession, science and technology of ergonomics via its practice standards and practice-assessment tools. Along with that will come enhanced job opportunities for all ergonomists. As the number of certificants increases, the cost of operations attributable to each individual certificant will decrease if no additional cost items evolve. For the present, financial efficiency exceeds that of many businesses and non-profit organizations: 520 sq. ft of office space at \$0.45 sq. ft per month, average labor cost of \$13.33 per hour (no employee benefits, but full-time availability of staff), information dissemination costs averaging \$2,081.00 per month to all segments of the market, for example. BCPE

was organized on a projected financial basis (budget) of \$100,000.00 per year. Even with countless, dedicated *pro bono publico* work by many supporters of BCPE and its mission, fees had to be increased to ensure the continued viability of the organization.

## **Editor's Note "ANOTHER POINT OF VIEW"**

Media hype and futurists declare this to be the start of the "Information Age" accompanied by continual and rapid changes in all aspects of our lives. Job stress, cultural stress, family stress and economic stress rank high on safety & health concerns tied to impacts of technology. Somewhere along the line OSHA discovered ergonomics as a potential solution to occupational safety & health problems; suddenly everyone either wanted to be (or thought s/he was) an ergonomist. The staff at the BCPE office fields a lot of questions from journalist, potential applicants from occupations related to ergonomics, human resource managers, politicians, lawyers, bureaucrats, and personnel recruiters, among others, who are curious and/or confused about what ergonomics is, and where it is headed. In a keynote address (printed in an edited and much abbreviated version below) Ulrika Wallersteiner presents her viewpoint on professional issues from the perspective of her position and personal experiences as president of ERGO Systems, Canada Inc. She also serves as a volunteer director of BCPE. Other directors have different experiences and perspectives, reflecting the diversity of the profession and its uses in various system applications. What is your perception, or answer to the question: "Who is in control of our profession?" Mail, FAX, or e-mail (BCPEHQ@aol.com) us a brief article on the topic, and we will consider publishing it in an upcoming issue of *The Professional Ergonomist*.

## **ANNUAL INTERNATIONAL INDUSTRIAL ERGONOMICS & SAFETY CONFERENCE 1995 Seattle Washington June 14, 1995**

### **Keynote Address**

#### **WHO IS IN CONTROL OF OUR PROFESSION?**

by Ulrika C. Wallersteiner, CPE

Dear Ladies and Gentlemen-

It is with great pleasure that I am here today; and I am very honored that the conference organizing committee has allowed me to speak to you on a subject matter that is very close to my heart: *the profession of ergonomics*.

By the very fact that you are here today, either presenting a paper or attending a session to gather information, you are making a statement about the value you and your company attach to ergonomics.

Your attendance here today also suggests that you have a contribution to make within the context of ergonomics to either the workplace, the design of a product, or the environment of a public place which will improve the well-being, safety and productivity of the end-user.

However, most of us involved with ergonomics today are actually focused on the activity of "telling the time". We are the time tellers of ergonomics, people have to consult us to tell them about ergonomics. If we disappear from our organizations through layoffs, transfers or death, so does the ergonomics knowledge. The challenge that I bring to you today is: How can we collectively move from telling the time to building the clock, the ergonomic organization, for the benefit of the generations to come and to ensure that the continuation of ergonomics does not depend on the continuous efforts of our individual time-telling capabilities.

Ergonomics can save lives, prevent injuries, increase productivity and contain costs. However, to date we are severely limited in what we manage to implement 1) because we do not have political clout, 2) because we are poorly recognized professionally, and 3) because we have no universally agreed upon standard by which to gauge our professionalism.

Furthermore, with all the falderal surrounding the ergonomics regulations, I believe we are on the verge of extinction (through absorption by other occupations). How many of you really feel secure in your jobs today?

Our insecurity should signal to us that it is time for us to get involved in the "politics of ergonomics" because if you don't, you may not have a job tomorrow-whether it is ergonomizing the world or teaching students; and that is the essence of my talk today: Who is in control of our profession all comes down to the activity of politics, which may be akin to the game of rugby. Who's in control of the (political) ball? (Not governmental, but organizational politics)

Stepping back from all the mayhem of the games people play, I see ergonomics poised on the threshold of a time machine, and depending on our abilities or inabilities to get "our act together" in the next couple of years, we will either play into the hands of ergoluddites and send the profession back into the dark ages, or accelerate forward and solidify our profession as the future emerges; which it will be is up to YOU!

Why do I lay so much emphasis on YOU? You the individual? **Because I believe the survival of ergonomics depends on our solidarity as a profession.** And the solidarity movement needs a critical mass to lobby against the onslaught of naysayers. I believe that the biggest problem in the advancement of our profession today is a lack of solidarity amongst ourselves, which allows other groups to control the growth and existence of our profession, to hold the political football.

You may feel that I am an alarmist...but I would like to ask you to take a moment and reflect how many of you look outside of yourselves (beyond your day to day dealings in ergonomic design) and ponder the future of ergonomics? You may want to reply...and say "politics is not for me, I leave that up to the politicians of this world" and I say to you: ergonomics is like having a family; you have your job, and then there is "raising ergonomics". The field of ergonomics is too young to stand



without your support and involvement...currently we need every ergonomics practitioner to be involved in the politics of ergonomics to pull together and to share a common vision and direction for the profession of ergonomics.

What are the weak links that make us prey for others to control our profession? I see three major areas:

1) If we insist on staying divided amongst ourselves, it is easy for a larger group (such as the National Association of Manufacturers) to shoot us down....

2) If we insist on keeping disparate goals, we will dissipate our energies convincing each other that "ours" is the right goal; like running on the same spot, it's an exercise, but not progress.

3) If we insist on staying fuzzy about what ergonomics is, and is not, we will never distinguish ourselves from other professions and will always be prey to a larger, more diffuse, group which is always looking towards absorbing more members. Is that what we want? I don't think so, otherwise why would we hold ergonomics conferences, publish ergonomics books, subscribe to ergonomics journals, etc. We participate in these activities because we believe ergonomics is different from health & safety, rehabilitation & occupational therapy, industrial psychology & industrial engineering, occupational medicine & computer sciences.

And where is ergonomics today? Barely holding on! In my 15 years of practice, I have never experienced such tentativeness towards ergonomics. The regulations have definitely triggered a massive backlash...but I have also experienced more people wanting to do "segmental, do-it-yourself ergonomics", challenging recommendations, and pitting ergonomists against one another. To stem the tide and to take control of our profession, it will require us to pull together, to share a common vision and direction, and to initially agree on three things:

- the core area covered by the field of ergonomics,
- the definition of a professional ergonomist, and
- the competency level required of a professional

ergonomist such that it can be measured with reasonable objectivity and accuracy.

**First**, we need to agree that there is such a field called "ergonomics" which occupies itself with:

A) identifying the physical and psychological characteristics of humans as they relate to workplaces, environments and products, and

B) having the goal of optimizing the design of a workplace, environment and product to minimize sub-optimal human performance (inefficiencies) and injuries. Our design capabilities are similar to those of an automobile designer who designs a car to reduce drag and fuel consumption.

**Secondly**, we need to agree that there is such a professional as an ergonomist. We need to have a greater understanding of the roles ergonomists can fulfill. If we don't, no one else will do it for us.

**Thirdly**, we need to agree that the profession has to have standards against which we can measure our competencies. This is where certification comes in. At this point I would like to stress that certification is a means to an end - solidifying the profession - it is not the end itself! But it is essential to defining the profession and requires your support in order to move from uncertainty to maturity.

Finally in order to regain control of our profession we need to do three things:

1) We need to do some marketing and lobbying of our own. Maybe we need to revisit the regulations and truly develop ergonomics regulations (or guidelines) which are human performance based... We may not yet have "proven" data, but we have "reasonable" data to get started on performance based ergonomic design criteria.

2) We need to work within our own profession, other professions and within educational institutions to develop a curriculum that emphasizes skills, knowledge and abilities that are meaningful in the ergonomics context. Some of the applicable courses already exist in a diversity of other departments. So there is no need to reinvent the wheel; but what we need to do is to create a new entity with an economic and societal value namely 'ergonomics', and thereby make the invisible, visible! (or the opaque,

transparent!)

3) We need to challenge ourselves to move from being an activity-based profession, (talking to the converted) to being results oriented and getting involved in the world of politics. This means supporting, volunteering, learning, teaching and strengthening existing ergonomics organizations such as the host of this conference: International Society for Industrial Ergonomics and Safety Research (ISIES), the Board of Certification in Professional Ergonomics (BCPE), Human Factors & Ergonomics Society (HFES), the Human Factors Association of Canada (HFAC), and other IEA Federated Societies. Of course they are not perfect, but they can be influenced. United we stand, divided we fall. There is strength in numbers! So join, learn and participate!

At the moment we need everyone to join forces and to recognize the real enemy - it is us, and our need to tell the time. It is time for each one of us to put our efforts into the politics of ergonomics (even though I know there are lives to save, injuries to prevent, and productivity gains to be made) to build an organization and identity which will keep ticking away long after you and I are gone. You might not be able to control what happens to you in your workplace; however, you can control what happens to your profession by the actions you take.

In conclusion, if you want the field of ergonomics to last the length of your professional career, and possibly be there for your children's children to benefit from, *then don't ask what the professional associations such as BCPE, HFES, HFAC, or ISIES can do for you, but ask what you can do, on a daily basis, to solidify and support the political strength of these organizations and ergonomics.* Instead of focusing on telling the time, focus on building the watch so that others can tell the time long after you are gone!

## BCPE AT THE HFES ANNUAL MEETING

The directors of BCPE and many BCPE Certificants will be actively involved with the HFES 39th Annual Meeting in San Diego (October 9-13, 1995). The BCPE exam will be administered Sunday October 8, proctored by Susan Hallbeck, PhD, CPE, Karel Jahns, CMA, Valerie Rice, PhD, CPE and Dieter Jahns, CPE. We hope for success of many BCPE applicants; Dave Cochran, PhD, CPE and Harvey Cohen, PhD, CPE may step in as alternate proctors if things get too stressful.

The Board will hold its annual business meeting Monday, October 9, 10:30AM-5:30PM. Tuesday through Thursday BCPE publications, including the new Directory of Certificants, will be on display at the *Combined Publishers Exhibit* staffed by HFES personnel in the exhibit hall. On Thursday, between 5:30PM and 7:30PM, the BCPE will host a cash-bar (we can't afford wine & cheese) PROFESSIONAL ERGONOMISTS NETWORK reception. It's open to everyone interested in lively discussion and collegiality. Even HFES "Dinner Cruisers" should have time for a short chat before catching the boat. Dozens of CPEs and CHFPs are also involved in panels, paper sessions and other venues of the HFES meeting. So we are again thankful for the cooperation of HFES and wish everyone a lively and enjoyable time.

## LOOKING AHEAD

### NEXT EXAM DATES

Dates for the written examination in 1996 have been set: Monday, April 8, 1996 at various locations (determined by demand, availability of qualified proctors and cost factors) and Sunday, September 1, 1996, just prior to, and co-located with, the 40th HFES Annual Meeting in Philadelphia, Pennsylvania. Application deadlines are two (2) months prior to each test date.

### ASSOCIATE ERGONOMIST

Starting in 1996 a new level of certification will be implemented for "Associate Ergonomist" or "Associate Human Factors Professional". The new level is designed to create a path by which individuals can achieve professional certification in progressive steps. A person can take the Basic Knowledge (Part I) of the BCPE exam immediately after fulfilling the education requirement (i.e. M.S. degree or equivalent). Parts II and III may be taken after fulfilling the other BCPE requirements (given a passing score on Part I). Logistics and details will be worked out in October, but 1994 and 1995 graduates interested in the program

should contact the BCPE office for further information. The AEP/AHFP designations will lapse after a person has held it for five (5) years and not transitioned to the next level of CPE/CHFP.

### VOLUNTEERS WITH GOOD IDEAS

In order to bring some "grassroots wisdom and energy" to bear on the myriad of tasks that BCPE needs to accomplish, a more formal structure for a BCPE network of volunteers is being contemplated; a BCPE-PEN? We definitely could use more items suitable for inclusion in the written examination. If you have any, send them in (along with the correct answer and authoritative reference for it). We could use a newsletter editor/publisher and free-lance writers for the newsletter. We could...if you have an idea and can implement it yourself (or under your leadership) let us know. You know what our mission is, help us accomplish it. For example, Peter Budnick, PhD, CPE is working on creating a BCPE home page on the ErgoWeb (<http://ergoweb.mech.utah.edu>). He offered, we accepted. He specified, we provided. We are grateful for not having to finance him. It should be "up and running" some time in November.

## THE PROFESSIONAL ERGONOMIST

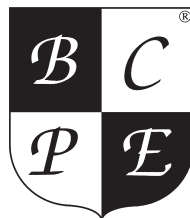
The Newsletter of the BCPE

Summer/Fall 1995 (September)

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