




**THE
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P **ROFESSIONAL**
ENG **INEER**



**bulletin of the
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engineers
of the
province of manitoba**

November, 1969



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Opinions expressed are not necessarily those held by the A.P.E.M. or the Council of the A.P.E.M.

WINNIPEG, MANITOBA, NOVEMBER, 1969

FIFTIETH

Annual General Meeting

Thursday, November 27, 1969, 2.00 p.m.

FORT GARRY HOTEL

PROGRAMME

1:30 p.m. Registration Opens

2:00 p.m. Official Opening by

President

Introduction of Guests

Minutes of Annual

General Meeting of

November 27, 1968

Minutes of Special

Meeting of March 26,

1969

Declaration of Councillors

Elected

President's Address

Registrar's Report

Committee Reports

Auditors' Report

Appointment of Auditors

Nominating Committee

Appointments

Draft Budget

RECESS — Coffee

Declaration of Officers
Elected

Panel Discussion With
Membership Participation

"What Does Profes-
sionalism Mean to a
Professional Engineer?"

6:30 p.m. Reception

7:30 p.m. Dinner

8:40 p.m. Guest Speaker:

Premier E. R. Schreyer

"Future Trends in Indus-
trial and Resource
Development"

Ceremony of Turning
Over Gavel to Incoming
President

President's Report

Every year as he prepares his annual report, I expect each President feels as I do, that the year has gone by very quickly and much remains still to be accomplished. I have this feeling in spite of the fact that I doubt there has ever been a Council that has put in as many hours at the task as the one of which I have been honored to be the Chairman. The members of the Association continue to elect a group of dedicated, sincere professional engineers to the Council and it has been a privilege to be associated with them. The volume of work facing Council has steadily increased and recently members of Council have been devoting about two full days' work a month to Association business. Attendance at meetings has been excellent and I am very grateful to the members of Council for the support they have given me.

Committee members too, have been busy with their various activities, the reports of which may be found elsewhere in this issue. We are fortunate indeed in this Association to have so many members who give so willingly of their time and their talents to the profession. More than 10% of the members residing in Winnipeg work on Committees and there seems to be no problem in finding engineers who are interested enough in the welfare of their profession to devote a considerable amount of time to the Association.

These are troubled times in many countries, including our own. They are times of dissension and inquiry into existing orders. Some of this dissension has manifested itself in Associations such as our own and has received considerable publicity. I hope you will all take enough interest in this Association to enquire into its activities and to question its structures. The Association should continue to change with changing times, but let it be an orderly change. Changes should be growth based on a solid foundation in the best democratic tradition. We must not permit the good to be destroyed simply for the sake of change.

This year Council has spent a great deal of time on matters of discipline and ethics. Let us remember that as members of this Association we have a code of ethics binding us which says "The Professional Engineer shall regard the physical and economic well-being of the public

as his first responsibility in all aspects of his work," and which further states "The Professional Engineer shall think highly of his profession and its members, its history and traditions and shall act in a manner worthy of its honour and dignity at all times."

A special committee of Council is working with the legislation committee and our legal advisor to prepare a by-law on discipline. We feel that it is essential that the mechanics are made available to allow informal review of any alleged unprofessional conduct. It is hoped that such a by-law will be available for your approval soon.

There have been many heated debates at Council meetings during my years on Council, and particularly during this past year. I want to emphasize that these debates were never promoted by self-interest, nor because of any appreciable variation in objectives, but in respect to the best methods of accomplishing the objectives of the Association.

One other activity of the Association is, I believe, worthy of mentioning here for extra emphasis, although I am sure the responsible committee will be reporting in detail. I would commend to future Councils that the good work of the Student liaison, and the Career Guidance and Counselling Committee be encouraged and supported. These activities are, in my opinion, of vital interest to the Profession.

It is unfortunate that all our members cannot be more familiar with the work of the Canadian Council of Professional Engineers. Through C.C.P.E. and the good auspices of some of the larger Provincial Associations, a great deal is being accomplished, which we could not do ourselves. The fall meeting held earlier this month, considered Student Counselling, Admission Standards, Accreditation, Performance Standards, as well as a wide variety of other topics.

In conclusion, I wish to thank the members of Council and the Committees, the membership at large and the office staff for the support and assistance given to me during my term as your President. No one was ever too tired or too busy to go the second mile. I urge you to give the same support and help to those who will serve as your Executive and Council in

the coming years, so that the Association may progress and build on your combined strengths, so that this Profession may be one in which we may all continue to hold

membership with pride.

Respectfully submitted,
L. W. BLACKMAN, P. Eng.

Secretary-Registrar's Report

A membership growth curve for the Association, plotted in 1965, based on data back to 1951 predicted a membership of 1700 by October 31, 1969. Our membership as of this date stood at 1,738. Over a 17 year period the annual net membership gain per year has been 75 members. Since 1966 our net gain per year has exceeded 100 members, but this was offset by a loss in 1965 due to a fee increase. With annual resignations, transfers out, write-offs, etc., it is necessary to register almost double the net gain to maintain our growth. Membership fees have been held constant since 1965 despite deficit predictions, because of controlled spending and the increased growth rate. The Budget Committee found it necessary to recommend raising the membership fee for 1970, and Council has approved a five dollar per member fee increase. This is still three dollars per member less than the authorized ceiling of \$33.00 permitted by By-law 32-2. The 1970 draft budget is intended to balance based on a fee of \$30.00. It has a built in contingency factor and it is hoped that a small surplus may result to bolster our reserves which have not kept pace with rising costs. For an organization the size of ours, good practice would indicate that our reserves should permit operation for a six months' period without income (or equal 50% of our annual budget).

A staff increase is not contemplated in the near future but the present staff is reaching the saturation point which certainly indicates that members are using the services of the Association. In 1966 the services of our stenographer were required on the average of one day a week (hourly basis). She will be required full time in 1970 (still based on an hourly rate to retain flexibility but a member of our staff since 1967). Rather than increase the male staff at this point, it may be economic to obtain professional services from time to time in order to expedite completion of special studies or reports required by Council or Committees. The Employee Engineers Committee has des-

cribed elsewhere in this issue, some of the services available to members and the services aspect can therefore be omitted from this report.

As a profession we have problems which are accentuated by the diverse engineering occupations and employment levels. During many conversations with engineers in Winnipeg and on visits to Gillam, Thompson, Brandon and Pinawa, I am told in no uncertain terms on what the Association should concentrate its efforts. Seldom is the administration of the Act given first priority by members demanding action. Because Council is elected democratically, Council members frequently hold diametrically opposite points of view on any controversial subject. With but few exceptions, we are all employee engineers, and whether or not an employee thinks as a professional engineer and can look at the function of the Association without bias depends largely on whether or not he is utilized, treated and paid as a professional by his employer. There are employers in Manitoba who have proven by example that attitude can be instilled from the top. This type of enlightened engineering management can do much to prevent fragmentation of our profession.

This last year Council members have considered 204 agenda items, a large proportion of which can be considered controversial. Although some of these items may not be resolved, guidelines should emerge in the areas of discipline, Association initiative and public involvement. Our xerox prints on the average 3,000 sheets per month, a large proportion of which is directed to Council as relevant information on all subjects prior to Council or Committee meetings involving Council members. The moral of the story is that it takes a great deal of time and dedication to serve on Council.

Developments that have not been reported by others in this issue include: negotiations with the North Dakota State Board of Registration for Professional Engineers, with reciprocity regarding registration

and licensing in mind. The first meeting was held in Winnipeg on October 17th, with Messrs. Toman, Bavone, Webster and Petersen from the North Dakota Board in attendance. Part of the program included a meeting with Dean Hoogstraten and engineering faculty members from the University of Manitoba, and a tour of the University of Manitoba engineering facilities. Most significant to A.P.E.M. members is that under the Exemption Clause of the new North Dakota registration law, temporary permits may be issued to persons legally qualified to practise engineering in his own country which extends similar privileges to persons registered under the North Dakota Act. Permits are issued for a specific project, for a period not to exceed one year. It is expected that future meetings will be expanded to include representations from the Minnesota Board and other adjacent States.

At the Special Meeting of the Association of March 26, 1969, Council was authorized to relocate the offices which are shared with the Manitoba Association of Architects to accommodate the expanding requirements of the Winnipeg Chamber of Commerce. This possible move is still being negotiated by the Premises Committee, chaired by Mr. Fowler and will take place only if equivalent space is provided at no additional cost to the members. Referring to the principal topic at the same meeting, follow-up on the subject of Research and Development to support the growth of secondary industry from within Manitoba is proceeding with Mr. E. A. Speers providing the initiative.

Backed by the Provincial Associations and the Corporation and authorized to spend an additional \$5,000.00 if necessary, the Canadian Council of Professional Engineers has intervened on behalf of professional engineers in the Public Service, requesting that the Government of Canada review immediately the matter of classifications revision as it applies to professional engineers in the Public Service. Copies of the C.C.P.E. bulletin covering the text of the letter to the Hon. C. M. Drury may be obtained from the Association office upon request.

Fourth year engineering students are now annually invited to a dinner with A.P.E.M. members in order to further communications between students, faculty members and practising engineers. This interchange is appreciated by the students but they want more of the same and sooner. The Student Liaison Committee of

the Membership Committee has been charged with providing this service, and the general membership may be asked to help with this work. Members will also be asked to represent the Association at high school career days as part of our Career Guidance function.

Our public relations function has been neglected and this service can only be provided by members who have the necessary overall knowledge of the profession, the ability to write, and the time to devote to a continuing project. Suggestions would be welcome.

We wish to record the deaths of and ask you to remember the following members: M. Del Begio, A. S. Dawson, L. Millidge, R. W. Berry, N. B. Cawley, A. P. Bowman.

As an engineer with over 1700 supervisors, but enjoying enlightened management, I wish to thank the President and Council and the many members whose contribution over the past year has enabled the Association to progress. Thanks also to our capable female staff, Mrs. Dunklee, our Executive Secretary, and Mrs. Calverley, our Stenographer.

Respectfully submitted,

T. W. ALGEO, P. Eng.

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COMMITTEE ON SAFETY IN ENGINEERING PRACTICE

The three sub-committees formed to deal with specific failures or aspects of Engineering safety are each continuing their investigations with their findings being brought to the whole committee for group evaluation and action.

A report prepared by the sub-committee dealing with the Inland Cement building failure was reviewed by the committee and after incorporating a number of suggestions made by committee members and some of the people who had been directly involved, was submitted to Council on September 16th, 1969.

A second report dealing with "Wind Storm Failures of Masonry Walls Under Construction" has been considered by the whole committee and is being revised in places to reflect suggestions made by committee members and organizations who have been asked to comment. It is hoped

that this report will be sent to Council prior to the Annual Meeting.

The sub-committee dealing with "Review of Regulations and Practices Concerning Construction Falsework" is making progress on a report that will make a series of recommendations in this area.

Late in September, 1969, Council requested that the Committee investigate circumstances which led to the failure of the Holy Redeemer Parish Centre roof and this is now being organized.

Committee members for 1969-79 season are:

B. E. Aikins, P. Eng., Sub-committee Chairman; R. H. Banks, P. Eng., Sub-committee Chairman; C. I. Biegler, P. Eng., Sub-committee Chairman; D. L. T. Oakes, P. Eng.; W. R. McQuade, P. Eng.; Dr. G. A. Morris, P. Eng.; J. S. Hicks, P. Eng.; G. W. Simonson, P. Eng.; C. F. Ripley, P. Eng.; T. A. Crosier, P. Eng.; R. Renyaud, P. Eng., Secretary.

Respectfully submitted,
W. N. ISBERG, P. Eng.
Chairman.



BOARD OF EXAMINERS' REPORT

Members of the Board of Examiners, for the year 1969 were: K. M. Adams, C. R. Bouskill, W. C. Brisbin, G. H. Currie, H. N. Gawley, G. A. Morris, M. P. Musick, R. W. Newberry, A. H. Pask, J. S. Shewchuk, G. W. Swift, J. Tinkler and J. D. Wiebe.

Since the 1968 Annual Meeting, the Board held six meetings. The qualifications of forty-one applicants were reviewed. The comparable volume of reviews for two previous years were thirty-four in 1968 and twenty-one in 1967. Of the forty-one assessed applicants, ten possessed the necessary academic qualifications for registration while seventeen were required to write four or fewer confirmatory examinations to fulfill the academic requirements. Nine examinations were set for six applicants who arranged to write in April. Seven examinations, of which three received a passing grade, were attempted by four of the applicants. October examinations were discontinued. One applicant completed the academic requirements by examinations this year.

During the year, the Board reviewed recommendations of the CCPE Accreditation Board regarding revisions to the Uniform Syllabus of Examinations, approved the Civil Engineering Syllabus and returned comments for both the Industrial Engineering and Metallurgical Engineering Syllabi. In addition, a guide submitted by the CCPE from the Quebec Corporation of Engineers for assessing applicants from French Engineering Schools was approved. Because of the large number of applicants from Czechoslovakia this year, the Board deliberated at length to formulate a policy for assessing qualifications of graduates from Czech Engineering Institutions.

As there has been no revision to the fees paid individuals setting and marking examination papers for a number of years, the Board undertook a survey of other Provinces' policy in this regard. The results of the survey coupled with a review of opinions by individuals setting and marking papers, framed a Recommendation to Council for an upward revision. A fee schedule applicable to applicants was revised accordingly.

We gratefully acknowledge the able assistance given to the Board throughout the year by:

Our Registrar — T. W. Algeo, for acting as Secretary at the Board Meetings and performing many time-consuming chores;

Mrs. D. L. Dunklee and Mrs. Calverley— for the detailed work of recording and following up the particulars of applications, etc.;

U. of M. Faculty Members, M.I.T. Faculty Members and Registered Engineers for their assistance in setting and marking examinations and reading and grading theses.

In conclusion, I extend my personal thanks and appreciation to the aforementioned individuals and to the dedicated members of the Board who graciously accepted tasks assigned by the Chairman.

Respectfully submitted,
M. P. MUSICK, P. Eng.
Chairman.



CONSULTING ENGINEERS COMMITTEE

The Consulting Engineers Committee is responsible for reviewing items of interest

to the general practice of Consulting Engineering in Manitoba and has representatives of private practice and organizations which utilize consulting engineering services. Members of the Committee are Messrs. L. W. Blackman, L. S. Earp, B. L. Fisher, W. H. Finnbogason, G. E. McLure, W. H. Mitchell, A. O. Dyregrov, Secretary; A. W. Greenberg, Vice-Chairman and D. R. Grimes, Chairman.

The responsibility for engineering work, stamped by an engineer who subsequently changes employers was reviewed. Further study of this is being carried out with particular reference to stamps on standard drawings.

One meeting was given over to a discussion of engineering performance, in view of complaints being expressed in some quarters of inadequate plans.

A brief was prepared for Council on the necessity for a revision to the schedule of minimum fees to be charged for consulting professional engineering services to Architects. The submission was approved in principle by Council and a draft schedule is now being prepared. A discussion was held with members of the Manitoba Association of Architects before completion of the brief.

The Committee recommended to Council that a List of Consulting Engineers not be published by Council. This recommendation was accepted.

Respectfully submitted,

D. R. GRIMES, P. Eng.
Chairman.

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MEMBERSHIP COMMITTEE

Committee members for 1969 were: B. Corkal, W. Mann, W. Veldman, R. W. Tipper, A. B. Buchanan, R. Madder, G. A. Smith, M. Jeroff, W. A. Bergman, F. Young, J. Dinoon, R. Menzies, L. Tough (Vice-Chairman), and C. Howard (Chairman).

Some of the objectives of the Membership Committee are to maintain membership growth, to have members act as agents for the Association or act as an information source at their places of employment, to stimulate interest in the Association, to sponsor membership drives, to act as a student liaison group, and to be responsible for publishing the annual

roster. To serve the Engineering fraternity effectively, this requires a large committee that represents all major employers within the Metropolitan area.

The annual Engineering Graduates Dinner was held at the Montcalm Motor Hotel on February 25, 1969. The Association played host to 127 out of a possible 200 members of the 1969 University of Manitoba Engineering Graduating Class, with 33 Association members welcoming the students and participating in the question and answer period that followed the dinner. The many pointed questions indicated that the students were sincerely interested in the functioning of the Profession that they were about to enter. That the evening was an unqualified success was due to the hard work of the student liaison Sub-Committee chaired by Mr. Al Buchanan, with assistance from Messrs. F. D. Young and G. A. Smith, who looked after all of the arrangements for this occasion. Hopefully the Association Council will see fit to sponsor a similar evening in the spring of 1970.

Six members of the Association requested a special meeting to discuss the need to spur development of industry in the province. This meeting was held in the Blue Room in the Charterhouse Motel at 8:00 p.m. on March 26, 1969. A talented group of speakers provided an extremely informative evening by enlightening the Engineering Profession on the research and development that is taking place within the province. A Special Meeting Sub-Committee headed by Mr. L. H. Tough, with assistance from Messrs. W. Mann and A. Bergman, arranged the physical facilities for this meeting.

For the first time, Council approved the use of commercial advertising in the current membership roster. A Roster Sub-Committee chaired by Mr. R. W. Tipper, with assistance from Mr. W. Veldman, solicited advertising from engineering companies and organizations that do business with the members of the Engineering Profession. Through a concerted effort this committee obtained \$695.75 from advertising, which was only \$132.08 less than the \$827.83 total cost for printing. We hope that next year the entire cost of publishing the roster will be borne by advertising. In future the roster will be published in June to permit time for the Association's office staff to update the roster with information that is not available to them until after the first of March each year.

Registration figures for 1969 with the corresponding figures for 1968 are:

	1969	1968
Registrations	115	113
Engineers-in-Training	63	81
Engineering Pupils	000	000

The members of the Committee wish to thank Mrs. D. L. Dunklee for her assistance throughout the year.

Respectfully submitted,
C. H. HOWARD, P. Eng.,
Chairman.

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SPORTS COMMITTEE

Over two hundred professional engineers from Manitoba participated in the three sports functions presented during 1969.

Twelve teams participated in the Fourth Annual APEM Bonspiel, held January 23, 1969 at the Highlander Curling Rink. Main event winners were Clyde McBain, Ron Morris, John Ross and Bill Farnell.

The spring golf tournament, held June 19, 1969 attracted ninety-one golfers to Rossmere Golf and Country Club. Ken Lailey fashioned a score of 80 to capture the Landon Cup, emblematic of the spring tournament low scorer.

The fall golf tournament was held on September 15, 1969 at Southwood Golf and Country Club. The Sullivan Cup, presented to the low net winner of the fall tournament was won by A. Brown.

Thanks are hereby extended to committee members Don Miller, Terry Monastyrski, Bud Christie and Bob Jeske for their fine work and co-operation throughout the year. On behalf of the sports committee I offer my sincere thanks to Mrs. Dunklee for her able assistance. Special thanks are due also to the prize donors.

The next sports event is the APEM Bonspiel which is scheduled for Thursday, January 22, 1970 at the Highlander Curling Rink.

Respectfully submitted
C. G. KIRBY, P. Eng.
Chairman.

SOCIAL COMMITTEE

I wish to report that the main activity of the Social Committee during 1969 was the organization of our annual "Wine & Roses Ball". This dinner and dance was held on February 7, 1969 with some 350 people attending, and it was generally considered to be very successful. In accordance with our plans, the budget worked out to a "break-even" situation.

It was decided not to sponsor the fall frolic in 1969 as the general feeling was that there was little demand for this type of dance. We intend to investigate the possibility of sponsoring the frolic in 1970.

Respectfully submitted
R. W. HUTCHINSON, P. Eng.
Chairman.

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AWARDS COMMITTEE

The Awards Committee is comprised of six past presidents of the Association, this year the members being R. C. Sommerville, Chairman, F. M. Fowler, R. T. Harland, S. J. Borgford, B. Chappell and T. E. Weber.

No nominations were received from the membership and the Committee has no recommendations concerning Honorary Life Memberships or for the Merit Award at this time.

The Committee considered the recommendation to Council made by last year's committee and again recommends that By-law No. 31 be changed to read:

"Council may pay for the reception and entertainment of important guests, and may pay expenses incurred in matters pertaining to the interests of the Association.

"The Council may pay annually, from the interest on invested funds, for the cost of Certificates of Life Membership and for the aggregate of the annual fees of all members still living to whom such certificates have been granted. Life Membership, Honoris Causa, may be granted by unanimous decision of Council to a member who has, in the opinion of Council, rendered meritorious service to the Association, who is no longer practising on a full-time basis as a Professional Engineer, and who has preferably been continuously a member for not less than 35 years and has attained the age of 65."

Committee believes that this will make the award of more significance than merely a recognition of longevity.

The Committee again feels that a change in the Merit Award is necessary and recommends once more that the Term of Reference No. 2 be amended to permit recognition of a group of engineers, as well as an individual, in making an outstanding achievement. In considering the Terms of Reference made in 1961, sufficient other changes were found to be required that the Committee has substantially re-written them and recommends to Council the adoption of new Terms of Reference, which are herewith presented for the consideration of Council.

Finally, the Committee feels that all members of the Association should become involved in making recommendations each year for the recognition of outstanding engineering achievements or public service on the part of our members. The regular granting of the Merit Award could do much to mark the efforts of engineers and would also enhance the stature of the profession in the minds of the public.

Respectfully submitted
 R. C. SOMMERVILLE, P. Eng.
 Chairman.



CAREER GUIDANCE AND COUNSELLING COMMITTEE

As a result of work carried out by this Committee we are pleased to report that some tangible improvements have been made in this area of the Association's activities. Whilst the Committee has contributed to the various items, those members of the Association who attended as speakers at Career Days and represented the profession in this field at other events in many ways contributed more.

It is obvious from the general support received, that many of our members are now vitally interested in this program, and next year promises to be even more productive. As usual some changes in committee membership occur each year and anyone interested in the work of the Committee is invited to contact the Chairman.

In keeping with a policy statement from C.C.P.E. that local association committees associate with E.I.C. groups, a representative has been invited from the local

E.I.C. Chapter organization. In addition the Student E.I.C. Chapter has been advised of the Committee's activities and invited to send a representative. On at least one occasion a representative from the Student section attended a career day to speak on the subject from that point of view. Also represented on the committee are "Man-Cett", Manpower, Winnipeg Chamber of Commerce and the Provincial Guidance Branch.

This year the Association presented a brief to the Provincial Government on local guidance problems as a whole and the present government currently has it under review. A separate report with recommendations was submitted to C.C.P.E. in June and though no official answer has been received we have had indications that the submission has been carefully considered. At the National level a start has been made by the National Joint Committee on Student Counselling to coordinate available material. C.C.P.E. is now represented on the Youth Science Foundation, which has given indications that it may be possible in the near future to sponsor "Science, Engineering and Technology Clubs" in high schools and thus have a Canadian equivalent to the U.S.A. "Jets" programme. We believe that the representation by our committee has helped direct C.C.P.E. in this area. Many other things are now happening in the Guidance and Counselling field as it applies to Engineering but we must have the membership support if we are to obtain the results we seek. Anyone outside Metro Winnipeg interested in these activities and prepared to work locally is earnestly requested to contact the Registrar.

Respectfully submitted
 A. F. ESHMADE, P. Eng.
 Chairman.



EMPLOYEE ENGINEERS COMMITTEE

Summary Report

The nominal roll of this Committee was temporarily increased during the year by seconding an interested group of members who had been instrumental in organizing the Association Smoker in 1967 which led to the formation of the committee in its present form. At its peak therefore, the committee comprised the following:

Frank P Barlishen, F. Gordon Denson,

N. Pat Feschuk, Ron V. Houghton, Ed H. Klassen, Jon P. Stefanson, A. Gerry Mensforth, Myron P. Musick, D. Les T. Oakes, Tom Shkordoff, Wilf H. Stange, and Dave S. G. Ross, Chairman.

The names of Pat Feschuk and Frank Barlishen were later removed as had been pre-arranged initially. Their assistance during the activities planning sessions was appreciated.

The objectives of the committee can be categorized as follows:

- (a) Release for publication in "The Manitoba Professional Engineer" of the tabular salary survey data.
- (b) Consider and recommend response to the formation of an Employee Engineers Group within the Manitoba Telephone System.
- (c) Develop a direct questionnaire for membership of the Association, to supplement and make more meaningful the salary survey data and prepare for its submission to members prior to the annual meeting, if possible, along with notices and ballots.
- (d) Consider and prepare for publication a review of personal services presently available to members at the Association offices. Cataloguing of these services would be intended to be informative.
- (e) At the same time consideration was given the formulation of a definitive statement of the needs and demands for which the said personal services were offered.

Meetings

Between February and August, six meetings were called. Of these three were with a minority of members present. Nevertheless, there was considerable interest and accomplishment.

Activity

- (a) As was indicated under the heading of "Objectives", the salary survey tabular data appeared in the June, 1969 issue of "The Manitoba Professional Engineer" after having been reviewed by the Committee.
- (b) Council formally asked for the reaction of the Committee to the written request for support by the newly organized Manitoba Tele-

phone System Engineers group. This was given considerable attention, following which it was verbally recommended to Council through the registrar that no action be taken pending further development and clarification of the declared aims, objects and activation of the group. The latter in turn were contacted and asked to arrange to keep communications open with the Committee.

- (c) A questionnaire form was developed, after very thoughtful consideration, for submission to Association members. The purpose was to supplement the simple questionnaire used to survey engineers in Canada. This existing annual survey requires only the salary attained and year of graduation. Relevance, responsibility, fringe benefits and regional disparities are among factors not given weight in the opinion of many Manitoba engineers. Consequently it was intended to submit to Council a questionnaire which could be circulated in one mailing at the time of the annual meeting with notices and ballots. This was completed and was submitted to Council after October 1, 1969, for ratification and implementation, if approved.
- (d) Preparation of a catalogue of personal services to be published as a feature in "The Manitoba Professional Engineer" was completed. Its release for publication is evident in the Annual Meeting issue currently in the hands of the membership.
- (e) Consideration of an introductory statement to the foregoing personal services outline became a highly controversial issue. As a result it was decided to allocate to one committee member the responsibility of submitting a personal but anonymous introductory statement, as a separate feature in lieu of a statement representing committee consensus.

Summary of Salary Survey Report

The tabulation published in June, as previously mentioned, provides the following comparisons, arranged as in previous reports:

- Median Annual Manitoba Engineer's Salary for 1968 12,600

- Increase over Median last year (Comparable increase one year ago) 5.0%
5.26%
- Questionnaire returns from Manitoba — 1968 542
- Questionnaire returns from all Canada (except Quebec) 1968 14,574
- Registration in Manitoba at end of 1968 1,650
- Returns from Manitoba for past five years:

Year	Number	% of Registration
1964	484	37
1965	472	35
1966	634	44.5
1967	660	43.1
1968	542	32.9

Source of Data

At present survey data is obtained by and from the annual survey conducted by the Ontario Association of Professional Engineers. It is, as formerly, on a cost-sharing basis, delegated to Trans-Canada Data Clearing Limited, a Toronto-based operation. Current cost to A.P.E.M. for 1968 — \$79.35. (Unpublished data, too voluminous to publish, is obtainable at the A.P.E.M. office). In addition to "The Engineers' Joint Survey," copies of which are mailed directly to members by the A.P.E.M., the results of the Committee's questionnaire, when available, should help materially in providing more complete data to Manitoba Engineers.

Discussion

The work of this Committee still suffers from the problem of insufficient involvement by members as well as the almost traditional reluctance of engineers at large to become involved. Nevertheless, as the foregoing detail attests, more than usual achievement can be attributed to those who actively participated.

It remains only for the chairman to acknowledge with sincere thanks the assistance and support received from the Executive Branch at the office, and from the Committee members who carried on during his unavoidable absence for a prolonged period in the early spring.

Respectfully submitted
D. S. G. ROSS, P. Eng.
Chairman.

EMPLOYEE ENGINEER?—WHAT IS IT?

By a Member of the
Employee Engineers Committee

It can be a very controversial topic of conversation, or a theme for a lengthy dissertation, or even a schizoid phenomenon. But has it ever occurred to you, P. Eng., that it may be a contradiction in terms. The Employee Engineers Committee wrestled with this issue and delegated the writer, who must remain anonymous, to set out one man's attempt to come up with the answer.

Who is the Employee Engineer? Almost all members of the Association of Professional Engineers of the Province of Manitoba can be termed "employees" in some sense of the word. However, for the purposes of this piece it shall be assumed that the Employee Engineer is one who cannot, or who feels he cannot as an individual voice in an organization, effectively influence the employment practices, or the attitude of employers with regard to Professional Engineers.

It is suggested that this concern with such individual effectiveness and influence is a sociological phenomenon of recent years. The employed professional engineer has become aware that his position as a hired hand among others highly trained in their early apprenticeships, places him in an undifferentiated position. Moreover, the swift onrush of expanding technology in which the P. Eng. often finds himself, tends to submerge him in this swelling technical matrix, instead of providing him with the situation that enhances his focal professional position in the application of technology.

It is further suggested that Association members are tempted to allow themselves to think unprofessionally merely in terms of the degree to which they can hope to derive increased and more lucrative benefit from their employment.

Above all, Association members have for too long sanctioned by their inattentiveness the existence of earnings "ghettos" in their midst in which fellow members of the profession are remunerated at levels much lower than their own. It is a considered opinion of the writer that these situations tend to reduce the prestige of the profession, if only by the very existence of such pockets in which such attitudes or conditions are to be found. In consequence, such loss of prestige impairs the effective performance of

the engineering function in our society. Quite conceivably, distress of this nature in some areas can spread and infect the whole, and every one in it.

It follows from this discussion that each professional engineer be called upon to insist upon becoming more aware of groups, or individuals, within the Profession who are continuing to work under a handicap, whether it is one arising out of an attitude of disregard for the status of the engineer, or of depressed salary levels for the group or individual in question.

To help initiate such awareness, the Employee Engineers Committee, of which the writer is a member, has taken upon itself the small task of setting out, elsewhere in this issue, a resume of the services that are available to individual members of the Association.



THE ASSOCIATION AND THE EMPLOYEE ENGINEER

A personalized definition of the "Employee Engineer" appears on a previous page in this issue in an unsolicited contribution by a member of the Employee Engineers Committee. The Committee, while not in agreement with the position taken in it, hopes that this article, together with the following outline of some of the services presently available through the A.P.E.M., will serve to generate some member interest in this most important subject.



OUTLINE OF SERVICES

By R. V. HOUGHTON, P. Eng.

1. Employment Service:

This service entails recording, in a card-file system, inquiries and details of professional job openings available from employers, as well as qualifications and other data of Manitoba Professional Engineers and Engineers in Training seeking positions. The potential employee is matched to a potential employer, or vice-versa. The two parties are put in direct contact with one another to further explore the opportunities. It was noted that employers are becoming more selective in choosing professional engineers. The num-

ber of opportunities listed is substantially balanced by positions being sought. Almost all engineers seeking jobs are presently employed but are looking for better opportunities.

2. Out of Province Information Service:

This service consists of supplying information to engineers regarding registration requirements, transfer requirements and job opportunities in this or other provinces and/or countries.

3. "Report on Salaries":

(a) An annual "Report on Salaries" is distributed to all members of the Association. This information is compiled from a survey of employers in Ontario, British Columbia, and Alberta, and is not, as often popularly held, a concoction of wishful thinking supplied by employed engineers through questionnaires.

(b) An annual Salary Survey is published in the Manitoba Professional Engineer, compiled from returns from individual engineers in Manitoba and in all Canada, except Quebec.

4. Employer Relations:

The Registrar, Mr. T. W. Algeo maintains a continuing open line to employers on wage and level standards. He makes particular effort to contact new employers establishing in the province to make them cognizant of the profession and the advantages of professional engineering services that can be supplied by employee engineers.

The Registrar is regularly contacted by employers to assist with the "technical classification" of a potential employee. If the potential employee is eligible for registration, his qualifications can be related to an engineering responsibility level. If he is not eligible for registration as a professional engineer, his qualifications can usually be related to one of three technician or technology grades adopted by the Manitoba Society of Certified Engineering Technicians and Technologists, Inc., and now being adopted by industry.

5. Position Evaluation:

The Association will make an assessment of positions and determine their relationship to the responsibility levels described in the "Report on Salaries." In order to take advantage of this service, it is necessary for a member to obtain, from the A.P.E.M., standard position des-

cription forms which he is to complete in detail, sign and which must also be agreed to and signed by his supervisor. This information is then returned to the Registrar, and an individual evaluation will be made of the position as described. A comparative evaluation is currently requested from the Association of Professional Engineers of Ontario, who have a "Special Services" Department to carry out this service, but as expertise is developed and if the volume is significant, such evaluations will be carried out entirely by the A.P.E.M.

In the case of the first formal request, the assessment by the Registrar rated the employee only slightly higher than the A.P.E.O. check assessment.

6. "Group Negotiations" and the A.P.E.M.:

In June of 1967, the Council of the A.P.E.M. articulated a policy in regard to the attitude of the A.P.E.M. regarding "Collective Bargaining" and "Group Negotiations" as follows:

POLICY STATEMENT

Council is opposed to any form of compulsory collective bargaining for professional engineers and will continue to oppose the inclusion of professional engineers in any group formed for the purpose of collective bargaining as it believes this to be contrary to the best interests of the public and of the Association.

Council believes that each member of this Association should, to the greatest extent possible, deal as an individual with his employer in matters of employment conditions.

However, Council recognizes that the individual approach may be impractical in some cases and that some form of group discussion may be necessary. Council therefore accepts the principle of group negotiations by professional engineers, provided that the group is formed on a strictly voluntary basis, is restricted to members of the engineering profession, is not affiliated with any trade union and is designed to establish and maintain the employment relationship with a particular employer on a voluntary, ethical and professional basis.

An information service is now available and it is proposed to provide a more comprehensive advisory service to members and to employers. The

Association will not participate directly in discussions between member groups and their respective employers nor will it become a bargaining agent for individual members or for groups of members.

The A.P.E.M., by request of both the employees concerned and the employer, could represent the employee engineers through Council or a committee of Council, in their negotiations with their employer. These representations would not have any legal status except by mutual agreement of the parties. The Association cannot, therefore, purport to act on behalf of a group or groups of employee engineers, but may act as an advisor or a non-binding arbitrator in a dispute.

7. The Engineering Profession Act:

In the main, the purpose of the Association is to administer the Engineering Profession Act, and in so doing, protect the public. Of the approximately 1,500 enquiries annually made from overseas, only about 4% are eligible for registration in Manitoba as professional engineers without examination. This function protects the public from unqualified practice in engineering, limits the supply by the maintenance of high standards, maintains and improves the excellence of the profession, and thus improves the rewards for the true professional.

In conclusion, we might ask ourselves if we are maintaining the prestige of the profession in obtaining a salary commensurate with the level of our expertise and responsibility. It is suggested that we ask ourselves if the service we supply our employer is professional in its content and consider what positive contributions one may make to the Association.

It is recommended that suggestions regarding the "Employee Professional" be made through the Chairman of the Committee on Employee Engineers of the Association of Professional Engineers of Manitoba.

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LEGISLATIVE COMMITTEE

Committee Members: D. J. Sampson, Chairman; L. Domaschuk, Secretary; S. Barkwell, R. T. Harland, A. D. Myska, D. L. T. Oakes.

For several years now, it has been recognized that the Engineering Act, as

now written, is not the perfect instrument for the direction and administration of our Association. However, there are also indications and recommendations from our Legal Counsel that if at all possible, the Act should not be re-written at this time.

The above has been background to all of this Committee's work and considerations in 1969. Early meetings were directed towards appraising the Act and deciding whether or not the dissatisfaction with the Act could be tolerated for another one or two years.

The conclusion was that in two areas—Professional Ethics and Discipline—it was essential that the Act be changed as soon as possible, but by an amending by-law rather than a new act. Recommendations in this regard were presented to Council and a Committee of Council has been formed to assist the Legislative Committee in the preparation of a by-law draft. There has been one meeting with the Committee of Council to establish a course of investigation and action.

The committee members and our Registrar are to be thanked for their in depth consideration and comment on the problems of legislation for the Association. This effort should, as a minimum, result in an "Ethics & Discipline" By-Law in 1970.

Respectfully submitted,
D. J. SAMPSON, P. Eng.
Chairman.

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BULLETIN COMMITTEE

Rather than merely being an instrument for conveying to the membership information on professional activities and reports on association undertakings, it is felt by the Bulletin Committee that the "Professional Engineer" should provide a sounding board for the entire membership of the Association on any subject of current concern or of immediate interest. It would be hoped that the Bulletin would be the means by which the opinions and views of not just committee members but of the membership at large might be made known on any matter affecting the engineer as an engineer or the engineer as a citizen—the engineer as a part of the engineering community and of society. Towards this viewpoint, the four issues of the Bulletin published in the past year

have contained articles and comments covering subjects ranging from the student power problem and Canadian foreign aid to the Southern Indian Lake issue. By thus presenting the Bulletin committee views on these subjects it was hoped the desired exchange within the membership could be evoked. Verbal and written comment (not always favourable) seem to indicate some modicum of success in the attainment of this objective.

It is felt by many engineers that the Association as a recognizable entity in the Manitoba community should be taking a public stand on issues which affect engineers or on issues on which the opinion of the engineering fraternity could be of value. An example of an issue arising during the past year on which it is felt that such a public stand could have been thus taken is that resulting from statements issued by the Federal Treasury Board on the classification and utilization of engineers in the public service. Such a statement affecting a number of other professions would have met with an immediate public challenge. Although the Bulletin cannot represent the official stand of the Association on subjects such as this within the public sector, it can be the means by which the individual viewpoint is realized.

The degree to which these viewpoints become public can be judged by the events of the past year during which on at least two occasions outside interest was invoked by the contents of the Bulletin. In one instance the Winnipeg Free Press, in one of its labour columns, chose to reprint a bulletin article in its entirety and in another instance the view of a member of the committee as expressed in the "Professional Engineer" covering the subject of student-faculty-administration problems on our campuses was challenged by some members of the student body at the University of Manitoba. This latter has resulted in an offer to openly debate the subject. Should this debate come off, future issues of the Bulletin will inform the membership of the results. There is then some interest in the opinions of the engineering community outside the membership of the Association.

There are at present 12 members on the Bulletin Committee. The problem of deciding on subject matter and content, the organization of material, general committee business and the checking of galley proofs required the committee to meet 16 times during the year. Aside from the number of meetings it will be appreciated

that considerable time must be also spent by members attending other meetings of importance (viz:- reporting on Council meetings), researching of subject matter and preparing articles (including cartoons). Regardless of criticism the membership might wish to level at the Bulletin because of form or content, the Committee members in my opinion as editor, cannot be faulted in their efforts on behalf of the Association. It is my opinion that the Association has been well served by the Bulletin Committee.

Finally, might I say to Council and to the membership that the Bulletin is a worthwhile instrument and should be used by Council to directly advise the membership on its business and by the membership in making its views known. It is your Bulletin, use it, and help to further develop it as an effective means of communication.

Respectfully submitted,
W. R. NEWTON, P. Eng.,
Editor.



METS WIN WITHOUT COUNCIL

By J. W. J. LEWIS, P. Eng.

While men of levity gathered round their TV sets on October 15, 1969 to watch the world series, our Council was assembled round their table. In the chair was President Larry Blackman, Registrar Algeo at his left hand side and around the table Councillors Fowler, Hood, Baracos, Finn-bogason, Lansdown, Barkwell, Earp, Hallson and Adam.

Councillor Baracos will prepare the program for the Annual General Meeting. For dinner the guest speaker will be the Premier of Manitoba, ladies and guests are welcome.

The federal government personnel department have expressed the view that their engineers are overpaid and underutilized. The yardstick for comparison were the other professions, lawyers, sociologists and the lunatic fringe. Canadian Council will investigate why engineers are underutilized if indeed, they are. Our council supports this fact finding venture even to the tune of a dime a head assessment for special expenses.

C. P. Bennett, P. Eng., has called for a special meeting to discuss Southern Indian Lake.

There was discussion regarding the merits of a consultant from another

province doing his thing in Manitoba prior to becoming registered in Manitoba. General practice seems to be to allow three months for transfer of papers.

A delegation of the registration board from North Dakota visited our offices and the University on October 17, 1969.

The proposed budget for the coming year was discussed. Fees for 1970 were set at \$30.00 per member.

By this time it was two-thirty and your reporter returned to his paid employment, the council meeting continued. Besides the visit of the delegation from North Dakota there are other hearings, meetings of council and interviews which are not reported here. We are lucky to have so dedicated a group of men looking after our affairs.



STAND UP AND BE COUNTED

Occasionally the Association receives comments from members who think the Association should be doing more for the membership. In order to determine what the members want from the Association, a form is printed below which may be completed and returned to the Association office.

The Association also receives inquiries from members who wish to be of service and at this time of the year new committees are being formed and chairmen are looking for recruits. For the benefit of those who wish to offer their services a form is provided.

I think the Association should offer its members the following services:

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.....

Name of Member

I wish to serve on one of the Association's committees (state preference, if any):

.....
.....

Name of Member

Please return completed forms to the Association office:

710 - 177 Lombard Avenue,
Winnipeg 2, Manitoba.

RESEARCH AND DEVELOPMENT

On March 26, 1969 unanimous approval to applying research and development to increase the quality and quantity of Manitoba's secondary industry was given by members of the Association of Professional Engineers of Manitoba at a meeting held in Winnipeg.

This meeting was arranged and chaired by E. A. Speers, P. Eng. There were five papers in all including Mr. Ian Blicq, Deputy Minister, Department of Industry, Mr. R. G. Hart, A.E.C.L., Pinawa; R. G. Hunter, P. Eng., Air Canada, Montreal; Mr. M. Yunik, P. Eng., Department of Electrical Engineering, University of Manitoba; and the chief speaker, Dr. R. A. Gallop, Head, Food Science Department, University of Manitoba.

This report is, by necessity, a greatly abridged and abbreviated version of one of the presentations of that evening. To those who are intrigued by the problems and the potential involved, we recommend the whole reports on file at the office of the Association.

Excerpts from Dr. Gallop's discussion follow:

"Because almost any factor in the human environment can now be ordered partly or fully to man's will, we must decide what will support and elevate man's dignity and destiny. We need agreement on the objectives of human society on a much higher level than we have in the past, a much higher level than a mere affluent man in a secular society, if our industrial and social growth is to be in tune with man's personality and highest needs."

What resources do we have to enable us to carry these responsibilities?

Human Resources: "We have precious manpower which we must adequately raise, educate and provide the opportunities for them . . ." "We haven't carried out the R & D, we haven't carried out the expansion of industrial and service industry, to take these people and give them a meaningful future in Canada, preferably in our province. The human resources are by far the most important one. Japan, with little more than human resources as a base, has dramatically shown what great things can be done nationally and internationally, when the latent capabilities of 100 million intelligent, resourceful, energetic, disciplined people can be rap-

idly evoked in an industrial development program.

Physical Resources: We have all our utilities to protect and conserve where possible, all our power generating sources, the fuels and this sort of thing. Our minerals are scarce. They may appear to be abundant now but the whole world is very short of minerals of all kinds. We must protect these resources to the utmost, because unwise, inefficient, current use of a scarce irreplaceable resource such as oil, gas, or minerals, will be something that the future generations of this region will greatly deplore. We must conserve resources such as oil and gas. And we have a tremendous pollution worry coming along, when they start digging up all that oil and metals on the continental shelf and polluting our coastal waters with oil and other suspended matter. The fisheries industries are going to be in real trouble, when we don't do our homework on learning how to deal with the pollution mess we're going to get when we start mining under the sea. We've got the problem now of the oil being scattered all over the place but of course people never learn how to soak it up, or are not made to do so by law, before they start releasing it into the sea. This kind of foolishness must stop.

On Water — "We must cycle it much faster than nature is doing if we are downgrading it much faster. And we need to give high priority to R & D investment in water conservation, renovation and re-use. The proper use of recycling of high quality water resources which are scarce, as in Southern Manitoba, can make industrial development in such a region largely independent of the water supply problems which to date have retarded the development of such regions."

On Land — "Our prime land is so valuable that we must put it aside now for its proper function, which is primarily food production. It must be reserved for agriculture of the most scientific kind." ". . . where we'll have farms run by engineers who are sitting in control towers rather like that at the Winnipeg airport. They will have several radar screens, to control semi-automatic major harvesting machines going back and forth on long straight runs, switching every 30 or 40 feet, swinging round, and coming back. The flat lands of the world, particularly in this area have a logical place in this development. The food industry is being forced out of the Niagara Peninsula and such places as the Fraser Valley by settle-

ment. We are losing approximately one half to one acre of prime agricultural land per person settled in these regions. The future in this flat prairie, if it were reserved is incredible to anticipate."

IMPEDIMENTS TO INDUSTRIAL GROWTH:

Attitudes: "We must cease to be proud of shipping primarily raw materials away from this province. Any society today that is happy to mine and ship raw materials in essentially raw forms, such as mineral ores slightly purified by floation or maybe sintered, and such things as wheat all over the world, is an undeveloped society and Canadians should not be quite so proud of this in our 102nd year. These are primarily raw materials. To do this kind of thing and to complacently build a future on this kind of industry, shows that we are not in contact with reality. We must stop wanting to copy others. Our duty is to lead, not to follow. We must get up and go rather than wait for the other fellow because when we follow the other fellow we adopt obsolete technology. We buy somebody else's model of a machine or a production line. We mimic his product which his R & D has already supplanted. He's ready to change his process by the time we copy it. We are always a half phase behind in many industries that are changing rapidly, if we adopt this process.

We don't have a high degree of confidence in ourselves and fellow Manitobans. This is something that I as an outsider to this province, and an outsider to Canada want to reassure you on. We have in this city, in this province, the finest band of professional men I have ever met anywhere in the world. We have here a fine bunch of co-operative, capable men of great insight and tremendous potential. Let's have the highest possible degree of mutual confidence in each other and interdependence on each other, to get the job of R & D in Manitoba done. There's very few places in the world that have this kind of cohesion and brainpower, and a brain centre is a first prerequisite of real good R & D programmes."

"We must stop not thinking and not acting very creatively. The old ARC rule — Attitude, receptability and creativity applies. We have to change our attitudes, to realize that we have — let me assure you as an outsider — nothing to be ashamed of here, nothing to be reticent about, but a lot to be very proud and optimistic about."

Waste and Pollution: "Any industry today has to face the full consequence of all its actions and rightly so. Whenever we convert any raw materials to products we usually have some water used and wastes created. These are impediments to growth. In several parts of the world, potato processing plants are currently having to stagnate, face crippling charges for effluent waste disposal, or close down and possibly relocate because they have not done their homework on water and waste control problems. They haven't done their housekeeping on their process. They haven't looked after their raw materials. They have created intolerable levels of these problems. Now waste in itself is nothing abnormal. We have to have wastes. But pollution is abnormal. Pollution is the differential between the rate at which we regenerate it. We need not have pollution, but we must be prepared to deal with these things much more rationally than we have in the past."

"The other impediments of course are usually financial problems, transport problems and market problems which more or less are real ones. It is absolutely essential that we have much more R & D here, because we must have growth of the GNP in Manitoba, to even keep the present quality of life per capita. For instance, unless we achieve this, our universities won't have the funds in the future to carry their teaching responsibilities properly with a much greater Provincial GNP, below the disincentive levels of tax rates. We must increase the GNP of the province rapidly and greatly, by one of two factors or preferably by both. Tourism is a major industry — the major support of many countries of the world and not to be neglected by any means, and engineers are involved in that. But R & D which leads to secondary industry expansion, is the major growth factor which we must promote. We simply have to raise the GNP to keep a tax level here that is tolerable, or we will lose more of our most valuable people."

MANITOBA'S OPPORTUNITIES:

Dr. Gallop deals with this subject over the last thirteen pages of his talk, outlining the potential advantages geographically, financially and regionally. He outlines many opportunities in the food industry resulting from the application of R & D to basic primary food products and waste. He outlines the potential in import replacement industries, such as spices. "We must develop saleable patents, gadgets, machinery, "know-how,"

instead of buying them. We must call into productive use many more raw materials, especially in agriculture, forestry and minerals. If this is to take place we must get busy on R & D here. We can then expand, as we must, all the ancillary trades, service industries, education, merchandising, transport, marketing, general business, and government."

"Total utilization would enable millions of possible products to be designed and evaluated for marketing. If we know the processes well and can produce the necessary raw materials of the right type, in the right quantity, and place and time, we can achieve total utilization, with endless flexibility to move back and forth in products, as the market or other changing factors dictate. And we must have this ability to change utilization patterns of crops if more crops are not to face the present chaos and despondency in the wheat trade. Also, the total utilization concept can greatly reduce or eliminate the traditional costs of waste disposal, which will otherwise have to be carried by industry, and it is usually a millstone causing stagnation or retarded development."

"By eliminating waste we can generate sufficient savings to get this concept under way."

"We create tremendous problems by wasting resources, such as creating millions of gallons per day of unnecessary effluents and tons and tons of unnecessary garbage. 10% bruising in potatoes can lead to 90% wastage from storage later, at huge cost. We have to pay for all this now. So we must stop creating these problems. This is the first thing. We must improve our housekeeping. This can mean tremendous savings. I can give you an illustration. One Plant Manager who heard me talk about water and waste control last year, rang me up a couple of months later and said "Since I heard your talk I have saved twenty-five thousand dollars in water bills." He didn't need \$12,500 worth of water per month that he had been wasting, he just carried out some elementary housekeeping."

On understanding our industries through research:

"We must understand the inter-relationship of all steps in an industry. In our food industry these range from water, genetics, physiology, chemistry versus quality, through storage to processing, packaging, marketing, and then the clean

up procedures which we can and must use. Every craftsman has a responsibility to clean up his workshop when he is finished his work of art."

"Air pollution is just a highly refined form of chemical warfare against one's neighbour."

"Our research emphasis must have a good overview, with a special effort being made to overcome the weaknesses in the understanding of those links involved and the control of the links in the chain. The chain must be complete, even if some of the links are weak. We cannot persist in having the "broken chain" industries. We currently over-emphasize some part, such as merchandising and selling, and neglect the vital parts, such as R & D or water and waste control. Industry after industry is facing the wall now, because of this kind of foolishness."

"We must keep a close eye on local and world developments in our society. We must anticipate changes in demand for products and services early—we must learn how to meet them in good time, first qualitatively, and then later prepare to do it quantitatively as the major market opens up. So we have to develop research and development on a small scale through a pilot operation, particularly on processes. Not how to make a lot of product but how to do things, and forget economic costing at this stage. We must find out if it is technically possible, before we worry about economic costing, because we cannot cost realistically until the scale is big enough, and secondly, by the time we come to costing on a major scale operation, all the factors which affect cost will be very different to what they were at the pilot scale. This is what is happening in the water and waste field now. Industries which did not effectively control their water and waste disposal problems, because they were allowed to neglect this responsibility, only carried 60-90% of the realistic costs of a good operation. Now they have to carry 100% and look what happens to their cost picture. We must critically evaluate where we are, versus our competitors and our collaborators. This is the base line, and we must have this information before we go ahead on research."

"We have found that solid wastes from processing crops, both from the farm and from the processing plant, such as straw, potato culls, and other similar organic matter, can be effectively disposed of by drying and carbonization into activated

charcoal, which is an increasingly valuable chemical with many functions, such as in de-activating pesticide residues in soils by absorption, and particularly in the purification of water and air for many purposes, including food processing. We can thus replace pollution by depollution measures when disposing of wastes."

"Thus we think we can make many food processing plants essentially independent of major supplies of water, when water is scarce and expensive, or we can anticipate enlargement of such plants by 5-10 times, without having to worry too much about problems of water supply or discharge. And when a proper solids disposal system such as the activated charcoal process, is built into the overall operation, the plant can become self-sustaining, and largely independent of waste discharge facilities such as external sewage works, rivers, lakes, land etc., with all the advantages involved, particularly in largely eliminating environmental pollution, which is undesirable, unnecessary, and a form of negative advertising that all of us must avoid." — E.A.S.



CONTINUING EDUCATION

Four non-credit courses were offered this fall at the University of Manitoba through the Department of Professional Studies, Extension Division, University of Manitoba. Final registration in the courses was as follows: Fortran IV, 12; Finite Element Method in Engineering, 6; Structural Engineering Computer Workshop, 6; and Direct Current Transmissions, 2. The Direct Current Transmission course had to be dropped due to a lack of participants. Although the Structural Engineering Computer Workshop did not attract the necessary number of participants to successfully present the course, it is expected that if additional participants are found the course will be presented in a form modified from that originally suggested. A meeting of those interested in the course and the instructors will be held towards the middle of November, 1969. Letters have been sent to those who have expressed an interest in the course explaining the delay in getting the course underway. It is anticipated that the course will start early in 1970. Those interested in the above course are requested to contact Prof. E. Shapiro.

A number of courses will be offered by the Department of Professional Studies, Extension Division, University of Manitoba, in early 1970. These include Taste, Odor Control and Microstraining; Sewage Lagoons; Pumps and Pump Controls; Wind Action and Its Effect on Structures; Design in Plastics; Air Photo Interpretation; and Circuit Design. Information on the courses is available from Prof. E. Shapiro, Department of Professional Studies, Extension Division, University of Manitoba, Winnipeg 19, Manitoba at 474-9623. — P.F.



STUDENT REVOLTS!

By E. E. LACH, P. Eng.

What a change there has been in the concept of a University in the past decade — and brought about by radical members from a society that has the means to send them to college.

Long regarded as a sanctuary for freedom of thought and expression of ideas, a place where opposing ideas were debated and discussed without resort to violence, universities now are places and targets of violence and destruction by student radicals.

Student rebels today even reject the scholastic authority of the professor, a drastic change from the past, and the only basis it seems on which mass higher education is possible.

To say that nothing is to be gained from the costly student violence would be deceiving ourselves into believing that one side can be totally wrong and the other totally right. Every generation attempts to make this world a better place to live for those that follow and so the criticism of the older generation by youth should be listened to and heeded. Surely, man has so far failed in stamping out to an acceptable degree hunger and the related sufferings and discontent as we know it in the world today. Surely too, our highly productive society is destroying nature, polluting our airspace and our fresh waters. Concerned as one may be, these are issues which even a naïve student radical should not expect to see corrected overnight. They cannot be achieved by their methods of revolutionary tactics and force. The civilized society requires that profound changes be debated, discussed and accepted without destruction of the whole before adjustments can be

made. The radicals on the other hand promote the idea that society will not change except by force.

Quite possibly this is where our recent experiences of student revolt will be of greatest benefit, to recognize their true nature, aims and consequences.

The idea that force is necessary for change, is the strategy of a few radicals who are interested more in revolutions than social changes. Further to this, the charges of inhumanity and dishonesty of our society by student radicals is without doubt the mouthing of the beliefs of the far Left.

One leader of the McGill demonstration was not simply a student agitator or radical but an avowed Marxist. His goals are not educational reform but total destruction of our democratic way of life.

It is also known that the McGill operation was financed to the extent of \$1500.00 by El Fatah, an Arab terrorist organization in Algeria.

Further to these observations it has been recognized that successful student revolts in western democracies tend to occur in systematic identifiable stages which supports the idea that far from being the genuine cry of our concerned youth they are part of an overall plan of disruption and destruction from an outside force.

Does this sequence of events not have a familiar ring?

- 1) A small minority singles out an issue such as race, language, war or poverty, any of which are outside the realm of university jurisdiction;
- 2) Unable to act on the demands of this issue the university administration finds itself marked as an enemy of truth and justice. The news media in reporting this activity repeat the allegations of the rebels which tends to give the proceedings a degree of dignity;
- 3) Students sensing a genuine cause grow in number and a bolder act such as a sit-in or seizure occurs forcing the authorities to call out the police;
- 4) The overall results include not only temporary scholastic interruption but also faculty splits and in many cases a defeat of the university administration as well as the charges

of police brutality and the encouraging of many to defy our laws and the officers responsible for enacting them.

The challenge then is for the university administration to recognize a planned student revolt and to maintain control — by force if necessary.

For parents, political leaders, and teachers interested in preserving our democratic way of life and the opportunities for mass higher education there is a challenge to close the "communication gap" with youth, accept their recommendations and challenge them to work from within the present framework. The education system specifically could be improved by student representation provided that representation is not a power to veto on curriculum, faculty appointments or university administration.



LETTER TO THE EDITOR

PROTESTS SMUG OLD MEN

Dear Sir:

During the past year, since I moved to Manitoba and became a member of the Association of Professional Engineers of Manitoba, I have been disappointed with every issue of **The Manitoba Professional Engineer** (the Bulletin). What I dislike is the consistently conservative and reactionary tone of all the editorial comment in each issue. It actually **sounds** as though the people writing for the Bulletin are a group of very smug, self-satisfied old men.

It is my opinion that if the Bulletin is going to include editorial material (and I think it should), then the Association has a duty to its members to ensure that this material covers a wide range of subjects which bear on the engineer's professional responsibility for the social effects brought about by technological (i.e. engineering) developments. It seems to be necessary to periodically remind the membership that engineering is supposed to be a profession dedicated to the application of scientific discoveries to the **betterment** of mankind rather than to its detriment, and that engineering was never intended to be dedicated solely to the betterment of the individual engineer's financial status (e.g. salary surveys, etc.). Furthermore, the editorial material needs to be far more **balanced** than it has been: there must be room for more than one point of view.

With all these thoughts in mind, I have enclosed the sort of article I would like to see published in the Bulletin. The article is a speech by Professor George Wald of Harvard University which gives a different point of view on student unrest. It also reminds those responsible for technological developments (i.e. engineers) about the directions these developments are going and how they threaten all lives on this earth. Dr. Wald is a highly qualified scientist and is highly respected. His speech has been given a favourable review in **Maclean's** magazine and has been published in its entirety in **The Boston Globe** and **I.E.E.E. Spectrum**. Although some members of A.P.E.M. may have seen Dr. Wald's speech in **I.E.E.E. Spectrum**, for the benefit of the rest of the membership I urge you to republish it in the Bulletin.

I have enclosed a letter from Dr. Wald which authorizes the republishing of his speech. (The handwritten change in his letter is his.) Also enclosed are copies of the speech as it was published in both **The Boston Globe** and **I.E.E.E. Spectrum**. Please note the different layouts and editorial introductions in the two renditions. I will agree that the speech is a bit long for the size of the Bulletin, but it is worth the extra space. The least that you can do is publish the main highlights. If restrictions on publication space so dictate, I would be quite willing to assist with the editing of Dr. Wald's speech.

For both the improvement of the Bulletin and the professional outlook of the members of A.P.E.M., I ask you to please consider my requests seriously. Publish the speech and prove that the Bulletin Committee really isn't a group of smug, self-satisfied old men.

Yours truly,
Peter J. Nelson, P. Eng.

♦ ♦ ♦

EDITOR'S NOTE:

A reply to Mr. Nelson's letter has been forwarded to him indicating that:

(1) because Dr. Wald's speech has already had very wide distribution through the public press and in the magazines and publications mentioned by Mr. Nelson;

(2) because the speech is of such a length as would require the largest part of a normal issue of the bulletin to reprint;

and(3) because the policy of the bulletin committee is to only include in the "Professional Engineer" articles written and prepared by the membership of the Association, it has been decided that the speech should not be reprinted in the pages of the "Professional Engineer."

Copies of Dr. Wald's speech can be made available to those interested in the pros and cons of the Viet Nam conflict by contacting the Association office.

Mr. Nelson's letter is reprinted herein as an expression of his opinion on the editorial content and general quality of Bulletin commentary. These are his opinions and although we on the committee do not agree with him entirely, we suggest that his opinions have a right to be expressed and since Mr. Nelson is a Registered Professional Engineer, he has a right to see these views expressed in his Bulletin.

Mr. Nelson has been invited to meet the Bulletin Committee members at his convenience so that he may judge at first hand whether or not we are in fact "very smug, self satisfied old men."

W. R. Newton, P. Eng.,
Editor.

♦ ♦ ♦

ENGINEERS SINGLED OUT

Recently the Government of Canada granted increases in salary to all of its employees. The Public Service engineers, however, were singled out for treatment much less favourable than members of other professions within the service.

The reason given by senior Treasury Officials and apparently agreed to by the government was that "Professional Engineers in Canada are generally under-utilized and/or over-classified." It should be noted that the statement does not specify only federal government engineers. Apparently this argument does not apply to the dozens of other professional groups within the service, since none of them were downgraded in this manner.

We do not intend to defend engineers or draw comparisons with other professions, or to make further comment on the attitude of the government in this matter. We merely publish this information as a matter of interest to the membership.

— R.M.S.

A.P.E.M. BRIEF TO THE SPECIAL COMMITTEE OF SENATE A SCIENCE POLICY FOR CANADA

Following is a brief which the A.P.E.M. submitted to the Special Committee of the Senate regarding a Science Policy for Canada.

The brief was prepared by Messrs. A. Round, C. Templeton, J. Adam, and A. Lansdown.

The areas in which some work has been done to shape a national policy are as follows:

1. Space Research
2. Water Resources
3. Urban Development
4. Transportation
5. Computer Applications
6. Scientific Aid to Developing Areas of the World.

It is very important for all Professional Engineers to be aware of this planning process and to actively consider it.

— R.M.S.



BRIEF TO THE SPECIAL COMMITTEE ON SCIENCE POLICY OF THE SENATE OF CANADA FROM THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF MANITOBA

A. INTRODUCTION

The Association of Professional Engineers of Manitoba operates by authority of the Province of Manitoba under the "Engineering Profession Act." It has about 1300 licensed members residing in the Province of Manitoba.

The Association recognizes the changing role of technology in our society and supports activities which will assist in keeping its members

abreast of advances in their specific spheres of activity. Most of all, it **protects and serves the public**, for which purpose it has the responsibility for licensing Professional Engineers in Manitoba.

The Association supports the participation by its members in the planning and coordination required to define and evaluate difficult areas in science matters relative to society and in the devising of plans for evolving solutions, as well as supporting the co-operation of its members in the subsequent carrying out of approved plans. (These matters must be kept in perspective with our size and resources as an organization).

B. SUMMARY OF RECOMMENDATIONS

1. The Association of Professional Engineers of Manitoba subscribes to the general theme of Report No. 4 of the Science Council.
2. A way must be found for as broad a participation as possible in the development and achievement of approved programs.
3. Regional development must be considered.
4. Self-generating regional technical communities must be developed.

C. DISCUSSION

1. The Association subscribes to the general theme of Report No. 4 of the Science Council of Canada. This is an excellent base for studying how science programs should be defined and rated for the benefit of society. We believe that these principles are for the good of Canada and should be explored fully by all levels of government and industry and implemented to the greatest degree.
2. Our Association believes that if these goals are to be achieved on a national basis, they must be broken down into as many components as are required for the **whole** of Canada to participate in their achievement.

For example, we subscribe completely to the principle that industry must take a far greater role in research and development than it has in the past. But if all the technical skills available for research and development are concentrated

in the larger centers, which could well happen, the long term goal of Canada would not be achieved if other centers remained under developed.

3. We believe that the national goals recommended by the Science Council need also to be sub-divided into regional goals, so that technological skills will be developed for goals which are pertinent to specific regions. When we say we would like "regional" goals and objectives to be set, we are not suggesting that regions be subsidized unnecessarily; but only that a sincere effort be made by government, universities and industry to create regional technical communities having sufficient capabilities to be self-generating. Neither are we suggesting that all regions should strive for technical competence in all fields, for to do so would result in capabilities that are too thinly spread out. Rather, each region should strive for competence only in those fields that are **meaningful** to that region.
4. We are convinced that the key to a strong national technical capability is the development of self-generating regional technical communities. By this we mean that the industries in each community will promote the development of specific skills for their own use. The availability of these skills in turn will generate other industries using similar skills, thus forming a common pool of specifically-skilled people in a particular region.

We are now taking steps to have some forums on this subject, which will discuss Manitoba's goals. Thus we hope that when your investigations progress further we will have more meaningful ideas of what portions of the national goals should be achieved in the Manitoba region:

Association of Professional
Engineers of Manitoba

April, 1969

♦ ♦ ♦

Tilden Rent-A-Car System have offered to extend a 20% discount to all members of this Association. Anyone interested should merely present his membership card as proof of registration.

PHILOSOPHICALLY YOURS

Work is the open sesame to every portal, the great equalizer in the world, the true philosopher's stone that transmutes all the base metal of humanity into gold.

— Sir William Osler.

Anyone knows that patience is necessary if you want to achieve anything worthwhile. Yet for modern man patience is as difficult to practise as discipline or concentration.

— Erich Fromm.

If a little knowledge is a dangerous thing, who then has so much as to be out of danger?

— Thomas Huxley.

In accepting life, one must accept the fact that one cannot always be right.

— C. S. Bluemel.

Resolve to be thyself; and know that he who finds himself, loses his misery.

— Matthew Arnold.

Ful Wys is he that can himselven knowe.

— Chaucer.

As men, we are all equal in the presence of death.

— Pubilius Syrus.

Let a fool hold his tongue and he will pass for a sage.

— Pubilius Syrus.

How awful to reflect that what people say of us is true! — Logan Learsall Smith.

The whole difference between construction and creation is exactly this; that a thing constructed can only be loved after it is constructed; but a thing created is loved before it exists. — G. K. Chesterton.

The greatest of faults, I should say, is to be conscious of none.

— Carlyle.

May blessings be upon the head of Cadmus or the Phoenicians, or whoever invented books! . . . An art that carries the voice of man to the extremities of the earth and to the latest generations.

— Carlyle.

I love the man who knows it all,
From east to west, from north to south,
Who knows all things, both great and
small,

And tells it with his tiresome mouth.

— Robert Jones Burdette

If matter mute and inanimate, though changed by the forces of Nature into a multitude of forms, can never die, will the spirit of man suffer annihilation when it has paid a brief visit, like a royal guest, to this tenement of clay? No, I am as sure that there is another life as I am that I live today. — William Jennings Bryan.

1970 Draft Budget

REVENUE

Annual Dues — including Penalties, Transfers, Reinstatements, Engineers in Training	\$54,250.00
Licences	500.00
Registration Fees	5,500.00
Exam. Fees and Misc. Income	1,000.00
Investment Income	1,700.00
	<u>\$62,950.00</u>

EXPENDITURE

Salaries	\$29,189.00
Office Rent	3,224.00
Janitorial Service	288.00
Printing Supplies, Equipment	7,500.00
Telephone and Light	650.00
Postage	2,750.00
Canadian Council Levy	3,970.00
Council and Committee Meeting Expense	900.00
Annual Meeting (Incl. Bulletin)	1,400.00
Audit Fee	400.00
Legal Fees	3,000.00
Certificates and Seals	1,300.00
Publication	2,500.00
Roster	200.00
Public Relations	150.00
Travel	1,800.00
Miscellaneous (Memberships, Cleaning Equipment, Florist, etc.)	1,000.00
Special Activities (Dance, Golf)	Nil
Student Activities (Scholarships, Rules, Iron Ring, University of Manitoba publication and 4th Year Dinner)	1,300.00
A.P.E.M. 50th Anniversary	1,200.00
Career Guidance and Counselling Committee (Slide presentation)	300.00
	<u>\$63,021.00</u>

Budgeted Deficit — \$71.00