Fall Seminar October 5 and 6
Set For the Berkshires

Fred MacInnis and Charles Shields have prepared a most interesting program for the Fall Seminar to be held on Thursday and Friday, October 5th and 6th, 1967, at the Oak N Spruce Resort Lodge, South Lee, Massachusetts. (Directions on back of reservation form enclosed.)

HOSPITAL ARCHITECTURE

Augmenting the duty of Maintenance Engineering lies the never ending awareness of new trends in hospital architecture. Inevitably all areas for future construction will affect the hospital engineer who often censures plans and specifications for pitfalls.

Philip B. Kelly, Professional Engineer and Executive Vice President of Richie Associates, Inc, and Peter M. A. Moyes, A.I.A. Vice President, will cover "under the general heading of Specifications, the types, intent, what they should do and general philosophy of a specifier; and under Contracts the elements of the contract, general conditions, proposals, security, etc. The subjects (specifications and contracts), will be presented in detail to the members present and should offer some enlightenment in the legal aspects of dealing with contractor, architect and possibly governmental agencies.

Two other programs will also be included in the seminar. Mr. Norman Metzger, Director and Personnel Manager of Mount Sinai Hospital, New York, New York, will talk on a

(Continued on page 2)

Welcome Aboard

GEORGE L. BEITNER
Platt Superintendent
St. Vincent's Hospital
2320 Main Street
Bridgeport, Connecticut

J. A. JENSEN
Assistant Chief Engineer
Veterans Administration Hospital
West Spring Street
West Haven, Connecticut

CLEMANT A. MIRON
Plant Supervisor
St. Joseph’s Hospital
220 Pawtucket Street
Lowell, Massachusetts

ROBERT LANGLOIS
Chief Engineer
Rumford Community Hospital
Franklin Street
Rumford, Maine

JOHN W. MANZ
Administrative Engineer
Yale - New Haven Hospital
New Haven, Connecticut 06504

Know
Roger McAlister

Those in the society who have met Roger realize the interest which he maintains in a group discussion. Roger, Administrative Engineer at St. Mary's 398 bed hospital, Waterbury, Conn., is in charge of 26 engineering and maintenance employees and is directing a large renovation project. Employing monolith-epoxy floors, the Central Monitor Control Center (see newsletter article) and a new communication system in the hospital keeps him constantly abreast of the latest trends in hospital engineering.

Born and reared in Denora, Penn.,

(Continued on page 4)
Fall Seminar 
(Continued from page 1)

subject entitled “Hospitals and Unions.” Mr. John Willis, Director of Security Nationwide for Pinkerton, Inc., and Vice President in charge of Pinkerton Security Service will talk on “Hospital Security and Investigation.”

There will be a question and discussion period subsequent to the talks.

Reservations for the seminar and lodge may be obtained via the enclosed card.

Two plans are proposed for this pleasant long weekend.

Plan “A” arrive Thursday afternoon, Oct. 5th

3:00-6:00 — Registration
6:30  Banquet Dinner
Prime Ribs of Beef

Friday

7:30-8:30 — Buffet Breakfast
10:15-10:30 — Coffee & Danish
12:30 — Old fashioned outdoor
Chicken Bar-B-Q or
Fish supper (check choice)

3:00-3:15 — Break

Cost: $21.43 per person, double occupancy room with private bath includes above meals, tax and tip.

$17.73 for wives include above meals, tax, tip and foliage bus tour Friday afternoon.

Plan “B” as above PLUS — remain Friday night and depart Sunday afternoon, October 8th. Total of 8 meals, 3 nights, lodging, free golf, dancing, recreation, relaxation, taxes and tips. A pleasant long weekend in the Berkshires - $52.50 per person.

If you have any questions concerning the program please call:

Fred MacInnis
Cooley Dickinson Hospital
Northampton, Massachusetts

WHAT VALUE EVALUATION SHEETS?

PART II

In the February edition of the spring newsletter, an article heading, identical to this one, was written, questioning the value of the evaluation sheet. In the article it was stated by Sam Thorpe, Lowell General Hospital, Lowell, Massachusetts, that “if properly and intelligently executed,” the evaluation sheets “could be of great value to the officers and committees of the organization in planning future meetings.”

You may recall that during our annual program of NEHES, March 28, 1967, evaluation sheets were handed out to the 83 members present, requesting their interest in subjects for future programs. Fred MacInnis, Treasurer, sent this editor a break-down of these interests as they appear here:

Persons Subjects
15 Air conditioning, heating and ventilating
13 Training, staffing and preventative maintenance
10 Hospital designs and architectures
 (acoustics, patient rooms, semi-private and private, new interior finishes, application techniques, wall covering, materials used in new construction, of hospital, building construction and new building equipment.)
9 Hospital Communication (2 way communication, equipment monitoring, execuphone-executone, remote monitoring, ICU monitoring and treatment, associated electrical hazards)
6 Hospital security
6 Safety (fire doors, smoke barriers, fire protection, safe floor construction, disaster and fire safety).

It would appear that our seminars for future programs will now be well oriented and that this will give committeemen ideas for future seminars. Consensus of opinion would lead us to believe that:

1) The evaluation sheets were valuable.

2) The members did fill them out at the meeting.

3) Perhaps if questionnaires were short and concise, as this one was, that the individuals would take the initiative shortly after the meeting to reply then and there.

4) The evaluation sheet is a good method for collecting data.

DON'T FORGET THAT THIS IS YOUR ORGANIZATION. SUPPORT ITS PROGRAMS AND EFFORTS BY NOTIFYING RESPECTIVE STATE REPRESENTATIVES OF YOUR INTERESTS.

Verne R. Clow
Editor—N.E.H.E.S.

Engineer's Bookshelf

Engineer's Bookshelf

During the past years this listing has carried many excellent books which have been of great value to hospital engineers, but this book is about the most handy and useful reference book reviewed by this newsletter to date:

DON GRAP'S DATA SHEETS
Reinhold Publishing Corporation
450 Park Avenue
New York, New York 10022

These pages illustrate many thousands of simplified facts about building materials, planning and construction. 800 pages of excellent factual information concerning simplified contracts, perspective layouts, flooring, painting, paving, framing, finish work, handrails, stairs, hardware, lighting, heating, insulating, piping, sign work, etc. Ideal for drawing references on project work; this book has received many compliments by architects, contractors, engineers, and maintenance personnel.

ROY HUDENBURG WRITES A BOOK

Many of us remember Roy Hudenburg when he managed A.H.A. Institutes of Hospital Planning and Plant Operation. Roy is one of the more knowledgeable men in the field and has written a book entitled:

PLANNING THE COMMUNITY HOSPITAL
Printed by McGraw Hill
3330 West 42nd Street
New York, New York 10036

(Continued on page 6)
CONTROL CENTER FOR HOSPITAL EQUIPMENT AND UTILITIES

The Heart Rate Monitor in Intensive Coronary Care Units measures a patient's heart rate, temperature, blood pressure, amount of oxygen in the blood, records this information, alerts the person in charge with an alarm and automatically compensates for patient heart deficiency. This piece of instrumentation is regulated through a central monitoring control and would be most analogous to the central control console used by hospital engineers in some of the larger hospitals in the United States to monitor and control equipment of the Physical Plant.

The engineers' central control console is the size of an office desk and may be increased in size and complexity to meet the demands for future hospital growth. Its capabilities are many fold and its desirability unquestionable. Air stream pressure switches, centrifugal switches, thermocouples, photo-electric cells, and many other sensing devices can give you basic information to measure various items which must be recorded on the console. The measuring of temperature, speed of rotary machinery, velocity and quantity of gases, and the height of a liquid in a container are a fragment of the capabilities offered by the sophisticated instrumentation on today's market.

Capabilities of the console include:

I. COMMUNICATION
A) By means of telephone and intercom to various machine areas and the control center.
B) Closed circuit television whereby a cluster of gauges, etc., may be seen and read at the monitor location.

II. INDICATION
A) Conditions of any vital point are known by means of a normal and off-normal indication at the monitor site.
1. Normal or off-normal temperature, relative humidity, pressure, or flow.
2. Binary signals indicating start - stop, on-off, open - closed, etc.

III. DISPLAY
A) A graphic or symbolic display of the system, i.e., a machine area.
1. A color filled space- engraved panel.
2. The projection of any one of a number of systems using 35 mm slides or 35 mm strip film with automatic projection.

IV. CONTROL
A) Motor start-stop.
B) Reset of electronic and pneumatic controllers.
C) Positioning of both the electronic and pneumatic manually regulated control devices.

V. RECORDING
A) Logging a preselected schedule automatically.
B) Logging the values or statuses of:
1. All points.
2. All off-normal points.
3. All points of a selected system.
4. All off-normal points of a selected system.
5. Any point.
C) Recording point values identified by a number and a dot.
1. Red is off-normal.
2. Black is normal.
3. Green is the status of a particular point.
D) Totalizing, which registers total volumes, as gallons of water flow per period of time, etc.

VI. ALARM
A) Visual and audible indication of off-normal equipment and environmental conditions.
1. (Visual) The operator of a console can do other tasks in the vicinity of the control without requiring constant supervision.
2. (Audible) When the operator is a considerable distance from the control center, an alarm is set off whereby he may be notified that trouble is prevalent in any one particular machine area.
B) Alarm cutouts - when a particular machine is intentionally shut down in a normal course of building
(Continued on page 4)
Control Center
(Continued from page 3)

operation a sequence of meaningless alarms shall not occur.

C) Other alarms
1. Smoke detection
2. Security
3. Point alarm or status enunciator

These six features of the control panel may provide for automatic coverage of all machine areas and rooms in the hospital for the three shifts. With manual operations, a specific point was under surveillance only while the maintenance man was actually at that point. A check, previously made every eight hours, may be controlled by the panel in a matter of seconds. Certainly this cuts maintenance costs to an appreciable degree.

Point-sensing controls on hundreds of thousands of pieces of equipment, to include vigilance over cooling, heating, venting and special patient service systems, frees maintenance men from routine checks and thereby makes them available for other engineering and maintenance tasks, project work, or repairs. Expedi tious discovery of malfunctioning equipment may save costly machinery from permanent damage and prevent a serious outage which might well adversely affect patient care. More proficient usage of the existing manpower of the maintenance crew may allow the present crew to handle an enlarged monitoring job.

In the event of a blackout, critical areas, like the operating room and extensive care units, could be shifted to hospital emergency power in a matter of seconds with the use of the control console. If emergency power is not capable of taking over the full load of equipment, certain pieces of equipment which can be spared would be shut off. With the return of outside power or emergency power or when the emergency power reaches it peak, the shut down equipment can be restarted. Formerly, maintenance men would have to start each piece of equipment. Complete electrical tests, simulating blackout conditions as often as is practicable, can be made most readily to assure emergency equipment is working correctly.

SIZE

The console is not much larger than an office desk (see picture). It contains the devices which can be used by the operator to perform a wide variety of inspection and control chores at the press of a button. Its capabilities can be illustrated by the following through the handling of a control job.

EXAMPLE OF CAPABILITIES

Temperature adjustment is needed in a section of the hospital. The operator must control the temperature changing apparatus by the use of numbers. To ascertain the numbers which will apply in this case, he dials a code which projects on the viewing screen a diagram of the temperature control unit which needs to be adjusted. This may show a large section of the heating system with a list of numbers for the various control points. Finding the control points that he needs to adjust, he then dials its number into the system. Then the increase or decrease motor is called into play to make the needed change in temperature.

When it reaches an alarm, that some point being monitored is not operating properly, the operator first hears a bell sound, then can find in digital code the precise area where the trouble is located.

Automatic scanning, possible with the central control, makes it possible to check, correlate, and control on a continual basis, mechanical equipment, to include critical temperatures, pressures and humidity for the entire complex.

Also provided is a fast means of ascertaining malfunctions of any of the equipment whether it be an overheated fan, a hot motor, a sticky valve or troublesome piece of machinery.

The operator is provided a prompt way of checking temperatures and humidity in such critical areas as operating and delivery rooms, but he also is able to switch entire buildings from heating to cooling to meet changing outdoor conditions and without leaving the center to control outside air dampers and turbines.

We as hospital engineers, becoming more involved with modern and complex technological advances, must use these same advances to compete with the desirabilities of modern hospitals in function, design and growth. It would be most advan-
tageous for the engineer to promote and inform his administration and trustees of the attributes the control console possesses and to figure for its installation in future design. Once such a system is initially installed, it may be developed to a size to meet the demands of any future addition to the hospital.

Know Roger McAlister
(Continued from page 1)

he graduated there from high school. Roger also holds an engineering degree in the United States Merchant Marine Academy. Serving as a lieutenant during World War II, he has had various background experiences in engineering to include:

(1) Serving as an overseas engineer for the Heinz Company.

(2) Refrigeration Consultant Engineer for the Extended Marshal plan.

(3) Eight years as a consultant to the Turkish government living in Ankara, Turkey.

(4) Employment at the Hubbell-Lawless and Blakely Company of New Haven, Connecticut, prior to going to St. Mary's in June of 1963.

Roger is married to the former Dorothea Volker, who is a Physical Therapist at St. Mary's. They have two grown children: Captain Roger Lee McAlister, who has recently returned to duty after serving in Viet Nam and will be sent to Germany for the remainder of his tour of duty, and Mrs. Pamela Plumbeg, a resident of Kansas City, Kansas. Roger is active in many organizations. He is President-elect of the Connecticut Hospital Engineers Society and is serving as state representative for our own N.E.H.E.S.

PAY YOUR DUES

Please mail your dues to:
William T. Doherty, Secretary
St. Francis Hospital
Hartford, Connecticut
Proposal For Junior Colleges

Many Hospital Engineers and Technicians are past graduates or trainees of specific professions. As of now there are few or no colleges today which offer a Bachelor of Science degree or Associate degree in Hospital Engineering. Yet this field is becoming so complex and involved, with the advancements made in the space age, that it would appear some degree of formal education might be very beneficial for future Hospital Engineers.

From the nut and bolt or handyman the Hospital Engineer was regarded as, emerged he, who in most cases was required to have a college degree in some particular specialty. Many are chosen from the ranks of those holding degrees in Industrial Management, Industrial Engineering, Construction Engineering, Marine Engineering, etc. Specialized in one field, much of the orientation and education of other trades and departments within the hospital would necessarily be derived from 'on the job training'. Some degree of training, however, if the opportunity is taken, is afforded by recognized programs such as the International Correspondence School, Manufacturers' Schools, (often a week or so) and the Hospital Engineering Program offered by the American Hospital Association. Needless to say, employment as a Hospital Engineer offers a tremendous potential and educational opportunity.

Mr. Alex Bender, Superintendent of Buildings and Grounds, Wallingford, Connecticut, and Dr. George H. Parks, Assistant to the President of Williamsport Area Community College, have drafted a Hospital Maintenance Technical Associate Degree course. The ingredients include the cooperation of a hospital or hospitals, for on the job training.

They recommend that "a committee of three men from each state, applying for federal funds, aim at:

1. Identifying a two year technical institute interested in the program.
2. Identifying a hospital or hospitals interested in a program.
3. Developing a two year associate degree technical curriculum for recruits from the ranks of high school graduates.
4. Making provisions for the many older hospital maintenance technicians who are willing to seek higher education and responsibility.

With the establishment of the committee, the technical institute and the hospital, the next step is to apply for federal funds for this much needed project."

Mr. Bender and Dr. Parks felt, "that any large city should be able to furnish the needed school and hospital."

The need for this educational setup has been recognized by Bob Davis, Secretary for the American Society of Hospital Engineers.

The association has proposed a guide line for the curriculum which has been approved by the committee on Plant Operation. Oriented to training and education for department heads, such a program of courses (shown below) may apply to hospital technicians as well.

**JUNIOR COLLEGE CURRICULUM**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fundamentals of Refrigeration</td>
<td>4</td>
</tr>
<tr>
<td>Basic Electricity</td>
<td>3</td>
</tr>
<tr>
<td>Fundamentals of Drafting</td>
<td>3</td>
</tr>
<tr>
<td>Freshman English</td>
<td>3</td>
</tr>
<tr>
<td>Basic Technical Mathematics</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refrigeration Theory &amp; Practice</td>
<td>4</td>
</tr>
<tr>
<td>Elements of Electricity</td>
<td>3</td>
</tr>
<tr>
<td>Memos, Reports, and Letters</td>
<td>3</td>
</tr>
<tr>
<td>Fundamentals of Steam Power &amp; Generation</td>
<td>3</td>
</tr>
<tr>
<td>Advanced Technical Mathematics</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat Power Fundamentals</td>
<td>4</td>
</tr>
<tr>
<td>Industrial Electronics</td>
<td>3</td>
</tr>
<tr>
<td>Plans and Specifications</td>
<td>3</td>
</tr>
<tr>
<td>Industrial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>Fundamentals of Supervision</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fourth Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heating and Air Conditioning</td>
<td>4</td>
</tr>
<tr>
<td>Maintenance Engineering</td>
<td>3</td>
</tr>
<tr>
<td>Organization &amp; Management</td>
<td>3</td>
</tr>
<tr>
<td>Mechanics of Construction</td>
<td>3</td>
</tr>
<tr>
<td>Sanitation</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

**On-the-Job Training**

1. General orientation to the hospital and to the department.

2. Operation of engineering systems
   1. Heating and power plant boilers, pumps, water treatment, heaters, engines, generators.
   2. Utilities-electrical, water, steam, distilled water, gases, vacuum
   3. Air conditioning-cooling, heating, humidity adjustment, filtering, ventilation

3. Maintenance of hospital engineering systems and structures
   1. Components of systems-heating, power plant, utilities, air conditioning
   2. Specialized equipment - radiological, laundry, dietary, laboratory, others
   3. Structural - carpentry, masonry, painting, plumbing
   4. Grounds
   5. Furniture

4. Program planning and management functions - organization, scheduling, training, methods of improvement, preventative maintenance, supplies, fire and safety

5. Organization and functions of hospitals
   1. Patient care objectives
   2. Role of the department head and of engineering department
   3. Interdepartmental relationships
   4. Application of management systems and procedures - budget, personnel management, records and reports, procurement

6. Experience in various operational, maintenance, supervisory and management roles

Graduates from such a course might work as Assistant Engineers or Plant Engineers. Hospital Engineering is an ever increasing field, primarily due to the expansion, erection, and complexity of hospitals in the United States today. Some action needs to take place to fill this demand adequately. Technicians from various trades may act as teachers in specific courses within the curriculum as well as offer valuable on the job training to students. Neophyte technicians may also wish to enroll in specific courses within the curriculum. The initiation of this program to a large degree is, however you look at it, an effort we as hospital engineers must fulfill either individually or through the efforts of A.S.H.E., New England Hospital Engineers Society, the colleges, or community leaders.
Engineer's Bookshelf

(Continued from page 2)

Roy has worked with the committee which oversees NFPA Bulletin 58. He now is the Hospital Research and Planning Coordinator for Kiff, Voss & Franklin, Architects, office of York & Sawyer.

The depth and insight shown in this book will give an excellent understanding of interdepartment relationship.

The illustrations and plan views are very well presented. The use of a molecular model to indicate functions makes the planning aspect relatively easy to assimilate.

BEST'S SAFETY - MAINTENANCE DIRECTORY

COMBINED WITH

THE MANUAL OF MODERN SAFETY TECHNIQUES

Alfred M. Best Co., Inc.
Park Avenue & Columbia Road
Box 600, Morristown, N. J. 07960

11th edition . . . $10.00

This directory provides a ready-reference guide to broader aspects of safety program techniques. Then to implement these techniques, the product DIRECTORY sections of this volume present the equipment, devices, and services so necessary in preventing accidents, injuries, fire and hazardous or unhealthy working conditions.

NEHES FOR NEW MEMBERS
NEHES PUSHES

Fred MacInnis of the Cooley Dickinson Hospital - Northampton, Massachusetts is Chairman. Please assist by referring capable, eligible men in the Hospital Engineering Field to Fred.

POSITION REPORT

There are a number of position openings in the New England area. Those interested in obtaining a position in Hospital Engineering should contact:

Charles Shields, President
Memorial Hospital
Worcester, Massachusetts

MASTERY SIMPLIFIED

by J. Ralph Dalzell and Gilbert Townsend.


A follow up to "Fundamentals of Carpentry." This volume on the fundamentals of masonry practice is a valuable source book for those interested in any phase of masonry work. The first 3 chapters are devoted to the study of cementitious materials used. All facets of masonry from variations of units, bonding, terms used, to blueprint reading are covered.

WORDS OF WISDOM

He who is silent is forgotten; he who abstains is taken at his word; he who does not advance falls back; he who stops is overwhelmed, distracted, crushed; he who ceases to grow greater becomes smaller; he who leaves off, gives up; the stationary condition is the beginning of the end.

An illiterate wise man is not half so dangerous as an educated fool.

No person was ever honored for what he received. Honor has been the reward for what he gave.

CONTRIBUTIONS TO THE NEWSLETTER

Support your organization by submitting your thoughts and ideas in the form of editorials and pictures to the newsletter. This is our best opportunity to other organizations of the efforts being made by New England Hospital Engineers. The invitation is open; any submittal is appreciated.

VERNE R. CLOW, Editor
Plant Engineer
Mary Hitchcock Memorial Hospital
Hanover, New Hampshire

NEWSLETTER

Published by

NEW ENGLAND HOSPITAL ENGINEERS SOCIETY

Verne Clow, Editor
Alexander Bender
Associate Editor
Louis E. Ely Jr.
Associate Editor

Printed by The Reporter Press
Canaan, New Hampshire