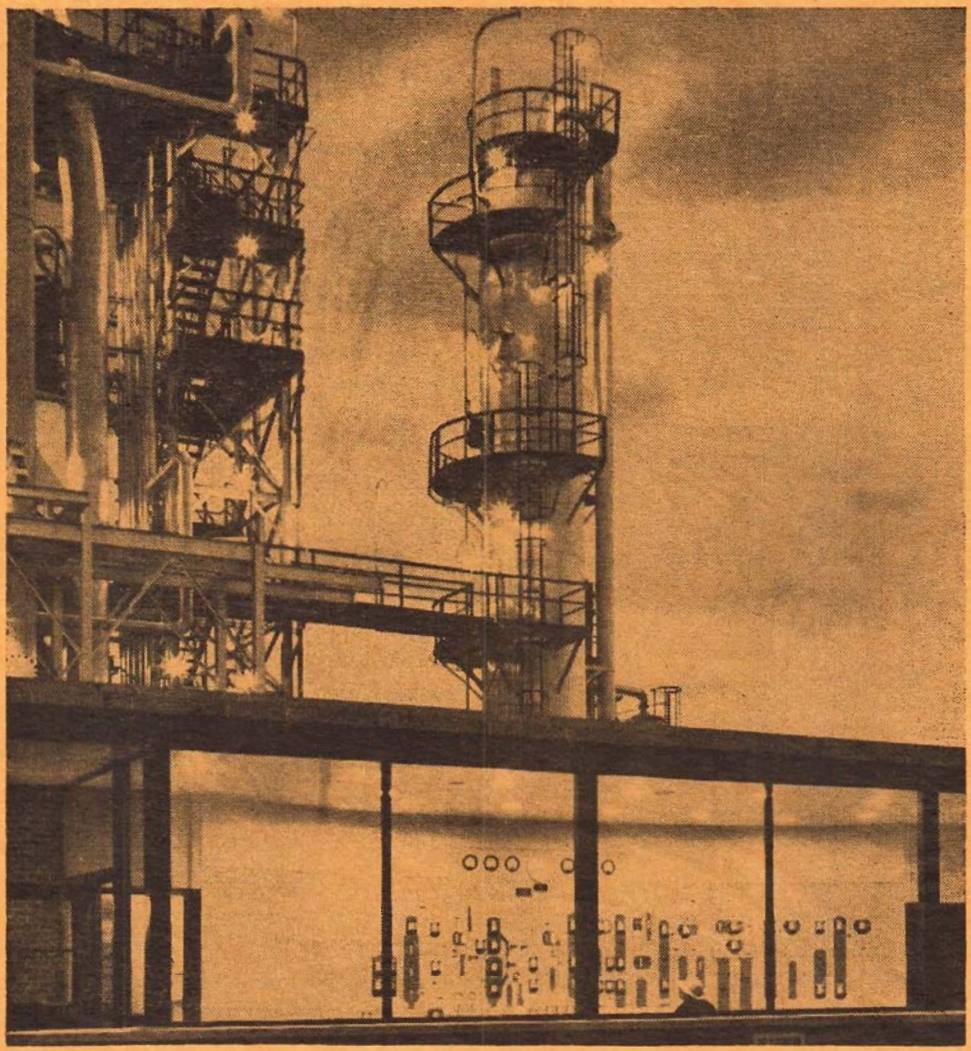
INSTRUMENT SOCIETY of AMERICA

SARNIA SECTION

Monthly Bulletin



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TAYLOR INSTRUMENTS MEAN ACCURACY FIRST

The Instrument Society of America

SARNIA SECTION

has as its objective the advancement of the arts and sciences associated with the theory, design, and use of measuring and control instruments in the various industries in the Sarnia area.

The immediate benefits derived by the Sarnia members include a monthly meeeting at which a qualified speaker discusses an instrument subject after which members fraternize with other instrument men and interchange ideas and news at a social hour, a subscription to the "I.S.A. JOURNAL", a subscription to the Sarnia Section "BULLETIN", access to all technical data, servicing techniques and standardization policies developed by the National Committees of the ISA and an annual school for mechanics and technicians.

As a member of the National body of the Instrument Society of America, a rapidly growing and influential technical society, the member partakes indirectly in the progress of instrumentation made possible by the work of the various National Committees.

Executive Officers for the 1955-56 season are:

Honorary President	F. A. BAIN Chief Refiner, Sun Oil Co. Ltd.
President	LARRY HALL Sun Oil Co. Ltd.
Vice-President	HAROLD KOHLMEIER Polymer Corp. Ltd.
Secretary	RON ASSELSTINE Canadian Oil Refineries Ltd.
Treasurer	R. J. ROSE Catalytic Const. Ltd.

Meetings are held on the fourth Monday of each month from September to May inclusive at 8.00 P.M. The meetings are held at the Sarnia Y.M.-Y.W.C.A. unless otherwise announced.

Anyone earning his livelihood through the manufacture or use of instruments and who is acceptable to the executive body may become a member of the Sarnia Section, I.S.A. Dues are $12.00 per annum. Associate Members are those who are associated with instruments but who do not earn their livelihood directly from them, such as stationary engineers, process operators, etc. Their dues are $7.50 per annum.

Correspondence relating to the general activities of the Sarnia Section should be addressed to the Secretary, Mr. Ron Asselstine, 891 Burr Street, Sarnia, Ont. Dues should be made payable to the Sarnia Section, Instrument Society of America and sent to the Treasurer, Mr. R. J. Rose, 875 Woodhaven, Sarnia, Ont.

Correspondence concerning programs should be sent to the Program Chairman, Mr. J. Heatley, 240 Kathleen Ave., Sarnia, Ont.

Copy for "THE BULLETIN" should be sent to the Managing Editor, Mr. H. Hobbs, 122 Cameron Street, Sarnia, Ontario.

COMPANY REPRESENTATIVES FOR 1955-56

Imperial Oil Limited
Joe Woodcock

Polymer Corporation
Ed. Brown

Canadian Oil Refineries
T. J. McClean

Dow Chemical Company
T. Scarsbrook

Sun Oil Co. Limited
T. Davidson

12A Temperature Transmitter

M/42 Indicating Pneumatic Transmitter

13A Differential Pressure (d/p) Cell

M/40 Recording Controller

PROCESS MEASUREMENT AND CONTROL

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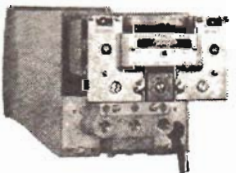
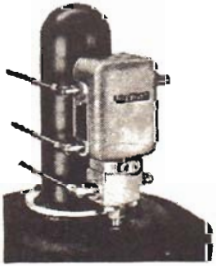
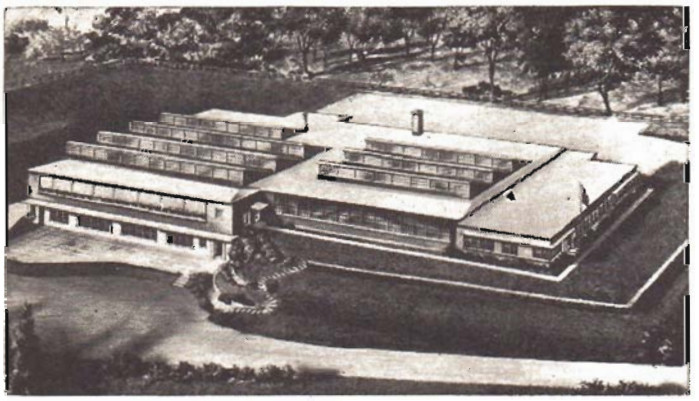
M/53 Consotrol Recording Station



M/58 Consotrol Controller



M/59 Consotrol Valve Mounted Controller



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Honeywell Customized Instrumentation provides for the engineering of measurement, recording and control of process variables to specific production requirements. It works out details of what instrument to use for each measurement or control function . . . what type of primary element . . . what control system . . . what size and style of valve. It provides all essential signals, safety interlocks, and accessories. It combines all these elements into a complete unit, arranged for peak production efficiency . . . greatest convenience of the operator and for maximum ease of service . . . custom-fitted to the individual needs of the process to be controlled. The net result adds up to lower cost operation—through more efficient use of men and machines.

MINNEAPOLIS

Honeywell

BROWN INSTRUMENTS

First in Controls

The "BULLETIN"

VOLUME 5 No. 6 FEBRUARY 1956

Managing Editor: H. Hobbs

Illustrator: N. Knowles "Written on a Roll Chart": H. Hobbs

Polymer Reporter: Ed. Brown I. O. L. Reporter: Joe Woodcock

Canadian Oil Reporter: T. J. McLean Dow Reporter: Tom Scarsbrook

JANUARY MEETING

The January meeting of the Sarnia Section, I.S.A. was held at the Vendome Hotel, Sarnia, on Monday, January 16, 1956, at 8 p.m. About 50 members and visitors were present.

The President, Larry Hall, of Sun Oil Co., opened the meeting and called on Education Chairman, Harold Kohlmeier, of Polymer Corp., for a report on the school. Mr. Kohlmeier announced that the school on Brown Potentiometers would be held on Wednesday, January 25th, probably at the Technical School. Conducting the course will be Mr. John Francis, Service Manager for Brown Instruments, of Toronto.

Mr. Joe Woodcock, of Imperial Oil, Special Events Chairman, introduced the speaker for the evening, Mr. G. F. Brockett, Research and Application Chief of Fisher Governor Co., Marshalltown, Iowa, who spoke on the subject "The 'Why' of Control Valves".

Mr. Brockett gave a most interesting talk on Control Valves with questions thrown at him in rapid succession. Finally, the formal discussion had to be cut short because of the time, by Mr. Jack Heatley, of Imperial Oil, Program Chairman, who thanked the speaker on behalf of the Section. In the social hour which followed, Mr. Brockett continued to answer individual questions.

In opening his talk, Mr. Brockett stated that the first pneumatically operated control valve was used in 1925 and that, therefore, the control valve industry was only about 30 years old. Through experience, each manufacturer had gradually improved his product until, today, there was almost a standardized product with little to choose from amongst the different makes. Users now buy control valves with three main points in mind. They are:

(1) Service
(2) Integrity of the manufacturer
(3) Quality of workmanship

The speaker devoted a few minutes on choosing characteristics of inner valves. With modern instrumentation there is little to choose between a % type of valve or a linear type, but, he declared that the trend is towards the % type. While there is a widespread difference of opinion among Instrument engineers in the specification of the two types, Mr. Brockett recommended that the % v-port always be used in a process where the control valve pressure drop is only a small part of the system pressure drop and that a parabolic plug be used where the line fluid is a slurry or contains solid particles such as catalyst fines, etc.

On stuffing boxes, there are two main types used at present. Both use "Teflon" packing but one is pure Teflon molded in a "v" shape, while the other is a Teflon impregnated asbestos flat ring type. Some manufacturers specify the "v" type as standard with the flat type optional at no extra cost and other manufacturers specify in the reverse manner. The advantage of the "v" type is an almost guaranteed leak proof seal for three years or more, but it requires a highly polished stem of 4 micro inches R M S and 20 micro inches R M S on the inside of the stuffing box to prevent galling of the packing. Mr. Brockett said that Fisher had found that one ring **under** the spring in the stuffing box acted as a cleaner for the stem and prolonged packing life. The flat ring Teflon impregnated asbestos could be "pulled up" in case of leakage and did not require the high stem finish of the other type but had a much shorter life.

One of the most interesting points Mr. Brockett touched on was the poor efficiency of the "sweep flow angle type body" or "Venturi type". He declared these were vastly overrated in the industry because of their theoretically streamlined flow. Declaring that the main purpose of a control valve was to absorb energy by creating a pressure drop in the system, he pointed out that a "Venturi type" body minimizes this pressure drop and thus decreases the efficieny of the valve. Also, that the true venturi effect is reached at only the design point. At all other points the valve does not act as a venturi and actually creates more turbulence downstream of the valve than a globe type body. He recommended that where difficulty was encountered in these valves due to the plug controlling near the seat, that they be reversed, and that the flow be introduced beneath the plug instead of at the side as designed. This was particularly necessary if the plug "chattered" due to high pressure drop.

On the subject of "cavitation",, the speaker showed some slides illustrating the effects of this problem. The pictures were taken through a 3 inch glass pipe downstream, of a 2 inch control valve. Using water at 60°F. and a pressure drop of 100 psi, he demonstrated that a one inch diamter "hole" existed for a smuch as three feet downstream of the valve, and that the glass pipe was honeycombed with holes at right angles to the stream, through which a fine wire could be pushed right to the outside of the pipe.

He showed slides, also, of an apparatus set up by Fisher Governor to determine the resonance rates of inner valves. This machine vibrated the plug at vibrations up to 4000 cps, and, by sprinkling white sand on the plug faces the patter of vibration was clearly evident. Some vibrations in field applications caused the valve stem to glow red hot and in one particular case the stem became so hot that the stainless steel stem became welded to the stuffing box. This was a fruitful field for research and one into which valve manufacturers were just beginning to delve.

The speaker answered many questions too numerous to mention in the space allowed, but all were impressed with the speaker's intimate knowledge of control valves and his non-technical method of explaining difficult problems in the field.

NEWS ITEM

Our hard working Secretary, Ron Asselstine, Canadian Oil Company, has been under the weather since Christmas and has been in hospital for most of that time. Seems like he has been working too hard and the doctor has ordered a long rest, plus bushels of vitamin tablets and injections of different drugs to get him back on his feet. He is beginning to see the end of it now and should be back at work in a week or two. We've saved all his mail and there will be lots to do when you get back Ron.

THE PRESIDENT'S CORNER

One of our members called me up at work the other day and said some kind words about the "Bulletin". This is so unusual an occurrence that I think it rates as news. Not that we haven't heard kind words before — we have; but it is pretty rare and I, for one, appreciated it very much, since the "Bulletin" got its start as a mimeographed sheet, when I was in my first year as Secretary of the Sarnia Section, and it has been a pet project of mine ever since.

However, this member didn't call me up to pat me on the back, particularly. He called to express his delight in reading and re-reading the essays and iambic pentameter of our gifted friend, Howard Hobbs and the illustrations of the equally talented Neville Knowles. In fact he so enjoyed the work of these contributors that he has suggested publishing all their works in one volume!

Here, indeed, is an appreciative reader. Would that some of our other appreciaitve readers were more voluble. Unless you have tried it, you can hardly appreciate the work, the time and the agonizing mental efforts required to turn out a contribution to the "Bulletin", whether in prose, poetry or illustration. Sure, it is easy for those who never contribute to say: "It's easy for you—you can write—you can draw—you have talent." But, it isn't easy and the more talent a contributor has, the harder it is for him to turn out something which satisfies him, because he is more critical and he is competing with himself: He has always to better his past work.

Usually, he puts it off and puts if off until the deadline is past, then he makes a frenzied effort, misses his favourite TV programs, encurs the ire of his wife for failing to do some household task and the tears of his children for missing their evening play hour, struggles long past his bed time and gets up earlier than usual, tired and irritable to get the finished product to the editor or the printer and then wonders whether his readers enjoy it—or even read it, for readers take such things for granted in these days of TV. Spectaculars—all for free.

So, thank you, appreciative reader—not only for the encouragement which I can pass on to Howard and Knobby and Harold but also for an excuse to write this—my contribution for the month and which is being anxiously awaited by Editor Hobbs so that he may know how much he has to write to fill up the remaining space. Come, Howard, with this second hand encouragement, you should be able to write at least three pages!

Larry Hall.

MAINTENANCE CLINIC

A very successful maintenance clinic on Brown Potentiometers was sponsored by the Sarnia Section, I.S.A. on January 25th, 1956, at the Collegiate Institute.

Mr. John Francis, Service Manager of Brown Instruments Division of Minneapolis-Honeywell Regulator Company of Toronto, was in charge and gave a comprehensive lesson on trouble shooting on the Brown Precision Indicator and the Brown Strip Chart Potentiometer with applicable references to the Brown Non-indicating Potentiometer. He dealt in detail with the Brown "Electronik" Amplifier, showing the electrical circuit and how to trouble shoot on the components.

The clinic was organized by Mr. Harold Kohlmeier of Polymer Corporation, Education Chairman of the Sarnia Section. He introduced Mr. Francis and Mr. Ware.

Mr. Larry Hall, Sun Oil Co., President of the Sarnia Section thanked the Instructors on behalf of the students. The following Sarnia Section members attended the clinic:

Mr. J. Connors, Polymer Corp.; Mr. R. Chamberlain, Polymer Corp.; Mr. G. Willis, Polymer Corp.; Mr. F. Lescoe, Polymer Corp.; Mr. W. Kirk, Polymer Corp.; Mr. F. Croft, Canadian Oil Co.; Mr. T. Moore, Dow; Mr. T. Scarsbrook, Dow; Mr. L. Hall, Sun Oil Co.; Mr. T. Davidson, Sun Oil Co.; Mr. R. Rose, Sun Oil Co. (Catalytic); Mr. R. Hunt, Sun Oil Co., (Catalytic); Mr. R. Carey, Sun Oil Co. (Catalytic); Mr. R. Morissette, Sun Oil Co. (Catalytic); Mr. J. Warwick, Sun Oil Co. (Catalytic).

MEETING NOTICE

PLACE	VENDOME HOTEL, BANQUET ROOM
DATE	MONDAY, FEBRUARY 27, 1956
TIME	8.00 P.M.
SPEAKER	**MR. JOHN H. FOX** **General Sales Manager** **Minneapolis-Honeywell Regulator Co.**
SUBJECT	**HOW AUTOMATIC CAN YOU GET?**
NOTE	This is M-H's Annual Special Meeting and everyone is welcome. Come and bring an interested friend.

NOMINATING COMMITTEE

The Nominating Committee for 1956 has been appointed by the Executive and consists of the following members, Mr. Jack Heatley, Imperial Oil, Chairman and Mr. Hadley Cole, Dow Chemical and Mr. Ambrose Upfold, Polymer Corp. as members.

This committee will meet and draw up a slate of nominees for the 1956-57 executive and will report to the members at the March General Meeting. Members will then have the privilege of adding further names to the list and will vote by secret ballot at the April meeting.

WRITTEN ON A ROLL CHART

A Discussion of Economics

(in one scene)

Scene 1

A winter's night within a dark and cavernous process-building. Overhead, a maze of pipe-lines, thick with scale and ill-covered with ancient insulation, which reveals far more than it hides. Everywhere on the lines are festering growths, where vile and viscous liquids drip continuously from long neglected leaks and form unpleasant stalactites as they cling in desperation to the pipes which were their erstwhile prison. Below, and streching back from the centre are two line of pumps, plaintively whining as they strive to force material onward before it can emerge in ever-growing sticky clusters from the gaping, packing-glands. At the sides and rear, dimly seen through a thick miasmatic fog-bank which pervades the building, squat the sweating, misshapen forms of the process vessels, made, if this were possible, more unsightly by the weird array of instruments with which they are festooned. Level controllers with ponderous extended arms and bulky counter-weights drive huge elderly valves by means of sloppy, many-angled linkages. Unreadable glass thermometers peep wearily from innacessable locations. Brass-bound pressure-gauges from some forgotten era, rigidly indicate pressures which existed during the same period. An elaborate network of electrical and thermocouple leads is everywhere like some fantastic jungle-creeper, held at infrequent intervals, to the pipes, by scanty tendrills of scotchtape. Everywhere, a distinct flavour of un-genteel decay, of horrid mechanistic senility, being fought in vain by make-shift, temporary repairs.

In the foreground, a well-dressed authoratative man watches impatiently, while a tattered individual, working with the maddening deliberation of the elderly and self-satisfied, uses a pair of large wrenches to bend a tortured level-arm to some new position. With a glance at his watch, the well-dressed one speaks—

Master:

Make haste! Thou sad decrepit blight upon the earth,
The midnight hour draweth on apace.
This splendid unit waits upon your task,
And like some race-horse champing at the bit,
Looks evil at tight-restraining rein,
Which trifling thing forbids it from the track.
This instrument at which you tug and twist,
(So strong I hear your scanty sinews crack,)

Surprised me much, when it did fail to-day,
For scarcely thirty years have gone their way
Since my old grand-sire came by that machine
In second-hand condition. We were told,
By someone who could vouch the very fact,
It ran the bilge-pump on the MERRIMAC.
And now it fails me in my hour of need,
Each minute that, we do not operate,
Each hour passing on its winged feet,
Is losing me a fortune. How I fear
The wail of customers, when I must say,
I cannot fill their orders right away.

Graybeard:

If haste would cure, I then would emulate,
The scamp'ring rabbit of the forest-glade,
But in this case such conduct would but ill—
Reward the user of such energy.
This instrument on which I toil to-night,
This fine machine on which so much depends
Has through it's years of duty worn away
Until the veriest shadow yet endures.
Where once the float did have security,
Cased within a thick, wrought-iron vest
It now comes quite indecently to view,
Half-hidden by this thin eroded case.
The bearings are no more, this link may move
Thrice farther than it ought, impoint of fact,
And never quite take up its neighbour's slack.
This instrument has served you long and well,
Its years of honest service far exceed
Our two combined lifetimes. It indeed
Was ancient when that same grandsire of yours
Did first evolve the black-strap fomula
That fascinates this pancake-loving land,
And which provides you with prosperity.
Think you that this same grandsire, did he live,
Would call you wise, that you so much depend,
Upon this tired controller, which so long
Ago, he plundered from some rusting scrap?
Such frugalness I know he would deplore,
Could he see how production losses soar.

Master:

I grant you this, O aged imbelcile,
This instrument has served for many years,
And were these years our sole criterion,
And yard-stick of an objects usefulness,
Yourself would long ago have gone from hence
And leaving, cause no measurable gap.
My grandsire that you foolishly invoke
Would beam with pleasure at the very sight,
Of this fine process unit. He would see

That everything was as it used to be.
For he, a frugal man in every way
Knew cutting maintenance costs was sure to prove
A source of lavish profit. He would be
Delighted by my careful management.

Graybeard:

Now "Careful" is a scarce appropriate term,
For one surpassing parsimonious.
We patch and tape and paste from morn 'till night,
And trebly swath the piccollo-like pipe,
Your scouts patrol the near-by salvage yard,
And leap and scream with idotic joy
When they obtain some item cast aside
Which may serve here if patched the proper way.
I fear your zeal may carry you too far
And some cheap-salvaged item may let go
And cause you grief you cannot soon undo.

Master:

I hear you with decreasing patient-ness,
Complete your work and cease to din my ears
With vile complaint and pessimistic groan.
An evil prophet must anon speak true,
For speaking is the greatest thing you do.
Could you but spend on instrument repair,
The effort of your gloomy prophecies,
Then we, to-day, would be quite trouble-free,
And need not wrangle in the midnight air.
Hark! Who approaches?

Enter two cloaked figures dragging a large, far from new, gate valve.

1st Figure:

O Master, fate has smiled on us again,
Well-worth-while was our evening promenade,
For passing by the neighbouring process-gate,
We saw this goodly object in our reach,
And brought it here lest same late-prowling thief
Should pick it up and carry it away.

Master:

Indeed you have well thought and nobly done,
To take temptation from the common path
'Tis said that virtue is its own reward,
So when you sleep this night, feel that you are
Rewarded in a marvellous degree.
Be comforted. This valve is safe with me.

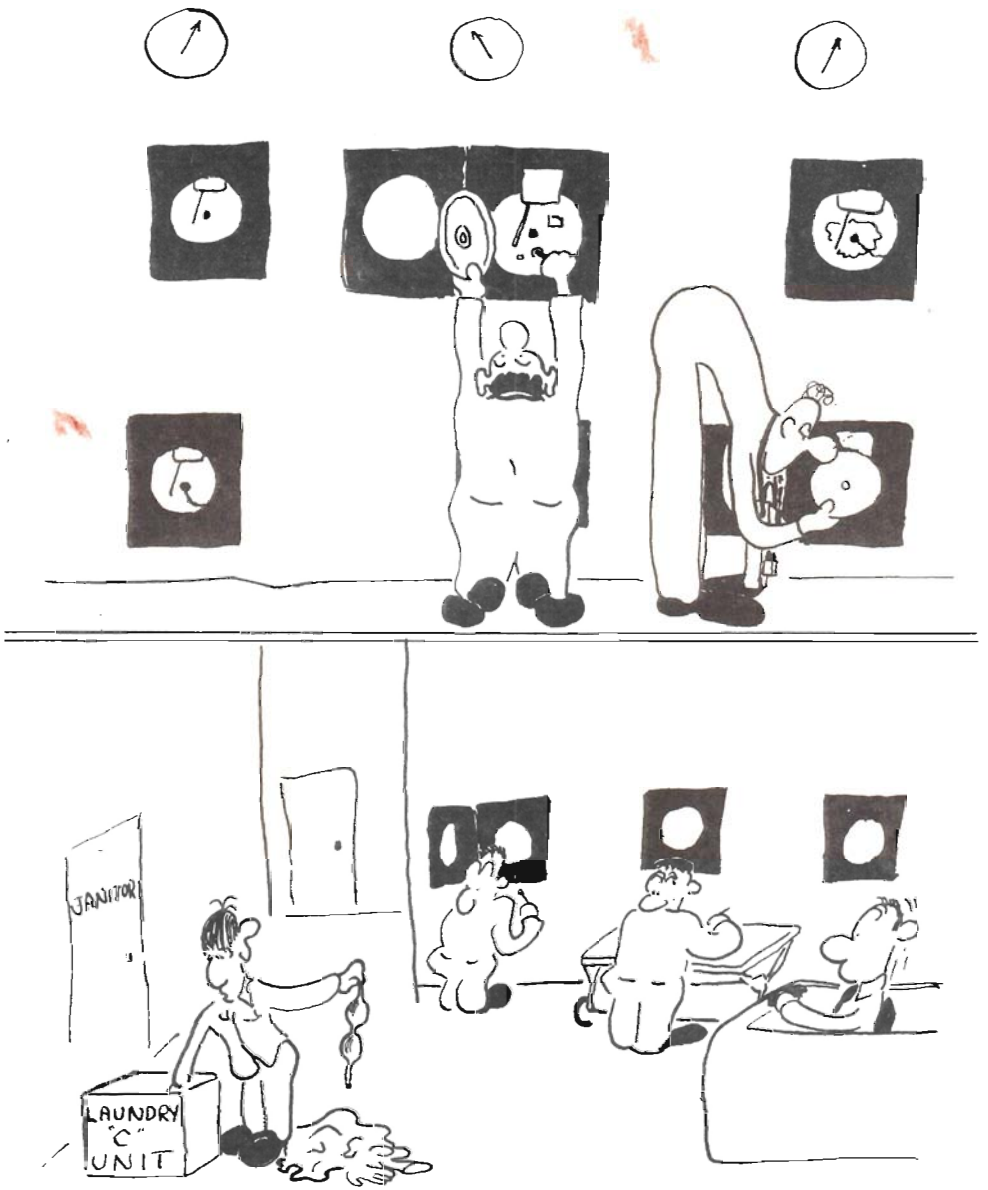
Exit two figures.

Graybeard:

All is ready Master.

Master signals to an operator who starts a pump and opens valves around the repaired level. All is well for a moment. Overhead, a pipe bursts spraying liquid that instantly vaporizes. Exit all, gasping and choking. The curtain falls.

H. Hobbs.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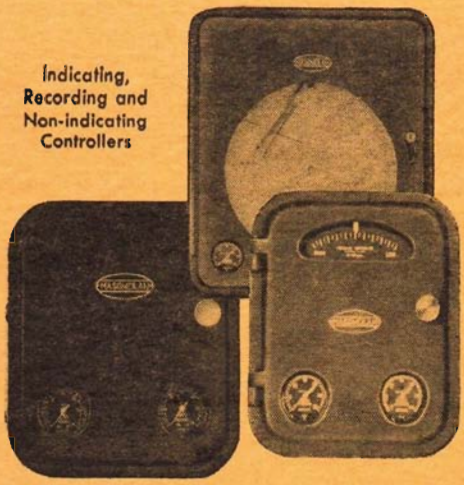
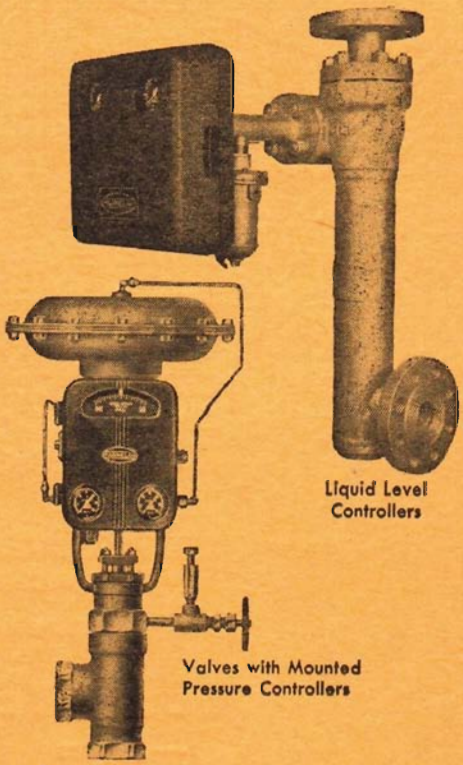


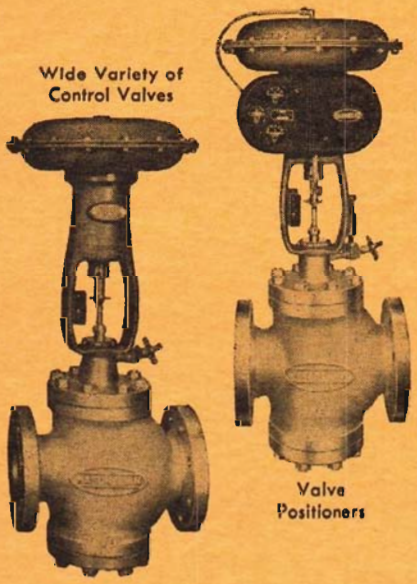
Indicating, Recording and Non-indicating Controllers



Liquid Level Controllers

Valves with Mounted Pressure Controllers

Differential Pressure Transmitters



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