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The Irish Plumbing and Heating Engineer, August 1964 (complete issue)

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ENGINEER



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August 1964

Published by ARROW@TU Dublin, 1964

Vol. 4 No. 5

Northern Ireland Special Edition, 1964

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THE LEADERS IN HEATING AND SANITARY EQUIPMENT





● Mr. T. F. Barrett, M.I.M.E.,
A.M. Inst. Pet.

OIL FIRED HOMES (I.) LTD. Boilers Ltd., has been reorganised and the Company is now controlled by three directors: Mr. George S. Fazenfeld, Mr. N. J. O'Connor, and Mr. T. F. Barrett, M.I.M.E., A.M. Inst. Pet., Director and Manager. Mr. Barrett, who is a mechanical engineer and for many years interested in combustion problems, originally joined Oil Fired Homes (I.) Ltd., as Sales Service Engineer.

On severing connection with the firm in December, 1963, he continued to hold a franchise for the sale of Perkins boilers trading as Heating Supplies and Services, "Fairhill," Newtownpark Avenue, Blackrock, Co. Dublin. On July 1st, this year, Mr. Barrett merged his interest with the other two directors of Oil Fired Homes (I.) Ltd. and the Company has now been granted the sole concession for Perkins boilers in the 26 Counties.

The Company's existing showrooms are being completely redecorated and a formal opening of the renovated premises is planned for September. Following the opening a special demonstration trailer, provided by Perkins Boilers Limited, and showing their latest working models, will tour the country.

* * *

WAVIN PVC profiled rainwater system—this is the big news just now from Wavin Pipes Limited of Balbriggan, Co. Dublin. Features of the new R.W. system are its immense strength, its rigidity, its light weight and its "click" together



design, which makes it incredibly easy to erect.

Where the system must bear the greatest strain, at junctions, the profiling method of reinforcement comes into play and, by giving great strength, ensures that the guttering is quite rigid.

With the "click" together method of erection the use of cements, adhesives and gutter bolts are eliminated. Its light too—a twelve foot length of Wavin profiled gutter weighs only 5lbs.

Maintenance is also eliminated—the guttering needs no painting either—while the tough unplasticised PVC, from which it is made, makes the system impervious to atmospheric corrosion.

* * *

THE LATEST gas fired boiler to enter the domestic heating market—the

NEW GAS FIRED BOILER BY CRANE

Crane Cavalier—has now been approved by the cross-Channel Gas Council and is in production. The well thought out design and construction of this boiler reflects Crane's great experience in the manufacture of successful heating appliances for the domestic market. Three sizes provide an output of 30, 45 or 60 thousand B.t.u./hr. All are in the same sized enamelled cabinet

Continued page four

● Mr. Padraic O'Halpin, B.E., A.M.I.Mech.E., of Quadrant Engineers, 167 Strand Road, Sandy-mount, Dublin 4, who has recently been appointed Chairman of the Statutory Apprenticeship Committee for the Engineering and Metal Trades, member of the Board of Directors of Ceimici Teoranta and member of the Board of Governors of St. Laurence's Hospital.



IRISH PLUMBING & HEATING
ENGINEER

Vol. 4. No. 5. AUGUST, 1964.
THE IRISH PLUMBING AND HEATING ENGINEER is the only publication produced in Ireland catering exclusively for the heating, plumbing and ventilation industries with a guaranteed circulation covering the Republic of Ireland and Northern Ireland every month.

This month the I.P.H.E. breaks new ground with its first Northern Ireland Special Review. The review, contained in a tinted, pull-out section, is to be a yearly feature.

Allen McDowell, already well-known to readers for his monthly Northern Notes column, contributes to the review. Two prominent Northern trade figures are guest contributors to the section.

W. J. R. Couchman has another part in his Seven Deadly Sins series for readers. These articles, for domestic heating installers, have aroused keen interest and will continue monthly for some time to come.

A. L. Townsend has compiled the introductory article for this month's Special Review which deals with sanitaryware. An equipment review appears in conjunction with the review.

Trade Topics review the month's news.

● Editorial and advertising offices:
Callaghan Chambers, 13/15 Dame Street, Dublin 2. Tel. 56465-6.
London: J. T. Robson & Son Ltd., 30 Fleet Street, London, E.C.4. Tel.: Fleet Street 4438.
Belfast: Allen McDowell, 43 Horn Drive, Belfast 11. Phone 614606.



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is partly because they're designed and made to B.S.A. standards, and partly because we satisfy ourselves that every single item is working before it leaves the factory. We don't do sample checks. Every single boiler, every pump, every valve and radiator, gets an *in-use* test, as exacting as we can make it.



IF YOU'D LIKE TO KNOW MORE, TURN ON 

from page two

available in a range of colours, and specially designed to fit in with the British Standard kitchen equipment. It is of special interest that the top fits flush up against the wall behind.

Some other important features are: Long-life cast iron boiler body with glass lined flue-ways; continuous pilot with push-button ignition providing maximum safety; and three control systems with a model, specially designed for small bore installations, incorporating a Crane Programmer and a pump.

* * *

OIL HEAT Services of 16 Fade St., Dublin, 2, are now offering a comprehensive service to oil fired boilers. This service includes the cleaning of the boiler, adjusting the burner and carrying out all tests, such as the CO₂ test, smoke test, draught test, and efficiency test.

DUBLIN SERVICE TO OIL FIRED BOILERS

"The correct analysis of all these factors is most important for the economic combustion of oil and can be of a considerable saving in the running costs of the boiler. People who have had these tests and adjustments carried out have noticed the considerable reduction in their fuel bills," said a spokesman for the company.

trade Topics

* * *

RADIATION gas appliance engineering has been combined with the flair for contemporary furniture design of E. Gomme Ltd., the G-Plan people, to produce the new Radiation Highspeed "G" radiant convector gas fire. The fire, introduced to the market by Radiation Gas Fires Ltd., has been conceived from the outset as a piece of "furniture" which, if need be, can dispense with the traditional setting of the fireplace.

CONVECTOR IS PIECE OF FURNITURE

The high efficiency heating unit, based on the successful, fast-selling Radiation Sunbeam fire, is housed in a stylish cabinet by Gomme in a choice of teak or tola—the most popular woods for furniture to-day. The slim cabinet—7½" deep—is in two sizes: Model No. 700 is 27½" wide and No. 700/1 is 33" wide. Both sizes house the same heating unit and provide a choice for large or small fireplaces. Although the Highspeed "G" looks

thoroughly at home on the hearth, it represents a new concept of room heating that owes no more allegiance to the traditional fireplace than does the fuel it burns—high speed gas.

A brand new feature of the High-speed "G" is the Radaflash auto-ignition which operates immediately the burner tap is turned past the full-on position. The fire has an input of 18,000 B.t.u./hr. which is ample to heat a room of up to 20' x 12' x 8'. An automatic draught regulator maintains a high level of heating efficiency in all conditions of chimney pull. No flue restrictor is required. It is fitted with an 8-position thermostat.

* * *

WITH PRODUCTION of peat briquettes, machine turf and moss peat up last year, sales of peat products reached a record £5½m., says Bord na Mona's 18th annual report. It shows a profit for the year of £888,553. After allowing for interest payments there was a net surplus of £7,765.

At the end of the year the Board's capital totalled £20.55m. Production figures for the various products were: Machine turf, 957,810 tons; milled peat, 1,637,761 tons; briquettes, 281,847 tons; moss peat, 347,590 tons.

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B.S.A. HARFORD INTRODUCE SCALED DOWN OPIOMATIC PUMP — THE "JUNIOR"

A new scaled down version of the well established Opiomatic range of variable central heating pumps marketed by B.S.A. Harford Pumps Ltd., has recently been introduced and is known as the Opiomatic "Junior." The new pump has been developed to include the smaller installation and, since space is often at a premium, is smaller and more compact than the standard model. It is noteworthy, nevertheless, that performance characteristics of the two pumps differ only slightly.

Variation is obtained by the manual operation of a setting device which matches the pump duty to the existing system resistance. A wide selection of duties is available ranging from a minimum of 2.75 ft. head at zero flow and 1 ft. at 12 gal./min., to a maximum of 5.5 ft at zero flow and 2.5 ft. at 16 gal./min.

A simple plug positioned in the top of the casing may be depressed to serve the dual purpose of venting air trapped within the pump and, should the shaft become jammed, of engaging in a keyway on the shaft which may then be loosened by a screwdriver without recourse to dismantling. Further provision against dirt fouling the shaft is made by a fine mesh filter at the back of the impellor.

Several proven features of the existing Opiomatic range are integral with the "Junior."

Several proven features of the existing Opiomatic range are integral with the "Junior."



● The Opiomatic "Junior."

The Opiomatic "Junior" weighs 18 lb. and has been designed for closed circuit low pressure hot water heating systems with maximum water temperature of up to 200°F. and maximum air ambient temperatures of up to 140°F. An attractive hammered green finish gives the pump an elegant yet workmanlike appearance.

**NEW FROM
BSA HARFORD**



LIGHTWEIGHT

NEW OPIOMATIC JUNIOR pump for medium installations cuts weight from 24lbs to 18

B.S.A. Harford have packed all the reliability of the famous Opiomatic glandless pump into a scaled-down version weighing only just over 18 lbs.

All the features that made the Opiomatic Britain's biggest selling pump are here in the Opiomatic Junior: B.S.A. engineering; simple, accessible adjustment; push-button vent; clutch for freeing shaft; super-silent operation; high efficiency. And of course

the *proved* reliability — proved by actual *in-use* tests on every single pump before it leaves the factory. These are not sample tests — *every* pump is tested up to and beyond its design limits, and is guaranteed for two years. B.S.A. Harford are the world's largest manufacturers of Variable Output Glandless Accelerators.

To see the rest of the B.S.A. Harford central heating system, turn on.

BSA
HARFORD

NOW READ ON



NORTHSIDE HOUSE,
MOUNT PLEASANT,
COCKFOSTERS, HERTS.

PUMPS ■ BOILERS ■ RADIATORS ■ VALVES ■ BURNERS ■ PUMPS ■ BOILERS



From left — Chairman Mr. C. O. Stanley with Messrs. A. R. Bradshaw, P. H. Greer, S. E. Clotworthy and P. J. Elton.

Unidare Ltd. re-constitutes its Board

UNIDARE Limited announce that the Board of Directors has been re-constituted as follows:—

C. O. Stanley, C.B.E., LL.D., F.C.G.I., Chairman; A. R. Bradshaw, C.B.E., formerly Managing Director, has been appointed Deputy Chairman; P. H. Greer, M.I.E.E., M.I.C.E.I., formerly General Manager, has been appointed Managing Director; R. F. Browne Director.
S. E. Clotworthy, C.B.E., B.Sc. (Eng.),

M.I.E.E., F.R.Ac.S., Managing Director of Alcan Industries Limited, has been co-opted to the Board; W. Declan Dwyer, LL.D., Director; P. J. Elton, M.C., M.A., Chairman and Managing Director

of Alcan (U.K.) Limited, has been co-opted to the Board, and Sir Robert Renwick, Bart., K.B.E., Director. Sir Ben L. Barnett, K.B.E., C.B., M.C., M.A., has resigned from the Board.

WHITE-RODGERS Ltd. of 75 South Western Rd., Twickenham, Middlesex, announce the

WHITE-RODGERS DISTRIBUTORS APPOINTED

appointment of Thos. Heiton & Company Ltd., of 18 West-

moreland St., Dublin 2, as their authorised distributors for the Republic of Ireland. White-Rodgers Ltd. manufacture automatic controls for heating, refrigeration, air conditioning and major home appliances.

Heating controls, which historically represent the major portion of White-Rodgers' business, have been expanded gradually over the last twenty-five years to a full range of control equipment in each of the three domestic automatic heat fields—oil, gas and electricity, where a reputation has been achieved as world leaders for dependable quality controls with an outstanding aesthetic appeal.

An example of new product introduction in the heating control field is the White-Rodgers line of moderately priced zone control equipment which has been received enthusiastically in both Canada and the United States of America.

White-Rodgers Controls will be available from stock and the technical staff of Thos. Heiton & Co. Ltd. are available to give advice and assistance when required.

2496 Deck Pattern Pillar Cock

Sperryn

Raised Nose Pillar Cocks comply in all aspects with Clause 53 of Model Water Byelaws 1963

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London Office and Warehouse:

131 Great Suffolk St., London, S.E.1.

Telephone: HOP 0131. Telex 24797.





FLYWEIGHT

For smaller installations- the new neat 9³/₄ lb OPIXY

Central heating is now going into many houses for which even the Opiomatic Junior is unnecessarily large. For such installations B.S.A. Harford have designed the Opixy pump.

The 9³/₄ lb Opixy is not just a half-size version of the Junior. It is a completely new design, inside and out (no housewife could object to it in her kitchen).

Features include: variability by easily accessible controls; push-button to free shaft; vent screw on top for quick release of trapped air; specially designed water-lubricated bearings; guaranteed for two years.

And like all B.S.A. Harford equipment, every pump is certified individually tested.

B.S.A.
HARFORD
Northside House,
Mount Pleasant,
Cockfosters,
Herts.



the 7 deadly sins of domestic installation



IN our work so far on this hypothetical installation, we have established the position of all the components and the location of the pipe runs. As yet, however, we do not know the **size** of anything. This approach may seem illogical but, in fact, there is no other sequence that is possible for us. The reason for this will become apparent when we start to size the radiators, since, without some knowledge of the amount of heat that will be emitted from pipework in a given room, it is quite impossible to determine the radiator size accurately. In the same way until one knows the run of a pipe and thus its length, friction losses and pipe sizing cannot be established.

In order to make a start at all it is, however, necessary to make certain assumptions about pipe sizing. Then to work from those assumptions and to make any necessary final corrections before completing the design. For a small job like this it is fairly safe to assume that all the pipework of the heating system, with the exception of the common mains serving individual circuits, may be $\frac{1}{2}$ ". The mains, from the boiler to where the circuits divide, may be taken as $\frac{3}{4}$ ". It is not usual to work out the pipe sizing of the hot water circulation to the cylinder—some people would take this as 1"—but, as the cylinder is not very far above the boiler it would be better practice to use $1\frac{1}{4}$ ".



In the same way we say straight away that the thermo-syphon circulation to the bathroom may be $\frac{3}{4}$ " with the cold feed and the vent established at $\frac{1}{2}$ ". This, of course, is the **primary** cold feed and vent, the equivalent for the hot water supply would need to be larger, $\frac{3}{4}$ " or even 1".

The isometric layout of the system, as shown last month, but with provisional pipe sizing, is shown below.

Next, the radiator sizing, starting with the lounge. The intention is to use a radiator that is the same width as the window. The pipes are above the floor and using the same notional scale that was used in Part 3 the total length of pipework exposed will be twelve feet, give or take a foot or so. Emission figures for $\frac{1}{2}$ -inch copper pipe are difficult to define exactly but an average figure under design conditions would be 45 B.t.u./hr. per foot run, for painted pipe.

Thus we have 45×12 or 540 B.t.u./hr. to deduct from the figure of 12,730 B.t.u./hr., which we found in Part 3 to be the heat requirement for the lounge. The balance of 12,190 B.t.u./hr. must be made up in radiator surface.

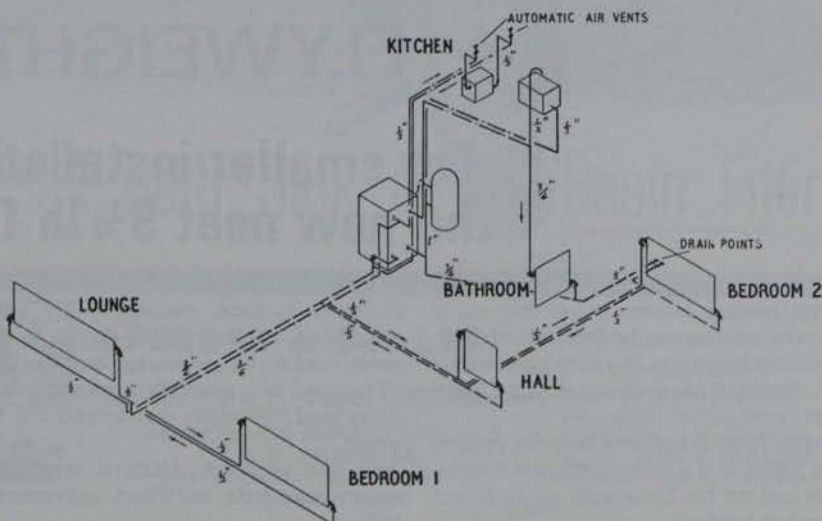
The next thing to do is to establish the emission figure per square foot from the particular radiators that we intend to use. Now, with the usual design conditions, i.e., a 180 degree F. flow temperature and 20 degree F.

difference between flow and return, the radiator temperature, on a two-pipe system, may be taken as 170 degrees F. The design temperature of the room is 70 degrees F. so the radiator will be working on a 100 degree F. temperature difference between air and water. Under these conditions most single-panel steel radiators are stated to emit 192 B.t.u./hr. per square foot of surface. Rounding off upwards to the nearest square foot the required surface in a single-panel radiator, would be 12,190 or 64 square feet.

192



This is where we hit a snag. Reference to the radiator catalogue shows that the resultant single-panel radiator would be far too large for the window width and cill height that we have to work to. So we use a double-panel radiator, but remember, the emission rate will be lower. From the catalogue we might get a figure



from previous page

of, say 167 B.t.u./hr. per square foot of surface.

12,190 gives us 73 square feet and, in a double unit, this can easily be accommodated in the space available.

This size can be accepted as final; if the pipe size in the lounge did have to go up to $\frac{1}{4}$ " one could perhaps decrease the size a little but it would hardly be worth doing so, although it could be advisable in a room with a lot of exposed pipework. The only other reason for altering the size at this point would be if we wished to make an allowance for quick heating, when up to 15% could be added, or if we were designing a special type of system, of which more will be said later, where the radiator surface is deliberately increased so as to absorb the full output of the boiler. Neither of these cases apply so the lounge radiator may remain at 73 sq. ft. of double-panel surface.

If skirting heating is being used instead, the same basic process would be followed. Skirting heating emission is usually given by the foot run; a typical figure might be 500 B.t.u./hr. per foot. This emission figure is usually dependent on a stated throughput of water and this requirement needs to be borne in mind when pipe sizing. In my experience skirting heating rarely comes out at the right length for a room and it is good practice to finish the job off by continuing with empty heater casing for the odd couple of feet where this is necessary to completely cover the length of a wall. This is simply for appearance sake.



We can tackle Bedroom 1 next, where lurks another snare for the unwary. This room is only heated to 60 degrees F. so there will be a water to air temperature difference of 110 degrees F.

The increased emission can be worked out, but to save a lengthy description of this process let us assume that the radiator catalogue gives the figure. Many manufacturers do provide this information, bless them, and on a 110 degrees F. difference a typical figure would be of the order of 211 B.t.u./hr. Pipe losses in Bedroom 1 may be taken as 1170 B.t.u./hr. from Part 3 we note that the heat requirements are 8,350 B.t.u./hr.; after allowing for pipe losses therefore the single-panel radiator requirement will be

This sparkling and well-informed series is by W. J. R. COUCHMAN. Mr. Couchman maintains close contact with the trade throughout Ireland and is ideally informed to compile this series.

7180 = approximately 35 square feet.

211

In this case it will be possible to fit a single-panel radiator of this size below the eight-foot window.

The bathroom will be a rather special case; it is served by a thermosiphon or gravity circulation and, with a flow temperature of 180 degrees F. we should not expect the radiator temperature to greatly exceed 160 degrees F. The design temperature of the bathroom is 60 degrees F. but, due to the lower radiator temperature, the emission will be only 192 B.t.u./hr. per square foot, if a single-panel radiator is used. The eight feet of painted $\frac{1}{4}$ " wide copper pipe in this room will emit approximately $8 \times 62 = 496$, say 500 B.t.u./hr. From Part 3 the heat requirement is known to be 4,360 B.t.u./hr. We therefore have to make up 3,860 B.t.u./hr. with the radiator. We could use a chrome towel rail with a small inset radiator but a panel radiator with a fitted rail above would be cheaper, if acceptable

to the customer. The size will be 3,860 rounding off to 20 square feet.

192.



Sparing you the rest of the process we may assume that the hall radiator will be 14 square feet and that the second bedroom radiator will be 30 square feet. In both cases single-panel radiators may be used there is no exposed pipework.

Our radiator schedule, therefore, is as follows, and it so happens that no sizes will need to be revised because of revised pipe sizing:—

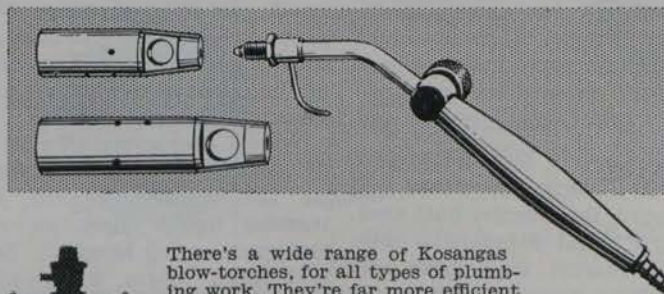
Lounge—73 sq. ft. double panel.
Bedroom—1.35 sq. ft. single-panel.
Bedroom 2—30 sq. ft. single-panel.
Bathroom—20 sq. ft. single panel.
Kitchen—Convactor, 4,000 B.t.u. hr.

Hall—14 sq. ft. single panel.

With the radiators properly sized and any "deadly sins" of omission carefully avoided we can go on to pipe sizing next month.

Kosangas Blow-Torches

for every plumbing job!



There's a wide range of Kosangas blow-torches, for all types of plumbing work. They're far more efficient than the conventional types.

The Kosangas TH3 and TH4 high pressure blow-torches are specially designed for paint-burning, pre-heating and soldering.

The Bullfinch Mark II has a full range of heads, including soldering attachment. Use Kosangas blow-torches, with the small Kosangas portable cylinder, also for roof-felting, jointing of plastic pipes, and other heating needs.

A plumber's portable furnace with wind protected burner is available.

Send for details to: McMullans Kosangas Ltd., 1 Upper O'Connell St., Dublin. Tel: Dublin 40761-4.

SPECIAL REVIEW

THIS MONTH

Domestic, industrial, commercial and hospital sanitaryware

RESEARCH PROGRAMMES WILL BENEFIT ALL SECTIONS

WITH such colossal sums of money being programmed for building and redevelopment, it is true to say that a large slice of this spending will go on extensive research.

New ideas will emerge. Here I propose to take a look at possible trends in the field of sanitary ware, and in view of the importance and interest in these developments insofar as modern hospital practice is concerned, I am putting the emphasis on this sector.

With sanitary ware being given the "once-over" to check that present designs are best suited to modern hospital demands, it can bring but good not only to the hospital staffs and patients, but also, in many cases, to the home builder, who will be able to use equipment of better design as a result of likely improvements arising out of detailed research.

Urinals of the monolithic stall type might well give way to the lighter, more easily serviced and generally more hygienic wall hung basin type.

Lavatory Basins may well have to be adapted or purpose designed to meet the needs of wheel-chair patients. Such a new design of basin might well be useful in some homes where elderly persons are confined to wheel-chairs on account of illness or old age.

FLUSHING Cisterns, where used, will tend towards the selective flush kind. These, and "Ideal Standard" have one on the market now, offer the choice of a full two-gallon flush, or a lesser amount of about one gallon, according to need. This is a sensible and quite practical step toward the increasing need to conserve water supplies.

Baths of durable cast-iron will, it is thought, retain their place as a

good general choice. On the other hand, the pressed steel baths, and the perspex ones are making considerable headway. As sumptuous and relaxing as the modern bath can be, especially in a well planned bathroom, there can be no escaping the growing popularity of the shower bath.

Shower Baths may be in glazed fireclay, cast iron, and glass fibre. Alternatively, they may be had in complete one-piece all plastic construction ready to install. These shower cabinets need only water and water connection on site and really are an economic proposition. They are ideally suited for use as a second "bathroom" and, in many cases, are being so employed where a sizeable space, formerly a wall cupboard perhaps, can be found to accommodate their 3ft. square plan.

HAND Washing, especially after toilet usage, has always been a sensible moral duty. The unfortunate Aberdeen epidemic has perhaps emphasised the need for more fastidious personal hygiene. Even so, **hand drying** can cause bothersome towel problems or messy disposable paper towel litter nuisances. Electrically heated, warmed air driers take up little space, and are hygienic and economical in use.

Where exceptional "peak" usage of hand washing facilities are needed, as in factories, schools, etc., the **washing trough** offers an economic and space saving fitment. Served by a blended warm water supply to

spray taps, white glazed troughs can provide a durable yet pleasing answer to space restriction and robust usage, and at the same time give really economical water and fuel consumption. Wall mounted, electric warm air blowers could well be used instead of towelling of any kind.

Urinals have been mentioned earlier, but one feature of new approaches to design can be seen in that which incorporates individual flushing cistern with an electronic operating device. The flush water discharges only when a user addresses the urinal stall and thereby intercepts the electronic beam which monitors the operating sequence.

AND this is perhaps a good note to end upon. Personal hygiene is an essential pre-requisite to good health. Whether good hygiene is by electronic means or the good old-fashioned scrubs, the fact remains that avoidance of disease transmission by contact should be guarded against. Can we look forward to neatly housed warm air blowing nozzles situated conveniently in the bathroom walls?

And why not warm air drying for the whole body after a bath?

But enough of this pipe-dream and back to realities. Hygiene must be promoted and the skill of the appliance designers allied to the know-how of the plumbing installers, will always form the best means to this end.

PRODUCT REVIEW begins on page thirteen











This special review article was prepared by technical expert A. L. Townsend.

Ten

Specify **FISHLOW** and get exactly what you want

The range of FISHLOW Stainless Steel Sinks is wide and the prices are low. The table below gives evidence for these statements. Their distinctive multi-fluted draining boards give efficient draining, great strength, good sound-deadening qualities and are easily cleaned. Top quality British stainless steel is the basis of their good looks and lifetime durability. A range of Vitreous Enamel sinks is also available. Please ask for fully descriptive literature. Barbour Index No.227

<p>MODEL L 18" x 36"</p> 	<p>MODEL DL 18" x 54"</p> 	<p>MODEL N 18" x 42"</p>  <p>MODEL W 21" x 42"</p>	<p>MODEL WN 18" x 63"</p>  <p>MODEL WW 21" x 63"</p>
<p>MODEL WL 18" x 54"</p> 	<p>MODEL TL 18" x 72"</p> 	<p>MODEL DN 18" x 63"</p>  <p>MODEL DW 21" x 63"</p>	<p>MODEL TN 18" x 84"</p>  <p>MODEL TW 21" x 84"</p>

JOHNSON

AND

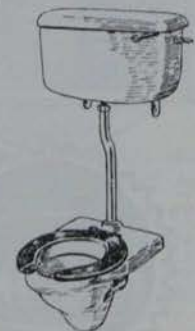
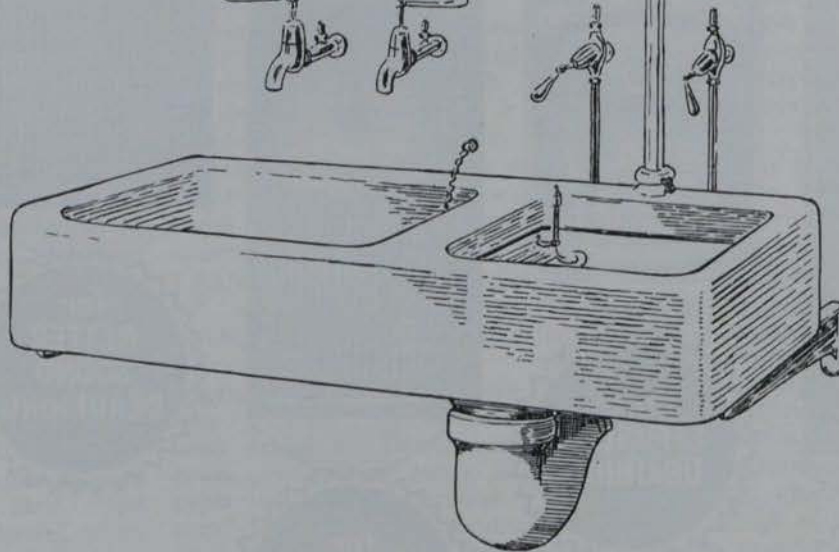
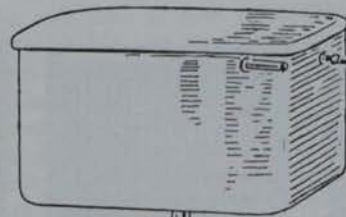
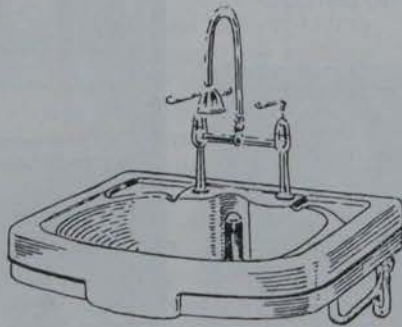
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A NEW 6 ft. "Standard Lowline" bath has been announced by Ideal-Standard Ltd. of Hull. It will supplement the existing 5 ft. and 5 ft. 6 in. models. The "Lowline" is made of porcelain enamelled cast-iron and has a low internal depth and a flat bottom giving greater safety and comfort. The taps can be fitted centrally or on either corner. As a further alternative, taps can be fitted on the wall, in which case the bath is supplied without tap drillings. It has flat shaped rims with no anti-splash moulding, and an optional extra is a pair of recessed chromium-plated handgrips.

Ideal-Standard are marketing a dual flush cistern which is available in two forms—for use in a low level suite (fitted with a flushing handle) and for use at high level (with a chain and pull). The cistern and its siphon are made of vitreous china. The choice of flushes is made as follows: for one gallon the handle is pressed and released immediately—for two gallons the handle is pressed and held until the flush is complete.

The same firm have also introduced into their range of vitreous china urinals a new design of slab urinal. The new "Vitual" can be supplied to any length above two feet in increments of 1 inch and can be tailored to fit any length of wall.

THE V4157 Herculex 22" x 20" counter top washbasin unlike many conventional vanity basins does not need a cover strip as it rests on the counter top by the use of a flange, and is therefore much easier and cheaper to fix. It also has a large bowl area and a wide slab for toilet accessories or special fittings. It is illustrated here with the Nuastyle mixer fitting with pop-up waste.

The Muresta W.C. is a new wall hung, double trap, vacuumatic W.C. used with an Armitage vitreous china concealed cistern and flushbend. If fixed on non-load bearing walls a



The Muresta wall hung W.C. by Armitage Ware Ltd.

**IN this equipment review
we take a look at new
developments in the fields
covered by the foregoing
special review. (All claims are
those of the manufacturers).**

chair carrier support built into the wall and floor is used. The V1006 Ormura bidet, wall hung, in much the same way as the Muresta w.c. now means that an Armitage bathroom set can be fixed clear of the floor, facilitating cleaning and is of much neater appearance. The bidet has the Nuastyle B206 fitting which gives controlled water to the rim and douche. The manufacturers are Armitage Ware Ltd. of Staffordshire.

DURING THE last year Curran Ltd., Clonmel, Co. Tipp. have introduced a 5'6" porcelain enamelled steel bath. Colours are white, primrose, pink, turquoise and blue. These baths are being enamelled at Clonmel for sale in both the 26 Counties and Northern Ireland and are proving a great success. Prototypes have been produced and production will commence shortly of porcelain enamelled steel lavatory basins. Curran Ltd. are also continuing with their popular range of porcelain enamelled steel sink units.

TWYFORDS Ltd. of Stoke-on-Trent are the manufacturers of the No. 181/1 Unislab Urinal, which is made in one piece thereby eliminating joints which have given cause for leakage in the slab type urinal made of separate components. Because of this, the Unislab is particularly suitable for installation on upper floors. Two or more can be butted together to form a continuous range. A single stall version, the No. 183 has just been advised to the trade and thus enables a range to be made up for any number of persons.

Also from Twyfords comes the No. 2676 p/3 "Viking" washbasin. This product was originally designed for the Scandinavian market and has since been introduced in the home market where it is sold in increasing numbers. It is an inexpensive flat top washbasin which is available with a number of supply fittings. Of interest also is the Twyford No. 2677/1 Baby Bath which was designed in consultation with a number of leading hospitals in Britain.

ON THE market recently from Wildblood and Taylor Ltd. of Longton,

is the Balmoral Pedestal Washbasin, size 25" x 20". The supports are No. 461 pedestal or No. SF.77 concealed bracket. There is a standard pillar tap at 8", centre, and features include the large bowl, soap sinking and an anti-splash rim. It is available in white, black and eight standard colours.

Also available is the Balmoral close-coupled suite with Closet No. 476, the action of which is double trap syphonic, with a P trap or S trap outlet; and cistern No. 496 with right or left hand lever. The supply and overflow is side or bottom, and it has a capacity of 2, 2½ and 3 gallons. The Irish agents for the "Balmoral" range are G. F. Morley Ltd., 45 Quinns Lane, Fitzwilliam Square, Dublin 2.



The Vitural vitreous china slab urinal without divisions is by Ideal-Standard Limited. This is a corner installation, which includes risers and treads. Back inlets give an extremely neat appearance. The usual flush pipe system is also available

THE CATERING Equipment Division of Hammond Lane Industries Ltd. have, in a comparatively short period, developed the following impressive range of equipment:

Plain Top and Bain Marie hotcupboards in standard sizes from 2 ft. to 10 ft.; Served Counters for hospitals and restaurants; Self-Service counters; Back Bar equipment and Called Order units for gas, and electric heating.

A wide range of mini-hotcupboards and counter Bain Maries are also available for the smaller caterer.

In addition to the domestic range of sinks over 30 catering models are available at present. These sink units make maximum use of the pressed type of standard bowls which are 24" x 18" and 27" x 20" in varying depths. Shortly to be introduced is a 30" x 20" heavy duty pressed bowl in various depths, suitable for pot wash or general wash-up.

Notwithstanding this wide range a "Specials" department to manufacture purpose made units with pressed or fabricated bowls is maintained.



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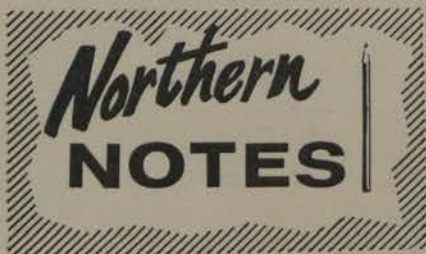
Telex: 5325.

DOI: The Irish Plumbing and Heating Engineer, August 1964 (complete issue)

Northern Ireland special review ...



Presented with the August, 1964, issue of the Irish Plumbing and Heating Engineer.



By **Allen McDowell***

comprehensive coverage of the subject, dealing as it does, with every facet of central heating.

New four-day course for heat engineers

A FOUR day training course for heating engineers is to be introduced to Northern Ireland in October. Organised by the Coal Advisory Service in conjunction with the National Coal Board, it will take the form of an instructional session covering all aspects of installation. The first course commences in Belfast on October 6 and will be repeated the following week.

Lecturers from London will speak and the organisers hope that an examination may be held later, with successful pupils gaining a certificate of proficiency.

Prior to the heating installers course, another for approved appliance distributors will take place. It will commence on September 14 for five days, again, with a repeat course to follow should the response be sufficient.

The curriculum for the heating installers course should provide a most

Central heating

"ELEVEN PER cent of all the homes in Britain have some form of central heating and nearly one quarter of the 1,800,000 systems in existence at the beginning of the year were installed during 1963".

This information was derived as a result of a continuous survey, still being carried out by A.G.B. Ltd., an independent firm of market research experts and was released to members of the Northern Ireland Coal Advisory Service last month.

And the other facts that A.G.B. have come up with make most interesting reading. The N.C.B. report their findings as follows:

"Since the end of 1959, the number of houses with some form of central heating has more than doubled and of the present total, 63 per cent use solid fuel, 11 per cent gas, 11 per cent electricity and 9 per cent oil. In 1963, out of a total of 418,000 new installations, 208,000 were solid fuel fired. The figures for the previous year were 220,000 new installations, of which 114,000 were solid fuel fired.

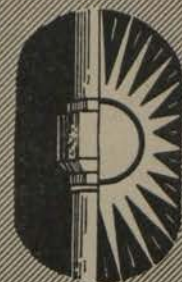
"This indicates the rapid growth of the market for central heating and also shows that solid fuel is winning as

Welcome to the first I.P.H.E. Northern Ireland Special Annual Review. It represents a further expansion in the Engineer's coverage of N.I. and a further service to our Northern readership.

Allen McDowell, well-known for his monthly Northern Notes column, looks at the news making developments. His contribution also covers an extensive equipment review.

The first of our guest contributors is Mr. F. R. McBride, A.M.I. Mech.E., M.Inst.F., who deals with the current picture in the heating industry.

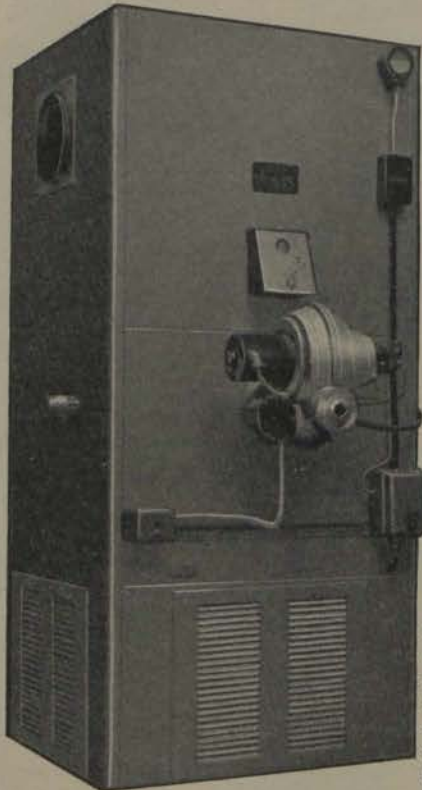
The President of the Northern Ireland Master Plumbers' Association—Mr. J. A. Willis—also contributes to the review. His outspoken comments appear under the heading "A President's Viewpoint."



*Allen McDowell's Northern Notes appear every month in the Irish Plumbing and Heating Engineer.

Continued page nineteen

The Irish Plumbing and Heating Engineer.



Still leads the Way...

FOR INDUSTRIAL SPACE HEATING EQUIPMENT

Oil Fired & Gas Fired

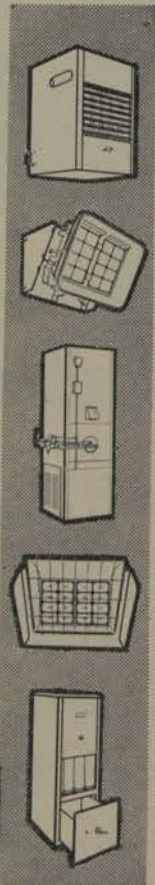
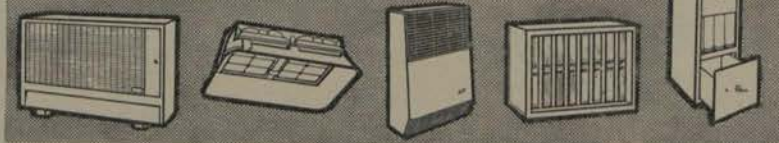
A complete range of many sizes and types of space heaters and air cleaning equipment.

The heater illustrated is the VO/HO 500, one of the recent additions to the range of Harris Oil-Fired Air Heaters which extends from 100,000 to 1,000,000 B.t.u. per hour. These heaters embody the new Harris suspended flame combustion system, thus ensuring high efficiency of combustion and a flame that stays clean. These heaters are suitable for operation as free-standing units or with ducting having resistance not exceeding 0.3 in. w.g. These heaters are delivered to site completely assembled and ready for connection to oil supply and electricity.

Other products as illustrated include

- 1 Gas-fired indirect and direct suspended air heaters.
- 2 Infra-red gas-fired wall-mounted radiant heaters (industrial).
- 3 Gas-fired vertical and horizontal warm air heaters.
- 4 Infra-red gas-fired wall-mounted radiant heaters (commercial).
- 5 Unit dust collectors.
- 6 Electrostatic air filters for dust filtration (down to 0.01 microns).
- 7 Gas-fired "Wellsway" flued convector heaters.
- 8 Infra-red gas-fired suspended radiant heaters.
- 9 Gas-fired "Medway 30" balanced flue convector heaters.

Full details of all products and data sheets are available on request.



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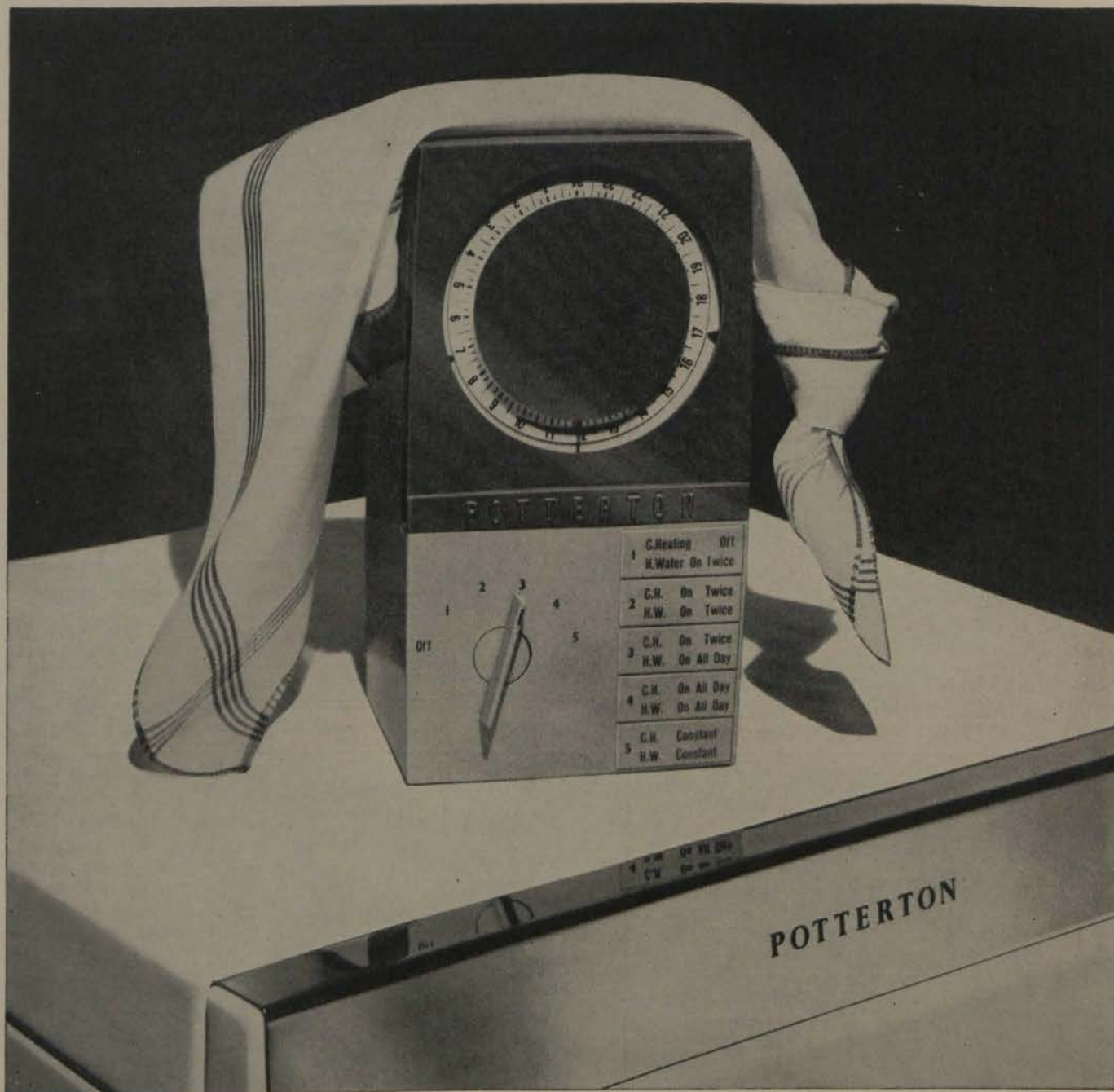
- = Ease and economy of installation for the heating and plumbing installer
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Potterton boilers—the gas-fired Diplomat, the oil-fired BOA, and the new, oil-fired Portway—have all the control, convenience and comfort any customer could ask for.

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Gas is choice for 336 flats

THE NORTHERN IRELAND Housing Trust has chosen gas for central heating, water heating and clothes drying in 336 flats to be built on three sites on the outskirts of Belfast.

The first two blocks of 15-storey flats are under construction at Rushpark, Newtownabbey and similar developments will be sited at Finaghy and Newtownbreda.

Each block will be 130 feet high and will contain 56 flats, each with two bedrooms, kitchen and living-room. Each flat will be heated by a Radiation Ductair G2303 warm-air unit housed in a white stove-enamelled cabinet 23½" and 32" wide and 14½" deep, weighing 100 lbs.

Hot water will be supplied by a regulo-controlled Ascot Circulyn gas water heater connected to a cylinder. The Ductair and Circulyn will be room-sealed and will discharge products of combustion into Se-Duct or common flue. A built-in Flavel clothes dryer will be fitted.

These flats will be the first in Northern Ireland to be fitted with this all-gas service. Similar installations are probable in a 260-flat development planned for Rathcoole, making a total of almost 600 flats. In Belfast itself, the first 400 flats in the Upper Library Street redevelopment scheme will have gas fires, water heaters and cookers.

The Belfast Gas Two-Part Tariff—the "half-price" tariff—will ensure economical running costs for the tenants in all these developments. much new business as all the other fuels put together. These figures refer

Shown here is the first fifteen-storey block of all-gas flats under construction for the Northern Ireland Housing Trust at Rushpark, Newtownabbey.

Northern Notes —from page fifteen

to all homes fitted with some degree of central heating".

Note: The Coal Advisory Service is a joint organisation of the N.I. Coal Importers Association and the National Coal Board of Britain. The Belfast office is managed by Mr. D. G. Barrett, B.Sc. (Econ.).

Giant boilers

THE NEW £250,000 boiler plant at Short Brothers and Harland Ltd.,—now in the final stages of completion—will have three of the largest shell boilers ever installed in the U.K.

The boilers, each weighing over 50 tons, and with a peak load of 44,000 lbs. an hour, arrived in Belfast at the end of last month on a special charter ship (one of them is pictured above).

Two other boilers, one for the Belfast Silk and Rayon Co., and one for Robt. Wilson, Burnhouse, arrived on the ship, the 2,272-ton Cardiganbrook.

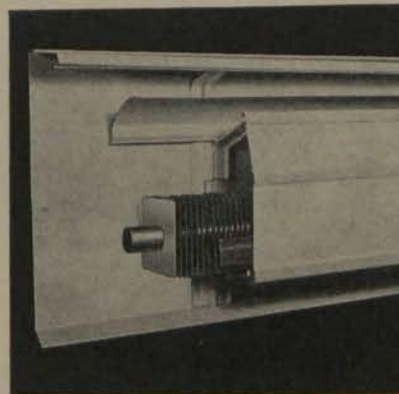
The new boiler house at Shorts will



centralise the heating of the whole Queen's Island plant for the first time. At the moment, heating for the workshops, offices and the specialised needs of the aircraft industry is provided by four separate plants.

Designed by Shorts works engineers' department, the new plant will go into operation in the Spring.

The boilers were built by Richardsons Westgarth of Sunderland. Local agents are J. Hamilton and Co., Percy Street, Belfast.



What's so special about **WEBSTER SKIRTING HEATING?**

There's the design, smart and unobtrusive. The multi-fin copper tube heating element is fixed to the base of the walls at ankle height, tucked out of sight behind a metal skirting board. Air enters at floor level, passes over the heating unit and circulates throughout the room by natural convection. But there are two kinds of heat! The metal face of the skirting board radiates heat as well at ankle height, where it's appreciated. The Webster system is easily installed, responds rapidly to thermostatic control, is safe as can be.

Standard for all Warren Webster Skirting Heating is the controlled emission of heat by the moveable damper blade.

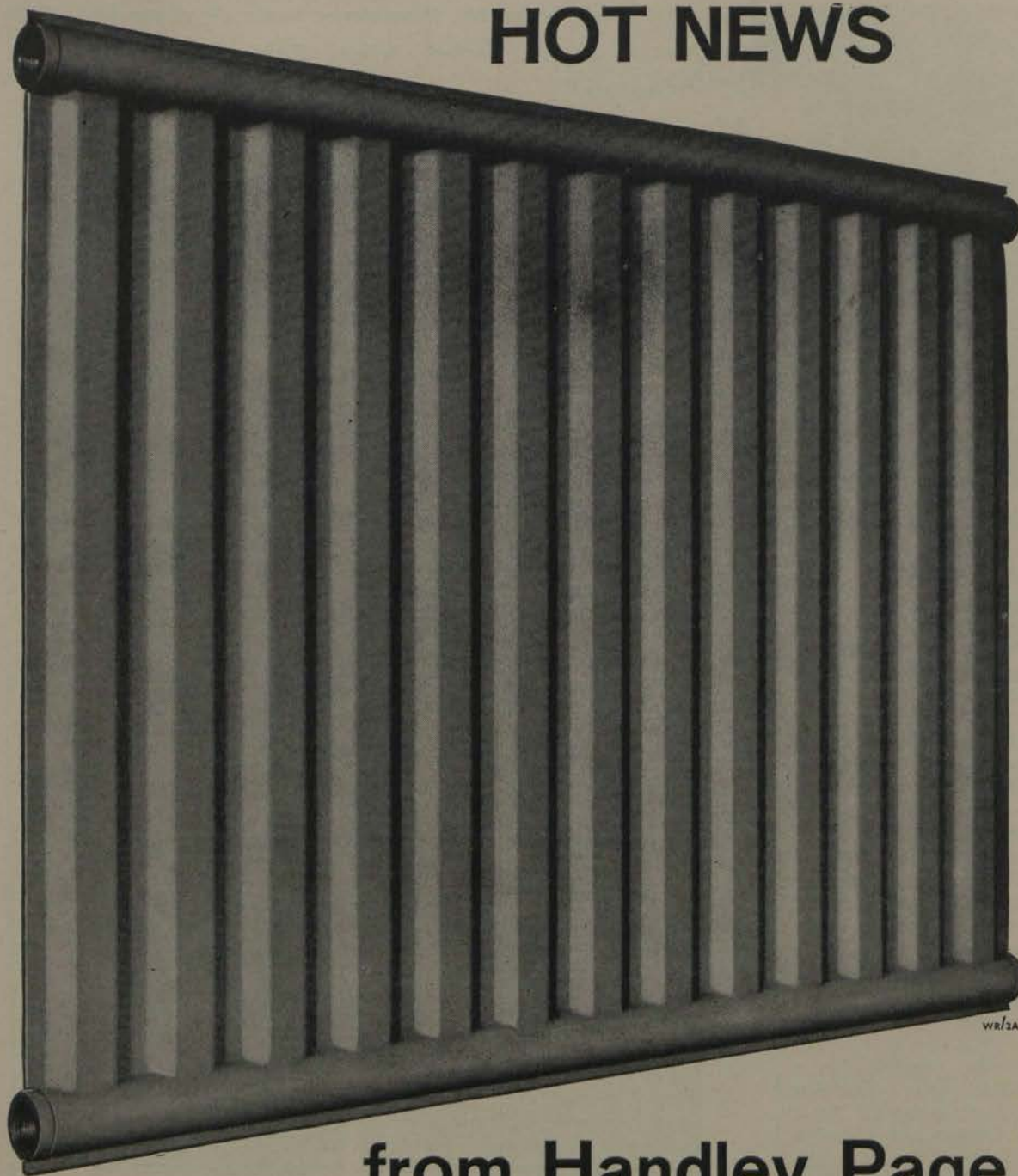
You really should send for details.

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HOT NEWS



from Handley Page

Handley Page, constructor of Britain's fast-as-sound Victor V-bombers, has entered the space-heating field. Its new range of hot-water panel radiators has the unmistakable hallmark of the company's unique design and vast engineering skill.

Handley Page radiators are formed from high-quality 18-gauge mild-steel sheet, electrically seam-welded for extra strength. Their distinctive, easy-to-clean, vertical fluting provides a rigid, light-weight product which stands up firmly to shock or ill-treatment. Each radiator is tested to 100 p.s.i.—twice the normal working pressure.

Slim, elegant, efficient, economical—Handley Page radiators are perfect for all closed-circuit heating systems. And their construction allows them to be angled or curved to suit bay-window requirements.

BRIEF SPECIFICATION:

HEIGHT: Four standard heights—12", 18", 24", 30".

WIDTH: Single panel—1.35"; Double panel—3.25".

LENGTH: Thirteen standard lengths up to 88.5" available from stock. Special lengths made to order or single panels can be connected together in series.

FINISH: A coat of stove-enamelled white primer is standard. Stove-enamelled gloss finishes available at an extra charge.

All enquiries to:

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The HEATING INDUSTRY



ONE of the industries which has grown far beyond its pre-war size in Northern Ireland is the heating industry. Prior to 1939 and in fact prior to 1945 this industry was in its infancy and with the exception of one or two firms such work was carried out by firms of general engineers. The last fifteen to twenty years has seen the growth of a major branch of engineering with many firms specialising in heating only.

The older firms such as Johnston Bros. and Wilson Ltd., Wm. Coates and Sons Ltd., Musgrave Ltd., are already well known throughout all of Ireland, having carried out work both North and South. The new firms such as Wm. Brennan & Sons Ltd., J. W. Thompson (P and H) Ltd., G. N. Haden and Sons Ltd., and Vaughan Heating Co. Ltd., to mention but a few, are all expanding and the latter has recently opened offices in Dublin.

In these few words it can be seen therefore that the heating industry has grown from a small unit, employing a few hundred men, to a large independent unit employing some thousands.

THROUGHOUT Ulster there has been for the past few years a very substantial factory development and re-modernisation scheme and this coupled with the schools and hospital programme has taxed the heating trade to its limit, in fact it can be said that there is practically full employment.

The factories which have been built have mostly been of the now standard north light construction, giving wide and column free production areas, with single and double storey office blocks attached, mostly of open plan or panelled construction.

The type of heating which has been adopted for most of the factories has been the radiant panel system, such as that developed by Frenger Ceilings (Frengerstrip) or Brightside Engineering, coupled with Unit heaters, where curtain heating has been required. Office heating consists mostly of cast iron or

By

**F. R. McBride, A.M.I.Mech.E.,
M.Inst.F.**

steel radiators, similar to those manufactured by Ideal Boilers and Radiators Ltd., Veba Ltd., or Gulf (P.D. Heating). In the more recent constructions convectors, both fan assisted and natural, have been widely used, particularly in the offices to be occupied by management. Convectors supplied by Flexaire Ltd., Biddles, or Copperad Ltd., have been among the most popular.

Welding has been extensively used and now the modern trend is for the offsite pre-fabrication. Whether the heating system is hot water, high or low pressure, or steam, automatic thermostatic control, such as the Satchwell or Honeywell systems have been widely used.

THE boiler houses which have been built to provide heat and power for the new construction are the last word in design and equipment whether the unit be oil or coal fired brightness and cleanliness is the keynote.

Most of the boilers of the past few years have been of the package type such as those manufactured by Cochran Boilers Ltd., Allen Ygnis Ltd., G.W.B. Ltd., John Thompson Ltd., etc. In addition the two largest shell boilers in Ireland are to be installed at Short Bros. and Harland Ltd., the famous aircraft firm. These boilers are being manufactured by Richardson Westgarth Ltd. As is to be expected the greater percentage of these boilers are oil fired, the popular burners being those manufactured by Clyde Fuel Systems Ltd., Hamworthy Burners, Nu Way, etc.

The heavier oil fuels 950 or 3,500 sec. are in common use, but there has

been a tendency of late to use 200 sec. fuel oil on plants up to 5,000 lb./hour.

It is extremely difficult in this short article to give credit to the developments of the heating industry in Northern Ireland, but the reader can be assured that this branch of engineering is one of the most progressive in the Province. Every effort is made to induce young and capable designers and installation engineers and this coupled with the practice of utilising, where possible, all modern developments and equipment is ensuring for the clients, heating installations equal to those anywhere in these Islands.

People

● MR. RONALD AINSWORTH HOLT, deputy station engineer at the Burnley works of the North Western Gas Board has been appointed manager of the Portadown Gas Works.

Mr. Holt, who is 40, succeeds Mr. Tom Scott, now manager of Newtownards Gas Works.

* * *

● AEI announces the appointment of MR. A. CORMACK as Manager of the Turbine-Generator Division works at Larne, Northern Ireland. MR. K. R. JOHNSTON succeeds Mr. Cormack as Manager of the Division's Petershill works, near Glasgow.

These appointments are made on the resignation from the Company of MR. W. T. H. GOLDING, who has left to take up a new appointment in Belfast.

Twenty-one

The Irish Plumbing and Heating Engineer.

‘**INSTALLATION RATE GOVERNED BY AVAILABILITY OF SKILLED TRADESMEN . . . HONESTY MUST BE THE RULING THOUGHT . . . SOLIDARITY WITHIN THE TRADE A GREAT NEED.**

A PRESIDENT'S VIEWPOINT

A RECENT issue of a national trade magazine carried the headline over its editorial "The Big Boom: Industry ready for mass carve-up". But is it ready? What's more should it be willing? Certainly there are sections of the industry apparently only too ready and willing to see the market 'carved up', and as quickly as possible. I refer of course to the oil companies, the coal industry, gas councils, etc., as well as the mammoth concerns in the manufacturing side of the industry all of whom are spending vast sums of money advertising to a very responsive public, creating in the process a demand for their particular products which cannot easily be satisfied.

These mighty spenders, however, seem to have ignored one very basic fact. The limit to the rate at which heating installations can be carried out is governed by the number of skilled tradesmen there are available to carry out the installation programme. Certainly there are new firms of contractors coming into being every week—but this does nothing to increase the labour force. And what of these new firms? How many of them are doing the job properly? The first requirement of any individual setting up in business is to know how to run a business. How to prepare estimates that will successfully see him through a contract and leave him with a just reward for his efforts, and a bit more to allow him to consolidate and expand. If he is without the necessary skill and technical knowledge to design his own schemes with complete confidence he would be well advised to employ a good designer.

The unwise individual who ignores these simple rules not only makes it difficult and sometimes disastrous for himself but makes it equally difficult and embarrassing for his fellow competitors whose accurate and genuine

estimates for decent standards of work are frequently by comparison made to look not only ridiculous, but to the uninformed customer "Highway Robbery". The real "robber" is of course the bad installer who takes good money for poor work.

WHAT is good work? What should the customer be entitled to expect for his money? Many phrases have been coined to describe it: background heating, selective heating, "small bore" heating, packaged deals, etc. None of these really mean anything. A central heating installation should be designed to maintain in a home, on the coldest, most miserable day of winter, conditions equal to those of the most comfortable pleasant day of summer. Nothing less than this degree of comfort should be offered; nothing less should ever be installed by the limited labour force available. If a prospective purchaser finds that he cannot afford these standards he should be advised to save until he can.

Above all, honesty must be the ruling thought behind all. There will inevitably be the prospective buyer who is determined to install one of the so-called cheaper packaged deals: four or five radiators from a "high-output" open fire boiler. He should be made to fully understand the limitations of such a system. That he is proposing to spread 70 or 80 sq. ft. of heating surface over his entire house, heated from, let's face it, the most inefficient type of fuel consumer in general use—the open fire.

He should be told that he will have to frequently, sometimes very

frequently, replenish the fuel so inefficiently being consumed before his eyes. He should be told that he cannot expect to rise in the morning to warm radiators—let alone warm rooms—because the open fire just cannot contain sufficient fuel to maintain the output of his radiators overnight. Indeed if the fire is to be kept alight overnight it must be banked down. The unfortunate breadwinner must be told that he will probably be several hours at his office before his bedroom radiator has once again begun to perform.

If after all this he is still prepared to go ahead, at least he has had honest advice and will realise the limitations of the system he is purchasing. If, on the other hand, he decides not to proceed he will go away a wiser man and probably with the idea in his mind that this firm is the one he will go back to when he can afford to do the job properly.

TOO often in the past this honesty has been lacking and many a "packaged system" has been chucked in the scrap heap unpaid for, by a disappointed, bewildered, dissatisfied customer.

What can be done to counteract these unpleasant and disturbing trends?

The greatest need, at present, I think is for greater solidarity within the trade, more discussion, and a singleness of purpose. Individually as independent firms we can protest, but to whom? Our protests will disappear into thin air and will never reach the ears for which they are intended.

That the industry itself is concerned

Continued page twenty-five

By

J. A. WILLIS, President, Northern Ireland Master Plumbers' Association

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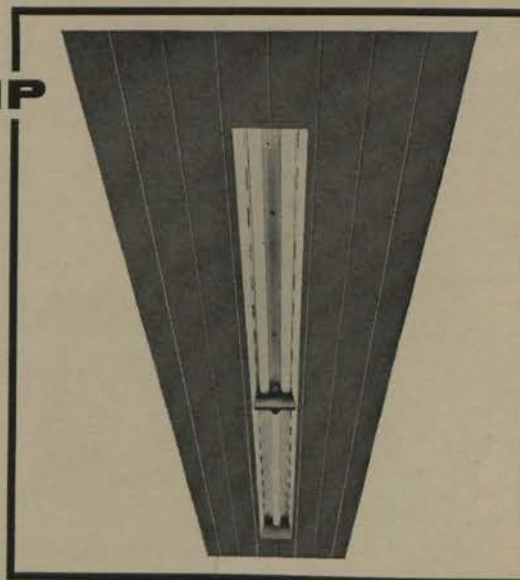
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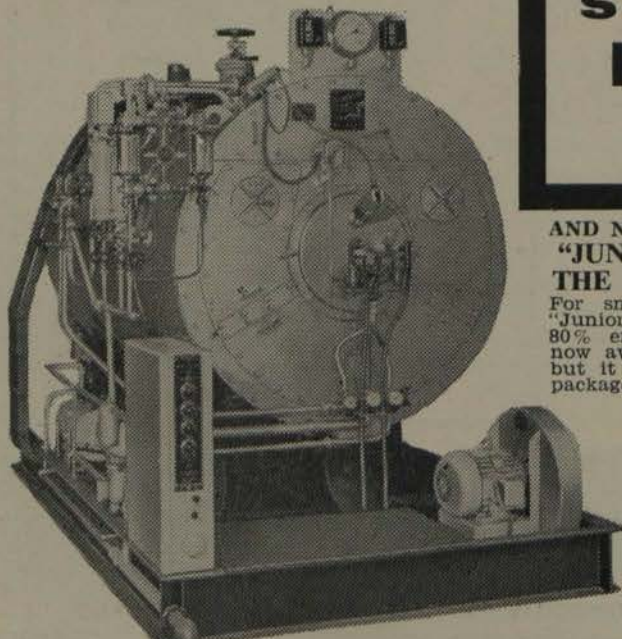
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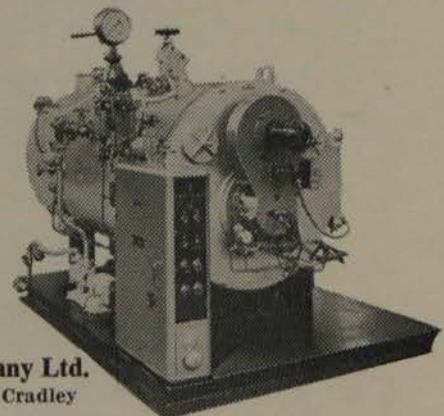
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Belfast, 5. Tel. 57823.

The Cradley Boiler Company Ltd.
Cradley Heath, Staffs. Tel. Cradley
Heath 66003.



VIEWPOINT

from page twenty-two.

for its own reputation is evidenced by the recent formation, in London, of the Domestic Heating Society, the objects of which are as follows:—

- (a) to provide a forum through regular meetings for the exchange of ideas and opinions on all matters of interest to individuals in the various sections of the industry;
- (b) to collect, collate and disseminate information regarding domestic heating among the membership;
- (c) to press for the establishment of high standards in the practice of domestic heating;
- (d) to initiate, support and co-operate with others in proposals and activities calculated to assist the promotion of the society's objects.

Membership of this Society will be open to all in the United Kingdom who, in the opinion of the Council, have a genuine interest in domestic heating and are actively engaged in one or other branches of the industry.

WE in Northern Ireland are very pleased to observe this development and it is to be hoped that Northern Ireland will contribute to the membership of what will undoubtedly be a responsible body.

Obviously all firms in Northern Ireland cannot expect to become members of this body, but that is not the same as saying that they cannot be expected to show a sense of responsibility.

The Northern Ireland Master Plumbers' Association has, for many years, been the authoritative voice of the plumbing fraternity and has negotiated successfully with trade unions, public authorities, and Government bodies on behalf of its members. It is, perhaps, unfortunate that this Association does not represent the entire installing trade although there is no doubt that this trade in its entirety benefits from the efforts of the Association.

The importance of a strong association must be obvious and I have no hesitation in advancing to all firms, be they new or old-established, an invitation to add to our strength that we may collectively and in unity be in a better position to advance the standards of the work we do and to resist those things that we find deplorable.

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Northern NOTES

Adam Orr secure big Belfast contract

ADAM ORR Ltd. of Belfast has secured the contract for the new Autolite factory at present under construction at Finaghy on the outskirts of the city.

The contract, valued in the region of £150,000, is for the mechanical services and include steam heating and plumbing, ventilation, air conditioning and the sprinkler installation.

Considering the fact that the contract must be completed by October 31 of this year, the undertaking will be quite an achievement for this impressive company who, five years ago, entered the heating field with only a handful of workers. Today the staff numbers over 120. Work in hands at present tops the £1m mark.

There are, within the company, three separate divisions, each attending to its own job: domestic heating, housing and industrial. Cross-channel, the firm is also making its mark with the formation last month of Adam Orr (U.K.) Ltd., with offices in Manchester. Their Belfast address is 25 Nth. Thomas Street.

* * *

A GAS production tradition which has stood for more than a century was broken in Strabane, Co. Tyrone, recently when the local gas plant changed over to a newly installed propane air unit.

The northern town, on the Tyrone-Donegal border, now has the distinction of being the first gas works in Northern Ireland to have a twin plant of this description.

* * *

THE JUNIOR Steampacket oilfired package boiler by the Cradley Boiler Co. Limited has since its introduction, figured in numbers of important installations in both North and South. This junior version of the successful Cradley Steampacket has been designed

● IN CONJUNCTION WITH THIS SPECIAL REVIEW "NORTHERN NOTES" IS ALSO LOOKING AT RECENT INTRODUCTIONS AND DEVELOPMENT IN THE EQUIPMENT FIELD.



to cover the lower evaporations up to 2,400 lbs. per hour from at 212 degrees F.

This, of course, enables the smaller user to enter the high efficiency range at a practical cost. This three-pass semi-wetback type has an efficiency of 80 per cent plus. Boilers can be supplied for 35 sec. (Gas Oil) 2PP sec. Redwood No. 1 at 100 degrees F. Details from G. W. Monson and Sons, 227 Beersbridge Road, Belfast 5.

* * *

NEW FROM the Harris Engineering Company Limited, is the HO/VO. 500 oilfired air heater with an output of

A medium pressure hot water boiler is shown leaving the Cradley Boiler Co. Ltd. works at Cradley Heath, Staffs. Three similar units are at present being installed in Northern Ireland by Vaughan Heating Co. Ltd.

500,000 Btu's/hr. It sells at £499. In addition there is a similar new model—output 340,000 Btu's/hr—which sells at £350.

Both of these new products include the recently developed principle of "suspended flame combustion" which ensures very high combustion efficiency

Continued page twenty-nine

CENTRAL HEATING

WITH THE FAMOUS

'All-Around' Grate Boiler



The Willis "All-Around" grate boiler is the most powerful grate boiler on the market—proof of this claim is to examine the design—the boiler fits "All-Around" any open fire, giving a larger heating surface than any 'Back' boiler—ask your merchant, he knows.

HEATS 3-4 RADIATORS PLUS PLENTY OF HOT WATER—FROM ONE OPEN FIRE.

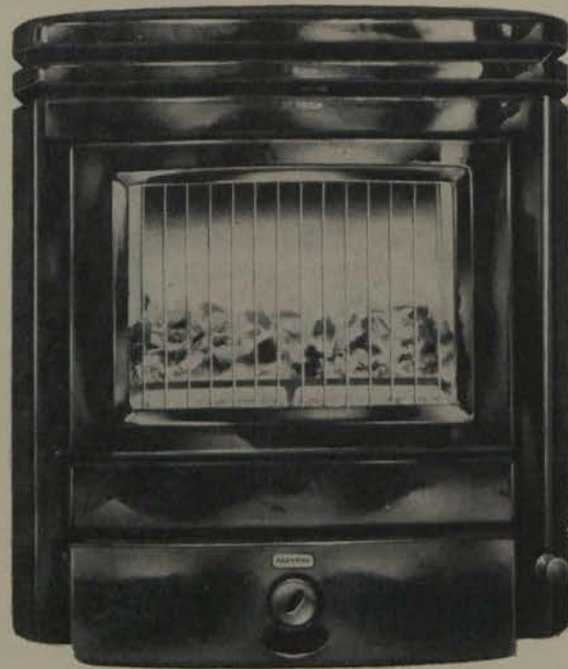
Made in Belfast by WILLIS, the Name Famous for 40 years in Open Fire Heating.

Write now for details to: Wm. Willis & Co. Ltd., 23/9 Dublin Road, Belfast, 2.

Parkray

77 'open fire behind glass'

has already provided central heating from the living room fire for more homes than all other room heaters put together



WHOLE ROOM WARMTH PLUS CENTRAL HEATING PLUS HOT WATER

Now, at last, you can install central heating from a living room fire that offers all the advantages of an *enclosed appliance*—high efficiency, low running costs, convected heat, positive air control and *much longer refuelling periods*.

Choice of Systems

Supplying domestic hot water, the Parkray 77 will heat 3 radiators and a towel rail—50 sq. ft. of radiating surface including unlagged pipes. This can be installed as either a gravity or forced circulation system. Without hot water, 5 radiators can be installed—80 sq. ft. of radiating surface including unlagged pipes—it is recommended that at least part of this system is arranged for gravity circulation.

Selective central heating system

The Parkray can also be installed with a selective central heating system, allowing for the selective use of more radiators than the boiler can fully heat simultaneously. For instance, in addition to a domestic hot water system, two radiators could be installed downstairs and two more upstairs. This type of installation can be arranged either for the selective use of individual radiators or as a 2-ring circuit.

High output flued boiler

Parkray 77 combines, for the first time, a high output *flued* central heating boiler (15,000 Btu/h.) with a room heater. This makes it possible to vary the proportion of space heating to water heating over a wide range; so the water heating can be boosted *without* noticeably affecting the room temperature. And, with the Parkray, it is never necessary to install a radiator in the same room as the appliance—Parkray's convected warmth sees to that.

Long refuelling periods

High operating efficiency with close control over the rate of burning enables the Parkray to operate on smokeless fuels *at full output* on a refuelling period of *four hours*—much longer intervals with normal usage.

Installation costs

As a guide: you can offer a combined central heating and a hot water system, including the Parkray 77, all piping, 3 panel radiators, pump, 30 gallon indirect cylinder, expansion tank and the whole cost of installation for about £180.

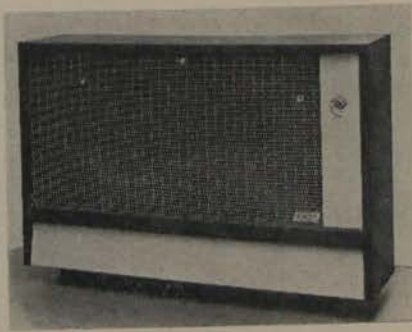
Recommend and install the central heating from a living room fire that makes real sense—to your customers, to you.

Full technical details on all Parkray products are available from

L. F. Young, 85 Gransha Road, Bangor, Co. Down, or

Radiation Parkray Limited, Radiation House, North Circular Road, London NW10





LEFT—From Harris Engineering is their new Medway 30 balanced flue gasfired convector heater (see text).



RIGHT—Isotapes, the well-known flexible heating tapes are shown here in use at a power station.

from page twenty-seven

and a flame which will stay clean without frequent maintenance attention.

Harris Engineering products circulate throughout the country and in the main are manufactured at the company's works at Killowen Street, Coleraine.

Another of their new products is the Medway 30 balanced flue gasfired convector heater. This has an output of 30,000 Btu's/hr. and is highly suitable for schools, offices, churches, halls and the like.

The latest addition to their range of Harris Schwank radiant heaters is the V.40, V.60, V.80 series. This is a simple yet attractive design of radiant heater for industrial purposes and is very competitively priced.

EVERTON (Hospital) Engineering Ltd., Newtownabbey, Co. Antrim have been appointed the sole distributor to the heating trade throughout Ireland for the range of oilfired air heaters manufactured by Messrs. Powmatic Ltd., Reading, Berkshire. These units have an output range from 60,000 Btu's per hour to 1,000,000 Btu's per hour and are extremely competitive in price. Units are held in stock for immediate delivery in Belfast and Dublin. Technical assistance is available for the preparation of heating schemes.

NEW COMPANY: McMorran and Partner Ltd.,—Nominal capital £2,000 in £1 shares. Subscribers—Ronora Florence Lavery and Elizabeth Ray Harbinson, both of Upper North Street, Belfast. Business: to operate as plumbers, heating and ventilating engineers, etc.

IN ORDER to help overcome the Heating Engineers' difficulty is providing sufficient heating surface with panel radiators, Stelrads offer the Nuvello in two widths. The N. 60 at 2½" wide give 100 per cent increase in heating surface over a similar sized panel radiator and

the N. 40 at 1½" wide, an increase of 50 per cent.

The pressure tests to which stelrads are subjected and the gauge and specification of steel used in their manufacture, comply fully with the requirements of Amendment No. 1 (1963) of the British Standard No. 3528: (1962).

The latest development from Steel Radiators Limited, manufacturers of Stelrad radiators, is their Stelostat which is a thermostatic valve manufactured to the same high standard as their other products. The Stelostat has already proved itself in Europe, having been marketed there for a number of years by Steel Radiators' associated companies.

BELL'S ASBESTOS and Engineering Limited of Bestobell Works, Slough, Bucks, have introduced a new range of radiator valves designed for use on low pressure small bore and gravity central heating systems. The valves are being marketed under the trade name 'Belkon' with which the Company is already associated through its range of pressed steel radiators.

'Belkon' radiator valves will be available in sizes ½" and ¾" straight or angle pattern, in matt or chromium plated finish with connections to suit either copper or iron pipes. The thermoplastic wheelheads and lockshields are readily interchangeable, and

lockshield patterns can be easily set without using special tools. On wheelhead patterns the distinctive grey position indicator shows at a glance the degree of opening of the valve.

ALFRED BRIGGS, the Malcolm Road, Lurgan, manufacturers of Alwood products report continued high demand for the Gold Star ductless hood. Activated charcoal works this hood and the new De Luxe filters are 50 per cent larger.

The new hood is available in two sizes—24" and 36" and is finished in luxury white stove enamel. The hood has fingertip treble switching for fast and slow speed fan and hob light.

THE SERIES AH compact air handling unit, which offers the engineer and contractor a diversified selection of floor or ceiling mounted central station units. These units are available with direct expansion water or steam coils, or in combinations of these coils. The Dunham Bush engineered flexibility of the component parts assures delivery of air, conditioned to fulfill any seasonal or product demand. Air can be filtered, cooled, dehumidified, heated and humidified, depending on the requirement.

The series MZ Multi-Zone air handling unit will condition and control

Continued page thirty-one

Courts have a heat problem

THE new Petty Sessions Courts in Belfast are experiencing a warm weather problem.

During the hot spell towards the end of last month the heat was so oppressive in both Custody and Summons Courts that not only had the main doors to be opened wide in each case but also the door behind the bench leading to the magistrate's private room.

In another of the courts "business" had

to be adjourned for ten minutes because of the heat.

While these solutions worked they created another problem. The noise from the main hall, usually thronged with people, kept interfering with the work inside. On several occasions requests had to be made by the magistrates for "a bit of order".

Sounds like a job going abegging for someone in the air-conditioning field.

Twenty-nine



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The goodlooking Parkrays

A BIG single door, completely panelled in heat resistant glass gives an unbroken view of the fire in Radiation's room heaters—Parkray 33 and Parkray 66. This feature gives the appeal of an "open fire", while preserving the performance efficiency of the closed stove. The slim Parkray lines (the Parkray 33 projects only seven inches and the 66 only five inches) overcome the popular prejudice against the bulky "box" of the typical stove.

Shown here is the Parkray 66 with back boiler which provides, at low fuel consumption, radiant heat and convected warm air for heating a normal to large size living room and sufficient hot water for the average household's domestic supply plus a small radiator or heated towel rail. It is available in grey velvet, mushroom, bronze lustre, black lustre and gunmetal lustre.

from page twenty-nine

air, for up to 14 zones from a single unit.

The series LSCU is a completely weatherproof external roof-mounted condensing unit, especially designed for use with Dunham Bush air handling units. Remote room conditioners are available as concealed or display models for horizontal or vertical mounting, and are designed to meet all requirements where silent operation is a prime consideration.

* * *

ONE OF the key features in the design of the new Supastor night storage heater series is the fact that the heater's simple output control has been supplemented by an adjustable input control.

These features combine to give a very high degree of user choice over daytime comfort, without extra installation cost or complication. Dulrae Limited manufacture the Supastor series which is available from

Luke, Martyn and Co. Limited, 1 Sandyhill Park, Drumbeg, Dunmurray, Belfast.

* * *

THE POWERMAX water heater, which is a complete unit constructed and designed exclusively for large volume water heating and low pressure (30 p.s.i. and 100 p.s.i.) steam supplies, is one product in the Powermax range now being handled by British Steam Specialties Limited of Distillery Street, Belfast.

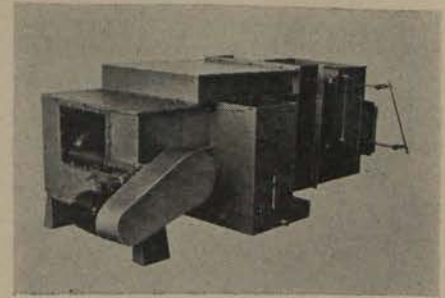
Other items in the range are condensate pumping units, calorifiers for steam, high pressure hot water and medium pressure hot water steam generators and swimming pool heaters.

The Powermax boiler provides temperature controlled hot water instantaneously and thus a bulky and expensive storage tank is eliminated. Equipped with a forced draught burner this unit features combustion efficiencies of 80 per cent and better. Ten units are available with continuous ratings ranging from 280,000 Btu's/hr. to 2,500,000 Btu's/hr.

* * *

AVAILABLE through Hegan and Company of 56 Distillery Street, Belfast, are the revolutionary Climasol heat pump units by Lucas Industrial Equipment Limited. With these units the heat is taken from the outside air and transferred to the building.. The system operates even under frost conditions.

On this system there is an average three times as much heat for the electricity used as with ordinary



From Dunham-Bush Ltd., the series AH air handling unit (see text).

resistance electric heaters. The capital cost in this case is high—£395. These machines can be for heating only, cooling only, or both. Heat can also be transferred from the air in a boiler room, kitchen or still room of a pub, etc., to the air in another part of the building.

Also available is the latest Lucas unit—the 12 KW Climastor storage heater for ducted heating installations.

* * *

ATTENTION MANUFACTURERS, SUPPLIERS !

Each month The Irish Plumbing and Heating Engineer will contain a comprehensive survey of the month's trade news from N.I. under the heading, "Northern Notes."

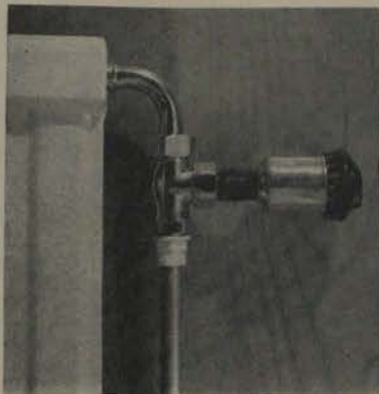
Contributions should be addressed to our resident correspondent — Allen McDowell, at 43 Horn Drive, Belfast 11. His telephone number is 614606.

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Thirty-one



A new valve

THE latest development from Steel Radiators Ltd., Southall, Middlesex, manufacturers of the Stelrad radiators, is their Stelostat, a thermostatic valve fitted to the inlet pipe of the radiator, and which is no larger than the conventional types of radiator valves giving full temperature control (see review on earlier page).

THE DESIGN of the Webster skirting heating system has emerged from over 16 years of continuous research and improvement and results in an extremely neat and unobtrusive form of heating for use in small bore systems.

What it consists of is a 1/4" outside diameter copper tube equipped with 55 aluminium fins per foot suitably encased in a back plate, top moulding and front plate ribbed for strength. The heating element rests in electro-galvanised steel cradles, which in turn, are supported on brackets. The cradles have been designed to slide on their supports, so providing for noiseless expansion and contraction.

Webster skirting heating is supplied in lengths of 8', 6', 5', 4', 3' and 2', all of which incorporate as standard, a rolled steel damper controlled by a neat and simple friction clip. Manual, as well as thermostatic control of the system is possible.

Installation is simple—it is just a case of screwing the fitment to the base of the wall. Costs compare very favourably with other control heating systems.

Additional technical information on emissions, designs, etc., and quotations, can be obtained from the manufacturers: Warren Webster and Co. Ltd., Heating Equipment, Lennox-town, Near Glasgow.

* * *

THE BELFAST firm of Davidson and Co. have offered shareholders £750,000 6 1/4 pc convertible unsecured loan stock, 1984-89, at a price of £99 for every £100 of stock.

It will be offered on the basis of £5 of stock for every 14 Davidson 10s. shares held on June 19.

The issue has been underwritten by Kleinwort Benson, and the brokers are Cazenove and Co., and A. D. MacIlwaine and Co., Belfast.

The stock is convertible in 1967, 1968 and 1969, into 90 Ordinary shares at 22s. each, 85 at 23s. 4d. each, and 80 at 24s. 9d. respectively, for every £100 stock.

The directors have stated that both

working capital and bank borrowings have tended to increase—bank debt at June 30 last was about £850,000—and it is considered that long term capital should now be raised.

At present the group's orders stand at about £11m. Pre-tax profits for the current year are expected to exceed the £236,102 average of the last three years, and, at least, maintenance of the eight pc dividend is intended.

* * *

THE RIMA range of foot valves and strainers is now available in this country from Sweden. The valves, moulded in nylon, are characterised by a low resistance to flow and are said

Continued page thirty-three.

you'll be selling
even more **BARKING**
taps and fittings from now on

Your builder and plumber customers agree on this. There's pride to be taken in installing the best. And when architects and householders demand no less than the best, everyone profits. Remember, leading water undertakings approve Barking fittings, and there's an answer to every requirement in the Barking range. Sell from stock, with the power of Barking advertising behind you.

Single Control * Shower Mixer

BIFLO GOBLET BARKING HIGH-LOW HIFLO

BARKING
BRASSWARE

REGD

Barking Brassware Co. Ltd., River Road, Barking, Essex. R1Ppleway 3057-9
I.E.3

Thirty-two

<https://arrow.tudublin.ie/bsn/vol4/iss5/1>

DOI: The Irish Plumbing and Heating Engineer, August 1964 (complete issue)

from previous page

to operate satisfactorily under the most difficult conditions in either oil or water. Their toughness enables them to operate also in acids, minerals, salts and alcohol.

Valves are distinguishable by the colour of the strainers—blue for water and red for oil. Both valves have casings of black nylon and the strainer part of the 'red' valve is of red CAB plastics. The valve balls are made of rubber and neoprene respectively with a lead core. Sizes of the valves range from 1 in. to 2 in. in ¼-in. steps.

These valves are available from Smail, Sons and Co. Ltd., of 21 Bridge End, Belfast.

* * *

TO MEET the widespread demand for a smaller version of the Aspect burst-proof cold water storage cistern, Allied Structural Plastics Ltd., of Dunstable, Beds., have introduced a tank of 30 gallons nominal capacity (25 gallons actual). It incorporates the same design principles as the cistern of 60 gallons nominal capacity introduced last October, and is equally resistant to freezing conditions. Loss of heat through its walls is exceptionally low

and, to reduce the heat loss still further, PVC lids are available.

Moulded from "Alkathene"—ICI's polythene—the new tank weighs only 9lb. The material complies with B.S. 1973 and the cistern conforms to the model by-laws. It is 1 ft. 8 ins. high with a diameter of 2 ft. 1 in. at the top and 1 ft. 11½ ins. at the bottom. The flexibility of the polythene material permits the cistern to be passed with ease through the smallest loft openings.

* * *

A NEW concept in radiant fires are Dimplex "Heated Furniture Units" which are designed as a focal point in a lounge or dining room. Beautifully styled, these heaters are complementary to Dimplex storage heaters and electric radiators.

The heating unit consists of three silica sleeved elements, each in its own reflector—with separate switching to give a choice of one, two, or three heats. A cream marble effect surround and a beautifully panelled frame faced in wood effect laminated material in red mahogany, sliced walnut or blonde maple.

The Dimplex Domestic Thermal Storage Heater, Model DSH 43

(2½ KW.) with its sensible rounded line, is finished in hammered bronze stove enamel attractively relieved by bright anodised aluminium trims and chrome outlet grille.

* * *

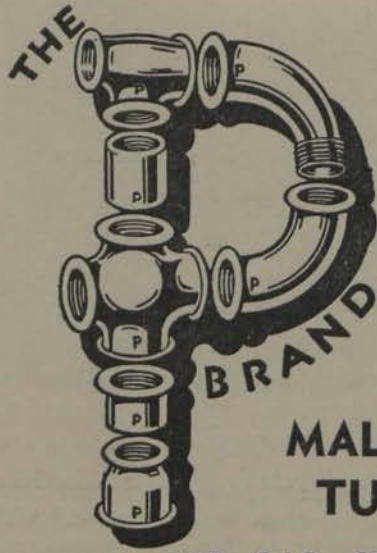
TWO new thermostats have now been made available for the heating and ventilating field by K.D.G. Instruments Ltd., of Manor Royal, Crawley. The Model T.A.10 is in white polystyrene cover, mounted horizontally on a black base and is 4¼" wide by 2½" high by 2¼" deep.

The model T.A.1M is in a metal enclosure, stove enamelled white, and is fitted with a covered dial. It is vertically mounted, 3½" high, by 2" wide, 1⅞" deep. Both instruments are fitted with vacuum plated aluminium range scales, gold in colour and are clearly marked in increments of 5 degrees F.

The thermostats operate on the vapour pressure principle and are actuated by a stainless steel capsule 2" in diameter providing ample power to operate a robust snap action switch. The capsule is charged by a patent method, the charging being carried out at the time of the electrical welding of the capsule.

INDEX TO ADVERTISERS

Aric (Ireland) Ltd	...	44	Leinster Engineering Co. Ltd.	...	38
Asbestos Cement Ltd.	...	Cover iii	Lincoln Furnaces Ltd.	...	43
Barking Brassware Ltd.	...	32	Manotherm Ltd.	...	38
Briggs, Alfred	...	26	Masser, A. H., & Co.	...	26
B.S.A. Harford Pumps Ltd.	...	3-5-7	McMullans Kosangas Ltd.	...	9
Caltex (Ireland) Ltd.	...	Cover iv	Meyer, Wm. A., Ltd.	...	35
Carthorn (1949) Ltd.	...	18	Monsell, Mitchell & Co. Ltd.	...	34
Corporation Gas Works, Belfast	...	16	National Coal Board	...	Cover i
Cradley Boiler Co. Ltd.	...	24	Normond Instruments Ltd.	...	39
Davidson & Co. Ltd.	...	18	Oil Fired Homes (I.) Ltd.	...	47
Du Bois Co. Ltd., The	...	Cover ii	Orr, Adam, Ltd.	...	30
Fisher & Ludlow Ltd.	...	11	Parkes, G. B., Ltd.	...	34
Frenger Ceilings Ltd.	...	23	Potterton, Thos., Ltd.	...	17
Hamilton, J., & Co. Ltd.	...	30	Radiation Parkray Ltd.	...	28
Handley Page Ltd.	...	20	RCM (Air Distribution) Ltd.	...	31
Harper, John, & Co. Ltd.	...	42	Rototherm Precision & Instrument Co. Ltd.	...	36
Harris Engineering Co. Ltd.	...	16	Sanbra Fyffe Ltd.	...	14
Heating Controls & Devices Ltd.	...	Cover ii	Sperryn & Co. Ltd.	...	6
Hendron Bros. (Machinery) Ltd.	...	41	Thompson, John (Wilson Boilers) Ltd.	...	45
Ideal-Standard Ltd.	...	1	Ulster Heating Centre	...	24
Industrial Gases (I.F.S.) Ltd.	...	37	Warren Webster & Co. Ltd.	...	19
Johnson, Alfred, & Son Ltd.	...	12	Willis, William & Co. Ltd.	...	27
Johnson & Slater Ltd.	...	14	Wilson, Henry & Co. Ltd.	...	46
Kelly, John, Ltd.	...	25			



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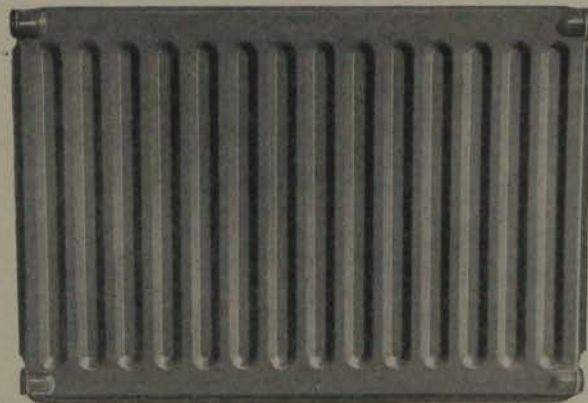
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trade Topics

FOR CLIENTS who would like warm air heating but still want to retain the boiler and hot water system—and consequently have domestic hot water allied to the heating system—Powell Duffryn Heating Limited, Vale Road, Camberley, Surrey, provide the "Housewarmer." In smaller sizes, 6,000 to 14,000 B.t.u./hr., it is connected to pipework and attached to the wall in precisely the same way as a radiator.

The larger size units—12,000 and 25,000 B.t.u./hr.—are floor standing and designed as articles of furniture. In both cases the units will emit as much heat as a radiator ten times the size. The whisper quiet fan operated heat emission makes for quicker room heating and greater flexibility in response to control. The Irish agents are Tedcastle, McCormick & Co., Ltd., and in Northern Ireland, John Kelly Ltd.

Irish success

William F. Jackson of 15 Mount Pleasant Terrace, Ranelagh, Dublin, won a bronze medal in the plumbing section of the XIII International Trade Apprentices Competitions which concluded in Lisbon earlier this month.

Ireland was awarded two gold, two silver and four bronze medals in the competitions in which 21 Irish apprentices competed against their counterparts from twelve countries. Last year the competitions were held at Bolton Street College of Technology.

STEEL RADIATORS Ltd. are now able to offer the well known Stelator Pump with a variable head. This new Stelator has five settings but is infinitely variable between them.

The other details remain the same—low electrical consumption, high R.P.M., silence and reliability. This will not increase the cost—on the contrary the price is down.



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9 burners plus 8 supports


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These sets of equipment are packed in a well-made, strong and attractively finished carrying case containing a range of equipment which enables most jobs to be undertaken.

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industrial heating & ventilating IN IRELAND



No. 8—Presented with the August, 1964, issue of the Irish Plumbing & Heating Engineer.

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<https://arrow.tudublin.ie/bsn/vol4/iss5/1>

DOI: The Irish Plumbing and Heating Engineer, August 1964 (complete issue)

The industrial section this month takes a close look at industrial and commercial boilers, boiler fittings, water heaters and heat exchangers. Michael J. Walsh has compiled this special review article.

An equipment review in conjunction with the review deals with important introductions and developments in the fields covered.

Unfortunately, we have had to put off until next month Daniel Heeney's concluding article in his Mechanical Refrigeration To-day series.

Trade Topics review the month's news, while a new method of large-scale air conditioning is dealt with in the section.

Editorial and Advertising Offices:

Callaghan Chambers, 13/15 Dame Street, Dublin 2. Tel. 56465-6.

London: J. T. Robson & Son Ltd., 30 Fleet Street, London, E.C.4. Tel.: Fleet Street 4438.

Belfast: Allen McDowell, 43 Horn Drive, Belfast 11. Phone 614606.





ENROLMENTS FOR the Conference on Modern Techniques in Fuel Efficiency, FUEL EFFICIENCY CONFERENCE FOR DUBLIN

to be held at the Intercontinental Hotel, Dublin, from 19th to 22nd October, are being received by Mr. H. Brown, Area Engineer, National Industrial Fuel Efficiency Service, 40 Rosemary Street, Belfast 1.

This Conference has been arranged by the N.I.F.E.S. in conjunction with the Department of Transport and Power to provide industrialists, and others interested in the use of fuel, with the opportunity of exchanging views and keeping abreast of the latest developments which can lead to increased production and reduced overhead costs.

* * *

THE KENT "Mini-Oil" meter provides an extremely accurate and inexpensive method of metering fuel - oil supplies to the central heating systems of houses and flats

ACCURATE FUEL-OIL METER

where oil is fed from a central tank, and for small industrial heating systems with capacities from 65,000 to 120,000 B.t.u./hr. The meter measures flows from 0.5 to 4 Imp. gal/hr. (0.6 to 4.8 U.S. gal./hr.; 2.3 to 18.2 l/hr.) within accuracy limits of plus-minus 0.35 per cent. in the lower half of the flow range.

Small and compact, the meter is constructed of specially developed low friction and corrosion-resistant materials to give a virtually indefinite life at the recommended flow rates. Mag-



MR. Patrick J. McHugh has been appointed Area Manager for the John Thompson Group of Companies in Ireland, and will operate a Branch Office from 25, Lower Leeson Street, Dublin, 2.

Mr. McHugh, who was born in Carlow, is a graduate of the Institute of Mechanical Engineers, London, and has recently been elected to the Committee of the Graduates and Students section of the I. Mech. E. (Republic of Ireland Branch). Since joining John Thompson in 1957, he has been employed in the London Office of the Group, and until recently was Assistant Manager in New York, U.S.A., for John Thomson Associated Companies (U.S.A.) Ltd.



MR. Richard Pakenham Lynch, who has been appointed sales manager of O'Brien Plastics Ltd., Bishopstown, Cork, was formerly general manager of John Meldrum & Sons, Ltd., of Sligo. He is a native of Cork and began his business career with Robert Scott & Co. Ltd., of Cork, before becoming manager of Graves & Co. Ltd. of Waterford in 1948. He joined John Meldrum & Sons Ltd. in March, 1959.

He is a former Council member of the Sligo Chamber of Commerce and was a member of the Sligo Regional Group of the Irish Management Institute before moving to Cork.

netic drive from the measuring piston to the counter ensures that oil cannot leak into the counter mechanism. From George Kent Ltd., Luton, Bedfordshire, England. Irish agent is S. W. Carty & Son.

* * *

IN A supplementary statement to shareholders at the Annual General Meeting of Walker Crowther & Co. Ltd., in Cheltenham, Mr. Richard Walker, Chairman and Managing Director, said that sales in the first quarter of this year were up by a

third on the same period last year. Exports were up by 14 per cent. and sales of their subsidiary company in Germany were up by 65 per cent.

* * *

THE 1964 Heating, Ventilating and Fuel Efficiency Exhibition to be held at City Hall, Deansgate, runs from September 8 to September 17. This Exhibition is running on a biannual basis. Both the number and type of exhibits this year promise to make it even more successful than its predecessor, say the organisers.



**GAS OR ELECTRIC?
WELDING OF COURSE!**



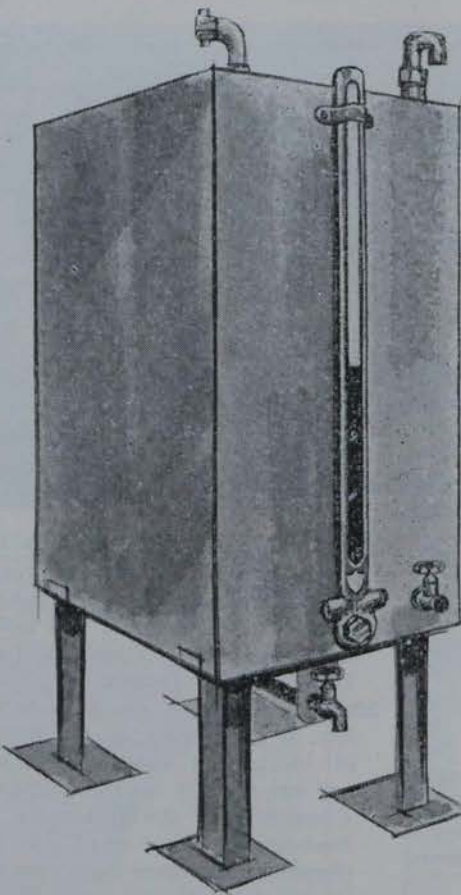
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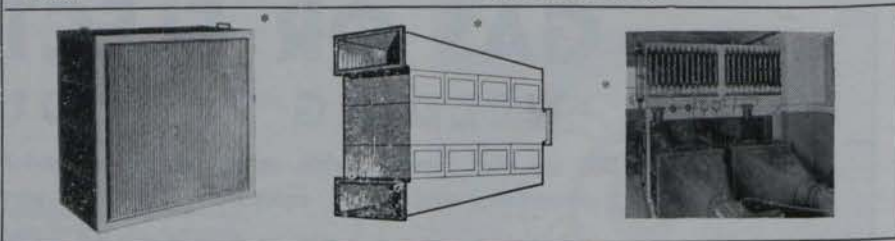


1. Vokes high Temperature 'Absolute' filter. To withstand temperatures up to 1000° F.
2. Vokes 'UNIPAK' system, available in many different sizes for a wide range of air volumes.
3. The Methylene blue test rig at Henley Park, headquarters of the Vokes Group.

Vokes 'Absolute' air filters were developed for use in nuclear energy applications where inefficient filtration could lead to hazardous conditions for both equipment and personnel. Their outstanding performance (99.95% efficiency against particles in the 0.1-0.5 micron range) has quickly led to their adoption by laboratories, food processing plants, etc.—in fact, wherever a need for super efficiency filtration exists. For further information please write for catalogue HJ.

Variants of the 'Absolute' filter include High Temperature High Humidity, and Acid Resistant types—all with a guaranteed efficiency of 99.99% against sub-micronic particles. 'Absolute' filters are available as canister types using an all welded canister assembled between headers, and Vokes can also supply 'UNIPAK' systems for housing several panels in easily-serviced, space-saving units.

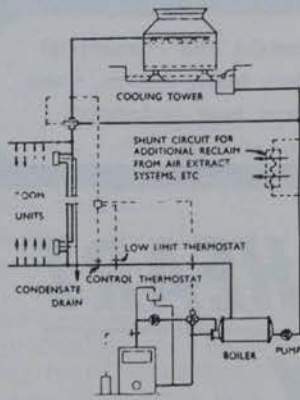
Vokes 'Absolute' filters are tested in accordance with BSS.2831 on a methylene blue test rig. Every filter is subjected to a stream of air containing particles of methylene blue 'dust' ranging in size from 0.1 to 0.5 microns, and rejected if its efficiency is less than 99.95%. Vokes is the only British company to guarantee minimum performance figures in this way and Vokes filters are therefore widely used in all applications which require scientific filtration.



Comprehensive literature covering all Vokes filters is available on request from the Sole Agents:

THE LEINSTER ENGINEERING CO. LTD.

VOKES



NEW LARGE SCALE AIR CONDITIONING METHOD

A completely new method of large scale air-conditioning suitable for office blocks, hotels, hospitals, colleges, and other buildings which conventionally use air-conditioning piped from central plant, is to be marketed by Temperature Ltd.

Known as the Temkon "Versatemp" system, it is simple to design, cheap to install and run and flexible in operation. This large scale system successfully incorporates the principle of the Reclaim heat pump.

On the Reclaim system excess heat in areas of a building exposed to sunlight, high internal loads, etc., is extracted by the room units on a cooling cycle and transferred to the water circuit to be pumped to other areas for use where a heating requirement exists.

The basis of the Versatemp system is a piped water circuit to which all the individual room units are connected in parallel. The units are standard Temkon hermetic room air conditioners based on the proven Temkon "Whispair" individual packaged unit. Any unit at any time can operate as a heater or cooler.

With units operating on a cooling cycle, heat extracted from the room plus compressor heat is transferred to the water circuit via the water-cooled condenser coil. On heating the reverse applies; heat extracted from the water via the condenser plus compressor heat

is pumped into the room. Heating or cooling may be selected as required in each room without reference to pre-set central temperatures or to the settings of other room units. No zoning is required.

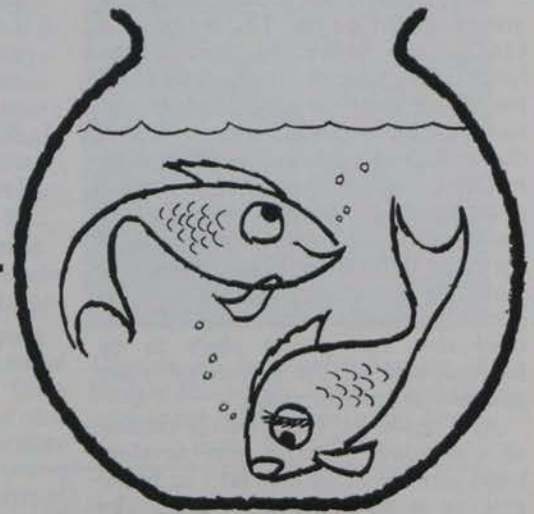
To maintain the water temperature constant there are two auxiliary water circuits, one containing a boiler and calorifier and the other a cooling tower. There are virtually no transmission heat gains or losses from air ducts and water pipes. The chilled water circuit is eliminated and the condenser water and ventilation air are circulated at temperatures approximately to the surrounding air. No lagging is required anywhere.

Each unit air conditioner is fitted

with fresh air intake ports and a full volume air filter. Ventilation air may be ducted into the unit via a short direct connection to atmosphere through the wall. Alternatively, air from central plant may be ducted into the unit or introduced separately to the room.

Installing the Versatemp system, only simple pipe connections to the units are required which need not be installed until the furnishings are complete and can be made the responsibility of the tenant; for re-planning they can be easily removed and resited. Only the water circuit and the air supply facilities have to be part of the main building structure.

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so that you can
see the fish
so when you want to
know how full or
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Thirty-nine



MONTHLY SPECIAL REVIEW

Industrial and commercial
boilers, boiler fittings, water
heaters, heat exchangers.

BOILERHOUSE IS THE HEART OF THE FACTORY

EVERY industrial undertaking requires heat, either for heating, for process or for power. The boilerhouse can be truly called the heart of the factory. Its efficiency can seriously affect the efficiency of the entire factory and its failure can result in enormous losses, due to both lost production and spoiled material. The selection of a new boiler is therefore an important step for any industrialist and may indeed be one of the most difficult he is called upon to make. He is probably a specialist in his own particular line of process machinery but is not likely to be familiar with all the aspects of boiler selection and performance.

As a result of more than a century of continuous research and development, the "state of the art" in boiler practice is now extremely high. The association of smoke, grime and dust with boiler plant is now gone and is replaced with the modern concept of a boilerhouse; clean, well lighted, architecturally attractive and equipped with automatic stokers and burners, as well as numerous instruments and controls. Boilers themselves conform to extremely high standards of efficiency and reliability. In spite of this "any old boiler" just will not do. Each type of boiler has its own characteristics which may make it more suitable for a given application than another.

THERE are five main types of boiler from which to select. These, together with their usual range of application are:

1. Vertical Boilers: Suitable for small factories, waste heat, pile drivers, etc. and for use in restricted spaces; Pressures up to 150 psi.
2. Lancashire and Cornish Boilers: For larger factories and heating installations.
3. Economic Boilers: For medium sized factories and heating in-

stallations; pressures up to 250 psi.

4. Locomotive Type Boilers: For mobile boilers of all kinds, for agricultural and traction purposes, and medium sized factories.
5. Water Tube Boilers: For power stations and medium and large factories; suitable up to very high pressures.

Some of the factors which affect the selection of a new boiler will now be considered briefly:—

Output: Choosing the right size of boiler is of the utmost importance. Too small a boiler is a source of perpetual worry; too large a boiler may be extravagant. Where a number of processes requiring steam in large intermittent amounts are to be catered for, a suitable diversity factor must be allowed.

The evaporation of a boiler is the amount of water it will evaporate. This depends on the heating surface and the grate area (for solid fuel boilers) or the furnace volume (for oil fired boilers). It also depends on the condition under which a boiler is worked. The best conditions may be summarised as follows:

- There must be sufficient draught in the furnace to burn the fuel efficiently.
- The boiler must be kept clean inside and free from scale.
- The boiler must be adequately lagged.
- The feed water must be as pure as possible and fed continuously into the boiler.

The fuel should be of good quality and the firing rate should be even.

Fuel: Fuels used currently in Ireland for industrial boilers are oil (of which four grades are available), coal, turf, wood and gas. The selection of one of these is made on the basis of availability, reliability of supply, cost and just plain personal preference. A condition that often arises is the burning of waste and this may lead to the selection of a step grate type furnace or a combined fuel boiler. The latter are now commonly called for.

SPACE: The current prosperity of industry has brought one headache for the boiler engineer. Many existing boilerhouses have been designed with no thought at all to future expansion, and it is not uncommon to be called upon to double the output of a boilerhouse with no increase in allocated space. Fortunately, the continuous efforts of manufacturers to reduce space requirements have yielded remarkable results and enable most problems to be resolved. Most manufacturers supply packaged boilers with all mountings, water and steam fittings, feed pump and control gear mounted integrally on a steel base, fully factory-tested before despatch. This results in a considerable economy of space. A further feature of these is that no special foundations are generally required, greatly reducing the installation costs.

Running Costs: On large installations in particular, running cost is of paramount importance. Heat often constitutes a sizeable proportion of the manufacturing costs especially where drying is involved, and competitiveness is therefore affected by the cost of fuel. Many boiler manufacturers guarantee 80 per cent efficiency for their boilers and in favourable circumstances can well exceed this. Labour



This special review
article was compiled
by technical expert
Michael J. Walsh.

from previous page

costs must also be included under this heading; every effort must be made to reduce these by the provision of automatic control.

Reliability: This is essential in an industrial installation. The cost of repairs, while often sizeable, may still be small when compared to the cost of lost production and spoiled goods resulting from breakdowns. Where a factory works on three shifts and the boiler is down for short periods only on weekends, the time for maintenance is very limited. It is essential that in these cases brickwork, controls, pumps, etc. give trouble free performance over long periods.

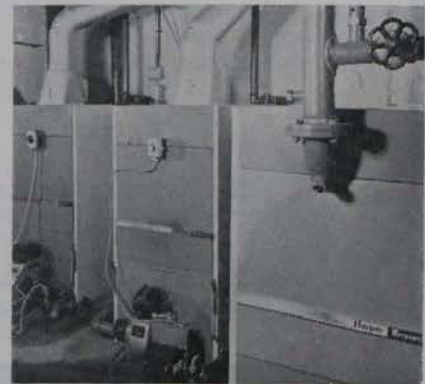
Peak Loads: Peak loads of relatively short duration should be analysed before deciding on boiler sizes. The staggering of loads in various departments and the use of hot water or steam storage may pay at once in reducing the cost of new boiler plant. Where this is not possible consideration should be given to the purchase of a heat accumulator or of a thermal storage type boiler. In the latter system it is possible to allow the water level to vary over a large range. The firing rate does not have to be altered rapidly to follow steam demand and it is possible to

obtain higher efficiencies due to more consistent combustion conditions.

Seasonal load variations: In most factories the process load is relatively constant throughout the year, but a space heating load is superimposed on it for half the year only. While one large boiler is cheaper than two giving the same total output, if the seasonal variation is very great there may be a case for a two or more boiler layout. Most boilers give peak efficiencies in the range 60 to 90 per cent rating, the reduction in efficiency below 60 per cent depending largely on the particular design, the fall-off being less with boilers having a large amount of convection heating surface. Apart from the savings some firms feel that the "insurance value" of two boilers justifies the extra cost. For steam demands over 20,000 lbs./hour the case for twin boilers is particularly strong. This is partly due to the increased financial losses that would occur with the failure of one large boiler, and because the extra cost is proportionally less for larger plants.

Cost: The question of cost has been deliberately left until last. Only when all other conditions are fully satisfied should a boiler be purchased on the basis of its initial cost. A saving in the initial purchase can be quickly

cancelled by increased running and maintenance costs, and by the cost of breakdowns. In addition to the cost of the boiler itself must also be taken into consideration the cost of foundations, erection, chimneys, fittings, etc. The life of a boiler plant will vary between 10 and 50 years, depending on the care with which it is selected for its particular purpose and on the manner in which it is maintained. It should be viewed as a long term investment and every care must be taken to see that it is suitable not only for the immediate requirements but for many years ahead.



Here is an impressive line-up of Harper Meehanite boilers. See the equipment review on page forty-three for details.

"SPACE SAVER" STEAM BOILERS— Columbia Packaged Fully Automatic Tubeless Steam Boilers

Steam up to 80lbs. pressure in approx. 10 mins. Sizes available: 5 h.p.—25 h.p. (170lbs. steam per hr.—900lbs. per hr.), with working pressures up to 125 p.s.i. Units are suitable for Laundries, Dry Cleaning, Dairies, Bottling Plants, Tyre Remoulding, Poultry Processing, Bakeries, etc. Cf. Leaflet 132B.

ONE SOURCE FOR FULLY AUTOMATIC TROUBLE-FREE HEAT AND YEAR ROUND DOMESTIC HOT WATER—TRY THE COLUMBIA LOW PRESSURE HOT WATER PACKAGED BOILER WITH THE TANKLESS COIL FOR DOMESTIC HOT WATER — WITH 20 YEARS MANUFACTURERS' GUARANTEE

Sizes available from 87,000 up to 915,000 B.T.U.'s. Boiler Burner Units are attractively housed in a two-tone green steel jacket and are fully equipped for firing on delivery to site. Outstanding features of the boiler are: Maximum operating efficiency by the arrangement of the tubes, which force the hot gases to travel five times the length of the boiler, and quiet operation.

For further information and technical advice, consult:—

BOILER DIV., HENDRON BROS. (Machinery) LTD., LITTLE DENMARK ST., DUBLIN. Tel. 40846/7/8.

A complete, round-the-clock, after-sales service is available and spares are available ex stock.

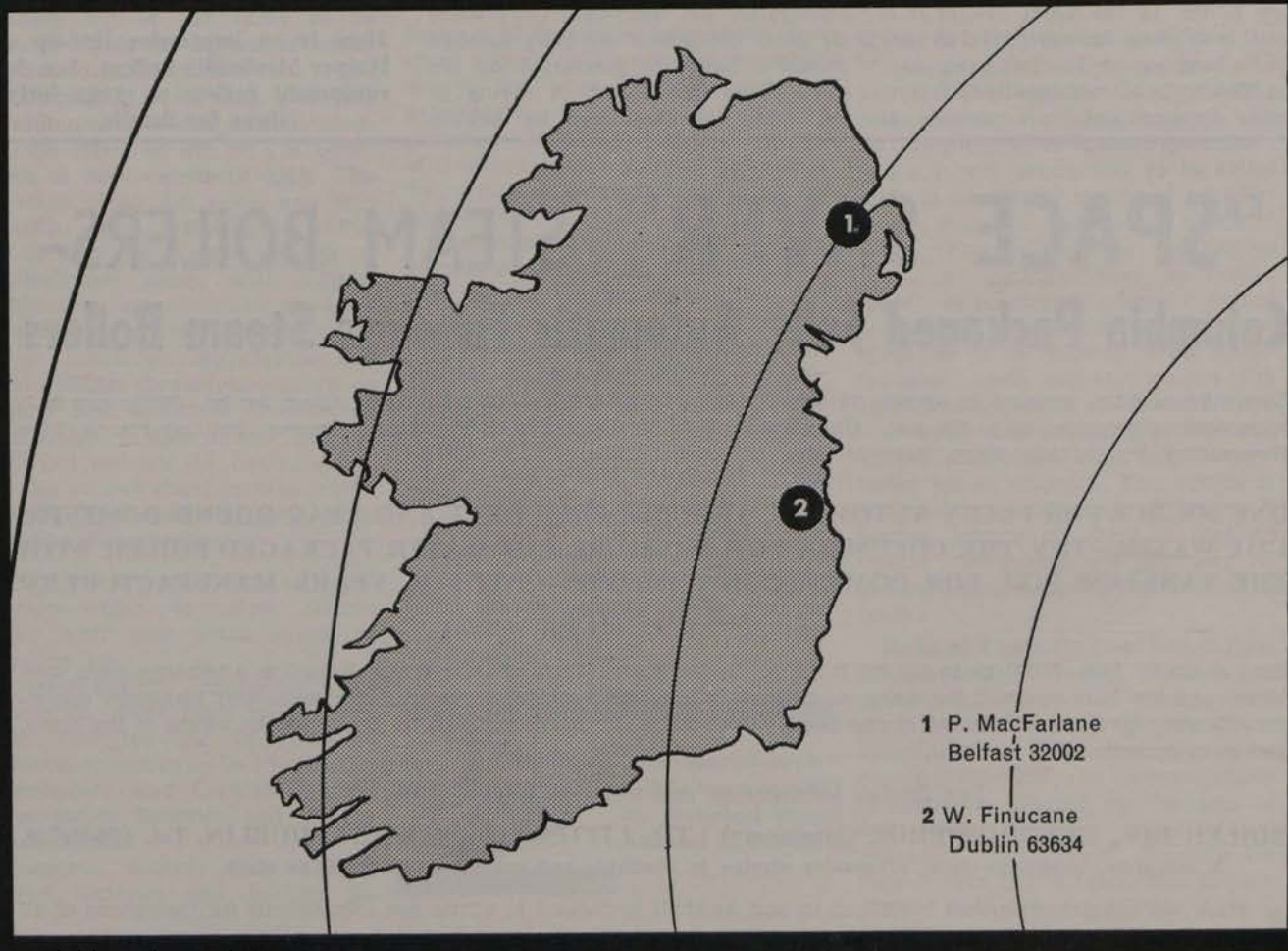
● Have you a heating problem? Call on us and we shall be pleased to advise you. Quotations for insulations of all kinds free of charge.



oil-fired boiler representatives now cover Ireland

Since Harper Meehanite oil-fired boilers were introduced five years ago demand has increased with each successive year. Today, Harpers are accepted as the criterion for reliability and economy in oil-fired boilers and enjoy ever-increasing popularity.

- Now Harper add further benefits!
- (i) every section is guaranteed for five years.
 - (ii) a nationwide sales and advisory service. Your local representative is listed on the left.



ELTRON ARE well known for their ability to produce heaters for almost any application with electric line heaters and boilers forming only a part of their business. These, however, are made up for all duties with a maximum load of 300 K.W. per unit. They can be supplied either as direct electric heaters, or can be fitted with coils for heating with a secondary medium such as oil, water or steam.

The electric side of the heaters consists of patent Eltron withdrawable heating elements, which are constructed from 80/20 nickle chrome resistance

PRODUCT REVIEW

from page forty-one

wire embedded in a compressed magnesium oxide insulation. This is protected by a metal sheath which is fitted into a solid drawn pocket. The elements may therefore be easily removed for repair or cleaning, without the necessity of draining the vessel. The elements are rated according to the application.

A control thermostat is fitted and also a safety cut-out to prevent damage through overheating if the boiler runs

dry or the thermostat fails. Irish agents: J. I. Yates Ltd.

* * *

THE HARPER Meehanite from John Harper and Co. Ltd., is a cast iron oil fired sectional automatic boiler. The heat output is 80,000 to 450,000 Btu/hr. over a range of seven models.

The overall sizes range from 51" x 24½" x 16½" to 51" x 24½" x 53" and is available in two-tone grey stove enamelled casing, with grey vitreous enamelled flue pipe. Other colours are available to order.

The material used for the sections is "Meehanite" which is a tough, dense and corrosion resistant type of cast iron, reducing the risk of boiler failure. The insulation is of fibreglass in sheet steel casing. It is supplied complete with firebricks, cement, asbestos rope, etc. The Irish agent is Wm. Finucane and Co.

* * *

THE OILEX packaged boilers for hot water are manufactured by Hartley and Sugden Ltd., Halifax, England. The range extends from Boiler O.P. 1 (325,000 Btu/hr. with a heating surface of 72 sq. feet) to Boiler O.P. 19 (5,000,000 Btu/hr. with heating surface of 1,039 sq. ft).



The warm air heating leader of Canada is rapidly expanding over here!

Lincoln's new factory and Head Office at East Grinstead offer greatly increased productive capacity. It will be needed to handle the growing demand for Lincoln installations. Efficient central heating is essential in modern homes and the advantages of Lincoln Warm Air are recognised by an increasingly discriminating public. The parent company, Bartaco Limited of Ontario, are the largest manufacturers of heating equipment in Canada, where the rigorous winters provided the proving ground for the development of warm air heating.

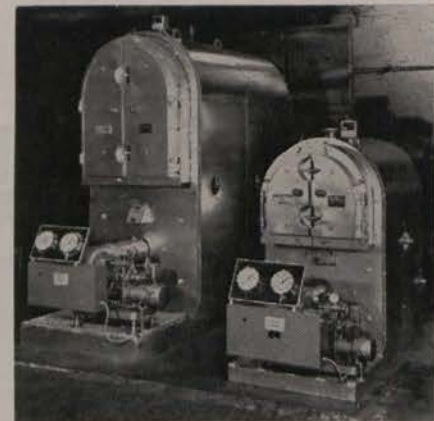
You can benefit from the growing awareness of Lincoln Warm Air. Lincoln offer great advantages to Authorized Installers:-

- * **The widest range of warm air units.** A model to suit every type of installation and construction. This allows Lincoln dealers to design systems to the customer's exact requirements. They are not restricted to one "standard" unit as many dealers are.
- * **Expert Technical Assistance.** Lincoln dealers are thoroughly trained and kept informed of technical progress. Because Lincoln have a unit to suit every application they can offer unbiased advice on the installation of systems to produce excellent results with *maximum efficiency*. Systems to produce higher temperatures, or run longer, than other installations of comparable size, *on the same fuel budget*. Anyone can produce effective heating regardless of running costs: only experts with Lincoln's kind of know-how can combine maximum heating, maximum efficiency and *minimum running costs*.
- * **National Advertising.** All enquiries resulting from Lincoln advertising are passed on to the local Authorised Installer. Lincoln provide a full range of sales promotion material and give co-operative advertising support.
- * **Prompt Delivery.** The increased capacity of the new factory allows virtually off-the-shelf delivery of warm air units, ducting and all fittings needed for an installation.



For full details and descriptive literature write:

LINCOLN WARM AIR HEATING EQUIPMENT,
Dept. AB.4, EAST GRINSTEAD, SUSSEX. TELEPHONE: EAST GRINSTEAD 21266



The boiler control box is prewired and connected to the dual boiler water temperature thermostat and high limit stat. A thermometer and an altitude gauge neatly mounted on an attractively styled instrument board are connected to the boiler. Apart from the quarl there are no internal refractories and the boiler can be handled on site with confidence.

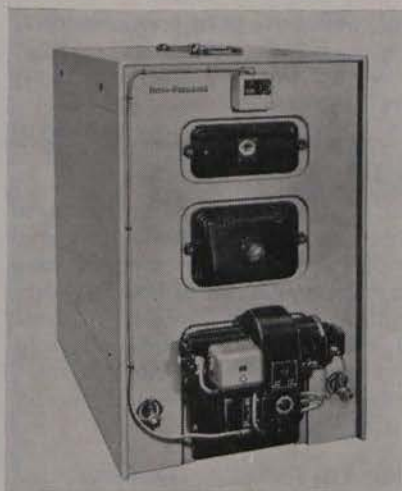
* * *

THE G.P. Oilfired solid fuel boilers from Allied Ironfounders Limited which cover a range from 690,000 to 1,200,000 Btu/hr., are basically designed for oil firing on 35 seconds or 200. The Fuel Oil is Redwood No. 1 but it has been specially designed to

Continued overleaf

Forty-three

allow easy conversion to gravity feed solid fuel operation on Anthracite Grains, Gas Coke No. 4, or N.C.B. Sunbrite No. 4 using the well known Watts Gravity-Feed Stoker Attachment.



The Boilers consist of two (Models 690 and 900) or three (Model 1,200) main vertical sections, with a back section comprising a flue gas heat exchange unit. Main sections are fully water cooled top, sides and base, with the necessary opening in the base for fitting the Watts Water-cooled burner unit when on solid fuel. All sections separately will pass a 26" doorway.

PRODUCT REVIEW

from previous page

Construction of waterways, of minimum width 2", are of $\frac{3}{8}$ " mild steel, electricwelded and hydraulically tested to 80 lbs. p.s.i.

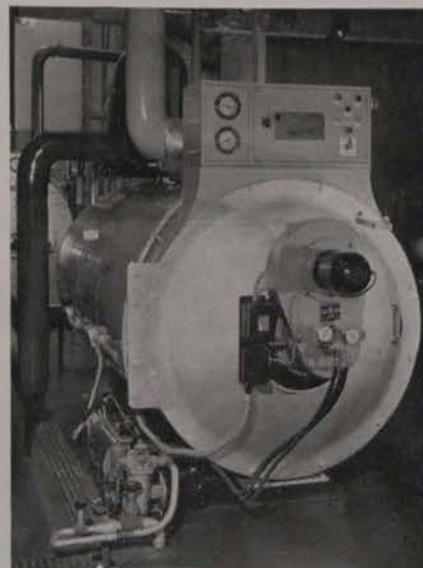
THREE VEKOS Powermaster coal fired packaged automatic boilers, recently installed in the Midlands and the North of England are expected by the manufacturers, G.W.B. Furnaces Ltd., Dudley, Worcestershire, to make fuel and labour savings approaching £8,000 per year.

Each of the Vekos Powermaster boilers is capable of raising 3,400 lbs. steam/hour (from and at 212 degrees F). The third boiler installed is capable of producing 15,500 lb. steam/hour. In this particular case the steam is used for process work and also for heating 75,000 sq. ft. of office and factory building.

The company also manufacture the successful 9WB Voriflow Burners. Irish agents: Hendron Bros. (Machinery) Ltd., 9 Little Denmark St., Dublin.

JOHN THOMPSON (Wilson Boilers) Limited are marketing their new Aquapac Boiler, which is manufactured in the range $\frac{1}{2}$ million to 40,000,000 Btu's/hr. and suitable for low pressure,

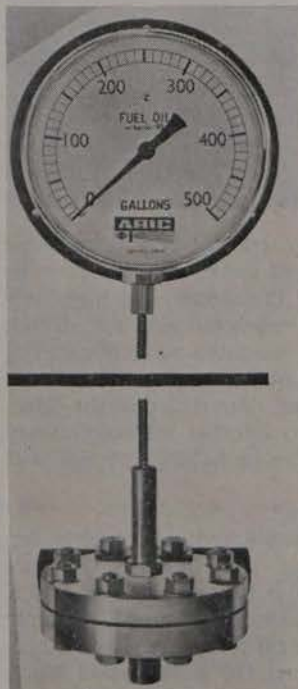
medium pressure, and high pressure operation.



The boiler illustrated is rated at $2\frac{1}{2}$ million Btu's/hr. and is suitable for a working pressure of 50 p.s.i. and of course is oil fired. The Aquapac is also manufactured as a solid fuel unit suitable for coal or turf firing, in the range $\frac{1}{2}$ million to 25 million Btu's/hr. Full details may be obtained from the Dublin office of the firm, at 25 Lower Leeson Street.

PRODUCT REVIEW continued page forty-six

NEW ARIC TANK CONTENTS GAUGE WITH REMOTE READING UP TO 100 FT.



★ YOU HAVE INSTRUMENTATION PROBLEMS OR REQUIREMENTS?

Our wide range of ARIC Instruments cover all types of measurement and control of pressure and temperature.

★ YOU HAVE INSTRUMENTS FOR REPAIR ?

Why not call in ARIC and make use of our wide repair facilities here in Dublin.

★ YOU HAVE INSTRUMENTS ON SITE THAT REQUIRE MAINTENANCE ?

Our highly skilled outside maintenance unit can repair on site.

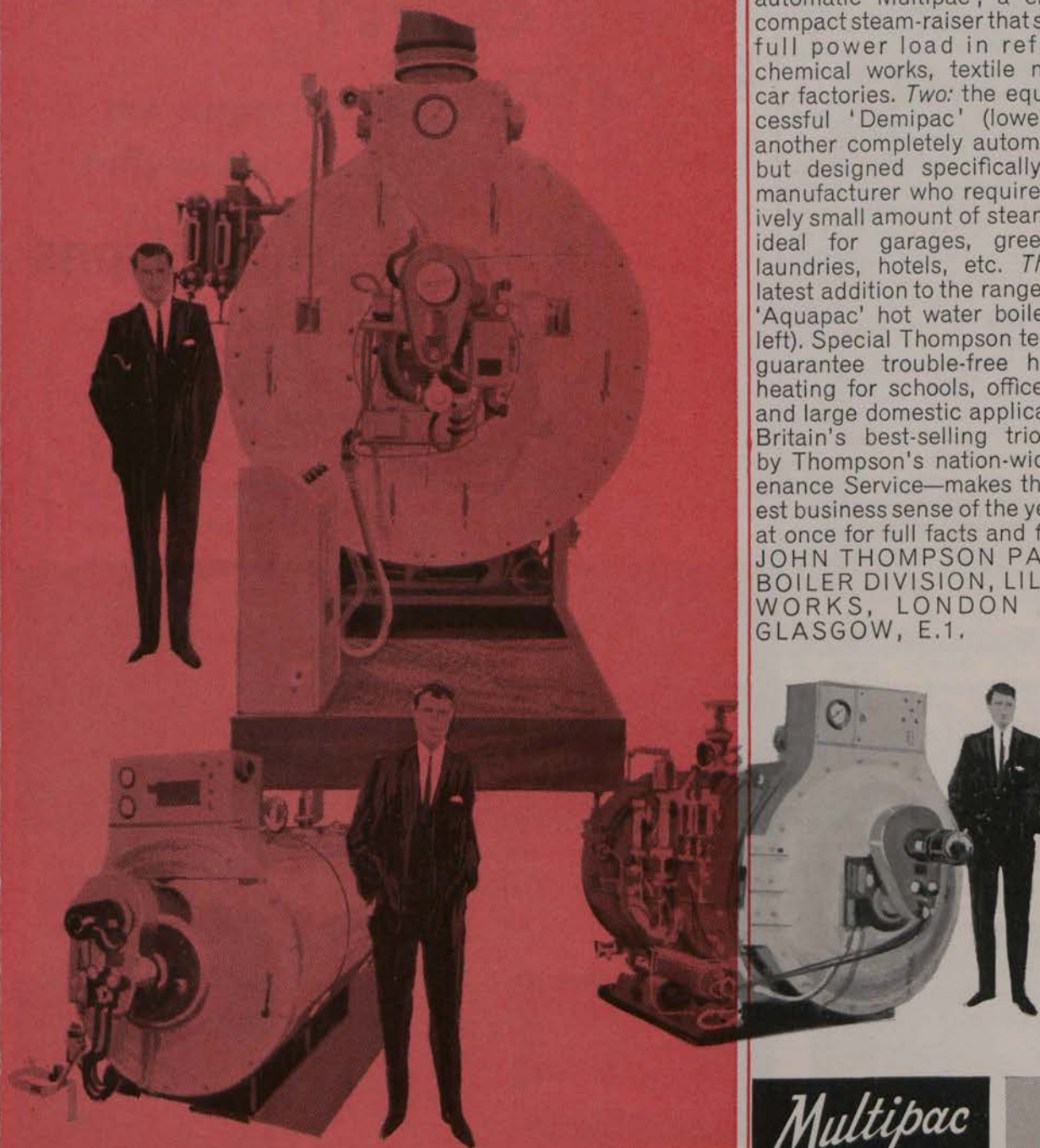
ARIC TRANSMITTING PRESSURE GAUGE WITH STAINLESS STEEL DETACHABLE DIAPHRAGM



ARIC (IRELAND) LTD., 6 MONTAGUESTREET, DUBLIN 2. TEL.: 53821/55510

THREE OF A KIND

From John Thompson comes Britain's best-selling range of oil-fired package boilers—three of a kind which between them satisfy every industrial demand. *One:* the fully-automatic 'Multipac', a clean and compact steam-raiser that shoulders full power load in refineries, chemical works, textile mills and car factories. *Two:* the equally successful 'Demipac' (lower, right), another completely automatic unit, but designed specifically for the manufacturer who requires a relatively small amount of steampower—ideal for garages, greenhouses, laundries, hotels, etc. *Three:* the latest addition to the range, the new 'Aquapac' hot water boiler (lower, left). Special Thompson techniques guarantee trouble-free hot water heating for schools, offices, hotels and large domestic applications. Britain's best-selling trio—backed by Thompson's nation-wide Maintenance Service—makes the soundest business sense of the year. Write at once for full facts and figures to JOHN THOMPSON PACKAGE BOILER DIVISION, LILYBANK WORKS, LONDON ROAD, GLASGOW, E.1.



ANOTHER
3
OF
A
KIND—
AVAILABLE
ON
REQUEST



Multipac

Demipac

Aquapac



The Irish Plumbing and Heating Engineer.

BASTIAN and Allen Ltd. of Harrow, Middlesex — a member of the Parkinson Cowan Group—manufacture electrode boilers for steam raising and warm heating. Electrode boilers differ in principle from any other method of heating water. Heat is generated in the water itself instead of being transmitted through a material from some higher temperature. The heat generated is exactly equivalent to the electricity expended and the only loss is by radiation from the boiler shell resulting in a high overall efficiency (about 98 per cent) whether the boiler is on full or reduced loads.

In the medium voltage range units are available in ratings from 10 k.w. (34,000Btu/h) to 1,440 kw. (4,900,000 Btu/h) while on high voltage models are supplied with ratings from 750 kw. (2,550,000 Btu/h) up to 20,000 kw. (68,000,000 Btu/h).

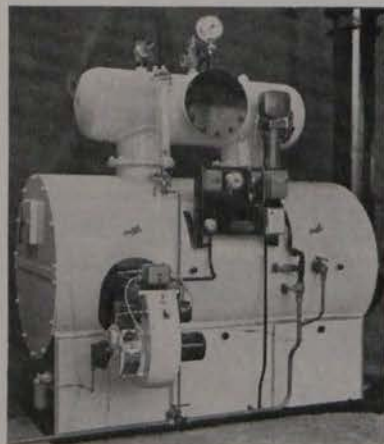
Bastian and Allen have also introduced the Impact range of packaged automatic immersion heater type steam boilers. Designed to meet the increasing demand for small steam raisers below the rating of their electrode steam boilers, the four models at present available cover steam outputs up to 132 lbs. per hour at pressures up to 150 p.s.i.

* * *

PERKINS BOILERS LTD., of Mansfield Road, Derby, England, manufacture an extensive range of industrial steam and hot water boilers, for oil and gas firing and also electrically powered, together with the Airmatic range of warm air units which are used extensively for industrial purposes.

From the range we note the 500,000 Btu PC.11 vertical hot water boiler with oil fired pressure jet burner. This

Continued page forty-eight



One of the Perkins Patomatic Mark 10 range.

PRODUCT REVIEW

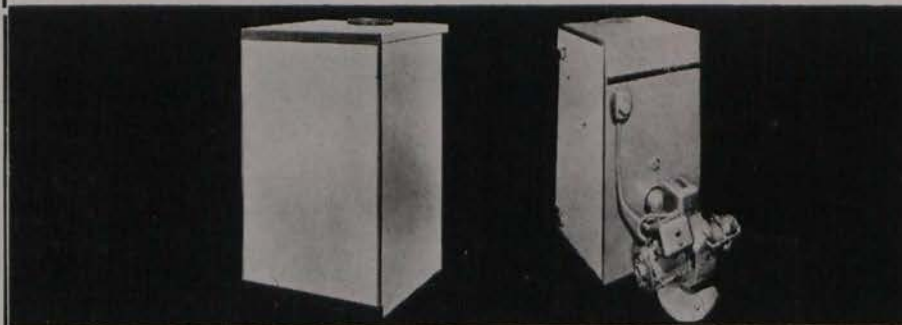
from page forty-four

They don't let you D O W N at Wilsons

Every Wilson oil-fired boiler is fired and tested for you before it leaves the works. The outputs are guaranteed, *tested* outputs into water

Every Wilson radiator has a guaranteed emission figure—a figure calculated to B.S. : 3528 : 1962 by the Heating and Ventilating Research Association, Bracknell.

All boilers are very accessible for your checking and cleaning —saves you time on the job. And if there *is* trouble with a Wilson installation, we do want to hear about it. Because it is not our custom to assume that the installer must be at fault.



Wilson Wallframe. Five models available with outputs from 45 to 150 thousand B.T.U. Advanced technical design without frills. The biggest selling wallframe boiler in the country.

Wilson Boiler/Burner Units. Pressure-jet fired. Outputs from 70 to 800 thousand B.T.U. Larger models now with Wilson Cosytube baffle for maximum corrosion-free life.



Wilson Radiators. Their extra slim design makes them favourites with housewives. 816 sizes, with standard popular range for quick delivery.



Full details from

Henry Wilson & Co. Ltd.

Makers of Heating Equipment since 1840

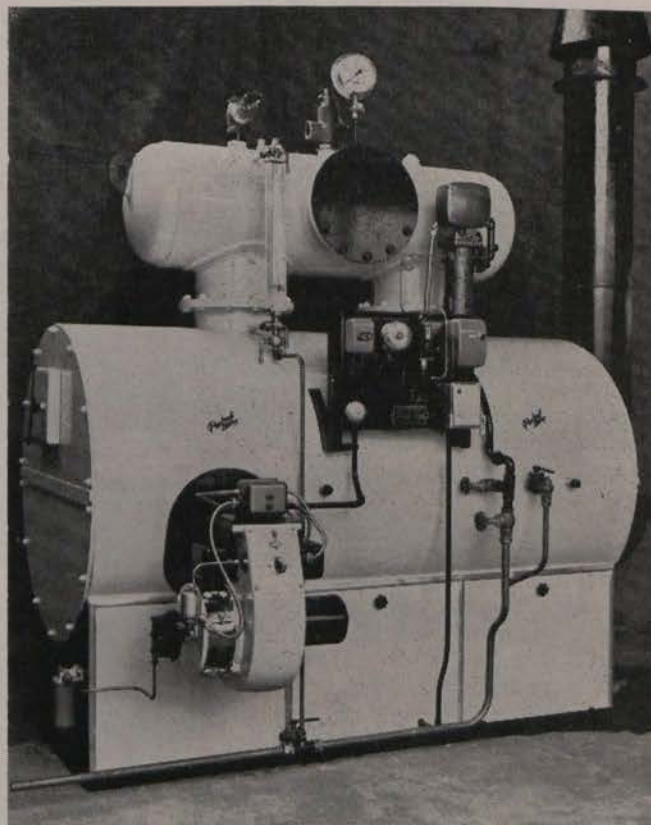
16, Fade Street, Dublin.

Telephone: 76009.

Perkins

for
the largest range of
fully-automatic boilers
for domestic and
industrial purposes

★ The name and reputation of Perkins is known throughout the world, where their boilers are in use in Hotels, Hospitals, Institutions, Factories and Private Dwellings—anywhere where there is a need for HEAT.



Above: THE PERKINS PATOMATIC

A horizontal fire tube steam raising boiler with a wide range of sizes and applications. Packaged and electrically controlled models of the Patomatic are also available. Capacities up to 4,000,000 BTU's/hr. 100 to 4,000lbs. per hour evaporation.

Left: PC SERIES—55,000 to 1,000,000 BTU's/hr.

The construction of all Perkins oil fired boilers is from high quality steel and designed exclusively for oil firing. The design incorporates multi-horizontal water tubes arranged spirally, in order to ensure that no combustion heat passes into the flue without having first come into contact with water-wetted, heat transfer surfaces. The boiler is adequately insulated to reduce heat loss to a minimum.



Sole Concessionaires for Republic of Ireland:

**OIL FIRED HOMES
(Ireland) LTD.**

6 HARCOURT ROAD, DUBLIN.
Telephone 54736.

MANUFACTURERS OF THE FAMOUS PERKINS 'FLUE-LESS' MINI BOILERS

The Irish Plumbing and Heating Engineer.

boiler is part of a range which commences at 55,000 Btu's up to a larger size of 1,000,000 Btu's per hr.

The fully automatic oil fired pressure jet steam boilers of the Patomatic Mark 10 range are available with evaporative capacities of up to 5,000 lbs. of steam per hour from and at 200 degrees F at sea level at a maximum working pressure of 150 p.s.i. The Irish agents are Oil Fired Homes (Ireland) Ltd. in the Republic of Ireland, and the Ulster Heating Centre in Northern Ireland.

* * *

THE RANGE of boilers from Ruston and Hornsby Ltd., Long Mile Road, Walkinstown, Dublin, includes the Paxman low pressure boiler designed specifically for the lower range of application for low pressure steam or hot water. It is supplied as a fully packaged unit or free standing, the accent being on simplicity and low cost rather than optimum efficiency. The low pressure boiler also features ease of maintenance and operation.

The Paxman Watertube, Boilers WTK and WTV are specifically designed to meet special requirements of extra high pressures and larger evaporations than can be achieved with shell boilers. The WTK version is oil or gas fired only (i.e. not solid fuel), whereas the WTV is suitable for all types of boiler fuel including solid. Paxman Dryback and Waste Heat Boilers come in the category of specials, the former where superheaters or pulverised fuel firing are required. Waste heat boilers are specially designed



Forty-eight

PRODUCT REVIEW

from page forty-six

to meet a customer's requirements to utilise waste heat produce from various sources.

* * *

THE NEW Buderus P 22W is available from the sole agents in Ireland, Quadrant Engineers, 167 Strand Road, Merrion Gates, Sandymount, Dublin 4. It has many new features which include enlarged dual/fuel combustion chamber, capable of burning solid fuel or oil.

The Buderus P 22W also features ease of cleaning, pleasant finish of modern type (Buderus castings are of very fine surface finish), steel insert frontplate, for easy installation of oil burner, finned convection surface, tight dust proof surfaces and extremely high efficiency.

* * *

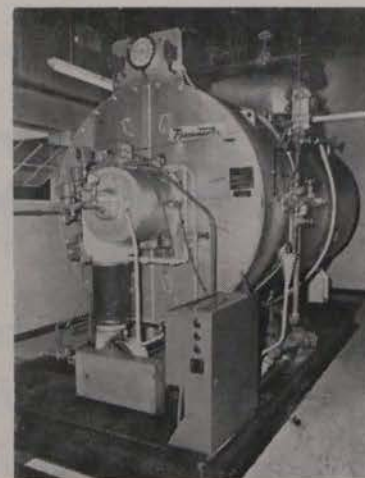
THE POWERMASTER automatic boiler Model 5 manufactured by Orr and Sembower Inc. and distributed by Hendron Brothers (Machinery) Ltd., Little Denmark Street, Dublin, is designed especially for smaller steam users in processing and heating applications ranging from 20 HP (670,00 Btu/hr.) to 100 HP (3,350,000 Btu/hr.). The oil burner is a mechanical pressure atomizing type designed for burning light oil. The gas burner is the same pre-mix burner furnished on the Model 3 for all commercially available gases. Combination fuel burners can be furnished for both gas and oil.

The Powermaster hot water boiler is claimed to be the first packaged unit designed especially to meet the needs of modern forced circulation hot water heating systems. It is not just a steam boiler converted to hot water service. The design of the Powermaster utilises a dip-tube outlet located at the top of the boiler shell, baffled to eliminate entry of air and vapour. A separate vent connection is provided for piping to the expansion tank or other convenient point for continuous removal of air from the boiler.

Hendron Brothers are also distributors here for the Columbia Boiler Company of Pottstown, from the range of which we note the steel, water tube, oil-fired heating unit which gives the maximum operating efficiencies. The arrangement of the tubes forces the hot gases to travel five times the full length of the boiler. It features one-piece welded construction of heavy copper bearing steel.

* * *

THE 'IDEAL Vanguard' series of oil



A Powermaster installed at Beechams (Ireland) Ltd.

fired boilers by Ideal-Standard Ltd., is available in seven sizes ranging from 175,000 to 385,000 Btu/hr. They are supplied as a mated boiler/burner unit.

The air/fuel ratio of the boiler is pre-set to give acceptable performance, the very minimum of site adjustment being required on initial commissioning to obtain optimum CO_2 and smoke values.

The oil nozzle is selected and fitted at works and pump pressure is pre-set to give the correct oil delivery according to the size of the boiler with which the burner is supplied. The integral draught stabiliser automatically compensates for excess draught to give the correct suction in the combustion chamber.

* * *

TWO NEW suspended oil-fired units have been added to the vast range of Lincoln Furnaces making thirty-five models in all, manufactured in four different styles—counter flow, high-boy, low-boy and Suspended. The latest units are rated at 35,000 Btu and 750 Btu and are both supplied with fireclay combustion chambers.

The fan assembly is designed for extensive ductwork enabling one unit to heat large factory areas and offices if required. All controls supplied with each unit are manufactured by Messrs. Honeywell Limited and include room thermostat, oil filter and draught stabiliser.

Glass fibre air filters are fitted on the return air openings thus ensuring that only clean air is ducted through the building. For buildings with a ventilation problem fresh air can be ducted through the unit to maintain an assured number of air changes. Full details may be obtained from Lincoln Furnaces Ltd., Charlwoods Road, East Grinstead, Sussex.

SLATING THE 'FASTNET' WAY!



Fastnet Asbestos Cement Slates are available in a variety of shades, are a high quality product which possess colour and texture, are strong and durable; yet light and economical. The lightness and strength of "Fastnet" slates permit considerable savings to be effected in the quantity of roof timber required and thus reduce the overall cost of a roof. All Asbestos Cement materials are approved by the Department of Local Government for grant purposes.



Asbestos

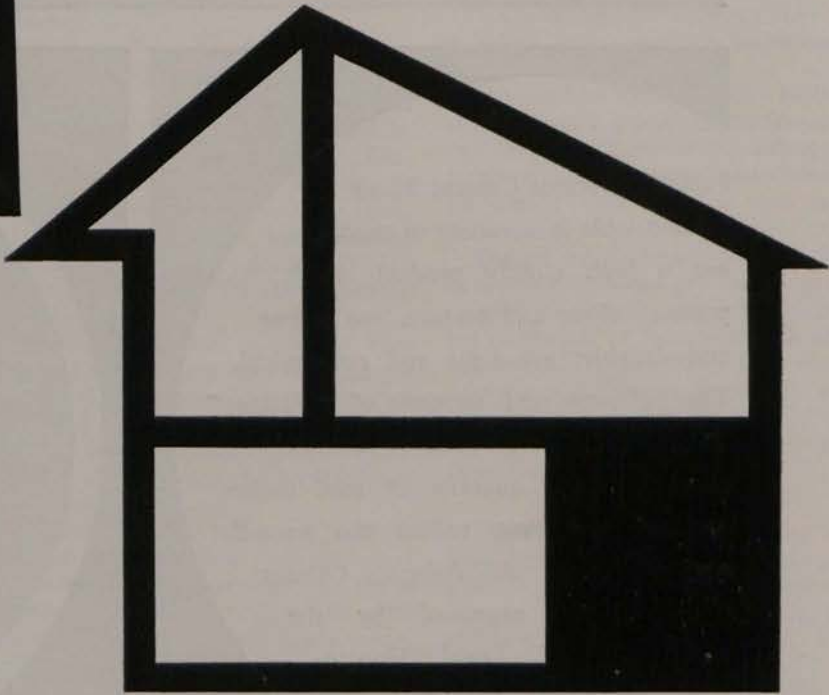
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