

6th May, 1958.

Dear Mr. Andrews,

Thank you for your letter of the 30th ult. I am pleased to accept your kind invitation to visit Bord na Mona Works on the 22nd May. Since I heard from you, I have been speaking to Mr. Thomas and he has mentioned the proposed itinerary to me. This is quite suitable.

I look forward to seeing you.

Kind regards.

Yours sincerely,

M. O Maicin,  
City Manager.

Dr. C.S. Andrews,  
Managing Director,  
Bord na Mona,  
Pembroke Street,  
DUBLIN.

Mr. Rathigan | Books Bag

L100/EC/2/1/5(2)



BORD na MÓNA

Telefón 66431

Telegrama: Móna, Át Cliaí, Éire

Ár uTas.....

Do tas.....

BAILE ÁTA CLIAÍ, ÉIRE

30th April, 1958.



M. Macken, Esq.,  
City Manager,  
City Hall,  
LIMERICK.

Dear Mr. Macken,

I was speaking to Mr. Thomas the other day and I suggested to him that you and he should visit us on the 22nd May. He told me he would mention the matter to you and the proposed itinerary. I hope you will find it possible to come. If that does not suit you we can arrange an alternative date.

Looking forward to seeing you.

Yours sincerely,

*W.S. Anderson*

MANAGING DIRECTOR.

*W.S. Anderson*  
*2/5/58*  
*W.S.*

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DOCK ROAD  
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OUR REF:..... **FKT/EC.**

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TELEGRAMS: GAS DEPARTMENT

F. K. THOMAS, M.Inst., Gas E.,  
CITY GAS ENGINEER

PERSONAL.

30th April, 1958.

M. Macken, Esq.,  
City Manager,  
Arus Na Cathrach,  
LIMERICK.

Dear Manager,

This is just to confirm our telephone conversation this morning that you and I have been invited by Dr. C.S. Andrews, Managing Director of Bord Na Mona, to make a tour of the Bord Na Mona bogs on Thursday the 22nd May, starting at Boora Bog near Tullamore at about 10 a.m. on that day. Dr. Andrews says he will write to you direct arranging a programme, but in the meantime I have written to him as per enclosed letter.

Yours sincerely,

FKT/EC.

PERSONAL.

30th April, 1958.

Dr. C.S. Andrews,  
Managing Director,  
Bord Na Mona,  
Pembroke St.,  
DUBLIN.

Dear Dr. Andrews,

Further to our conversation of yesterday,  
I have had a word with Mr. Macken, City Manager  
and he will be very pleased to accept your kind  
invitation to make a tour of the bogs on the 22nd  
May, as you suggested. I expect you will be in  
touch with him regarding the details in due course.

Yours sincerely,

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11th February, 1958.

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Dear Mr. Andrews,

Thank you very much for your letter of the 7th instant. Needless to say I was very happy to meet you on your visit to Limerick, and you can be sure that Mr. Thomas and I will give every help.

I will be very interested in seeing one of your production units in action, and if you give me a reminder later in the year, I am sure I will be able to fit in a visit.

Kind regards.

Yours sincerely,

---

M. O Maicin,  
City Manager.

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A.S. Andrews, Esq.,  
Managing Director,  
Bord na Mona,  
DUBLIN.

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L10012/1/5 (b)



# BORO na mòna

Telefón 66431

Telegrama: Mòna, Àt Cliaç, Éire

Àr oTas.....

Oo Tas.....



BAILE ÁCA CLIAÇ, ÉIRE  
DUBLIN, IRELAND

7th February, 1958.

*79/2*  
M. Macken, Esq.,  
City Manager,  
City Hall,  
LIMERICK.

Dear Mr. Macken,

Just a note to say thanks to you for having given me so much of your time on Wednesday. I would like you to express my appreciation to Mr. Thomas for his very helpful approach to the problem. It is very encouraging to find someone in the country who knows so much about the problem and is sympathetic to the possible developments in the field of gas production.

I have asked Mr. Miller of our Experimental Station to get in touch with Mr. Thomas and I hope some good comes to the country from the contact.

I express my deep appreciation to you and I hope later on in the year when we are fully going you will do us the honour of paying a visit to some of our Works. I am quite sure they would be of considerable interest to you.

Yours sincerely,

*h. S. Chase*

MANAGING DIRECTOR.

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2/PD/EC/2/1/5(7)

# **USE OF TURF**

— IN —

## **INDUSTRIAL APPLIANCES**



**BORD NA MONA**  
**28 Upper Pembroke Street**  
**DUBLIN**

**USE OF TURF**  
**in**  
**Industrial Appliances**

BORD NA MONA  
28 UPPER PEMBROKE STREET, DUBLIN



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## Foreword

It is probably true to say that of the four main costs in industry—raw materials, wages, fuel and power—the first two are largely beyond the control of the individual industrialist. There is, however, still a wide freedom of choice in fuels, and considerable scope for economies in the generation and utilization of heat; and, in highly competitive industry, the selection and proper use of fuel may decide the question of survival or extinction.

The ever-changing pattern of fuel prices has, in the immediate past, rendered it necessary for the industrialist to keep his choice of fuel under constant review. The price trend of imported fuels has for a number of years been definitely upwards, though temporary fluctuations have to some extent obscured the tendency. The price of machine turf has on the other hand, remained reasonably stable, due to expanding production and incessant attention to improvement in production efficiency, for which there has been somewhat more scope than exists in older fuel industries. To-day turf is, in all but a few exceptional localities, the cheapest industrial fuel in Ireland.

The selection of the cheapest fuel will, however, not automatically lead to low heating costs. Unsuitable plant, bad operation and wastage of boiler-house labour may more than counterbalance low calorific costs, and it is to aid industrialists in avoiding such mistakes that this booklet has been prepared. It should be remembered that the information in it can serve only as a general guide: each case is, in the last analysis, a special one; and the technical staff of Bord na Mona are always ready to deal with specific problems.

It is hoped that the booklet will be read with profit and that it will contribute in some measure not only to increased efficiency in Irish industry generally, but also to increased support for what is, next to agriculture, the most basic Irish industry of all—Turf.



## Section I. Fundamental Principles of Combustion

---

### (a) Combustion Process

By "Combustion" is meant the combination of a material with oxygen accompanied by heat release at a temperature high enough to give a visible heat. Under suitable circumstances all elements will combine with oxygen, but for practical purposes the only elements met with in commercial fuels are carbon, hydrogen and their various compounds known as hydrocarbons. In all solid fuels carbon is the largest single component. Smokeless fuels such as anthracite and coke contain practically no combustible matter other than carbon, while bituminous coals, turf and timber contain hydrogen in various amounts. Liquid and gaseous fuels contain large quantities of hydrocarbons.

The effect of hydrogen in a fuel is to form "volatiles." These are substances which, as their name indicates, may be driven off in an unburnt state by heat, and the magnitude and nature of the volatile content of a fuel has a very important bearing on the technique which must be employed to burn it.

Small quantities of sulphur are found in most fuels. The amounts are so small that their effect on heating values is insignificant but, owing to the tendency of sulphur to form compounds with a corrosive effect on metalwork, the less of this material contained in a fuel the better.

### (b) Air Requirements for Combustion

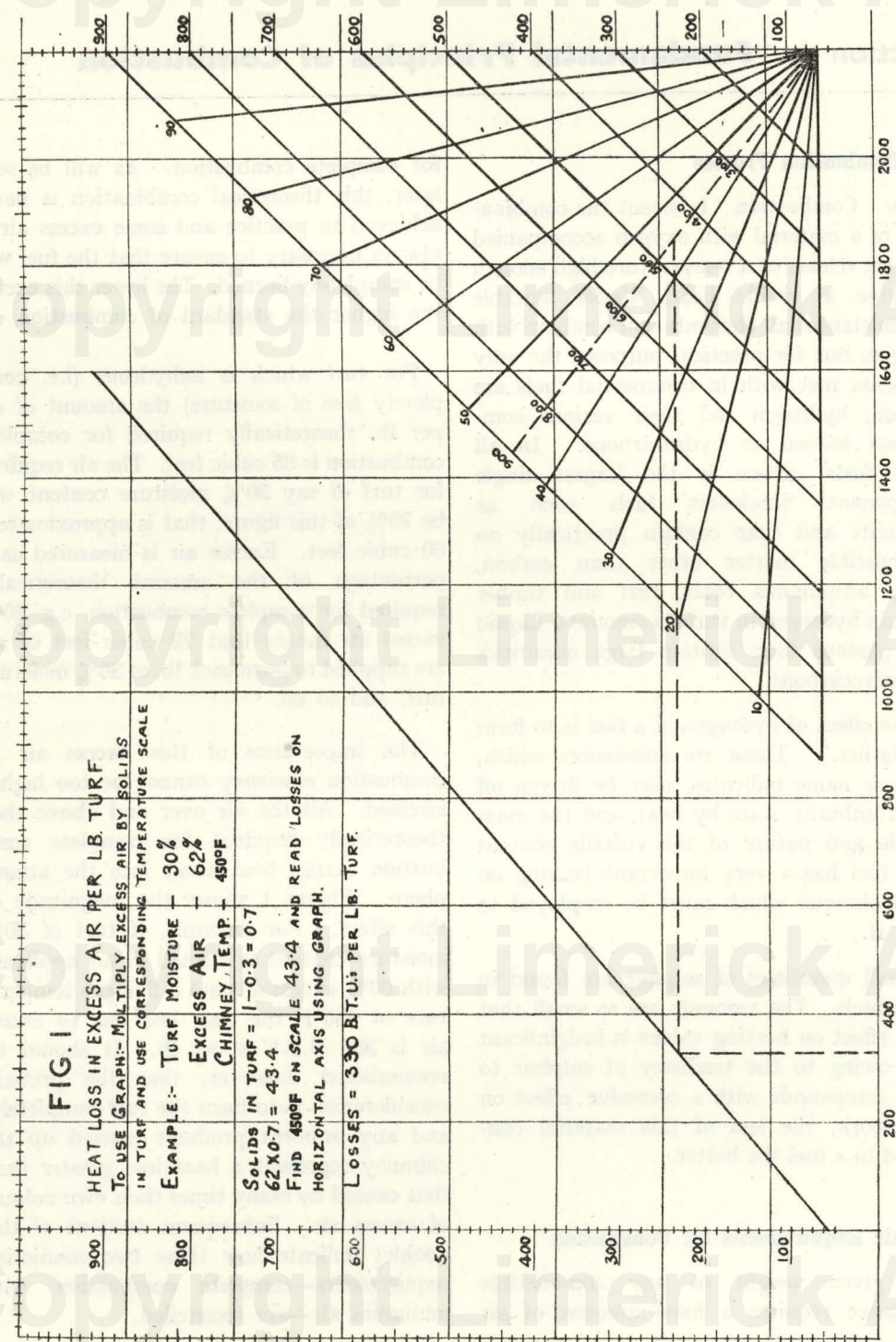
A given weight of any combustible substance requires a fixed amount of air

for complete combustion. As will be seen later, this theoretical combination is never achieved in practice and some excess air is always necessary to ensure that the fuel will be completely burned. The lower this excess the higher the standard of combustion.

For turf which is anhydrous (i.e. completely free of moisture) the amount of air per lb. theoretically required for complete combustion is 85 cubic feet. The air required for turf of say 30% moisture content will be 70% of this figure, that is approximately 60 cubic feet. Excess air is measured as a percentage of the amount theoretically required for complete combustion, e.g. 20% excess air means that 72 cubic feet of air are supplied to burn each lb. of 30% moisture turf, and so on.

The importance of this excess air in combustion efficiency cannot be too highly stressed. All the air over and above that theoretically required for complete combustion carries heat away into the atmosphere. Figure 1 shows the magnitude of this effect. For example, if turf of 30% moisture content is burned in an appliance with 62% excess air and a flue gas temperature of 450°F the heat loss due to excess air is 330 B.T.U.'s per lb. It should be remembered, however, that the primary consideration is to burn the turf completely, and any unburnt products carried up the chimney represent a heat loss greater than that caused by many times their own volume of excess air. Subsequent sections of this booklet indicate how these two conflicting requirements—complete combustion with minimum air—are reconciled.





### (c) Combustion Products

When any fuel is completely burnt away the products consist of ash, which is left on the grate, and gaseous substances which escape through the chimney.

Carbon unites with oxygen to produce carbon dioxide, but in a deficiency of air will burn to carbon monoxide, a poisonous gas which still contains over two-thirds of the original heat in the carbon.

Hydrogen unites with oxygen to produce water in the form of vapour.

A number of other chemical elements found in different fuels in varying proportions, are released by the combustion process. Three of these, viz. sulphur, chlorine and phosphorus, are important from the point of view of deposit formation and corrosion and may be injurious on this account. Fortunately, turf is comparatively free of them. Sulphur is the most well known and troublesome of these elements, but the low sulphur content of turf is combustible and, provided the flue gases are kept above dew point and proper combustion techniques are used, corrosion from flue gas deposits will not occur. It should be remembered, however, that the sulphuric acid dew point is considerably higher than the water dew-point and condensation of acid may take place at temperature of 350°F or more. Furthermore the fact that the flue gases as a whole may be above the acid dew point is no guarantee that there are not cold points in the circuit which cause local condensation. In large plants it is necessary to design gas-flow passes so as to give a uniform velocity in order to prevent differential cooling and consequent acid deposition.

Each volume of oxygen taking part in the combustion of carbon will form an equal

volume of carbon dioxide. Since air consists of 21% oxygen and 79% nitrogen the combustion of pure carbon in minimum air will produce a gas containing 21% carbon dioxide ( $\text{CO}_2$ ) and 79% nitrogen. When air in excess of the minimum is present, the waste gases will also contain some oxygen, two typical analyses being:—

- (1) 14%  $\text{CO}_2$ — 7% oxygen—79% nitrogen
- (2) 10%  $\text{CO}_2$ —11% oxygen—79% nitrogen

Since most fuels contain some hydrogen, which unites with oxygen to form water, concealing some of the oxygen, the maximum theoretical  $\text{CO}_2$  content is usually less than 21%. The maximum theoretical  $\text{CO}_2$  content for flue gases from turf varies with the hydrogen content of the turf, but is about 20%. Figure 2 shows the relation between excess air and  $\text{CO}_2$  content in the case of turf. For example, as can be seen from the graph, a flue gas containing 12%  $\text{CO}_2$  indicates the presence of 66% excess air.

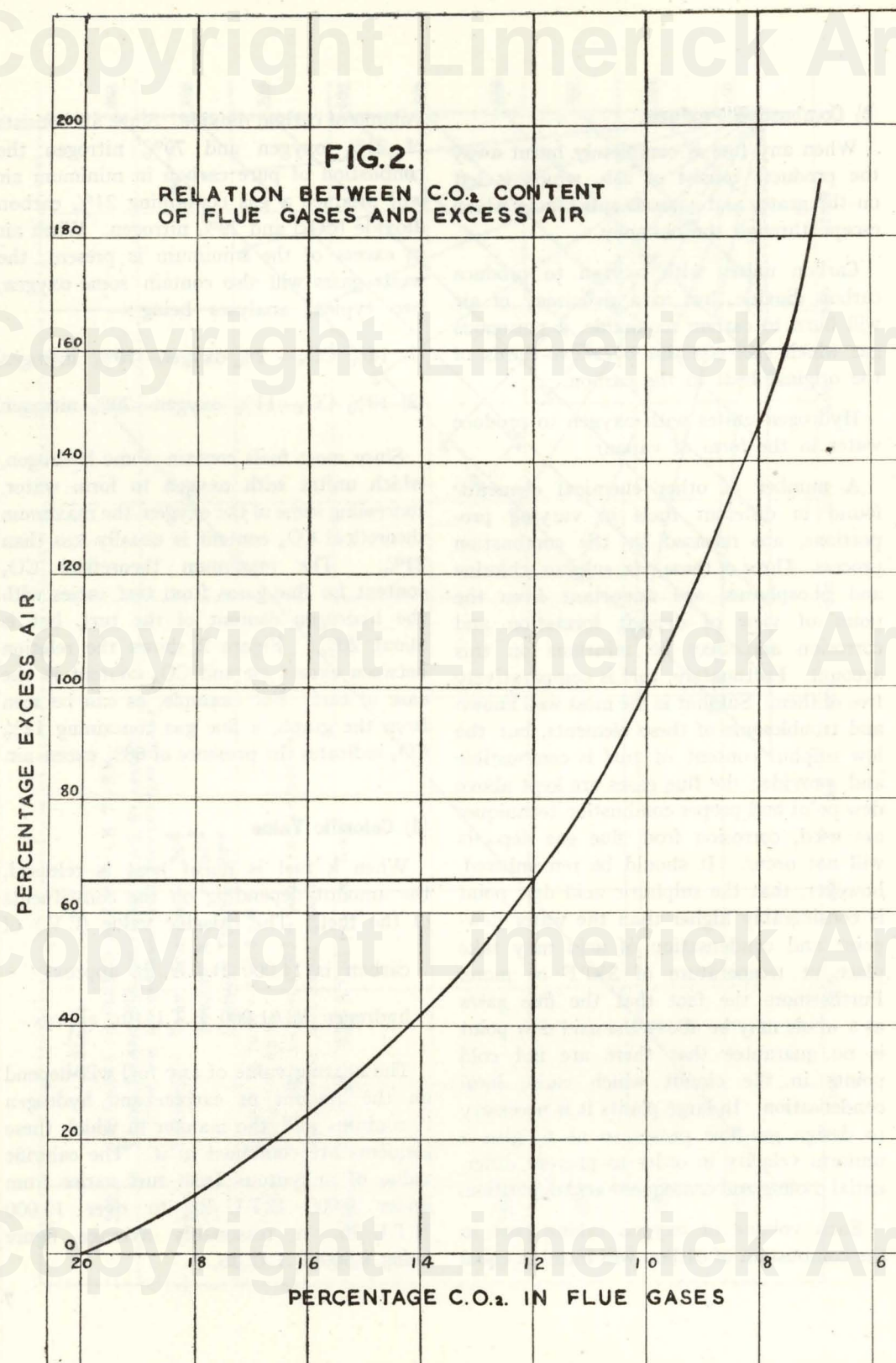
### (d) Calorific Value

When a fuel is burnt heat is released, the amount depending on the constituents of the fuel. The calorific value (C.V.) of carbon is 14,000 B.T.U./lb. approx.

hydrogen is 61,000 B.T.U./lb. approx.

The heating value of any fuel will depend on the amount of carbon and hydrogen it contains and the manner in which these elements are combined in it. The calorific value of anhydrous Irish turf varies from under 9,000 B.T.U./lb. to over 10,000 B.T.U./lb., a reasonably average figure being 9,500 B.T.U./lb.





**(e) Effect of moisture**

All solid fuels contain some moisture. The most obvious effect of moisture in a fuel is to reduce the amount of solid matter, decreasing the calorific value in the same proportion as the reduction of solids.

For instance, turf of 30% moisture content contains 70% dry matter and the gross calorific value is :

$$9,500 \times \frac{70}{100} = 6,650 \text{ B.T.U./lb.}$$

Moisture has a secondary effect which is also quite important. All the water in turf, as in other fuels, is driven off in the form of steam during combustion, and heat is required to turn water into steam. When this steam escapes from the appliance without being condensed back into water, then the heat is irrevocably lost. The steam formed by the combustion of hydrogen in the fuel causes a similar heat loss.

The heat actually available for useful purposes is reduced by these two losses, i.e. the gross heat value of the fuel is not fully available to the appliance. By definition, the gross calorific value of a fuel is the heat released when unit weight of the fuel is burned, the products of combustion cooled to 60°F., and the moisture in the combustion gas condensed to water. The nett calorific value is the same as the gross value less the latent heat of the moisture, i.e. the combustion gases are cooled to 60°F. but the moisture is not condensed,

The real heat available to the boiler is less than the gross calorific value and even a little less than the nett calorific value since it is not practicable to reduce the flue temperature to 60°F. let alone condense the moisture at this temperature. Flue temperatures as low as 250°F can be obtained but in practice higher temperatures are much more common.

If  $C_g$  = gross calorific value of anhydrous fuel;

$M$  = moisture content of fuel as fired ;

$H$  = hydrogen content of fuel (usually about 5% in turf) ;

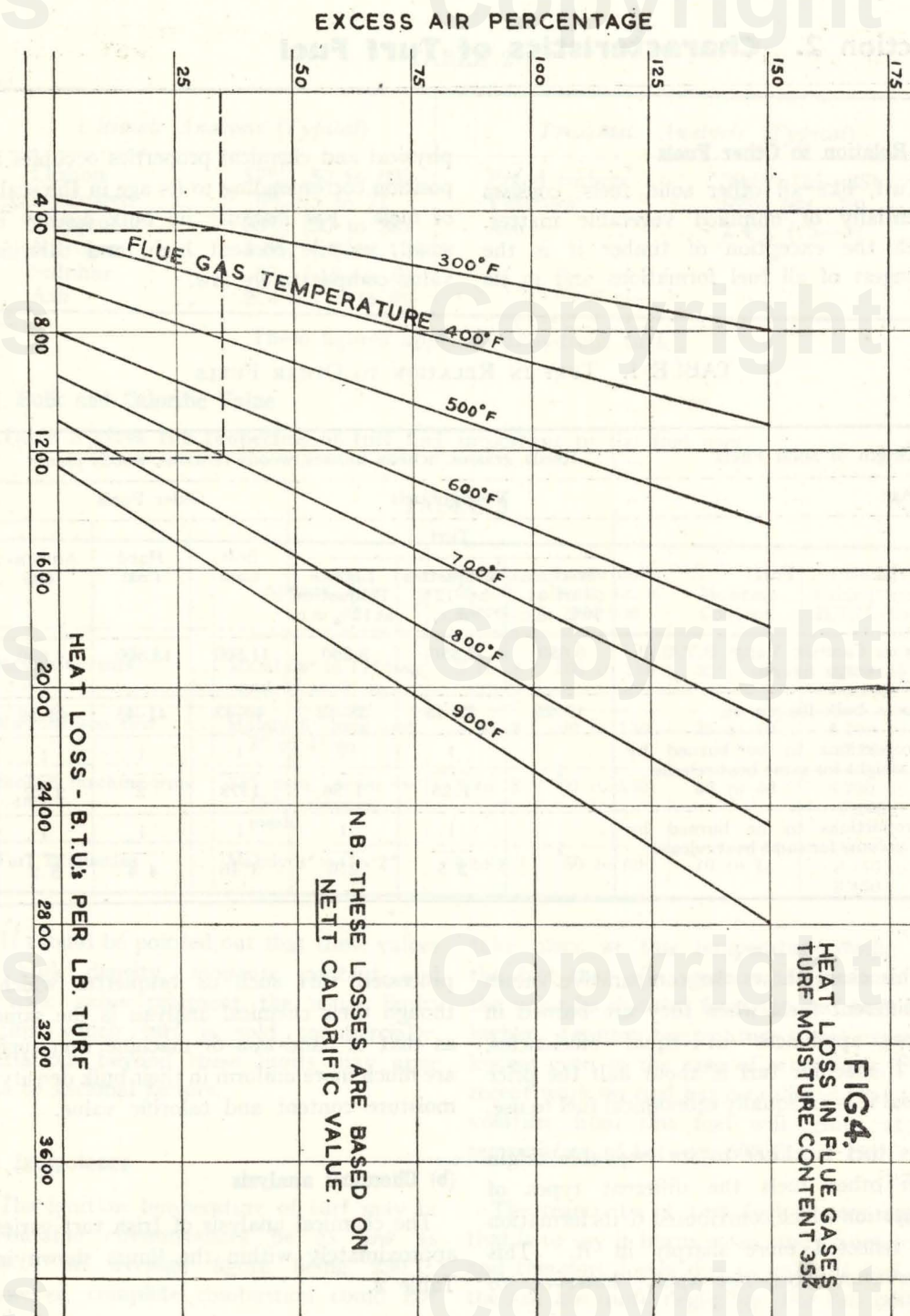
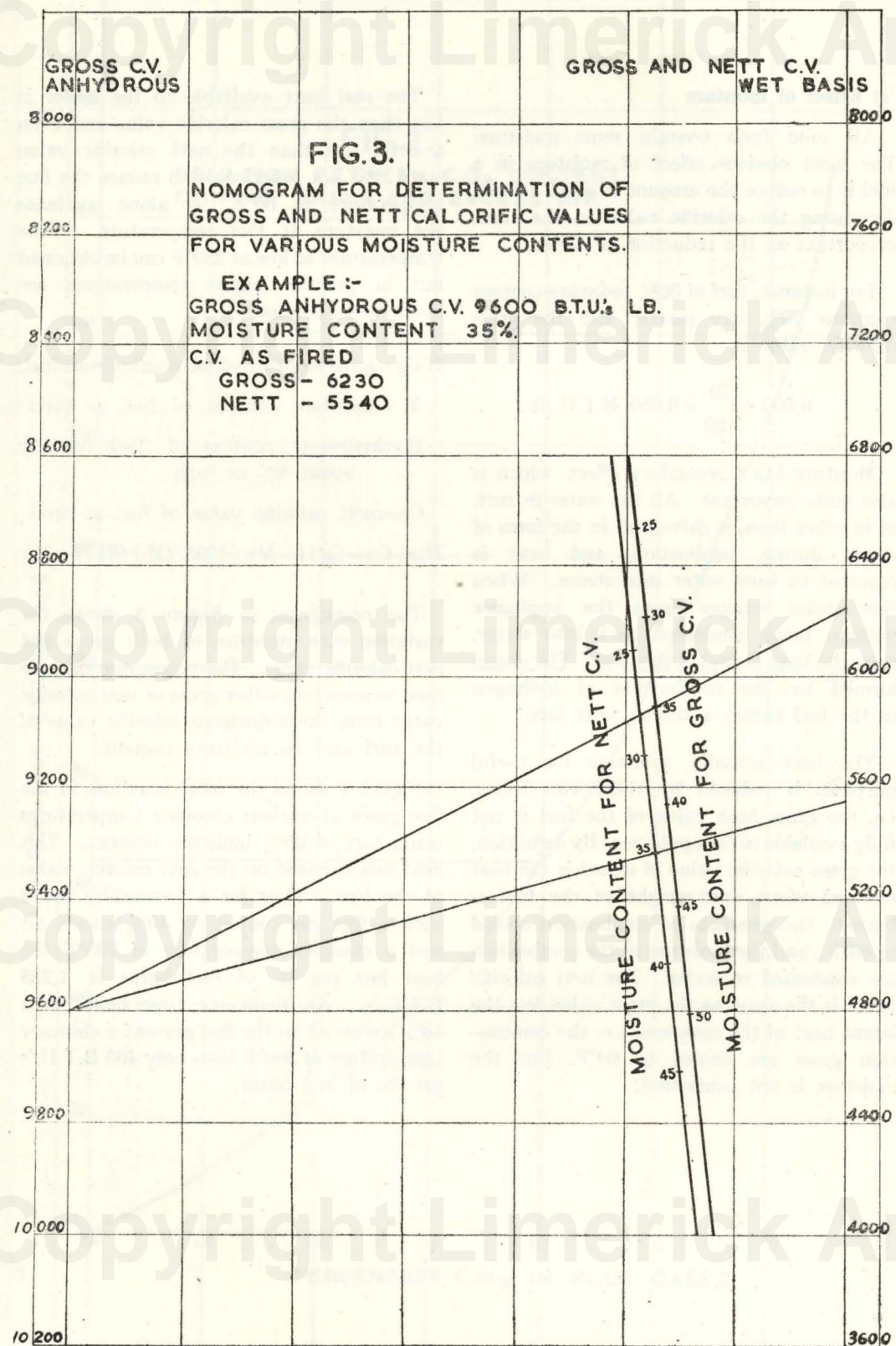
$C_n$  = nett calorific value of fuel as fired ;

Then  $C_n = C_g (1 - M) - 1055 (M + 9H [1 - M])$

The nomogram in Figure 3 shows the variation with moisture of both gross and nett calorific value. The nomogram may be used to ascertain either gross or nett calorific value from the anhydrous calorific value of the turf and its moisture content.

Figure 4 shows the total heat loss in the flue gases at various chimney temperatures using turf of 35% moisture content. This heat loss is based on the nett calorific value of the fuel. Thus for a Lancashire boiler with a flue gas containing 40% excess air and a chimney temperature of 700°F the heat loss per lb. of fuel burnt is 1,235 B.T.U.'s. An Economic type boiler with 40% excess air in the flue gas and a chimney temperature of 300°F loses only 460 B.T.U.'s per lb. of fuel burnt.







## Section 2. Characteristics of Turf Fuel

### (a) Relation to Other Fuels

Turf, like all other solid fuels, consists essentially of humified vegetable matter. With the exception of timber it is the youngest of all fuel formations and in its

physical and chemical properties occupies a position corresponding to its age in the scale of fuels. For instance its bulk density is small, volatile content high, and calorific value comparatively low.

TABLE 1. TURF IN RELATION TO OTHER FUELS

Origin of Solid Fuels ...	Reeds, grasses, lichens, mosses, woody remains, woody plants					
Age ...	Young Fuels			Older Fuels		
Fuel	Turf			Soft Coal	Hard Coal	Anthracite
	Machine turf at 30% m.c.	Briquettes at 12% m.c.	Lignite Briquettes at 12% m.c.			
Gross Calorific Value B.T.U./lb. (Average figures)	6,650	8,350	9,200	11,500	13,300	14,800
Loose bulk lbs./cu. ft. ...	17-25	37-45	38-42	40-43	41-45	43-50
Proportions to be burned by weight for same heat release ...	1	$\frac{1}{1.25}$	$\frac{1}{1.36}$	$\frac{1}{1.73}$	$\frac{1}{2}$	$\frac{1}{2.22}$
Proportions to be burned by volume for same heat release ...	1	$\frac{1}{2.5}$	$\frac{1}{2.6}$	$\frac{1}{3.46}$	$\frac{1}{4.4}$	$\frac{1}{5.2}$

This chart shows the comparative values of different fuels when they are burned in proper appliances at equal efficiencies, e.g. if machine turf is about half the price of coal it is an equally economical fuel to use.

As turf is closer to its vegetable origin than other fuels the different types of vegetation which contributed to its formation are reflected more sharply in it. This observation does not apply, however, to

processed turf such as briquettes which, though their chemical analysis is the same as that of hand-won or machine won turf, are much more uniform in their bulk density, moisture content and calorific value.

### (b) Chemical analysis

The chemical analysis of Irish turf varies approximately within the limits shown in Table 2.

TABLE 2

Ultimate Analysis (Typical)			Proximate Analysis (Typical)		
Carbon ..	57%	(50 to 62)	Fixed carbon ..	30.6%	(25-35)
Hydrogen ..	6%	(5 to 7)	Volatiles ..	67%	(63-73)
Oxygen ..	33%	(30 to 38)	Ash ..	2.4%	(.5-4)
Nitrogen ..	1.3%	(.5 to 1.7)			
Sulphur ..	.3%	(.15 to .6)			
Ash ..	2.4%	(.5 to 4)			

These figures apply to anhydrous turf.

### (c) Bulk and Calorific Value

Table 3 gives the properties of turf fuel important to the fuel user.

TABLE 3

	Approx. size	Density of sod pieces	Loose bulk density cu. ft. per ton	Moisture Content	Calorific Value (Gross B.T.U./lbs.)
Hand-won turf ..	Mainly 8" to 12" long and 3" to 6" sq.	.3 to .8	100 to 150	% 30 to 40	5,700 to 6,300
Machine-won turf ..	Mainly 9" long and 3" to 4" sq.	.5 to .8	90 to 130	25 to 40	5,700 to 7,200
Broken machine-won turf.	3½" max. down to 15% through ½" mesh.	.5 to .8	90 to 130	25 to 40	5,700 to 7,200
Turf Briquettes ..	Mainly 8" x 4" x 2"	.9 to 1.1	50 to 60	10 to 14	8,150 to 8,450

It should be pointed out that these values of bulk density, moisture content and calorific value represent the usual limits within which turf is sold commercially. Variations beyond these limits may arise due to seasonal factors.

### (d) Ignipotence

The ignition temperature of turf may in favourable circumstances be as low as 150°C, an average figure being 230°C. However, complete combustion could not

take place at this temperature owing to the fact that the ignition temperature of the volatiles distilled from the turf is much higher. Ignition temperature is not exactly known even in the case of other fuels, but recent work on coal has established that the volatiles from this fuel will ignite at a temperature of between 500°C and 750°C.

The reactivity of turf fuel is very high, that is to say it burns easily and completely and therefore losses due to unburnt fuel in the ash are quite negligible. For full boiler



outputs combustion at the rate of 30 to 35 lbs. per sq. foot of grate area per hour is usually necessary with coal. In the case of turf, experience has shown that combustion rates of up to 100 lbs. per sq. foot of grate area per hour are attainable and a burning rate of 70 lbs. per sq. foot of grate area per hour can be easily achieved. These figures are applicable to shell boilers, but in water tube boilers where furnace temperatures are higher, combustion rates of up to 300 lb. per sq. ft. per hour have been reached.

#### (e) Summary of Turf Characteristics

Although turf has a lower calorific value than most other solid fuels it has many advantages over them, the principal being :—

(i) Turf is a highly reactive fuel. Tests have shown that it is more reactive than many coals and a very high rate of combustion is possible.

(ii) The ignition temperature is low (actually the lowest of any solid fuel) and therefore fresh turf will commence to burn almost immediately it is thrown on the fire. The volatiles will also burn quickly provided the combustion chamber temperature is sufficient. This question is discussed at length in subsequent sections.

(iii) Turf is a non-caking fuel and therefore no poking or slicing is required. With many varieties of coal very frequent poking is necessary, and each time this operation is carried out, large volumes of volatiles are released unburnt, causing dense chimney smoke and considerable loss of heat.

(iv) Turf has a low combustion temperature and the heat released is spread over a large volume of gas. This is a distinct advantage in brick-kilns and similar plants where local overheating gives rise to rejected goods and it is desired to spread a uniform heat over a large area.

(v) Anhydrous turf contains about 67% volatile matter. The volatiles, being gaseous, allow of easy mixing with the combustion air and can be burned with low excess air. For this reason turf, in properly designed appliances, can be burned at a higher efficiency than many less volatile fuels.

(vi) Turf has a low ash content and fire cleaning is less difficult and laborious than with other solid fuels. Clinker formations seldom occur, and even when they do, are not extensive, and being comparatively soft can be easily broken down and removed. This major advantage will be readily appreciated by boiler attendants.



### Section 3.

### Application of Combustion Principles to Turf Burning

#### (a) Problem of Combustion Control

Having established the fact that the primary aims in combustion control are :—

- (i) To burn the fuel completely,
- (ii) To burn it in the minimum possible quantity of air, it is well to consider the means which must be adopted to achieve these results.

In order to burn a fuel completely it must be raised to the ignition temperature and kept at that temperature until combustion is complete. To burn it in minimum air the air and fuel must be mixed intimately, by setting up turbulent conditions in the combustion chamber. These requisites are known as "time," "temperature" and "turbulence" or the "three Ts."

The necessary conditions are easy to achieve in the case of gaseous fuel, as the air and gas may be intimately mixed in a burner. Thus gas can be burnt in almost the theoretical amount of air (not more than 10% excess). Liquid fuels may be broken into a mist with properly designed appliances and a high degree of mixing can be achieved in this manner. Solid fuels may be powdered and blown into a furnace in the same manner as fuel oil with similar results as far as air requirements are concerned. With solid fuels burnt on grates, however, where the combustion air is drawn through the firebed, much of this air passes through the spaces between the pieces of fuel and takes no part in the combustion so that

excess air in this case is usually much higher than with gaseous fuel. The minimum amount of excess air obtainable in practice with various fuels is given below :—

Gas	..	..	less than 10%
Fuel Oil	..	..	20%
Solid Fuel burnt on grates			35%

This last figure is a minimum one and figures of two or three hundred per cent. are not uncommon. The Mona Jet burner, described later in this booklet, presents a special case of a grateless furnace for solid fuel, in which turf may be burned with excess air of as low as 10%.

Turf is a high volatile fuel and it must be burned under conditions suitable to such fuels. Although the ignition temperature is very low, this does not mean that complete combustion can take place at very low temperatures. As soon as the turf ignites, distillation of volatiles commences and the ignition temperature of these volatiles is much higher than that of the solid turf. The presence of moisture vapour and a large amount of excess air will render the ignition temperature even more difficult to reach. If these volatiles do not burn they invariably deposit in flues and chimneys. Thus excessive chimney deposits can follow from the use of wet turf and even from the use of quite good turf in badly designed appliances. In order to avoid these conditions, the three "Ts" principles must be fully applied.



(i) TIME :

The combustibles must spend a sufficient time under the proper conditions of temperature and turbulence to allow completion of the burning reaction. In discussing turf this is equivalent to saying that a large combustion chamber is necessary. With a small combustion chamber, half-burnt volatiles will be forced into the cooler parts of the appliance which quench the flames before all their available heat is released. This is particularly true in the case of low temperature appliances, such as cast iron sectional boilers, which have no refractory lining. In the case of high-temperature furnaces, where refractory walls are above the ignition temperature throughout, there is little danger of incomplete combustion due to such effects.

(ii) TEMPERATURE :

The Combustibles must be kept over the ignition temperature until burning is firmly established. With low-volatile fuels, such as coke or anthracite, and the fixed carbon of high-volatile fuels, this condition is automatically fulfilled as the burning temperature will always be above the ignition temperature. The volatiles in turf, however, will be distilled off at temperatures lower than their ignition temperature and care must be taken to distribute the available heat so that they will burn completely. For example, hot-water boilers are often selected on the sole grounds that their design for heat exchange is highly efficient, the combustion chambers and flues being entirely water-jacketed. It is found, however, in practice that these boilers are rarely satisfactory for sod-turf burning, the reason being that it is difficult to reach a sufficiently high combustion chamber temperature to

ensure complete combustion of the volatiles. In such cases a pre-combustion appliance, such as the Monajet burner is advisable to ensure substantially complete combustion before the hot gases impinge on water-cooled walls.

Hot refractory surfaces wholly or partly surrounding the combustion chamber which become incandescent and reflect heat back to the rising volatiles are very effective. Dry-back shell boilers lend themselves to high-volatile fuels for this reason. Another application of the same principle is found in the combustion arch often built in a boiler-furnace, and in external step grate furnaces.

(iii) TURBULENCE :

In many cases, although more than enough air for complete combustion is supplied, unburnt combustibles are lost up the chimney. This is due very often to absence of the foregoing conditions of time and temperature, but is also commonly a result of "stratification." This means that the combustion air and the rising volatiles pass through the plant in separate streams without mingling. Steps should be taken to break these streams and cause the unburnt gases and air to mix efficiently, or in other words to set up turbulent conditions. A very simple method for mixing the streams of volatiles in air is the installation of brick baffles set in a honeycomb pattern which cause the gases to follow a zig-zag course. These baffles must of course be installed in a position where the gases are still above their ignition temperature and, as they present an obstruction to the travel of flue gases, they are only of benefit where sufficient draught is available to overcome this resistance. Forced draught and over-fire air jets are good promoters of effective turbulence.

These rules for efficient combustion allow of a certain degree of flexibility. For instance, a higher temperature will compensate for some lack of turbulence and vice versa, but designers and operators should endeavour to set up all the necessary conditions to the highest degree possible.

Since turbulence and air supply are closely connected, the latter will now be briefly dealt with.

(b) Air Supply and Draught :

With a high-volatile fuel such as turf the fixed carbon is burnt on the grate and the volatiles are burnt in the combustion chamber above the fuel. The air which burns the fixed carbon is normally led in under the grate and passes through the firebed. This is known as primary air. The air which burns the volatiles is introduced over the firebed and is known as secondary air. The distinction is actually much more complicated than the above indicates, as normally some proportion of the fixed carbon is gasified and the resulting gases are burnt in the combustion space, but for practical purposes the rough distinction between fixed carbon and volatiles may be taken as reasonably accurate.

Some air will pass up through the spaces in the firebed without taking part in the combustion process, and it is sometimes possible to achieve complete combustion with undergrate or primary air alone, the uncombined air being available to burn the volatiles over the grate. A skilful fireman can actually promote this effect by purposely leaving thin patches in the fire. This, however, is a haphazard method and it is highly desirable to adopt some means of separating the two air supplies.

NATURAL DRAUGHT :

The force used, to carry the air through the resistance of the firebed, and the flue gases through the appliance, is known as draught. The oldest, simplest and least satisfactory form is natural draught, which depends on the natural buoyancy of hot gases rising in a chimney to cause a suction under the firebed, thus drawing fresh air in. The main disadvantages of natural draught are :—

(i) Starting up is extremely slow. The chimney must be hot before a draught is created, but some draught is required before the chimney can be heated. Very often this vicious circle can only be broken by lighting a fire in the base of the chimney.

(ii) Natural draught depends not only on chimney height and flue-gas temperature, but also on air temperature, cloud conditions and wind direction. Adjustment of chimney dampers and air inlets is therefore necessary to counteract such effects.

MECHANICAL DRAUGHT ;

of which there are a number of forms, was introduced to supplement or replace chimney draught and, while the system solves the problem of slow starting and of varying weather conditions, mechanical draught installations suffer to a greater or less extent from one major fault, i.e. the combustion air and the gas to be burnt flow in the same direction through the combustion chamber, so that stratification is a normal condition and real turbulence is extremely difficult, if not impossible, to achieve. In recent years other combustion appliances working on air-supply systems to which the word "draught" is scarcely applicable have met with considerable



success. Examples of these are cyclone furnaces, over-fire air jets, and down-jet combustion which is exemplified in the Mona Jet burner. All these systems seek to give the combustion air a positive direction of flow different from that of the gases to be burnt.

The three principal mechanical draught systems are

- (i) Induced draught.
- (ii) Forced draught.
- (iii) A combination of induced and forced draught known as balanced draught.

(i) *Induced Draught* is produced by a fan placed at the base of the chimney stack, drawing air through the fire. Since the air will always take the line of least resistance, whenever the furnace doors are open for firing, practically all the air will be drawn over the firebed and very little through it, so that the furnace will be cooled at these times.

(ii) *Forced Draught* is produced by a fan placed in front of the furnace, blowing air through the firebed. It does not suffer from the disadvantages of the induced draught system, but in certain circumstances may set up a positive pressure over the firebed, causing burnt gases and flame to blow out through the firing door. This will, of course, mean that no induced secondary air can enter over the firebed and combustion will normally be incomplete. The latter drawbacks can be overcome by supplying secondary air under pressure, and some recent Continental designs actually provide for the operation of boiler furnaces under pressure.

(iii) *Balanced Draught* is a combination of forced and induced draught. The load or rate of burning is regulated by the forced draught fan and the induced draught fan is used to draw the burnt gases away through the system. With this type of installation it is possible to arrange conditions so that there is a very slight suction over the firebed. A fixed amount of secondary air will then be drawn over the firebed and opening the firedoors for fuelling will not produce a serious adverse effect. With a properly designed grate increased turbulence may be achieved using balanced draught.

An alternative to the use of air fans to promote forced draught is the use of steam jet air ejectors, but output from these devices is limited and they suffer from the disadvantage of not being effective until sufficient steam pressure is available in the boiler.

The use of mechanical draught is important in turf burning for three major reasons:—

- (i) It enables rapid pick up to full load, since the reactivity of the turf enables it to respond well to forced draught.
- (ii) It helps to produce turbulence which is so important in the case of a highly volatile fuel like turf.
- (iii) It rapidly produces a high combustion temperature and hence helps to complete combustion.

For any type of draught system the installation of a suitable draught gauge will be a useful addition. By this means draught control can be exercised and optimum damper settings obtained with a little experience. The use of the draught gauge in conjunction with  $\text{CO}_2$  measurements facilitates control of boiler performance and will be repaid in terms of higher efficiency.

#### (c) Grate Design :

The commonest type of firegrate is constructed from a number of parallel firebars which are normally removable. The effective grate area is made up of the spaces between the bars and therefore these bars should be set as widely apart as possible, the limit being the point at which an undue amount of unburnt fuel falls through.

A number of proprietary firegrates are available for use with forced draught. The principle employed in most of these lies in the provision of a large number of small air spaces so that air is blown through the firebed at high velocity and some turbulence is thereby created. In certain types of such grates the air-holes near the front are inclined away from the firing door and towards the chimney, while those at the back are pointed away from the chimney, so that turbulence is promoted over the firebed.

Water-cooled firebars are commonly employed, but should be used only in systems where the same water is circulated continuously, such as in central heating systems, or where specially treated water is available, in order to prevent blockage by scale formation.

If turf is burnt below the ash fusion temperatures, the ash is free running and very fine with a high percentage passing 200 mesh. In most industrial combustion furnaces using turf, ash fusion temperatures are rarely reached. It is important therefore particularly with natural draught grates, that the firebar spacings be large enough to allow the free fall of ash between them. Fine ash can bridge small holes easily and thus restrict draught appreciably. With

proprietary grates designed for forced draught this problem does not arise.

#### (d) Combustion Systems :

The travel of the air through the firebed can be carried out in various ways, the principal being:—

(i) *Updraught*. This is the commonest method, the combustion air being introduced in the opposite direction to the fuel feed, i.e. fresh fuel is fed on top of the fire while combustion air is introduced mainly underneath.

(ii) *Downdraught*. In this system the air supply is in the same direction as the fuel feed, i.e. both from the top. Distilled tars are forced through the incandescent part of the bed and under proper conditions are "cracked" to lighter and cleaner products. The system lends itself admirably to small furnaces where magazine feed is desirable, but may lead to trouble with firebars overheating, as these receive no cooling from air. For this reason firebars in such appliances should be either water-cooled or made from some material such as nicrome which retains its mechanical properties at high temperatures.

(iii) *Crossdraught*. The air flow is directed at right angles to the fuel feed. Usually the fuel is gravity fed from a hopper, and the air flow is across the base of the hopper towards the firebox. It has roughly the same application as down draught and suffers from roughly the same limitations.

(iv) *Down Jet Combustion*. A jet of air is directed downwards on to the free-forming surface of a fuel feed from a hopper. Fuel is fed by gravity as it is burned away at the base of the hopper. The combustion gases rise up from the fuel surface towards



the air jet and pass by it into the flues. Extremely turbulent conditions are created by this air-gas impingement and mixture. High combustion temperatures are obtained and burning is controlled entirely by air-jet regulation.

The down-jet combustion principle, which is inherently suitable for turf burning, is incorporated in the Mona Jet burner, of which a more detailed description is given in this booklet in a later section. It fulfils all the conditions required to burn a highly volatile fuel, namely

1. A pronounced turbulence.
2. A high temperature combustion, particularly in the volatile zone.
3. Ample combustion time.
4. Adequate air supply to the burning volatiles as well as to the fixed carbon in the firebed.

The down draught system is difficult to operate well for turf burning. It requires an open firebed so that combustion air can reach the volatiles passing down through the grate. Alternatively it requires a secondary air supply below the grate and well distributed across it.

Both the crossdraught and updraught systems are comparable, in principle, in that the air passes through the firebed from the "air" side of the fuel to the flue side of it. It is advisable in these cases to arrange secondary air supply either by induced draught over the firebed or by overfire air jets. Except with a very open structure firebed a separate secondary air supply should be provided. In gravity fed hopper appliances in which broken turf is used, an open firebed is very difficult to

obtain, as the fines pack the firebed spaces. Larger industrial plants using sod turf can avoid the necessity for separate secondary air by skilled firing, but bad firing produces poor combustion in so many cases that overfire air jets are recommended as an efficient safeguard.

#### (e) Combustion Control by CO<sub>2</sub> Observations :

As previously pointed out, all air in excess of that necessary to burn the fuel carries away valuable heat. The amount of this excess air is indicated by the CO<sub>2</sub> content of the flue gas and every boilerhouse using fuel on any substantial scale should be fitted with a CO<sub>2</sub> meter and recorder. It is not possible to obtain complete combustion without some excess air, but it is possible by intelligent firing guided by CO<sub>2</sub> readings to keep this excess air within reasonable limits. While the CO<sub>2</sub> meter is an invaluable aid, it does not tell the whole story, and visual examination of the chimney gases should be frequently carried out to ensure that combustion is complete. When burning turf the ideal conditions are achieved when the CO<sub>2</sub> is as high as possible and the chimney shows little or no smoke. Otherwise any of the following sets of circumstances may prevail.

(1) *Low CO<sub>2</sub> and clear chimney* : This indicates that combustion is complete, but that excess air is heavy. In this case the fire may be too open or too much secondary air is being drawn in over the firebed. The practice adopted by some firemen of leaving the firing door partly open is often responsible for this.

(ii) *High CO<sub>2</sub> and heavy smoke* : This condition indicates a shortage of secondary air, as insufficient air is being supplied to

burn all the volatiles. It may also mean too deep a firebed and insufficient induced or forced draught.

(iii) *Low CO<sub>2</sub> and heavy smoke* : This is the worst case of all and indicates extremely bad combustion conditions, as the air supply is greatly in excess of actual requirements, but nevertheless the fuel is not being completely burnt. The conditions of time, temperature and turbulence are not being set up and steps should be taken immediately to rectify this.

#### (f) Firing Practice :

The two main systems of firing turf by hand are

- (1) The Coking Method.
- (2) The Spreading Method.

In the coking method (Fig. 5) the fresh charge of fuel is fed to the front of the furnace only and later spread evenly over the grate. The advantage of this method is that the fresh fuel is subjected to an initial drying and carbonisation process

during which volatiles are distilled off, travelling over the whole length of the incandescent firebed. Combustion is therefore completed as early as possible. Since the turf is brought up to, or nearly up to its initial temperature before spreading over the grate, combustion is very quickly established and the boiler surfaces are therefore subject to radiation from the firebed for the maximum length of time.

The spreading method merely involves depositing the turf evenly over the firebed. This is obviously an inferior system of firing, since the volatiles evolved at the rear end of the fire are led into the cooler parts of the plant immediately, and incomplete combustion may therefore result. Furthermore, there are periods when the fire is completely covered with a layer of "green" fuel and at such times the firebed emits little or no radiant heat to the boiler surfaces.

If wet hand-won turf is being used, the coking method may not work as the length of time the charge has to be left on the

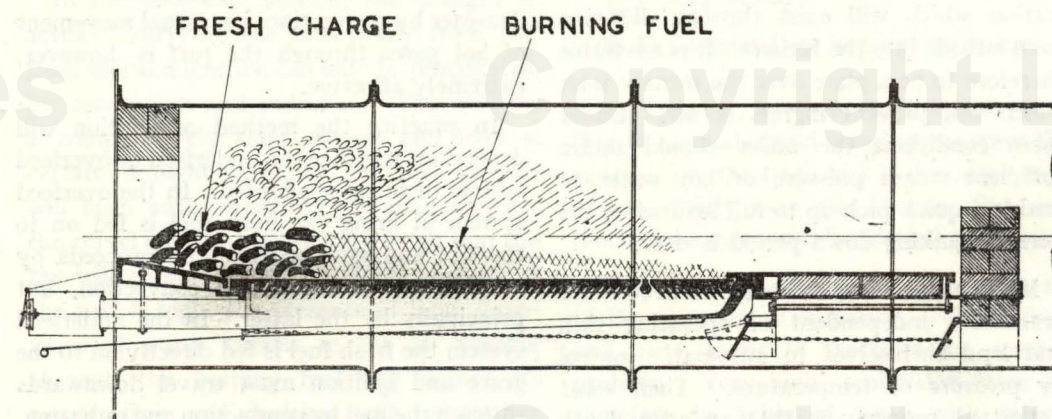


Fig. 5. Hand Firing Technique (Coking Method) on a Turbine Furnace Grate.



front of the grate for drying and carbonization may be too long. In such cases the spreading method is the only one to use in spite of its inherent defects.

With a high volatile fuel, such as turf, deep firebeds with insufficient air are liable to lead to incomplete combustion of volatiles and the deposit of tarry substances in flues and chimneys. In the extreme case it is bad practice, for instance, to "bank down" a boiler by filling the hot combustion chamber with turf and shutting off the air supply.

The best banking down technique for turf is as follows:—

(a) Raise the boiler steam pressure (or hot water temperature) to the maximum allowable by normal firing, so that at these maximum temperature conditions the turf volatiles are fully burned and only a fire of red embers and ash is left on the grate.

(b) Shut off the steam jack valves, or hot water circulating system, and close all air supply ducts to the furnace. It is important to seal off air inlets efficiently even if the chimney dampers fit perfectly, since the high reactivity of turf will cause it to continue burning even in the low oxygen concentration which will exist through diffusion from outside into the furnace. It is advisable therefore to fit a plate over the furnace inlet which will prevent ingress of air. Under these conditions the boiler should retain sufficient steam pressure or hot water to enable a quick pick-up to full load when the normal banking down period is over.

Mechanical firing systems, however, are practically independent of operating skill and lend themselves to automatic control by pressure or temperature. Their most important property is that an even depth of firebed can be maintained and the draught

has, therefore, a constant effect at all times. Unlike hand-firing, the furnace doors may be kept closed always except for cleaning.

The banking down operation using turf in mechanical stokers is as follows: Run the stoker at full speed for a short time, until there is a heavy fire in the furnace. Stop the turf fuel feed, but keep the air going until the volatiles are burnt away and the entire fuel charge glowing. Shut the dampers tightly and close all air inlets securely. The period of full speed stoker operation can be determined by a little practice and should be such that at the end of the banking down operation the boiler should be a little under maximum temperature or pressure conditions.

#### (g) Ignition of Turf:

When one part of a turf fire is ignited, ignition spreads throughout the body of the fuel by the well known methods of heat transfer, conduction, convection and radiation. In the particular case of turf which has insulating properties, heat transfer by conduction is negligible. Some heat is transferred by radiation, but the proportion is less than with most other solid fuels since the combustion temperature is low. Transfer by convection, i.e. actual movement of hot gases through the turf is, however, extremely effective.

In practice the method of ignition will depend on whether the underfeed or overfeed system of firing is adopted. In the overfeed system of firing the fresh fuel is fed on to the fire and ignition therefore proceeds by conduction, radiation and convection, but principally by the latter. In the underfeed system the fresh fuel is fed directly on to the grate and ignition must travel downwards through the fuel by conduction and radiation.

Figs. 6 and 7 will serve to clarify this.

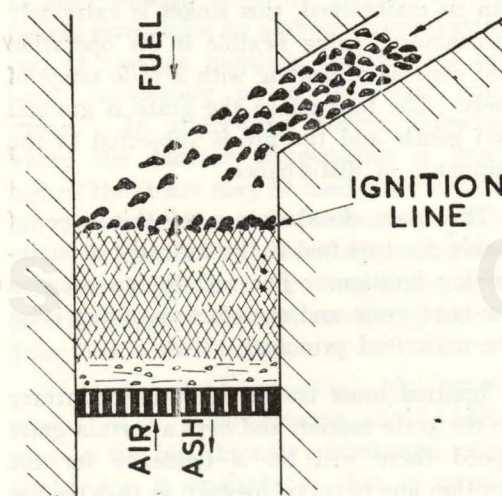


Fig. 6. Overfeed Combustion

It can be seen that in the overfeed system the hot gases are being drawn through the bed of fresh fuel and that therefore ignition is promoted to the maximum. In this system the rate of combustion is limited only by the danger of increasing the draught to such an extent that the fire is blown off the grate.

In the underfeed system, the draught is actually carrying the heat away from the fresh fuel and ignition can only be propagated by conduction and radiation. This will be a comparatively slow process and over a certain draught intensity the fuel on top will burn away more rapidly than ignition can travel downwards, with the result that the fire will go out. If the moisture content of the turf is high, the presence of large quantities of water vapour in the air passing through the burning fuel will reduce its temperature and ignition will be further impeded.

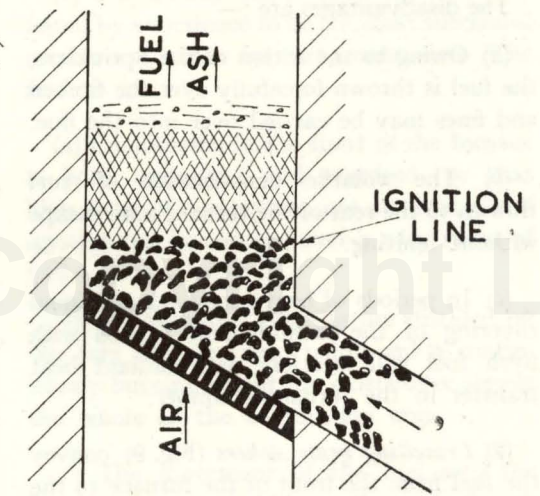


Fig. 7. Underfeed Combustion

#### (h) Mechanical Firing Equipment:

Practically all mechanical stokers fall into the following groups:—

- (1) Spreader, Sprinkler and Shovel stokers.
- (2) Travelling grates.
- (3) Underfeed stokers.
- (4) Coking stokers.
- (5) Pre-combustion hopper-fed stokers.

(1) *Spreader, sprinkler and shovel stokers* (Fig. 8) simulate hand firing by the spreading method, i.e. the fresh fuel is deposited more or less evenly over the burning fire, only this is done mechanically instead of by hand.

The main advantage of this system lies in the fact that it is purely overfeed firing and that there is therefore no ignition problem. Very high combustion rates can therefore be achieved, even with inferior fuel.



The disadvantages are :—

(a) Owing to the action of the Sprinklers, the fuel is thrown forcefully over the firebed and fines may be carried over into the flue.

(b) The volatile constituents of turf thrown to the rear of the furnace may escape without igniting.

(c) In periods of heavy load the continual covering of the incandescent firebed with fresh fuel will interfere with radiant heat transfer in the furnace chamber.

(2) *Travelling grate stokers* (Fig. 9) convey the fuel from the front of the furnace to the rear, the depth of fire and draught being so adjusted that the fuel is just burned out when it reaches the end of its travel so that ash and clinker only are discharged over the end of the grate. Provided that ignition

can be maintained, this stoker is extremely satisfactory, being flexible in its operation and capable of dealing with a wide range of fuels. The feed on to the grate is gradual and gentle and the fire is subjected to the minimum of disturbance.

The main disadvantage of this type of stoker for turf fuel is the difficulty of maintaining ignition. The fuel is deposited on the bare grate and therefore the firing is on the underfeed principal.

Ignition must travel backwards contrary to the grate motion and over a certain grate speed there will be a tendency for the ignition line to travel forward so that the fire will disappear over the end, leaving only green fuel on the grate. This effect will increase very rapidly with turf moisture content, and depends also on the rate at which heat is being extracted from the fire.

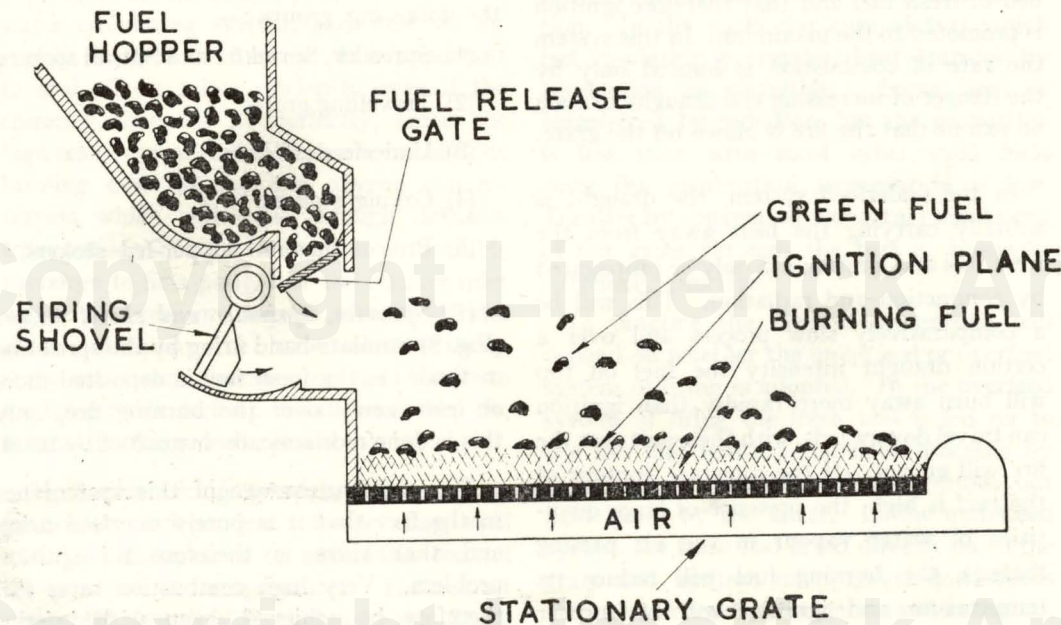


Fig. 8. Spreader Stoker.

In shell boilers, where the furnace is completely surrounded by a water-cooled surface, turf of average moisture content will not burn successfully on a travelling grate stoker. In water-tube boilers, however, where the furnace temperature is much higher, the stoker may be used quite successfully. It would no doubt be possible to promote ignition by refractory arches and over-fire air jets, but travelling grates as at present designed are not recommended for firing turf in shell boilers.

(3) *Underfeed Stokers* (Fig. 10) usually consist of a slowly-moving screw which conveys the fuel through a horizontal retort discharging it upwards so that it spreads out on both sides over the grate, or retort.

As will be seen, the underfeed system is employed in the middle of the grate, while at the sides the system is overfeed. For this reason the stoker frequently runs with a "black centre" as shown in the diagram. Ignition may be promoted by the provision of brick arches over the stoker, where space in the furnace chamber permits. Uneven feed of the fuel is often encountered in underfeed screw stokers.

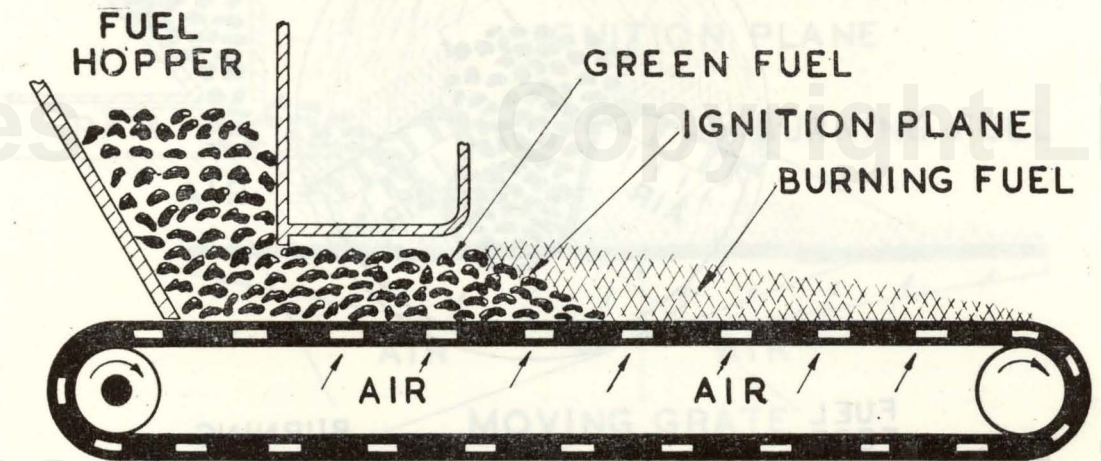


Fig. 9. Travelling Grate Stoker.

(4) *The Coking Stoker* (Fig. 11) has been found by experience to be the most successful mechanical stoker for turf combustion. The reasons are :

(a) Combustion in the front of the furnace is both underfeed and overfeed, so that high rates of combustion are attainable and ignition can be assured over a wide range of fuel.

(b) Moisture and volatiles are distilled off the turf near the feed point and a continuously burning bright fire exists over almost the whole of the combustion area.

(c) The movement of the fuel into the furnace is reasonably gentle, and fly-ash problems are not serious.

This stoker is available in a special turf-burning design which makes due allowance for the low bulk-density of the turf.

(5) *Pre-burning furnaces* of the gas producer and Dutch oven types have been used extensively for turf burning, but they have not been in favour with users in recent years. A more modern form of furnace, the Mona



Jet burner, with automatic self-regulating hopper feed has been developed recently. It is applicable to most types of institutional and industrial furnace plants.

The Mona Jet Burner (Fig. 12) operates on the down-jet system of air supply which cannot be duplicated by natural draught. The air jet is directed downwards on to the fuel bed, so that it penetrates sufficiently to create combustion and it also mixes with the volatiles to complete combustion. With proper furnace design and selection of air pressure, extremely turbulent conditions will prevail and stratification cannot occur. This effect, combined with the fact that complete combustion takes place in the minimum of air, produces  $\text{CO}_2$  contents as high as 19% and 16% to 18% can be expected under normal operation.

As the turf burns away, more is fed by gravity from the hopper to take its place. A positive fuel feed is, therefore, unnecessary, the air fan controlling both combustion and fuel supply. This feature immediately leads to a very simple and inexpensive method of automatic control. The fan may be arranged to switch on or off by variations in temperature, steam pressure, etc. This on-off method of control is not highly efficient with normal firing systems, where modulated control is favoured, but in the case of the Mona Jet burner scarcely any fuel is burnt when the fan is switched off, so that efficiency is not materially affected.

Banking presents no difficulty with this burner as the combustion chamber is completely enclosed and the plant may be shut down for protracted periods with an in-

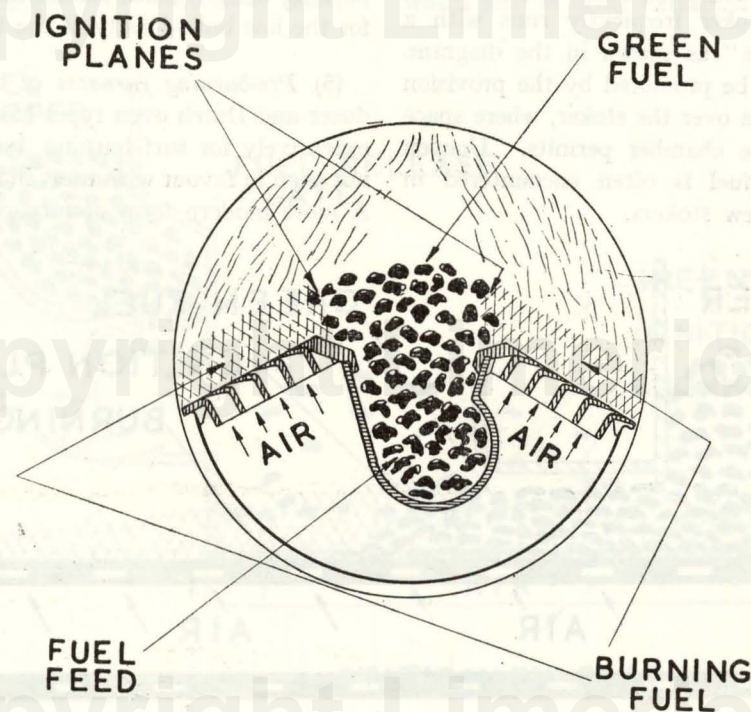


Fig. 10. Underfeed Stoker.

appreciable consumption of fuel, while at the same time ignition is maintained.

The burner, in the short time which has elapsed since it was first developed, has been applied to a number of processes with pronounced success. The following list of processes already tested and working efficiently give some idea of the wide range of application.

- (i) Hot water central heating for schools, institutions and factories.
- (ii) Steam raising for industrial process work.
- (iii) Industrial drying (materials already being dried successfully are: grass, leather, seaweed and sand).
- (iv) Greenhouse heating.

The extreme flexibility of the Mona Jet burner follows from the fact that it is a

self-contained appliance which can be fixed to practically any heat-consuming device.

In brief, the advantages of the Mona Jet burner are :—

- (a) High combustion efficiency.
- (b) Low excess air.
- (c) High flame temperatures.
- (d) Low banking losses.
- (e) Automatic fuel feed.
- (f) Adaptability to practically any heat-consuming device.
- (g) Simplicity of automatic control.

When external furnaces, such as the Mona Jet burner, are used, it is of the greatest importance that the boiler and furnace fitting be sealed to prevent air leaks. Low excess air in the boiler flue outlet depends not only on a low excess air combustion in the firebox, but also on the prevention of air entering the boiler at any part of the

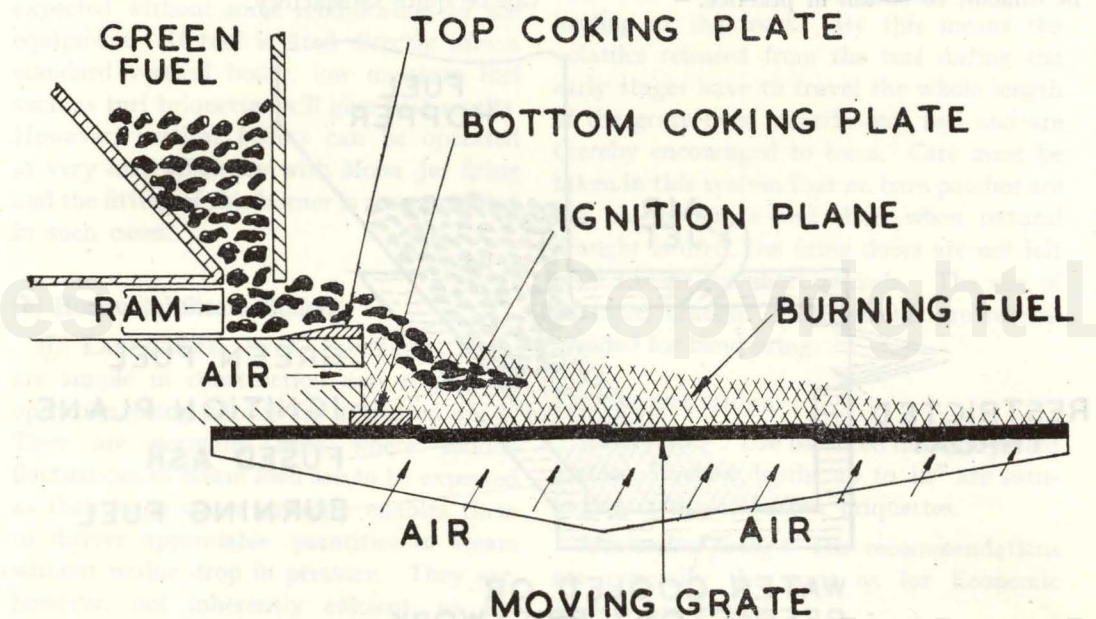


Fig. 11. Coking Stoker.



flue gas passage. The effect of such air leaks is the same as increasing the excess air of combustion with a consequent reduction in efficiency.

Turf fuel used in all automatic stokers and hopper feed systems, with the exception of large plants such as power stations, must be broken from the normal sod size of up to 12" in length to a maximum size of 3½". A typical size distribution of a "run of the breaker" turf which operates successfully in such equipment is:—

Passing ½" mesh	..	12%
Passing 1" but retained on ½"	..	15%
" 2" " " 1"	..	35%
" 3" " " 2"	..	35%
Over 3" mesh	..	3%

Large Mona Jet burners have been operated successfully on unbroken sod turf but this depends on a maximum sod size of about 10", a regular supply of which may be difficult to obtain in practice.

#### (i) Flyash Removal :

When forced draught systems are used with turf fuel, an appreciable amount of flyash is carried through the furnace flues. Under high draught conditions associated with high load outputs, this flyash might be carried out to atmosphere or to the chimney base, and may not deposit in the flue passages. It is a harmless non-corrosive ash and is usually of such a small particle size that it does not constitute a nuisance when it reaches the atmosphere. However, it has a high heat insulating quality and, if it deposits in boiler flues, the heat exchange is considerably reduced and chimney heat losses increase rapidly. It is important therefore to keep boiler flues, tubes and heating surfaces clear of this flyash and at least weekly cleaning is advisable.

For cleaning boiler fire tubes, soot blowers are recommended, although brush cleaning can be quite satisfactory.

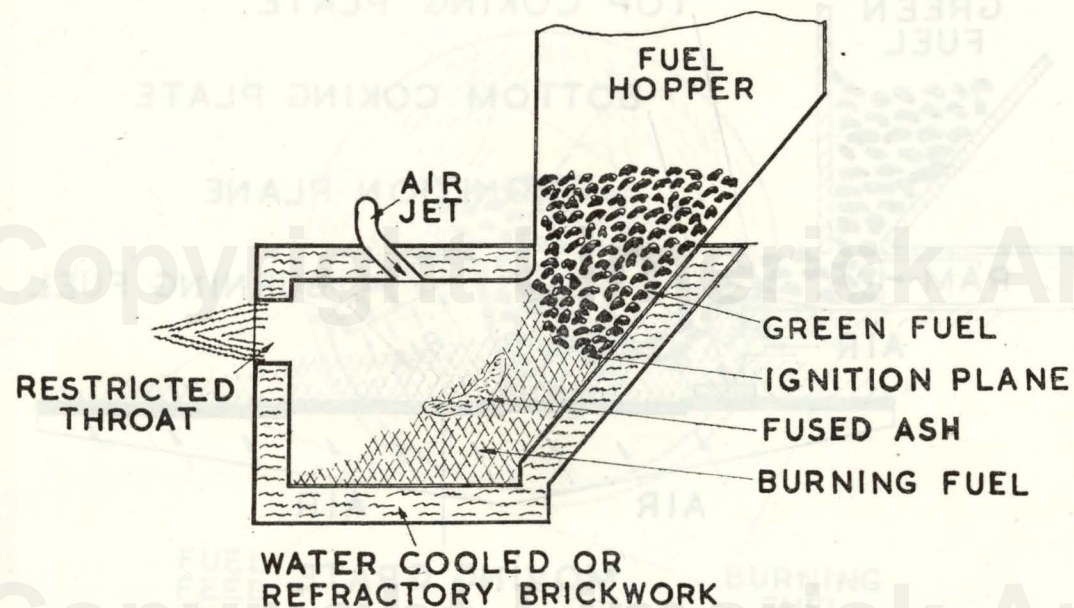


Fig. 12. Mona Jet Burner.

## Section 4. Industrial Fuel Plant

If the foregoing principles are borne in mind, practically any standard make of boiler can be adapted for turf-burning. The choice of boiler will then be made on considerations not connected with the fuel such as load variations, quick steaming, available space and water treatment, to name a few. The following remarks may serve as a rough guide to users.

#### (a) Vertical Steam Boilers :

Though these boilers may be obtained for evaporations as high as 6,000 lb./hr., they are not normally used for duties of more than 2,000 lb./hr. Owing to the short flue gas travel combined with the long flame characteristics of turf, high efficiencies from these boilers using turf fuel cannot be expected without some modification to the equipment. If turf is fired directly into a standard vertical boiler, low moisture fuel such as turf briquettes will give best results. However, vertical boilers can be operated at very high efficiency with Mona Jet firing and the fitting of this burner is recommended in such cases.

#### (b) Horizontal Steam Boilers :

(i) LANCASHIRE TYPE BOILERS : These are simple in construction and reliable in operation, being suitable for untreated water. They are normally used where sudden fluctuations of steam load are to be expected as their large water capacity enables them to deliver appreciable quantities of steam without undue drop in pressure. They are, however, not inherently efficient, as the heating passages are of large dimensions and gas velocity is, therefore, low, so that

heat transfer is not so good as in more modern type boilers. The boiler brickwork is liable to develop air leaks, also causing excess air. With skilled attention and proper maintenance of brickwork high efficiencies can be obtained, with only 25% chimney losses, provided an economiser is used. With bad maintenance and careless firing the chimney losses may rise to over 50%. It is difficult to obtain full load by hand-firing turf into Lancashire boilers and mechanical firing systems are preferred. Where the boiler is lightly loaded, however, various hand-firing techniques can be employed. One effective method is to fire the turf at the front of the furnace grate only, as the first operation. After a suitable interval the next operation consists in pushing this turf back over the firegrate and re-loading at the front. By this means the volatiles released from the turf during the early stages have to travel the whole length of the grate over incandescent fuel and are thereby encouraged to burn. Care must be taken in this system that no bare patches are left on the grate and that, when natural draught is used, the firing doors are not left open except for short periods. The use of balanced draught grate systems are recommended for hand-firing.

#### RECOMMENDATIONS:

*Hand-firing* : Use balanced draught patent grates. Firebed depths up to 12" are satisfactory with sod turf or briquettes.

*Mechanical-firing* : The recommendations are generally the same as for Economic Boilers (see below).

(ii) ECONOMIC TYPE BOILERS : These are normally self-contained boilers without brick



flues and are, therefore, free from air leaks which are common in Lancashire boiler installations. The gas passages consist of large numbers of narrow tubes which have the effect of extracting the maximum amount of heat from the hot gases. They are inherently efficient appliances, their chimney losses being between 20% and 25%. They are more sensitive to water supply than the Lancashire boiler and are at their best under steady load conditions. Dry back combustion chambers are preferable to the wet-back type in order to prevent cooling of volatiles before combustion is complete.

#### RECOMMENDATIONS :

*Hand-firing* : Use balanced draught patent grates. Firebed depths up to 12" are satisfactory with sod turf or briquettes. Within the smaller range of boilers, where a single furnace is available, these are preferable for hand-firing turf, as they provide extra combustion space.

*Mechanical-firing* : Mona Jet burners give good results with double furnace boilers for evaporations up to 6,000 lb./hr. Ram or Shovel stokers can be used on single or double furnace boilers, but there is a limit to the successful operation of shovel stokers on small furnaces as the trajectory of the fuel particles will cause them to impinge on the top of the furnace and limit the fuel throw. On general principles the low-ram coking stoker is to be preferred.

When single furnace boilers are in use, ram coking stokers are most satisfactory. Mona Jet burners may be used successfully in these cases only up to loads of about 3000 lb./hr. of steam.

(iii) **HYBRID STEAM BOILERS** : Certain

manufacturers combine the characteristics of different types in one boiler in order to cope with special conditions. For instance, the "Super Lancashire" type boiler is provided with fire-tubes like those of an Economic boiler as well as with brick flues. Another type, known as the "Colonial" boiler, consists essentially of an economic type boiler, minus its furnace-tube, mounted over a refractory combustion box. The multitubular boiler with a short front furnace tube and locomotive type boilers are in common use also.

The use of turf in these boilers must be subject to specialist advice, but in practically all these cases, the Mona Jet burner will, within the load limits specified above, give good results without any special modification to the boiler. Where the load permits hand-firing, balanced draught grates can be fitted, and where the boiler utilisation time justifies it, mechanical firing systems as recommended for Lancashire and Economic boilers can be used.

#### (c) **Water-tube Boilers** :

Water-tube boilers are normally used only for large high-pressure installations. They are sensitive to hard water and water softeners should always be employed. Their combustion chambers are usually lined with refractory and complete combustion is fairly easy to achieve. Water-tube boilers are not as a rule, hand-fired and can be fitted with travelling grates, spreader, ram and shovel stokers.

#### RECOMMENDATIONS :

*For small water-tube boilers up to 8,000 lbs. steam/hr.* Hand and mechanical-firing methods described under Lancashire and Economic boilers are applicable.

*For larger boilers* : Travelling grates for sod turf and special furnaces for milled peat combustion are obtainable from reputable boiler makers.

#### (d) **Low Pressure Hot-Water Central Heating Boilers** :

Demands for central heating have given rise to a very wide range of low-pressure hot-water boilers ranging from those with an output of 3 or 4 million B.T.U.'s for factories and large institutions, to boilers of 1/30th of this output. Since these boilers are usually entirely water-jacketed and often fitted with water-cooled grates, combustion chamber temperatures do not lend themselves to turf firing with the same efficiency as low volatile fuels and Mona Jet burners should be fitted whenever feasible. The water-cooled Mona Jet burner is preferable in all such installations. In cases where the installation of a Mona Jet Burner is not possible, good results may be obtained by using machine

turf or briquettes, but forced draught and over-fire air jets should be used, in order to promote turbulence.

#### (e) **Ovens, Kilns and Drying Plant** :

Bakers' ovens, brick and lime kilns and many kinds of drying furnaces can be fired successfully with turf. Most of these plants are refractory lined and lend themselves to the use of volatile fuels. Nevertheless so many designs and variations exist in this range of appliances that no general rules can be laid down and individual examination of the plant is usually necessary before its suitability for turf burning, or the best method of adaptation, can be decided. It will be found, however, that the Mona Jet burner has a wide and useful application in plants of this type.

Table 4 gives a summary of recommendations for the use of turf in various types of industrial appliances.



TABLE 4—RECOMMENDED FIRING METHODS FOR VARIOUS TYPES OF PLANT

<i>Appliance Type</i> Vertical Boilers ..	Mona Jet firing is recommended in all cases, but hand-firing though much less efficient, may be economical in certain cases, if the boiler is the multitubular type.
Cornish Boilers ..	Up to 3,000 lb./hr. the Mona Jet burner is recommended for maximum efficiency ; over that size, hand-firing on patent furnace grates. Cornish boilers of over 4,000 lb./hr. are seldom encountered.
Lancashire Boilers ..	Up to 6,000 lb./hr. hand-firing on patent grates or Mona Jet burners. Above 6,000 lb./hr. coking stokers.
Economic Boilers ..	Up to 6,000 lb./hr. hand-firing on patent grates ; Mona Jet burner up to 3,000 lb./hr. on single furnace boilers and 6,000 lb./hr. on twin furnace boilers ; over 6,000 lb./hr. coking stokers.
Locomotive Boilers ..	As for Cornish boilers.
Small water-tube boilers	Hand-firing, Mona Jet Burners, or coking stokers within limits as specified above.
Large water-tube boilers	Travelling grates or other special stokers.
Drying furnaces or kilns	External furnaces for all sizes, particularly the Mona Jet burner up to 6,000,000 B.T.U.'s/hr.

The recommendations set out above, and the limits laid down as applicable to the various firing systems are intended merely as a very rough guide for new boiler installations, but are subject to wide variations in existing boiler plant. Specialist advice should be sought on every occasion.



## Section 5. Labour, storage and Mechanical Handling

### (a) Labour in the Boiler House :

It is estimated that the power output of an average manual labourer is one-tenth of one horse-power. Taking wages at four shillings per hour, and electricity at 1.5 pence per Kilowatt hour, hand labour is accordingly seen to be about 320 times as dear as electric power ; and if running costs alone were the only criterion, there is therefore an unanswerable case for mechanisation. Other factors, however, must be considered. The most obvious of these relates to the scale of the operation. A man must be employed to attend the machine and mechanisation is therefore pointless if it replaces one man only. The greater the number which can be replaced the more attractive mechanisation becomes. The second most important question is that of capital cost. A figure of 20% may be taken as an average to cover capital charges on machinery along with maintenance and repair. If therefore a man's wages are taken as £500 per year, it will not be an economic proposition to mechanise if the investment is over £2,500 for each man replaced.

It is not difficult to apply these principles to boiler-house operations. There is a wide range of boiler plant which requires the attention of only one man, even with hand-firing. No matter what mechanical handling and stoking plant are installed, one man's labour is still required, and therefore investment of this nature in such a case is not justified unless substantial gains in efficiency can be expected. The upper limit of the range in which mechanisation is of doubtful advantage could be taken as about 6,000 lb. steam per hour.

For plants above this size, where several men are employed, mechanical handling and stoking should be a very attractive proposition.

At the other end of the scale there are those installations in which neither high labour costs nor mechanical handling can be justified. It would obviously be uneconomic to pay a boilerman ten pounds per week to fire a plant which consumed only say twenty pounds worth of fuel per week. At the same time, heavy expenditure on mechanical firing plant would not be justified in such an installation. In these cases the only reasonable solution is to utilise the services of an employee who is normally engaged on other duties. It is then necessary to arrange the installation so that it requires attention for, say, half-an-hour to one hour per day. In the case of turf fired plants this necessitates a hopper-fed appliance such as the Mona Jet burner, with if possible an overhead fuel store. A little careful planning in the beginning will be sufficient to ensure that labour requirements are negligible.

### (b) Delivery and Storage :

Generally speaking, continuous deliveries of turf are available from the various bogs throughout the year, so that the problem of turf storage for winter consumption is not a serious one, and no elaborate arrangements are necessary. The smallest economical consignment of sod turf is one lorry load, containing about 6 to 8 tons, so that at least 700 cubic feet of storage space should be available. The maximum storage necessary is usually about two weeks' supply (working and reserve storage combined).



When using unbroken sod turf, the reserve storage need not be under cover if the turf is properly stacked, and if it is used once per year. Broken turf and briquettes should be stored under cover if possible. When hand-won turf is used, the storage space required is  $1\frac{1}{2}$  times that of machine turf. When using briquettes the storage space is about one-half that of machine turf.

**(c) Mechanical Handling of Turf :**

It has been well demonstrated in industry that the efficient combustion of turf can easily be achieved using any of the methods of hand or stoker firing, provided the correct techniques are applied. It has been demonstrated almost equally clearly, however, that a turf fired boiler plant can only be made successful provided efficient handling of turf is organised from the lorry to the grate. A good handling arrangement can more than compensate for poor combustion if the latter depends upon gangs of men to unload lorries and carry the turf into the boiler house. The economics of the system must be considered in relation to the overall cost.

Some very good handling systems for turf have been devised, and it is important to stress that the system need not consist of elaborate multi-conveyor arrangements if careful use is made of slopes and/or overhead bins.

Every boiler house is a case for separate consideration so these notes will deal only with the principles which should be considered in the two general conditions of hand-firing and stoker firing.

**(a) HAND-FIRING :** Two principles are involved here. Firstly, to unload the lorry as quickly as possible and secondly to

transport the turf to the boiler-house floor to a convenient position for the boiler man to fire it. The two principles can be combined when it is possible to back the lorry into the boiler-house. Design for hand-firing must allow the use of run-of-the-bog sod peat.

**(b) STOKER FIRING :** Three principles apply in this condition. Firstly to unload the lorry quickly into a hopper or conveyor boot ; secondly to convey it to a storage bin over the stoker hopper and thirdly to arrange sufficient storage either in the first hopper or boot, or the second bin, preferably the latter, to allow normal boiler working for a minimum of 3 or 4 hours' supply.

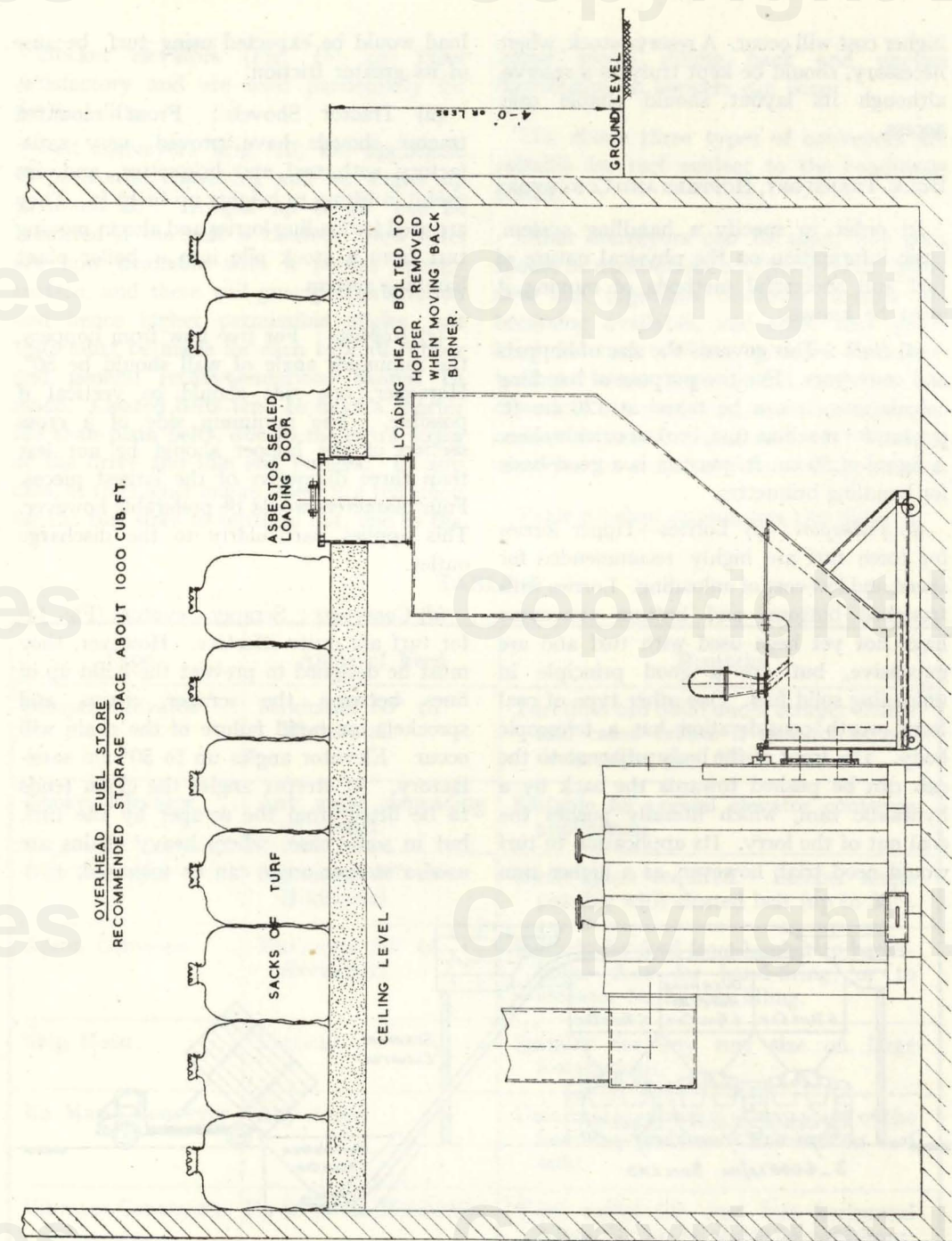
When the boiler house is underground, or when slopes permit, the first two principles can be combined and the turf tipped from the lorry into the storage bin over the stokers.

Design for medium-sized stoker firing must allow the use of small size turf which has become known colloquially as "broken turf." If the turf received is in the form of run-of-the-bog sod peat, it must be crushed at some stage in the handling system. This complicates the system considerably, but for relatively large plants it can be more economic to incorporate a crusher.

It is not advisable to use sacked broken turf for any plant except for example small central heating plants, where consumption does not justify storage bins or mechanical handling. Even in these cases, however, layout is extremely important. (Fig. 13).

**RESERVE STOCK**

In any handling system it is a bad principle to incorporate reserve stock pile in the normal flow of the turf. The daily handling is not only complicated by so doing, but a much



**Fig. 13** Simple, But Effective Layout of Small Mona Jet Burner For Easy Hopper Filling.



higher cost will occur. A reserve stock, where necessary, should be kept truly as a reserve, although its layout should enable easy access.

#### BULK, TRANSPORT, HOPPERS AND CONVEYORS

In order to specify a handling system, basic information on the physical nature of turf and successful methods of moving it must be known.

(a) *Bulk*: This governs the size of hoppers and conveyors. For the purpose of handling calculations, it can be taken at 120 cu. ft. per ton for machine turf, broken or unbroken. A figure of 50 cu. ft. per ton is a good basis for handling briquettes.

(b) *Transport*: (i) Lorries—Tipper lorries for loose turf are highly recommended for speed and low cost of unloading. Lorries with troughed bottoms and bottom conveyors have not yet been used with turf and are expensive, but are a good principle in unloading solid fuel. One other type of coal lorry worth consideration has a telescopic body. The front of the body adjacent to the cab can be pushed towards the back by a hydraulic ram, which literally pushes the coal out of the lorry. Its application to turf would need trial, however, as a higher ram

load would be expected using turf, because of its greater friction.

(ii) *Tractor Shovels*: Front mounted tractor shovels have proved very satisfactory with turf and briquettes, and are useful in lifting to heights up to 10 ft. They are used for loading lorries and also in moving turf from a stock pile into a boiler plant handling system.

(c) *Hoppers*: For free flow from hoppers, the minimum angle of wall should be 50°. Moreover, one side should be vertical if possible. The minimum side of a cross section of the hopper should be not less than three diameters of the largest pieces. Four diameters would be preferable however. This applies particularly to the discharge outlet.

(d) *Conveyors*: Scraper elevators (Fig. 14) for turf are quite effective. However, they must be designed to prevent the build up of fines between the scraper chains and sprockets, or rapid failure of the chain will occur. Elevator angles up to 50° are satisfactory. At steeper angles the chain tends to be lifted from the scraper by the turf, but in some cases where heavy chains are used a steeper angle can be tolerated.

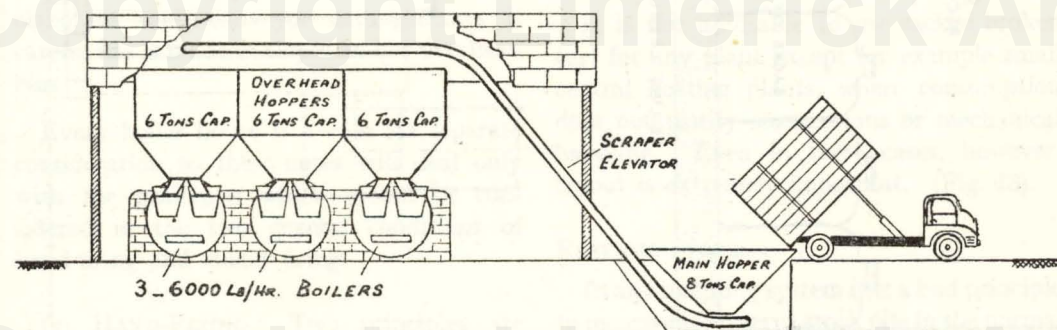


Fig 14. Automatic Handling Plant using Scraper Conveyor

Bucket elevators (Fig. 15) are most satisfactory and are used particularly for vertical lifts.

Belt conveyors (Fig. 16) are applicable to horizontal conveying and for angles up to about 25°. Angles up to 35° can be tolerated if the belt is cleated. New belts are now available with a porous spongy surface, and these will give greater friction and hence higher permissible angles, but tests must be made for each type of rubber and general recommendations cannot be made. Cleated belts tend to have a shorter life than plain belts, due to the extra stress at the drive and idle end pulleys. In any case, at the higher angles, there is a tendency for the turf sizes to separate out, due to the

larger pieces rolling back and uneven distribution in hoppers can occur.

The above three types of conveyors are suitable for turf subject to the conditions stated.

Other conveyors can be used, but tests should be made before accepting them. Many new and ingenious conveyor designs are becoming available, and some may prove ideal for turf. Worm or screw conveyors tend to create high mould and are not desirable. En masse conveyors are expensive and are suitable for small turf only. Vibrator conveyors have limited but useful application.

Table 5 below summarises this data.

TABLE 5

Type	Angle of Feed	Remarks
Scraper Elevator ..	Maximum 50° to Horizontal.	Turf fines can build under scraper chains and cause failure if elevator is not designed against this.
Bucket Elevator ..	Any angle depending on design.	Suitable for special elevator conveyor application.
Belt Conveyor ..	Maximum 25° to Horizontal.	Much space required. Steeper angle possible with cleated belt (up to 35°).
Apron Conveyor ..	Maximum 30° to Horizontal.	Suitable for feed from bunker to boiler-house floor for hand-firing, or to elevator for hopper filling.
Skip Hoist ..	Vertical	Suitable for any turf size on large installations.
En Masse Conveyor	Any Angle	Universal application at any stage of the handling problem. For broken turf only.
Vibrator Conveyors	Up to 15° to Horizontal	Very useful for dust free horizontal conveying up to about 15 tons/hour.



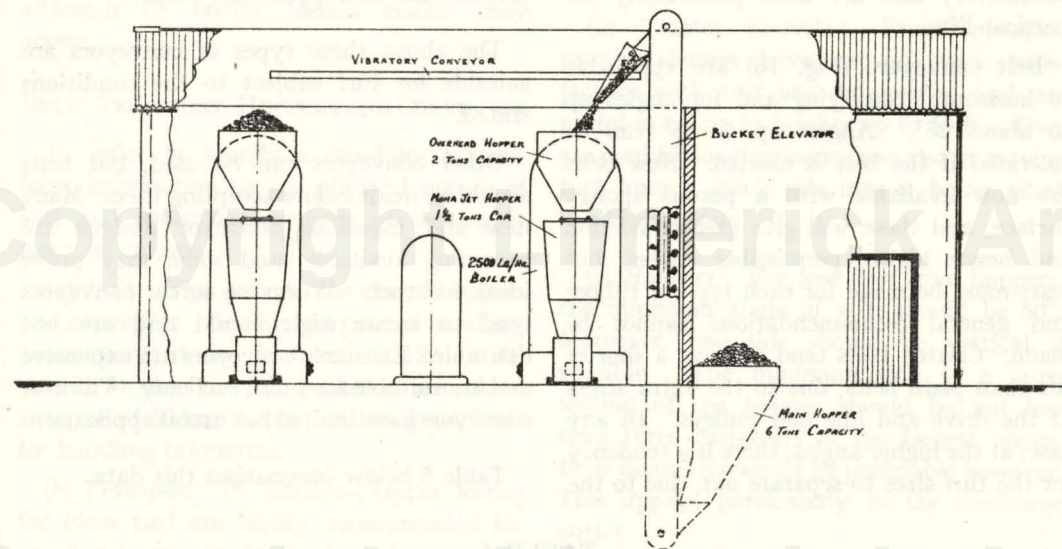


Fig. 15. Bucket Elevator System combined with Vibrator Conveyor.

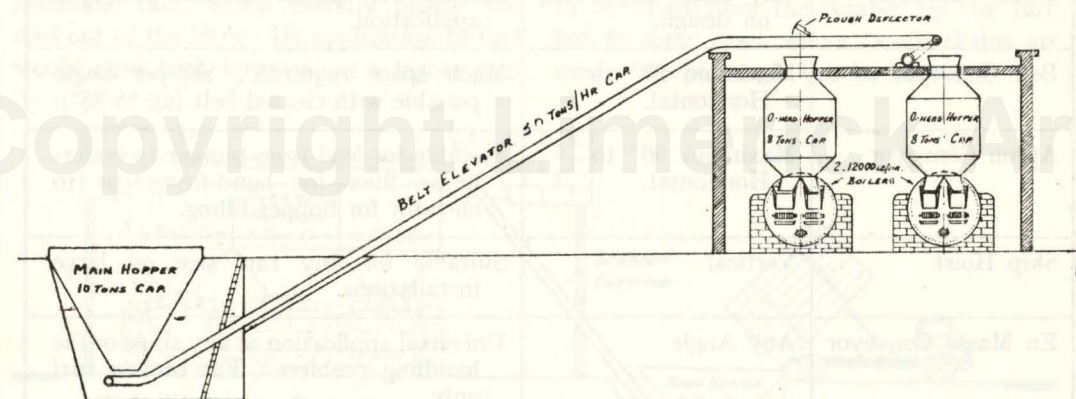


Fig. 16. Belt Elevator Handling Plant

NOTES



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NOTES

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18,083.

ORDER:

L1PD/EC/2/1/5 (8)

Copy sent to:

City Accountant.  
M. O'Sullivan.  
J. Conerty.

on 14/10/57.

Acting on the recommendation of the City Engineer, I hereby approve of the purchase of 144 - 54" x 16" Gyplath laths from Messrs. F. Spaight & Sons Ltd., Henry Street, at a cost of £14. 8. 0., less 2½% discount. This is the lowest quotation received.

Signed this \_\_\_\_ day of October, 1957.

City Manager & Town Clerk.



✓

Trans. Encl. 801.

bty none + Mos

2/7/57

—  
—  
Circular no. 5 7/57  
from Dept. Local  
Gov. dated 29/6/57  
re the use of  
native fuel.

boke and gas are  
classed as native  
fuels.



P. Harnett Esq.

Chief Clerk.

mental hospital.

2/7/57

—  
—  
Circular of 7/57  
from Dept. Social Gov.  
dated 29/6/57 re  
the use of native  
fuel.  
broke and gas are  
classed as native  
fuels.



m. County Co.  
Streets for

2/6/57

Letter no 8. 7/57  
from Dept. Local  
Gov. dated 29/6/57  
re Use of Native  
Fuels.

boke and gas are  
considered native  
fuels.



DÉPARTMENT OF LOCAL GOVERNMENT  
CUSTOM HOUSE  
DUBLIN



TELEPHONE 42961

17.  
ROINN RIALTAIS AITIÚIL  
TEACH AN CHUSTAIM

BAILE ÁTHA CLIATH



Circular No. G. 7 /57.

29 June, 1957.

USE OF NATIVE FUEL.

A Chara,

*Copy to: J. Eals.  
B. Clerk, Mental Idols  
M. Boonewy  
2/7/57.*

I am directed by the Minister for Local Government to refer to Circular G. 3/54 of the 4th February, 1954, regarding the use of native fuel by local authorities and to remind you that it is the policy of the Government to ensure that, to the utmost extent practicable, native fuels will be used in preference to imported fuel for the purposes of all local authorities.

I am, accordingly, again to request you to ensure that all local authorities for which you are Manager will continue to give effect to this policy.

Additional copies of this Circular are enclosed.

Mise, le meas,

*M. Lantieri*

To/  
Each City and County Manager.



366/8

C/Hall  
Mo

BORD NA MONA  
28/31 Upper Pembroke St.,  
DUBLIN



28th August, 1954

City Manager,  
Town Hall,  
Limerick

Dear Sirs,

Machine Turf

I am directed to inform you that the Board has found it necessary to increase the price of machine turf as from 1st September, 1954. From that date the following prices will operate until further notice:-

- |             |   |  |
|-------------|---|--|
| Sod turf    | - | 54/6d per ton ex Works                         |
| Broken turf | - | 59/6d per ton ex Works<br>in returnable sacks. |

Assuring you of our careful attention to your valued orders.

Yours faithfully,

*V. D. Sheahan*

SECRETARY.

EB/BD



Proposals for development works on bogs owned or acquired by the local authority for its own use or for letting or over which a right of turbary has been acquired by the local authority.

[illegible]

I certify

- (1) that these works are necessary in order to facilitate turf production;
- (2) that the turf to be produced in each of the above-mentioned bogs will be of sound quality;
- (3) that the above proposals do not cover works to any County Roads.

Date \_\_\_\_\_ Signed \_\_\_\_\_ County Engineer.  
Signed \_\_\_\_\_ Manager or Secretary

Note 1. Separate tracings (Scale 6 inches to 1 mile) showing the location of each of the works should be submitted. The name of the bog should be clearly marked on the tracing, which should also show the length of each proposed road.



L1/PD/EC/2/1/15/15  
269/4  
ROINN RIALTAIS ÁITIÚIL  
(Department of Local Government),

BÓITHRE (Roads),  
T.9.

TEACH AN CHUSTUIM  
(Custom House),

BAILE ÁTHA CLIATH  
(Dublin).

W.2/54

22 Aibreán, 1954.

A Chara,

I am directed by the Minister for Local Government to state that he would be glad to learn at an early date of the local authority's intentions in the matter of procuring supplies of turf in 1954/55, under the following heads:-

1. If the local authority intend to produce turf themselves:
  - (a) An estimate of direct production for the year by hand-won methods.
  - (b) An estimate of direct production for the year by semi-automatic methods.
2. An estimate of the quantity likely to be purchased under contract in the year.
3. The period for which the stocks at 1 and 2 above, together with any reserve supply will suffice to meet the needs of the local authority.

As regards direct production, the Emergency Powers (No. 310) Order, 1944, has been kept in force up to 31st March, 1955. Grants will be available for the development of bogs owned or acquired by the local authority or over which they have acquired a right of turbary where such development is proved to be necessary; any applications for grant should be accompanied by particulars of the proposed works on Form T.2, a specimen of which is attached, together with an indication of the need for the development work.

I am to request that a return, on Form T.9, may be furnished each month giving particulars of employment as at the end of the month on bog development works whether financed under grant or not and on production.

Additional copies of this letter are enclosed for the information of the technical staff.

Mise, le meas,

To each County and City Manager.

R. J. Sheehy.



Form T.9

\_\_\_\_\_ County Council.

TURF PRODUCTION SCHEME, 1954

Return of Employment afforded on the Turf Production Scheme 1954

for the month of \_\_\_\_\_ 195

- (a) Number of men employed on bog development financed by way of grant for works under the Local Authorities (Works) Act \_\_\_\_\_
- (b) Number of men employed on bog development work other than those returned at (a) \_\_\_\_\_
- (c) Number of men employed on the production of turf \_\_\_\_\_
- (d) Number of women and children employed on the production of turf \_\_\_\_\_
- (e) Total number of persons employed in connection with the turf production scheme \_\_\_\_\_

I certify that the above particulars are correct.

(Signed) \_\_\_\_\_

County Engineer.  
County Secretary.

Date: \_\_\_\_\_

Note: Particulars of employment should relate to the end of the month.



L/PO/EC/2/1/5(G)

Wt.4256.D.133.G.26b.20m.9/53.D.(D.P.S.)Ltd.

From

THE DEPARTMENT OF LOCAL GOVERNMENT,  
CUSTOM HOUSE,  
DUBLIN.

407/7

To

*Lt. Manager*  
*Town Hall*  
*Limerick*

QUERY

REPLY

(Date) *20 July 1954* (No.) *30/26/1*

Subject *Imp Production Plan 1954/55*

Please furnish a reply to this Department's communication (W.2/54) of the 22nd April in connection with the above matter in order that the Department's work may be completed.  
Communication of 11th and 16th June refs as well as show continuation of 8th inst.

*P.*



27380

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5th February, 1953.

Copyright Limerick Archive

A Dhuine Uasail,

With reference to your communication of 31st ultimo, Ref: W.30/26, enclosing copy of letter which was issued to County Managers regarding turf, I desire to inform you that in reply to the queries in the first paragraph that the Limerick Corporation do not intend to produce any turf directly.

We will require <sup>2,200</sup>~~2,200~~ tons of turf for the Limerick Mental Hospital and about <sup>600</sup>~~500~~ tons for the Limerick City Home and Hospital.

Mise, le meas,

City Manager.

Copyright Limerick Archive

Secretary,  
Department of Local Government,  
Custom House,  
Dublin.

Copyright Limerick Archive



DEPARTMENT OF LOCAL GOVERNMENT  
CUSTOM HOUSE  
DUBLIN  
TELEPHONE 42961



75 850  
LIPD/EC/2/1/85 (19)  
ROINN RIALTAIS AITIÚIL

TEACH AN CHUSTAIM

BAILE ATHA CLIATH

W. 30/26

City Manager,

Town Hall,

Limerick.

31 January, 1953.

*Chad*

*cm*



A Chara,

I am directed by the Minister for Local Government to enclose herewith copy of a circular letter (No. W.1/53) dated 24th instant which has issued to all County Managers on the subject of turf supplies for 1953. It would be appreciated if the information requested in the first paragraph thereof could be furnished in respect of Limerick Corporation.

Mise, le meas,

*Warrant*

2200.  
500.  
2700.



DEPARTMENT OF LOCAL GOVERNMENT,  
CUSTOM HOUSE,  
DUBLIN.

PHONE 42961.



ROINN RIALTAIS AITIÚIL

TEACH AN CHUSTAIM,

BAILE ÁTHA CLIATH.

W 1/53.

24 Eanáir, 1953.

A Chara,

I am directed by the Minister for Local Government to state that he would be glad to learn at an early date of the council's intentions in the matter of procuring supplies of turf in 1953/54, under the following heads:-

- (1) An estimate of direct production for the year by the county council by handwoven methods.
- (2) An estimate of direct production for the year by semi-automatic methods.
- (3) An estimate of the quantity likely to be purchased under contract in the year.
- (4) The period for which the stocks at (1), (2) and (3) together with any reserve supply will suffice to meet the requirements of the local authority.

As regards direct production, the Emergency Powers (No. 310) Order, 1944, under which local authorities can acquire, work and lease bogs has been kept in force up to the 31st December, 1953. In the selection of bogs for production, regard will be had, no doubt, to the experience gained in previous years and the extent to which development works have been carried out.

In addition to acquiring bogs for their own use, local authorities can, under the Order mentioned above, encourage and facilitate private turf production by acquiring and developing where necessary bogs for letting to persons unable to meet their own needs.

As regards the development of bogs owned or acquired by the local authority or over which they have acquired a right of turbary whether for production by themselves or for letting to private persons, grants will be available, subject to the approval of Dáil Éireann, to meet the cost of necessary work. Proposals for any such work should be furnished on Form T.2, a specimen of which is annexed hereto, accompanied by the necessary tracings.

Where development works are considered to be necessary and are required to be put in hands with the minimum of delay, proposals therefor should be forwarded to the Department immediately if, at a later stage, it is intended to seek a grant towards the cost. Form T.2 can conveniently be used for this purpose.

The paragraphs relating to insurance, employment of temporary engineers, etc., which were included in this Department's Circular W.2/51 of the 19th February, 1951, will apply in the coming season. As regards the carriage of turf workers, attention is drawn to the circular letter issued by the Department of Industry and Commerce in May, 1951, regarding applications for permits authorising the use of lorries for this purpose. It should be noted that the Conditions of Employment (Turf Industry) (Exclusion) Order, 1951, is no longer in force.

A return on Form T.8 might be made each fortnight where the council is engaged on the direct production of turf and for this purpose the first form might be furnished for the fortnight ending 21st March, 1953. In addition, Form T.9 might be furnished each month and should give particulars of employment as at the end of a month on bog development works whether financed under grant or not and on production.

Additional copies of this circular letter are enclosed for the information of the Technical Staff.

Mise, le meas,

To each County Manager.

*Ro Murchú*



Note 1. Separate tracings (Scale 6 inches to 1 mile) showing the location of each of the works should be submitted. The name of the bog should be clearly marked on the tracing, which should also show the length of each proposed road.



Form T.8

TURF PRODUCTION SCHEME, 1953

Return for fortnight ended: \_\_\_\_\_

A. Total number of bogs worked during fortnight	County Council.
B. Quantity of turf cut during fortnight	Estimated sale tons (dry)
C. Total quantity of 1953 turf crop disposed of to date	Sale tons
D. Total quantity of 1953 turf crop saved, stacked and ready for disposal at end of fortnight	Estimated sale tons
E. Total quantity of 1953 turf crop not ready for disposal at end of fortnight	Estimated sale tons
F. Quantity of turf for which contracts or other arrangements have been made for delivery in 1953/54	County Engineer. County Council.
G. Quantity of turf under column 1. delivered during fortnight	

County Engineer.

County Council.



Form T.9

\_\_\_\_\_  
County Council.

TURF PRODUCTION SCHEME, 1953

Return of Employment afforded on the Turf Production

Scheme, 1953, for the month of \_\_\_\_\_ 1953.

- (a) Number of men employed on bog development financed by way of grant for works under the Local Authorities (Works) Act \_\_\_\_\_
- (b) Number of men employed on bog development work other than those returned at (a) \_\_\_\_\_
- (c) Number of men employed on the production of turf \_\_\_\_\_
- (d) Number of women and children employed on the production of turf \_\_\_\_\_
- (e) Total number of persons employed in connection with the turf production scheme \_\_\_\_\_

I certify that the above particulars are correct.

(Signed) \_\_\_\_\_

County Engineer.  
County Secretary.

Date \_\_\_\_\_ 1953.



Copyright Limerick Archives

11th August, 1954.

A Dhuine Uasail,

With reference to your communication of 22nd April, 1954, Ref: W.2/54 I desire to inform you that the Limerick Corporation do not intend to produce any turf directly this year. However, we will require approximately 2,200 tons of turf for the Limerick Mental Hospital and 600 tons for the Limerick City Home and Hospital.

Mise, le meas,

---

(M. O Maicín)  
City Manager.

The Secretary,  
Department of Local Government,  
Custom House,  
DUBLIN.

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LI PD/EC/2/1/c(26)  
T.9  
ROINN RIALTAIS ÁITIÚIL  
(Department of Local Government),

BÓITHRE (Roads),

TEACH AN CHUSTUIM  
(Custom House),

BAILE ÁTHA CLIATH  
(Dublin). 769/4

W.2/54

22 Aibreán, 1954.

A Chara,

I am directed by the Minister for Local Government to state that he would be glad to learn at an early date of the local authority's intentions in the matter of procuring supplies of turf in 1954/55, under the following heads:-

1. If the local authority intend to produce turf themselves:
  - (a) An estimate of direct production for the year by hand-won methods.
  - (b) An estimate of direct production for the year by semi-automatic methods.
2. An estimate of the quantity likely to be purchased under contract in the year.
3. The period for which the stocks at 1 and 2 above, together with any reserve supply will suffice to meet the needs of the local authority.

As regards direct production, the Emergency Powers (No. 310) Order, 1944, has been kept in force up to 31st March, 1955. Grants will be available for the development of bogs owned or acquired by the local authority or over which they have acquired a right of turbary where such development is proved to be necessary; any applications for grant should be accompanied by particulars of the proposed works on Form T.2, a specimen of which is attached, together with an indication of the need for the development work.

I am to request that a return, on Form T.9, may be furnished each month giving particulars of employment as at the end of the month on bog development works whether financed under grant or not and on production.

Additional copies of this letter are enclosed for the information of the technical staff.

Mise, le meas,

To each County and City Manager.

E. J. Sheehy.



Form T.9

\_\_\_\_\_ County Council.

TURF PRODUCTION SCHEME, 1954Return of Employment afforded on the Turf Production Scheme 1954

for the month of \_\_\_\_\_ 195

- (a) Number of men employed on bog development financed by way of grant for works under the Local Authorities (Works) Act \_\_\_\_\_
- (b) Number of men employed on bog development work other than those returned at (a) \_\_\_\_\_
- (c) Number of men employed on the production of turf \_\_\_\_\_
- (d) Number of women and children employed on the production of turf \_\_\_\_\_
- (e) Total number of persons employed in connection with the turf production scheme \_\_\_\_\_

I certify that the above particulars are correct.

(Signed) \_\_\_\_\_

County Engineer.  
County Secretary.

Date: \_\_\_\_\_

Note: Particulars of employment should relate to the end of the month.



L100/EC/2/1/5(28)

DEPARTMENT OF LOCAL GOVERNMENT,  
CUSTOM HOUSE,  
DUBLIN.  
Telephone 42961



ROINN RIALTAIS AITIÚIL

TEACH-AN CHUSTAIM.

BAILE ÁTHA CLIATH.

*Handwritten signature in blue ink.*

*Handwritten number 79683 in blue ink.*

Circular No. G. 3/54.

4th February, 1954.

USE OF TURF.

A Chara,

I am directed by the Minister for Local Government to state that it is the policy of the Government to ensure that to the utmost extent practicable turf will be used in preference to any other fuel for the purposes of all local authorities.

I am accordingly to request you to ensure that all local authorities for which you are manager will take the necessary steps to give effect to this policy.

Additional copies of this Circular are enclosed.

Mise, le meas,

*Handwritten signature in blue ink.*

To/ Each city and county manager.



*Ein-shreagra ar an litir seo, is mar seo ba choir e stiuradh:—*

*Any reply to this communication should be addressed to:—*

An Rúnaí  
(The Secretary)

*je'n uimhir seo:—*

*and the following number quoted:—*

W. 30/26/1

AN ROINN RIALTAIS AITIUIL  
(Department of Local Government),

TEACH AN CHUSTAIM  
(Custom House).

BAILE ÁTHA CLIATH  
(Dublin)



23 June, 1952.

A Chara,

I am directed by the Minister for Local Government to refer to your letter of the 16th instant in regard to turf requirements in the current year and to state that it is noted that it is proposed to procure 3,000 tons, to be retained as a reserve stock.

Mise, le meas,

City Manager and Town Clerk,  
Town Hall,  
Limerick.



23168  
L/PD/EC/2/1/530

16th June, 1952.

A Bhuine Uasail,

I desire to refer to your circular letter No. W1/52 dated the 19th February, 1952 on the subject of turf supplies. In reply to the query raised under No. 2 of the 1st paragraph of your letter I wish to state that the requirements of institutions under my control for the current season are as follows:-

City Home and Hospital	-	1,000 tons;
Joint Mental Hospital Board-		2,000 tons:

In both cases it is proposed to advertise for these supplies and to retain as reserve stock. As no bog development works are being carried out by the Corporation the remainder of your circular does not apply.

Mise, le meas,

City Manager.

Secretary,  
Department of Local Government,  
Custom House,  
DUBLIN.



23127

14th June, 1952.

Dear Sir,

In reply to your communication of 13th instant I wish to inform you that it is proposed to advertise for the quantities of turf which will be required for the City Home and Hospital and the Mental Hospital for the current year. Your Board, could of course submit a quotation. I might mention, for your information, that the approximate quantities required will be 2,000 tons for the Mental Hospital and 1,000 tons for the City Home and Hospital.

The Corporation will treat direct with you in connection with the Cheap Fuel Scheme as heretofore but this will not come into operation until December next.

Yours faithfully,

City Manager.

B. Murphy, Esq.,  
4 Coolraine Estate,  
Limerick.





BORD na MÓNA

Telefón

Áir nTas.....

Do Tas.....

H Coolrairie Estates.  
Limerick13<sup>th</sup> June 1952.The City Manager.  
Limerick.

Dear Sir.

I wish to inform you that machine/won turf will be available this year from BORD na MÓNA bogs in Kerry and Clare. The nearest of these to Limerick City, is Crag bog Co. Clare, which is approx. 35 mls. This season's production in this bog will be 3/4000 tons. Based on last year's price of 56/10 per ton, loaded ex works, you would have this turf delivered to your institutions at not more than 72/- per ton — possibly well under that figure.

PLEASE QUOTE  
THIS REFERENCE  
WHEN REPLYING





BORD NA MÓNA

Telefón

ÁR UTAŞ.....

Do TAŞ.....

The Board do not undertake delivery, but will give every assistance in getting reliable hauliers. If you decide to use machine turf this year, I will arrange for the whole output of Craag, or whatever quantity you are likely to require, to be reserved for you. To enable me to do so I would appreciate your decision as early as possible.

Yours faithfully  
Barth. J. Murphy.

PLEASE QUOTE  
THIS REFERENCE  
WHEN REPLYING



L170/EC/2/1/15(34)



Glin  
Co Limerick

11. 9. 51.

Dear Sir,

I will be grateful to  
you if you will let me know  
if you are buying turf, also  
price you are paying for it  
and oblige.

Yours faithfully,  
Thomas Barrett.



Phone No 1  
 Lissycasey PO  
 Ennis  
 Kildare

18.9.51

6870



Dear Sir,

I have about 300 tons of first class turf which I would be prepared to deliver immediately at £3.5.0 per ton. I have already supplied 600 tons to Kildare County Council and if you wish to find out quality of turf delivered you can phone Ennis 90 and ask for the Co Engineer. The turf I have at present is even better. Trusting to hear from you by return post.

Yours Truly  
 William Pyne



22961

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31st May, 1952.

W.30/26/1.

A Dhuine Uasail,

I desire to refer to your letter of 28th April last and to previous correspondence in the matter and wish to inform you that I do not appear to have received your Circular Letter W.1/52 of 19th February, 1952. Please be good enough to let me have a number of copies when the matter will have my immediate attention.

I must apologise for the delay in replying to your letter but this was, however, unavoidable.

Mise, le meas,

City Manager.

The Secretary,  
Department of Local Government,  
Dublin.

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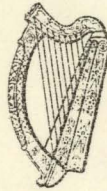


69760

*Eín-threagra ar an litir seo, is mar  
seo ba choir e stiuradh:—  
Any reply to this communication  
should be addressed to:—*

An Rúnaí  
(The Secretary)

*fe'n uimhir seo:—  
and the following number quoted:—*



AN ROINN RIALTAIS AITIUIL  
(Department of Local Government),

TEACH AN CHUSTAIM  
(Custom House).

BAILE ÁTHA CLIATH  
(Dublin)

W. 30/26/1

28 April, 1952.

A Chara,

I am directed by the Minister for Local Government to refer to this Department's Circular Letter, W.1/52 of the 19th February, 1952 on the subject of turf supplies for the coming season and to request that you will be good enough to furnish a reply thereto.

Mise, le meas,

*W. J. W.*

City Manager,  
LIMERICK.





DEPARTMENT OF LOCAL GOVERNMENT,  
CUSTOM HOUSE,  
DUBLIN.  
PHONE 42961.



ROINN RIALTAIS AITIÚIL  
TEACH AN CHUSTAIM,  
BAILE ÁTHA CLIATH.

26 March, 1952.

A Chara,

I am directed by the Minister for Local Government to refer to this Department's Circular No. W 1/52 of the 19th ultimo regarding the procurement of turf supplies in 1952 by local authorities for use in institutions, offices and machinery and to request that a reply thereto may be furnished as a matter of urgency.

Mise, le meas,

County Manager,

County Council.

City Manager and Town Clerk,  
Limerick Co. Borough Council.



20077

8th January, 1952.

Turf Purchases.

A Dhuine Uasail,

I desire to refer to your query of the 7th instant reference W.431 and to inform you that approximately 600 tons of turf were supplied to the Limerick City Home and Hospital last year by private contractors. The Limerick District Mental Hospital received 2778 tons from Clare County Council and 1130 tons from private suppliers.

Mise, le meas,

City Manager.

Secretary,  
Department of Local Government,  
Custom House,  
DUBLIN.



LIPD/EC/2/1/5/69

66811



From

To

THE DEPARTMENT OF LOCAL GOVERNMENT,

CUSTOM HOUSE,

DUBLIN.

*City Manager & Town Clerk  
Limerick Corporation*

QUERY

REPLY

(Date) 7.1.1952 (No.) W 431...

Subject - Turf Purchases.

Particulars are required urgently, under the following headings, of the amount of turf acquired during the current season for the Corporation's use (as ~~distinct from the turf produced under the Council's direct labour scheme~~):-

- (a) Amount of turf for which contracts have been placed or other purchase arrangements made.
- (b) Source of supply i.e. County Council (giving name) or private producer.
- (c) Amount delivered to date under the arrangement at (a).

*4000 Tons*  
*blow to be*  
(a) \_\_\_\_\_ tons.

(b) \_\_\_\_\_

(c) \_\_\_\_\_ tons.

An immediate reply is requested please.

*P.*



L/PO/EC/2/1/5(41)

~~Ally Munn~~

Ring Frank

Edna 241



UIMH. THAGARTHA  
(Reference No.)

70616  
LIPD/EC/2/1/5(12)  
AN ROINN RIALTAIS ÁITIÚIL  
(Department of Local Government),



TEACH AN CHUSTAIM  
(Custom House),

BAILE ÁTHA CLIATH  
(Dublin).

6.6.1952.

*City Manager and Town Clerk,  
Limerick C.B.C.*

*With reference to your  
letter of 31st. ultimo regarding  
turf supplies for the coming season,  
copies of the Department's Circular  
Letter W. 1/52 of 19th. February 1952  
on the subject are attached.*

*P.*



LIPNec/2/1/5 (43)  
ROINN RIALTAIS ÁTTIÚIL,  
(Department of Local Government),

TEACH AN CHUSTAIM,  
(Custom House),

BAILE ÁTHA CLIATH.  
(Dublin).

Circular No. WI/52.

19th February, 1952.

A Chara,

I am directed by the Minister for Local Government to refer to the conference held in November last at which he indicated the desirability of local authorities producing or securing supplies of turf again in 1952 for use in institutions, offices and machinery. In this connection Councils should have regard to the advisability in present circumstances of maintaining a reserve supply of turf over and above immediate requirements. The Minister accordingly would be glad to learn at an early date of the Council's intentions in the matter and to have:--

1. An estimate of direct production by (a) hand-won methods and (b) semi-automatic methods.
2. An estimate of the quantity likely to be purchased under contract.
3. An indication of the period for which the quantities at 1 and 2 would meet local authority requirements.

#### Acquisition and Development of Bogs

Emergency Powers (No. 310) Order, 1944, under which bogs can be acquired, worked or leased by local authorities has been continued in force up to 31st December, 1952. Local authorities who intend to develop bogs for machine production may, in some cases, find it more economical and satisfactory to acquire the bogs outright under whichever of their ordinary powers of land acquisition is appropriate. In selecting the bogs to be worked in the coming season, regard should be had to the experience gained in previous seasons especially in the matter of accessibility, quality of turf and costs of production. In addition to acquiring bogs for their own use, local authorities can encourage and facilitate private turf production by acquiring and developing, where necessary, bogs for letting to persons unable to meet their own needs.

Development works such as drainage and the making and repair of bog roads should, where necessary, be put in hands at the earliest possible date.

The extent of the monies to be allocated to works under the Local Authorities (Works) Act will be a matter for determination in due course by the Dáil but the Minister will be prepared to give priority for grants out of any monies so provided to works for bog drainage and the repair of bog roads which, in the opinion of the local authority, have sustained or are likely to sustain damage from flooding, landslide, subsidence or other similar occurrence. Particulars of works proposed should be submitted on Form W.7 (Part III) (specimen attached).



2.

It will also be a matter for the Dáil to decide what grants, if any, will be made available in due course to recoup expenditure necessarily incurred in the making and repair of bog roads (other than repairs carried out under the Works Act) on bogland owned or acquired by the local authority either for letting or for their own use or over which the local authority has acquired a right of turbary. Proposals for works on bog roads (other than works to be executed under the Works Act) should be submitted to the Department as soon as possible on Form T.2. of which a specimen is attached.

In any case where development works whether roads or drainage of bogs acquired by the local authority are a matter of urgency, they may be commenced without the Minister's prior approval, provided the estimated cost does not exceed 5s. per ton of turf likely to be produced in 1952 on the bogs in question. Particulars of works so commenced should be notified to the Department together with the appropriate Forms noted above. Where development work on bogs involve operations under such financial arrangements as may in due course be made under the terms of the two preceding paragraphs a cross reference thereto should be made on each Form.

#### Miscellaneous

The paragraphs relating to insurance, employment of temporary Engineers, etc., which were included in this Department's Circular W.2/51 of 19th February, 1951, will apply in the current season. Attention is, however, drawn to the Circular Letter issued by the Department of Industry and Commerce in May last regarding applications for permits authorising the use of lorries for the carriage for reward of turf workers by County Councils.

The Conditions of Employment (Turf Industry) (Exclusion) Order, 1951, made by the Minister for Industry and Commerce under which work done in connection with the production of turf is declared to be excluded industrial employment for the purposes of various sections of the Conditions of Employment Act, 1936, dealing with working hours of adults, overtime, etc., continues in force up to 31st December, 1952.

#### Returns of Employment and Production

A return on Form T.8. should be forwarded each fortnight (specimen attached). The figures to be furnished on the first return should cover the fortnight ending 23rd February, 1952.

Additional copies of this circular are enclosed for the use of the appropriate Technical Staff.

Mise, le meas,

*R. O. Murphy*

To/  
Each Manager.



Proposals for making and/or repair of roads on or into bogs owned or acquired by the local authority for its own use or for letting or bogland over which a right of turbary has been acquired by the local authority.

[illegible]

I certify

- (1) that these works are necessary in order to facilitate turf production.
- (2) that the turf to be produced in each of the above-mentioned bogs will be of sound quality.
- (3) that the above proposals do not cover works to any County Roads.

Date ..... Signed ..... County Engineer

Signed ..... Manager or Secretary.

Note 1. Separate tracings (Scale 6 inches to 1 mile) showing the location of each of the works should be submitted. The name of the bog should be clearly marked on the tracing, which should also show the length of each proposed road.



Proposals for bog development works which can be executed under the Local Authorities (Works) Act.

Scheme No.	Name of bog or other dis- tinguishing description	Location (D.E.D., Townland, etc.)	Brief indication as to whether or not bog is vested in, or right of turbary acquired by local authority and if so whether lettings will be made.	Give approx- imate numbers of private producers who will benefit by the work.	Estimated production (Tons dry) in 1952. By local authority By private producers producers	Brief specification of work to be done.	Total esti- mated cost.

I certify that the above works, the total estimated cost of which is £ \_\_\_\_\_ are proposed and approved by the local authority, that they are satisfied that the works came within the scope of the Act and that the necessary orders have been made under Section 2 that either:

- A. The local authority are of opinion that land owned by them or property maintained by them has sustained or is likely to sustain damage from flooding, etc., and that they consider that the works proposed are reasonable for the purpose of affording relief or protection from the damage; or
- B. The local authority are of opinion that land in their functional area or property not maintained by them has sustained or is likely to sustain damage from flooding etc., and that it is in the public interest to afford relief or protection from the damage and that they consider that the works proposed are reasonable for the purpose of affording such relief or protection.

Signed \_\_\_\_\_ County Secretary.



FORM T. 8.

TURF PRODUCTION SCHEME, 1952

Return for fortnight ended \_\_\_\_\_

A.	Total number of bogs worked during fortnight.			
B.	Maximum number of men employed on bog development during fortnight.	<u>Works Act</u>	<u>T.2.</u>	<u>Total</u>
C.	Maximum number of persons employed on turf production during fortnight.	<u>Men</u>	<u>Women and Children</u>	<u>Total</u>
D.	Total number of persons employed as above during fortnight (Figure will not necessarily be the total of B and C but the total number of names on the County Engineer's paysheet, counting each name once.)	<u>Men</u>	<u>Women and Children</u>	<u>Total</u>
E.	Quantity of turf cut during fortnight.	Estimated sale tons (dry)		
F.	Total quantity of 1952 turf crop disposed of to date.	Sale tons		
G.	Total quantity of 1952 turf crop saved, stacked and ready for disposal at end of fortnight.	Estimated sale tons		
H.	Total quantity of 1952 turf crop not ready for disposal at end of fortnight.	Estimated sale tons		
I.	Quantity of turf for which contracts or other arrangements have been made for delivery in 1952/53.			
J.	Quantity of turf under column I delivered during fortnight.			

\_\_\_\_\_  
County Engineer\_\_\_\_\_  
County Council.



19202

19th September 1951.

Dear Sir,

I desire to acknowledge the receipt of your communication of the 18th instant offering about 300 tons of first-class turf, and in reply to inform you that, as all the turf required for the City Institutions has now been purchased I regret I cannot accept your offer.

Yours faithfully,

Deputy City Manager.

William Pyne, Esq.,  
Lissycasey P.O.,  
Ennis,  
Co. Clare.



19098

Copyright Limerick Archive

12th September, 1951.

Copyright Limerick Archive

Dear Sir,

I desire to acknowledge the receipt  
of your communication of the 11th instant and in  
reply to inform you that as all the turf required  
by the City Institutions has been purchased, I  
cannot consider your offer.

Copyright Limerick Archive

Yours faithfully,

City Manager.

Copyright Limerick Archive

T. Barrett, Esq.,  
Glin,  
CO. LIMERICK.

Copyright Limerick Archive



14024

6th September 1951.

Dear Sirs,

I desire to thank you for your letter of the 4th instant informing me that you have about 500 tons of good quality turf at 57/6d delivered Limerick. I regret I am unable to avail of your offer as all the turf required for the City Institutions has now been purchased.

Yours faithfully,

City Manager.

Messrs. G.W. Leahy & Sons,  
Abbeyfeale,  
Co. Limerick.



18822

23rd August, 1951 .

Dear Mr. O'Sullivan,

I desire to acknowledge the receipt of your communication of 18th instant and in reply to inform you that we have purchased or placed contracts for all the turf we require for our Institutions. We are paying £3 per ton for turf delivered, and in fact, we have had to cut down on supplies within the past week as it was being delivered too fast.

With best wishes,

Yours sincerely,

City Manager.

T. O'Sullivan, Esq.,  
Ballylongford,  
CO. KERRY.



L/DP/EC/2/1/5(52)

# D.O'SULLIVAN

DIRECTORS  
A. O'SULLIVAN  
T. O'SULLIVAN  
M. O'SULLIVAN

*and Sons*

## DEPARTMENTS

MAIZE MILLING  
MILL STUFFS · PROVISIONS  
GROCERIES · DRIED FRUITS  
BEER · WINE AND SPIRITS  
CURING AND DAIRY SALT  
TIMBER · IRON · HARD-  
WARE · COALS · CEMENT  
PAINTS · OILS · SLATES  
GLASS · MANURES · SEEDS  
AND MACHINERY

TELEPHONE NO. 4

*Limited*

MILLERS · IMPORTERS · GENERAL  
WHOLESALE & RETAIL MERCHANTS  
AUCTIONEERS AND VALUERS

18th August, 1951.

**BALLYLONGFORD**

CO. KERRY.

WEEKLY HALF HOLIDAY — MONDAY 1 p.m.

• TELEGRAMS · O'SULLIVAN · BALLYLONGFORD

Dear Mr. Macken,

I would be glad to know if you are open to purchase any  
turf for any of the City Institutions under your care - the probable  
quantity and the price you are prepared to pay delivered.  
There is a fair amount of good quality turf in this area.

With best wishes,

Yours sincerely,

*D. O'Sullivan*

Mr. M. Macken.  
St. Cecilia,  
O'Connell Ave,  
LIMERICK

MAKERS OF GOLDEN XXX MEAL and SOLE DISTRIBUTORS OF "SHANNON PRIDE" FLOUR.



18495

Copyright Limerick Archives

2nd August, 1951.

Dear Sir,

I enclose herewith letter received from Deputy J.J. Collins, Abbeyfeale regarding supply of turf by Mr. J. Foley. As we cannot accommodate this man at the City Home, you might get in touch with him regarding delivery of turf. The present position regarding deliveries is £3 per ton, delivered and unloaded on the site.

Yours faithfully,

City Manager.

Copyright Limerick Archives

P. Harnett, Esq.,  
Chief Clerk,  
Mental Hospital,  
Mulgrave Street,  
LIMERICK.

Copyright Limerick Archives



18/10/

7th July 1951.

A Dhuine Uasail,

With reference to yours of the 5th instant, ref: W.30/26/1, I desire to inform you that I have now obtained 4,000 tons of turf from the Clare County Council for the Limerick Mental Hospital. Delivery is commencing on Monday, 9th instant.

I have obtained offers from private producers for further supplies and I am advertising for turf delivered Limerick City Home at £3 per ton. I am hopeful of being able to get a reasonable quantity this way.

With regard to the adequacy of turf fuel, I wish to state that, having regard to the type of boiler both at the City Home and Mental Hospital, turf fuel would not be deemed adequate to give sufficient steam during the Winter months for the heating of these institutions. I am at present investigating the possibility of obtaining some fuel oil so that it might act as a standby in the event of sufficient coal not being available during the Winter months.

Mise, le meas,

City Manager.

The Secretary,  
Department of Local Government,  
Custom House,  
Dublin.



Ein-shreagra ar an litir seo, is  
mar seo ba choir e stiuradh:—  
(Any reply to this communication  
should be addressed to:—)

An Rúnaí  
(The Secretary)

je'n uimhir seo:—  
(and the following number  
quoted:—)

W. 30/26/1.

L/PO/EC/2/1/5 (55)  
60497  
ROINN RIALTAIS AITIÚIL  
(Department of Local Government),

TEACH AN CHUSTAIM  
(Custom House),

BAILE ÁTHA CLIATH  
(Dublin).

5 July, 1951.



A Chara,

I am directed by the Minister for Local Government to  
refer to your letter of the 13th April, 1951, regarding  
supplies of turf for the Limerick Corporation and to inquire  
what steps have been taken to ensure an adequate supply of  
fuel for the institutions with particulars of the amounts  
of any contracts which have been placed.

Mise, le meas,

The City Manager & Town Clerk,  
Town Hall,  
Limerick.

4000 tons.  
to be stored for winter  
administered for supplies  
from City House.



L/PDIEC/2/1/15 (56)  
60563

J. P. LAVAN & SON,

SOLICITORS.

MARTIN J. LAVAN.

DUBLIN OFFICE :-  
D'OLIER CHAMBERS, D'OLIER STREET

City Manager,  
City Hall,  
Limerick.

BRANCH OFFICE :-  
NEWCASTLE WEST.

ATTENDANCE - EVERY THURSDAY

TELEGRAMS :-  
LAVAN, ABBEYFEALE  
TELEPHONE :- NO. 17

OFFICES:-

*Abbeyfeale,*

*Co. Limerick.*

10th July, 1951.



Dear Sir,

Re:- Turf Contract - Daniel Cronin.

Further to our letter of last week regarding above. We should feel much obliged for a reply thereto.

Yours faithfully,

MJL/FMc.

*J. P. Lavan & Son*



6th July 1951.

Dear Sir,

I acknowledge receipt of yours of the 3rd instant and desire to confirm my telephone conversation with you this morning to the effect that it will be in order for you to commence delivery of turf to the Mental Hospital on Monday morning. I will arrange to have the turf stacked, etc.

Yours faithfully,

City Manager.

The County Engineer,  
County Home,  
Ennis,  
Co. Clare.



6th July 1951.

Dear Sir,

I enclose herewith copy of letter dated 3rd instant which I have received from the County Engineer, Clare Co. Council, together with copy of my reply.

I will discuss to-day, in your absence, with Mr. Barry detailed arrangements regarding the taking in of this turf.

Yours faithfully,

City Manager.

P. Hartnett, Esq.,  
Chief Clerk,  
Mental Hospital,  
Mulgrave Street,  
Limerick.



L/PO/EC/2/1/5 (59)

# COMAIRLE CONNDAE AN CLÁIR

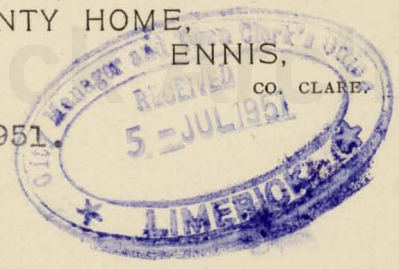
(CLARE COUNTY COUNCIL).

TELEPHONE : ENNIS 90.

J. B. BARRY, B.E.  
CO. ENGINEER. DO'D/TB.

COUNTY ENGINEER'S DEPARTMENT,  
COUNTY HOME,  
ENNIS,  
CO. CLARE.

3rd July, 1951.



The City Manager,  
Town Hall,  
LIMERICK.

Dear Sir,

With reference to previous correspondence regarding the proposal to supply 4,000 tons of turf to institutions in Limerick City, I desire to state that arrangements can now be made to commence transport of this turf. It is proposed to send you all East Clare turf i.e. 2,000 tons and 2,000 tons from Knocknahila bog in West Clare. I assume you can arrange to have the lorries weighed and tarped. The vehicles should be tarped on alternate days or at least twice each week. A delivery docket will be issued for each load leaving the bogs and given to the driver who will hand same to whoever is in charge at your end. The person receiving delivery should sign each docket and attach it to the official weight docket for transmission to this office at the end of each week. This information will be required here for (a) making out the carrier's payment, (b) keeping an account of the tonnage delivered and (c) having a check on all turf sent from the various bogs.

It is hoped that the foregoing procedure will suit your requirements and I shall be obliged if you will please let me hear from you at your earliest convenience. Please set out the quantity to be sent to each Institution.

Yours faithfully,

*Handwritten notes:*  
10  
copy of letter to Barry  
this price for his inform others  
Thurs 10th Barry

John B. Barry  
County Engineer

**P.S.** Since writing above letter I have received copy of your letter to the Secretary. It is not yet possible to ascertain what the final production cost will be as this will depend on weather conditions. According to present information it will be about £2 on roadside. I will write you next week giving further details. The transport and loading will vary from 15/- per ton for 30 miles to 19/- for 53 miles. I am anxious to start delivering to you on Monday next and would you please ring me tomorrow (Thursday).



60406

Shannon, Listowel,

H. Kerry. 28<sup>th</sup> June 1951

Mr. Macken,

Manager, Limerick City Corporation.

— Dear Sir —

I beg to state we are  
in a position to supply a few hundred  
tons of well saved turf of 1951 crop.

Please let me know if you are open  
to purchase any, & I'll quote lowest  
price per ton, delivered.

— Thanking you,

Yours faithfully,

Edmond Mulvihill.





J. P. LAVAN & SON,  
SOLICITORS.  
•  
MARTIN J. LAVAN.  
•  
DUBLIN OFFICE :-  
D'OLIER CHAMBERS, D'OLIER STREET

BRANCH OFFICE :-  
NEWCASTLE WEST.  
ATTENDANCE - EVERY THURSDAY

TELEGRAMS :-  
LAVAN, ABBEYFEALE  
TELEPHONE :- No. 17

60421  
LIPOL/EC/2/1/5(61)  
OFFICES:-

*Abbeyfeale.*

*Co. Limerick*

2nd July, 1951.

The City Manager,  
City Hall,  
Limerick.



Dear Sir,

We have been consulted by Mr. Daniel Cronin, Convent Road, Abbeyfeale, County Limerick, who has requested us to make application to you on his behalf to supply turf per Contract to the various institutions in Limerick City under your management. If you look up records you will find that our client entered into a similar Contract with you during the latter war years and supplied the following institutions with turf, City Home, Gas Works, Strand Barracks, Town Hall, City Hall and Water Works, and it would appear that you were well satisfied with supplies received at that time.

Mr. Cronin is now in a position to enter into a Similar Contract with you and can guarantee excellent quality turf if you are kind enough to consider his application.

Thanking you for an early reply.

Yours faithfully,

*J. P. Lavan*

MJL/FMc.



17979

29th June 1951.

Dear Sir,

I am having offers from people in County Clare for the supply of turf to me at £3 per ton, delivered Limerick, and I am seriously thinking of advertising for turf at a price per ton, delivered Limerick.

Would you please let me know the maximum quantity of turf which your Council will be able to supply to me and let me have a firm price for this turf, delivered Limerick.

I shall be glad if you will let me have this information at your earliest convenience.

Yours faithfully,

City Manager.

D. Blackwell, Esq.,  
Co. Manager,  
Ennis,  
Co. Clare.



150 tons -

L/1PD/EC/2/1/5 (13)

1) Go about with oil.

2) Ref.

3) See about. Coal from Quay.  
Phoenix Park

4) See about. oil supply.

5) See about. Ref. - Store.

6) Write Just Requirements.





L/PD/EC/2/1/5(64)

60101

Jm Bragg  
Lisycasey

Dear Sir

I was informed by the Clare  
Council that you required Turf  
and to communicate with you, I so would  
Deliver at Limerick City 400 tons of  
Turf at £3.0.0 per ton, I am a  
big Turf producer. I have that  
much Turf ready to Haul at once,  
I will Guarantee the best quality  
Turf, I would be very Grateful if  
you would let me know by return if  
you will accept my offer or not, as  
I would like to start Delivering it  
at present, Trusting you will oblige

Yours Truly

Andrew Johnston

Bragg

Lisycasey

Clare



19991

Copyright Limerick Archives

15th June, 1951.

Copyright Limerick Archives

Dear Sir,

I desire to acknowledge the receipt of your undated communication offering 400 tons of turf at £3 per ton. The City Manager is at present on annual leave and when he returns to duty on the 25th instant I will put your letter before him.

Yours faithfully,

Deputy City Manager.

Copyright Limerick Archives

A. Johnston, Esq.,  
Cragg,  
Lissycasey,  
CO. CLARE.

Copyright Limerick Archives



LIPD/EC/2/1/5 (66)

comairle conndae an cláir

(CLARE COUNTY COUNCIL).

TELEPHONE : ENNIS 90.

J. B. BARRY, B.E. DO'D/TB.  
CO. ENGINEER.

COUNTY ENGINEER'S DEPARTMENT,  
COUNTY HOME,  
ENNIS,  
CO. CLARE.

12th May, 1951.

The City Manager  
Town Hall,  
LIMERICK.



Dear Sir,

With reference to my letter of the 17th April last regarding the supplying of turf for Institutions in Limerick, I am now in a position to state that this Council will be able to supply your Institutions with approximately 2,000 tons of turf and I shall be obliged if you will please let me know at an early date what quantity of turf you would like to have supplied to you. It is proposed to send this turf from the East Clare Bogs as the distances from those bogs to Limerick will be considerably shorter than the distances from West Clare to Limerick City.

I hope to hear from you at an early date regarding your exact requirements.

Yours faithfully,

  
County Engineer.

*to about Market the put  
Storage*





# BORO NA MÕNA

Telefón 66431

Telegrams: Mõna Baile Átha Cliath

Ár vtag.....

Do tag.....

BAILE ÁTHA CLIAIC

30th March, 1951.

The City Manager,  
Office of the City Manager and Town Clerk,  
Town Hall,  
LIMERICK.

Dear Sir,

I have received your letter of the 20th inst relative to the supply of 7000 tons of turf to institutions in Limerick City.

In reply, I wish to state that no decision has yet been taken regarding the disposal of turf to be produced by my Board in the coming season and we are unable at this stage to enter into advance commitments or give any assurance that supplies can be made available to the institutions concerned.

Yours faithfully,

PLEASE QUOTE  
THIS REFERENCE  
WHEN REPLYING

CBM/BD

SECRETARY.



## COMAIRLE CONTAE LUIMNIGE

(LIMERICK COUNTY COUNCIL).

p. ó mÍOÚCÁIN,  
Contae-Dáimíreoir.(P. J. MEGHEN, B.E.,  
County Manager).OIFIS AN CONTAE-DÁIMISTEORA,  
(County Manager's Office)SRÁID UÍ CONAILL 82/83  
(82 & 83 O'Connell Street)luimneac.  
(Limerick)

S'é Sáirréal an Focal aSúr  
r'é Sáirréal an Fear.



7th March, 1951.

Dear Mr. Macken,

With reference to your letter of the 5th inst., I regret to inform you that the Co. Council do not anticipate that they will have any surplus turf for sale to the Institutions you mention. As regards the cutting of turf by private persons, the nearest bogs to the City are at Castleconnell, but they are held by private owners. The only bogs which the Co. Council will be working near Limerick are at Moher and Portnard. I think the nearest bog would be about 16 miles. At the moment I do not think there are likely to be any vacant banks in these areas.

Yours faithfully,

COUNTY MANAGER

M. Macken, Esq.,  
City Manager,  
Town Hall,  
Limerick.



JOHN McGRATH,  
SECRETARY.

Telephone :  
NENAGH Nos. 57 & 58.

COMHAIRLE CHONNDAAE THIOBRAID ARANN (THUAIDH)  
TIPPERARY (N.R.) COUNTY COUNCIL

THE COURT HOUSE

NENAGH 28th March, 1951.

CO. TIPPERARY

IN REPLY PLEASE  
QUOTE REFERENCE

258/1.

Dear Sir,

With reference to your letter of the 5th instant, in connection with turf production, I wish to inform you that the target for this year is determined at 6,500 tons to meet the fuel requirements of our own Institutions, Plant, Offices, etc. The Council have decided not to produce any surplus turf for sale.

There are two bogs, namely Shower and Annaholty, within a radius of 20 miles from Limerick City, and we do not propose to produce any turf in this area. This Council would facilitate private producers by acquiring and developing the afore-mentioned bogs.

You might let us know if many people are likely to be involved and the approximate quantity of turf which it is proposed to produce by private enterprise.

Yours faithfully,

COUNTY MANAGER

The City Manager,  
Office of the City Manager  
and Town Clerk,  
Town Hall,  
LIMERICK.

PS/MC.



Aon fhreagra ar an litir seo,  
is mar seo ba chóir é sheoladh :-

Any reply to this communication  
should be addressed to :-

AN RUNAÍ

faoin uimhir seo :-  
and the following number  
quoted :-



LIPD/EC/211/5 (70)

AN ROINN TIONSCAIL agus TRÁCHTÁLA  
(Department of Industry and Commerce)

Sráid Cill Dara,



BAILE ÁTHA CLIATH.  
(Dublin).  
600 67

*John*  
To each *City* County Manager:

I am directed by the Minister for Industry and Commerce to refer to Circular No. W.2/51, dated 19th February, 1951, issued by the Department of Local Government in connection with, inter alia, the transport of turf workers in lorries. I am to say that it has been decided, with the concurrence of the Minister for Local Government, that permits authorising the carriage of County Council turf workers in lorries should in future be issued by the Minister for Industry and Commerce in accordance with the provisions of Emergency Powers (No.319) Order, 1944, and that the issue of permits by County Engineers under the authority of the Emergency Powers (Transport of Workers) (Turf) Order, 1944, should be discontinued. Accordingly, where your Council proposes to hire a lorry for the carriage of turf workers application for a permit should be made to this Department by the County Engineer. A supply of forms for use in connection with such applications is attached.

This arrangement does not affect the validity of any permits already issued by County Engineers with the consent of the Minister for Industry and Commerce.

JOHN LEYDON,

Secretary.



APPLICATION FOR PERMIT(S) UNDER EMERGENCY POWERS (NO.319)  
ORDER, 1944, AUTHORISING THE USE OF MECHANICALLY-PROPELLED  
VEHICLES FOR THE CARRIAGE OF PASSENGERS FOR REWARD.

I hereby apply for a permit(s) under the provisions of  
Emergency Powers (No.319) Order, 1944, authorising the person(s)  
named to use the mechanically-propelled vehicles specified  
hereunder for the carriage for reward of workers employed by the  
\_\_\_\_\_ County Council in the production of turf  
and for the development of bogs in County/Counties \_\_\_\_\_  
\_\_\_\_\_.

Registration No. of Vehicle

Name & Address of owner of Vehicle

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The vehicle/vehicles specified above are insured for the carriage of  
workers.

Signed \_\_\_\_\_

County Engineer

Address \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Emk



17478

Copyright Limerick Archives

29th May 1951.

Dear Mr. Barry,

I am obliged for your letter of the 12th instant and desire to inform you that we would be in a position to take at least 2,000 tons of turf from you. I was speaking to the County Manager recently and I mentioned to him that all going well it might be possible for us to take about 4,000 tons of turf entirely. However, this will depend on the amount which you can produce and the availability of alternative forms of fuel.

Perhaps you would let me have an estimate of the cost of the turf delivered Limerick.

Yours sincerely,

City Manager.

Copyright Limerick Archives

J. B. Barry, Esq., B.E.,  
Co. Engineer,  
Clare County Council,  
County Home,  
Ennis,  
Co. Clare.

Copyright Limerick Archives



## COMAIRLE CONROE AN CLÁIR

(CLARE COUNTY COUNCIL).

TELEPHONE : ENNIS 90.

J. B. BARRY, B.E.

CO. ENGINEER.

DO'D/TB.

COUNTY ENGINEER'S DEPARTMENT,  
COUNTY HOME,

ENNIS,

CO. CLARE.

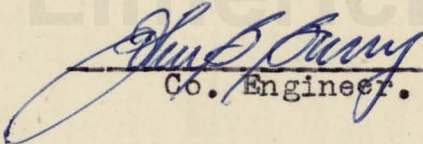
17th April, 1951.

City Manager,  
Town Hall,  
LIMERICK.

Dear Sir,

Your letter of 5th March last, inquiring if this Council can supply the Limerick Institutions with turf, has been referred to me by the Co. Manager. I regret the delay in sending you a reply but the matter had to be held over until the Council dealt with the question of turf production. I now find that we will have no clear idea of what our total production is likely to be until about three weeks from now. At the end of that period I will write to you again and let you know if this Council will have sufficient surplus turf to let you have a supply.

Yours faithfully,

  
Co. Engineer.



13th April 1951.

A Dhuine Uasail,

With reference to yours of the 31st ultimo, ref: W.30/26/1,  
I desire to inform you that I have not yet received anything  
definite from Clare County Council regarding supply of turf.  
I have the whole question of fuel for the institutions under  
consideration at present and will write you as soon as possible  
in regard to the matter.

Mise, le meas,

City Manager.

The Secretary,  
Department of Local Government,  
Custom House,  
Dublin.



Copyright Limerick Archives

13th April 1951.

Dear Mr. Blackwell,

I shall be glad if you will let me have a reply to my letter forwarded to you on the 5th ultimo regarding turf supplies.

Yours sincerely,

City Manager.

Copyright Limerick Archives

D. Blackwell, Esq.,  
County Manager,  
Clare County Council,  
Courthouse,  
Ennis,  
Co. Clare.

Copyright Limerick Archives



58971

ROINN RIALTAIS ÁITIÚIL,  
(Department of Local Government),

TEACH AN CHUSTUIM,  
(Custom House),

BAILE ÁTHA CLIATH.  
(Dublin).

EL. 2 /51.



18th April, 1951.

Turf Workers

A Chara,

1. I am directed by the Minister for Local Government to suggest to local authorities that in order to ensure that turf workers are available for the turf production campaign, careful consideration might be given to the following matters.

2. Attention is drawn to the terms of the Department's Circular Letter R/RM/201W. dated 27th January, 1949, relating to the temporary disemployment of road workers because of inclement weather. It is recommended that similar arrangements be applied to turf workers. That Circular Letter recommended that in any area in which equally or more advantageous conditions were not already in operation, the local authority should consider the advisability of making payment to the nearest half day worked, that is, that payment should be made for a half day (morning or afternoon) irrespective of the actual time worked in the half day and that men reporting for work in the morning should be paid for that half day even though weather conditions rendered work impossible. It was also recommended that where men were asked to work again after the normal luncheon interval, any who did so should be paid for the second half of the day even though the weather did not in fact improve sufficiently to enable work to be done.

3. The Circular Letter referred to in the foregoing paragraph also suggests for the consideration of local authorities the question of providing proper shelters for workers.



4. Attention is also drawn to the terms of Circular Letter (IR/201) of 31st March, 1947, in regard to the issue of protective clothing to workers, particularly in regard to the issue of rubber boots.

5. The differentials approved in the Department's Circular Letter EL.76/50 dated 23rd December last in regard to supervisory workers and carters may be applied to supervisory workers engaged in turf production.

6. Arrangements for granting travelling time remuneration are also favoured by the Minister where exceptional distances have to be travelled by the employee involving reductions in normal working hours and earning capacity. Cases where the employee, with the general approval of the local authority, uses his own method of transport to reach bogs situated at considerable distances from his home can be dealt with by way of mileage allowance generally on the lines of the concessions that were in operation during the previous turf production campaign. A note of any concessions re-introduced should be forwarded to the Department for record purposes.

7. The wages to be paid to adult male turf workers should be such as will enable local authorities to secure sufficient workers to complete their programmes during the season. The Minister's sanction to rates not exceeding a basic time rate of 1/8d an hour may be presumed. Similarly, the remuneration paid to young persons and women workers during the 1947 season may be increased proportionately to the increases over the 1947 rate occurring in the case of adult male turf workers.

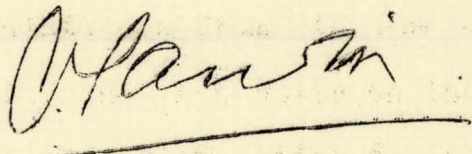


-3-

8. A differential over the normal turf worker's rate not exceeding 2/6d a day for wholetime sleansmen, with appropriate modifications where part-time work as a sleansman occurs, may be paid.

9. This Circular Letter should not be interpreted as an instruction to a local authority to pay any particular level of wages to their employees, but it may be regarded as conveying sanction to the payment of wages within the limits indicated in the foregoing paragraphs and application for sanction to wage proposals within these limits need not, therefore, be submitted for approval. Particulars of the rates paid should, however, be furnished for record purposes.

Mise, le meas,



To each Manager.



L1PD/EC/2/1/5 (79)

58879  
ROINN RIALTAIS AITIÚIL  
(Department of Local Government),

TEACH AN CHUSTAIM  
(Custom House),

BAILE ÁTHA CLIATH  
(Dublin).



12th April, 1951.

*Ein-fhreagra ar an litir seo, is  
mar seo ba choir e stiuradh:—  
(Any reply to this communication  
should be addressed to:—)*

An Rúnaí  
(The Secretary)

*fe'n uimhir seo:—  
(and the following number  
quoted:—)*

W. 6/51.

Dear Manager,

I would refer to the Department's Circular  
(Reference No. W. 2/51) of the 19th February, 1951, in which  
reference is made to the submission of proposals for  
expenditure on bog roads (other than works to be executed  
under the Local Authorities (Works) Act, 1949). In order to  
allocate the monies to be made available for bog roads to the  
best advantage on essential works as between local authorities  
we would be grateful if all proposals on Form T.2. were  
submitted at an early date. Where difficulty is likely to  
arise in regard to the immediate submission of all such  
proposals, perhaps an estimate of the total grant to be  
applied for could be furnished to enable a figure of total  
requirements of all local authorities to be determined and  
some preliminary allocation made.

Mise, le meas,

G. A. Meagher

To each Manager.



L/PO/EC/2/1/5(80)

58651

*Ein-shreagra ar an litir seo, is  
mar seo ba chóir é stiúradh :—  
(Any reply to this communication  
should be addressed to :—)*

**An Rúnaí**  
(The Secretary)

*fé'n uimhir seo :—  
(and the following number quoted:—)*



**ROINN RIALTAIS ÁITIÚIL**  
(Department of Local Government),

**TEACH AN CHUSTAIM**  
(Custom House),

**BAILE ÁTHA CLIATH**  
(Dublin).

W.30/26/1.

3/ March, 1951.

A Chara,

I am directed by the Minister for Local Government to refer to your letter of the 20th March, 1951, regarding your efforts to acquire supplies of turf for the Limerick Corporation and the Limerick Mental Hospital Board and to state that the Minister would be glad to be informed of the outcome of your correspondence with the Clare and Tipperary County Councils in the matter. Should the County Councils mentioned be unable to supply you with the full quantities you require it is suggested that you might approach the Galway County Council to make up any deficiency. While the cost of transporting turf from Galway may be somewhat higher than from Clare or Tipperary, it is felt that this higher cost will be offset to a large extent by the lower cost at which turf is produced in Galway county.

Mise, le meas,

The City Manager,  
Town Hall,  
Limerick.

*L. B. Uregher*



ROINN RIALTAIS ÁITIÚIL,  
(Department of Local Government),

TEACH AN CHUSTUIM,  
(Custom House),

BAILE ÁTHA CLIATH.  
(Dublin).

W. 5/51



21st March, 1951.

Dear Manager,

We have had a couple of informal inquiries from local authorities regarding the policy to be adopted in acquiring bogs which were developed in the past by County Councils and are now in possession of private producers. It is considered that if local authorities find it necessary to do so in order to reach their production targets, they should take possession of bogs developed by them in the past. It would be well, however, if, where circumstances permitted, lettings were granted of portions of developed bogs or alternative bogs were vested for granting lettings to producers displaced by the local authority. For the purpose of such lettings it is suggested that an order of preference as follows might be observed:-

1. Persons cutting for their own domestic requirements.
2. Industries cutting with their own labour directly for themselves, and
3. Speculators, agents, etc.

Yours sincerely,

*G. A. W. [Signature]*

To/  
Each Manager.



L100/EC/2/1/5 (82)  
58508

ROINN RIALTAIS ÁITIÚIL,  
(Department of Local Government),

TEACH AN CHUSTUIM,  
(Custom House),

BAILE ÁTHA CLIATH.  
(Dublin).

W. 5/51



21st March, 1951.

Dear Manager,

We have had a couple of informal inquiries from local authorities regarding the policy to be adopted in acquiring bogs which were developed in the past by County Councils and are now in possession of private producers. It is considered that if local authorities find it necessary to do so in order to reach their production targets, they should take possession of bogs developed by them in the past. It would be well, however, if, where circumstances permitted, lettings were granted of portions of developed bogs or alternative bogs were vested for granting lettings to producers displaced by the local authority. For the purpose of such lettings it is suggested that an order of preference as follows might be observed:-

1. Persons cutting for their own domestic requirements.
2. Industries cutting with their own labour directly for themselves, and
3. Speculators, agents, etc.

Yours sincerely,

G. A. Weagher

To/  
Each Manager.



20th March, 1951.

A Chara,

With reference to your Circular Letter of the 6th instant, Ref: W.3/51, I desire to inform you that it is not possible for either the Limerick Corporation or the Limerick Mental Hospital Board to undertake the cutting of turf. I have written to Limerick, Clare and Tipperary County Councils regarding the matter. Limerick County Council has informed me that they are unable to supply us with any extra turf, and I have not received any definite reply yet from either Tipperary or Clare.

I am also requesting Bord na Mona to let me know if they will be in a position to supply us with turf. The requirements will be about 4,000 tons for the Mental Hospital and 3,000 tons for the City Home and Hospital.

I hope, however, to be able to get some coal to supplement whatever supply of turf I may be able to obtain.

Mise, le meas,

City Manager.

Secretary,  
Department of Local Government,  
Custom House,  
Dublin.



20th March, 1951.

Dear Sir,

I have been in touch with Limerick, Clare and Tipperary County Councils and they have informed me that they are unable to supply turf for use in our institutions, namely Limerick Mental Hospital and Limerick City Home and Hospital. The quantity of turf which will be required for these institutions will be approximately 4,000 tons and for the City Home and Hospital, 3,000 tons.

I shall be glad if you will let me know what quantity of this turf you would be prepared to supply.

Yours faithfully,

City Manager.

Secretary,  
Bord na Mona,  
28, Upper Pembroke Street,  
Dublin.



L/PD/EC/2/1/5 (85)

58724

Ein-fhreagra ar an litir seo, is  
mar seo ba chóir é stiúradh:—  
(Any reply to this communication  
should be addressed to:—)

An Rúnaí  
(The Secretary)  
fé'n uimhir seo:—  
(and the following number quoted:—)



ROINN RIALTAIS ÁITIÚIL  
(Department of Local Government),  
TEACH AN CHUSTAIM  
(Custom House),

BAILE ÁTHA CLIATH  
(Dublin).

Circular No. W.3/51.



6th March, 1951.

*clm*

A Chara,

I am directed by the Minister for Local Government to refer to this Department's Circular No. W.2/51 dated 19th February, 1951, regarding the uncertainty of the fuel position and the need for immediate action by local authorities to provide for their fuel requirements by the production of turf and to request that you will be good enough to supply on or before the 19th of this month as firm an estimate as possible of the quantity of turf proposed to be produced by the Council. If the Council is unable to produce a sufficient quantity of turf for itself, please state what arrangements are proposed to have the balance of the Council's requirements produced by other local authorities.

Mise, le meas,

*Ga Mheas*

*Write to Board  
W. 3/51*

To/  
Each Manager.

*4000 tons for  
M. H.  
3000 tons for City House*

*Attach details of fuel  
requirements for City House  
of Municipal Hospital,  
M. H.*



JOHN McGRATH,  
SECRETARY.

Telephone :  
NENAGH Nos. 57 & 58.

COMHAIRLE CHONNDÁE THIOBRAID ARANN (THUAIDH)  
TIPPERARY (N.R.) COUNTY COUNCIL

THE COURT HOUSE

NENAGH 7th March, 1951.  
CO. TIPPERARY

IN REPLY PLEASE  
QUOTE REFERENCE



Dear Sir,

I wish to acknowledge receipt of your letter of 5th inst. concerning supplies of turf. I am sending copy of your letter to the County Surveyor, and will write to you further in a few days.

Yours faithfully,

*J. Warran*  
County Manager.

The City Manager,  
Town Hall,  
Limerick.

PS/GH



5th March, 1951.

Dear Sir,

I shall be glad if you will let me know if your County Council are producing any surplus turf for sale to Institutions other than your own County Institutions for the year 1951. If so, you might let me know if there is any possibility of your being able to supply Limerick Mental Hospital or City Home with a quantity of turf.

It has also been represented to me that a number of people in the City of Limerick will be prepared to cut their own private supply of turf, and I shall be glad if you will let me know if there are any bogs adjacent to the City or within a radius of say, 20 miles of it which your Council would be prepared to develop and make available for the use of private individuals.

Yours faithfully,

City Manager.

D. Blackwell, Esq.,  
County Manager,  
Clare County Council,  
Courthouse,  
ENNIS.

Limerick County Manager,

Tipperary County Manager (N.R.)



C. STENSON, B.E.; M.I.C.E.I.  
CITY ENGINEER  
Sutón 456  
(Telephone 456)



HALLA NA CAITHAC  
(CITY HALL)

Luimneac.  
(LIMERICK)

LIPD/EC/2/1/5(88)

57930

23rd February, 1951.



Dear Sir,

In reply to your letter of 9th instant, I set out hereunder approximate requirements of turf in the event of no coal being available:-

Fire Station	...	...	...	...	70 tons annually
City Library	...	...	...	...	60 " "
Town Hall	...	...	...	...	70 " "
Strand Barracks	...	...	...	250	" "

Yours faithfully,  
450

L. Stenson  
Stenson

City Engineer.

M. Macken, Esq.,  
City Manager.



L/1PD/EC/2/1/5(89)

UIMH. THAGARTHA  
(Reference No.)



AN ROINN RAILTAIS AITIÚIL  
(Department of Local Government),

TEACH AN CHUSTUIM  
(Custom House),

BAILE ATHA CLIATH.  
(Dublin).

Circular No.  
W.2/51.

19th February, 1951.

TURF PRODUCTION CAMPAIGN, 1951

A Chara,

I am directed by the Minister for Local Government to refer to this Department's Circular T.1/51 dated 19th January last and to state that in view of the uncertainty attending coal imports, it cannot be assumed that coal will be available for institutions etc. in the 1951/52 season or in the seasons immediately following. Local authorities are advised, therefore, in their own interests to plan on the basis that coal will not be available and to arrange without delay to cut as much turf as can be harvested and ricked in a position easily accessible for loading and delivery.

For this purpose turf production should be given priority over other works during the appropriate season.

SURVEY AND ACQUISITION OF BOGLAND

Where it has not already been done, it is suggested that immediately the Council decide to embark on a turf scheme, a survey of bogland in each area should be carried out.

Emergency Powers (No. 310) Order, 1944, under which bogs can be acquired, worked or leased has been continued in force up to the 31st December, 1951. It is suggested that Vesting Orders should cover the two-year period allowed by the Order. If the bogs are not required for the full period, they can be returned to the owners on the cessation of activities. Local authorities will, no doubt, exercise discretion in regard to acquiring bogs where it is clear that the best interests of the turf campaign would be served by leaving private producers



in possession of bogs which they are at present working satisfactorily. In addition to acquiring bogs for their own purposes, the Minister trusts that local authorities will encourage and facilitate private turf production by acquiring and developing, where necessary, bogs for letting to persons unable to meet their needs.

Local authorities who are not in a position to produce turf in their own area owing to lack of bogland should seek the co-operation of another local authority in meeting their needs on the basis of that authority's average production cost or, if necessary, on a specially agreed basis.

#### CONTRACT ARRANGEMENTS

It has been represented to the Minister that the fuel requirements of certain institutions have in past years been supplied by private producers of hand-won turf and that a discontinuance of this arrangement would disrupt private turf production in the areas concerned. The Minister, if furnished with particulars of these cases, would be disposed to raise no objection to the arrangements being continued, but he would urge that the target of turf to be produced by direct labour should not be automatically reduced to the extent of the proposed purchases of turf.

#### BOG DEVELOPMENT

1. Development works such as drainage and the making and repair of bog roads should, where necessary, be put in hands at the earliest possible date.

Grants for works under the Local Authorities (Works) Act, may be used for drainage and for repair of bog-roads which in the opinion of the local authority have sustained or are likely to sustain damage from flooding, land slide, subsidence or other similar occurrence. This applies only to bogland owned or acquired by the local authority for its own use or for



letting or over which the local authority has acquired a right of turbary. In proposing any work for execution under the Act, local authorities must satisfy themselves that the work proposed can be properly carried out under the powers of the Act. Particulars of any works proposed should be submitted on Form RPB/1 or RPC/1 as may be appropriate. The certificate which is part of either form should, of course, accompany any schemes submitted. In addition, an estimate of the quantity of turf which is likely to be produced whether by the local authority or by private enterprise in the area to be served by the proposed works should be given.

Subject to the approval of Dáil Éireann, grants will be made available in due course to recoup expenditure necessarily incurred in the making and repair of bog roads (other than repairs carried out under the Local Authorities (Works) Act) on bogland owned or acquired by the local authority either for letting or for their own use or over which the local authority has acquired a right of turbary. In the meantime the expenditure under this head should be financed from the Turf Production Account and, where necessary, overdrafts will be authorised. Proposals for expenditure on bog roads (other than works to be executed under the Local Authorities (Works) Act) should be submitted to the Department as soon as possible on Form T.2 of which a specimen is attached. In any case where development works whether roads or drainage on bogs acquired by local authorities are a matter of urgency, they may be commenced without the Minister's prior approval provided the estimated cost does not exceed 2/6d per ton of turf likely to be produced in 1951 in the bogs affected. Particulars of works so commenced should be notified to the Department, together with the appropriate forms noted above.



It is appreciated that development work on some bogs may involve operations under the grant arrangement referred to in the foregoing paragraph and under the Local Authorities (Works) Act. In the submission of particulars of the works a cross reference should be made on each form.

2. As indicated, the foregoing arrangements refer only to development work on bogs acquired by local authorities for their own use or otherwise. The Special Employment Schemes Office will deal with proposals to have development works whether drainage or road works carried out **on** bogs not acquired by local authorities and any such proposals that may be made to you by land holders, voluntary organisations, business firms or others should be referred for consideration to the Director, Special Employment Schemes Office, 51, St. Stephen's Green, Dublin.

#### TRANSPORT OF WORKERS

The Emergency Powers (Transport **of** Workers) (Turf) Order, 1944 is still in force. Under this Order County Engineers may, with the consent of the Minister for Industry and Commerce, issue permits to owners of vehicles to carry turf workers for reward.

Circular T.340 of the 11th June, 1942, to County Engineers suggested the adoption of certain courses regarding the insurance cover to be provided in connection with the transport in motor lorries of workers employed by County Councils on bog work. The Council's position in this matter should be examined and, where necessary, the present cover should be suitably amended.

With regard to Workmen's Compensation Insurance, some County Councils found it more economical during the previous Turf Schemes to carry their own insurance and it is assumed that consideration will be given to the matter in connection



with the present campaign.

RETURNS OF EMPLOYMENT AND PRODUCTION

A Return on Form T.1 should be forwarded each fortnight. A specimen form is attached. The figures to be furnished on the first return should cover the fortnight ending 24th February, 1951. The index figures on the form should be used where the information is sent by telegram. The importance of supplying the Returns promptly is stressed.

GENERAL

With regard to the employment of additional temporary engineering staff, the procedure applying to the recruitment of Engineers for Local Authorities (Works) Act schemes may be followed and this letter can be regarded as affording sanction to the employment of any temporary Engineers that may be necessary.

Additional copies of this Circular are enclosed for the use of the appropriate technical staff.

Mise, le meas,

R. O. Murch.

To/  
Each Manager.



FORM T. 1.

TURF PRODUCTION SCHEME

Return for fortnight ended \_\_\_\_\_

A	Maximum number of men engaged on bog development during fortnight	
B	Maximum number of men engaged on turf production during fortnight	
C	Total number of men engaged as above during fortnight (Figure will not necessarily be the total of A and B but the total number of names on the County Engineers pay sheet counting each name once).	
D	Quantity of raw turf cut during fortnight	Estimated Sale Tons (Dry)
E	Quantity of turf purchased during fortnight	Sale Tons
F	Total quantity of turf saved, stacked ready for disposal at end of fortnight	Estimated sale Tons
G	Total quantity of turf not ready for disposal at end of fortnight	Estimated Sale Tons
H	Total quantity of turf disposed of to date	Sale Tons
I	Total number of bogs worked during fortnight	
J	Quantity of Turf for which contracts have been issued (See Department's Circular W.2/51 of 19th February, 1951.)	

Signed \_\_\_\_\_  
County Engineer

\_\_\_\_\_ County Council.



TURF PRODUCTION SCHEME, 1951

Proposals for making and/or repair of roads on or into bogs owned or acquired by the local authority for its own use or for letting or bog-land over which a right of turbary has been acquired by the local authority.

Number of Bog (1)	Name of Bog (2)	Townland (3)	Electoral Division (4)	Whether owned or acquired by the local authority for (a) own use (b) letting. (5)	Estimated quantity of turf likely to be produced by local authority. (6)	Estimated quantity of turf likely to be produced by other parties. (7)	Nature of Work (8)	Estimated Cost. (9)
					(Tons dry)	(Tons dry)		

I certify

- (1) that these works are necessary in order to facilitate turf production.
- (2) that the turf to be produced in each of the above mentioned bogs will be of sound quality.
- (3) that the above proposals do not cover works to any County Roads.

Date ..... Signed ..... County Engineer.

Signed ..... Manager or Secretary.

Note 1. Separate tracings (Scale 6 inches to 1 mile) showing the location of each of the works should be submitted. The name of the bog should be clearly marked on the tracing, which should also show the length of each proposed road.



15-391

1st February 1951.

Dear Sir,

Please let me know the amount of Coal which  
is consumed in the Hospital in one year.

Yours faithfully,

City Manager.

P.Hartnett, Esq., Chief Clerk, Mental Hospital, Limerick

and

F. Earls, Esq., City Home and Hospital.



LIPDREC/1/15 (97)

Sutan  
Telephone

58

ÓCARLANN MEABAIR SALAIR  
LIMNEAC.

MENTAL HOSPITAL,  
LIMERICK.

57501

M. O'Maicein, Esq., B.E.,  
City Manager,  
Town Hall,  
LIMERICK.

6th. February, 1951.

Dear Sir,

In reply to your letter of 1st. instant, I beg to inform  
you that the amount of Coal consumed in this hospital in one year  
comes to approx. 1,400. *lms*

Yours faithfully,

*P. Harnett*

Chief Clerk.





From

To

THE DEPARTMENT OF LOCAL GOVERNMENT

CUSTOM HOUSE

DUBLIN

QUERY

(Date)

30.1.51

(No.)

T. 1/51

Subject

Handwoven turf requirements

Please supply as early as possible the information requested in this Department's circular of 19.1.51.

*aw*



REPLY

City Manager  
Limerick



15355

31st January, 1951.

Dear Mr. Meagher,

With reference to your telephone call and to your Circular T.1/51, I desire to inform you that due to the fact that the County Manager was away I have been unable to discuss this question with him. I hope to be in Dublin next week and I will discuss the matter with you if possible.

Yours sincerely,

City Manager.

G. A. Meagher, Esq.,  
Department of Local Government,  
Custom House,  
Dublin.



UIMH. THAGARTHA  
(Reference No.)

59225



AN ROINN RAILTAIS AITIÚIL  
(Department of Local Government),

TEACH AN CHUSTUIM  
(Custom House),

BAILE ÁTHA CLIATH.  
(Dublin).

Circ. T 1/51.



19th January, 1951.

*ask  
Limerick  
Fire Station  
Limerick Town Hall*  
A Chara,

I am directed by the Minister for Local Government to refer to the conference held on the 17th instant regarding the fuel situation and to request that you will be good enough to furnish to the Department as soon as possible a statement indicating the amount of hand-won turf that would be required in a full year for (a) hospitals, institutions, dispensaries; (b) offices, and (c) machinery.

Mise, le meas,

G. A. Meagher

4000 Mt.  
2500 City Hall

To each City and County Manager.

1400 ton of Coal  
for Mt.

1000 ton of Coal  
City Hall



15-141

15th January, 1951.

Dear Mr. Meagher,

Reference to your personal note to the City Manager regarding Conference in Dublin on Wednesday next to discuss the question of Turf production, Mr. Macken has been down with the flu for the past week. He is now a good deal better and was able to come to the office for a few hours to-day. He does not, however, feel well enough to undertake the journey to Dublin and has asked me to write you so that you may convey his apologies to the Minister.


Yours sincerely,

Asst. Town Clerk.

G. A. Meagher, Esq.,  
Department of Local Government,  
Custom House,  
Dublin.



L/PD/EC/2/1/5(102)

C. or B.		Táille le n-íoc		Telegrafa an póist.		thm. an Telegrafa	
1. áda ar		s. d.		Ní mór an fuirm seo do chur le h-aon fiapruí a d'éanfar mar gheall ar an telegram so. (This form must accompany any enquiry respecting this telegram.)		Seólta.....M.	
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THE CITY MANAGER CITY HALL LIMERICK =

VENUE OF TURK PRODUCTION MEETING WEDNESDAY 3/30 PM

CHANGED TO COUNCIL CHAMBER GOVERNMENT BUILDINGS

= DEPARTMENT OF LOCAL GOVERNMENT++ CT 3/30++



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Some day you may get a  
telegram to say that you have

WON A SWEEP  
PRIZE

*Get your tickets NOW!*

HOSPITALS' TRUST (1940) LIMITED, BALLSBRIDGE, DUBLIN

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UIMH. THAGARTHA  
(Reference No.)



AN ROINN RAILTAIS AITIÚIL  
(Department of Local Government),

TEACH AN CHUSTUIM  
(Custom House),

BAILE ÁTHA CLIATH.  
(Dublin).

*Mr. Macken,  
It is requested that  
you attend in view of your  
interest in turf for Institutions.  
G.A. Meagher*

12th January, 1951.



A Chara,

I am directed by the Minister for Local Government to inform you that a Conference will be held in his room in the Custom House, Dublin, on Wednesday next, the 17th instant, at 3.30 p.m., to discuss the question of Turf production by County Councils in the current year. The Tánaiste and the Minister will be present.

I am to request accordingly that you will be so good as to arrange to attend, accompanied by the County Engineer.

Mise, le meas,

*Hanin.*

To each County Manager.