

ability to satisfactorily burn the fuel that is available in a given locality, and its quietness of operation.

DOMESTIC FUEL OILS

Furnace oils, Nos. 1 to 3, are those used for domestic heating installations as they are available in most territories and they do not require pre-heating. They are suitable for installations requiring up to 15 gal. per hour, or more, in districts where heavy oil is not available. Burners should be selected that will satisfactorily handle the grade of oil available and owners should be advised to employ only the grade of fuel for which the burner is designed, except that a lighter grade than the one specified, can be used in most any type of burner.

BURNER TYPES AND CHARACTERISTICS

There are two distinct types of oil burners used for oil heating—the natural draft burner and the mechanical draft burner. Their names indicate the manner in which the air for combustion is obtained.

The natural draft burner requires no motor and usually has no moving parts. The air for combustion is supplied by the pull of the chimney and is, therefore, dependent upon the construction of the latter. This type of burner is often incorrectly referred to as a "gravity" type burner. Gravity indicates the manner in which the fuel is fed to the burner and a gravity system is applicable to either natural draft or mechanical draft burners. This type of burner is more susceptible to changes in the weather, wind currents about the chimney and other factors which cause a variation in the draft intensity than is the mechanical draft burner, unless the effects of this variation in draft can be overcome in the design of the chimney, or in the design of the burner, or by the use of a draft regulator. A natural draft burner is usually limited to small heating loads, depending in size somewhat on the design of burner, and for best operation requires the use of lighter oils. It has in its favor a low first cost, simplicity of design, noiseless operation and requires no power for operation.

The mechanical draft burner is motor driven and often the air for combustion is supplied by a fan or blower. Generally where a fan is used it is of sufficient capacity to supply the entire amount of air for combustion when the burner is operating at its maximum capacity. Often where a blower, either centrifugal or positive pressure, is used, only a portion of the air required is supplied under pressure, the balance being induced by the injector action of the air from the blower plus the natural draft from

TABLE 1. FUEL OIL SPECIFICATIONS
(A.O.B.A. Standard)

OIL No.	NAME	APPROXIMATE GRAVITY RANGE BAUME
1	Furnace Oil Light	(36° - 40°)
2	Furnace Oil—Medium	(32° - 36°)
3	Furnace Oil—Heavy	(28°-32° and 25° Pacific Coast Diesel Oil)
4	Fuel Oil—Light	24°+
5	Fuel Oil—Medium	18°+
6	Fuel Oil—Heavy	14°+

the chimney. The air from the blower is usually used to aid in the atomization of the fuel. The fan or blower produces a more constant

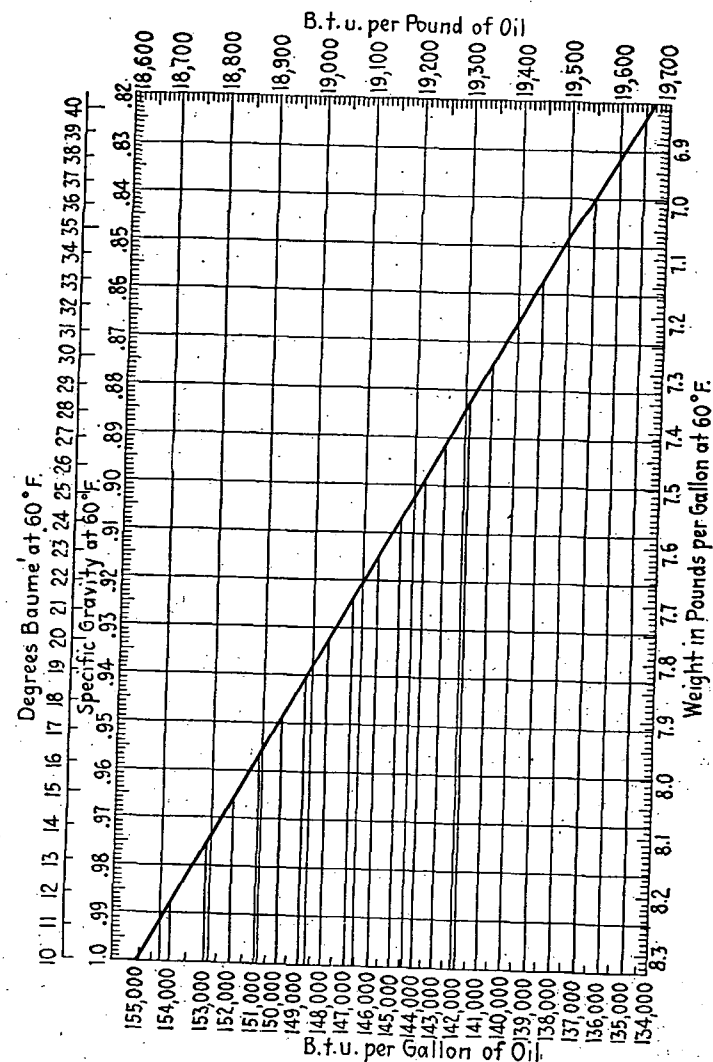


FIG. 1. HEAT CONTENT OF VARIOUS QUALITY OILS

supply of air under varying draft conditions and therefore maintains a uniformly efficient combustion condition.