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Within the past few years there has sprung up a decided sentiment in favor of forced or induced draft in land installations. The fitness of this form of draft from marine work, where tall chimneys are to be avoided, is readily conceded, and, following the precedent there established the use of mechani cal draft is extending to stationary plants.

Natural draft depends upon the difference m temperature between the gases inside and outside the chimney, and is greater accordingly as the smoke and gas from the furnace pass out in a more highly-heated state. But this entails a great loss of heat which might otherwise be used to better advantage. True, the introduction of an economizer into the flue space has the effect of absorbing some of this excess heat and returning it to the boiler through the water. Yet even the economizer dare not consume too much, or the temperature of the flue gases will be so much reduced as to seriously impair the effect of the draft.

Here, then, is where forced draft scores a point. By means of a fan or centrifugal blower the combustion can be made more perfect, owing to a nicety of regulation of the air supply, and therefore the gases will reach their maximum temperature. The economizer may then absorb every unit of heat that escapes into the stack, if possible, without detriment to the draft, since the pressure from the blower furnishes this. By this combined installation of economizer and forced draft a saving of fifteen per cent. has been made in cases where fuel was dear and the feedwater low in temperature.

More than this, it costs less to instal a mechanical draft apparatus than to build a suitable chimney for natural draft. And then it is possible to secure a more complete utilization of the waste heat than by ordinary methods. Poor grades of coal may be used, in connection with mechanical draft, to great advantage, thus lessening the cost of coal supply.

Again, there is no chance of the efficiency of the draft being influenced by the weather. If the draft tends to become weak the fan may be speeded up to keep it uniform, and if, under the stress of some sudden emergency, it is found necessary to generate more steam in a very short time, an increase in the force of the draft, directly under the control of the engineer, makes a quick response to the demand. This system is most flexible, and is adaptable to any and all situations. The Practical Engineer.

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