

COMMITTEE ON MANUFACTURING MACHINERY.

Dear Sir,

This Committee has been instructed by the General Committee of the Technologists' Association to formulate a Report on Factory Equipments. The object of the Report is to place before the Sugar Industry modern and up-to-date machinery of all classes according to their efficiencies and capacities and their relation to each other and the Factory as a whole.

It is with this object that we are sending out a number of questions to all Factories of the Industry in this country with the hope that as many replies as possible will be given.

As data compiled will be of great comparative value to all interested in sugar engineering and manufacture, we hope that all Companies will reply to these questions so that the results obtained will be of benefit to the Industry and from which we will form the basis of this Report.

As the General Meeting is being held on March the 26th and 27th, will you please return the information before the end of January to allow the Committee time to draw up the Report for circulation before the date of the meeting. This circulation will allow Members of the Technologists' Association an opportunity to study the Report and will be the means of a more intelligent discussion when the paper is read.

No individual names of Factories will be used in tabulating results—but members only.

Members of the Committee.

J. W. WICKES.

B. J. W. PEARCE.

J. R. SIMPSON.

B. E. D. PEARCE (Convenor).

MILLS.

1. How many tons of cane per hour are being crushed?
2. What is your average fibre in cane per cent.?
3. What type of cane carrier chain and slat are you using?
4. Are cane knives being used
5. How many sets and what kind?
6. What is the distance between carrier and lowest point of knife?
7. What is your motive power and method of transmission?
8. What h.p. are you using
9. What do you reckon necessary?
10. How many r.p.m. do your knives run?
11. What benefit have you obtained from the use of knives?
12. What is the position of knives relative to your crusher?
13. Have you any other method of preparing cane before crushing?
14. What does your milling equipment consist of and size?
15. State number of units and type with their drives?
16. What do you consider the full capacity of your crushing plant with canes, say of 14 per cent. fibre?
17. What type of intermediate carrier?
18. Carriers to boilers—What type of chain?
19. Method of handling cask cask and where returned to?
20. What per cent. maceration are you using?
21. How do you apply maceration water and under what pressure?

BOILERS.

1. What is the heating surface per ton of cane per hour?
2. Do you consider your boiler heating surface sufficient?
3. What do you consider necessary per ton of cane per hour for
 - (1) Making mill white sugar?
 - (2) Making 96° test?
4. What is the grate area per square feet of heating surface?
5. What is the combustion volume per square feet of heating surface as measured to the point where gases first come in contact with boiler tubes or shell?
6. Are you using water tube boilers or fire tube boilers?
7. If both—What proportion of each?
8. Are you using economisers?
9. If so—What heating surface per ton cane per hour?
10. Are you using induced or forced draught?
11. If so state size of fan in either case?
12. Are you using any means of pre-heating air?
13. If so—What type, and with what results?
14. Besides above, are you using any other system of heating water and with what success?
15. What supplementary fuel are you using and how much?
16. How do you feed this to boilers?

JUICE SCALES.

1. What type of juice scales are being used?
2. Are you finding these satisfactory?
3. Are you weighing your maceration water or circulating from volume?
4. If weighing—What type of scale are you using?

JUICE HEATERS.

1. Are you using horizontal or vertical heaters?
2. Which do you consider the most satisfactory?
3. What are the square feet of heating surface per ton of cane per hour?
4. What is your per cent. mix juice on cane?
5. What is your steam pressure on heater?
6. What do you reckon necessary—Basis basis mixes juice 100 per cent. on cane with cold macciation and steam pressure 5lbs. to the square inch pressure?

CLARIFIERS AND SUBSIDERS.

1. What type of settling tanks are you using?
2. Are they equipped with coils?
3. If so—What is the ratio of heating surface to volume?
What is the ratio of volume (in cubic feet) per ton of cane per hour?
4. What do you consider necessary?
5. What method of draining have you?

SULPHUR BOXES AND BURNERS.

1. What type of sulphur box are you using?
2. Which do you consider the most satisfactory?
3. What type of sulphur burner are you using?
4. What area of sulphur burner per ton cane per hour?

FILTER PRESSES.

1. What capacity of mud settling tanks per ton of cane per hour are you using?
2. What do you consider necessary?
3. What is your ratio of filtering area per ton of cane per hour?
4. What area do you consider necessary for—
 - (1) Mill whites?
 - (2) Raws.
5. What size of filter presses are you using?
6. Are they side fed or centre fed?
7. Do you prefer the larger or the smaller?
8. Are you using the hydraulic closing device?
9. What type of pump are you using for scum?
10. What is the capacity of the pump?
11. Have you preference for any type of pump for this class of work?
12. Are you using Montjus?
13. If so, with what success?
14. Are you using a Peck Strainer?
15. Did this relieve the work at this station?
16. Are you using any other method of screening juices?

PRE-EVAPORATORS.

1. Are you using pre-evaporators?
2. Are you using live or exhaust steam in the Colandria?
3. What use are you making of the vapours?
4. What benefit have you found in using one?
5. What heating surface per ton of cane per hour?
6. What do you consider necessary?

EVAPORATORS.

1. How many effect have you in your evaporator?
2. State heating surface per ton of cane per hour?
3. Is this sufficient?
4. What do you consider necessary for—
 - (1) Triple?
 - (2) Quadruple?
5. What is the average density of syrup?
6. What is the average density of clear juice?
7. What type of extraction pump—
 - (1) Water?
 - (2) Syrup?
8. Have you any special type of save all?
9. Have you any preference for triple evaporators to quadruple evaporators on actual experience in sugar manufacture in this country and if so, why?

VACUUM PUMP DISPLACEMENT.

1. What is the cubic feet per minute displacement per ton of cane per hour?
2. What do you consider this figure should be?
3. Are you using the wet or dry pump and what type?

PANS.

1. How many pans have you?
2. How many colandria pans and what type?
3. How many coil pans?
4. Which do you prefer, and why?
5. Have you preference for any type of pan for boiling low grades?
6. What is your total heating surface per ton of cane per hour?
 - (1) Colandria?
 - (2) Coil?
7. What is your ratio heating surface to volume?
 - (1) Calandria?
 - (2) Coil?
8. Are you using live steam or exhaust?
9. Into how many units do you consider the pan floor should be divided?
10. What ratio heating surface to tons of cane per hour do you consider necessary—
 - (1) Mill whites.
 - (2) Raws?
11. Are you using any special type of pans?

CRYSTALLIZERS AND HOT ROOM TANKS.

1. What cubic capacity per ton of cane per hour have you—
 - (1) No. 1 sugars?
 - (2) No. 2 sugars?
 - (3) No. 3 sugars (if any)?
 - (4) Low grades.
2. What type and average size of tank do you use for low grades?
3. What do you consider necessary for each?
 1.
 2.
 3.
 4.

SYRUP TANKS.

1. State the ratio of cubic feet to tons of cane per hour?
2. What do you consider necessary for
 - (1) White sugar?
 - (2) 96° test?

BLOW UPS FOR MOLASSES—RE-MELTS AND WASHES—IF ANY.

1. State the ratio of cubic feet to tons of cane per hour?
2. What do you consider necessary for
 - (1) White sugar?
 - (2) 96° test?

CENTRIFUGALS.

1. State ratio of sieving area in square feet to tons of cane per hour. Raws:—
 - (a) 96° test?
 - (b) Low grades?
 Mill Whites:—
 - (a) Precures?
 - (b) White sugars?
 - (c) Low grades?
2. In each case state what you would consider necessary?
 - (a)
 - (b)
 - (c)
3. What experience have you had with the use of mechanical dischargers—such as their effect on linings and the adaptability to 96° test sugar—white sugars and low grades. If so—What type and make have you used?
4. What type of centrifugal linings is used throughout?
5. What size and type of mesh do you consider most suitable for each job?

SUGAR ROOM.

1. How are you weighing sugars?
2. What, in your opinion, is the best way to weigh sugar?
3. Have you found automatic scales accurate and reliable?
4. Have you found automatic scales more advantageous than platform scales?

WATER SERVICE PUMPS.

1. What type of pump are you using?
2. What is the gallons capacity of pumps per ton of cane per hour?
3. Are you using dams or direct river supply?

