Column B.—Dust determinations are next made at stations *1, 2, 3 and 4,* and the count of particles per cubic foot recorded from each station. The scale of the chart is arranged for a direct reading dust counter. If some other type of instrument is used, a correction factor is, of course, necessary.

Column C.—Culture plates are next exposed to determine the bacterial content of the air. One plate is exposed at each station for two minutes, incubated, and the colonies that develop are counted and recorded for each plate. The average of all plates is plotted on the chart.

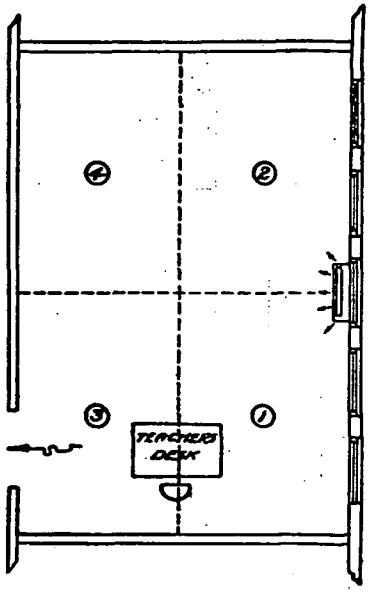

FIG. 2. STATIONS FOR MAKING TEST

Column D.—Odor determinations are made of the room as a whole.

The observer should go outside of the room or preferably outside of the building for a few moments previous to making the test. He then enters the room quickly, and makes his determinations of the air in the classroom by means of the olfactory sense, recording the results whether perfect, very faint, noticeable, etc., in accordance with the following table.

Freedom from Odors

100%	95%	90%	85%	80%	75%	70%
Perfect	Very Faint	Faint	Noticeable	Distinct	Decided	Strong

An Odorometer consists of a case of six vials each containing an odor substance in varying strength. It adds materially in classifying and standardizing odor perception. Its use, however, is not imperative.

Column E.—Samples of air are next taken at each station, and later analyzed for carbon dioxide, and results of this analysis plotted in *Column E* in parts in 10,000.

Column F.—Distribution of the air in the room is determined from the CO_2 analysis taken at the various stations.

The following example illustrates the method of making the calculation:

Stations	CO_2	Stations	Variations from the Average
1	11.1	1	11.1 − 10.2 = 0.9
2	9.4	2	10.2 − 9.4 = 0.8
3	10.4	3	10.4 − 10.2 = 0.2
4	9.9	4	10.2 − 9.9 = 0.3
Total	40.8		Total 2.2
Average	10.2		Average 0.55

$$\frac{0.55 \times 100}{10.2} = 5.4 = \text{per cent of variation.}$$

$100 - 5.4 = 94.6 =$ final per cent of distribution.

TEST DATA

BUILDING ____ DATE ____
ROOM ____ FLOOR ____ TIME ____ TO ____

STATION	TEMPERATURE DRY BULB	TEMPERATURE WET BULB	R.H.%	AIR MOTION	DUST	BACTERIA	ODORS	CO_2	SUPPLY REGISTERS AREA ☐	SUPPLY REGISTERS VELOCITY	SUPPLY REGISTERS C.F.M.	EXHAUST REGISTERS AREA ☐	EXHAUST REGISTERS VELOCITY	EXHAUST REGISTERS C.F.M.
1														
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														

PRIMARY SENSE IMPRESSION. NOTES.

NO. OCCUPANTS		WINDOWS NO.		RADIATORS	HEATER
PHYSICAL STATE		TYPE		TYPE, SQ. FT.	TEMP. DEV. WET. DRY.
AIR SPACE PER OCCUPANT		AREA			WINDOW VEL. M.P.H.
TOTAL AIR SUPPLY BY CO_2		LEAKAGE			TEST BY
AIR SUPPLY PER OCCUPANT BY CO_2		RATIO % CO_2 CONTENT			CHECKED BY
" " " " " FAN		FLOOR AREA PER PERSON			APPROVED
AIR DISTRIBUTION %					

FIG. 3. DATA SHEET FOR SYNTHETIC AIR CHART TEST

After the tests have been made as described, the observer completes his test by a study of air motion and air currents. This is done by liberated puffs of ammonium chloride in different locations in the room with a suitable apparatus. Observations of the velocity and direction of travel of these small artificial smoke clouds add materially in obtaining a true conception of the velocity and general behavior of the air currents in the room.

Plotting the Test Data

The results of the tests are plotted in each column as previously described. The following data from the test illustrated on the chart on page 485 will make the entire procedure clear:

Average Dry Bulb temp. 75 deg.—Wet Bulb temp. 59.7 deg.—Effective temp. 67.4 deg.

Effective temp. Dif. 3.4 deg.—Plot in Column *A.*
Aver. Dust Count for 4 Stations—7000 particles per cu. ft.—Plot in Column *B.*
Aver. Bacteria for 4 Stations — 3.5 —Plot in Column *C.*
Aver. Odors Percentage — 90 per cent —Plot in Column *D.*
Aver. CO_2 — 10.2 —Plot in Column *E.*
Distribution Per Cent — 94.2 per cent —Plot in Column *F.*