[Report 1964-1966] / Medical Officer of Health, Northfleet U.D.C.

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URBAN DISTRICT OF NORTHFLEET

TRIENNIAL REPORT

ON CERTAIN MATTERS

CONCERNING

PUBLIC HEALTH

FOR THE YEARS

1964, 1965, 1966.

URBAN DISTRICT OF NORTHFLEET 1964, 1965, 1966

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URBAN DISTRICT OF NORTHFLEET

Report for the years 1964, 1965 and 1966
on certain matters concerning Public Health

April 1969

To THE CHAIRMAN AND MEMBERS OF THE
URBAN DISTRICT OF NORTHFLEET

Mr. Chairman, Ladies and Gentlemen,

As soon as practicable after the end of each year it is the duty of a medical officer of health to make to the local authority a report for that year on the sanitary circumstances, sanitary administration, vital statistics and on any other matters concerning their district on which he considers it desirable to report. The report that follows is written in compliance with that duty.

The report covers three years which has advantages for an authority of this size. I regret that the completion of the report is so late but being a small department some delay in the preparation is inevitable if we are to include collect and analyse what information is available and spread the work amongst our routine commitments. The practice of compiling our own tables is time consuming but unless we do our own compilation we cannot inform ourselves on details such as quarterly death rates, place of death etc. Whether detailed analysis of local information justifies the time involved is uncertain, we can however hope that it will provide a record for future reference. "However great may be our aversion to figures we cannot escape the conclusion that the solution of most of the problems of clinical or preventive medicine must ultimately depend on them."

The information in this report contains much material provided by officers of other departments and other authorities or organisations. The progress in certain environmental matters relates to the work of the Council's Public Health Inspectors. The presentation of the statistical material is a product of the patience of the clerical assistant concerned. I thank these colleagues for their co-operation.

On behalf of my colleagues in the public health office and myself I wish to thank the Chairman and Members of the Public Health Committee for their support and interest during the period under review.

I am,
Mr. Chairman, Ladies and Gentlemen,
Your obedient servant,

Medical Officer of Health.

NORTHFLEET URBAN DISTRICT

1964 1965 1966

SUMMARY

By the end of 1966 the upward trend of the population figure had assumed a more gentle gradient and the annual increase was less than the excess of births over deaths.

During 1964-66 the rate of natural increase, i.e. excess of births over deaths was higher than the three neighbouring districts and twice that of the County of Kent.

During 1963-66 the increasing annual number of births kept step with the increase in population so that the birth rate remained constant and above that of England and Wales.

Deaths in 1966 seemed to be unusually large in number. No clear reason for this was discerned.

The causes of death 1964-66 presented the usual pattern.

The death rate from coronary heart disease in Northfleet is significantly less than that of England and Wales or London.

The cancer death rate in Northfleet was akin to that of England and Wales.

The proportion of deaths to cases is greater in lung cancer than in other forms. Although the Northfleet death rate from cancer of the lung is less than that of London the difference may not be significant.

There was one maternal death in 1966. Two sudden infant deaths occurred in 1964 and one in 1965.

Deaths from motor vehicle accidents to residents of Northfleet produced a rate similar to that of England and Wales.

Influenza mildly asserted itself in 1966. Measles appeared at the beginning of 1965 and 1967 in accordance with the biennial cycle.

The number of cases on the tuberculosis register continued to decline.

Vaccination rates for poliomyelitis, diphtheria, whooping cough and tetanus were good. Vaccination rates for smallpox might usefully be improved.

From available statistics blended with conjecture the housing needs of Northfleet are estimated and an assessment of how far they are being met is presented.

In drinking water fluorine remained at an unsatisfactory low level.

The fall out of Strontium 90 continued to decrease, the continuing decline being a consequence of the test-ban treaty.

The problem of dust from cement works is reviewed. That emission figures of individual works are not made available to us is regarded as an omission.

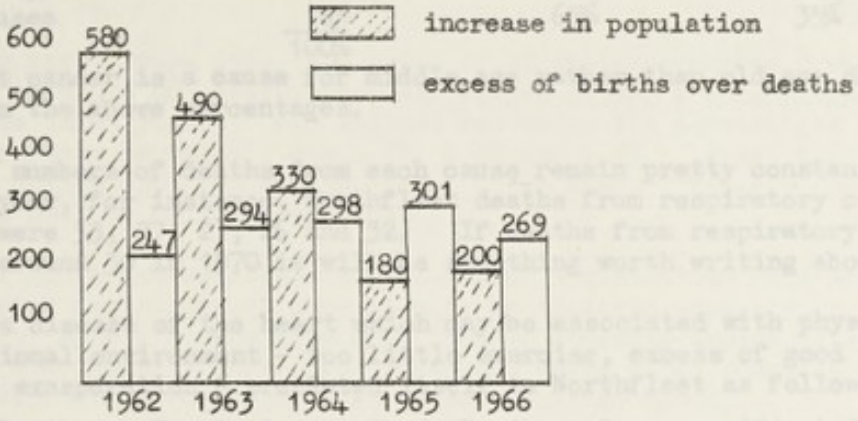
Pollution of the air with products of combustion, as shown by the indices smoke and sulphur dioxide, showed a noteworthy trend of decrease between 1962 and 1967. In regard to Smoke Control Orders the contribution of Northfleet to this satisfactory trend remained limited to its two Orders of 1961 and 1962.

Sanitary administration is reviewed.

COMMENTARY

POPULATION
Table I

Since the last census year of 1961 the annual increase in population has displayed a downward trend to figures which in 1965 and 1966 were below those of the natural increase, i.e. below the excess of births over deaths.



The Registrar General's estimates of population between census years have been shown by each census to be reliable guides. As his estimates are largely derived from statistics of housing occupancy an interpretation of the diminishing annual increase in population may be that the houses acquired by the Council prior to redevelopment were being vacated thus causing the balance of migration to be away from this district.

The rates per thousand population of natural increase for this and neighbouring districts were:

	1964	1965	1966
Dartford R.D.	10.9	10.3	9.5
Dartford Town	9.4	10.1	8.4
Northfleet U.D.	12.5	12.6	11.1
Swanscombe U.D.	11.1	8.8	9.2
England & Wales	7.0	6.9	6.0
Kent A.C.	6.4	6.2	5.8

BIRTHS
Table II

The trend has been:

	1959	1960	1961	1962	1963	1964	1965	1966
Births Northfleet U.D.	356	434	436	479	505	511	515	523
Rate adjusted by C.F.	16.7	18.9	18.3	19.7	20.0	20.0	20.0	20.0
Rate Eng. & Wales	16.5	17.2	17.6	18.0	18.2	18.5	18.1	17.7

DEATHS
Table II

These have been:

Deaths Northfleet U.D.	208	193	191	232	211	213	214	254
Rate adjusted by C.F.	11.6	10.9	10.4	12.3	11.4	11.4	11.2	12.9
Rate Eng. & Wales	11.6	11.5	11.9	11.9	12.2	11.3	11.5	11.7

The notably high number of deaths in 1966 might be partly linked with the influenza which occurred late in the first quarter which is mentioned below. Otherwise there appears to be no particular season, age group or cause of death associated with the increase of 1966.

Around 50% of deaths continued to be the proportion occurring in hospital compared with 48% in England and Wales, about 60% in Dartford R.D. and 70% in Dartford Town.

The proportion of deaths in Northfleet occurring at age 75 and over continued to be around 37% compared with around 43% for England and Wales, for Dartford Town and for Dartford R.D. If the postponement of death is an objective of public health then our 37% should be 100%.

600
500
400
300
200
100
1962
1963
1964
1965
1966

MAIN CAUSES
Table V

The pattern of the main causes of death in Northfleet continued to be similar to that of England and Wales:

	Approximate percentages		
	All deaths	Before age 75	After age 75
Circulatory disease	37%	50%	50%
Cancer	20%	75%	25%
Vascular lesions of nervous system ("Strokes")	14%	45%	55%
Respiratory disease	13%	50%	50%
Other causes	16%	65%	35%
	100%		

That cancer is a cause for middle age rather than old age death is seen from the above percentages.

The numbers of deaths from each cause remain pretty constant from year to year, for instance, Northfleet deaths from respiratory causes(R.G.) 1962/66 were 33, 27, 27, 26 and 32. If deaths from respiratory causes are not around 30 in 1970 it will be something worth writing about.

Coronary disease

This disease of the heart which may be associated with physical and emotional environment - too little exercise, excess of good food, abundant exasperation - presented itself in Northfleet as follows:

Year	Deaths	Population	Crude Death rate	Comp. factor	Adjusted Death rate
1959	29	20720	1.40	1.16	1.61
1960	27	21580	1.25	1.22	1.53
1961	31	22380	1.25	1.22	1.70
1962	36	22960	1.57	1.27	1.92
1963	30	23450	1.28	1.27	1.62
1964	45	23780	1.89	1.27	2.40
1965	36	23960	1.50	1.24	1.86
1966	40	24160	1.66	1.23	2.04
1959/66	274	182990	1.50	1.23	1.84

In the same years coronary disease presented itself in England and Wales and London as follows:

	Deaths per 1000 population	
Year	England and Wales	London A.C.
1959	1.87	1.89
1960	2.01	2.02
1961	2.07	2.05
1962	2.20	2.26
1963	2.29	2.36
1964	2.24	2.13
1965	2.38	2.27*
1966	2.39	2.28*
1959/66	2.19	2.16

*Greater London

Let us make a comparison, albeit crude, of our death rate with that of England and Wales and London. To correct for the youngness of our Northfleet population we have used the comparability factor intended for the death rate from all causes.

The thus adjusted death rate will perhaps be on the high side but nevertheless better to use this than the crude rate. To reduce the play of chance the Northfleet death rate has been calculated from the deaths over a period of eight years. The rate that results i.e. 1.84 would have a one in twenty probablilty of varying by plus or minus 0.20. It would have a one in a hundred probability of varying by plus or minus 0.26. Thus, as the difference between Northfleet rate and the other rates is more than this, it is likely that the difference is due to some other cause than the play of chance. Perhaps it is that the Northfleet population feed less exotically, use their muscles more wholesomely and contain fewer persons in jobs associated with emotional stress.

Cancer

Northfleet deaths from this cause from 1959 to 1966 (R.G.) were: 44, 45, 41, 38, 36, 38, 56, 49 - roughly 45 annually. At the South Metropolitan 1960-62 annual cancer registration rate about 75 cases could be expected annually, thus about 30 Northfleet cases must be being cured annually - or at least not having cancer as a primary cause of death.

Cancer deaths for Northfleet for 1964/66 were 18%, 26% and 19% of all deaths. The percentages for England and Wales were 19.5%, 19.4% and 19.2%. The crude Northfleet death rates for cancer for 1964/66 were 1.6, 2.2 and 2.0. For England and Wales the rates were 2.21, 2.23 and 2.25.

Cancer of the lung

In the three years 1964/66 a total of 37 deaths occurred from this cause in a total of 681 deaths from all causes giving a percentage of 5.4% for the three years. For England and Wales the percentages for these three years separately was 4.7%, 4.8% and 4.8%. About half the Northfleet deaths occurred at the age of 65 or over. Tobacco shortens pensions as well as collecting taxes.

At the South Metropolitan 1960/62 cancer registration rate about 15 lung cancer registrations were then to be expected annually in Northfleet. As the deaths from this 1964/66 averaged around 12 annually, it appears that about 3 Northfleet cases are being cured annually - a smaller proportion of cures than for other forms of cancer.

In the years 1959/66 Northfleet deaths from lung cancer were:

Year	Deaths	Population	Crude Death rate	Comp. factor	Adjusted Death rate
1959	14	20720	0.68	1.16	0.79
1960	10	21580	0.46	1.22	0.56
1961	10	22380	0.45	1.22	0.55
1962	8	22960	0.35	1.22	0.43
1963	6	23450	0.26	1.27	0.33
1964	12	23780	0.50	1.27	0.64
1965	16	23960	0.67	1.24	0.83
1966	9	24160	0.37	1.23	0.46
1959/66	85	182990	0.46	1.23	0.57

In the same years deaths from lung cancer in England and Wales and London were as follows:

Deaths per 1,000 population

Year	England and Wales	London A.C.
1959	0.46	0.64
1960	0.48	0.70
1961	0.49	0.67
1962	0.51	0.68
1963	0.52	0.70
1964	0.54	0.74
1965	0.55	0.70*
1966	0.56	0.72*
1959/66	0.52	0.68

*Greater London

Our death rate 1959/66 has a one in twenty probability of varying plus or minus 0.12 and as the difference from the England and Wales and London rates is less than this the difference is not significant.

Cancer of the uterus

The Northfleet deaths from this cause 1964-66 were 2, 2, 1. Four occurred at ages 45-64 and one at age 65-74. The figures are given to put the risks cared for by cervical screening in perspective. In the same years seven females died from lung cancer so it seems that females who have the tobacco habit are wilfully accepting a risk of cancer similar in size to the risk which cervical screening is designed to reduce.

Leukaemia

Northfleet deaths 1958-66 have been 1, 0, 3, 1, 2, 3, 1, 0, 5 average about 2. The crude death rate for the nine years is about 0.08. Rate for England and Wales 1965 = 0.06. The probability is high that the difference is due to chance. Leukaemia is of interest in regard to ionising radiations.

RESPIRATORY DISEASE

Deaths from respiratory disease 1964-66 (R.G.) were 27, 26, and 32. For these three years this gives a crude death rate of 1.2. The 1965 England and Wales rate was 1.4 and that of Greater London 1.5.

The percentages of all deaths for each year were 13%, 12% and 11%. For England and Wales in 1966 the percentage was 13%.

DEATHS RELATING TO THE WELFARE OF INFANTS AND MOTHERS
Tables VIII & IX

There was one maternal death in 1966 in hospital from thrombosis.

The infant death rates 1964-66 before and after birth were akin to those of England and Wales and the probabilities were high that the differences that occurred were produced by chance. The 12 deaths in the first day of life 1964-66 gave a rate of 7.7 per 1,000 live births. That for England and Wales was 7.1 in 1964.

All but 6 of the still-births occurred in hospital and of these 6 born at home only 2 might have had a better chance in hospital.

The absence of still-births due to birth injuries compared with 2% in England and Wales might be associated with good local midwifery.

All but 7 of the infant deaths occurred in hospital.

Three deaths were sudden:

Year	Age	Cause
1964	3 months	Ia bronchiolitis b bronchopneumonia
1964	3 months	Ia acute bronchiolitis and acute otitis media
1965	2 months	Ia bronchopneumonia b otitis media

The causes of two deaths were revealed by coroner's post mortem examinations. Sudden unexplained deaths in infancy are associated with: (1) Early bottle feeding and hypersensivity to cows milk, (2) risk of suffocation by a pillow, (3) recent infection. The above illustrate the latter.

Cancer of the uterus

Leukaemia

RESPIRATORY DISEASE

DEATHS RELATING TO THE WELFARE AND OF INFANTS AND MOTHERS

Tables VIII & IX

DEATHS THROUGH INJURY

Table X
Motor Vehicle Accidents

Northfleet U.D.

Year	Deaths: Motor Vehicle Accidents E810-/835	All Causes	Population	
1958	2	246	20370)	
1959	1	208	20720)	62670
1960	2	193	21580)	
1961	3	191	22380)	
1962	4	232	22960)	
1963	2	211	23450)	140690
1964	6	213	23780)	
1965	1	214	23960)	
1966	5	254	24160)	
	26	1962	203360	

England & Wales

1965	7515	549379	47763000
1966	7454	563624	48075300

From above:

		Deaths as % of deaths from all causes	Death rate per 1000 pop.
Northfleet U.D.	1958-66	1.3%	0.13
England & Wales	1965	1.4%	0.16
England & Wales	1966	1.3%	0.16

The above Northfleet deaths are not necessarily on Northfleet roads as deaths on the roads are assigned to the district of residence.

The Chief Constable's reports show that deaths 1961-1966 on roads in Northfleet Urban District have been 3, 3, 1, 3, 2, 3 = 15 in a population of 140690 = 0.11 per 1000 population. Dartford Rural District deaths for the same period have been 13, 16, 9, 18, 15, 10 = 81 = 0.24 per 1000 population. The difference in the rates is presumed to be due to the difference in the mileage of roads yet the Urban District despite its lower accident rate is given more scope for road safety than the Rural District.

Table X
Home Accidents

Northfleet U.D.

Year	Deaths: Home Accidents E870-E936	All Causes	Population
1961	1	191	22380
1962	1	232	22960
1963	6	211	23450
1964	4	213	23780
1965	1	214	23960
1966	0	254	24160
	13	1315	140690

England & Wales

1965	7017	549379	47763000
1966	7206	563624	48075300

From above:

		Deaths as % of deaths from all causes	Death rate per 1000 pop.
Northfleet U.D.	1961-66	1.0%	0.09
England & Wales	1965	1.3%	0.15
England & Wales	1966	1.3%	0.15
Dartford Town	1961-65	0.9%	0.09
Dartford R.D.	1961-65	0.5%	0.05

The lower rate for the Rural District is seemingly associated with different environmental conditions.

Years of life lost

This loss is calculated on an assumption that we should each live at least to the age of 85. The details of deaths in this district have been:-

Northfleet U.D.

	Age at death in years	Years of life lost	
	Motor vehicle accidents		
1961	72, 74, 79	13, 11, 6	= 30
1962	20, 62, 72, 82	65, 23, 13, 3	= 104
1963	39, 81	46, 4	= 50
1964	18, 21, 22, 64, 64, 81	67, 64, 63, 21, 21, 4	= 240
1965	19	66	= 66
1966	21, 21, 41, 72, 87	64, 64, 44, 13, 0	= 185
		Total years of life lost	675
	Home accidents		
1961	87	0	= 0
1962	85	0	= 0
1963	5, 49, 57, 61, 77, 80	80, 36, 28, 24, 8, 5	= 181
1964	1, 6, 9, 77, 81	84, 79, 76, 8, 4	= 251
1965	1	84	= 84
1966	-	0	= 0
		Total years of life lost	516

Thus in Northfleet the number of years of life lost from motor vehicle accidents is more than from accidents in the home. Furthermore, in the latter natural causes in the elderly may have substantially contributed to the death. I mention these facts for them to be considered alongside the frequent statement that there are more deaths from accidents in the home than from accidents on the road.

Suicide Table X

In the 13 years 1954-66 the number of deaths from suicide in each year was 2, 4, 3, 2, 1, 4, 1, 4, 2, 0, 1, 2, and 1, a total of 27. The aggregate of the population estimates of these years was: 282,400.

The annual death rate from this cause over these years was therefore: 27/282,400 = 9.6 per 100,000.

The rate for this and neighbouring districts was:

	Deaths 1954-66	Aggregate of population estimates 1954-66	Average population	Annual death rate 1954-66 per 100,000
Swanscombe U.D.	6	117,100	9,000	5.1
Dartford R.D.	38	661,820	50,909	5.7
Northfleet U.D.	27	282,400	21,723	9.6
Dartford Town	66	548,150	42,165	12.1

The Greater London rate for 1966 was 12.5 and that for England and Wales was 10.4.

Suicide (continued)

I imagine that the amounts by which the suicide rates of Swanscombe U.D. and Dartford R.D. differ from those of Northfleet U.D. and Dartford Town are such that they could occur by chance only rarely. These differences are therefore worthy of attention. The age group which predominated in our deaths from suicide was that of 45 years and over. Mental and physical health and also emotional and physical environment play a substantial part in suicides and there are certain environmental features which pertain to the persons of this age group in Swanscombe U.D. and Dartford R.D. which differ from those in Northfleet U.D. and Dartford Town.

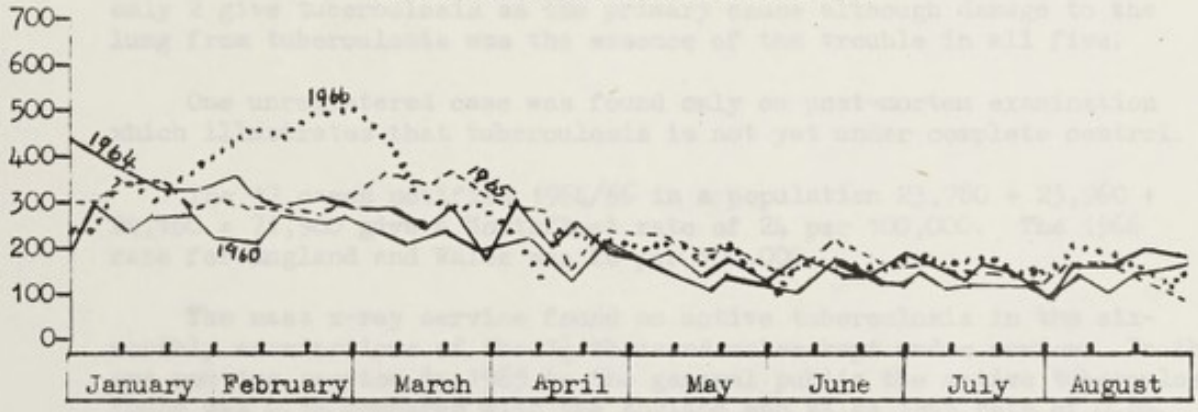
In the former the environment of the lives of this age group has been different from that of the same age group living in neighbouring urban areas. Up to 1926 Swanscombe was a parish of the Rural District and those now of middle age or older in Swanscombe U.D. and Dartford R.D. contain a higher proportion than elsewhere of those who have lived all their lives in the vicinity, have gained there livelihood from the soil or in a few cases the sea and have lived in village-like communities. They have been in competition with nature rather than with man and have enjoyed more social cohesion.

COMMUNICABLE DISEASE

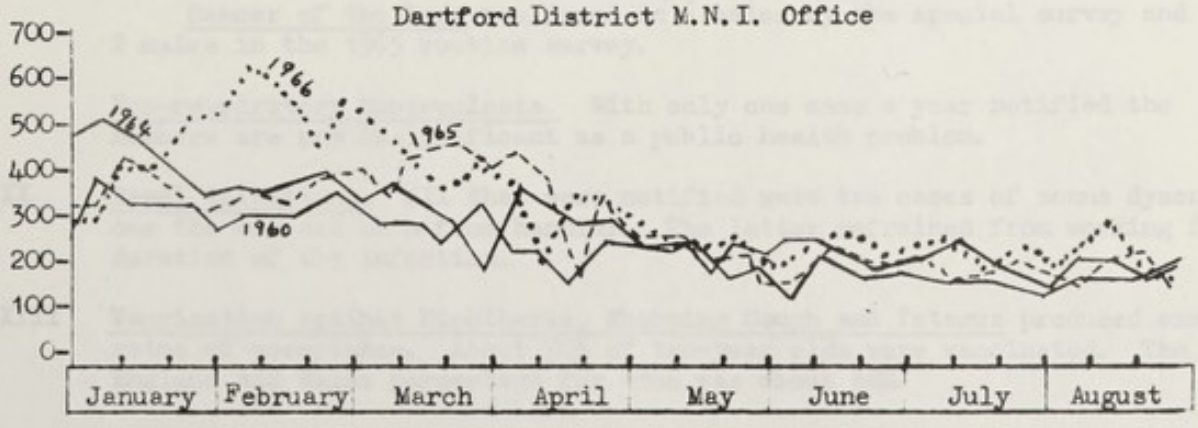
Virus infections

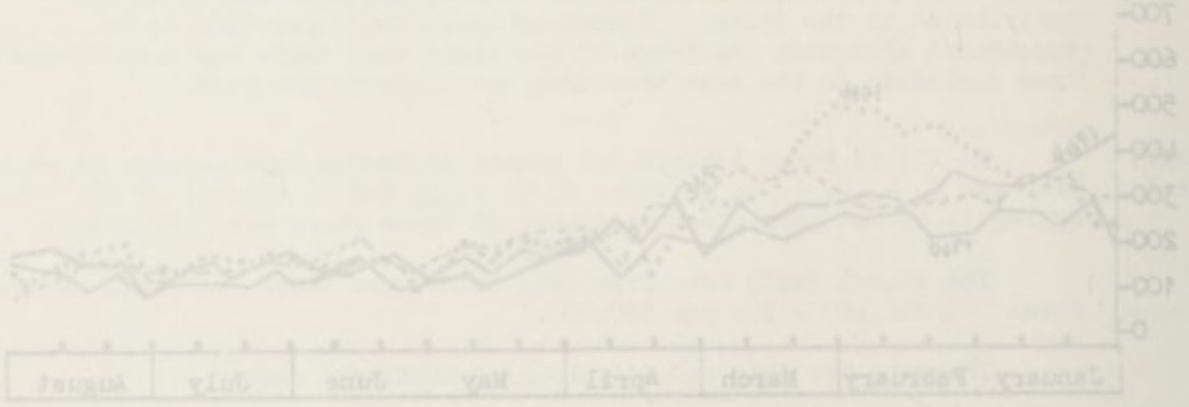
Influenza The virus of influenza was present in England and Wales in the winters of 1964, 1965 and 1966 but if we use sickness benefit as a guide it was only in 1966 that it had noticeable effect here. As mentioned above this might be considered in searching for the reason for the increased deaths of 1966. The sickness benefit figures are given in the graphs below. The year 1960 was unusual in that there was no influenza in the country, in 1964 and 1965 it was patchy and mild, in 1966 in the south it did not decline until March.

Gravesend District M.N.I. Office



Dartford District M.N.I. Office





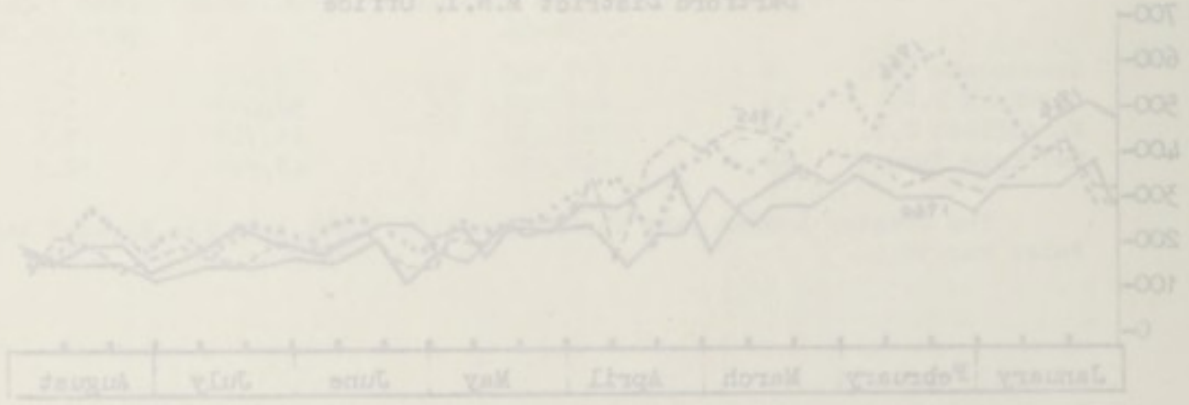


Table XI

Measles. In accordance with the biennial cycle measles was here from the end of 1964 until April 1965 and again from the end of 1966 until April 1967. What was unusual was that it appeared also in a small way in the middle of 1964 a feature also of Dartford Borough and Rural District.

Poliomyelitis. No case occurred. The last was in 1957. In 1966 in England and Wales the number of cases notified was the lowest in post-war years.

Mumps. is not notifiable. The schools informed us of its presence in 1964.

Chicken-pox. is not notifiable. The schools informed us of its presence in 1966.

Table XIII

Vaccination against poliomyelitis. The vaccination records provide vaccination rates which compare favourably with the known rates of England and Wales. That about 60% of school children have received their 4th dose of vaccine means that the community is impregnated with a worthwhile barrier against the introduction and spread of this disease.

Vaccination against smallpox. That around 60% of 1 year olds are receiving primary vaccination is good but not as good as one could expect. That only 11% of school children have immunity illustrates that we condone our population being susceptible to the disease. For financial reasons the records of vaccination are not complete. The picture contains a tinge of public and official hestiation on vaccination policy. In spite of world unrest there are signs that on a world basis the disease is coming under closer control.

Bacterial diseases Table XII

Respiratory tuberculosis. The number of cases on the register continued to decline the 1966 number being only 70% of that of 1961. Of the 17 cases notified 1964/66 11 were infectious and among these were two food handlers and the necessary attention was given to the question presented by their work. Of the 8 cases removed from the register by death chest conditions are given in 5 as the primary cause of death and of these only 2 give tuberculosis as the primary cause although damage to the lung from tuberculosis was the essence of the trouble in all five.

One unregistered case was found only on post-mortem examination which illustrates that tuberculosis is not yet under complete control.

The 17 cases notified 1964/66 in a population 23,780 + 23,960 + 24,160 = 71,900 give a Northfleet rate of 24 per 100,000. The 1966 rate for England and Wales was 26 per 100,000.

The mass x-ray service found no active tuberculosis in the six-monthly examinations of the 1½ thousand males kept under review. In the one routine service in 1965 to the general public the active tuberculosis found was 0.3% compared with the England and Wales 1965 rate of 0.8%.

Cancer of the lung was found in 6 males by the special survey and in 2 males in the 1965 routine survey.

Non-respiratory tuberculosis. With only one case a year notified the numbers are now insignificant as a public health problem.

Table XI

Bowel infections. All that were notified were two cases of sonne dysentery one the husband of a food handler. The latter refrained from working for the duration of the infection.

Table XIII

Vaccination against Diphtheria, Whooping Cough and Tetanus produced excellent rates of acceptance. About 90% of two-year olds were vaccinated. The England and Wales percentage for 1966 was about 68%.

Local need

Conjecture on the arithmetic of housing need may be an instructive though exacting exercise. With apologies for their over-simplification and their fancifulness I present the following estimates of new dwellings needed by the population of Northfleet in the six years 1961-66:

Immediate need:

(a) The 1961 census showed that 155 households were sharing accommodation and that they were occupying 73 dwellings. To relieve this sharing 155 - 73 = 82 dwellings were then required. To relieve shared accommodation Council-owned dwellings were necessary.

(b) In addition about 190 households consisted of more than one family, mostly two. Thus to relieve this sharing about 95 dwellings were then required. These also would be Council-owned.

Recurrent need:

(a) Dwellings are required after marriage or on attaining independence and are vacated after death. The number we require each year is half the annual number of births a score of years before less half the current annual number of deaths. In recent years this has been about 400/2 less 220/2 = 200 - 110 = 90 a year.

The 1961 census told us that 46% of Northfleet dwellings were owner-occupied, 28% were rented to tenants by private enterprise and 26% were rented to tenants by Council enterprise. Of the 28% renting private enterprise dwellings assume half have progeny who seek to rent Council dwellings and half have progeny who seek to own private enterprise dwellings.

Then of the 90 dwellings required each year through natural increase of the population 46% + 14% = 60% = 54 will require to be provided by private enterprise and 26% + 14% = 40% = 36 will be required to be provided by Council enterprise.

(b) If when built a dwelling lasts on average 100 years before demolition then in due course the present 7,000 dwellings of Northfleet will require replacing at the rate of 70 a year. However 100 years ago the number of dwellings in this area would be no more than 2,000 and replacement needs may at present be no more than 20 a year. Mainly Council-owned dwellings would be required as replacements.

Thus in 1961 the need of the Northfleet population was:

Immediate non-recurrent: 82 + 95 = 177 Council dwellings

Annual recurrent: Private enterprise dwellings 54
Council enterprise dwellings 36 + 20 = 56
110

Based on this conjecture the needs which Northfleet could have expected to meet in the six years 1961-66 were:

Private enterprise dwellings:

Recurrent need 1961-66 54 x 6 = 324

Council enterprise dwellings

Immediate need of 1961 177
Recurrent need 1961-66 56 x 6 = 336
513

Total dwellings needed 1961-66 837

Local progress 1961-66

The numbers of dwellings built in Northfleet in these six years were.

Private enterprise	908
Council enterprise	355
	1263

Trend in theory

Private enterprise. Compared with the need of 324 the provision of private enterprise dwellings was abundantly more than necessary for the local 1961 Northfleet population assuming their cost to be appropriate to the local pocket. A large portion of these new private enterprise houses as we know were occupied by new-comers.

Council enterprise. Compared with the need of 513 Council enterprise dwellings provision fell short of need by 513 - 355 = 158 dwellings. Bearing in mind the 177 Council dwellings estimated as the 1961 need as implied by the census the picture appears to be one of keeping up with the current demand but little ability yet to reduce need accumulated from the past. Nevertheless the figures suggest that if an additional 177 or so dwellings could be purchased by the Council in any of the years subsequent to 1961 the present Council building rate would be abreast of local need and theoretically the waiting list would disappear.

Trend in fact

The trend in fact is similar to that in theory, i.e. a slighly diminishing need as judged by the waiting list. The smallness of the downward trend may be temporary and due to the recent moves towards younger age at marriage (to which there is a limit), towards separate accommodation for the aged and towards increased expectancy of life. Also the recent phase of town redevelopment meant that more than usual dwellings were being vacated prior to demolition and their occupants rehoused

Where fact differs markedly from theory is in the size of accumulated need. Whereas the 1961 census suggested that there were 177 families in shared accommodation the waiting list had 355 and in addition 127 aged persons requiring independant accommodation. I imagine that the waiting list contained applicants in shared accommodation outside Northfleet not included in the census figure and that aged persons were not included in the census as separate households or families.

In the period under consideration the waiting list of applicants for Council dwellings was as follows:

Year	Housing need		Total	Housing preference	
	Applicants in shared accommodation	Aged applicants	housing need	Applicants desiring better amenities	Total applicants
1960	362	184	546	330	876
1961	355	127	482	339	821
1962	435	155	690	397	1087
1963	423	203	626	287	1013
1964	347	201	548	341	889
1965	319	223	542	296	838
1966	328	203	531	372	903

In the above discussion shared accommodation is emphasised as the essential housing adversity. Those applicants for Council dwellings who are already in houses fit for habitation but who seek better amenities do not represent a numerical need for rehousing and if they do move they leave a dwelling which another family can occupy.

HOUSING PROVISION IN THE 14 YEARS 1953 - 1966

Local Authority	Population mid 1953	Population mid 1967	Population increase mid 1953-mid 1967	Dwellings built 1953 - 1966				Dwellings put out of use for habitation					Increase in dwellings available		Increase in population mid 1953 - 1967 per 100 additional dwellings available
				Council Enterprise	Boundary Change	Private Enterprise	Total	Unfit and demolished (P.13 Hsg. return)	Undertakings not to use for habitation or purchased by Authority for redevelopment Not included in previous column	Hutments closed or demolished	Prefabricated bungalows demolished	Total	Number	Per 10000 1953 population	
S'combe U.D.	8614	9340	726	429	0	374	803	65	8	38	0	111	692	803	105
N'fleet U.D.	19280	24660	5380	1141	0	1504	2645	189	209	3	0	401	2244	1167	240
D'ford Town*	38430	44520	6090	1803	+467	1822	4092	333	about 20	0	5 about 1953	359	3733	971	163
D'ford Rural Area*	36610	59890	23280	2497	-467	6394	8424	250	about 30	16 about 1953	50 in 1966	346	8078	2203	289

* Dartford Town = Borough less 2000 persons in institutions

Dartford Rural Area = District " " " " "

MIGRATION IN 14 YEARS 1953 - 1966

Local Authority	Population mid-1953	Population mid-1967	Increase in population in 14 years mid-1953 to mid-1967	Natural increase in population in 14 years 1953 to 1966	Change in population due to boundary change	Balance of migration*	Balance of migration per 10000 of 1953 population
SWANSCOMBE Urban District	8614	9340	726	806	0	-80	-93
NORTHFLEET Urban District	19280	24660	5380	2723	0	+2657	+1378
DARTFORD Town	38430	44520	6090	4351	+1500	+239	+62
DARTFORD Rural Area	36610	59890	23280	7243	-1500	+17537	+4780

*As the migrants contribute their natural increase to that of their new area of residence the figures in this column are a mild underestimate.

HOUSE OWNERSHIP

Local Authority	Census 1961		% houses built 1953-1966 by private enterprise
	Council Tenants	Owner Occupiers	
SWANSCOMBE U.D.	34%	30%	47%
NORTHFLEET U.D.	26%	46%	57%
DARTFORD M.B.	26%	51%	45%
DARTFORD R.D.	24%	54%	76%

Trends in Housing and Population.

Northfleet Urban District and the adjoining Local Authority Districts have different capacities for expansion, different types of need, different proportions of housing in their ownership, different shades of policy regarding allocating tenancies and have different opportunities for redevelopment.

The housing and population changes for the period 1953-66 are given in the accompanying tables. Swanscombe U.D. and Dartford M.B. have had least room for expansion and their populations appear to have depended on natural increase for population growth. In contrast Northfleet U.D. and Dartford R.D. have received substantial numbers of house occupiers from without the district with the result that their population growth is greater. This is already surmised by those familiar with this area.—— Swanscombe is largely a peninsular protruding into the chalk pits and has the greatest proportion of Council owned housing. Dartford R.D. had expansive areas for redevelopment and has the least proportion of houses in Council ownership. The accompanying statistics are an attempt to add precision to what is locally known.

Incidentally the Kent Quinquennial Review informed us that in 1963 in Swanscombe U.D. of households who had been there since before 1952, 45% lived in Council property. Of households who had gone to live in Swanscombe U.D. and Stone ward of R.D. since 1951, 60% went from a distance of less than 15 miles. Compared with neighbouring districts a greater percentage went to Swanscombe U.D. because of availability of housing and personal ties.

RADIOACTIVITY

Fall-out Appendix VI

Fall-out of radioactive material was of interest during the period under review as a result of test explosions in the Arctic in 1958 and 1961 and in the Arctic and Pacific in 1962.

During this period the Agricultural Research Council Radiobiological Laboratory kept under observation the position in regard to the food of the country as a whole while in Kent the County Analyst kept local food supplies under observation. Iodine 131 and strontium 90 were the two radioactive materials which required most attention.

The radioactivity of iodine 131 is only short lived and this isotope was therefore not a great food problem except for infants dependent on milk, at the time of the fall-out. Because of its short life iodine 131 need only be kept under observation for a short period after weapon trials. In 1963 and subsequently no iodine 131 was detected except for an unmeasurable trace after the Chinese tests of 1964 and 1965.

The radioactivity of strontium 90 decays only slowly merely half being lost in 30 years. Chemically it is similar to calcium and consequently strontium is deposited in bones where it is an intimate influence on blood forming tissue. To be on the safe side there should be caution should the diet average more than 130 strontium units over a year. It will be seen from Appendix VI that at its worst the strontium 90 in milk reached only about 1/6th of this figure.

The graph of strontium 90 in milk is worth attention because the change from a rising curve to one falling back almost to the 1962 level is a tribute to diplomacy and the test-ban treaty. When the graph was rising people required reassurance although the figures had to rise much further to justify anxiety but now that figures are back to the level which pertained before the bomb tests the hazard is forgotten.

DUST FROM CEMENT WORKS

Previous reports.

In a memorandum of 1956 to the Joint Committee and in my reports to Northfleet U.D. Council for 1958-63 this feature of our environment was discussed. The subjects reviewed included the history of the nuisance, the methods of manufacture of cement, the methods of dust prevention, the nature of the dust including the finer dust not measured by our gauges, the relationship of the dust to health and the question of research. These matters will therefore not be repeated here.

In my report for 1962-63 I recorded the difficulties of the cement industry on the south side of the river due to the deterioration in quality of the estuarine clay then in use. These difficulties increased the emission of dust from the works and the 1954-62 trend lines of the graphs of our gauge readings showed an upward trend in the later years. Remedies however were in hand and by the end of 1963 all except Swanscombe Works were being supplied by the more satisfactory eocene clay. By the end of 1964 all Thames-side works were so supplied.

Gauge readings.

In Appendix VII of this report instead of trend lines for deposit gauge readings histograms have been used for the period 1963-5. The percentages of dust from cement works in the total solids measured for Northfleet, Swanscombe and Horns Cross(pages (iv) and (vii)) provide the most concise guide and from these a downward trend is perhaps detectable.

If Appendix VII serves no other purpose it will perform a service if it illustrates that it is one thing to gather measurements but it is another to interpret them. One of the unproductive discussions one has to witness from time to time is on the deposit collected by gauges during one month compared with that of the previous month when the difference is due merely to a change in the wind direction. Interpreting deposit gauge readings is a tantalising exercise and Appendix VII might be amplified by several more pages on wind direction, wind speed, rainfall, humidity, temperature and atmospheric pressure. Our hope is that we may overcome the vagaries of the weather by looking at averages of periods of a year or more in a survey covering say a decade. The quantity and quality of fuels used is also relevant.

In the meantime the readings to watch are the percentages of dust from cement works in total deposit - the size of the sample varies with the weather but the constituents of the sample vary with the local emissions.

Dust emissions.

However what can give us precision is information on the amount of dust being emitted from the works' chimneys. The Annual Reports of the Alkali etc. Works Inspector provide the following data:

Thames-side Cement Works

	1963	1964	1965	1966	1967
Average "dust slip" grains per cubic foot	0.4	0.3	0.3	$<$0.3	$<$0.3
"mass emission" with that of 1964 as 100%	?	100%	87%	76%	59%
Cement production (million tons)					
Thames-side	4.5	?	?	?	decreased
England & Wales	12.9	15.5	15.5	15.3	15.8

We are grateful for the foregoing useful information on emissions but it has the following short-comings:

(a) Dust "slip" in grains per cu. ft. pays no regard to the method of manufacture. The semi-dry process of manufacture creates a smaller volume of flue gas than the wet process and therefore grains per cu. ft. "slip" represent less emission of dust with the semi-dry process than with the wet process. Less important may be the possibility that with old plant adventitious air may gain entry and cause dilution to the flue gases or variations in the volumes of air used for combustion may cause dust concentration to be erroneously represented.

(b) Emission is created by production and therefore we should have the related figures of local production. These latter figures are not given. Without any change in efficiency mass emission could be reduced by a reduction in production.

(c) The data for individual works are not given. They do not tell us therefore where there is scope for lessening the dust nuisance.

(d) The data for individual months are not given and therefore they cannot be easily related to monthly gauge readings or periods of exceptional weather.

Dust/ clinker ratio.

In certain other industries we can observe an individual chimney and compare the darkness of the particulate emission, i.e. smoke, with a shade chart and by recording also the length of time of emission we can assess the efficiency of the works in avoiding smoke nuisance. We can then assess the scope for improvement.

With the cement industry the particulate emission is light grey and is masked by steam so that one cannot by observing the chimney emission assess the efficiency of a works in reducing dust nuisance. However an index of efficiency in an individual works does exist. It is the ratio, expressed as a percentage, borne by the dust emitted from the chimney in a given period to the clinker produced by the kiln in that same period.

This index is not made available to us. The Member of Parliament for Dartford in 1963 kindly pressed the Minister of Housing and Local Government for this dust/clinker ratio to be provided for individual works but the Minister would only agree to have average figures for all Thames-side works included in the Annual Reports of the Chief Alkali Inspector and these I have given above. They do not include the dust/ clinker ratio for which we asked.

The reasons for not giving us the figures for individual works are that the Ministry are given them in confidence.

At the end of last century the confidential nature of the information that a person was suffering from infectious disease was the reason for opposing the notification of such disease to the public health authorities. By making notification a statutory duty of both the head of the household as well as the attending medical practitioners this objection was met.

With this analogy in mind it would not seem unreasonable to make it a statutory duty for both the cement industry as well as the Alkali etc. Works Inspectorate to keep local authorities informed on clinker production and of the results of emission sampling at each cement works in their district. Certain large County Boroughs have been given responsibilities under the Alkali etc. Works Act for the industries in their areas. It would of course be out of the question for an Urban District of the size of Northfleet to have such involved technical responsibilities. Nevertheless not only should the best practicable means be taken to avoid dust nuisance but they should be seen to be taken and there seems no technical reason why a local authority however small should be denied the information of emissions from individual works.

Range of dust control.

Without this information we have to rely on conjecture. The roofs of houses in Stone, Swanscombe and Northfleet are indicators of the effectiveness of dust control for the individual works in the vicinity. In Stone the roofs show most evidence of dustiness, while in Northfleet the roofs show least. The cement works at Stone have the lowest chimneys and they are in two groups. I imagine the Stone works have the oldest plant. The cement works at Swanscombe for several years now have emitted their effluent mainly from one high chimney. The cement works at Northfleet since 1959 have been provided with a high chimney (another low one albeit still in use), have been equipped with electro-static precipitators that are up-to-date and have had in use a semi-dry process of manufacture.

It thus appears that in Stone emission from the works is greatest and dispersion is least, while at Northfleet emission is least and dispersion is greatest.

As seen from the reports of the Alkali etc. Works Inspectorate the average "slip" at Thames-side is 0.3 grains per cubic foot. As the Alkali etc. Works Inspector disapproves of emissions of above 0.5 grains per cubic foot I imagine that to produce an average of 0.3 the range of emissions at Thames-side is 0.1 to 0.5 grains per cubic foot. If this is so the likely figure for the Stone works is 0.5 while that for the works at Northfleet is 0.1. One can surmise therefore that there is substantial technical scope for improvement at Stone but little at Northfleet.

This surmise could be tested by the provision of figures relating to dust control at each individual works and such indices would be useful to those with amenity and planning responsibilities.

Level of dust for complaint

Many industries have reduced atmospheric pollution by more efficient combustion of fuel but this contribution to the cleaning of the air has been assisted by the added incentive of fuel economy. No such incentive assists the desire of the cement industry to reduce dust emission which duly involves expenditure that is entirely unproductive. Furthermore we can presume that the nearer the industry gets to perfection the more expensive further improvement becomes. Although the cement industry is notorious for their dust emission it is not the only industry causing dust nuisance.

I have already outlined the need for precision in the information we are given regarding dust emission. To complement this we also need precision in regard to the amount of dust that is acceptable in the district and can be received without complaint. Such a figure might be flexible and by being linked with weather conditions could justify variation of dust arrestment with the weather.

Directly or indirectly the population of the district has a vested interest in the prosperity of the industry but some housewives have a greater interest in reducing the housework the dust creates. Those who have the welfare of the housewife in mind should have some guidance on how much of the industry's resources they can expect to be devoted to dust arrestment. Complete dust arrestment is impossible and may be unnecessary - what degree of perfection should the industry strive to attain?

Future production.

The above observations are in part the product of chair-borne contemplation of the reports of the Alkali etc. Works Act Inspectorate. The technicalities of the local cement industry are of course beyond the range of my practical experience. Nevertheless I submit these observations as a means of seeking consideration for this subject. It is a tug o' war between housewives and cement economics. At the time of writing it has become evident that the cement industry will increase its production in Northfleet within the next decade and here the proximity of that industry to residential development is unique.

Winter averages. Appendix VII

Pollution is at its worst in winter when space-heating demands increased emissions from domestic, commercial and industrial premises. It is expedient therefore to assess the local position from the winter measurements made by the Council's Public Health Inspectors.

As a means of indicating the coldness and the space-heating required each winter I have given the "degree days" which are detailed in Appendix VII.

Smoke.

In my report for 1962-63 I gave for comparison the readings of Islington 1 a site in inner London among high density housing with industry, and Sheffield 60 (Redmires) a site in open country 5 miles west of the city centre. The winter of 1962-63 was exceptionally severe and authorised fuels in many places including Northfleet were in such short supply that Smoke Control Orders were suspended. In these 3 sites a distinct downward trend has since been recorded with the result that in the winter of 1966-67 all 3 gauges showed no more that half the concentration of the winter of 1962-63. This displays in figures what anybody with a memory of 10 years ago can see with their eyes when looking over the house tops in London.

Downward trend.

The concentrations have been:

Winter	1962-63	1963-64	1964-65	1965-66	1966-67
	micrograms per cubic metre				
Northfleet Code X	119	118	82	76	63
Islington 1. Code A2	269	188	178	142	102
Sheffield 60 (Redmires) Code 01	92	71	59	51	38
Degree days	4111	3574	3296	3111	2880

Because we in Northfleet have least scope for improvement our downward trend has the least proportional fall but in 1966-67 Northfleet retained the same relative position thus our concentrations remained below those of inner London and higher than those in the open country of the coal-burning North.

From Appendix VII one can see that from here to Swanley Northfleet appears to share with the neighbouring gauge sites the benefit of nearby expansive open space the exception being the Dartford site which has a more congested urban environment.

Incentives.

None of the local gauge sites is in a smoke control area and it may be conjectured that the downward trend locally is due to the downward trend nationally. The downward national trend has followed not only the improvements initiated under the provisions of the Clean Air Acts but also the changes due to choice made spontaneously in the general population. More people are preferring to use oil, gas or electricity for reasons of convenience and there is continuing improvement in the efficiency of combustion of the fuels used by industry. The air of the nation has become cleaner and Northfleet has shared this benefit. Northfleet has contributed to this improvement by its two Smoke Control Orders. The contribution could be greater but proposals for a third Smoke Control Area did not survive scrutiny of its economic aspects in 1966.

Sulphur dioxide.

Since the winter of 1962-63 concentrations have been:

Winter	1962-63	1963-64	1964-65	1965-66	1966-67
	microgrammes per cubic metre				
Northfleet Code X	190	125	164	152	127
Islington 1. Code A2	326	322	297	278	231
Sheffield 60 (Redmires) Code 01	115	94	93	84	65
Degree days	4111	3574	3296	3111	2880

Downward trend.

Thus there is also a downward trend in the SO_2 figures but the gradient is less marked than with the smoke figures. The Clean Air Act can reduce and nearly eliminate smoke but up to 1967 it could only disperse SO_2 through high chimneys.

For some reason unexplained the local gauges together with others in the South East showed a noticeable drop below the trend-line in the winter ending March 1964. The smoke figures did not show this feature so mild weather and diminished space-heating were not responsible for the diminished SO_2 pollution observed. It may have been due to a recession in industry calling for less fuel consumption for power or perhaps the weather was conducive to the dispersal of the SO_2 from industry's high chimneys. I don't know.

Locally the gauge at Horns Cross (Stone) has had the lowest winter readings which is no doubt associated with the sparseness of the housing there and perhaps with the fact that the cement industry emits an alkaline effluent.

Smoke/ SO_2 ratio.

In warm weather the heat of the ground expands the adjacent polluted air, gives it bouyancy causing it to rise, disperse and be replaced by air from elsewhere. Thus dilution and dispersal of pollution is related to temperature and if we wish to follow the trend of pollution we should use an index which is as far as possible unaffected by season.

Its value.

In an area like Northfleet one substantial portion of pollution is emitted by industry, is constant and is mainly SO_2. The other substantial portion is from domestic coal fires, is variable and contains more smoke than SO_2. The weather decides how much pollution is contained in air drawn into each gauge. The variable domestic pollution determines the proportions of the constituents of the mixture that enters. Thus the smoke/SO_2 ratio gives us an index of domestic coal-burning pollution less influenced by weather than the absolute measurements. In Appendix VII page 75 this is further explained.

The ratios for the Northfleet gauge suggest that its environment in recent years in the periods April to September has contained about 20% domestic coal-fired pollution and in the periods October to March has contained about 40% domestic coal-fired pollution. From 1962-63 winter onwards the Northfleet ratios have not been incompatible with the downward trend.

Smoke/SO_2 ratios

Downward trend.

Winter	1962/63	1963/64	1964/65	1965/66	1966/67
Northfleet	0.70	0.94	0.50	0.50	0.50
Islington 1	0.83	0.58	0.63	0.51	0.45
Sheffield 60	0.80	0.76	0.64	0.61	0.58

An incidental feature of the Smoke/SO_2 ratio is the hunch that smoke by itself is perhaps harmless, that SO_2 by itself is harmless in the quantity possible but that, when mixed, smoke and SO_2 are harmful and the smaller the ratio the less the capacity for harm.

Peak concentrations.

If one has been mindful of the effects of pollution on health in contemplating the above paragraphs it would be in relation to the effects of pollution over numerous years on the texture of the organs inside the chest, i.e. the increased incidence of chronic bronchitis with subsequent over-burdened heart and increased incidence of lung cancer.

There is another aspect to consider which is a feature of the acute exacerbations of the pollution experienced in time of fog. Such times of peak concentrations are hazardous to those with established chest disease, i.e. the chest cripples.

The Greater London population in 1952 experienced 4,000 deaths accelerated by the December fog and 10 years later experienced 700 deaths accelerated by a similar fog in 1962.

As mentioned in my report for 1962-63 the Medical Officer of Health of the London County Council subsequently concluded at that time "The level of pollution (in London) begins to exert a marked effect upon mortality when the daily concentration reaches 2000 micrograms of black suspended matter and 1150 microgams of acidic gases per cubic metre of air..." (Scott Med. Off. 16.10.59).

The maximum concentrations of Winter 1962-63 were those of the December fog namely:

	Smoke	SO_2
	micrograms per cubic metre	
Northfleet	1055	1068
Islington 1	3974	3303
Sheffield 60	371	492

In contrast with the above in the period April 1963 to March 1967 the highest smoke reading in Northfleet was 534 in February 1964 and the highest sulphur dioxide reading was 562 in December 1965. Thus at the time of the 1962 fog Northfleet did not experience concentrations of pollutants lethal to chest cripples and in subsequent years peak concentrations have been substantially less.

Hindrance to administrative evolution

Those who serve on district public health committees are motivated by the need to improve amenity and promote public welfare but the association of these motives with public health is now less close than in the past. Housing and planning have been and are expeditiously administered but biological health being a long term project with benefits which need a memory to discern has not received and is not receiving the nuture required for administrative evolution. With the passage of changeless years our local government pattern of district health management has become obsolete.

Two fighting wars, two slumps and one cold war have not helped public health evolution in the districts. On biological public health as opposed to amenity we expend but little of the community's resources and as the administrative wastefulness is expressed by diminished opportunity to serve it is not evident from without.

It is not expedient to discuss here the deficiencies of the position of your district medical officer of health as re-organisation is now on the horizon and the tide of events will we hope bring in the necessary readjustments.

District Public Health duties

I will outline a possible shape of these readjustments.

A large portion of the work of a district public health department concerns the improvement and management of amenity which responsibility is eminently appropriate for the lesser local authorities in which sphere they have some most wholesome qualities.

The remaining portion of the work is the task of acquiring information on all matters likely to affect the health of the district and this is a task appropriate to large authorities.

For brevity I omit discussion on the management of outbreaks of disease, in these Nature is our ally. I have in mind the hazards of man-made environment demanding man-made control. For these, objective opinions based on population studies will be the influences which will initiate future long-term public health action.

The gathering and management of statistical material will constitute a substantial part of the work and sizeable populations will be appropriate as gathering grounds of data. The computor will take over from the slide-rule.

Future administrative evolution

Clues for the future re-organisation may be found in the following:

1) Work to improve amenity to be separated from work to improve public health;
2) Amenity work to remain with local government;
3) Executive side of public health to be the province of the national health service through area health boards;
4) The advisory side of public health work to be provided by a local office of health information linked with the organisation of the Registrar General;
5) This local office be directed by a medical actuary who would have the responsibility of guiding the management of all local health and sickness records, would be free to initiate or assist in any statistical inquiry he deems wise, would have authority to require relevant information to be provided to him.

JHH/CEK.

TABLE I.

SOCIAL CONDITIONS

Northfleet U.D.

Area (acres)		3,770
Population (Census 1931)		16,223
" (Census 1951)		18,921
" (Census 1961)		22,092
Mid-year home population 1964 (Registrar General's estimate)		23,780
" " " " 1965 (" " ")		23,960
" " " " 1966 (" " ")		24,160
Number of domestic and agricultural dwelling houses assessed to rates:	31.3.64	7,496
	31.3.65	7,662
	31.3.66	7,715
Rateable value:	31.3.64	£1,339,876
	31.3.65	£1,385,723
	31.3.66	£1,408,298
Sum represented by 1d. rate:	31.3.64	£5,514
	31.3.65	£5,660
	31.3.66	£5,727

POPULATION. Growth of the population is due to natural increase (i.e. excess of births over deaths) and immigration, both being related to new houses built.

Year	1959	1960	1961	1962	1963	1964	1965	1966
Est. mid-year home population	20,720	21,580	22,380	22,960	23,450	23,780	23,960	24,160
Increase on previous year	+350	+860	+800	+580	+490	+330	+180	+200
Excess of births over deaths	148	241	245	247	294	298	301	269
Immigration or emigration	+202	+619	+555	+333	+196	+32	-121	-69
Houses built	376	73	150	295	193	160	168	297

COMPARABILITY FACTORS. When local crude birth and death rates are multiplied by the area comparability factors they are comparable with the rate for England and Wales or with the adjusted rate for any other area. In the last eight years the factors for births (governed by the proportion of women aged 18-44 years) and for deaths (governed by the proportions of all age groups) have been as follows:-

Year	1959	1960	1961	1962	1963	1964	1965	1966
Births	0.97	0.94	0.94	0.94	0.93	0.93	0.93	0.93
Deaths	1.16	1.22	1.22	1.22	1.27	1.27	1.24	1.23

UNEMPLOYMENT. The number unemployed aged 18 years and over of Gravesend and district registered in the first half of December with the Employment Exchange were:

	1959	1960	1961	1962	1963	1964	1965	1966
Males	342	268	309	525	473	223	181	541
Females	145	76	85	134	101	85	65	115
Persons	487	344	394	659	574	308	246	656

ILLEGITIMATE BIRTH RATE

	1959	1960	1961	1962	1963	1964	1965	1966
Northfleet U.D.	22	44	32	38	38	51	39	55
Swanscombe U.D.	29	15	37	39	64	56	34	24
Dartford B.	37	35	33	40	46	55	50	58
Dartford R.D.	30	30	22	29	30	37	44	54
Kent A.C.	45	46	49	53	56	62	68	67
England & Wales	51	54	59	66	69	72	77	79

POPULATION OF YOUNG PERSONS. A guide is necessary to the young population in the district in order that we may form an idea from vaccinations done of the proportion who have been given immunity to certain diseases. A rough estimate can be made from the births which have occurred in the district in the past. This assumes a stable population and does not take into account deaths after one year of age or the balance of those coming into the district over those leaving.

Year	Births Number	Infant deaths	Infants surviving to 1 year	Age Dec. 31st 1964	1965	1966	Approximate Population Age Dec. 31st 1966	1965	1964
1966	523	30	483	-2	-1	0			
1965	515	11	504	-1	0	1			
1964	511	29	482	0	1	2	0-4 yrs = 2,423		
1963	505	14	491	1	2	3		0-4 yrs = 2,367	
1962	479	12	463	2	3	4			0-4 yrs = 2,285
1961	436	9	427	3	4	5			
1960	434	12	422	4	5	6			
1959	356	7	349	5	6	7			
1958	349	10	339	6	7	8	5-11 yrs = 2,464		
1957	342	6	336	7	8	9		5-11 yrs = 2,344	
1956	303	5	298	8	9	10			5-11 yrs = 2,251
1955	300	7	293	9	10	11			
1954	315	8	307	10	11	12			
1953	334	5	329	11	12	13	12-15 yrs = 1,198		
1952	280	12	268	12	13	14		12-15 yrs = 1,136	
1951	305	11	294	13	14	15			12-15 yrs 1,109
1950	252	7	245	14	15	16			
1949	311	9	302	15	16	17	16-18 yrs = 867		
1948	334	14	320	16	17	18		16-18 yrs = 1,021	
1947	427	28	399	17	18	19			16-18 yrs = 1,100
1946	393	12	381	18	19	20			

Population of children.	Dec. 31st	Birth years	Est. population
(i) aged 5-11 years	1961	1950-56	2034
	1962	1951-57	2125
	1963	1952-58	2170
	1964	1953-59	2251
	1965	1954-60	2344
	1966	1955-61	2464
(ii) aged 5-14 years	1965	1951-60	3235
	1966	1952-61	3368

NATURAL INCREASE

	Births	Deaths	Natural increase	Population	Rate of natural increase per 1000 population
1953	334	205	129	19280	6.7
1954	315	199	116	19450	6.0
1955	300	200	100	19630	5.1
1956	303	215	88	19850	4.4
1957	342	198	144	20110	7.2
1958	349	246	103	20370	5.1
1959	356	208	148	20720	7.1
1960	434	193	241	21580	11.2
1961	436	191	245	22380	10.9
1962	479	232	247	22960	10.8
1963	505	211	294	23450	12.5
1964	511	213	298	23780	12.5
1965	515	214	301	23960	12.6
1966	523	254	269	24160	11.1

TABLE II BIRTHS & DEATHS, 1964, 1965 & 1966

Northfleet U.D.

	1964			1965			1966		
	M	F	P	M	F	P	M	F	P
Live Births:									
Legitimate	249	236	485	254	241	495	253	241	494
Illegitimate	10	16	26	11	9	20	20	9	29
	259	252	511	265	250	515	273	250	523
Deaths, all causes:	117	96	213	116	98	214	138	116	254
Pregnancy, child-birth, abortion:	-	-	-	-	-	-	-	1	1*
Still Births:									
Legitimate	7	6	13	6	2	8	5	3	8
Illegitimate	-	-	-	1	1	2	-	-	-
	7	6	13	7	3	10	5	3	8
Deaths 0-6 days:									
Legitimate	3	4	7	-	2	2	6	2	8
Illegitimate	-	-	-	-	-	-	1	-	1
	3	4	7	-	2	2	7	2	9
Deaths 7-27 days:									
Legitimate	-	1	1	-	-	-	1	-	1
Illegitimate	-	-	-	-	-	-	-	-	-
	-	1	1	-	-	-	1	-	1
Deaths 28-364 days:									
Legitimate	1	5	6	4	-	4	1	-	1
Illegitimate	-	-	-	-	1	1	-	-	-
	1	5	6	4	1	5	1	-	1
Total under 1 year:									
Legitimate	4	10	14	4	2	6	8	2	10
Illegitimate	-	-	-	-	1	1	1	-	1
	4	10	14	4	3	7	9	2	11

	Northfleet U.D.			England & Wales		
	1964	1965	1966	1964	1965	1966
Rates per 1,000 Home Population						
Crude live birth rate	21.5	21.5	21.6	18.5	18.1	17.7
Live birth rate adjusted by C.F.	20.0	20.0	20.0	18.5	18.1	17.7
Crude death rate	9.0	9.0	10.5	11.3	11.5	11.7
Death rate adjusted by C.F.	11.4	11.2	12.9	11.3	11.5	11.7
Rates per 1,000 Live and Still Births						
Maternal death rate	-	-	1.9*	0.26	0.25	0.26
Stillbirth rate	24.8	19.0	15.1	16.3	15.8	15.4
Perinatal death rate (s.bs. & deaths 0-6 days)	38.2	22.9	32.0	28.2	26.9	26.3
Rates per 1,000 Live Births						
Early neonatal death rate (deaths 0-6 days)	13.7	3.9	17.2	12.0	11.3	11.1
Neonatal death rate (deaths 0-27 days)	15.7	3.9	19.1	13.8	13.0	12.9
Infant death rate (deaths 0-364 days)	27.4	13.6	21.1	19.9	19.0	19.0

*The last previous such death was in 1962.

TABLE IIIA CAUSES OF DEATH ACCORDING TO SEX

Northfleet U.D.

Registrar General's Return

	1964				1965				1966			
	M	F	P		M	F	P		M	F	P	
All causes	117	96	213		116	98	214		138	116	254	
Tuberculosis, respiratory	1	1	2		-	-	-		1	-	1	
Tuberculosis, other	-	-	-		-	-	-		-	-	-	
Syphilitic disease	-	-	-		1	-	1		-	1	1	
Diphtheria	-	-	-		-	-	-		-	-	-	
Whooping cough	-	-	-		-	-	-		-	-	-	
Meningococcal infections	-	-	-		-	-	-		-	-	-	
Acute poliomyelitis	-	-	-		-	-	-		-	-	-	
Measles	-	-	-		-	-	-		-	-	-	
Other infect. & parasitic dis.	-	1	1		-	-	-		-	-	-	
Malignant neoplasm, stomach	3	2	5		5	-	5		1	3	4	
Malig. neopl. lung, bronchus	11	1	12		12	4	16		7	2	9	
Malignant neoplasm, breast	-	4	4	=38	-	3	3	=56	-	6	6	=49
Malignant neoplasm, uterus	-	2	2		-	2	2		-	1	1	
Other malig. & lymph. neopl's.	6	8	14		23	7	30		14	10	24	
Leukaemia, aleukaemia	1	-	1		-	-	-		3	2	5	
Diabetes	-	-	-		-	-	-		2	3	5	
Vascular lesions of nervous system	8	16	24		10	16	26		19	19	38	
Coronary disease, angina	33	12	45		23	13	36		25	15	40	
Hypertension with heart disease	-	2	2	=81	1	2	3	=79	3	5	8	=88
Other heart disease	6	18	24		13	17	30		15	15	30	
Other circulatory disease	7	3	10		5	5	10		5	5	10	
Influenza	1	-	1		-	1	1		2	2	4	
Pneumonia	7	6	13	=27	7	5	12	=26	8	3	11	=32
Bronchitis	9	2	11		4	6	10		10	5	15	
Other dis. of resp. system	1	1	2		2	1	3		1	1	2	
Ulcer of stomach & duodenum	-	-	-		1	-	1		-	-	-	
Gastritis, enteritis & diarrhoea	-	-	-		-	1	1		-	1	1	
Nephritis and nephrosis	1	-	1		-	1	1		1	1	2	
Hyperplasia of prostate	1	-	1		2	-	2		-	-	-	
Pregnancy, childbirth, abortion	-	-	-		-	-	-		-	1	1	
Congenital malformations	-	2	2		1	-	1		-	-	-	
Other def. and ill-def. diseases	8	13	21		5	10	15		16	13	29	
Motor vehicle accidents	6	1	7		-	1	1		4	1	5	
All other accidents	6	1	7		1	1	2		1	-	1	
Suicide	1	-	1		-	2	2		-	1	1	
Homicide and operations of war	-	-	-		-	-	-		-	-	-	

TABLE IIIB CAUSES OF DEATH ACCORDING TO AGE

~~Northfleet~~ U.D.

Registrar ~~General~~'s Return

1964

1964	All ages	Under 4 wks	4 wks - 11 mos	1 - 4 yrs	5 - 14 yrs	15 - 24 yrs	25 - 34 yrs	35 - 44 yrs	45 - 54 yrs	55 - 65 yrs	65 - 74 yrs	75+	Main causes
Males													
All causes	117	3	1	3	2	4	1	4	8	20	32	39	
Tuberculosis	1	-	-	-	-	-	-	-	-	1	-	-	
Malignant neoplasm, stomach	3	-	-	-	-	-	-	1	1	-	-	1	
Malignant neoplasm, lung, bronchus	11	-	-	-	-	-	-	-	1	3	4	3	=21
Other malignant and lymphatic neoplasms	6	-	-	-	-	-	-	-	-	2	3	1	
Leukaemia, aleukaemia	1	-	-	1	-	-	-	-	-	-	-	-	
Vascular lesions of nervous system	8	-	-	-	-	-	-	-	-	2	3	3	=8
Coronary disease, angina	33	-	-	-	-	-	-	1	5	8	11	8	
Other heart disease	6	-	-	-	-	-	-	-	-	-	1	5	=46
Other circulatory disease	7	-	-	-	-	-	-	-	1	1	2	3	
Influenza	1	-	-	-	-	-	-	-	-	-	-	1	
Pneumonia	7	-	1	-	-	-	-	-	-	-	1	5	=18
Bronchitis	9	-	-	-	-	-	-	-	-	1	3	5	
Other diseases of respiratory system	1	-	-	-	-	-	-	-	-	-	1	-	
Nephritis and nephrosis	1	-	-	-	-	-	-	-	-	-	-	1	
Hyperplasia of prostate	1	-	-	-	-	-	-	-	-	-	-	1	
Other defined and ill-defined diseases	8	3	-	1	-	-	-	-	-	-	2	2	
Motor vehicle accidents	6	-	-	-	-	3	1	-	-	2	-	-	
All other accidents	6	-	-	1	2	1	-	1	-	-	1	-	
Suicide	1	-	-	-	-	-	-	1	-	-	-	-	
Females													
All causes	96	5	5	-	-	1	-	1	8	15	23	38	
Tuberculosis, respiratory	1	-	-	-	-	-	-	-	-	1	-	-	
Other infective and parasitic diseases	1	-	-	-	-	1	-	-	-	-	-	-	
Malignant neoplasm, stomach	2	-	-	-	-	-	-	-	-	-	1	1	
Malignant neoplasm, bronchus	1	-	-	-	-	-	-	-	1	-	-	-	
Malignant neoplasm, breast	4	-	-	-	-	-	-	-	2	1	-	1	=17
Malignant neoplasm, uterus	2	-	-	-	-	-	-	-	1	-	1	-	
Other malignant and lymphatic neoplasms	8	-	-	-	-	-	-	-	2	3	-	3	
Vascular lesions of nervous system	16	-	-	-	-	-	-	-	1	1	6	8	=16
Coronary disease, angina	12	-	-	-	-	-	-	1	-	5	2	4	
Hypertension with heart disease	2	-	-	-	-	-	-	-	-	-	2	-	
Other heart disease	18	-	-	-	-	-	-	-	-	3	4	11	=35
Other circulatory disease	3	-	-	-	-	-	-	-	-	-	1	2	
Pneumonia	6	-	4	-	-	-	-	-	-	1	-	1	
Bronchitis	2	-	-	-	-	-	-	-	-	-	-	2	=9
Other diseases of respiratory system	1	-	-	-	-	-	-	-	-	-	1	-	
Congenital malformations	2	1	1	-	-	-	-	-	-	-	-	-	
Other defined and ill-defined diseases	13	4	-	-	-	-	-	-	1	-	5	3	
Motor vehicle accidents	1	-	-	-	-	-	-	-	-	-	-	1	
All other accidents	1	-	-	-	-	-	-	-	-	-	-	1	

TABLE IIIC CAUSES OF DEATH ACCORDING TO AGE

Northfleet U.D.

Registrar General's Return

1965

1965	All ages	Under 4 wks	4 wks – 11 mos	1 – 4 yrs	5 – 14 yrs	15 – 24 yrs	25 – 34 yrs	35 – 44 yrs	45 – 54 yrs	55 – 64 yrs	65 – 74 yrs	75+	Main causes
Males													
All causes	116	–	4	–	–	–	–	1	13	25	38	35	
Syphilitic disease	1	–	–	–	–	–	–	–	–	1	–	–	
Malignant neoplasm, stomach	5	–	–	–	–	–	–	–	1	1	1	2	
Malignant neoplasm, lung, bronchus	12	–	–	–	–	–	–	–	3	5	3	1	=40
Other malignant and lymphatic neoplasms	23	–	1	–	–	–	–	–	3	2	8	9	
Vascular lesions of nervous system	10	–	–	–	–	–	–	–	–	3	3	4	=10
Coronary disease, angina	23	–	–	–	–	–	–	–	4	4	12	3	
Hypertension with heart disease	1	–	–	–	–	–	–	–	–	–	1	–	
Other heart disease	13	–	–	–	–	–	–	–	1	–	5	11	=42
Other circulatory disease	5	–	–	–	–	–	–	–	1	2	1	1	
Pneumonia	7	–	–	–	–	–	–	–	–	2	4	1	
Bronchitis	4	–	–	–	–	–	–	–	–	–	2	2	=13
Other diseases of respiratory system	2	–	–	–	–	–	–	–	–	–	1	1	
Ulcer of stomach and duodenum	1	–	–	–	–	–	–	–	–	–	–	1	
Hyperplasia of prostate	2	–	–	–	–	–	–	–	–	1	–	1	
Congenital malformations	1	–	1	–	–	–	–	–	–	–	–	–	
Other defined and ill-defined diseases	5	–	2	–	–	–	–	1	–	–	–	2	
All other accidents	1	–	–	–	–	–	–	–	–	1	–	–	
Females													
All causes	98	2	1	–	–	2	–	1	9	14	21	48	
Malignant neoplasm, lung, bronchus	4	–	–	–	–	–	–	1	–	1	–	2	
Malignant neoplasm, breast	3	–	–	–	–	–	–	–	–	2	1	–	
Malignant neoplasm, uterus	2	–	–	–	–	–	–	–	2	–	–	–	=16
Other malignant and lymphatic neoplasms	7	–	–	–	–	–	–	–	–	3	1	3	
Vascular lesions of nervous system	16	–	–	–	–	–	–	–	1	1	3	11	=16
Coronary disease, angina	13	–	–	–	–	–	–	–	–	1	6	6	
Hypertension with heart disease	2	–	–	–	–	–	–	–	2	–	–	–	
Other heart disease	17	–	–	–	–	–	–	–	1	–	5	11	=37
Other circulatory disease	5	–	–	–	–	–	–	–	–	1	1	3	
Influenza	1	–	–	–	–	–	–	–	–	–	1	–	
Pneumonia	5	–	–	–	–	–	–	–	1	–	–	4	
Bronchitis	6	–	–	–	–	–	–	–	–	3	1	2	=13
Other diseases of respiratory system	1	–	–	–	–	–	–	–	–	1	–	–	
Gastritis, enteritis and diarrhoea	1	–	–	–	–	–	–	–	–	–	–	1	
Nephritis and nephrosis	1	–	–	–	–	–	–	–	1	–	–	–	
Other defined and ill-defined diseases	10	2	–	–	–	1	–	–	–	–	2	5	
Motor vehicle accidents	1	–	–	–	–	1	–	–	–	–	–	–	
All other accidents	1	–	1	–	–	–	–	–	–	–	–	–	
Suicide	2	–	–	–	–	–	–	–	1	1	–	–	

TABLE IIID CAUSES OF DEATH ACCORDING TO AGE

Northfleet U.D.

Registrar General's Return

1966

1966	All ages	Under 4 wks	4 wks - 11 mos	1 - 4 yrs	5 - 14 yrs	15 - 24 yrs	25 - 34 yrs	35 - 44 yrs	45 - 54 yrs	55 - 64 yrs	65 - 74 yrs	75+	Main causes
Males													
All causes	138	8	1	-	-	2	1	6	13	27	37	43	
Tuberculosis, respiratory	1	-	-	-	-	-	-	-	-	-	1	-	
Malignant neoplasms, stomach	1	-	-	-	-	-	-	-	1	-	-	1	
Malignant neoplasms, lung, bronchus	7	-	-	-	-	-	-	-	-	2	4	1	
Other malignant and lymphatic neoplasms	14	-	-	-	-	-	-	1	-	3	3	7	=25
Leukaemia, aleukaemia	3	-	-	-	-	-	-	1	-	-	2	-	
Diabetes	2	-	-	-	-	-	-	-	-	-	2	-	
Vascular lesions of nervous system	19	-	-	-	-	1	-	-	2	2	7	7	=19
Coronary disease, angina	25	-	-	-	-	-	-	1	5	7	6	6	
Hypertension with heart disease	3	-	-	-	-	-	-	-	-	1	-	2	
Other heart disease	15	-	-	-	-	-	-	-	2	3	2	8	=48
Other circulatory disease	5	-	-	-	-	-	-	-	-	2	2	1	
Influenza	2	-	-	-	-	-	-	-	-	1	1	-	
Pneumonia	8	2	1	-	-	-	-	-	1	-	2	2	
Bronchitis	10	-	-	-	-	-	-	1	-	3	3	3	=21
Other diseases of respiratory system	1	-	-	-	-	-	-	-	1	-	-	-	
Nephritis and nephrosis	1	-	-	-	-	-	-	-	-	-	1	-	
Other defined and ill-defined diseases	16	6	-	-	-	-	-	1	1	3	1	4	
Motor vehicle accidents	4	-	-	-	-	1	-	1	-	-	1	1	
All other accidents	1	-	-	-	-	-	1	-	-	-	-	-	
Females													
All causes	116	2	-	-	-	2	2	4	3	21	28	54	
Syphilitic disease	1	-	-	-	-	-	-	-	-	-	-	1	
Malignant neoplasm, stomach	3	-	-	-	-	-	-	-	-	3	-	-	
Malignant neoplasm, lung, bronchus	2	-	-	-	-	-	-	-	-	1	-	1	
Malignant neoplasm, breast	6	-	-	-	-	-	-	1	-	1	1	3	
Malignant neoplasm, uterus	1	-	-	-	-	-	-	-	-	1	-	-	=24
Other malignant and lymphatic neoplasms	10	-	-	-	-	-	-	1	1	2	2	4	
Leukaemia, aleukaemia	2	-	-	-	-	1	-	-	-	-	1	-	
Diabetes	3	-	-	-	-	-	-	-	-	-	1	2	
Vascular lesions of nervous system	19	-	-	-	-	-	-	-	-	1	5	13	=19
Coronary disease, angina	15	-	-	-	-	-	-	-	-	5	4	6	
Hypertension with heart disease	5	-	-	-	-	-	-	-	1	-	3	1	
Other heart disease	15	-	-	-	-	-	1	-	-	2	3	9	=40
Other circulatory disease	5	-	-	-	-	-	-	1	-	-	1	3	
Influenza	2	-	-	-	-	-	-	-	-	-	-	2	
Pneumonia	3	-	-	-	-	-	-	-	-	1	-	2	
Bronchitis	5	-	-	-	-	-	-	-	1	-	2	2	=11
Other diseases of respiratory system	1	-	-	-	-	-	-	-	-	-	1	-	
Gastritis, enteritis and diarrhoea	1	-	-	-	-	-	-	-	-	-	-	1	
Nephritis and nephrosis	1	-	-	-	-	-	-	-	-	-	-	1	
Pregnancy, childbirth, abortion	1	-	-	-	-	-	1	-	-	-	-	-	
Other defined and ill-defined diseases	13	2	-	-	-	-	-	1	-	3	4	3	
Motor vehicle accidents	1	-	-	-	-	1	-	-	-	-	-	-	
Suicide	1	-	-	-	-	-	-	-	-	1	-	-	

TABLE III. CAUSES OF DEATH ACCORDING TO AGE

Northleet U.D.

Registrar-General's Returns

1956

| | | |

TABLE IV CAUSES OF DEATHS AT AGES 75 YEARS AND OVER

~~Northfleet~~ U.D.

Compiled locally

	1964						1965						1966					
Males	All Causes	75 - 79	80 - 84	85 - 89	90 - 94	95 - 99	All Causes	75 - 79	80 - 84	85 - 89	90 - 94	95 - 99	All Causes	75 - 79	80 - 84	85 - 89	90 - 94	95+
All causes	39	21	8	7	3	-	36	18	15	3	-	-	44	19	16	7	2	-
Malig. neo. stom.	1	-	1	-	-	-	2	2	-	-	-	-	-	-	-	-	-	-
Malig. neo. lung	2	2	-	-	-	-	1	1	-	-	-	-	1	1	-	-	-	-
Malig. neo. other	2	2	-	-	-	-	9	6	3	-	-	-	7	2	2	3	-	-
Diabetes	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-
Vasc. les. N.S.	3	2	-	1	-	-	4	2	2	-	-	-	6	3	2	-	1	-
Coron. dis. ang.	8	5	1	2	-	-	5	1	4	-	-	-	8	3	5	-	-	-
Hyperten. & heart	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other heart dis.	4	-	1	2	1	-	6	2	2	2	-	-	8	3	3	1	1	-
Other circ. dis.	5	4	-	1	-	-	2	1	-	1	-	-	2	1	1	-	-	-
Influenza	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pneumonia	5	1	2	1	1	-	2	1	1	-	-	-	2	1	1	-	-	-
Bronchitis	4	2	2	-	-	-	2	2	-	-	-	-	3	2	-	1	-	-
Other resp. dis.	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-
Nephrit., nephros.	1	1	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-
Hyperpl. prostate	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Oth. def. & ill-def.	1	1	-	-	-	-	1	-	1	-	-	-	5	3	2	-	-	-
Motor vehicle acc.	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-
All other accs.	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Females																		
All causes	38	11	14	7	4	2	47	23	13	7	3	1	53	16	15	14	7	1
Malig. neo. stom.	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Malig. neo. lung	-	-	-	-	-	-	2	2	-	-	-	-	1	1	-	-	-	-
Malig. neo. breast	1	1	-	-	-	-	-	-	-	-	-	-	3	2	1	-	-	-
Malig. neo. uterus	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-
Malig. neo. other	3	1	2	-	-	-	2	1	1	-	-	-	4	1	-	3	-	-
Diabetes	-	-	-	-	-	-	-	-	-	-	-	-	2	-	2	-	-	-
Vasc. les. N.S.	8	3	3	2	-	-	12	8	3	1	-	-	13	2	4	4	3	-
Coron. dis. ang.	4	1	2	1	-	-	4	2	1	-	1	-	6	2	-	3	1	-
Hyperten. & heart	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-
Other heart dis.	10	2	4	2	2	-	10	4	2	3	1	-	9	5	2	-	1	1*
Other circ. dis.	2	-	1	-	-	1	3	2	-	1	-	-	3	-	2	-	1	-
Influenza	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-
Pneumonia	1	-	-	-	1	-	4	-	2	1	1	-	3	2	1	-	-	-
Bronchitis	2	-	1	-	-	1	2	2	-	-	-	-	2	1	1	-	-	-
Gastr., enteritis	-	-	-	-	-	-	1	1	-	-	-	-	1	-	1	-	-	-
Nephrit., nephros.	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-
Oth. def. & ill-def.	4	1	-	1	1	1	6	-	4	1	-	1	3	-	2	-	1	-
Motor vehicle acc.	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
All other accs.	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Age 101 years

TABLE VA MAIN CAUSES OF DEATH - 1964

~~Northfleet~~ U.D.

By month and quarter (compiled locally)

All ages	All causes		Main causes		Other causes		Circ. disease		Cancer		Vasc.les. N.S.		Resp. disease	
January	22		17		5		9		1		3		4	
February	24		16		8		7		1		2		6	
March	27		22		5		11		8		-		3	
1st qr.		73		55		18		27		10		5		13
April	11		8		3		3		1		1		3	
May	8		7		1		4		-		3		-	
June	14		12		2		5		4		2		1	
2nd qr.		33		27		6		12		5		6		4
July	13		10		3		7		2		-		1	
August	16		13		3		5		6		-		2	
September	15		12		3		6		-		6		-	
3rd qr.		44		35		9		18		8		6		3
October	19		16		3		7		5		2		2	
November	24		22		2		9		6		4		3	
December	20		16		4		9		5		-		2	
4th qr.		63		54		9		25		16		6		7
Year		213		171		42		82		39		23		27
0-74														
January	12		8		4		5		-		1		2	
February	14		9		5		4		-		1		4	
March	15		11		4		6		5		-		-	
1st qr.		41		28		13		15		5		2		6
April	9		7		2		3		1		1		2	
May	4		3		1		2		-		1		-	
June	12		11		1		4		4		2		1	
2nd qr.		25		21		4		9		5		4		3
July	7		5		2		3		1		-		1	
August	10		7		3		2		5		-		-	
September	8		6		2		4		-		2		-	
3rd qr.		25		18		7		9		6		2		1
October	12		10		2		5		4		1		-	
November	16		14		2		4		5		3		2	
December	17		13		4		7		4		-		2	
4th qr.		45		37		8		16		13		4		4
Year		136		104		32		49		29		12		14
75+														
January	10		9		1		4		1		2		2	
February	10		7		3		3		1		1		2	
March	12		11		1		5		3		-		3	
1st qr.		32		27		5		12		5		3		7
April	2		1		1		-		-		-		1	
May	4		4		-		2		-		2		-	
June	2		1		1		1		-		-		-	
2nd qr.		8		6		2		3		-		2		1
July	6		5		1		4		1		-		-	
August	6		6		-		3		1		-		2	
September	7		6		1		2		-		4		-	
3rd qr.		19		17		2		9		2		4		2
October	7		6		1		2		1		1		2	
November	8		8		-		5		1		1		1	
December	3		3		-		2		1		-		-	
4th qr.		18		17		1		9		3		2		3
Year		77		67		10		33		10		11		13

TABLE VB MAIN CAUSES OF DEATH - 1965

Northfleet U.D.

By month and quarter (compiled locally)

All ages	All causes	Main causes	Other causes	Circ. disease	Cancer	Vasc.les. N.S.	Resp. disease
January	19	16	3	5	5	4	2
February	22	19	3	11	3	3	2
March	14	14	-	8	1	1	4
1st qr.	55	49	6	24	9	8	8
April	23	20	3	10	9	-	1
May	20	18	2	5	6	3	4
June	25	22	3	9	5	2	6
2nd qr.	68	60	8	24	20	5	11
July	12	11	1	2	6	3	-
August	11	9	2	4	2	3	-
September	18	17	1	6	6	2	3
3rd qr.	41	37	4	12	14	8	3
October	16	12	4	8	2	1	1
November	18	15	3	6	5	2	2
December	17	14	3	7	3	2	2
4th qr.	51	41	10	21	10	5	5
Year	215	187	28	81	53	26	27
0-74							
January	11	9	2	4	2	1	2
February	13	10	3	6	1	2	1
March	8	8	-	3	1	1	3
1st qr.	32	27	5	13	4	4	6
April	13	12	1	6	6	-	-
May	15	14	1	3	6	3	2
June	18	15	3	6	3	2	4
2nd qr.	46	41	5	15	15	5	6
July	9	8	1	2	6	-	-
August	5	3	2	1	2	-	-
September	11	10	1	5	4	-	1
3rd qr.	25	21	4	8	12	-	1
October	8	6	2	4	1	-	1
November	12	10	2	5	3	1	1
December	9	8	1	6	1	-	1
4th qr.	29	24	5	15	5	1	3
Year	132	113	19	51	36	10	16
75+							
January	8	7	1	1	3	3	-
February	9	9	-	5	2	1	1
March	6	6	-	5	-	-	1
1st qr.	23	22	1	11	5	4	2
April	10	8	2	5	2	-	1
May	5	4	1	2	-	-	1
June	7	7	-	3	2	-	2
2nd qr.	22	19	3	10	4	-	5
July	3	3	-	-	-	3	-
August	6	6	-	3	-	3	-
September	7	7	-	1	2	2	2
3rd qr.	16	16	-	4	2	8	2
October	8	6	2	3	2	1	-
November	6	5	1	1	2	1	1
December	8	6	2	1	2	2	1
4th qr.	22	17	5	5	6	4	2
Year	83	74	9	30	17	16	11

TABLE V(C) - MAIN CAUSES OF DEATH - 1966

Northfleet U.D.

By month and quarter (compiled locally)

All ages	All causes	Main causes	Other causes	Circ. disease	Cancer	Vasc.les. N.S.	Resp. disease
January	29	20	9	13	3	3	1
February	23	22	1	10	5	1	6
March	24	24	-	15	2	3	4
1st qr.	76	66	10	38	10	7	11
April	22	18	4	5	3	4	6
May	18	13	5	5	5	2	1
June	24	19	5	5	12	2	-
2nd qr.	64	50	14	15	20	8	7
July	18	17	1	3	4	6	4
August	14	10	4	5	3	1	1
September	16	14	2	5	4	3	2
3rd qr.	48	41	7	13	11	10	7
October	23	21	2	10	5	6	-
November	19	15	4	5	2	6	2
December	27	17	10	8	3	4	2
4th qr.	69	53	16	23	10	16	4
Year	257	210	47	89	51	41	29
0-74							
January	19	10	9	5	3	1	1
February	15	15	-	7	4	-	4
March	17	17	-	9	1	3	4
1st qr.	51	42	9	21	8	4	9
April	14	11	3	4	2	2	3
May	9	6	3	1	3	2	-
June	15	11	4	3	7	1	-
2nd qr.	38	28	10	8	12	5	3
July	13	12	1	2	4	4	2
August	7	6	1	2	3	1	-
September	10	9	1	3	3	1	2
3rd qr.	30	27	3	7	10	6	4
October	14	13	1	6	4	3	-
November	11	8	3	5	-	2	1
December	16	9	7	5	1	2	1
4th qr.	41	30	11	16	5	7	2
	160	127	33	52	35	22	18
75+							
January	10	10	-	8	-	2	-
February	8	7	1	3	1	1	2
March	7	7	-	6	1	-	-
1st qr.	25	24	1	17	2	3	2
April	8	7	1	1	1	2	3
May	9	7	2	4	2	-	1
June	9	8	1	2	5	1	-
2nd qr.	26	22	4	7	8	3	4
July	5	5	-	1	-	2	2
August	7	4	3	3	-	-	1
September	6	5	1	2	1	2	-
3rd qr.	18	14	4	6	1	4	3
October	9	8	1	4	1	3	-
November	8	7	1	-	2	4	1
December	11	8	3	3	2	2	1
4th qr.	28	23	5	7	5	9	2
Year	97	83	14	37	16	19	11

TABLE VI MAIN CAUSES OF DEATH BY YEAR Northfleet U.D.

	Year	All Causes	Main Causes	Other Causes	Circ. Disease	Cancer	Vasc. Les.N.S.	Resp. Dis.
ENGLAND AND WALES								
All ages	1966	536,624	471,863	91,761	207,924	108,158	78,824	76,957
Ages 0-74	1966	317,462	254,849	62,613	104,655	79,110	32,826	38,258
Ages 75+	1966	246,162	217,014	29,148	103,269	29,048	45,998	39,699
Percentages of all causes								
All ages	1966	100%	83%	16%	37%	19%	14%	13%
Ages 0-74	1966	100%	80%	20%	33%	25%	10%	12%
Ages 75+	1966	100%	88%	12%	42%	12%	18%	16%
NORTHFLEET U.D. (R.G.)								
All ages	1964	213	170	43	81	38	24	27
	1965	214	187	27	79	56	26	26
	1966	254	207	47	88	49	38	32
Ages 0-74	1964	136	102	34	48	28	13	13
	1965	131	114	17	48	39	11	16
	1966	157	124	33	52	33	18	21
Ages 75+	1964	77	68	9	33	10	11	14
	1965	83	73	10	31	17	15	10
	1966	97	83	14	36	16	20	11
Percentages of all causes								
All ages	1964	100%	80%	20%	38%	18%	11%	13%
	1965	100%	87%	13%	37%	26%	12%	12%
	1966	100%	80%	20%	35%	19%	15%	11%
Ages 0-74	1964	100%	75%	25%	35%	21%	10%	10%
	1965	100%	87%	13%	37%	30%	8%	12%
	1966	100%	79%	21%	33%	21%	11%	13%
Ages 75+	1964	100%	88%	12%	43%	13%	14%	18%
	1965	100%	88%	12%	37%	20%	18%	12%
	1966	100%	86%	14%	37%	17%	21%	11%
SWANSCOMBE U.D. (R.G.)								
All ages	1964	76	60	16	25	15	12	8
	1965	67	57	10	24	14	10	9
	1966	78	66	12	24	21	10	11
Ages 0-74	1964	45	35	10	16	8	9	2
	1965	40	34	6	16	10	4	4
	1966	48	37	11	14	14	7	2
Ages 75+	1964	31	15	6	9	7	3	6
	1965	27	23	4	8	4	6	5
	1966	30	29	1	10	7	3	9
Percentages of all causes								
All ages	1964	100%	79%	21%	33%	20%	16%	11%
	1965	100%	85%	15%	36%	21%	15%	13%
	1966	100%	85%	15%	31%	27%	13%	14%
Ages 0-74	1966	100%	78%	22%	36%	18%	20%	4%
	1965	100%	85%	15%	40%	25%	10%	10%
	1966	100%	77%	23%	29%	29%	15%	4%
Ages 75+	1964	100%	81%	19%	29%	23%	10%	19%
	1965	100%	85%	15%	30%	15%	22%	19%
	1966	100%	97%	3%	33%	23%	10%	30%

TABLE VII- DEATHS BY QUARTER AND PLACE

Northfleet U.D.

		1st quarter	2nd quarter	3rd quarter	4th quarter	Year
Number of deaths	1960	59	49	36	52	196
	1961	60	45	38	47	190
	1962	79	50	35	68	232
	1963	87	51	30	44	212
	1964	73	33	44	63	213
	1965	55	68	41	51	215
	1966	76	64	48	69	257
Adjusted (C.F.) Death Rates						
Northfleet	1960	13.3	11.0	8.1	11.7	11.0
	1961	13.0	9.8	8.3	10.2	10.4
	1962	16.7	10.6	7.4	14.4	12.3
	1963	18.8	11.0	6.5	9.5	11.4
	1964	15.6	7.1	9.4	13.5	11.3
	1965	11.4	14.0	8.4	10.5	11.2
	1966	15.5	13.0	9.7	14.0	13.0
England & Wales	1960	13.4	10.9	9.8	12.2	11.5
	1961	15.6	10.9	9.5	11.9	12.0
	1962	15.5	11.1	9.4	11.9	11.9
	1963	17.0	11.0	9.6	11.2	12.2
	1964	13.2	10.8	9.5	11.6	11.3
	1965	13.3	10.9	9.9	11.9	11.5
	1966	14.6	11.0	9.7	11.6	11.7

1964

Deaths at home, in hospital and elsewhere

		1st qr. M	1st qr. F	2nd qr. M	2nd qr. F	3rd qr. M	3rd qr. F	4th qr. M	4th qr. F	1964 M	1964 F	1964 P
All ages	Home	20	20	11	4	12	6	16	19	59	49	108
	Hospital	20	11	12	6	11	12	11	16	54	45	99
	Elsewhere	2	-	-	-	1	2	1	-	4	2	6
		42	31	23	10	24	20	28	35	117	96	213
Age 75+	Home	8	9	2	1	6	4	3	9	19	23	42
	Hospital	11	4	2	3	4	5	3	3	20	15	35
	Elsewhere	-	-	-	-	-	-	-	-	-	-	-
		19	13	4	4	10	9	6	12	39	38	77

Deaths at home or hospital as % of all deaths

		1st qr. M	1st qr. F	2nd qr. M	2nd qr. F	3rd qr. M	3rd qr. F	4th qr. M	4th qr. F	1964 M	1964 F	1964 P
All ages	Home	48%	65%	48%	40%	50%	30%	57%	54%	50%	51%	51%
	Hospital	48%	36%	52%	60%	46%	60%	39%	46%	46%	47%	47%
	Elsewhere	5%	-	-	-	4%	10%	4%	-	3%	2%	3%
		101%	101%	100%	100%	100%	100%	100%	100%	99%	100%	101%
Aged 75+	Home	42%	69%	50%	25%	60%	44%	50%	75%	49%	61%	55%
	Hospital	58%	31%	50%	75%	40%	56%	50%	25%	51%	40%	46%
	Elsewhere	-	-	-	-	-	-	-	-	-	-	-
		100%	100%	100%	100%	100%	100%	100%	100%	100%	101%	101%

Deaths at ages of 65 and over as % of deaths at all ages (from R.G's figures)

	Northfleet U.D.		Dartford Town		Dartford R.D.		England & Wales	
Aged	65-74	75+	65-74	75+	65-74	75+	65-74	75+
1964	26%	36%	25%	44%	24%	45%	25%	42%
1965	28%	39%	26%	40%	23%	45%	26%	43%
1966	26%	38%			24%	43%	26%	44%

TABLE VII - DEATHS BY QUARTER AND PLACE (continued)

Northfleet U.D.

1965

Deaths at home, in hospital and elsewhere

		1st qr.		2nd qr.		3rd qr.		4th qr.		1965		
		M	F	M	F	M	F	M	F	M	F	P
All ages	Home	12	11	13	17	11	14	8	9	44	51	95
	Hospital	18	13	25	13	9	7	20	14	72	47	119
	Elsewhere	1	-	-	-	-	-	-	-	1	-	1
		31	24	38	30	20	21	28	23	117	98	215
Aged 75+	Home	5	6	6	7	3	9	3	4	17	26	43
	Hospital	6	6	4	5	2	2	7	8	19	21	40
	Elsewhere	-	-	-	-	-	-	-	-	-	-	-
		11	12	10	12	5	11	10	12	36	47	83

Deaths at home or hospital as % of all deaths

All ages	Home	39%	46%	34%	57%	55%	67%	71%	39%	38%	52%	44%
	Hospital	58%	54%	66%	43%	45%	33%	29%	61%	62%	48%	55%
	Elsewhere	3%	-	-	-	-	-	-	-	1%	-	1%
		100%	100%	100%	100%	100%	100%	100%	100%	101%	100%	100%
Aged 75+	Home	45%	50%	60%	58%	60%	82%	30%	33%	47%	55%	52%
	Hospital	55%	50%	40%	42%	40%	18%	70%	67%	53%	45%	48%
	Elsewhere	-	-	-	-	-	-	-	-	-	-	-
		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

1966

Deaths at home, in hospital and elsewhere

										1966		
All ages	Home	22	13	18	18	11	10	17	13	68	54	122
	Hospital	22	19	16	12	16	10	17	20	71	61	132
	Elsewhere	-	-	-	-	1	-	1	1	2	1	3
		44	32	34	30	28	20	35	34	141	116	257
Aged 75+	Home	6	8	6	10	6	6	6	6	24	30	54
	Hospital	5	6	5	5	3	3	6	9	19	23	42
	Elsewhere	-	-	-	-	-	-	1	-	1	-	1
		11	14	11	15	9	9	13	15	44	53	97

Deaths at home or hospital as % of all deaths

All ages	Home	50%	41%	53%	60%	39%	50%	49%	38%	48%	47%	48%
	Hospital	50%	59%	47%	40%	57%	50%	49%	59%	50%	53%	51%
	Elsewhere	-	-	-	-	4%	-	3%	3%	1%	1%	1%
		100%	100%	100%	100%	100%	100%	101%	100%	99%	101%	100%
Aged 75+	Home	55%	57%	55%	67%	67%	67%	46%	40%	55%	57%	56%
	Hospital	45%	53%	45%	33%	33%	33%	46%	60%	43%	43%	43%
	Elsewhere	-	-	-	-	-	-	8	-	2	-	1
		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Deaths in hospital as % of all deaths

	Northfleet U.D.		Dartford Town		Dartford R.D.	
	All ages	75+	All ages	75+	All ages	75+
1964	55%	48%	72%	71%	65%	66%
1965	47%	46%	72%	73%	63%	58%
1966	51%	43%			69%	67%

TABLE VIII -DEATHS OF INFANTS UNDER ONE YEAR OF AGE

(Northfleet)

Age	Cause	I.C.D.No.	1964	1965	1966
Under 1 day	Atelectasis	762.5	1	-	2
	Asphyxia	761.0	1	-	-
	Immaturity	776	2	-	2
	Exopholos	560.2	1	-	-
	Intracranial injury	760.0	-	2	1
			5	2	5
1 - 6 days	Intracranial injury	760.0	1	-	-
	Asphyxia	762.0	1	-	-
	Pneumonia	763.0	-	-	1
	Atelectasis	762.0	-	-	1
	Intracranial birth injury	760.0	-	-	1
			2	-	3
7-27 days	Congenital malformation	751	1	-	-
	Pneumonia	763.0	-	-	1
			1	-	1
28-364	Pneumonia	49	5	-	1
	Pneumonia & congen. heart disease	49	1	-	-
	Accident in home	N991	-	1	-
	Otitis media	391.	-	1	-
	Malignant neoplasm	155.0	-	1	-
	Congenital malformation	754.2	-	1	-
	Mastoiditis	392.0	-	1	-
			6	5	1
1 - 364 days			14	7	10

TABLE IX STILLBIRTHS

I.C.D.	Cause	1964	1965	1966	1964/66	% all Stillbirths Northfleet 1964/66	% all Stillbirths Eng.&Wales 1966
30	Chr.dis. in mother	-	-	1	1	3%	3%
32.2	(Haemorrhage & prem.	2	-	-	2)		
32.2	(separation of placenta	-	-	1	1)	9%	13%
32.3-4	Toxaemias of pregnancy	3	1*+1	-	5	15%	12%
34.1	Difficult labour + disprop'n	-	-	-	-	-	2%
34.2	Mal position	-	-	-	-	-	3%
36.0	Cord conditions	2	1*+1	1	5	15%	8%
37	Birth injuries	-	-	-	-	-	2%
38.0	Anencephalus	1*+1	-	1	3	9%	11%
38.1-3	Other malform. N.S.	1*	-	-	1	3%	6%
39.2	Erythroblastosis	1*	2	2	5	15%	4%
39.4	Maceration	1	1	-	2	6%	6%
						75%	70%
31.3	Acute disease in mother	-	-	1	1		
36.1	Placenta praeviea	-	1	-	1		
36.4	Prem. sep. placenta	-	-	1	1		
36.5	Placental infarct	-	1*	-	1		
36.6	Other abnormality of placenta on cord	-	-	1	1		
39.5	Other ill-defined cause	-	1	-	1		
39.6	Cause unspecified	1	1	-	2	24%	30%
		13	10+1	8+1	33	99%	100%

*At home, remainder in hospital.

10+1 = 10 Northfleet + 1 "Gravesend" address.
8+1 = 8 Northfleet + 1 "Dartford" address.
(i.e. 2 Northfleet s.b. assigned to wrong district by R.G.)

TABLE X - INJURY

Northfleet U.D.

(a) ACCIDENTS ON THE ROAD

Casualties (not necessarily local residents) on local roads (Chief Constable's analysis).

Local Authority	Total injury accidents			Killed			Seriously injured			Slightly injured			Total		
	1964	1965	1966	1964	1965	1966	1964	1965	1966	1964	1965	1966	1964	1965	1966
Dartford R.D.	329	332	307	18	15	10	145	115	130	344	332	329	507	462	469
Northfleet U.D.	130	133	108	3	2	3	55	42	41	140	124	103	198	168	147
Swanscombe U.D.	81	60	74	1	4	2	23	40	35	92	54	54	116	98	91
Dartford M.B.	336	305	275	9	6	5	115	93	100	311	302	240	435	401	345

Deaths of local residents not necessarily on local roads.

			Place of accident
1964			
64 years	M	Pedal cycle/van	London Road, Rosherville
18 years	M	Motor-cycle/milk float	Springhead Road
21 years	M	Motor-scooter/tanker(Pillion passenger)	A2 at Bean
64 years	M	Pedal-cycle/lorry	A2 near Springhead
22 years	M	Van struck bank and overturned	St. Margaret's Road, Darenth
81 years	F	Pedestrian/motor-cycle	Burch Road
25 years	M	Car ran off road	Rochester to Gravesend Road near Chalk Church
1965			
19 years	F	Mini-truck/car	A2 near junction with M2
1966			
21 years	M	Car/car	Gravesend to Rochester Road, Chalk
41 years	M	Motor-cycle hit by object from lorry	Perry Street
72 years	M	Pedestrian/van	Park Avenue/Coulton Avenue
87 years	M	Pedestrian/car	A2 near Tollgate
21 years	F	Car/car	Maidstone to Tonbridge road at Mereworth

International classification of injuries

External cause of injury			Nature of injury		
1964	1965	1966	1964	1965	1966
E 813.0	E 825.9	E 816.4	N 803	N 804	N 862
E 815.1		E 814.1	N 803		N 805
E 815.1		E 812.0	N 853		N 808
E 813.0		E 812.4	N 808		N 809
E 823.1		E 816.5	N 862		N 804
E 812.4			N 853		
E 823.4			N 862		

Northfleet U.D.

(b) DEATHS FROM ACCIDENTS IN THE HOME

Year	Age	Sex	Cause	Int.Class.Dis.	Categories
1964	1	M	CO poisoning by fire	E916	N968
	6	M	CO poisoning by fire	E916	N968
	9	M	CO poisoning by fire	E916	N968
	77	M	Pathological fracture of left femur with amputation	731	
	81	F	Fell on stairs and fractured skull	E900	N803
1965	11mths	F	Asphyxiation by dressing gown cord meant to prevent fall from cot	E924	N991
1966	None				

(c) DEATHS FROM ACCIDENTS AT WORK

			Occupation	Cause		
1964	21	M	Waterman	Drowning	E850	N990
	38	M	Waterman	Drowning	E850	N990
1965	56	M	Scaffolder	Crushed by travelling crane	E912	N869
1966	33	M	Steel erector	Railway sleeper fell from height on to head	E910.3	N908

(d) DEATHS FROM OTHER ACCIDENTS

1964	69	M	Retired burner-welder	Drowning in chalk pit		N990
1965	None					
1966	None					

(e) SUICIDE

			Cause		
1964	39	M	Domestic gas CO poisoning	E972	N968
1965	61	F	CO poisoning	E972	N968
	53	M	Barbiturate poisoning	E970	N971
1966	62	F	Domestic gas CO poisoning	E972	N968

(f)

DEATHS FROM ACCIDENTS IN THE HOME - ENG. & WALES (includes residential institutions)

	Under 15			Over 15			All ages			65+
	1964	1965	1966	1964	1965	1966	1964	1965	1966	1966
Poisoning	69	50	56	1410	1333	1440	1479	1383	1496	734
Falls	75	68	92	3901	3854	3969	3976	3922	4061	3601
Burns etc.	187	203	197	580	548	600	767	751	797	417
Others	545	534	488	393	427	364	938	961	852	144
Total	876	855	833	6284	6162	6373	7160	7017	7206	4896

DEATHS FROM MOTOR VEHICLE ROAD ACCIDENTS - ENGLAND & WALES

Motor vehicle road accidents involving injury to:	-15 1966	15+ 1966	All ages 1966	65+ 1966
Motor cyclist* (E814, E815, E821)	16	1064	1080	24
Pedal cyclist (E813)	109	345	454	90
Pedestrian (E812)	526	2401	2927	1394
Occupant of motor vehicle** (rest of E800-E825)	118	2693	2811	301
Total	769	6503	7272	1809

*Including passengers. **Including a few deaths of other and unspecified persons.

TABLE XI - PREVALENCE OF INFECTIOUS DISEASES (other than tuberculosis)

Northfleet U.D.

	All ages	Under one	1-4	5-9	10-14	15-24	25-44	45-64	65+
1964									
Whooping cough	5	1	2	2	-	-	-	-	-
Measles	83	8	54	21	-	-	-	-	-
Pneumonia	4	1	1	-	-	-	-	1	1
Scarlet fever	3	-	1	2	-	-	-	-	-
Puerperal pyrexia	1	-	-	-	-	1	-	-	-
	96	10	58	25	-	1	-	1	1
1965									
Whooping cough	1	-	1	-	-	-	-	-	-
Measles	315	11	174	129	1	-	-	-	-
Pneumonia	4	1	-	-	-	-	2	1	-
	320	12	175	129	1	-	2	1	-
1966									
Whooping cough	3	-	3	-	-	-	-	-	-
Measles	96	1	57	37	-	1	-	-	-
Scarlet fever	2	-	-	-	1	-	1	-	-
Sonne dysentery	2	-	-	-	-	1	1	-	-
	103	1	60	37	1	2	2	-	-

The following non-notifiable diseases were reported from the schools:

	Chicken pox	Impetigo	Mumps	Rubella	Ringworm
1964	7	5	106	-	1
1965	3	-	2	1	-
1966	47	2	1	-	-

MEASLES. By ward and month, according to date of notification

	East			West			South-East			South			Northfleet U.D.		
	1964	1965	1966	1964	1965	1966	1964	1965	1966	1964	1965	1966	1964	1965	1966
Jan	-	25	-	-	25	-	-	9	-	-	33	-	-	92	-
Feb	-	36	-	-	30	-	-	28	-	-	42	-	-	136	-
Mar	-	8	-	-	14	-	1	9	-	-	26	-	-	57	-
Apr	-	6	-	1	7	2	-	-	-	1	-	-	2	13	2
May	-	-	-	1	-	-	-	-	-	1	-	-	2	-	-
June	-	3	4	1	-	-	-	-	-	-	-	-	1	3	4
July	5	1	-	4	-	-	-	-	-	1	-	-	10	1	-
Aug	5	-	8	5	-	4	1	-	4	-	-	5	11	-	21
Sept	2	1	2	3	3	-	-	-	-	2	-	1	7	4	3
Oct	-	-	-	3	-	-	-	-	-	-	1	-	3	1	-
Nov	4	1	16	5	-	7	4	-	1	2	-	3	15	-	27
Dec	19	-	31	12	-	3	1	-	13	7	-	3	39	-	50
	35	80	61	35	79	16	7	46	18	14	102	12	91	307	107

MEASLES - BIENNIAL CYCLE, according to date of notification

	November	December	January	February	March	April	Total for 6 months
1951-1952	-	-	-	-	-	-	-
1952-1953	27	28	93	47	25	16	236
1953-1954	-	-	-	-	-	1	1
1954-1955	1	-	-	1	4	7	13
1955-1956	-	1	-	-	-	1	2
1956-1957	-	35	17	1	5	14	72
1957-1958	-	-	-	-	-	-	-
1958-1959	-	-	1	23	72	43	139
1959-1960	-	-	-	-	-	-	-
1960-1961	-	2	29	151	100	56	338
1961-1962	8	-	-	-	-	-	8
1962-1963	40	53	49	45	13	4	204
1963-1964	-	-	-	-	1	2	3
1964-1965	15	39	92	136	57	13	352
1965-1966	-	-	-	-	-	2	2
1966-1967	27	50	43	52	30	5	207

Total for 12 months

1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966
335	78	188	2	478	46	224	9	223	2	400	131	125	83	315	96

TABLE XII - TUBERCULOSIS 1964, 1965 & 1966

Northfleet U.D.

(a) RESPIRATORY

NOTIFICATIONS in last ten years

1957	24	1959	11	1961	9	1963	7	1965	5
1958	5	1960	15	1962	12	1964	8	1966	4

NOTIFICATIONS BY AGE

1964	Total	0-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65+
Males	2	-	1	-	1	-	-	-	-	-
Females	6	-	-	-	1	3	1	1	-	-
	8	-	1	-	2	3	1	1	-	-
1965										
Males	3	-	-	-	-	-	1	-	1	1
Females	2	-	-	-	1	-	-	-	-	1
	5	-	-	-	1	-	1	-	1	2
1966										
Males	1	-	-	-	1	-	-	-	-	-
Females	3	-	-	-	1	2	-	-	-	-
	4	-	-	-	2	2	-	-	-	-

Details of notifications were as follows:

	Sex	Age	Classification	Remarks
1964	F	26	B3*	---
	F	28	B1	Overcrowded. Later rehoused elsewhere.
	F	31	B3	Mother of male aged 10 below.
	M	10	A1	Son of female aged 31 above.
	M	23	A1	---
	F	24	A1	Husband a "transfer-in" and B3.
	F	41	A2	---
	F	52	A2	Diagnosis changed to pulmonary neoplasm later.
1965	M	41	B	---
	M	62	B2	---
	F	65	B2	Canteen assistant.
	M	66	B	Publican. Removed later to Swanscombe, giving up his business. Daughter recovered from tuberculosis 1961.
	F	42	A2	---
1966	M	23	B1	---
	F	25	B1	---
	F	25	B1	---
	F	42	B1	---

*A = non-infectious B = infectious 1, 2, 3 = lobes affected.

CASES OF RESPIRATORY TUBERCULOSIS ON THE TUBERCULOSIS REGISTER ON DECEMBER 31st.

	Male	Female	Persons		Male	Female	Persons
1957	137	68	225	1962	122	89	211
1958	135	95	230	1963	107	75	182
1959	141	99	240	1964	99	77	176
1960	141	103	244	1965	89	64	153
1961	137	103	240	1966	82	61	143

CHANGES IN THE REGISTER IN 1964, 1965 and 1966

Additions	1964	1965	1966	Removals:	1964	1965	1966
New notifications	8	5	4	Lost sight of	-	-	-
Came into district	9	3	7	Left district	5	3	5
Restored to register	1	2	2	Died	3	2	3
	18	10	13	Recovered	15	28	15
				Changed diagnosis	1	-	-
					24	33	23

TABLE XII-TUBERCULOSIS

Northfleet U.D.

(a) RESPIRATORY (continued)

MASS X-RAY SERVICE

(Including Gravesend)

			Over 45 Service	Routine Service					
			Industry etc.	Public		Industry etc.		Schools	
			Males	M	F	M	F	M	F
No. X-rayed	1964	(i)	1570	-	-	-	-	-	-
		(ii)	1375	-	-	-	-	-	-
	1965	(i)	1406	3779	5296	3287	1020	358	334
		(ii)	1559	-	-	-	-	-	-
	1966	(i)	1655	-	-	-	-	-	-
		(ii)	1659	-	-	-	-	-	-
Active Tuberculosis	1964	(i)	0	-	-	-	-	-	-
		(ii)	0	-	-	-	-	-	-
	1965	(i)	0	1	0	2	0	0	0
		(ii)	0	-	-	-	-	-	-
	1966	(i)	0	-	-	-	-	-	-
		(ii)	0	-	-	-	-	-	-
Inactive Tuberculosis	1964	(i)	1	-	-	-	-	-	-
		(ii)	2	-	-	-	-	-	-
	1965	(i)	13	15	24	7	2	-	-
		(ii)	3	-	-	-	-	-	-
	1966	(i)	7	-	-	-	-	-	-
		(ii)	6	-	-	-	-	-	-
% Active Tuberculosis	1964	(i)	0	-	-	-	-	-	-
		(ii)	0	-	-	-	-	-	-
	1965	(i)	0	0.3	0	0.6	0	0	0
		(ii)	0	-	-	-	-	-	-
	1966	(i)	0	-	-	-	-	-	-
		(ii)	0	-	-	-	-	-	-

In above surveys lung cancer was found as follows:

1964	Over 45 Service	3 males
1965	Over 45 Service	1 male
1965	Routine Service	2 males
1966	Over 45 Service	2 males

TABLE XII - TUBERCULOSIS 1964, 1965 & 1966

(a) RESPIRATORY (continued)

DEATHS OF PERSONS SUFFERING FROM TUBERCULOSIS — Northfleet U.D.

Persons removed from the register after information of death were:

Sex	Year Born	Year notified	Cause of death: Underlying	Cause of death: Contributory	Infectious when diagnosed
			Died 1964		
M	1900	1958	Pulmonary tuberculosis	-	Yes
M	1904	1963	Coronary thrombosis Atherosclerosis	-	No
F	1897	1963	Cor pulmonale Embolic pulmonary hypertension	Old quiescent tubero. lesion	No
			Died 1965		
M	1896	1950	Cor pulmonale Emphysema Chronic bronchitis	Chronic pulmonary tuberculosis	Yes
M	1892	1959	Uraemia Carcinoma prostate	-	Yes
			Died 1966		
M	1913	1963	Secondary carcinoma of liver Primary not known	-	Yes
M	1897	1946	Respiratory failure Secondary chest infection Pulmonary tuberculosis	-	Yes
M	1890	1954	Acute cor pulmonale Chronic bronchitis & emphysema	-	Yes

In 1964 the following death occurred of a person whose name was not on the register and whose tuberculosis was found only at post mortem examination:

F	1898	-	Tuberculosis bronchopneumonia Miliary tuberculosis	-	?

(b) NON-RESPIRATORY

NOTIFICATIONS in last ten years

1957	-	1959	1	1961	4	1963	3	1965	1
1958	1	1960	-	1962	1	1964	1	1966	1

New notifications 1964/66 were females aged 17, 53 and 25, the organs being the inguinal lymph glands, the kidney, and the cervical lymph glands respectively.

CASES OF NON-RESPIRATORY TUBERCULOSIS ON THE REGISTER ON DECEMBER 31st.

	Male	Female	Persons		Male	Female	Persons
1957	8	11	19	1962	1	12	13
1958	8	11	19	1963	1	12	13
1959	6	12	18	1964	1	13	14
1960	6	11	17	1965	1	14	15
1961	6	14	20	1966	1	14	15

CHANGES IN THE REGISTER IN 1964, 1965 and 1966

Additions:	1964	1965	1966	Removals	1964	1965	1966
New notifications	1	1	1	Lost sight of	-	-	-
Came into district	-	1	1	Left district	-	-	-
Restored to register	-	-	-	Died	-	-	-
	1	2	2	Recovered	-	1	2
					-	1	2

TABLE XII - TUBERCULOSIS (continued)

GRAVESEND CHEST CLINIC

These figures relate to the whole area served (Gravesend, Northfleet etc.)

CASES OF TUBERCULOSIS UNDER CARE AT 31st DECEMBER:

	Respiratory					Non-Respiratory			
	Men	Women	Age 0-14	Total	Sputum + in year	Men	Women	Age 0-14	Total
1964	367	220	31	618	18	17	32	5	54
1965	476	307	30	813	20	17	33	3	53
1966	591	423	28	1042	13	20	38	4	62

	New cases of respiratory tuberculosis:				New cases of non-respiratory tuberculosis:			
	Not bacteriologically confirmed							
1964	5	7	2	14	3	5	0	8
1965	25	15	0	40	2	5	0	7
1966	13	11	0	24	5	6	0	11
	Bacteriologically confirmed							
1964	7	6	0	13				
1965	8	7	0	15				
1966	7	6	0	13				

PERSONS EXAMINED AS CONTACTS:

	1964	1965	1966
Examined for first time	596	774	480
Examined and had attended in previous years	221	244	329
Re-attending during year	263	270	174
Total examinations	1080	1288	983
Examined as contacts of new cases:	180	160	126

Contacts found tuberculous:

Age 0-15	2	-	-
Over 15	2	4	5
Total	4	4	5

Tuberculin reaction of contacts attending for first time:

	Negative				Positive			
Age	1964	1965	1966	Age	1964	1965	1966
0 - 5	116	116	82	0	-	-	-
6 - 14	78	41	28	1 - 3	3	-	-
15 - 20	17	14	8	4 - 6	1	2	2
21 - 25	16	9	3	7 - 14	10	16	11
26 - 35	9	12	4	Over 14	105	129	51
Over 35	5	8	3		119	147	64
	241	200	128				

Number of B.C.G. Vaccinations:

1964	1965	1966
220	222	178

TABLE XIII - VACCINATIONS

Northfleet U.D.

Virus Diseases

(a) POLIOMYELITIS

For the years 1957 to 1960 the figures provided by County Hall for vaccination against poliomyelitis for each year gave the number of persons born in each of stated years who had received vaccination in each year under review. When we had figures in this detail we could assemble them in a way which demonstrated the size and pattern of the immunity barrier ready to oppose the spread of poliomyelitis. For 1961 the figures we received related to persons in age groups each of several years of birth. For 1962 similar groupings were also used but the groupings of years of birth were slightly different. For 1963 the groupings were the same as 1962 and we were able to manage the figures concisely enough for example to give the following in our 1963 report:-

Percentage of young population vaccinated 1959-1963

Born	Estimated population	No. had 2nd dose	% of population	*No. had 3rd dose	% of population
1957-1963	2827	1741	62%	2108	74%
1943-1956	4300	673	16%	3095	72%
1943-1963	7127	2414	34%	5203	73%

*For footnote see 1963 report, it explains why more 3rd doses than 2nd doses.

The raw figures for this current report were provided to us in yet a different form. For 1964 they were in age groups which differed from those of 1963 and the figures 1965-1966 not only differed in their age groups from those of 1964 but in addition were limited to age groups under sixteen years of age.

The above difficulties explain some of the short comings in the presentation of the figures that follow:-

Completed courses of primary vaccination (3 doses or equivalent) Northfleet U.D. 1958-65 (no 3rd doses before 1958)

Vaccinated			Vaccinated					Est. pop. 1965	%immune Dec. 31 1965 Northfleet U.D.	England and Wales
Previous years	1961	Born in year	1962	1963	1964	1965	1962-65			
		1965	-	-	-	93	93	504	18%	?
		1964	-	-	85	301	386	482	80%	65%
		1963	-	69	332	22	423	491	86%	71%
		1962	44	299	44	11	398	463	86%	71%
		1961	281	48	21	330*	350+	427	82+%	?
4591	1119	Previous eligible years	579	76	249		1234-			
126	18	"Others"	426	21	4		451			
4717	1137	Total	1330	513	735	757	3335			

*born 1949-61

TABLE XIII - VACCINATIONS (continued)

Northfleet U.D.

(a) POLIOMYELITIS (continued)

Completed courses of primary vaccinations (3 doses or equivalent)
1962-66

Born in year	Vaccinated 1962-65	Vaccinated 1966	Vaccinated 1962-66	Estimated Population	Estimated % Immune 31st Dec. 1966 Northfleet	Estimated % Immune 31st Dec. 1966 England & Wales
1966	-	94	94	483	19%	?
1965	93	259	352	504	70%	68%
1964	386	29	415	482	86%	72%
1963	423	10	433	491	88%	76%
1962	398	5	403	463	87%	?
Previous years	1584	9	1593			
Others	451	not stated				

Completed courses of 4 doses

1961 Age group	Completed 4 doses	1962 Age group	Completed 4 doses	1963 Age group	Completed 4 doses
School children aged under 12 years	1435*	Born 1943 to 1956	223*	Aged between 5 and 12 years	218*

1964 Age group	Completed 4 doses	1965 Age group	Completed 4 doses	1966 Age group	Completed 4 doses
Born 1964	-	Born 1965	-	Born 1963-66	-
1963	5	1964	-	Born 1962	31
1962	-	1963	-	1959-61	253*
1961	-	1958-61	274*	1950-58	11*
1949-60	210*	1949-57	35*		
1933-48	-				
Others	-				

*When dead vaccine had been previously given by injection 4th doses by injection or by oral route were given around the year of school entry. Most of these latter doses must therefore have been given at ages from 5 to 8. By 1965 the practice followed was to give three oral doses in infancy followed by a fourth oral dose on starting school.

Percentage of children aged 5 - 11 who have had 4 doses

(a) Year	(b) Birth years	(c) Est. Pop.	(d) No. receiving 4th dose	School leavers (e) Born	School leavers (f) Pop.	(g) School leavers immune $\frac{1435}{2034} = 70\%$	(h) Col. (d) cumulative	(i) Col. (g) cumulative	(j) No. with 4th dose at end of year (h)-(i)	(k) % with 4th dose at end of year j/c x 100
1961	1950-56	2034	1435	1950	245	172	1435	172	1263	62%
1962	1951-57	2125	223	1951	294	206	1658	378	1280	60%
1963	1952-58	2170	218	1952	268	188	1876	566	1310	60%
1964	1953-59	2251	210	1953	329	230	2086	796	1290	57%
1965	1954-60	2344	309	1954	307	215	2395	1011	1384	59%
1966	1955-61	2464	264	1955	293	204	2659	1215	1444	58%

The above table contains assumptions and estimates the rough nature of which only justify figures to the nearest hundred. The figures are not so rounded off in order that the origin of certain figures can thereby be discerned.

TABLE XIII - VACCINATIONS (continued) Northfleet U.D.

(b) SMALLPOX

NUMBERS VACCINATED and REVACCINATED by age at date of vaccination

Year	Under 1 year	1 year	2 - 4	5 - 14	15 or over	Total
			Vaccinated			
1966	?	291	?	?	?	?
1965	?	311	?	?	?	?
1964	?	285	?	?	?	?
1963	?	105	?	?	?	?
1962	283	37	66	166	247	799
1961	263	24	13	8	2	310
1960	?	?	?	?	?	?
1959	226	___15___/		6	4	251
			Revaccinated			
1966	?	?	?	2)	?	?
1965	?	?	?	1) Age 5-7 years	?	?
1964	?	?	?	-	?	?
1963	-	?	?	9)	?	?
1962	-	1	43	267	578	889
1961	-	-	-	2	2	4
1960	?	?	?	?	?	?
1959	-	-	-	-	4	4

INFANT VACCINATION RATE. Up to the end of 1961 most infants who were vaccinated were vaccinated in the first year of life but in 1962 more infants than in former years were vaccinated at a later age. In 1963 the second year of life was advocated as an age for vaccination. The percentage of the number of births in a year of those vaccinated while under one year of age in that year is used here as a vaccination rate up to 1962.

	No. of live births	No. vaccinated under 1 yr.	% of births of those vaccinated
1966	523	?	?
1965	515	?	?
1964	511	?	?
1963	505	?	?
1962	479	283	59%
1961	436	263	60%
1960	434	?	?
1959	356	226	64%

SECOND YEAR VACCINATION RATE. With practice changing to vaccination in the second year of life the County no longer record vaccinations at ages under 1 year, consequently the expedient rate is now the vaccinations done as a percentage of infants surviving to the age of one year.

	Infants aged 1 year approx.	Vaccinations done at age 12 - 23 months	% of those eligible vaccinated
1966	504	291	58%
1965	482	311	65%
1964	491	285	58%
1963	463	105	23%
1962	427	37	9%
1961	422	24	6%

SCHOOL CHILD IMMUNITY DECEMBER 1965. When records of vaccination and revaccination of all young age groups were available it was feasible to make an estimate of school child immunity. Records are now incomplete and this is no longer feasible. However vaccination and revaccination of children of school age is now minimal and the immunity is mainly that from the vaccinations and revaccinations done in 1962 when smallpox was in the country. Our 1963 report estimated 489 or 16% of those born 1949-58 to have this legacy in December 1963. 302 and 245 = 547 left this age group by December 1965, i.e. 16% 547 = 88 left who were immune, therefore 489 - 88 = 401/3235 = 12% of school children had some immunity in December 1965. A further 294 left this age group by December 1966, i.e. 16% 294 = 47 left who were immune, therefore 401-47 = 354 with immunity remained. The 5-14 population December 1966 was 3368. Thus roughly 354/3368 = 11% of school children had some immunity in December 1966.

TABLE XIII - VACCINATIONS (continued)

Northfleet U.D.

Bacterial Diseases

(c) DIPHTHERIA

NUMBER VACCINATED

Year	Age at 31st December (in years)	Primary innoculations done in the year	Reinforcing innoculations done in the year
1966	0 - 4	458	326
	5 - 7	4	270
	8 - 16	-	4
1965	0 - 4	489	331
	5 - 7	2	253
	8 - 16	-	-
1964	0 - 4	451	268
	5 - 9	6	194
	10 - 14	1	4
1963	0 - 4	412	235
	5 - 9	2	166
	10 - 14	-	3
1962	0 - 4	336	167
	5 - 9	7	146
	10 - 14	-	-
1961	0 - 4	413	127
	5 - 9	45	172
	10 - 14	9	7

PRIMARY VACCINATIONS

at age 0 - 4 years before December 31st 1966 in children aged 0 - 8 years

Year Born	Age Dec.31 1966	Vaccinated in year ending December 31st										Est. Pop.	% vaccinated at age 0-4 years
		1958	1959	1960	1961	1962	1963	1964	1965	1966	1958-66		
1966	0									225	225	483	47%
1965	1								228	213	441	504	88%
1964	2							194	244	12	450	482	93%
1963	3		Not born				181	227	8	4	420	491	85%
1962	4					165	214	18	3	4	404	463	87%
1961	5				171	148	11	6	6		342	427	80%
1960	6			154	182	14	5	6			361	422	86%
1959	7		79	170	25	3	1		Aged 5+		278	349	80%
1958	8	52	150	21	16	6					245	339	73%
1958-66	0-8	52	229	345	394	336	412	451	489	458	3166	3960	80%
		1%	6%	9%	10%	9%	10%	11%	12%	12%	80%	100%	

TABLE XIII - VACCINATIONS (continued)

Northfleet U.D.

Bacterial Diseases

(c) DIPHTHERIA (continued)

REINFORCING VACCINATIONS[1] by December 31st, 1966

Year Born	Age Dec. 31st 1966	Revaccinated in year ending December 31st											1966	Est. Pop.	% Revaccs. by 1966
		1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966			
1966	0											-	-	483	0%
1965	1										-	3	3	504	1%
1964	2									-	3	202	205	482	43%
1963	3								-	1	229	79	309	491	63%
1962	4							-	2	185	73	42	302	463	65%
1961	5						-	2	153	58	26	90*	329	427	77%
1960	6					-	-	116	52	24	84*	90	366	422	87%
1959	7				-	-	57	33	28	39*	84	90	331	349	95%
1958	8			-	-	5	37	16	33*	39	84	1	215	339	63%
1957	9		-	2	1	6	33	29*	33	39	?	-	143	336	43%
1956	10	-	-	-	-	19	34*	29	33	39	?	1	155	298	52%
Total 0-10		-	-	2	1	30	161	225	334	424	583	598	2358	4594	51%
Percentage		-	-	-	-	1%	3%	5%	7%	9%	13%	13%	51%		
Previous years 11+ back to:		467 1942	300 1943	166 1944	172 1945	151 1946	138 1952	88 1953	67 1954	38 1955	? 1959	2 1950			
Previous Years:		-	-	-	-	-	7	-	3	4	?	?			

Not born

[1] Some of these revaccinations at school entry may be in children already enumerated at age 18-21 months. *Average of age group of several years.

(d) WHOOPING COUGH

NUMBER VACCINATED

Year	Age at 31st December in years	Primary inoculations done in the year	Reinforcing inoculations done in the year
1966	0 - 4	456	231
	5 - 7	2	125
	8 - 16	-	4
1965	0 - 4	483	231
	5 - 7	2	142
	8 - 16	-	-
1964	0 - 4	445	?
	5 - 9	3	?
	10 - 14	1	?
1963	0 - 4	414	?
	5 - 9	2	?
	10 - 14	-	?
1962	0 - 4	332	?
	5 - 9	5	?
	10 - 14	-	?
1961	0 - 4	400	?
	5 - 9	38	?
	10 - 14	6	?

TABLE XIII - VACCINATIONS (continued)

Northfleet U.D.

Bacterial Diseases

(d) WHOOPING COUGH (continued)

PRIMARY VACCINATIONS

Year Born	Age Dec.31 1966	Vaccinated in year ending December 31st										Est. Pop.	% vaccinated at age 0-4 years
		1958	1959	1960	1961	1962	1963	1964	1965	1966	1958-66		
1966	0									224	224	483	46%
1965	1								228	213	441	504	88%
1964	2							193	242	12	447	482	93%
1963	3						184	226	7	3	420	491	85%
1962	4					164	213	18	2	4	401	463	87%
1961	5				171	147	11	5	4		338	427	79%
1960	6			154	179	14	5	3			355	422	84%
1959	7		130	142	19	3	1				295	349	84%
1958	8	113	106	16	14	4					253	339	75%
1958-66	0-8	113	236	312	383	332	414	445	483	456	3174	3960	80%
% 0-8 age group vaccinated		3%	6%	8%	10%	8%	10%	11%	12%	12%	80%	100%	

Not born

Aged 5+

REINFORCING VACCINATIONS. As since 1960 combined vaccine has been used for whooping cough, diphtheria and tetanus and reinforcing vaccinations at 18-21 months are done with the combined vaccine the number of reinforcing vaccinations at this age for whooping cough is similar to that for diphtheria.

(e) TETANUS

1965 was the first year for which we had figures for tetanus vaccination.

	Age 31st December	Primary vaccinations	Reinforcing vaccinations
1966	0 - 4	458	326
	5 - 7	4	270
	8 - 16	-	4
1965	0 - 4	489	331
	5 - 7	2	253
	8 - 16	-	-

In view of the introduction of the combined vaccine in 1960 the numbers of primary vaccinations against tetanus in years 1960-64 can be assumed to be almost identical with those of diphtheria vaccination.

(f) TUBERCULOSIS

Children in close contact with patients suffering from tuberculosis are, if necessary, vaccinated with B.C.G. The vaccinations carried out at the Chest Clinic are given in Table XII. Vaccination of school children is carried out by the School Health Services. These children are skin tested and those who do not react are vaccinated. Those who do react are referred to the Chest Physician for further investigation. Figures are not available for this district.

NEW DWELLINGS

The following dwellings have been completed in the last six years:-

	1961	1962	1963	1964	1965	1966	1961/66
By Council enterprise	53	41	86	78	42	55	355
By Private enterprise	97	254	107	82	126	242	908
	150	295	193	160	168	297	1263

APPLICANTS FOR COUNCIL HOUSES

At the end of March in the years 1963 to 1966 the waiting list for housing applicants has been as follows:-

	Young and Middle-aged Applicants	Aged Applicants
1963	810	203
1964	688	201
1965	615	223
1966	700	203

FAMILIES REHOUSED BY THE COUNCIL

During the years ending in March the numbers rehoused have been:-

1963 82 1964 81 1965 116 1966 90

COUNCIL TENANTS TRANSFERRED

The following families were transferred to accommodation more suitable to their requirements:-

1963 46 1964 47 1965 68 1966 47

HOUSING PRIORITY ON MEDICAL GROUNDS

In 1964, 1965 and 1966 there was no precise scheme for the purpose of allocating priority in rehousing on medical grounds.

IMPROVEMENT GRANTS

	Number of dwellings improved: With discretionary grants	With standard grants	Cost to the public purse: Discretionary grants	Standard grants
1964	23	12	£7,858	£1,232
1965	11	30	£1,030	£8,627
1966	25	14	£8,504	£1,806

UNFIT HOUSES MADE FIT

	By Owner			By Council		
	1964	1965	1966	1964	1965	1966
After informal action by local authority	96	101	162	-	-	-
After formal notice under						
(a) Public Health Acts	29	38	74	-	-	-
(b) Sections 9 and 16 Housing Act, 1957	-	-	-	-	-	-
Under Section 24, Housing Act, 1957	-	-	-	-	-	-

RENT ACT, 1957

	1964	1965	1966
Applications received for Certificates of Disrepair	1	1	-
Notices issued to landlords (Form J)	1	1	-
Undertakings received from landlords (Form K)	-	1	-
Certificates of Disrepair issued (Form L)	1	-	-

OVERCROWDING

In 1964, 1965 and 1966 there were no proceedings to abate statutory overcrowding.

HOUSING (continued) Northfleet U.D.

REPAIRS: The following are the details of repairs initiated by the Council's Public Health Inspector's:-

	1964	1965	1966
Ceilings repaired or renewed	17	17	33
Walls, brickwork damp-proofed	33	153	210
Walls, internal plaster repaired	16	31	41
Doors and frames repaired or renewed	10	10	19
Firegrates repaired or renewed	1	5	4
Fireplaces, brickwork and plasterwork repaired	-	-	2
Floors repaired or relaid	7	21	18
Windows, woodwork of frames, sashes or sills repaired or renewed	42	49	112
Sash lines provided	2	19	14
Chimney flues repaired	1	1	-
Sinks repaired or renewed	3	2	6
Water supply, pipes etc., repaired	1	4	4
Electric lighting provided	-	-	2
Water closets:			
External structure repaired	5	9	38
Internal structure repaired	3	18	20
Flushing cistern repaired or renewed	3	9	7
Pedestal pan and traps repaired or renewed	2	3	8
Roofs repaired	26	35	75
Rain-water pipes repaired or renewed	3	2	19
Eaves gutters repaired or renewed	9	15	30
Chimney stacks repaired or rebuilt	-	2	16
Valley gutters repaired or renewed	5	3	-
Walls, external, repaired	5	19	36
Yard surfaces repaired or relaid	-	8	4
Dustbins provided	3	2	15
Fences repaired or renewed	1	1	3
Miscellaneous	-	23	6

HOUSES DEMOLISHED OR CLOSED - HOUSING ACT, 1957

	Houses demolished or closed		
	1964	1965	1966
Unfit houses demolished:			
In Clearance Areas (Part III)	9	10	-
Not in Clearance Areas (Part II)	2	-	2
Unfit houses closed (Part II)	2	-	1
Houses acquired under Part V	88	82	22
demolished for redevelopment or vacated	74	63	12

ADDRESSES OF HOUSES DEMOLISHED OR CLOSED

	Clearance Areas	Section 17, etc.	Part V
1964	Carters Road, 8, 9, 10, 11 and 12 Lawn Road 3, 4, 5 and 6	Dover Road 29 (Closed*) Newmans Road, 1 Samaritan Grove, 14 Upper Ave., Noakes Cottage	
1965	Dorset Place, Lawn Road, 21, 22, 23, 24, 25, 26, 27, 28, 29 and 30	Nil.	
1966	Nil.	Alfred Place, 21 Dover Road, 29 (*Demolished) Wycliffe Road, 24	

HOUSING (continued) Northfleet U.D.

PERSONS DISPLACED PRIOR TO CLOSURE OR DEMOLITION OF HOUSES

Year of closure or demolition	Clearance Areas		Section 17, etc.		Part V.
1964	Adults	34	Adults	8	
	Children	10	Children	-	
1965	Adults	-	Adults	-	
	Children	-	Children	-	
1966	Adults	-	Adults	2	
	Children	-	Children	-	

CARAVANS. The following are the details of licences issued during 1964, 1965 and 1966 under the Caravan Sites and Control of Development Act, 1960:

	1964	1965	1966
Site licences in force at end of year	2	2	2
Number of caravans permitted	12	12	12

In addition to the above, 4 showman caravans not requiring licences have been stationed in the district in these 3 years for the winter periods.

APPENDIX II - WATER

QUANTITY. The supply has always been sufficient for domestic and drinking purposes.

QUALITY. In the following analyses the results of sampling are summarised by use of the following indicators:

Bacteriological: Number of E. coli (type 1) per 100 ml.
Chemical: Albuminoid ammonia expressed as nitrogen in parts per million.

Bacteriological Analyses

Samples by Medway Water Board

	1964		1965		1966	
	No. of Samples.	E.coli type 1	No. of Samples.	E.coli type 1	No. of Samples.	E.coli type 1
Hazells Pumping Station						
Raw water:	52	None	38	None	47	None
			2	1 - 2	1	2
Treated water:	52	None	40	None	48	None
Northfleet Pumping Station						
Raw water:	89	None	55	None	47	None
	11	1 - 18+	13	1 - 50	9	1 - 3
Treated water:	101	None	68	None	55	None
Consumer's Premises						
Treated water:	-	-	-	-	2	-

Samples by Council's Public Health Inspectors

	1964		1965		1966	
	No. of Samples.	E.coli type 1	No. of Samples.	E.coli type 1	No. of Samples.	E.coli type 1
Consumer's Premises						
Treated water	19	None	19	None	26	None

Chemical Analyses

Samples by Medway Water Board

		No. of Samples	Albuminoid Nitrogen p.p.m.	Temporary Hardness p.p.m.	Total Hardness p.p.m.
Hazells Pumping Station					
Raw Water:	1964/6	None	-	-	-
Treated water:	1964	4	Nil	Av. 243	283
	1965	2	Nil	Av. 245	284
	1966	3	Nil	Av. 248	284
Northfleet Pumping Station					
Raw Water:	1964	4	Nil	Av. 248	285
	1965	4	Nil	Av. 244	285
	1966	3	Nil	Av. 249	284
Treated water:	1964/6	None	-	-	-

SWIMMING POOLS

The four pools in this district are at County Primary Schools. The water is chlorinated with hypochlorite solution after filtration through fabric or sand.

	No. of Samples	E. coli type 1	Plate counts
Lawn Road School Swimming Pool			
1964	11	None	1, 0, 0, 0, 450, 0, 0, 4 uncountable.
1965	12	None	0, 2, 1,500, 0, 1, 0, 1,600, 5 uncountable
1966	9	None	0, 0, 0, 6, 0, 0, 0, 2 uncountable.
Shears Green School Swimming Pool			
1964	4	None	1, 500, 14, 1 uncountable.
1965	5	None	2, 92, 300, 0, 0.
1966	4	None	0, 0, 0, 0.
Rosherville School Swimming Pool			
1964	3	None	0, 50, 1 uncountable.
1965	5	None	0, 0, 0, 0, 1 uncountable.
1966	3	None	0, 0, 0.
Dover Road School Swimming Pool			
1964	1	1	1 uncountable,
	2	None	60, 1.
1965	4	None	4, 2,100, 0, 0.
1966	None	-	-

FLUORIDE CONTENT

Too small to measure.

In addition to the 208 dwellings connected to the sewer in 1962 and 1963, 102 dwellings were connected to the sewer in 1964, 1965 and 1966. These latter dwellings were in Barnfield Close, Fawkham Avenue, Festival Avenue, The Laurels, Longfield Avenue, Nurstead Avenue, Walnut Hill Road and Woodland Close. The 625 houses built in 1964, 1965 and 1966 were connected to the sewer. The position at the end of 1966 was approximately as follows:-

	Dec. 1966
Dwellings with water-closets discharging into the sewer	8,019
" " " " " into septic tanks	3
" " " " " into cesspools	41
" " chemical closets	1
Dwellings and shops with private dwelling accommodation: 31.3.67 (Abstract of Accounts)	8,064

The following are the details of the work initiated by the Council's Public Health Inspectors during 1964, 1965 and 1966:-

	1964	1965	1966
Drains repaired or reconstructed	9	7	6
Drains cleared	6	8	10
Gully traps repaired or renewed	4	-	5
Drainage works inspected	88	41	49
Tests applied to drains (excluding Council houses)	84	5	5

SEWAGE DISPOSAL WORKS. Results of samples taken from the effluent were:-

Samples taken by Northfleet Urban District Council

		No. of Samples	Suspended solids	Albuminoid nitrogen	Oxygen absorbed in 4 hrs @ 27°C	Oxygen absorbed in 5 days @ 20°C B.O.D.
			Parts per million			
1964		Nil	-	-	-	-
1965	2nd qr.	1	64	?	?	More than 75
		1	33	5.3	28.0	65
1966	1st qr.	1	38	?	20.9	53
	2nd qr.	1	90	?	34.0	160

Samples taken by Port of London Authority

			Average readings			
1964	1st qr.	2	117	6.9	38.0	145
	2nd qr.	3	169	7.3	44.4	166
	3rd qr.	2	49	6.3	21.9	60
	4th qr.	2	45	3.9	22.4	53
1965	1st qr.	2	58	4.2	25.6	63
	2nd qr.	1	67	3.8	20.0	38
	3rd qr.	3	102	4.0	20.4	53
	4th qr.	6	48	6.1	26.5	86
1966	1st qr.	6	60	6.2	27.9	86
	2nd qr.	8	44	5.3	26.4	76
	3rd qr.	10	27	4.2	20.7	49
	4th qr.	7	37	3.9	20.9	71

Standards vary with local circumstances but as a general guide the standard asked for at our position along the river Thames is less than 31 p.p.m. suspended matter and less than 21 p.p.m. B.O.D.

FOOD PREPARATION. Food premises inspected by the Council's Public Health Inspectors were:

	Premises		
	1964	1965	1966
Bakehouses	3	3	3
Butchers	14	14	14
Cafes, restaurants, canteens etc.	30	30	29
Confectioners	24	23	23
Fish fryers and fishmongers	5	5	5
Greengrocers	14	14	14
Grocers	64	63	62
Ice-cream premises	60	60	59
Licensed premises (non-catering)	27	27	25
The number of inspections were	317	256	309

The figure for ice-cream premises is the number of premises registered most of which were also the premises of grocers or confectioners.

REGISTERED PREMISES. Section 16 of the Food & Drugs Act, 1955 requires certain premises to be registered. Those registered in 1964, 1965 and 1966 were:

	1964	1965	1966
Sausage making and cooked meats	13	13	13
Curing and preservation of fish	5	5	5
Ice-cream storage and sale	60	60	59

Visits to these premises are included in the figures tabulated above.

NOTICES. As a result of the foregoing inspections the following informal written notices were served or complied with:

Informal written notices served:		Informal written notices complied with:	
1964	14	1964	22
1965	4	1965	3
1966	4	1966	4

The following summarises the defects remedied:

	1964	1965	1966
Premises and equipment cleansed, repaired or improved	16	2	3
Provision of first aid or facilities for cleanliness	5	-	1
Protection of food from risk of contamination	2	2	2
Repair or cleaning of sanitary accommodation	5	-	1
Miscellaneous	2	-	-

Certain notices were verbal and not written.

MILK. Regulations require this Council to register (a) dairies not being dairy farms and (b) distributors, i.e. dairymen other than dairy farmers.

The following are the figures for registrations:

	1964	1965	1966
Distributors registered	40	37	37
Dairies registered	-	-	-

Milk sold must be designated and distributors must be licensed by the Food & Drugs Authority to use the designations. Licenses issued by Dec. 1966 were:-

Pasteurised	3	Ultra heat treated	1	
Sterilised	17	Pasteurised and sterilised	15	Total: 37
Untreated	-	Pasteurised, sterilised and u.h.t.	1	

FOOD REGARDED AS UNFIT FOR CONSUMPTION.

Seizure of suspected food by the Council's Officers: Nil.

Surrender of suspected food by traders:

	Meat and Fish		Other Foods	
1964	Canned meat	38 lbs.	Canned veg. and fruit	42 lbs.
	Canned fish	14 ozs.	Canned milk	3 lbs.
			Canned soup	1 lb.
1965	Liver	26 lbs.	Fruit	11 lbs.
	Canned meat	36 lbs.	Canned vegetables	9 lbs.
			Canned milk	1 lb.
			Lemonade	11 ozs.
1966	Frozen meat	7 lbs.	Canned veg. and fruit	28 lbs.
	Fresh meat	330 lbs.	Canned milk	3 lbs.
	Canned meat	14 lbs.	Dried fruit	3 lbs.
	Canned fish	6 ozs.	Canned soup	5 lbs.
	Frozen fish	6 lbs.		

Submission of suspected food by complaining customers:

		1964	1965	1966
Tainted, "off" or old:	Confirmed	-	2	-
	Not confirmed	2	1	-
Moulds:	Confirmed	-	1	2
	Not confirmed	-	-	-
Dirt:	Confirmed	-	-	1
	Not confirmed	3	1	3
Mineral oil:	Confirmed	-	2	1
	Not confirmed	-	-	-
Insects or their larvae:	Confirmed	-	-	1
	Not confirmed	-	-	-
Total:	Confirmed	-	5	5
	Not confirmed	5	2	3

Unfit food found by sampling: Nil

Meat rejected by slaughterhouses: Nil

There is no slaughterhouse in this district. One slaughterman was licensed in 1964-66 but he does this work only occasionally and outside this district.

LEGAL PROCEEDINGS. Mainly by Food and Drugs Authority.

	Food	Offending substance.	Action taken.
1964	Nil	-	-
1965	Bread	Fabric and mineral oil	Fined £20 plus 5 guineas costs.
	Bread	Iron and mineral oil	Manufacturers warned.
1966	Milk	Sediment	Suppliers warned.
	Pork pie	Mould growth	Proceedings discontinued.
	Bread	Fabric and mineral oil	Fined £10 plus 5 guineas costs.
	Bread	Mould growth	Manufacturers warned.

LABORATORY EXAMINATIONS.

Ice cream. Samples obtained and examined for cleanliness by the methylene blue test were:

Methylene blue decolourised in:	Provisional Grade	1964	1965	1966
Over 4 hrs. @ 37°C.	I	16	23	28
2½ - 4 hrs. " "	II	15	9	3
0 - 2 hrs. " "	III	2	2	2
Pre-incubation period (17 hrs. @ 20°C.)	IV	-	-	2
		33	34	35

Suggested standard. About 50% of samples to fall into Grade I, 80% into Grades I or II, not more than 20% into Grade III, and none into Grade IV.

Milk. All milk sold must be designated milk and must satisfy prescribed tests. Sampling for these tests is done by the Food and Drugs Authority. The results of sampling were:

	Satisfactory			Unsatisfactory		
	1964	1965	1966	1964	1965	1966
Pasteurised	8	28	13	0 (3 void)	0	0
Sterilised	0	1	1	-	0	0
Untreated	0	0	0	-	-	-

APPENDIX V - FOOD CONTENT

SAMPLING. Samples taken by the Food and Drugs Authority in Northfleet U.D. were:

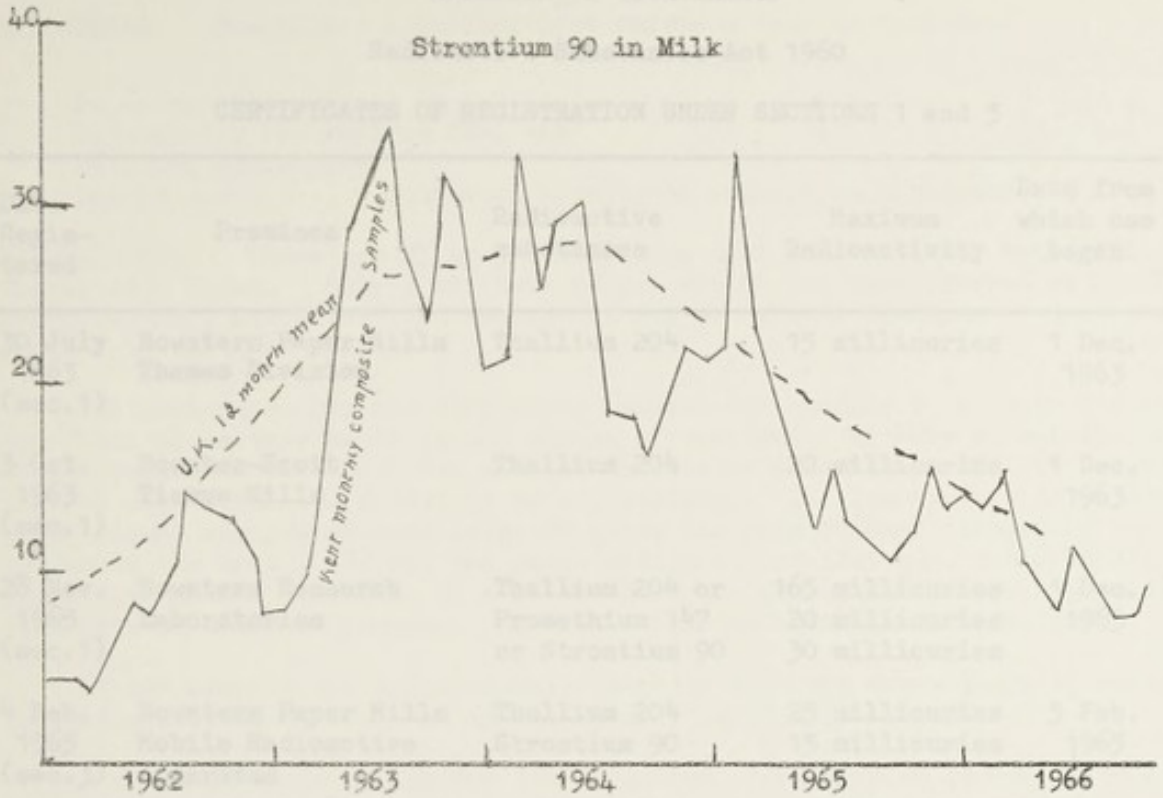
	1964	1965	1966
Milks	35	35	11
Drugs	6	6	6
Spirits etc.	5	8	5
Other food	35	32	45
	81	81	67

Of the above samples all were satisfactory except:

LEGAL PROCEEDINGS etc.

	Offending substance	Action taken
From sampling:		
1965	Ginger beer contained sediment	Manufacturers informed.
1966	Stewed steak with 62% meat	Production discontinued.
Items submitted by customers:		
1964	Wire nail in loaf	Caution to bakers.
	Bolt in tin of corned beef	No action. Foreign origin.
	Brown bread in white bread	No action.
	Cornflakes with charred cereal	No action.
	Hair in mincemeat	No action.
1966	String in pie	Fined £10 costs £5.5.0d. (Case heard 1967)

Note. In regard to appendices IV and V, affairs relating to the fitness of food are included in Food Hygiene and affairs relating to quality are included in Food Content. The distinction is desirable as, briefly, unfit food may cause loss of health whereas poor quality food causes loss of money. E.g. unfit food = lead in cider; poor quality food = water in milk.



KENT

	Number of samples					Strontium 90 pCi/g.Ca*				
	1962	1963	1964	1965	1966	1962	1963	1964	1965	1966
Jan	125	88	99	83	97	4.0	8.5	25.6	21.9	13.0
Feb	105	143	136	112	123	4.4	8.4	27.0	22.3	13.8
March	112	160	94	80	138	4.0	9.6	32.5	32.6	13.5
April	81	64	122	74	85	5.8	13.4	26.3	22.5	14.2
May	107	169	94	80	127	8.6	21.6	28.6	15.5	10.9
June	80	84	118	42	98	8.2	24.5	30.0	12.2	8.8
July	103	100	120	110	116	10.4	31.0	25.5	15.4	7.5
Aug	65	62	96	86	54	14.6	32.8	18.8	12.4	10.8
Sept	106	54	85	81	103	13.6	27.6	17.9	11.2	8.5
Oct	95	146	81	80	44	13.0	24.0	16.9	10.3	7.4
Nov	120	123	93	66	48	12.5	31.4	19.0	11.8	8.4
Dec	64	87	38	36	37	10.4	29.6	21.3	15.1	8.4
Average						9.1	21.9	24.1	16.9	10.4

UNITED KINGDOM

Deposition Sr.90 mCi/km^2	1958	1959	1960	1961	1962	1963	1964	1965	1966
Annual deposit	5	8	2	2	11	19	15	6	3
Cumulative deposit Dec. 31	15	23	24	26	35	53	67	71	72
Intake of Sr.90 pCi/day									
Total diet	6	10	7	7	11	25	29	19	≠
Mean Strontium 90 values (pCi/g.Ca)									
Total diet	6	9	6	6	10	23	26	18	≠
Milk	7	10	6	6	12	26	28	19	12

*pCi/ = picocurie. pCi/g.Ca = Strontium Unit = picocurie Sr.90 per gramme calcium

≠ Analysis of total diet now unnecessary as results similar to milk.

APPENDIX VI (continued)

Radioactive Substances Act 1960

CERTIFICATES OF REGISTRATION UNDER SECTIONS 1 and 3

Date Registered	Premises	Radioactive substances	Maximum Radioactivity	Date from which use began	Registration revoked w.e.f.
30 July 1963 (sec.1)	Bowaters Paper Mills Thames Division	Thallium 204	15 millicuries	1 Dec. 1963	
3 Oct. 1963 (sec.1)	Bowater-Scott Tissue Mills	Thallium 204	20 millicuries	1 Dec. 1963	
28 Nov. 1963 (sec.1)	Bowaters Research Laboratories	Thallium 204 or Promethium 147 or Strontium 90	165 millicuries 20 millicuries 30 millicuries	1 Dec. 1963	20 April 1967
4 Feb. 1965 (sec.3)	Bowaters Paper Mills Mobile Radioactive Apparatus	Thallium 204 Strontium 90	25 millicuries 15 millicuries	5 Feb. 1965	10 May 1967
12 Mar. 1965 (sec.1)	Bowaters Paper Mills Thames Division	Thallium 204	20 millicuries	13 Mar. 1965	18 May 1967
19 Apr. 1966 (sec.1)	Lytag Ltd.	Caesium 137	27 millicuries	21 Apr. 1966	
19 Apr. 1967 (sec.1)	Bowaters Research Laboratories	Thallium 204 or Promethium 147	200 millicuries 20 millicuries	20 Apr. 1967	
24 May 1967 (sec.1)	Bowaters Paper Mills Thames Division	Thallium 204	35 millicuries	25 May 1967	9 Nov. 1967
23 June 1967 (sec.1)	Boyle Industrial Gauging Works	Thallium 204 or Krypton 85 or Strontium 90 or Americium 241 Tritium	200 millicuries 5 curies 5 curies 10 curies 410 curies	26 June 1967	20 Jan. 1968
8 Nov. 1967 (sec.1)	Bowaters Paper Mills Thames Division	Thallium 204 or Krypton 85	35 millicuries 520 millicuries	9 Nov. 1967	

POLLUTION WITH DUST

INDUSTRIAL. Complaints regarding dust nuisance were as follows:-

	1964	1965	1966
Paper manufacture	2	2	1
Electricity (pulverised fuel ash)	11	9	8
Building operations	-	1	-
Cement works	Continued to attract comment as a nuisance.		

MEASUREMENTS. There are 25 gauges measuring dust for the local authorities of the Thames-side areas. Only 7 of these gauges are in the area covered by Dartford M.B., Dartford R.D., Northfleet and Swanscombe U.D's. Their readings 1963-66 are on pages i to vii that follow.

One main cause for the difference between the reading of a gauge for one month from that of another month is the change of weather. We have no refined mathematical resources to adjust for changes in weather although we do have certain meteorological data which can assist in interpretation. It also assists if we can see the proportional changes of each gauge alongside the proportional changes of the other gauges in the area. If all the gauge readings, for instance, change in the same proportion in one direction in a given month the one common factor may be the weather, some data of which we possess. It could also be a change in emission.

We can compare the proportional change of each and every gauge by using the logarithmic vertical scale as explained diagramatically on page viii.

A means of compensating for the influence of weather on the deposits of dust from cement works is to assume that dust from other sources is emitted in constant amounts and observe the percentage of dust from cement works in total dust collected by the gauges.

POLLUTION WITH PRODUCTS OF COMBUSTION

DOMESTIC. By the end of 1966 the number of dwellings in the Smoke Control areas 1 and 2 created in 1961 and 1962 were 1,400 and 407 respectively.

INDUSTRIAL. Complaints regarding smoke nuisances were as follows:-

	1964	1965	1966
Paper manufacture	1	-	2
Shipping and wharves	1	2	1
Building firm's chimney	1	4	1
Cement works boiler house chimney	1	-	-
Locomotive	-	1	-
Burning corn stubble	-	1	-
Ice cream (fumes from van)	-	-	1
Bonfires (garden)	6	3	3

MEASUREMENTS. Readings of the volumetric gauges follow on pages 72, 73 and 74.

SMELLS

Complaints of oil smells from oil storage facilities of the cement industry were 1964, 2; 1965, 1; 1966, 1.

One complaint was received in 1965 of oil smells from an ice cream van.

AIR HYGIENE

DEPOSIT GAUGE READINGS

Tons per square mile

Month	Dissolved matter			Undissolved matter			Total solids			Dust from cement wks			Dust from other sources		
	'63	'64	'65	'63	'64	'65	'63	'64	'65	'63	'64	'65	'63	'64	'65
WHITE OAK															
Jan	15	8	6	7	6	4	22	14	10	8	3	2	14	11	8
Feb	10	7	6	16	9	7	26	16	13	6	4	4	20	12	9
Mch	6	7	8	7	9	7	12	16	15	1	4	0	11	12	15
Apl	7	6	7	6	10	15	13	16	22	4	3	0	9	13	22
May	6	7	3	7	10	14	13	17	17	3	2	0	10	15	17
June	6	5	6	6	5	6	12	10	12	3	2	3	9	8	9
July	5	3	6	4	8	10	9	11	16	2	1	2	7	10	14
Aug	6	5	3	5	7	5	11	12	9	1	3	2	10	9	7
Sept	8	4	10	4	5	5	12	10	15	4	3	0	8	7	15
Oct	6	8	5	3	22	5	10	30	10	1	0	4	9	30	6
Nov	6	7	8	3	6	7	9	13	15	0	3	4	9	10	11
Dec	8	6	5	4	4	5	12	10	10	3	3	0	9	7	10
										36	31	21	125	144	143
BOW ARROW															
Jan	29	18	10	9	13	7	38	32	17	28	18	5	10	14	12
Feb	12	17	14	7	17	15	19	34	29	12	14	13	7	20	16
Mch	-	18	16	-	22	13	-	40	30	-	13	12	-	27	18
Apl	20	13	21	21	13	16	41	26	37	30	5	15	11	21	22
May	11	16	7	9	19	6	20	35	13	10	14	2	10	21	11
June	14	18	13	15	17	19	29	35	32	18	11	11	11	24	21
July	14	7	15	22	14	14	36	21	29	30	4	9	6	17	20
Aug	12	10	15	12	20	13	24	30	28	12	11	10	12	19	18
Sept	19	10	10	37	23	11	56	33	21	33	9	1	23	24	20
Oct	9	17	21	7	19	20	16	36	41	8	16	23	8	20	18
Nov	12	15	26	6	10	19	18	25	46	5	12	25	13	13	21
Dec	17	15	9	13	13	9	30	28	18	18	14	2	12	14	16
										204+	141	128	123	234	213
DARTFORD CENTRAL															
Jan	19	14	9	8	11	10	27	25	19	14	12	3	13	23	16
Feb	15	13	10	17	13	12	32	27	22	15	9	8	17	18	14
Mch	8	15	11	6	13	9	14	28	21	4	9	6	10	19	15
Apl	18	9	14	15	10	12	33	19	26	22	3	8	11	16	16
May	13	12	5	5	12	7	18	24	12	7	7	0	11	17	12
June	12	14	12	6	9	8	17	23	20	11	5	8	6	18	12
July	10	5	11	11	11	8	21	16	19	15	2	4	6	14	15
Aug	10	9	12	10	8	8	20	17	20	7	6	5	13	11	15
Sept	10	8	7	15	14	8	25	22	15	16	10	2	9	12	13
Oct	7	13	17	6	10	8	13	23	25	6	8	15	7	15	10
Nov	8	12	16	6	8	12	14	20	28	3	9	13	11	11	15
Dec	11	12	7	9	9	7	20	22	13	9	8	0	11	14	13
										129	88	72	125	188	166
JOYCE GREEN															
Jan	-	17	9	-	15	5	-	32	14	-	17	5	-	15	9
Feb	-	19	9	-	18	5	-	35	14	-	20	6	-	15	8
Mch	9	17	14	15	17	7	24	34	21	0	12	12	24	22	9
Apl	11	10	17	9	11	17	20	21	34	10	5	2	10	16	32
May	-	14	5	-	17	5	-	32	10	-	8	2	-	24	8
June	12	14	10	13	13	7	25	27	17	9	7	6	14	20	11
July	13	7	10	19	12	9	33	19	20	15	3	6	18	16	14
Aug	15	9	8	12	10	6	27	19	13	8	7	6	19	12	7
Sept	17	10	7	11	13	10	28	23	17	19	10	1	9	13	16
Oct	10	22	20	11	14	37	21	36	57	10	10	14	11	26	43
Nov	16	14	22	20	9	18	36	24	41	9	10	14	25	14	27
Dec	14	6	7	11	7	6	26	13	13	16	5	0	10	8	13
											114	74		193	197

DEPOSIT GAUGE READINGS (continued)

Month	Dissolved matter			Undissolved matter			Total solids			Dust from cement wks			Dust from other sources		
	'63	'64	'65	'63	'64	'65	'63	'64	'65	'63	'64	'65	'63	'64	'65
HORNS CROSS															
Jan	-	35	25		36	11	-	71	36	-	55	29	-	16	7
Feb	34	33	35	30	22	1	64	55	36	60	39	34	4	16	2
Mch	27	32	28	20	18	6	47	50	34	36	40	33	11	10	1
Apl	24	35	38	15	30	84	39	66	122	33	48	51	6	18	71
May	22	23	15	20	15	39	41	38	54	37	34	25	4	4	29
June	23	24	22	22	11	27	45	35	49	38	26	34	7	9	15
July	14	9	18	29	13	19	43	22	37	39	6	27	4	16	10
Aug	17	16	12	15	65	15	32	81	27	21	58	20	11	23	7
Sept	27	11	25	25	13	15	52	23	40	49	14	24	3	9	16
Oct	18	34	11	23	38	26	41	72	37	32	43	16	9	29	21
Nov	19	45	54	13	33	35	32	78	89	20	67	65	12	11	24
Dec	29	44	27	31	24	14	60	68	42	54	66	18	6	2	24
										419+	496	376	77	163	227
SWANSCOMBE															
Jan	37	29	13	25	23	8	62	52	22	46	43	17	16	9	5
Feb	21	26	18	24	22	21	45	47	39	36	30	28	9	17	11
Mch	18	24	23	11	19	25	29	43	48	20	27	31	9	16	17
Apl	19	16	31	17	15	38	36	31	69	27	16	38	9	15	31
May	18	19	14	16	32	17	34	51	32	25	28	17	9	23	15
June	19	27	-	17	16	-	36	43	68	27	23	18	9	20	50
July	14	14	17	23	23	12	37	37	29	22	6	17	15	31	12
Aug	17	12	22	12	18	26	29	30	48	19	18	27	10	12	21
Sept	21	17	20	23	21	10	44	38	30	36	25	21	8	13	11
Oct	19	32	20	15	25	16	34	58	36	28	43	24	6	15	12
Nov	19	28	39	12	19	23	31	47	62	19	39	46	19	8	16
Dec	24	31	26	22	20	12	46	51	38	41	36	26	5	15	12
										346	334	310	124	194	213
NORTHFLEET															
Jan	27	27	20	12	25	16	39	52	36	34	38	25	5	14	11
Feb	18	23	17	27	27	15	45	50	32	36	24	22	9	26	10
Mch	20	19	20	17	24	17	37	43	38	27	19	24	10	24	14
Apl	18	12	28	17	9	25	35	21	53	30	9	32	5	12	21
May	13	17	13	14	12	13	27	29	26	24	13	13	3	16	13
June	15	20	15	15	15	11	30	35	26	24	12	13	6	23	13
July	13	10	14	11	14	10	24	24	24	20	11	9	4	13	15
Aug	20	12	17	16	25	19	36	37	37	24	19	23	12	18	14
Sept	18	12	19	16	14	11	34	26	30	26	14	14	8	12	16
Oct	17	24	19	21	21	11	38	45	30	26	26	18	12	19	12
Nov	16	25	40	8	16	24	24	41	64	13	34	36	11	7	28
Dec	20	21	-	19	19	-	40	40	-	32	28	-	8	12	-
										316	247	229+	93	196	167

TREND

Sum of Horns Cross, Swanscombe and Northfleet readings. i.e. "tons per 3 sq miles"

Month	Dust from cement wks			Dust from elsewhere			Total solids			% Dust from cement works		
	'63	'64	'65	'63	'64	'65	'63	'64	'65	'63	'64	'65
Jan	-	136	71	-	39	23	101	175	94	-	78	76
Feb	132	93	84	22	59	23	154	152	107	85	61	78
Mch	83	86	88	30	30	32	113	116	120	73	74	73
Apl	92	73	121	18	45	123	110	118	244	84	62	50
May	86	75	55	16	43	57	102	118	112	84	64	49
June	89	61	65	22	52	78	111	113	143	80	54	45
July	81	23	53	23	60	37	104	83	90	77	28	59
Aug	64	95	70	33	53	42	97	148	112	66	64	62
Sept	111	53	59	19	24	41	130	87	100	85	61	59
Oct	86	112	55	27	63	48	113	175	103	76	64	53
Nov	52	140	147	35	26	68	87	166	215	60	84	68
Dec	127	130	-	19	29	-	146	159	-	87	82	-
	1003+	1077	868+	264	523	572+						

AIR HYGIENE (continued)

DEPOSIT GAUGE READINGS (continued)

Month	Dissolved matter			Undissolved matter			Total solids			Dust from cement wks			Dust from other sources		
	'63	'64	'65	'63	'64	'65	'63	'64	'65	'63	'64	'65	'63	'64	'65
EDMUND GROVE															
Jan	-	25	25		16	11	-	41	36	-	29		-	12	7
Feb	24	23	25	20	22	1	44	45	26	60	34		4	11	2
Mch	27	32	28	20	18	6	47	50	34	26	40		11	10	1
Apl	24	23	38	15	30	84	39	66	122	23	48		6	18	11
May	22	25	15	20	15	29	41	36	44	27	24		4	4	29
June	25	24	22	22	11	27	45	35	49	26	26		7	9	15
July	14	9	16	29	15	19	43	22	37	19	6		4	16	10
Aug	17	16	12	15	65	15	32	81	27	21	58		11	23	7
Sept	27	11	25	25	15	15	52	25	40	49	14		3	9	16
Oct	36	34	11	25	36	26	61	72	37	32	43		9	29	21
Nov	19	45	54	15	35	35	32	78	89	20	67		12	11	24
Dec	29	44	27	31	24	14	60	68	42	54	66		19	6	2
	319+	359		296	356		615+	715		376	477		77	165	227
EDWARDSCOMBE															
Jan	37	29	19	25	25	8	62	52	22	46	43		17	16	9
Feb	21	26	18	24	22	21	45	47	39	56	30		28	9	17
Mch	18	24	23	11	19	25	29	43	48	20	27		31	9	16
Apl	19	16	31	17	15	38	36	31	69	17	16		38	9	15
May	18	19	14	16	32	17	34	51	32	35	28		17	9	25
June	19	27	-	17	16	-	36	43	68	27	25		16	9	20
July	14	14	17	25	25	12	39	37	29	22	6		17	15	12
Aug	17	12	22	12	18	26	29	30	48	19	18		27	10	12
Sept	21	17	20	23	21	10	44	38	30	36	25		21	8	15
Oct	19	32	20	15	25	16	34	58	36	28	43		24	6	15
Nov	19	28	39	12	19	25	31	47	64	19	39		46	8	16
Dec	24	31	26	22	20	12	46	51	38	41	36		26	9	12
	346	334		251	312		597	646		370	340		310	124	213
NORTHFLEET															
Jan	27	20	12	25	16	59	52	36	54	38	25		5	14	11
Feb	18	25	17	27	15	45	50	32	36	24	22		9	26	10
Mch	20	19	20	17	24	17	37	43	38	27	19		24	10	14
Apl	18	12	28	17	9	25	35	21	53	30	9		22	5	12
May	15	17	15	14	12	13	27	29	28	24	15		3	16	15
June	15	20	15	15	15	11	30	35	26	24	12		6	23	13
July	13	10	14	11	14	10	24	24	24	20	12		4	12	15
Aug	20	12	17	16	25	19	36	37	44	24	19		25	18	14
Sept	18	17	19	16	14	11	34	26	30	26	14		8	12	16
Oct	17	24	19	21	21	11	38	45	30	26	26		16	12	19
Nov	16	25	40	8	16	24	24	41	64	15	34		36	11	7
Dec	20	21	-	19	19	-	40	40	-	32	28		-	8	12
	218	217		227	219		445	436		314	277		155	206	187

TREND

Sum of Borne Grove, Swanscombe and Northfleet readings. i.e. "tons per 5 sq miles"

Month	Dust from cement wks			Dust from elsewhere			Total solids			% Dust from cement works		
	'63	'64	'65	'63	'64	'65	'63	'64	'65	'63	'64	'65
Jan	-	196	71	-	59	25	101	175	96	-	78	76
Feb	192	93	84	25	59	25	154	152	107	85	61	78
Mch	85	86	88	30	30	32	115	116	120	75	74	73
Apl	92	75	121	18	49	123	110	118	244	84	62	50
May	86	75	55	16	43	57	102	118	112	84	64	49
June	99	81	65	22	32	78	111	113	143	80	54	45
July	81	25	55	25	60	37	106	85	90	77	28	59
Aug	64	95	70	33	53	42	97	148	112	66	64	62
Sept	111	53	59	19	24	41	130	87	100	85	61	59
Oct	86	112	55	27	63	48	113	175	103	76	64	53
Nov	52	140	147	25	26	68	87	166	215	60	84	68
Dec	127	130	-	19	29	-	146	159	-	87	82	-
	1095	1130	823+	303	467	529+	1398	1597	1352+	783	708	609+

AIR HYGIENE (continued)

DEPOSIT GAUGE READINGS

Month	% Dust from cement works		
	1963	1964	1965
WHITE OAK			
Jan	36	23	18
Feb	23	26	30
Mch	8	26	1
Apl	31	16	0
May	23	10	0
June	25	16	23
July	22	7	12
Aug	9	25	19
Sept	33	30	0
Oct	10	0	42
Nov	0	20	28
Dec	25	30	1
	~~274~~ 245	229	174
BOW ARROW			
Jan	74	55	27
Feb	33	42	45
Mch		33	39
Apl	73	19	39
May	50	39	18
June	62	32	35
July	84	20	31
Aug	50	35	35
Sept	58	28	4
Oct	50	45	56
Nov	28	48	54
Dec	60	50	13
	622+	446	396
DARTFORD CENTRAL			
Jan	52	47	15
Feb	47	35	34
Mch	29	34	27
Apl	67	15	31
May	38	29	3
June	64	20	39
July	72	11	18
Aug	35	33	23
Sept	64	43	12
Oct	46	36	59
Nov	22	46	47
Dec	45	38	0
	581	387	308
JOYCE GREEN			
Jan	-	52	35
Feb	-	57	45
Mch	0	38	57
Apl	50	22	5
May	-	26	19
June	36	24	37
July	45	17	29
Aug	30	39	45
Sept	68	43	5
Oct	47	28	25
Nov	25	40	39
Dec	62	36	0
		422	341

AIR HYDINES (continued)

INDUSTRIAL GASES HANDLING

Month	% Dust from cement works		
	1963	1964	1965
WHITE OAK			
Jan	36	25	18
Feb	25	26	30
Mch	8	26	1
Apl	31	16	0
May	25	10	0
June	25	16	25
July	22	7	12
Aug	9	25	19
Sept	35	30	0
Oct	10	0	42
Nov	0	20	28
Dec	25	30	1
NEW ARROW	214	259	174
Jan	74	55	27
Feb	35	42	45
Mch		25	39
Apl	25	19	39
May	50	39	16
June	62	32	25
July	84	20	21
Aug	50	25	25
Sept	58	26	4
Oct	50	45	56
Nov	26	48	54
Dec	60	50	23
	522	426	368
DARTFORD CENTRAL			
Jan	52	47	25
Feb	47	35	34
Mch	29	34	27
Apl	67	25	31
May	38	29	2
June	64	20	39
July	72	11	38
Aug	35	25	25
Sept	64	43	12
Oct	46	36	39
Nov	22	46	47
Dec	45	38	0
	581	387	369
JOYCE GREEN			
Jan	-	32	25
Feb	-	37	45
Mch	0	28	37
Apl	50	22	5
May	-	26	19
June	35	24	37
July	45	17	29
Aug	20	29	45
Sept	60	45	5
Oct	47	28	25
Nov	25	40	39
Dec	62	45	0
	344	422	341

DEPOSIT GAUGE READINGS (continued)

Month	% Dust from cement works		
	1963	1964	1965
HORNS CROSS			
Jan		77	82
Feb	94	70	94
Mch	77	80	97
Apl	85	73	42
May	90	90	45
June	85	74	69
July	90	28	72
Aug	66	72	75
Sept	94	63	61
Oct	78	60	43
Nov	63	86	73
Dec	90	98	43
	912+	871	796
SWANSCOMBE			
Jan	74	83	79
Feb	80	63	72
Mch	69	63	64
Apl	75	53	54
May	74	55	55
June	75	54	27
July	59	17	59
Aug	66	61	55
Sept	82	65	72
Oct	83	75	67
Nov	61	83	74
Dec	89	72	69
	887	744	747
NORTHFLEET			
Jan	87	73	70
Feb	80	48	70
Mch	73	39	63
Apl	86	44	60
May	89	46	51
June	80	33	50
July	84	47	37
Aug	66	52	62
Sept	76	55	47
Oct	68	58	60
Nov	54	81	56
Dec	80	71	
	923	647	626+

DUST FROM CEMENT WORKS
MONTHLY TOTALS OF DARTFORD CENTRAL AND WHITE OAK GAUGES

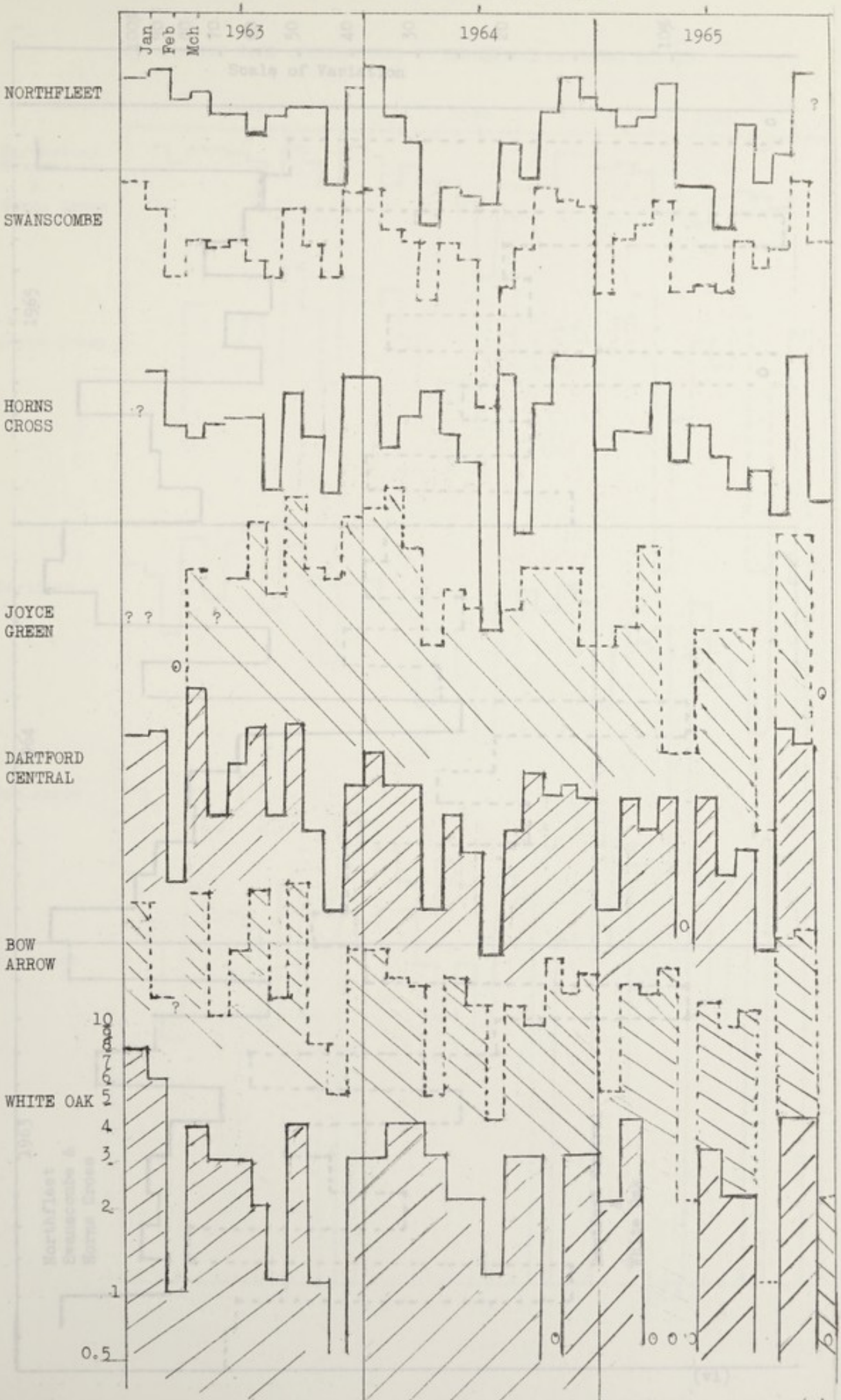
Month	1963	1964	1965
Jan	22	15	5
Feb	21	13	12
Mch	5	13	6
Apl	26	6	8
May	10	9	0
June	14	7	11
July	17	3	6
Aug	8	9	7
Sept	20	13	2
Oct	7	8	19
Nov	3	12	17
Dec	12	11	0
	165	119	93

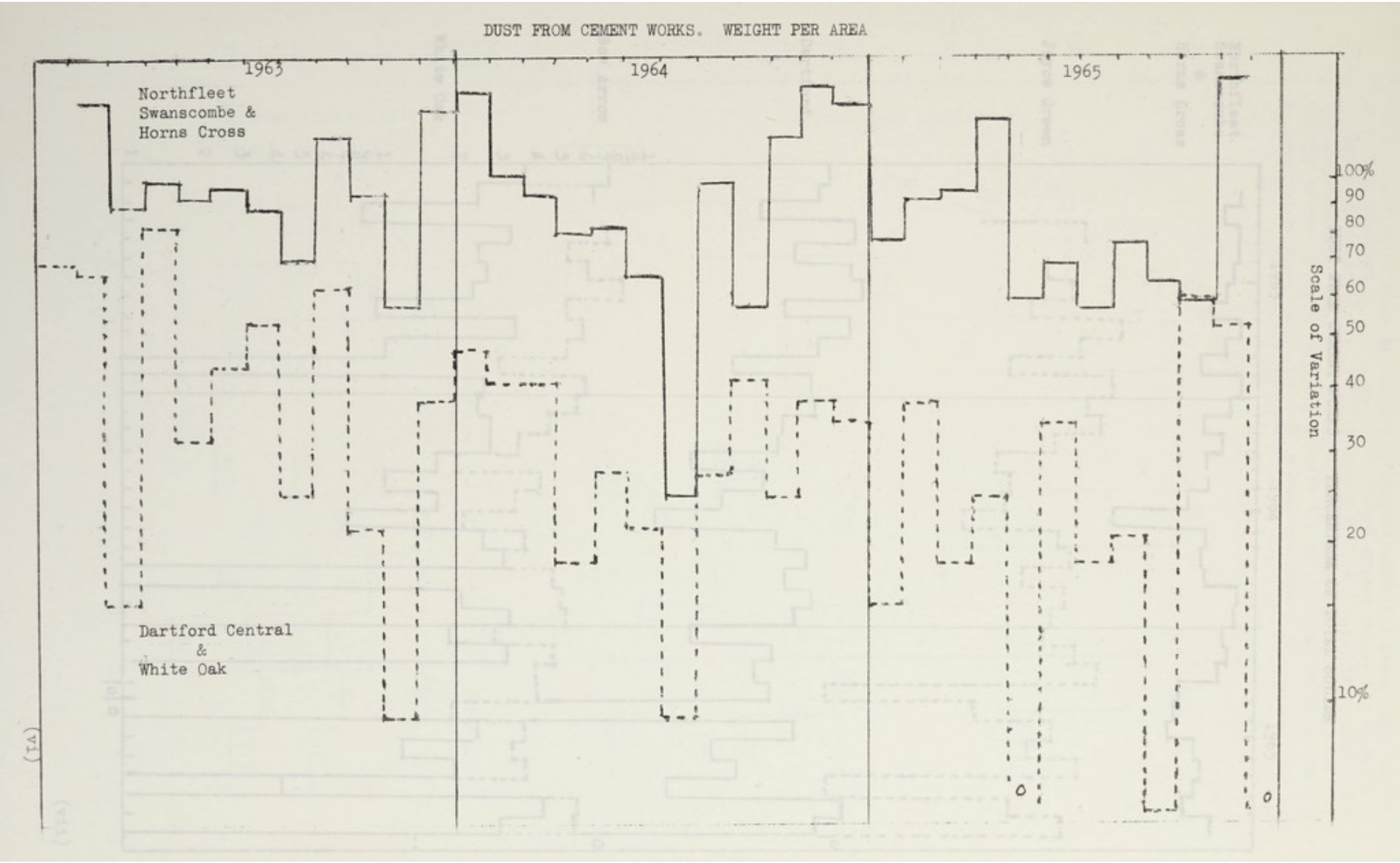
Month	% Dust from cement works		
	1963	1964	1965
ROSES CROSS			
Jan		77	82
Feb	94	70	94
Mch	77	80	97
Apl	85	75	42
May	90	90	45
June	85	74	69
July	90	78	72
Aug	66	72	75
Sept	94	65	61
Oct	76	60	43
Nov	65	86	73
Dec	90	78	47
	912+	871	779
SWANSCOMBE			
Jan	74	85	79
Feb	80	63	72
Mch	69	65	64
Apl	75	53	54
May	74	55	55
June	75	54	57
July	59	17	59
Aug	66	61	55
Sept	82	65	72
Oct	83	75	67
Nov	61	85	74
Dec	89	72	69
	867	723	747
NORTHFLEET			
Jan	87	75	70
Feb	80	46	70
Mch	75	39	63
Apl	86	44	60
May	89	46	51
June	80	35	50
July	84	47	37
Aug	66	52	62
Sept	76	55	47
Oct	68	58	60
Nov	74	81	56
Dec	80	71	
	925	649	625+

MONTHLY TOTALS OF DARTFORD CENTRAL AND WHITE OAK GAUGES

Month	1963	1964	1965
Jan	22	15	5
Feb	21	15	12
Mch	5	15	6
Apl	26	6	8
May	10	3	0
June	14	7	11
July	17	3	6
Aug	8	9	7
Sept	20	15	2
Oct	7	8	19
Nov	3	12	17
Dec	12	11	0
	165	119	93

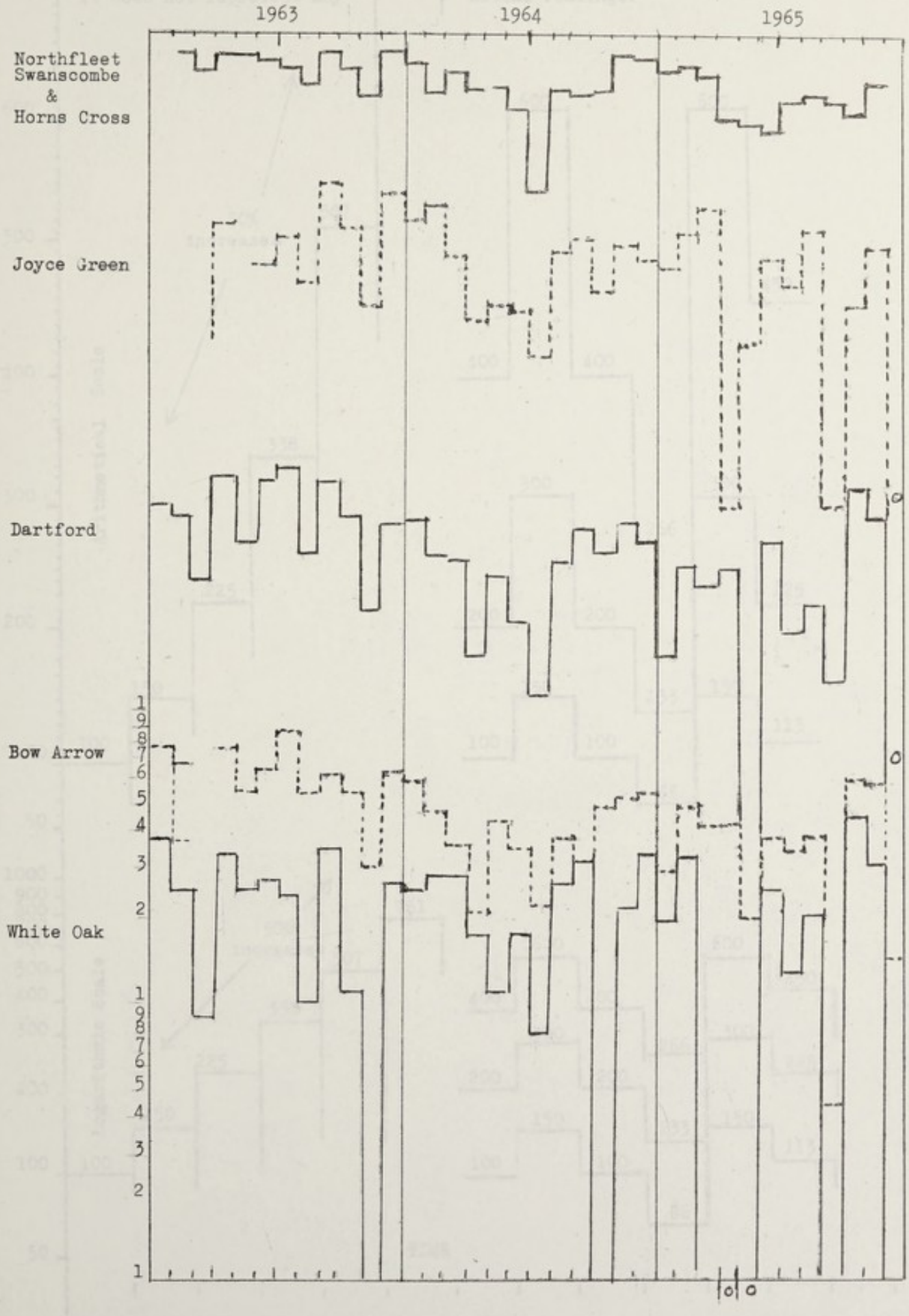
DUST FROM CEMENT WORKS. WEIGHT PER AREA

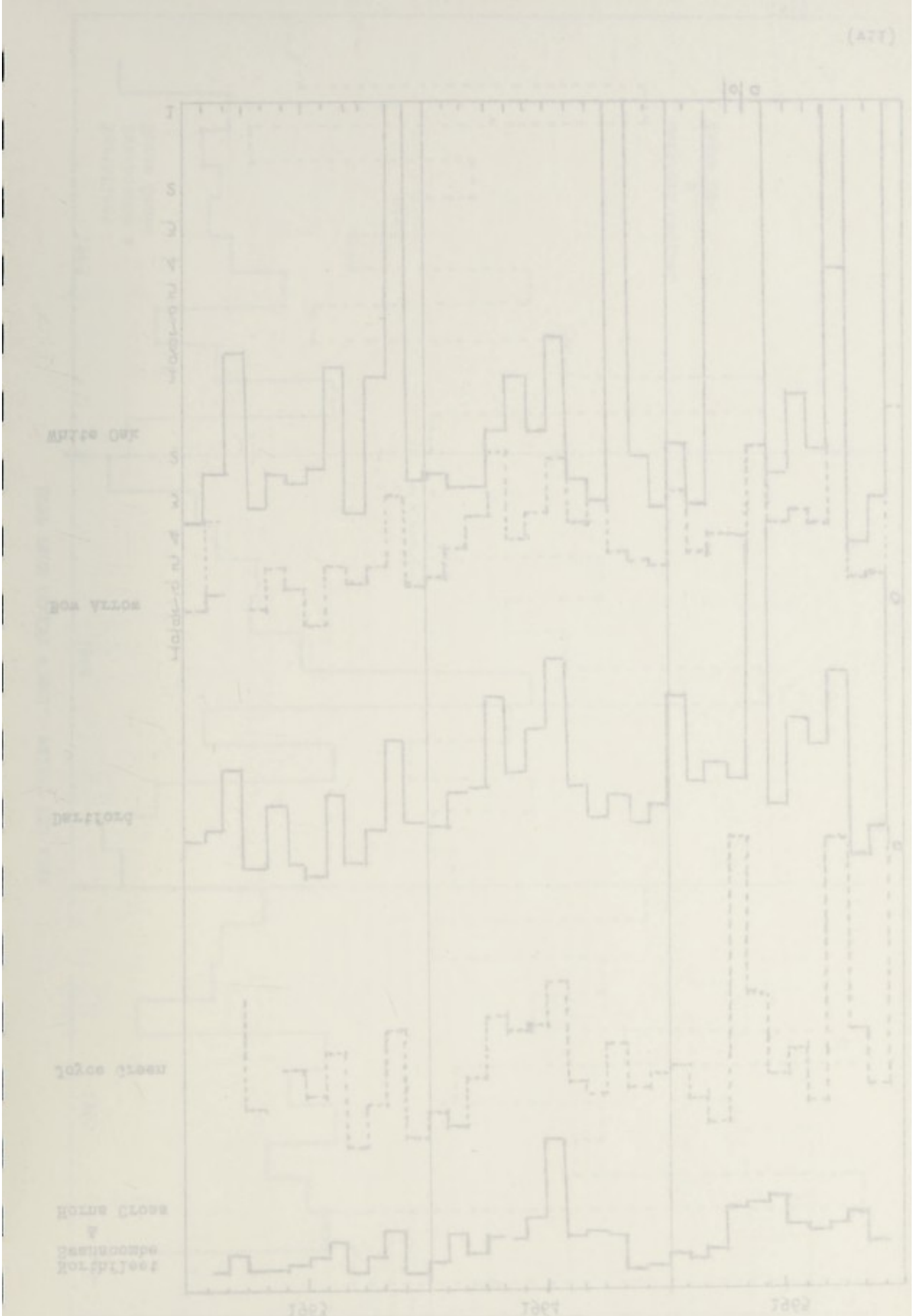



DUST FROM CEMENT WORKS. WEIGHT PER AREA
1963
1964
1965
Northfleet
Swanscombe &
Horns Cross
Dartford Central
&
White Oak
100%
90
80
70
60
50
40
30
20
10%
Scale of Variation
(VI)

Scale of Variation
1961
1962
1963
1964

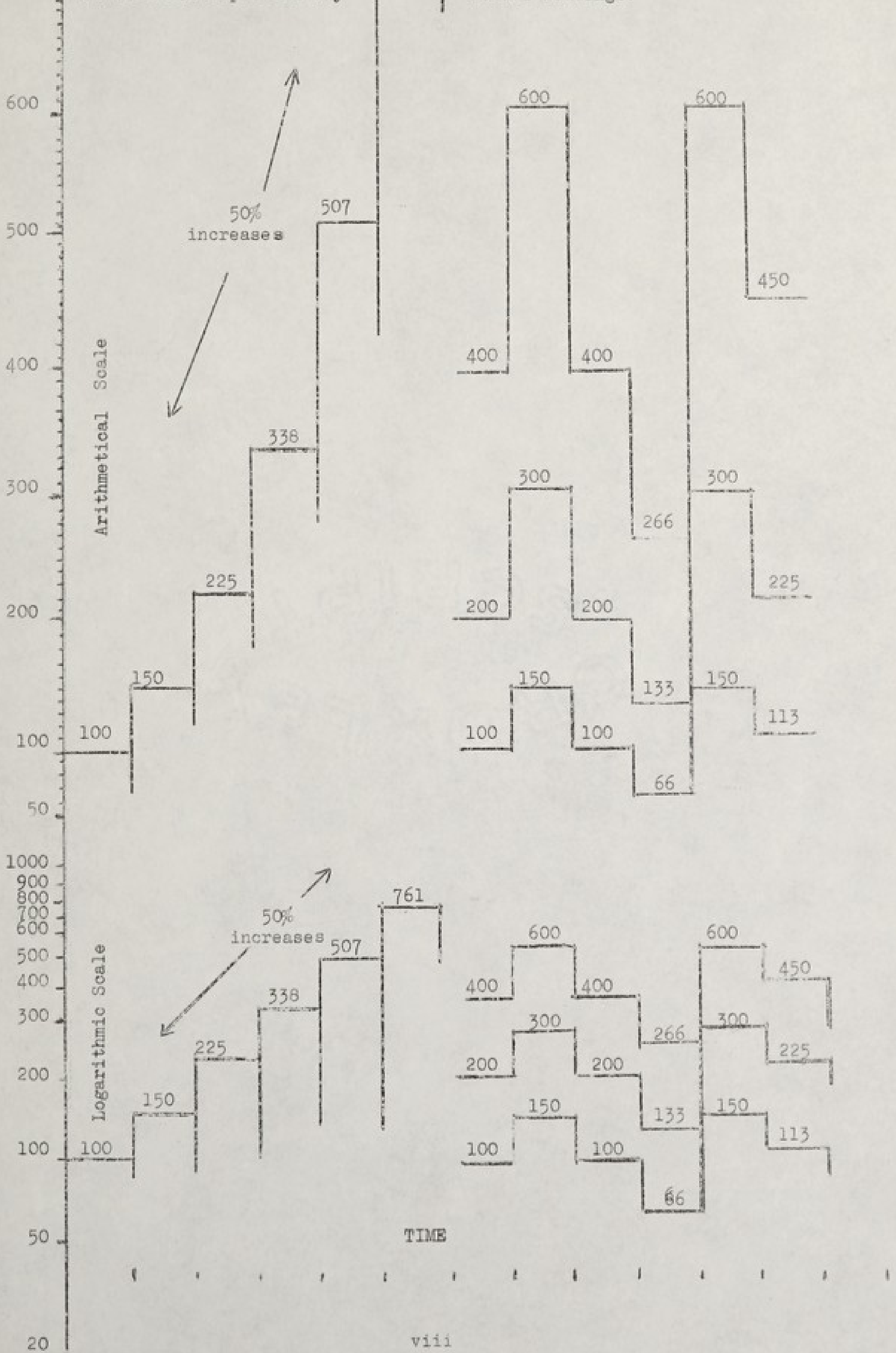
DUST FROM CEMENT WORKS - PERCENTAGE OF TOTAL SOLIDS





AIR HYGENE

Use of logarithmic scale to compare diagrammatically the percentage rise or fall in readings of different gauges collecting deposits differing substantially in amount. This diagram is to illustrate the compactness of the logarithmic scale (below) and its ability to depict trend compared with the arithmetical scale (above). It does not represent any actual readings.



Increase
Increase

POLLUTION WITH PRODUCTS OF COMBUSTION

The Volumetric Gauges

The nature of the sites of the gauges needs consideration if one is to study the records of the whole area. Up to the end of 1967 none of the gauges was in a smoke control area.

The Northfleet gauge is on the 2nd floor of Northfleet Council offices. In the immediate vicinity is residential housing of medium density. Open country begins within $\frac{1}{4}$ mile to the South. Within $\frac{1}{2}$ mile to the North and North-East is an industrial area with a cement works, paper factory and electricity generating station dominating the environment. To the North beyond is the open space of the River Thames.

The Swanscombe gauge is in the precincts of the Swanscombe Council offices in a small park amongst medium density housing with open space within $\frac{1}{4}$ mile to the South and to the North. Cement works lie $\frac{2}{3}$ mile to the North and a mile beyond is the River Thames and its open space.

The Horns Cross (Stone) gauge is in the A.P.C.M. research laboratory which again is in park land beyond which is medium density housing in the West and North-West. $\frac{2}{3}$ mile to the North are two cement works.

The Dartford gauge is in the public health office in the comercial centre of the town set back 10 yards from a traffic laden street and with a park in the vicinity to the South and industry to the North.

The Swanley gauge is in the public health office which is one of numerous separate well-spaced buildings in their own grounds on central heating by oil or electricity. Medium density housing lies to the North-East round to the South-West. Elsewhere there is open space.

Three gauges - Northfleet, Swanscombe and Horns Cross (Stone) have cement works in the vicinity. These might be kept in mind as the dust from these works will modify the darkness of the smoke stain and it is possible that it might diminish the acidity from which the SO_2 readings are assessed.

DEGREE DAYS

A "degree day" is a concise way of expressing a difference of 1° F between outside temperatures (when lower) and 60° F maintained for 24 hours. Figures kindly provided by the Gas Council.

	Average 1947-67	1962-63	1963-64	1964-65	1965-66	1966-67
September	137	202	169	143	186	129
October	304	312	308	393	272	243
November	499	560	423	425	565	515
December	632	793	796	652	590	560
January	702	1031	765	653	740	619
February	613	859	625	623	447	507
March	544	556	657	550	497	436
Oct-March	3294	4111	3574	3296	3111	2880
April	403	410	411	383	398	434
May	255	310	172	233	260	261
Sept-May	4089	5033	4326	4055	3955	3704
June	125	124	142	130	75	125
July	76	104	55	96	87	55
August	85	118	81	90	113	79
June-August	286	346	278	316	275	259

POLLUTION WITH PRODUCTS OF COMBUSTION

Micrograms per cubic metre. Seasonal averages.

		Smoke	Sulphur-dioxide	Smoke/SO_2 ratio
Summer - April to September				
NORTHFLEET	1963	28	77	.36
	1964	22	76	.29
	1965	25	93	.27
	1966	27	91	.30
SWANSCOMBE	1963	-	-	-
	1964	-	-	-
	1965	-	-	-
	1966	26	86	.30
HORNS CROSS (STONE)	1963	22	68	.32
	1964	22	67	.35
	1965	22	60	.37
	1966	25	49	.31
DARTFORD	1963	42	106	.40
	1964	38	93	.41
	1965	36	101	.36
	1966	45	110	.41
SWANLEY	1963	32	69	.46
	1964	27	75	.36
	1965	26	87	.30
	1966	25	76	.33
Winter - October to March				
NORTHFLEET	1963-4	118	125	.94
	1964-5	82	164	.50
	1965-6	76	152	.50
	1966-7	63	127	.50
SWANSCOMBE	1963-4	-	-	-
	1964-5	-	-	-
	1965-6	-	-	-
	1966-7	N	N	N
HORNS CROSS (STONE)	1963-4	102	110	.93
	1964-5	N	N	N
	1965-6	63	84	.75
	1966-7	52	67	.78
DARTFORD	1963-4	144	N	N
	1964-5	103	225	.46
	1965-6	94	181	.52
	1966-7	89	173	.51
SWANLEY	1963-4	114	141	.81
	1964-5	74	169	.44
	1965-6	53	124	.43
	1966-7	60	120	.50

N = Insufficient number of daily concentrations appearing in the period for the calculation of an average according to the criteria adopted.

APPENDIX VII - AIR HYGIENE (continued)

POLLUTION WITH PRODUCTS OF COMBUSTION

SMOKE/SO_2 RATIOS IN MONTHS OF MINIMUM AND MAXIMUM POLLUTION

	June			July			August		
	Smoke	SO_2	Ratio	Smoke	SO_2	Ratio	Smoke	SO_2	Ratio
NORTHFLEET									
1963	17	90	.19	11	58	.19	12	54	.22
1964	17	58	.29	17	17	.15	21	75	.28
1965	16	101	.16	13	61	.21	20	83	.24
1966	20	88	.23	22	74	.30	21	72	.29
1967	16	93	.17	17	75	.23	19	58	.33
SWANSCOMBE									
1963	-	-	-	-	-	-	-	-	-
1964	-	-	-	-	-	-	-	-	-
1965	-	-	-	-	-	-	-	-	-
1966	18	92	.20	19	55	.35	18	77	.23
1967	15	72	.21	13	62	.21	13	42	.31
HORNS CROSS									
1963	15	71	.21	10	61	.16	12	48	.25
1964	16	51	.31	21	70	.30	21	67	.31
1965	15	66	.23	8	45	.18	18	53	.34
1966	19	44	.43	20	30	.67	21	28	.75
1967	15	47	.32	13	53	.25	N	N	N
DARTFORD									
1963	30	108	.28	26	76	.34	29	81	.36
1964	31	88	.35	29	91	.32	36	89	.40
1965	30	104	.29	23	74	.31	40	94	.43
1966	34	94	.36	41	81	.51	36	98	.37
1967	34	111	.31	28	97	.29	34	77	.44
SWANLEY									
1963	19	68	.28	20	54	.37	20	39	.51
1964	19	65	.29	21	75	.28	25	75	.33
1965	21	95	.22	15	68	.22	20	88	.23
1966	22	65	.34	19	70	.27	14	68	.21
1967	12	68	.18		N			N	

	December			January			February		
NORTHFLEET									
1963/64	167	157	1.06	159	175	.91	194	178	1.09
1964/65	101	198	.51	68	138	.49	87	185	.47
1965/66	93	165	.56	114	165	.69	53	101	.52
1966/67	67	142	.47	89	168	.53	58	110	.53
SWANSCOMBE									
1963/64	-	-	-	-	-	-	-	-	-
1964/65	-	-	-	-	-	-	-	-	-
1965/66	94	96	.98	104	115	.90	49	63	.78
1966/67		N		85	146	.58	-	-	-
HORNS CROSS									
1963/64	139	149	.93	133	153	.87	171	165	1.04
1964/65	91	137	.66	54	101	.53	82	151	.54
1965/66	81	78	1.04	83	89	.93	44	54	.81
1966/67	59	73	.94	72	97	.74	47	61	.77
DARTFORD									
1963/64	214	268	.80	197	282	.70	199	262	.76
1964/65	130	259	.50	91	203	.45	103	293	.33
1965/66	117	186	.63	132	226	.58	69	121	.57
1966/67	94	183	.51	116	238	.49	74	152	.49
SWANLEY									
1963/64		N			N			N	
1964/65	102	208	.49	62	146	.42	65	213	.31
1965/66	51	102	.50	53	150	.35	47	83	.57
1966/67	67	120	.56	82	173	.47	57	123	.46

POLLUTION WITH PRODUCTS OF COMBUSTION (continued)

Number of days when readings have exceeded 500 but not 1,000 micrograms per cubic metre. Such readings only occurred in winter. Highest daily readings given alongside.

	Winter	Smoke		Sulphur-dioxide	
NORTHFLEET	1963/4	3	534(Feb)	4	542(Feb)
	1964/5	0		0	
	1965/6	0		1	562(Dec)
	1966/7	0		1	556(Jan)
SWANSCOMBE	1963/6	no readings		no readings	
	1966/7	0		0	
HORNS CROSS (STONE)	1963/4	2	873(Nov)	0	
	1964/7	0		0	
DARTFORD	1963/4	5	837(Feb)	11	785(Jan)
	1964/5	0		7	734(Dec. see belo
	1965/6	0		1	533(Nov)
	1966/7	0		4	542(Jan)
SWANLEY	1963/4	3	619(Dec)	4	786(Jan)
	1964/5	0		3	730(Dec)
	1965/7	0		0	

Only one reading exceeded 1000 micrograms per cubic metre, namely 1106 for SO_2 at Dartford in November 1964.

CLASS CODE (NATIONAL SURVEY SITE CLASSIFICATION)

In the national survey of which these readings form part each gauge site is given a code number as a concise way of classifying the surroundings of each site. The code numbers of the sites here are as follows:

Site	Class Code
NORTHFLEET	X
SWANSCOMBE	B2
HORNS CROSS (STONE)	X
DARTFORD	D2
SWANLEY	B3

The meanings of the code are as follows:

B2 Residential area with medium-density housing, typically an inner suburb or housing estate, surrounded by other built-up areas but interspersed with some industrial undertakings.

B3 Residential area with medium-density housing surrounded by or interspersed with areas with low potential A.P. output (parks, fields, coast), or any residential area with low-density housing.

D2 Small town centre; limited commercial area mixed with old residential housing and possibly minor industry.

X Unclassified site, or mixed area.

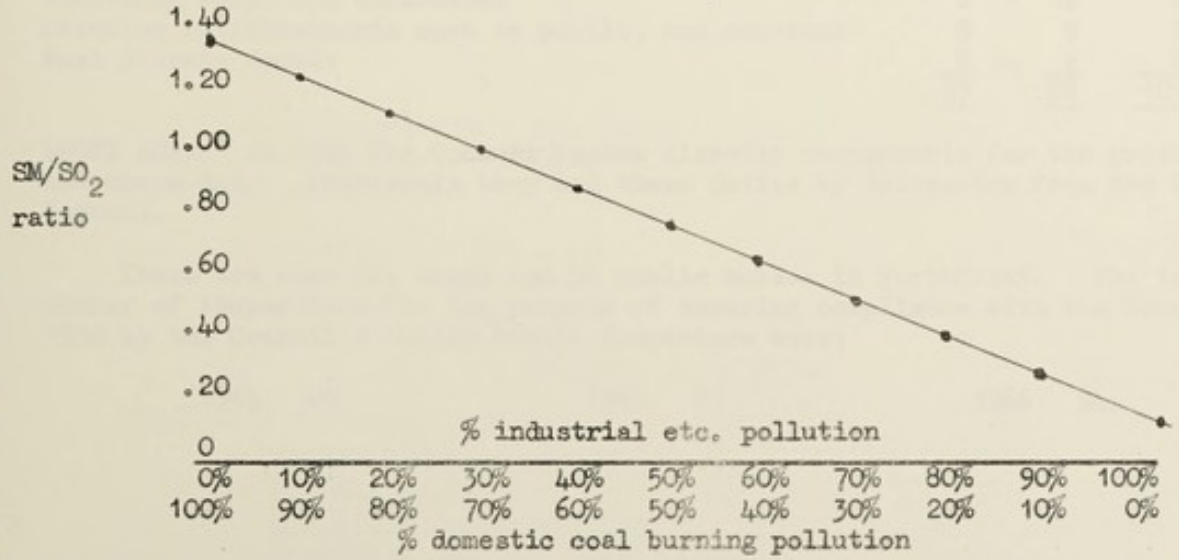
SMOKE CALCULATIONS

These are by use of the British Standard Smoke Calibration Curve.

POLLUTION WITH PRODUCTS OF COMBUSTION

INTERPRETATION OF SMOKE/SO_2 RATIOS. In 1965 in England and Wales 0.90 million tons of smoke were emitted from domestic coal-fire chimneys with 0.70 million tons of SO_2. From the chimneys of efficient fuel combustion i.e. industry, electricity generating stations etc. 0.25 million tons of smoke were emitted with 5.62 million tons of SO_2. (Investigation of Atmospheric Pollution 1956-66 tables 1 and 2). The smoke/SO_2 ratios of these emissions were thus 90/70 = 1.29 and 0.25/5.62 = 0.05. Ratios resulting from different proportions by volume might be expressed thus:

Domestic coal burning ratio = 1.29	Sources of efficient combustion industry, electricity generating etc. ratio = 0.05	Smoke/SO_2 Ratio of mixture
100%	0%	$\frac{\text{Smoke}}{SO_2} = \frac{1.29 \times 100 + 0.05 \times 0}{1 \times 100 + 1 \times 0} = 1.29$
90%	10%	$\frac{\text{Smoke}}{SO_2} = \frac{1.29 \times 90 + 0.05 \times 10}{1 \times 90 + 1 \times 10} = 1.16$
80%	20%	$\frac{\text{Smoke}}{SO_2} = \frac{1.29 \times 80 + 0.05 \times 20}{1 \times 80 + 1 \times 20} = 1.04$
70%	30%	$\frac{\text{Smoke}}{SO_2} = \frac{1.29 \times 70 + 0.05 \times 30}{1 \times 70 + 1 \times 30} = 0.92$
60%	40%	$\frac{\text{Smoke}}{SO_2} = \frac{1.29 \times 60 + 0.05 \times 40}{1 \times 60 + 1 \times 40} = 0.79$
50%	50%	$\frac{\text{Smoke}}{SO_2} = \frac{1.29 \times 50 + 0.05 \times 50}{1 \times 50 + 1 \times 50} = 0.67$
40%	60%	$\frac{\text{Smoke}}{SO_2} = \frac{1.29 \times 40 + 0.05 \times 60}{1 \times 40 + 1 \times 60} = 0.55$
30%	70%	$\frac{\text{Smoke}}{SO_2} = \frac{1.29 \times 30 + 0.05 \times 70}{1 \times 30 + 1 \times 70} = 0.42$
20%	80%	$\frac{\text{Smoke}}{SO_2} = \frac{1.29 \times 20 + 0.05 \times 80}{1 \times 20 + 1 \times 80} = 0.30$
10%	90%	$\frac{\text{Smoke}}{SO_2} = \frac{1.29 \times 10 + 0.05 \times 90}{1 \times 10 + 1 \times 90} = 0.17$
0%	100%	$\frac{\text{Smoke}}{SO_2} = \frac{1.29 \times 0 + 0.05 \times 100}{1 \times 0 + 1 \times 100} = 0.05$



The above is an oversimplification. There are sites in U.K. giving ratios much greater than 1.29 but I imagine that these have exceptional sources of pollution or perhaps features which remove SO_2.

FACTORIES ACT. The Council enforces the provision of sanitary conveniences in all factories. In factories without mechanical power the Council also enforces the provision of adequate cleanliness, temperature, ventilation and drainage and freedom from overcrowding. The Council keeps a register of outworkers.

	1964	1965	1966
Factories without mechanical power on register	1	1	1
" with " " " "	54	51	50
Other premises in which provision of sanitary accommodation is enforced by L.A. e.g. Building sites	20	16	15
Inspections	44	40	46
Defects found	3	12	7
Written notices served	2	4	5
Outworkers in Northfleet U.D. at 31st Dec.	10	5	9

OFFICES, SHOPS AND RAILWAY PREMISES ACT.

In May 1964 Sections 29 (2) 46 and 49 of the Offices, Shops and Railway Premises Act came into force. These sections deal with certain fire precautions, certain exemptions, and the notification of employment of persons. In August 1964 all other sections of the Act came into force with the exceptions of Sections 24-26 relating to first aid, Section 29, requiring an annual report to Parliament by the Minister, and Section 83 (2) which applies provisions to the Crown. In January 1965 all provisions of the Act came into operation.

Visits under the Offices, Shops and Railway Premises Act are for enforcement in regard to cleanliness, overcrowding, temperature, ventilation, lighting, sanitary conveniences, washing facilities, supply of drinking water, accommodation for clothing, sitting facilities, seats for sedentary work, eating facilities, floors, passages and stairs, fencing of exposed parts of machinery and first aid.

	1964	1965	1966
Number of premises registered at end of year	97	100	101
Number of premises receiving general inspection	97	68	101
Number of visits by Public Health Inspectors	192	174	199
Number of defects found	6	8	1
Premises inspected were:			
Offices	17	10	18
Retail shops	67	45	70
Wholesale shops and warehouses	2	2	2
Catering establishments open to public, and canteens	9	9	9
Fuel storage depots	2	2	2
	97	68	101

SHOPS ACT. In 1964 the Council became directly responsible for the provisions of the Shops Act. Previously they had these duties by delegation from the County Council.

There are some 224 shops and 30 public houses in Northfleet. The total number of inspections for the purpose of ensuring compliance with the Shops Act, 1950 by the Council's Public Health Inspectors were:

1964 48 1965 81 1966 64

APPENDIX 1X - DISINFECTION, DISINFESTATION & RODENT CONTROL

Northfleet U.D.

DISINFECTION

Northfleet Urban District Council have an arrangement with Swanscombe Urban District Council whereby facilities for disinfection and disinfestation of persons and articles are provided by us on a rechargeable basis. Transport for the articles is provided by Northfleet.

In 1964, 1965 and 1966 these facilities were used as follows:-

	Northfleet			Swanscombe		
	1964	1965	1966	1964	1965	1966
Tuberculosis	1	-	-	-	-	-
Scabies	-	-	-	-	-	-

DISINFESTATION

The following were the number of occasions when advice was given or disinfestation carried out:-

	1964	1965	1966
Wasps	3	29	11
Gooseberry mites	1	-	-
Maggots and flies	-	-	5
Bees	2	3	6
Booklice	-	1	-
Bed bugs	8	3	4
Fleas	3	3	3
Beetles, including cockroaches and carpet beetles	2	3	1
Woodworm	2	2	1
Ants	1	3	5
Crickets	1	-	-
Slugs	-	-	1
Snakes	1	-	-
Birds, including pigeons	1	3	1
Moles	1	-	-
Rabbits	1	-	-

RODENT CONTROL

	1964	1965	1966
Total number of properties (including nearby premises) inspected following notification	311	221	306
Number infested by (i) Rats	68	52	125
(ii) Mice	44	35	49
Total number of properties inspected for rats and/or mice for reason other than notification	1046	948	1267
Number infested by (i) Rats	-	-	2
(ii) Mice	-	-	1

APPENDIX X - NOISE

Complaints received:	1964	1965	1966
Industrial premises	6	5	5
Barking dogs	-	-	1
Ice cream vendor's chimes	7	-	-
Domestic: radios, parties, etc.	1	7	2
Bird scarer	1	-	-

APPENDIX XI - PUBLIC CLEANSING

The Council's Refuse Collection and Disposal Service was under the direction of the Council's Chief Public Health Inspector. The Joint Scheme for controlled tipping at the Vale Road quarry was continued during 1964, 1965 and 1966. It serves Gravesend Borough, Northfleet and Swanscombe Urban Districts. The following amounts of refuse were collected and disposed of:

1964 12,456 tons 1965 12,494 tons 1966 12,580 tons.

Cesspool emptying became the responsibility of the Surveyor's Department in July 1964.

	1964	1965	1966			
COST. (From Abstract of Accounts)						
	Expenditure			Income		
	1964-5	1965-6	1966-7	1964-5	1965-6	1966-7
	£	£	£	£	£	£
Cesspool emptying	794	No longer quoted as a separate item				
House and trade refuse collection	17,150	17,195	20,225	127	207	152
Disposal: Joint Tip	5,023	5,271	5,946	4,129*	4,763*	4,599*
Salvage of waste	1,480	1,497	1,293	1,293	1,435	776
Street cleansing	5,237	4,373	4,356	1,331	1,203	1,100
Catchpit cleansing	773	1,171	958	112	99	138
*Includes contributions:			Gravesend	1,716	1,466	2,778
			Swanscombe	208	270	387

PUBLIC HEALTH COMMITTEE

1964 - 1965

Councillor	Mrs. B.E. Barker	Councillor	L.N. Curtis
"	S. Bennett	"	D.H.T. Payne
"	Mrs. P.E. Blake	"	J.F. Rolls
"	T.S. Codley		

Co-opted Member: Mrs. I. Walter

1965 - 1966

Councillor	Mrs. B.E. Barker	Councillor	C.R. Lane J.P.
"	S. Bennett	"	D.C. Rapley, J.P.
"	Mrs. P.E. Blake	"	E.J.J.C. Rouse, J.P.
"	V.S. Hammond	"	W.H.W. Smith

Co-opted Member: Mrs. I. Walter

1966 - 1967

Councillor	Mrs. B.E. Barker	Councillor	W.H.W. Smith
"	S. Bennett	"	Mrs. S. Tiller
"	V.S. Hammond	"	G.W. Townsend
"	D.C. Rapley J.P.	"	Mrs. Westcott
"	E.J.J.C. Rouse		

Co-opted Member: Mrs. I. Walter

OFFICERS

Clerk and Solicitor to the Council	Drewery F. Bunkall
Medical Officer of Health (Part-time)	J.H. Hudson
Chief Public Health Inspector	J.S. Cowpland
Additional Public Health Inspector	R.E. Richards (until 12.4.64)
	D. Hitchcock (from 1.6.64)
Student Public Health Inspector	A.M. Mills
Clerical Assistants - Senior	Miss C.E. Keen
Junior	Miss W.H. Stowers (until 9.8.64)
	Miss M.L. Grewcock (21.9.64 until 30.4.65)
	Miss J. Ashton (29.4.65 until 19.6.66)
	Miss S.V. Curd (from 18.7.66)