HASL-93

UC 41, Health & Safety
TID-4500, 15th Ed.

SUMMARY OF GUMMED FILM RESULTS THROUGH DECEMBER, 1959

John H. Harley
Naomi A. Hallden
Long D. Y. Ong
Health and Safety Laboratory

September 5, 1960

This document is
PUBLICLY RELEASABLE
Larry E. Williams
Authorizing Official
Date: 06/23/2006

U. S. ATOMIC ENERGY COMMISSION
New York Operations Office
Health and Safety Laboratory

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency Thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

DISCLAIMER

Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.

LEGAL NOTICE

This report was prepared as an account of Government sponsored work. Neither the United States, nor the Commission, nor any person acting on behalf of the Commission.

A. Makes any warranty or representation, expressed or implied, with respect to the accuracy, completeness, or usefulness of the information contained in this report, or that the use of any information, apparatus, method, or process disclosed in this report may not infringe privately owned rights; or

B. Assumes any liabilities with respect to the use of, or for damages resulting from the use of any information, apparatus, method, or process disclosed in this report.

As used in the above, "person acting on behalf of the Commission" includes any employee or contractor of the Commission, or employee of such contractor, to the extent that such employee or contractor of the Commission, or employee of such contractor prepares, disseminates, or provides access to, any information pursuant to his employment or contract with the Commission, or his employment with such contractor.

This report has been reproduced directly from the best available copy.

Printed in USA. Price $3.50. Available from the Office of Technical Services, Department of Commerce, Washington 25, D. C.

ABSTRACT

The data for gummed film fallout measurements through December 1959 are reported. While the initial purpose of the gummed film network was to determine the geographic distribution and time of arrival of fallout, considerable effort has been devoted to computation of strontium 90 deposition and infinity gamma dose. These latter computations have been satisfactory for the period of observation and furnish data for locations not covered by other types of measurement.

Detailed comparisons are made between strontium 90 estimates from gummed film and analyses made on pot and soil samples. Comparable tests of the gamma dose estimate are not possible.

The bulk of the report consists of summary tables for each gummed film station listing the monthly estimates of strontium 90 deposition and infinity gamma dose.

ACKNOWLEDGEMENTS

The authors wish to acknowledge the assistance of the many people who have worked on this program since its inception. It is impossible to name all the individuals involved but our particular thanks are given to the observers of the various U. S. Weather Bureau Stations, the Canadian Meteorological Service, the Air Weather Service of the Air Force, and to the others who collected the samples over this period of years.

In the Health and Safety Laboratory we are grateful to the gummed film staff for preparing and counting the enormous number of samples involved and to the staff of the Statistics Branch for handling the card punching, computation and printing of data. The strontium 90 analyses which have been used for comparison were made under the general direction of Edward P. Hardy, Jr. and Gerald Hamada.

Considerable general assistance has been available from Dr. Lester Machta and Robert List of the U. S. Weather Bureau who arranged for many of the sampling locations and maintained liaison between the Weather Bureau and our Laboratory.

Dr. S. Allan Lough, Director of the Health and Safety Laboratory, made many valuable suggestions in the preparation of the manuscript.

CONTENTS

	Page
ABSTRACT	ii
ACKNOWLEDGEMENTS	iii
SECTION I	
INTRODUCTION	1
Historical	1
The Computation Model	5
Defects of System	7
EXPERIMENTAL DATA	10
Comparison of Duplicate Stations	11
Evaluation of Strontium 90 Data	14
Evaluation of Infinity Gamma Dose Data	23
SUMMARY	30
PROCEDURE FOR GUMMED FILM	32
Sampling	32
Sample Preparation	32
Counting	33
Data Handling	34
BIBLIOGRAPHY	36
SECTION II	
MONTHLY SUMMARIES FOR INDIVIDUAL STATIONS	37

For many years, gummed film sampling comprised the only widespread network for measuring fallout. This technique fulfilled its original purposes of delineating the geographic distribution of fallout and indicating the time of arrival of radioactive material. While the test pattern remained simple and included only fission devices, it was also possible to estimate individual long-lived nuclides such as Sr^{90} and to estimate the fallout infinity gamma dose.

More complex test patterns and delayed fallout from thermonuclear devices made the Sr^{90} and gamma dose estimates very difficult. Despite the complexities, considerable effort has been devoted to testing various mathematical models to allow computation of these two parameters and thus to extract the utmost from the available data. This report describes the model adopted and gives the results of these computations in some detail. In addition, comparisons have been made with more direct measurements of Sr^{90} fallout where these are available.

The data indicate that useful information on Sr^{90} deposition has been obtained by the gummed film technique. The gamma dose estimates cannot be confirmed, but are the best available for any network.

Historical

The first detection of radioactive fallout away from the site of the explosion was in Rochester, New York, in February of 1951, although Webb[1] had reported activity of unknown origin in paperboard in 1945. The Health and Safety Laboratory was subsequently given the responsibility of determining the relative fallout at distances beyond 200 miles from the Nevada test site. Later this responsibility was modified to delineating world-wide fallout from the megaton weapons fired in the Pacific and elsewhere.

The original measurements were extremely simple as only the total mixed fission product beta activity was required. These data gave information on the arrival of fallout and to some extent on the relative fallout contribution at different locations.

In the first network of 10 stations set up for the United States in the spring of 1951, the collector was a metal tray having an area of about 9 square feet. A layer of water was maintained in the tray and every twenty-four hours the contents were filtered to obtain the particulate activity. The water, including any rainfall, was collected in a polyethylene bottle. These samples were prepared for beta counting and measured with Geiger tubes against Radium D+E standards.

For the fall 1951 tests the network was expanded to 61 stations and 20 of these had gummed paper samplers as well as trays. These stations were operated for the Atomic Energy Commission by the U. S. Weather Bureau. The gummed papers were forwarded to the Health and Safety Laboratory for ashing and counting. The results on these stations were reported by the Health and Safety Laboratory in 1952.(2)

The network in the United States for the spring 1952 tests included 109 deposition stations with gummed paper samplers. The data were reported in 1953 by Eisenbud and Harley.(3)

During the fall 1952 Pacific tests the network consisted of 51 gummed paper stations in the continental United States and 60 elsewhere in North America and overseas. All later samplings were with a gummed acetate film instead of gummed paper which gave a smaller amount of ash. In the spring 1953 Nevada series, 96 U. S. stations and 29 others were in operation, and in the spring 1954 Pacific series, the network was 39 U. S. stations plus

81 others. These data were also reported by Eisenbud and Harley.[4,5]

The network since 1954 has been quite stable. In January 1959 it consisted of 46 U. S. stations, 68 elsewhere in North America and overseas and 64 maintained in cooperation with other countries through the United Nations.

As the approach to fallout problems became more sophisticated, it was desirable to have a measure of individual radionuclides, particularly Sr^{90} and to have an estimate of the gamma dose delivered to the population in various geographic areas. Actual Sr^{90} measurements could best be performed on monthly samples but, because of the radiochemistry involved, this collection system grew very slowly. It was apparent that it would be very useful if a reasonable estimate of the Sr^{90} deposition could be made from the total beta measurements on gummed film.

In the period before megaton weapons were fired, the radioactive debris stayed in the troposphere and was cleared out with an average life of about one month. Thus, it was usually possible to attribute fallout to a single burst and to make reasonable estimates of the Sr^{90} content based on total beta measurements. It was also possible by a knowledge of the nuclides produced, to estimate the infinite plane gamma dose.

The original calculations of Sr^{90} deposition from measurements of total beta activity on ashed gummed-film samples were performed as follows:

1. The activity measured on a given sampling day was attributed to the test immediately preceding that sampling day.

2. The measured activity on the counting day was extrapolated to a fixed day (usually the first day of the following year) by the formula

$$A = A_c \left[\frac{C - B}{E - B}\right]^{1.2}$$

where,

A_c = β activity on counting day

C = Counting day

B = Burst day

E = Extrapolation day

3. The Sr^{90} fraction of the total beta activity on this day was taken from modified Hunter and Ballou[6] curves.

4. The Sr^{90} activity values for the individual days were summed by months and these sums added for the desired period. The same data were also used to compute an infinity gamma dose using the calculation system described by Hallden and Harley.[7]

The data reported for fallout through September 1955[5] were based on the above computations, but comparison of the estimated Sr^{90} values with available radiochemical data showed the method was inadequate. The actual fallout was older and contained a higher percentage of Sr^{90} than the model indicated.

A new model was then devised to take stratospheric debris into account. Tests of this model appeared to give reasonable agreement between estimated and measured Sr^{90}. This was the general system:

1. Estimates of the yields of total fission products and of Sr^{90} were obtained for each weapon test.

2. The total fission-product yield for each test was added to the calculated fission-product residue from previous tests. (The $T^{-1.2}$ law was used for decaying total fission product activity.)

3. The combined fission-product yield was used to estimate an effective burst date. This was used with samples following each test to extrapolate from counting date to a fixed computing date.

4. The Sr^{90} activity from each test was added to the accumulated Sr^{90} from previous tests. (No Sr^{90} decay was included)

5. The Sr^{90} to fission-product beta activity ratio was computed and applied to the measured beta activity on each sample.

These data were reported by Eisenbud and Harley[8] covering fallout through June 1957. The model was applied only to the results obtained after May 1956.

Unfortunately, later calculations have cast doubt on the validity of the effective burst date concept and actual errors of computation have been uncovered. The present model was designed to overcome some of the objections to the previous one. All of the data since the beginning of 1954 have been recomputed according to this third model.

It would have been technically possible to introduce a number of experimentally determined refinements into the model, but the cost of computation for some 375,000 pieces of data would have been prohibitive. Therefore, the relatively simple model described had to be accepted.

The Computation Model

The present model was designed to take into account new data on Sr^{90} yield, stratospheric and tropospheric residence times and the decay of Sr^{90}. The model will first be outlined and then its defects will be discussed.

1. An estimate of the fission yield is obtained for each weapon test.
2. The value of 133 megacuries of beta activity per nominal bomb[9] is used to obtain total megacuries of fission products at one day.
3. The value of 0.00105 percent of Sr^{90} is used to obtain total megacuries of Sr^{90} at one day.
4. The megacuries of mixed fission products produced in each test are decayed by the $T^{-1.2}$ law for each subsequent day and the results for all tests summed.
5. The megacuries of Sr^{90} produced in each test are decayed with a half-life of 27.7 years for each subsequent day and the results for all tests summed.
6. Both the mixed fission products and Sr^{90} are also corrected for tropospheric ($< 3/4$ MT) and stratospheric ($> 3/4$ MT) deposition using half-residence times of 20 days and 4 years respectively.

7. The mixed fission products existing on sampling day after decay and deposition corrections are further decayed to counting day.

8. The ratio of mixed fission products on sampling day (from all tests before sampling day) to that on counting day is used to correct the beta activity of individual samples back to sampling day.

9. The ratio of Sr^{90} to mixed fission products present from all tests on sampling day is used to compute the Sr^{90} deposition from the individual samples.

10. The daily values are summed to give the total deposition for the month. This value is divided by the number of actual samples in the month and multiplied by the expected number to give the final value for monthly Sr^{90} deposition. This value is as of the sampling month.

11. The computed beta activity on sampling day is treated by the method of Hallden and Harley[7] to obtain the infinity gamma dose from fallout on that day. This calculation takes into account the apportionment of the computed beta activity among the debris of different ages.

12. The daily gamma values are summed and corrected as for the monthly Sr^{90} deposition.

The mathematical expressions are:

$$\frac{A_s}{A_c} = \frac{\sum_{i=1}^{n} \frac{I_{ni}}{(t_s - t_{ni})^{1.2}} \; e^{-\lambda(t_s - t_{ni})}}{\sum_{i=1}^{n} \frac{I_{ni}}{(t_c - t_{ni})^{1.2}} \; e^{-\lambda(t_s - t_{ni})}}$$

A_s = β Activity on sampling day dpm/ft^2

A_c = β Activity on counting day dpm/ft^2

i = Burst number

I_{ni} = Yield for burst i, Mc of mixed fission products at 1 day

t_s = Sampling day

t_{ni} = Burst day

λ = Deposition constant

$$Sr^{90} = \frac{A_s}{80} \cdot \frac{1.05 \times 10^{-5}}{D} \sum_{i=1}^{n} I_{ni} \; e^{-(\lambda + 6.8 \times 10^{-5})(t_s - t_{ni})}$$

Where

$$D = \sum_{i=1}^{n} I_{ni} \frac{1}{(t_s - t_{ni})^{1.2}} \; e^{-\lambda(t_s - t_{ni})}$$

Sr^{90} = mc/mi^2 of Sr^{90}

λ = 3.5×10^{-2} for I_{ni} 5000 (Tropospheric)

λ = 4.7×10^{-4} for I_{ni} 5000 (Stratospheric)

$$\text{Dose} = A_s \frac{3.0 \times 10^{-6}}{D} \sum_{i=1}^{n} I_{ni} \frac{1}{(t_s - t_{ni})^{.425}} e^{-\lambda(t_s - t_{ni})}$$

Dose = Infinity γ dose in millirads

Defects of System

There are a number of defects in the overall gummed film system and in fact, it only deserves the effort expended because there were no other types of sampling available for the time and locations at which most of these measurements were made. These defects will be discussed individually even though it is not possible to give good numerical estimates of the errors involved.

1. The measurement is a total beta count only and is subject to the errors of self-absorption and the change in average energy of mixed fission products with time. The self-absorption is partially corrected for by using basic standards with the same weight of material as found in the average fallout sample. No correction is made for such heavy or light samples as may appear from time to time. The average energy of the mixed fission products has been calculated in this Laboratory based on the assumptions that the average energy is one-third the maximum energy of the beta particle and that the percentage of each isotope in fallout samples follows the Hunter and Ballou[6] calculations.

   The average energies calculated on this basis are:

10 days	0.32 Mev
80 days	0.30 Mev
150 days	0.28 Mev
2 years	0.48 Mev

The average energy of potassium 40 according to Marinelli, Brinkerhoff and Hine[10] is 0.40 Mev. We believe this to be the best approximation of the energy for mixed fission products among the available long-lived isotopes.

2. There are losses both in the collection process and in the sample processing. These are corrected for only by the overall factor of 1.6 relating mixed fission product β activity found in pot samples to that found in composite gummed film samples for the same periods. This factor of 1.6 was shown to be a good average value for New York City over a period of two years in 1954 and 1955, but does not necessarily apply to each individual sample. Welford[11] has shown the relative loss of several nuclides and has found a factor of 1.85 for the year 1958.

3. The general formula depends on the $T^{-1.2}$ law which is not absolutely applicable to each sample and each type of debris. On the average, however, for fallout remote from the test site, it is the best value presently available. (Later reports, such as NRDL-247 indicate an exponent of -1.25 which is not appreciably different.)

4. No allowance is made for fission product fractionation or for induced activities. The fractionation is probably less critical at considerable distances from the test site but radiochemical data are not available for checking this point. Most of the induced activities are of relatively short half-life and are not counted with the time lag inherent in the system.

5. The general formula does not allow for differences in geographic distribution of the debris. (For instance the 1958 USSR polar tests did not appear in the southern hemisphere). All samples are treated by the same formula. The effect of this can only be shown by comparing computed Sr^{90} values with the few data available for measured Sr^{90} deposition.

6. The general formula does not allow a time lag for the debris to reach different geographic areas. The inclusion of such a lag would have made the computation impossibly complex.

7. The general formula does not allow for distribution of megaton debris between the stratosphere, troposphere and local deposition. This could have been included but would have essentially doubled the computation. This was not considered worth while since the estimates of this distribution are of doubtful validity.

8. The general formula does not allow for the cases when almost all of the debris came from a single burst. The individual daily results, however, have been reviewed. Where the presence of fallout, known trajectories and supplementary data indicate that the fallout does result largely from a single burst, corrections have been made individually. This, of course, results in decreasing the Sr^{90} and gamma dose values for these particular samples. Since only markedly high values can be detected, the process may destroy the relationship between stations so corrected and those not corrected.

EXPERIMENTAL DATA

For the most part, the experimental data are derived from the average of duplicate daily gummed film samples analyzed as described in the section on Procedure. The monthly summaries of estimated Sr^{90} deposition and infinity gamma dose make up the bulk of this report, but certain data have been extracted in this section to compare with more direct measurements or with other estimates. The evaluations are separated into comparison of duplicate stations, Sr^{90} data and gamma dose data. There are certain cases where daily data are not available. Since these may enter into the evaluations attempted, they are described below.

During certain periods in 1955 and 1956, the daily gummed film samples were composited on a monthly basis for counting. The purpose of this compositing was not to reduce the counting load but was an attempt to collect sufficient gummed film ash to make a radiochemical analysis for Sr^{90}. This effort was not successful as it was found that the collection efficiency for Sr^{90} was considerably poorer than the efficiency for the total mixed fission products. This was later confirmed by Welford[11] in his measurements on New York City samples.

The composite samples have been treated in the computation process as though all activity had been deposited on the 15th of the sampling month. This should not lead to any marked computation errors since the compositing was only carried out during periods or at stations where local fallout was not expected. All composite samples are marked as such in the summary tables for each station.

Because of the large number of samples being handled and because of difficulties in the field, there are not always sufficient daily samples

to justify a monthly summary. In the data tables, we have arbitrarily taken the reporting of less than 10 days in the month to be an insufficient sample. As it is desirable to obtain an estimate of cumulative values for comparison with soil data and to approximate the total deposition where other data are lacking, missing months have been filled in by geographic interpolation. In the arbitrary system selected, the three closest stations are averaged for geographic interpolation with some weight being given to the months immediately before and after the missing month. These interpolated estimates are marked as such in the summary tables for each station.

Comparison of Duplicate Stations

Since duplicate films were exposed daily at most of the network stations, there is a considerable body of data on paired samples at the same location. A statistical treatment of the duplicates is planned as an exercise in methematical statistics, but this project will not be complete for some time. It might be noted that visual inspection shows remarkable agreement for the most part. This may be taken as an indication that we are usually dealing with a statistically valid number of particles deposited on each film.

It is possible to compare results from two stations in the same city for a few cases. Such data have been tabulated for New York City (Table 1) and for Tokyo and Durban (Table 2). While it is not necessarily true that such paired stations will give identical results, they should be close.

The tables indicate a number of differences, but the overall agreement is reasonable. It is not possible to attribute errors individually to sampling, analysis, or computation.

TABLE 1

Comparison of Two Gummed Film Stations at New York City, HASL (136) and La Guardia Airport (117) mc/mi^2 of Strontium 90

Month	1954		1955		1958	
	136	117	136	116	136	117
1	-	-	.12	.03*	-	-
2	.51	.05	.33	.27	.34	.36
3	.07	.04	-	-	.76	.81
4	.09	.05	-	-	2.69	2.03
5	.22	.06	-	-	.72	.82
6	.09	.07	.92	.68	.64	.56
7	.06	.06	.27	.10*	.36	.73
8	.11	.08	.38	.10*	.20	.25
9	.27	.26	.23	.11*	.41	.32
10	.10	.10	.20	.26*	.72	.87
11	1.44	.47	.13	.25	.78	.75
12	.14	.08*	.20	.16	.86	.63

* Composite Sample

\- Data missing for HASL Station (136)

TABLE 2a

Comparison of Two Gummed Film Stations at Tokyo
mc/mi^2 of Strontium 90

Year	Month	Station 805	Station 820
1956	11	0.33	0.21
	12	0.20	0.22
1957	1	0.27	0.21
	2	0.75	0.53
	3	0.70	0.55
	4	1.13	3.59
	5	0.90	1.23
	6	0.58	0.53
	7	0.86	1.21
	8	0.35	0.37
	9	0.61	0.87

TABLE 2b

Comparison of Two Gummed Film Stations at Durban
mc/mi^2 of Strontium 90

Year	Month	Station 713 Univ. of Durban	Station 723 Natal Airport
1957	6	0.04	0.06
	7	0.13	0.19
	8	0.20	0.29
	9	0.20	0.23
	10	0.21	0.05
	11	0.08	0.08
	12	0.07	0.22
1958	1	0.08	0.11
	2	0.03	0.22
	3	0.01	0.47
	4	0.01	0.01
	5	0.10	0.18
	6	0.03	0.03
	7	0.07	0.05
	8	0.05	0.19
	9	0.18	0.19
	10	0.10	0.16
	11	0.09	0.03
	12	0.09	0.07

Evaluation of Sr^{90} Data

In estimating the validity of gummed film values for Sr^{90}, we have available radiochemical Sr^{90} measurements in monthly pot samples and in soil samples. The earliest useful pot data began in April 1954 at New York City but even as late as January 1957, only a few stations were available. For the soil collections, a few locations were sampled in October of 1955 and a larger number in 1956 and 1958.

Pot samples, like gummed film, are a measure of fallout rate. The analyses are available on a monthly basis and no decay corrections are required.

The comparison of calculated and measured values must be made with a degree of caution and the pot values should not be automatically assumed as correct. In all of the comparative tables we have indicated where certain pot values are suspect. Suspicion is raised where other radiochemical data, such as Strontium-89/90 ratios indicate possible error in the Sr^{90} analysis. It is also possible, of course, that other pot samples may have suffered losses in the sample transfer without disturbing the 89/90 ratio. There is a possible added factor in that many pot-gummed film comparisons are made for cases when the two collectors are separated by some distance even though in the same city.

Three sets of data are presented for New York City. Table 3 shows the pot data and the computed Sr^{90} values based on the original single burst assumption for several months in 1956. The computed Sr^{90} is obviously very low and the apparent age of the fallout is much greater than was assumed. This disagreement was the reason for seeking a better model.

Table 4 compares pot values with Sr^{90} computed by the present model. Inspection of this table brings out several points:

TABLE 3

Comparison of Pot Analyses With Single Burst Gummed Film Estimates of Sr^{90} (New York City)

Sampling Period	Pot Sr^{90} mc/mi^2	Gummed Film Sr^{90} Estimate (mc/mi^2)
May 1956	0.83	0.11
June	.63	.01
July	.72	.03
August	.53	.05
September	.32	.04
October	.54	.03
November	.51	.03

TABLE 4

New York City
Comparison of Pot Analyses and
Gummed Film Estimates of Strontium 90 (mc/mi^2)

Month	1954		1955		1956		1957		1958		1959	
	Pot	Film	Pot	Film	Pot	Film	Pot	Film	Pot	Film	Pot	Film
1	- -	- -	0.23	0.03**	0.27	0.31**	0.27	0.25	1.28	0.80	1.39	1.29
2	- -	0.05	0.87	0.27	1.07	0.77	0.52	0.34	1.23	0.36	1.63	1.12
3	0.59	0.04	2.43	1.57*	1.78	0.33**	1.04	0.76	0.89	0.81	5.10	2.18
4	0.88	0.05	1.24	1.11*	0.81	1.48**	4.81	3.32	1.52	1.72	6.28	2.45
5	0.38	0.06	0.94	0.83*	0.83	1.35	0.93	0.51	2.63	0.82	1.49	1.17
6	0.48	0.07	0.82	0.68	0.63	0.27	0.82	0.58	1.75	0.56	4.82	0.88
7	0.15	0.06	0.38	0.10**	0.72	0.33	0.84	0.84	1.58	0.28	0.49	0.01
8	0.26	0.08	0.70	0.10**	0.53	0.25	0.50	0.56	0.60	0.25	0.68	0.10
9	1.40	0.26	0.51	0.11**	0.32	0.46	0.41	0.92	0.65	0.32	0.12	0.08
10	0.27	0.10	0.47	0.26**	0.54	0.22	0.38	0.37	1.06	0.87	0.36	0.05
11	0.81	0.47	0.35	0.25	0.51	0.28	0.42	0.42	0.98	0.75	0.31	0.04
12	0.33	0.08**	0.55	0.16	0.55	0.33	0.60	0.66	1.77	0.63	0.51	0.06
Pot/film ratio	4.37		1.73		1.34		1.20		1.95		2.46	

* Corrected for local fallout
** Monthly composite gummed film

1. The gummed film results tend to be low when compared to pot analyses.

2. Results from composite samples are even lower with respect to the pot analyses than the summed daily values compared in adjoining months.

3. The highest daily pot/film ratios are found in 1954, and the next highest are found in 1958 and 1959.

4. The daily pot/film ratios are generally good during 1955, 1956 and 1957.

Since the composite gummed film results were excessively low, a comparison was made for the months of February through June of 1955 where the samples from stations in the United States were run by both methods. This comparison showed the summed daily values to be 5 times as high as the composites on the average. This value may not be generally applicable and has not been used in preparing the summary tables for individual stations. The most probable causes are loss of sample in compositing and insufficient correction for self-absorption.

The monthly pot samples collected in New York City from 1954 through 1958 were analyzed for total β activity as well as for Sr^{90}. These total β activity values have been treated by the present model, assuming the monthly collection to have been a single sample taken on the 15th of the month. (Pot samples before January 1957 were collected weekly and the effective date was taken as mid-week). This computation allows comparison of calculated and measured Sr^{90} from the same collector.

The data in Table 5 show a marked improvement over the comparison made in Table 4. This is surprising, since they are based on the same model and a factor (1.6) has been included to correct for gummed film efficiency. The difference is very marked for 1958, and an inspection of the

TABLE 5

Comparison of Sr^{90} Values Measured in Pot Samples Collected In New York City With Those Computed From Total β Activity in The Same Pot Samples
Data Given in mc/mi^2

Month	1954		1955		1956		1957		1958	
	Meas.	Comp.	Meas.	Comp.	Meas.	Comp.	Meas.	Comp.	Meas.	Comp.
1	-	-	0.23	0.04	0.27	.52	0.27	-	1.28	1.41
2	-	-	0.87	0.27	1.07	.64	0.52	0.37	1.23	.99
3	0.59	-	2.43	2.51	1.78	1.71	1.04	0.68	0.89	2.58
4	0.88	0.26	1.24	1.50	0.81	1.88	4.81	1.38	1.52	4.50
5	0.38	0.05	0.94	-	0.83	1.10	0.93	1.12	2.63	1.84
6	0.48	0.03	0.82	0.74	0.63	0.13	0.82	0.94	1.75	.72
7	0.15	0.05	0.38	0.12	0.72	0.22	0.84	2.26	1.58	1.11
8	0.26	0.07	0.70	0.33	0.53	0.58	0.50	2.83	0.60	.35
9	1.40	0.56	0.51	0.16	0.32	0.73	0.41	2.65	0.65	.54
10	0.27	0.15	0.47	0.31	0.54	0.26	0.38	0.51	1.06	2.67
11	0.81	0.70	0.35	0.26	0.51	0.47	0.42	0.01	0.98	.98
12	0.33	0.21	0.55	0.14	0.55	0.64	0.60	0.92	1.77	1.91
Meas/comp. Ratio	2.38		1.34		0.96		0.82		0.81	

total β activity relation for routine pots and films was made. The total β ratio of pot/film for 1958 was found to be 2.25 rather than 1.6.

The change in collection efficiency factor does not account for the difference between the computed values for pots and gummed film. It is not possible to evaluate the numerous other factors, such as the use of a single sampling date for a monthly collection; and no explanation is available.

Data for pot-gummed film comparisons at locations other than New York City are presented in Tables 6, 7 and 8. Since the earliest results are for 1957, there is no confirmation of the low estimates for 1954. As was the case for New York City, the 1957 comparison is better than that for 1958 and 1959.

It has been found from the HASL pot network data that little of the debris from the USSR tests in the fall of 1958 appeared far south of the equator. The model would be expected to strongly underestimate the Sr^{90} in the lower latitudes at the end of 1958 and in 1959. The data from Durban and Pretoria in Table 7 seem to confirm this.

Soil analyses provide only cumulative Sr^{90} deposition data, and not deposition rates. Since the inherent error (not including sampling) in soil analysis is about 10%[12], the subtraction of Sr^{90} soil values to obtain deposition rate is not satisfactory. Thus, the only valid comparison of gummed film data with soils is for accumulated deposition.

There is a factor not accounted for in the comparisons made here. Soil values are reported as of the time of collection, while the summed gummed film values are as of their collection date. These summed values are therefore too high by about 3% per year, as no allowance has been made for Sr^{90} decay after deposition.

TABLE 6

Comparison of Pot Analyses and Gummed Film Estimates of Strontium 90
Data given in mc/mi^2

		Chicago		Salt Lake City		Los Angeles		Nagasaki		Hiroshima	
		Pot	Film	Pot	Film	Pot	Film	Pot	Film	Pot	Film
1957	1	0.30	.29	0.80	.47	0.99	.45	1.01	.93	0.29	.32
	2	0.27	.35	0.83	.59	0.76	.27	0.17	.51	0.53	.29
	3	0.47	.49	2.39	1.53	0.09*	.37	0.38	.36	0.23	.48
	4	1.15	.86	2.30	1.78	0.84	.56	1.98	1.16	1.12	1.33
	5	0.27	.67	0.81	1.49	0.24	.20	0.72	.37	0.57	.59
	6	0.48	.75	1.61	2.07	0.12	.16	0.27	.19	0.49	.23
	7	1.57	1.34	0.94	2.40	0.92	.39	1.07	.85	0.82	.56
	8	0.75	.65	1.28	2.06**	0.05	.08	0.46	.34	0.05	.07
	9	0.10	.79	0.15*	1.88**	0.04	.14	0.26	.19	0.28	.36
	10	0.22	.27	0.99	1.77	0.26	.19	0.21	.28	lost	.30
	11	0.15	.14	0.41	.31	0.27	.16	0.19	.09	0.14	.09
	12	- -	.49	0.64	.43	0.20	.46	0.17	.39	0.36	.23
1958	1	0.30	.16	0.70	.39	0.44	.23	0.60	.38	0.24	.30
	2		.19	1.10	.49	0.90	.36	0.55	.32	0.25	.24
	3	lost	1.24	1.47	2.26	1.30	.93	1.13	.69	0.92	.82
	4	0.57	2.37	2.10	3.69	1.60	.76	2.52	1.22	3.37	1.83
	5	0.79	.96	1.30	1.69	0.05*	.27	1.75*	.24	1.06	.52
	6	4.87	1.49	0.28	.75	0.10	.05	0.88	.49	0.64	.35
	7	0.09*	.56	0.06*	.59	0.16	.06	2.10	2.60	0.43	1.39
	8	3.67*	.44	0.71	.57	0.08	.15	0.50	.33	2.66*	.29
	9	0.33	.21	- -	.24	0.08	.08	0.26	.10	0.42	.20
	10	0.76	.35	0.10	.38	0.15	.14	0.55	.30	0.79	.58
	11	1.04	.39	0.26	.42	0.11	.18	0.61	.22	0.71	.27
	12	0.42	.25	- -	.95	0.07	.12	2.16	.72	0.57	.40
1959	1	1.00	0.38	2.46	1.27	1.82	0.42	3.00	1.10	1.81	0.85
	2	- -	0.76	2.56	1.24	3.31	1.54	2.14	1.09	2.45	1.27
	3	- -	3.41	4.56	1.21	0.10	0.42	3.74	1.56	5.55	2.77
	4	4.41	2.62	5.84	2.64	0.63	0.67	7.60	2.53	6.52	2.39
	5	4.19	2.01	- -	3.77	0.22	0.16	3.02	0.93	0.40	0.99
	6	0.58	0.52	2.40	1.44	0.09	0.08	0.74	.35	1.09	0.57
	7	0.33	0.17	0.53	0.41	0.09	0.06	1.73	.64	- -	0.51
	8	- -	0.08	--	0.25	0.05	0.06	0.19	.18	- -	0.16
	9	0.90	0.08	0.69	0.20	0.03	0.05	0.13	.04	0.04	0.09
	10	- -	0.08	0.25	0.15	0.12	0.09	0.06	.08	0.27	0.09
	11	- -	0.05	0.93	0.15	0.03	0.02	0.09	.06	0.13	0.10
	12	- -	0.05	0.26	0.10	0.39	0.11	0.36	.08	0.16	0.07

* Pot Value Suspect
** Best Estimate, Not Formula

TABLE 7

Comparison of Pot Analyses and Gummed Film Estimates of Strontium 90
Data given in Mc/mi^2

		Miami		Honolulu		Bangkok		Durbin			Pretoria		Vienna	
		Pot	Film	Pot	Film	Pot	Film	Pot	Film 713	Film 723	Pot	Film	Pot	Film
1957	7	1.51	1.25	0.42	.47	0.02	.36	0.01	.13	.19	0.06	.43	1.95	.91
	8	0.75	1.17	0.31	.27	0.04	.32	0.10	.20	.29	0.07	.11	0.79	1.29
	9	0.52	.35	0.16	.26	0.07	.01	0.23	.20	.23	0.45	.14	0.59	2.12
	10	0.41	.45	0.13	.12	0.02	.18	0.24	.21	.05	0.19	.13	0.03	.09
	11	0.29	.15	0.64	- -	0.01	.01	0.32	.08	.08	0.10	.05	0.22	.20
	12	0.63	.22	0.57	- -	- -	.02	0.22	.07	.22	0.12	.08	0.11	.09
1958	1	0.29	.19	0.71	.27	0.12	.07	0.02	.08	.11	0.10	.08	0.16	.17
	2	0.22	.14	0.36	.16	lost	.03	0.18	.03	.22	0.06	.19	0.27	.39
	3	0.60	.19	1.33	.89	0.04	.02	0.09	.01	.47	0.11	.10	0.35	.60
	4	0.49	.17	0.84	.51	0.04	.07	0.46*	.01	.01	0.17	.04	0.71	.79
	5	1.70	.34	1.15	.58	0.05	.19	0.91*	.10	.18	0.49	.47	0.69	.51
	6	1.39	.22	1.21	.38	0.17	.15	0.04	.03	.03	0.02	.07	3.13*	.84
	7	0.77	.15	0.07*	.53	0.40	.65	0.44*	.07	.05	0.05	.05	1.07	.33
	8	6.20*	.41	0.70	.22	0.23	.25	0.02	.05	.19	0.01	.04	1.84	.31
	9	0.60	.21	0.73	.12	0.04	.10	0.40	.18	.19	0.59	.22	0.02*	.09
	10	0.74	.22	1.56	.19	0.12	.02	0.38	.10	.06	0.86	.19	0.76	.17
	11	0.63	.13	0.49	.13	0.02	.03	0.60	.09	.03	0.36	.19	0.48	.13
	12	1.86	.51	1.12	.45	0.03	.03	0.60	.09	.07	0.76	.06	1.17	.58
1959	1	1.16	0.46	2.21	0.96	0.01	- -	0.56	0.10	0.13	0.48	0.10	0.43	0.32
	2	0.90	0.73	3.91	1.48	0.05	0.25	0.14	0.12	0.08	0.52	0.06	- -	0.69
	3	6.00	1.30	4.86	1.08	0.54	0.18	- -	0.07	0.26	0.13	0.00	1.15	0.71
	4	- -	0.68	2.11	0.85	0.05	0.19	0.17	0.72	0.09	- -	0.16	3.87	2.44
	5	3.52	0.81	1.61	1.96	0.14	0.56	0.24	0.04	0.18	0.08	0.20	2.59	1.93
	6	- -	0.42	1.07	0.23	0.25	0.17	0.05	0.04	- -	0.03	0.22	4.15	1.84
	7	1.72	0.19	- -	0.10	0.48	0.19	0.08	0.13	0.10	0.05	0.20	2.32	0.88
	8	0.50	0.12			0.11	0.12	0.17	0.10	0.21	0.00	0.19	0.94	0.45
	9	0.46	0.06			0.06	0.63	- -	0.07	0.15	0.12	0.18	0.05	0.25
	10	0.17	0.04			0.03	0.08	0.24	0.12	0.10	0.07	0.11	- -	0.29
	11	0.20	0.06			0.00	0.06	0.43	0.09	0.11	0.17	0.07	0.08	0.16
	12	- -	0.06			0.16	0.10	0.27	0.09	0.07	0.24	0.08	- -	0.08

* Pot Value Suspect

TABLE 8

Comparison of Pot Analyses and
Gummed Film Estimates of Strontium 90
Data Given in mc/mi^2

		Bogota			Karachi	
		Pot	Film 615	Film 621	Pot	Film
1958	1	.04	.18	.17	- -	- -
	2	.04	.17	- -	.02	.25
	3	.12	.08	.03	.07	.12
	4	.02	.02	.02	.13	.19
	5	.12	.02	.10	.39	.41
	6	.02	.06	.04	.07	.30
	7	.10	.15	.08	.29	.31
	8	.20	.06	.16	.15	.21
	9	.06	.05	.04	.06	.04
	10	.09	.05	.04	.06	.04
	11	.10	.03	.06	.04	.10
	12	- -	.04	.05	lost	.30
1959	1	- -	0.13	0.06	0.29	0.32
	2	0.06	0.08	0.09	- -	0.39
	3	0.07	0.02	0.06	0.15	
	4	0.25	0.09	0.12	0.47	0.61
	5	0.02	0.07	0.06	- -	0.40
	6	- -	0.03		- -	0.44
	7	- -	0.23		0.47	0.41
	8	0.04			0.06	0.31
	9	0.02		0.07	0.11	0.25
	10	- -		0.07	- -	0.11
	11	0.33		0.03	0.12	0.14
	12	- -		0.03	- -	0.10

Table 9 presents comparisons of soil analyses and gummed film estimates for 17 sites in the United States. Once again, the model produces low results, particularly for the 1958 samplings.

It should be noted that the gummed film estimate is high for Albuquerque, Grand Junction and Salt Lake City in 1955, 1956 and 1957. Even the 1958 estimates are high for the first two. This has been studied in some detail and is not considered to be the result of local fallout. The pot-film comparison for Salt Lake City in Table 6 shows high film estimates even when no local fallout is present, such as in the spring of 1958. A possible explanation is an increased collection efficiency for the gummed film in dry areas. This may be enhanced by the collection of windblown material by the film. The windblown debris on the soil may later be blown off, while this is not possible with a gummed surface.

Table 10 presents the data available for other soil sampling sites. The results appear similar to those in previous tables, but the agreement is better than for U. S. soil sites.

Evaluation of Infinity Gamma Dose Data

There are no data at hand by which the gamma dose calculated from the gummed film measurements can be checked. While dosimetric measurements have been possible at a few locations following relatively high fallout from single bursts, no direct measurements are available on a continuous basis.

Gustafson[13] has made some spectrometric measurements on soils and computed the gamma dose rate for the vicinity of Chicago. This is a laborious process and again, repeated observations over any extended period have not been reported.

TABLE 9

Comparison of Soil Analyses and Gummed Film
Estimates of Sr^{90} at 17 Sites in the United States
Data given in mc/mi^2

Location	Oct. '55		Oct. '56		Oct. '57		Oct. '58	
	Soil	Film	Soil	Film	Soil	Film	Soil	Film
Albuquerque	5.1	16.2	9.3	22.8	20.5	34.0	27.2	43.6
Atlanta	7.9	8.6	16.1	13.6	20.2	20.9	36.9	26.1
Binghamton	11.4	4.5	17.3	7.5	22.8	12.0	39.6	17.0
Boise	16.2	10.1	23.4	15.3	22.2	23.2	38.8	31.2
Des Moines	8.9	8.2	28.0	14.4	24.2	25.3	55.2	32.0
Detroit	11.1	9.1	21.9	15.2	29.9	20.8	39.9	25.8
Grand Junction	3.8	18.9	7.5	24.8	23.7	35.4	38.9	43.5
Jacksonville	8.7	5.8	8.6	8.6	25.5	15.7	36.0	20.9
Los Angeles	2.1	3.6	9.9	5.7	8.3	8.8	18.8	12.4
Memphis	15.8	11.0	20.8	14.7	38.0	22.6	36.8	28.9
New Orleans	7.8	9.1	11.1	14.4	30.4	22.8	33.9	28.4
New York	12.6	7.9	24.1	14.1	34.0	23.1	- -	31.0
Philadelphia	8.8	8.7	15.4	12.8	22.7	18.2	43.7	23.4
Rapid City	19.5	6.7	30.3	10.5	31.7	18.4	74.1	21.9
Rochester	8.0	6.9	18.0	11.2	27.9	16.5	34.1	21.5
Salt Lake City	13.9	24.5	24.1	31.8	20.0	48.4	75.2	60.2
Seattle	7.8	5.6	19.3	10.4	27.5	14.8	30.7	21.6

TABLE 10

Comparison of Soil Analyses and Gummed Film
Estimates of Strontium 90
Data given in mc/mi^2

Location	1956 Sampling Month	1956 Soil	1956 Film	1958 Sampling Month	1958 Soil	1958 Film
Fairbanks, Alaska	8	4.2	7.0	6	12.5	12.6
Panama Canal Zone	1	4.9	2.6	2	7.1	7.4
		6.0			9.0	
Lima, Peru	1	3.8	2.4	2	2.2	5.2
Buenos Aires, Argentina	1	2.6	2.7	2	11.2	6.2
Bogota, Columbia	1	2.5	2.5	2	4.7	6.0
Oslo, Norway	8	11.6	4.9	9	28.6	12.7
Durban, Union of South Africa	9	4.7	4.0	3	6.9	5.8
		3.2				
Hiroshima, Japan	4	5.5	5.0			
Nagasaki, Japan	4	3.8	6.0			
Tokyo, Japan	4	1.8	7.0	2	30.4	17.9
					24.6	
Melbourne, Australia	4	3.0	3.7			
Wellington, New Zealand	4	3.3	2.5	3	9.7	4.8
Singapore	4	2.6	4.1	2	4.2	6.4
		3.2				
Sydney, Australia	4	5.6	4.0			
Wake Island	4	8.6	4.7	2	20.2	11.9
Canton Island	11	3.5	2.8	2	4.7	5.1
					11.3	
Honolulu, Hawaii	11	7.7	6.3	2	32.6	11.3

The original computation of gamma dose from total beta activity on gummed film[7] was developed to meet this lack of suitable dose estimates. Unfortunately, the gamma dose calculations are subject to the same errors in evaluating multiple bursts as the Sr^{90} estimates.

The gamma dose computed is the air dose to infinite time from uniform fallout on an infinite smooth plane. No reduction for shielding or weathering has been introduced, nor has there been included any build-up factor for scattering. The usual overall reduction factor is 10[14] for converting to gonad dose. It might be noted here that the thirty year dose is only slightly less than the infinity dose.

There is a second possible estimate of gamma dose. If we assume that Cs^{137} is produced and deposited in a fixed ratio to Sr^{90}, the dose from Cs^{137} can be computed. The calculations are based on the same assumptions as the total beta activity[7]. The modified formulas are:

$$\text{Dose} = 6.64 \times 10^{-10} \sum N \text{ in mrads}$$

where,

Dose = Cs^{137} infinity γ dose in millirads

$\sum N$ = Total Cs^{137} gamma disintegrations to infinity per sq. ft.

Accepting a half-life for Cs^{137} of 26.6 years and an initial β dpm ratio for Cs^{137}/Sr^{90} of 1.75, there would be 2.8×10^9 Cs^{137} β disintegrations to infinity per sq. ft. for each mc/mi^2 of Sr^{90}. This would give 2.3×10^9 Cs^{137} γ disintegrations per sq. ft.

The final formula would be:

$$\text{Dose} = 1.5\ (mc/mi^2\ Sr^{90}) \text{ in mrads}$$

The estimate of gamma dose based on Cs^{137} will be extremely low for fallout occurring shortly after a test and will improve with age of the debris.

Since the dose calculation for Cs^{137} requires only multiplication of the Sr^{90} mc/mi^2 by 1.5, this has not been done for the general tables. The comparison has been made in Table 11, however, for the dose deposited each year at New York City. The same data are shown in Table 12 for Salt Lake City, where a larger proportion of fresh fallout might be expected.

In Table 11, the gamma dose estimate from the pot Sr^{90} determinations is the highest, as would be expected from the New York City Sr^{90} comparison of pots and films. The Cs^{137} Film/Total γ Film ratios are the same for the two cities, indicating that the high yield tests overwhelm any effect from fresh fallout.

TABLE 11

Comparison of Infinity Gamma Dose Estimates
For New York City

Year	Cs^{137} Pot (1)	Cs^{137} Film (2)	Total γ Film (3)
1954*	8.3	1.9	3.5
1955	14.2	8.2	9.1
1956	12.8	9.6	10.6
1957	17.3	14.3	16.3
1958	23.9	12.3	18.3
1959	34.8	14.1	17.7
TOTAL	111.3	60.4	75.5

* Starting March 1

(1) Sr^{90} from pots x 1.5

(2) Sr^{90} from gummed film x 1.5

(3) Calculated by formula including all fission products

TABLE 12

Comparison of Infinity Gamma Dose Estimates
for Salt Lake City

Year	Cs^{137} (1)	Total γ (2)
1954	3.9	8.9
1955	20.3	24.5
1956	9.9	12.3
1957	25.2	29.0
1958	18.6	25.8
1959	19.2	23.2
TOTAL	97.1	123.7

(1) Sr^{90} from gummed film x 1.5

(2) Calculated by formula including all fission products

SUMMARY

While the gummed film network fulfilled its original purpose of delineating fallout patterns, this report has been devoted to the extension of the β activity measurements to the estimation of Sr^{90} deposition and infinity gamma dose. The computations have been based on a simple model, but yield Sr^{90} estimates that are generally within a factor of two from measured values.

It would be possible to improve the gummed film estimates by adopting a more sophisticated model, but the added cost would not be justified. The present results have required much greater effort than was expected and have appeared more slowly than was hoped.

The gummed film Sr^{90} estimates are lower in most cases than the measured values at nearby sampling sites. The deviation is probably a combination of many effects:

1. The estimate of Sr^{90} yield may be low, particularly for fractionated debris, where long range fallout is enriched in this nuclide.

2. The gummed film efficiency is variable and is probably lowest during heavy rainfalls when a large fraction of the Sr^{90} is deposited.

3. The gummed film efficiency continues to decrease in the absence of large scale tests, for the percentage of long-lived Sr^{90} and Cs^{137} increases and their retention is poor.

4. The present model is poor during periods of repeated high yield tests, as there is no delay included for arrival time from either the troposphere or stratosphere. The debris is thus always considered to be fresher than the actual fallout.

The results presented in this report have some value in the absence of direct measurements. While it is not possible to evaluate all situations, the data may be used for geographic interpolation between stations where Sr^{90} results are available. It is also possible to make reasonable estimates for

stations having only gummed film sampling by the use of a regional Pot/Gummed Film factor. As an example, the following table was developed from the northern hemisphere stations where pot data were collected.

Average Pot/Gummed Film Ratios for the Northern Hemisphere

Month	1957	1958	1959
Jan.	1.4	1.6	2.1
Feb.	1.3	1.8	2.0
Mar.	1.2	1.1	2.8
Apr.	1.4	1.0	2.1
May	.9	1.6	1.6
June	1.0	2.4	2.5
July	1.1	1.2	2.6
Aug.	.7	2.1	1.9
Sept.	.5	2.3	1.5
Oct.	.7	2.0	2.1
Nov.	1.3	2.0	2.4
Dec.	1.1	2.5	3.5
Mean Ratio	1.0	1.8	2.3

These average ratio factors can still yield only an approximation and probably hold only for the northern hemisphere.

There is some justification for applying the same factors to the infinity gamma dose data as well. Most of the errors can be divided into two classes, poor collection of fission products and those involved in the model computation. Poor collection would affect the Sr^{90} and γ dose values equally. The computation model is equivalent except for the factors of % Sr^{90}, and of γ disintegrations per β dpm. The first is approximately a $T^{+1.2}$ function, while the second is approximately $T^{+0.73}$ for the first year and $T^{+1.2}$ thereafter. Thus, the average Pot/Film ratio may be a reasonable correction factor.

There has been no attempt in this report to depict the geographical distribution of Sr^{90}. The data do not warrant this, as soil and pot analyses are more reliable for this purpose.

PROCEDURE FOR GUMMED FILM

Sampling

The sampling medium is a rubber base cement spread on a 13" x 13" cellulose acetate backing and covered with glassine paper for protection. For sampling, the glassine is removed and the film attached to a cadmium-plated steel frame having a one foot square opening. The frame is held three feet above the ground on a stand. Each paper is exposed for twenty-four hours, the sampling being started at 1230 Greenwich Civil Time at each station. At the end of the sampling period fresh films are put in place on spare frames and exchanged with the exposed films. The exposed films are stripped off and folded with the gummed sides together into a size suitable for mailing. Most sampling stations collect duplicate samples, and the two samples plus a field data card giving the location, date of sampling, and weather information are forwarded to the Health and Safety Laboratory.

Sample Preparation

An important point in processing is maintaining identification of the sample from receipt to the reporting of the analytical results. For this purpose a six digit serial number is assigned to each sample. The first three digits indicate the day of analysis on a counting house calendar basis, while the last three digits indicate the number of the sample run during that day. When the sample envelope is opened, a prenumbered label is placed on the data card and the gummed films are placed in steel cans for ashing. These ashing cans are used as crucibles and are discarded after a single use. For convenience and speed of operation they are held in groups of ten in a stainless steel rack and the rack number and position within the rack are the actual indication of sample number for each can.

The samples are ashed at 500 to 550° C in electrically-heated muffle furnaces which hold individual racks. The ashing process is accelerated by feeding in about one liter of oxygen per minute to each furnace and requires slightly under one hour for completion. After cooling, the ash is transferred to a 1-1/4" diameter plastic counting planchet. Each planchet has been labeled with a gummed label which is a duplicate of the one used on the data card. This maintains the proper continuity and agreement of serial numbers. The planchets are then sealed between two layers of vinyl tape in groups of eighty. The sealing is done with a high frequency heater which makes a ring seal around each planchet. The samples are spaced about 9" on centers and the resultant tape can be readily handled in an automatic counter.

Each tape contains four blanks consisting of unexposed papers run through the process and four counter standards. Counter background is determined from the blanks and counter efficiency and reliability is determined from the standards.

Counting

The samples are analyzed on automatic beta counters with Geiger tube detectors. A reel of eighty planchets is loaded into the counter and the first sample is positioned above the Geiger tube which is mounted face up. The sample is separated from the tube face by a single thickness of vinyl tape and is held in position by a fixed stop which engages the side of the planchet. The counts are registered on a four Dekatron scaler. Simultaneously, 600 pulses per minute are applied to this scaler and are recorded on a duplicate parallel scaler. When 10,000 count plus time pulses are recorded on the first scaler, the number of time pulses is punched on paper tape by a Data Transfer and Recording (DTR) system developed by the Instrumentation

Division. At the same time, the serial number corresponding to the sample, machine identification and other data are punched into the tape. The sample stop is disengaged by a solenoid and the next sample is pulled into place and counted. In that way, with eight units operating, 640 samples, blanks and standards can be counted in a twenty-four hour period.

The basic standardization of the counters is set up on potassium chloride. The K^{40} isotope, present in consistent amounts in all potassium compounds, gives a disintegration rate of 29.0 dps per gram of potassium or 912 dpm per gram of potassium chloride. It has been found that the average weight of ash from fallout samples is about 100 mg. While the counter standards used are compressed pellets of four grams to reduce the counting time, their effective disintegration rate is referred to 100 mg of potassium chloride.

Data Handling

All calculations are performed on IBM equipment. The field data cards are turned over to punch operators where location, date of sampling, serial number, and weather data are punched. The paper strips from the DTR unit are automatically transferred to separate IBM cards. The two sets of data are then combined on the basis of sample serial number, and the single cards are ready for computation. Figure 1 is a flow sheet of the system indicating all of the steps carried out in producing the final reports.

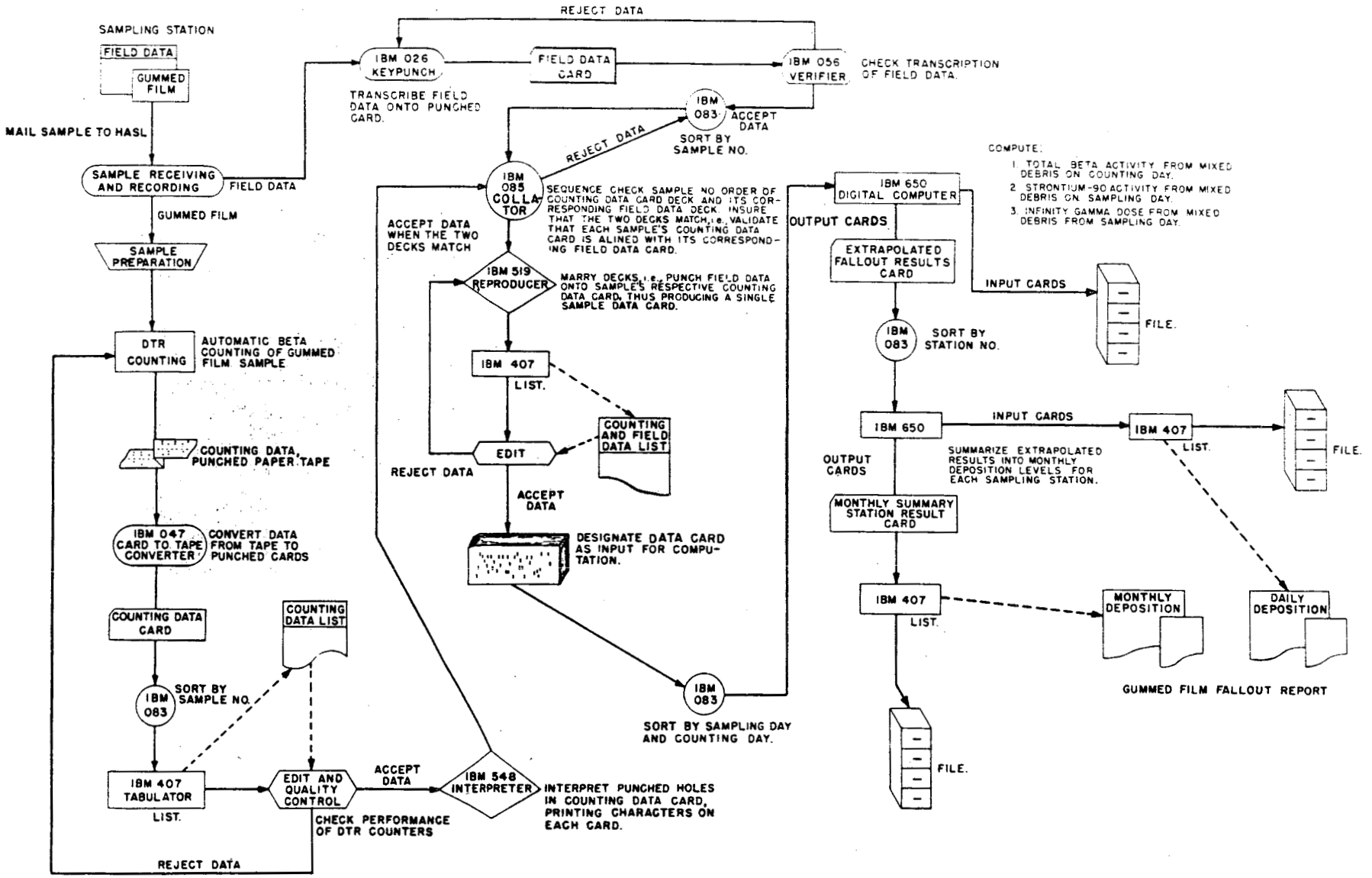
SAMPLING STATION
FIELD DATA
GUMMED FILM
MAIL SAMPLE TO HASL
SAMPLE RECEIVING AND RECORDING
FIELD DATA
GUMMED FILM
SAMPLE PREPARATION
DTR COUNTING
AUTOMATIC BETA COUNTING OF GUMMED FILM SAMPLE
COUNTING DATA, PUNCHED PAPER TAPE
IBM 047 CARD TO TAPE CONVERTER
CONVERT DATA FROM TAPE TO PUNCHED CARDS
COUNTING DATA CARD
COUNTING DATA LIST
IBM 083
SORT BY SAMPLE NO.
IBM 407 TABULATOR
LIST.
EDIT AND QUALITY CONTROL
CHECK PERFORMANCE OF DTR COUNTERS
REJECT DATA
ACCEPT DATA
IBM 548 INTERPRETER
INTERPRET PUNCHED HOLES IN COUNTING DATA CARD, PRINTING CHARACTERS ON EACH CARD.
REJECT DATA
IBM 026 KEYPUNCH
TRANSCRIBE FIELD DATA ONTO PUNCHED CARD.
FIELD DATA CARD
IBM 056 VERIFIER
CHECK TRANSCRIPTION OF FIELD DATA.
IBM 083
ACCEPT DATA
SORT BY SAMPLE NO.
REJECT DATA
IBM 085 COLLATOR
SEQUENCE CHECK SAMPLE NO ORDER OF COUNTING DATA CARD DECK AND ITS CORRESPONDING FIELD DATA DECK. INSURE THAT THE TWO DECKS MATCH, i.e., VALIDATE THAT EACH SAMPLE'S COUNTING DATA CARD IS ALINED WITH ITS CORRESPONDING FIELD DATA CARD.
ACCEPT DATA WHEN THE TWO DECKS MATCH
IBM 519 REPRODUCER
MARRY DECKS, i.e., PUNCH FIELD DATA ONTO SAMPLE'S RESPECTIVE COUNTING DATA CARD, THUS PRODUCING A SINGLE SAMPLE DATA CARD.
IBM 407
LIST.
EDIT
COUNTING AND FIELD DATA LIST
REJECT DATA
ACCEPT DATA
DESIGNATE DATA CARD AS INPUT FOR COMPUTATION.
IBM 083
SORT BY SAMPLING DAY AND COUNTING DAY.
IBM 650 DIGITAL COMPUTER
COMPUTE:
1. TOTAL BETA ACTIVITY FROM MIXED DEBRIS ON COUNTING DAY.
2. STRONTIUM-90 ACTIVITY FROM MIXED DEBRIS ON SAMPLING DAY.
3. INFINITY GAMMA DOSE FROM MIXED DEBRIS FROM SAMPLING DAY.
OUTPUT CARDS
EXTRAPOLATED FALLOUT RESULTS CARD
INPUT CARDS
FILE.
IBM 083
SORT BY STATION NO.
IBM 650
INPUT CARDS
IBM 407
LIST.
FILE.
OUTPUT CARDS
SUMMARIZE EXTRAPOLATED RESULTS INTO MONTHLY DEPOSITION LEVELS FOR EACH SAMPLING STATION.
MONTHLY SUMMARY STATION RESULT CARD
IBM 407
LIST.
MONTHLY DEPOSITION
DAILY DEPOSITION
GUMMED FILM FALLOUT REPORT
FILE.

FIGURE NO. 1

BIBLIOGRAPHY

(1) Webb, J. H., "Fogging of Photographic Film by Radioactive Contaminants in Cardboard Packaging Materials," Phys. Rev., 76, 375 (1949)

(2) "Radioactive Debris from Operations Buster and Jangle," U. S. Atomic Energy Commission Report NYO-1576, January 28, 1957, Declassified with deletions, April, 1959

(3) Eisenbud, M. and Harley, J. H., "Radioactive Dust from Nuclear Detonations," Science, 117, 141-147 (1953)

(4) Eisenbud, M. and Harley, J. H., "Radioactive Fallout in the United States;" Science, 121, 677-680 (1955)

(5) Eisenbud, M. and Harley, J.H., "Radioactive Fallout through September 1955," Science, 124, 251-255 (1956)

(6) Hunter, H. F. and Ballou, N. E., "Simultaneous Slow Neutron Fission of U^{235} Atoms," Nucleonics 9, No. 11 C-2 (1951)

(7) Hallden, N. A. and Harley, J. H., "Method of Calculating Infinity Gamma Dose," U. S. Atomic Energy Commission Report NYO-4859, April 15, 1957

(8) Eisenbud, M. and Harley, J. H., "Long-Term Fallout," Science, 128, 399-402 (1958)

(9) The Effects of Atomic Weapons, U. S. Government Printing Office, Washington, D. C. (1950)

(10) Marinelli, L. D., Brinckerhoff, R. F. and Hine, G. J., "Average Energy of Beta-Rays Emitted by Radioactive Isotopes," Rev. Mod. Phys., 19, 25-28 (1947)

(11) Welford, G. A. and Collins, W. R., "An evaluation of Existing Fallout Collection Methods," Science, 131, 1791-1793 (1960)

(12) Alexander, L. T., et al, "Strontium 90 on the Earth's Surface," reported in U. S. Atomic Energy Commission Report HASL-84, April 1, 1960

(13) Gustafson, P. F., Argonne National Laboratory, Reported in the Atomic Energy Commission Quarterly Statement on Fallout, April 1, 1960

(14) "Report of the United Nations Scientific Committee on the Effects of Atomic Radiation," p. 101, New York (1958)

SECTION II

MONTHLY SUMMARIES FOR INDIVIDUAL STATIONS

Because of the change in emphasis for different test series and because of differences between Nevada Tests and Pacific and Foreign Tests, the network has been subject to considerable change over the years. The majority of the data presented are for sampling stations which have had a continuous history since the end of 1952 when the first world-wide network was established. Some stations entering the network later, particularly those set up in cooperation with the U. N. Scientific Committee on the Effects of Atomic Radiation, are also included.

Stations having data for only limited periods are not listed. These would include:

1. Special stations operating for short periods of time around the two United States test sites.
2. Certain stations operating in cooperation with the U. S. Public Health Service.
3. Other stations not forwarding samples on a continuous basis.

A map of the network is given in Figure 2. The stations operating directly with HASL (Table 13) are distinguished from those operating through the United Nations Scientific Committee (Table 14). Table 15 is made up of the summary tables for all stations in order of station number.

In all of the summary tables, composite samples are marked with a single asterisk (*). Where geographical interpolation was required to fill out a table, the values are marked with a double asterisk (**).

The effect of fresh fallout from single bursts has been taken into account in some cases. For these months, a figure also appears in the column headed "Formula". This figure represents the actual value calculated by the model, while the figure under "Best Estimate" represents the value obtained after allowing for fresh fallout. In all other cases, the "Best Estimate" figure is also the calculated value.

In the final totals, the pre-1954 data are based on single burst computations described in the "Historical" section of this report.

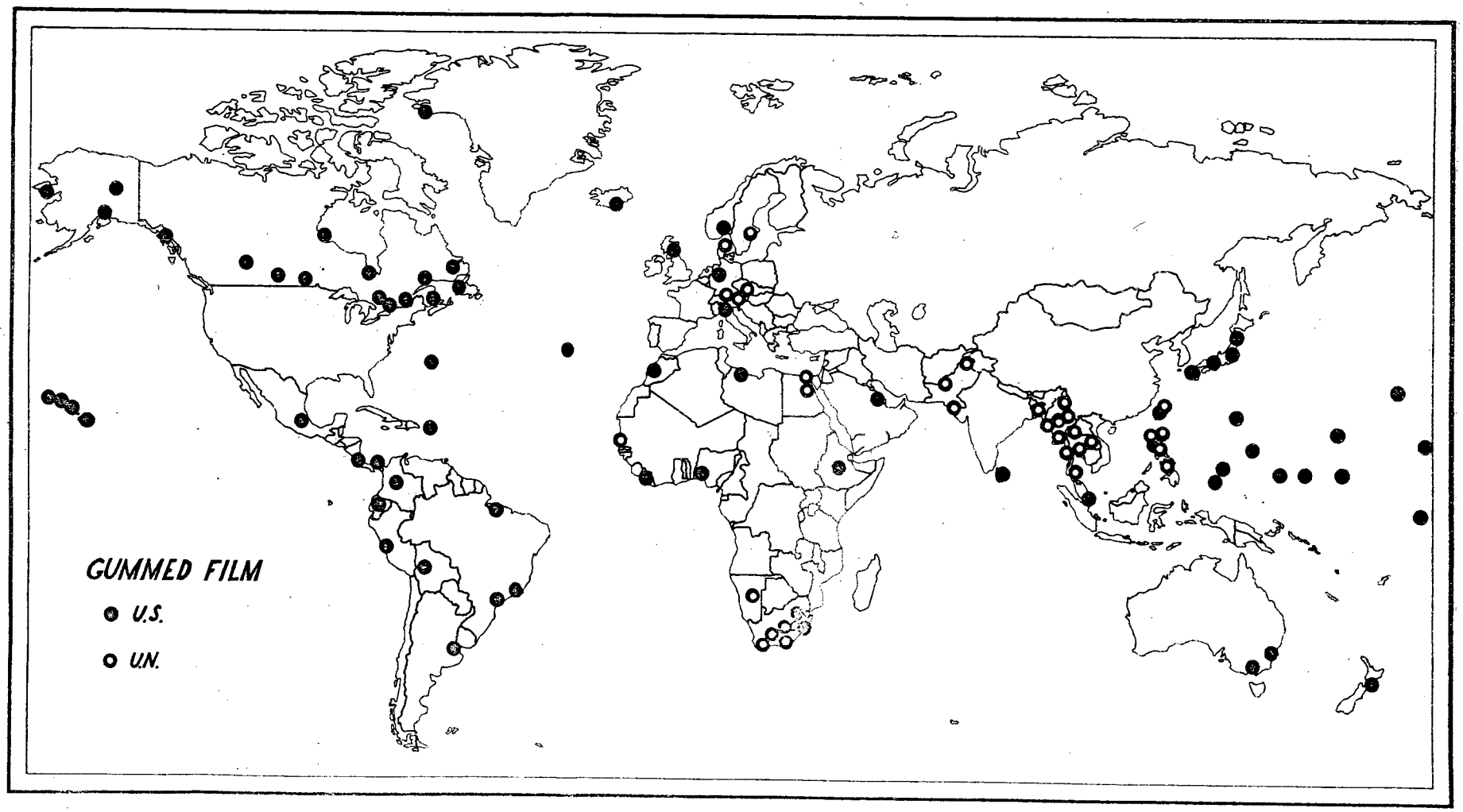

Figure 2

TABLE 13

NUMERICAL INDEX OF AEC
WORLD-WIDE NETWORK STATIONS

101	Detroit, Michigan
102	Louisville, Kentucky
103	Knoxville, Tennessee
105	Memphis, Tennessee
108	Atlanta, Georgia
115	Philadelphia, Pennsylvania
116	Pittsburgh, Pennsylvania
117	New York City, LaGuardia
118	Binghamton, New York
122	Rochester, New York
127	New Haven, Connecticut
132	Jacksonville, Florida
133	Miami, Florida
134	Washington, D. C.
137	Cleveland, Ohio
138	Cape Hatteras, North Carolina
139	Concord, New Hampshire
141	Boston, Massachusetts
204	Corpus Christi, Texas
206	Dallas, Texas
209	Wichita, Kansas
211	Scottsbluff, Nebraska
212	Rapid City, South Dakota
216	Minneapolis, Minnesota
219	Des Moines, Iowa
221	St. Louis, Missouri
222	Chicago, Illinois
225	New Orleans, Louisiana
304	Boise, Idaho
309	Billings, Montana
310	Salt Lake City, Utah
314	Tucson, Arizona
321	Grand Junction, Colorado
323	Albuquerque, New Mexico
326	Las Vegas, Nevada
401	Seattle, Washington
404	Medford, Oregon
407	San Francisco, California
410	Los Angeles, California
501	Anchorage, Alaska
502	North Bay, Ontario, Canada
503	Moosoonee, Ontario, Canada
504	Moncton, New Brunswick, Canada
505	Montreal, Quebec, Canada
507	Seven Islands, Quebec, Canada
508	Winnipeg, Manitoba, Canada

TABLE 13 (Cont)

509 Churchill, Manitoba, Canada
510 Regina, Saskatchewan, Canada
511 Edmonton, Alberta, Canada
515 Deep River, Ontario, Canada
516 Goose Bay, Newfoundland, Canada
517 Stephenville, Newfoundland, Canada
518 Thule, Greenland
519 Keflavik, Iceland
522 Nome, Alaska
523 Fairbanks, Alaska
524 Juneau, Alaska
525 San Juan, Puerto Rico
601 Panama Canal Zone, Albrook AFB
602 Bermuda, Kindley AFB
603 Lima, Peru
604 San Jose, Costa Rica
605 Lagens, Azores
606 Buenos Aires, Argentina
608 Sao Paulo, Brazil
611 Belem, Brazil
612 La Paz, Bolivia
613 Quito, Ecuador
614 Mexico City, Mexico
615 Bogota, Colombia
701 Prestwick, Scotland
702 Rhein Main, Germany
703 Pretoria, Union of South Africa
705 Dhahran, Saudi Arabia
706 Sidi Slimane, Morocco
708 Oslo, Norway
710 Tripoli, Libya, Wheelus AFB
711 Lagos, Nigeria
713 Durban, Union of So. Africa, University
714 Monrovia, Liberia
715 Milan, Italy
717 Addis Ababa, Ethiopia
723 Durban, Union of So. Africa, Natal Airport
801 Hiroshima, Japan
802 Nagasaki, Japan
804 Taipei, Taiwan, First Station
805 Tokyo, Japan, Haneda AFB
806 Misawa, Japan
810 Melbourne, Australia
811 Wellington, New Zealand
813 Colombo, Ceylon
814 Singapore
815 Sydney, Australia
901 Guam, Marianas
903 Iwo Jima, Volcano Islands

TABLE 13 (Cont)

904 Manila, Phillipines, Clarke AFB
905 Johnson Island
906 French Frigate Shoals, Hawaii
907 Midway Island
908 Wake Island
909 Canton, Phoenix Islands
910 Ponape, Marshall Islands
911 Truk, Caroline Islands
912 Yap, Palau Islands
913 Koror, Palau Islands
914 Lihue, Hawaii
915 Honolulu, Hawaii
916 Hilo, Hawaii
922 Kwajalein, Marshall Islands

TABLE 14

NUMERICAL INDEX OF STATIONS OPERATED COOPERATIVELY BY AEC AND GOVERNMENT OF INDICATED COUNTRY

621 Bogota, Colombia, Tibaitata
722 Vienna, Austria, Wien Hohe Warte
724 Salzburg, Austria
725 Innsbruck, Austria
726 Krippenstein, Austria
727 Klagenfurt, Austria
728 Port Elizabeth, Union of So. Africa
729 Cape Town, Union of So. Africa
730 Beaufort, Union of So. Africa
731 Bloemfontein, Union of So. Africa
732 Windhoek, Union of So. Africa
735 Stockholm, Sweden
737 Dakar, French West Africa
821 Quetta, Pakistan
822 Peshawar, Pakistan
823 Karachi, Pakistan
824 Dacca, Pakistan
825 Bangkok, Thailand
826 Chiengmai, Thailand
827 Ubol, Thailand
828 Songkhla, Thailand
829 Taipei, Taiwan, Second Station
830 Rangoon, Burma
831 Taipei, Taiwan, Third Station
832 Akyab, Burma
833 Lashio, Burma
834 Moulmein, Burma
835 Prome, Burma
836 Mergui, Burma
837 Mandalay, Burma
838 Myitkyina, Burma

TABLE 15

Monthly Summaries of Estimated Sr^{90} Deposition and Infinity Gamma Dose Through December 1959

Stations are listed in order of station numbers as given in Tables 13 and 14.

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 101 LOCATION DETROIT, MICHIGAN

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04		0.09*		0.21*		0.28
Feb.		.06		.49		.52		.27
March		.03		2.53		.35*		.41
April		.13	7.57	2.24		.60**		.88
May		.05		.61		2.25		.61
June		.10		.22*		.30		.54
July		.05		.11*		.19		.67
Aug.		.04		.13*		.43		.24
Sept.		.19		.12*		.60		.89
Oct.		.20		.11**		.32		.28
Nov.		.34		.22		.26		.14
Dec.		.00		.15		.28	.82	0.64
TOTAL		1.23		7.02		6.31		5.85

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.25		0.48
Feb.		.16		.83
March		.24		1.82
April		1.08		2.64
May		.64		1.78
June		.57		.47
July		.33		.17
Aug.		.21		.11
Sept.		.23		.07
Oct.		.41		.07
Nov.		.53		.03
Dec.		.36		.06
TOTAL		5.01		8.53

Pre-1954	1.22
1954	1.23
1955	7.02
1956	6.31
1957	5.85
1958	5.01
1959	8.53
Total	35.2

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 101 LOCATION DETROIT, MICHIGAN

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.1		0.2*		0.3*		0.5
Feb.		.1		1.0		.8		.4
March		.2		4.9		.5*		.7
April		.7	14.1	4.2		.9**		1.6
May		.2		1.1		3.4		1.0
June		.4		.4*		.6		1.0
July		.1		.2*		.4		1.1
Aug.		.1		.2*		1.0		.4
Sept.		.5		.2*		1.3		1.4
Oct.		.5		.2**		.6		.6
Nov.		.8		.4		.5		.2
Dec.		.0		.2		.5	1.5	1.2
TOTAL		3.7		13.2		10.8		10.1

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.4		1.0
Feb.		.3		1.7
March		.5		3.4
April		1.8		4.8
May		1.3		3.1
June		1.1		.8
July		.9		.3
Aug.		.5		.2
Sept.		.5		.1
Oct.		1.4		.1
Nov.		1.6		.1
Dec.		.8		.1
TOTAL		11.1		16.7

Pre-1954	4.3
1954	3.7
1955	13.2
1956	10.8
1957	10.1
1958	11.1
1959	16.7
Total	70.0

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 102 LOCATION LOUISVILLE, KENTUCKY

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04		0.06*		0.18*		0.41
Feb.		.07		.45		.73		.55
March		.15	2.46	1.16		.65*		.68
April		.08		.82		.11*		.80
May		.04	10.22	4.57		.65		.65
June		.06		.48*		.29	1.26	1.03
July		.14		.26*		.54	2.62	1.51
Aug.		.05		.09*		.47		.99
Sept.		.13		.11*		.69		.78
Oct.		.22		.23*		.24		.21
Nov.		.32		.17		.13		.13
Dec.		.03		.32		.23		.37
TOTAL		1.33		8.72		4.91		8.07

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.41		1.21
Feb.		.38		1.32
March		.82		2.56
April		1.72		2.97
May		1.02		1.40
June		.71		.63
July		.88		.18
Aug.		.23		.12
Sept.		.22		.10
Oct.		.18		.08
Nov.		.51		.08
Dec.		.60		.07
TOTAL		7.68		10.72

Pre-1954	1.44
1954	1.33
1955	8.72
1956	4.91
1957	8.07
1958	7.68
1959	10.72
Total	42.9

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 102 LOCATION LOUISVILLE, KENTUCKY

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.0			0.1*		0.3*		0.7
Feb.	.1			.9		1.2		.9
March	.8		4.7	2.9		1.0*		1.1
April	.4			1.5		.2*		1.4
May	.2		18.6	8.3		1.1		1.1
June	.2			.8*		.6	2.3	1.8
July	.4			.4*		1.3	4.3	2.5
Aug.	.1			.1*		1.0		1.6
Sept.	.3			.2*		1.5		1.3
Oct.	.5			.4*		.4		.4
Nov.	.7			.3		.3		.3
Dec.	.0			.6		.4		.7
TOTAL	3.7			16.5		9.3		13.8

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.7		2.6
Feb.		.6		2.6
March		1.6		4.9
April		3.0		5.4
May		2.0		2.4
June		1.3		1.0
July		2.3		.3
Aug.		.6		.2
Sept.		.5		.1
Oct.		.6		.1
Nov.		1.5		.1
Dec.		1.4		.1
TOTAL		16.1		19.8

Pre-1954	6.3
1954	3.7
1955	16.5
1956	9.3
1957	13.8
1958	16.1
1959	19.8
Total	86.0

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 103 LOCATION KNOXVILLE, TENNESSEE

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.02		0.07*		0.19*		0.36
Feb.		.07		.23		.61		.42
March		.10		1.55		.22*		.47
April		.06		.80		.28*		.47
May		.10	9.58	3.10		.37		.39
June		.05		.15*		.20		.68
July		.07		.08*		.75	1.74	1.28
Aug.		.10		.06*		.21		.58
Sept.		.06		.38*		.27		1.73
Oct.		.10		.27*		.23		.86
Nov.		.38		.08		.22		.30
Dec.		.01		.34		.29		.55
TOTAL		1.12		7.01		3.85		8.09

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.41		0.83
Feb.		.40		1.31
March		.58		1.43
April		1.45		1.79
May		.60		1.00
June		.31		.40
July		.40		.12
Aug.		.17		.13
Sept.		.16		.06
Oct.		.34		.08
Nov.		.46		.06
Dec.		.62		.05
TOTAL		5.90		7.26

Pre-1954	1.31
1954	1.12
1955	7.01
1956	3.85
1957	8.09
1958	5.90
1959	7.26
Total	34.5

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 103 LOCATION KNOXVILLE, TENNESSEE

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1*		0.3*		0.6
Feb.		.1		.5		1.0		.7
March		.6		2.9		.3*		.7
April		.3		1.5		.4*		.8
May		.5	17.3	5.6		.6		.7
June		.2		.3*		.4		1.2
July		.2		.1*		1.7	2.8	2.0
Aug.		.3		.1*		.5		.9
Sept.		.1		.6*		.6		3.2
Oct.		.2		.4*		.4		1.7
Nov.		.9		.1		.4		.6
Dec.		.0		.6		.6		1.0
TOTAL		3.4		12.8		7.2		14.1

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.7		1.8
Feb.		.7		2.6
March		1.1		2.7
April		2.5		3.2
May		1.2		1.8
June		.6		.7
July		1.1		.2
Aug.		.4		.2
Sept.		.4		.1
Oct.		.9		.1
Nov.		1.4		.1
Dec.		1.5		.1
TOTAL		12.5		13.6

Pre-1954	8.2
1954	3.4
1955	12.8
1956	7.2
1957	14.1
1958	12.5
1959	13.6
Total	72.0

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 105 LOCATION MEMPHIS, TENNESSEE

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04		0.05*		0.30*		0.36
Feb.		.08		.39		.46		.31
March		.14	1.27	0.76		.30*		.85
April		.08		1.61		.48*		.92
May		.20	10.01	2.53		.83		.68
June		.09		.40*		.16	1.06	0.72
July		.07		.10*		.27	1.90	1.25
Aug.		.04		.11*		.21		1.09
Sept.		.06		.04*		.28	1.01	0.63
Oct.		.08		.10*		.14		.74
Nov.		.18		.07		.12		.26
Dec.		.03		.17		.23		.37
TOTAL		1.09		6.33		3.79		8.18

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.32		1.16
Feb.		.32		.89
March		1.12		1.97
April		1.58		1.53
May		.60		.66
June		.44		.55
July		.60		.19
Aug.		.26		.13
Sept.		.18		.05
Oct.		.22		.05
Nov.		.44		.09
Dec.		.43		.08
TOTAL		6.51		7.35

Pre-1954	3.83
1954	1.09
1955	6.33
1956	3.79
1957	8.18
1958	6.51
1959	7.35
Total	37.1

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 105 LOCATION MEMPHIS, TENNESSEE

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.0		0.1*		0.5*		0.6
Feb.		.1		.8		.7		.5
March		.7	2.4	1.6		.5*		1.4
April		.5		3.0		.7*		1.7
May		1.1	18.1	4.6		1.3		1.2
June		.3		.7*		.3	1.9	1.3
July		.2		.2*		.6	3.1	2.1
Aug.		.1		.2*		.5		1.8
Sept.		.1		.1*		.6	1.6	1.0
Oct.		.2		.2*		.3		1.6
Nov.		.4		.1		.2		.5
Dec.		.1		.3		.4		.7
TOTAL		3.8		11.9		6.6		14.4

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.5		2.5
Feb.		.6		1.8
March		2.2		3.7
April		2.7		2.8
May		1.2		1.2
June		.8		.9
July		1.6		.3
Aug.		.7		.2
Sept.		.4		.1
Oct.		.7		.1
Nov.		1.3		.1
Dec.		1.0		.1
TOTAL		13.7		13.8

Pre-1954	23.3
1954	3.8
1955	11.9
1956	6.6
1957	14.4
1958	13.7
1959	13.8
Total	88.0

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 108 LOCATION ATLANTA, GEORGIA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04		0.05*		0.27*		0.35
Feb.		.07		.11		.71		.43
March		.15		1.10		.16*		.76
April		.08		.94		0.86		1.22
May		.12	7.62	3.28		.45		.27
June		.13		.21*		.21		.68
July		.13		.13*		.72	1.04	0.62
Aug.		.05		.05*		.29		.47
Sept.		.03		.42*		.23	3.36	1.57
Oct.		.04		.10*		.24	1.22	0.63
Nov.		.34		.68		.12		.15
Dec.		.02		.17		.18		.33
TOTAL		1.20		7.24		4.44		7.47

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.38		0.61
Feb.		.44		1.18
March		.60		2.22
April		1.47		1.64
May		.49		.70
June		.35		.36
July		.45		.25
Aug.		.26		.14
Sept.		.19		.09
Oct.		.11		.07
Nov.		.30		.07
Dec.		.71		.09
TOTAL		5.75		7.42

Pre-1954	1.04
1954	1.20
1955	7.24
1956	4.44
1957	7.47
1958	5.75
1959	7.42
Total	34.6

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 108 LOCATION ATLANTA, GEORGIA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.0		0.1*		0.4*		0.6
Feb.		.1		.2		1.1		.7
March		.7		2.1		.2*		1.2
April		.4		1.8		1.6		2.2
May		.7	13.8	6.0		.7		.5
June		.5		.4*		.4		1.2
July		.4		.2*		1.6	1.7	1.1
Aug.		.2		.1*		.6		.7
Sept.		.1		.7*		.5	6.8	3.0
Oct.		.1		.2*		.4	2.3	1.3
Nov.		.8		1.1		.2		.3
Dec.		.1		.3		.3		.6
TOTAL		4.1		13.2		8.0		13.4

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.6		1.3
Feb.		.8		2.4
March		1.2		4.2
April		2.5		3.0
May		1.0		1.2
June		.7		.6
July		1.2		.4
Aug.		.7		.2
Sept.		.4		.1
Oct.		.3		.1
Nov.		.8		.1
Dec.		1.7		.1
TOTAL		11.9		13.7

Pre-1954	3.7
1954	4.1
1955	13.2
1956	8.0
1957	13.4
1958	11.9
1959	13.7
Total	68.0

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 115 LOCATION PHILADELPHIA, PENNSYLVANIA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04		0.05*		0.08*		0.20
Feb.		.05		.29		.55		.23
March		.04		1.35		.39*		.85
April		.02	1.49	.87		.28*		.87
May		.03	2.93	1.85		1.03		.31
June		.05		.87		.23		.49
July		.06		.15*		.31		.56
Aug.		.06		.16*		.14		.14
Sept.		.19		.12*		.43		.93
Oct.		.08		.15*		.19		.38
Nov.		.27		.08		.22		.17
Dec.		.02		.33		.25		.34
TOTAL		0.91		6.27		4.10		5.47

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.44		0.89
Feb.		.31		.89
March		.65		1.42
April		1.35		1.89
May		.52		.37
June		.35		.40
July		.28		.10
Aug.		.24		.12
Sept.		.17		.06
Oct.		.39		.05
Nov.		.44		.05
Dec.		.63		.05
TOTAL		5.77		6.29

Pre-1954	1.94
1954	0.91
1955	6.27
1956	4.10
1957	5.47
1958	5.77
1959	6.29
Total	30.8

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 115 LOCATION PHILADELPHIA, PENNSYLVANIA

	1954		1955		1956	1957
	Formula	Best Est.	Formula	Best Est.	Best Est.	Best Est.
Jan.		0.0		0.1*	0.1*	0.4
Feb.		.1		.6	.9	.4
March		.2		2.6	.6*	1.4
April		.1	2.8	1.6	.4*	1.5
May		.2	5.3	3.3	1.5	.5
June		.2		1.5	.5	.9
July		.2		.2*	.7	.9
Aug.		.2		.3*	.3	.2
Sept.		.5		.2*	.9	1.5
Oct.		.2		.2*	.4	.9
Nov.		.6		.1	.4	.3
Dec.		.1		.6	.5	.6
TOTAL		2.6		11.3	7.2	9.5

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.7		1.9
Feb.		.5		1.8
March		1.3		2.7
April		2.3		3.4
May		1.0		.6
June		.7		.7
July		.7		.2
Aug.		.6		.2
Sept.		.4		.1
Oct.		1.5		.1
Nov.		1.3		.1
Dec.		1.5		.1
TOTAL		12.5		11.9

Pre-1954	5.8
1954	2.6
1955	11.3
1956	7.2
1957	9.5
1958	12.5
1959	11.9
Total	61.0

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 116 LOCATION PITTSBURGH, PENNSYLVANIA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.05		0.04*		0.35*		0.30
Feb.		.06		.24		1.17		.42
March		.07		1.36		.37*		.47
April		.05	1.19	.81		1.43*		1.26
May		.04	4.19	1.70		1.38		.33
June		.09		.67		.34		.87
July		.08		.12*		.33	1.27	0.88
Aug.		.08		.09*		.36		.33
Sept.		.17		.06*		.58		.54
Oct.		.15		.13*		.21		.39
Nov.		.25		.11		.28		.15
Dec.		.05		.23		.29		.34
TOTAL		1.14		5.56		7.09		6.28

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.40		0.80
Feb.		.28		1.35
March		.23		1.44
April		2.10		2.72
May		.82		1.45
June		.64		.60
July		.45		.18
Aug.		.20		.10
Sept.		.22		.06
Oct.		.23		.10
Nov.		.43**		.09
Dec.		.28**		.07
TOTAL		6.28		8.96

Pre-1954	1.28
1954	1.14
1955	5.56
1956	7.09
1957	6.28
1958	6.28
1959	8.96
Total	36.6

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 116 LOCATION PITTSBURGH, PENNSYLVANIA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.1		0.1*		0.6*		0.5
Feb.		.1		.5		1.9		.7
March		.4		2.6		.6*		.8
April		.2	2.1	1.5		2.1*		2.1
May		.2	7.5	3.0		2.1		.6
June		.4		1.2		.7		1.6
July		.2		.2*		.8	2.1	1.4
Aug.		.2		.1*		.8		.5
Sept.		.4		.1*		1.3		.9
Oct.		.4		.2*		.4		.8
Nov.		.6		.2		.5		.3
Dec.		.1		.4		.6		.6
TOTAL		3.3		10.1		12.4		10.8

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.7		1.7
Feb.		.5		2.7
March		.5		2.7
April		3.6		4.9
May		1.6		2.5
June		1.2		1.0
July		1.2		.3
Aug.		.5		.2
Sept.		.5		.1
Oct.		.9		.1
Nov.		.7**		.1
Dec.		.5**		.1
TOTAL		12.4		16.4

Pre-1954	3.9
1954	3.3
1955	10.1
1956	12.4
1957	10.8
1958	12.4
1959	16.4
Total	69.0

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 117 LOCATION NEW YORK CITY

	1954		1955		1956	1957
	Formula	Best Est.	Formula	Best Est.	Best Est.	Best Est.
Jan.	0.04			0.03*	0.31*	0.25
Feb.	.05			.27	.77	.34
March	.04		3.51	1.57	.33*	.76
April	.05		1.65	1.11	1.48*	3.32
May	.06		1.85	.83	1.35	.51
June	.07			.68	.27	.58
July	.06			.10*	.33	.84
Aug.	.08			.10*	.25	.56
Sept.	.25			.11*	.46	.92
Oct.	.10			.26*	.22	.37
Nov.	.47			.25	.28	.42
Dec.	.08			.16	.33	.66
TOTAL	1.35			5.47	6.38	9.53

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.80		1.29
Feb.		.36		1.12
March		.81		2.18
April		1.72		2.45
May		.82		1.17
June		.56		.88
July		.28		.01
Aug.		.25		.10
Sept.		.32		.08
Oct.		.87		.05
Nov.		.75		.04
Dec.		.63		.06
TOTAL		8.17		9.43

Pre-1954	1.48
1954	1.35
1955	5.47
1956	6.38
1957	9.53
1958	8.17
1959	9.43
Total	41.8

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 117 LOCATION NEW YORK CITY

	1954		1955		1956	1957
	Formula	Best Est.	Formula	Best Est.	Formula Best Est.	Formula Best Est.
Jan.		0.0		0.1*	.5*	.4
Feb.		.1		.5	1.2	.6
March		.2	6.8	2.1	.5*	1.2
April		.2	3.1	2.0	2.2*	5.5
May		.3	3.3	1.5	2.0	.9
June		.3		1.2	.5	1.0
July		.2		.2*	.7	1.4
Aug.		.2		.2*	.5	.9
Sept.		.7		.2*	1.0	1.4
Oct.		.2		.4*	.4	.8
Nov.		1.1		.4	.5	.9
Dec.		.1		.3	.6	1.2
TOTAL		3.6		9.1	10.6	16.3

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		1.3		2.8
Feb.		.7		2.3
March		1.6		4.1
April		3.0		4.4
May		1.6		2.0
June		1.1		1.5
July		.7		.0
Aug.		.7		.2
Sept.		.7		.1
Oct.		3.2		.1
Nov.		2.2		.1
Dec.		1.5		.1
TOTAL		18.3		17.7

Pre-1954	5.4
1954	3.6
1955	9.1
1956	10.6
1957	16.3
1958	18.3
1959	17.7
Total	81.0

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 118 LOCATION BINGHAMTON, NEW YORK

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04		0.01*		0.05*		0.11
Feb.		.05		.12		.28		.12
March		.02		.59		.26*		.27
April		.04		.91		.27*		.62
May		.03		.77		.72		.45
June		.06		.17*		.40		.48
July		.09		.09*		.18		.72
Aug.		.09		.05*		.25		.52
Sept.		.26		.04*		.30	1.04	0.66
Oct.		.09		.12*		.07		.35
Nov.		.30		.21		.08		.11
Dec.		.01		.10		.11		.29
TOTAL		1.08		3.18		2.87		4.70

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.39**		0.28
Feb.		.28**		.41
March		.25		1.01
April		.85		1.24
May		.91		.63
June		.61		1.00
July		.37		.20
Aug.		.23		.12
Sept.		.22		.07
Oct.		.47		.06
Nov.		.55		.07
Dec.		.33		.07
TOTAL		5.46		5.16

Pre-1954	0.59
1954	1.08
1955	3.18
1956	2.87
1957	4.70
1958	5.46
1959	5.16
Total	23.0

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 118 LOCATION BINGHAMTON, NEW YORK

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.0		0.0*		0.1*		0.2
Feb.		.1		.2		.5		.2
March		.1		1.1		.4*		.4
April		.2		1.7		.4*		1.2
May		.1		1.4		1.1		.8
June		.2		.3*		.8		.9
July		.3		.2*		.4		1.2
Aug.		.2		.1*		.5		.8
Sept.		.7		.1*		.6	1.8	1.2
Oct.		.2		.2*		.1		.8
Nov.		.7		.4		.1		.2
Dec.		.0		.2		.2		.5
TOTAL		2.8		5.9		5.2		8.4

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.7**		0.6
Feb.		.5**		.8
March		.5		1.9
April		1.4		2.2
May		1.8		1.1
June		1.1		1.7
July		1.0		.3
Aug.		.6		.2
Sept.		.5		.1
Oct.		1.7		.1
Nov.		1.6		.1
Dec.		.8		.1
TOTAL		12.2		9.2

Pre-1954	2.0
1954	2.8
1955	5.9
1956	5.2
1957	8.4
1958	12.2
1959	9.2
Total	46

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 122 LOCATION ROCHESTER, NEW YORK

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.00		0.03*		0.11*		0.16
Feb.		.05		.14		.39		.17
March		.02		1.23		.18*		.31
April		.06	3.64	1.46		.93*		1.07
May		.03	3.04	1.23		1.05		.52
June		.09		.14*		.27		.81
July		.05		.09*		.19		.47
Aug.		.11		.08*		.28		.43
Sept.		.29		.36*		.34		.73
Oct.		.16		.10*		.12		.25
Nov.		.18		.13		.09		.17
Dec.		.01		.25		.29		.28
TOTAL		1.05		5.24		4.24		5.37

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.21		0.57
Feb.		.21		.88
March		.25		.99
April		.96		2.63
May		.74		1.27
June		.73		.54
July		.35		.12
Aug.		.19		.09
Sept.		.30		.08
Oct.		.60		.05
Nov.		.46		.06
Dec.		.46		.07
TOTAL		5.46		7.35

Pre-1954	1.02
1954	1.05
1955	5.24
1956	4.24
1957	5.37
1958	5.46
1959	7.35
Total	29.7

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 122 LOCATION ROCHESTER, NEW YORK

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1*		0.2*		0.3
Feb.		.1		.3		.6		.3
March		.1		2.4		.3*		.5
April		.3	6.7	2.3		1.4*		2.0
May		.1	5.5	2.2		1.6		.9
June		.3		.3*		.5		1.4
July		.1		.1*		.4		.8
Aug.		.3		.1*		.6		.7
Sept.		.7		.6*		.8		1.2
Oct.		.4		.2*		.2		.5
Nov.		.4		.2		.2		.3
Dec.		.0		.4		.6		.5
TOTAL		2.8		9.2		7.4		9.4

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.4		1.2
Feb.		.4		1.8
March		.5		1.9
April		1.7		4.7
May		1.5		2.2
June		1.4		.9
July		.9		.2
Aug.		.5		.1
Sept.		.7		.1
Oct.		2.1		.1
Nov.		1.3		.1
Dec.		1.1		.1
TOTAL		12.5		13.4

Pre-1954	3.1
1954	2.8
1955	9.2
1956	7.4
1957	9.4
1958	12.5
1959	13.4
Total	58

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 127 LOCATION NEW HAVEN, CONNECTICUT

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04		0.05*		0.23*		0.19
Feb.		.07		.45		.45		.27
March		.03	2.20	1.09		.54*		.58
April		.04	2.81	1.33		.84*		2.29
May		.02	1.64	.71		.83		.46
June		.04		.20*		.23		.32
July		.06		.09*		.25		.50
Aug.		.06		.11*		.14		.76
Sept.		.23		.09*		.36		.70
Oct.		.10		.23*		.12		.47
Nov.		.39		.05		.18		.24
Dec.		.07		.21		.31		.52
TOTAL		1.15		4.57		4.48		7.30

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.53		0.93
Feb.		.33		.75
March		.63		1.89
April		1.04		2.45
May		.78		.92
June		.42		.72
July		.24		.13
Aug.		.17		.10
Sept.		.23		.05
Oct.		.39		.09
Nov.		.66		.05
Dec.		.40		.08
TOTAL		5.82		8.16

Pre-1954	1.21
1954	1.15
1955	4.57
1956	4.48
1957	7.30
1958	5.82
1959	8.16
Total	32.7

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 127 LOCATION NEW HAVEN, CONNECTICUT

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.0		0.1*		0.4*		0.3
Feb.		.1		.9		.7		.4
March		.1	4.2	1.9		.8*		.9
April		.2	5.2	2.4		1.2*		3.8
May		.1	3.0	1.3		1.3		.8
June		.2		.4*		.5		.6
July		.2		.1*		.5		.8
Aug.		.2		.2*		.3		1.2
Sept.		.6		.1*		.8		1.1
Oct.		.2		.4*		.2		1.0
Nov.		.9		.1		.3		.5
Dec.		.2		.4		.6		.9
TOTAL		3.0		8.3		7.6		12.3

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.9		2.0
Feb.		.6		1.5
March		1.2		3.6
April		1.8		4.4
May		1.5		1.6
June		.8		1.2
July		.6		.2
Aug.		.4		.2
Sept.		.5		.1
Oct.		1.5		.1
Nov.		1.9		.1
Dec.		1.0		.1
TOTAL		12.7		15.1

Pre-1954	5.3
1954	3.0
1955	8.3
1956	7.6
1957	12.3
1958	12.7
1959	15.1
Total	64

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 132 LOCATION JACKSONVILLE, FLORIDA

	1954		1955		1956	1957
	Formula	Best Est.	Formula	Best Est.	Formula Best Est.	Formula Best Est.
Jan.		0.04		0.04*	0.11*	0.10
Feb.		.06		.07	.24	.26
March		.11		.57	.27*	.38
April		.07		.41	.19*	.67
May		.10	3.83	2.23	.34	.31
June		.12		.15*	.19	.44
July		.10		.09*	.48	2.02
Aug.		.08		.06*	.24	.79
Sept.		.13		.05*	.24	1.48
Oct.		.09		.09*	.32	.40
Nov.		.16		.06	.08	.13
Dec.		.01		.22	.08	.52
TOTAL		1.07		4.04	2.78	7.50

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.48		0.74
Feb.		.43		1.32
March		.83		1.73
April		1.11		.88
May		.52		.81
June		.30		.93
July		.40		.11
Aug.		.24		.18
Sept.		.17		.08
Oct.		.15		.04
Nov.		.15		.10
Dec.		.64		.06
TOTAL		5.42		6.98

Pre-1954	0.92
1954	1.07
1955	4.04
1956	2.78
1957	7.50
1958	5.42
1959	6.98
Total	28.7

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 132

LOCATION JACKSONVILLE, FLORIDA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.0		0.1*		0.2*		0.2
Feb.		.1		.1		.4		.4
March		.7		1.1		.4*		.6
April		.4		.8		.3*		1.3
May		.5	6.9	4.0		.6		.5
June		.5		.3*		.4		.8
July		.3		.1*		1.1		3.3
Aug.		.2		.1*		.5		1.2
Sept.		.3		.1*		.5		2.8
Oct.		.2		.1*		.6		.9
Nov.		.4		.1		.2		.3
Dec.		.0		.4		.2		1.0
TOTAL		3.6		7.3		5.4		13.3

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.8		1.6
Feb.		.7		2.6
March		1.7		3.3
April		1.9		1.6
May		1.0		1.4
June		.6		1.6
July		1.1		.2
Aug.		.6		.3
Sept.		.4		.1
Oct.		.5		.1
Nov.		.4		.2
Dec.		1.5		.1
TOTAL		11.2		13.1

Pre-1954	4.1
1954	3.6
1955	7.3
1956	5.4
1957	13.3
1958	11.2
1959	13.1
Total	58

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 133 LOCATION MIAMI, FLORIDA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.05		0.02*		0.17*		0.13
Feb.		.06		.41		.05		.21
March		.15		.31		.12*		.29
April		.16		.61		.47*		.25
May		.36	4.04	2.10		.64		.30
June		.25		.02*		.19		.30
July		.21		.14*		.38		1.25
Aug.		.12		.09*		.34		1.17
Sept.		.10		.04*		.45		.35
Oct.		.15		.09*		.30		.45
Nov.		.19		.08		.05		.15
Dec.		.01		.17		.08		.22
TOTAL		1.81		4.08		3.24		5.07

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.19		0.46
Feb.		.14		.73
March		.19		1.30
April		.17		.68
May		.34		.81
June		.22		.42
July		.15		.19
Aug.		.41		.12
Sept.		.21		.06
Oct.		.22		.07
Nov.		.13		.06
Dec.		.51		.06
TOTAL		2.88		4.96

Pre-1954	1.36
1954	1.81
1955	4.08
1956	3.24
1957	5.07
1958	2.88
1959	4.96
Total	23.4

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 133

LOCATION MIAMI, FLORIDA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.1		0.0*		0.3*		0.2
Feb.		.1		.8		.1		.3
March		.9		.6		.2*		.5
April		.8		1.1		.7*		.5
May		2.0	7.3	3.8		1.0		.5
June		1.0		.0*		.4		.5
July		.7		.2*		.8		2.1
Aug.		.3		.1*		.7		1.9
Sept.		.3		.1*		1.0		.6
Oct.		.4		.1*		.6		.9
Nov.		.4		.1		.1		.3
Dec.		.0		.3		.2		.4
TOTAL		7.0		7.2		6.1		8.7

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.3		1.0
Feb.		.2		1.5
March		.4		2.5
April		.3		1.2
May		.7		1.4
June		.4		.7
July		.4		.3
Aug.		1.0		.2
Sept.		.5		.1
Oct.		.7		.1
Nov.		.4		.1
Dec.		1.2		.1
TOTAL		6.5		9.2

Pre-1954	5.9
1954	7.0
1955	7.2
1956	6.1
1957	8.7
1958	6.5
1959	9.2
Total	51

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 134 LOCATION WASHINGTON, D.C., SILVER HILL

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.00		0.07*		0.20*		0.26
Feb.		.07		.19		.39		.32
March		.04	.93	0.50		.56*		.47
April		.04	1.53	0.62		.62*		.56
May		.04	2.85	1.67		1.17		.35
June		.09		.29		.24		.64
July		.06		.09*		.24		.47
Aug.		.10		.11*		.14		.28
Sept.		.09		.43*		.40		.59
Oct.		.08**		.10*		.25		.27
Nov.		.36**		.12		.17		.14
Dec.		.06		.27		.13		.32
TOTAL		1.03		4.42		4.51		4.67

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.34		0.70
Feb.		.33		1.03
March		.48		1.07
April		1.16		2.34
May		.33		.72
June		.35		.48
July		.25		.11
Aug.		.21		.08
Sept.		.15		.05
Oct.		.26		.05
Nov.		.44		.04
Dec.		.54		.08
TOTAL		4.84		6.75

Pre-1954	0.86
1954	1.03
1955	4.42
1956	4.51
1957	4.67
1958	4.84
1959	6.75
Total	27.1

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 134

LOCATION WASHINGTON, D.C., SILVER HILL

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1*		0.3*		0.4
Feb.		.1		.4		.6		.5
March		.2	1.8	1.0		.9*		.8
April		.2	2.1	1.1		.9*		1.0
May		.2	5.1	3.0		1.8		.6
June		.3		.5		.5		1.1
July		.2		.1*		.6		.8
Aug.		.3		.2*		.3		.4
Sept.		.2		.7*		.9		1.0
Oct.		.2**		.2*		.5		.5
Nov.		.7**		.2		.3		.3
Dec.		.1		.5		.3		.6
TOTAL		2.7		8.0		7.9		8.0

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.6		1.5
Feb.		.6		2.1
March		.9		2.0
April		2.0		4.2
May		.7		1.2
June		.7		.8
July		.7		.2
Aug.		.5		.1
Sept.		.3		.1
Oct.		.8		.1
Nov.		1.2		.1
Dec.		1.3		.1
TOTAL		10.3		12.5

Pre-1954	3.0
1954	2.7
1955	8.0
1956	7.9
1957	8.0
1958	10.3
1959	12.5
Total	52

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 137 LOCATION CLEVELAND, OHIO

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.09		0.08*		0.25*		.29
Feb.		.09		.34		.39		.30
March		.04	3.46	.84		.32*		.81
April		.14	10.44	3.20		.40*		2.28
May		.07	1.92	0.95		1.07		.44
June		.15		.31*		.81		.65
July		.07		.20*		.36		.71
Aug.		.12		.01*		.42		.33
Sept.		.18		.08*		.70		.76
Oct.		.34		.06*		.14		.52
Nov.		.18		.06		.13		.12
Dec.		.31		.25		.21		.32
TOTAL		1.74		6.38		5.20		7.53

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.73		0.66
Feb.		.29		.96
March		.24		1.39
April		1.72		3.05
May		.74		1.89
June		.65		.42
July		.35		.18
Aug.		.30		.17
Sept.		.27		.08
Oct.		.61		.05
Nov.		.71		.09
Dec.		.40		.03
TOTAL		7.01		8.97

Pre-1954	1.37
1954	1.74
1955	6.38
1956	5.20
1957	7.53
1958	7.01
1959	8.97
Total	38.2

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 137 LOCATION CLEVELAND, OHIO

	1954		1955		1956	1957
	Formula	Best Est.	Formula	Best Est.	Best Est.	Best Est.
Jan.		0.1		0.2*	0.4*	.5
Feb.		.2		.7	.6	.5
March		.2	6.7	1.6	.5*	1.4
April		.7	19.4	7.5	.6*	4.1
May		.4	3.5	1.7	1.9	.7
June		.6		.5*	1.4	1.2
July		.2		.3*	.6	1.2
Aug.		.3		.0*	.7	.5
Sept.		.5		.1*	1.2	1.2
Oct.		.8		.1*	.2	1.1
Nov.		.4		.1	.2	.2
Dec.		.4		.4	.4	.6
TOTAL		4.8		13.2	8.7	13.2

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		1.2		1.4
Feb.		.5		1.9
March		.5		2.6
April		3.0		5.5
May		1.5		3.3
June		1.2		.7
July		.9		.3
Aug.		.8		.3
Sept.		.6		.1
Oct.		2.3		.1
Nov.		2.1		.1
Dec.		.9		.1
TOTAL		15.5		16.4

Pre-1954	5.2
1954	4.8
1955	13.2
1956	8.7
1957	13.2
1958	15.5
1959	16.4
Total	77

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 138 LOCATION CAPE HATTERAS, NORTH CAROLINA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.05		0.02*		0.65*		.42
Feb.		.04		.11		.53		.50
March		.06		.65		.29*		.56
April		.02		.37		.24*		.32
May		.04		2.16		.15		.25
June		.04		.14*		.26		.28
July		.09		.06*		.27	2.12	1.20
Aug.		.27		.05*		.27		.60
Sept.		.17		.04*		.18		1.14
Oct.		.07		.03*		.25		.35
Nov.		.33		.21		.09		.28
Dec.		.03**		.22		.06		.51
TOTAL		1.21		4.06		3.24		6.41

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.24		0.60
Feb.		.25		1.54
March		.39		1.71
April		.60		1.60
May		.17		.77
June		.22		.22
July		.10		.23
Aug.		.15		.04
Sept.		.24		.09
Oct.		.13		.06
Nov.		.32		.04
Dec.		.44		.05
TOTAL		3.25		6.95

Pre-1954	1.23**
1954	1.21
1955	4.06
1956	3.24
1957	6.41
1958	3.25
1959	6.95
Total	26.4

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 138 LOCATION CAPE HATTERAS, NORTH CAROLINA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		.1		0.0*		1.0*		.7
Feb.		.1		.2		.9		.9
March		.3		1.3		.4*		1.0
April		.1		.7		.4*		.6
May		.2		3.9		.3		.4
June		.1		.2*		.5		.5
July		.3		.1*		.5	5.1	2.0
Aug.		.8		.1*		.5		.9
Sept.		.4		.1*		.3		2.2
Oct.		.2		.0*		.4		.7
Nov.		.7		.4		.2		.6
Dec.		.1**		.4		.1		.9
TOTAL		3.4		7.4		5.7		11.4

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.4		1.3
Feb.		.4		3.1
March		.8		3.2
April		1.0		2.9
May		.3		1.3
June		.4		.4
July		.2		.4
Aug.		.4		.1
Sept.		.6		.1
Oct.		.4		.1
Nov.		.9		.1
Dec.		1.0		.1
TOTAL		6.8		13.1

Pre-1954	4.8**
1954	3.4
1955	7.4
1956	5.5
1957	11.4
1958	6.8
1959	13.1
Total	52

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 139 LOCATION CONCORD, NEW HAMPSHIRE

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.05		0.02*		0.15*		0.09
Feb.		.03		.33		.17		.11
March		.01		.47		.13*		.32
April		.02	1.95	1.13		.27*		.55
May		.05		.59		.60		.45
June		.03		.19*		.18		.29
July		.07		.06*		.11	1.14	0.65
Aug.		.04		.08*		.09		.69
Sept.		.16		.05*		.27		1.22
Oct.		.09		.08*		.12		.24
Nov.		.13		.06		.14		.15
Dec.		.03		.11		.21		.33
TOTAL		0.71		3.17		2.44		5.09

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.16		0.45
Feb.		.12		.41
March		.39		.90
April		.67		1.63
May		.52		.61
June		.32		.85
July		.20		.12
Aug.		.12		.09
Sept.		.18		.07
Oct.		.23		.08
Nov.		.48		.03
Dec.		.31		.07
TOTAL		3.70		5.31

Pre-1954	1.23**
1954	0.71
1955	3.17
1956	2.44
1957	5.09
1958	3.70
1959	5.31
Total	21.6

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 139 LOCATION CONCORD, NEW HAMPSHIRE

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.1		0.0*		0.2*		0.2
Feb.		.1		.6		.3		.2
March		.1		.9		.2*		.5
April		.1	3.6	2.1		.4*		.9
May		.2		1.1		.9		.8
June		.1		.3*		.4		.5
July		.2		.1*		.3	1.9	1.1
Aug.		.1		.1*		.2		1.1
Sept.		.4		.1*		.6		1.9
Oct.		.2		.1*		.2		.6
Nov.		.3		.1		.3		.3
Dec.		.0		.2		.4		.6
TOTAL		1.9		5.7		4.4		8.7

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.3		1.0
Feb.		.2		.8
March		.8		1.7
April		1.2		3.0
May		1.0		1.1
June		.6		1.4
July		.5		.2
Aug.		.3		.1
Sept.		.4		.1
Oct.		.9		.1
Nov.		1.4		.1
Dec.		.8		.1
TOTAL		8.4		9.7

Pre-1954	4.8**
1954	1.9
1955	5.7
1956	4.4
1957	8.7
1958	8.4
1959	9.7
Total	44

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 141 LOCATION BOSTON, MASSACHUSETTS

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.19		0.03*		0.33*		0.22
Feb.		.19		.42		.36		.24
March		.03		.100		.34*		.53
April		.03	2.22	1.13		.27*		.92
May		.02		.98		.63		.62
June		.07		.43		.30		.50
July		.09		.16*		.17		.50
Aug.		.09		.12*		.11		.42
Sept.		.40		.06*		.47		.60
Oct.		.46		.18*		.20		.30
Nov.		.39		.07		.24		.22
Dec.		.01		.15		.30		.32
TOTAL		1.97		3.83		3.72		5.27

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.60		0.72
Feb.		.30		0.75
March		.75		1.11
April		1.87		2.75
May		.79		.81
June		.54		.68
July		.29		.15
Aug.		.25		.12
Sept.		.28		.05
Oct.		.32		.05
Nov.		.53		.04
Dec.		.55		.10
TOTAL		7.07		7.33

Pre-1954	2.69
1954	1.97
1955	3.83
1956	3.72
1957	5.27
1958	7.07
1959	7.33
Total	31.9

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 141 LOCATION BOSTON, MASSACHUSETTS

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.2		0.1*		0.5*		0.4
Feb.		.3		.8		.6		.4
March		.2		1.9		.5*		.8
April		.2	4.1	2.2		.4*		1.6
May		.1		1.8		1.0		1.1
June		.3		.7		.6		.7
July		.3		.3*		.4		.8
Aug.		.2		.2*		.2		.7
Sept.		1.0		.1*		1.0		1.0
Oct.		1.1		.3*		.4		.7
Nov.		.9		.1		.5		.4
Dec.		.0		.3		.6		.6
TOTAL		4.8		8.8		6.7		9.2

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		1.0		1.6
Feb.		.6		1.5
March		1.5		2.1
April		3.2		5.0
May		1.6		1.4
June		1.0		1.1
July		.8		.2
Aug.		.6		.2
Sept.		.7		.1
Oct.		1.2		.1
Nov.		1.6		.1
Dec.		1.4		.1
TOTAL		15.2		9.0

Pre-1954	24.8
1954	4.8
1955	8.8
1956	6.7
1957	9.2
1958	15.2
1959	9.0
Total	78

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION #204 LOCATION CORPUS CHRISTI, TEXAS

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04			0.07*		0.11*		0.20
Feb.	.12			.34		.08		.23
March	.16			.26		.11*		.42
April	.17			.65		.14*		.32
May	.19		1.90	.99		.23		.38
June	.08			.07*		.08		.70
July	.05			.06*		.14		.22
Aug.	.05			.04*		.23		.33
Sept.	.09			.08*		.27		.37
Oct.	.10			.06*		.16		.37
Nov.	.11			.18		.19		.16
Dec.	.00			.06		.13		.30
TOTAL	1.16			2.86		1.87		4.00

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.42		1.54	
Feb.	.38		2.06	
March	.34		.85	
April	.40		1.50	
May	.24		.38	
June	.06		.26	
July	.11		.09	
Aug.	.20		.06	
Sept.	.19		.06	
Oct.	.26		.04	
Nov.	.18		.05	
Dec.	.67		.06	
TOTAL	3.45		6.95	

Pre-1954	0.87
1954	1.16
1955	2.86
1956	1.87
1957	4.00
1958	3.45
1959	6.95
Total	21.2

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 204 LOCATION CORPUS CHRISTI, TEXAS

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.2*		0.2*		0.3
Feb.		.2		.7		.1		.4
March		.8		.5		.2*		.7
April		1.0		1.2		.2*		.6
May		1.1	3.4	1.7		.3		.6
June		.3		.1*		.2		1.4
July		.2		.1*		.3		.4
Aug.		.1		.1*		.5		.5
Sept.		.2		.1*		.6		.6
Oct.		.2		.1*		.3		.9
Nov.		.3		.3		.4		.4
Dec.		.0		.1		.2		.6
TOTAL		4.4		5.2		3.5		7.4

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.7		3.3
Feb.		.6		4.1
March		.7		1.6
April		.7		2.7
May		.5		.7
June		.1		.4
July		.3		.1
Aug.		.5		.1
Sept.		.4		.1
Oct.		.9		.1
Nov.		.5		.1
Dec.		1.6		.1
TOTAL		7.5		13.4

Pre-1954	3.1
1954	4.4
1955	5.2
1956	3.5
1957	7.4
1958	7.5
1959	13.4
Total	44

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 206 LOCATION DALLAS, TEXAS

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04		0.03*		0.22**		0.15
Feb.		.14		.17		.40		.34
March		.17	1.75	.90		.29*		.85
April		.18		.87		.64*		2.53
May	.52	0.34	25.56	6.21		.42		.61
June		.17		.20*		.23		.96
July		.10		.08*		.94		.37
Aug.		.05		.08*		.20		.49
Sept.		.05		.07*		.11	1.64	.80
Oct.		.27		.12*		.22		.47
Nov.		.10		.03		.12		.27
Dec.		.02		.10		.14	.38	.23
TOTAL		1.63		9.06		3.93		8.07

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.48		0.48
Feb.		.38		.95
March		.81		1.67
April		.93		1.58
May		.33		1.58
June		.46		.46
July		.26		.12
Aug.		.32		.10
Sept.		.11		.06
Oct.		.19		.05
Nov.		.27		.06
Dec.		.31		.05
TOTAL		4.85		7.16

Pre-1954	1.84
1954	1.63
1955	9.06
1956	3.93
1957	8.07
1958	4.85
1959	7.16
Total	36.5

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 206 LOCATION DALLAS, TEXAS

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1*		0.4**		0.3
Feb.		.2		.3		.6		.6
March		.9	3.3	1.8		.4*		1.4
April		1.0		1.6		.9*		4.6
May	2.10	1.8	46.3	11.1		.7		1.0
June		.6		.3*		.5		1.9
July		.3		.1*		1.9		.6
Aug.		.1		.1*		.4		.8
Sept.		.1		.1*		.2	2.6	1.3
Oct.		.6		.2*		.4		1.0
Nov.		.2		.1		.2		.5
Dec.		.1		.2		.3	.7	.4
TOTAL		5.9		16.0		6.9		14.4

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.8		1.0
Feb.		.6		1.9
March		1.6		3.1
April		1.6		2.9
May		.7		2.8
June		.8		.8
July		.7		.2
Aug.		.8		.2
Sept.		.3		.1
Oct.		.7		.1
Nov.		.7		.1
Dec.		.7		.1
TOTAL		10.0		13.3

Pre-1954	8.2
1954	5.9
1955	16.0
1956	6.9
1957	14.4
1958	10.0
1959	13.3
Total	75

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 209 LOCATION WICHITA, KANSAS

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04		0.03*		0.17*		0.17
Feb.		.29		.27		.24		.21
March		.07	1.67	0.61		.28*		.61
April		.07	6.20	2.23		.27*		1.05
May		.40	4.17	1.65		.72		1.56
June		.21		.38*		.22	1.49	1.04
July		.09		.09*		.94		.76
Aug.		.14		.03*		.30		.48
Sept.		.10		.09*		.40	4.31	1.65
Oct.		.14		.06*		.13		.46
Nov.		.06		.05		.09		.26
Dec.		.09		.12		.17		.17
TOTAL		1.70		5.57		3.93		8.42

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.13		0.28
Feb.		.28		.46
March		.36		1.11
April		1.73		1.75
May		.49		1.08
June		.67		.48
July		.71		.23
Aug.		.28		.08
Sept.		.34		.06
Oct.		.22		.07
Nov.		.18		.05
Dec.		.31		.02
TOTAL		5.70		5.67

Pre-1954	2.56
1954	1.70
1955	5.57
1956	3.93
1957	8.42
1958	5.70
1959	5.67
Total	33.6

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 209 LOCATION WICHITA, KANSAS

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1*		0.3*		0.3
Feb.		.5		.5		.4		.4
March		.4	3.2	1.1		.4*		1.0
April		.4	11.4	4.1		.4*		1.8
May		2.4	7.6	3.0		1.3		2.6
June		.8		.7*		.4	2.7	1.8
July		.3		.1*		2.3		1.3
Aug.		.4		.1*		.7		.7
Sept.		.2		.1*		.9	6.7	2.7
Oct.		.3		.1*		.2		1.1
Nov.		.1		.1		.2		.5
Dec.		.3		.2		.3		.3
TOTAL		6.1		10.2		7.8		14.5

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.2		.6
Feb.		.5		.9
March		.7		2.1
April		3.0		3.2
May		1.0		1.9
June		1.3		.8
July		1.9		.4
Aug.		.7		.1
Sept.		.8		.1
Oct.		.8		.1
Nov.		.5		.1
Dec.		.8		.1
TOTAL		12.2		10.3

Pre-1954	9.8
1954	6.1
1955	10.2
1956	7.8
1957	14.5
1958	12.2
1959	10.3
Total	71

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 211 LOCATION SCOTTSBLUFF, NEBRASKA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04		0.04*		0.14*		0.14
Feb.		.10		.17		.19		.10
March		.02	2.48	1.36		.20*		.26
April		.10	1.86	1.02		.51*		.78
May		.31	8.13	1.43		.15		1.05
June		.27		.29*		.58	1.60	.86
July		.21		.23*		1.35	3.07	1.60
Aug.		.24		.14*		.47		.86
Sept.		.17		.08*		.44		1.53
Oct.		.20		.11*		.16		.70
Nov.		.08		.27		.09		.13
Dec.		.01		.24		.17		.36
TOTAL		1.75		5.38		4.45		8.37

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.16		0.36
Feb.		.17		.45
March		.37		1.08
April		.68		1.23
May		.88		2.64
June		1.13		1.21
July		.73		.31
Aug.		.27		.11
Sept.		.30		.09
Oct.		.24		.05
Nov.		.36		.06
Dec.		.57		.08
TOTAL		5.86		7.67

Pre-1954	1.71
1954	1.75
1955	5.38
1956	4.45
1957	8.37
1958	5.86
1959	7.67
Total	35.2

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 211 LOCATION SCOTTSBLUFF, NEBRASKA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.0		0.1*		0.2*		0.3
Feb.		.2		.3		.3		.2
March		.1	4.8	2.6		.3*		.4
April		.5	3.5	1.8		.8*		1.5
May		1.8	14.8	2.6		.3		1.8
June		1.0		.5*		1.1	2.0	1.6
July		.7		.4*		3.0	5.0	2.7
Aug.		.7		.2*		1.0		1.4
Sept.		.4		.1*		.9		2.4
Oct.		.5		.2*		.3		1.4
Nov.		.2		.5		.2		.3
Dec.		.1		.4		.3		.6
TOTAL		6.2		9.7		8.7		14.6

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.3		0.8
Feb.		.3		.9
March		.7		2.0
April		1.2		2.2
May		1.7		4.6
June		2.2		2.0
July		2.0		.5
Aug.		.7		.2
Sept.		.7		.1
Oct.		.9		.1
Nov.		1.1		.1
Dec.		1.4		.1
TOTAL		13.2		13.6

Pre-1954	4.8
1954	6.2
1955	9.7
1956	8.7
1957	14.6
1958	13.2
1959	13.6
Total	71

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 212 LOCATION RAPID CITY, SOUTH DAKOTA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04**		0.02*		0.08*		0.08
Feb.		.06		.20		.21**		.09
March		.02		.34		.15*		.19
April		.02		.57		.24*		.44
May		.16	2.79	1.14		.52		.60
June		.19		.47*		.37		.57
July		.18		.27*		.89	10.70	3.70
Aug.		.20		.19*		.43		.82
Sept.		.13		.15*		.44		.87
Oct.		.10		.13*		.20		.44
Nov.		.07		.05		.02		.06
Dec.		.03**		.17		.13		.39
TOTAL		1.20		3.70		3.68		8.25

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.16		0.19
Feb.		.05		.18
March		.38		.47
April		.56		1.10
May		.47		1.15
June		.43		.47
July		.29		.10
Aug.		.25		.07
Sept.		.15		.10
Oct.		.28		.06
Nov.		.16		.05
Dec.		.12		.02
TOTAL		3.30		3.96

Pre-1954	2.05
1954	1.20
1955	3.70
1956	3.68
1957	8.25
1958	3.30
1959	3.96
Total	26.1

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 212 LOCATION RAPID CITY, SOUTH DAKOTA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.0**		0.0*		0.1*		0.1
Feb.		.1		.4		.3**		.1
March		.1		.6		.2*		.3
April		.1		1.1		.4*		.8
May		.9	5.0	2.2		.8		1.0
June		.7		.8*		.7		1.0
July		.6		.5*		2.1	17.3	7.5
Aug.		.6		.3*		1.0		1.3
Sept.		.3		.2*		1.0		1.4
Oct.		.2		.2*		.4		.9
Nov.		.2		.1		.0		.1
Dec.		.1**		.3		.2		.7
TOTAL		3.9		6.7		7.2		15.2

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.3		0.4
Feb.		.1		.4
March		.7		.9
April		.9		2.0
May		.9		2.0
June		.8		.8
July		.8		.2
Aug.		.6		.1
Sept.		.3		.1
Oct.		1.0		.1
Nov.		.5		.1
Dec.		.3		.1
TOTAL		7.2		7.2

Pre-1954	10.7
1954	3.9
1955	6.7
1956	7.2
1957	15.2
1958	7.2
1959	7.2
Total	58

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 216 LOCATION MINNEAPOLIS, MINNESOTA

	1954		1955		1956	1957
	Formula	Best Est.	Formula	Best Est.	Formula Best Est.	Formula Best Est.
Jan.		0.04*		0.02*	0.16*	0.13
Feb.		.06		.14	.12	.21
March		.14		.39	.18*	1.07
April		.11		.55	.48*	.58
May		.07	2.70	1.29	1.24	1.17
June		.16		.36*	.93	.78
July		.17		.23*	.57	1.84
Aug.		.19		.12*	.56	.72
Sept.		.21		.16*	.53	1.07
Oct.		.24		.24*	.48	.47
Nov.		.19		.98	.18	.14
Dec.		.03**		.33	.15	.72
TOTAL		1.61		3.91	5.58	8.90

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.23		0.47
Feb.		.15		.30
March		.13		.47
April		1.80		1.55
May		1.16		2.30
June		.85		.81
July		.27		.29
Aug.		.57		.15
Sept.		.20		.10
Oct.		.40		.10
Nov.		.37		.07
Dec.		.12		.06
TOTAL		6.25		6.67

Pre-1954	1.44
1954	1.61
1955	3.91
1956	5.58
1957	8.90
1958	6.25
1959	6.67
Total	34.4

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 216

LOCATION MINNEAPOLIS, MINNESOTA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0**		0.0*		0.3*		0.2
Feb.		.1		.3		.1		.3
March		.8		.7		.3*		1.7
April		.5		1.0		.7*		1.1
May		.3	6.6	2.5		1.9		2.0
June		.6		.6*		1.8		1.4
July		.5		.4*		1.3		3.0
Aug.		.5		.2*		1.2		1.1
Sept.		.5		.3*		1.2		1.8
Oct.		.6		.4*		.9		1.0
Nov.		.4		.1		.3		.3
Dec.		.1**		.6		.3		1.3
TOTAL		4.9		7.1		10.3		15.2

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.4		1.0
Feb.		.2		.6
March		.3		.9
April		3.1		2.8
May		2.3		4.0
June		1.6		1.4
July		.7		.5
Aug.		1.5		.2
Sept.		.5		.1
Oct.		1.4		.1
Nov.		1.1		.1
Dec.		.3		.1
TOTAL		13.4		11.8

Pre-1954	6.2
1954	4.9
1955	7.1
1956	10.3
1957	15.2
1958	13.4
1959	11.8
Total	69

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 219 LOCATION DES MOINES, IOWA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04**		0.05*		0.91*		0.17
Feb.		.07		.29		.28		.21
March		.16	1.94	0.86		.03*		.52
April		.14	1.61	1.02		.03*		2.11
May		.07	9.02	1.47		1.34		.99
June		.13		.20*		.33		.81
July		.16		.16*		.62	1.88	1.53
Aug.		.22		.12*		1.13		1.40
Sept.		.22		.08*		.94		1.55
Oct.		.27		.18*		.39		1.26
Nov.		.19		.39		.21		.20
Dec.		.03**		.21		.12		.24
TOTAL		1.70		5.04		5.93		10.99

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.17		0.47
Feb.		.18		.48
March		.31		1.60
April		2.23		2.37
May		.71		2.81
June		.78		.44
July		.83		.17
Aug.		.43		.15
Sept.		.35		.09
Oct.		.31		.05
Nov.		.35		.04
Dec.		.17		.09
TOTAL		6.82		8.76

Pre-1954	2.06
1954	1.70
1955	5.04
1956	5.93
1957	10.99
1958	6.82
1959	8.76
Total	41.3

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 219 LOCATION DES MOINES, IOWA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0**		0.1*		0.8*		0.3
Feb.		.1		.6		.5		.4
March		.8	3.8	1.7		.5*		.8
April		.8	3.0	1.8		.5*		3.8
May		.3	16.4	2.6		2.1		1.7
June		.5		.4*		.6		1.5
July		.5		.3*		1.4	3.1	2.5
Aug.		.6		.2*		2.5		2.2
Sept.		.6		.1*		2.1		2.5
Oct.		.7		.3*		.7		3.2
Nov.		.6		.6		.4		.4
Dec.		.1**		.4		.2		.4
TOTAL		5.6		9.1		12.3		19.7

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.3		1.0
Feb.		.3		1.0
March		.6		3.0
April		3.8		4.3
May		1.4		4.9
June		1.5		.7
July		2.2		.3
Aug.		1.1		.2
Sept.		.8		.1
Oct.		.8		.1
Nov.		1.0		.1
Dec.		.4		.1
TOTAL		14.2		15.8

Pre-1954	8.5
1954	5.6
1955	9.1
1956	12.3
1957	19.7
1958	14.2
1959	15.8
Total	85

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 221 LOCATION ST. LOUIS, MISSOURI

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04**		0.07*		0.25*		0.40
Feb.		.09		.44		.57		.66
March		.09	6.09	1.46		.72*		1.08
April		.10	2.55	1.77		.61*		1.73
May		.14	11.14	2.15		1.36		1.25
June		.25		.34*		.34		1.21
July		.10		.23*		.80	3.22	2.05
Aug.		.30		.10*		.47		.71**
Sept.		.15		.10*		.92		1.41
Oct.		.26		.33*		.33		.71
Nov.		.27		.37		.24		.25
Dec.		.03**		.24		.23		.57
TOTAL		1.91		7.60		6.84		12.03

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.51		0.57
Feb.		.67		.91
March		1.48		2.14
April		2.69		2.03
May		.86		2.52
June		.99		0.27
July		1.29		.24
Aug.		.46		.15
Sept.		.21		.09
Oct.		.30		.08
Nov.		.65		.02
Dec.		.45		.09
TOTAL		10.56		9.11

Pre-1954	1.23**
1954	1.91
1955	7.60
1956	6.84
1957	12.03
1958	10.56
1959	9.11
Total	49.3

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 221 LOCATION ST. LOUIS, MISSOURI

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.0**		0.1*		0.4*		0.7
Feb.		.2		.9		.9*		1.1
March		.5	11.8	2.8		1.1*		1.7
April		.6	4.7	3.3		.9		3.0
May		.6	20.3	3.9		2.3		2.1
June		.9		.6*		.7		2.2
July		.6		.4*		1.8	5.2	3.3
Aug.		.9		.2*		1.0		1.1**
Sept.		.4		.2*		2.0		2.2
Oct.		.6		.5*		.6		1.6
Nov.		.6		.6		.5		.5
Dec.		.1**		.4		.4		1.0
TOTAL		6.0		13.9		12.6		20.3

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.9		1.2
Feb.		1.6		1.8
March		2.9		4.1
April		4.6		3.7
May		1.7		4.4
June		1.8		.5
July		3.4		.4
Aug.		1.2		.2
Sept.		.5		.1
Oct.		1.0		.1
Nov.		1.9		.0
Dec.		1.1		.1
TOTAL		22.6		16.6

Pre-1954	4.8**
1954	6.0
1955	13.9
1956	12.6
1957	20.3
1958	22.6
1959	16.6
Total	97

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 222 LOCATION CHICAGO, ILLINOIS

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04		0.07*		0.27		0.29
Feb.		.19		.43		.18		.35
March		.07	3.06	1.03		.48*		.49
April		.14		.94		.46*		.86
May		.05	4.34	1.66		1.84		.67
June		.11		.27*		.13		.75
July		.07		.16*		.23		1.34
Aug.		.19		.06*		.39		.65
Sept.		.20		.09*		.47		.79
Oct.		.14		.16*		.11		.27
Nov.		.55		.37		.07		.14
Dec.		.00		.10		.16		.49
TOTAL		1.75		5.34		4.79		7.09

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.16		0.38
Feb.		.19		.76
March		1.24		3.41
April		2.37		2.62
May		.96		2.01
June		1.49		.52
July		.56		.17
Aug.		.44		.08
Sept.		.21		.08
Oct.		.35		.08
Nov.		.39		.05
Dec.		.25		.05
TOTAL		8.61		10.21

Pre-1954	1.76
1954	1.75
1955	5.34
1956	4.79
1957	7.09
1958	8.61
1959	10.21
Total	39.6

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 222 LOCATION CHICAGO, ILLINOIS

	1954		1955		1956	1957
	Formula	Best Est.	Formula	Best Est.	Best Est.	Best Est.
Jan.		0.0		0.1*	0.4*	0.5
Feb.		.3		.8	.3	.6
March		.3	5.9	2.0	.7*	.8
April		.7		1.7	.7*	1.5
May		.2	7.9	3.0	2.7	1.1
June		.4		.5*	.3	1.3
July		.2		.3*	.5	2.2
Aug.		.5		.1*	.9	1.0
Sept.		.5		.1*	1.0	1.2
Oct.		.3		.3*	.2	.6
Nov.		1.2		.6	.1	.3
Dec.		.0		.2	.3	.9
TOTAL		4.6		9.7	8.1	12.0

	1958	1959
	Formula Best Est.	Formula Best Est.
Jan.	0.3	0.8
Feb.	.3	1.5
March	2.5	6.4
April	4.1	4.7
May	1.9	3.5
June	2.8	.9
July	1.5	.3
Aug.	1.2	.1
Sept.	.5	.1
Oct.	1.2	.1
Nov.	1.1	.1
Dec.	.6	.1
TOTAL	18.0	18.6

Pre-1954	7.7
1954	4.6
1955	9.7
1956	8.1
1957	12.0
1958	18.0
1959	18.6
Total	79

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 225 LOCATION NEW ORLEANS, LOUISIANA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04		0.05*		0.39*		0.35
Feb.		.08		.17		.46		.40
March		.18		.49		.38*		.74
April		.23		1.10		.20*		.94
May		.16	7.40	2.87		.63		.45
June		.19		.29*		.47	3.75	1.52
July		.23		.34*		1.25		1.37
Aug.		.12		.24*		.57		.82
Sept.		.22		.15*		.34		.90
Oct.		.11		.10*		.24		.41
Nov.		.23		.21		.19		.24
Dec.		.03		.22		.25		.35
TOTAL		1.82		6.23		5.37		8.49

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.38		0.76
Feb.		.53		1.18
March		.55		3.13
April		.71		.89
May		.70		.87
June		.38		.45
July		.82		.12
Aug.		.52		.07
Sept.		.26		.08
Oct.		.21		.06
Nov.		.17		.06
Dec.		.24		.01
TOTAL		5.47		7.68

Pre-1954	1.44
1954	1.82
1955	6.23
1956	5.37
1957	8.49
1958	5.47
1959	7.68
Total	36.5

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 225 LOCATION NEW ORLEANS, LOUISIANA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.0		0.1*		0.6*		0.6
Feb.		.1		.3		.7		.7
March		1.0		.9		.6*		1.2
April		1.3		2.0		.3*		1.6
May		.9	13.4	5.2		1.0		.8
June		.7		.5*		.9	6.7	2.8
July		.7		.6*		2.8		2.2
Aug.		.4		.4*		1.3		1.3
Sept.		.6		.2*		.8		1.5
Oct.		.3		.2*		.4		.9
Nov.		.5		.3		.4		.5
Dec.		.1		.4		.5		.6
TOTAL		6.6		11.1		10.3		14.7

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.6		1.6
Feb.		.9		2.4
March		1.1		6.0
April		1.2		1.6
May		1.4		1.5
June		.8		.8
July		2.2		.2
Aug.		1.4		.1
Sept.		.6		.1
Oct.		.7		.1
Nov.		.5		.1
Dec.		.6		.0
TOTAL		12.0		14.5

Pre-1954	8.0
1954	6.6
1955	11.1
1956	10.3
1957	14.7
1958	12.0
1959	14.5
Total	77

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 304 LOCATION BOISE, IDAHO

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04		0.05*		0.37*		0.21
Feb.		.09		.15		.30		.40
March		.03		.35		.26*		.80
April		.03		1.28		.87*		.84
May		.43	5.82	1.88		.87		1.10
June		.11		.25*		.38		.62
July		.10		.14*		.58	3.54	0.85
Aug.		.11		.07*		.24		.36
Sept.		.11		.05*		.23	1.73	1.31
Oct.		.08		.15*		.44		1.13
Nov.		.09		.15		.12		.16
Dec.		.03		.53		.18		.47
TOTAL		1.25		5.05		4.84		8.25

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.39		1.00
Feb.		.30		1.02
March		2.08		1.48
April		1.62		1.04
May		.81		2.07
June		.58		.51
July		.37		.17
Aug.		.55		.14
Sept.		.20		.38
Oct.		.40		.06
Nov.		.42		.05
Dec.		.56		.02
TOTAL		8.28		7.94

Pre-1954	4.49
1954	1.25
1955	5.05
1956	4.84
1957	8.25
1958	8.28
1959	7.94
Total	40.1

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 304 LOCATION BOISE, IDAHO

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.0		0.1*		0.6*		0.4
Feb.		.1		.3		.5		.7
March		.2		.7		.4*		1.3
April		.1		2.4		1.3*		1.6
May		2.7	10.5	3.4		1.3		1.9
June		.4		.4*		.7		1.2
July		.3		.2*		1.3	5.7	1.4
Aug.		.3		.1*		.5		.6
Sept.		.3		.1*		.5	3.5	2.4
Oct.		.2		.2*		.8		2.2
Nov.		.2		.2		.2		.3
Dec.		.1		.9		.3		.8
TOTAL		4.9		9.0		8.4		14.8

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.7		2.1
Feb.		.5		2.0
March		3.9		2.8
April		2.8		1.9
May		1.6		3.6
June		1.1		.9
July		1.0		.3
Aug.		1.4		.2
Sept.		.5		.6
Oct.		1.6		.1
Nov.		1.2		.1
Dec.		1.3		.0
TOTAL		17.6		14.6

Pre-1954	3.6
1954	4.9
1955	9.0
1956	8.4
1957	14.8
1958	17.6
1959	14.6
Total	73

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION #309 LOCATION BILLINGS, MONTANA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04		0.03*		0.14*		0.13
Feb.		.06		.05		.15		.21
March		.01		.20		.26*		.30
April		.05		.86		.55*		1.12
May	.41	0.36	5.39	1.63		.85		1.15
June		.18		.52*		.78		1.82
July		.16		.36*		.98	5.20	2.29
Aug.		.23		.15*		.62		1.79
Sept.		.12		.16*		.55		1.24
Oct.		.10		.07*		.29		1.19
Nov.		.13		.25		.21		.13
Dec.		.01		.26		.21		.24
TOTAL		1.45		4.54		5.59		11.61

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.16		0.41
Feb.		.10		.22
March		.39		.80
April		1.59		1.27
May		1.05		2.40
June		.94		1.07
July		.43		.36
Aug.		.47		.21
Sept.		.35		.08
Oct.		.83		.08
Nov.		.48		.06
Dec.		.27		.03
TOTAL		7.06		6.99

Pre-1954	1.61
1954	1.45
1955	4.54
1956	5.59
1957	11.61
1958	7.06
1959	6.99
Total	38.9

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 309 LOCATION BILLINGS, MONTANA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1*		0.2*		0.2
Feb.		.1		.1		.2		.3
March		.0		.4		.4*		.5
April		.2		1.6		.8*		2.1
May	2.5	1.9	9.8	2.9		1.3		1.9
June		.7		.9*		1.5		3.4
July		.5		.6*		2.3	8.3	3.6
Aug.		.5		.6*		2.3		2.9
Sept.		.3		.3*		1.2		2.0
Oct.		.2		.1*		.6		2.4
Nov.		.3		.4		.4		.3
Dec.		.0		.4		.4		.4
TOTAL		4.9		8.1		10.7		20.0

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.3		0.9
Feb.		.2		.4
March		.7		1.5
April		2.7		2.3
May		2.0		4.2
June		1.8		1.8
July		1.1		.6
Aug.		1.2		.3
Sept.		.8		.1
Oct.		2.8		.1
Nov.		1.5		.1
Dec.		.6		.0
TOTAL		15.7		12.3

Pre-1954	7.1
1954	4.9
1955	8.1
1956	10.7
1957	20.0
1958	15.7
1959	12.3
Total	79

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 310 LOCATION SALT LAKE CITY, UTAH

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04**		0.03*		0.62*		0.47
Feb.		.05		.12		.29		.59
March		.02	4.25	1.61		.14*		1.53
April		.14	6.78	1.84		.67*		1.77
May		.60	44.25	7.16		1.30		1.49
June		.23		.37*		.33		2.07
July		.21		.43*		.79		2.40
Aug.		.20		.25*		.49	4.63	2.06
Sept.		.21		.16*		.64	2.66	1.88
Oct.		.25		.30*		.80		1.77
Nov.		.65	3.10	.70		.30		.31
Dec.		.01**		.56		.26		.43
TOTAL		2.61		13.53		6.63		16.77

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.39		1.27
Feb.		.49		1.24
March		2.26		1.21
April		3.69		2.64
May		1.69		3.77
June		.75		1.44
July		.59		.41
Aug.		.57		.25
Sept.		.24		.20
Oct.		.38		.14
Nov.		.42		.15
Dec.		.95		.10
TOTAL		12.42		12.82

Pre-1954	9.64
1954	2.61
1955	13.53
1956	6.63
1957	16.77
1958	12.42
1959	12.82
Total	74.4

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 310 LOCATION SALT LAKE CITY, UTAH

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.0*		0.1*		1.0*		0.8
Feb.		.1		.2		.5		1.0
March		.1	8.2	3.2		.2*		2.5
April		.7	12.6	3.1		1.0*		3.3
May		3.3	80.4	13.3		2.1		2.6
June		.9		.6*		.6		3.8
July		.7		.7*		1.8		3.9
Aug.		.6		.4*		1.1	7.7	3.2
Sept.		.5		.3*		1.4	4.2	2.9
Oct.		.6		.5*		1.5		3.5
Nov.		1.4	5.0	1.1		.6		.7
Dec.		.0*		1.0		.5		.8
TOTAL		8.9		24.5		12.3		29.0

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.7		2.7
Feb.		.8		2.5
March		4.4		2.3
April		6.4		4.7
May		3.3		6.6
June		1.4		2.4
July		1.5		.7
Aug.		1.5		.4
Sept.		.6		.3
Oct.		1.6		.2
Nov.		1.3		.2
Dec.		2.3		.2
TOTAL		25.8		23.2

Pre-1954	34.7
1954	8.9
1955	24.5
1956	12.3
1957	29.0
1958	25.8
1959	23.2
Total	158

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 314 LOCATION TUCSON, ARIZONA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		0.03**		0.27*			0.33
Feb.	.06		.23		.28			.23
March	.17		1.29		.69*			.33
April	.29		.22		.22*			.32
May	.80		.59		.16			.62
June	.18		.14*		.49		1.73	1.01
July	.40		.19*		1.56		13.67	3.82
Aug.	.12		.13*		.53			1.42
Sept.	.10		.05*		.32			.51
Oct.	.05		.23*		.24			.63
Nov.	.04		.58**		.20			.46
Dec.	.00		.03		.11			.49
TOTAL	2.24		3.71		5.07			10.17

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.14		0.31
Feb.		.28		.30
March		1.31		.37
April		1.65		.98
May		.52		.32
June		.55		.55
July		1.48		.34
Aug.		.74		.03
Sept.		.25		.10
Oct.		.33		.10
Nov.		.57		.06
Dec.		.08		.06
TOTAL		7.90		3.52

Pre-1954	1.17
1954	2.24
1955	3.71
1956	5.07
1957	10.17
1958	7.90
1959	3.52
Total	33.8

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 314 LOCATION TUCSON, ARIZONA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1**		0.4*		0.6
Feb.		.1		.4		.5		.4
March		1.0		2.4		1.0*		.5
April		1.5		.4		.3*		.6
May		4.6		1.1		.3		1.0
June		.7		.2*		.9	3.1	1.8
July		1.3		.3*		3.8	22.7	5.8
Aug.		.3		.2*		1.2		2.2
Sept.		.3		.1*		.7		.9
Oct.		.1		.4*		.5		1.3
Nov.		.1		1.0**		.4		1.0
Dec.		.0		.1		.2		0.9
TOTAL		10.0		6.7		10.2		17.0

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.2		0.7
Feb.		.5		.6
March		2.6		.7
April		2.8		1.8
May		1.0		.6
June		1.2		.9
July		3.9		.6
Aug.		2.0		.1
Sept.		.6		.1
Oct.		1.1		.1
Nov.		1.6		.1
Dec.		.2		.1
TOTAL		17.7		6.4

Pre-1954	3.2
1954	10.0
1955	6.7
1956	10.2
1957	17.0
1958	17.7
1959	6.4
Total	71

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 321 LOCATION GRAND JUNCTION, COLORADO

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04		0.04*		0.19*		0.36
Feb.		.08		.06		.44		.21
March		.08	4.70	2.88		.26*		.86
April		.19	11.37	5.80		.84*		1.36
May		.45	9.13	1.84		.90		1.19
June		.20		.35*		.49		1.23
July		.16		.19*		1.06	2.68	1.78
Aug.		.22		.09*		.37		.66
Sept.		.24		.09*		.32		1.49
Oct.		.15		.09*		.37		1.16
Nov.		.43	1.94	.45		.14		.25**
Dec.		.00		.20		.16		.23
TOTAL		2.24		12.08		5.54		10.78

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.32		0.23
Feb.		.18		.70
March		1.68		.90
April		1.45		2.19
May		1.22		2.54
June		.83		.91
July		1.02		.29
Aug.		.31		.13
Sept.		.40		.14
Oct.		.24		.08
Nov.		.52		.04
Dec.		.25		.05
TOTAL		8.42		8.20

Pre-1954	5.24
1954	2.24
1955	12.08
1956	5.54
1957	10.78
1958	8.42
1959	8.20
Total	52.5

ESTIMATE OF INFINITY γ DOSE FROM SUMMED FILM

STATION # 321

LOCATION GRAND JUNCTION, COLORADO

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1*		0.3*		0.6
Feb.		.1		.1		.7		.4
March		.5	9.0	5.7		.4*		1.4
April		1.0	21.1	10.8		1.2*		2.4
May		2.5	16.5	5.0		1.4		2.0
June		.8		.6*		1.0		2.2
July		.5		.3*		2.4	4.4	2.7
Aug.		.6		.2*		.8		1.0
Sept.		.6		.2*		.7		2.3
Oct.		.4		.1*		.7		2.4
Nov.		1.0	3.1	.8		.3		.5**
Dec.		.0		.3		.3		.4
TOTAL		8.0		24.2		10.2		18.3

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.5		1.5
Feb.		.3		1.4
March		3.3		1.7
April		2.5		4.0
May		2.4		4.4
June		1.6		1.5
July		2.7		.5
Aug.		.8		.2
Sept.		.9		.2
Oct.		1.0		.1
Nov.		1.5		.1
Dec.		.6		.1
TOTAL		18.1		15.7

Pre-1954	31.0
1954	8.0
1955	24.2
1956	10.2
1957	18.3
1958	18.1
1959	15.7
Total	126

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 323 LOCATION ALBUQUERQUE, NEW MEXICO

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04**		0.03*		0.34*		0.23
Feb.		.25	1.07	.18		.37		.27
March		.48	3.78	.62		.06*		.81
April		.22		.85		.12*		.95
May		.22	4.99	.71		.12*		1.66
June		.24		.52*		1.37	2.11	1.34
July		.24		.26*		1.77	4.62	2.64
Aug.		.16		.28*		.55		.78
Sept.		.14		.22*		.25	3.17	1.29
Oct.		.11		.19*		.30		.96
Nov.		.61		.60		.24		.30
Dec.		.01**		.14		.08		.47
TOTAL		3.26		4.60		6.12		11.70

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.25		0.26
Feb.		.35		.29
March		.83		.93
April		2.45		2.16
May		1.29		2.15
June		.99		.85
July		1.22		.45
Aug.		.84		.15
Sept.		.27		.11
Oct.		.35		.12
Nov.		.21		.08
Dec.		.20		.06
TOTAL		9.25		7.61

Pre-1954	9.09
1954	3.26
1955	4.60
1956	6.12
1957	11.70
1958	9.25
1959	7.61
Total	51.6

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 323 LOCATION ALBUQUERQUE, NEW MEXICO

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.0**		0.1*		0.5*		0.4
Feb.	.4		2.1	.3		.6		.4
March	2.7		7.2	1.2		.1*		1.3
April	1.2			1.6		.2*		1.6
May	4.3		9.0	1.3		1.2		2.8
June	.9			.9*		2.7	3.8	2.4
July	.8			.4*		4.2	7.6	4.3
Aug.	.5			.5*		1.2		1.2
Sept.	.4			.4*		.5	5.0	2.1
Oct.	.3			.3*		.6		1.9
Nov.	1.4			1.0		.5		.6
Dec.	0.0**			.2		.1		.9
TOTAL	12.9			8.2		12.4		19.9

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.4		0.6
Feb.		.6		.6
March		1.6		1.7
April		4.3		3.9
May		2.5		3.8
June		1.9		1.4
July		3.3		.7
Aug.		2.2		.2
Sept.		.6		.2
Oct.		1.4		.2
Nov.		.6		.1
Dec.		.5		.1
TOTAL		19.9		13.5

Pre-1954	54.3
1954	12.9
1955	8.2
1956	12.4
1957	19.9
1958	19.9
1959	13.5
Total	141

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 326 LOCATION LAS VEGAS, NEVADA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.00		0.05*		0.35*		0.33
Feb.		.03		.20		.05		.12
March		.01	5.48	1.65		.31*		.32
April		.04	2.20	0.90		.59*		.37
May		.30		1.31		.45		.57
June		.09		.25*		.22		.37
July		.12		.03*		.60		1.04
Aug.		.10		.08*		.09		.15
Sept.		.03		.20*		.02		.55
Oct.		.17		.17*		.31		.22
Nov.		.43		.03		.11		.13
Dec.		.02		.18		.13		.34
TOTAL		1.34		5.05		3.23		4.51

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.37		0.29
Feb.		.21		.67
March		.74		.65
April		1.27		.64
May		.50		1.36
June		.16		.46
July		.51		.15
Aug.		.46		.09
Sept.		.26		.10
Oct.		1.00		.15
Nov.		.72		.07
Dec.		.15		.04
TOTAL		6.35		4.67

Pre-1954	5.88
1954	1.34
1955	5.05
1956	3.23
1957	4.51
1958	6.35
1959	4.67
Total	31.0

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 326

LOCATION LAS VEGAS, NEVADA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1*		0.6*		0.6
Feb.		.0		.4		.1		.2
March		.0	10.3	3.2		.5*		.5
April		.2	4.1	1.4		.9*		.7
May		1.6		2.4		.7		1.0
June		.3		.4*		.4		.7
July		.4		.1*		1.5		1.7
Aug.		.3		.1*		.2		.2
Sept.		.1		.3*		.0		1.0
Oct.		.4		.3*		.6		.5
Nov.		1.0		.0		.2		.3
Dec.		.1		.3		.3		.6
TOTAL		4.4		9.0		6.0		8.0

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.4		0.6
Feb.		.4		1.3
March		1.5		1.2
April		2.2		1.2
May		1.0		2.4
June		.3		.8
July		1.3		.2
Aug.		1.3		.1
Sept.		.6		.2
Oct.		4.0		.2
Nov.		2.1		.1
Dec.		.4		.1
TOTAL		15.5		8.4

Pre-1954	23.7
1954	4.4
1955	9.0
1956	6.0
1957	8.0
1958	15.5
1959	8.4
Total	75

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 401 LOCATION SEATTLE, WASHINGTON

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.02**		0.09*		0.60*		0.20	
Feb.	.07		.25		.38		.40	
March	.01		.69		.67*		.67	
April	.01		.64		.18*		.49	
May	.34		.38		.35		.28	
June	.12		.10*		.53		.42	
July	.03		.11*		.31		.40	
Aug.	.17		.27*		.12		.21	
Sept.	.14		.06*		.36		.40	
Oct.	.10		.16*		.37		.37	
Nov.	.10		.31		.19		.39	
Dec.	.08**		.58		.39		.38	
TOTAL	2.04		3.64		4.45		4.61	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.86		1.21	
Feb.	.46		1.22	
March	.81		1.99	
April	1.64		1.90	
May	.77		1.07	
June	.61		.63	
July	.06		.24	
Aug.	.14		.11	
Sept.	.20		.07	
Oct.	.42		.05	
Nov.	.59		.09	
Dec.	1.32		.06	
TOTAL	7.88		8.64	

Pre-1954	0.84
1954	2.04
1955	3.64
1956	4.45
1957	4.61
1958	7.88
1959	8.64
Total	32.1

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 401 LOCATION SEATTLE, WASHINGTON

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0**		0.2*		1.0*		0.3
Feb.		.1		.5		.6		.7
March		.0		1.3		1.0*		1.1
April		.1		1.2		.3*		.9
May		2.2		.7		.5		.5
June		.5		.2*		1.0		.8
July		.1		.2*		.7		.7
Aug.		.5		.5*		.3		.3
Sept.		.4		.1*		.7		.8
Oct.		.2		.3*		.7		.8
Nov.		2.2		.5		.4		.9
Dec.		.2**		1.0		.7		.7
TOTAL		6.5		6.7		7.9		8.5

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		1.4		2.6
Feb.		.8		2.4
March		1.5		3.8
April		2.8		3.4
May		1.5		1.9
June		1.2		1.1
July		.2		.4
Aug.		.3		.2
Sept.		.5		.1
Oct.		1.4		.1
Nov.		1.7		.1
Dec.		3.2		.1
TOTAL		16.5		16.2

Pre-1954	2.2
1954	6.5
1955	6.7
1956	7.9
1957	8.5
1958	16.5
1959	16.2
Total	62

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 404 LOCATION MEDFORD, OREGON

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.02		0.06*		0.39*		0.21	
Feb.	.06		.20		.30		.46	
March	.01		.32		.20*		.55	
April	.03		.41		.37*		.33	
May	.09		.20		.50		.43	
June	.05		.10*		.27		.11	
July	.05		.01*		.29		.17	
Aug.	.03		.01*		.16		.06	
Sept.	.05		.05*		.27		.41	
Oct.	.05		.03*		.29		.33	
Nov.	.07		.17		.08		.14	
Dec.	.02		.51		.13		.39	
TOTAL	.53		2.07		3.25		3.59	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.35		0.80	
Feb.	.32		.63	
March	1.95		.67	
April	1.54		.54	
May	.37		1.28	
June	.68		.36	
July	.24		.09	
Aug.	.19		.05	
Sept.	.12		.05	
Oct.	.36		.07	
Nov.	.21		.04	
Dec.	.32		.31	
TOTAL	6.65		4.89	

Pre-1954	0.77
1954	.53
1955	2.07
1956	3.25
1957	3.59
1958	6.65
1959	4.89
Total	21.8

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 404

LOCATION MEDFORD, OREGON

		1955	1956	1957
	Formula Best Est.	Formula Best Est.	Formula Best Est.	Formula Best Est.
Jan.	0.0	0.1*	0.6*	0.4
Feb.	.1	.4	.5	.8
March	.1	.6	.3*	.9
April	.2	.7	.5*	.6
May	.5	.4	.8	.7
June	.2	.2*	.5	.2
July	.1	.0*	.7	.3
Aug.	.1	.0*	.3	.1
Sept.	.1	.1*	.6	.7
Oct.	.1	.0*	.5	.7
Nov.	.1	.3	.2	.3
Dec.	.1	.9	.2	.7
TOTAL	1.7	3.7	5.7	6.4

	1958	1959
	Formula Best Est.	Formula Best Est.
Jan.	0.6	1.7
Feb.	.5	1.3
March	3.7	1.3
April	2.7	1.0
May	.7	2.2
June	1.3	.6
July	.7	.1
Aug.	.5	.1
Sept.	.3	.1
Oct.	1.2	.1
Nov.	.6	.1
Dec.	.8	.5
TOTAL	13.6	9.1

Pre-1954	1.5
1954	1.7
1955	3.7
1956	5.7
1957	6.4
1958	13.6
1959	9.1
Total	42

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 407 LOCATION SAN FRANCISCO, CALIFORNIA

	1954		1955		1956	1957
	Formula	Best Est.	Formula	Best Est.	Formula Best Est.	Formula Best Est.
Jan.		.01		0.10*	0.87*	0.49
Feb.		.08		.16	.42	.47
March		.03		.15	.23*	.55
April		.02		.38	.29*	.33
May		.11	.83	.32	.17	.38
June		.05		.05*	.10	.15
July		.02		.04*	.11	.11
Aug.		.03		.02*	.08	.09
Sept.		.06		.20*	.12	.40
Oct.		.05		2.81*	.32	.21
Nov.		.05		.20	.06	.06
Dec.		.06		1.01	.08	.46
TOTAL		.57		5.44	2.85	3.70

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.37		0.91
Feb.		.55		1.01
March		3.21		.61
April		1.78		.42
May		.34		.32
June		.21		.10
July		.09		.04
Aug.		.10		.06
Sept.		.07		.06
Oct.		.10		.04
Nov.		.12		.04
Dec.		.22		.06
TOTAL		7.16		3.67

Pre-1954	0.67
1954	.57
1955	5.44
1956	2.85
1957	3.70
1958	7.16
1959	3.67
Total	24.1

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 407

LOCATION SAN FRANCISCO, CALIFORNIA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.2*		1.4*		0.8
Feb.		.1		.3		.7		.8
March		.4		.3		.3*		.9
April		.1		.7		.4*		.6
May		.6	1.5	.6		.3		.6
June		.2		.1*		.2		.3
July		.1		.1*		.3		.2
Aug.		.1		.0*		.2		.1
Sept.		.1		.3*		.3		.7
Oct.		.1		4.5*		.6		.5
Nov.		.1		.3		.1		.1
Dec.		.1		1.7		.2		.8
TOTAL		2.0		9.1		5.0		6.4

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.6		2.0
Feb.		.9		2.0
March		6.0		1.2
April		3.2		.8
May		.7		.6
June		.4		.2
July		.2		.1
Aug.		.3		.1
Sept.		.2		.1
Oct.		.4		.1
Nov.		.4		.1
Dec.		.5		.1
TOTAL		13.8		7.4

Pre-1954	1.4
1954	2.0
1955	9.1
1956	5.0
1957	6.4
1958	13.8
1959	7.4
Total	45

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 410 LOCATION LOS ANGELES, CALIFORNIA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04		0.10*		0.23*		0.45
Feb.		.04		.10		.30		.27
March		.01		.13		.14*		.37
April		.04		.29		.38*		.56
May		.19	1.74	.48		.29		.20
June		.06		.08*		.06		.16
July		.04		.04*		.17		.39
Aug.		.05		.04*		.06		.08
Sept.		.08		.40*		.09		.14
Oct.		.04		.03*		.09		.19
Nov.		.19		.49		.09		.16
Dec.		.16		.16		.15		.46
TOTAL		.94		2.34		2.05		3.43

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.23		0.42
Feb.		.36		1.54
March		.93		.42
April		.76		.67
May		.27		.16
June		.05		.08
July		.06		.06
Aug.		.15		.06
Sept.		.08		.05
Oct.		.14		.09
Nov.		.18		.02
Dec.		.12		.11
TOTAL		3.33		3.68

Pre-1954	0.65
1954	.94
1955	2.34
1956	2.05
1957	3.43
1958	3.33
1959	3.68
Total	16.4

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 410

LOCATION LOS ANGELES, CALIFORNIA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.1		0.2*		0.4*		0.8
Feb.		.1		.2		.5		.4
March		.1		.2		.2*		.6
April		.2		.5		.6*		1.1
May		1.1	3.1	.9		.4		.3
June		.2		.1*		.1		.3
July		.1		.1*		.4		.6
Aug.		.2		.1*		.1		.1
Sept.		.2		.7*		.2		.2
Oct.		.1		.0*		.2		.4
Nov.		.4		.8		.2		.3
Dec.		.5		.3		.3		.8
TOTAL		3.3		4.1		3.6		5.9

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.4		0.9
Feb.		.6		3.1
March		1.9		.8
April		1.3		1.2
May		.5		.3
June		.1		.1
July		.2		.1
Aug.		.4		.1
Sept.		.2		.1
Oct.		.6		.1
Nov.		.5		.0
Dec.		.3		.2
TOTAL		7.0		7.0

Pre-1954	1.2
1954	3.3
1955	4.1
1956	3.6
1957	5.9
1958	7.0
1959	7.0
Total	32

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 501 LOCATION ANCHORAGE, ALASKA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		0.00*		0.25*		0.16	
Feb.	.03		.15		.41		.22	
March	.00		.13		.21*		.16	
April	.01		.26		.35*		.10	
May	.06		.06		.30		.17	
June	.03		.17*		.30		.21	
July	.06		.15*		.07		.26	
Aug.	.05		.17*		.19		.22	
Sept.	.10		.07*		.31		.69	
Oct.	.09		.34*		.12		.18	
Nov.	.05		.06		.31		.11	
Dec.	.05		.26		.06		.13	
TOTAL	.57		1.82		2.88		2.61	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.30		0.32	
Feb.	.17		.38	
March	.16		.34	
April	.67		.44	
May	.42		.60	
June	.45		.37	
July	.20		.44	
Aug.	.16			
Sept.	.15			
Oct.	.54			
Nov.	.18			
Dec.	.17			
TOTAL	3.57			

Pre-1954	0.74
1954	.57
1955	1.82
1956	2.88
1957	2.61
1958	3.57
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 501

LOCATION ANCHORAGE, ALASKA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.0*		0.4*		0.3
Feb.		.1		.3		.7		.4
March		.0		.2		.3*		.3
April		.1		.5		.5*		.2
May		.3		.1		.5		.3
June		.1		.3*		.6		.4
July		.2		.3*		.2		.4
Aug.		.1		.3*		.4		.3
Sept.		.3		.1*		.7		1.2
Oct.		.2		.5*		.2		.4
Nov.		.1		.1		.7		.2
Dec.		.1		.4		.2		.4
TOTAL		1.6		3.1		5.3		4.6

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.5		0.7
Feb.		.3		.8
March		.3		.6
April		1.1		.8
May		.8		1.0
June		.9		.6
July		.5		.7
Aug.		.4		
Sept.		.4		
Oct.		1.5		
Nov.		.5		
Dec.		.4		
TOTAL		7.6		

Pre-1954	2.0
1954	1.6
1955	3.1
1956	5.3
1957	4.6
1958	7.6
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 502 LOCATION NORTH BAY, ONTARIO, CANADA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04		0.05*		0.13*		0.20
Feb.		.09		.66		.10		.29
March		.01	2.59	.75		.33*		.14
April		.04	2.14	1.15		.30*		.59
May		.03		1.18		.77		.81
June		.11		.20*		.35		.50**
July		.08		.09*		.19		.65**
Aug.		.09		.09*		.20		.38
Sept.		.33		.17*		.48		.99
Oct.		.14		.31*		.23		.37
Nov.		.26		.47		.22		.31
Dec.		.01		.23		.27		.32
TOTAL		1.23		5.35		3.57		5.55

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.29		0.41
Feb.		.36		.38
March		.45		.76
April		1.64		1.34
May		1.15		1.67
June		.92		.75
July		.19		.34
Aug.		.32		.13
Sept.		.24		.14
Oct.		.48		.10
Nov.		.46		.15
Dec.		.47		.05
TOTAL		6.97		6.22

Pre-1954	0.63
1954	1.23
1955	5.35
1956	3.57
1957	5.55
1958	6.97
1959	6.22
Total	29.5

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 502

LOCATION NORTH BAY, ONTARIO, CANADA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.0		0.1*		0.2*		0.3
Feb.		.2		1.3		.2		.5
March		.0	5.0	1.5		.5*		.2
April		.2	4.0	2.0		.4*		1.1
May		.1		2.1		1.2		1.4
June		.4		.4*		.7		.9**
July		.3		.2*		.4		1.1**
Aug.		.1		.1*		.4		.6
Sept.		.8		.3*		1.1		1.5
Oct.		.3		.5*		.4		.8
Nov.		.6		.8		.5		.6
Dec.		.0		.4		.5		.6
TOTAL		3.0		9.7		6.5		9.6

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.5		0.9
Feb.		.6		.8
March		.9		1.4
April		2.8		2.4
May		2.3		2.9
June		1.8		1.3
July		.5		.6
Aug.		.8		.2
Sept.		.6		.2
Oct.		1.5		.2
Nov.		1.3		.2
Dec.		1.1		.1
TOTAL		14.7		11.2

Pre-1954	2.0
1954	3.0
1955	9.7
1956	6.5
1957	9.6
1958	14.7
1959	11.2
Total	57.0

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 503 LOCATION MOOSONEE, ONTARIO, CANADA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		0.01*		0.20*		0.03	
Feb.	.08		.11		.28**		.09	
March	.00		.09		.23*		.15	
April	.01		.16		.37*		.36	
May	.01		.51		.53		.73	
June	.06		.16*		.64		.68	
July	.06		.23*		.32		.60	
Aug.	.09		.13*		.15		.53	
Sept.	.03		.07*		.40		.90	
Oct.	.10		.09*		.35		.26	
Nov.	.14		.02		.06		.39	
Dec.	.01		.10		.06		.24	
TOTAL	.59		1.68		3.59		4.96	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.08		0.07	
Feb.	.06		.11	
March	.24		.15	
April	.58		.72	
May	.69		2.11	
June	.85		1.54	
July	.15		.58	
Aug.	.24		.20	
Sept.	.23		.08	
Oct.	.21		.10	
Nov.	.33		.08	
Dec.	.08		.11	
TOTAL	3.74		5.85	

Pre-1954	1.02
1954	.59
1955	1.68
1956	3.59
1957	4.96
1958	3.74
1959	5.85
Total	21.4

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 503

LOCATION MOOSOONEE, ONTARIO, CANADA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.0*		0.4*		0.1
Feb.		.1		.2		.4*		.1
March		.0		.2		.3*		.2
April		.0		.3		.6*		.7
May		.0		.9		.8		1.2
June		.2		.3*		1.3		1.2
July		.2		.4*		.8		1.0
Aug.		.3		.2*		.3		.8
Sept.		.1		.1*		.9		1.6
Oct.		.2		.1*		.7		.6
Nov.		.3		.0		.1		.9
Dec.		.0		.2		.1		.4
TOTAL		1.4		2.9		6.7		8.8

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.1		0.1
Feb.		.1		.2
March		.5		.3
April		1.0		1.3
May		1.4		3.6
June		1.6		2.6
July		.4		.9
Aug.		.6		.3
Sept.		.5		.1
Oct.		.7		.2
Nov.		1.0		.1
Dec.		.2		.2
TOTAL		8.1		9.9

Pre-1954	5.6
1954	1.4
1955	2.9
1956	6.7
1957	8.8
1958	8.1
1959	9.9
Total	43.0

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 504 LOCATION MONCTON, NEW BRUNSWICK, CANADA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.03		0.03*		0.61*		0.10	
Feb.	.03		.10		.06		.08	
March	.01		.44		.18*		.18	
April	.01		.34		.29*		.38	
May	.01		.71		.57		.51	
June	.03		.15*		.25		.38	
July	.07		.14*		.23		.36	
Aug.	.16		.12*		.12		.34	
Sept.	.12		.07*		.33		.64	
Oct.	.11		.12*		.16		.28	
Nov.	.26		.07		.10		.16	
Dec.	.02		.18		.21		.40	
TOTAL	.86		2.47		3.11		3.81	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.07		0.27	
Feb.	.17		.30	
March	.15		.70	
April	.28		.96	
May	.20		.97	
June	.20		.71	
July	.08		.29	
Aug.	.10		.09	
Sept.	.19		.12	
Oct.	.71		.11	
Nov.	.38		.15	
Dec.	.11		.07	
TOTAL	2.64		4.74	

Pre-1954	1.49
1954	.86
1955	2.47
1956	3.11
1957	3.81
1958	2.64
1959	4.74
Total	19.1

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 504

LOCATION MONCTON, NEW BRUNSWICK, CANADA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1*		1.0*		0.2
Feb.		.0		.2		.1		.1
March		.0		.8		.3*		.3
April		.0		.6		.4*		.7
May		.1		1.3		.9		.8
June		.1		.3*		.5		.7
July		.2		.2*		.5		.6
Aug.		.5		.2*		.3		.5
Sept.		.6		.1*		.7		1.0
Oct.		.3		.2*		.3		.6
Nov.		.6		.1		.2		.3
Dec.		.1		.3		.4		.7
TOTAL		2.5		4.4		5.6		6.5

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.1		0.6
Feb.		.3		.6
March		.3		1.3
April		.5		1.7
May		.4		1.7
June		.4		1.2
July		.2		.5
Aug.		.3		.1
Sept.		.4		.2
Oct.		2.5		.2
Nov.		1.1		.2
Dec.		.3		.1
TOTAL		6.8		8.4

Pre-1954	3.6
1954	2.5
1955	4.4
1956	5.6
1957	6.5
1958	6.8
1959	8.4
Total	38.0

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 505 LOCATION MONTREAL, QUEBEC, CANADA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.03		0.02*		0.22*		0.13
Feb.		.06		.17		.07		.18
March		.01	1.38	.94		.26*		.23
April		.02	1.44	.88		.53*		.46
May		.02		.93		1.00		.76
June		.08		.26*		.22		.41
July		.08		.10*		.21		.54
Aug.		.11		.10*		.14		.24
Sept.		.06		.14*		.35		1.06
Oct.		.17		.08*		.18		.27
Nov.		.31		.15		.13		.19
Dec.		.18		.26		.26		.42
TOTAL		1.13		4.03		3.57		4.89

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.29		1.27
Feb.		.60		.94
March		.36		.69
April		1.40		1.46
May		1.17		.59
June		.87		.88
July		.31		.41
Aug.		.21		.28
Sept.		.32		.16
Oct.		.39		.24
Nov.		.45		.27
Dec.		.42		.07
TOTAL		6.79		7.26

Pre-1954	1.00
1954	1.13
1955	4.03
1956	3.57
1957	4.89
1958	6.79
1959	7.26
Total	28.7

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 505

LOCATION MONTREAL, QUEBEC, CANADA

	1954		1955		1956	1957
	Formula	Best Est.	Formula	Best Est.	Best Est.	Best Est.
Jan.		0.0		0.0*	0.3*	0.2
Feb.		.1		.3	.1	.3
March		.1	2.7	1.8	.4*	.4
April		.1	2.7	1.6	.8*	.8
May		.1		1.7	1.5	1.3
June		.3		.4*	.4	.8
July		.3		.2*	.4	.9
Aug.		.2		.2*	.3	.4
Sept.		.3		.2*	.8	1.6
Oct.		.4		.1*	.4	.5
Nov.		.7		.2	.2	.4
Dec.		.2		.4	.5	.8
TOTAL		2.8		7.1	6.1	8.4

	1958	1959
	Formula Best Est.	Formula Best Est.
Jan.	0.5	2.7
Feb.	1.0	1.9
March	.7	1.3
April	2.4	2.6
May	2.3	1.0
June	1.7	1.5
July	.8	.7
Aug.	.5	.4
Sept.	.8	.3
Oct.	1.5	.4
Nov.	1.3	.4
Dec.	1.0	.1
TOTAL	14.5	13.3

Pre-1954	3.2
1954	2.8
1955	7.1
1956	6.1
1957	8.4
1958	14.5
1959	13.3
Total	55.0

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 507 LOCATION SEVEN ISLANDS, QUEBEC, CANADA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		0.02*		1.05*		0.05	
Feb.	.05		.15		.03*		.05	
March	.00		.23		.11*		.10	
April	.02		.09		.12		.26	
May	.02		.30		.45		.58	
June	.03		.25*		.33		.58	
July	.08		.27*		.19		.46	
Aug.	.09		.17*		.19		.38	
Sept.	.08		.12*		.27		1.39	
Oct.	.22		.11*		.20		.30	
Nov.	.32		.30		.10**		.08	
Dec.	.01		.47		.27		.18	
TOTAL	.96		2.48		3.31		4.41	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.09		0.09	
Feb.	.12		.10	
March	.13		.08	
April	.72		.40	
May	.67		1.32	
June	.90		1.21	
July	.17		.54	
Aug.	.26		.32	
Sept.	.23		.47	
Oct.	.30		.21	
Nov.	.26		.14	
Dec.	.07		.08	
TOTAL	3.92		4.96	

Pre-1954	1.12
1954	.96
1955	2.48
1956	3.31
1957	4.41
1958	3.92
1959	4.96
Total	21.2

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 507

LOCATION SEVEN ISLANDS, QUEBEC, CANADA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.0*		1.7*		0.1
Feb.		.1		.3		.1		.1
March		.0		.4		.2*		.2
April		.1		.2		.2*		.4
May		.1		.5		.8		1.0
June		.1		.4*		.6		1.1
July		.2		.5*		.5		.8
Aug.		.3		.3*		.4		.6
Sept.		.2		.2*		.6		2.2
Oct.		.5		.2*		.4		.6
Nov.		.7		.5		.2**		.2
Dec.		.0		.8		.5		.3
TOTAL		2.3		4.4		6.2		7.6

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.2		0.2
Feb.		.2		.2
March		.3		.2
April		1.2		.7
May		1.3		2.3
June		1.7		2.0
July		.4		.9
Aug.		.7		.5
Sept.		.6		.7
Oct.		1.0		.3
Nov.		.7		.2
Dec.		.2		.1
TOTAL		8.5		8.3

Pre-1954	5.2
1954	2.3
1955	4.4
1956	6.2
1957	7.6
1958	8.5
1959	8.3
Total	42.0

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 508 LOCATION WINNIPEG, MANITOBA, CANADA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04		0.03*		0.83*		0.19
Feb.		.03		.05		.05**		1.74
March		.02		.11		.16**		.56
April		.02		.80		.11*		.46
May		.05	1.67	1.01		.91		.45
June		.08		.34*		.28		.89
July		.08		.16*		.24	4.38	1.58
Aug.		.04		.13*		.25		1.00
Sept.		.09		.10*		.39		.83
Oct.		.07		.23*		.24		.34
Nov.		.07		.13		.13		.05
Dec.		.08		.46		.14		.34
TOTAL		.67		3.55		3.73		8.43

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.08		1.05
Feb.		.30		.15**
March		.78		.28**
April		1.06		.91
May		1.11		1.25
June		.46		1.14
July		.17		.70
Aug.		.34		.49
Sept.		.24		.14
Oct.		.22		.13
Nov.		.34		.08
Dec.		1.15		.06
TOTAL		6.25		6.38

Pre-1954	1.20
1954	.67
1955	3.55
1956	3.73
1957	8.43
1958	6.25
1959	6.38
Total	30.2

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 508

LOCATION WINNIPEG, MANITOBA, CANADA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.0		0.1*		1.3*		0.3
Feb.		.0		.1		.1*		2.9
March		.1		.2		.3**		.9
April		.1		1.5		.2*		.9
May		.3	3.0	1.9		1.4		.7
June		.3		.6*		.5		1.6
July		.3		.3*		.5	7.1	2.6
Aug.		.1		.2*		.5		1.6
Sept.		.1		.2*		.9		1.3
Oct.		.1		.4*		.5		.7
Nov.		.1		.2		.2		.1
Dec.		.1		.8		.3		.6
TOTAL		1.6		6.5		6.7		14.2

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.1		2.3
Feb.		.5		.3**
March		1.5		.5**
April		1.8		1.6
May		2.1		2.2
June		1.0		1.9
July		.5		1.1
Aug.		.9		.8
Sept.		.6		.2
Oct.		.8		.2
Nov.		1.0		.1
Dec.		2.8		.1
TOTAL		13.6		11.3

Pre-1954	6.0
1954	1.6
1955	6.5
1956	6.7
1957	14.2
1958	13.6
1959	11.3
Total	60

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 509 LOCATION CHURCHILL, MANITOBA, CANADA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		0.01*		0.05*		0.09	
Feb.	.03		.02		.05**		.07	
March	.01		.08		.04*		.15	
April	.00		.17		.05*		.11	
May	.01		.12		.11		.12	
June	.04		.24*		.14		.16	
July	.03		.12*		.10		.49	
Aug.	.04		.11*		.03		.33	
Sept.	.09		.08*		.21		.83	
Oct.	.04		.08*		.20		.13	
Nov.	.09		.11		.03		.02	
Dec.	.01		.07		.11		.06	
TOTAL	.43		1.21		1.12		2.56	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.49		0.07	
Feb.	.22		.04	
March	.12		.08	
April	.63		.11	
May	.10		.24	
June	.22		.25	
July	.12		.77	
Aug.	.10		.36	
Sept.	.13		.23	
Oct.	.09		.08	
Nov.	.23		.04	
Dec.	.06		.21	
TOTAL	2.51		2.48	

Pre-1954	0.65
1954	.43
1955	1.21
1956	1.12
1957	2.56
1958	2.51
1959	2.48
Total	11.0

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 509

LOCATION CHURCHILL, MANITOBA, CANADA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.0		0.0*		0.1*		0.2	
Feb.	.1		.0		.1**		.1	
March	.0		.2		.1*		.2	
April	.0		.3		.1*		.2	
May	.0		.2		.2		.2	
June	.1		.4*		.3		.3	
July	.1		.2*		.2		.8	
Aug.	.1		.2*		.1		.5	
Sept.	.1		.1*		.4		1.3	
Oct.	.1		.1*		.4		.3	
Nov.	.2		.2		.1		.0	
Dec.	.0		.1		.2		.1	
TOTAL	.8		2.0		2.3		4.2	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.8		0.1	
Feb.	.4		.1	
March	.2		.1	
April	1.1		.2	
May	.2		.4	
June	.4		.4	
July	.3		1.3	
Aug.	.3		.6	
Sept.	.3		.4	
Oct.	.3		.1	
Nov.	.7		.1	
Dec.	.1		.3	
TOTAL	5.1		4.1	

Pre-1954	1.3
1954	.8
1955	2.0
1956	2.3
1957	4.2
1958	5.1
1959	4.1
Total	20.0

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 510 LOCATION REGINA, SASKATCHEWAN, CANADA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04		0.01*		0.06*		0.09
Feb.		.02		.04		.03		.09
March		.00		.05		.20*		.16
April		.02		1.01		.14*		.59
May		.09	1.44	.81		.63		.61
June		.04		.33*		.80		.65
July		.12		.14*		.22	7.38	2.92
Aug.		.18		.15*		.23		2.76
Sept.		.01		.09*		.24		1.51
Oct.		.16		.12*		.21		.66
Nov.		.18		.15		.06		.11
Dec.		.01		.09		.24		.33
TOTAL		.87		2.99		3.06		10.48

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.03		0.17
Feb.		.17		.15
March		.10		.32
April		1.07		.92
May		1.15		1.95
June		.61		1.53
July		.20		.55
Aug.		.45		.32
Sept.		.20		.30
Oct.		.49		.14
Nov.		.12		.08
Dec.		.10		.08
TOTAL		4.69		6.51

Pre-1954	0.90
1954	.87
1955	2.99
1956	3.06
1957	10.48
1958	4.69
1959	6.51
Total	29.5

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 510

LOCATION REGINA, SASKATCHEWAN, CANADA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.0		0.0*		0.1*		0.1
Feb.		.0		.1		.0		.2
March		.0		.1		.3*		.3
April		.1		1.9		.2*		1.1
May		.5	2.6	1.7		1.0		1.0
June		.1		.6*		1.5		1.2
July		.4		.2*		.6	11.8	3.9
Aug.		.5		.3*		.5		4.0
Sept.		.0		.1*		.5		2.5
Oct.		.4		.2*		.4		1.3
Nov.		.4		.2		.1		.2
Dec.		.0		.2		.4		.6
TOTAL		2.4		5.6		5.6		16.5

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.1		0.4
Feb.		.3		.3
March		.2		.6
April		1.8		1.7
May		2.2		3.4
June		1.2		2.6
July		.5		.9
Aug.		1.2		.5
Sept.		.5		.5
Oct.		2.1		.2
Nov.		.3		.1
Dec.		.2		.1
TOTAL		10.6		11.3

Pre-1954	2.8
1954	2.4
1955	5.6
1956	5.6
1957	16.5
1958	10.6
1959	11.3
Total	55.0

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 511 LOCATION EDMONTON, ALBERTA, CANADA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		0.01*		0.10*		0.09	
Feb.	.02		.04		.05**		.10	
March	.01		.35		.25*		.18	
April	.05		.24		.29*		.78	
May	.12		.50		1.19		1.02	
June	.06		.23*		.83		.75	
July	.13		.24*		.54		.85	
Aug.	.14		.24*		.23		.59	
Sept.	.09		.15*		.93		1.37	
Oct.	.05		.16*		.17		.31	
Nov.	.10		.05		.10		.08	
Dec.	.00		.08		.11		.10	
TOTAL	.81		2.29		4.79		6.22	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.13		0.23	
Feb.	.23		.26	
March	.27		.43	
April	1.19		.67	
May	1.68		1.42	
June	1.19		1.78	
July	.25		.82	
Aug.	.44		.39	
Sept.	.31		.17	
Oct.	.32		.11	
Nov.	.13		.10	
Dec.	.16		.07	
TOTAL	6.30		6.35	

Pre-1954	0.82
1954	.81
1955	2.29
1956	4.79
1957	6.22
1958	6.30
1959	6.35
Total	27.6

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 511

LOCATION EDMONTON, ALBERTA, CANADA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.0*		0.2*		0.2
Feb.		.0		.1		.1**		.2
March		.0		.7		.4*		.3
April		.3		.4		.4*		1.5
May		.6		.9		1.9		1.7
June		.2		.4*		1.6		1.4
July		.4		.4*		1.2		1.4
Aug.		.4		.4*		.5		.9
Sept.		.1		.2*		2.1		2.8
Oct.		.1		.3*		.3		.6
Nov.		.2		.1		.2		.2
Dec.		.0		.1		.2		.2
TOTAL		2.3		4.0		9.1		11.4

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.2		0.5
Feb.		.4		.5
March		.5		.8
April		2.1		1.2
May		3.3		2.5
June		2.4		3.0
July		.7		1.3
Aug.		1.1		.6
Sept.		.7		.3
Oct.		1.0		.2
Nov.		.4		.1
Dec.		.4		.1
TOTAL		13.2		11.1

Pre-1954	2.3
1954	2.3
1955	4.0
1956	9.1
1957	11.4
1958	13.2
1959	11.1
Total	63

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 515 LOCATION DEEP RIVER, ONTARIO, CANADA

	1954		1955		1956	1957
	Formula	Best Est.	Formula	Best Est.	Formula Best Est.	Formula Best Est.
Jan.	0.04			.12*	0.11*	0.10
Feb.	.05			.20	.05	.10
March	.07			.28	.12*	.16
April	.05		1.51	.59	.67*	.46
May	.05		5.52	1.52	.66	.39
June	.05			.24*	.23	.41
July	.07			.02*	.18	.80
Aug.	.08			.04*	.08	.21
Sept.	.09			.07*	.11	.99
Oct.	.07			.09*	.18	.08
Nov.	.07			.10	.14	.12
Dec.	.08			.05	.13	.13
TOTAL	.77			3.32	2.66	3.95

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.08		0.18	
Feb.	.06		.26	
March	.27		.44	
April	.58		1.43	
May	.90		1.42	
June	.79		.51	
July	.43		.49	
Aug.	.17		.31	
Sept.	.22		.13	
Oct.	.40		.06	
Nov.	.40		.05	
Dec.	.13		.04	
TOTAL	4.43		5.32	

Pre-1954	0.94
1954	.77
1955	3.32
1956	2.66
1957	3.95
1958	4.43
1959	5.32
Total	21.4

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 515 LOCATION DEEP RIVER, ONTARIO, CANADA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.0		.2*		0.2*		0.2
Feb.		.1		.4		.1*		.2
March		.1		.5		.2		.2
April		.3	2.8	1.1		1.0*		.8
May		.3	9.9	2.8		1.0		.7
June		.2		.4*		.5		.7
July		.2		.0*		.4		1.3
Aug.		.1		.1*		.2		.3
Sept.		.1		.1*		.3		1.6
Oct.		.1		.1*		.3		.2
Nov.		.1		.2		.3		.3
Dec.		.1		.1		.3		.2
TOTAL		1.7		6.0		4.8		6.7

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.1		0.4
Feb.		.1		.5
March		.5		.8
April		1.0		2.6
May		1.7		2.5
June		1.5		.9
July		1.1		.8
Aug.		.4		.5
Sept.		.5		.2
Oct.		1.5		.1
Nov.		1.2		.1
DEC		.3		.1
TOTAL		9.9		9.5

Pre-1954	2.8
1954	1.7
1955	6.0
1956	4.8
1957	6.7
1958	9.9
1959	9.5
Total	41.0

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 516 LOCATION GOOSE BAY, NEWFOUNDLAND, CANADA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		.04*		.26*		0.09	
Feb.	.09		.04		.05		.11	
March	.01		.07		.08*		.18	
April	.01		.42		.05*		.39	
May	.02		.50		.50		.53	
June	.07		.43*		.31		.68	
July	.07		1.88*		.40		.55	
Aug.	.08		.56*		.13		.56	
Sept.	.15		.41*		.25		1.16	
Oct.	.12		.15*		.25		.29	
Nov.	.13		.09		.15		.27	
Dec.	.03		.18		.06		.05	
TOTAL	.82		4.77		2.49		4.86	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.20		0.18	
Feb.	.16		.20	
March	.42		.23	
April	.68		.73	
May	.71		1.52	
June	.61		.89	
July	.14		.40	
Aug.	.17		.33	
Sept.	.20		.11	
Oct.	.15		.10	
Nov.	.20			
Dec.	.12			
TOTAL	3.76			

Pre-1954	1.08
1954	.82
1955	4.77
1956	2.49
1957	4.86
1958	3.76
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 516 LOCATION GOOSE BAY, NEWFOUNDLAND, CANADA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.0		.1**		.4*		0.2	
Feb.	.2		.1		.1		.2	
March	.0		.1		.1*		.3	
April	.0		.8		.1*		.7	
May	.1		.9		.8		.9	
June	.3		.7*		.6		1.2	
July	.2		3.2*		.9		.9	
Aug.	.2		.9*		.3		.9	
Sept.	.4		.7*		.5		1.8	
Oct.	.3		.2*		.5		.6	
Nov.	.3		.2		.3		.6	
Dec.	.0		.3		.1		.1	
TOTAL	2.0		8.2		4.7		8.4	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.3		0.4	
Feb.	.3		.4	
March	.8		.4	
April	1.2		1.3	
May	1.4		2.6	
June	1.2		1.5	
July	.4		.6	
Aug.	.4		.5	
Sept.	.5		.2	
Oct.	.5		.1	
Nov.	.6			
Dec.	.3			
TOTAL	7.9			

Pre-1954	4.4
1954	2.0
1955	8.2
1956	4.7
1957	8.4
1958	7.9
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 517 LOCATION STEPHENVILLE, NEWFOUNDLAND, CANADA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.02		0.07*		0.26*		0.19	
Feb.	.03		.19		.22		.13	
March	.02		.40		.30*		.19	
April	.02		.32		.48*		1.17	
May	.04		.53		.90		.67	
June	.05		.40*		.35		.54	
July	.14		.27*		.14		.51	
Aug.	.14		.31*		.21		.60	
Sept.	.18		.23*		.39		1.20	
Oct.	.33		.20*		.26		.47	
Nov.	.48		.58		.32		.22	
Dec.	.02		.20		.33		.68	
TOTAL	1.47		3.70		4.16		6.57	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.23		0.16	
Feb.	.27		.38	
March	.28		.27	
April	.94		.91	
May	.99		1.95	
June	.55		.67	
July	.19		.61	
Aug.	.21		.36	
Sept.	.29		.25	
Oct.	.58			
Nov.	.56			
Dec.	.19			
TOTAL	5.28			

Pre-1954	1.53
1954	1.47
1955	3.70
1956	4.16
1957	6.57
1958	5.28
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 517

LOCATION STEPHENVILLE, NEWFOUNDLAND, CANADA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.0		0.2*		0.4*		0.3
Feb.		.1		.4		.4		.2
March		.0		.8		.5*		.3
April		.1		.6		.7*		2.0
May		.2		1.0		1.4		1.2
June		.2		.7*		.7		1.0
July		.4		.4*		.3		.8
Aug.		.4		.5*		.5		.9
Sept.		.5		.4*		.8		1.9
Oct.		.8		.3*		.5		1.0
Nov.		1.1		1.1		.6		.5
Dec.		.1		.3		.6		1.2
TOTAL		3.9		6.7		7.4		11.3

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.4		0.3
Feb.		.4		.8
March		.5		.5
April		1.6		1.6
May		1.9		3.4
June		1.1		1.1
July		.5		1.0
Aug.		.5		.6
Sept.		.7		.4
Oct.		2.2		
Nov.		1.6		
Dec.		.5		
TOTAL		11.9		

Pre-1954	7.9
1954	3.9
1955	6.7
1956	7.4
1957	11.3
1958	11.9
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 518 LOCATION THULE, GREENLAND

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		0.01*		0.13*		0.06	
Feb.	.04		.17		.11		.08	
March	.00		.02		.06*		.08	
April	.01		.09		.09*		.14	
May	.02		.18		.39		.46	
June	.04		.10*		.23		.68	
July	.07		.09*		.25		1.00	
Aug.	.05		.17*		.18		.57	
Sept.	.04		.13*		.14		.63	
Oct.	.04		.24*		.16		.31**	
Nov.	.00		.28		.05		.14**	
Dec.	.03		.12		.05		.11	
TOTAL	.38		1.60		1.84		4.26	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.35		0.38	
Feb.	.17		.29	
March	.40		.21	
April	.31		.32	
May	.37		.64	
June	.28		.62	
July	.17		.56	
Aug.	.15		.12	
Sept.	.10		.10	
Oct.	.24		.16	
Nov.	.11			
Dec.	.19			
TOTAL	2.86			

Pre-1954	0.67
1954	.38
1955	1.60
1956	1.84
1957	4.26
1958	2.86
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 518 LOCATION THULE, GREENLAND

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.0		0.0*		0.2*		0.1	
Feb.	.1		.3		.2		.1	
March	.0		.0		.1*		.1	
April	.0		.2		.1*		.3	
May	.1		.3		.6		.8	
June	.1		.2*		.4		1.2	
July	.2		.2*		.6		1.6	
Aug.	.1		.3*		.4		.9	
Sept.	.1		.2*		.3		1.0	
Oct.	.1		.4*		.3		.7**	
Nov.	.0		.4		.1		.3**	
Dec.	.0		.2		.1		.2	
TOTAL		.8		2.7		3.4		7.3

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.6		0.8	
Feb.	.3		.6	
March	.8		.4	
April	.6		.6	
May	.7		1.1	
June	.5		1.0	
July	.4		.9	
Aug.	.4		.2	
Sept.	.2		.2	
Oct.	.8		.2	
Nov.	.3			
Dec.	.4			
TOTAL		6.0		

Pre-1954	1.0
1954	.8
1955	2.7
1956	3.4
1957	7.3
1958	6.0
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 519 LOCATION KEFLAVIK, ICELAND

	1954 Formula Best Est.	1955 Formula Best Est.	1956 Formula Best Est.	1957 Formula Best Est.
Jan.	0.04	0.03*	0.34*	0.43
Feb.	.06	.03*	.11**	.15
March	.02	.27	.60*	.30
April	.01	.87	.52*	.84
May	.01	.42	1.03	.48
June	.02	.25*	.64	.28
July	.06	.35*	.22	.50
Aug.	.08	.21*	.13	.47
Sept.	.06	.17*	.36	.77
Oct.	.12	.03*	.34	.62
Nov.	.30	.20	.30	
Dec.	.09	.36**	.22	
TOTAL	.87	3.19	4.81	

	1958 Formula Best Est.	1959 Formula Best Est.
Jan.		
Feb.		
March		
April		
May		
June		
July		
Aug.		
Sept.		
Oct.		
Nov.		
Dec.		
TOTAL		

Pre-1954	0.90
1954	.87
1955	3.19
1956	4.81
1957	
1958	
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 519

LOCATION KEFLAVIK, ICELAND

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1*		0.5*		0.8
Feb.		.1		.1*		.2**		.2
March		.2		.5		.9*		.5
April		.0		1.6		.8*		1.6
May		.1		.8		1.9		.8
June		.1		.4*		1.3		.5
July		.2		.6*		.5		.8
Aug.		.2		.4*		.3		.7
Sept.		.2		.3*		.8		1.3
Oct.		.3		.1*		.6		1.5
Nov.		.7		.3		.6		
Dec.		.1		.6**		.4		
TOTAL		2.2		5.8		8.8		

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.				
Feb.				
March				
April				
May				
June				
July				
Aug.				
Sept.				
Oct.				
Nov.				
Dec.				
TOTAL				

Pre-1954	2.0
1954	2.2
1955	5.8
1956	8.8
1957	
1958	
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 522 LOCATION NOME, ALASKA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.04		0.02*		0.09*		0.16
Feb.		.03		.16		.10*		.07
March		.02		.04		.11		.15
April		.00		.02		.19*		.23
May		.01		.05		.11		.36
June		.03		.20*		.13		.24
July		.06		.11*		.08		.15
Aug.		.10		.14*		.14		.32
Sept.		.13		.13*		.24		.67
Oct.		.09		.05*		.14		.39
Nov.		.11		.14		.05		.21
Dec.		.04		.18		.15		.15
TOTAL		.66		1.24		1.53		3.10

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.06		0.39
Feb.		.12		.24
March		.42		.14
April		1.50		.36
May		.26		.73
June		.49		.58
July		.15		.23
Aug.		.14		.24
Sept.		.11		.24
Oct.		.30		.09
Nov.		.16		.08
Dec.		.16		.08
TOTAL		3.87		3.40

Pre-1954	0.99
1954	.66
1955	1.24
1956	1.53
1957	3.10
1958	3.87
1959	3.40
Total	14.8

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 522 LOCATION NOME, ALASKA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.0*		0.1*		0.3
Feb.		.1		.3		.2		.1
March		.2		.1		.2*		.2
April		.0		.0		.3*		.4
May		.1		.1		.2		.6
June		.1		.4*		.3		.4
July		.2		.2*		.2		.2
Aug.		.3		.2*		.3		.5
Sept.		.3		.2*		.5		1.1
Oct.		.2		.1*		.3		.9
Nov.		.2		.3		.1		.5
Dec.		.1		.3		.3		.3
TOTAL		1.8		2.2		3.0		5.5

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.1		0.8
Feb.		.2		.5
March		.8		.3
April		2.6		.7
May		.5		1.3
June		.9		1.0
July		.4		.4
Aug.		.3		.4
Sept.		.3		.4
Oct.		1.0		.1
Nov.		.5		.1
Dec.		.4		.1
TOTAL		8.0		6.1

Pre-1954	3.4
1954	1.8
1955	2.2
1956	3.0
1957	5.5
1958	8.0
1959	6.1
Total	30.0

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 523 LOCATION FAIRBANKS, ALASKA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		0.01*		0.03*		0.06	
Feb.	.04		.04		.06		.09	
March	.00		.09		2.38*		.15	
April	.00		.13		.48*		.18	
May	.01		.21		.47		.61	
June	.04		.45*		.28		.62	
July	.05		.26*		.10		.40	
Aug.	.05		.27*		.23		.50	
Sept.	.07		.12*		.32		.67	
Oct.	.05		.03*		.13		.17	
Nov.	.04		.06		.01		.04	
Dec.	.04		.07		.02		.11	
TOTAL	.43		1.74		4.51		3.60	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.06		0.10	
Feb.	.10		.07	
March	.22		.14	
April	.54		.31	
May	.45		.89	
June	.70		.78	
July	.27		.65	
Aug.	.08		.48	
Sept.	.16		.19	
Oct.	.09		.39	
Nov.	.06		.06	
Dec.	.06		.04	
TOTAL	2.79		4.10	

Pre-1954	0.99
1954	.43
1955	1.74
1956	4.51
1957	3.60
1958	2.79
1959	4.10
Total	18.2

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 523

LOCATION FAIRBANKS, ALASKA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.0*		0.0*		0.1
Feb.		.1		.1		.1		.2
March		.0		.2		3.6*		.2
April		.0		.2		.7*		.3
May		.1		.4		.7		1.0
June		.1		.8*		.5		1.1
July		.2		.4*		.2		.6
Aug.		.1		.4*		.5		.8
Sept.		.2		.2*		.7		1.1
Oct.		.1		.0*		.2		.4
Nov.		.1		.1		.0		.1
Dec.		.1		.1		.9		.2
TOTAL		1.1		2.9		7.2		6.1

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.1		0.2
Feb.		.2		.1
March		.4		.3
April		1.0		.6
May		.9		1.5
June		1.4		1.3
July		.7		1.1
Aug.		.2		.8
Sept.		.4		.3
Oct.		.3		.6
Nov.		.2		.1
Dec.		.2		.1
TOTAL		6.0		7.0

Pre-1954	3.4
1954	1.1
1955	2.9
1956	7.2
1957	6.1
1958	6.0
1959	7.0
Total	34.0

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 524 LOCATION JUNEAU, ALASKA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		0.08*		0.13*		0.21	
Feb.	.15		.12		.31		.28	
March	.00		.23		.26*		.29	
April	.00		.31		.44*		.63	
May	.02		.61		.37		.67	
June	.02		.19*		.09		.27	
July	.06		.08*		.04		.17	
Aug.	.03		.22*		.21		.30	
Sept.	.10		.10*		.44		.48	
Oct.	.23		.15*		.25		.40	
Nov.	.30		.18		.43		.22	
Dec.	.04		.24		.46		.26	
TOTAL	.99		2.51		3.43		4.18	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.53		0.55	
Feb.	.36		.91	
March	.62		1.52	
April	.61		1.14	
May	.34		.96	
June	.47		1.06	
July	.11		.38	
Aug.	.08			
Sept.	.18			
Oct.	.70			
Nov.	.86			
Dec.	1.00			
TOTAL	5.86			

Pre-1954	0.99
1954	.99
1955	2.51
1956	3.43
1957	4.18
1958	5.86
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 524 LOCATION JUNEAU, ALASKA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.2*		0.2*		0.4
Feb.		.3		.2		.5		.5
March		.0		.4		.4*		.5
April		.0		.6		.7*		1.1
May		.1		1.1		.6		1.1
June		.1		.3*		.2		.5
July		.2		.1*		.1		.3
Aug.		.1		.4*		.5		.5
Sept.		.2		.2*		1.0		.9
Oct.		.6		.2*		.5		.9
Nov.		.7		.3		.9		.4
Dec.		.1		.4		.9		.5
TOTAL		2.4		4.4		6.5		7.6

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.9		1.2
Feb.		.6		1.8
March		1.2		2.9
April		1.1		2.1
May		.7		1.7
June		.9		1.8
July		.3		.6
Aug.		.2		
Sept.		.4		
Oct.		2.5		
Nov.		2.6		
Dec.		2.4		
TOTAL		13.8		

Pre-1954	3.4
1954	2.4
1955	4.4
1956	6.5
1957	7.6
1958	13.8
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 525 LOCATION SAN JUAN, PUERTO RICO

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04		.07*		0.25*		0.20
Feb.		.04		.15		1.17		.08
March		.16		.92		.23*		.36
April		.05		.40		.32*		.21
May		.16	1.44	.82		.54		.14
June		.23		.14*		.28		.21
July		.06		.09*		.14		.53
Aug.		.11		.08*		.24		.48
Sept.		.15		.06*		.15		.53
Oct.		.11		.10*		.25		.14
Nov.		.10		.11		.18		.08
Dec.		.02		.26		.13		.25
TOTAL		1.23		3.20		3.88		3.21

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.23		0.60
Feb.		.26		.72
March		.13		.70
April		.23		.85
May		.29		.73
June		.33		.46
July		.15		.25
Aug.		.31		.12
Sept.		.18		.11
Oct.		.13		.25
Nov.		.21		.11
Dec.		.23		.15
TOTAL		2.68		5.05

Pre-1954	1.03
1954	1.23
1955	3.20
1956	3.88
1957	3.21
1958	2.68
1959	5.05
Total	20.3

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 525

LOCATION SAN JUAN, PUERTO RICO

	1954		1955		1956	1957
	Formula	Best Est.	Formula	Best Est.	Best Est.	Best Est.
Jan.	0.0			.2*	0.4*	0.4
Feb.	.1			.3	1.9	.1
March	.9			1.8	.3*	.6
April	.3			.7	.5*	.4
May	.8		2.6	1.5	.8	.2
June	.9			.2*	.5	.4
July	.2			.1*	.4	.9
Aug.	.3			.1*	.5	.7
Sept.	.4			.1*	.3	.9
Oct.	.3			.2*	.5	.3
Nov.	.2			.2	.3	.2
Dec.	.1			.4	.2	.4
TOTAL	4.5			5.8	6.6	5.5

	1958	1959
	Formula Best Est.	Formula Best Est.
Jan.	0.4	1.3
Feb.	.4	1.4
March	.3	1.3
April	.4	1.5
May	.6	1.3
June	.6	.8
July	.4	.4
Aug.	.8	.2
Sept.	.4	.2
Oct.	.4	.4
Nov.	.6	.2
Dec.	.5	.2
TOTAL	5.8	9.2

Pre-1954	3.4
1954	4.5
1955	5.8
1956	6.6
1957	5.5
1958	5.8
1959	9.2
Total	41

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 601 LOCATION PANAMA CANAL ZONE, ALBROOK AFB

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04		0.03*		0.08*		0.07
Feb.		.02		.07		.20		.08
March		.13		.02*		.14*		.05
April		.10		.04*		.12*		.06
May		.16		.06*		.25		.09
June		.18		.02*		.05		.18
July		.04**		.03*		.45		.43
Aug.		.12		.05*		.31		.58**
Sept.		.09		.21*		.12		.15
Oct.		.05		.05*		.19		.20
Nov.		.08**		.10		.24		.07
Dec.		.06		.10		.09		.26
TOTAL		1.07		.78		2.24		2.22

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.37		0.18
Feb.		.06		.12
March		.01		.10
April		.10		.17
May		.10		.30
June		.09		.12
July		.28		.23
Aug.		.39		.08
Sept.		.26		
Oct.		.21		
Nov.		.12		
Dec.		.14		
TOTAL		2.13		

Pre-1954	0.72
1954	1.07
1955	.78
1956	2.24
1957	2.22
1958	2.13
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 601

LOCATION PANAMA CANAL ZONE, ALBROOK AFB

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.0		0.1*		0.1*		0.1
Feb.		.0		.1		.3		.1
March		.7		.0*		.2*		.1
April		.6		.1*		.2*		.1
May		.8		.1*		.4		.2
June		.7		.0*		.1		.3
July		.1**		.1*		1.0		.7
Aug.		.3		.1*		.7		.9*
Sept.		.2		.3*		.3		.2
Oct.		.1		.1*		.3		.4
Nov.		.2**		.2		.5		.1
Dec.		.1		.2		.2		.5
TOTAL		3.8		1.4		4.3		3.7

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.6		0.4
Feb.		.1		.2
March		.0		.2
April		.2		.3
May		.2		.5
June		.2		.2
July		.7		.4
Aug.		1.0		.1
Sept.		.6		
Oct.		.7		
Nov.		.3		
Dec.		.3		
TOTAL		4.9		

Pre-1954	1.8
1954	3.8
1955	1.4
1956	4.3
1957	3.7
1958	4.9
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 602 LOCATION BERMUDA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		0.03*		0.77*		0.48	
Feb.	.06		.16		.40		.28	
March	.07		.55*		.83*		.67	
April	.02		.14*		.31*		.48	
May	.20		.33*		.27		.42	
June	.08		.15*		.06		1.99	
July	.07		.10*		.48			
Aug.	.10		.08*		.22			
Sept.	.12		.06*		.40			
Oct.	.09		.13*		.38			
Nov.	.27		.23		.11		.25	
Dec.	.34		.51		.27		.46	
TOTAL	1.46		2.47		4.50			

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	1.14		1.49	
Feb.			1.14	
March			1.36	
April			.98	
May			.55	
June			.60	
July			.24	
Aug.			.28	
Sept.			.18	
Oct.				
Nov.				
Dec.	1.28			
TOTAL				

Pre-1954	1.57
1954	1.46
1955	2.47
1956	4.50
1957	
1958	
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 602 LOCATION BERMUDA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1*		1.2*		0.8
Feb.		.1		.3		.7		.5
March		.4		1.0*		1.3*		1.1
April		.1		.3*		.5*		.9
May		1.1		.6*		.4		.7
June		.3		.3*		.1		3.6
July		.2		.2*		1.0		
Aug.		.3		.1*		.5		
Sept.		.3		.1*		.9		
Oct.		.2		.2*		.7		
Nov.		.6		.4		.2		.5
Dec.		.4		.9		.5		.8
TOTAL		4.0		4.5		8.0		

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		1.9		3.2
Feb.				2.3
March				2.6
April				1.8
May				1.0
June				1.0
July				.4
Aug.				.4
Sept.				.3
Oct.				
Nov.				
Dec.		3.0		
TOTAL				

Pre-1954	8.3
1954	4.0
1955	4.5
1956	8.0
1957	
1958	
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 603 LOCATION LIMA, PERU

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04		0.07*		0.03*		0.07
Feb.		.04**		.04		.10		.08**
March		.03		.07*		.18*		.07
April		.07		.09*		.12*		.08
May		.04		.07*		.03		.08
June		.03		.02*		.08		.11
July		.07		.04*		.08		.14
Aug.		.05		.06*		.19		.13
Sept.		.08		.13*		.17		.20
Oct.		.10		.11**		.19		.13
Nov.		.09		.07**		.09		.22
Dec.		.01		.10**		.02		.15
TOTAL		.65		.87		1.29		1.46

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.07		0.06
Feb.		.15**		.06
March		.02		.03
April		.02		.09
May		.04		.15
June		.11		
July		.18		
Aug.		.13		
Sept.		.19		
Oct.		.18		
Nov.		.05		
Dec.		.07**		
TOTAL		1.21		

Pre-1954	.87**
1954	.65
1955	.87
1956	1.29
1957	1.46
1958	1.21
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 603 LOCATION LIMA, PERU

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1*		0.0*		0.1
Feb.		.1*		.1		.2		.2**
March		.5		.1*		.3*		.1
April		.4		.2*		.2*		.1
May		.2		.1*		.1		.1
June		.1		.0*		.2		.2
July		.2		.1*		.2		.2
Aug.		.1		.1*		.4		.2
Sept.		.2		.2*		.4		.4
Oct.		.2		.2**		.4		.3
Nov.		.2		.1**		.2		.5
Dec.		.0		.2**		.0		.3
TOTAL		2.2		1.5		2.6		2.7

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.1		0.1
Feb.		.3**		.1
March		.0		.0
April		.0		.2
May		.1		.3
June		.2		
July		.5		
Aug.		.3		
Sept.		.4		
Oct.		.5		
Nov.		.2		
Dec.		.2**		
TOTAL		2.8		

Pre-1954	3.7**
1954	2.2
1955	1.5
1956	2.6
1957	2.7
1958	2.8
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 604 LOCATION SAN JOSE, COSTA RICA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		0.00*		0.07*		0.04	
Feb.	.02		.03		.12		.05	
March	.16		.04*		.11*		.07	
April	.05		.02*		.02*		.06	
May	.15		.05*		.11		.12	
June	.28		.04*		.09		.20	
July	.07		.02*		.23		.31	
Aug.	.14		.04*		.31		.30	
Sept.	.10		.05*		.12		.28	
Oct.	.10		.03*		.14		.09	
Nov.	.07		.02		.05		.06	
Dec.	.01		.07		.05		.31	
TOTAL	1.19		.43		1.42		1.89	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.27		0.05	
Feb.	.14		.15	
March	.07		.12	
April	.13		.13	
May	.23		.21	
June	.21		.15	
July	.52		.19	
Aug.	.53			
Sept.	.24			
Oct.	.15			
Nov.	.06			
Dec.	.44			
TOTAL	2.99			

Pre-1954	0.84
1954	1.19
1955	.43
1956	1.42
1957	1.89
1958	2.99
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 604 LOCATION SAN JOSE, COSTA RICA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.0*		0.1*		0.1
Feb.		.0		.1		.2		.1
March		.9		.1*		.2*		.1
April		.3		.0*		.0*		.1
May		.8		.1*		.2		.2
June		1.1		.1*		.2		.4
July		.2		.0*		.5		.5
Aug.		.4		.1*		.7		.5
Sept.		.1		.1*		.3		.4
Oct.		.2		.0*		.3		.2
Nov.		.2		.0		.1		.1
Dec.		.0		.1		.1		.6
TOTAL		4.2		0.7		2.9		3.3

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.5		0.1
Feb.		.2		.3
March		.1		.2
April		.2		.2
May		.4		.4
June		.4		.3
July		1.4		.3
Aug.		1.3		
Sept.		.5		
Oct.		.6		
Nov.		.2		
Dec.		1.1		
TOTAL		6.9		

Pre-1954	3.7
1954	4.2
1955	0.7
1956	2.9
1957	3.3
1958	6.9
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 605 LOCATION LAGENS, AZORES

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		0.04*		0.21*		0.36	
Feb.	.06		.08*		.64**		.41	
March	.03		.18*		1.47*		.68	
April	.04		.24*		.54*		.29	
May	.02		.04*		.55		.25	
June	.07		.39*		.16		.39	
July	.05		.01*		.22		.98	
Aug.	.13		.15*		.26		.40	
Sept.	.12		.12*		.26		.42	
Oct.	.19		.10*		.40		.28	
Nov.	.13		.22**		.13		.19	
Dec.	.30		.52**		.42		.24	
TOTAL	1.18		2.09		5.26		4.85	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.25		1.54	
Feb.	.31		1.05	
March	1.22		2.03	
April	.88		1.02	
May	.50		1.72	
June	.54		.80	
July	.19		.46	
Aug.	.18		.45	
Sept.	.21		.33	
Oct.	.25			
Nov.	.45			
Dec.	.50			
TOTAL	5.48			

Pre-1954	- -
1954	1.18
1955	2.09
1956	5.26
1957	4.85
1958	5.48
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 605

LOCATION LAGENS, AZORES

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1*		0.3*		0.6
Feb.		.1		.2*		1.1**		.7
March		.2		.3*		2.2*		1.1
April		.3		.4*		.8*		.5
May		.1		.1*		.9		.4
June		.3		.7*		.3		.7
July		.1		.1*		.5		1.6
Aug.		.4		.2*		.6		.6
Sept.		.3		.2*		.6		.7
Oct.		.5		.2*		.8		.6
Nov.		.3		.4**		.3		.4
Dec.		.4		.9**		.8		.5
TOTAL		3.0		3.8		9.2		8.4

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.4		3.3
Feb.		.5		2.1
March		2.4		3.9
April		1.6		1.8
May		1.0		3.0
June		1.0		1.3
July		.5		.7
Aug.		.5		.7
Sept.		.5		.5
Oct.		.9		
Nov.		1.3		
Dec.		1.2		
TOTAL		11.8		

Pre-1954	--
1954	3.0
1955	3.8
1956	9.2
1957	8.4
1958	11.8
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 606 LOCATION BUENOS AIRES, ARGENTINA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		0.06*		0.23*		0.13	
Feb.	.07		.10		.06		.11	
March	.04		.05*		.54*		.07	
April	.01		.04*		.08*		.05	
May	.03		.20*		.13		.16	
June	.02		.04*		.04		.10	
July	.04		.03*		.07		.21	
Aug.	.04		.04*		.21		.15	
Sept.	.07		.18*		.14		.09	
Oct.	.10		.16*		.11		.15	
Nov.	.15		.13		.17		.12	
Dec.	.01		.16		.13		.18	
TOTAL	.62		1.19		1.91		1.52	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.15		0.13	
Feb.	.13		.11	
March	.04		.09	
April	.03		.11	
May	.11		.10	
June	.10		.11	
July	.29		.12	
Aug.	.18			
Sept.	.14			
Oct.	.13			
Nov.	.15			
Dec.	.16			
TOTAL	1.61			

Pre-1954	0.89
1954	.62
1955	1.19
1956	1.91
1957	1.52
1958	1.61
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 606 LOCATION BUENOS AIRES, ARGENTINA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1*		0.4*		0.2
Feb.		.1		.2		.1		.2
March		.2		.1*		.8*		.1
April		.0		.1*		.1*		.1
May		.1		.4*		.2		.3
June		.1		.1*		.1		.2
July		.1		.1*		.1		.3
Aug.		.1		.1*		.5		.2
Sept.		.2		.3*		.3		.1
Oct.		.2		.2*		.2		.3
Nov.		.3		.2		.3		.2
Dec.		.0		.3		.2		.3
TOTAL		1.4		2.1		3.2		2.5

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.3		0.3
Feb.		.2		.2
March		.1		.2
April		.0		.2
May		.2		.2
June		.2		.2
July		.8		.2
Aug.		.5		
Sept.		.3		
Oct.		.3		
Nov.		.5		
Dec.		.4		
TOTAL		3.8		

Pre-1954	3.8
1954	1.4
1955	2.1
1956	3.2
1957	2.5
1958	3.8
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 608 LOCATION SAO PAULO, BRAZIL

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		.04		0.06*		0.11*		0.16
Feb.		.05		.06*		.04		.10
March		.03		.06*		.22*		.08
April		.03		.03*		.07*		.05
May		.15		.15*		.02		.06
June		.10		.03*		.13		
July		.03		.05*		.08		
Aug.		.10		.06*		.12		
Sept.		.10		.05*		.22		.20
Oct.		.11		.12*		.11		.21
Nov.		.04		.12		.09**		.02
Dec.		.01		.04		.09		.09
TOTAL		.79		.83		1.30		

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.				0.03
Feb.				
March				
April				
May				
June				
July				
Aug.				
Sept.				
Oct.				
Nov.		.10		
Dec.		.11		
TOTAL				

Pre-1954	- -
1954	.79
1955	.83
1956	1.30
1957	
1958	
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 608

LOCATION SAO PAULO, BRAZIL

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		.0		0.1*		0.2*		0.3
Feb.		.1		.1*		.1		.2
March		.2		.1*		.3*		.1
April		.2		.1*		.1*		.1
May		.8		.3*		.1		.1
June		.4		.0*		.3		
July		.1		.1*		.3		
Aug.		.3		.1*		.3		
Sept.		.2		.1*		.5		.3
Oct.		.3		.2*		.2		.4
Nov.		.1		.2		.2**		.0
Dec.		.0		.1		.2		.2
TOTAL		2.7		1.5		2.8		

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.				0.1
Feb.				
March				
April				
May				
June				
July				
Aug.				
Sept.				
Oct.				
Nov.		.3		
Dec.		.3		
TOTAL				

Pre-1954	- -
1954	2.7
1955	1.5
1956	2.8
1957	
1958	
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 611 LOCATION BELEM, BRAZIL

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04						0.09	
Feb.	.06						.17	
March	.04				1.48**		.14	
April	.08				.10*		.08	
May	.27						1.43	
June	.18		.05*					
July	.09							
Aug.	.06				.46		.19	
Sept.	.25				.33		.19	
Oct.	.21		.56*		.09			
Nov.	.05						.05	
Dec.	.01		.07				.05	
TOTAL	1.34							

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.09		0.23	
Feb.	.13		.89	
March	.16		.51	
April	.11		.34	
May	.04		.13	
June	.34		.49	
July	.20		.31	
Aug.	.29		.25	
Sept.	.20		.12	
Oct.	.04		.26	
Nov.	.03			
Dec.	.13			
TOTAL	1.76			

Pre-1954	- -
1954	1.34
1955	
1956	
1957	
1958	1.76
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 611

LOCATION BELEM, BRAZIL

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.	0.0						0.2	
Feb.	.1						.3	
March	.2				2.2*		.2	
April	.4				.2*		.1	
May	1.3						2.4	
June	.7		.1*					
July	.3				1.0		.3	
Aug.	.2				.7		.3	
Sept.	.7				.2			
Oct.	.5		.6*				.1	
Nov.	.1						.1	
Dec.	.0		.1					
TOTAL		4.5						

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.2		0.5
Feb.		.2		1.8
March		.3		1.0
April		.2		.6
May		.1		.2
June		.6		.8
July		.5		.5
Aug.		.7		.4
Sept.		.5		.2
Oct.		.1		.4
Nov.		.1		
Dec.		.3		
TOTAL		3.8		

Pre-1954	- -
1954	4.5
1955	
1956	
1957	
1958	3.8
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 612 LOCATION LA PAZ, BOLIVIA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		0.19*		0.06*		0.10	
Feb.	.04		.06		.05		.11	
March	.10		.04*		.11*		.04	
April	.08		.03*		.05*		.04	
May	.45		.30*		.08		.35	
June	.08		.04*		.03		.10	
July	.07		.04*		.26		.08	
Aug.	.34		.04**		.23		.49	
Sept.	.48		.09*		.31		.23	
Oct.	.21		.23*		.14		.11	
Nov.	.42		.13		.08		.05	
Dec.	.01		.09		.19		.06	
TOTAL	2.32		1.28		1.59		1.76	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.09		0.07	
Feb.	.18		.08	
March	.06		.03	
April	.08		.05	
May	.06		.09	
June	.16		.08	
July	.23		.39	
Aug.	.15			
Sept.	.35			
Oct.	.63			
Nov.	.17			
Dec.	.13			
TOTAL	2.29			

Pre-1954	0.90
1954	2.32
1955	1.28
1956	1.59
1957	1.76
1958	2.29
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 612

LOCATION LA PAZ, BOLIVIA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.4*		0.1*		0.1
Feb.		.1		.1		.1		.2
March		.5		.1*		.2*		.1
April		.4		.1*		.1*		.6
May		2.5		.5*		.1		.6
June		.3		.1*		.1		.2
July		.2		.1*		.5		.1
Aug.		.5		.1**		.5		.8
Sept.		1.2		.1*		.7		.4
Oct.		,5		.4*		.3		.2
Nov.		1.0		.2		.1		.1
Dec.		.0		.1		.4		.1
TOTAL		7.2		2.3		3.2		3.1

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.1		0.2
Feb.		.3		.2
March		.1		.1
April		.2		.1
May		.1		.2
June		.3		.1
July		.6		.6
Aug.		.4		
Sept.		.8		
Oct.		1.8		
Nov.		.5		
Dec.		.3		
TOTAL		5.5		

Pre-1954	3.8
1954	7.2
1955	2.3
1956	3.2
1957	3.1
1958	5.5
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 613 LOCATION QUITO, ECUADOR

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.04		0.07*		0.04*		0.05
Feb.		.04		.12		.03		.04
March		.11		.02*		.06*		.06
April		.20		.01*		.02*		.04
May		.13		.14*		.00		.19
June		.04		.01*		.00		.08
July		.03		.02*		.02		.07
Aug.		.03		.03*		.08		.13
Sept.		.10		.08*		.11		.18
Oct.		.08		.02*		.08		.10
Nov.		.01		.02		.09		.08
Dec.		.01		.07		.09		.07
TOTAL		.82		.61		.62		1.09

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.44		0.09
Feb.		.09		.15
March		.10		.08
April		.02		.07
May		.05		.06
June		.06		.10
July		.07		.11
Aug.		.09		.06
Sept.		.13		
Oct.		.24		
Nov.		.03		
Dec.		.03		
TOTAL		1.35		

Pre-1954	0.84
1954	.82
1955	.61
1956	.62
1957	1.09
1958	1.35
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 613

LOCATION QUITO, ECUADOR

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.4*		0.1*		0.1
Feb.		.1		.2		.1		.1
March		.6		.0*		.1*		.1
April		1.1		.0*		.0*		.1
May		.7		.3*		.0		.3
June		.1		.0*		.0		.1
July		.1		.0*		.1		.1
Aug.		.1		.0*		.2		.2
Sept.		.3		.1*		.3		.3
Oct.		.2		.0*		.2		.2
Nov.		.0		.0		.2		.2
Dec.		.0		.1		.2		.1
TOTAL		3.3		1.1		1.5		1.9

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.7		0.2
Feb.		.1		.3
March		.2		.2
April		.0		.1
May		.1		.1
June		.1		.2
July		.2		.2
Aug.		.2		.1
Sept.		.3		
Oct.		.6		
Nov.		.1		
Dec.		.1		
TOTAL		2.7		

Pre-1954	3.6
1954	3.3
1955	1.1
1956	1.5
1957	1.9
1958	2.7
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 614 LOCATION MEXICO CITY, MEXICO

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		0.03*		0.05*		0.08	
Feb.	.05		.05		.09		.22	
March	.47		.17		.19*		.15	
April	.36		.14		.27*		.30	
May	1.13		.39		1.08		.49	
June	.24		.13*		.09		.99	
July	.09		.08*		.46		1.66	
Aug.	.16		.01*		.56		.68	
Sept.	.10		.28*		.29		.44	
Oct.	.06		.10*		.21		.39	
Nov.	.06		.07		.11		.22	
Dec.	.00		.09		.07		.25	
TOTAL	2.76		1.54		3.47		5.87	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.23		0.13	
Feb.	.19		.21	
March	.05		.19	
April	.29		.62	
May	1.05		.65	
June	.52		.27	
July	.45		.21	
Aug.	.51			
Sept.	.21			
Oct.	.09			
Nov.	.11			
Dec.	.16			
TOTAL	3.86			

Pre-1954	0.92
1954	2.76
1955	1.54
1956	3.47
1957	5.87
1958	3.86
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 614

LOCATION MEXICO CITY, MEXICO

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.	0.0		0.1*		0.1*		0.1	
Feb.	.1		.1		.1		.4	
March	2.6		.3		.3*		.2	
April	1.9		.3		.4*		.6	
May	6.5		.7		1.6		.8	
June	.9		.2*		.2		1.8	
July	.2		.1*		1.0		2.7	
Aug.	.2		.0*		1.2		1.1	
Sept.	.1		.5*		.6		.8	
Oct.	.1		.2*		.4		.9	
Nov.	.1		.1		.2		.4	
Dec.	.0		.1		.1		.4	
TOTAL		12.7		2.7		6.2		10.2

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.	0.4		0.3	
Feb.	.3		.4	
March	.1		.4	
April	.5		1.1	
May	2.1		1.1	
June	1.0		.5	
July	1.2		.3	
Aug.	1.3			
Sept.	.5			
Oct.	.3			
Nov.	.3			
Dec.	.4			
TOTAL		8.4		

Pre-1954	3.9
1954	12.7
1955	2.7
1956	6.2
1957	10.2
1958	8.4
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 615 LOCATION BOGOTA, COLOMBIA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		0.03*		0.11*		0.05**	
Feb.	.03		.08		.18		.06**	
March	.14		.05*		.23*		.06**	
April	.06		.02*		.09**		.05**	
May	.05		.10*		.33		.07	
June	.04		.01*		.16		.12	
July	.02		.02*		.28		.08	
Aug.	.05		.04*		.23**		.14	
Sept.	.07		.43*		.12**		.17	
Oct.	.01**		.08*		.14**		.07	
Nov.	.09		.05		.13**		.03	
Dec.	.03**		.13		.08**		.41	
TOTAL	.63		1.04		2.08		1.31	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.18		0.13	
Feb.	.17		.08	
March	.08		.02	
April	.02		.09	
May	.02		.07	
June	.06		.03	
July	.15			
Aug.	.06			
Sept.	.05			
Oct.	.05			
Nov.	.03			
Dec.	.04			
TOTAL	.91			

Pre-1954	- -
1954	.63
1955	1.04
1956	2.08
1957	1.31
1958	.91
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 615 LOCATION BOGOTA, COLOMBIA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1*		0.2*		.1**
Feb.		.1		.2		.3		.1**
March		.8		.1*		.3*		.1**
April		.3		.0*		.2**		.1**
May		.3		.2*		.5		.1
June		.2		.0*		.3		.2
July		.1		.0*		.6		.1
Aug.		.1		.1*		.5**		.2
Sept.		.2		.7*		.3**		.3
Oct.		.0**		.1*		.3**		.1
Nov.		.2		.1		.3**		.1
Dec.		.1**		.2		.2**		.7
TOTAL		2.4		1.8		4.0		2.2

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.3		0.3
Feb.		.3		.2
March		.2		.0
April		.0		.2
May		.0		.1
June		.1		.0
July		.4		
Aug.		.1		
Sept.		.1		
Oct.		.2		
Nov.		.1		
Dec.		.1		
TOTAL		1.9		

Pre-1954	- -
1954	2.4
1955	1.8
1956	4.0
1957	2.2
1958	1.9
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 621 LOCATION BOGOTA COLOMBIA, TIBAITATA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								
July								
Aug.								.14
Sept.								.06
Oct.								.01
Nov.								.06
Dec.								.03
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.17		0.06
Feb.				.09
March		.03		.06
April		.02		.12
May		.10		.06
June		.04		
July		.08		
Aug.		.16		
Sept.		.03		.07
Oct.		.04		.07
Nov.		.06		.03
Dec.		.05		.03
TOTAL				

Pre-1954	
1954	
1955	
1956	
1957	
1958	
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 621

LOCATION BOGOTA COLOMBIA, TIBAITATA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								
July								.2
Aug.								.1
Sept.								.0
Oct.								.1
Nov.								.1
Dec.								
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.3		0.1
Feb.				.2
March		.1		.1
April		.0		.2
May		.2		.1
June		.1		
July		.2		
Aug.		.4		
Sept.		.1		.1
Oct.		.1		.1
Nov.		.2		.0
Dec.		.1		.0
TOTAL				

Pre-1954	
1954	
1955	
1956	
1957	
1958	
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 701 LOCATION PRESTWICK, SCOTLAND

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.02		0.05*		0.41*		0.30	
Feb.	.13		.03*		.18		.23	
March	.01		.07*		.21*		.59	
April	.01		.24*		.24*		.64	
May	.02		.10*		.72		.46	
June	.04		.24*		.20		.33	
July	.07		.07*		.58		.30	
Aug.	.17		.10*		.11		.37	
Sept.	.37		.10*		.48		.54	
Oct.	.26		.15*		.38		.38	
Nov.	.43		.37		.35		.29	
Dec.	.12		.66		.38		.19	
TOTAL	1.65		2.18		4.24		4.61	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.42		0.52	
Feb.	.22		1.04	
March	.47		.93	
April	.94		1.72	
May	.49		1.16	
June	.49		.89	
July	.23		.44	
Aug.	.19		.16	
Sept.	.17		.19	
Oct.	.21		.19	
Nov.	.22		.15	
Dec.	.79			
TOTAL	4.84			

Pre-1954	1.05
1954	1.65
1955	2.18
1956	4.24
1957	4.61
1958	4.84
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 701 LOCATION PRESTWICK, SCOTLAND

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1*		0.7*		0.5
Feb.		.2		.1*		.3		.4
March		.1		.1*		.3*		.9
April		.1		.4*		.4*		1.2
May		.1		.2*		1.1		.8
June		.2		.4*		.4		.6
July		.2		.1*		1.4		.5
Aug.		.5		.2*		.2		.6
Sept.		.9		.2*		1.0		.9
Oct.		.6		.2*		.7		.8
Nov.		1.0		.7		.7		.6
Dec.		.4		1.1		.7		.3
TOTAL		4.3		3.8		7.9		8.1

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.7		1.1
Feb.		.4		2.1
March		.9		1.8
April		1.6		3.1
May		1.0		2.0
June		1.0		1.5
July		.6		.7
Aug.		.5		.2
Sept.		.4		.3
Oct.		.7		.3
Nov.		.8		.2
Dec.		1.9		
TOTAL		10.5		

Pre-1954	1.8
1954	4.3
1955	3.8
1956	7.9
1957	8.1
1958	10.5
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 702 LOCATION RHEIN MAIN, GERMANY

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.07		0.03*		0.24*		0.15	
Feb.	.07		.68		.06		.39	
March	.08		.24*		.18*		.88	
April	.01		.21*		.56*		.47	
May	.01		.38*		.59		.27	
June	.04		.29*		.25		.37	
July	.09		.15*		.31		.89**	
Aug.	.12		.11*		.20		.87**	
Sept.	.11		.33*		.16		2.85**	
Oct.	.10		.20*		.17		.09**	
Nov.	.40		.11		.12		.06**	
Dec.	.28		.36		.13		.31	
TOTAL	1.38		3.09		2.97		7.60	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.24		0.52	
Feb.	.27		.41	
March	.66		1.35	
April	.83		1.51	
May	1.16		.90	
June	.79		.90	
July	.29		.33	
Aug.	.34		.37	
Sept.	.15		.39	
Oct.	.32			
Nov.	.18			
Dec.	.62			
TOTAL	5.85			

Pre-1954	0.58
1954	1.38
1955	3.09
1956	2.97
1957	7.60
1958	5.85
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 702

LOCATION RHEIN MAIN, GERMANY

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.1		0.1*		0.4*		0.3
Feb.		.1		1.4		.1		.6
March		.2		.5*		.3*		1.4
April		.1		.4*		.8*		.9
May		.1		.7*		1.0		.5
June		.1		.5*		.5		.7
July		.3		.3*		.7		1.5**
Aug.		.3		.2*		.4		1.4**
Sept.		.3		.5*		.3		3.6**
Oct.		.2		.3*		.3		.2**
Nov.		.9		.2		.2		.1**
Dec.		.4		.6		.3		.6
TOTAL		3.1		5.7		5.3		11.8

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.4		1.1
Feb.		.4		.8
March		1.3		2.6
April		1.4		2.7
May		2.3		1.6
June		1.5		1.5
July		.8		.5
Aug.		.9		.6
Sept.		.4		.6
Oct.		1.0		
Nov.		.5		
Dec.		1.5		
TOTAL		12.4		

Pre-1954	2.1
1954	3.1
1955	5.7
1956	5.3
1957	11.8
1958	12.4
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 703 LOCATION PRETORIA, UNION OF SOUTH AFRICA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		0.03*		0.03*		0.10	
Feb.	.03		.06		.04		.03	
March	.01		.03*		.02*		.06	
April	.01		.02*		.04*		.05	
May	.09		.19*		.22		.06	
June	.03		.02*		.04		.21	
July	.02		.02*		.08		.43	
Aug.	.09		.02*		.03		.11	
Sept.	.23		.03*		.19		.14	
Oct.	.21		.16*		.25		.13	
Nov.	.11		.02		.12		.05	
Dec.	.01		.18		.09		.08	
TOTAL	.88		0.78		1.15		1.45	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.08		0.11	
Feb.	.18		.06	
March	.10		.14**	
April	.04		.16	
May	.46		.20	
June	.07		.22	
July	.05		.20	
Aug.	.04		.19	
Sept.	.22		.18	
Oct.	.19		.11	
Nov.	.19		.07	
Dec.	.06		.08	
TOTAL	1.68		1.72	

Pre-1954	0.68
1954	.88
1955	0.78
1956	1.15
1957	1.45
1958	1.68
1959	1.72
Total	8.3

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 703

LOCATION PRETORIA, UNION OF SOUTH AFRICA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.	0.0		0.1*		0.0*		0.2	
Feb.	.1		.1		.1		.1	
March	.0		.1*		.0*		.1	
April	.1		.0*		.1*		.1	
May	.4		.3*		.6		.1	
June	.1		.0*		.1		.4	
July	.1		.0*		.2		.7	
Aug.	.1		.0*		.1		.2	
Sept.	.6		.0*		.4		.2	
Oct.	.5		.2*		.5		.3	
Nov.	.2		.0		.2		.1	
Dec.	.0		.3		.2		.1	
TOTAL		2.2		1.1		2.5		2.6

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.	0.1		0.2	
Feb.	.3		.1	
March	.2		.3**	
April	.1		.3	
May	.9		.3	
June	.1		.4	
July	.1		.3	
Aug.	.1		.3	
Sept.	.5		.3	
Oct.	.6		.2	
Nov.	.6		.1	
Dec.	.1		.1	
TOTAL		3.7		2.9

Pre-1954	0.9
1954	2.2
1955	1.1
1956	2.5
1957	2.6
1958	3.7
1959	2.9
Total	16

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 705 LOCATION DHAHRAN, SAUDI ARABIA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		.05*		0.20*		0.33	
Feb.	.10		.05		.28		.40	
March	.09		.02*		.53*		.39	
April	.08		.15*		.26*		1.24	
May	.07		.10*		.24		1.16	
June	.06		.02*		.13		.22	
July	.06		.01*		.12		.20	
Aug.	.04		.01*		.19		.30	
Sept.	.09		.00*		.19		.25	
Oct.	.03		.04*		.05		.10	
Nov.	.00		.01*		.08		.08	
Dec.	.09		.15		.18		.19	
TOTAL	.75		.61		2.45		4.86	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	1.07		1.16	
Feb.	.19		.59	
March	.42		1.37	
April	.60		.54	
May	.36		1.26	
June	.23		.32	
July	.18		.15	
Aug.	.12		.28	
Sept.	.06		.08	
Oct.	.03		.10	
Nov.	.23		.12	
Dec.	.39			
TOTAL	3.88			

Pre-1954	0.93
1954	.75
1955	.61
1956	2.45
1957	4.86
1958	3.88
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 705 LOCATION DHAHRAN, SAUDI ARABIA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1*		0.3*		0.6
Feb.		.2		.1		.4		.7
March		.5		.3*		.8*		.6
April		.4		.3*		.4*		2.3
May		.4		.2*		.4		2.0
June		.2		.0*		.3		.4
July		.2		.0*		.3		.3
Aug.		.1		.0*		.4		.5
Sept.		.2		.0*		.4		.4
Oct.		.1		.0*		.1		.2
Nov.		.0		.0*		.2		.2
Dec.		.2		.2		.3		.3
TOTAL		2.5		1.2		4.3		8.5

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		1.8		2.5
Feb.		.3		1.2
March		.8		2.6
April		1.0		1.0
May		.7		2.2
June		.4		.5
July		.5		.2
Aug.		.3		.4
Sept.		.1		.1
Oct.		.1		.1
Nov.		.6		.2
Dec.		.9		
TOTAL		7.5		

Pre-1954	2.5
1954	2.5
1955	1.2
1956	4.3
1957	8.5
1958	7.5
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 706 LOCATION SIDI SLIMANE, MOROCCO

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.04		0.06*		0.48*		0.26
Feb.		.04		.15		.87		.15
March		.07		.25*		.86*		.51
April		.03		.26*		.99*		.57
May		.03		.08*		.93		.35
June		.04		.34*		.25		.13
July		.02		.36*		.09		.32
Aug.		.02		.02*		.24		.28
Sept.		.03		.39*		.11		.59
Oct.		.06		.15*		.27		.53
Nov.		.19		.20		.22		.26
Dec.		.07		.53		.13		.65
TOTAL		.64		2.79		5.44		4.60

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.36		0.62
Feb.		.30		1.01
March		.42		1.59
April		4.27		1.02
May		.75		1.51
June		.72		.15
July		.18		.38
Aug.		.10**		.17
Sept.		.33**		.12
Oct.		.53**		
Nov.		.86		
Dec.		2.13		
TOTAL		10.95		

Pre-1954	0.79**
1954	.64
1955	2.79
1956	5.44
1957	4.60
1958	10.95
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 706 LOCATION SIDI SLIMANE, MOROCCO

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1*		0.8*		0.5
Feb.		.1		.3		1.4		.2
March		.4		.5*		1.3*		.8
April		.2		.5*		1.5*		1.1
May		.2		.1*		1.4		.6
June		.2		.6*		.5		.2
July		.0		.6*		.2		.5
Aug.		.1		.0*		.5		.4
Sept.		.1		.6*		.2		.9
Oct.		.1		.2*		.5		1.1
Nov.		.4		.4		.5		.5
Dec.		.1		.9		.2		1.2
TOTAL		1.9		4.8		9.0		8.0

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.6		1.3
Feb.		.5		2.0
March		.8		3.0
April		7.2		1.9
May		1.5		2.7
June		1.4		.3
July		.5		.6
Aug.		.3**		.3
Sept.		.8**		.2
Oct.		2.3**		
Nov.		2.4		
Dec.		5.1		
TOTAL		23.4		

Pre-1954	2.0**
1954	1.9
1955	4.8
1956	9.0
1957	8.0
1958	23.4
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 708 LOCATION OSLO, NORWAY

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.04		0.08*		0.10*		0.35
Feb.		.19		.07		.10		.12
March		.02		.07*		.26*		.20
April		.01		.15*		.21*		.29
May		.03		.16*		.52		.70
June		.05		.19*		.28		.55
July		.05		.06*		.29		.43
Aug.		.09		.09*		.12		.35
Sept.		.10		.10*		.34		.27
Oct.		.14		.12*		.14		.18
Nov.		.15		.09		.19		.11
Dec.		.04		.29		.12		.31
TOTAL		.91		1.47		2.67		3.86

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.58		0.12
Feb.		.16		.29
March		.28		1.03
April		.72		1.56
May		.43		1.07
June		.45		1.03
July		.27		
Aug.		.23		
Sept.		.19		
Oct.		.21		
Nov.		.19		
Dec.		.18		
TOTAL		3.79		

Pre-1954	0.77
1954	.91
1955	1.47
1956	2.67
1957	3.86
1958	3.79
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 708 LOCATION OSLO, NORWAY

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.2*		0.2*		0.6
Feb.		.3		.1		.2		.2
March		.1		.1*		.4*		.3
April		.1		.3*		.3*		.6
May		.1		.3*		.8		1.2
June		.2		.3*		.5		1.0
July		.2		.1*		.7		.7
Aug.		.2		.1*		.3		.5
Sept.		.3		.2*		.7		.5
Oct.		.3		.2*		.3		.4
Nov.		.3		.2		.4		.2
Dec.		.1		.5		.2		.6
TOTAL		2.2		2.6		5.0		6.8

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		1.0		0.3
Feb.		.3		.6
March		.5		2.0
April		1.2		2.8
May		.9		1.9
June		.9		1.7
July		.7		
Aug.		.3		
Sept.		.4		
Oct.		.6		
Nov.		.6		
Dec.		.4		
TOTAL		7.8		

Pre-1954	1.9
1954	2.2
1955	2.6
1956	5.0
1957	6.8
1958	7.8
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 710 LOCATION TRIPOLI, LIBYA, WHEELUS AFB

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		0.23*		0.36*		0.81	
Feb.	.11		.09**		.77		.17	
March	.06		.17*		.61*		.31	
April	.11		.22*		2.53*		.63	
May	.11		.31*		.46		.72	
June	.18		.27*		.13		1.12	
July	.07		.10*		.05		.20	
Aug.	.03		.01*		.08		.28	
Sept.	.11		.08*		.31		.76	
Oct.	.24		.42*		.33		1.15	
Nov.	.42		.33		.41		.38	
Dec.	.30		.80		.37		.39	
TOTAL	1.78		3.03		6.41		6.92	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	1.50		2.76	
Feb.	.57		3.20	
March	.36		1.92	
April	.84		1.23	
May	.42		3.81	
June	.62		.74	
July	.18		.73	
Aug.	.10		.16	
Sept.	.33		.27	
Oct.	.53			
Nov.	.35**			
Dec.	1.92			
TOTAL	7.72			

Pre-1954	0.80
1954	1.78
1955	3.03
1956	6.41
1957	6.92
1958	7.72
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 710 LOCATION TRIPOLI, LIBYA, WHEELUS AFB

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.5*		0.6*		1.4
Feb.		.2		.2**		1.2		.3
March		.4		.3*		.9*		.5
April		.6		.4*		3.8*		1.1
May		.6		.6*		.7		1.2
June		.7		.5*		.3		2.0
July		.2		.2*		.1		.3
Aug.		.1		.0*		.2		.4
Sept.		.3		.1*		.6		1.2
Oct.		.6		.7*		.6		2.6
Nov.		1.0		.6		.8		.8
Dec.		.5		1.4		.7		.7
TOTAL		5.2		5.5		10.5		12.5

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		2.5		5.9
Feb.		1.1		6.4
March		.7		3.7
April		1.4		2.2
May		.8		6.6
June		1.2		1.2
July		.5		1.2
Aug.		.3		.3
Sept.		.8		.4
Oct.		2.3		
Nov.		1.0**		
Dec.		4.6		
TOTAL		17.2		

Pre-1954	3.0
1954	5.2
1955	5.5
1956	10.5
1957	12.5
1958	17.2
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 711 LOCATION LAGOS, NIGERIA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.04		0.08*		.03*		0.06
Feb.		.02		.02*		.12		.10
March		.01		.03*		.14*		.25
April		.01		.06*		.31*		.23
May		.01		.00*		.18		.11
June		.01				.10		.42
July		.05				.11		
Aug.		.01				.12		.61
Sept.		.04				.06		
Oct.		.00				.33		.10
Nov.		.02				.09		.09
Dec.		.03						.41
TOTAL		.25						

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.07		
Feb.				
March				
April				
May				
June				
July				
Aug.				
Sept.				
Oct.				
Nov.				
Dec.				
TOTAL				

Pre-1954	0.78
1954	.25
1955	
1956	
1957	
1958	
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 711 LOCATION LAGOS, NIGERIA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.2*		0.0*		0.1
Feb.		.0		.0*		.2		.2
March		.0		.1*		.2*		.4
April		.1		.1*		.5*		.4
May		.1		.0*		.3		.2
June		.0				.2		.7
July		.1				.2		
Aug.		.0				.3		1.0
Sept.		.1				.1		
Oct.		.0				.6		.2
Nov.		.0				.2		.2
Dec.		.0						.7
TOTAL		.4						

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.1		
Feb.				
March				
April				
May				
June				
July				
Aug.				
Sept.				
Oct.				
Nov.				
Dec.				
TOTAL				

Pre-1954	2.0
1954	.4
1955	
1956	
1957	
1958	
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 713 **LOCATION** DURBAN, UNION OF SOUTH AFRICA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		0.03**		0.03*		0.07	
Feb.	.02		.06**		.05		.05	
March	.01		.03**		.02		.06	
April	.02		.02**		.04**		.05	
May	.02		.19**		1.51**		.06	
June	.01		.01*		.04**		.04	
July	.03		.02**		.09		.13	
Aug.	.02		.02**		.08		.20	
Sept.	.04		.26*		.05		.20	
Oct.	.09		.06*		.06		.21	
Nov.	.10		.06		.14		.08	
Dec.	.05		.04		.07		.07	
TOTAL	.45		.80		2.18		1.22	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.08		.10	
Feb.	.22		.12	
March	.01		.07	
April	.01		.72	
May	.10		.04	
June	.03		.04	
July	.07		.13	
Aug.	.05		.10	
Sept.	.18		.07	
Oct.	.10		.12	
Nov.	.09		.09	
Dec.	.09		.09	
TOTAL	1.03		1.69	

Pre-1954	0.79**
1954	.45
1955	.80
1956	2.18
1957	1.22
1958	1.03
1959	1.69
Total	8.2

Note: Pretoria only station available for interpolation

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 713

LOCATION DURBAN, UNION OF SOUTH AFRICA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1**		0.0*		0.1
Feb.		.0		.1**		.1		.1
March		.1		.1**		.0*		.1
April		.1		.0**		.1**		.1
May		.1		.3**		3.6**		.1
June		.0		.0*		.1**		.1
July		.1		.0**		.2		.2
Aug.		.1		.0**		.2		.4
Sept.		.1		.4*		.1		.3
Oct.		.2		.1*		.1		.5
Nov.		.2		.1		.3		.2
Dec.		.1		.1		.1		.1
TOTAL		1.1		1.3		4.9		2.3

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.1		0.2
Feb.		.5		.2
March		.0		.1
April		.0		1.3
May		.2		.1
June		.1		.1
July		.2		.2
Aug.		.1		.2
Sept.		.4		.1
Oct.		.3		.2
Nov.		.3		.1
Dec.		.2		.1
TOTAL		2.4		2.9

Pre-1954	2.0**
1954	1.1
1955	1.3
1956	4.9
1957	2.3
1958	2.4
1959	2.9
Total	17

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 714 LOCATION MONROVIA, LIBERIA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		0.05*		0.08*		0.11	
Feb.	.04		.02*		.06		.10	
March	.08		.05*		.13*		.13	
April	.08		.12*		.16*		.07	
May	.10		.10*		.30		.13	
June	.27		.09*		.29		.35	
July	.17		.06*		.22		.77	
Aug.	.14		.07*		.40		.50	
Sept.	.09		.07*		.29		.32	
Oct.	.14		.19*		.19		.13	
Nov.	.14		.09		.17		.09	
Dec.	.09		.05		.16		.09	
TOTAL	1.38		.96		2.45		2.79	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.60		0.27	
Feb.	.19		.45	
March	.19		.41	
April	.30		.33	
May	.33		.31	
June	.29		.38	
July	.30		.14	
Aug.	.32			
Sept.	.24			
Oct.	.21			
Nov.	.09			
Dec.	.15			
TOTAL	3.21			

Pre-1954	0.79**
1954	1.38
1955	.96
1956	2.45
1957	2.79
1958	3.21
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 714

LOCATION MONROVIA, LIBERIA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1*		0.1*		0.2
Feb.		.1		.0*		.1*		.2
March		.5		.1*		.2*		.2
April		.4		.2*		.2*		.1
May		.5		.2*		.5		.2
June		1.0		.2*		.6		.6
July		.6		.1*		.5		1.3
Aug.		.4		.1*		.9		.8
Sept.		.2		.1*		.7		.5
Oct.		.3		.3*		.4		.3
Nov.		.3		.1		.3		.2
Dec.		.2		.1		.3		.2
TOTAL		4.5		1.6		4.8		4.8

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		1.0		0.6
Feb.		.3		.9
March		.4		.8
April		.5		.6
May		.7		.5
June		.6		.6
July		.8		.2
Aug.		.8		
Sept.		.5		
Oct.		.6		
Nov.		.3		
Dec.		.4		
TOTAL		6.9		

Pre-1954	2.0**
1954	4.5
1955	1.6
1956	4.8
1957	4.8
1958	6.9
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 715 LOCATION MILAN, ITALY

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.07		0.02*		0.21*		0.08	
Feb.	.07		.04*		.06		.09	
March	.05		.05*		.39*		.10	
April	.04		.07*		.76*		.19	
May	.03		.34*		.98		.13	
June	.24		.73*		.39		.25	
July	.04		.30*		.29		.21	
Aug.	.03		.16*		.20		.18	
Sept.	.11		.10*		.55		.19	
Oct.	.01		.48*		.17		.09	
Nov.	.09		.06		.03		.04	
Dec.	.01		.14		.06		.05	
TOTAL	.79		2.49		4.09		1.60	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.17		0.27	
Feb.	.29		.34	
March	.23		.74	
April	.17		1.54	
May	.19		1.40	
June	.19		.96	
July	.08		.74	
Aug.	.10		.20	
Sept.	.08			
Oct.	.08			
Nov.	.07			
Dec.	.15			
TOTAL	1.80			

Pre-1954	0.79**
1954	.79
1955	2.49
1956	4.09
1957	1.60
1958	1.80
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 715 LOCATION MILAN, ITALY

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.1		0.0*		0.3*		0.1	
Feb.	.1		.1*		.1		.1	
March	.2		.1*		.6*		.2	
April	.2		.1*		1.1*		.3	
May	.2		.6*		1.6		.2	
June	.5		.7*		.7		.4	
July	.1		.5*		.6		.3	
Aug.	.1		.3*		.4		.3	
Sept.	.2		.2*		1.2		.3	
Oct.	.0		.8*		.3		.2	
Nov.	.2		.1		.1		.1	
Dec.	.0		.2		.1		.1	
TOTAL	1.9		3.7		7.1		2.6	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.3		0.6	
Feb.	.5		.7	
March	.5		1.4	
April	.3		2.8	
May	.4		2.4	
June	.4		1.6	
July	.2		1.2	
Aug.	.3		.3	
Sept.	.2			
Oct.	.2			
Nov.	.2			
Dec.	.4			
TOTAL	3.9			

Pre-1954	2.0**
1954	1.9
1955	3.7
1956	7.1
1957	2.6
1958	3.9
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 717 LOCATION ADDIS ABABA, ETHIOPIA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		0.08*		0.05*		0.05	
Feb.	.04		.03		.09		.21	
March	.10		.05*		.11*		.12	
April	.09		.10*		.34*		.17	
May	.15		.06*		.16		.36	
June	.33		.22*		.14		.55	
July	.21		.24*		.21		.57	
Aug.	.30		.31*		.27		.55	
Sept.	.26		.09*		.35		.40	
Oct.	.09		.06*		.22		.36	
Nov.	.03		.01		.01		.04	
Dec.	.01		.12		.04		.07	
TOTAL	1.65		1.37		1.99		3.45	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.19		0.17	
Feb.	.06		.26	
March	.11		.45	
April	.17		.74	
May	.16		- -	
June	.51		.46	
July	.70		.16	
Aug.	.53		.18	
Sept.	.43			
Oct.	.10			
Nov.	.02			
Dec.	.19			
TOTAL	3.17			

Pre-1954	0.79**
1954	1.65
1955	1.37
1956	1.99
1957	3.45
1958	3.17
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 717

LOCATION ADDIS ABABA, ETHIOPIA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.2*		0.1*		0.1
Feb.		.1		.1		.2		.3
March		.5		.1*		.2*		.2
April		.5		.2*		.5*		.3
May		.7		.1*		.3		.6
June		1.3		.4*		.3		1.0
July		.7		.4*		.5		.9
Aug.		.8		.5*		.6		.9
Sept.		.7		.1*		.8		.7
Oct.		.2		.1*		.4		.8
Nov.		.1		.0		.0		.1
Dec.		.0		.2		.1		.1
TOTAL		5.6		2.4		4.0		6.0

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.3		0.4
Feb.		.1		.5
March		.2		.9
April		.3		1.4
May		.3		- -
June		1.0		.8
July		1.9		.3
Aug.		1.4		.3
Sept.		1.0		
Oct.		.3		
Nov.		.1		
Dec.		.5		
TOTAL		7.4		

Pre-1954	2.0**
1954	5.6
1955	2.4
1956	4.0
1957	6.0
1958	7.4
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 722 LOCATION VIENNA, AUSTRIA, WIEN HOHE WARTE

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								.52
July								.91
Aug.								1.29
Sept.								2.11
Oct.								.09
Nov.								.20
Dec.								.09
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.17		0.32
Feb.		.39		.69
March		.60		.71
April		.79		2.44
May		.51		1.93
June		.84		1.84
July		.33		.88
Aug.		.30		.45
Sept.		.09		.25
Oct.		.17		.29
Nov.		.13		.16
Dec.		.58		.08
TOTAL		4.90		10.04

Pre-1954	
1954	
1955	
1956	
1957	
1958	4.90
1959	10.04
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 722 LOCATION VIENNA, AUSTRIA, WIEN HOHE WARTE

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								.9
July								1.5
Aug.								2.0
Sept.								3.4
Oct.								.2
Nov.								.4
Dec.								.2
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.3		0.7
Feb.		.7		1.4
March		1.2		1.3
April		1.4		4.4
May		1.0		3.4
June		1.6		3.1
July		.9		1.4
Aug.		.8		.7
Sept.		.2		.4
Oct.		.6		.4
Nov.		.4		.2
Dec.		1.4		.1
TOTAL		10.5		17.5

Pre-1954	
1954	
1955	
1956	
1957	
1958	10.5
1959	17.5
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 723 LOCATION DURBAN, UNION OF SOUTH AFRICA, NATAL AIRPORT

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.								
Feb.								
March								
April								
May								
June								.06
July								.19
Aug.								.29
Sept.								.23
Oct.								.05
Nov.								.08
Dec.								.22
TOTAL								

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.11		0.12
Feb.		.22		.08
March		.47		- -
April		.01		.09
May		.18		.18
June		.03		.10
July		.05		.21
Aug.		.19		.15
Sept.		.19		.10
Oct.		.06		.11
Nov.		.03		.07
Dec.		.07		
TOTAL		1.61		

Pre-1954	
1954	
1955	
1956	
1957	
1958	1.61
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 723

LOCATION DURBAN, UNION OF SOUTH AFRICA, NATAL AIRPORT

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								.1
July								.3
Aug.								.5
Sept.								.4
Oct.								.1
Nov.								.2
Dec.								.4
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.2		0.3
Feb.		.4		.2
March		.9		- -
April		.0		.2
May		.4		.3
June		.1		.2
July		.1		.3
Aug.		.5		.2
Sept.		.4		.1
Oct.		.2		.2
Nov.		.1		.1
Dec.		.2		
TOTAL		3.5		

Pre-1954	
1954	
1955	
1956	
1957	
1958	3.5
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 724 LOCATION SALZBURG, AUSTRIA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								.70
July								1.01
Aug.								.98
Sept.								2.85
Oct.								.07
Nov.								.10
Dec.								.42
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.26		0.32
Feb.		.49		.61
March		.31		.90
April		2.28		1.66
May		1.22		3.08
June		1.20		1.90
July		.53		.92
Aug.		.34		.68
Sept.		.20		.22
Oct.		1.04		.15
Nov.		.22		.12
Dec.		.98		.14
TOTAL		9.07		10.70

Pre-1954	
1954	
1955	
1956	
1957	
1958	9.07
1959	10.70
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 724 LOCATION SALZBURG, AUSTRIA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								1.2
July								1.6
Aug.								1.5
Sept.								4.6
Oct.								.2
Nov.								.2
Dec.								.8
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.4		0.7
Feb.		.8		1.2
March		.6		1.7
April		4.0		3.0
May		2.5		5.3
June		2.2		3.2
July		1.5		1.5
Aug.		.9		1.1
Sept.		.5		.3
Oct.		3.6		.2
Nov.		.6		.2
Dec.		2.3		.2
TOTAL		19.9		18.6

Pre-1954	
1954	
1955	
1956	
1957	
1958	19.9
1959	18.6
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 725 LOCATION INNSBRUCK, AUSTRIA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								1.02
July								.81
Aug.								2.40
Sept.								2.92
Oct.								.09
Nov.								.06
Dec.								.43
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.22		.44
Feb.		.53		.53
March		.58		.53
April		1.22		1.48
May		.66		2.15
June		.69		2.03
July		.37		.90
Aug.		.43		.43
Sept.		.23		.17
Oct.		.52		.48
Nov.		.09		1.34
Dec.		.89		.06
TOTAL		6.43		10.54

Pre-1954	
1954	
1955	
1956	
1957	
1958	6.43
1959	10.54
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 725 LOCATION INNSBRUCK, AUSTRIA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.								
Feb.								
March								
April								
May								
June								1.8
July								1.3
Aug.								3.8
Sept.								4.7
Oct.								.2
Nov.								.1
Dec.								.8
TOTAL								

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.4		0.9
Feb.		.9		1.1
March		1.1		1.0
April		2.1		2.7
May		1.3		3.7
June		1.3		3.4
July		1.0		1.5
Aug.		1.1		.7
Sept.		.5		.3
Oct.		1.8		.7
Nov.		.3		2.0
Dec.		2.1		.1
TOTAL		13.9		18.1

Pre-1954	
1954	
1955	
1956	
1957	
1958	13.9
1959	18.1
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 726 LOCATION KRIPPENSTEIN, AUSTRIA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								.68
July								.65
Aug.								.81
Sept.								2.42
Oct.								.13
Nov.								.04
Dec.								.08
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.08		0.17
Feb.		.14		.25
March		.44		.70
April		.38		.57
May		.58		1.43
June		.57		1.57
July		.28		1.18
Aug.		.30		.64
Sept.		.17		.32
Oct.		.13		.10
Nov.		.12		.32
Dec.		.27		.02
TOTAL		3.46		7.31

Pre-1954	
1954	
1955	
1956	
1957	
1958	3.46
1959	7.31
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 726 LOCATION KRIPPENSTEIN, AUSTRIA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								1.2
July								1.1
Aug.								1.3
Sept.								4.0
Oct.								.3
Nov.								.1
Dec.								.1
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.1		0.4
Feb.		.2		.5
March		.9		1.3
April		.7		1.0
May		1.2		2.5
June		1.1		2.6
July		.7		1.9
Aug.		.8		1.0
Sept.		.4		.5
Oct.		.4		.1
Nov.		.4		.5
Dec.		.7		.1
TOTAL		7.6		12.4

Pre-1954	
1954	
1955	
1956	
1957	
1958	7.6
1959	12.4
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 727 LOCATION KLAGENFURT, AUSTRIA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								1.06
July								1.08
Aug.								.83
Sept.								.46
Oct.								.09
Nov.								.06
Dec.								.09
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.18		0.14
Feb.		.07		.18
March		.24		.77
April		1.22		1.38
May		.65		1.55
June		1.02		1.32
July		.39		.73
Aug.		.37		1.17
Sept.		.13		.30
Oct.		.08		.13
Nov.		.20		.02
Dec.		.42		.10
TOTAL		4.97		7.79

Pre-1954	
1954	
1955	
1956	
1957	
1958	4.97
1959	7.79
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 727

LOCATION KLAGENFURT, AUSTRIA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								1.9
June								1.8
July								1.3
Aug.								.9
Sept.								.2
Oct.								.1
Nov.								.2
Dec.								
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.3		0.3
Feb.		.1		.4
March		.5		1.4
April		2.1		2.5
May		1.3		2.6
June		1.9		2.2
July		1.0		1.2
Aug.		1.0		1.9
Sept.		.3		.5
Oct.		.3		.2
Nov.		.6		.0
Dec.		1.0		.1
TOTAL		10.4		13.3

Pre-1954	
1954	
1955	
1956	
1957	
1958	10.4
1959	13.3
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 728 LOCATION PORT ELIZABETH, UNION OF SOUTH AFRICA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.								
Feb.								
March								
April								
May								
June								.07
July								.16
Aug.								.15
Sept.								.13
Oct.								.13
Nov.								.06
Dec.								.05
TOTAL								

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.27		0.09
Feb.		.10		.03
March		.36		.14**
April		.05		.14
May		.05		.48
June		.06		.22**
July		.04		.06
Aug.		.02		.09
Sept.		.08		.06
Oct.		.06		.12
Nov.		.07		.06
Dec.		.10		.10
TOTAL		1.26		1.59

Pre-1954	
1954	
1955	
1956	
1957	
1958	1.26
1959	1.59
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 728 LOCATION PORT ELIZABETH, UNION OF SOUTH AFRICA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.								
Feb.								
March								
April								
May								
June								.1
July								.3
Aug.								.2
Sept.								.2
Oct.								.3
Nov.								.1
Dec.								.1
TOTAL								

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.5		0.2
Feb.		.2		.1
March		.7		.3**
April		.1		.3
May		.1		.8
June		.1		.4**
July		.1		.1
Aug.		.0		.1
Sept.		.2		.1
Oct.		.2		.2
Nov.		.2		.1
Dec.		.2		.2
TOTAL		2.6		2.9

Pre-1954	
1954	
1955	
1956	
1957	
1958	2.6
1959	2.9
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 729 LOCATION CAPETOWN, UNION OF SOUTH AFRICA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								.18
July								.11
Aug.								1.30
Sept.								.01
Oct.								.08
Nov.								.05
Dec.								.10
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.14		0.07
Feb.		.16		.04
March		.34		.14**
April		.05		.08
May		.05		.09
June		.02		.10
July		.09		.11
Aug.		.09		.35
Sept.		.02		.13
Oct.		.03		.11
Nov.		.41		.08
Dec.		.24		.06
TOTAL		1.64		1.36

Pre-1954	
1954	
1955	
1956	
1957	
1958	1.64
1959	1.36
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 729 LOCATION CAPETOWN, UNION OF SOUTH AFRICA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								.3
July								.2
Aug.								2.1
Sept.								.0
Oct.								.2
Nov.								.1
Dec.								.2
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.2		0.2
Feb.		.3		.1
March		.7		.3**
April		.1		.1
May		.1		.2
June		.0		.2
July		.2		.2
Aug.		.2		.6
Sept.		.0		.2
Oct.		.1		.2
Nov.		1.1		.1
Dec.		.6		.1
TOTAL		3.6		2.5

Pre-1954	
1954	
1955	
1956	
1957	
1958	3.6
1959	2.5
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 730 LOCATION BEAUFORT, UNION OF SOUTH AFRICA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								.04
July								.16
Aug.								.14
Sept.								.02
Oct.								.25
Nov.								.03
Dec.								.08
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		1.24		0.14
Feb.		.10		.39
March		.24		.14**
April		.08		.09
May		.04		.19
June		.09		.19
July		.05		.19
Aug.		.01		.15
Sept.		.07		.19
Oct.		.29		.14
Nov.		.10		.08
Dec.		.24		.07
TOTAL		2.55		1.96

Pre-1954	
1954	
1955	
1956	
1957	
1958	2.55
1959	1.96
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 730 LOCATION BEAUFORT, UNION OF SOUTH AFRICA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								.1
July								.3
Aug.								.2
Sept.								.0
Oct.								.5
Nov.								.1
Dec.								.1
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		2.0		0.3
Feb.		.2		.8
March		.5		.3**
April		.1		.2
May		.1		.3
June		.2		.3
July		.1		.3
Aug.		.0		.2
Sept.		.2		.3
Oct.		.8		.2
Nov.		.3		.1
Dec.		.6		.1
TOTAL		5.1		3.4

Pre-1954	
1954	
1955	
1956	
1957	
1958	5.1
1959	3.4
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 731 LOCATION BLOEMFONTEIN, UNION OF SOUTH AFRICA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.								
Feb.								
March								
April								
May								
June								.71
July								.35
Aug.								.45
Sept.								.16
Oct.								.09
Nov.								.11
Dec.								.14
TOTAL								

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.15		0.05
Feb.		.13		.04
March		.11		.14**
April		.32		.26
May		.12		.13
June		.12		.37
July		.05		.23
Aug.		.04		.06
Sept.		.07		.17
Oct.		.13		.14
Nov.		.12		.10
Dec.		.14		.08
TOTAL		1.50		1.77

Pre-1954	
1954	
1955	
1956	
1957	
1958	1.50
1959	1.77
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 731 LOCATION BLOEMFONTEIN, UNION OF SOUTH AFRICA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								1.2
July								.6
Aug.								.7
Sept.								.3
Oct.								.2
Nov.								.2
Dec.								.3
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.3		.1
Feb.		.2		.1
March		.2		.3**
April		.6		.5
May		.3		.2
June		.2		.6
July		.1		.4
Aug.		.1		.1
Sept.		.2		.3
Oct.		.5		.2
Nov.		.4		.2
Dec.		.3		.1
TOTAL		3.4		3.1

Pre-1954	
1954	
1955	
1956	
1957	
1958	3.4
1959	3.1
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION #. 732 LOCATION WINDHOEK, UNION OF SOUTH AFRICA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.								
Feb.								
March								
April								
May								
June								.91
July								.17
Aug.								.16
Sept.								.05
Oct.								.02
Nov.								.08
Dec.								.10
TOTAL								

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.09		0.14
Feb.		.88		.06
March		.12		.14**
April		.14		.19
May		.19		.15
June		.08		.22**
July		.09		.53
Aug.		.19		.32
Sept.		.10		.13
Oct.		.09		.14
Nov.		.21		.07
Dec.		.22		.07
TOTAL		2.40		2.16

Pre-1954	
1954	
1955	
1956	
1957	
1958	2.40
1959	2.16
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 732 LOCATION WINDHOEK, UNION OF SOUTH AFRICA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								1.5
July								.3
Aug.								.2
Sept.								.1
Oct.								.0
Nov.								.2
Dec.								.2
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.1		.3
Feb.		1.4		.1
March		.2		.3**
April		.3		.3
May		.4		.3
June		.1		.4**
July		.2		.9
Aug.		.5		.5
Sept.		.2		.2
Oct.		.3		.2
Nov.		.6		.1
Dec.		.5		.1
TOTAL		4.8		3.7

Pre-1954	
1954	
1955	
1956	
1957	
1958	4.8
1959	3.7
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 735 LOCATION STOCKHOLM, SWEDEN

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.								
Feb.								
March								
April								
May								
June								
July								
Aug.								.13
Sept.								
Oct.								.11
Nov.								.15
Dec.								.04
TOTAL								

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.07		0.15
Feb.		.06		.06
March		.14		.25
April		1.45		.69
May		.56		1.10
June		.85		.47
July		1.46		.65
Aug.		.11		.22
Sept.		.08		.17
Oct.		.14		.26
Nov.		.24		.18
Dec.		.27		.13
TOTAL		5.43		4.33

Pre-1954	
1954	
1955	
1956	
1957	
1958	5.43
1959	4.33
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 735 LOCATION STOCKHOLM, SWEDEN

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								
July								
Aug.								.2
Sept.								
Oct.								.2
Nov.								.3
Dec.								.1
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.1		.3
Feb.		.1		.1
March		.3		.5
April		2.5		1.3
May		1.1		1.9
June		1.7		.8
July		4.2		1.1
Aug.		.3		.4
Sept.		.2		.3
Oct.		.4		.4
Nov.		.7		.3
Dec.		.6		.2
TOTAL		12.2		7.6

Pre-1954	
1954	
1955	
1956	
1957	
1958	12.2
1959	7.6
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 737 LOCATION DAKAR, FRENCH WEST AFRICA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.								
Feb.								
March								
April								
May								
June								
July								
Aug.								.11
Sept.								.05
Oct.								.06
Nov.								.02
Dec.								.18
TOTAL								

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.				
Feb.				
March		.01		
April		.03		
May		.37		
June		.42		
July		.14		
Aug.				
Sept.				
Oct.		.15		
Nov.		.18		
Dec.				
TOTAL				

Pre-1954	
1954	
1955	
1956	
1957	
1958	
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 737

LOCATION DAKAR, FRENCH WEST AFRICA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								
July								.2
Aug.								.1
Sept.								.1
Oct.								.0
Nov.								.3
Dec.								
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.				
Feb.				
March		.0		
April		.1		
May		.7		
June		.8		
July		.4		
Aug.				
Sept.				
Oct.		.6		
Nov.		.5		
Dec.				
TOTAL				

Pre-1954	
1954	
1955	
1956	
1957	
1958	
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 801 LOCATION HIROSHIMA, JAPAN

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		0.07*		0.41*		0.32	
Feb.	.08		.06		.21		.29	
March	.04		.13*		.52*		.48	
April	.03		.19*		.67*		1.33	
May	.17		.22*		.50		.59	
June	.12		.12*		.84		.23	
July	.11		.08*		.23		.56	
Aug.	.05		.06*		.16		.30**	
Sept.	.13		.05*		.27		.36	
Oct.	.06		.11*		.20		.30	
Nov.	.26		.28		.13		.09	
Dec.	.05		.22		.40		.23	
TOTAL	1.14		1.59		4.54		5.08	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.30		0.85	
Feb.	.24		1.27	
March	.82		2.77	
April	1.83		2.39	
May	.52		.99	
June	.35		.57	
July	1.39		.51	
Aug.	.30		.16	
Sept.	.20		.09	
Oct.	.58		.09	
Nov.	.27		.10	
Dec.	.40		.07	
TOTAL	7.20		9.86	

Pre-1954	1.09
1954	1.14
1955	1.59
1956	4.54
1957	5.08
1958	7.20
1959	9.86
Total	30.5

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 801 LOCATION HIROSHIMA, JAPAN

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.0		0.1*		0.7*		0.6	
Feb.	.1		.1		.3		.5	
March	.3		.2*		.8*		.8	
April	.2		.4*		1.0*		2.5	
May	1.0		.4*		.8		1.0	
June	.5		.2*		1.6		.4	
July	.3		.1*		.5		.9	
Aug.	.1		.1*		.3		.6**	
Sept.	.3		.1*		.6		.6	
Oct.	.1		.2*		.4		.6	
Nov.	.6		.5		.2		.2	
Dec.	.1		.4		.8		.4	
TOTAL	3.6		2.8		8.0		9.1	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.5		1.8	
Feb.	.4		2.6	
March	1.6		5.2	
April	3.1		4.3	
May	1.1		1.7	
June	.8		.9	
July	3.7		.8	
Aug.	.8		.3	
Sept.	.5		.1	
Oct.	2.1		.1	
Nov.	.8		.1	
Dec.	.9		.1	
TOTAL	16.3		18.0	

Pre-1954	4.2
1954	3.6
1955	2.8
1956	8.0
1957	9.1
1958	16.3
1959	18.0
Total	62

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 802 LOCATION NAGASAKI, JAPAN

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		0.46*		0.76*		0.93	
Feb.	.09		.06		.25		.51	
March	.01		.15*		.41*		.36	
April	.03		.22*		.37*		1.16	
May	.15		.13*		.50		.37	
June	.15		.10*		.68		.19	
July	.21		.05*		.27		.85	
Aug.	.03		.03*		.15		.34	
Sept.	.05		.06*		.09		.19	
Oct.	.07		.04*		.24		.28	
Nov.	.28		.15		.08		.09	
Dec.	.05		.24		.30		.39	
TOTAL	1.16		1.69		4.10		5.66	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.38		1.10	
Feb.	.32		1.09	
March	.69		1.56	
April	1.22		2.53	
May	.24		.93	
June	.49		.35	
July	2.60		.64	
Aug.	.33		.18	
Sept.	.10		.04	
Oct.	.30		.08	
Nov.	.22		.06	
Dec.	.72		.08	
TOTAL	7.61		8.64	

Pre-1954	1.38
1954	1.16
1955	1.69
1956	4.10
1957	5.66
1958	7.61
1959	8.64
Total	30.2

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 802 LOCATION NAGASAKI, JAPAN

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.0		1.0*		0.1*		1.6	
Feb.	.2		.1		.4		.8	
March	.1		.3*		.6*		.6	
April	.1		.4*		.5*		2.2	
May	.8		.2*		.8		.6	
June	.5		.2*		1.3		.3	
July	.7		.1*		.5		1.4	
Aug.	.1		.1*		.3		.5	
Sept.	.1		.1*		.2		.3	
Oct.	.2		.1*		.4		.6	
Nov.	.6		.3		.2		.2	
Dec.	.1		.4		.6		.7	
TOTAL	3.5		3.3		5.9		9.8	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.6		2.4	
Feb.	.5		2.2	
March	1.3		2.9	
April	2.1		4.6	
May	.5		1.6	
June	1.0		.6	
July	7.2		1.0	
Aug.	.8		.3	
Sept.	.2		.1	
Oct.	1.2		.1	
Nov.	.6		.1	
Dec.	1.7		.1	
TOTAL	17.7		16.0	

Pre-1954	6.6
1954	3.5
1955	3.3
1956	5.9
1957	9.8
1958	17.7
1959	16.0
Total	63

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 804 LOCATION TAIPEI, TAIWAN

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.04		0.23*		1.10*		0.87
Feb.		.06		.04		.71		1.96
March		.02		.11*		1.08*		1.31
April		.14		.27*		1.13*		1.45
May		.25		.23*		1.52		.68
June		.07		.38*		.85		.17
July		.20		.14*		1.77		.19
Aug.		.07		.08*		.53		.31
Sept.		.12		.16*		.54		.54
Oct.		.46		.62*		.19**		.27
Nov.		.51		.61		1.19		.29
Dec.		.05		1.02		.22**		.40
TOTAL		1.99		3.89		10.83		8.44

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.72		1.12
Feb.		.76		1.26
March		.53		1.18
April		.51		1.44
May		.54		.24
June		.53		.54
July		1.82		.18
Aug.		.18		.23
Sept.		.15		.20
Oct.		.48		.16
Nov.		.70		.13
Dec.		.84		.11
TOTAL		7.76		6.79

Pre-1954	- -
1954	1.99
1955	3.89
1956	10.83
1957	8.44
1958	7.76
1959	6.79
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 804 LOCATION TAIPEI, TAIWAN

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.5*		1.8*		1.5
Feb.		.1		.1		1.2		3.3
March		.1		.2*		1.6*		2.1
April		.7		.5*		1.7*		2.7
May		1.2		.4*		2.4		1.2
June		.3		.7*		1.7		.3
July		.7		.2*		4.9		.3
Aug.		.2		.1*		1.2		.5
Sept.		.3		.3*		1.2		.8
Oct.		1.1		1.0*		.4**		.6
Nov.		1.2		1.1		2.3		.6
Dec.		.1		1.8		.5**		.7
TOTAL		6.0		6.9		20.9		14.6

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		1.2		2.4
Feb.		1.3		2.5
March		1.1		2.3
April		.9		2.6
May		1.1		.4
June		1.1		.9
July		4.9		.3
Aug.		.5		.4
Sept.		.4		.3
Oct.		1.8		.2
Nov.		2.0		.2
Dec.		2.0		.2
TOTAL		18.3		12.7

Pre-1954	- -
1954	6.0
1955	6.9
1956	20.9
1957	14.6
1958	18.3
1959	12.7
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 805 LOCATION TOKYO, JAPAN, HANEDA AFB

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		0.06*		0.60*		0.27	
Feb.	.09**		.11		.34		.75	
March	.13**		.31*		.54*		.70	
April	.03		.41*		.54*		1.13	
May	.20		.28*		.44		.90	
June	.09		.26*		.37		.58	
July	.09		.10*		.26		.86	
Aug.	.12		.12*		.30		.35	
Sept.	.23		.14*		.55		.61	
Oct.	.29		.49*		.70		.41	
Nov.	.31		.22		.33		.15	
Dec.	.37		.24		.20		.27	
TOTAL	1.99		2.74		5.17		6.98	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.23		0.45	
Feb.	.25		.94	
March	3.24		1.85	
April	2.20		2.07	
May	1.00		2.16	
June	.43		1.42	
July	.54		.98	
Aug.	.25		.36	
Sept.	.24		.16	
Oct.	.50			
Nov.	.53			
Dec.	.42			
TOTAL	9.83			

Pre-1954	0.83
1954	1.99
1955	2.74
1956	5.17
1957	6.98
1958	9.83
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 805 LOCATION TOKYO, JAPAN, HANEDA AFB

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.0		0.1*		1.0*		0.5
Feb.		..2**		.2		.5		1.3
March		.3**		.6*		.8*		1.1
April		.2		.7*		.8*		2.1
May		1.1		.5*		.7		1.5
June		.3		.5*		.7		1.0
July		.3		.2*		.7		1.4
Aug.		.3		.2*		.6		.5
Sept.		.6		.2*		1.2		1.1
Oct.		.7		.8*		1.3		.8
Nov.		.7		.4		.6		.3
Dec.		1.2		.4		.4		.5
TOTAL		5.9		4.8		9.3		12.1

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.4		1.0
Feb.		.4		1.9
March		6.3		3.5
April		3.8		3.7
May		2.1		3.8
June		.8		2.4
July		1.5		1.6
Aug.		.7		.6
Sept.		.5		.3
Oct.		1.9		
Nov.		1.5		
Dec.		1.0		
TOTAL		20.9		

Pre-1954	3.2
1954	5.9
1955	4.8
1956	9.3
1957	12.1
1958	20.9
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 806 LOCATION MISAWA, JAPAN

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.	0.04		0.08*		0.48*		0.43	
Feb.	.11		.12		.29		.50	
March	.35		.16*		1.16*		.51	
April	.02		.31*		.55*		1.01	
May	.18		.61*		.60		.58	
June	.08		.22*		.22		.29	
July	.08		.12*		.51		.57	
Aug.	.07		.15*		.23		.39	
Sept.	.22		.10*		.35		.56	
Oct.	.27		.31*		.39		.72	
Nov.	.29		.27		.34		.18	
Dec.	.05		.81		.22		.41	
TOTAL	1.76		3.25		5.34		6.15	

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.	0.22		0.79	
Feb.	.27**		1.61	
March	1.41		2.81	
April	2.66		2.45	
May	1.10		2.67	
June	.39		2.12	
July	.37		.85	
Aug.	.50		.21	
Sept.	.49			
Oct.	.95			
Nov.	.92			
Dec.	1.02			
TOTAL	10.30			

Pre-1954	0.68
1954	1.76
1955	3.25
1956	5.34
1957	6.15
1958	10.30
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 806 LOCATION MISAWA, JAPAN

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.2*		0.8*		0.8
Feb.		.2		.2		.5		.8
March		.6		.3*		1.8*		.8
April		.1		.6*		.8*		1.9
May		1.0		1.1*		1.0		1.0
June		.3		.4*		.4		.5
July		.3		.2*		1.1		.9
Aug.		.1		.2*		.5		.6
Sept.		.6		.2*		.7		.9
Oct.		.7		.5*		.7		1.6
Nov.		.7		.4		.6		.4
Dec.		.1		1.4		.4		.7
TOTAL		4.7		5.7		9.3		10.8

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.4		1.7
Feb.		.5*		3.2
March		2.7		5.3
April		4.6		4.4
May		2.2		4.6
June		.8		3.6
July		1.0		1.4
Aug.		1.3		.3
Sept.		1.1		
Oct.		3.7		
Nov.		2.7		
Dec.		2.4		
TOTAL		23.4		

Pre-1954	2.6
1954	4.7
1955	5.7
1956	9.3
1957	10.8
1958	23.4
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 810 LOCATION MELBOURNE, AUSTRALIA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.04		0.02*		0.23*		0.05
Feb.		.10		.02*		.05		.09
March		.01		.05*		.09*		.03
April		.01		.04*		.35*		.12
May		.01		.38*				.08
June		.01		.06*				.42
July		.01		.06*				.07
Aug.		.22**		.05*				.49
Sept.		.07		.15*				.31
Oct.		.09		.19*		.23		1.30
Nov.		.12		.06		.14		.26
Dec.		.03		.19		.13		.46
TOTAL		.72		1.29				3.68

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.				0.06
Feb.				.10
March				.04
April				
May				
June				
July				
Aug.				
Sept.				
Oct.				
Nov.				
Dec.				
TOTAL				

Pre-1954	- -
1954	.72
1955	1.29
1956	
1957	3.68
1958	
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 810 LOCATION MELBOURNE, AUSTRALIA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		.0		0.0*		0.4*		0.1
Feb.		.2		.0*		.1		.2
March		.0		.1*		.1*		.0
April		.0		.1*		.5*		.2
May		.1		.7*				.1
June		.0		.1*				.8
July		.0		.1*				.1
Aug.		.5**		.1*				.8
Sept.		.2		.3*				.5
Oct.		.2		.3*		.4		2.6
Nov.		.3		.1		.3		.5
Dec.		.1		.3		.2		.8
TOTAL		1.6		2.2				6.7

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.				0.1
Feb.				.2
March				.1
April				
May				
June				
July				
Aug.				
Sept.				
Oct.				
Nov.				
Dec.				
TOTAL				

Pre-1954	- -
1954	1.6
1955	2.2
1956	
1957	6.7
1958	
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 811 LOCATION WELLINGTON, NEW ZEALAND

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		0.03*		0.14*		0.07	
Feb.	.05		.03*		.04		.03	
March	.01		.06*		.22*		.07	
April	.00		.07*		.06*		.07	
May	.01		.28*		.02		.12	
June	.02		.03*		.06		.10	
July	.05		.04*		.03		.32	
Aug.	.03		.04**		.03		.12	
Sept.	.12		.02*		.03		.14**	
Oct.	.20		.04*		.04		.17**	
Nov.	.05		.05		.08		.27	
Dec.	.04		.05		.07		.06	
TOTAL	.62		.74		.82		1.54	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.07		0.05	
Feb.	.19		.07	
March	.06		.07	
April	.07		.06	
May	.13		.16	
June	.03		.14	
July	.17		.12	
Aug.	.06		.08	
Sept.	.03		.07	
Oct.	.04			
Nov.	.02			
Dec.	.06			
TOTAL	.93			

Pre-1954	0.78
1954	.62
1955	.74
1956	.82
1957	1.54
1958	.93
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 811 LOCATION WELLINGTON, NEW ZEALAND

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1*		0.2*		0.1
Feb.		.1		.1*		.1		.1
March		.1		.1*		.3*		.1
April		.0		.1*		.1*		.1
May		.0		.5*		.0		.2
June		.1		.1*		.1		.2
July		.1		.1*		.1		.5
Aug.		.1		.1**		.1		.2
Sept.		.3		.0*		.1		.3**
Oct.		.5		.1*		.1		.4**
Nov.		.1		.1		.2		.5
Dec.		.1		.1		.1		.1
TOTAL		1.5		1.5		1.5		2.8

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.1		0.1
Feb.		.3		.1
March		.1		.1
April		.1		.1
May		.3		.3
June		.1		.2
July		.5		.2
Aug.		.2		.1
Sept.		.1		.1
Oct.		.1		
Nov.		.1		
Dec.		.1		
TOTAL		2.1		

Pre-1954	2.8
1954	1.5
1955	1.5
1956	1.5
1957	2.8
1958	2.1
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 813 LOCATION COLOMBO, CEYLON

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.04		0.02*		0.15*		0.06
Feb.		.04		.02*		.03		.07
March		.27		.07*		.11*		.12
April		.15		.05*		.21*		.07
May	2.37	.74		.13*		.06		.23
June		.11		.13*		.07		.14
July		.12		.23*		.12		.20
Aug.		.10		.03*		.08		.19
Sept.		.04		.04*		.12		.12
Oct.		.08		.10*		.17		.09
Nov.		.04		.04		.09		.05
Dec.		.05		.04		.07		.27
TOTAL		1.78		0.90		1.28		1.61

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.10		
Feb.		.14		
March		.08		
April		.17		
May		.31		1.67
June		.19		.51
July		.52		.82
Aug.		.26		.15
Sept.		.16		
Oct.		.18		
Nov.		.05**		
Dec.		.04**		
TOTAL		2.20		

Pre-1954	1.32
1954	1.78
1955	0.90
1956	1.28
1957	1.61
1958	2.20
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 813

LOCATION COLOMBO, CEYLON

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1*		0.2*		0.1
Feb.		.1		.0*		.1		.1
March		1.6		.1*		.2*		.2
April		.8		.1*		.3*		.1
May	13.4	4.2		.2*		.1		.4
June		.4		.2*		.1		.3
July		.4		.4*		.3		.3
Aug.		.3		.1*		.2		.3
Sept.		.1		.1*		.3		.2
Oct.		.2		.2*		.3		.2
Nov.		.1		.1		.2		.1
Dec.		.1		.1		.1		.5
TOTAL		8.3		1.7		2.4		2.8

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.2		
Feb.		.2		
March		.2		
April		.3		
May		.6		2.9
June		.4		.9
July		1.4		1.3
Aug.		.7		.2
Sept.		.4		
Oct.		.5		
Nov.		.1**		
Dec.		.1**		
TOTAL		5.1		

Pre-1954	5.8
1954	8.3
1955	1.7
1956	2.4
1957	2.8
1958	5.1
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 814 LOCATION SINGAPORE

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		.05**		0.10*		0.03	
Feb.	.06		.03**		.03		.08	
March	.31		.10**		.24*		.04	
April	.13		.09**		.06*		.04	
May	.44		.15**		.05		.07	
June	.06		.08**		.19		.05	
July	.07		.07**		.14		.19**	
Aug.	.08		.04*		.09		.21**	
Sept.	.07		.20*		.08		.15	
Oct.	.03		.03*		.14		.11	
Nov.	.05		.09**		.09		.04	
Dec.	.07		.06**		.08**		.28**	
TOTAL	1.41		.99		1.29		1.29	

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.06		0.23	
Feb.	.10		.26	
March	.12		.15	
April	.07		.17	
May	.05		.11	
June	.15		—	
July	1.71		.18	
Aug.	.35**			
Sept.	.25**			
Oct.	.04			
Nov.	.08			
Dec.	.17**			
TOTAL	3.15			

Pre-1954	1.32
1954	1.41
1955	.99
1956	1.29
1957	1.29
1958	3.15
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 814 LOCATION SINGAPORE

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		.1**		0.2*		0.1
Feb.		.1		.0**		.1		.1
March		2.0		.2**		.4*		.1
April		.7		.2**		.1*		.1
May		2.7		.3**		.1		.1
June		.2		.1**		.4		.1
July		.2		.1**		.4		.3**
Aug.		.2		.1*		.2		.3**
Sept.		.2		.3*		.2		.2
Oct.		.1		.0*		.3		.2
Nov.		.1		.1**		.2		.1
Dec.		.1		.1**		.1**		.5**
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.1		0.5
Feb.		.2		.5
March		.2		.3
April		.1		.3
May		.1		.2
June		.3		--
July		4.4		.3
Aug.		.9**		
Sept.		.6**		
Oct.		.1		
Nov.		.2		
Dec.		.4**		
TOTAL				

Pre-1954	5.8
1954	6.6
1955	1.6
1956	2.7
1957	2.2
1958	8.6
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION #: 815 LOCATION SYDNEY, AUSTRALIA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04		0.10*		0.18*		0.07
Feb.		.05		.04*		.10		.10
March		.01		.06**		.11*		.10
April		.00		.06*		.07*		.04
May		.02		.41*		.05		.02
June		.01		.04**		.07		.04
July		.01		.05**		.05		.02
Aug.		.56		.05**		.03		.11
Sept.		.15		.09**		.02		.12
Oct.		.09		.08*		.19		.20
Nov.		.10		.08		.11		.05
Dec.		.03		.13		.11		.67
TOTAL		1.07		1.19		1.09		1.54

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.12		0.10
Feb.		.20		.11
March		.04		.09
April		.03		.10
May		.04		.15
June		.02		.29
July		.06		
Aug.		.12		
Sept.		.07		
Oct.		.04**		
Nov.		.04		
Dec.		.07		
TOTAL		.85		

Pre-1954	1.32
1954	1.07
1955	1.19
1956	1.09
1957	1.54
1958	.85
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 815 LOCATION SYDNEY, AUSTRALIA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.2*		0.3*		0.1
Feb.		.1		.1*		.2		.2
March		.0		.1**		.2*		.2
April		.0		.1*		.1*		.1
May		.1		.7*		.1		.0
June		.0		.1**		.1		.1
July		.0		.1**		.1		.0
Aug.		.8		.1**		.1		.2
Sept.		.4		.1**		.0		.2
Oct.		.2		.1*		.4		.4
Nov.		.2		.1		.2		.1
Dec.		.0		.2		.2		1.2
TOTAL		1.8		2.0		2.0		2.8

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.2		0.2
Feb.		.3		.2
March		.1		.2
April		.0		.2
May		.1		.3
June		.4		.5
July		.1		
Aug.		.3		
Sept.		.2		
Oct.		.2**		
Nov.		.1		
Dec.		.2		
TOTAL		2.2		

Pre-1954	5.8
1954	1.8
1955	2.0
1956	2.0
1957	2.8
1958	2.2
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 821 LOCATION QUETTA, PAKISTAN

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								0.15
Feb.								.49
March								.58
April								1.18
May								.67
June								
July								
Aug.								
Sept.								
Oct.								
Nov.								
Dec.								
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.				1.15
Feb.		.29		1.90
March		.60		1.17
April		.57		1.82
May		.50		1.17
June		.20		.56
July		.27		.38
Aug.		.14		.32
Sept.		.05		.19
Oct.		.15		.11
Nov.		.12		.08
Dec.		.57		.08
TOTAL				8.93

Pre-1954	
1954	
1955	
1956	
1957	
1958	
1959	8.93
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 821 LOCATION QUETTA, PAKISTAN

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								0.3
Feb.								.8
March								.9
April								2.2
May								1.1
June								
July								
Aug.								
Sept.								
Oct.								
Nov.								
Dec.								
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.				2.4
Feb.		.5		3.8
March		1.2		2.2
April		1.0		3.4
May		1.0		2.1
June		.4		.9
July		.7		.6
Aug.		.4		.5
Sept.		.1		.3
Oct.		.6		.2
Nov.		.3		.1
Dec.		1.3		.1
TOTAL				16.6

Pre-1954	
1954	
1955	
1956	
1957	
1958	
1959	16.6
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 822 LOCATION PESHAWAR, PAKISTAN

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.								
Feb.								
March								
April								
May								
June								
July								
Aug.								
Sept.								
Oct.								
Nov.								
Dec.								
TOTAL								

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.				1.33
Feb.		.35		1.98
March		1.54		1.25**
April		2.35		1.69
May		3.38		3.89
June		.98		1.58
July		.56		.84
Aug.		.67		.36
Sept.		.17		.36
Oct.		.27		.34
Nov.		.12		.08
Dec.		.36		.11
TOTAL				13.81

Pre-1954	
1954	
1955	
1956	
1957	
1958	
1959	13.81
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 822 LOCATION PESHAWAR, PAKISTAN

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								
July								
Aug.								
Sept.								
Oct.								
Nov.								
Dec.								
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.				2.9
Feb.		.6		4.1
March		3.0		2.4**
April		4.2		3.1
May		6.9		6.8
June		2.1		2.7
July		1.4		1.4
Aug.		1.7		.6
Sept.		.4		.6
Oct.		.8		.5
Nov.		.3		.1
Dec.		.9		.2
TOTAL				25.4

Pre-1954	
1954	
1955	
1956	
1957	
1958	
1959	25.4
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 823 LOCATION KARACHI, PAKISTAN

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								0.06
Feb.								.15
March								.14
April								.22
May								.19
June								
July								
Aug.								
Sept.								
Oct.								
Nov.								
Dec.								
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.				0.32
Feb.		.25		.39
March		.12		1.25**
April		.19		1.41**
May		.41		.40
June		.30		.44
July		.31		.41
Aug.		.21		.31
Sept.		.13		.26
Oct.		.04		.11
Nov.		.10		.15
Dec.		.30		.10
TOTAL				5.55

Pre-1954	
1954	
1955	
1956	
1957	
1958	
1959	5.55
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 823 LOCATION KARACHI, PAKISTAN

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								0.1
Feb.								.2
March								.2
April								.4
May								.3
June								
July								
Aug.								
Sept.								
Oct.								
Nov.								
Dec.								
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.				0.7
Feb.		.4		.8
March		.2		2.4**
April		.3		2.6**
May		.8		.7
June		.6		.7
July		.8		.7
Aug.		.6		.5
Sept.		.3		.4
Oct.		.1		.2
Nov.		.3		.2
Dec.		.7		.1
TOTAL				10.0

Pre-1954	
1954	
1955	
1956	
1957	
1958	
1959	10.0
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 824 LOCATION DACCA, PAKISTAN

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								0.16
Feb.								.22
March								.36
April								.43
May								.40
June								
July								
Aug.								.41
Sept.								
Oct.								
Nov.								
Dec.								
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.66		0.33
Feb.		.33		.82
March		.36		1.32
April		.90		.73
May		.72		1.27
June		.35		.78
July		.21		.22
Aug.		.25		.42
Sept.		.08		.06
Oct.		.08		.18
Nov.		.03		.03
Dec.		.06		.07
TOTAL		4.03		6.23

Pre-1954	
1954	
1955	
1956	
1957	
1958	4.03
1959	6.23
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 824 LOCATION DACCA, PAKISTAN

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								0.3
Feb.								.4
March								.6
April								.8
May								.7
June								
July								
Aug.								.6
Sept.								
Oct.								
Nov.								
Dec.								
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		1.1		0.7
Feb.		.6		1.6
March		.7		2.5
April		1.5		1.3
May		1.5		2.2
June		.7		1.3
July		.5		.4
Aug.		.7		.7
Sept.		.2		.1
Oct.		.2		.3
Nov.		.1		.0
Dec.		.2		.1
TOTAL		7.6		11.2

Pre-1954	
1954	
1955	
1956	
1957	
1958	7.6
1959	11.2
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 825 LOCATION BANGKOK, THAILAND

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.01		0.01*		0.06*		
Feb.		.05		.01*				
March		.37		.02*		.05*		.08
April		.08		.02*		.11*		.06
May		.33		.03*				.01
June		.10		.04*				.06
July		.10		.04*				.36
Aug.		.07		.02*				.32
Sept.		.02		.04*				.01
Oct.		.01		.06*				.18
Nov.		.05						.01
Dec.		.01						.02
TOTAL		1.20						

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.07		.26
Feb.		.03		.25
March		.02		.18
April		.07		.19
May		.19		.56
June		.15		.17
July		.65		.19
Aug.		.25		.12
Sept.		.10		.63
Oct.		.02		.08
Nov.		.03		.06
Dec.		.03		.10
TOTAL		1.61		2.79

Pre-1954	
1954	
1955	
1956	
1957	
1958	1.61
1959	2.79
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 825 LOCATION BANGKOK, THAILAND

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.0*		0.1*		
Feb.		.1		.0*				
March		1.8		.0*		.1*		.1
April		.3		.0*		.2*		.1
May		2.1		.1*				.0
June		.2		.1*				.1
July		.2		.1*				.6
Aug.		.1		.0*				.5
Sept.		.1		.1*				.0
Oct.		.1		.1*				.4
Nov.		.2						.0
Dec.		.0						.0
TOTAL		5.2						

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.1		.5
Feb.		.0		.5
March		.0		.3
April		.1		.3
May		.4		1.0
June		.3		.3
July		1.8		.3
Aug.		.7		.2
Sept.		.2		1.0
Oct.		.1		.1
Nov.		.1		.1
Dec.		.1		.1
TOTAL		3.9		4.7

Pre-1954	
1954	
1955	
1956	
1957	
1958	3.9
1959	4.7
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 826 LOCATION CHIENGMAI, THAILAND

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								.10
April								.16
May								.23
June								.14
July								.22
Aug.								.12
Sept.								.04
Oct.								.05
Nov.								.01
Dec.								.06
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.05		0.11
Feb.		.07		.53
March		.01		.42
April		.10		.81
May		.15		.55
June		.09		.15
July		.10		.10
Aug.		.07		.12
Sept.		.12		.11
Oct.		.07		.50
Nov.		.02		.07
Dec.		.02		.07
TOTAL		.84		3.54

Pre-1954	
1954	
1955	
1956	
1957	
1958	.84
1959	3.54
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 826 LOCATION CHIENGMAI, THAILAND

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								.2
April								.3
May								.4
June								.3
July								.4
Aug.								.2
Sept.								.1
Oct.								.1
Nov.								.1
Dec.								.1
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.1		0.2
Feb.		.1		1.1
March		.0		.8
April		.2		1.5
May		.3		1.0
June		.2		.3
July		.3		.2
Aug.		.2		.2
Sept.		.3		.2
Oct.		.2		.8
Nov.		.1		.1
Dec.		.0		.1
TOTAL		2.0		6.5

Pre-1954	
1954	
1955	
1956	
1957	
1958	2.0
1959	6.5
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 828 LOCATION SONGKHLA, THAILAND

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								.12
April								.04
May								.01
June								.00
July								.15
Aug.								.11
Sept.								.02
Oct.								.16
Nov.								.03
Dec.								.02
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.07		0.13
Feb.		.02		.10
March		.01		.12
April		.01		.07
May		.02		.21
June		.10		.17
July		.61		.14
Aug.		.16		.01
Sept.		.16		.12
Oct.		.04		.02
Nov.		.13		.03
Dec.		.18		.06
TOTAL		1.51		1.18

Pre-1954	
1954	
1955	
1956	
1957	
1958	1.51
1959	1.18
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 828 LOCATION SONGKHLA, THAILAND

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								.2
April								.1
May								.0
June								.0
July								.2
Aug.								.2
Sept.								.0
Oct.								.3
Nov.								.1
Dec.								.0
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.1		0.3
Feb.		.0		.2
March		.0		.2
April		.0		.1
May		.0		.4
June		.2		.3
July		1.6		.2
Aug.		.4		.0
Sept.		.4		.2
Oct.		.1		.0
Nov.		.4		.0
Dec.		.4		.1
TOTAL		3.6		2.0

Pre-1954	
1954	
1955	
1956	
1957	
1958	3.6
1959	2.0
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 827 LOCATION UBOL, THAILAND

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.								
Feb.								
March								.06
April								.01
May								.11
June								.07
July								.27
Aug.								.11
Sept.								.21
Oct.								.03
Nov.								.01
Dec.								.01
TOTAL								

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.04		0.04
Feb.		.01		.06
March		.04		.14
April		.06		.10
May		.28		.16
June		.18		.51
July		.81		.11
Aug.		.21		.14
Sept.		.24		.46
Oct.		.07		.06
Nov.		.10		.07
Dec.		.01		.05
TOTAL		2.05		1.90

Pre-1954	
1954	
1955	
1956	
1957	
1958	2.05
1959	1.90
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 827 LOCATION UBOL, THAILAND

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								.1
April								.0
May								.2
June								.1
July								.4
Aug.								.2
Sept.								.3
Oct.								.1
Nov.								.0
Dec.								.0
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.1		0.1
Feb.		.0		.1
March		.1		.3
April		.1		.2
May		.6		.3
June		.4		.9
July		2.2		.2
Aug.		.5		.2
Sept.		.6		.7
Oct.		.2		.1
Nov.		.3		.1
Dec.		.0		.1
TOTAL		5.1		3.3

Pre-1954	
1954	
1955	
1956	
1957	
1958	5.1
1959	3.3
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 829 LOCATION TAIPEI, TAIWAN, SECOND STATION

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.								
Feb.								
March								
April								
May								
June								
July								
Aug.								
Sept.								
Oct.								
Nov.								
Dec.								
TOTAL								

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.20		0.22
Feb.		.28		.31
March		.11		.12
April		.09		.52
May		.80		.23
June		.30		.15
July		.54		.19
Aug.		.22		.25
Sept.		.15		.24
Oct.		.05		.10
Nov.		.04		.10
Dec.		.15		.10
TOTAL		2.93		2.53

Pre-1954	
1954	
1955	
1956	
1957	
1958	2.93
1959	2.53
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 829 LOCATION TAIPEI, TAIWAN, SECOND STATION

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.								
Feb.								
March								
April								
May								
June								
July								
Aug.								
Sept.								
Oct.								
Nov.								
Dec.								
TOTAL								

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.3		0.5
Feb.		.5		.6
March		.2		.2
April		.2		.9
May		1.5		.4
June		.8		.2
July		1.4		.3
Aug.		.6		.4
Sept.		.4		.4
Oct.		.2		.2
Nov.		.1		.1
Dec.		.3		.1
TOTAL		6.5		4.3

Pre-1954	
1954	
1955	
1956	
1957	
1958	6.5
1959	4.3
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 830 LOCATION RANGOON, BURMA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								
July								
Aug.								.22
Sept.								1.48
Oct.								.10
Nov.								.06
Dec.								.03
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.03		- -
Feb.		.35		- -
March		.06		- -
April		1.33		.22
May		.16		.44
June		.49		.25
July		.67		- -
Aug.		.34		.27
Sept.		.18		
Oct.		.10		
Nov.		.04		
Dec.				
TOTAL				

Pre-1954	
1954	
1955	
1956	
1957	
1958	
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 830 LOCATION RANGOON, BURMA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								
July								
Aug.								.4
Sept.								2.5
Oct.								.2
Nov.								.1
Dec.								.1
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.1		- -
Feb.		.6		- -
March		.1		- -
April		2.2		.4
May		.3		.8
June		1.0		.4
July		1.8		- -
Aug.		.9		.4
Sept.		.4		
Oct.		.4		
Nov.		.1		
Dec.				
TOTAL				

Pre-1954	
1954	
1955	
1956	
1957	
1958	
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 831 LOCATION TAIPEI, TAIWAN, THIRD STATION

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								
July								
Aug.								
Sept.								
Oct.								
Nov.								
Dec.								
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.				0.76
Feb.				.33
March				1.28
April		.23		.95
May		.69		.54
June		.50		.14
July		.91		.26
Aug.		.15		.32
Sept.		.19		.22
Oct.		.08		.51
Nov.		.12		.35
Dec.		.27		.25
TOTAL				5.91

Pre-1954	
1954	
1955	
1956	
1957	
1958	
1959	5.91
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 831 LOCATION TAIPEI, TAIWAN, THIRD STATION

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								
July								
Aug.								
Sept.								
Oct.								
Nov.								
Dec.								
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.				1.6
Feb.				.7
March				2.4
April		.4		1.7
May		1.3		.9
June		1.1		.2
July		2.4		.4
Aug.		.4		.5
Sept.		.4		.3
Oct.		.3		.8
Nov.		.3		.5
Dec.		.6		.4
TOTAL				10.4

Pre-1954	
1954	
1955	
1956	
1957	
1958	
1959	10.4
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 832 LOCATION AKYAB, BURMA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								
July								
Aug.								.08
Sept.								.13
Oct.								.03
Nov.								.05
Dec.								.01
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.01		
Feb.				
March				
April		.33		
May		.39		
June		.38		
July		.63		
Aug.		.36		
Sept.		.20		
Oct.				.00
Nov.				.00
Dec.				.00
TOTAL				

Pre-1954	
1954	
1955	
1956	
1957	
1958	
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 832 LOCATION AKYAB, BURMA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								
July								
Aug.								.1
Sept.								.2
Oct.								.1
Nov.								.1
Dec.								.0
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.0		
Feb.				
March				
April		.6		
May		.8		
June		.8		
July		1.6		
Aug.		1.0		
Sept.		.5		
Oct.				.0
Nov.				.0
Dec.				.0
TOTAL				

Pre-1954	
1954	
1955	
1956	
1957	
1958	
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 834 / LOCATION MOULMEIN, BURMA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								
July								
Aug.								.25
Sept.								
Oct.								.03
Nov.								.07
Dec.								.11
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.11		
Feb.				
March				
April				
May		.24		
June		.56		
July		.63		
Aug.		.21		
Sept.		.21		
Oct.		.10		
Nov.				
Dec.				
TOTAL				

Pre-1954	
1954	
1955	
1956	
1957	
1958	
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 834 LOCATION MOULMEIN, BURMA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.								
Feb.								
March								
April								
May								
June								
July								
Aug.								.4
Sept.								
Oct.								.1
Nov.								.1
Dec.								.2
TOTAL								

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.2		
Feb.				
March				
April				
May		.5		
June		1.1		
July		1.7		
Aug.		.5		
Sept.		.5		
Oct.		.3		
Nov.				
Dec.				
TOTAL				

Pre-1954	
1954	
1955	
1956	
1957	
1958	
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 833 LOCATION LASHIO, BURMA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								
July								
Aug.								.27
Sept.								.33
Oct.								.03
Nov.								.04
Dec.								.10
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.06		
Feb.		.11		
March		.25		
April		.29		
May		.80		
June		.23		
July		.24		
Aug.		.13		
Sept.				
Oct.				
Nov.				
Dec.				
TOTAL				

Pre-1954	
1954	
1955	
1956	
1957	
1958	
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 833 LOCATION LASHIO, BURMA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								
July								
Aug.								.5
Sept.								.5
Oct.								.1
Nov.								.1
Dec.								.2
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.1		
Feb.		.2		
March		.5		
April		.5		
May		1.6		
June		.5		
July		.6		
Aug.		.3		
Sept.				
Oct.				
Nov.				
Dec.				
TOTAL				

Pre-1954	
1954	
1955	
1956	
1957	
1958	
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 835 LOCATION PROME, BURMA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								
July								
Aug.								0.02
Sept.								.31
Oct.								.08
Nov.								.05
Dec.								.09
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		.10		
Feb.		.16		
March		.22		
April		.15		
May		.07		
June		.25		
July		.39		
Aug.				
Sept.				
Oct.				
Nov.				
Dec.				
TOTAL				

Pre-1954	
1954	
1955	
1956	
1957	
1958	
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 835 LOCATION PROME, BURMA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								
July								
Aug.								.0
Sept.								.5
Oct.								.2
Nov.								.1
Dec.								.2
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.2		
Feb.		.3		
March		.4		
April		.3		
May		.1		
June		.5		
July		1.0		
Aug.				
Sept.				
Oct.				
Nov.				
Dec.				
TOTAL				

Pre-1954	
1954	
1955	
1956	
1957	
1958	
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 837 LOCATION MANDALAY, BURMA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								
July								
Aug.								.08
Sept.								.06
Oct.								.01
Nov.								
Dec.								
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.02		0.06
Feb.		.01		.08
March		.29		.26
April		.28		- -
May		.36		.10
June		.16		.18
July		.13		.21
Aug.				.11
Sept.				.05
Oct.				.18
Nov.				.08
Dec.				.09
TOTAL				

Pre-1954	
1954	
1955	
1956	
1957	
1958	
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 837 LOCATION MANDALAY, BURMA

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.								
Feb.								
March								
April								
May								
June								
July								
Aug.								.1
Sept.								.1
Oct.								.0
Nov.								
Dec.								
TOTAL								

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.0		0.1
Feb.		.0		.2
March		.6		.5
April		.5		---
May		.7		.2
June		.3		.3
July		.4		.3
Aug.				.2
Sept.				.1
Oct.				.3
Nov.				.1
Dec.				.1
TOTAL				

Pre-1954	
1954	
1955	
1956	
1957	
1958	
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 838 LOCATION MYITKYINA, BURMA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								
July								
Aug.								
Sept.								
Oct.								.10
Nov.								.04
Dec.								.05
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.12		
Feb.		.24		
March		.65		
April		.39		
May		.27		
June		.24		
July		.08		
Aug.		.20		
Sept.				
Oct.				
Nov.				
Dec.				
TOTAL				

Pre-1954	
1954	
1955	
1956	
1957	
1958	
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 838 LOCATION MYITKYINA, BURMA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								
July								
Aug.								
Sept.								
Oct.								.2
Nov.								.1
Dec.								.1
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.2		
Feb.		.4		
March		1.2		
April		.8		
May		.6		
June		.6		
July		.2		
Aug.		.5		
Sept.				
Oct.				
Nov.				
Dec.				
TOTAL				

Pre-1954	
1954	
1955	
1956	
1957	
1958	
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 836 LOCATION MERGUI, BURMA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								
July								
Aug.								.24
Sept.								.41
Oct.								.05
Nov.								.02
Dec.								.17
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.11		
Feb.				
March				
April		.07		
May		.14		
June		.14		
July		.34		
Aug.		.17		
Sept.		.28		
Oct.		.18		
Nov.				
Dec.				
TOTAL				

Pre-1954	
1954	
1955	
1956	
1957	
1958	
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 836 LOCATION MERGUI, BURMA

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.								
Feb.								
March								
April								
May								
June								
July								
Aug.								.4
Sept.								.7
Oct.								.1
Nov.								.0
Dec.								.3
TOTAL								

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.2		
Feb.		.0		
March				
April		.1		
May		.3		
June		.3		
July		.9		
Aug.		.5		
Sept.		.6		
Oct.		.5		
Nov.				
Dec.				
TOTAL				

Pre-1954	
1954	
1955	
1956	
1957	
1958	
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 901

LOCATION GUAM, MARIANAS

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		.04		0.04*		0.78*		0.25
Feb.		.09		.05*		.30		.30
March	1.43	0.43		.09*		.65*		.24
April		.48		.08*		.23*		.21
May		1.54		.28*	10.57	4.09		.29
June		.28		.07*	8.30	3.16		.15
July		.16		.05*	2.61	1.52		.20
Aug.		.20		.05*		1.42		.27
Sept.		.16		.08*		.64		.23
Oct.		.19		.13*		.53		.30
Nov.		.17		.14		.30		.07
Dec.		.01		.19**		.33		.29
TOTAL		3.75		1.25		13.95		2.80

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		.14		0.48
Feb.		.23		.75
March		.19		.87
April		.22		.71
May	5.93	5.18		.49
June	8.60	5.67		.17
July	12.65	5.81		.30
Aug.		1.13		.26
Sept.		.45		.18
Oct.		.18		
Nov.		.23		
Dec.		.24		
TOTAL		19.67		

Pre-1954	2.59
1954	3.75
1955	1.25
1956	13.95
1957	2.80
1958	19.67
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 901 LOCATION GUAM, MARIANAS

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1*		1.3*		0.4
Feb.		.2		.1*		.5		.5
March	4.2	2.7		.2*		1.1*		.4
April		2.7		.2*		.3*		.4
May		8.2		.5*	21.5	7.1		.5
June		1.0		.1*	16.1	4.5		.3
July		.5		.1*	7.1	2.7		.3
Aug.		.6		.1*		3.3		.4
Sept.		.4		.1*		1.4		.4
Oct.		.5		.2*		1.0		.8
Nov.		.4		.2		.6		.1
Dec.		.0		.3*		.6		.5
TOTAL		17.2		2.2		24.4		5.0

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.2		1.0
Feb.		.4		1.5
March		.4		1.7
April		.4		1.3
May	11.7	10.0		.9
June	16.8	10.8		.3
July	34.8	13.5		.5
Aug.		2.9		.4
Sept.		1.0		.3
Oct.		.6		
Nov.		.7		
Dec.		.6		
TOTAL		41.5		

Pre-1954	13.2
1954	17.2
1955	2.2
1956	24.4
1957	5.0
1958	41.5
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 903 LOCATION IWO JIMA, VOLCANO ISLANDS

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		.04		0.11*		0.28*		0.37
Feb.		.04		.11		.17		.49
March		.04		.08*		.25*		.52
April		.12		.19*		.14*		.94
May		.31		.08*		.32		.26
June		.15		.06*		.10		.06
July		.11		.07*		.18		.18
Aug.		.08		.05*		.34		.08
Sept.		.09		.07*		.23		.17
Oct.		.10		.14*		.14		.13
Nov.		.15		.37		.11		.25
Dec.		.05		.24		.40		.23
TOTAL		1.28		1.57		2.66		3.68

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.11		0.65
Feb.		.35		.27
March		.41		.58
April		.30		.65
May		.77		.30
June		2.01		.18
July	3.42	2.04		.22
Aug.		.26		.19
Sept.		.14		.14
Oct.		.23		.40
Nov.		.14		.17
Dec.		.59		.15
TOTAL		7.35		3.90

Pre-1954	14.06
1954	1.28
1955	1.57
1956	2.66
1957	3.68
1958	7.35
1959	3.90
Total	34.5

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 903 LOCATION IWO JIMA, VOLCANO ISLANDS

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.2*		0.5*		0.7
Feb.		.1		.2		.3		.8
March		.2		.2*		.4*		.8
April		.7		.3*		.2*		1.6
May		1.5		.1*		.7		.4
June		.6		.1*		.2		.1
July		.4		.1*		.4		.3
Aug.		.2		.1*		.7		.1
Sept.		.2		.1*		.5		.3
Oct.		.2		.2*		.3		.3
Nov.		.4		.6		.2		.5
Dec.		.1		.4		.7		.4
TOTAL		4.6		2.6		5.1		6.3

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.2		1.4
Feb.		.6		.5
March		.8		1.1
April		.5		1.2
May		1.5		.5
June		4.1		.3
July	9.3	4.3		.4
Aug.		.7		.3
Sept.		.3		.2
Oct.		.7		.6
Nov.		.4		.2
Dec.		1.4		.2
TOTAL		15.5		6.9

Pre-1954	91.5
1954	4.6
1955	2.6
1956	5.1
1957	6.3
1958	15.5
1959	6.9
Total	132

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 905 LOCATION JOHNSON ISLAND

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.01		0.08*		0.66*		0.29
Feb.		.04		.11		.49		.29
March	0.79	0.21		.09*		.76*		.29
April	3.59	1.28		.11*		.46*		.18
May		.79		.08*		.52		.25
June		.12		.08*		.92		.15
July		.14		.04*	5.92	2.14		.49
Aug.		.07		.05*		.37		.43**
Sept.		.05		.05*		.44		.12
Oct.		.08		.06*		.21		.12
Nov.		.20		.33		.18		.07
Dec.		.08		.24		.32		.16
TOTAL		3.07		1.32		7.47		2.84

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.21		.54
Feb.		.21		.85
March		1.16**		.78
April		.83		.55
May		.46		.44
June		.55		.21
July		1.64		.11
Aug.		.35		.13
Sept.		0.21		.12
Oct.		.21		.06
Nov.		.26		.14
Dec.		.37		.14
TOTAL		6.46		4.07

Pre-1954	0.63
1954	3.07
1955	1.32
1956	7.47
1957	2.84
1958	6.46
1959	4.07
Total	25.9

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 905 LOCATION JOHNSON ISLAND

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.2*		1.1*		0.5
Feb.		.1		.2		.8		.5
March	7.7	1.4		.2*		1.2*		.5
April	23.8	7.5		.2*		.7*		.3
May		4.5		.1*		.8		.4
June		.5		.1*		1.8		.3
July		.2		.1*	11.8	4.8		.8
Aug.		.2		.1*		.9		.7**
Sept.		.1		.1*		.9		.2
Oct.		.2		.1*		.4		.3
Nov.		.4		.5		.3		.1
Dec.		.1		.4		.6		.3
TOTAL		15.2		2.3		14.3		4.9

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.3		1.1
Feb.		.3		1.7
March		2.3**		1.5
April		1.4		1.0
May		.9		.8
June		1.1		.4
July		4.2		.2
Aug.		.9		.2
Sept.		0.5		.2
Oct.		.6		.1
Nov.		.7		.2
Dec.		.9		.2
TOTAL		14.1		7.6

Pre-1954	2.2
1954	15.2
1955	2.3
1956	14.3
1957	4.9
1958	14.1
1959	7.6
Total	61

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 904 LOCATION MANILA PHILLIPINES, CLARKE AFB

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.	0.04		0.03*			0.12*		0.05
Feb.	.04		.04			.02		.03
March	.30		.00*			.09*		.05
April	.26		.17*			.08*		.10
May	.33		.01*			.58**		.15
June	.23		.07*			.78		.07
July	.20		.04*		2.33	0.64		.23
Aug.	.08		.03*			.40		.20
Sept.	.25		.05*			.16		.14
Oct.	.07		.13*			.14		.09
Nov.	.04		.08			.11		.03
Dec.	.01		.03			.06		.21
TOTAL	1.85		.68			3.18		1.35

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.09		.07	
Feb.	.20		.06	
March	.08		.18	
April	.20		.12	
May	.84		.12	
June	.56		.12	
July	.91		.10	
Aug.	.25		.12	
Sept.	.14		.17	
Oct.	.07		.13	
Nov.	.03			
Dec.	.07			
TOTAL	3.44			

Pre-1954	2.54
1954	1.85
1955	.68
1956	3.18
1957	1.35
1958	3.44
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 904 LOCATION MANILA PHILLIPINES, CLARKE AFB

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.0		0.1*		0.2*		0.1
Feb.		.1		.1		.0		.1
March		1.7		.0*		.1*		.1
April		1.5		.3*		.1*		.2
May		1.7		.0*		.9**		.3
June		.9		.1*		1.5		.1
July		.7		.1*	6.9	1.6		.4
Aug.		.1		.0*		.9		.3
Sept.		.6		.1*		.4		.2
Oct.		.2		.1*		.3		.2
Nov.		.1		.1		.2		.1
Dec.		.0		.1		.1		.4
TOTAL		7.6		1.1		6.3		2.5

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.1		.2
Feb.		.3		.1
March		.2		.3
April		.3		.2
May		1.6		.2
June		1.2		.2
July		2.5		.2
Aug.		.6		.2
Sept.		.3		.3
Oct.		.2		.2
Nov.		.1		
Dec.		.2		
TOTAL		7.6		

Pre-1954	13.4
1954	7.6
1955	1.1
1956	6.3
1957	2.5
1958	7.6
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 906 LOCATION FRENCH FRIGATE SHOALS, HAWAII

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.01		0.04*		0.29*		0.43
Feb.		.04		.05*		1.21		.37
March		.02		.17*		.52*		.21
April		0.39		.07*		.46*		.44
May		.37		.10*		.30		.33
June		.09		.07*		.45		.19
July		.06		.06*	1.82	1.03		.26
Aug.		.09		.08*		.23		.21
Sept.		.06		.07*		.42		.26
Oct.		.20		.06*		.38		.20**
Nov.		.10		.14		.21		.17
Dec.		.04		.19**		.13		.17
TOTAL		1.47		1.10		5.63		3.24

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.46	0.26		1.14
Feb.		.33		.74
March		1.09		.51
April		.79		1.01
May		.20		.73
June		.42		.38
July		.26		.22
Aug.		.18		.13
Sept.		.87		.24
Oct.		.16		.07
Nov.		.41		.07
Dec.		.29		.07
TOTAL		5.26		5.31

Pre-1954	0.83
1954	1.47
1955	1.10
1956	5.63
1957	3.24
1958	5.26
1959	5.31
Total	22.8

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 906 LOCATION FRENCH FRIGATE SHOALS, HAWAII

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.0		0.1*		0.5*		0.7
Feb.		.0		.1*		2.0		.6
March		.1		.3*		.8*		.3
April		2.7		.1*		.7*		.8
May		2.1		.2*		.5		.6
June		.3		.1*		.9		.4
July		.2		.1*	3.7	2.0		.4
Aug.		.3		.1*		.5		.3
Sept.		.1		.1*		.9		.5
Oct.		.5		.1*		.7		.4**
Nov.		.2		.2		.4		.4
Dec.		.1		.3**		.3		.3
TOTAL		6.6		1.8		10.1		5.7

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.	0.8	0.4		2.5
Feb.		.5		1.5
March		2.2		1.0
April		1.4		1.8
May		.4		1.3
June		.8		.6
July		.7		.3
Aug.		.5		.2
Sept.		1.9		.4
Oct.		.5		.1
Nov.		1.2		.1
Dec.		.7		.1
TOTAL		11.2		9.9

Pre-1954	3.1
1954	6.6
1955	1.8
1956	10.1
1957	5.7
1958	11.2
1959	9.9
Total	48

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 907 LOCATION MIDWAY ISLAND

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.01		0.07*		0.97*		0.60
Feb.		.04		.52		.44		.46
March		.04		.09*		.20*		.30
April		.03		.06*		.25*		.72
May		.09		.07*		.29		.54
June		.07		.06*		.17		.14
July		.12		.14*		.30		.29
Aug.		.03		.12*		.31		.39
Sept.		.12		.09*		.65		.20
Oct.		.05		.13*		.21		.19
Nov.		.01		.38		.08		.09
Dec.		.04		2.36		.26		.13
TOTAL		.65		4.09		4.13		4.05

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.49		2.30
Feb.		.58		.76
March		.76		1.72
April		.50		2.60
May		.37		.78
June	1.94	1.30		.65
July		.22		.57
Aug.		.39		.34
Sept.		.13		.31
Oct.		.19		.32
Nov.		.38		.33
Dec.		.74		.10
TOTAL		6.05		10.78

Pre-1954	1.30
1954	.65
1955	4.09
1956	4.13
1957	4.05
1958	6.05
1959	10.78
Total	31.0

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 907 LOCATION MIDWAY ISLAND

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.0		0.1*		1.6*		1.0
Feb.		.1		1.0		.7		.8
March		.2		.2*		.3*		.5
April		.2		.1*		.8*		1.4
May		.5		.1*		.5		.9
June		.3		.1*		.3		.3
July		.4		.2*		.7		.5
Aug.		.1		.2*		.7		.6
Sept.		.3		.1*		1.4		.4
Oct.		.1		.2*		.4		.4
Nov.		.1		.6		.2		.2
Dec.		.1		4.1		.5		.2
TOTAL		2.4		7.0		8.1		7.2

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.8		5.0
Feb.		1.0		1.5
March		1.5		3.3
April		.9		4.8
May		.7		1.3
June	3.8	2.6		1.1
July		.6		.9
Aug.		1.1		.5
Sept.		.3		.5
Oct.		.6		.5
Nov.		1.1		.5
Dec.		1.8		.1
TOTAL		13.0		20.0

Pre-1954	5.1
1954	2.4
1955	7.0
1956	8.1
1957	7.2
1958	13.0
1959	20.0
Total	63.0

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 909 LOCATION CANTON, PHOENIX ISLANDS

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.04		0.02*		0.07*		0.05
Feb.		.08		.03		.01		.04
March	3.67	.91		.02*		.04*		.05
April		.08		.01*		.01*		.06
May		.35		.00*		.09		.07
June		.15		.01*		.19		.18
July		.07		.02*		.15		.08
Aug.		.07		.02*		.06		.11
Sept.		.06		.01*		.12		.10
Oct.		.06		.00*		.03		.09
Nov.		.03		.08		.02		0.05
Dec.		.05		.02		.04		.50
TOTAL		1.95		.24		.83		1.38

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.15		0.04
Feb.		.09		.07
March		.05		.21
April		.05		.09
May		.37		.15
June		.07		.24
July		.13		.09
Aug.		.40		
Sept.		.08		
Oct.		.10		
Nov.		.02		
Dec.		.02		
TOTAL		1.53		

Pre-1954	0.45
1954	1.95
1955	.24
1956	.83
1957	1.38
1958	1.53
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 909 LOCATION CANTON, PHOENIX ISLANDS

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.0*		0.1*		0.1
Feb.		.1		.1		.0		.1
March	27.8	6.2		.0*		.1*		.1
April		.5		.0*		.0*		.1
May		1.9		.0*		.1		.1
June		.6		.0*		.4		.3
July		.2		.0*		.3		.1
Aug.		.2		.0*		.1		.2
Sept.		.1		.0*		.3		.2
Oct.		.1		.0*		.1		.2
Nov.		.1		.1		.0		.1
Dec.		.1		.0		.1		.9
TOTAL		10.1		0.2		1.6		2.5

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.3		0.1
Feb.		.1		.1
March		.1		.4
April		.1		.2
May		.8		.3
June		.2		.4
July		.3		.2
Aug.		1.0		
Sept.		.2		
Oct.		.3		
Nov.		.1		
Dec.		.1		
TOTAL		3.6		

Pre-1954	1.4
1954	10.1
1955	0.2
1956	1.6
1957	2.5
1958	3.6
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 908 LOCATION WAKE ISLAND

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04		0.05*		0.30*		0.22
Feb.		.05		.11		.50		.28
March		.09		.21*		.22*		.21
April		.08		.15*		.14*		.22
May		.12		.09*		1.03		.22
June		.08		.04*		.52		.18
July		.13		.04*	4.40	1.11		.39
Aug.		.07		.08*		.24		.20
Sept.		.28		.07*		.22		.23
Oct.		.15		.11*		.29		.27
Nov.		.13		.11		.16		.24
Dec.		.04		.32		.17		.27
TOTAL		1.26		1.38		4.90		2.93

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.21		0.55
Feb.		.19		.57
March		.39		.54
April		.58		1.01
May		.29		.81
June		1.08		.34
July	2.75	1.91		.44
Aug.		.63		
Sept.		.35		
Oct.		.22		
Nov.		.17		
Dec.		.16		
TOTAL		6.18		

Pre-1954	1.03
1954	1.26
1955	1.38
1956	4.90
1957	2.93
1958	6.18
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 908 LOCATION WAKE ISLAND

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1*		0.5*		0.4
Feb.		.1		.2		.8		.5
March		.6		.4*		.3*		.3
April		.5		.3*		.2*		.4
May		.6		.2*		1.7		.4
June		.3		.1*		1.0		.3
July		.4		.1*	9.9	2.6		.6
Aug.		.2		.1*		.5		.3
Sept.		.7		.1*		.5		.4
Oct.		.4		.2*		.5		.6
Nov.		.3		.2		.3		.6
Dec.		.1		.5		.3		.5
TOTAL		4.2		2.5		9.4		5.3

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.4		1.2
Feb.		.3		1.1
March		.8		1.0
April		1.0		1.8
May		.6		1.4
June		2.1		.6
July	7.1	4.9		.7
Aug.		1.7		
Sept.		.8		
Oct.		.7		
Nov.		.5		
Dec.		.4		
TOTAL		14.2		

Pre-1954	4.0
1954	4.2
1955	2.5
1956	9.4
1957	5.3
1958	14.2
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 911

LOCATION TRUK, CAROLINE ISLANDS

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.04		0.09*		0.41*		0.14
Feb.		.02		.07		.13		.21
March		1.39		.05*		.27*		.08
April		.55		.10*		.23*		.09
May	6.24	1.52		.05*	1.48	1.05		.12
June		.30		.07*	4.10	2.22		.13
July		.13		.02*	4.07	1.74		.38
Aug.		.10		.05*		.30		.21
Sept.		.04		.04*		.17		.16
Oct.		.02		.05*		.05		.10
Nov.		.10		.09		.11		.09
Dec.		.06		.20		.13		.24
TOTAL		4.27		.88		6.81		1.95

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.10		0.39
Feb.		.04		.97
March		.07		.62
April		.22		.58
May	4.89	3.40		.33
June	10.20	4.61		.19
July	3.80	3.73		.19
Aug.		.55		
Sept.		.30		
Oct.		.18		
Nov.		.09		
Dec.		.20		
TOTAL		13.49		

Pre-1954	1.51
1954	4.27
1955	.88
1956	6.81
1957	1.96
1958	13.49
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 911 LOCATION TRUK, CAROLINE ISLANDS

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.0		0.2*		0.7*		0.2
Feb.		.0		.1		.2		.3
March		10.9		.1*		.4*		.1
April		3.5		.2*		.3*		.2
May	43.1	9.5		.1*	2.9	1.7		.2
June		1.1		.1*	8.2	5.2		.2
July		.4		.0*	14.0	5.2		.6
Aug.		.1		.1*		.7		.3
Sept.		.1		.1*		.4		.3
Oct.		.2		.1*		.1		.2
Nov.		.2		.1		.2		.2
Dec.		.1		.3		.3		.5
TOTAL		26.1		1.5		15.4		3.3

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.2		0.8
Feb.		.1		1.9
March		.1		1.2
April		.4		1.0
May	9.6	6.6		.6
June	19.3	9.1		.3
July	10.2	8.2		.3
Aug.		1.4		
Sept.		.7		
Oct.		.5		
Nov.		.3		
Dec.		.5		
TOTAL		28.1		

Pre-1954	5.6
1954	26.1
1955	1.5
1956	15.4
1957	3.3
1958	28.1
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 910

LOCATION PONAPE, MARSHALL ISLANDS

	1954		1955		1956		1957	
	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.	Formula	Best Est.
Jan.		0.04		0.06*		0.26*		0.21
Feb.		.04		.08		.20		.22
March		1.42		.05*		.26*		.21
April	4.11	1.11		.07*		.22*		.11
May	4.28	1.15		.06*	.88	0.55		.18
June	.30	0.24		.03*	2.32	1.37		.23
July		.13		.04*		1.56		.30
Aug.		.09		.03*		.29		.27**
Sept.		.47		.05*		.13		.10
Oct.		.09		.10*		.08		.09
Nov.		.18		.37		.07		.06
Dec.		.08		.19		.09		0.30
TOTAL		5.04		1.13		5.08		2.28

	1958		1959	
	Formula	Best Est.	Formula	Best Est.
Jan.		0.05		0.64
Feb.		.14		1.30
March		.18		.85
April		.45		1.17
May	11.77	4.96		.54
June	6.31	3.84		.17
July		2.00		.28
Aug.		.42		.24
Sept.		.93		.17
Oct.		.31		.11
Nov.		.13		.09
Dec.		.19		--
TOTAL		13.60		

Pre-1954	4.11
1954	5.04
1955	1.13
1956	5.08
1957	2.28
1958	13.60
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 910 LOCATION PONAPE, MARSHALL ISLANDS

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1*		0.4*		0.4
Feb.		.0		.2		.3		.4
March		9.6		.1*		.4*		.3
April	28.3	6.8		.1*		.3*		.2
May	29.3	6.4		.1*	1.9	1.1		.3
June	1.2	0.9		.1*	6.5	2.5		.4
July		.4		.1*		3.8		.5
Aug.		.2		.1&		.6		.4**
Sept.		1.2		.1*		.3		.2
Oct.		.2		.2*		.2		.2
Nov.		.4		.7		.1		.1
Dec.		.1		.3		.2		0.5
TOTAL		26.2		2.2		10.2		3.9

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.1		1.4
Feb.		.2		2.6
March		.4		1.6
April		.8		2.1
May	23.2	9.8		.9
June	13.5	7.6		.3
July		5.5		.5
Aug.		1.1		.4
Sept.		2.1		.3
Oct.		.8		.2
Nov.		.3		.1
Dec.		.4		--
TOTAL		29.3		

Pre-1954	16.5
1954	26.2
1955	2.2
1956	10.2
1957	3.9
1958	29.3
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 913 LOCATION KOROR, PALAU ISLANDS

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.04		.04*		0.13*		0.08
Feb.		.06		.04		.07		.11
March		.92		.05*		.15*		.04
April		.95		.03*		.11*		.10
May		.93		.05*		.19		.13
June		.17		.03*		.41		.08
July		.08		.01*		1.20		.22
Aug.		.10		.02*		.16		.15
Sept.		.09		.05*		.07		.16
Oct.		.07		.05*		.13		.13
Nov.		.05		.18		.18		.05
Dec.		.02		.14		.11		.19
TOTAL		3.48		.69		2.91		1.44

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.05		0.25
Feb.		.18		.59
March		.08		.29
April		.15		.51
May		.94		.36
June		2.16		.08
July	2.99	2.50		.07
Aug.		.34		.06
Sept.		.15		.09
Oct.		.12		.09
Nov.		.07		.09
Dec.		.15		.09
TOTAL		6.89		2.57

Pre-1954	0.94
1954	3.48
1955	.69
1956	2.91
1957	1.44
1958	6.89
1959	2.57
Total	18.9

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 913 LOCATION KOROR, PALAU ISLANDS

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1*		0.2*		0.1
Feb.		.1		.1		.1		.2
March		6.4		.1*		.2*		.1
April		5.8		.1*		.2*		.2
May		6.0		.1*		.3		.2
June		.6		.1*		.8		.1
July		.2		.0*		3.3		.4
Aug.		.3		.0*		.4		.2
Sept.		.2		.1*		.2		.3
Oct.		.2		.1*		.2		.3
Nov.		.1		.3		.4		.1
Dec.		.1		.2		.2		.3
TOTAL		20.0		1.3		6.5		2.5

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.1		0.5
Feb.		.3		1.2
March		.2		.5
April		.3		.9
May		1.9		.6
June		4.3		.1
July	8.2	6.9		.1
Aug.		.9		.1
Sept.		.3		.1
Oct.		.3		.1
Nov.		.2		.1
Dec.		.3		.1
TOTAL		16.0		4.4

Pre-1954	3.4
1954	20.0
1955	1.3
1956	6.5
1957	2.5
1958	16.0
1959	4.4
Total	54.0

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 912

LOCATION YAP, PALAU ISLANDS

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.01		0.05*		0.32*		0.06
Feb.		.04		.04*		.05		.09
March		1.27		.10*		.17*		.09
April	4.04	1.14		.05*		.10*		.11
May		.49		.03*		.62		.16
June		.10		.05*		.45		.12
July		.10		.03*		.91		.26
Aug.		.06		.06*		.08		.17
Sept.		.07		.03*		.09		.19
Oct.		.15		.08*		.02		.08
Nov.		.08		.11		.15		.09
Dec.		.05		.10		.05		.73
TOTAL		3.56		0.72		3.01		2.20

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.11		0.40
Feb.		.10		1.08
March		.09		.42
April		.10		.48
May	3.03	1.82		.44
June	5.25	3.30		.09
July	3.26	1.45		.08
Aug.		.67		.12
Sept.		.20		.11
Oct.		.11		.14
Nov.		.06		.19
Dec.		.14		.21
TOTAL		8.15		3.76

Pre-1954	2.30
1954	3.56
1955	0.72
1956	3.01
1957	2.20
1958	8.15
1959	3.76
Total	23.7

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 912 LOCATION YAP, PALAU ISLANDS

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1*		0.5*		0.1
Feb.		.1		.1*		.1		.2
March		9.7		.2*		.3*		.1
April	25.3	7.0		.1*		.2*		.2
May		2.7		.1*		1.0		.3
June		.4		.1*		.9		.2
July		.3		.1*		2.3		.4
Aug.		.2		.1*		.2		.3
Sept.		.2		.1*		.2		.4
Oct.		.4		.1*		.1		.2
Nov.		.2		.2		.3		.2
Dec.		.1		.2		.1		1.4
TOTAL		21.3		1.5		6.2		4.0

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.2		.8
Feb.		.2		2.2
March		.2		.8
April		.2		.9
May	5.9	3.7		.8
June	9.9	6.5		.2
July	8.6	3.9		.1
Aug.		1.7		.2
Sept.		.5		.2
Oct.		.4		.2
Nov.		.2		.3
Dec.		.3		.3
TOTAL		18.0		7.0

Pre-1954	7.8
1954	21.3
1955	1.5
1956	6.2
1957	4.0
1958	18.0
1959	7.0
Total	66.0

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 914 LOCATION LIHUE, HAWAII

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.	0.04		0.09*		0.39*		0.62	
Feb.	.04		.15		.32		.65	
March	.04		.12*		.36*		.26	
April	.85		.06*		.10*		.36	
May	.15		.09*		.44		0.33	
June	.08		.06*		.40		.24	
July	.09		.04*		1.00		.40	
Aug.	.06		.06*		.15		.43	
Sept.	.04		.05*		.60		.28	
Oct.	.21		.10*		.25		.17	
Nov.	.06		0.13		.18		.17	
Dec.	.05		.20		.46		.49	
TOTAL	1.71		1.15		4.65		4.40	

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.	0.27		1.92	
Feb.	.24		1.91	
March	1.11		1.63	
April	.67		1.78	
May	.50		1.20	
June	.68		.40	
July	.64		.29	
Aug.	.32		.48	
Sept.	.22		.28	
Oct.	.21		.18	
Nov.	.19		.09	
Dec.	.80			
TOTAL	5.85			

Pre-1954	0.61
1954	1.71
1955	1.15
1956	4.65
1957	4.40
1958	5.85
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 914 LOCATION LIHUE, HAWAII

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.2*		0.6*		1.1
Feb.		.1		.3		.5		1.1
March		.3		.2*		.6*		.4
April		5.1		.1*		.1*		.6
May		.8		.2*		.7		.5
June		.3		.1*		.8		.4
July		.3		.1*		2.1		.6
Aug.		.2		.1*		.3		.7
Sept.		.1		.1*		1.3		.5
Oct.		.5		.2*		.5		.4
Nov.		.1		.2		.3		.4
Dec.		.1		.3		.9		.9
TOTAL		7.9		2.1		8.7		7.6

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.5		4.1
Feb.		.4		3.9
March		2.2		3.1
April		1.1		3.2
May		1.0		2.1
June		1.3		.7
July		1.6		.5
Aug.		.8		.8
Sept.		.5		.4
Oct.		.7		.3
Nov.		.5		.1
Dec.		1.9		
TOTAL		12.5		

Pre-1954	2.2
1954	7.9
1955	2.1
1956	8.7
1957	7.6
1958	12.5
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 916 LOCATION HILO, HAWAII

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.04		0.17*		0.47*		0.65
Feb.		.03		.55		1.00		.71
March		.12		.28*		.84*		.76
April		.86		.21*		.30*		.70
May	1.48	0.73		.31*		1.22		.71
June		.13		.22*		1.04		.49
July		.10		.20*		1.65		.83
Aug.		.06		.12*		.40		.58
Sept.		.06		.11*		.61		.43
Oct.		.11		.16*		.36		.30
Nov.		.05		.21		.26		.25
Dec.		.05		.19		.32		.57
TOTAL		2.34		2.73		8.47		6.98

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.26		1.47
Feb.		.33		4.57
March		1.47		2.84
April		1.95		3.58
May		1.33		3.07
June		.75		.94
July		.63		.63
Aug.		.55		
Sept.		.34		
Oct.		.44		
Nov.		.51		
Dec.		.73		
TOTAL		9.20		

Pre-1954	1.02
1954	2.34
1955	2.73
1956	8.47
1957	6.98
1958	9.20
1959	
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 916 LOCATION HILO, HAWAII

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.4*		0.7*		1.1
Feb.		.0		1.1		1.6		1.2
March		.7		.5*		1.3*		1.2
April		5.0		.4*		.4*		1.3
May	9.4	4.1		.6*		1.9		1.2
June		.5		.4*		2.1		.9
July		.3		.3*		3.4		1.4
Aug.		.2		.2*		.9		.9
Sept.		.2		.2*		1.3		.7
Oct.		.3		.3*		.7		.6
Nov.		.1		.4		.5		.5
Dec.		.1		.3		.6		1.0
TOTAL		11.5		5.1		15.4		12.0

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.4		3.1
Feb.		.6		9.1
March		2.9		5.4
April		3.4		6.5
May		2.6		5.3
June		1.4		1.6
July		1.7		1.0
Aug.		1.4		
Sept.		.8		
Oct.		1.5		
Nov.		1.4		
Dec.		1.7		
TOTAL		19.8		

Pre-1954	3.8
1954	11.5
1955	5.1
1956	15.4
1957	12.0
1958	19.8
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 915 LOCATION HONOLULU, HAWAII

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.04		0.04*		0.21*		0.34
Feb.		.03		.16		.40		.51
March		.15		.11*		.25*		.21
April	2.55	0.68		.11*		.24*		.28
May		.38		.09*		.23		.15
June		.11		.10*		1.06		.18
July		.11		.07*		1.01		.47
Aug.		.04		.07*		.08		.27
Sept.		.04		.04*		.22		.26
Oct.		.09		.10*		.15		.12
Nov.		.05		.06		.14		.20**
Dec.		.01		.17		.11		.41**
TOTAL		1.73		1.12		4.10		3.40

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.27		0.96
Feb.		.16		1.48
March		.89		1.08
April		.51		.86
May		.58		1.96
June		.38		.23
July		.53		.10
Aug.		.22		
Sept.		.12		
Oct.		.19		
Nov.		.13		
Dec.		.45		
TOTAL		4.43		

Pre-1954	0.49
1954	1.73
1955	1.12
1956	4.10
1957	3.40
1958	4.43
1959	
Total	

ESTIMATE OF INFINITY γ-DOSE FROM GUMMED FILM

STATION # 915 LOCATION HONOLULU, HAWAII

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.1*		0.3*		0.6
Feb.		.1		.3		.6		.8
March		.8		.2*		.4*		.3
April	15.2	3.9		.2*		.4*		.5
May		2.1		.2*		.4		.3
June		.4		.2*		2.1		.3
July		.3		.1*		2.1		.8
Aug.		.1		.1*		.2		.4
Sept.		.1		.1*		.5		.4
Oct.		.2		.2*		.3		.2
Nov.		.1		.1		.3		.4**
Dec.		.0		.3		.2		.7**
TOTAL		8.1		2.1		7.8		5.7

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.4		2.0
Feb.		.3		3.0
March		1.8		2.0
April		.9		1.5
May		1.1		3.4
June		.8		.4
July		1.4		.2
Aug.		.6		
Sept.		.3		
Oct.		.6		
Nov.		.4		
Dec.		1.1		
TOTAL		9.7		

Pre-1954	1.8
1954	8.1
1955	2.1
1956	7.8
1957	5.7
1958	9.7
1959	
Total	

ESTIMATE OF Sr^{90} DEPOSITION FROM GUMMED FILM

STATION # 922 LOCATION KWAJALEIN, MARSHALL ISLANDS

	1954		1955	1956		1957
	Formula	Best Est.	Formula Best Est.	Formula	Best Est.	Formula Best Est.
Jan.		0.04	0.14*		0.32**	0.16
Feb.		.04	.14		.17	.21
March	38.55	3.15	.07*		.16*	.10
April	3.93	1.08	.11**		.43*	.08
May	20.04	2.15	.07**	4.43	0.76	.07
June		.30	.05**	14.40	1.44	.20
July		.18	.05*		4.36	.24
Aug.		.16	.08*		.89	.33
Sept.		.19	.07*		.38	.20
Oct.		.02	.16*		.28	.08
Nov.		.03	.19**		.24	.13**
Dec.		.08	.24**		.12	.16
TOTAL		7.42	1.37		9.55	1.96

	1958		1959
	Formula	Best Est.	Formula Best Est.
Jan.		0.08	0.40
Feb.		.26	.52
March		.10	.38
April		.12	.70
May	12.13	5.91	.26
June		1.31	.13
July		1.64	.16
Aug.		.35	.17
Sept.		.12	.05
Oct.		.14	.07
Nov.		.05	.14
Dec.		.14	.11
TOTAL		10.22	3.09

Pre-1954	- -
1954	7.42
1955	1.37
1956	9.55
1957	1.96
1958	10.22
1959	3.09
Total	

ESTIMATE OF INFINITY γ DOSE FROM GUMMED FILM

STATION # 922 LOCATION KWAJALEIN, MARSHALL ISLANDS

	1954 Formula	1954 Best Est.	1955 Formula	1955 Best Est.	1956 Formula	1956 Best Est.	1957 Formula	1957 Best Est.
Jan.		0.0		0.3*		0.5**		0.3
Feb.		.0		.3		.3		.3
March	314.3	25.0		.1*		.2*		.2
April	26.3	6.5		.2**		.6*		.1
May	133.2	13.2		.1**	10.6	2.0		.1
June		1.2		.1**	27.4	5.8		.4
July		.6		.1*		9.1		.4
Aug.		.5		.1*		2.0		.5
Sept.		.5		.1*		.9		.3
Oct.		.1		.3*		.5		.2
Nov.		.1		.4**		.5		.3**
Dec.		.1		.4**		.2		.3
TOTAL		35.8		2.5		22.6		3.4

	1958 Formula	1958 Best Est.	1959 Formula	1959 Best Est.
Jan.		0.1		0.9
Feb.		.5		1.0
March		.2		.7
April		.2		1.3
May	24.3	12.9		.5
June		2.5		.2
July		4.4		.3
Aug.		.9		.3
Sept.		.3		.1
Oct.		.4		.1
Nov.		.1		.2
Dec.		.3		.2
TOTAL		22.8		4.9

Pre-1954	- -
1954	35.8
1955	2.5
1956	22.6
1957	3.4
1958	22.8
1959	4.9
Total	