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*Design Temperatures for Flexible
Airfield Pavement Design*

by

Dr A F Stock

FINAL REPORT

July 1989

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Introduction

The mechanistic approach to flexible pavement design (1,2,3,4) recognises 2 forms of traffic induced structural damage, one being fatigue failure by cracking in the asphalt layer, the other being permanent deformation.

The criterion used for ensuring that the pavement does not fail prematurely due to fatigue in the asphalt is based upon tensile strain. It has been shown (4) that the tensile strain due to aircraft loading has a maximum value at the bottom of the asphalt layer, and it is at this depth that the strain is calculated. The position of the maximum strain relative to the aircraft wheels is dependent upon the aircraft gear configuration, the pavement thickness and stiffness, but is readily determined. Extensive laboratory fatigue tests, combined with full scale trials (5,6,7,8,9,10) have permitted the development of a fatigue criterion based on a limiting strain value, so that pavements can be designed to give satisfactory performance.

The parameter used as a criterion to limit permanent deformation is the vertical strain on the subgrade. The derivation of this parameter can be traced to the AASHO road test (11) when stress, strain and deformation were calculated at several locations in the pavement and correlated with the terminal rut depth. As a result of this, and other complimentary research, the vertical strain on the subgrade was identified as the parameter which correlated, most reliably, with the development of wheel track deformation. Most mechanistic design systems, including the one developed by the Corps of Engineers for Airfield pavements (4) use this parameter, derived from an analysis of existing pavement structures of known performance. The derivation usually involved a single analysis of each pavement using a

single temperature and a typical load. Because of these simplifying assumptions the criterion is not suitable for a cumulative damage analysis.

Procedure for Computation of Fatigue Damage

The computation of damage due to repeated loading is based upon the linear summation of cycle ratios as defined by Miner's rule⁽¹²⁾. For failure, the summation of the ratio of the number of cycles of load actually applied (n) to the number of cycles of that same load to cause failure (N) must equal or exceed 1, as shown below.

$$\frac{N_1}{N_1} + \frac{N_2}{N_2} + \frac{N_3}{N_3} + \dots + \frac{N_i}{N_i} \geq 1$$

or

$$\sum_{i=1}^i \frac{N_i}{N_i} \geq 1$$

The number of cycles applied to a given pavement structure can be determined from data on aircraft movements. The number of cycles of that load to cause failure must be determined from the fatigue design criteria. This in turn involves calculating the strain in the pavement from details of the layer thickness and the temperature profile within the asphalt layer. It is also important to have detailed information on aircraft movements so that the correct combination of temperature gradient and traffic can be used to determine the number of cycles to failure.

The calculation procedure requires the following specific steps.

1. Division of the asphalt layer, in the pavement under analysis, into sublayers suitable for the computation of temperature gradients and the subsequent computation of strain.
- 2) Computation of the temperature gradient in the pavement under analysis

for the conditions relating to the time of year to be represented by the damage computation.

- 3) Transformation of the temperature data into stiffness values for use in the analysis.
- 4) Analysis of pavements for the critical asphalt strain.
- 5) Determination of the number of cycles which would cause failure at the strain level calculated in step 4 above.
- 6) Computation of damage in the pavement for each representative time period.
- 7) Development of a Damage - Temperature relationship for each pavement structure considered, assuming the asphalt layer to have a constant temperature.
- 8) Determine the "equivalent temperature" by comparing the results of step 6 with the relationship obtained in step 7.

In order to undertake the analysis outlined above, it is necessary to select appropriate layer thicknesses and properties for the pavement structure. It is also necessary to select damage models and determine traffic movement and loading data. This section will provide this background information.

Pavement Structure for Analysis

It was decided to analyse pavements with asphalt layer thicknesses of 3 inches, 5 inches and 10 inches, selected as being typical of the classes of airfield pavement.

Each pavement has been treated as a three layer structure, and in order to eliminate effects other than temperature changes, the characteristics of the base and subgrade were held constant. The base was modelled as an unbound layer 12 inches thick with a modulus of 50,000 lbs/in². The subgrade was assigned a modulus of 15,000 lbs/in².

The loading used for the computation was selected on the basis of the type of aircraft, appropriate to the class of airfield pavement, relevant to the thickness of the asphalt layer, as defined in the Corps of Engineers Airfield Pavement design procedure. For a 3 inch pavement the critical aircraft for design is the F15, for the 5 inch pavement it is the C141 and a B52 is the aircraft appropriate for the 10 inch pavement.

Traffic movement data for the five busiest TAC bases, Luke, Nellis, George, Holman and Tyndall was supplied, broken down into movements for the periods 0000 - 0600 hrs, 0600 - 1200 hrs, 1200 - 1800 hrs and 1800 - 0000 hrs as shown in Table 1.

Traffic movements on an hourly basis would have been preferred, and would have given greater precision in these computations, but the data was not available in this form.

The data in Table 1 shows that the pattern of movements within each six hour time period is similar for the five bases. Data to confirm this is shown in Table 2 which summarises the percentage of movements which can be assigned to each 6 hour period and also gives the standard deviation of that percentage for each time period. It was therefore assumed that the movements for a typical Air Force Base can be described by one pattern.

Table 3 shows the total number of movements for a year computed from the mean values and the pattern established in Tables 1 and 2. Also shown are the daily and hourly movements derived from the total assuming that movements are distributed evenly through each time period.

Two relationships are required to describe the asphaltic material for this study. The first requirement is to assign a stiffness value appropriate to the temperatures calculated in each sub-layer. The relationship used is as follows (5)

$$\begin{aligned} \text{Log } E &= 6.16 - 0.00003 T^{2.32} \\ &+ 0.074 \log f \\ &+ 0.000009 T^{2.32} \log f \end{aligned}$$

where

$$\begin{aligned} T &= \text{temperature } (^{\circ}\text{F}) \\ f &= \text{frequency of loading (cps)} \end{aligned}$$

The second relationship is necessary in order to relate the maximum strain in the plane of the bottom of the asphalt layer to a number of cycles of

load which would cause failure at that strain. This relationship is usually presented in the following form (4)

$$\text{Allowable strain} = 10^{-A}$$

$$A = \frac{N + 2.665 \log_{10} (E_{AC}) + 0.392}{5}$$

(14.22)

where N = \log_{10} (aircraft coverages)

E_{AC} = Modulus of the asphalt concrete.

To compute the no of coverages for a given strain this equation can be rewritten in the form

$$N = 10$$

The Computation of Temperature Gradients within the Pavement

The most effective data for a study such as is described herein is actual temperature measurement at various depths within representative pavements. Unfortunately, this data is not available for the pavements analysed for this study, in appropriate climates. It was therefore necessary to find a means of computing the temperature gradient.

After a study of two systems for calculating the variation of temperature with depth, (13,14) the method reported by Robinson (14) was selected because of the strength of the validating data.

Robinson's calculation procedure assumes a one-dimensional model of heat transfer which is solved by a finite difference method. The solution requires an initial temperature distribution within the pavement and a knowledge of the thermal properties of the materials in the pavement structure. Heat input was estimated from the data on hourly air temperatures, wind speed and cloud cover, and on a computed solar radiation intensity. This latter parameter was calculated from equations published by Iqbal (15).

Data on four locations was provided as being typical of the range in continental USA. These were Minot, Homestead, Wright-Patterson and Williams. Hourly temperature data was supplied for a "typical" 24 hour period in each month of the year. Temperature profiles were calculated for each hour for pavements with 3.5 and 10 inch thick asphalt surfaces at all locations. Thus a total of 3,456 profiles were calculated.

For convenience, the 3 inch asphalt layer was subdivided into 8 layers of equal thickness, the 5 inch into 7 layer, 6 of which were 0.75" thick and the lowest layer being 0.5" thick, and the 10 inch pavement into 6 layer of 1.5" thickness and one layer of 1" thickness.

Calculation of Damage

Tables 4 - 15 show the computation of damage for the structures at each base. It will be noted that some time periods have been omitted, this is because of computational errors. In view of the very large number of analysis necessary for this study an automated system was developed. On completion of the computation it was discovered that some of the files had been corrupted. Checks were performed to ensure that the remaining files were in fact correct. It was not possible to correct those found to be in error.

Tables 16, 17 and 18 show the computation of damage for the 3, 5 and 10 inch pavements at each base, assuming constant temperature throughout the asphalt layer.

Finally, Tables 19, 20 and 21 show the computation of the conversion factor for the 3, 5 and 10 inch pavements respectively at each location.

Figures 1-9 plot the conversion factor as a function of air temperature at each base, and Table 22 shows the coefficients obtained from a linear regression of conversion factor as a function of air temperature for each base individually. The equivalent single temperature is computed from the mean air temperature multiplied by the conversion factor.

Regression analysis of the data relating conversion factor to temperature grouped by asphalt thickness gave very poor correlation coefficients, as did an analysis of the data grouped by base. It is therefore concluded that the effects of both climate and layer thickness combine to provide a unique solution to the relation between conversion factor and mean air temperature.

Recommended procedure for the determination of Equivalent Pavement Temperature

The bases used in this study were chosen to represent major climatic regions within continental USA. Thus it is probable that sufficient precision can be obtained by selecting the appropriate conversion factor - air temperature relationship from Table 22.

If this is deemed to be insufficiently reliable, then the procedure described in section 2 can be applied provided the necessary data can be made available.

Further Work

It is possible that further study could lead to the definition of a relationship which has wider application, the incorporation of terms to account for layer thickness in the conversion factor - air temperature relation could assist with this.

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TABLE I. TRAFFIC DATA FOR THE FIVE BUSIEST TAC BASES
(AS SUPPLIED BY VICKSBURG)

TIME INTERVAL	FY8701 PROPORTION OF TOTAL	FY8702 PROPORTION OF TOTAL	FY8703 PROPORTION OF TOTAL	FY8704 PROPORTION OF TOTAL	PROPORTION OF TOTAL
LUKE AFB					
0000-0600	0	0	0	0	0
0600-1200	10998	10384	11108	11411	11411
1200-1800	12172	12562	12846	13892	13892
1800-0000	1996	1774	2031	1463	1463
TOTAL MOVEMENTS	25166	24720	25985	26766	26766
NELLIS AFB					
0000-0600	62	75	204	88	88
0600-1200	6651	5965	4183	6581	6581
1200-1800	7449	7601	6019	7469	7469
1800-0000	1758	1847	954	1754	1754
TOTAL MOVEMENTS	15920	15488	11360	15892	15892
GEORGE AFB					
0000-0600	26	5	23	86	86
0600-1200	7241	6298	6432	6426	6426
1200-1800	7957	6513	6130	6130	6130
1800-0000	8132	1140	1045	854	854
TOTAL MOVEMENTS	23356	13956	13654	13496	13496
HOLLOWAY AFB					
0000-0600	6	3	10	4	4
0600-1200	10584	11185	12432	12416	12416
1200-1800	10494	11275	12292	13069	13069
1800-0000	483	806	733	829	829
TOTAL MOVEMENTS	21567	23269	25467	26318	26318
TYNDALL AFB					
0000-0600	5	4	10	10	10
0600-1200	5307	6455	6189	5760	5760
1200-1800	6361	7595	7480	6895	6895
1800-0000	705	1225	1513	1861	1861
TOTAL MOVEMENTS	12378	15279	15192	14526	14526
MEAN OF ALL BASES	19677.4	18542.4	18331.6	19399.6	19399.6

TABLE 2. SUMMARY OF AIRCRAFT MOVEMENTS

TIME INTERVAL	PERCENTAGE OF TOTAL	STANDARD DEVIATION
0000-0600	0	0.00
0600-1200	43	0.04
1200-1800	48	0.04
1800-0000	9	0.07

TABLE 3. REPRESENTATIVE NUMBER OF MOVEMENTS

TOTAL	PER. DAY	PER. HOUR
0	0	0
8156	22	4
9118	25	4
1670	5	1

TABLE 5 CONTINUED

HOUR	JULY			SEPTEMBER			OCTOBER			NOVEMBER			DECEMBER		
	MODULUS	STRAIN	PASSES (n)	MODULUS	STRAIN	PASSES (n)	MODULUS	STRAIN	PASSES (n)	MODULUS	STRAIN	PASSES (n)	MODULUS	STRAIN	PASSES (n)
0000-0100	709084	0.00109	0	487.1635	0	487.1635	0	487.1635	0	487.1635	0	487.1635	0	487.1635	0
0100-0200	710324	0.00109	0	484.9004	0	484.9004	0	484.9004	0	484.9004	0	484.9004	0	484.9004	0
0200-0300	711563	0.00109	0	482.6535	0	482.6535	0	482.6535	0	482.6535	0	482.6535	0	482.6535	0
0300-0400	712390	0.00109	0	481.1619	0	481.1619	0	481.1619	0	481.1619	0	481.1619	0	481.1619	0
0400-0500	713217	0.00109	0	479.6763	0	479.6763	0	479.6763	0	479.6763	0	479.6763	0	479.6763	0
0500-0600	714044	0.00109	0	478.1922	0	478.1922	0	478.1922	0	478.1922	0	478.1922	0	478.1922	0
0600-0700	714871	0.00109	4	476.7243	0.008390	4	476.7243	0.008390	4	476.7243	0.008390	4	476.7243	0.008390	4
0700-0800	711150	0.00109	4	483.4009	0.008274	4	483.4009	0.008274	4	483.4009	0.008274	4	483.4009	0.008274	4
0800-0900	711150	0.00109	4	483.4009	0.008274	4	483.4009	0.008274	4	483.4009	0.008274	4	483.4009	0.008274	4
0900-1000	706607	0.00108	4	514.9186	0.007768	4	514.9186	0.007768	4	514.9186	0.007768	4	514.9186	0.007768	4
1000-1100	702070	0.00109	4	523.8344	0.007636	4	523.8344	0.007636	4	523.8344	0.007636	4	523.8344	0.007636	4
1100-1200	697127	0.00107	4	559.2055	0.007153	4	559.2055	0.007153	4	559.2055	0.007153	4	559.2055	0.007153	4
1200-1300	692602	0.00106	4	596.3457	0.006707	4	596.3457	0.006707	4	596.3457	0.006707	4	596.3457	0.006707	4
1300-1400	689316	0.00105	4	633.2645	0.006316	4	633.2645	0.006316	4	633.2645	0.006316	4	633.2645	0.006316	4
1400-1500	686443	0.00104	4	671.7365	0.005954	4	671.7365	0.005954	4	671.7365	0.005954	4	671.7365	0.005954	4
1500-1600	685213	0.00103	4	708.3620	0.005646	4	708.3620	0.005646	4	708.3620	0.005646	4	708.3620	0.005646	4
1600-1700	685213	0.00104	4	674.9548	0.005926	4	674.9548	0.005926	4	674.9548	0.005926	4	674.9548	0.005926	4
1700-1800	686854	0.00105	4	639.3319	0.006256	4	639.3319	0.006256	4	639.3319	0.006256	4	639.3319	0.006256	4
1800-1900	689727	0.00106	4	602.9932	0.006588	4	602.9932	0.006588	4	602.9932	0.006588	4	602.9932	0.006588	4
1900-2000	693425	0.00107	4	567.1971	0.007163	4	567.1971	0.007163	4	567.1971	0.007163	4	567.1971	0.007163	4
2000-2100	697950	0.00108	4	532.1156	0.007829	4	532.1156	0.007829	4	532.1156	0.007829	4	532.1156	0.007829	4
2100-2200	702070	0.00109	4	500.2421	0.008498	4	500.2421	0.008498	4	500.2421	0.008498	4	500.2421	0.008498	4
2200-2300	704956	0.00109	4	494.8630	0.009021	4	494.8630	0.009021	4	494.8630	0.009021	4	494.8630	0.009021	4
2300-0000	707433	0.00109	4	490.1953	0.009539	4	490.1953	0.009539	4	490.1953	0.009539	4	490.1953	0.009539	4

TABLE 6. HOMESTEAD TO INCH STRONG SUPPORT

HOUR	JANUARY				MAY				JUNE				JULY			
	MODULUS	STRAIN	PASSES	n/N	MODULUS	STRAIN	PASSES	n/N	MODULUS	STRAIN	PASSES	n/N	MODULUS	STRAIN	PASSES	n/N
0000-0100	688009	0.00144	0	0	636873	0.00147	0	0	630050	0.00147	0	0	626046	0.00147	0	0
0100-0200	685623	0.00142	0	0	640067	0.00144	0	0	661534	0.00144	0	0	658691	0.00144	0	0
0200-0300	689906	0.00141	0	0	640067	0.00144	0	0	665194	0.00144	0	0	662550	0.00144	0	0
0300-0400	691986	0.00141	0	0	643093	0.00143	0	0	669060	0.00143	0	0	664316	0.00144	0	0
0400-0500	694658	0.0014	0	0	6421428	0.00143	0	0	675327	0.00143	0	0	669879	0.00144	0	0
0500-0600	697538	0.0014	0	0	6403265	0.00143	0	0	675390	0.00143	0	0	673347	0.00143	0	0
0600-0700	700215	0.00139	0	0.026776	6436020	0.027854	0	0.027854	678251	0.00143	4	4	676411	0.00143	4	4
0700-0800	702688	0.00139	4	0.027029	6421194	0.028145	4	0.028145	681321	0.00142	4	4	679479	0.00143	4	4
0800-0900	705163	0.00138	4	0.026316	6411994	0.028392	4	0.028392	683574	0.00142	4	4	681730	0.00143	4	4
0900-1000	707433	0.00138	4	0.025543	6403216	0.028505	4	0.028505	684598	0.00143	4	4	682754	0.00143	4	4
1000-1100	708465	0.00138	4	0.024646	6407684	0.028415	4	0.028415	683778	0.00143	4	4	682140	0.00143	4	4
1100-1200	708952	0.0014	4	0.023281	6370070	0.028196	4	0.028196	681525	0.00143	4	4	679663	0.00143	4	4
1200-1300	699803	0.00142	4	0.023971	6366020	0.028734	4	0.028734	677433	0.00142	4	4	675594	0.00142	4	4
1300-1400	692808	0.00142	4	0.028981	6344625	0.029581	4	0.029581	672123	0.00142	4	4	675937	0.00142	4	4
1400-1500	695008	0.00142	4	0.028981	6344625	0.029581	4	0.029581	672123	0.00142	4	4	675937	0.00142	4	4
1500-1600	695008	0.00142	4	0.028981	6344625	0.029581	4	0.029581	672123	0.00142	4	4	675937	0.00142	4	4
1600-1700	671511	0.00142	4	0.027901	6344625	0.029581	4	0.029581	672123	0.00142	4	4	675937	0.00142	4	4
1700-1800	667638	0.00142	4	0.026649	6344625	0.029581	4	0.029581	672123	0.00142	4	4	675937	0.00142	4	4
1800-1900	666212	0.00142	4	0.026580	6344625	0.029581	4	0.029581	672123	0.00142	4	4	675937	0.00142	4	4
1900-2000	667434	0.00144	4	0.027029	6344625	0.029581	4	0.029581	672123	0.00142	4	4	675937	0.00142	4	4
2000-2100	670083	0.00144	4	0.027104	6344625	0.029581	4	0.029581	672123	0.00142	4	4	675937	0.00142	4	4
2100-2200	673756	0.00143	4	0.026961	6344625	0.029581	4	0.029581	672123	0.00142	4	4	675937	0.00142	4	4
2200-2300	677433	0.00143	4	0.027063	6344625	0.029581	4	0.029581	672123	0.00142	4	4	675937	0.00142	4	4
2300-0000					651193	0.00144	1	1	651193	0.00144	1	1	648160	0.00144	1	1

TABLE 6 CONTINUED

HOUR	AUGUST				SEPTEMBER				OCTOBER			
	MODULUS	STRAIN	PASSES (n)	n/N	MODULUS	STRAIN	PASSES (n)	n/N	MODULUS	STRAIN	PASSES (n)	n/N
0000-0100	625247	0.00147	0	152.7046	631653	0.00147	0	148.6122	638884	0.00146	0	149.1772
0100-0200	658285	0.00144	0	147.5811	662550	0.00144	0	145.0629	667434	0.00144	0	142.2512
0200-0300	662347	0.00144	0	143.1814	666416	0.00144	0	142.8910	670899	0.00144	0	140.3016
0300-0400	666009	0.00144	0	143.0637	669675	0.00144	0	140.9861	674368	0.00143	0	143.2933
0400-0500	669675	0.00144	0	140.9861	672531	0.00143	0	144.3388	677433	0.00143	0	141.5720
0500-0600	672939	0.00143	0	144.1057	675594	0.00143	0	142.6014	680297	0.00143	0	139.5892
0600-0700	676207	0.00143	4	142.2571	678251	0.00143	4	141.1175	682959	0.00142	4	143.4872
0700-0800	678865	0.00143	4	140.7776	680706	0.00143	4	139.7652	685623	0.00142	4	142.0062
0800-0900	681116	0.00143	4	139.5411	682959	0.00142	4	143.4872	688085	0.00141	4	145.7152
0900-1000	681935	0.00143	4	139.0949	684598	0.00142	4	142.5735	689932	0.00142	4	139.6548
1000-1100	681116	0.00143	4	139.5411	68598	0.00143	4	137.6576	690137	0.00142	4	139.5443
1100-1200	678660	0.00143	4	140.8909	682959	0.00143	4	140.5518	688495	0.00142	4	140.4330
1200-1300	674368	0.00142	4	148.4104	679274	0.00143	4	148.7699	684803	0.00143	4	137.5478
1300-1400	669064	0.00141	4	157.0181	673756	0.00142	4	157.9134	679069	0.00142	4	145.6881
1400-1500	662957	0.0014	4	166.7316	667638	0.00141	4	168.3724	672327	0.00141	4	154.9954
1500-1600	656459	0.00139	4	177.4125	660518	0.0014	4	179.0287	665194	0.0014	4	165.2415
1600-1700	650586	0.00138	4	188.3927	654729	0.00139	4	183.8044	658191	0.00139	4	179.9178
1700-1800	645333	0.00137	4	199.6364	648766	0.00138	4	183.8044	653014	0.00139	4	176.4823
1800-1900	641703	0.00136	1	195.9230	644929	0.00139	1	183.8044	648968	0.0014	1	171.7331
1900-2000	639488	0.00136	1	187.2382	642912	0.0014	1	180.9475	645348	0.00141	1	159.6569
2000-2100	639085	0.0014	1	183.6496	643315	0.00142	1	168.2773	647553	0.00143	1	152.7872
2100-2200	640494	0.00142	1	170.2598	645334	0.00143	1	160.9911	649777	0.00144	1	150.4037
2200-2300	643219	0.00143	1	162.2036	648766	0.00144	1	153.4226	653622	0.00144	1	147.9456
2300-0000	647756	0.00144	1	154.0609	652812	0.00144	1	150.9015	657676	0.00144	1	147.9456

DECEMBER

HOUR	MODULUS	STRAIN	PASSES (n)	n/N
0000-0100	662754	0.00144	0	144.9439
0100-0200	683574	0.00142	0	143.1434
0200-0300	686854	0.00142	0	141.3289
0300-0400	689521	0.00141	0	144.9078
0400-0500	692397	0.00141	0	143.3093
0500-0600	695070	0.0014	0	146.9841
0600-0700	697538	0.0014	4	145.6022
0700-0800	700009	0.00139	4	148.5000
0800-0900	702070	0.00139	4	148.3333
0900-1000	704338	0.00138	4	152.4700
1000-1100	705782	0.0014	4	146.2633
1100-1200	705163	0.0014	4	141.4441
1200-1300	702482	0.00141	4	137.8917
1300-1400	697333	0.00142	4	135.7396
1400-1500	690548	0.00142	4	139.3231
1500-1600	682754	0.00142	4	143.6020
1600-1700	675185	0.00142	4	147.9323
1700-1800	669268	0.00142	4	151.4435
1800-1900	665194	0.00142	4	153.9279
1900-2000	663170	0.00141	1	149.4718
2000-2100	664991	0.00144	1	143.6481
2100-2200	667638	0.00141	1	142.1354
2200-2300	671307	0.00141	1	140.0745
2300-0000	674981	0.00141	1	142.9448

TABLE 8 CONTINUED

HOUR	AUGUST				SEPTEMBER				OCTOBER			
	MODULUS	STRAIN	PASSES (n)	n/N	MODULUS	STRAIN	PASSES (n)	n/N	MODULUS	STRAIN	PASSES (n)	n/N
0000-0100	958638	0.000981	0	359.3702	0	0.000982	0	0	971628	0.00096	0	0
0100-0200	960266	0.000979	0	371.4750	0	0.000981	0	0	972842	0.000958	0	0
0200-0300	961486	0.000977	0	374.0251	0	0.000978	0	0	973651	0.000956	0	0
0300-0400	963112	0.000974	0	378.1143	0	0.000975	0	0	974863	0.000955	0	0
0400-0500	964736	0.000972	0	380.3090	0	0.000975	0	0	976076	0.000953	0	0
0500-0600	965954	0.000970	0	382.9581	0	0.000972	0	0	976889	0.000951	0	0
0600-0700	967577	0.000967	4	387.1972	0.010330	0.000972	4	382.7561	0.000949	4	413.7121	0.009661
0700-0800	967171	0.000977	4	381.6732	0.010480	0.000967	4	387.1972	0.000948	4	414.5301	0.009664
0800-0900	964330	0.000977	4	371.0926	0.010778	0.000972	4	378.1856	0.000952	4	407.2344	0.00982
0900-1000	959859	0.000985	4	360.7053	0.011089	0.000979	4	368.3568	0.000956	4	394.0084	0.01015
1000-1100	954564	0.000991	4	355.1140	0.011263	0.000987	4	353.5623	0.011313	4	381.0876	0.010494
1100-1200	949666	0.000994	4	354.6159	0.011279	0.000993	4	353.4979	0.011315	4	367.3175	0.01088
1200-1300	944758	0.000996	4	355.9512	0.011297	0.000996	4	358.4301	0.011315	4	359.6923	0.01121
1300-1400	940662	0.000995	4	361.9100	0.011052	0.000994	4	365.4296	0.010946	4	356.9112	0.01120
1400-1500	937791	0.000993	4	368.5595	0.010853	0.000994	4	369.8520	0.010827	4	357.7953	0.01117
1500-1600	936149	0.000992	4	372.1550	0.010735	0.000993	4	369.8520	0.010827	4	359.6042	0.01112
1600-1700	935738	0.000992	4	372.5908	0.010735	0.000993	4	369.8520	0.010827	4	359.6042	0.01110
1700-1800	936560	0.000993	4	369.8520	0.010815	0.000993	4	368.1305	0.010865	4	363.4289	0.01084
1800-1900	939022	0.000994	1	365.4296	0.002736	0.000994	1	363.3120	0.002752	1	367.5084	0.00272
1900-2000	942211	0.000994	1	361.6311	0.002736	0.000994	1	362.3481	0.002752	1	376.1419	0.002651
2000-2100	947213	0.000991	1	362.5061	0.002758	0.000992	1	362.5336	0.002760	1	381.5916	0.002621
2100-2200	951299	0.000989	1	367.0097	0.002762	0.000988	1	364.5997	0.002757	1	386.4955	0.002581
2200-2300	954156	0.000986	1	364.6249	0.002742	0.000986	1	364.7097	0.002745	1	390.3548	0.002561
2300-0000	956602	0.000983	1	367.7055	0.002719	0.000984	1	365.8408	0.002733	1	392.6711	0.002541

HOUR	DECEMBER			
	MODULUS	STRAIN	PASSES (n)	n/N
0000-0100	988960	0.000931	0	441.5876
0100-0200	989361	0.000933	0	443.4874
0200-0300	990163	0.000928	0	447.3200
0300-0400	990965	0.000927	0	448.7686
0400-0500	991366	0.000926	0	450.7108
0500-0600	992167	0.000925	0	452.1780
0600-0700	992969	0.000924	4	453.6523
0700-0800	993769	0.000923	4	455.1372
0800-0900	994570	0.000922	4	456.6293
0900-1000	994970	0.000922	4	458.1214
1000-1100	995771	0.000921	4	459.6135
1100-1200	996572	0.000920	4	461.1056
1200-1300	997373	0.000919	4	462.5977
1300-1400	998174	0.000918	4	464.0898
1400-1500	998975	0.000917	4	465.5819
1500-1600	999776	0.000916	4	467.0740
1600-1700	1000000	0.000915	4	468.5661
1700-1800	1000000	0.000914	4	470.0582
1800-1900	1000000	0.000913	4	471.5503
1900-2000	1000000	0.000912	4	473.0424
2000-2100	1000000	0.000911	4	474.5345
2100-2200	1000000	0.000910	4	476.0266
2200-2300	1000000	0.000909	4	477.5187
2300-0000	1000000	0.000908	4	479.0108

TABLE 3. HINOT 10 IN H THICK ASPHALT

HOUR	MARCH			APRIL			MAY			JUNE			JULY			AUGUST		
	MODULUS	STRAIN	PASSES (n)	MODULUS	STRAIN	PASSES (n)	MODULUS	STRAIN	PASSES (n)	MODULUS	STRAIN	PASSES (n)	MODULUS	STRAIN	PASSES (n)	MODULUS	STRAIN	PASSES (n)
0000-0100	978498	0.00117	0	943530	0.00122	0	910588	0.00127	0	878185	0.00131	0	878185	0.00131	0	109.8761	0	0
0100-0200	977287	0.00117	0	953952	0.00121	0	932040	0.00126	0	910588	0.00129	0	910588	0.00129	0	107.7395	0	0
0200-0300	980111	0.00116	0	957009	0.00121	0	935328	0.00125	0	914724	0.00128	0	914724	0.00128	0	110.6696	0	0
0300-0400	983132	0.00116	0	960266	0.0012	0	938611	0.00124	0	918855	0.00128	0	918855	0.00128	0	109.3486	0	0
0400-0500	985148	0.00116	0	963112	0.0012	0	942096	0.00124	0	922775	0.00127	0	922775	0.00127	0	112.4391	0	0
0500-0600	988759	0.00115	0	965954	0.00119	0	945577	0.00123	0	926690	0.00126	0	926690	0.00126	0	115.6600	0	0
0600-0700	991366	0.00115	0	968995	0.00119	0	948577	0.00123	0	930601	0.00126	0	930601	0.00126	0	114.3692	0.0349	0
0700-0800	993966	0.00114	0	971890	0.00118	0	948846	0.00122	0	934506	0.00125	0	934506	0.00125	0	117.6969	0.0396	0
0800-0900	996366	0.00114	0	974863	0.00118	0	952320	0.00122	0	938422	0.00125	0	938422	0.00125	0	116.6014	0.0343	0
0900-1000	998167	0.00114	0	977887	0.00118	0	955379	0.00122	0	942791	0.00128	0	942791	0.00128	0	115.9245	0.0345	0
1000-1100	999966	0.00114	0	979874	0.00118	0	958383	0.00123	0	946842	0.00128	0	946842	0.00128	0	111.3967	0.0351	0
1100-1200	999966	0.00115	0	981874	0.00118	0	961387	0.00123	0	950842	0.00128	0	950842	0.00128	0	103.5628	0.0386	0
1200-1300	999370	0.00116	0	983874	0.00118	0	963891	0.00123	0	952842	0.00128	0	952842	0.00128	0	100.7233	0.0391	0
1300-1400	999370	0.00116	0	985874	0.00118	0	965891	0.00123	0	954842	0.00128	0	954842	0.00128	0	98.4610	0.0406	0
1400-1500	999370	0.00117	0	987874	0.00119	0	967891	0.00123	0	956842	0.00128	0	956842	0.00128	0	100.2296	0.0391	0
1500-1600	999370	0.00117	0	989874	0.00119	0	969891	0.00123	0	958842	0.00128	0	958842	0.00128	0	102.2298	0.0391	0
1600-1700	999370	0.00117	0	991874	0.00119	0	971891	0.00123	0	960842	0.00128	0	960842	0.00128	0	100.2473	0.0391	0
1700-1800	999370	0.00117	0	993874	0.00119	0	973891	0.00123	0	962842	0.00128	0	962842	0.00128	0	101.9725	0.0392	0
1800-1900	999370	0.00117	0	995874	0.00119	0	975891	0.00123	0	964842	0.00128	0	964842	0.00128	0	107.4615	0.0093	0
1900-2000	999370	0.00117	0	997874	0.00119	0	977891	0.00123	0	966842	0.00128	0	966842	0.00128	0	108.4609	0.0092	0
2000-2100	999370	0.00117	0	999874	0.00119	0	979891	0.00123	0	968842	0.00128	0	968842	0.00128	0	104.7071	0.0091	0
2100-2200	999370	0.00117	0	999874	0.00119	0	979891	0.00123	0	968842	0.00128	0	968842	0.00128	0	108.5271	0.0092	0
2200-2300	999370	0.00117	0	999874	0.00119	0	979891	0.00123	0	968842	0.00128	0	968842	0.00128	0	107.7931	0.0092	0
2300-0000	999370	0.00118	0	999874	0.00119	0	979891	0.00123	0	968842	0.00128	0	968842	0.00128	0	106.6065	0.0093	0

TABLE 9 CONTINUED

JHR	SEPTEMBER				OCTOBER			
	MODULUS	STRAIN	PASSES (n)	n/H	MODULUS	STRAIN	PASSES (n)	n/H
0060-0100	882768	0.00164	0	35.23840	934095	0.00123	0	127.7317
0100-0200	913690	0.00161	0	35.25804	947826	0.00123	0	122.8596
0200-0300	918996	0.00161	0	34.92030	951299	0.00122	0	126.7367
0300-0400	920300	0.0016	0	35.68163	954564	0.00121	0	130.8607
0400-0500	923600	0.00159	0	36.46836	957824	0.00121	0	129.6771
0500-0600	926896	0.00158	0	37.28151	961079	0.0012	0	133.9545
0600-0700	930189	0.00158	0	36.93081	963924	0.0012	4	132.9034
0700-0800	933479	0.00157	4	37.76502	966968	0.00119	4	137.4227
0800-0900	936970	0.00156	4	38.60509	969806	0.00118	4	142.2300
0900-1000	939842	0.00156	4	38.29150	972833	0.00119	4	135.5226
1000-1100	941277	0.00157	4	36.73697	976282	0.00119	4	135.2229
1100-1200	940662	0.00159	4	34.73205	978930	0.0012	4	130.0413
1200-1300	937791	0.00161	4	32.89459	988793	0.00122	4	120.7290
1300-1400	932862	0.00162	4	32.34284	963924	0.00124	4	112.8065
1400-1500	926690	0.00163	4	31.92259	957620	0.00125	4	110.2774
1500-1600	919681	0.00164	4	31.59396	951095	0.00126	4	107.9188
1600-1700	913070	0.00164	4	32.20727	944554	0.00127	4	105.6619
1700-1800	906861	0.00164	4	32.79830	938817	0.00127	4	107.3914
1800-1900	902302	0.00164	1	33.24179	934712	0.00127	1	108.6529
1900-2000	899191	0.00164	1	33.54918	932451	0.00126	1	113.7654
2000-2100	898568	0.00163	1	34.65495	932246	0.00126	1	117.9039
2100-2200	900021	0.00163	1	34.50605	933890	0.00125	1	116.9420
2200-2300	902302	0.00163	1	34.27407	936765	0.00125	1	120.6047
2300-0000	905411	0.00162	1	35.02253	940047	0.00124	1	0.008291

TABLE 10. MILLIONS 3 INCH THICK ASPHALT

HOUR	JANUARY				FEBRUARY				MARCH				MAY				JULY			
	MODULUS	STRAIN	PASSES (n)	n/N	MODULUS	STRAIN	PASSES (n)	n/N	MODULUS	STRAIN	PASSES (n)	n/N	MODULUS	STRAIN	PASSES (n)	n/N	MODULUS	STRAIN	PASSES (n)	n/N
0000-0100	727716	0.00192	0	0	735227	0.00192	0	0	27.05498	0	27.05498	0	700421	0.00196	0	0	700421	0.00196	0	0
0100-0200	728961	0.00191	0	0	726471	0.00192	0	0	26.93169	0	26.93169	0	702070	0.00195	0	0	702070	0.00195	0	0
0200-0300	729791	0.00191	0	0	727716	0.00192	0	0	26.80908	0	26.80908	0	703507	0.00193	0	0	703507	0.00193	0	0
0300-0400	731037	0.00191	0	0	728961	0.00191	0	0	27.39320	0	27.39320	0	704956	0.00195	0	0	704956	0.00195	0	0
0400-0500	732283	0.00191	0	0	730207	0.00191	0	0	27.26881	0	27.26881	0	706607	0.00195	0	0	706607	0.00195	0	0
0500-0600	733530	0.0019	0	0	731452	0.00191	0	0	27.4098	0	27.4098	0	709084	0.00195	0	0	709084	0.00195	0	0
0600-0700	734776	0.0019	0	0	732699	0.0019	0	0	27.24098	0	27.24098	0	710737	0.00195	0	0	710737	0.00195	0	0
0700-0800	736023	0.0019	0	0	733945	0.0019	0	0	27.51565	0	27.51565	0	712490	0.00194	0	0	712490	0.00194	0	0
0800-0900	735192	0.0019	0	0	735630	0.0019	0	0	27.55231	0	27.55231	0	714243	0.00193	0	0	714243	0.00193	0	0
0900-1000	736471	0.00192	0	0	736630	0.00192	0	0	27.05488	0	27.05488	0	715996	0.00194	0	0	715996	0.00194	0	0
1000-1100	737631	0.00194	0	0	737227	0.00192	0	0	27.21670	0	27.21670	0	717749	0.00195	0	0	717749	0.00195	0	0
1100-1200	738243	0.00195	0	0	738004	0.00195	0	0	27.47017	0	27.47017	0	719502	0.00193	0	0	719502	0.00193	0	0
1200-1300	739059	0.00195	0	0	739421	0.00195	0	0	28.57465	0	28.57465	0	721255	0.00194	0	0	721255	0.00194	0	0
1300-1400	739875	0.00195	0	0	739837	0.00195	0	0	29.31163	0	29.31163	0	723008	0.00194	0	0	723008	0.00194	0	0
1400-1500	740691	0.00195	0	0	740374	0.00195	0	0	30.36503	0	30.36503	0	724761	0.00194	0	0	724761	0.00194	0	0
1500-1600	741507	0.00195	0	0	741166	0.00195	0	0	29.35854	0	29.35854	0	726514	0.00194	0	0	726514	0.00194	0	0
1600-1700	742323	0.00196	0	0	741825	0.00196	0	0	27.98594	0	27.98594	0	728267	0.00195	0	0	728267	0.00195	0	0
1700-1800	743139	0.00194	0	0	742486	0.00196	0	0	26.98742	0	26.98742	0	730020	0.00196	0	0	730020	0.00196	0	0
1800-1900	743955	0.00193	0	0	743143	0.00194	0	0	26.46135	0	26.46135	0	731773	0.00195	0	0	731773	0.00195	0	0
1900-2000	744771	0.00193	0	0	743800	0.00193	0	0	26.52853	0	26.52853	0	733526	0.00194	0	0	733526	0.00194	0	0
2000-2100	745587	0.00192	0	0	744457	0.00193	0	0	26.89043	0	26.89043	0	735279	0.00193	0	0	735279	0.00193	0	0
2100-2200	746403	0.00192	0	0	745114	0.00192	0	0	26.68533	0	26.68533	0	737032	0.00193	0	0	737032	0.00193	0	0
2200-2300	747219	0.00192	0	0	745825	0.00192	0	0	26.60384	0	26.60384	0	738785	0.00193	0	0	738785	0.00193	0	0
2300-0000	748035	0.00194	0	0	746536	0.00192	0	0	27.22061	0	27.22061	0	740538	0.00196	0	0	740538	0.00196	0	0

TABLE 10. CONTINUED

HOUR	AUGUST				SEPTEMBER				OCTOBER			
	MODULUS	STRAIN	PASSES (n)	n/N	MODULUS	STRAIN	PASSES (n)	n/N	MODULUS	STRAIN	PASSES (n)	n/N
0000-0100	704544	0.00195	0	27.04384	707020	0.00195	0	26.79218	714014	0.00194	0	26.77508
0100-0200	705782	0.00195	0	26.91260	708258	0.00195	0	26.66755	715285	0.00194	0	26.65146
0200-0300	707020	0.00195	0	26.79218	710324	0.00195	0	26.46135	716527	0.00194	0	26.52853
0300-0400	708084	0.00195	0	26.58485	711977	0.00194	0	26.38224	717768	0.00194	0	26.40647
0400-0500	710324	0.00195	0	26.46135	713631	0.00194	0	26.81640	719839	0.00193	0	26.89043
0500-0600	712390	0.00194	0	26.94107	715285	0.00194	0	26.65146	721082	0.00193	0	26.76707
0600-0700	714044	0.00194	4	26.77508	716872	0.00194	4	26.53853	723154	0.00193	4	26.56317
0700-0800	715782	0.00186	4	26.98534	718413	0.00194	4	26.36942	724398	0.00192	4	27.13758
0800-0900	717347	0.00194	4	31.30770	719746	0.00195	4	26.20871	725354	0.00192	4	27.44710
0900-1000	717842	0.00194	4	30.75746	720804	0.00195	4	27.90515	725369	0.00195	4	26.95863
1000-1100	719268	0.00193	4	31.97186	721110	0.00194	4	30.02701	725369	0.00195	4	26.23871
1100-1200	719268	0.00193	4	34.99739	721110	0.00192	4	33.07936	725369	0.00194	4	30.36503
1200-1300	720268	0.00189	4	37.09237	721110	0.00188	4	36.00864	725369	0.00192	4	33.88301
1300-1400	720268	0.00188	4	38.71815	721110	0.00188	4	38.78174	725369	0.00192	4	33.88301
1400-1500	720268	0.00188	4	38.90936	721110	0.00188	4	40.22466	725369	0.00192	4	36.18560
1500-1600	720268	0.00188	4	38.84548	721110	0.00188	4	38.97339	725369	0.00192	4	35.51091
1600-1700	720268	0.00188	4	36.36360	721110	0.00188	4	36.24470	725369	0.00192	4	30.80698
1700-1800	720268	0.00188	4	33.83937	721110	0.00188	4	32.54597	725369	0.00192	4	28.11976
1800-1900	720268	0.00188	4	31.15629	721110	0.00188	4	29.78478	725369	0.00192	4	26.90285
1900-2000	720268	0.00188	4	29.35854	721110	0.00188	4	27.20292	725369	0.00192	4	26.91760
2000-2100	720268	0.00188	4	27.02890	721110	0.00188	4	26.98742	725369	0.00192	4	26.58485
2100-2200	720268	0.00188	4	26.89274	721110	0.00188	4	27.08613	725369	0.00192	4	26.42039
2200-2300	720268	0.00188	4	27.11335	721110	0.00188	4	26.91760	725369	0.00192	4	26.98274
2300-0000	720268	0.00188	4									

HOUR	NOVEMBER				DECEMBER			
	MODULUS	STRAIN	PASSES (n)	n/N	MODULUS	STRAIN	PASSES (n)	n/N
0000-0100	723568	0.00192	0	27.22061	726886	0.00192	0	26.89074
0100-0200	724398	0.00192	0	26.13258	727216	0.00192	0	26.80908
0200-0300	726057	0.00192	0	26.97264	728961	0.00191	0	27.39320
0300-0400	727301	0.00192	0	26.84986	729281	0.00191	0	27.31025
0400-0500	728546	0.00191	0	27.43480	731037	0.00191	0	27.18838
0500-0600	729791	0.00191	0	27.31025	732283	0.00191	0	27.06327
0600-0700	731037	0.00191	4	27.18638	733114	0.00191	4	27.65915
0700-0800	732283	0.00191	4	27.06327	734361	0.00191	4	27.57398
0800-0900	731452	0.00191	4	27.14529	735608	0.00192	4	27.44988
0900-1000	731452	0.00191	4	26.68533	737301	0.00192	4	26.84986
1000-1100	733347	0.00195	4	26.75051	738546	0.00194	4	26.81640
1100-1200	733347	0.00195	4	28.25971	740421	0.00195	4	27.47017
1200-1300	733347	0.00194	4	30.36503	742283	0.00195	4	28.71092
1300-1400	733347	0.00193	4	32.07528	744154	0.00194	4	30.31649
1400-1500	733347	0.00192	4	33.29424	746037	0.00194	4	30.65876
1500-1600	733347	0.00195	4	32.12723	747920	0.00196	4	29.59438
1600-1700	733347	0.00195	4	29.59438	749804	0.00196	4	28.11976
1700-1800	733347	0.00195	4	27.63338	751687	0.00194	4	27.02990
1800-1900	733347	0.00194	4	26.77508	753570	0.00194	4	27.06645
1900-2000	733347	0.00194	4	26.77508	755453	0.00193	4	27.01457
2000-2100	733347	0.00193	4	26.44710	757336	0.00193	4	26.85333
2100-2200	733347	0.00193	4	26.89043	759219	0.00192	4	27.17405
2200-2300	733347	0.00193	4	26.76707	761102	0.00192	4	27.06794
2300-0000	733347	0.00193	4	26.84449	762985	0.00192	4	26.11114

TABLE 11. WILLIAMS 5 INCH THICK ASPHALT

HOUR	JANUARY				FEBRUARY				MARCH				APRIL				MAY				JUNE								
	MODULUS	STRAIN	PASSES (n)	n/N	MODULUS	STRAIN	PASSES (n)	n/N	MODULUS	STRAIN	PASSES (n)	n/N	MODULUS	STRAIN	PASSES (n)	n/N	MODULUS	STRAIN	PASSES (n)	n/N	MODULUS	STRAIN	PASSES (n)	n/N	MODULUS	STRAIN	PASSES (n)	n/N	
0:00-0:10	75227	0.00107	0	503.3088	723154	0.00108	0	484.1141	720667	0.00108	0	488.5792	707020	0.00109	0	483.4009	711150	0.00109	0	490.9628	709497	0.00109	0	490.9628	707020	0.00109	0	490.9628	707020
0:10-0:20	726471	0.00107	0	501.0153	724398	0.00107	0	504.8453	723998	0.00107	0	504.8453	713217	0.00109	0	479.6763	713217	0.00109	0	486.4081	709497	0.00109	0	486.4081	709497	0.00109	0	486.4081	709497
0:20-0:30	727301	0.00107	0	499.4930	725642	0.00107	0	502.5421	725642	0.00107	0	502.5421	714871	0.00109	0	476.7243	714871	0.00109	0	482.6535	711563	0.00109	0	482.6535	711563	0.00109	0	482.6535	711563
0:30-0:40	728546	0.00106	0	497.2214	726471	0.00107	0	501.0153	726471	0.00107	0	501.0153	715217	0.00109	0	495.3773	715217	0.00109	0	479.6763	713217	0.00109	0	479.6763	713217	0.00109	0	479.6763	713217
0:40-0:50	729376	0.00106	0	519.5431	727116	0.00107	0	498.7342	726057	0.00107	0	498.7342	715285	0.00109	0	493.0975	715285	0.00109	0	475.9893	712685	0.00109	0	475.9893	712685	0.00109	0	475.9893	712685
0:50-0:60	730522	0.00106	0	517.1852	728961	0.00107	0	498.7342	726057	0.00107	0	498.7342	716940	0.00109	0	490.0784	716940	0.00109	0	495.3773	715285	0.00109	0	495.3773	715285	0.00109	0	495.3773	715285
0:60-0:70	731452	0.00106	0	515.6227	729791	0.00106	0	498.7342	726057	0.00107	0	498.7342	718192	0.00109	0	487.0846	718192	0.00109	0	493.0975	715285	0.00109	0	493.0975	715285	0.00109	0	493.0975	715285
0:70-0:80	732499	0.00106	0	513.2073	731037	0.00106	0	518.2561	728546	0.00107	0	518.2561	719839	0.00109	0	488.5792	719839	0.00109	0	493.0975	715285	0.00109	0	493.0975	715285	0.00109	0	493.0975	715285
0:80-0:90	732999	0.00106	0	513.2073	731037	0.00106	0	518.2561	728546	0.00107	0	518.2561	721496	0.00109	0	488.5792	721496	0.00109	0	493.0975	715285	0.00109	0	493.0975	715285	0.00109	0	493.0975	715285
0:90-1:00	733983	0.00107	0	494.5641	732999	0.00106	0	513.2073	731037	0.00106	0	513.2073	723525	0.00108	0	492.2214	723525	0.00108	0	495.3773	715285	0.00109	0	495.3773	715285	0.00109	0	495.3773	715285
1:00-1:10	735527	0.00108	4	482.5382	733983	0.00108	4	492.2214	733983	0.00108	4	492.2214	724846	0.00109	4	484.1141	724846	0.00109	4	488.5792	720667	0.00109	4	488.5792	720667	0.00109	4	488.5792	720667
1:10-1:20	736574	0.00108	4	473.7937	735527	0.00108	4	482.5382	733983	0.00108	4	482.5382	726057	0.00109	4	484.1141	726057	0.00109	4	488.5792	720667	0.00109	4	488.5792	720667	0.00109	4	488.5792	720667
1:20-1:30	738671	0.00108	4	510.9316	736574	0.00108	4	492.2214	733983	0.00108	4	492.2214	727116	0.00109	4	484.1141	727116	0.00109	4	488.5792	720667	0.00109	4	488.5792	720667	0.00109	4	488.5792	720667
1:30-1:40	740248	0.00107	4	523.0160	738671	0.00108	4	492.2214	733983	0.00108	4	492.2214	728961	0.00109	4	484.1141	728961	0.00109	4	488.5792	720667	0.00109	4	488.5792	720667	0.00109	4	488.5792	720667
1:40-1:50	737950	0.00107	4	557.4500	740248	0.00107	4	523.0160	738671	0.00108	4	523.0160	730070	0.00109	4	484.1141	730070	0.00109	4	488.5792	720667	0.00109	4	488.5792	720667	0.00109	4	488.5792	720667
1:50-1:60	696304	0.00107	4	560.9687	737950	0.00107	4	557.4500	740248	0.00107	4	557.4500	731934	0.00109	4	484.1141	731934	0.00109	4	488.5792	720667	0.00109	4	488.5792	720667	0.00109	4	488.5792	720667
1:60-1:70	697127	0.00108	4	533.7914	696304	0.00107	4	560.9687	737950	0.00107	4	560.9687	733983	0.00108	4	484.1141	733983	0.00108	4	488.5792	720667	0.00109	4	488.5792	720667	0.00109	4	488.5792	720667
1:70-1:80	700833	0.00109	4	502.5987	697127	0.00108	4	533.7914	696304	0.00107	4	533.7914	735999	0.00109	4	484.1141	735999	0.00109	4	488.5792	720667	0.00109	4	488.5792	720667	0.00109	4	488.5792	720667
1:80-1:90	707020	0.00109	1	490.9628	700833	0.00109	4	502.5987	697127	0.00108	4	502.5987	737950	0.00109	4	484.1141	737950	0.00109	4	488.5792	720667	0.00109	4	488.5792	720667	0.00109	4	488.5792	720667
1:90-2:00	712390	0.00109	1	481.1618	707020	0.00109	1	490.9628	700833	0.00109	4	490.9628	739999	0.00109	4	484.1141	739999	0.00109	4	488.5792	720667	0.00109	4	488.5792	720667	0.00109	4	488.5792	720667
2:00-2:10	716527	0.00108	1	496.1386	712390	0.00109	1	481.1618	707020	0.00109	4	481.1618	741871	0.00109	4	484.1141	741871	0.00109	4	488.5792	720667	0.00109	4	488.5792	720667	0.00109	4	488.5792	720667
2:10-2:20	719839	0.00108	1	490.0784	716527	0.00108	1	496.1386	712390	0.00109	4	496.1386	743871	0.00109	4	484.1141	743871	0.00109	4	488.5792	720667	0.00109	4	488.5792	720667	0.00109	4	488.5792	720667
2:20-2:30	721910	0.00108	1	486.3405	719839	0.00108	1	490.0784	716527	0.00108	1	490.0784	745871	0.00109	4	484.1141	745871	0.00109	4	488.5792	720667	0.00109	4	488.5792	720667	0.00109	4	488.5792	720667
2:30-0:00	723568	0.00107	1	506.3901	721910	0.00108	1	486.3405	719839	0.00108	1	486.3405	747871	0.00109	4	484.1141	747871	0.00109	4	488.5792	720667	0.00109	4	488.5792	720667	0.00109	4	488.5792	720667

TABLE 11. CONTINUED

HOUR	JULY				AUGUST				SEPTEMBER				n/N		
	MODULUS	STRAIN	PASSES (n)	n/N	MODULUS	STRAIN	PASSES (n)	n/N	MODULUS	STRAIN	PASSES (n)	n/N		MODULUS	STRAIN
0100-0100	702483	0.00109	0	0	704956	0.00109	0	0	707846	0.00109	0	0	489.4375	0	0
0100-0200	704131	0.00109	0	0	707020	0.00109	0	0	709497	0.00109	0	0	486.4081	0	0
0200-0300	705782	0.00109	0	0	708258	0.00109	0	0	711150	0.00109	0	0	483.4009	0	0
0300-0400	707020	0.00109	0	0	709911	0.00109	0	0	712300	0.00109	0	0	481.1518	0	0
0400-0500	708258	0.00109	0	0	711150	0.00109	0	0	713044	0.00109	0	0	478.1932	0	0
0500-0600	709911	0.00109	0	0	712804	0.00109	0	0	715285	0.00109	0	0	473.9893	0	0
0600-0700	711563	0.00109	0	0.008287	714044	0.00109	0	0	716527	0.00108	0	0	496.1386	0.00806	0
0700-0800	710737	0.00109	0	0.008281	697950	0.00105	0	0	717354	0.00108	0	0	494.6138	0.00808	0
0800-0900	707433	0.00109	0	0.008159	692191	0.00105	0	0	714871	0.00109	0	0	476.7243	0.00839	0
0900-1000	702482	0.00108	0	0.007153	690137	0.00105	0	0	709497	0.00109	0	0	486.4081	0.00822	0
1000-1100	691370	0.00107	0	0.007153	688085	0.00104	0	0	702070	0.00108	0	0	523.8344	0.00763	0
1100-1200	686443	0.00103	0	0.006366	684803	0.00103	0	0	667.4730	0.005992	0	0	592.5874	0.00675	0
1200-1300	681935	0.00101	0	0.005673	681116	0.00101	0	0	709.9178	0.005038	0	0	702.7423	0.00569	0
1300-1400	679069	0.000997	0	0.005054	677842	0.000989	0	0	893.2597	0.004477	0	0	834.4156	0.00479	0
1400-1500	677433	0.000994	0	0.004539	675390	0.000974	0	0	953.8042	0.004193	0	0	919.1355	0.00435	0
1500-1600	677025	0.000992	0	0.004527	674164	0.000974	0	0	978.2764	0.004088	0	0	948.9428	0.00421	0
1600-1700	678251	0.00101	0	0.004982	676207	0.000998	0	0	947.1615	0.004223	0	0	900.4780	0.00444	0
1700-1800	680706	0.00102	0	0.004921	679888	0.00102	0	0	867.8258	0.004608	0	0	801.5977	0.00495	0
1800-1900	684803	0.00105	0	0.004921	678888	0.00102	0	0	759.3992	0.004316	0	0	680.3632	0.00496	0
1900-2000	690137	0.00107	0	0.004921	690548	0.00107	0	0	644.4476	0.004743	0	0	575.3378	0.00473	0
2000-2100	694658	0.00108	0	0.004921	695892	0.00108	0	0	573.5166	0.004743	0	0	537.1648	0.00466	0
2100-2200	697950	0.00108	0	0.004921	700009	0.00108	0	0	536.3197	0.004864	0	0	504.1769	0.00498	0
2200-2300	700009	0.00108	0	0.004921	702894	0.00109	0	0	527.9547	0.004894	0	0	487.9008	0.00500	0
2300-0000	700009	0.00108	0	0.004921	702894	0.00109	0	0	498.6808	0.005005	0	0	493.2612	0.00502	0

HOUR	OCTOBER				NOVEMBER				DECEMBER				n/N			
	MODULUS	STRAIN	PASSES (n)	n/N	MODULUS	STRAIN	PASSES (n)	n/N	MODULUS	STRAIN	PASSES (n)	n/N		MODULUS	STRAIN	PASSES (n)
0000-0100	713217	0.00109	0	0	721496	0.00108	0	0	724398	0.00107	0	0	504.8453	0	0	
0100-0200	714871	0.00108	0	0	722739	0.00108	0	0	725642	0.00107	0	0	502.5421	0	0	
0200-0300	716527	0.00108	0	0	723983	0.00107	0	0	726471	0.00107	0	0	501.0153	0	0	
0300-0400	717768	0.00108	0	0	725227	0.00107	0	0	727301	0.00107	0	0	499.4930	0	0	
0400-0500	719010	0.00108	0	0	726471	0.00107	0	0	728546	0.00107	0	0	497.2214	0	0	
0500-0600	720253	0.00108	0	0	727301	0.00107	0	0	729376	0.00106	0	0	519.5431	0	0	
0600-0700	721496	0.00108	0	0.008212	728546	0.00107	0	0	730622	0.00106	0	0	517.1852	0.00773	0	
0700-0800	722739	0.00108	0	0.008249	729376	0.00106	0	0	731452	0.00106	0	0	515.6227	0.00775	0	
0800-0900	724082	0.00108	0	0.008159	729791	0.00106	0	0	732283	0.00106	0	0	514.0648	0.00778	0	
0900-1000	725326	0.00108	0	0.008429	729888	0.00107	0	0	733007	0.00107	0	0	494.2129	0.00809	0	
1000-1100	726569	0.00107	0	0.008429	729888	0.00107	0	0	733832	0.00108	0	0	482.5302	0.00828	0	
1100-1200	727812	0.00107	0	0.008429	729888	0.00107	0	0	734657	0.00109	0	0	474.5200	0.00842	0	
1200-1300	729055	0.00105	0	0.008429	729888	0.00109	0	0	735482	0.00109	0	0	474.5200	0.00842	0	
1300-1400	730298	0.00105	0	0.008429	729888	0.00109	0	0	736307	0.00109	0	0	512.5201	0.00780	0	
1400-1500	731541	0.00102	0	0.008429	729888	0.00109	0	0	737132	0.00108	0	0	512.5201	0.00780	0	
1500-1600	732784	0.00102	0	0.008429	729888	0.00109	0	0	737957	0.00108	0	0	589.7895	0.00678	0	
1600-1700	734027	0.00102	0	0.008429	729888	0.00109	0	0	738782	0.00106	0	0	594.4613	0.00672	0	
1700-1800	735270	0.00104	0	0.008429	729888	0.00109	0	0	739607	0.00106	0	0	565.4092	0.00707	0	
1800-1900	736513	0.00104	0	0.008429	729888	0.00109	0	0	740432	0.00109	0	0	531.2794	0.00752	0	
1900-2000	737756	0.00106	0	0.008429	729888	0.00109	0	0	741257	0.00109	0	0	494.8030	0.00702	0	
2000-2100	739000	0.00106	0	0.008429	729888	0.00109	0	0	742082	0.00109	0	0	484.1498	0.00706	0	
2100-2200	740243	0.00109	0	0.008429	729888	0.00109	0	0	742907	0.00109	0	0	475.2559	0.00710	0	
2200-2300	741486	0.00109	0	0.008429	729888	0.00109	0	0	743732	0.00108	0	0	491.5857	0.00703	0	
2300-0000	742729	0.00109	0	0.008429	729888	0.00109	0	0	744557	0.00108	0	0				

TABLE 12. WILLIAMS 10 INCH HIGH ASPHALT

HR	JANUARY				FEBRUARY				MARCH					
	MODULUS	STRAIN	PASSES (n)	n/N	MODULUS	STRAIN	PASSES (n)	n/N	MODULUS	STRAIN	PASSES (n)	n/N		
0000-0100	88895	0.0014	0	150.7546	0	0	0	149.4830	0	668045	0.00143	0	146.9363	0
0100-0200	700833	0.00139	0	149.0321	0	0	0	146.4063	0	687059	0.00141	0	146.2958	0
0200-0300	704544	0.00138	0	152.3512	0	0	0	149.5000	0	691370	0.0014	0	143.8773	0
0300-0400	708465	0.00137	0	155.6736	0	0	0	152.8277	0	695892	0.0014	0	146.5218	0
0400-0500	711977	0.00136	0	159.3676	0	0	0	156.2796	0	700009	0.00139	0	145.5000	0
0500-0600	715699	0.00135	0	163.0764	0	0	0	154.3510	0	704131	0.00138	0	152.5895	0
0600-0700	719010	0.00135	4	161.0828	0.024831	4	4	158.0190	0.025313	707846	0.00137	4	156.0367	0.025634
0700-0800	722325	0.00134	4	165.1467	0.024220	4	4	161.9511	0.024698	711770	0.00136	4	159.4912	0.025079
0800-0900	725434	0.00133	4	169.4981	0.023599	4	4	166.1612	0.024072	715078	0.00136	4	157.5325	0.025391
0900-1000	728339	0.00133	4	167.7024	0.023896	4	4	164.3917	0.024332	717561	0.00136	4	156.0839	0.025627
1000-1100	729999	0.00133	4	166.6880	0.023996	4	4	163.1426	0.024518	719130	0.00137	4	150.1235	0.026644
1100-1200	728791	0.00135	4	164.8188	0.023836	4	4	161.6102	0.024383	718120	0.00139	4	140.5990	0.028449
1200-1300	726264	0.00137	4	165.7125	0.024245	4	4	162.5603	0.025058	719277	0.0014	4	137.8651	0.029013
1300-1400	720253	0.00139	4	168.9421	0.023867	4	4	165.5493	0.023950	705359	0.00141	4	136.9927	0.029466
1400-1500	713184	0.00141	4	172.9210	0.023088	4	4	174.7037	0.023654	673393	0.00142	4	135.7396	0.029466
1500-1600	703307	0.00141	4	167.4610	0.023099	4	4	174.4665	0.023747	689111	0.00142	4	140.0987	0.028531
1600-1700	694658	0.00142	4	167.1371	0.023167	4	4	178.9924	0.028778	681321	0.00142	4	144.4083	0.027699
1700-1800	687264	0.00142	4	141.1043	0.028347	4	4	142.9154	0.027988	674368	0.00142	4	148.4104	0.026952
1800-1900	682344	0.00142	1	143.8321	0.006952	1	1	145.6981	0.006863	669472	0.00142	1	151.3205	0.006608
1900-2000	680297	0.00142	1	144.9883	0.006897	1	1	141.9140	0.007046	667027	0.00143	1	147.7754	0.006778
2000-2100	681116	0.00142	1	144.5242	0.006919	1	1	141.5720	0.007063	666619	0.00143	1	147.5347	0.006767
2100-2200	683778	0.00142	1	143.0296	0.006991	1	1	140.2138	0.007131	668860	0.00144	1	141.4444	0.006769
2200-2300	687674	0.00144	1	145.9474	0.006851	1	1	143.1434	0.006985	672327	0.00143	1	144.4555	0.006922
2300-0000	691781	0.0014	1	148.8538	0.006717	1	1	145.9474	0.006851	677025	0.00143	1	141.7995	0.007052

HR	APRIL				MAY				JUNE					
	MODULUS	STRAIN	PASSES (n)	n/N	MODULUS	STRAIN	PASSES (n)	n/N	MODULUS	STRAIN	PASSES (n)	n/N		
0000-0100	634462	0.00147	0	146.8652	0	0	0	152.7550	0	600624	0.00147	0	169.9627	0
0100-0200	664381	0.00144	0	143.9999	0	0	0	145.7693	0	617268	0.00147	0	158.0962	0
0200-0300	670287	0.00144	0	140.6433	0	0	0	142.4447	0	652012	0.00144	0	154.3179	0
0300-0400	676003	0.00143	0	142.3715	0	0	0	144.1178	0	647351	0.00143	0	145.6492	0
0400-0500	681525	0.00142	0	144.2932	0	0	0	141.1000	0	653014	0.00145	0	143.3988	0
0500-0600	686654	0.00141	0	146.4122	0	0	0	143.1773	0	658651	0.00144	0	147.3582	0
0600-0700	691781	0.0014	4	148.8538	0.026871	4	4	145.3377	0.027522	664177	0.00144	4	144.1178	0
0700-0800	696304	0.00139	4	151.6294	0.026380	4	4	142.5735	0.028055	669472	0.00144	4	141.0000	0.028348
0800-0900	700421	0.00139	4	149.2658	0.026797	4	4	145.3686	0.027516	674573	0.00143	4	143.1773	0.027937
0900-1000	702482	0.0014	4	142.8872	0.027994	4	4	139.1023	0.028755	678660	0.00143	4	140.8909	0.028390
1000-1100	708276	0.00141	4	137.9995	0.028985	4	4	139.2129	0.028732	680502	0.00143	4	139.8769	0.028596
1100-1200	693013	0.00142	4	138.0063	0.029654	4	4	136.0228	0.029406	680502	0.00143	4	140.3265	0.028504
1200-1300	685416	0.00142	4	142.1194	0.028145	4	4	143.8321	0.029406	676207	0.00143	4	142.2571	0.028118
1300-1400	676411	0.00141	4	152.5139	0.026227	4	4	153.5031	0.026058	676207	0.00143	4	156.1290	0.025619
1400-1500	665027	0.0014	4	164.0341	0.024385	4	4	164.7031	0.024286	662754	0.00139	4	172.9571	0.023127
1500-1600	658082	0.00138	4	182.7279	0.021890	4	4	212.2042	0.018849	663824	0.00136	4	199.9948	0.020000
1600-1700	650383	0.00137	4	195.5320	0.020457	4	4	227.3343	0.018849	644727	0.00133	4	232.0981	0.017234
1700-1800	644324	0.00137	4	200.4706	0.004988	4	4	227.3343	0.018849	638247	0.00128	4	269.6876	0.014831
1800-1900	640897	0.00137	1	196.4787	0.005099	1	1	242.0364	0.01413	630659	0.00128	1	300.7296	0.013229
1900-2000	639689	0.0014	1	183.3873	0.005452	1	1	237.1126	0.004217	628450	0.00128	1	300.7296	0.013229
2000-2100	641300	0.00143	1	163.8393	0.006103	1	1	221.4939	0.004514	618662	0.00128	1	301.8176	0.013229
2100-2200	645333	0.00144	1	155.6073	0.006426	1	1	190.4752	0.005250	618662	0.00135	1	281.1561	0.009356
2200-2300	650586	0.00145	1	147.1023	0.006797	1	1	174.9023	0.005250	622251	0.00139	1	240.4497	0.004158
2300-0000								153.6946	0.006361	627247	0.00141	1	204.6087	0.004887

TABLE 1.2. CONTINUED

HOUR	JULY				AUGUST				SEPTEMBER			
	MODULUS	STRAIN	PASSES	n/N	MODULUS	STRAIN	PASSES	n/N	MODULUS	STRAIN	PASSES	n/N
	(n)	(n)	(n)	(n)	(n)	(n)	(n)	(n)	(n)	(n)	(n)	(n)
0000-0100	600624	0.00146	0	175.8636	0	0	0	0	600624	0.00146	0	175.8636
0100-0200	641502	0.00143	0	163.7018	0	0	0	0	641502	0.00143	0	163.7018
0300-0400	645534	0.00144	0	160.9911	0	0	0	0	645534	0.00143	0	160.9911
0500-0600	649377	0.00144	0	152.7872	0	0	0	0	649377	0.00144	0	152.7872
0700-0800	653824	0.00144	0	150.2799	0	0	0	0	653824	0.00144	0	150.2799
0900-1000	657879	0.00144	0	147.8240	0	0	0	0	657879	0.00144	0	147.8240
1100-1200	661737	0.00144	0	145.5883	0.027484	4	0	0	661737	0.00144	0	145.5883
1300-1400	665805	0.00144	0	143.1806	0.027936	4	0	0	665805	0.00144	4	143.1806
1500-1600	669064	0.00144	0	141.3295	0.028302	4	0	0	669064	0.00144	4	141.3295
1700-1800	671103	0.00143	0	145.1587	0.027556	4	0	0	671103	0.00143	4	145.1587
1900-2000	670695	0.00143	0	145.3942	0.027511	4	0	0	670695	0.00143	4	145.3942
2100-2200	668453	0.00142	0	151.9361	0.026326	4	0	0	668453	0.00142	4	151.9361
2300-2400	663974	0.00141	0	160.2464	0.024961	4	0	0	663974	0.00141	4	160.2464
2500-2600	658285	0.00139	0	176.1040	0.022713	4	0	0	658285	0.00139	4	176.1040
2700-2800	651395	0.00135	0	194.7235	0.020541	4	0	0	651395	0.00135	4	194.7235
2900-3000	644324	0.00133	0	215.7668	0.018538	4	0	0	644324	0.00133	4	215.7668
3100-3200	637476	0.00131	0	239.2006	0.016722	4	0	0	637476	0.00133	4	239.2006
3300-3400	631453	0.00131	0	264.6374	0.015115	4	0	0	631453	0.00131	4	264.6374
3500-3600	626846	0.00132	0	269.8525	0.003705	1	0	0	626846	0.00131	1	269.8525
3700-3800	623848	0.00132	0	263.1249	0.003800	1	0	0	623848	0.00132	1	263.1249
3900-4000	622850	0.00134	0	245.1098	0.004079	1	0	0	622850	0.00134	1	245.1098
4100-4200	622850	0.00137	0	218.4886	0.004576	1	0	0	622850	0.00137	1	218.4886
4300-4400	626646	0.00139	0	200.8067	0.004979	1	0	0	626646	0.00139	1	200.8067
4500-4600	630450	0.00141	0	183.9721	0.005435	1	0	0	630450	0.00141	1	183.9721
0000-0100	636471	0.00147	0	145.6330	0	0	0	0	636471	0.00141	0	145.6330
0100-0200	665805	0.00144	0	143.1806	0	0	0	0	665805	0.00139	0	143.1806
0300-0400	670695	0.00144	0	140.4154	0	0	0	0	670695	0.00139	0	140.4154
0500-0600	679683	0.00143	0	142.7162	0	0	0	0	705163	0.00138	0	141.9951
0700-0800	683778	0.00142	0	140.3265	0	0	0	0	709084	0.00137	0	155.3117
0900-1000	687879	0.00141	0	143.0296	0	0	0	0	159.1215	0	0	159.1215
1100-1200	691986	0.00141	0	145.8315	0.027428	4	0	0	163.0764	0.024528	4	163.0764
1300-1400	695892	0.0014	0	143.5362	0.027867	4	0	0	161.0828	0.024831	4	161.0828
1500-1600	700009	0.00142	0	146.5218	0.027259	4	0	0	165.1467	0.024220	4	165.1467
1700-1800	693425	0.00142	0	144.9168	0.027602	4	0	0	169.6271	0.023581	4	169.6271
1900-2000	686258	0.00142	0	139.1938	0.028236	4	0	0	156.2354	0.025602	4	156.2354
2100-2200	682229	0.00141	0	137.2879	0.029030	4	0	0	134.6101	0.025715	4	134.6101
2300-2400	677229	0.00142	0	152.0235	0.026311	4	0	0	133.9759	0.025856	4	133.9759
2500-2600	676768	0.0014	0	163.6349	0.024444	4	0	0	134.1506	0.025917	4	134.1506
2700-2800	684989	0.00138	0	182.4278	0.021926	4	0	0	138.9924	0.026778	4	138.9924
2900-3000	680586	0.00137	0	195.3694	0.020474	4	0	0	143.3724	0.027899	4	143.3724
3100-3200	642106	0.00138	0	188.1787	0.005314	1	0	0	146.5095	0.006825	1	146.5095
3300-3400	642106	0.00139	0	169.1231	0.005912	1	0	0	142.7162	0.007006	1	142.7162
3500-3600	644525	0.00144	0	161.6636	0.006185	1	0	0	140.7776	0.007103	1	140.7776
3700-3800	648766	0.00144	0	153.4226	0.006517	1	0	0	143.4872	0.006969	1	143.4872
3900-4000	653824	0.00145	0	145.1688	0.006868	1	0	0	145.9474	0.006851	1	145.9474

TABLE 1.3. CONTINUED

HOUR	AUGUST				SEPTEMBER				NOVEMBER						
	MODULUS	STRAIN	PASSES	n/N	MODULUS	STRAIN	PASSES	n/N	MODULUS	STRAIN	PASSES	n/N	MODULUS	STRAIN	PASSES
0000-0100	959045	0.00174	0	21.01693	961892	0.00173	0	21.46122	974863	0.00171	0	21.94832	974863	0.00171	0
0100-0200	960266	0.00174	0	20.94579	963112	0.00173	0	21.38885	975672	0.00171	0	21.89985	975672	0.00171	0
0300-0300	961486	0.00174	0	20.87504	964330	0.00173	0	21.31693	976076	0.00171	0	21.87571	976076	0.00171	0
0300-0400	962705	0.00173	0	21.41295	965554	0.00173	0	21.22155	977691	0.0017	0	22.40269	977691	0.0017	0
0400-0500	963924	0.00173	0	21.34086	967577	0.00172	0	21.74815	978094	0.0017	0	22.42407	978094	0.0017	0
0500-0600	965148	0.00173	0	21.24534	968703	0.00172	0	21.62548	979304	0.0017	0	22.32338	979304	0.0017	0
0600-0700	966365	0.00173	0	21.17414	969909	0.00172	0	21.62725	980110	0.0017	0	22.28048	980110	0.0017	0.1795
0700-0800	967584	0.00174	0	20.82807	971048	0.00172	0	21.65133	981320	0.0017	0	22.20734	981320	0.0017	0.1801
0800-0900	968800	0.00175	0	20.87977	972205	0.00173	0	21.36483	982534	0.0017	0	22.55502	982534	0.0017	0.1797
0900-1000	969999	0.00177	0	20.83622	973423	0.00173	0	20.70335	974459	0.0017	0	21.37258	974459	0.0017	0.1820
1000-1100	971198	0.00178	0	19.31379	974758	0.00177	0	20.08264	975602	0.00173	0	21.24534	975602	0.00173	0.1820
1100-1200	972397	0.00178	0	20.33846	976179	0.00178	0	20.07010	976627	0.00175	0	20.56257	976627	0.00175	0.1952
1200-1300	973596	0.00179	0	20.10697	977592	0.00178	0	20.38648	977977	0.00176	0	20.39977	977977	0.00176	0.1960
1300-1400	974795	0.00179	0	20.32363	979005	0.00179	0	20.08312	978349	0.00177	0	20.10583	978349	0.00177	0.1984
1400-1500	975994	0.00179	0	20.42105	980418	0.00179	0	20.20285	979201	0.00177	0	20.22250	979201	0.00177	0.1979
1500-1600	977193	0.00179	0	20.39662	981831	0.00179	0	20.15480	979991	0.00177	0	20.15237	979991	0.00177	0.1984
1600-1700	978392	0.00179	0	20.25105	983244	0.00179	0	20.50725	980842	0.00176	0	20.49371	980842	0.00176	0.1934
1700-1800	979591	0.00178	0	20.55588	984657	0.00148	0	68.71280	981692	0.00175	0	20.67977	981692	0.00175	0.1934
1800-1900	980790	0.00178	0	20.17174	986070	0.00176	0	24.60059	982605	0.00173	0	21.36483	982605	0.00173	0.0468
1900-2000	981989	0.00177	0	20.31653	987483	0.00176	0	20.62913	983817	0.00172	0	21.69970	983817	0.00172	0.0468
2000-2100	983188	0.00176	0	20.44664	988896	0.00175	0	20.63582	985230	0.00172	0	21.53125	985230	0.00172	0.0464
2100-2200	984387	0.00175	0	20.50610	990309	0.00175	0	20.72696	986564	0.00171	0	22.09455	986564	0.00171	0.0452
2200-2300	985586	0.00175	0	21.58596	991722	0.00174	0	21.08841	987894	0.00171	0	22.04564	987894	0.00171	0.0453
2300-0000	986785	0.00174	0	21.11237	993135	0.00174	0	20.94579	989026	0.00171	0	21.99688	989026	0.00171	0.0454

HOUR	DECEMBER			
	MODULUS	STRAIN	PASSES	n/N
0000-0100	987984	0.00169	0	22.84217
0100-0200	989183	0.00169	0	22.74761
0200-0300	990382	0.00169	0	22.72279
0300-0400	991581	0.00169	0	22.64872
0400-0500	992780	0.00169	0	22.62410
0500-0600	993979	0.00169	0	22.57498
0600-0700	995178	0.00168	0	23.20445
0700-0800	996377	0.00168	0	22.55047
0800-0900	997576	0.00169	0	22.48872
0900-1000	998775	0.00172	0	22.32938
1000-1100	999974	0.00172	0	21.53125
1100-1200	100173	0.00173	0	21.36483
1200-1300	100372	0.00175	0	20.49273
1300-1400	100571	0.00175	0	20.70335
1400-1500	100770	0.00175	0	20.50610
1500-1600	100969	0.00175	0	20.65629
1600-1700	101168	0.00175	0	21.01693
1700-1800	101367	0.00173	0	21.26916
1800-1900	101566	0.00171	0	21.69169
1900-2000	101765	0.00171	0	22.07004
2000-2100	101964	0.0017	0	22.37716
2100-2200	102163	0.0017	0	22.37843
2200-2300	102362	0.0017	0	22.28042
2300-0000	102561	0.0017	0	22.25602

TABLE 1-4. WRIGHT PATTIPSON 5 INCH THICK ASPHALT

HOUR	JANUARY				MARCH				APRIL			
	MODULUS	STRAIN	PASSES	n/n	MODULUS	STRAIN	PASSES	n/n	MODULUS	STRAIN	PASSES	n/n
0000-0100	723901	0.000948	0	414.5401	0	0.009400	0	401.5546	0	0.00967	0	387.1922
0100-0200	979208	0.000946	0	418.0116	0	0.009321	0	404.3413	0	0.00965	0	389.8190
0200-0300	880514	0.000945	0	419.3080	0	0.009353	0	407.3402	0	0.00962	0	393.2774
0300-0400	980917	0.000943	0	421.0722	0	0.009352	0	408.5839	0	0.00958	0	397.0753
0400-0500	981723	0.000943	0	422.3840	0	0.00935	0	411.5392	0	0.00958	0	399.9045
0500-0600	982528	0.000941	0	425.9604	0	0.009348	0	414.9852	0	0.00956	0	403.2109
0600-0700	982931	0.000941	4	425.4951	0.009400	0.009400	4	416.2665	0.00955	0.00955	4	403.9848
0700-0800	983736	0.000939	4	429.1086	0.009321	0.009321	4	419.7676	0.009529	0.009529	4	398.5787
0800-0900	984138	0.000938	4	430.9314	0.009282	0.009282	4	410.1849	0.009551	0.009551	4	387.3245
0900-1000	982931	0.000943	4	421.0021	0.009501	0.009501	4	396.8207	0.010080	0.00974	4	374.3187
1000-1100	978901	0.000952	4	405.8943	0.009854	0.009854	4	381.7838	0.010477	0.00988	4	364.1896
1100-1200	974055	0.000962	4	390.3608	0.010246	0.009854	4	369.8464	0.010815	0.00988	4	358.0887
1200-1300	968387	0.000972	4	376.4998	0.010624	0.009833	4	363.5685	0.011002	0.00991	4	356.7371
1300-1400	963924	0.000978	4	369.6138	0.010822	0.00987	4	359.9064	0.011133	0.00993	4	356.4051
1400-1500	960672	0.000982	4	365.4234	0.010946	0.00989	4	359.1281	0.011138	0.00994	4	357.4798
1500-1600	959045	0.000982	4	367.0779	0.010896	0.00989	4	360.3588	0.011100	0.00994	4	358.7174
1600-1700	959859	0.000979	4	371.8949	0.010755	0.00988	4	362.1861	0.011044	0.00994	4	359.1312
1700-1800	962299	0.000974	4	378.9662	0.010555	0.00986	4	364.6249	0.010870	0.00991	4	359.8974
1800-1900	966265	0.000966	1	390.0723	0.002563	0.00988	1	370.6280	0.002698	0.00991	1	360.8438
1900-2000	970818	0.00096	1	397.9588	0.002512	0.00987	1	379.3937	0.002635	0.00987	1	364.4403
2000-2100	973651	0.000956	1	403.2109	0.003480	0.00984	1	386.9286	0.002584	0.00981	1	371.4691
2100-2200	975672	0.000953	1	407.3402	0.003454	0.00986	1	391.6458	0.002551	0.00976	1	376.7947
2200-2300	976883	0.000951	1	410.2830	0.002437	0.00982	1	393.6392	0.002539	0.00972	1	381.1634
2300-0000	978094	0.000949	1	413.2579	0.002419	0.00989	1	398.7068	0.002508	0.0097	1	382.9561

HOUR	MAY				JUNE				JULY			
	MODULUS	STRAIN	PASSES	n/n	MODULUS	STRAIN	PASSES	n/n	MODULUS	STRAIN	PASSES	n/n
0000-0100	962705	0.000975	0	376.6032	0	0.00984	0	366.2570	0	0.00985	0	365.2306
0100-0200	964330	0.000973	0	378.7834	0	0.00982	0	368.3263	0	0.00982	0	368.7447
0200-0300	965548	0.000971	0	381.4152	0	0.0098	0	370.4198	0	0.0098	0	370.8389
0300-0400	966765	0.000969	0	384.0762	0	0.00978	0	372.5369	0	0.00979	0	371.4750
0400-0500	967982	0.000967	0	386.7656	0	0.00976	0	375.0993	0	0.00977	0	373.6045
0500-0600	969198	0.000965	4	389.4849	0	0.00973	0	379.2087	0	0.00975	0	376.1792
0600-0700	970413	0.000963	4	392.2345	0.010197	0.00975	4	375.3353	0.010657	0.00976	4	374.2560
0700-0800	969603	0.000966	4	387.0420	0.010334	0.0098	4	367.9210	0.010871	0.00981	4	366.8754
0800-0900	966360	0.000974	4	374.369	0.010674	0.00985	4	361.9310	0.011051	0.00987	4	359.4988
0900-1000	965602	0.000982	4	364.1896	0.010983	0.00991	4	355.5168	0.011251	0.00992	4	355.3480
1000-1100	961299	0.000984	4	356.6861	0.011214	0.00994	4	354.6159	0.011379	0.00995	4	353.4615
1100-1200	961999	0.000984	4	352.9859	0.011214	0.00996	4	353.9512	0.011237	0.00996	4	352.6002
1200-1300	966004	0.000992	4	355.6870	0.011245	0.00995	4	361.9100	0.011052	0.00994	4	365.4296
1300-1400	943121	0.000995	4	353.4008	0.011229	0.00993	4	368.5595	0.010853	0.00992	4	372.3908
1400-1500	940252	0.000995	4	362.3307	0.010939	0.00991	4	374.9120	0.010669	0.00989	4	380.9447
1500-1600	938611	0.000994	4	365.8562	0.010933	0.0099	4	378.5801	0.010565	0.00988	4	384.2278
1600-1700	938611	0.000994	4	365.8562	0.010933	0.00991	4	379.0246	0.010553	0.00988	4	384.6797
1700-1800	939842	0.000994	4	364.5805	0.010971	0.00991	4	376.6739	0.010619	0.00989	4	381.8403
1800-1900	942301	0.000994	1	362.0505	0.002762	0.00992	1	373.0262	0.002680	0.00991	1	376.2324
1900-2000	945986	0.000992	1	361.9307	0.002762	0.00994	1	366.2824	0.002730	0.00993	1	369.4208
2000-2100	950891	0.000988	1	364.2616	0.002745	0.00994	1	362.0505	0.002762	0.00994	1	363.3120
2100-2200	954971	0.000984	1	367.5084	0.002721	0.00991	1	362.9236	0.002755	0.00992	1	362.3481
2200-2300	958231	0.00098	1	371.6790	0.002690	0.00989	1	362.4238	0.002759	0.0099	1	361.4240
2300-0000	960672	0.000977	1	374.8703	0.002667	0.00986	1	365.0407	0.002739	0.00987	1	364.0247

TABLE 15. CONTINUED

HOUR	AUGUST				SEPTEMBER				OCTOBER						
	MODULUS	STRAIN	PASSES (n)	H	n/N	MODULUS	STRAIN	PASSES (n)	N	n/N	MODULUS	STRAIN	PASSES (n)	N	n/N
0000-0100	867757	0.00132	0	103.1983	0	846018	0.00223	0	8.490351	0	881935	0.0013	0	112.8785	0
0100-0200	903754	0.0013	0	105.7611	0	889219	0.00216	0	8.720463	0	913070	0.00128	0	111.2047	0
0200-0300	908104	0.00129	0	108.5267	0	896700	0.00212	0	9.363378	0	919681	0.00127	0	113.4500	0
0300-0400	912656	0.00129	0	107.0901	0	903754	0.00209	0	9.847167	0	925660	0.00126	0	116.0033	0
0400-0500	916790	0.00128	0	110.0063	0	910381	0.00205	0	10.63695	0	931218	0.00125	0	118.8077	0
0500-0600	920506	0.00127	0	113.1793	0	916583	0.00202	0	11.24532	0	936560	0.00124	0	121.8051	0
0600-0700	924424	0.00127	4	115.9054	0.035744	922362	0.002	4	11.62262	0.344156	941072	0.00124	4	120.2550	0.03326
0700-0800	928337	0.00126	4	115.1140	0.034748	927220	0.00197	4	12.34296	0.324071	945577	0.00123	4	123.6399	0.03235
0800-0900	931318	0.00126	4	114.1673	0.035036	932657	0.00196	4	12.48323	0.320429	949666	0.00122	4	127.3183	0.03141
0900-1000	933068	0.00127	4	109.1639	0.036642	936149	0.00197	4	12.04900	0.331977	952728	0.00122	4	126.2307	0.03168
1000-1100	932857	0.00128	4	105.0891	0.038062	937996	0.002	4	11.11350	0.359922	954360	0.00123	4	120.6307	0.03315
1100-1200	935325	0.00128	4	101.7347	0.039317	937380	0.00204	4	10.08348	0.396688	953748	0.00124	4	116.0426	0.03447
1200-1300	935865	0.0013	4	97.1536	0.040337	934506	0.0021	4	8.794656	0.454821	950891	0.00126	4	107.9805	0.03704
1300-1400	919887	0.00131	4	97.09783	0.041195	929572	0.00215	4	7.929577	0.504440	931835	0.00132	4	90.31470	0.04428
1400-1500	905826	0.00131	4	99.09140	0.040387	923197	0.0022	4	7.118954	0.555589	905619	0.00126	4	122.9713	0.03252
1500-1600	898983	0.00131	4	101.1662	0.039539	916170	0.00224	4	6.714487	0.590730	883601	0.00136	4	136.6450	0.02979
1600-1700	892753	0.0013	4	103.2315	0.038747	909346	0.00226	4	6.551808	0.610518	863935	0.0013	4	129.0919	0.03098
1700-1800	887971	0.0013	1	109.2699	0.036806	890259	0.00238	1	6.654490	0.600193	862336	0.00158	1	124.4863	0.00803
1800-1900	885058	0.0013	1	111.8452	0.008942	874850	0.00246	1	3.575666	0.279668	865460	0.00131	1	114.2392	0.00875
1900-2000	883809	0.00131	1	108.0226	0.009257	864834	0.00236	1	4.732221	0.210383	871304	0.00132	1	108.9116	0.00947
2000-2100	885058	0.00131	1	107.6168	0.009292	862327	0.00231	1	6.031576	0.163794	879019	0.00132	1	105.3095	0.00947
2100-2200	887971	0.00131	1	106.6786	0.009373	865251	0.00228	1	7.157455	0.139714	887555	0.00131	1	106.8119	0.00936
2200-2300	892130	0.00131	1	105.3583	0.009491	871304	0.00224	1	7.675810	0.130279	895869	0.0013	1	108.2600	0.00923
2300-0000															

HOUR	DECEMBER			
	MODULUS	STRAIN	PASSES (n)	H
0000-0100	970413	0.00118	0	141.9930
0100-0200	971830	0.00118	0	141.4420
0200-0300	974257	0.00118	0	140.5049
0300-0400	976883	0.00117	0	145.5649
0400-0500	979304	0.00117	0	144.6079
0500-0600	981521	0.00116	0	150.0424
0600-0700	983726	0.00116	4	149.1438
0700-0800	985746	0.00116	4	148.3347
0800-0900	987756	0.00115	4	147.5320
0900-1000	989160	0.00115	4	146.6567
1000-1100	989963	0.00115	4	153.4255
1100-1200	988349	0.00117	4	146.6567
1200-1300	982125	0.00119	4	140.7937
1300-1400	977085	0.00121	4	135.3612
1400-1500	971425	0.00121	4	131.8480
1500-1600	965954	0.00122	4	122.9739
1600-1700	961689	0.00122	4	124.8947
1700-1800	958638	0.00122	4	121.6770
1800-1900	957824	0.00121	1	123.1204
1900-2000	958638	0.00121	1	124.1674
2000-2100	960876	0.0012	1	129.6771
2100-2200	963518	0.0012	1	129.3838
2200-2300	966157	0.00119	1	134.0299
2300-0000				133.0527

TABLE 16. COMPUTATIONS FOR THE 3 INCH PAVEMENT AT A CONSTANT TEMPERATURE

TEMPERATURE (FARENHEIT)	MODULUS	STRAIN	PASSES(n)	N	n/N
30	1336407	0.00147	54	20.17	2.7
35	1239077	0.00153	54	20.20	2.7
40	1167035	0.00157	54	20.83	2.6
45	1066639	0.00164	54	21.28	2.5
50	956828	0.00171	54	23.07	2.3
55	841739	0.00181	54	24.43	2.2
60	725642	0.00191	54	27.73	1.9
65	612585	0.00203	54	32.11	1.7
70	506090	0.00215	54	40.08	1.3
75	408923	0.00227	54	53.92	1.0
80	322966	0.00239	54	78.17	0.7
85	249193	0.00248	54	129.69	0.4
90	187738	0.00253	54	249.63	0.2
95	138035	0.00251	54	589.49	0.1
100	99001	0.00242	54	1715.77	0.0
105	69232	0.00224	54	6550.26	0.0
110	47184	0.00198	54	33723.11	0.0
115	31327	0.00166	54	242522.8	0.0
120	20254	0.00133	54	2348589.5	0.0

TABLE 17. COMPUTATIONS FOR THE 5 INCH PAVEMENT AT A CONSTANT TEMPERATURE

TEMPERATURE (FARENHEIT)	MODULUS	STRAIN	PASSES(n)	N	n/N
30	1336407	0.000817	54	380.35	0.1
35	1239077	0.000847	54	388.50	0.14
40	1130926	0.000883	54	402.45	0.13
45	1215424	0.000854	54	392.49	0.14
50	896323	0.000977	54	450.95	0.12
55	777377	0.001030	54	506.05	0.11
60	662080	0.001100	54	558.76	0.10
65	553452	0.001160	54	690.75	0.08
70	453866	0.001230	54	874.34	0.06
75	364968	0.001300	54	1185.20	0.05
80	287654	0.001350	54	1850.79	0.03
85	222123	0.001380	54	3302.55	0.02
90	167977	0.001390	54	6707.36	0.01
95	124357	0.001350	54	17296.24	0.00
100	90094	0.001270	54	55415.79	0.00
105	63852	0.001130	54	248733.5	0.00
110	44253	0.000936	54	1694728	0.00

TABLE 18. COMPUTATIONS FOR THE 10 INCH PAVEMENT AT A
CONSTANT TEMPERATURE

TEMPERATURE (FARENHEIT)	MODULUS	STRAIN	PASSES(n)	N	n/N
30	1336407	0.00102	54	125.40	0.43
35	1239077	0.00106	54	126.56	0.43
40	1130926	0.00111	54	128.20	0.42
45	1015424	0.00116	54	137.06	0.39
50	896323	0.00123	54	142.58	0.38
55	777377	0.00131	54	152.06	0.36
60	662080	0.00139	54	173.43	0.31
65	553452	0.00149	54	197.55	0.27
70	453866	0.00159	54	242.22	0.22
75	364968	0.00169	54	319.21	0.17
80	287654	0.00178	54	464.44	0.12
85	222123	0.00186	54	742.47	0.07
90	167977	0.00190	54	1405.59	0.04
95	124357	0.00189	54	3215.97	0.02
100	90094	0.00181	54	9424.52	0.01
105	63852	0.00165	54	37472.00	0.001
110	44253	0.00139	54	234641.74	0.0002

TABLE 19. COMPUTATION OF CONVERSION FACTORS FOR THE 3 INCH PAVEMENTS

HOMESTEAD						MINOT		
MONTH	MEAN AIR TEMP.	EQUIV. TEMP.	CONVERSION FACTOR	MONTH	MEAN AIR TEMP.	EQUIV. TEMP.	CONVERSION FACTOR	
1	68.54	58.23	0.85	1	6.88	46.10	6.70	
2	69.54	58.44	0.84	3	26.33	43.49	1.65	
3	72.83	59.40	0.82	4	43.30	40.79	0.94	
4	76.25	59.60	0.78	5	56.46	39.08	0.69	
5	78.67	59.61	0.76	7	72.83	38.43	0.53	
6	82.04	60.03	0.73	8	70.38	38.59	0.55	
7	83.67	60.36	0.72	9	70.46	38.68	0.55	
8	83.96	60.86	0.72	10	46.83	40.41	0.86	
9	83.96	60.29	0.72	11	29.46	42.96	1.46	
10	79.58	60.36	0.76					
11	71.42	60.27	0.84					
12	70.50	58.35	0.83					

WRIGHT-PATTERSON						WILLIAMS		
MONTH	MEAN AIR TEMP.	EQUIV. TEMP.	CONVERSION FACTOR	MONTH	MEAN AIR TEMP.	EQUIV. TEMP.	CONVERSION FACTOR	
2	33.17	42.54	1.28	1	45.38	57.62	1.27	
3	43.04	40.91	0.95	2	58.42	57.83	0.99	
4	54.25	39.11	0.72	3	62.46	58.42	0.94	
5	64.33	38.69	0.60	4	71.08	61.54	0.87	
6	74.33	38.19	0.51	5	80.33	62.77	0.78	
7	77.63	38.19	0.49	7	93.46	64.00	0.68	
8	76.33	38.40	0.50	8	91.58	67.01	0.73	
9	68.96	43.03	0.62	9	87.46	64.02	0.73	
10	57.83	42.88	0.74	10	76.04	61.78	0.81	
11	44.75	40.71	0.91	11	63.00	59.24	0.94	
12	34.50	42.32	1.23	12	55.83	58.14	1.04	

TABLE 20. COMPUTATION OF CONVERSION FACTORS FOR THE 5 INCH PAVEMENTS

HOMESTEAD						MINDT		
MONTH	MEAN AIR TEMP.	EQUIV. TEMP.	CONVERSION FACTOR	MONTH	MEAN AIR TEMP.	EQUIV. TEMP.	CONVERSION FACTOR	
1	68.54	53.70	0.78	2	14.46	43.22	2.99	
2	69.54	54.90	0.79	3	26.33	40.24	1.53	
3	72.83	55.32	0.76	4	43.30	37.02	0.86	
4	75.25	56.20	0.74	5	56.46	22.26	0.39	
5	78.67	56.44	0.72	6	66.54	34.04	0.51	
6	82.04	57.20	0.70	7	72.63	34.70	0.48	
7	83.67	57.71	0.69	8	70.38	34.55	0.49	
9	83.96	57.36	0.68	9	70.46	34.56	0.49	
10	79.58	56.93	0.72	10	46.83	36.31	0.78	
11	71.42	46.11	0.65	12	14.63	43.67	2.99	
12	70.50	53.83	0.76					

WRIGHT-PATTERSON						WILLIAMS		
MONTH	MEAN AIR TEMP.	EQUIV. TEMP.	CONVERSION FACTOR	MONTH	MEAN AIR TEMP.	EQUIV. TEMP.	CONVERSION FACTOR	
1	29.42	39.09	1.33	1	45.38	53.28	1.17	
2	43.04	36.80	0.86	2	58.42	53.73	0.92	
3	54.25	34.96	0.64	3	62.46	54.07	0.87	
4	64.33	34.46	0.54	4	71.08	58.72	0.83	
5	74.33	34.57	0.47	5	80.33	60.67	0.76	
6	77.63	34.93	0.45	6	89.42	63.48	0.71	
7	76.33	34.91	0.46	7	93.46	62.27	0.67	
9	68.96	38.11	0.55	8	91.58	66.50	0.73	
10	57.83	46.15	0.80	9	87.46	61.78	0.71	
11	44.75	37.13	0.83	10	76.04	58.71	0.77	
12	34.50	39.13	1.13	11	63.00	55.55	0.88	
				12	55.833	54.18107	0.970413	

TABLE 21. COMPUTATION OF CONVERSION FACTORS FOR THE 10 INCH PAVEMENTS

HOMESTEAD							MINOT				
MONTH	MEAN AIR TEMP.	EQUIV. TEMP.	CONVERSION FACTOR	MONTH	MEAN AIR TEMP.	EQUIV. TEMP.	CONVERSION FACTOR	MONTH	MEAN AIR TEMP.	EQUIV. TEMP.	CONVERSION FACTOR
1	68.54	47.07	0.69	3	26.33	45.09	1.75	3	26.33	45.09	1.75
3	72.83	47.54	0.65	4	43.30	39.30	0.91	4	43.30	39.30	0.91
4	76.25	48.15	0.63	5	56.46	33.21	0.59	5	56.46	33.21	0.59
5	78.67	48.58	0.62	6	65.54	29.53	0.44	6	65.54	29.53	0.44
6	82.04	49.81	0.61	7	72.83	28.19	0.39	7	72.83	28.19	0.39
7	83.67	50.30	0.60	8	70.38	29.05	0.41	8	70.38	29.05	0.41
8	83.96	50.86	0.61	9	45.83	37.22	0.79	9	45.83	37.22	0.79
9	83.96	49.57	0.59								
10	79.58	48.97	0.62								
12	70.50	47.14	0.67								

WRIGHT-PATTERSON							WILLIAMS				
MONTH	MEAN AIR TEMP.	EQUIV. TEMP.	CONVERSION FACTOR	MONTH	MEAN AIR TEMP.	EQUIV. TEMP.	CONVERSION FACTOR	MONTH	MEAN AIR TEMP.	EQUIV. TEMP.	CONVERSION FACTOR
1	29.42	45.67	1.55	1	45.38	48.79	1.08	1	45.38	48.79	1.08
3	43.04	38.45	0.89	2	58.42	48.20	0.83	2	58.42	48.20	0.83
4	54.25	33.24	0.61	3	62.46	47.66	0.76	3	62.46	47.66	0.76
5	64.33	30.07	0.47	4	71.09	50.01	0.70	4	71.09	50.01	0.70
6	74.33	28.19	0.38	5	80.33	52.17	0.65	5	80.33	52.17	0.65
7	77.63	28.49	0.37	6	89.42	55.84	0.62	6	89.42	55.84	0.62
8	75.33	28.37	0.37	7	93.46	55.60	0.59	7	93.46	55.60	0.59
10	57.83	36.21	0.63	8	91.58	55.60	0.61	8	91.58	55.60	0.61
12	34.50	43.74	1.27	9	87.46	55.60	0.64	9	87.46	55.60	0.64
				10	75.04	49.57	0.65	10	75.04	49.57	0.65
				12	55.83	48.40	0.87	12	55.83	48.40	0.87

TABLE 22. SUMMARY OF LINEAR REGRESSION ANALYSIS

BASE		m	c	rsquare
HOMESTEAD	3	-0.009	1.442	.98
	5	-0.005	1.094	.38
	10	-0.005	1.05	.97
WILLIAMS	3	-.0017	1.723	.94
	5	-.009	1.454	.9
	10	-.008	1.346	.88
MINOT	3	-.022	2.066	.91
	5	-.041	3.11	.91
	10	-.027	2.232	.91
WRIGHT-PAT3		-.01	1.633	.92
	5	-.016	1.657	.91
	10	-.022	1.98	.89

CONVERSION FACTOR = m X(AIR TEMP) + c

HOMESTEAD 3 INCH.

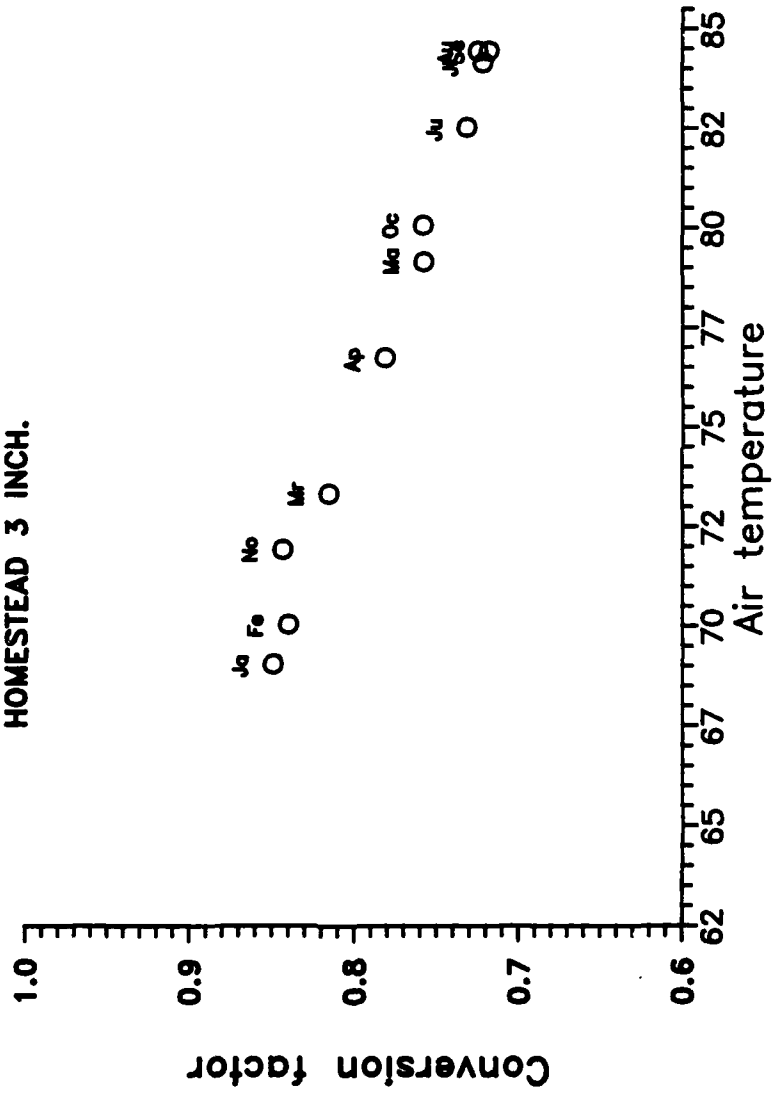


FIGURE 1. Conversion factor as a function of air temperature.

HOMESTEAD 5 INCH.

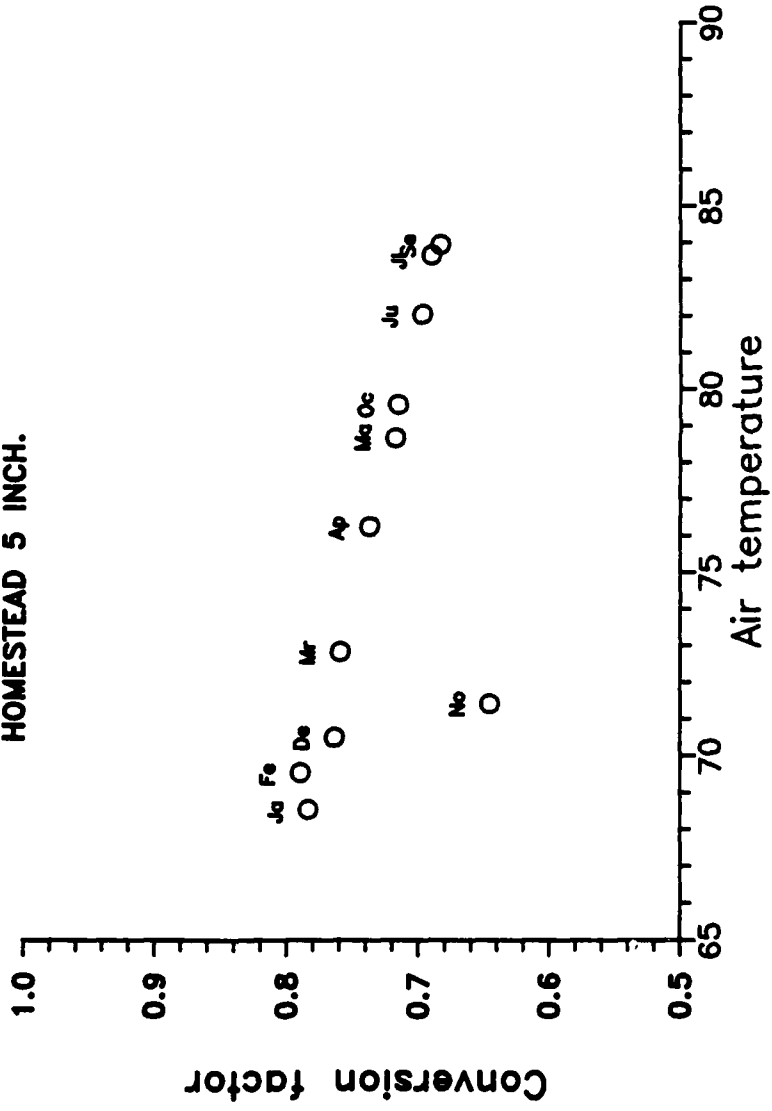


FIGURE 2. Conversion factor as a function of air temperature.

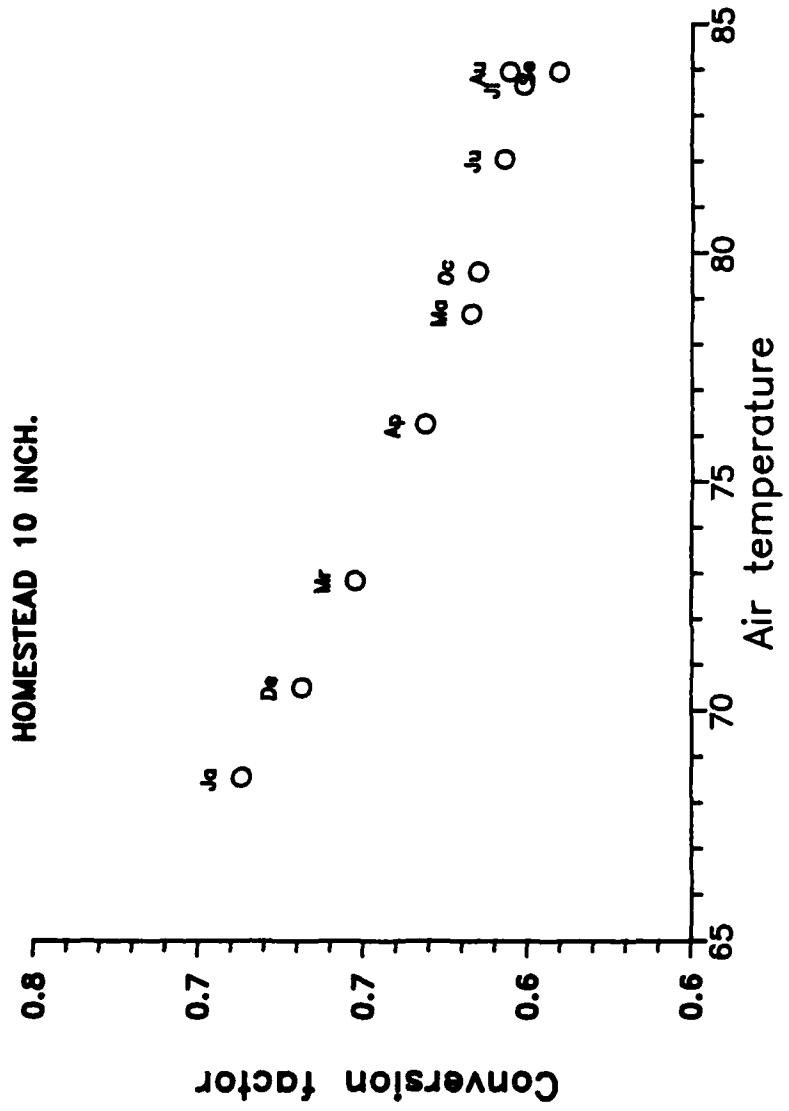


FIGURE 3. Conversion factor as a function of air temperature.

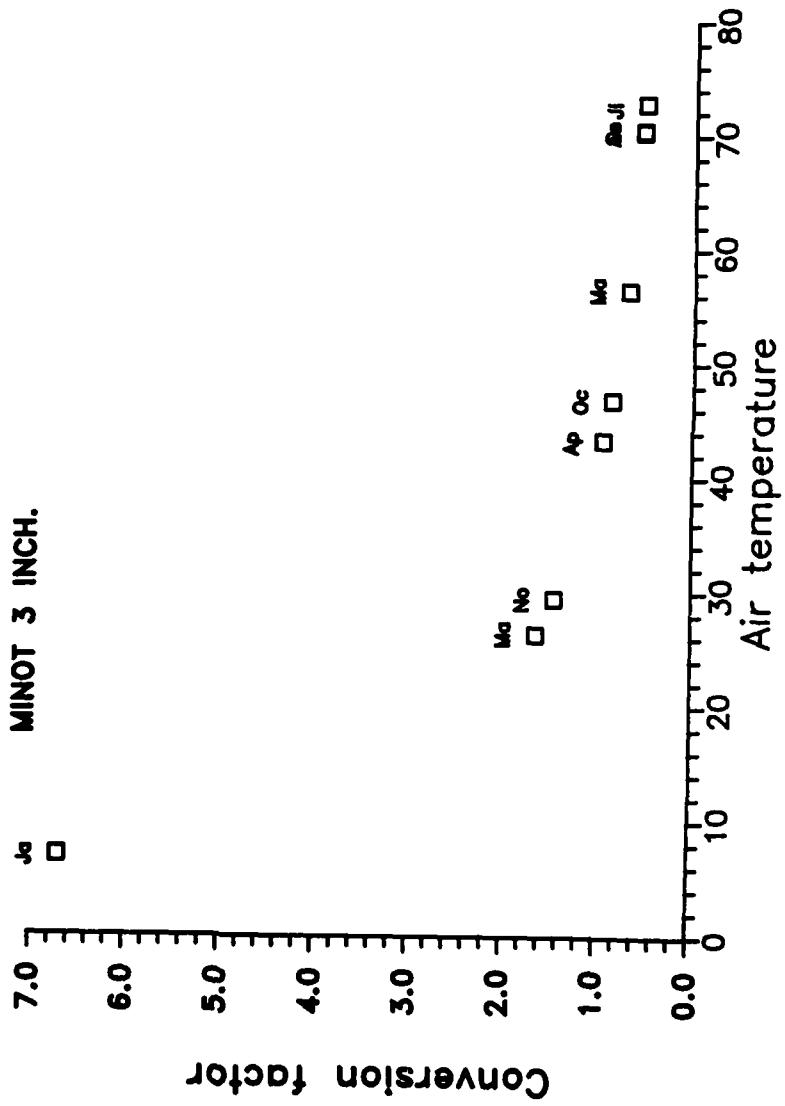


FIGURE 4. Conversion factor as a function of air temperature.

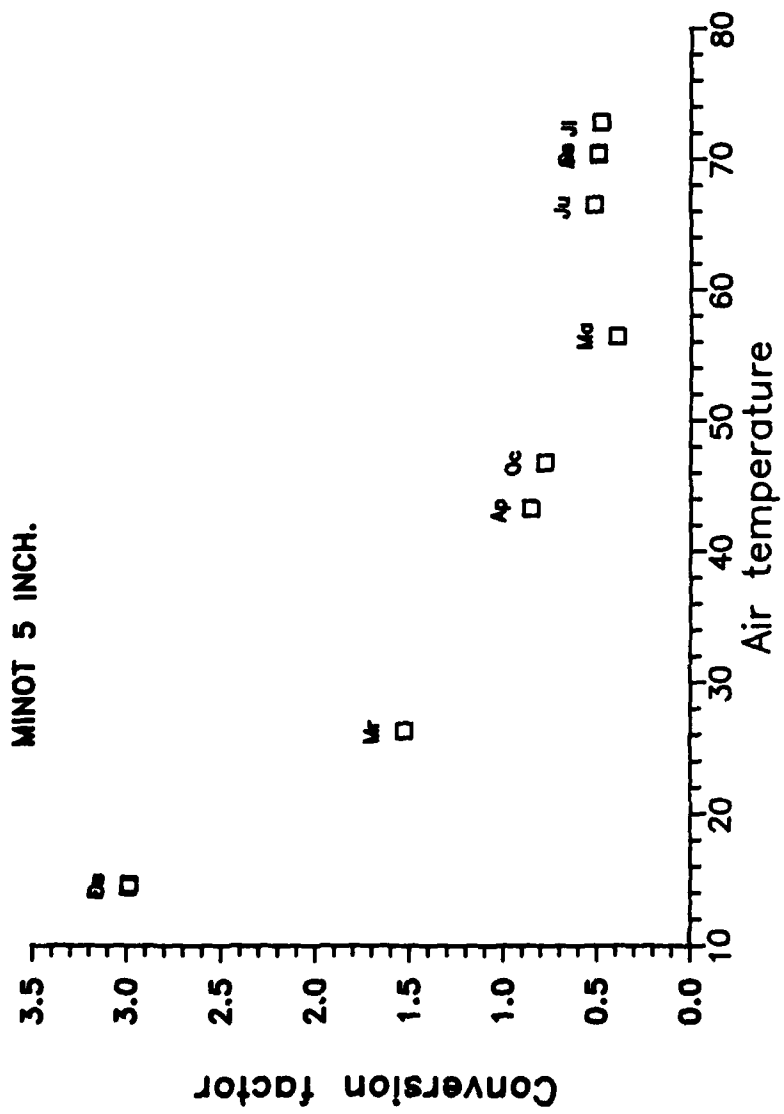


FIGURE 5. Conversion factor as a function of air temperature.

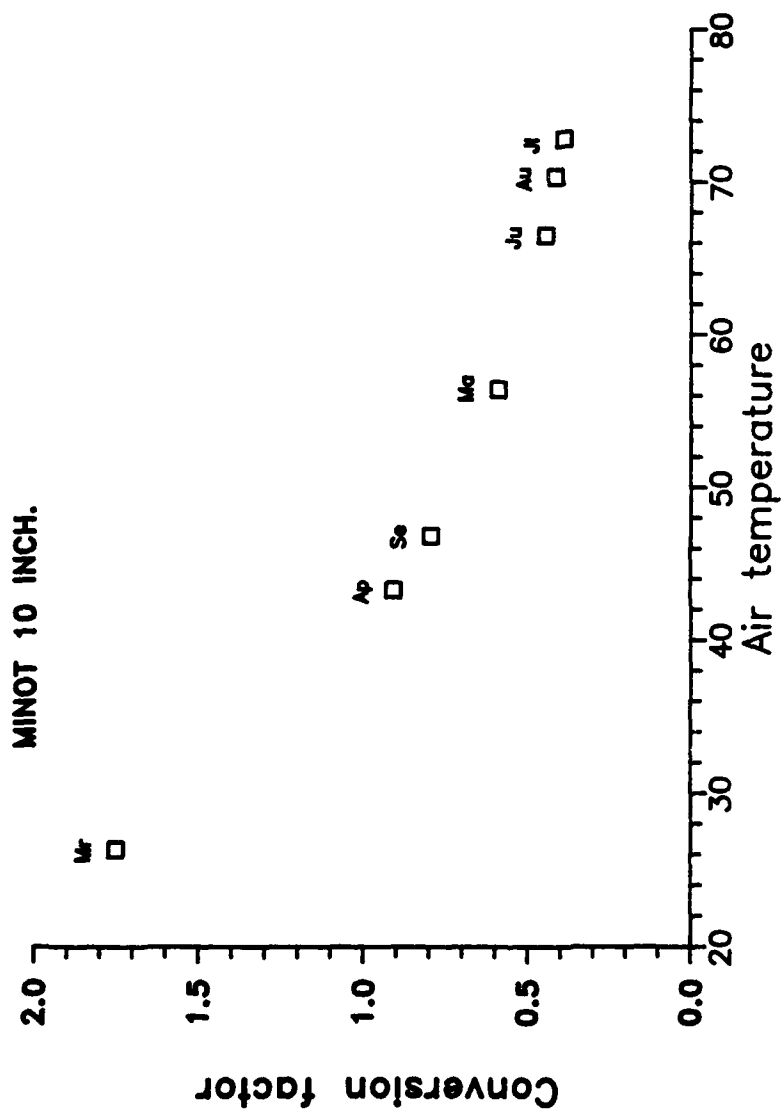


FIGURE 6. Conversion factor as a function of air temperature.

WILLIAMS 3 INCH.

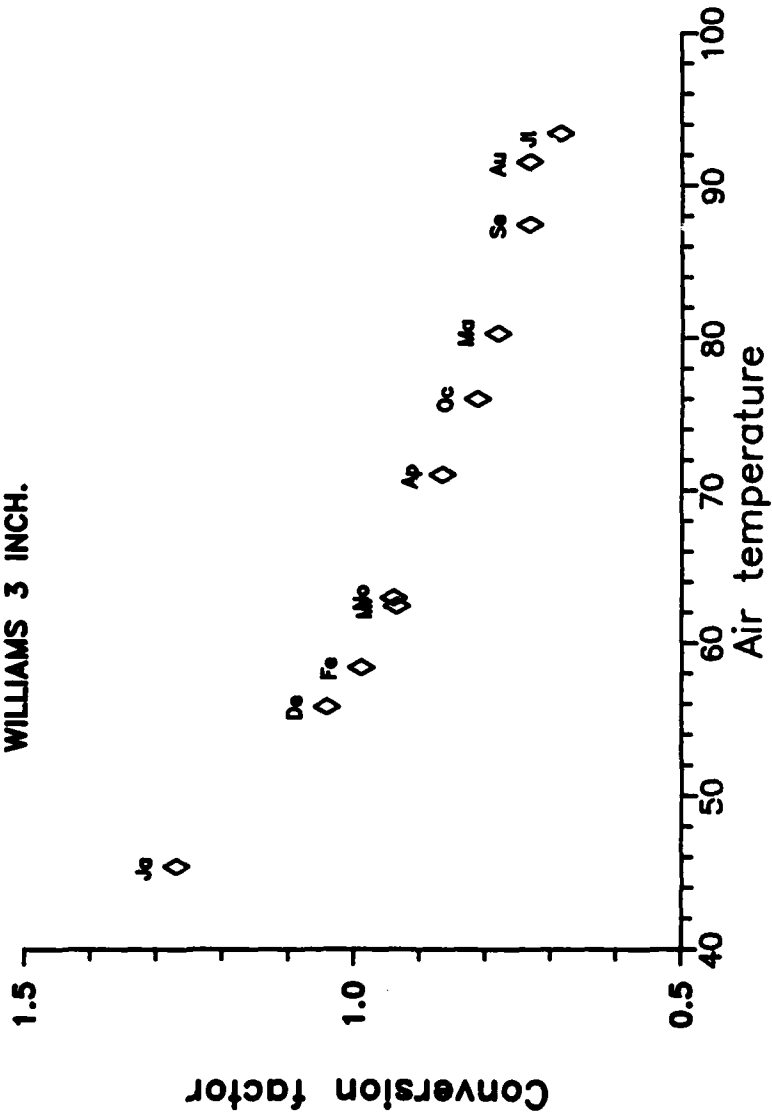


FIGURE 7. Conversion factor as a function of air temperature.

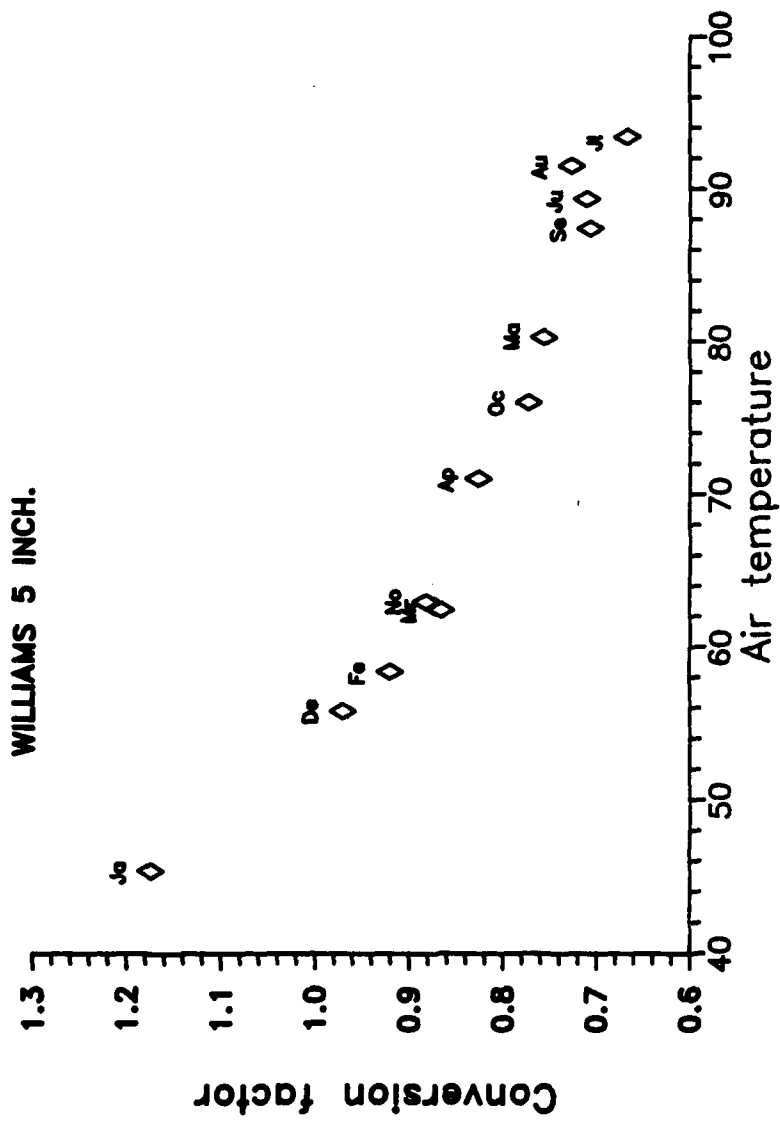


FIGURE 8. Conversion factor as a function of air temperature.

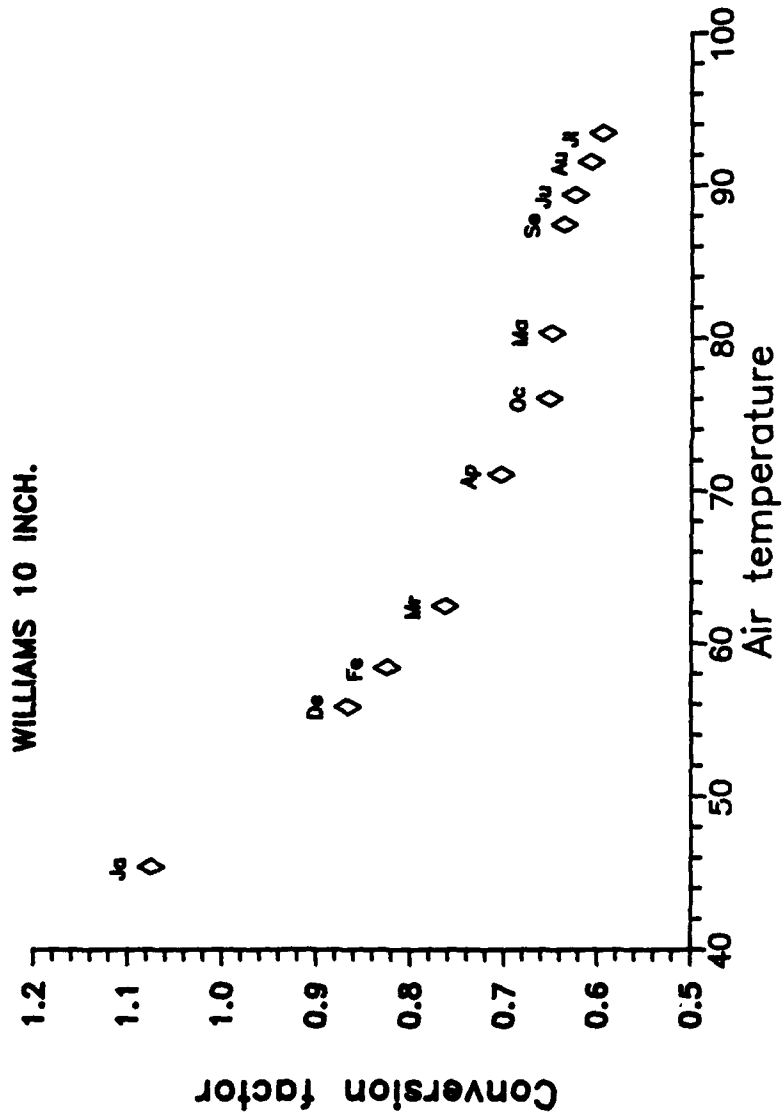


FIGURE 9. Conversion factor as a function of air temperature.

WRIGHT-PATTERSON 3 INCH.

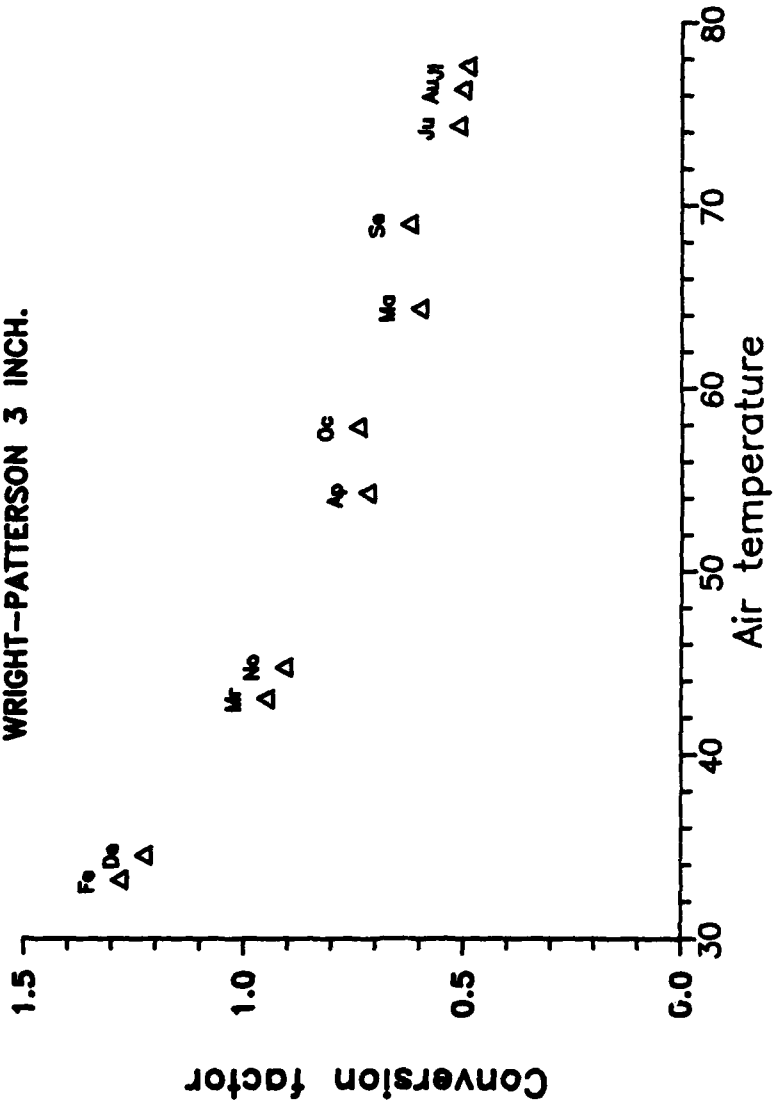


FIGURE 10. Conversion factor as a function of air temperature.

WRIGHT-PATTERSON 5 INCH.

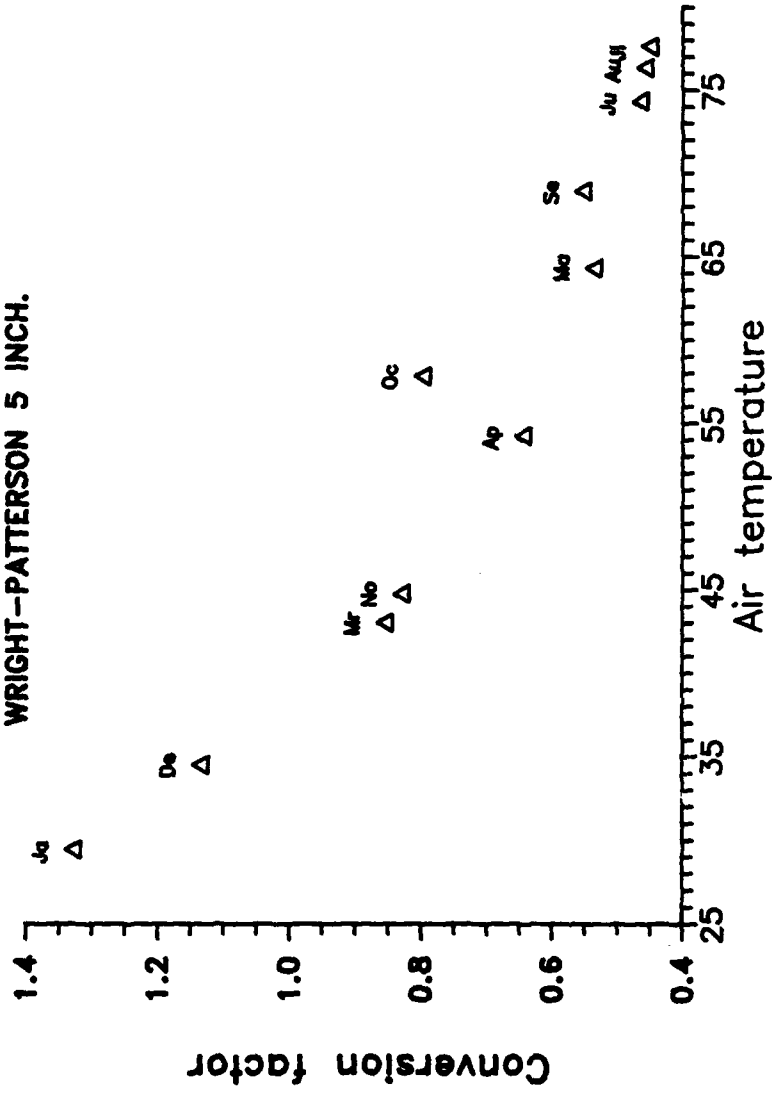


FIGURE 11. Conversion factor as a function of air temperature.

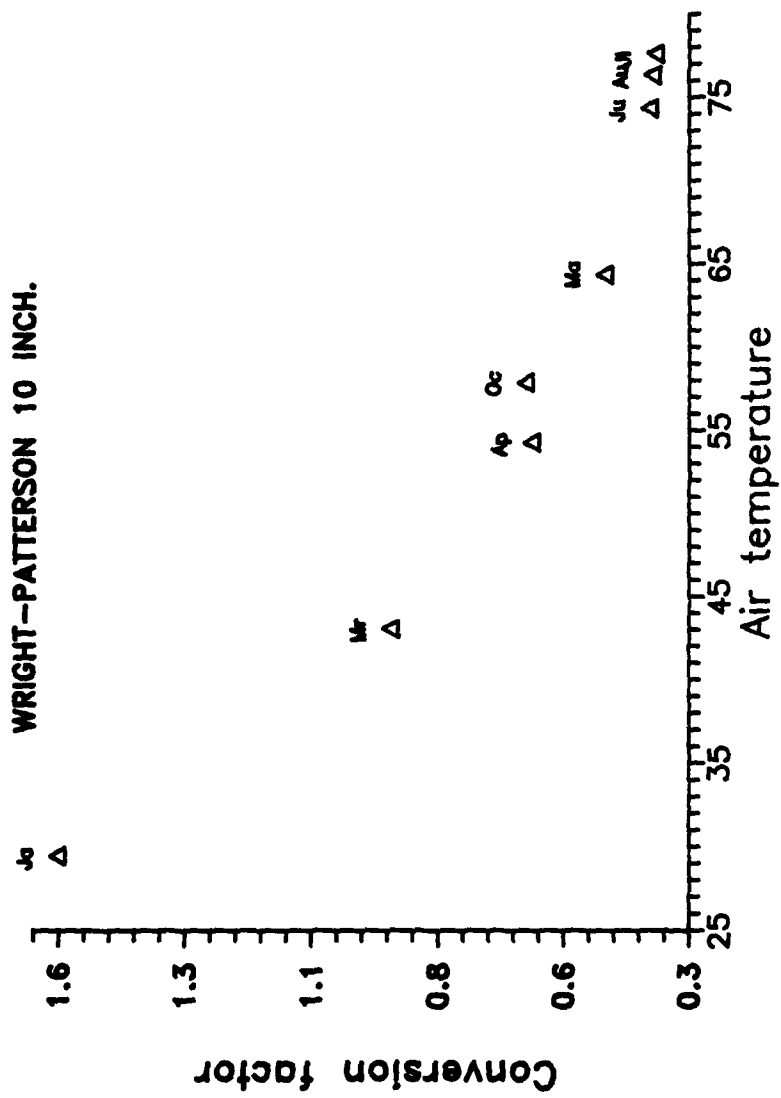


FIGURE 12. Conversion factor as a function of air temperature.