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Noise Characterization of VAST I Data

W. C. Torrez

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NAVAL OCEAN SYSTEMS CENTER

San Diego, California 92152-5000

J. D. FONTANA, CAPT, USN
Commander

R. T. SHEARER
Technical Director

ADMINISTRATIVE INFORMATION

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D. K. Barbour, Head
Signal Processing
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Signal and Information
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CONTENTS

1.0 INTRODUCTION	1
2.0 DESCRIPTION OF DATA TO BE ANALYZED	1
2.1 VAST I EXPERIMENT	1
2.2 VAST I DATA SETS	4
3.0 DESCRIPTION OF ANALYSIS METHODOLOGY	7
4.0 RESULTS AND DISCUSSION	11
5.0 REFERENCES	21

APPENDIX A STATISTICS TABLES FOR ANALYSIS OF NORMAL DISTRIBUTION FIT FOR ALL HYDROPHONES	A-1
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APPENDIX B TIME SERIES AND FREQUENCY SPECTRA, NORMAL PROBABILITY PLOTS, AND HISTOGRAMS FOR ALL HYDROPHONES	B-1
--	-----

FIGURES

1. VAST I MPL array.	2
2. VAST I signal-processing flow diagram.	3
3. The experimental site.	3
4. Exercise geometry.	4
5. Time series of hydrophone pressures for all channels for 081115Z July 1989.	5
6. Signal-to-noise ratios for all channels for 081115Z July 1989 for frequencies 8, 11, 14, 29, 34, 39, and 55 Hz.	6
7. (a) HS001T01 time series sampled for 1 minute, sampled at 250 samples per second. (b) Estimated spectral density for unfiltered HS001T01.	8
8. Gaussian goodness of fit for HS001T01. (a) Normal probability plot, $n = 15000$. (b) Normal density function, $n = 15000$	9
9. Sample means and standard deviations for 60-Hz filtered time series.	12
10. Sample skewnesses and kurtoses for 60-Hz filtered time series.	13
11. Plot of Kolmogorov-Smirnov statistic for testing goodness of fit to Gaussian.	14
12. Plot of Cramer-von Mises statistic for testing goodness of fit to Gaussian.	15
13. Plot of Anderson-Darling statistic for testing goodness of fit to Gaussian.	16

TABLES

1. GRAFSTAT output: Analysis of normal distribution fit (unfiltered data). . . . 10
2. Statistics table for analysis of normal distribution fit for all hydrophones . . . 10
3. Averages, standard deviations, and standard errors of first four sample moments of hydrophone data. 17
4. Kolmogorov-Smirnov statistics for testing goodness of fit to Gaussian for unfiltered and 60-Hz filtered data for all 24 hydrophones. 18
5. Cramer-von Mises statistics for testing goodness of fit to Gaussian for unfiltered and 60-Hz filtered data for all 24 hydrophones. 19
6. Anderson-Darling statistics for testing goodness of fit to Gaussian for unfiltered and 60-Hz filtered data for all 24 hydrophones. 20

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1.0 INTRODUCTION

This paper describes an initial analysis of acoustic data aimed at providing a characterization of the ocean noise statistics collected during recent sonar experiments deploying the Various Arrays Sea Test (VAST) I Marine Physical Laboratory (MPL) array. This characterization can be used in future research to guide the choice of a noise distribution model for the performance evaluation of generalized antisubmarine warfare (ASW) detection algorithms.

The objective of this research is to provide statistical characterization of the ambient noise field component of sonar data sets collected by Naval Ocean Systems Center (NOSC) and MPL scientists during VAST I experiment, conducted in 1989 in the deep Pacific ocean. The data were collected from omnidirectional hydrophones located at depths from about 100 to 3000 meters. The array is depicted in figure 1. Before statistical processing, the time domain data were band-passed filtered, digitized, and sampled at 250 Hz. See figure 2 for a flow diagram of the signal processors.

Descriptive and graphical methods for assessing statistical behavior were used for this characterization, including the calculation of the first, second, third, and fourth sample moments. Plots of these moments, normal probability plots, and histograms of the data were generated. Goodness of fit tests based on the empirical distributions function were performed to test the Gaussianity of the ambient noise field.

2.0 DESCRIPTION OF DATA TO BE ANALYZED

2.1 VAST I EXPERIMENT

The data sets analyzed in this report were recorded in the Pacific Ocean during the VAST I experiment. The experimental site is depicted in figure 3. The VAST I experiment involved multiple platforms, measurement equipment, and a variety of experiments [Northeast Pacific (NEPAC) Experiment, Downslope Conversion Experiment, Horizontal Random Array, and Tomography Source Experiment].

The operations occurring during the acoustic measurements portion of VAST I are briefly described. For a more detailed description of this experiment, please see reference 1. The acoustic measurements portion was that period when the VAST I MPL vertical array was recording acoustic data. The acoustic measurements portion extended over a period of approximately 11 days. The 11-day period started with "event day 1" and ended with "event day 12." Event day 1 started on 030000Z July 1989 when both arrays were deployed and ready to record data. The general exercise geometry is shown in figure 4.

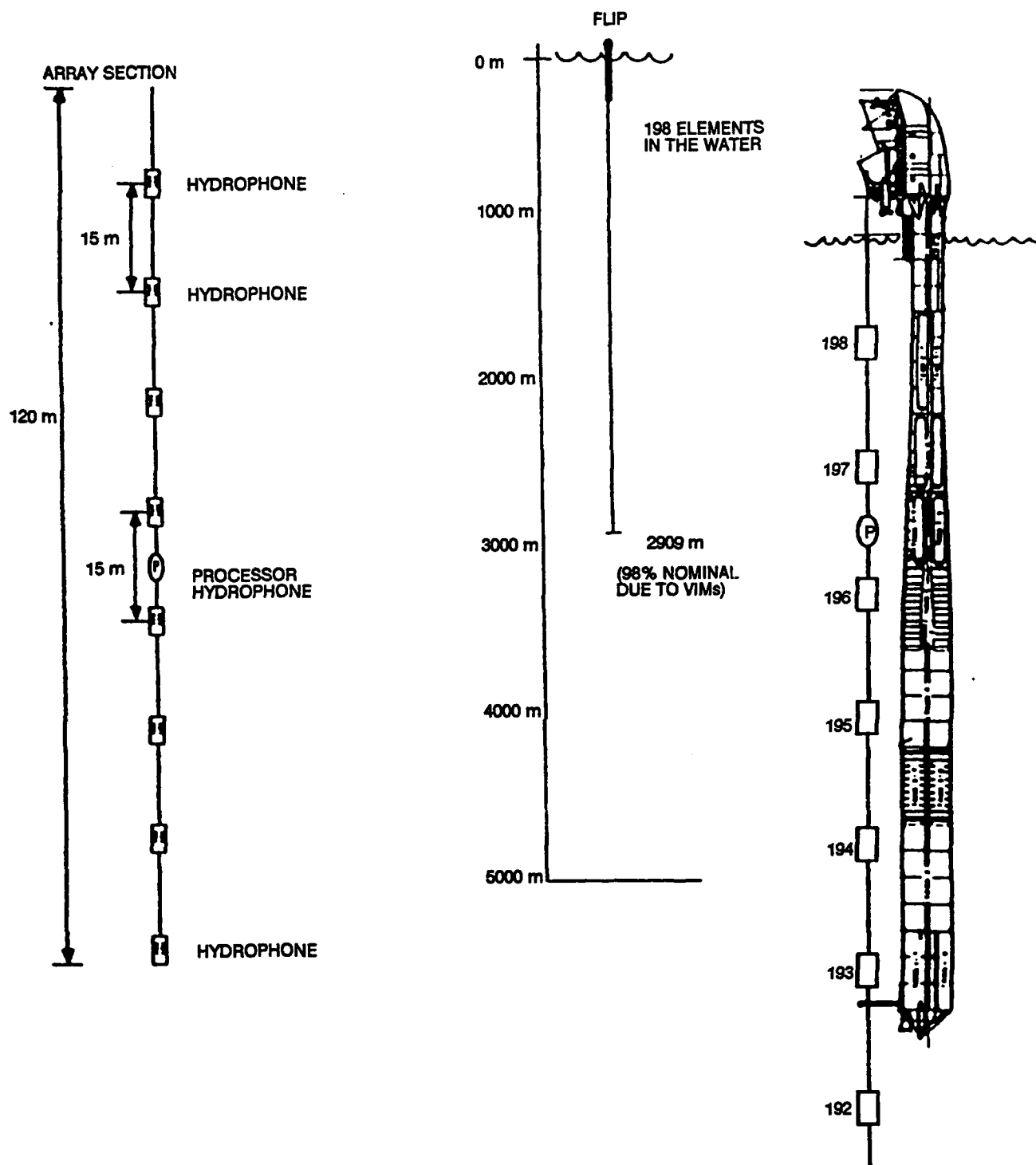


Figure 1. VAST I MPL array.

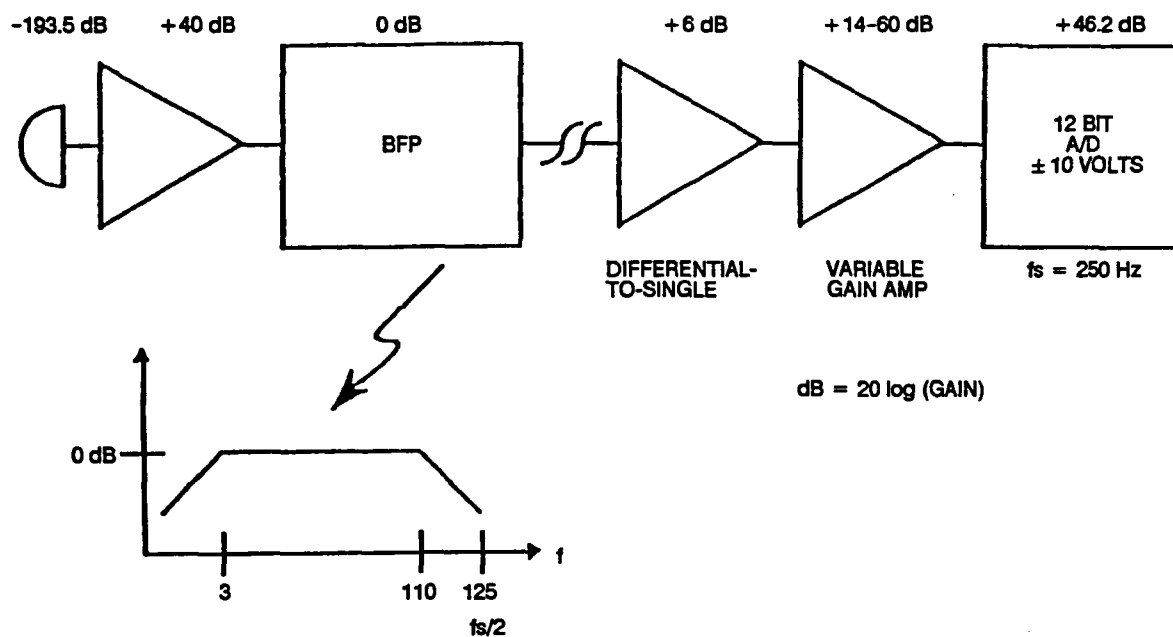


Figure 2. VAST I signal-processing flow diagram.

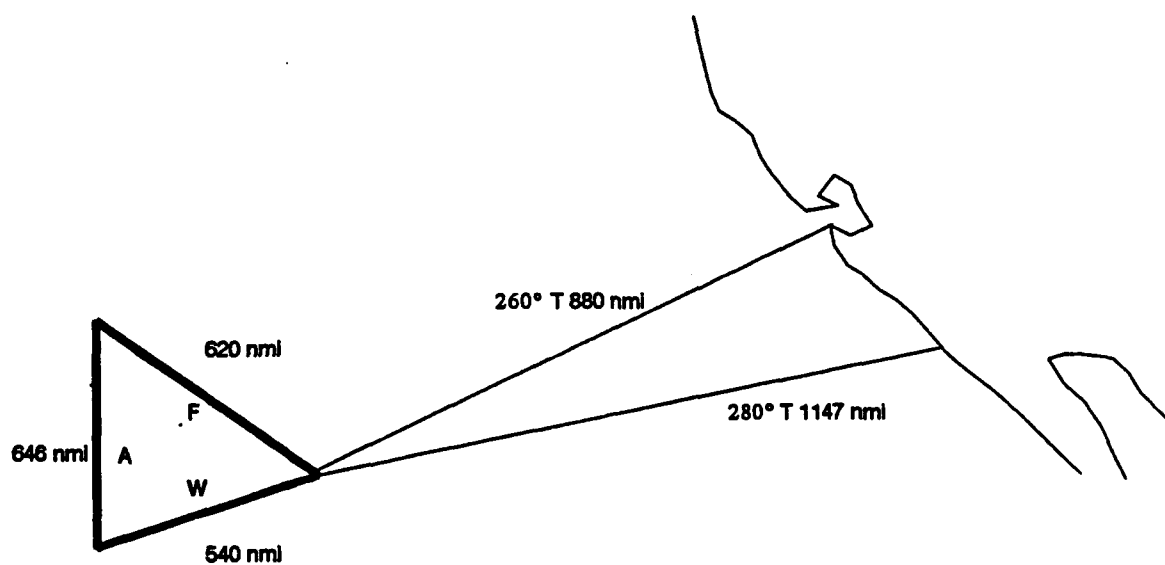


Figure 3. The experimental site.

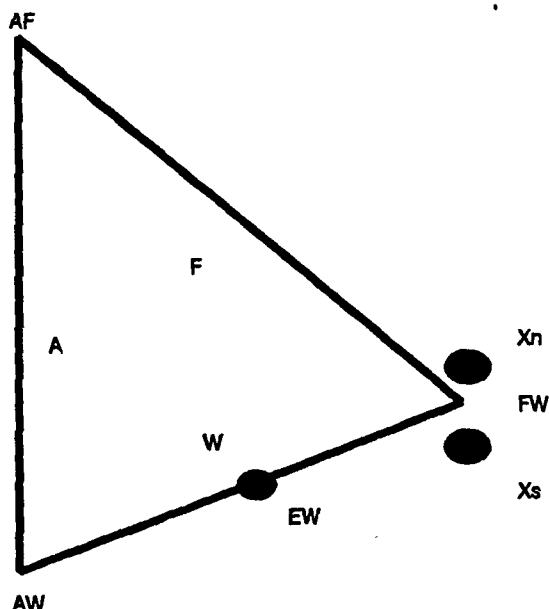


Figure 4. Exercise geometry.

Note: The triangle above represents the geometry of the VAST I exercise. Track lengths are: W 1000 km (540 nmi), A 1200 km (646 nmi), and F 1150 km (620 nmi). Points FW, AF and AW are the apexes of the triangle; the vertical arrays are implanted near FW, the tomography source is implanted near AW. Point EW is the midpoint of W track. Points Xn and Xs are the locations of the arrays. A, F, and W are the primary ship tracks for the VAST I experiment.

2.2 VAST I DATA SETS

The VAST I MPL array consists of 198 omnidirectional hydrophones or elements connected along a cable of approximately 3000 m in length and deployed on a vertical line array in the ocean from the MPL research vessel FLIP. The elements of the array are denoted here as $S_1, S_2, \dots, S_{198}$. Again, refer to figure 1 for a diagram of the array. As shown in the figure, the array is divided into 25 sections $A_1, A_2, \dots, A_{25}$, where section $A_i, 1 \leq i \leq 24$, consists of the eight elements $S_j, 8(i-1) + 1 \leq j \leq 8i$. Section A_{25} consists of the eight elements, $A_{193}, \dots, A_{198}$. As figure 1 shows, each element is spaced 15 m apart so that each section is 120 m in length. The array data were provided to us on 8-mm tape by D. Ensberg of MPL and represent time series of hydrophone pressures measured in volts. Quick-look plots of the raw time series and signal-to-noise ratios for selected frequencies for a small portion of the data (cf. figures 5 and 6) were also provided.

The data selected for analysis were collected on event day 6 or 081111Z July 1989. The first minute of this period was analyzed or the period from 081111Z to 081112Z July 1989. Since the sampling rate is 250 Hz, this represents 15,000 data points in the time series of pressure levels from a single hydrophone. Furthermore, only the deepest

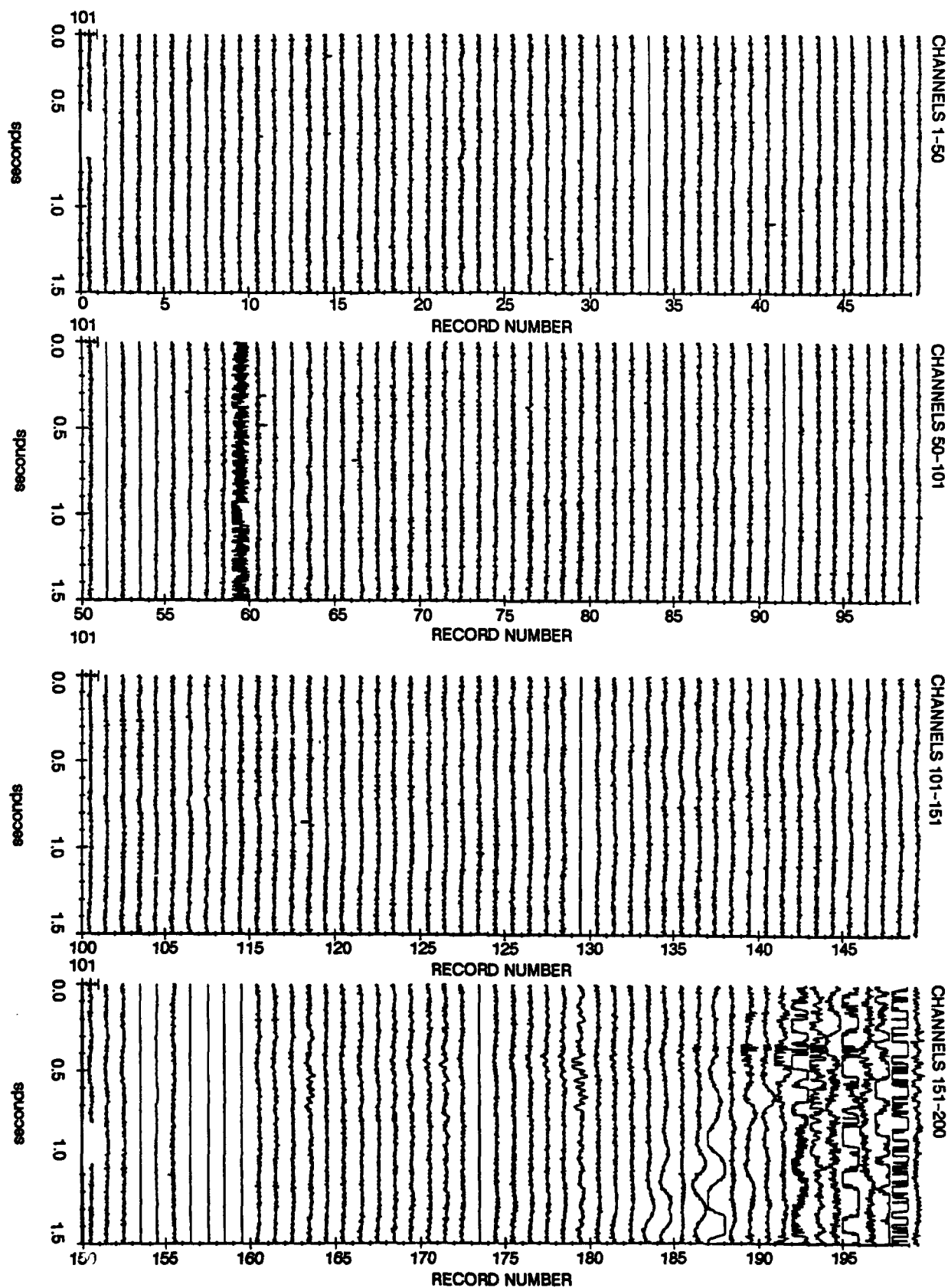


Figure 5. Time series of hydrophone pressures for all channels for 08115Z July 1989.

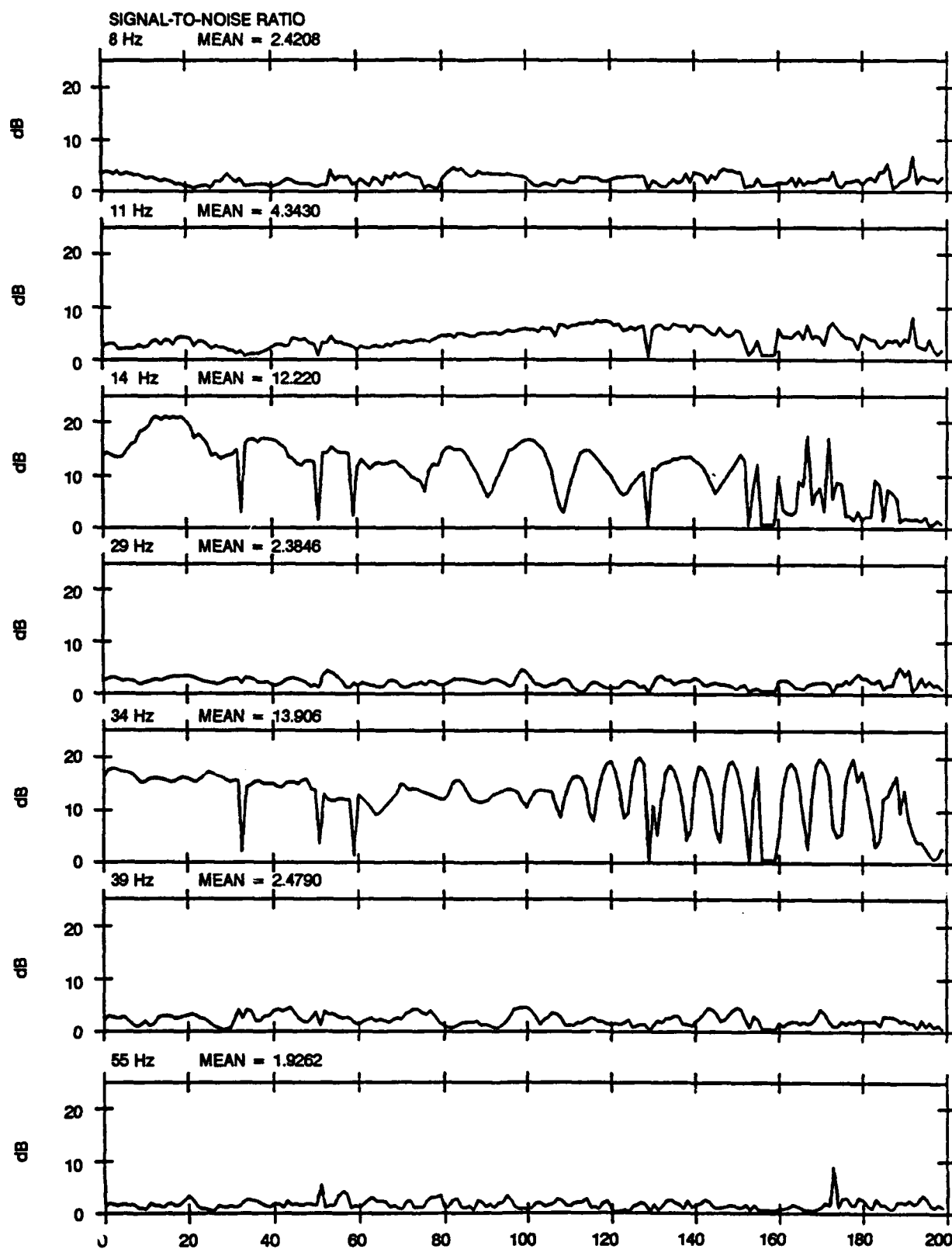


Figure 6. Signal-to-noise ratios for all channels for 081115Z July 1989 for frequencies 8, 11, 14, 29, 34, 39, and 55 Hz.

phone from each section was selected for analysis. Finally, the most shallow section, A_{25} , was omitted from the data analyzed due to poor data quality and section A_{20} , corresponding to element 153, was omitted, due to hydrophone malfunction during the 1-minute time window selected (see raw time series plots in figure 5, channels 153, 193 to 198). Thus, the elements processed are the 23 hydrophones

$$S_{8(i-1)+1} \leq i \leq 24, i \neq 20 .$$

3.0 DESCRIPTION OF ANALYSIS METHODOLOGY

The data sets were loaded onto a SUN workstation and then ported to an IBM mainframe for analysis using GRAFSTAT, a statistical package. A sample of analysis of the goodness of fit of a Gaussian distribution to the data is shown in table 1. All sample moments up to the fourth order were calculated: mean, variance, skewness, and kurtosis. Plots of the raw time series of hydrophone pressure levels and frequency spectra were generated, as well as normal probability plots and histograms for comparing the data to a Gaussian distribution. See figures 7 and 8 for these GRAFSTAT outputs for a typical hydrophone.

In addition, statistics based on the empirical distribution function (edf) were calculated for testing goodness to fit to the Gaussian distribution. Three such statistics we have used here (and which are generated by GRAFSTAT, cf. table 1) for testing goodness of fit to the Gaussian distribution based on the edf are the Kolmogorov-Smirnov D , Cramer-von Mises W^2 , and the Anderson-Darling A^2 statistics (see reference 2 for definitions and examples of the application of these statistics). The χ^2 test for goodness of fit to the normal has been omitted since, in general, edf statistics are more robust to outliers in the data and thus give more powerful tests of goodness of fit than χ^2 . However, when the parameters of the normal distribution must be estimated from the data, the critical values for the edf statistics must be modified accordingly. Apparently, GRAFSTAT, as stated in table 1, does not return exact significance levels with estimated parameters. Tables contained in reference 3 have made it possible to use D , W^2 , and A^2 for the case in which the distribution to be tested is Gaussian with parameters estimated by the sample mean $\bar{x}$ and the sample variance s^2 . Table 2, derived from table 1a of reference 3, gives the 5 and 10 percent modified critical values of D^* , W^{2*} , and A^{2*} for testing the goodness of fit to the Gaussian with estimated parameters for sample size $n = 15,000$.

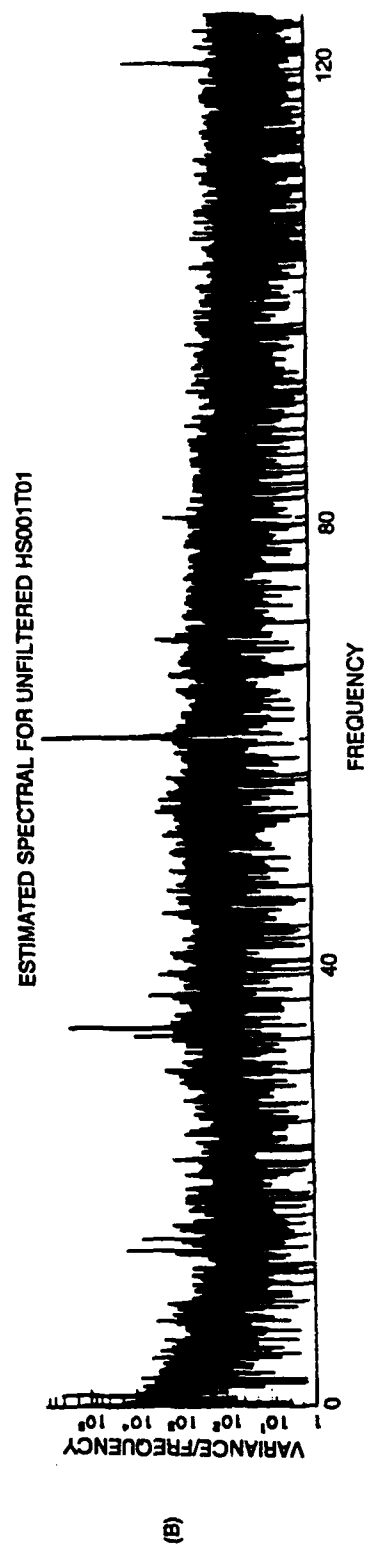
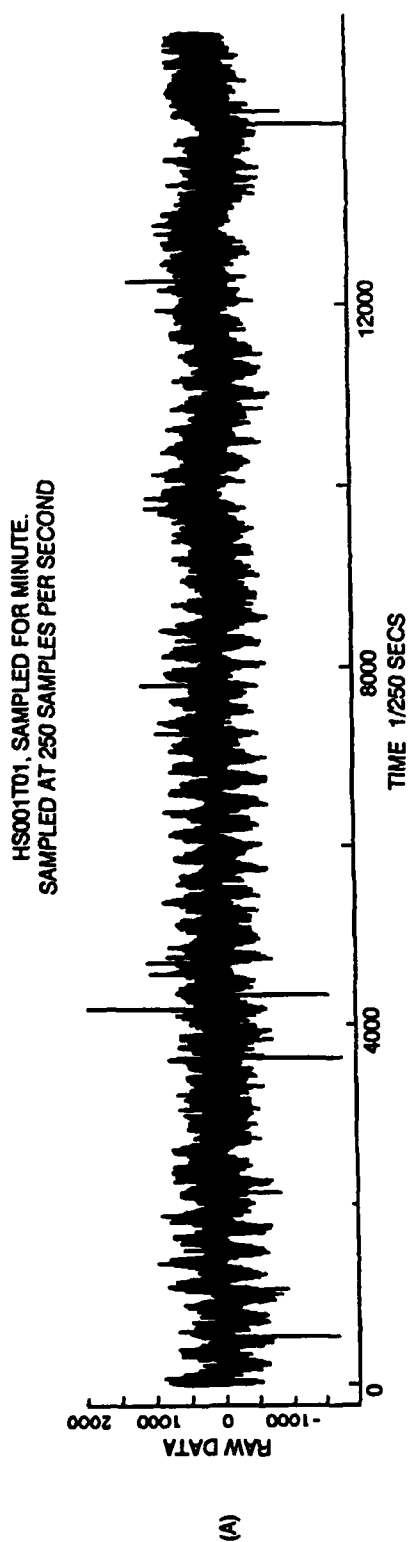


Figure 7. (a) HS001T01 time series sampled for 1 minute, sampled at 250 samples per second.
(b) Estimated spectral density for unfiltered HS001T01.

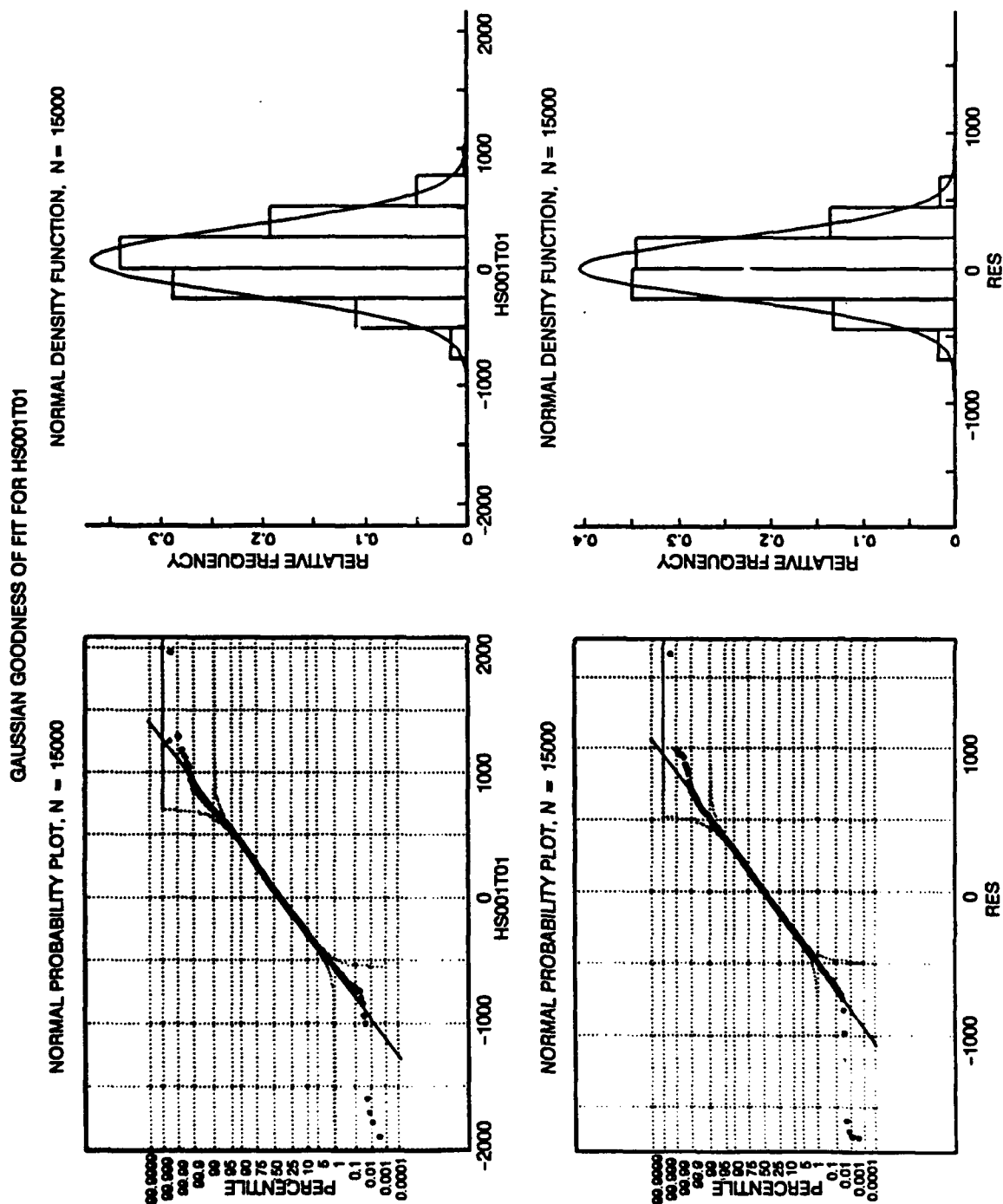


Figure 8. Gaussian goodness of fit for HS001T01. (a) Normal probability plot, $n = 15000$.
(b) Normal density function, $n = 15000$.

Table 1. GRAFSTAT output: Analysis of normal distribution fit (unfiltered data).

FILE: TAB001 DATA A1
ANALYSIS OF NORMAL DISTRIBUTION FIT

TA : HS001701
LECTION : ALL
^ AXIS LABEL: HS001701
SAMPLE SIZE : 15000
CENSORING : NONE
FREQUENCIES : 1
EST. METHOD : MAXIMUM LIKELIHOOD
CONF METHOD : EXACT

CONF. INTERVALS COVARIANCE MATRIX OF
(95 PERCENT) PARAMETER ESTIMATES
PARAMETER ESTIMATE LOWER UPPER MU SIGMA
MU 62.987 58.516 67.457 5.2008 0
SIGMA 279.31 276.19 282.51 0 2.6004
LOG LIKELIHOOD FUNCTION AT MLE = 1.0577E5

SAMPLE FITTED GOODNESS OF FIT TESTS
MEAN : 62.987 62.987 CHI-SQUARE : 35.938
STD DEV : 279.32 279.31 DEG FREED: 6
SKEWNESS: 0.0050916 0 SIGNIF : 0.0000028338
KURTOSIS: 3.3503 3 KOLM-SMIRN : 0.010066
* BASED ON MIDPOINTS OF FINITE INTERVALS SIGNIF : 0.095674
Cramer-V M : 0.29937
SIGNIF : < .15
ANDER-DARL : 2.1078
SIGNIF : < .10
PERCENTILES SAMPLE FITTED
5: 588.5 596.53
10: 295 295.01
25: 132.5 125.32
50: 59 62.987
75: 253 251.29
95: 427 420.98
95: 525.5 522.5
KS, AD, AND CV SIGNIF. LEVELS NOT
EXACT WITH ESTIMATED PARAMETERS.
NOTE: A SMALL SIGNIFICANCE LEVEL
(EG. P<.01) INDICATES LACK OF FIT

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E)*2)/E
INF.	773.4	9	20.617	11.617	6.546
773.4	515.6	234	246.71	-12.713	4.0124
515.6	257.8	1645	1593.3	51.65	1.6743
257.8	0	4327	4281.2	45.816	0.4903
0	257.8	5105	5196.9	-91.916	1.6257
257.8	515.6	2880	2852.8	27.231	0.25994
515.6	773.4	748	706.16	41.863	2.4818
773.4	1031.2	44	78.262	34.262	14.999
1031.2	INF.	8	4.0513	3.9487	3.8486
TOTAL		15000	15000		35.938

Table 2. Statistics table for analysis of normal distribution fit for all hydrophones.

Statistic	Critical Value	
	5%	10%
D*	0.00731	0.00669
W2*	0.12600	0.10399
A2*	0.78700	0.65580

4.0 RESULTS AND DISCUSSION

As previously described in section 2.2, the data analyzed consist of 23 time series collected from the VAST I MPL array elements $S_{8(i-1)+1}$, $1 \leq i \leq 24, i \neq 20$, representing the hydrophone pressure levels (measured in volts) for 1-minute time period commencing on 081111Z July 1989. Since the sampling rate is 250 Hz, each time series contains 15,000 points. Figures 9 and 10 show plots of the first four sample moments of the 1-minute time series across the 23 hydrophones selected. Table 3 gives means and standard deviations of each of the first four moment estimates. A typical raw time series and frequency spectrum for a single hydrophone (in this case, element 1) is shown in figure 7. A very strong 60-Hz line is clearly evident and is probably due to noise caused by a mechanical generator located near the array. A filter was used to detrend the time series for the 60-Hz cycle and the results presented apply to the decontaminated data. The lower plot in figure 8 shows the frequency spectrum of the 60-Hz filtered time series.

Table 4 shows the Kolmogorov-Smirnov statistic D calculated for both the unfiltered time series and the 60-Hz filtered time series across the 23 hydrophones. These values were obtained from GRAFSTAT described in the previous section. Typical results of these GRAFSTAT routines for testing goodness of fit to Gaussianity are shown in table 1. Figure 11 shows a plot of the Kolmogorov-Smirnov statistics for both the contaminated and uncontaminated time series. Also shown are the 5 and 10 percent critical value thresholds for D , 0.00731 and 0.00669, respectively (as given in table 2). Figure 11 shows that the 60-Hz contaminated time series failed the test of Gaussianity at numerous depths along the array, while below 810 m (element 145) all but 6 of the remaining 18 60-Hz filtered time series from deeper elements passed the goodness of fit test for Gaussianity at the 5-percent level of significance. Similar results were obtained using the Cramer-von Mises test (all but 7 of the remaining 18 60-Hz filtered time series from elements below element 145 passed the test at the 5-percent level) and the Anderson-Darling test (all but 8 of the remaining 18 60-Hz filtered time series from elements below element 145 passed the test at the 5 percent level). See figures 12 and 13 and tables 5 and 6 for the latter two cases. Thus, even the most stringent (i.e., most powerful) test (Anderson-Darling) determines that 10 out of 189 of the elements at a depth of 930 m or deeper pass the test of Gaussianity while the Kolmogorov-Smirnov test (a much more powerful and thus more stringent test than the standard χ^2 test) determines that 12 of the 18 60-Hz filtered time series from elements at a depth of 930 m or deeper pass the test of Gaussianity, even accounting for the required modifications due to estimating unknown means and variances.

Appendix A are statistics tables for analysis of normal distribution fit for all hydrophones. Appendix B are time series and frequency spectra, normal probability plots, and histograms for all hydrophones.

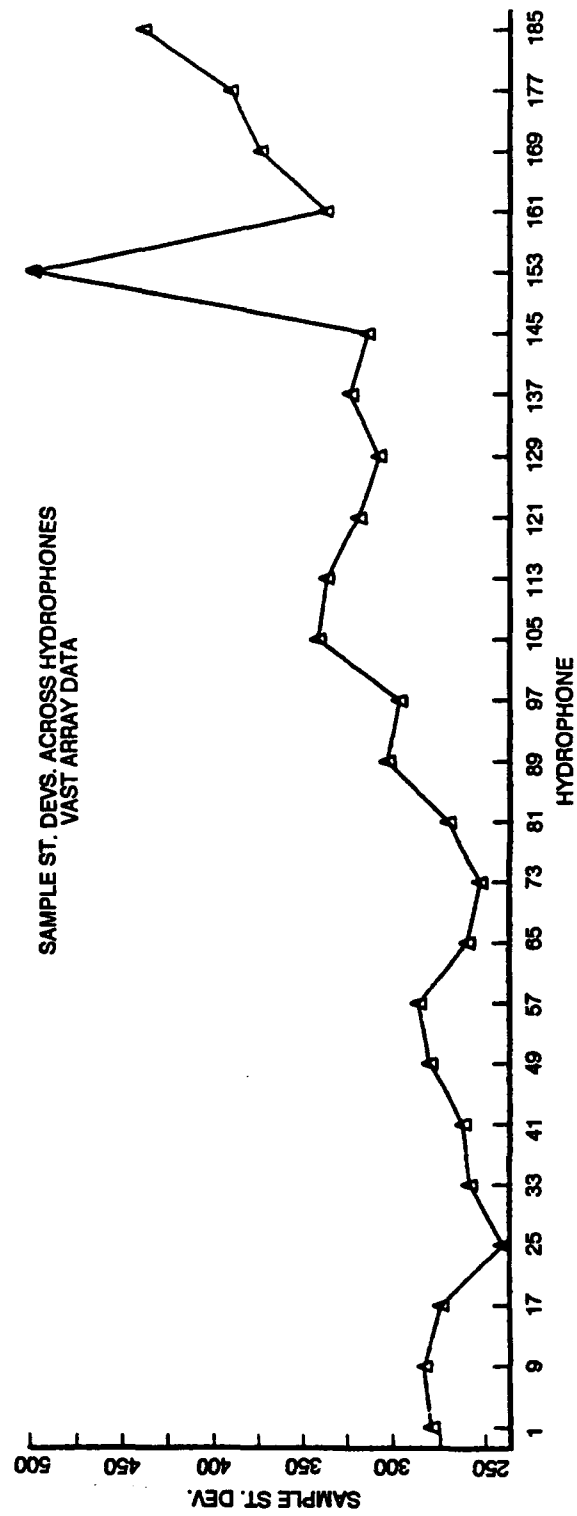
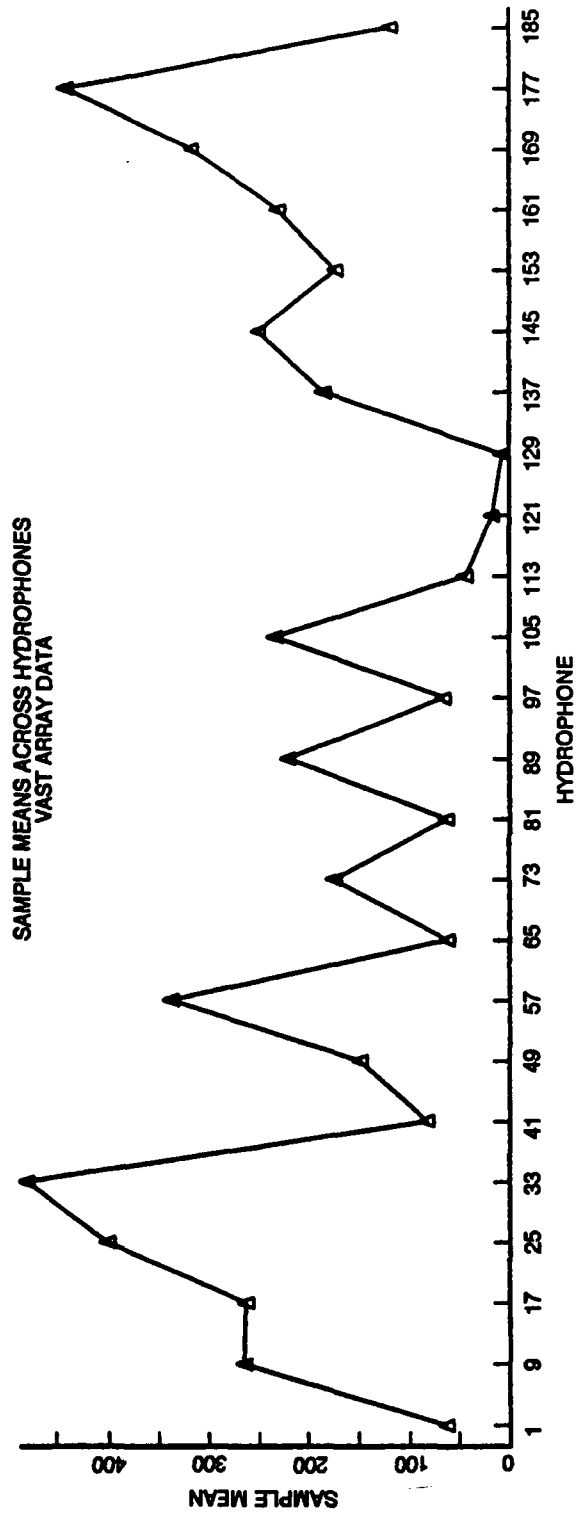


Figure 9. Sample means and standard deviations for 60-Hz filtered time series.

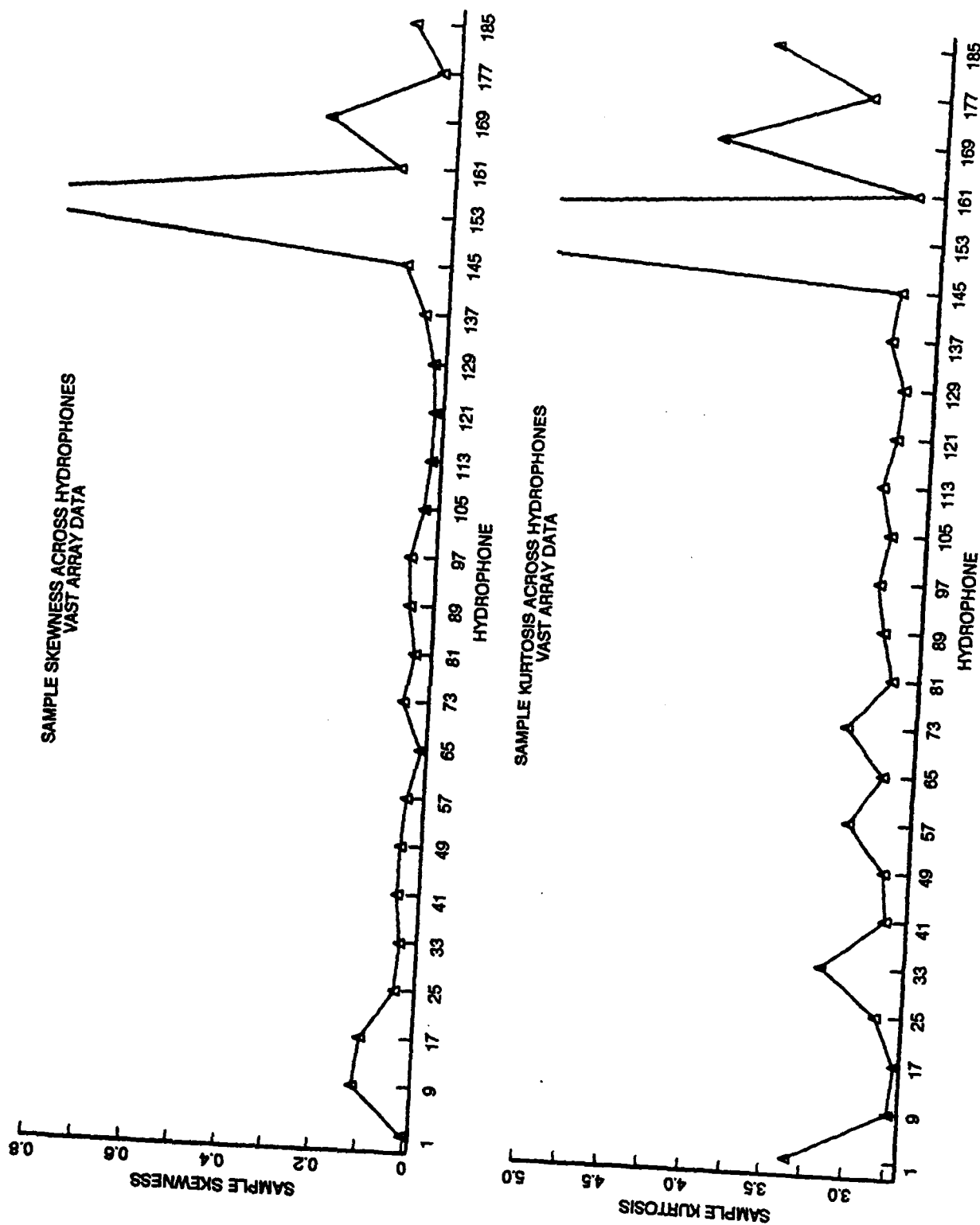


Figure 10. Sample skewnesses and kurtoses for 60-Hz filtered time series.

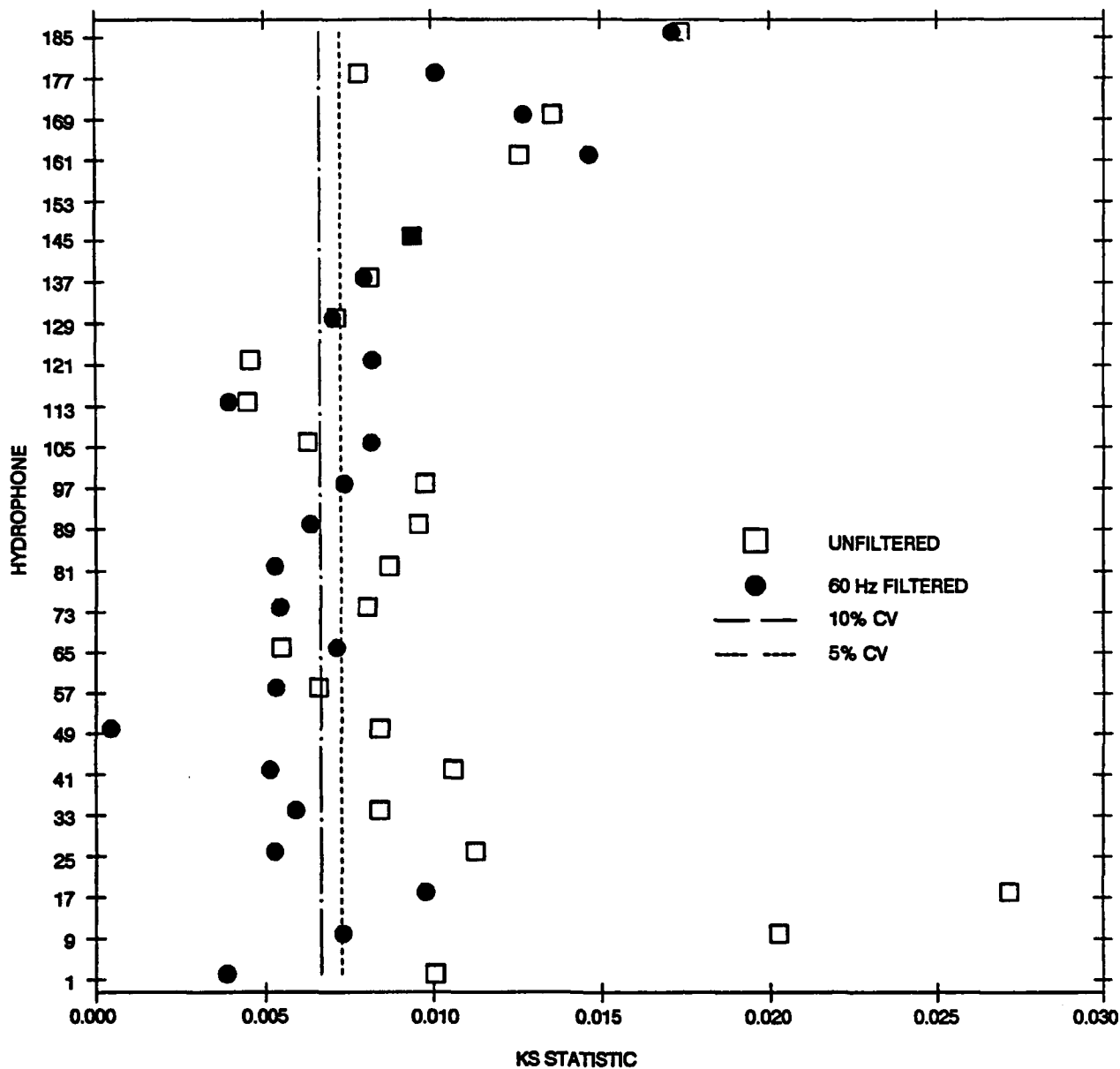


Figure 11. Plot of Kolmogorov-Smirnov statistic for testing goodness of fit to Gaussian.

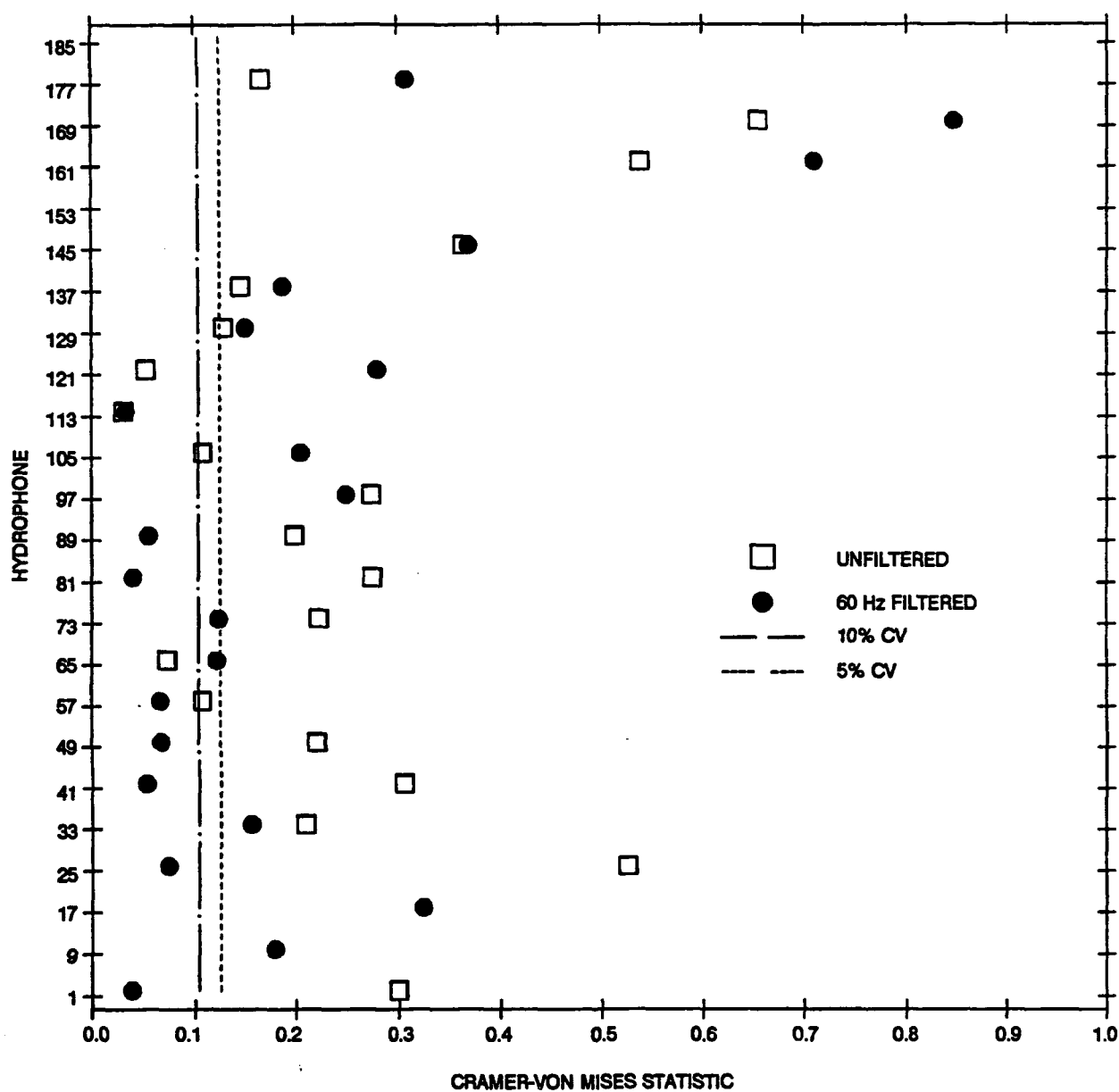


Figure 12. Plot of Cramer-von Mises statistic for testing goodness of fit to Gaussian.

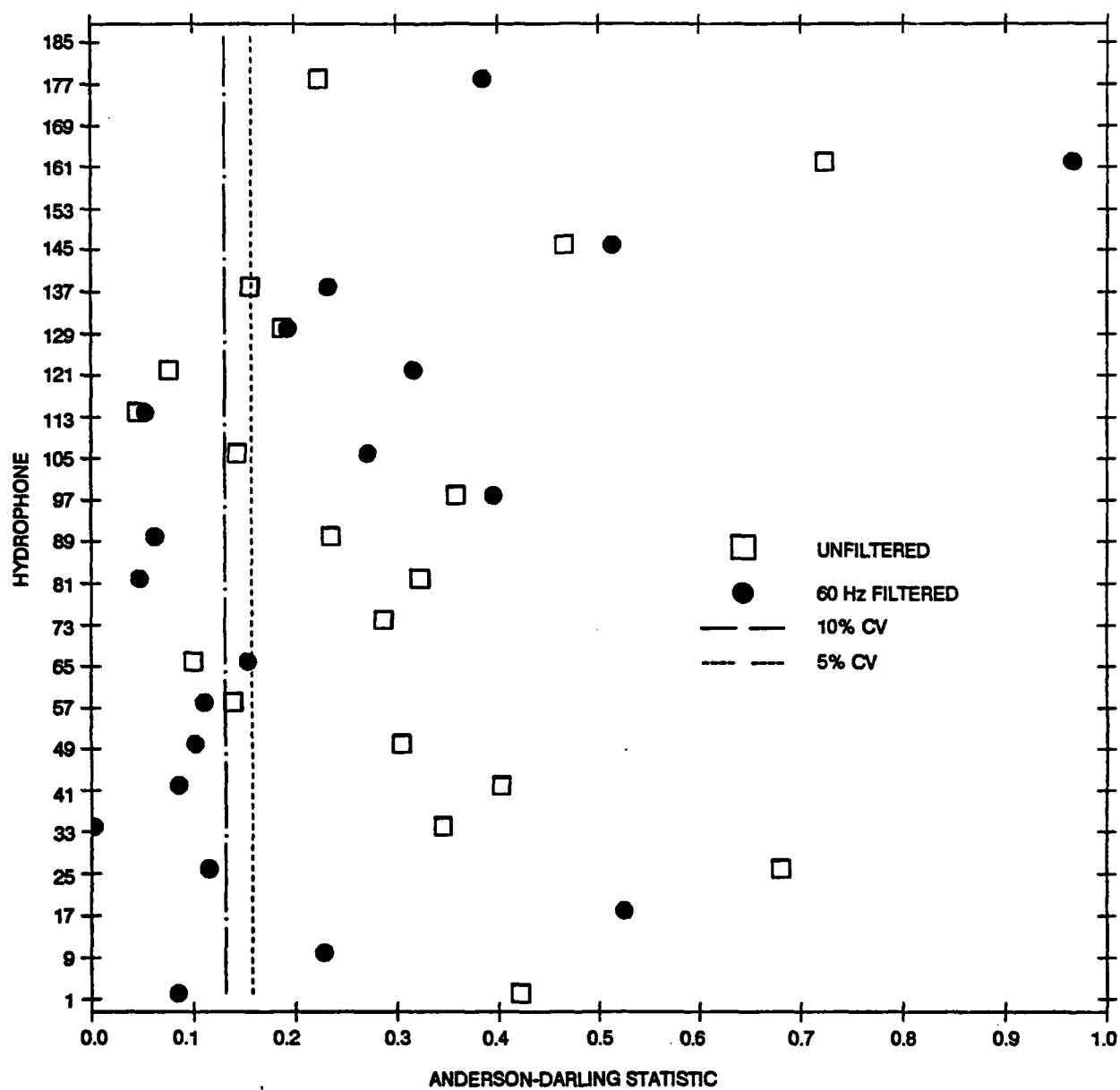


Figure 13. Plot of Anderson-Darling statistic for testing goodness of fit to Gaussian.

Table 3. Averages, standard deviations, and standard errors of first four sample moments of hydrophone data.

1	2 MEAN	3 STD DEV	4 SKEWNESS	5 KURTOSIS
AVERAGE	193.282292	313.314383	0.094338	3.205312
STANDARD DEVIATION	134.858335	81.151371	0.212405	0.991589
STANDARD ERROR	27.488809	12.482471	0.042353	0.202403

Table 4. Kolmogorov-Smirnov statistics for testing goodness of fit to Gaussian for unfiltered and 60-Hz filtered data for all 24 hydrophones.

1 HPHONE	2 KS STAT	3 KS STAT FILTERED
1	0.010080	0.003878
8	0.020258	0.007358
17	0.027188	0.008784
25	0.011242	0.005288
33	0.008408	0.005828
41	0.010804	0.003184
48	0.008403	0.000441
57	0.008817	0.003344
65	0.005485	0.007188
73	0.008058	0.003480
81	0.008718	0.003323
89	0.008387	0.008421
97	0.008812	0.007414
105	0.006307	0.008217
113	0.004508	0.003883
121	0.004387	0.008238
128	0.007188	0.007088
137	0.008174	0.008021
145	0.008431	0.008437
153		
161	0.012583	0.014872
168	0.013382	0.012732
177	0.007837	0.010143
185	0.017388	0.017148

Table 5. Cramer-von Mises statistics for testing goodness of fit to Gaussian for unfiltered and 60-Hz filtered data for all 24 hydrophones.

1 HPHONE	2 W2 STAT	3 W2 STAT FILTERED
1	0.266370	0.036616
8	1.423300	0.176370
17	0.125300	0.323370
23	0.523670	0.074664
33	0.208060	0.156130
41	0.305620	0.053613
46	0.216660	0.066747
57	0.106360	0.067361
63	0.073236	0.122660
73	0.221750	0.124570
81	0.274470	0.040457
86	0.166500	0.053620
87	0.273560	0.250140
103	0.106340	0.203160
113	0.030733	0.032612
121	0.052774	0.260160
126	0.126160	0.150750
137	0.146400	0.166440
143	0.363760	0.370110
153		
161	0.536760	0.710360
166	0.654640	0.846370
177	0.166220	0.306360
186	1.443400	1.361100

Table 6. Anderson-Darling statistics for testing goodness of fit to Gaussian for unfiltered and 60-Hz filtered data for all 24 hydrophones.

1 HPHONE	2 A2 STAT	3 A2 STAT FILTERED
1	2.10780	0.424010
8	8.50820	1.143800
17	17.88800	2.824200
25	3.40030	0.378780
33	1.72820	0.007188
41	2.01420	0.427880
48	1.32420	0.313030
57	0.88180	0.557700
65	0.48823	0.788070
73	1.43510	
81	1.81850	0.237820
88	1.17320	0.312830
97	1.78850	1.880800
105	0.71330	1.380000
113	0.22378	0.288340
121	0.38141	1.588300
128	0.83717	0.888840
137	0.78183	1.183700
145	2.33200	2.371800
153		
161	3.81330	4.832300
168	3.43480	7.188800
177	1.11680	1.832100
185	8.18380	10.402000

5.0 REFERENCES

1. VAST I Experiment Quick-Look Report. MPL 1989.
2. Torrez, W. C. 1986. "Statistical Characterization of Area 85 Data Sets," NOSC TR 1160 (Dec). Naval Ocean Systems Center, San Diego, CA.
3. Stephens, M. A. 1974. "EDF Statistics for Goodness of Fit and Some Comparisons," *J. Amer. Stat. Assoc.* 69: 730-737.

APPENDIX A

STATISTICS TABLES FOR ANALYSIS OF NORMAL DISTRIBUTION FIT FOR ALL HYDROPHONES

ANALYSIS OF NORMAL DISTRIBUTION FIT

A : HS001101
 ECTION : ALL
 AXIS LABEL: HS001101
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

CONF. INTERVALS COVARIANCE MATRIX OF
 (95 PERCENT) PARAMETER ESTIMATES

PARAMETER	ESTIMATE	LOWER	UPPER	MU	SIGMA
MU	62.987	58.516	67.457	5.2008	0
SIGMA	279.31	276.19	282.51	0	2.6004

LOG LIKELIHOOD FUNCTION AT MLE = 1.0577E5

	SAMPLE	FITTED	GOODNESS OF FIT TESTS
MEAN :	62.987	62.987	CHI-SQUARE : 35.938
STD DEV :	279.32	279.31	DEG FREED: 6
SKENNESS:	0.0050916	0	SIGNIF : 0.0000028338
KURTOSIS:	3.3503	3	KOLM-SMIRN : 0.010066
= BASED ON MIDPOINTS OF FINITE INTERVALS			SIGNIF : 0.095674
			CRAMER-V M : 0.29937
PERCENTILES	SAMPLE	FITTED	SIGNIF : < .15
5:	388.5	396.53	ANDER-DARL : 2.1078
10:	295	295.01	SIGNIF : < .10
25:	132.5	125.32	
50:	59	62.987	KS, AD, AND CV SIGNIF. LEVELS NOT
75:	253	251.29	EXACT WITH ESTIMATED PARAMETERS.
90:	427	420.98	
95:	525.5	522.5	NOTE: A SMALL SIGNIFICANCE LEVEL
			(EG. P<.01) INDICATES LACK OF FIT

CHI-SQUARE GOODNESS OF FIT TABLE

IER	UPPER	OBS	EXP	O-E	((O-E)*2)/E
F.	773.4	9	20.617	11.617	6.546
73.4	515.6	234	266.71	32.713	4.0124
515.6	257.8	1645	1593.3	51.65	1.6743
257.8	0	4327	4281.2	45.816	0.4903
0	257.8	5105	5196.9	91.916	1.6257
257.8	515.6	2880	2852.8	27.231	0.25994
515.6	773.4	748	706.14	41.863	2.4818
773.4	1031.2	44	78.262	34.262	14.999
1031.2	+INF.	8	4.0513	3.9487	3.8486
TOTAL		15000	15000		35.938

ANALYSIS OF NORMAL DISTRIBUTION FIT

DATA : RES
 SELECTION : ALL
 X AXIS LABEL: RES
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	1.2444E 12	3.5517	3.5517	3.2822 0	
SIGMA	2.2188E2	219.41	224.43	0	1.6411

LOG LIKELIHOOD FUNCTION AT MLE = 1.0232E5

SAMPLE			FITTED	GOODNESS OF FIT TESTS	
MEAN :	5.8406E 11		1.2444E 12	CHI-SQUARE :	10.372
STD DEV :	2.2189E2		2.2188E2	DEG FREED:	5
SKEWNESS:	5.9978E 2		0.0000E0	SIGNIF :	0.065354
KURTOSIS:	3.9823E0		3.0000E0	KOLM-SMIRN :	0.0038782
* BASED ON MIDPOINTS OF FINITE INTERVALS				SIGNIF :	0.97774
PERCENTILES	SAMPLE		FITTED	CRAMER-V M :	0.038818
5:	343.16		365.05	SIGNIF :	> .15
10:	282.84		284.4	ANDER-DARL :	0.42401
25:	148.69		149.59	SIGNIF :	> .15
50:	0.73337		0.000022412	KS, AD, AND CV SIGNIF. LEVELS NOT	
75:	150.07		149.59	EXACT WITH ESTIMATED PARAMETERS.	
90:	284.12		284.4		
95:	361.85		365.05	NOTE: A SMALL SIGNIFICANCE LEVEL	
				(EG. P<.01) INDICATES LACK OF FIT	

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
-INF.	675.66	17	17.447	0.44701	0.011453
675.66	450.44	277	300.18	23.182	1.7902
450.44	225.22	1997	2008.1	11.061	0.060931
225.22	0	5229	5174.3	54.69	0.57805
0	225.22	5172	5174.3	2.3099	0.0010312
225.22	450.44	2030	2008.1	21.939	0.23969
450.44	675.66	256	300.18	44.182	6.5028
675.66	+INF.	22	17.447	4.553	1.1882
TOTAL		15000	15000	.	10.372

ANALYSIS OF NORMAL DISTRIBUTION FIT

DATA : HSU
 SELECTION : ALL
 X AXIS LABEL: HSU
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	264.95	260.43	269.48	5.3306	0
SIGMA	282.77	279.61	286.02	0	2.6653

LOG LIKELIHOOD FUNCTION AT MLE = 1.0595E5

SAMPLE			FITTED	GOODNESS OF FIT TESTS	
MEAN :	264.95		264.95	CHI-SQUARE :	119.68
STD DEV :	282.78		282.77	DEG FREED :	11
SKENNESS:	0.11433		0	SIGNIF :	0
KURTOSIS:	2.739		3	KOLM-SHIRN :	0.020256
* BASED ON MIDPOINTS OF FINITE INTERVALS				SIGNIF :	0.0000090202
				CRAMER-V M :	1.4233
				SIGNIF :	< .01
				ANDER-DARL :	0.5092
				SIGNIF :	< .01
				KS, AD, AND CV SIGNIF. LEVELS NOT EXACT WITH ESTIMATED PARAMETERS.	
				NOTE: A SMALL SIGNIFICANCE LEVEL (EG. P<.01) INDICATES LACK OF FIT	

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
-INF.	591.2	3	18.48	15.48	12.967
591.2	443.4	31	73.344	42.344	24.447
443.4	295.6	215	263.96	48.961	9.0815
295.6	147.8	798	727.05	70.947	6.9231
147.8	0	1681	1532.9	148.11	14.311
0	147.8	2628	2474.2	153.83	9.5643
147.8	295.6	2908	3057.4	149.43	7.5035
295.6	443.4	2454	2892.7	238.73	19.702
443.4	591.2	2090	2095.5	5.4571	0.014212
591.2	739	1278	1162.1	115.89	11.557
739	886.8	505	493.37	11.635	0.27437
886.8	1034.6	170	160.32	9.6824	0.58477
1034.6	1182.4	29	39.626	10.626	2.8494
1182.4	+INF.	10	9.0665	0.9335	0.096115
TOTAL		15000	15000		119.68

ANALYSIS OF NORMAL DISTRIBUTION FIT

DATA : RES
 SELECTION : ALL
 X AXIS LABEL: RES
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	1.6185E 12	3.4209	3.4209	3.0448 0	
SIGMA	2.1371E2	211.32	216.16	0	1.5224

LOG LIKELIHOOD FUNCTION AT MLE = 1.0175E5

SAMPLE			FITTED			GOODNESS OF FIT TESTS	
MEAN :	5.5265E 11		1.6185E 12		CHI-SQUARE :	28.334	
STD DEV :	2.1372E2		2.1371E2		DEG FREED:	9	
SKENNESS:	1.0712E 1		0.0000E0		SIGNIF :	0.00083875	
KURTOSIS:	3.1398E0		3.0000E0		KOLM-SMIRN :	0.0073556	
= BASED ON MIDPOINTS OF FINITE INTERVALS					SIGNIF :	0.39152	
					CRAMER-V M :	0.17937	
					SIGNIF :	> .15	
					ANDER-DARL :	1.1436	
					SIGNIF :	> .15	
					KS, AD, AND CV SIGNIF. LEVELS NOT		
					EXACT WITH ESTIMATED PARAMETERS.		
					NOTE: A SMALL SIGNIFICANCE LEVEL		
					(EG. P<.01) INDICATES LACK OF FIT		

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
-INF.	642.06	13	19.962	6.9619	2.428
642.06	513.65	85	101.84	16.836	2.7833
513.65	385.24	417	414.07	2.9305	0.02074
385.24	256.82	1162	1185.1	23.111	0.45048
256.82	128.41	2490	2388.5	101.53	4.3162
128.41	0	3389	3390.6	1.556	0.00071411
0	128.41	3353	3390.6	37.556	0.41599
128.41	256.82	2396	2388.5	7.5337	0.023763
256.82	385.24	1125	1185.1	60.111	3.0489
385.24	513.65	439	414.07	24.93	1.501
513.65	642.06	95	101.84	6.8357	0.45884
642.06	+INF.	36	19.962	16.038	12.886
TOTAL		15000	15000		28.334

ANALYSIS OF NORMAL DISTRIBUTION FIT

DATA : HS017T01
 SELECTION : ALL
 X AXIS LABEL: HS017T01
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	263.45	267.83	259.06	5.0066	0
SIGMA	274.04	270.98	277.19	0	2.5033

LOG LIKELIHOOD FUNCTION AT MLE = 1.0548E5

SAMPLE			FITTED			GOODNESS OF FIT TESTS		
MEAN :	263.45		263.45		CHI-SQUARE :	193.64		
STD DEV :	274.05		274.04		DEG FREED:	8		
SKEWNESS:	0.10169		0		SIGNIF :	0		
KURTOSIS:	2.7115		3		KOLM-SMIRN :	0.027169		
* BASED ON MIDPOINTS OF FINITE INTERVALS					SIGNIF :	4.8273E 10		
					CRAMER-V M :	3.1255		
PERCENTILES	SAMPLE		FITTED		SIGNIF :	< .01		
5:	698		714.3		ANDER-DARL :	17.958		
10:	615		614.69		SIGNIF :	< .01		
25:	466		448.2		KS, AD, AND CV SIGNIF. LEVELS NOT EXACT WITH ESTIMATED PARAMETERS.			
50:	272		263.45		NOTE: A SMALL SIGNIFICANCE LEVEL (EG. P<.01) INDICATES LACK OF FIT			
75:	65		78.69					
90:	97		87.801					
95:	189		187.41					

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E)*2)*E
-INF.	1143.2	2	10.223	8.2232	6.6145
1143.2	952.67	26	79.043	53.043	35.595
952.67	762.13	370	426.7	56.701	7.5345
762.13	571.6	1617	1440.1	176.91	21.733
571.6	381.07	3355	3052.2	302.79	30.037
381.07	190.53	3607	4065.3	458.29	51.665
190.53	0	3299	3403.6	104.56	3.2123
0	190.53	1987	1790.9	196.11	21.475
190.53	381.07	637	591.0	45.1	3.4365
381.07	571.6	84	122.76	38.763	12.239
571.6	+INF.	16	17.327	1.3274	0.10169
TOTAL		15000	15000		193.64

ANALYSIS OF NORMAL DISTRIBUTION FIT

ATA : RES
 ELECTION : ALL
 X AXIS LABEL: HS017T01 60HZ FILTERED
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	2.4568E 13	3.0836	3.0836	2.4739 0	
SIGMA	1.9264E2	190.49	194.85	0	1.237

LOG LIKELIHOOD FUNCTION AT MLE = 1.002E5

SAMPLE			FITTED	GOODNESS OF FIT TESTS	
MEAN :	3.9601E 11		2.4568E 13	CHI-SQUARE :	69.819
STD DEV :	1.9264E2		1.9264E2	DEG FREED:	5
SKEWNESS:	1.5394E 1		0.0000E0	SIGNIF :	1.1176E 13
KURTOSIS:	3.9286E0		3.0000E0	KOLM-SMIRN :	0.0097941
= BASED ON MIDPOINTS OF FINITE INTERVALS				SIGNIF :	0.1125
				CRAMER-V M :	0.32537
PERCENTILES	SAMPLE		FITTED	SIGNIF :	< .15
5:	309.76		316.93	ANDER-DARL :	2.6242
10:	243.66		246.91	SIGNIF :	< .05
25:	130.53		129.87		
50:	2.5543		0.000019458	KS, AD, AND CV SIGNIF. LEVELS NOT	
75:	126.05		129.87	EXACT WITH ESTIMATED PARAMETERS.	
90:	243.47		246.91		
95:	314.42		316.93	NOTE: A SMALL SIGNIFICANCE LEVEL	
				(EG. P<.01) INDICATES LACK OF FIT	

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E)*2)/E
-INF.	575.56	10	21.075	11.075	5.8199
575.56	383.71	284	326.81	42.812	5.6083
383.71	191.85	2054	2046.7	7.2783	0.025882
191.85	0	5222	5105.4	116.61	2.6634
0	191.85	5100	5105.4	5.3914	0.0056935
191.85	383.71	1971	2046.7	75.722	2.8014
383.71	575.56	305	326.81	21.812	1.4558
575.56	+INF.	54	21.075	32.925	51.438
TOTAL		15000	15000	.	69.819

ANALYSIS OF NORMAL DISTRIBUTION FIT

DATA : HS025T01
 SELECTION : ALL
 X AXIS LABEL: HS025T01
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	401.48	397.62	405.33	3.8664	0
SIGMA	240.82	238.13	243.59	0	1.9332

LOG LIKELIHOOD FUNCTION AT MLE = 1.0354E5

SAMPLE			GOODNESS OF FIT TESTS		
MEAN	STD DEV	FITTED	CHI-SQUARE	DEG FREED	SIGNIF
401.48	240.83	401.48	50.013	11	6.2269E 7
0.033949	0	0	KOLM-SMIRN	0.011242	0.045122
2.8305	3	3	SIGNIF	0.52597	< .05
= BASED ON MIDPOINTS OF FINITE INTERVALS			Cramer-V M	3.4003	< .025
			SIGNIF	KS, AD, AND CV SIGNIF. LEVELS NOT EXACT WITH ESTIMATED PARAMETERS.	
			NOTE: A SMALL SIGNIFICANCE LEVEL (EG. P<.01) INDICATES LACK OF FIT		

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
-INF.	407.4	5	6.0225	1.0225	0.17359
407.4	271.6	22	32.913	10.913	3.6184
271.6	135.8	125	153.66	28.663	5.3467
135.8	0	511	523.58	12.584	0.30247
0	135.8	1423	1308.3	114.68	10.052
135.8	271.6	2465	2398	66.978	1.8707
271.6	407.4	3128	3224.6	96.593	2.8935
407.4	543.2	3057	3181.3	124.35	4.8604
543.2	679	2266	2302.8	36.826	0.58889
679	814.8	1355	1222.9	132.11	14.271
814.8	950.6	495	476.34	18.656	0.73067
950.6	1086.4	126	136.07	10.067	0.74485
1086.4	1222.2	17	28.373	11.373	4.5585
1222.2	+INF.	5	5.0318	0.03179	0.00020084
TOTAL		15000	15000		50.013

ANALYSIS OF NORMAL DISTRIBUTION FIT

DATA : RES
 SELECTION : ALL
 X AXIS LABEL: RES
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	2.8323E 12	3.1104	3.1104	2.5172 0	
SIGMA	1.9431E2	192.14	196.54	0	1.2586

LOG LIKELIHOOD FUNCTION AT MLE = 1.0033E5

GOODNESS OF FIT TESTS		
MEAN :	4.3998E 11	2.8323E 12
STD DEV :	1.9432E2	1.9431E2
SKEWNESS:	3.4646E 2	0.0000E0
KURTOSIS:	3.1351E0	3.0000E0
* BASED ON MIDPOINTS OF FINITE INTERVALS		
PERCENTILES	SAMPLE	FITTED
5:	314.12	319.69
10:	247.48	249.06
25:	131.99	131
50:	1.925	0.000019627
75:	130.33	131
90:	249.45	249.06
95:	321.94	319.69

CHI-SQUARE : 11.261
 DEG FREED: 9
 SIGNIF : 0.25826
 KOLM-SMIRN : 0.0052858
 SIGNIF : 0.79607
 CRAMER-V M : 0.074884
 SIGNIF : > .15
 ANDER-DARL : 0.57678
 SIGNIF : > .15
 KS, AD, AND CV SIGNIF. LEVELS NOT
 EXACT WITH ESTIMATED PARAMETERS.
 NOTE: A SMALL SIGNIFICANCE LEVEL
 (EG. P<.01) INDICATES LACK OF FIT

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
-INF.	635.15	10	8.3231	1.6769	0.33785
635.15	508.12	51	58.606	7.6058	0.98707
508.12	381.09	305	306.97	1.97	0.012643
381.09	254.06	1053	1059	25.975	0.63711
254.06	127.03	2467	2416.7	50.28	1.0461
127.03	0	3706	3650.4	55.593	0.84665
0	127.03	3586	3650.4	64.407	1.1364
127.03	254.06	2410	2416.7	6.7199	0.018685
254.06	381.09	1045	1059	13.975	0.18441
381.09	508.12	307	306.97	0.029983	0.0000029285
508.12	635.15	65	58.606	6.3942	0.69764
635.15	+INF.	15	8.3231	6.6769	5.3563
TOTAL		15000	15000		11.261

ANALYSIS OF NORMAL DISTRIBUTION FIT

DATA : MS033T01
 SELECTION : ALL
 X AXIS LABEL: MS033T01
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	479.39	475.26	483.52	4.4367	0
SIGMA	257.97	255.09	260.94	0	2.2184

LOG LIKELIHOOD FUNCTION AT MLE = 1.0458E5

SAMPLE			FITTED			GOODNESS OF FIT TESTS	
MEAN :	479.39		479.39		CHI-SQUARE :	71.725	
STD DEV :	257.98		257.97		DEG FREED:	9	
SKEWNESS:	0.027163		0		SIGNIF :	6.9804E 12	
KURTOSIS:	3.1786		3		KOLM-SMIRN :	0.0084083	
* BASED ON MIDPOINTS OF FINITE INTERVALS					SIGNIF :	0.23941	
					CRAMER-V M :	0.20909	
					SIGNIF :	> .15	
PERCENTILES	SAMPLE		FITTED		ANDER-DARL :	1.7262	
5:	66		54.966		SIGNIF :	< .15	
10:	152		148.74		KS, AD, AND CV SIGNIF. LEVELS NOT		
25:	302		305.47		EXACT WITH ESTIMATED PARAMETERS.		
50:	476		479.39		NOTE: A SMALL SIGNIFICANCE LEVEL		
75:	657		653.31		(EG. P<.01) INDICATES LACK OF FIT		
90:	814		810.04				
95:	906		903.81				

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E)*2)*E
-INF.	316.13	31	15.333	15.667	16.008
316.13	158.07	44	85.719	41.719	20.304
158.07	0	304	372.42	68.417	12.569
0	158.07	1191	1123.5	67.519	4.0578
158.07	316.13	2480	2354.3	125.65	6.7062
316.13	474.2	3408	3428.3	20.33	0.12056
474.2	632.27	3381	3469.5	88.529	2.2589
632.27	790.33	2398	2440.3	42.26	0.73186
790.33	948.4	1240	1192.7	47.343	1.8793
948.4	1106.5	413	404.93	8.0746	0.16101
1106.5	1264.5	103	95.462	7.5383	0.59528
1264.5	+INF.	7	17.54	10.54	6.3336
TOTAL		15000	15000		71.725

ANALYSIS OF NORMAL DISTRIBUTION FIT

TA : RES
 SECTION : ALL
 X AXIS LABEL: RES
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	3.4985E 12	3.3764	3.3764	2.9661 0	
SIGMA	2.1093E2	208.57	213.35	0	1.483

LOG LIKELIHOOD FUNCTION AT MLE = 1.0156E5

SAMPLE			FITTED	GOODNESS OF FIT TESTS	
MEAN :	5.3250E 11		3.4985E 12	CHI-SQUARE :	117.03
STD DEV :	2.1094E2		2.1093E2	DEG FREED:	9
SKENNESS:	1.6289E 1		0.0000E0	SIGNIF :	0
KURTOSIS:	3.8676E0		3.0000E0	KOLM-SMIRN :	0.0059284
* BASED ON MIDPOINTS OF FINITE INTERVALS				SIGNIF :	0.6675
				CRAHER-V M :	0.15613
PERCENTILES	SAMPLE		FITTED	SIGNIF :	> .15
5:	337.83		347.02	ANDER-DARL :	1.4566
10:	264.2		270.36	SIGNIF :	> .15
25:	139.39		142.21		
50:	1.2605		0.000021305	KS, AD, AND CV SIGNIF. LEVELS NOT	
75:	139.99		142.21	EXACT WITH ESTIMATED PARAMETERS.	
90:	266.77		270.36		
95:	343.11		347.02	NOTE: A SMALL SIGNIFICANCE LEVEL	
				(EG. P<.01) INDICATES LACK OF FIT	

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
-INF.	718.09	28	5.0992	22.901	102.85
718.09	574.47	37	43.347	6.3471	0.92938
574.47	430.85	219	259.72	40.724	6.3854
430.85	287.23	960	991.41	31.405	0.99485
287.23	143.62	2412	2420.1	8.0515	0.026787
143.62	0	3817	3780.4	36.627	0.35487
0	143.62	3867	3780.4	86.627	1.9851
143.62	287.23	2399	2420.1	21.051	0.18312
287.23	430.85	957	991.41	34.405	1.194
430.85	574.47	265	259.72	5.2761	0.10718
574.47	718.09	34	43.347	9.3471	2.0156
718.09	+INF.	5	5.0992	0.099166	0.0019285
TOTAL		15000	15000		117.03

ANALYSIS OF NORMAL DISTRIBUTION FIT

DATA : HS041T01
 SELECTION : ALL
 X AXIS LABEL: HS041T01
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

CONF. INTERVALS COVARIANCE MATRIX OF
 (95 PERCENT) PARAMETER ESTIMATES

PARAMETER	ESTIMATE	LOWER	UPPER	MU	SIGMA
MU	82.474	86.663	78.285	4.5662	0
SIGMA	261.71	258.79	264.72	0	2.2831

 LOG LIKELIHOOD FUNCTION AT MLE = 1.0679E5

GOODNESS OF FIT TESTS

	SAMPLE	FITTED	
MEAN :	82.474	82.474	CHI-SQUARE : 40.431
STD DEV :	261.72	261.71	DEG FREED: 12
SKENNESS:	0.036898	0	SIGNIF : 0.00006098
KURTOSIS:	2.8036	3	KOLM-SMIRN : 0.010604
* BASED ON MIDPOINTS OF FINITE INTERVALS			SIGNIF : 0.068546
PERCENTILES	SAMPLE	FITTED	CRAMER-V M : 0.30562
5:	505	513.05	SIGNIF : < .15
10:	420	417.92	ANDER-DARL : 2.0142
25:	264	258.92	SIGNIF : < .10
50:	83	82.474	KS, AD, AND CV SIGNIF. LEVELS NOT
75:	98	93.97	EXACT WITH ESTIMATED PARAMETERS.
90:	259	252.97	NOTE: A SMALL SIGNIFICANCE LEVEL
95:	352.5	348.1	(EG. P<.01) INDICATES LACK OF FIT

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E)=2)*E
-INF.	940.33	1	8.0565	7.0565	6.1806
940.33	806	22	34.691	12.691	4.443
806	671.67	126	140	14.003	1.4005
671.67	537.33	433	433.82	0.8165	0.0015368
537.33	403	1122	1038.5	83.474	6.7094
403	268.67	1987	1921	66.004	2.2679
268.67	134.33	2666	2745.8	79.845	2.3218
134.33	0	2924	3033.1	109.1	3.9243
0	134.33	2623	2589.2	33.793	0.44104
134.33	268.67	1674	1708.1	34.063	0.6793
268.67	403	934	870.71	63.288	4.6002
403	537.33	372	342.95	29.051	2.4608
537.33	671.67	97	104.36	7.3555	0.51845
671.67	806	17	24.399	7.3989	2.2437
806	+INF.	2	5.2807	3.2807	2.0382
TOTAL		15000	15000		40.431

ANALYSIS OF NORMAL DISTRIBUTION FIT

DATA : RES
 SELECTION : ALL
 X AXIS LABEL: RES
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	5.9363E 13	3.4549	3.4549	3.1056 0	
SIGMA	2.1503E2	213.42	218.31	0	1.5528

LOG LIKELIHOOD FUNCTION AT MLE = 1.019E5

SAMPLE			FITTED			GOODNESS OF FIT TESTS	
MEAN :	5.6542E 11		5.9363E 13		CHI-SQUARE :	13.824	
STD DEV :	2.1504E2		2.1503E2		DEG FREED:	11	
SKENNESS:	2.0863E 2		0.0000E0		SIGNIF :	0.24291	
KURTOSIS:	2.9464E0		3.0000E0		KOLM-SMIRN :	0.0051639	
= BASED ON MIDPOINTS OF FINITE INTERVALS					SIGNIF :	0.81863	
					CRAMER-V M :	0.053913	
					SIGNIF :	> .15	
PERCENTILES	SAMPLE		FITTED		ANDER-DARL :	0.42789	
5:	356.28		355.09		SIGNIF :	> .15	
10:	278.6		276.64		KS, AD, AND CV SIGNIF. LEVELS NOT EXACT WITH ESTIMATED PARAMETERS.		
25:	146.96		145.51		NOTE: A SMALL SIGNIFICANCE LEVEL (EG. P<.01) INDICATES LACK OF FIT		
50:	1.2845		0.000021801				
75:	145.41		145.51				
90:	276.72		276.64				
95:	354.12		355.09				

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
-INF.	755.81	1	3.5488	2.5488	1.8305
755.81	629.84	21	22.858	1.8577	0.15098
629.84	503.87	102	120.35	18.345	2.7945
503.87	377.91	459	452.96	6.0449	0.080672
377.91	251.94	1283	1223.5	59.461	2.8896
251.94	125.97	2350	2372.7	22.735	0.21784
125.97	0	3249	3304	55.019	0.91618
0	125.97	3371	3304	66.981	1.3579
125.97	251.94	2314	2372.7	58.735	1.4539
251.94	377.91	1243	1223.5	19.461	0.30953
377.91	503.87	468	452.96	15.045	0.49972
503.87	629.84	111	120.35	9.3453	0.72571
629.84	755.81	23	22.858	0.14228	0.00088567
755.81	+INF.	5	3.5488	1.4512	0.59347
TOTAL		15000	15000		13.824

ANALYSIS OF NORMAL DISTRIBUTION FIT

ATA : MS049T01
 ELECTION : ALL
 X AXIS LABEL: MS049T01
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	148.11	143.63	152.59	5.2182	0
SIGMA	279.77	276.65	282.99	0	2.6091

LOG LIKELIHOOD FUNCTION AT MLE = 1.0579E5

SAMPLE			FITTED	GOODNESS OF FIT TESTS	
MEAN :	148.11		148.11	CHI-SQUARE :	35.161
STD DEV :	279.78		279.77	DEG FREED:	12
SKEWNESS:	0.035874		0	SIGNIF :	0.00044149
KURTOSIS:	2.8244		3	KOLM-SMIRN :	0.0084035
* BASED ON MIDPOINTS OF FINITE INTERVALS				SIGNIF :	0.23999
				CRAMER-V M :	0.21969
PERCENTILES	SAMPLE		FITTED	SIGNIF :	> .15
5:	307.5		312.18	ANDER-DARL :	1.5242
10:	215		210.48	SIGNIF :	> .15
25:	45.5		40.51		
50:	148		148.11	KS, AD, AND CV SIGNIF. LEVELS NOT	
75:	340		336.73	EXACT WITH ESTIMATED PARAMETERS.	
90:	514		506.7		
95:	609		608.4	NOTE: A SMALL SIGNIFICANCE LEVEL	
				(EG. P<.01) INDICATES LACK OF FIT	

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
-INF.	656	17	30.585	13.585	5.8963
656	524.8	73	90.843	17.843	3.5047
524.8	393.6	270	275.05	5.0529	0.092825
393.6	262.4	703	670.94	32.062	1.5321
262.4	131.2	1428	1318.6	109.38	9.0725
131.2	0	2037	2088.1	51.149	1.2529
0	131.2	2635	2664.5	29.527	0.3272
131.2	262.4	2659	2739.7	80.722	2.3783
262.4	393.6	2304	2270	34.024	0.50998
393.6	524.8	1465	1515.5	50.502	1.6829
524.8	656	874	815.27	58.733	4.2312
656	787.2	384	353.37	30.635	2.6559
787.2	918.4	113	123.39	10.395	0.87568
918.4	1049.6	31	34.449	3.4485	0.34522
1049.6	+INF.	7	9.806	2.806	0.80294
TOTAL		15000	15000		35.161

ANALYSIS OF NORMAL DISTRIBUTION FIT

DATA : RES
 SELECTION : ALL
 X AXIS LABEL: H5049701 60HZ FILTERED
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	1.4333E 12	3.8328	3.8328	3.8222	0
SIGMA	2.3944E2	236.77	242.19	0	1.9111

LOG LIKELIHOOD FUNCTION AT MLE = 1.0246E5

GOODNESS OF FIT TESTS		
MEAN :	6.5429E 11	1.4333E 12
STD DEV :	2.3945E2	2.3944E2
SKENNESS:	1.7414E 2	0.0000E0
KURTOSIS:	2.8946E0	3.0000E0
= BASED ON MIDPOINTS OF FINITE INTERVALS		
CHI-SQUARE :	17.142	
DEG FREED:	13	
SIGNIF :	0.19292	
KOLM-SMIRN :	0.0044114	
SIGNIF :	0.93224	
CRAMER-V M :	0.068747	
SIGNIF :	> .15	
ANDER-DARL :	0.51303	
SIGNIF :	> .15	
KS. AD. AND CV SIGNIF. LEVELS NOT EXACT WITH ESTIMATED PARAMETERS.		
NOTE: A SMALL SIGNIFICANCE LEVEL (EG. P<.01) INDICATES LACK OF FIT		

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
-INF.	818.66	1	4.8313	3.8313	3.0383
818.66	701.71	11	20.543	9.5426	4.4328
701.71	584.76	84	84.121	0.12098	0.000174
584.76	467.81	275	271	4.0018	0.059094
467.81	350.86	721	690.8	30.202	1.3205
350.86	233.9	1407	1393.5	13.531	0.13138
233.9	116.95	2233	2224.6	8.4407	0.032027
116.95	0	2778	2810.7	32.68	0.37998
0	116.95	2753	2810.7	57.68	1.1837
116.95	233.9	2221	2224.6	3.5593	0.0056948
233.9	350.86	1417	1393.5	23.531	0.39735
350.86	467.81	742	690.8	51.202	3.7951
467.81	584.76	253	271	17.998	1.1953
584.76	701.71	76	84.121	8.121	0.78299
701.71	818.66	22	20.543	1.4574	0.10339
818.66	-INF.	6	4.8313	1.1687	0.28272
TOTAL		15000	15000		17.142

ANALYSIS OF NORMAL DISTRIBUTION FIT

DATA : MS057T01
 ELECTION : ALL
 X AXIS LABEL: MS057T01
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	338.34	333.77	342.92	5.4484	0
SIGMA	285.88	282.68	289.16	0	2.7242

LOG LIKELIHOOD FUNCTION AT MLE = 1.0612E5

SAMPLE			FITTED			GOODNESS OF FIT TESTS	
MEAN :	338.34		338.34		CHI-SQUARE :	8.674	
STD DEV :	285.89		285.88		DEG FREED :	8	
SKENNESS:	0.027124		0		SIGNIF :	0.37054	
KURTOSIS:	3.0581		3		KOLM-SHIRM :	0.0066166	
* BASED ON MIDPOINTS OF FINITE INTERVALS					SIGNIF :	0.52738	
					CRAMER-V M :	0.10838	
PERCENTILES	SAMPLE		FITTED		SIGNIF :	> .15	
5:	135		131.98		ANDER-DARL :	0.6918	
10:	31		28.072		SIGNIF :	> .15	
25:	141		145.61		KS, AD, AND CV SIGNIF. LEVELS NOT		
50:	342		338.34		EXACT WITH ESTIMATED PARAMETERS.		
75:	530		531.08		NOTE: A SMALL SIGNIFICANCE LEVEL		
90:	708		704.76		(EG. P<.01) INDICATES LACK OF FIT		
95:	807		808.67				

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E)*2)/E
-INF.	614	6	6.6529	0.65286	0.064066
614	409.33	48	60.193	12.193	2.4697
409.33	204.67	377	364.43	12.566	0.43327
204.67	0	1362	1343.2	18.792	0.2629
0	204.67	2961	3026	65.015	1.3969
204.67	409.33	4221	4170.4	50.642	0.61497
409.33	614	3481	3517.2	36.233	0.37325
614	818.67	1860	1815	45.015	1.1165
818.67	1023.3	569	572.64	3.6438	0.023185
1023.3	1228	106	110.34	4.3414	0.17081
1228	*INF.	9	13.936	4.9364	1.7485
TOTAL		15000	15000		8.674

ANALYSIS OF NORMAL DISTRIBUTION FIT

ATA : RES
 ELECTION : ALL
 X AXIS LABEL: HS057T01 60HZ FILTERED
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	1.2579E 12	4.0519	4.0519	4.2716	0
SIGMA	2.5313E2	250.3	256.03	0	2.1358

LOG LIKELIHOOD FUNCTION AT MLE = 1.0429E5

SAMPLE			FITTED			GOODNESS OF FIT TESTS	
MEAN :	6.9764E 11	11	1.2579E 12	12	CHI-SQUARE :	14.229	
STD DEV :	2.5314E2		2.5313E2		DEG FREED:	7	
SKEWNESS:	4.4830E 2	2	0.0000E0		SIGNIF :	0.047249	
KURTOSIS:	3.0966E0		3.0000E0		KOLM-SMIRN :	0.005344	
* BASED ON MIDPOINTS OF FINITE INTERVALS					SIGNIF :	0.78501	
					CRAMER-V M :	0.067581	
PERCENTILES	SAMPLE		FITTED		SIGNIF :	> .15	
5:	419.94		416.45		ANDER-DARL :	0.5577	
10:	326.1		324.44		SIGNIF :	> .15	
25:	171.52		170.66				
50:	2.1851		0.000025568		KS, AD, AND CV SIGNIF. LEVELS NOT		
75:	172.56		170.66		EXACT WITH ESTIMATED PARAMETERS.		
90:	327.83		324.44				
95:	413		416.45		NOTE: A SMALL SIGNIFICANCE LEVEL		
					(EG. P<.01) INDICATES LACK OF FIT		

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E)*2)*E
-INF.	734.78	25	27.739	2.7388	0.27041
734.78	551.09	175	193.31	18.307	1.7337
551.09	367.39	929	878.96	50.036	2.8484
367.39	183.7	2428	2410.2	17.846	0.13214
183.7	0	3885	3989.8	104.84	2.7547
0	183.7	4015	3989.8	25.163	0.1587
183.7	367.39	2449	2410.2	38.846	0.6261
367.39	551.09	901	878.96	22.036	0.55247
551.09	734.78	175	193.31	18.307	1.7337
734.78	+INF.	18	27.739	9.7388	3.4192
TOTAL		15000	15000		14.229

ANALYSIS OF NORMAL DISTRIBUTION FIT

VTA : MS065T01
 ELECTION : ALL
 X AXIS LABEL: MS065T01
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	61.276	57.122	65.429	4.4888	0
SIGMA	259.48	256.59	262.46	0	2.2444

LOG LIKELIHOOD FUNCTION AT MLE = 1.0466E5

SAMPLE			FITTED			GOODNESS OF FIT TESTS		
MEAN :	61.276		61.276		CHI-SQUARE :	30.211		
STD DEV :	259.49		259.48		DEG FREED:	12		
SKENNESS:	0.00162		0		SIGNIF :	0.0025953		
KURTOSIS:	2.8578		3		KOLM-SMIRN :	0.0054852		
* BASED ON MIDPOINTS OF FINITE INTERVALS					SIGNIF :	0.75753		
					CRAMER-V M :	0.073236		
					SIGNIF :	> .15		
					ANDER-DARL :	0.49923		
					SIGNIF :	> .15		
					KS, AD, AND CV SIGNIF. LEVELS NOT			
					EXACT WITH ESTIMATED PARAMETERS.			
					NOTE: A SMALL SIGNIFICANCE LEVEL			
					(EG. P5.01) INDICATES LACK OF FIT			

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E)*2)/E
-INF.	753.2	3	12.723	9.7232	7.4306
753.2	627.67	38	46.752	8.7516	1.6382
627.67	502.13	173	164.86	8.1398	0.4019
502.13	376.6	504	462	42.005	3.8191
376.6	251.07	971	1029	57.955	3.2643
251.07	125.53	1890	1821.5	68.494	2.5756
125.53	0	2529	2563.1	34.117	0.45413
0	125.53	2805	2867	61.967	1.3394
125.53	251.07	2552	2549.2	2.8184	0.0031161
251.07	376.6	1849	1801.8	47.249	1.239
376.6	502.13	1000	1012.3	12.261	0.1485
502.13	627.67	483	452.03	30.973	2.1223
627.67	753.2	156	160.43	4.4251	0.12206
753.2	878.73	43	45.246	2.2462	0.11151
878.73	+INF.	4	12.233	8.2332	5.5412
TOTAL		15000	15000		30.211

ANALYSIS OF NORMAL DISTRIBUTION FIT

ATA : RES
 ELECTION : ALL
 X AXIS LABEL: HS065T01 60HZ FILTERED
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	5.7241E 13	3.59	3.59	3.3534 0	
SIGMA	2.2428E2	221.77	226.85	0	1.6767

LOG LIKELIHOOD FUNCTION AT MLE = 1.0248E5

SAMPLE			FITTED	GOODNESS OF FIT TESTS	
MEAN :	6.0556E 11		5.7241E 13	CHI-SQUARE :	24.536
STD DEV :	2.2429E2		2.2428E2	DEG FREED:	13
SKEWNESS:	1.7860E 2		0.0000E0	SIGNIF :	0.026545
KURTOSIS:	2.8821E0		3.0000E0	KOLM-SMIRN :	0.0071676
* BASED ON MIDPOINTS OF FINITE INTERVALS				SIGNIF :	0.42403
PERCENTILES	SAMPLE		FITTED	CRAMER-V M :	0.12298
5:	375.19		368.98	SIGNIF :	> .15
10:	291.59		287.46	ANDER-DARL :	0.76907
25:	152.61		151.21	SIGNIF :	> .15
50:	3.4441		0.000022654	KS, AD, AND CV SIGNIF. LEVELS NOT	
75:	150.44		151.21	EXACT WITH ESTIMATED PARAMETERS.	
90:	287.84		287.46		
95:	369.47		368.98	NOTE: A SMALL SIGNIFICANCE LEVEL	
				(EG. P<.01) INDICATES LACK OF FIT	

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E)*2)/E
-INF.	758.24	2	5.5588	3.5588	2.2784
758.24	649.92	14	22.623	8.6227	3.2866
649.92	541.6	95	89.875	5.1247	0.29221
541.6	433.28	309	282.24	26.764	2.5379
433.28	324.96	735	704.91	30.095	1.2848
324.96	216.64	1404	1400.3	3.669	0.009613
216.64	108.32	2119	2212.8	93.829	3.9786
108.32	0	2716	2781.6	65.641	1.549
0	108.32	2867	2781.6	85.359	2.6194
108.32	216.64	2208	2212.8	4.8292	0.010539
216.64	324.96	1410	1400.3	9.669	0.066762
324.96	433.28	747	704.91	42.095	2.5138
433.28	541.6	268	282.24	14.236	0.71809
541.6	649.92	86	89.875	3.8753	0.1671
649.92	758.24	18	22.623	4.6227	0.94459
758.24	+INF.	2	5.5588	3.5588	2.2784
TOTAL		15000	15000		24.536

ANALYSIS OF NORMAL DISTRIBUTION FIT

DATA : HS073T01
 SELECTION : ALL
 X AXIS LABEL: HS073T01
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	174.08	178.13	170.04	4.2523	0
SIGMA	252.56	249.74	255.46	0	2.1262

LOG LIKELIHOOD FUNCTION AT MLE = 1.0426E5

SAMPLE			FITTED	GOODNESS OF FIT TESTS	
MEAN :	174.08		174.08	CHI-SQUARE :	19.789
STD DEV :	252.57		252.56	DEG FREED :	6
SKENNESS:	0.044626		0	SIGNIF :	0.0030188
KURTOSIS:	3.0938		3	KOLM-SMIRN :	0.0080582
* BASED ON MIDPOINTS OF FINITE INTERVALS				SIGNIF :	0.28428
				CRAMER-V M :	0.22175
PERCENTILES	SAMPLE		FITTED	SIGNIF :	> .15
5:	585.5		589.59	ANDER-DARL :	1.4351
10:	500		497.79	SIGNIF :	> .15
25:	350		344.35		
50:	174		174.08	KS. AD. AND CV SIGNIF. LEVELS NOT	
75:	0		3.8118	EXACT WITH ESTIMATED PARAMETERS.	
90:	152		149.43		
95:	240.5		241.43	NOTE: A SMALL SIGNIFICANCE LEVEL	
				(EG. P<.01) INDICATES LACK OF FIT	

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
-INF.	878.4	24	39.686	15.686	6.1999
878.4	658.8	360	372.47	12.472	0.41763
658.8	439.2	1884	1791.7	92.34	4.759
439.2	219.6	4211	4223.5	12.507	0.037038
219.6	0	4761	4892.8	131.83	3.552
0	219.6	2856	2787	69.007	1.7086
219.6	439.2	805	779.07	25.925	0.86271
439.2	658.8	94	106.27	12.272	1.4171
658.8	+INF.	5	7.5037	2.5037	0.83538
TOTAL		15000	15000		19.789

ANALYSIS OF NORMAL DISTRIBUTION FIT

ATA : RES
 SELECTION : ALL
 X AXIS LABEL: HS073T01 60HZ FILTERED
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	2.3965E 13	3.3656	3.3656	2.9472 0	
SIGMA	2.1026E2	207.91	212.67	0	1.4736

LOG LIKELIHOOD FUNCTION AT MLE = 1.0151E5

SAMPLE			FITTED	GOODNESS OF FIT TESTS	
MEAN :	5.3119E 11		2.3965E 13	CHI-SQUARE :	8.6196
STD DEV :	2.1027E2		2.1026E2	DEG FREED:	5
SKEWNESS:	4.0065E 3		0.0000E0	SIGNIF :	0.12522
KURTOSIS:	3.5348E0		3.0000E0	KOLM-SHIRM :	0.00548
* BASED ON MIDPOINTS OF FINITE INTERVALS				SIGNIF :	0.75855
				CRAMER-V M :	0.12457
PERCENTILES	SAMPLE		FITTED	SIGNIF :	> .15
5:	347.84		345.92	ANDER-DARL :	INFINITE
10:	268.44		269.49	SIGNIF :	0
25:	140.52		141.75		
50:	1.6761		0.000021237	KS, AD, AND CV SIGNIF. LEVELS NOT	
75:	139.88		141.75	EXACT WITH ESTIMATED PARAMETERS.	
90:	263.96		269.49		
95:	344.17		345.92	NOTE: A SMALL SIGNIFICANCE LEVEL	
				(EG. P<.01) INDICATES LACK OF FIT	

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E)*2)*E
-INF.	641.65	19	17.065	1.9353	0.21947
641.65	427.77	322	297.2	24.804	2.0701
427.77	213.88	1988	2003.5	15.505	0.12
213.88	0	5107	5182.2	75.234	1.0922
0	213.88	5300	5182.2	117.77	2.6762
213.88	427.77	1958	2003.5	45.505	1.0326
427.77	641.65	285	297.2	12.196	0.50052
641.65	*INF.	21	17.065	3.9353	0.9075
TOTAL		15000	15000		8.6196

ANALYSIS OF NORMAL DISTRIBUTION FIT

DATA : H5081701
 SELECTION : ALL
 X AXIS LABEL: H5081701
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	62.922	58.593	67.25	4.8746	0
SIGMA	270.41	267.39	273.51	0	2.4373

LOG LIKELIHOOD FUNCTION AT MLE = 1.0528E5

SAMPLE			FITTED			GOODNESS OF FIT TESTS	
MEAN :	62.922		62.922		CHI-SQUARE :	25.282	
STD DEV :	270.41		270.41		DEG FREED:	13	
SKENNESS:	0.025477		0		SIGNIF :	0.021193	
KURTOSIS:	2.835		3		KOLM-SMIRN :	0.0087179	
* BASED ON MIDPOINTS OF FINITE INTERVALS					SIGNIF :	0.20434	
					CRAMER-V M :	0.27447	
					SIGNIF :	> .15	
					ANDER-DARL :	1.6185	
					SIGNIF :	< .15	
					KS, AD, AND CV SIGNIF. LEVELS NOT		
					EXACT WITH ESTIMATED PARAMETERS.		
					NOTE: A SMALL SIGNIFICANCE LEVEL		
					(EG. P<.01) INDICATES LACK OF FIT		

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
-INF.	747.6	7	20.421	13.421	8.8205
747.6	623	58	63.521	5.5208	0.47982
623	498.4	200	200.37	0.36539	0.00066634
498.4	373.8	525	512.92	12.077	0.28435
373.8	249.2	1093	1065.7	27.315	0.70012
249.2	124.6	1883	1797.1	85.867	4.1028
124.6	0	2438	2459.9	21.947	0.19581
0	124.6	2624	2733.2	109.21	4.364
124.6	249.2	2408	2465.1	57.073	1.3214
249.2	373.8	1837	1804.6	32.37	0.58062
373.8	498.4	1127	1072.4	54.639	2.7839
498.4	623	522	517.21	4.7876	0.044316
623	747.6	194	202.46	8.4623	0.3537
747.6	872.2	66	64.319	1.6806	0.043912
872.2	996.8	16	16.481	0.48884	0.014029
996.8	+INF.	2	4.2504	2.2504	1.1915
TOTAL		15000	15000		25.282

ANALYSIS OF NORMAL DISTRIBUTION FIT

DATA : RES
 SELECTION : ALL
 X AXIS LABEL: H5081T01 60HZ FILTERED
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	2.5555E 13	3.6573	3.6573	3.4802	0
SIGMA	2.2848E2	225.93	231.1	0	1.7401

LOG LIKELIHOOD FUNCTION AT MLE = 1.0276E5

SAMPLE			FITTED	GOODNESS OF FIT TESTS	
MEAN :	6.1279E 11		2.5555E 13	CHI-SQUARE :	8.2018
STD DEV :	2.2849E2		2.2848E2	DEG FREED:	13
SKEWNESS:	1.1603E 2		0.0000E0	SIGNIF :	0.83021
KURTOSIS:	2.9519E0		3.0000E0	KOLM-SMIRN :	0.0053253
* BASED ON MIDPOINTS OF FINITE INTERVALS				SIGNIF :	0.78858
				CRAMER-V M :	0.040457
PERCENTILES	SAMPLE		FITTED	SIGNIF :	> .15
5:	376.34		375.9	ANDER-DARL :	0.23792
10:	295.94		292.85	SIGNIF :	> .15
25:	153.97		154.04		
50:	0.10253		0.000023078	KS, AD, AND CV SIGNIF. LEVELS NOT	
75:	154.7		154.04	EXACT WITH ESTIMATED PARAMETERS.	
90:	291.49		292.85		
95:	376.59		375.9	NOTE: A SMALL SIGNIFICANCE LEVEL	
				(EG. P<.01) INDICATES LACK OF FIT	

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
-INF.	788.33	1	4.3021	3.3021	2.5346
788.33	675.72	18	18.963	0.96294	0.048898
675.72	563.1	91	79.625	11.375	1.6251
563.1	450.48	256	261.99	5.9908	0.13699
450.48	337.86	683	679.22	3.7843	0.021084
337.86	225.24	1367	1387.6	20.567	0.30486
225.24	112.62	2253	2233.9	19.09	0.16314
112.62	0	2832	2834.4	2.4269	0.002078
0	112.62	2793	2834.4	41.427	0.60548
112.62	225.24	2275	2233.9	41.09	0.75581
225.24	337.86	1395	1387.6	7.4329	0.039816
337.86	450.48	669	679.22	10.216	0.15365
450.48	563.1	271	261.99	9.0092	0.3098
563.1	675.72	75	79.625	4.6246	0.2686
675.72	788.33	19	18.963	0.037058	0.00007242
788.33	+INF.	2	4.3021	2.3021	1.2319
TOTAL		15000	15000		8.2018

ANALYSIS OF NORMAL DISTRIBUTION FIT

I7A : HS089701
 ELECTION : ALL
 X AXIS LABEL: HS089701
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	220.08	215.24	224.93	6.1169	0
SIGMA	302.91	299.52	306.39	0	3.0584

LOG LIKELIHOOD FUNCTION AT MLE = 1.0699E5

	SAMPLE	FITTED	GOODNESS OF FIT TESTS
MEAN :	220.08	220.08	CHI-SQUARE : 27.862
STD DEV :	302.92	302.91	DEG FREED: 13
SKENNESS:	0.041742	0	SIGNIF : 0.0094581
KURTOSIS:	2.9023	3	KOLM-SMIRN : 0.0095973
* BASED ON MIDPOINTS OF FINITE INTERVALS			SIGNIF : 0.12614
			CRAMER-V M : 0.1985
			SIGNIF : > .15
			ANDER-DARL : 1.1752
			SIGNIF : > .15
			KS, AD, AND CV SIGNIF. LEVELS NOT EXACT WITH ESTIMATED PARAMETERS.
			NOTE: A SMALL SIGNIFICANCE LEVEL (EG. P<.01) INDICATES LACK OF FIT

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
INF.	691	12	19.738	7.7377	3.0334
691	552.8	67	60.697	6.3027	0.65447
552.8	414.6	169	190.64	21.645	2.4574
414.6	276.4	468	487.93	19.927	0.81385
276.4	138.2	1058	1017.6	40.389	1.603
138.2	0	1797	1729.5	67.457	2.631
0	138.2	2443	2395.6	47.352	0.93593
138.2	276.4	2568	2704.4	136.36	6.8754
276.4	414.6	2489	2488.1	0.94015	0.00025525
414.6	552.8	1868	1865.6	2.4427	0.0031984
552.8	691	1126	1140	13.988	0.17163
691	829.2	586	567.7	18.3	0.58989
829.2	967.4	243	230.38	12.623	0.69164
967.4	1105.6	76	76.179	0.17942	0.00042256
1105.6	1243.8	29	20.387	8.6129	3.6387
1243.8	+INF.	1	5.5831	4.5831	3.7622
TOTAL		15000	15000		27.862

ANALYSIS OF NORMAL DISTRIBUTION FIT

TA : RES
 SELECTION : ALL
 X AXIS LABEL: MS089T01 60HZ FILTERED
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	6.2119E 14	4.272	4.272	4.7485 0	
SIGMA	2.6688E2	263.9	269.95	0	2.3742

LOG LIKELIHOOD FUNCTION AT MLE = 1.0509E5

SAMPLE			FITTED			GOODNESS OF FIT TESTS	
MEAN :	7.1779E 11		6.2119E 14		CHI-SQUARE :	4.1742	
STD DEV :	2.6689E2		2.6688E2		DEG FREED:	11	
SKENNESS:	2.1906E 2		0.0000E0		SIGNIF :	0.96454	
KURTOSIS:	3.0018E0		3.0000E0		KOLM-SMIRN :	0.0064214	
= BASED ON MIDPOINTS OF FINITE INTERVALS					SIGNIF :	0.56633	
					CRAMER-V M :	0.05582	
					SIGNIF :	> .15	
PERCENTILES	SAMPLE		FITTED		ANDER-DARL :	0.31283	
5:	436.89		439.08		SIGNIF :	> .15	
10:	339.55		342.07		KS, AD, AND CV SIGNIF LEVELS NOT EXACT WITH ESTIMATED PARAMETERS.		
25:	180.78		179.93		NOTE: A SMALL SIGNIFICANCE LEVEL (EG. P<.01) INDICATES LACK OF FIT		
50:	0.62729		0.000026957				
75:	179.26		179.93				
90:	345.07		342.07				
95:	440.77		439.08				

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
-INF.	826.56	15	14.659	0.34101	7.9324E 3
826.56	688.8	65	59.249	5.7505	5.5812E 1
688.8	551.04	206	218.21	12.214	6.8360E 1
551.04	413.28	429	419.07	9.9259	1.5915E 1
413.28	275.52	1335	1353.1	18.085	2.4172E 1
275.52	137.76	2305	2278.7	26.313	3.0384E 1
137.76	0	2957	2957	0.031664	3.3907E 7
0	137.76	2966	2957	8.9684	2.7200E 2
137.76	275.52	2221	2278.7	57.687	1.4604E0
275.52	413.28	1378	1353.1	24.915	4.5878E 1
413.28	551.04	627	619.07	7.9259	1.0147E 1
551.04	688.8	220	218.21	1.7864	1.4624E 2
688.8	826.56	62	59.249	2.7505	1.2769E 1
826.56	-INF.	14	14.659	0.65899	2.9625E 2
TOTAL		15000	15000		4.1742E0

ANALYSIS OF NORMAL DISTRIBUTION FIT

ATA : MS097701
 ELECTION : ALL
 X AXIS LABEL: MS097701
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	65.784	61.041	70.527	5.8525	0
SIGMA	296.29	292.98	299.69	0	2.9263

LOG LIKELIHOOD FUNCTION AT MLE = 1.0665E5

SAMPLE			FITTED	GOODNESS OF FIT TESTS	
MEAN :	65.784		65.784	CHI-SQUARE :	44.914
STD DEV :	296.3		296.29	DEG FREED :	8
SKENNESS :	0.045839		0	SIGNIF :	3.821E 7
KURTOSIS :	2.942		3	KOLM-SMIRN :	0.0098118
* BASED ON MIDPOINTS OF FINITE INTERVALS				SIGNIF :	0.11134
				CRAMER-V H :	0.27359
				SIGNIF :	> .15
				ANDER-DARL :	1.7966
				SIGNIF :	< .15
				KS, AD, AND CV SIGNIF. LEVELS NOT	
				EXACT WITH ESTIMATED PARAMETERS.	
				NOTE: A SMALL SIGNIFICANCE LEVEL	
				(EG. P<.01) INDICATES LACK OF FIT	

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
-INF.	770.13	15	35.875	20.875	12.147
770.13	577.6	190	188.34	1.6571	0.01458
577.6	385.07	780	736.5	43.498	2.5691
385.07	192.53	1969	1914	55.001	1.5805
192.53	0	3221	3307.5	86.488	2.2616
0	192.53	3680	3801.8	121.76	3.8994
192.53	385.07	3052	2907	145.05	7.2372
385.07	577.6	1465	1478.4	13.388	0.12123
577.6	770.13	535	499.87	35.128	2.4686
770.13	962.67	85	112.3	27.301	6.6369
962.67	+INF.	8	18.523	10.523	5.978
TOTAL		15000	15000		44.914

ANALYSIS OF NORMAL DISTRIBUTION FIT

DATA : RES
 SELECTION : ALL
 X AXIS LABEL: RES
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	1.1911E 13	4.3122	4.3122	4.8382 0	
SIGMA	2.6939E2	266.38	272.49	0	2.4191

LOG LIKELIHOOD FUNCTION AT MLE = 1.0523E5

SAMPLE			FITTED	GOODNESS OF FIT TESTS	
MEAN :	7.2710E 11		1.1911E 13	CHI-SQUARE :	43.883
STD DEV :	2.6940E2		2.6939E2	DEG FREED:	9
SKENNESS:	7.3242E 2		0.0000E0	SIGNIF :	0.0000014834
KURTOSIS:	2.9750E0		3.0000E0	KOLM-SHIRN :	0.0074139
= BASED ON MIDPOINTS OF FINITE INTERVALS				SIGNIF :	0.38177
				CRAMER-V M :	0.25014
				SIGNIF :	> .15
				ANDER-DARL :	1.9806
				SIGNIF :	< .10
PERCENTILES	SAMPLE		FITTED	KS, AD, AND CV SIGNIF. LEVELS NOT	
5:	450.14		443.21	EXACT WITH ESTIMATED PARAMETERS.	
10:	353.07		345.29		
25:	183.53		181.62		
50:	3.8569		0.000027211	NOTE: A SMALL SIGNIFICANCE LEVEL	
75:	184.38		181.62	(EG. P<.01) INDICATES LACK OF FIT	
90:	350.04		345.29		
95:	440.01		443.21		

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E)*2)*E
-INF.	917.83	4	5.05	1.05	0.21833
917.83	734.26	31	43.088	12.088	3.3912
734.26	550.7	260	258.86	1.1403	0.0050231
550.7	367.13	1084	990.08	93.915	8.9084
367.13	183.57	2368	2420	52.045	1.1192
183.57	0	3654	3782.9	128.87	4.3904
0	183.57	3831	3782.9	48.127	0.61229
183.57	367.13	2424	2420	3.9555	0.006465
367.13	550.7	1090	990.08	99.915	10.083
550.7	734.26	229	258.86	29.86	3.4443
734.26	917.83	24	43.088	19.088	8.4561
917.83	+INF.	1	5.05	4.05	3.2481
TOTAL		15000	15000		43.883

ANALYSIS OF NORMAL DISTRIBUTION FIT

DATA : MS105T01
 SELECTION : ALL
 X AXIS LABEL: MS105T01
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	233.35	227.9	238.81	7.7506	0
SIGMA	340.97	337.16	344.88	0	3.8753

LOG LIKELIHOOD FUNCTION AT MLE = 1.0876E5

SAMPLE			FITTED			GOODNESS OF FIT TESTS	
MEAN :	233.35		233.35		CHI-SQUARE :	14.673	
STD DEV :	340.98		340.97		DEG FREED:	12	
SKEWNESS:	0.020837		0		SIGNIF :	0.25983	
KURTOSIS:	2.8903		3		KOLM-SMIRN :	0.0063068	
* BASED ON MIDPOINTS OF FINITE INTERVALS					SIGNIF :	0.58958	
					CRAMER-V M :	0.10854	
					SIGNIF :	> .15	
					ANDER-DARL :	0.7133	
					SIGNIF :	> .15	
					KS, AD, AND CV SIGNIF. LEVELS NOT		
					EXACT WITH ESTIMATED PARAMETERS.		
					NOTE: A SMALL SIGNIFICANCE LEVEL		
					(EG. P<.01) INDICATES LACK OF FIT		

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
-INF.	850.33	7	11.113	4.1129	1.5222
850.33	680.27	37	44.189	7.1887	1.1695
680.27	510.2	149	163.73	14.732	1.3256
510.2	340.13	525	475.32	49.676	5.1917
340.13	170.07	1084	1081.2	2.7659	0.0070754
170.07	0	1897	1927.4	30.4	0.47949
0	170.07	2696	2692.6	3.352	0.0041727
170.07	340.13	2905	2948.2	43.211	0.63334
340.13	510.2	2540	2530	10.027	0.039744
510.2	680.27	1734	1701.5	32.466	0.61947
680.27	850.33	914	896.84	17.161	0.32836
850.33	1020.4	573	370.42	2.5761	0.017915
1020.4	1190.5	105	119.88	14.88	1.847
1190.5	1360.5	30	30.208	0.20793	0.0014313
1360.5	+INF.	4	7.2912	3.2912	1.4856
TOTAL		15000	15000		14.673

ANALYSIS OF NORMAL DISTRIBUTION FIT

ATA : RES
 SELECTION : ALL
 X AXIS LABEL: HS105T01 60HZ FILTERED
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	7.3990E 13	5.0767	5.0767	6.7058 0	
SIGMA	3.1716E2	313.61	320.8	0	3.3529

LOG LIKELIHOOD FUNCTION AT MLE = 1.0767E5

SAMPLE			FITTED			GOODNESS OF FIT TESTS	
MEAN :	7.9838E 11		7.3990E 13			CHI-SQUARE :	33.375
STD DEV :	3.1717E2		3.1716E2			DEG FREED:	13
SKENNESS:	3.4311E 2		0.0000E0			SIGNIF :	0.0014963
KURTOSIS:	2.8480E0		3.0000E0			KOLM-SMIRN :	0.0082175
* BASED ON MIDPOINTS OF FINITE INTERVALS						SIGNIF :	0.26317
						CRAMER-V M :	0.20519
						SIGNIF :	> .15
PERCENTILES	SAMPLE		FITTED			ANDER-DARL :	1.36
5:	526.72		521.79			SIGNIF :	> .15
10:	412.33		406.51			KS, AD, AND CV SIGNIF. LEVELS NOT EXACT WITH ESTIMATED PARAMETERS.	
25:	219.47		213.82			NOTE: A SMALL SIGNIFICANCE LEVEL (EG. P<.01) INDICATES LACK OF FIT	
50:	1.8002		0.000032035				
75:	220.43		213.82				
90:	408.93		406.51				
95:	517.47		521.79				

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
-INF.	1085	6	4.7979	1.2021	0.30118
1085	929.97	17	20.445	3.4448	0.58042
929.97	774.97	73	83.846	10.846	1.403
774.97	619.98	264	270.45	6.4528	0.15396
619.98	464.98	762	690.1	71.896	7.4903
464.98	309.99	1380	1393.1	13.122	0.12361
309.99	154.99	2228	2225.1	2.8733	0.0037103
154.99	0	2733	2812.1	79.106	2.2253
0	154.99	2786	2812.1	26.106	0.24235
154.99	309.99	2231	2225.1	5.8733	0.015503
309.99	464.98	1442	1393.1	48.878	1.7149
464.98	619.98	752	690.1	61.896	5.5516
619.98	774.97	233	270.45	37.453	5.1865
774.97	929.97	82	83.846	1.8458	0.040634
929.97	1085	10	20.445	10.445	5.336
1085	+INF.	1	4.7979	3.7979	3.0063
TOTAL		15000	15000		33.375

ANALYSIS OF NORMAL DISTRIBUTION FIT

ATA : HS113T01
 SELECTION : ALL
 X AXIS LABEL: HS113T01
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	43.986	49.37	38.602	7.5426	0
SIGMA	336.36	332.6	340.22	0	3.7713

LOG LIKELIHOOD FUNCTION AT MLE = 1.0856E5

	SAMPLE	FITTED	GOODNESS OF FIT TESTS
MEAN :	43.986	43.986	CHI-SQUARE : 13.846
STD DEV :	336.37	336.36	DEG FREED: 11
SKENNESS:	0.01131	0	SIGNIF : 0.24163
KURTOSIS:	2.9525	3	KOLM-SMIRN : 0.0044996
* BASED ON MIDPOINTS OF FINITE INTERVALS			SIGNIF : 0.92172
			CRAMER-V M : 0.030755
PERCENTILES	SAMPLE	FITTED	SIGNIF : > .15
5:	592	597.37	ANDER-DARL : 0.22578
10:	474	475.11	SIGNIF : > .15
25:	275	270.74	
50:	42	43.986	KS, AD, AND CV SIGNIF. LEVELS NOT
75:	183	182.78	EXACT WITH ESTIMATED PARAMETERS.
90:	388	387.14	
95:	510	509.4	NOTE: A SMALL SIGNIFICANCE LEVEL
			(EG. P5.01) INDICATES LACK OF FIT

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
-INF.	1141.6	5	8.4869	3.4869	1.4326
1141.6	951.33	51	43.904	7.0961	1.1469
951.33	761.07	195	195.23	0.23392	0.0028026
761.07	570.8	605	632.11	27.109	1.1626
570.8	380.53	1551	1498.1	52.917	1.8692
380.53	190.27	2555	2599.5	44.489	0.76142
190.27	0	3292	3303	11.017	0.036747
0	190.27	3091	3073.5	17.506	0.099708
190.27	380.53	2094	2094.3	0.32287	0.00049774
380.53	570.8	1054	1045	9.0336	0.078095
570.8	761.07	385	381.7	3.2971	0.028481
761.07	951.33	111	102.05	8.952	0.7853
951.33	1141.6	9	19.888	10.888	5.961
1141.6	+INF.	2	3.2546	1.2546	0.4836
TOTAL		15000	15000		13.846

ANALYSIS OF NORMAL DISTRIBUTION FIT

ATA : RES
 ELECTION : ALL
 X AXIS LABEL: MS113T01 60HZ FILTERED
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	1.6237E 12	4.873	4.873	6.1783 0	
SIGMA	3.0442E2	301.02	307.92	0	3.0891

LOG LIKELIHOOD FUNCTION AT MLE = 1.0706E5

SAMPLE			FITTED	GOODNESS OF FIT TESTS	
MEAN :	7.8722E 11	1.6237E 12		CHI-SQUARE :	12.64
STD DEV :	3.0443E2	3.0442E2		DEG FREED :	11
SKEWNESS :	2.3157E 2	0.0000E0		SIGNIF :	0.31749
KURTOSIS :	2.9635E0	3.0000E0		KOLM-SMIRN :	0.0039928
* BASED ON MIDPOINTS OF FINITE INTERVALS				SIGNIF :	0.97054
				CRAMER-V M :	0.032612
PERCENTILES	SAMPLE	FITTED		SIGNIF :	> .15
5:	504.69	500.84		ANDER-DARL :	0.26854
10:	389.96	390.19		SIGNIF :	> .15
25:	205.45	205.24			
50:	1.9065	0.000030749		KS. AD. AND CV SIGNIF. LEVELS NOT	
75:	204.74	205.24		EXACT WITH ESTIMATED PARAMETERS.	
90:	393.19	390.19			
95:	504.26	500.84		NOTE: A SMALL SIGNIFICANCE LEVEL	
				(EG. P<.01) INDICATES LACK OF FIT	

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
-INF.	1016.5	7	6.4665	0.53345	0.044007
1016.5	847.11	36	33.972	2.0282	0.12109
847.11	677.69	153	154.61	1.6063	0.016689
677.69	508.26	540	517.46	22.543	0.98207
508.26	338.84	1237	1280.1	43.116	1.4522
338.84	169.42	2349	2341.2	7.7562	0.025695
169.42	0	3214	3166.1	49.862	0.78525
0	169.42	3124	3166.1	42.138	0.56081
169.42	338.84	2325	2341.2	16.244	0.1127
338.84	508.26	1277	1280.1	3.1164	0.0075867
508.26	677.69	547	517.46	29.543	1.6867
677.69	847.11	162	154.61	7.3937	0.35359
847.11	1016.5	26	33.972	7.9718	1.8707
1016.5	+INF.	1	6.4665	5.4665	4.6212
TOTAL		15000	15000		12.64

ANALYSIS OF NORMAL DISTRIBUTION FIT

ATA : MS121T01
 SELECTION : ALL
 X AXIS LABEL: MS121T01
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	17.199	22.305	12.094	6.7829	0
SIGMA	318.97	315.41	322.63	0	3.3914

LOG LIKELIHOOD FUNCTION AT MLE = 1.0774E5

SAMPLE			FITTED	GOODNESS OF FIT TESTS	
MEAN :	17.199		17.199	CHI-SQUARE :	11.937
STD DEV :	318.98		318.97	DEG FREED :	13
SKENNESS:	0.0082953		0	SIGNIF :	0.53281
KURTOSIS:	2.8836		3	KOLM-SMIRN :	0.0045966
* BASED ON MIDPOINTS OF FINITE INTERVALS				SIGNIF :	0.9092
				CRAMER-V M :	0.052774
				SIGNIF :	> .15
				ANDER-DARL :	0.38141
				SIGNIF :	> .15
				KS, AD, AND CV SIGNIF. LEVELS NOT	
				EXACT WITH ESTIMATED PARAMETERS.	
				NOTE: A SMALL SIGNIFICANCE LEVEL	
				(EG. P<.01) INDICATES LACK OF FIT	

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
INF.	1064	3	7.9448	4.9448	3.0776
1064	912	29	29.763	0.76326	0.019573
912	760	113	111.34	1.6577	0.024679
760	608	325	330.93	5.9282	0.1062
608	456	818	786.95	31.046	1.2248
456	304	1474	1497.4	23.408	0.36591
304	152	2298	2280	17.984	0.14185
152	0	2765	2778.2	13.161	0.062347
0	152	2467	2709	*41.991	0.65087
152	304	2104	2113.9	9.9145	0.0465
304	456	1340	1320	19.962	0.30186
456	608	698	659.61	38.391	2.2345
608	760	263	263.73	0.72676	0.0020027
760	912	86	84.364	1.6361	0.031728
912	1064	14	21.458	7.4579	2.5921
1064	*INF.	3	5.3825	2.3825	1.0546
TOTAL		15000	15000		11.937

ANALYSIS OF NORMAL DISTRIBUTION FIT

ATA : RES
 SELECTION : ALL
 X AXIS LABEL: MS121T01 60HZ FILTERED
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	1.0016E 12	4.7867	4.7867	5.9616 0	
SIGMA	2.9904E2	295.7	302.47	0	2.9808

LOG LIKELIHOOD FUNCTION AT MLE = 1.0679E5

SAMPLE			FITTED			GOODNESS OF FIT TESTS	
MEAN :	7.8477E 11		1.0016E 12		CHI-SQUARE :	37.8	
STD DEV :	2.9905E2		2.9904E2		DEG FREED:	13	
SKEWNESS:	2.4552E 2		0.0000E0		SIGNIF :	0.00031001	
KURTOSIS:	2.8446E0		3.0000E0		KOLM-SMIRN :	0.0082561	
= BASED ON MIDPOINTS OF FINITE INTERVALS					SIGNIF :	0.25823	
					CRAMER-V M :	0.28016	
					SIGNIF :	> .15	
PERCENTILES	SAMPLE		FITTED		ANDER-DARL :	1.5893	
5:	491.7		491.98		SIGNIF :	> .15	
10:	386.25		383.29		KS, AD, AND CV SIGNIF. LEVELS NOT EXACT WITH ESTIMATED PARAMETERS.		
25:	204.87		201.61		NOTE: A SMALL SIGNIFICANCE LEVEL (EG. P<.01) INDICATES LACK OF FIT		
50:	2.9494		0.000030205				
75:	205.74		201.61				
90:	383.07		383.29				
95:	485.12		491.98				

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
-INF.	982.11	1	7.8758	6.8758	6.0028
982.11	841.81	37	28.701	8.2988	2.3996
841.81	701.51	98	105.79	7.788	0.57335
701.51	561.21	315	311.82	3.1788	0.032405
561.21	420.91	780	740.34	39.658	2.1244
420.91	280.6	1420	1415.9	4.0568	0.011623
280.6	140.3	2234	2181.6	52.396	1.2584
140.3	0	2565	2707.9	142.92	7.5436
0	140.3	2644	2707.9	63.925	1.509
140.3	280.6	2225	2181.6	43.396	0.86321
280.6	420.91	1500	1415.9	84.057	4.99
420.91	561.21	764	740.34	23.658	0.75603
561.21	701.51	287	311.82	24.821	1.9758
701.51	841.81	109	105.79	3.212	0.097522
841.81	982.11	19	28.701	9.7012	3.2791
982.11	+INF.	2	7.8758	5.8758	4.3837
TOTAL		15000	15000		37.8

ANALYSIS OF NORMAL DISTRIBUTION FIT

DATA : MS129T01
 ELECTION : ALL
 X AXIS LABEL: MS129T01
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	6.277	11.198	1.3564	6.2996	0
SIGMA	307.4	303.96	310.93	0	3.1498

LOG LIKELIHOOD FUNCTION AT MLE = 1.0721E5

SAMPLE			FITTED	GOODNESS OF FIT TESTS	
MEAN :	6.277		6.277	CHI-SQUARE :	16.465
STD DEV :	307.41		307.4	DEG FREED :	12
SKEWNESS :	0.015632		0	SIGNIF :	0.17085
KURTOSIS :	2.8546		3	KOLM-SMIRN :	0.0071665
* BASED ON MIDPOINTS OF FINITE INTERVALS				SIGNIF :	0.42422
				CRAMER-V M :	0.12919
PERCENTILES	SAMPLE		FITTED	SIGNIF :	> .15
5:	512		512.01	ANDER-DARL :	0.93717
10:	407		400.28	SIGNIF :	> .15
25:	217		213.52		
50:	6		6.277	KS, AD, AND CV SIGNIF. LEVELS NOT	
75:	202		200.97	EXACT WITH ESTIMATED PARAMETERS.	
90:	394		387.72		
95:	500		499.46	NOTE: A SMALL SIGNIFICANCE LEVEL	
				(EG. P<.01) INDICATES LACK OF FIT	

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
-INF.	887.2	24	31.204	7.2039	1.6631
887.2	739.33	90	96.99	6.9898	0.50376
739.33	591.47	292	298.94	6.9391	0.16108
591.47	443.6	786	734.13	51.869	3.6648
443.6	295.73	1493	1436.6	56.408	2.2149
295.73	147.87	2205	2240.3	35.252	0.55473
147.87	0	2707	2784.1	77.079	2.134
0	147.87	2732	2757.4	25.384	0.23368
147.87	295.73	2192	2176.4	15.575	0.11146
295.73	443.6	1370	1369	0.97893	0.00069999
443.6	591.47	720	686.24	33.757	1.6606
591.47	739.33	280	274.1	5.8983	0.12692
739.33	887.2	91	87.232	3.7678	0.16274
887.2	1035.1	14	21.984	7.9839	2.8995
1035.1	+INF.	4	5.4226	1.4226	0.37321
TOTAL		15000	15000		16.465

ANALYSIS OF NORMAL DISTRIBUTION FIT

ATA : RES
 SELECTION : ALL
 X AXIS LABEL: HS129T01 60HZ FILTERED
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	1.0119E 12	4.5118	4.5118	5.2964 0	
SIGMA	2.8186E2	278.71	285.1	0	2.6482

LOG LIKELIHOOD FUNCTION AT MLE = 1.0591E5

SAMPLE			FITTED	GOODNESS OF FIT TESTS	
MEAN :	7.5066E 11		1.0119E 12	CHI-SQUARE :	14.459
STD DEV :	2.8187E2		2.8186E2	DEG FREED :	13
SKENNESS :	1.6470E 2		0.0000E0	SIGNIF :	0.34232
KURTOSIS :	2.8628E0		3.0000E0	KOLM-SMIRN :	0.0070693
* BASED ON MIDPOINTS OF FINITE INTERVALS				SIGNIF :	0.44163
PERCENTILES	SAMPLE		FITTED	CRAMER-V H :	0.15075
5:	460.59		463.72	SIGNIF :	> .15
10:	363.48		361.27	ANDER-DARL :	0.96594
25:	194.25		190.03	SIGNIF :	> .15
50:	1.2193		0.00002847	KS, AD, AND CV SIGNIF. LEVELS NOT	
75:	194.46		190.03	EXACT WITH ESTIMATED PARAMETERS.	
90:	364.51		361.27		
95:	461.29		463.72	NOTE: A SMALL SIGNIFICANCE LEVEL	
				(EG. P<.01) INDICATES LACK OF FIT	

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E)*2)*E
-INF.	944.25	2	6.2177	4.2177	2.861
944.25	809.35	18	24.428	6.4277	1.6913
809.35	674.46	84	94.731	10.731	1.2156
674.46	539.57	295	291.49	3.5146	0.042377
539.57	404.68	763	716.24	46.758	3.0525
404.68	269.78	1445	1405.6	39.419	1.1055
269.78	134.89	2189	2203.1	14.122	0.090517
134.89	0	2670	2758.2	88.193	2.82
0	134.89	2741	2758.2 *	17.193	0.10718
134.89	269.78	2219	2203.1	15.878	0.11444
269.78	404.68	1438	1405.6	32.419	0.74773
404.68	539.57	730	716.24	13.758	0.26427
539.57	674.46	283	291.49	8.4854	0.24702
674.46	809.35	92	94.731	2.7312	0.078742
809.35	944.25	25	24.428	0.57233	0.013409
944.25	*INF.	6	6.2177	0.2177	0.0076225
TOTAL		15000	15000		14.459

ANALYSIS OF NORMAL DISTRIBUTION FIT

ITA : MS137T01
 ELECTION : ALL
 X AXIS LABEL: MS137T01
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	184.65	189.83	179.47	6.9709 0	
SIGMA	323.36	319.75	327.07	0	3.4854

LOG LIKELIHOOD FUNCTION AT MLE = 1.0797E5

SAMPLE			FITTED			GOODNESS OF FIT TESTS	
MEAN :	184.65		184.65		CHI-SQUARE :	18.972	
STD DEV :	323.37		323.36		DEG FREED :	11	
SKENNESS:	0.040217		0		SIGNIF :	0.061597	
KURTOSIS:	2.9457		3		KOLM-SMIRN :	0.0081741	
* BASED ON MIDPOINTS OF FINITE INTERVALS					SIGNIF :	0.26881	
					CRAMER-V M :	0.1464	
					SIGNIF :	> .15	
					ANDER-DARL :	0.78165	
					SIGNIF :	> .15	
					KS, AD, AND CV SIGNIF. LEVELS NOT		
					EXACT WITH ESTIMATED PARAMETERS.		
					NOTE: A SMALL SIGNIFICANCE LEVEL		
					(EG. P<.01) INDICATES LACK OF FIT		

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
-INF.	1165.3	11	18.187	7.1873	2.8403
1165.3	998.8	63	70.389	7.3888	0.77562
998.8	832.33	255	250.28	4.7221	0.089093
832.33	665.87	694	686.44	7.556	0.083173
665.87	499.4	1478	1452.5	25.525	0.44858
499.4	332.93	2424	2371.3	52.7	1.1712
332.93	166.47	3008	2987.2	20.764	0.14433
166.47	0	2752	2903.8	151.84	7.9398
0	166.47	2224	2178.2	45.813	0.96356
166.47	332.93	1285	1240.7	24.283	0.46771
332.93	499.4	540	562.99	22.995	0.93918
499.4	665.87	190	193.95	3.9541	0.080613
665.87	832.33	64	51.54	12.44	3.0122
832.33	+INF.	12	12.456	0.45639	0.016722
TOTAL		15000	15000		18.972

ANALYSIS OF NORMAL DISTRIBUTION FIT

DATA : RES
 SELECTION : ALL
 X AXIS LABEL: MS137T01 60HZ FILTERED
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	1.1730E 12	4.8408	4.8408	6.097	0
SIGMA	3.0242E2	299.04	305.89	0	3.0485

LOG LIKELIHOOD FUNCTION AT MLE = 1.0696E5

GOODNESS OF FIT TESTS		
MEAN :	7.7764E 11	1.1730E 12
STD DEV :	3.0243E2	3.0242E2
SKENNESS:	6.4821E 2	0.0000E0
KURTOSIS:	2.9420E0	3.0000E0
* BASED ON MIDPOINTS OF FINITE INTERVALS		
PERCENTILES	SAMPLE	FITTED
5:	490.6	497.54
10:	387.92	387.61
25:	207.17	203.88
50:	4.3474	0.000030546
75:	203.95	203.88
90:	388.39	387.61
95:	504.18	497.54

CHI-SQUARE : 15.587
 DEG FREED: 11
 SIGNIF : 0.15716
 KOLM-SMIRN : 0.0080207
 SIGNIF : 0.28943
 Cramer-V M : 0.18844
 SIGNIF : > .15
 ANDER-DARL : 1.1657
 SIGNIF : > .15
 KS, AD, AND CV SIGNIF. LEVELS NOT
 EXACT WITH ESTIMATED PARAMETERS.
 NOTE: A SMALL SIGNIFICANCE LEVEL
 (EG. P<.01) INDICATES LACK OF FIT

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
-INF.	959.06	10	11.382	1.3818	0.16776
959.06	799.21	33	50.292	17.292	5.9453
799.21	639.37	190	197.05	7.0506	0.25228
639.37	479.53	585	587.39	2.3935	0.009753
479.53	319.69	1386	1332.3	53.653	2.1606
319.69	159.84	2357	2299.9	57.106	1.4179
159.84	0	3007	3021.6	14.641	0.070945
0	159.84	2961	3021.6	60.641	1.217
159.84	319.69	2258	2299.9	41.894	0.76314
319.69	479.53	1534	1332.3	1.6533	0.0020516
479.53	639.37	608	587.39	20.606	0.7229
639.37	799.21	201	197.05	3.9494	0.079155
799.21	959.06	61	50.292	10.708	2.2801
959.06	-INF.	9	11.382	2.3818	0.49842
TOTAL		15000	15000		15.587

ANALYSIS OF NORMAL DISTRIBUTION FIT

TA : H5145701
 SECTION : ALL
 X AXIS LABEL: H5145701
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	249.74	254.77	244.71	6.5765	0
SIGMA	314.08	310.57	317.69	0	3.2882

LOG LIKELIHOOD FUNCTION AT MLE = 1.0753E5

SAMPLE			GOODNESS OF FIT TESTS		
MEAN	STD DEV	FITTED	CHI-SQUARE	DEG FREED	SIGNIF
249.74	314.09	249.74	31.649	12	0.0015671
0.084358	0	0	KOLM-SMIRN	0.0094312	0.13868
2.9063	3	3	SIGNIF	0.36379	< .10
* BASED ON MIDPOINTS OF FINITE INTERVALS			ANDER-DARL	2.332	< .10
PERCENTILES	SAMPLE	FITTED	KS, AD, AND CV SIGNIF. LEVELS NOT EXACT WITH ESTIMATED PARAMETERS.		
5:	759	766.47	NOTE: A SMALL SIGNIFICANCE LEVEL (EG. P<.01) INDICATES LACK OF FIT		
10:	651	652.31			
25:	466	461.49			
50:	256	249.74			
75:	40	37.992			
90:	162	152.82			
95:	280	266.99			

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E)*2)*E
INF.	1258.1	5	10.213	5.2126	2.6606
1258.1	1100.9	27	40.268	13.268	4.3719
1100.9	943.6	136	153.24	17.243	1.9401
943.6	786.33	454	452.93	1.0701	0.0025282
786.33	629.07	1058	1047	11.006	0.11569
629.07	471.8	1996	1893.1	102.93	5.5964
471.8	314.53	2700	2677.5	22.467	0.18852
314.53	157.27	2968	2962.5	5.4589	0.010059
157.27	0	2450	2564.3	114.27	5.092
0	157.27	1667	1736.3	69.288	2.745
157.27	314.53	940	919.65	20.354	0.45048
314.53	471.8	423	381	42.006	4.6308
471.8	629.07	135	123.45	11.555	1.0815
629.07	786.33	37	31.084	5.9157	1.1258
786.33	*INF.	4	7.4783	3.4783	1.6178
TOTAL		15000	15000		31.649

ANALYSIS OF NORMAL DISTRIBUTION FIT

DATA : RES
 SELECTION : ALL
 X AXIS LABEL: HSI45T01 60HZ FILTERED
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	1.3133E 12	4.7833	4.7833	5.9531 0	
SIGMA	2.9882E2	295.49	302.26	0	2.9765

LOG LIKELIHOOD FUNCTION AT MLE = 1.0678E5

SAMPLE			FITTED	GOODNESS OF FIT TESTS	
MEAN :	7.7798E 11		1.3133E 12	CHI-SQUARE :	43.432
STD DEV :	2.9883E2		2.9882E2	DEG FREED :	13
SKENNESS:	8.5471E 2		0.0000E0	SIGNIF :	0.000038105
KURTOSIS:	2.9298E0		3.0000E0	KOLM-SMIRN :	0.0094371
* BASED ON MIDPOINTS OF FINITE INTERVALS				SIGNIF :	0.13821
				CRAMER-V M :	0.37011
PERCENTILES	SAMPLE		FITTED	SIGNIF :	< .10
5:	484.05		491.63	ANDER-DARL :	2.5719
10:	580.79		583.01	SIGNIF :	< .05
25:	206.24		201.46		
50:	4.698		0.000030183	KS, AD, AND CV SIGNIF. LEVELS NOT	
75:	198.03		201.46	EXACT WITH ESTIMATED PARAMETERS.	
90:	393.65		383.01		
95:	506.16		491.63	NOTE: A SMALL SIGNIFICANCE LEVEL	
				(EG. P<.01) INDICATES LACK OF FIT	

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
-INF.	1048.3	2	3.4647	1.4647	0.61921
1048.3	898.57	11	16.323	5.3233	1.736
898.57	748.81	50	71.831	21.831	6.635
748.81	599.05	232	245.86	13.862	0.7815
599.05	449.29	653	657.83	4.8306	0.035473
449.29	299.52	1415	1376	38.961	1.1031
299.52	149.76	2312	2250.5	61.461	1.6785
149.76	0	2921	2878.1	42.89	0.63915
0	149.76	2851	2878.1	27.11	0.25536
149.76	299.52	2181	2250.5	69.539	2.1487
299.52	449.29	1270	1376	106.04	8.1715
449.29	599.05	714	657.83	56.169	4.7961
599.05	748.81	304	245.86	58.138	13.748
748.81	898.57	67	71.831	4.8312	0.32494
898.57	1048.3	12	16.323	3.3233	0.67659
1048.3	+INF.	4	3.4647	0.53528	0.082698
TOTAL		15000	15000		43.432

ANALYSIS OF NORMAL DISTRIBUTION FIT

TA : MS153T01
 ELECTION : ALL
 X AXIS LABEL: MS153T01
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	172.23	164.27	180.19	16.487	0
SIGMA	497.3	491.74	503.01	0	8.2435

LOG LIKELIHOOD FUNCTION AT MLE = 1.1442E5

SAMPLE			FITTED			GOODNESS OF FIT TESTS	
MEAN :	172.23		172.23		CHI-SQUARE :	13892	
STD DEV :	497.32		497.3		DEG FREED:	12	
SKEWNESS:	1.0579		0		SIGNIF :	0	
KURTOSIS:	7.6274		3		KOLM-SMIRN :	0.065676	
= BASED ON MIDPOINTS OF FINITE INTERVALS					SIGNIF :	1.2684E 56	
					CRAMER-V M :	20.215	
					SIGNIF :	< .01	
PERCENTILES	SAMPLE		FITTED		ANDER-DARL :	155.52	
5:	490.5		445.93		SIGNIF :	< .01	
10:	322		465.17		KS, AD, AND CV SIGNIF. LEVELS NOT EXACT WITH ESTIMATED PARAMETERS.		
25:	79.5		163.04		NOTE: A SMALL SIGNIFICANCE LEVEL (EG. P<.01) INDICATES LACK OF FIT		
50:	179.5		172.23				
75:	456		507.5				
90:	731.5		809.63				
95:	926		990.39				

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ² /E
-INF.	1545.2	238	4.2519	233.75	12850
1545.2	1287.7	25	20.712	4.2878	0.88765
1287.7	1030.1	35	92.148	57.148	35.442
1030.1	772.6	77	313.71	236.71	178.61
772.6	515.07	313	821.32	508.32	314.61
515.07	257.53	1269	1653.9	384.95	89.594
257.53	0	2834	2562.1	271.9	28.855
0	257.53	3867	3053.3	813.74	216.87
257.53	515.07	3214	2799.2	414.76	61.454
515.07	772.6	1834	1974.3	140.32	9.9724
772.6	1030.1	783	1071.2	288.2	77.54
1030.1	1287.7	347	447.06	100.06	22.394
1287.7	1545.2	131	143.49	12.492	1.0875
1545.2	1802.7	31	35.207	4.2066	0.50262
1802.7	+INF.	2	8.0321	6.0321	4.5301
TOTAL		15000	15000		13892

ANALYSIS OF NORMAL DISTRIBUTION FIT

ATA : RES
 SELECTION : ALL
 X AXIS LABEL: H5153T01 60HZ FILTERED
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	1.2688E 11	7.8045	7.8045	15.848 0	
SIGMA	4.8757E2	482.12	493.16	0	7.924

LOG LIKELIHOOD FUNCTION AT MLE = 1.1613E5

	SAMPLE	FITTED	GOODNESS OF FIT TESTS
MEAN :	8.8515E 11	1.2688E 11	CHI-SQUARE : 7380.9
STD DEV :	4.8758E2	4.8757E2	DEG FREED: 10
SKENNESS:	1.1417E0	0.0000E0	SIGNIF : 0
KURTOSIS:	8.1257E0	3.0000E0	KOLM-SMIRN : 0.067167
* BASED ON MIDPOINTS OF FINITE INTERVALS			SIGNIF : 3.3347E 59
			CRAMER-V M : 23.017
			SIGNIF : < .01
			ANDER-DARL : 173.44
			SIGNIF : < .01
			KS, AD, AND CV SIGNIF. LEVELS NOT
			EXACT WITH ESTIMATED PARAMETERS.
			NOTE: A SMALL SIGNIFICANCE LEVEL
			(EG. P5.01) INDICATES LACK OF FIT

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E)*2)/E
-INF.	1574.1	254	9.5925	244.41	6227.3
1574.1	1311.8	25	43.932	18.932	8.1586
1311.8	1049.4	48	181.76	133.76	98.439
1049.4	787.05	147	563.27	416.27	307.64
787.05	524.7	723	1315.4	592.35	266.76
524.7	262.35	2321	2315	6.0033	0.015568
262.35	0	3860	3071.1	788.91	202.66
0	262.35	3743	3071.1	671.91	147
262.35	524.7	2259	2315	55.997	1.3545
524.7	787.05	1012	1315.4	303.35	69.96
787.05	1049.4	599	563.27	164.27	47.908
1049.4	1311.8	167	181.76	14.763	1.1991
1311.8	+INF.	42	53.525	11.525	2.4814
TOTAL		15000	15000		7380.9

ANALYSIS OF NORMAL DISTRIBUTION FIT

DATA : HS161T01
 SELECTION : ALL
 X AXIS LABEL: HS161T01 60HZ FILTERED
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	229.59	234.98	224.2	7.5621 0	
SIGMA	336.8	333.03	340.66	0	3.7811

LOG LIKELIHOOD FUNCTION AT MLE = 1.0858E5

SAMPLE			FITTED	GOODNESS OF FIT TESTS	
MEAN :	229.59		229.59	CHI-SQUARE :	54.746
STD DEV :	336.81		336.8	DEG FREED:	12
SKEWNESS:	0.10827		0	SIGNIF :	2.0098E 7
KURTOSIS:	2.8401		3	KOLM-SHIRN :	0.012583
* BASED ON MIDPOINTS OF FINITE INTERVALS				SIGNIF :	0.017299
				CRAMER-V M :	0.53876
				SIGNIF :	< .05
PERCENTILES	SAMPLE		FITTED	ANDE (-DARL :	3.6153
5:	772		783.69	SIGNIF :	< .025
10:	661		661.27	KS, AD, AND CV SIGNIF. LEVELS NOT	
25:	467		456.65	EXACT WITH ESTIMATED PARAMETERS.	
50:	232.5		229.59	NOTE: A SMALL SIGNIFICANCE LEVEL	
75:	3		2.5238	(EG. P<.01) INDICATES LACK OF FIT	
90:	211		202.09		
95:	337		324.51		

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
-INF.	1409.6	1	3.5246	2.5246	1.8086
1409.6	1233.4	7	18.062	11.062	6.7747
1233.4	1057.2	50	83.401	33.401	13.377
1057.2	881	273	293.23	20.229	1.3956
881	704.8	823	788.67	34.33	1.4943
704.8	528.6	1751	1622.9	128.07	10.107
528.6	352.4	2629	2555.5	73.501	2.114
352.4	176.2	2972	3079.3	107.32	3.7404
176.2	0	2786	2839.6	53.569	1.0106
0	176.2	1913	2003.8	90.829	4.117
176.2	352.4	1100	1082.1	17.927	0.29702
352.4	528.6	496	447.09	48.912	5.3511
528.6	704.8	161	141.32	19.679	2.7404
704.8	881	32	33.974	1.9744	0.11475
881	+INF.	6	7.5115	1.5115	0.30416
TOTAL		15000	15000		54.746

ANALYSIS OF NORMAL DISTRIBUTION FIT

ATA : RES
 SELECTION : ALL
 X AXIS LABEL: HS161T01 60HZ FILTERED
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	1.7805E 12	5.1687	5.1687	6.9511 0	
SIGMA	3.2290E2	319.3	326.61	0	3.4755

LOG LIKELIHOOD FUNCTION AT MLE = 1.0794E5

GOODNESS OF FIT TESTS		
MEAN :	8.1129E 11	1.7805E 12
STD DEV :	3.2291E2	3.2290E2
SKENNESS:	1.0904E 1	0.0000E0
KURTOSIS:	2.7781E0	3.0000E0
# BASED ON MIDPOINTS OF FINITE INTERVALS		
CHI-SQUARE :	71.589	
DEG FREED:	11	
SIGNIF :	6.0883E 11	
KOLM-SMIRN :	0.014672	
SIGNIF :	0.0031352	
CRAMER-V M :	0.71036	
SIGNIF :	< .025	
ANDER-DARL :	4.8325	
SIGNIF :	< .01	
KS, AD, AND CV SIGNIF. LEVELS NOT EXACT WITH ESTIMATED PARAMETERS.		
NOTE: A SMALL SIGNIFICANCE LEVEL (EG. P<.01) INDICATES LACK OF FIT		

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E)*2)*E
-INF.	992.11	2	15.923	13.923	12.174
992.11	826.76	36	62.492	26.492	11.231
826.76	661.41	175	225.55	50.55	11.329
661.41	496.06	677	629.63	47.366	3.5633
496.06	330.7	1475	1359.6	115.4	9.7946
330.7	165.35	2393	2271.3	121.74	6.5249
165.35	0	2818	2935.5	117.54	4.706
0	165.35	2855	2935.5	80.535	2.2095
165.35	330.7	2224	2271.3	47.264	0.98353
330.7	496.06	1344	1359.6	15.602	0.17904
496.06	661.41	671	629.63	41.366	2.7177
661.41	826.76	246	225.55	20.45	1.8541
826.76	992.11	74	62.492	11.508	2.1193
992.11	+INF.	10	15.923	5.9228	2.2031
TOTAL		15000	15000		71.589

ANALYSIS OF NORMAL DISTRIBUTION FIT

DATA : MS169T01
 SELECTION : ALL
 X AXIS LABEL: MG169T01
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	316.9	310.93	322.86	9.2672	0
SIGMA	372.84	368.67	377.12	0	4.6336

LOG LIKELIHOOD FUNCTION AT MLE = 1.101E5

SAMPLE			FITTED	GOODNESS OF FIT TESTS	
MEAN :	316.9		316.9	CHI-SQUARE :	152.68
STD DEV :	372.85		372.84	DEG FREED :	9
SKENNESS:	0.25847		0	SIGNIF :	0
KURTOSIS:	4.0482		3	KOLM-SMIRN :	0.013582
# BASED ON MIDPOINTS OF FINITE INTERVALS				SIGNIF :	0.007897
				CRAMER-V M :	0.65484
PERCENTILES	SAMPLE		FITTED	SIGNIF :	< .025
5:	280.5		296.5	ANDER-DARL :	5.4346
10:	149		160.98	SIGNIF :	< .01
25:	65		65.533		
50:	310.5		316.9	KS, AD, AND CV SIGNIF. LEVELS NOT	
75:	555		568.26	EXACT WITH ESTIMATED PARAMETERS.	
90:	784		794.77		
95:	918		930.29	NOTE: A SMALL SIGNIFICANCE LEVEL	
				(EG. P<.01) INDICATES LACK OF FIT	

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
-INF.	974.93	8	4.0761	3.9239	3.7773
974.93	731.2	19	32.95	13.95	5.9062
731.2	487.47	134	195.28	61.277	19.228
487.47	243.73	758	762.67	4.6691	0.028584
243.73	0	1978	1970.1	7.8619	0.031373
0	243.73	3545	3368.1	176.91	9.2918
243.73	487.47	3852	3811.9	40.091	0.42164
487.47	731.2	2789	2856.3	67.32	1.5866
731.2	974.93	1369	1416.8	47.764	1.6103
974.93	1218.7	399	464.97	65.971	9.36
1218.7	1462.4	93	100.9	7.9042	0.61916
1462.4	+INF.	56	15.927	40.073	100.82
TOTAL		15000	15000		152.68

ANALYSIS OF NORMAL DISTRIBUTION FIT

ATA : RES
 SELECTION : ALL
 X AXIS LABEL: HG169T01 60HZ FILTERED
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	3.2826E 12	5.6303	5.6303	8.2479 0	
SIGMA	3.5174E2	347.81	355.77	0	4.1239

LOG LIKELIHOOD FUNCTION AT MLE = 1.0923E5

SAMPLE			FITTED			GOODNESS OF FIT TESTS	
MEAN :	8.2143E 11		3.2826E 12		CHI-SQUARE :	107.41	
STD DEV :	3.5175E2		3.5174E2		DEG FREED :	7	
SKENNESS :	3.1129E 1		0.0000E0		SIGNIF :	0	
KURTOSIS :	4.3817E0		3.0000E0		KOLM-SMIRN :	0.012732	
* BASED ON MIDPOINTS OF FINITE INTERVALS					SIGNIF :	0.015449	
					CRAMER-V M :	0.84857	
					SIGNIF :	< .01	
					ANDER-DARL :	7.1888	
					SIGNIF :	< .01	
					KS, AD, AND CV SIGNIF. LEVELS NOT		
					EXACT WITH ESTIMATED PARAMETERS.		
					NOTE: A SMALL SIGNIFICANCE LEVEL		
					(EG. P<.01) INDICATES LACK OF FIT		

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
-INF.	1005.4	24	31.94	7.9402	1.9739
1005.4	754.04	142	208.45	66.45	21.183
754.04	502.69	853	906.77	53.77	3.1884
502.69	251.35	2500	2414.3	85.676	3.0404
251.35	0	4119	3938.5	180.48	8.2708
0	251.35	3968	3938.5	29.484	0.22072
251.35	502.69	2329	2414.3	85.324	3.0154
502.69	754.04	811	906.77	95.77	10.115
754.04	1005.4	181	208.45	27.45	3.6149
1005.4	+INF.	73	31.94	41.06	52.783
TOTAL		15000	15000		107.41

ANALYSIS OF NORMAL DISTRIBUTION FIT

DATA : MS177T01
 SELECTION : ALL
 X AXIS LABEL: MS177T01
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	441.91	435.68	448.15	10.129	0
SIGMA	389.8	385.44	394.27	0	5.0647

LOG LIKELIHOOD FUNCTION AT MLE = 1.1077E5

SAMPLE			FITTED			GOODNESS OF FIT TESTS		
MEAN :	441.91		441.91		CHI-SQUARE :	25.682		
STD DEV :	389.81		389.8		DEG FREED :	8		
SKENNESS:	0.028105		0		SIGNIF :	0.0011903		
KURTOSIS:	3.1402		3		KOLM-SMIRN :	0.007837		
# BASED ON MIDPOINTS OF FINITE INTERVALS					SIGNIF :	0.31556		
					CRAMER-V M :	0.16622		
					SIGNIF :	> .15		
					ANDER-DARL :	1.1168		
					SIGNIF :	> .15		
					KS, AD, AND CV SIGNIF. LEVELS NOT			
					EXACT WITH ESTIMATED PARAMETERS.			
					NOTE: A SMALL SIGNIFICANCE LEVEL			
					(EG. P<.01) INDICATES LACK OF FIT			

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)*E
-INF.	819	10	9.3818	0.61824	0.040741
819	546	42	75.089	33.089	14.581
546	273	404	415.35	11.351	0.31019
273	0	1468	1427.1	40.942	1.1746
0	273	3162	3058.9	103.13	3.4769
273	546	3990	4093.4	103.37	2.6106
546	819	3275	3420.8	45.763	0.61221
819	1092	1816	1784.9	31.116	0.54243
1092	1365	591	581.14	9.8608	0.16732
1365	1638	120	117.95	2.0481	0.035563
1638	+INF.	22	16.137	5.8633	2.1304
TOTAL		15000	15000		25.682

ANALYSIS OF NORMAL DISTRIBUTION FIT

DATA : RES
 SELECTION : ALL
 X AXIS LABEL: HG177T01 60HZ FILTERED
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	2.4721E 12	6.0254	6.0254	9.4461 0	
SIGMA	3.7642E2	372.22	380.74	0	4.7231

LOG LIKELIHOOD FUNCTION AT MLE = 1.1024E5

SAMPLE			FITTED	GOODNESS OF FIT TESTS	
MEAN :	8.5172E 11		2.4721E 12	CHI-SQUARE :	21.451
STD DEV :	3.7643E2		3.7642E2	DEG FREED :	7
SKENNESS:	3.3922E 2		0.0000E0	SIGNIF :	0.0031563
KURTOSIS:	3.1479E0		3.0000E0	KOLM-SMIRN :	0.010143
* BASED ON MIDPOINTS OF FINITE INTERVALS				SIGNIF :	0.091298
				CRAMER-V M :	0.30838
				SIGNIF :	< .15
PERCENTILES	SAMPLE		FITTED	ANDER-DARL :	1.9321
5:	602.31		619.29	SIGNIF :	< .15
10:	480.11		482.47		
25:	262.56		253.78		
50:	4.9053		0.000038021	KS, AD, AND CV SIGNIF. LEVELS NOT	
75:	258.45		253.78	EXACT WITH ESTIMATED PARAMETERS.	
90:	480		482.47		
95:	620.02		619.29	NOTE: A SMALL SIGNIFICANCE LEVEL	
				(EG. P<.01) INDICATES LACK OF FIT	

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
-INF.	1080.3	22	30.783	8.7832	2.5061
1080.3	810.25	177	204.39	27.387	3.6696
810.25	540.17	907	899.45	7.5505	0.063383
540.17	270.08	2550	2413.3	136.67	7.7393
270.08	0	3903	3952	49.046	0.60868
0	270.08	3853	3952	99.046	2.4823
270.08	540.17	2465	2413.3	51.666	1.1061
540.17	810.25	887	899.45	12.45	0.17232
810.25	1080.3	196	204.39	8.3866	0.34413
1080.3	+INF.	40	30.783	9.2168	2.7596
TOTAL		15000	15000		21.451

ANALYSIS OF NORMAL DISTRIBUTION FIT

TA : MS185T01
 SELECTION : ALL
 X AXIS LABEL: MS185T01
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	117.86	124.86	110.85	12.761	0
SIGMA	437.5	432.62	442.53	0	6.3803

LOG LIKELIHOOD FUNCTION AT MLE = 1.125E5

SAMPLE			GOODNESS OF FIT TESTS		
	SAMPLE	FITTED			
MEAN :	117.86	117.86	CHI-SQUARE :	177.62	
STD DEV :	437.52	437.5	DEG FREED :	10	
SKENNESS:	0.089296	0	SIGNIF :	0	
KURTOSIS:	3.7357	3	KOLM-SMIRN :	0.017386	
* BASED ON MIDPOINTS OF FINITE INTERVALS			SIGNIF :	0.00023044	
			CRAMER-V M :	1.4434	
			SIGNIF :	< .01	
			ANDER-DARL :	9.1536	
			SIGNIF :	< .01	
			KS, AD, AND CV SIGNIF. LEVELS NOT		
			EXACT WITH ESTIMATED PARAMETERS.		
			NOTE: A SMALL SIGNIFICANCE LEVEL		
			(EG. P<.01) INDICATES LACK OF FIT		

CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
NF.	1638	18	3.9306	14.069	50.361
1638	1365	34	28.798	5.2016	0.93953
1365	1092	155	162.08	7.0754	0.30888
1092	819	539	622.86	85.861	11.291
819	546	1527	1640.6	113.64	7.8709
546	273	3076	2963.3	112.7	4.2862
273	0	3893	3671.1	221.86	13.408
0	273	3149	3119.9	29.145	0.27226
273	546	1650	1818.6	168.61	15.633
546	819	664	726.96	62.959	5.4526
819	1092	202	199.18	2.8154	0.039795
1092	1365	75	37.257	37.743	38.235
1365	*INF.	18	5.3878	12.612	29.524
TOTAL		15000	15000		177.62

ANALYSIS OF NORMAL DISTRIBUTION FIT

DATA : RES
 SELECTION : ALL
 X AXIS LABEL: HS185T01 60HZ FILTERED
 SAMPLE SIZE : 15000
 CENSORING : NONE
 FREQUENCIES : 1
 EST. METHOD : MAXIMUM LIKELIHOOD
 CONF METHOD : EXACT

PARAMETER	ESTIMATE	CONF. INTERVALS (95 PERCENT)		COVARIANCE MATRIX OF PARAMETER ESTIMATES	
		LOWER	UPPER	MU	SIGMA
MU	3.6740E 12	6.8482	6.8482	12.202 0	
SIGMA	4.2782E2	423.04	432.73	0	6.101

LOG LIKELIHOOD FUNCTION AT MLE = 1.1216E5

SAMPLE			FITTED	GOODNESS OF FIT TESTS	
MEAN :	8.8783E 11		3.6740E 12	CHI-SQUARE :	246.38
STD DEV :	4.2784E2		4.2782E2	DEG FREED :	9
SKENNESS:	9.7814E 2		0.0000E0	SIGNIF :	0
KURTOSIS:	3.8226E0		3.0000E0	KOLM-SMIRN :	0.017146
* BASED ON MIDPOINTS OF FINITE INTERVALS				SIGNIF :	0.00029563
				CRAMER-V M :	1.5911
				SIGNIF :	< .01
PERCENTILES	SAMPLE		FITTED	ANDER-DARL :	10.402
5:	683.63		703.86	SIGNIF :	< .01
10:	519.76		548.35		
25:	275.04		288.43		
50:	8.696		0.000043213	KS, AD, AND CV SIGNIF. LEVELS NOT	
75:	269.04		288.43	EXACT WITH ESTIMATED PARAMETERS.	
90:	530.81		548.35		
95:	702.67		703.86	NOTE: A SMALL SIGNIFICANCE LEVEL	
(EG. P<.01) INDICATES LACK OF FIT					

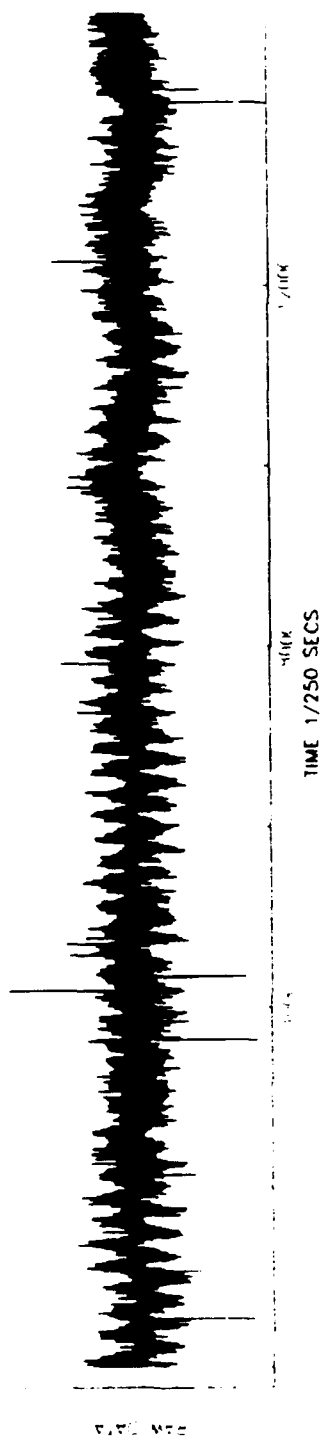
CHI-SQUARE GOODNESS OF FIT TABLE

LOWER	UPPER	OBS	EXP	O-E	((O-E) ²)/E
-INF.	1443.7	24	5.6876	18.312	58.961
1443.7	1155	52	46.375	5.6248	0.68222
1155	866.22	261	269.65	8.6538	0.27772
866.22	577.48	839	1006.3	167.35	27.828
577.48	288.74	2412	2419.9	7.9421	0.026065
288.74	0	4054	3752	302.01	24.309
0	288.74	3824	3752	72.005	1.3819
288.74	577.48	2271	2419.9	148.94	9.1671
577.48	866.22	885	1006.3	121.35	14.632
866.22	1155	272	269.65	2.3462	0.020414
1155	1443.7	78	46.375	31.625	21.566
1443.7	+INF.	28	5.6876	22.312	87.531
TOTAL		15000	15000		246.38

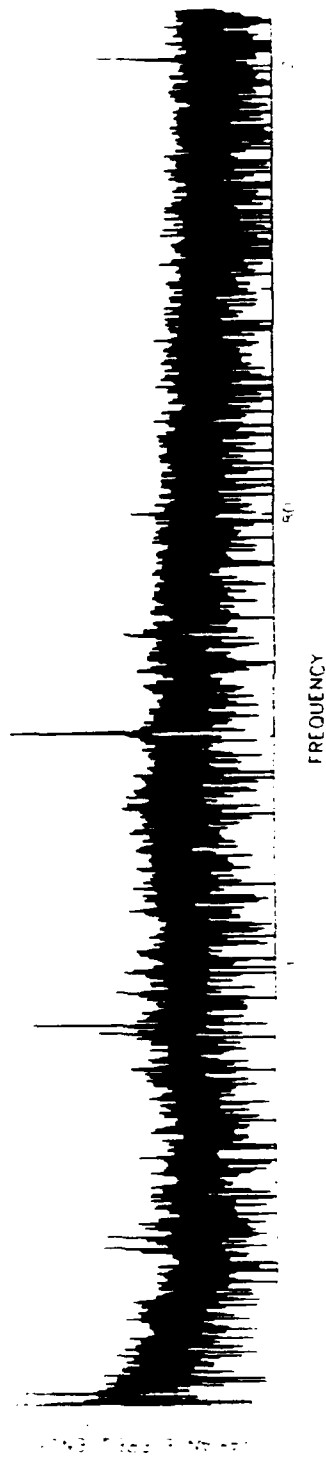
APPENDIX B

TIME SERIES AND FREQUENCY SPECTRA, NORMAL PROBABILITY PLOTS, AND HISTOGRAMS FOR ALL HYDROPHONES

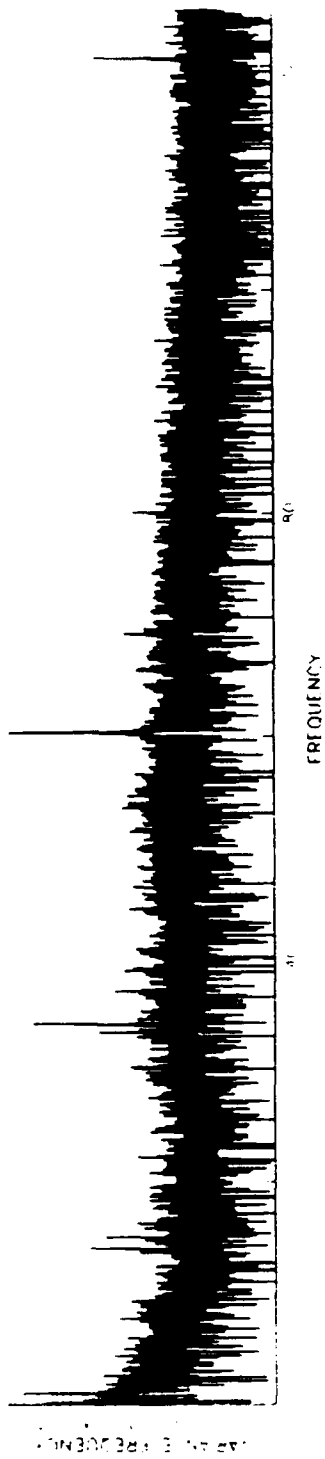
HS001T01, SAMPLED FOR MINUTE. SAMPLED AT
250 SAMPLES PER SECOND.



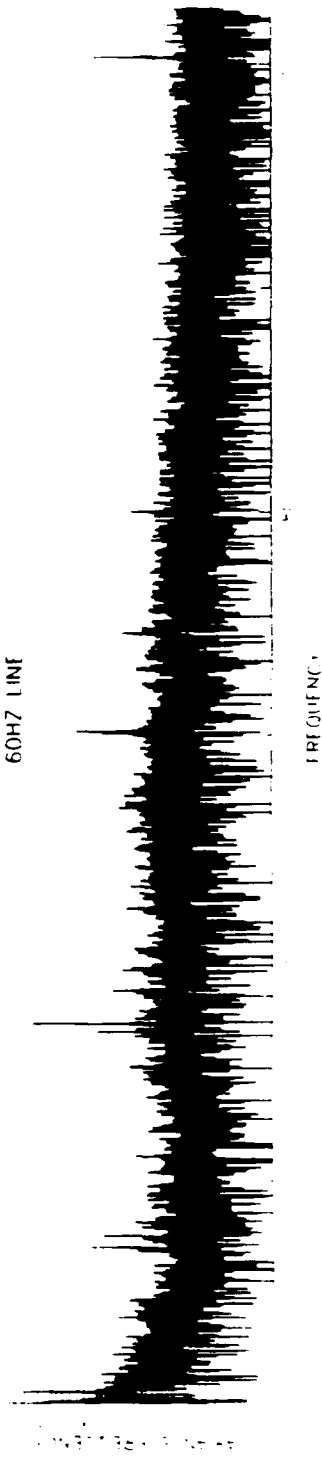
ESTIMATED SPECTRAL DENSITY FOR UNFILTERED HS001T01



ESTIMATED SPECTRAL DENSITY FOR UNFILTERED HS001101

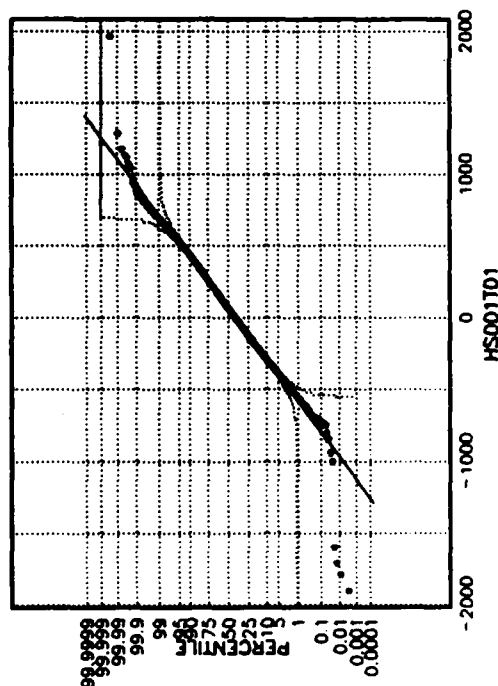


ESTIMATED SPECTRAL DENSITY FOR FILTERED HS001101
60HZ LINE

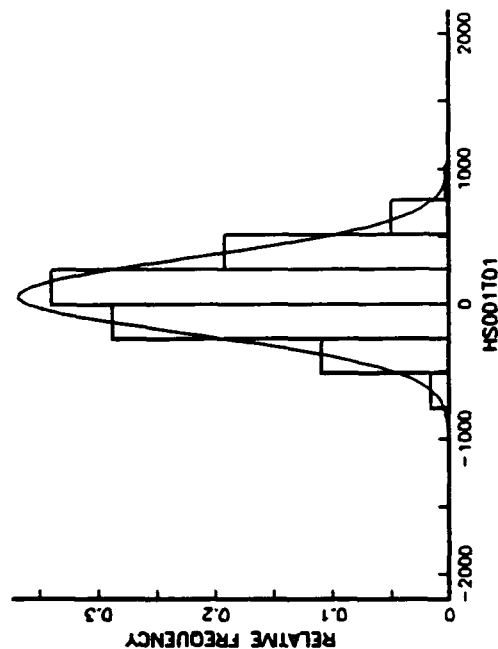


GAUSSIAN GOODNES OF FIT FOR HS001T01

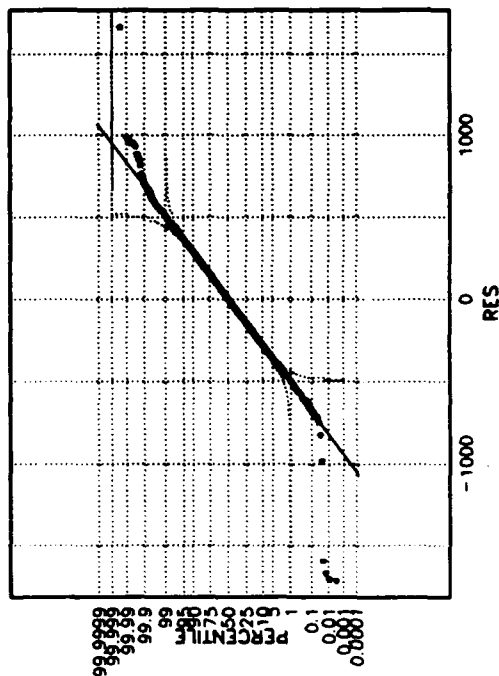
NORMAL PROBABILITY PLOT, N=15000



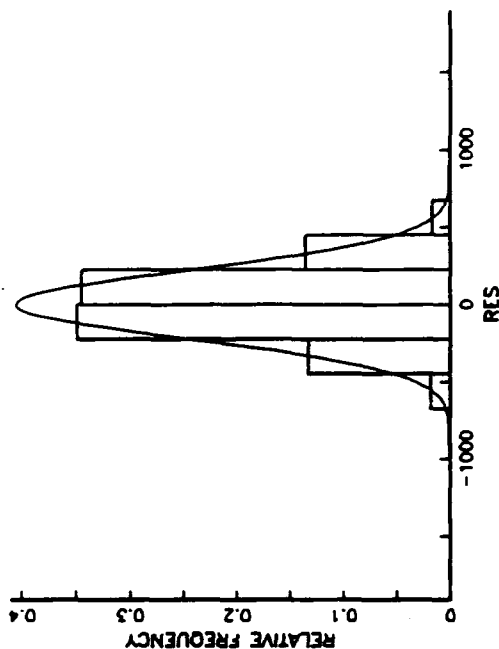
NORMAL DENSITY FUNCTION, N=15000



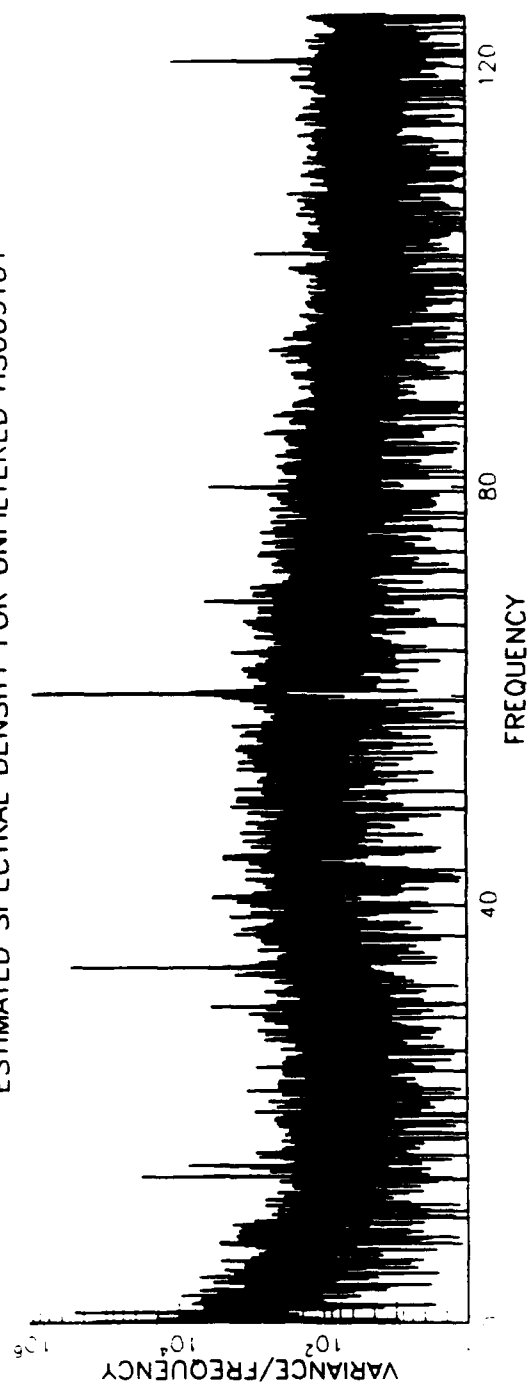
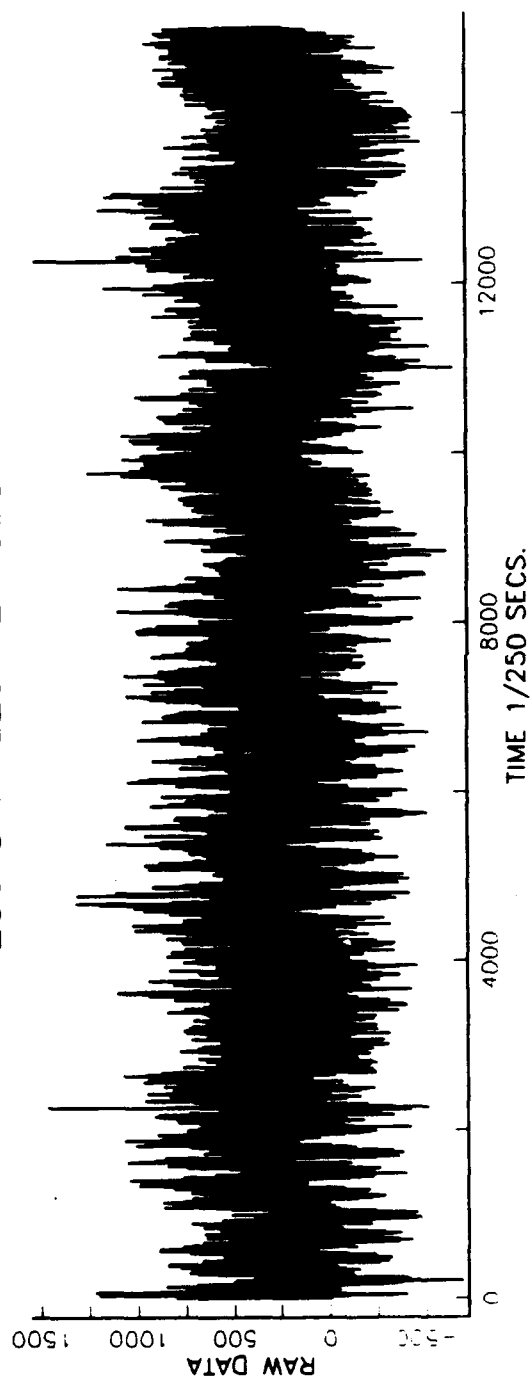
NORMAL PROBABILITY PLOT, N=15000



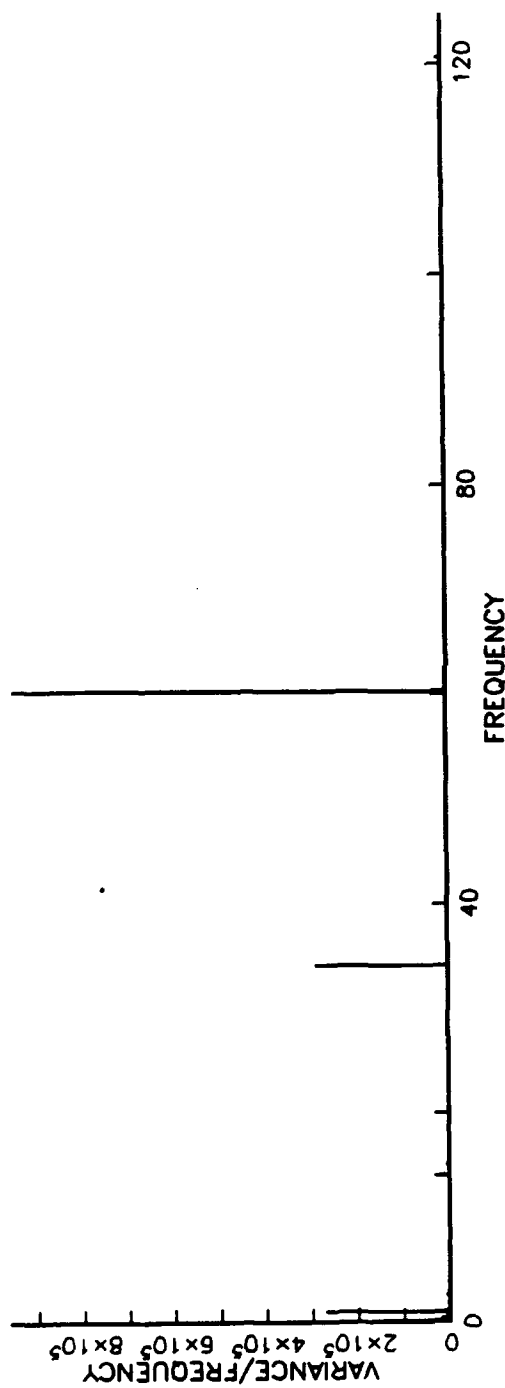
NORMAL DENSITY FUNCTION, N=15000



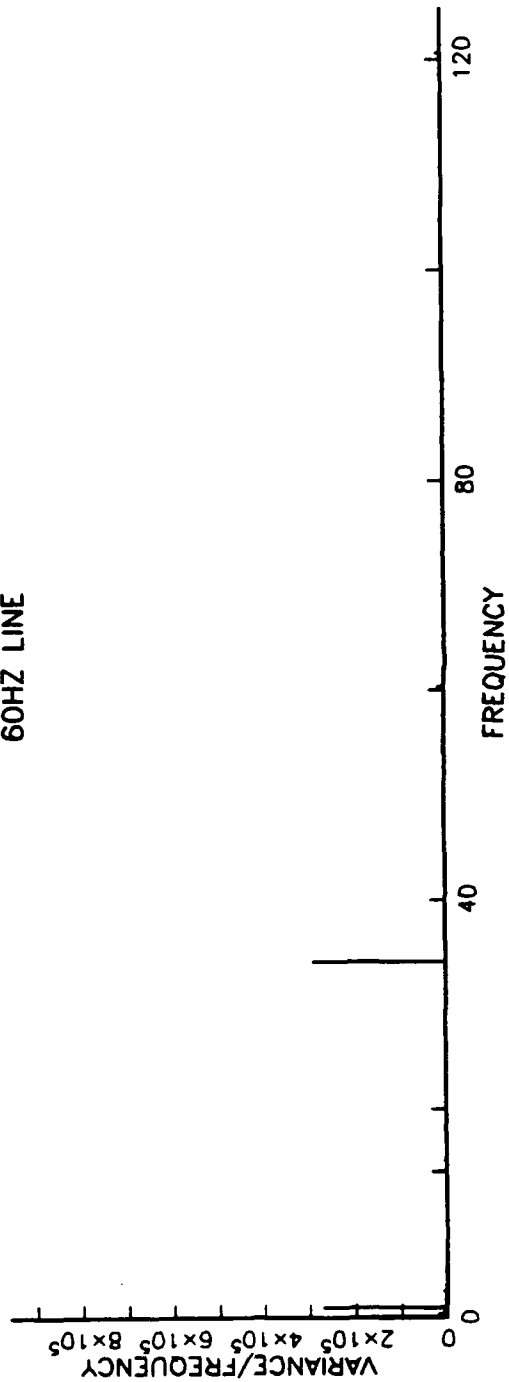
HS009T01, SAMPLED FOR 1 MINUTE. SAMPLED AT
250 SAMPLES PER SECOND.



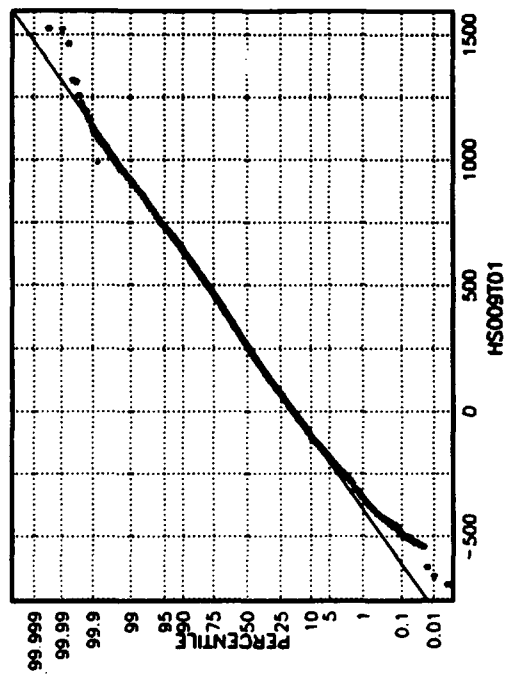
ESTIMATED SPECTRAL DENSITY FOR UNFILTERED HS009T01



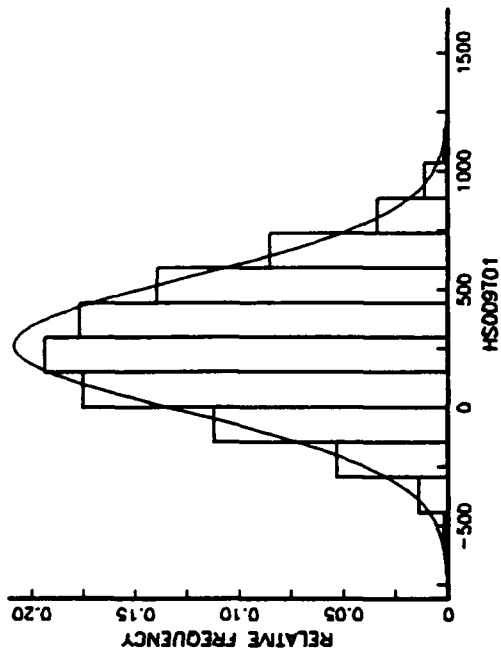
ESTIMATED SPECTRAL DENSITY FOR FILTERED HS009T01
60HZ LINE



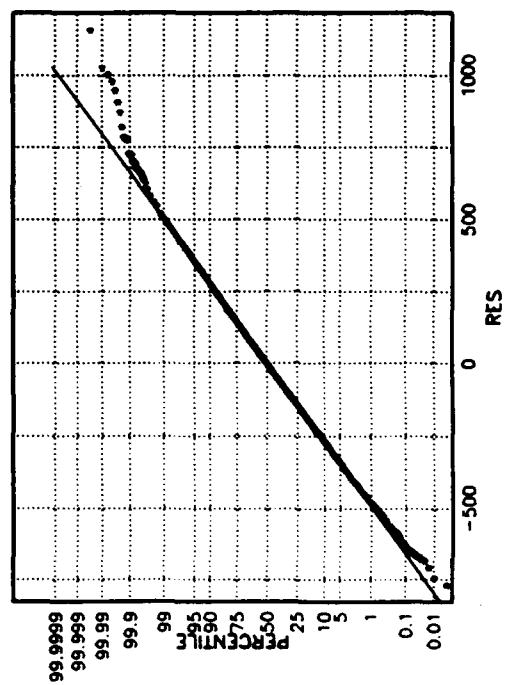
NORMAL PROBABILITY PLOT, N=15000



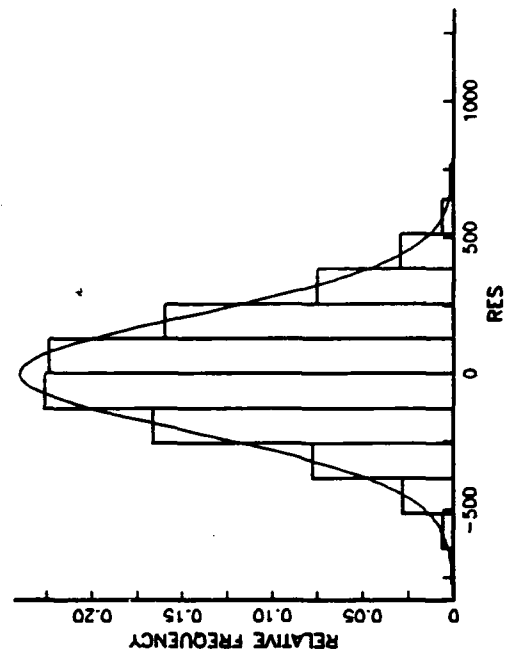
NORMAL DENSITY FUNCTION, N=15000



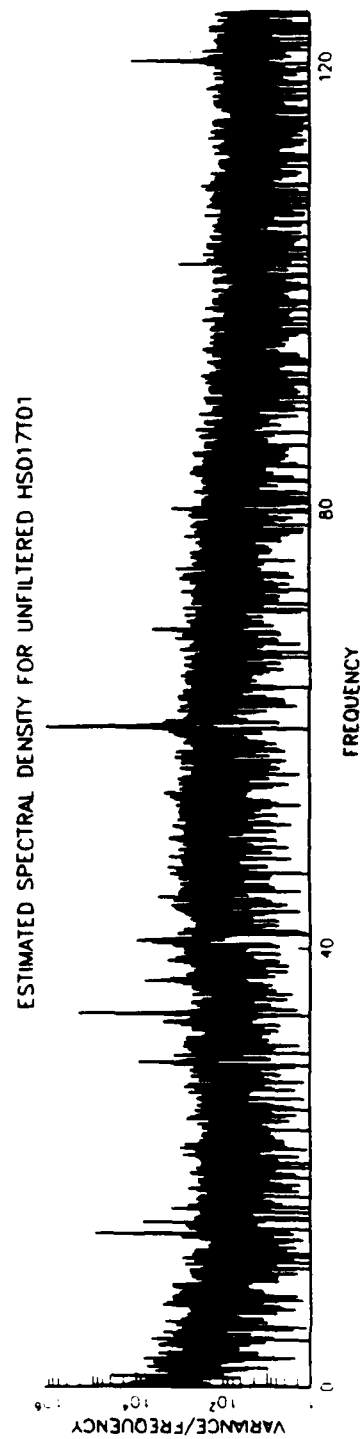
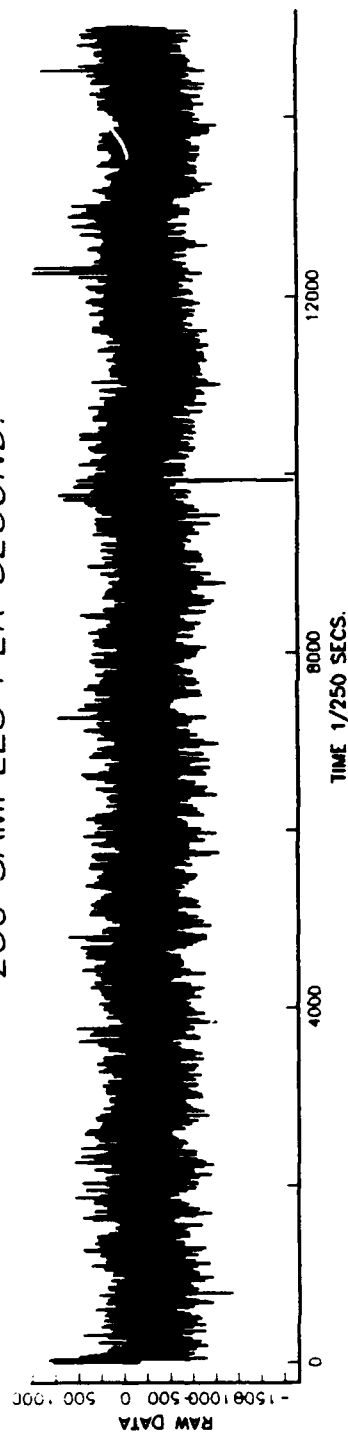
NORMAL PROBABILITY PLOT, N=15000

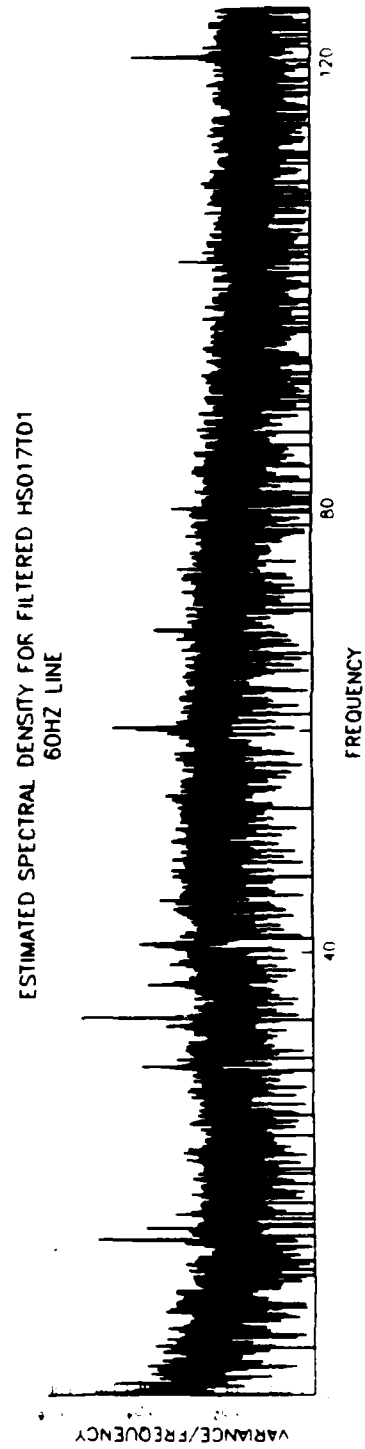
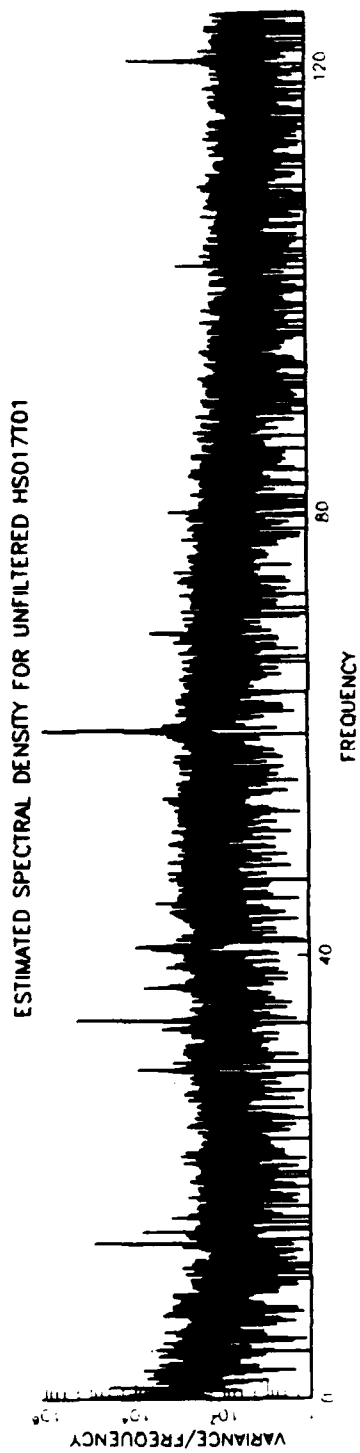


NORMAL DENSITY FUNCTION, N=15000



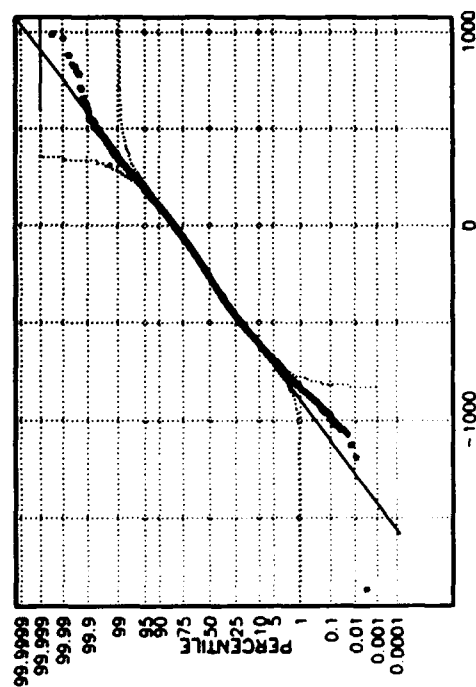
HS017T01, SAMPLED FOR MINUTE. SAMPLED AT
250 SAMPLES PER SECOND.



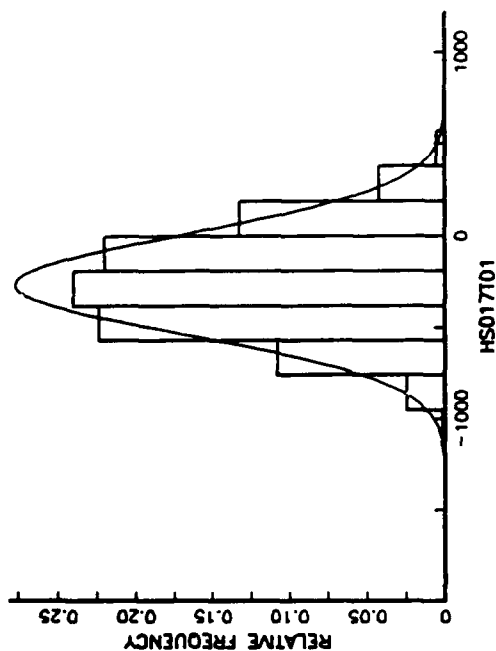


GAUSSIAN GOODNES OF FIT FOR HS017T01

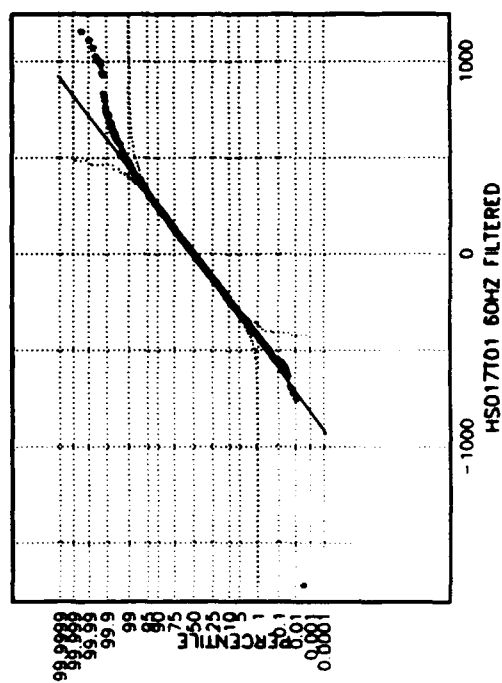
NORMAL PROBABILITY PLOT, N=15000



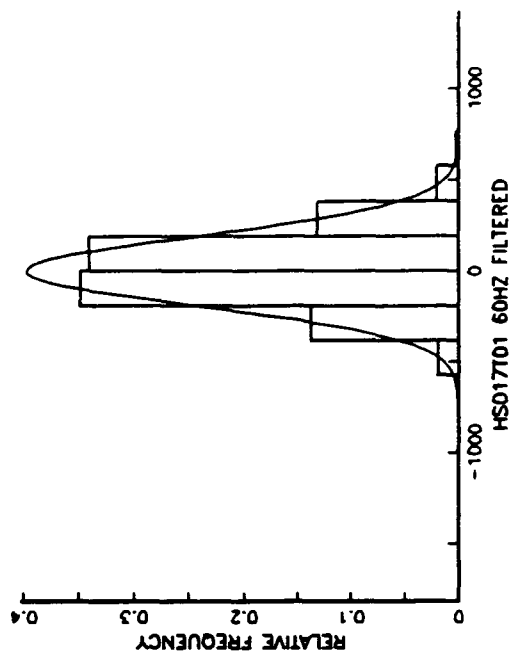
NORMAL DENSITY FUNCTION, N=15000



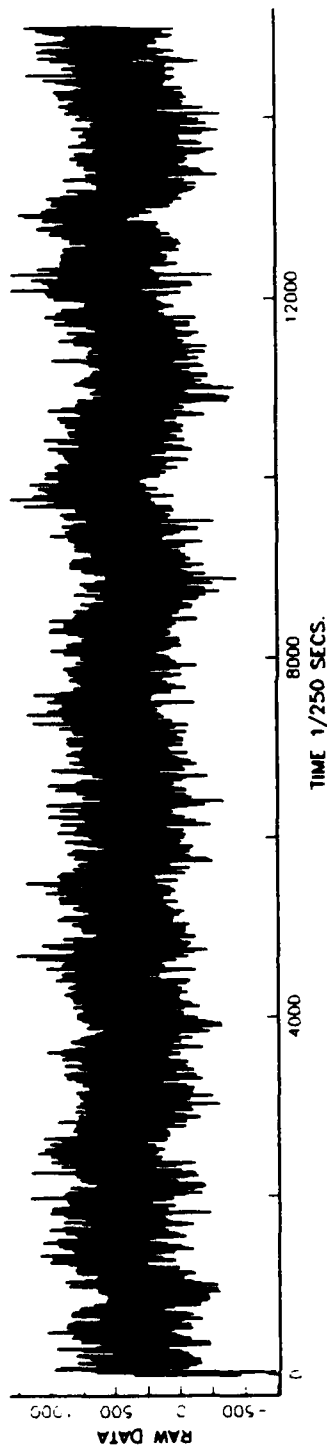
NORMAL PROBABILITY PLOT, N=15000



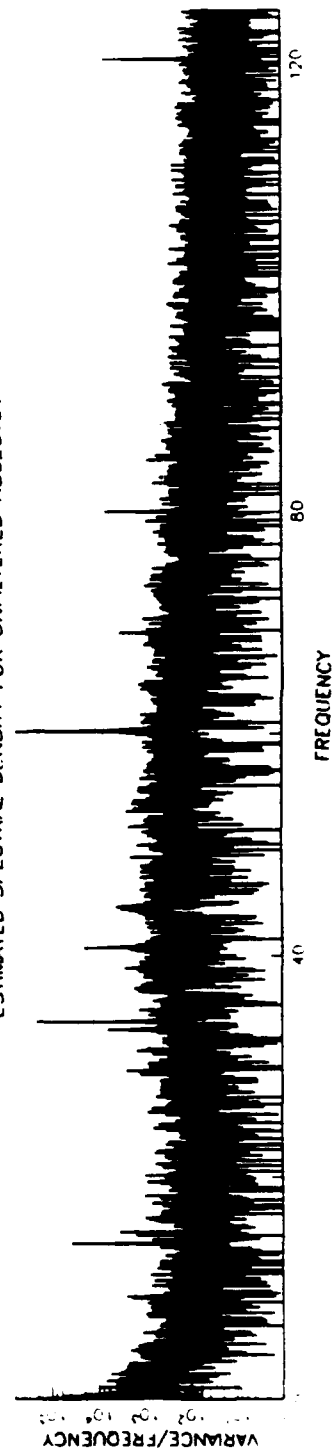
NORMAL DENSITY FUNCTION, N=15000

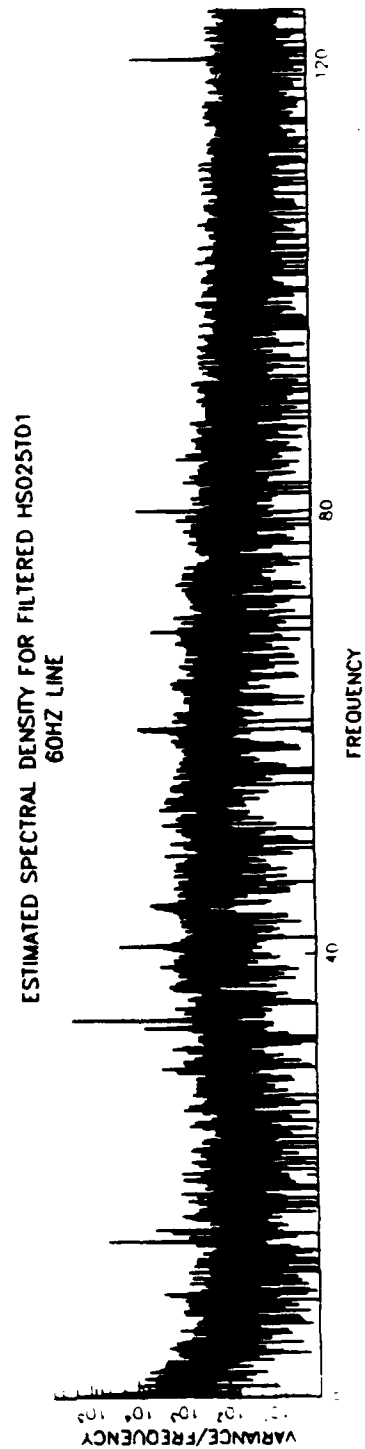
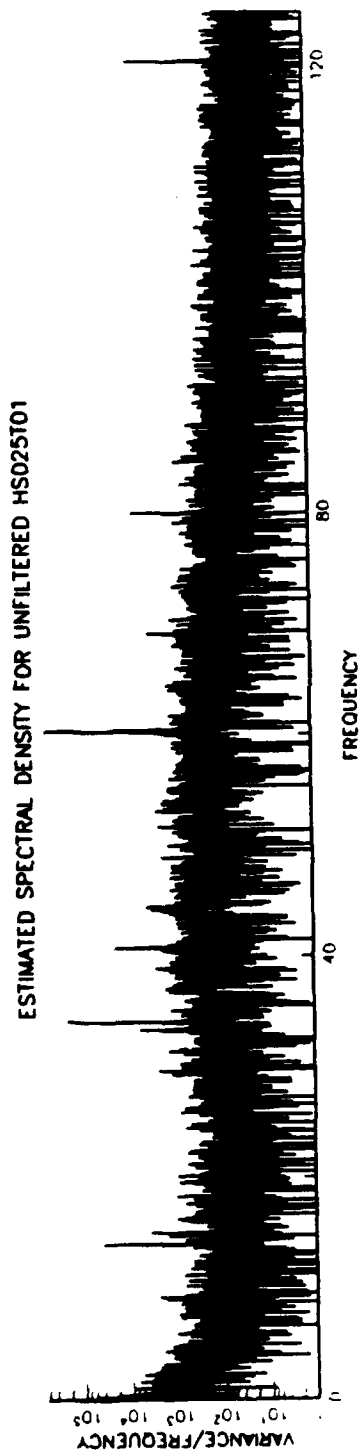


HS025T01, SAMPLED FOR 1 MINUTE. SAMPLED AT
250 SAMPLES PER SECOND.

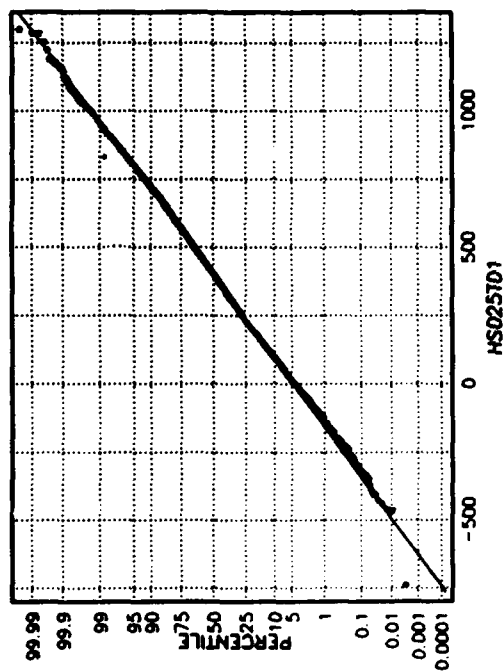


ESTIMATED SPECTRAL DENSITY FOR UNFILTERED HS025T01

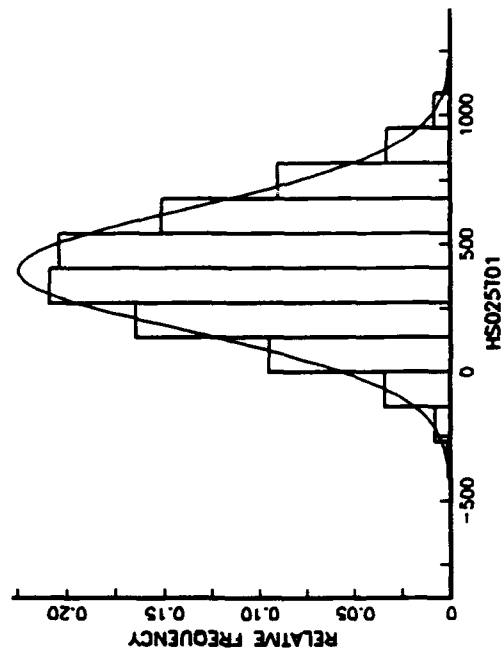




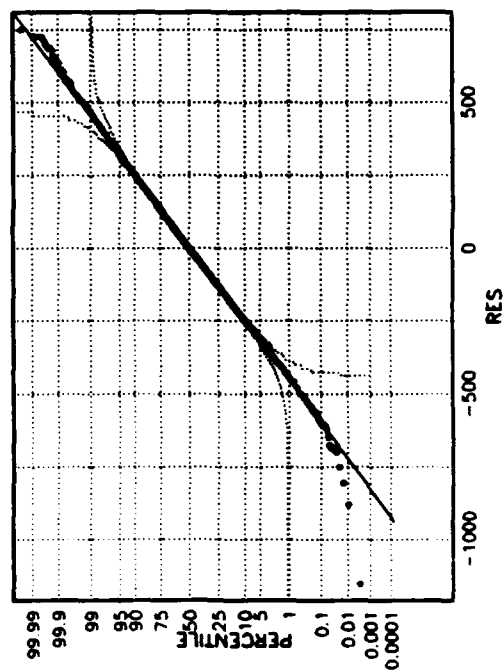
NORMAL PROBABILITY PLOT, N=15000



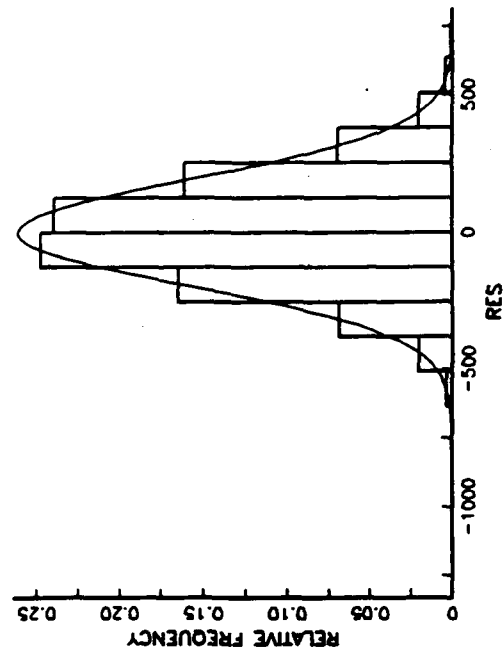
NORMAL DENSITY FUNCTION, N=15000



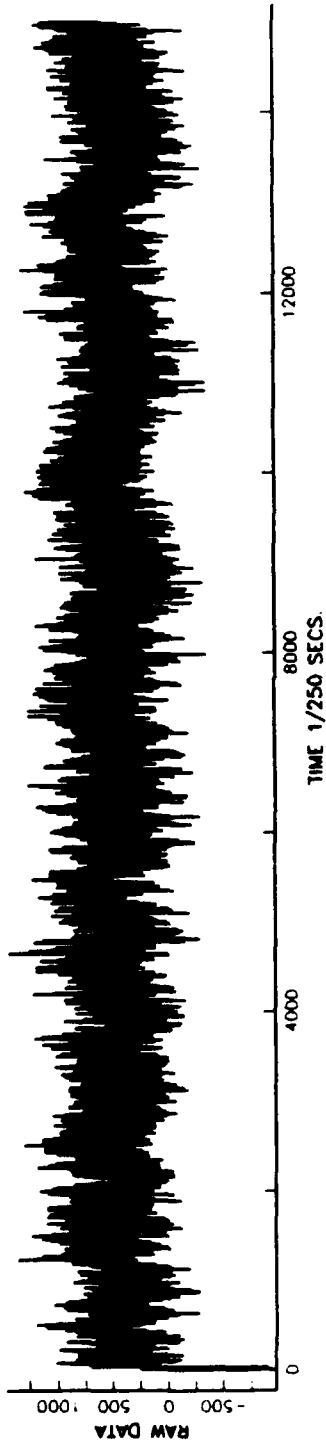
NORMAL PROBABILITY PLOT, N=15000



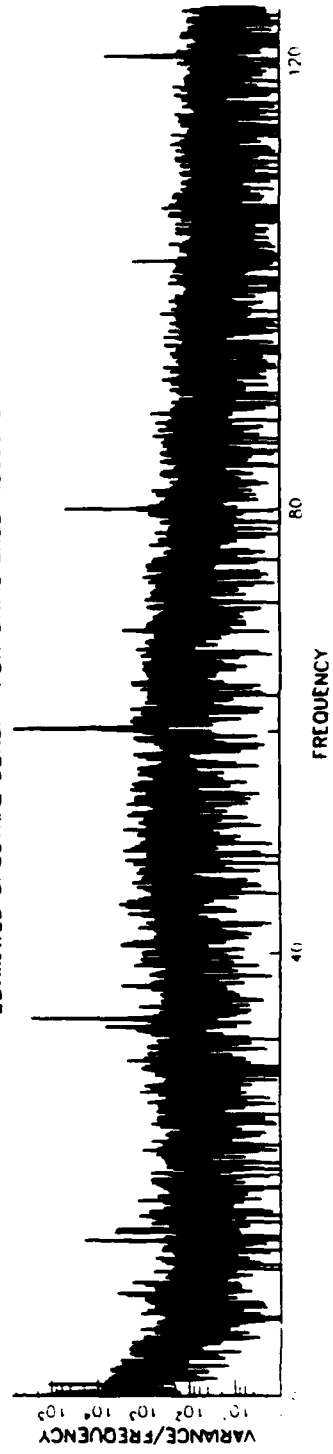
NORMAL DENSITY FUNCTION, N=15000

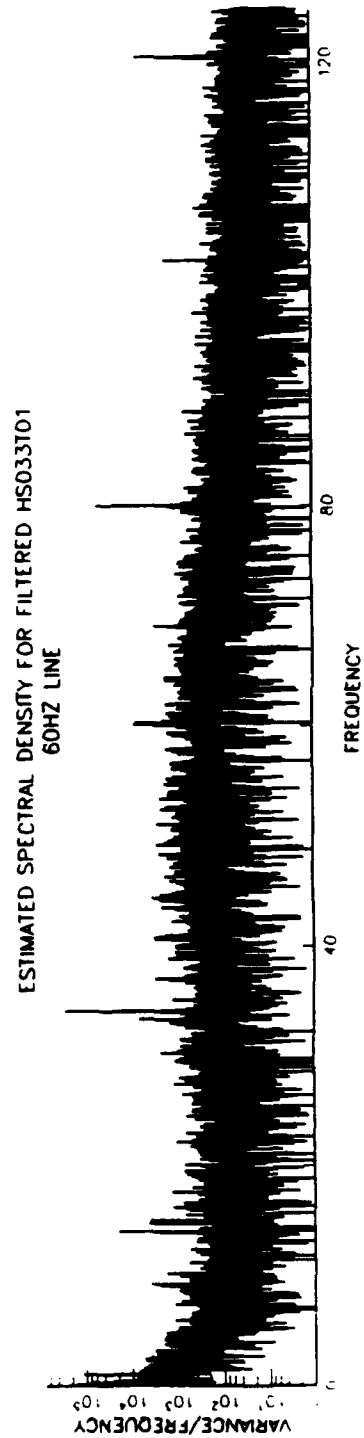
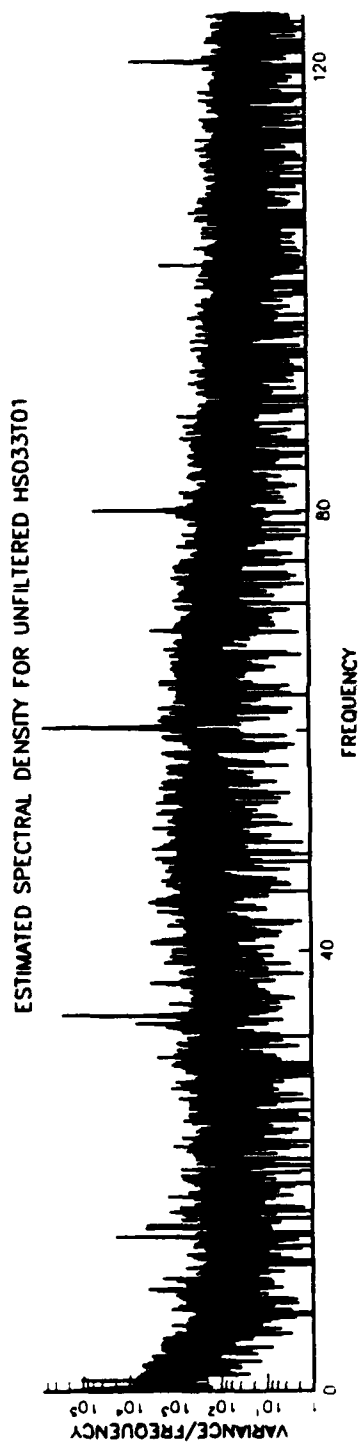


HS033T01, SAMPLED FOR 1 MINUTE. SAMPLED AT
250 SAMPLES PER SECOND.

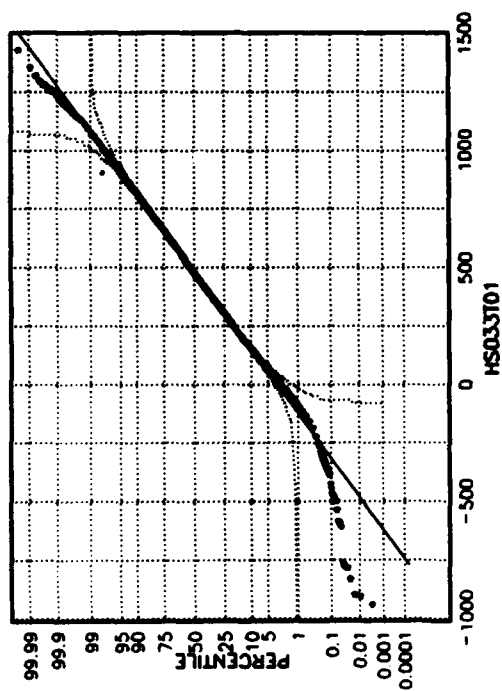


ESTIMATED SPECTRAL DENSITY FOR UNFILTERED HS033T01

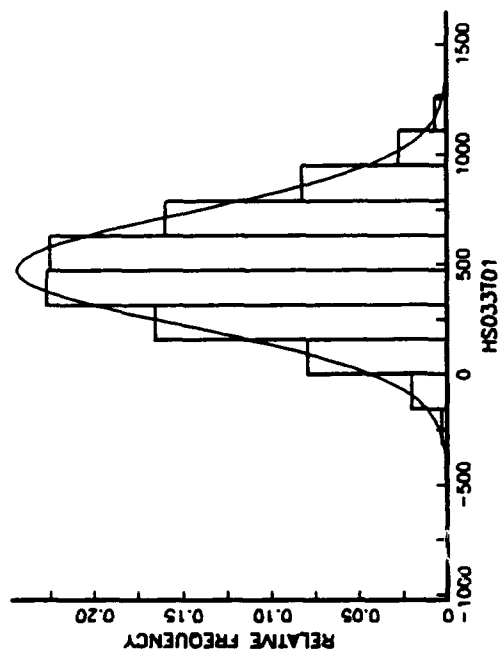




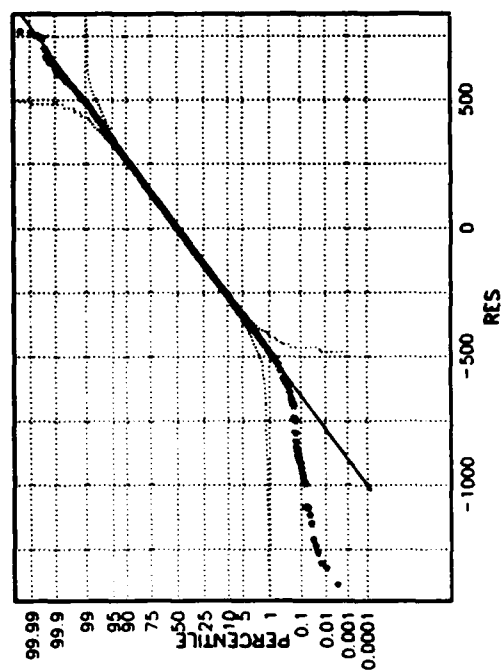
NORMAL PROBABILITY PLOT, N=15000



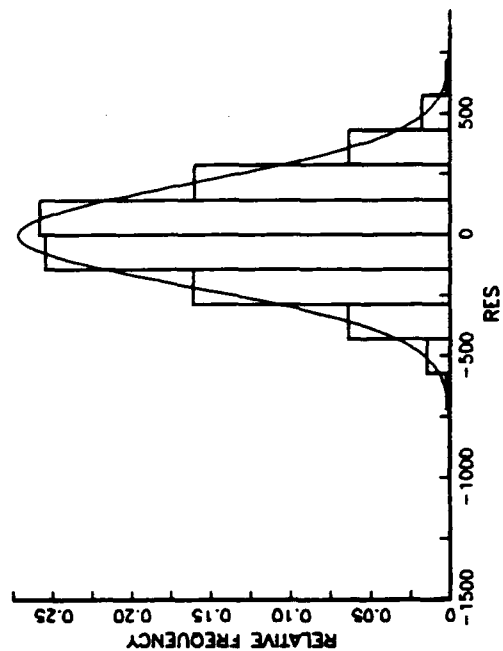
NORMAL DENSITY FUNCTION, N=15000



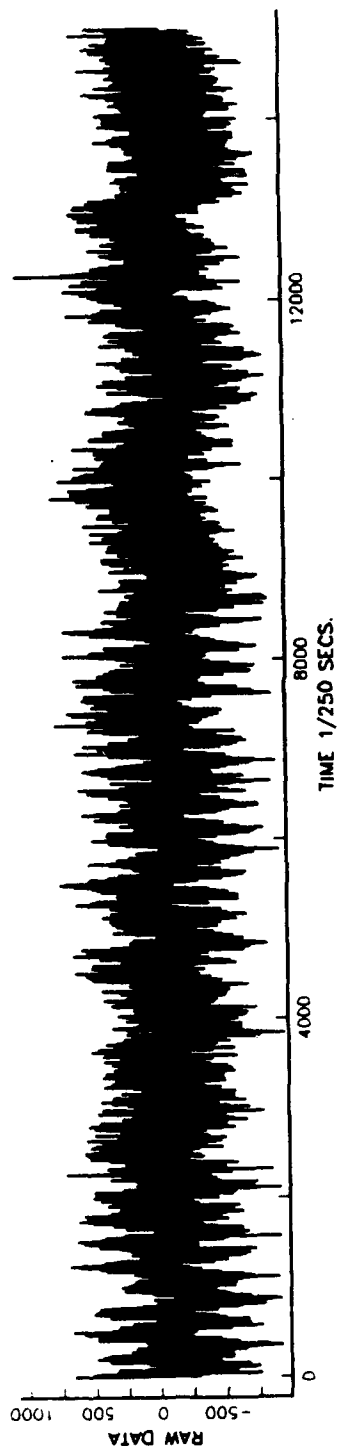
NORMAL PROBABILITY PLOT, N=15000



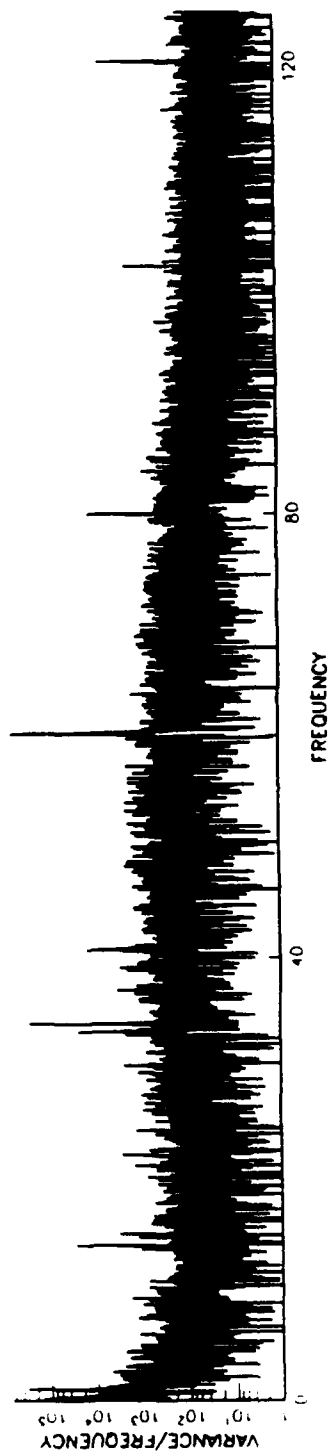
NORMAL DENSITY FUNCTION, N=15000

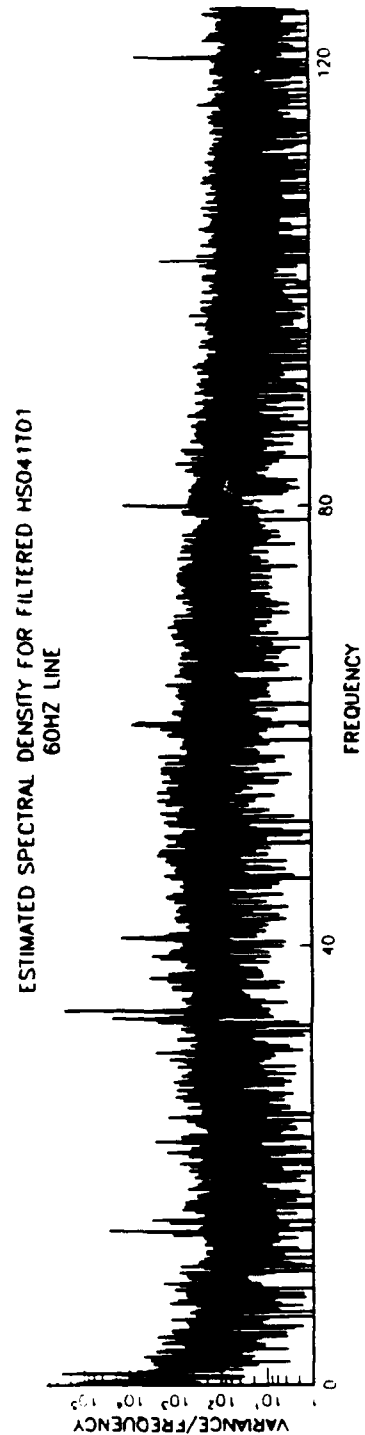
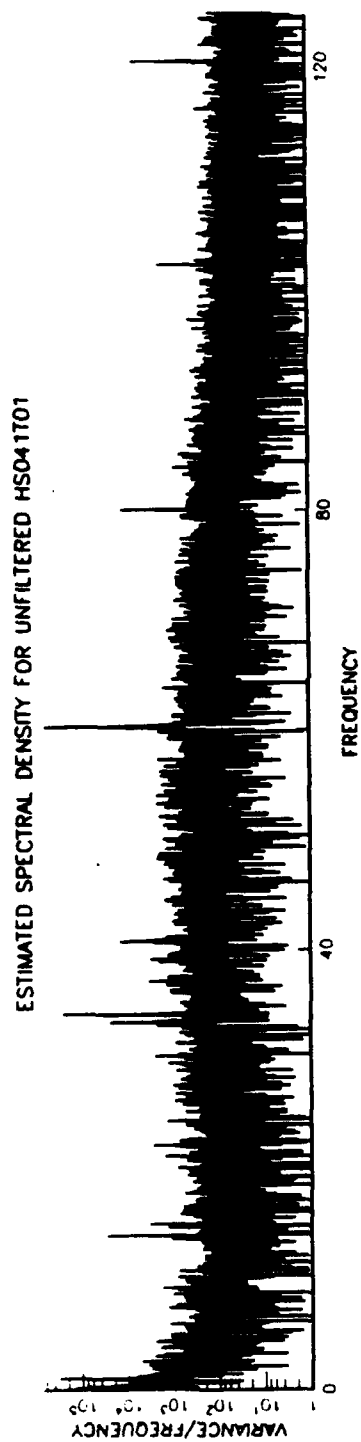


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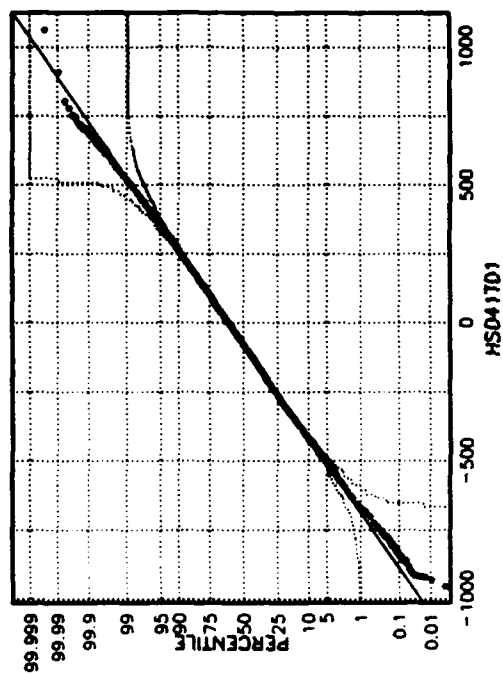


ESTIMATED SPECTRAL DENSITY FOR UNFILTERED HS041T01

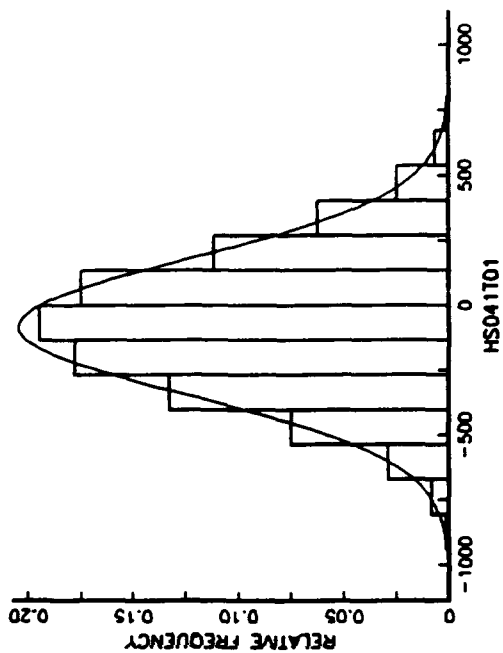




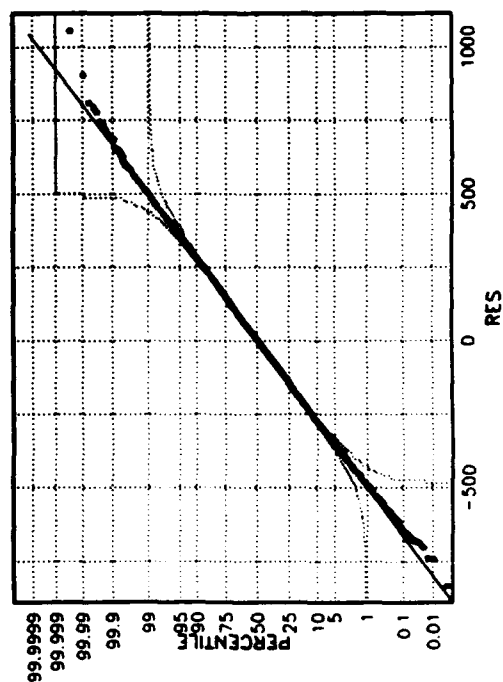
NORMAL PROBABILITY PLOT, N=15000



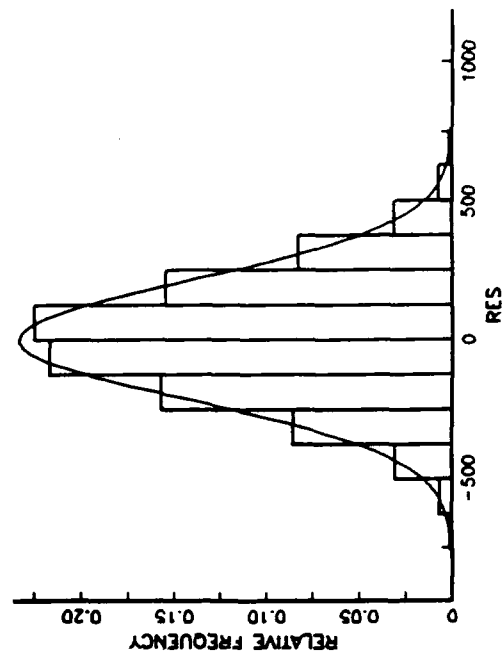
NORMAL DENSITY FUNCTION, N=15000



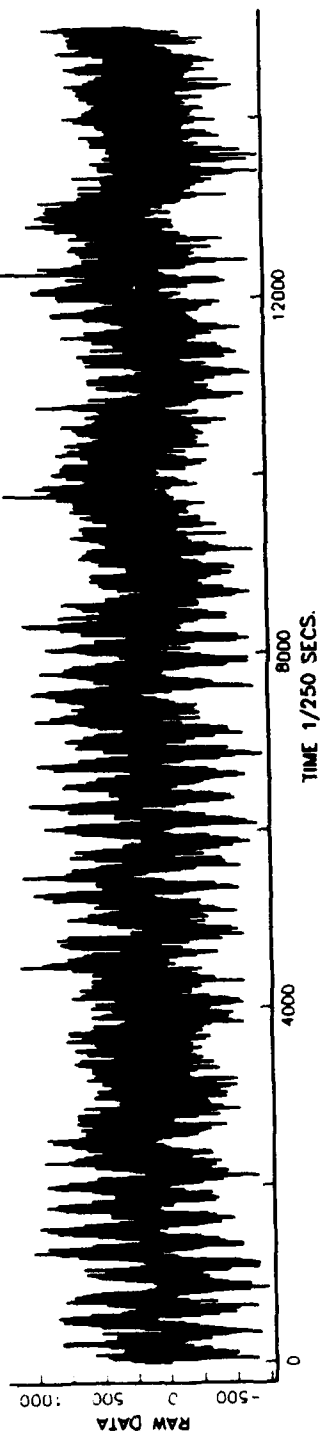
NORMAL PROBABILITY PLOT, N=15000



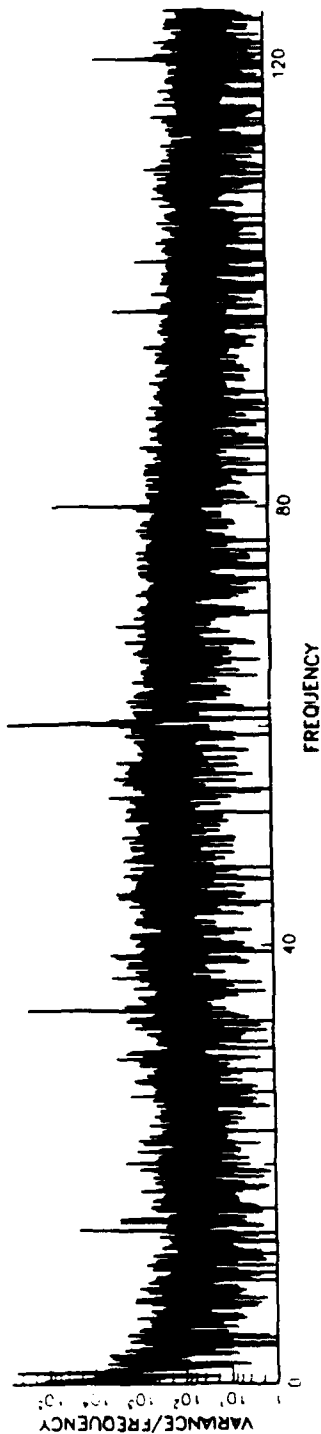
NORMAL DENSITY FUNCTION, N=15000

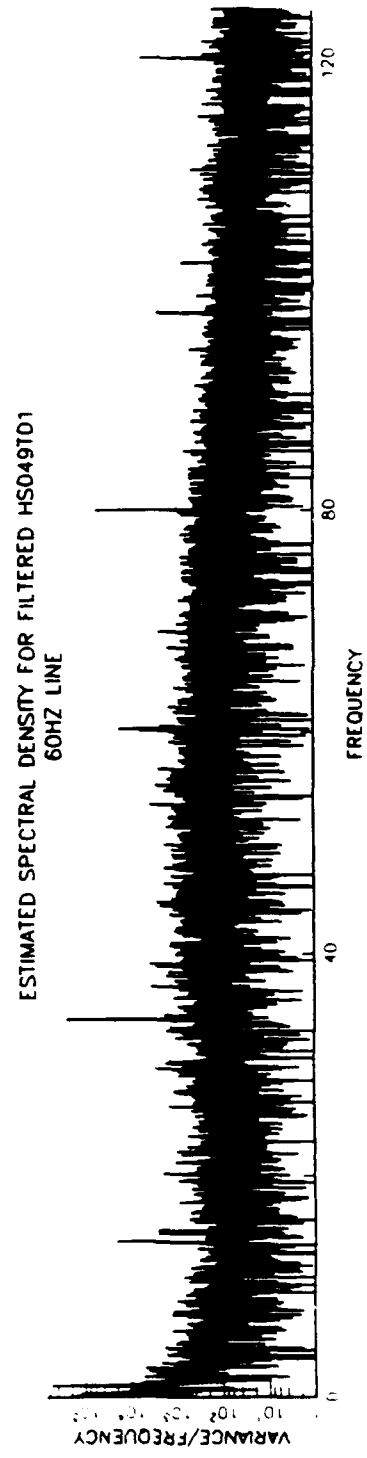
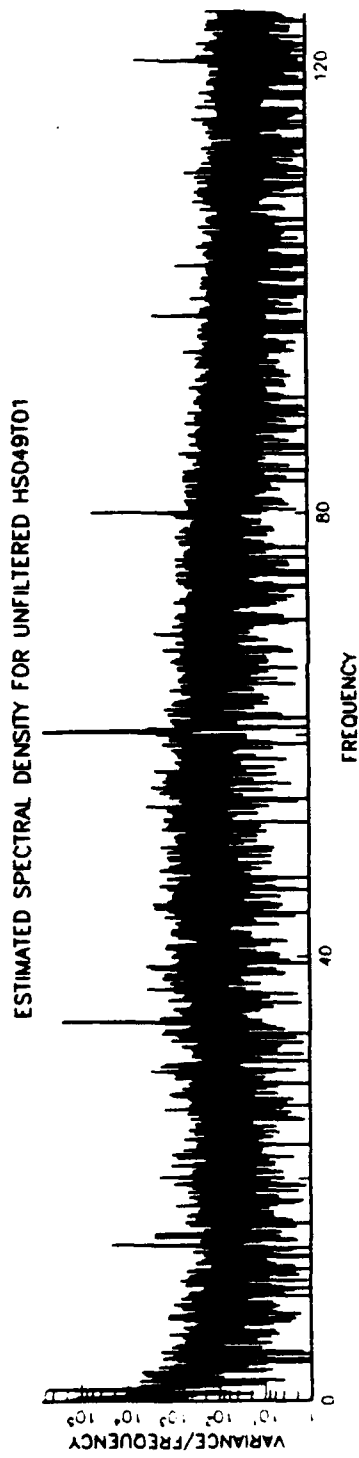


HS049T01, SAMPLED FOR MINUTE. SAMPLED AT
250 SAMPLES PER SECOND.



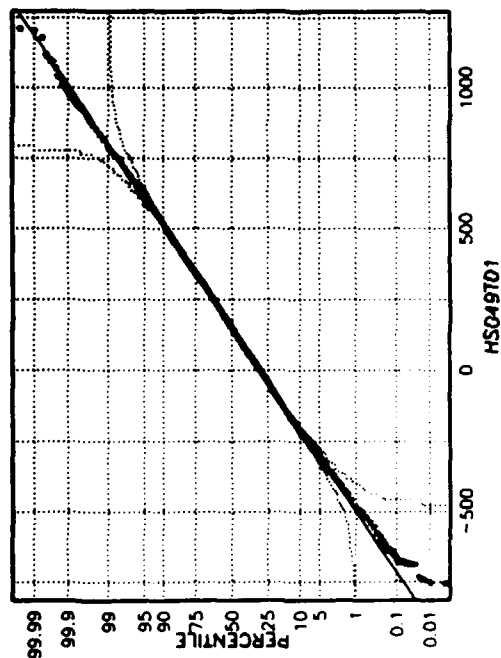
ESTIMATED SPECTRAL DENSITY FOR UNFILTERED HS049T01



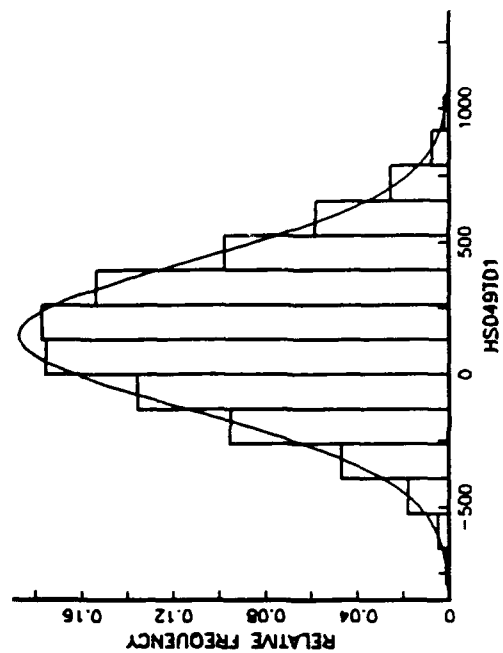


GAUSSIAN GOODNES OF FIT FOR HS049T01

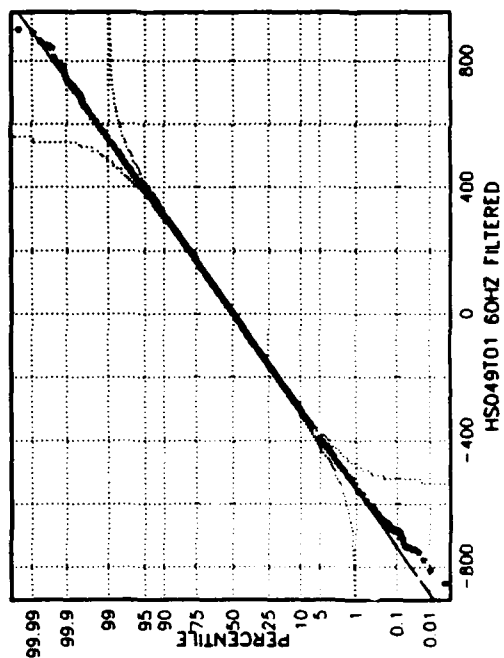
NORMAL PROBABILITY PLOT, N=15000



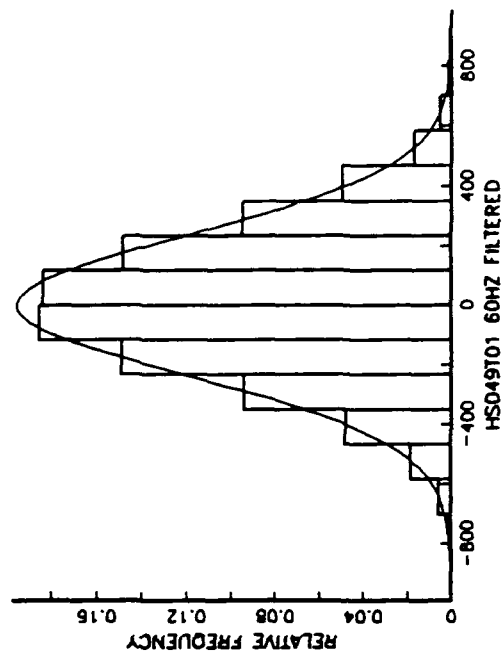
NORMAL DENSITY FUNCTION, N=15000



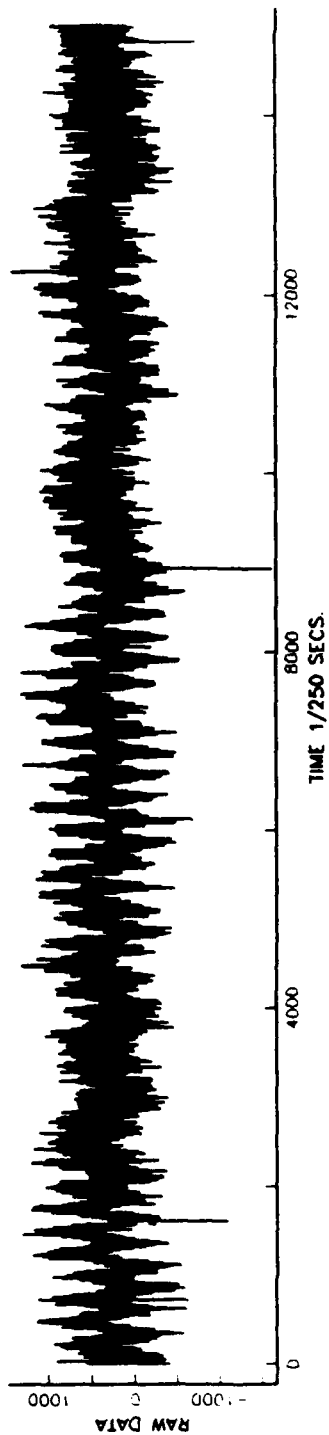
NORMAL PROBABILITY PLOT, N=15000



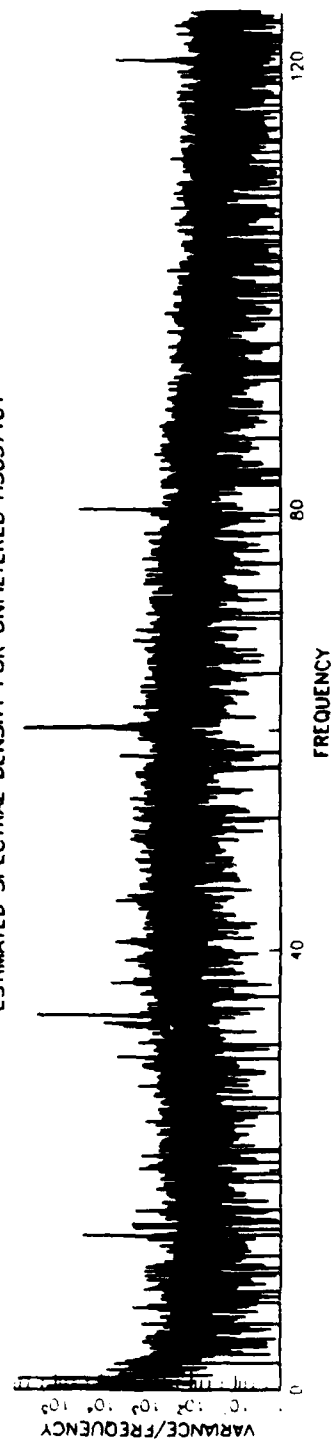
NORMAL DENSITY FUNCTION, N=15000



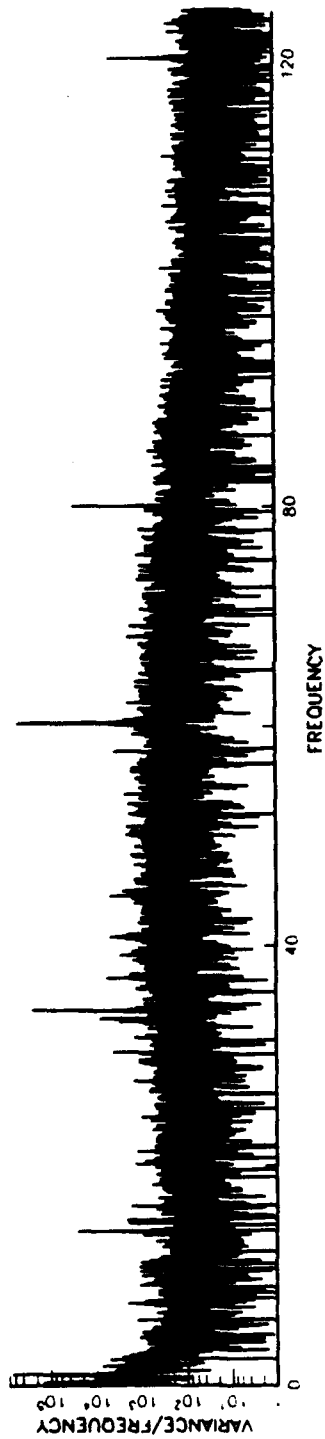
HS057T01,SAMPLED FOR MINUTE. SAMPLED AT
250 SAMPLES PER SECOND.



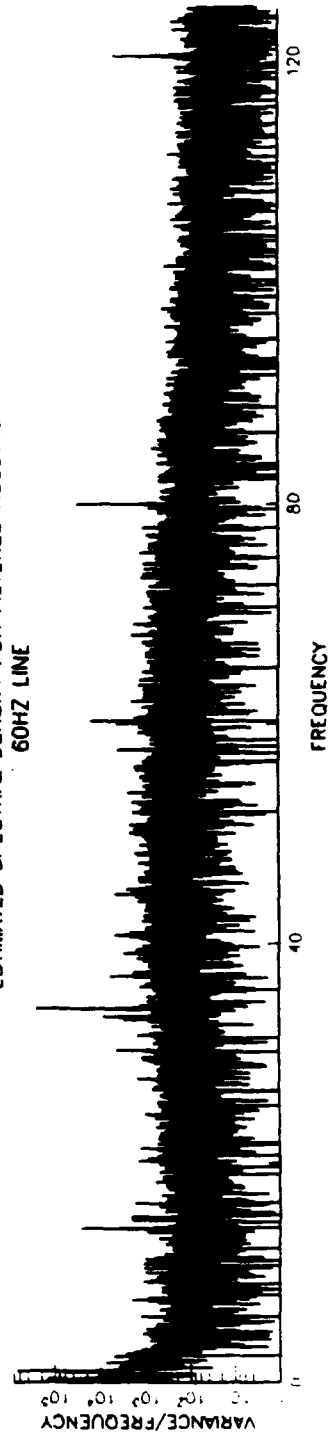
ESTIMATED SPECTRAL DENSITY FOR UNFILTERED HS057T01



ESTIMATED SPECTRAL DENSITY FOR UNFILTERED HS057T01

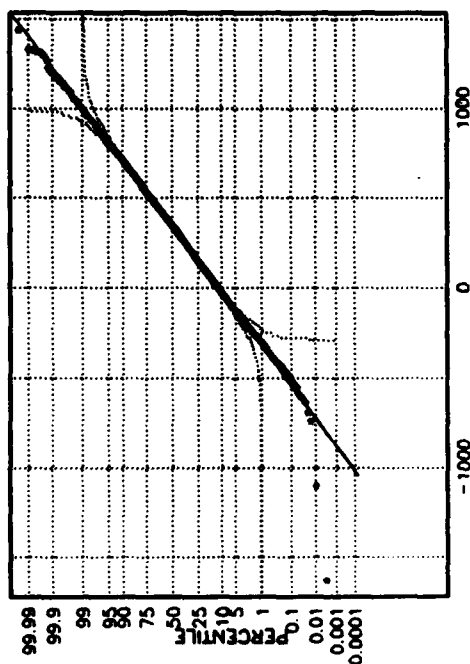


ESTIMATED SPECTRAL DENSITY FOR FILTERED HS057T01
60HZ LINE

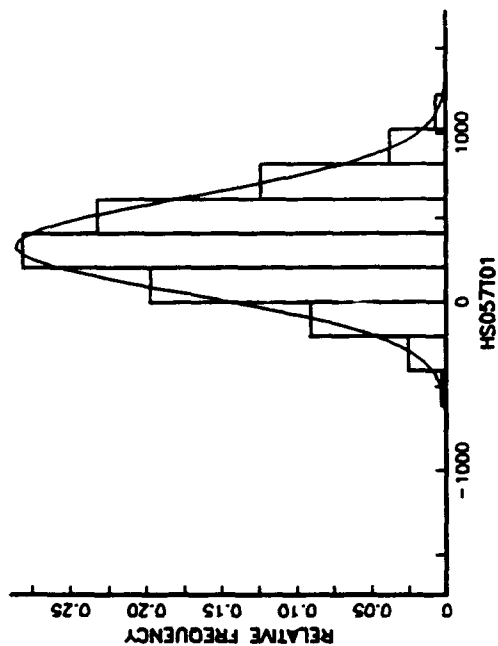


GAUSSIAN GOODNES OF FIT FOR HS057T01

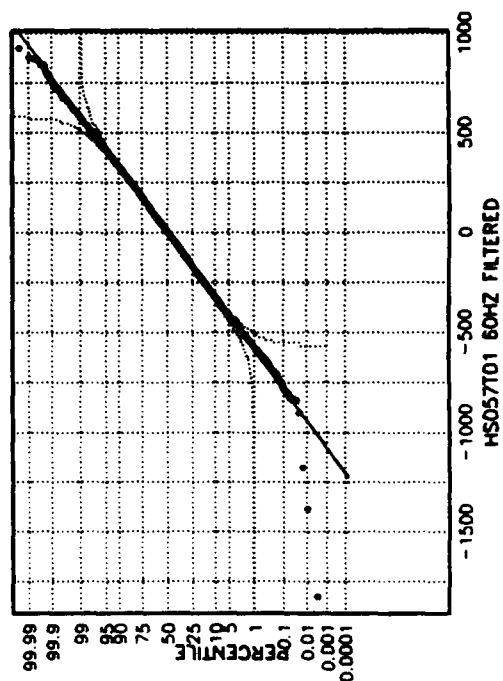
NORMAL PROBABILITY PLOT, N=15000



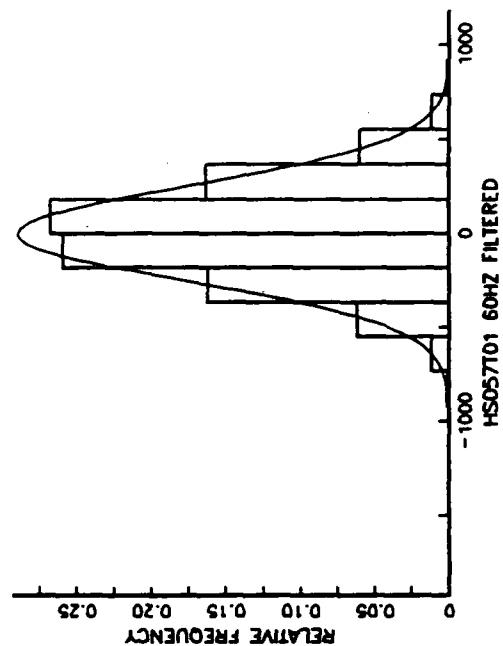
NORMAL DENSITY FUNCTION, N=15000



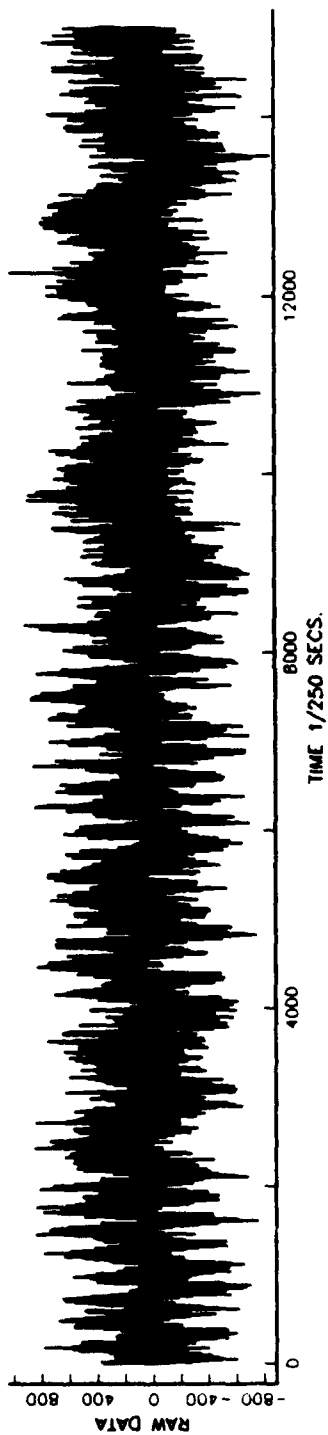
NORMAL PROBABILITY PLOT, N=15000



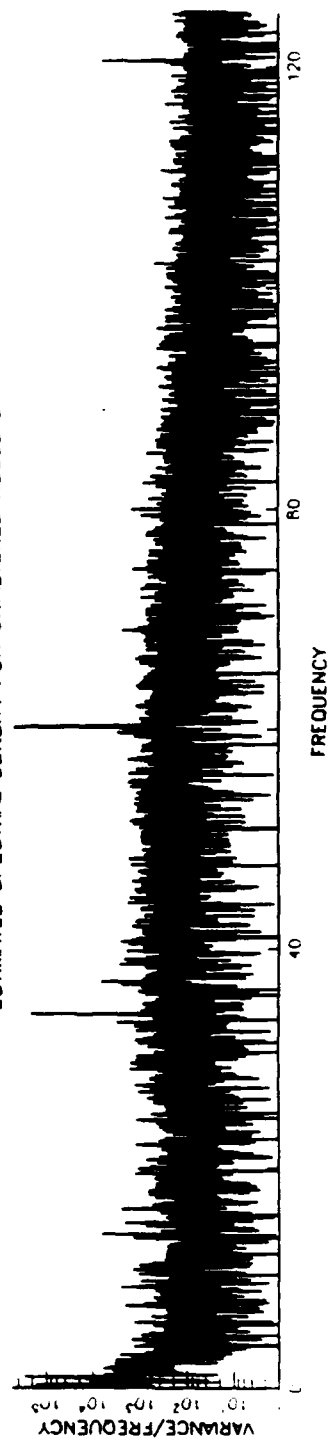
NORMAL DENSITY FUNCTION, N=15000



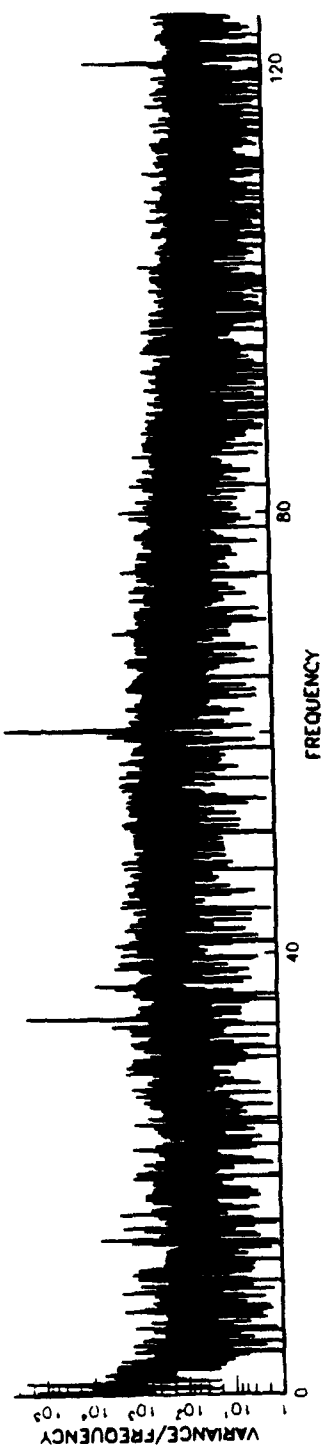
HS065T01, SAMPLED FOR MINUTE. SAMPLED AT
250 SAMPLES PER SECOND.



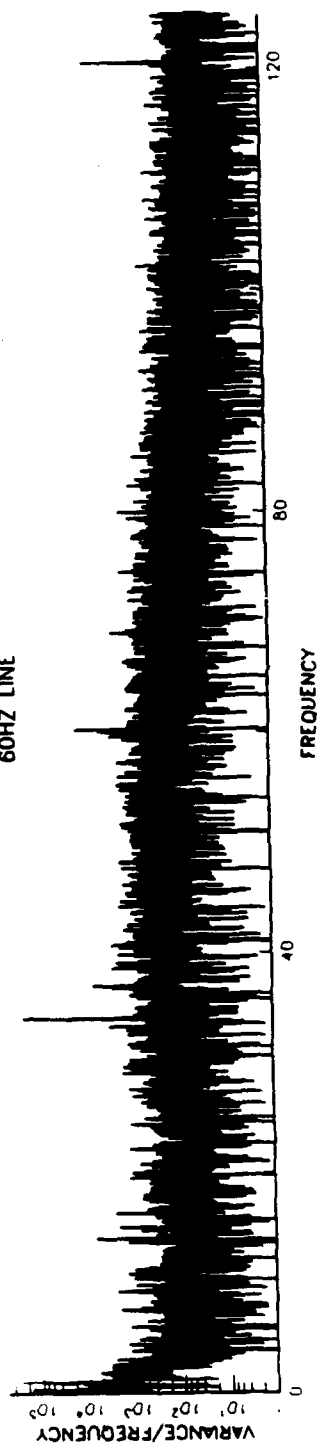
ESTIMATED SPECTRAL DENSITY FOR UNFILTERED HS065T01



ESTIMATED SPECTRAL DENSITY FOR UNFILTERED HS065T01

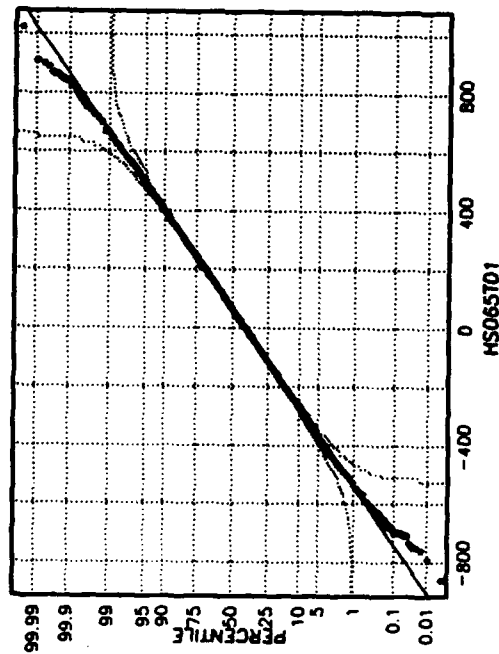


ESTIMATED SPECTRAL DENSITY FOR FILTERED HS065T01
60HZ LINE

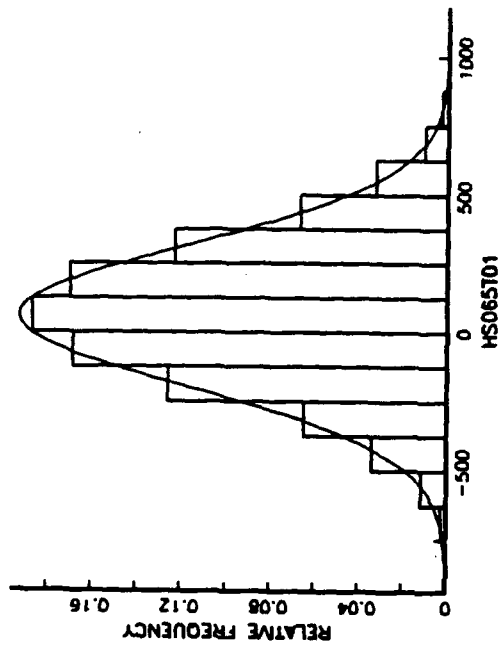


GAUSSIAN GOODNES OF FIT FOR HS065T01

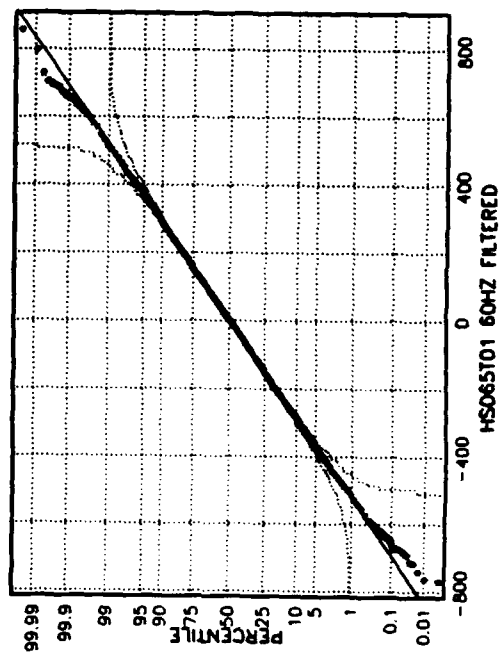
NORMAL PROBABILITY PLOT, N=15000



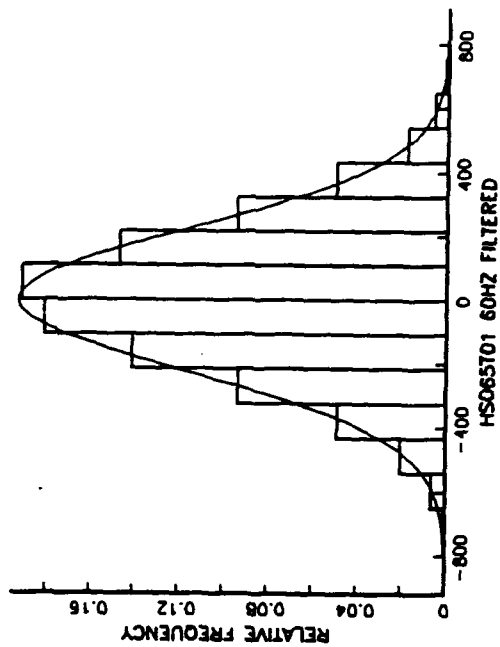
NORMAL DENSITY FUNCTION, N=15000



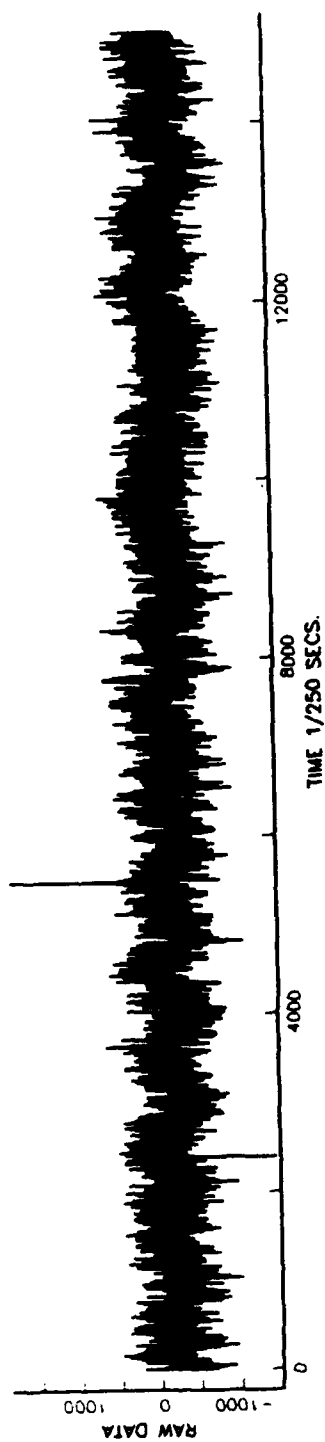
NORMAL PROBABILITY PLOT, N=15000



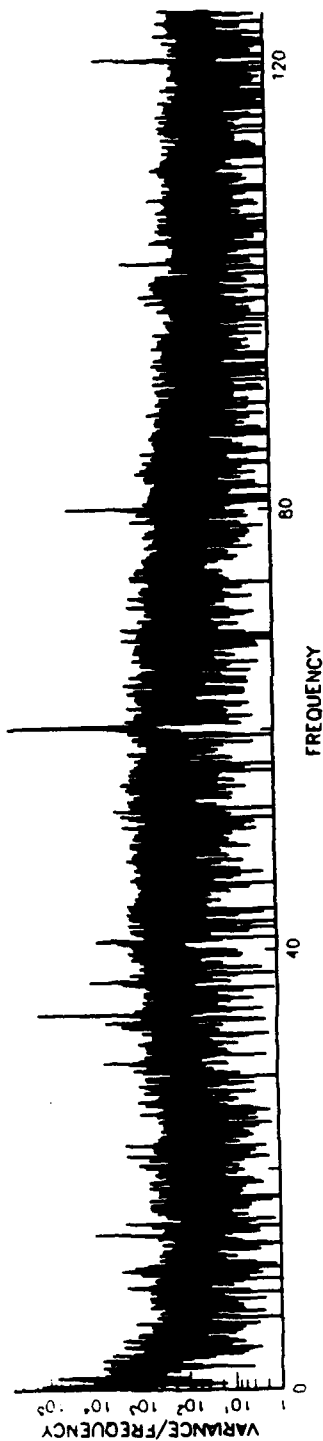
NORMAL DENSITY FUNCTION, N=15000

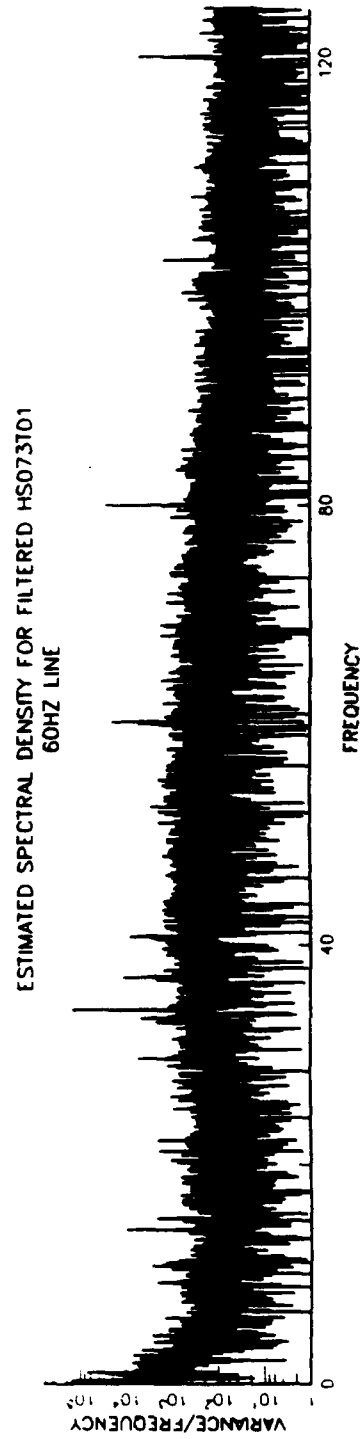
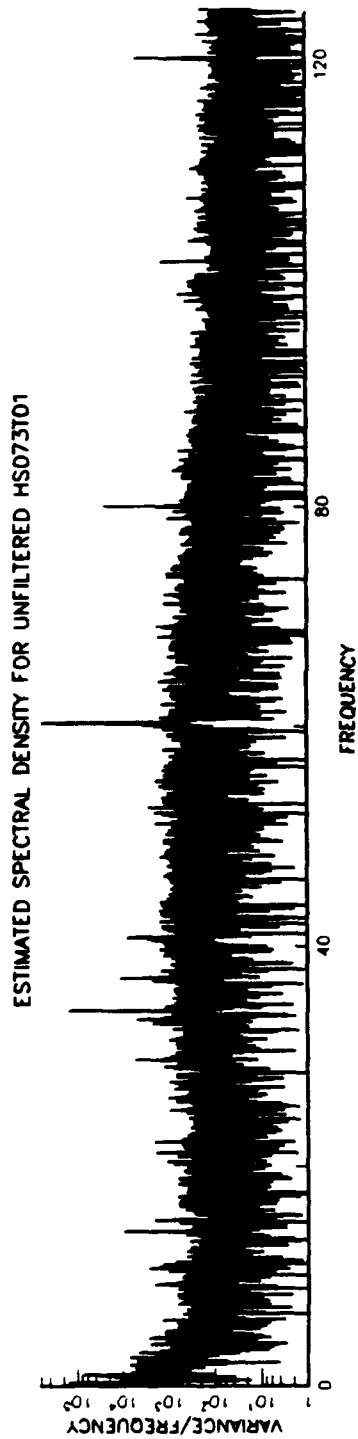


HS073T01, SAMPLED FOR MINUTE. SAMPLED AT
250 SAMPLES PER SECOND.



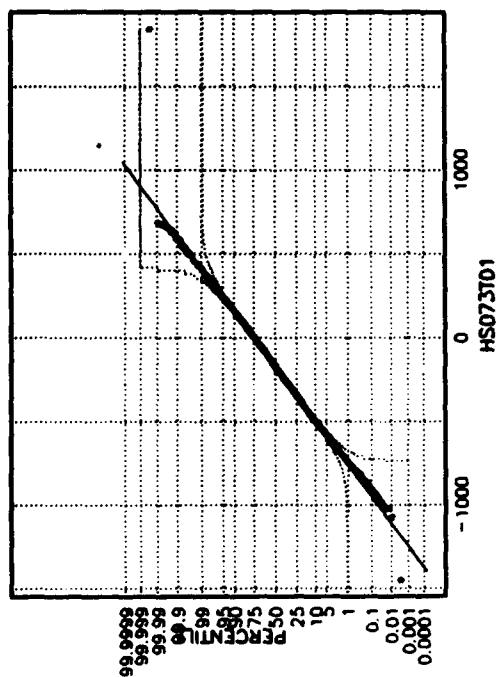
ESTIMATED SPECTRAL DENSITY FOR UNFILTERED HS073T01



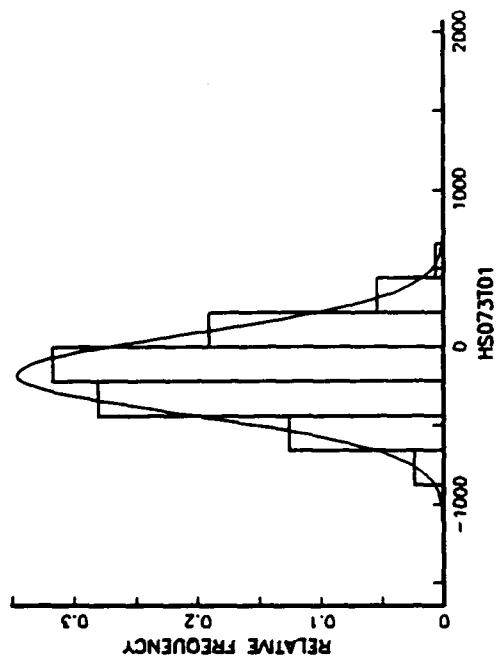


GAUSSIAN GOODNES OF FIT FOR HS073T01

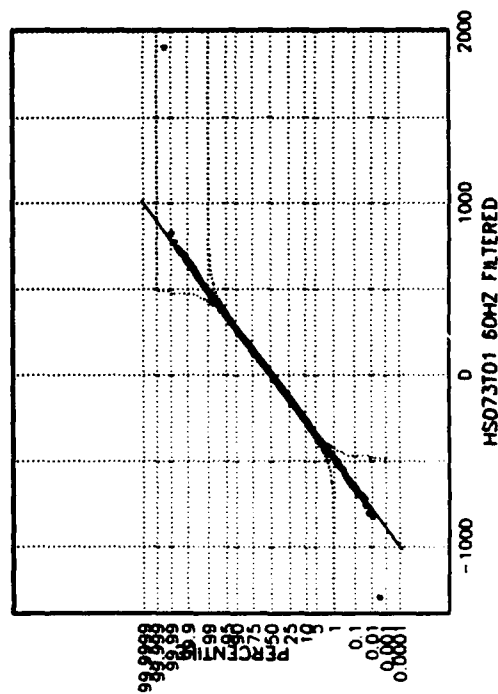
NORMAL PROBABILITY PLOT, N=15000



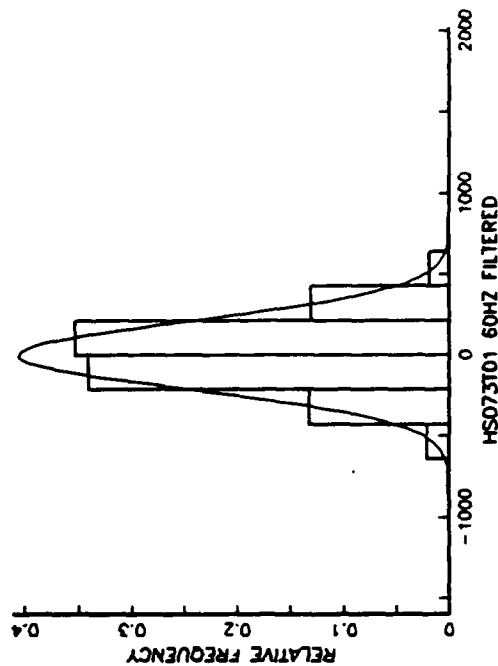
NORMAL DENSITY FUNCTION, N=15000



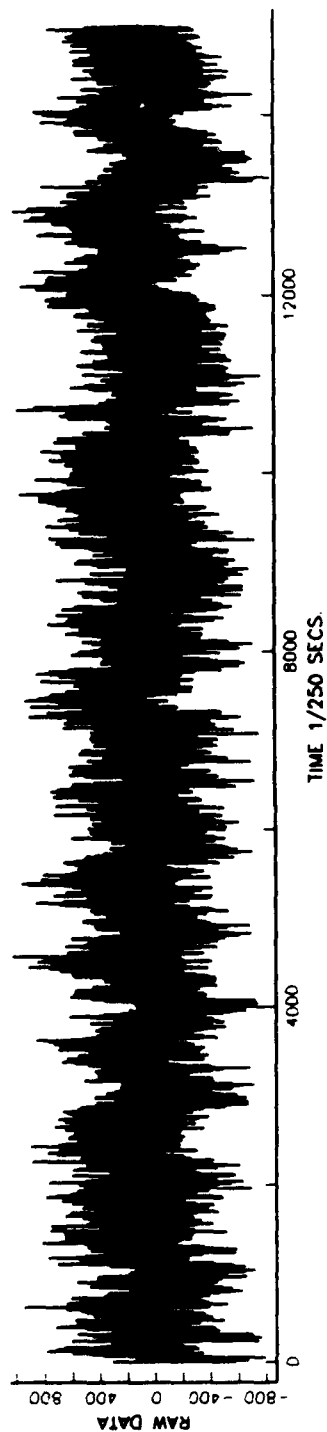
NORMAL PROBABILITY PLOT, N=15000



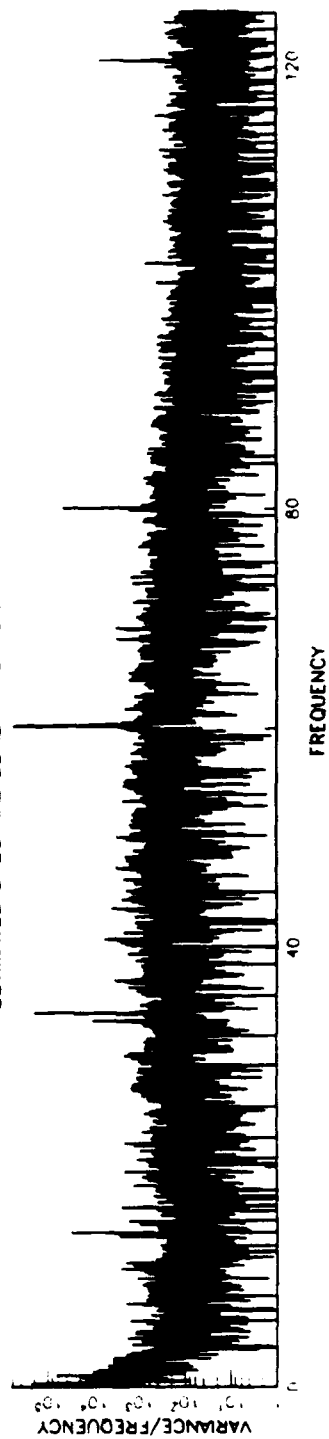
NORMAL DENSITY FUNCTION, N=15000

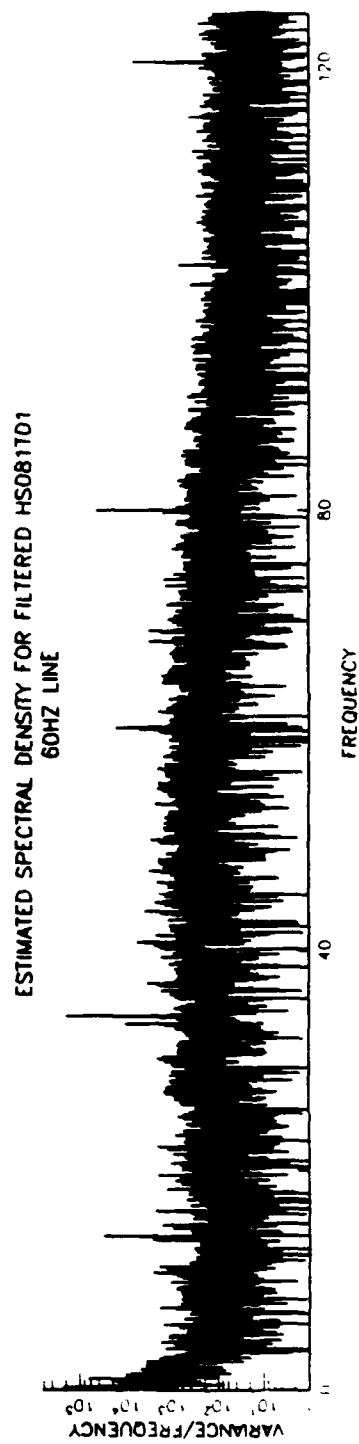
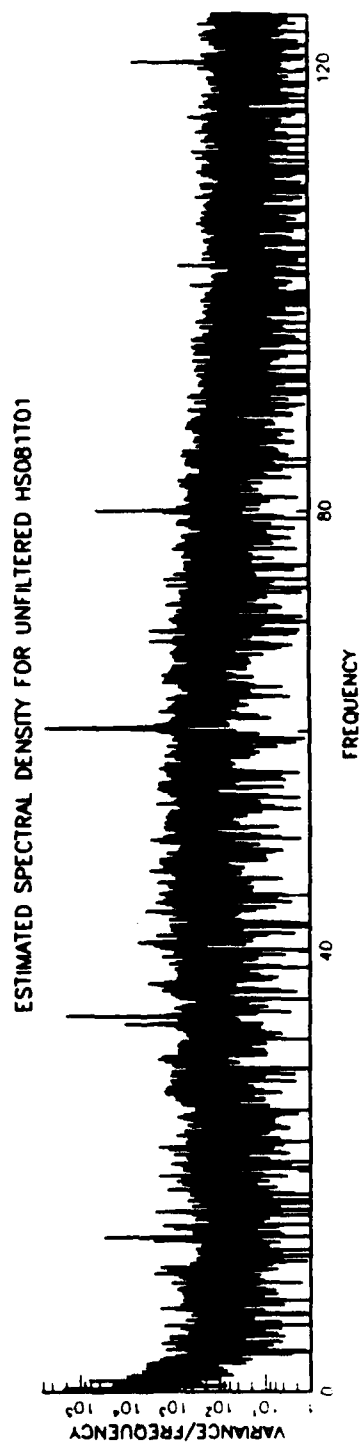


HS081T01, SAMPLED FOR MINUTE. SAMPLED AT
250 SAMPLES PER SECOND.



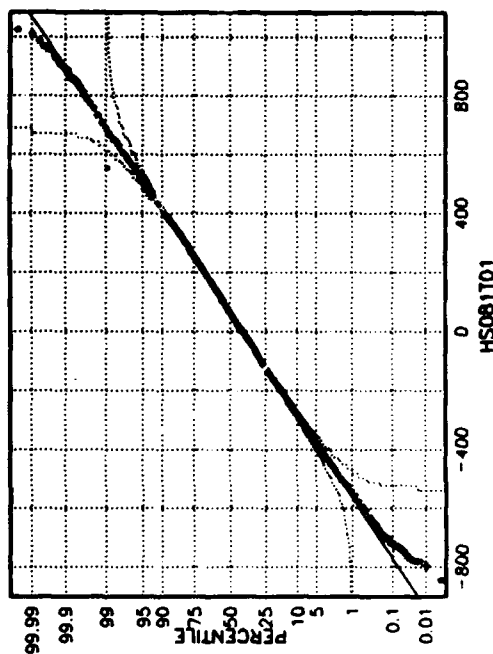
ESTIMATED SPECTRAL DENSITY FOR UNFILTERED HS081T01



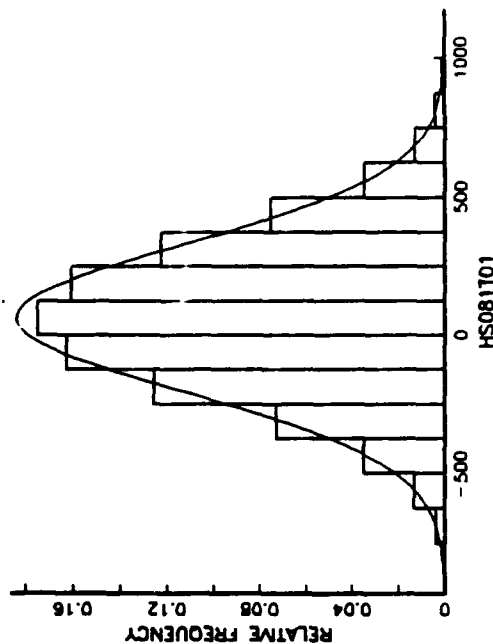


GAUSSIAN GOODNES OF FIT FOR HS081T01

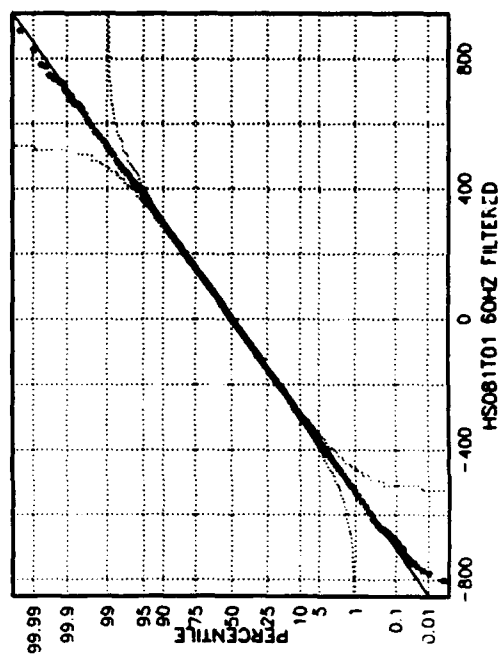
NORMAL PROBABILITY PLOT, N=15000



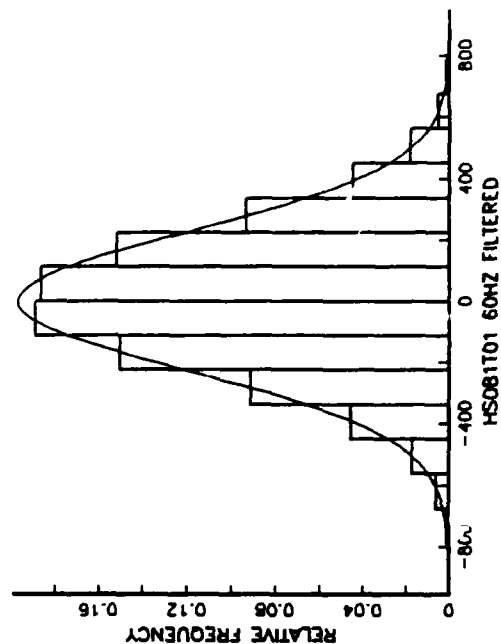
NORMAL DENSITY FUNCTION, N=15000



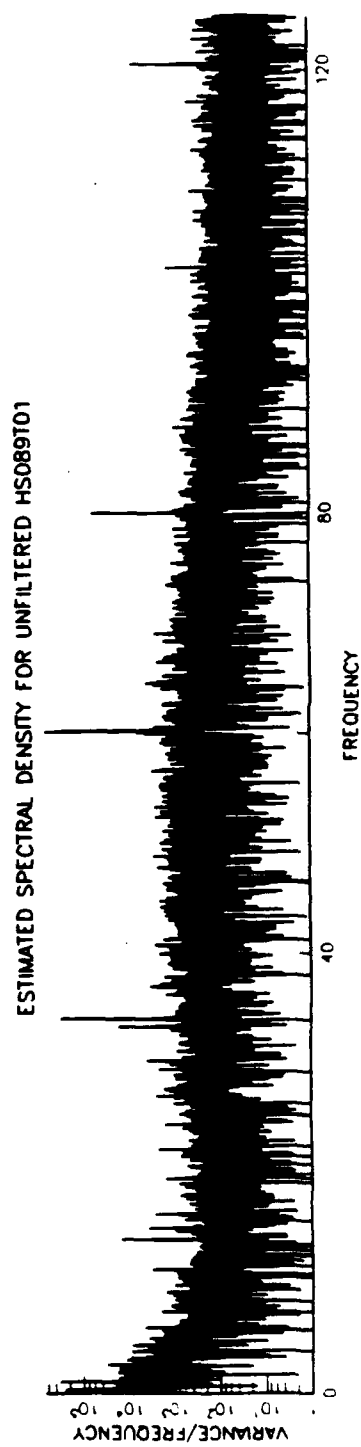
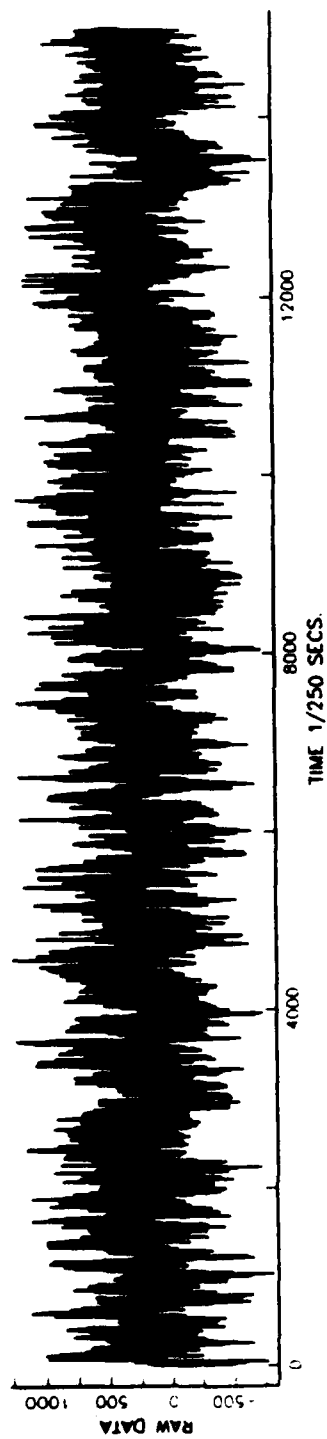
NORMAL PROBABILITY PLOT, N=15000

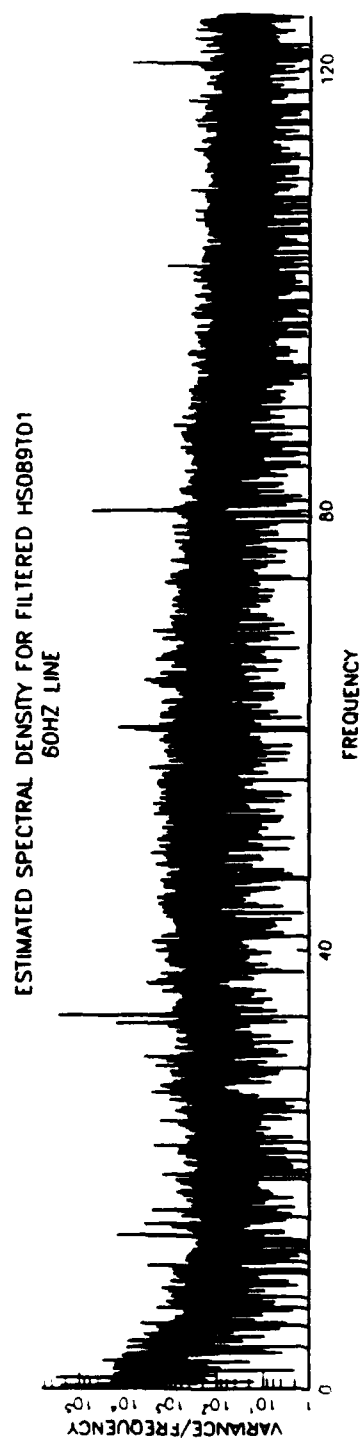
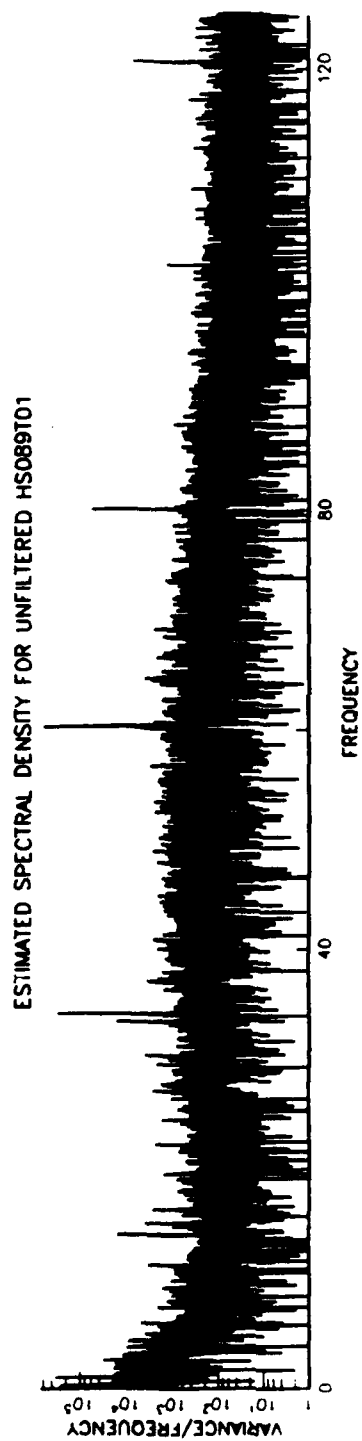


NORMAL DENSITY FUNCTION, N=15000



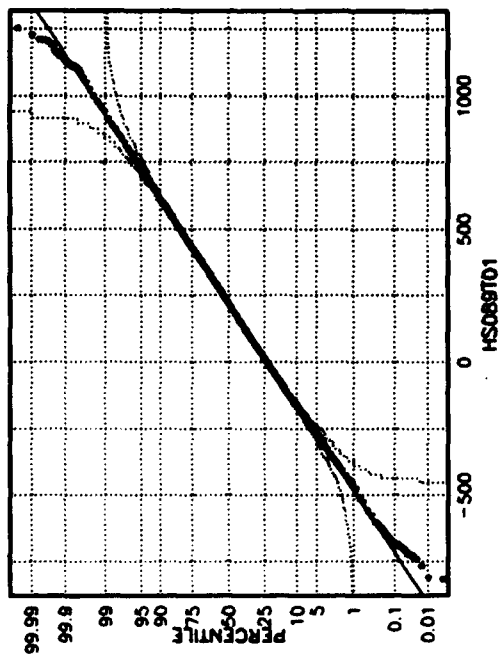
HS089T01, SAMPLED FOR MINUTE. SAMPLED AT
250 SAMPLES PER SECOND.



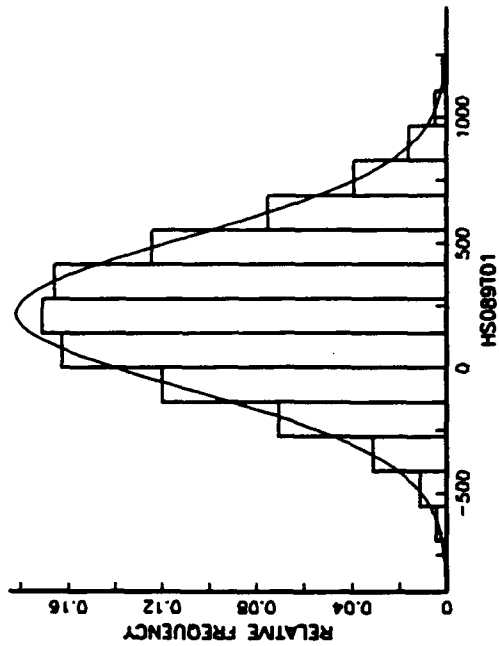


GAUSSIAN GOODNES OF FIT FOR HS089T01

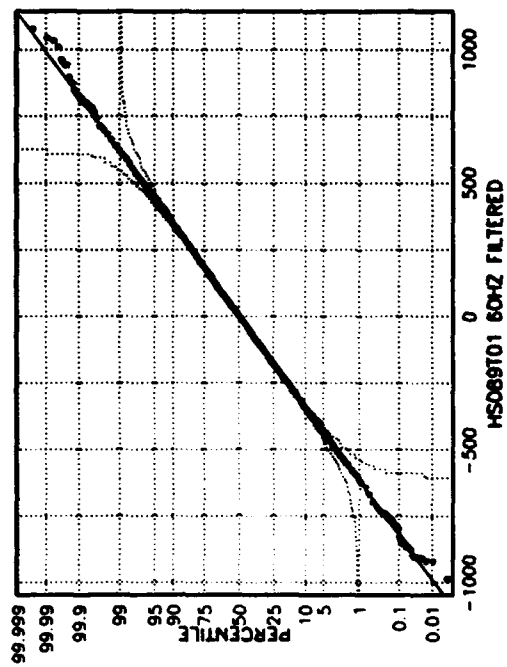
NORMAL PROBABILITY PLOT, N=15000



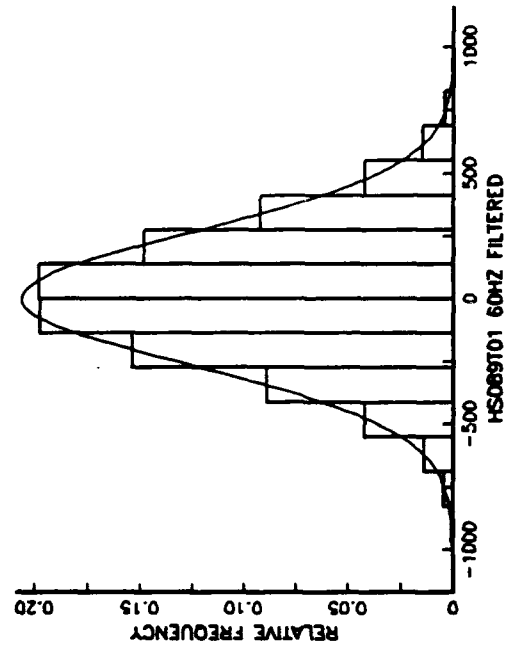
NORMAL DENSITY FUNCTION, N=15000



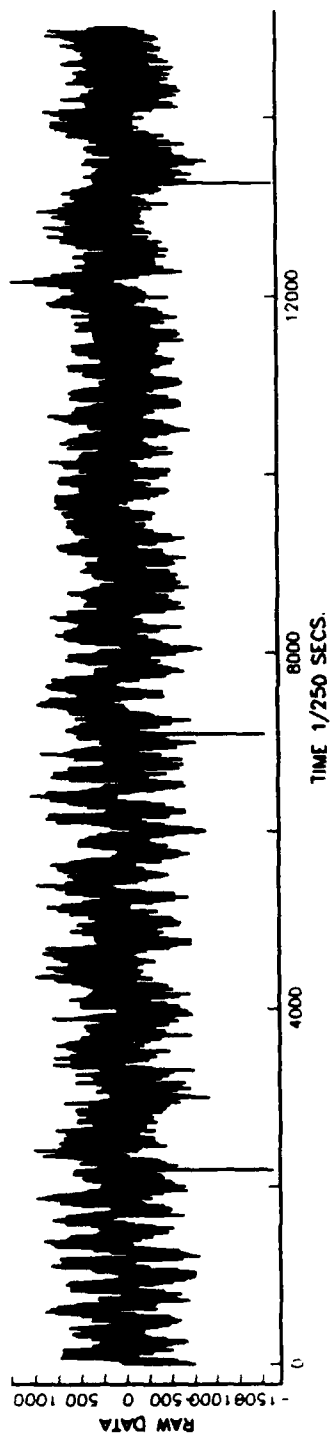
NORMAL PROBABILITY PLOT, N=15000



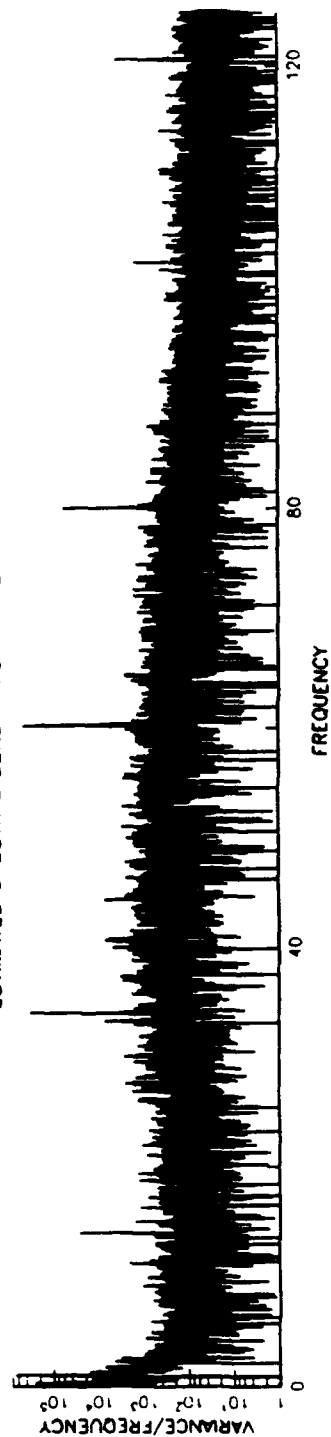
NORMAL DENSITY FUNCTION, N=15000

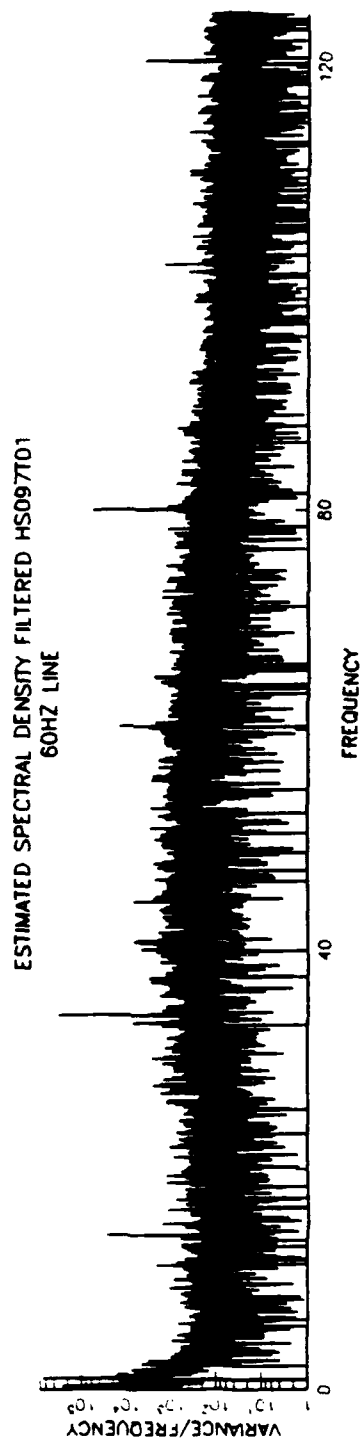
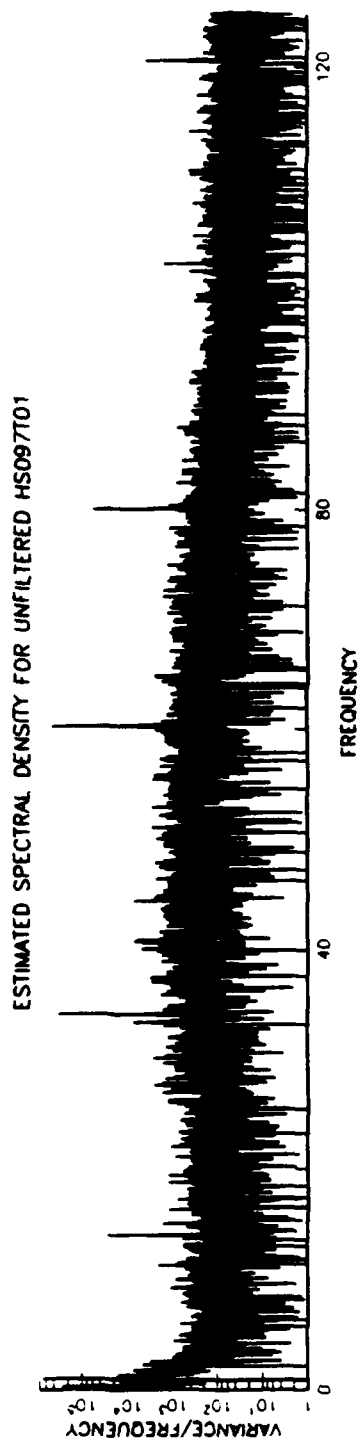


HS097T01, SAMPLED FOR 1 MINUTE. SAMPLED AT
250 SAMPLES PER SECOND.



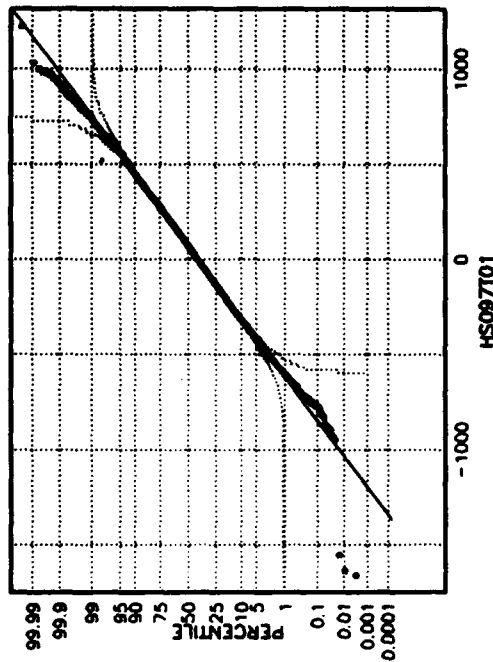
ESTIMATED SPECTRAL DENSITY FOR UNFILTERED HS097T01



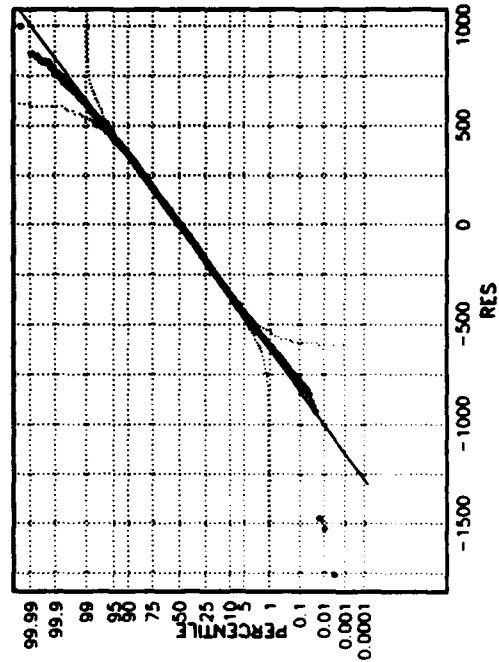


GAUSSIAN GOODNESS OF FIT FOR HS097T01

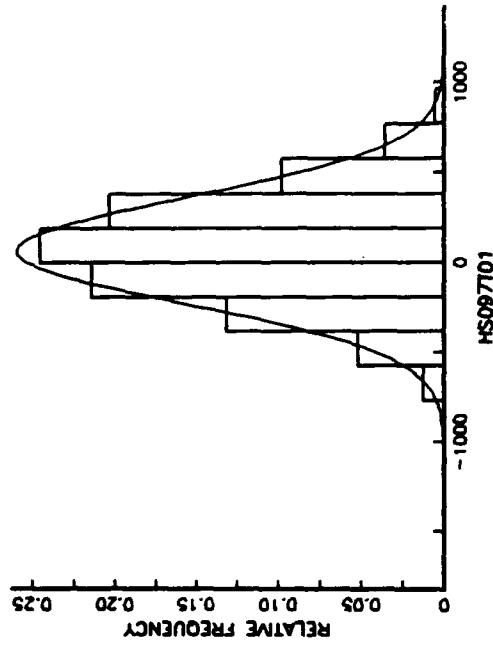
NORMAL PROBABILITY PLOT, N=15000



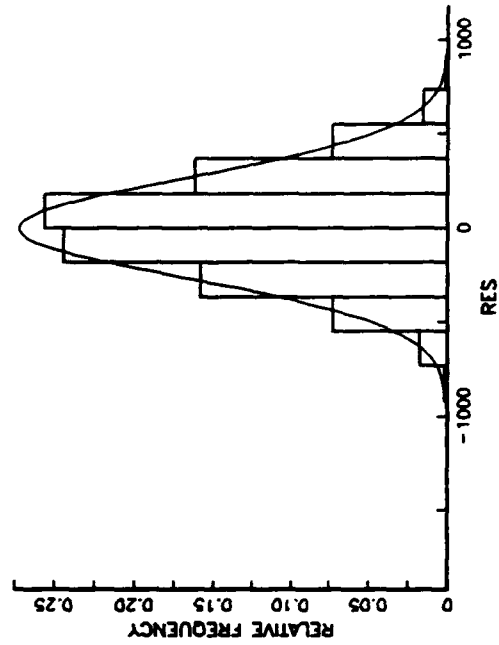
NORMAL PROBABILITY PLOT, N=15000



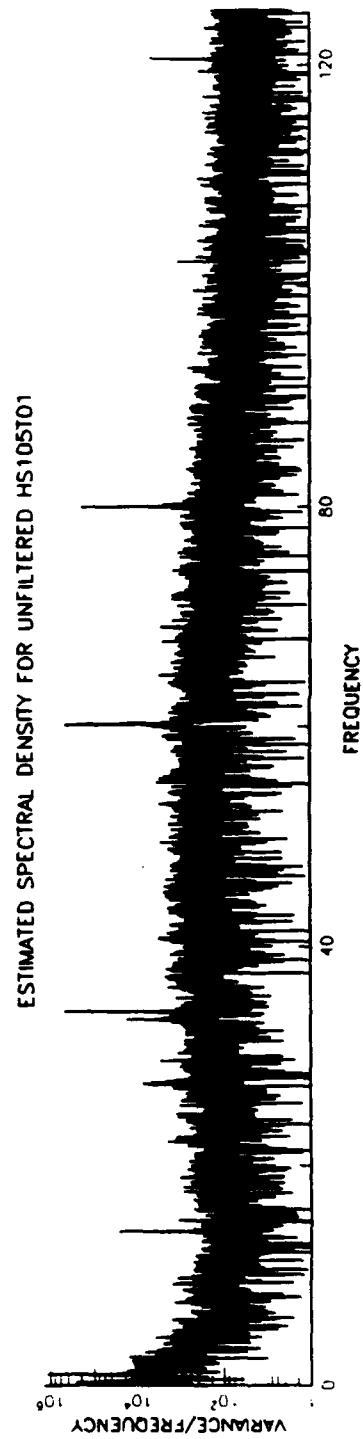
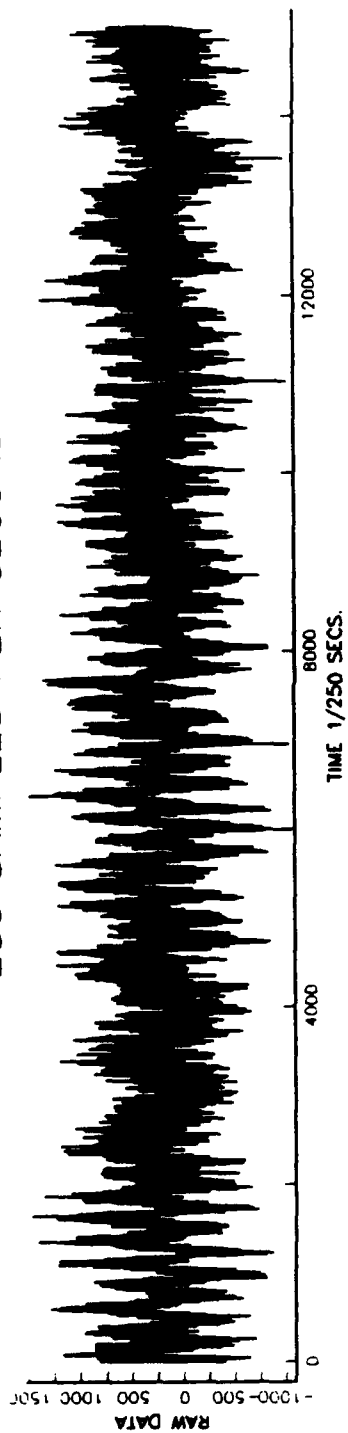
NORMAL DENSITY FUNCTION, N=15000

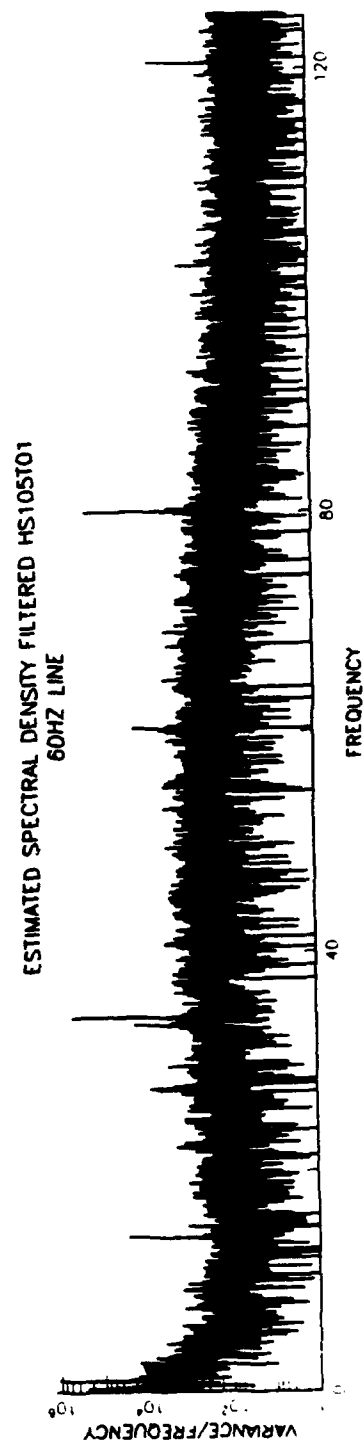
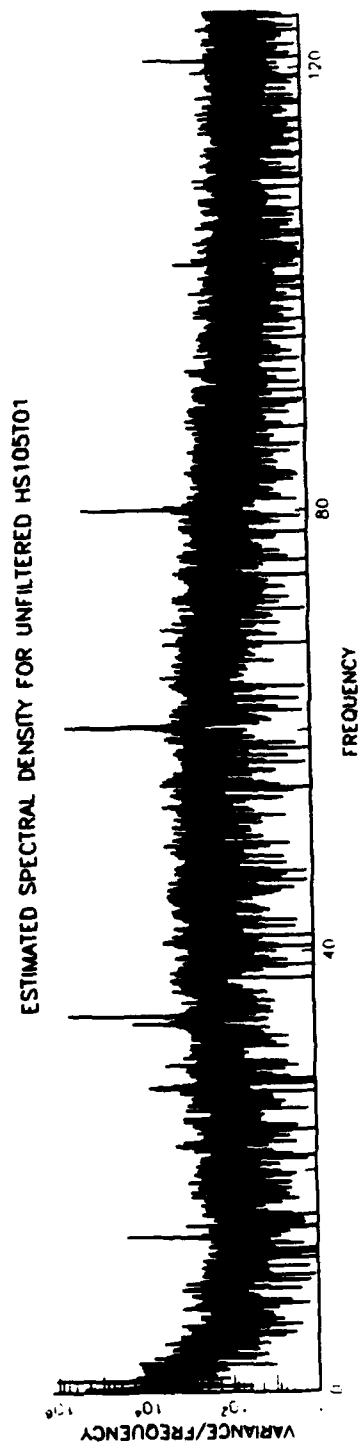


NORMAL DENSITY FUNCTION, N=15000



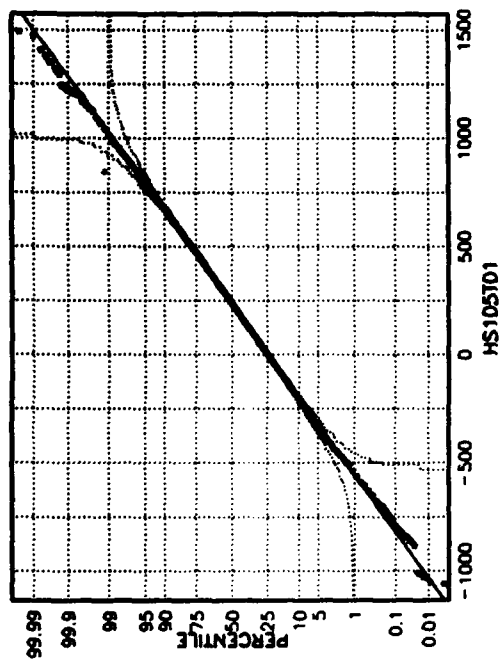
HS105T01,SAMPLED FOR 1 MINUTE. SAMPLED AT
250 SAMPLES PER SECOND.



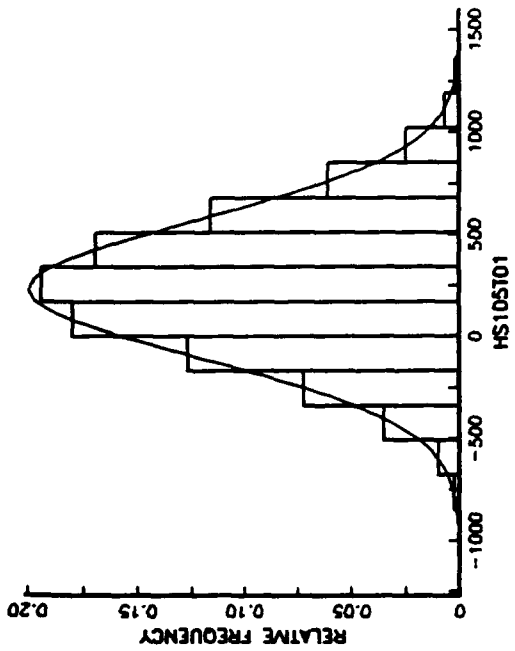


GAUSSIAN GOODNESS OF FIT FOR HS105T01

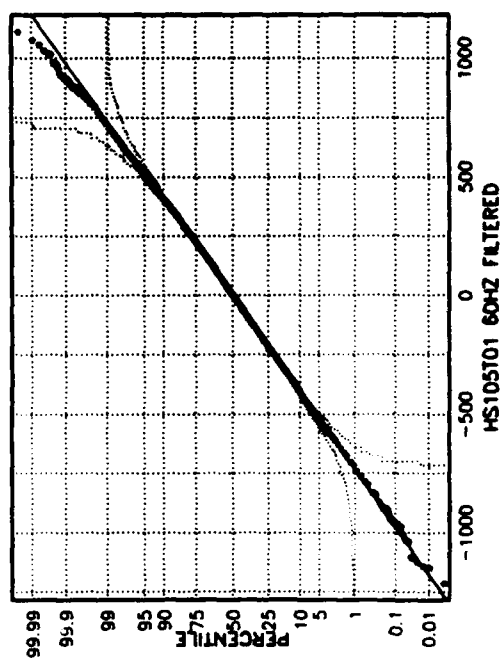
NORMAL PROBABILITY PLOT, N=15000



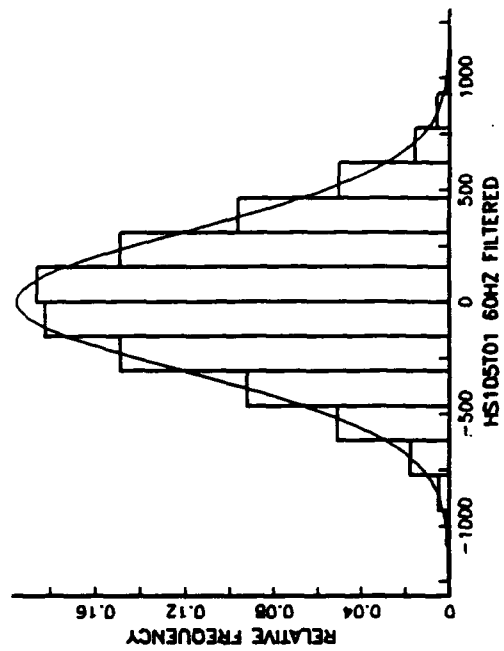
NORMAL DENSITY FUNCTION, N=15000



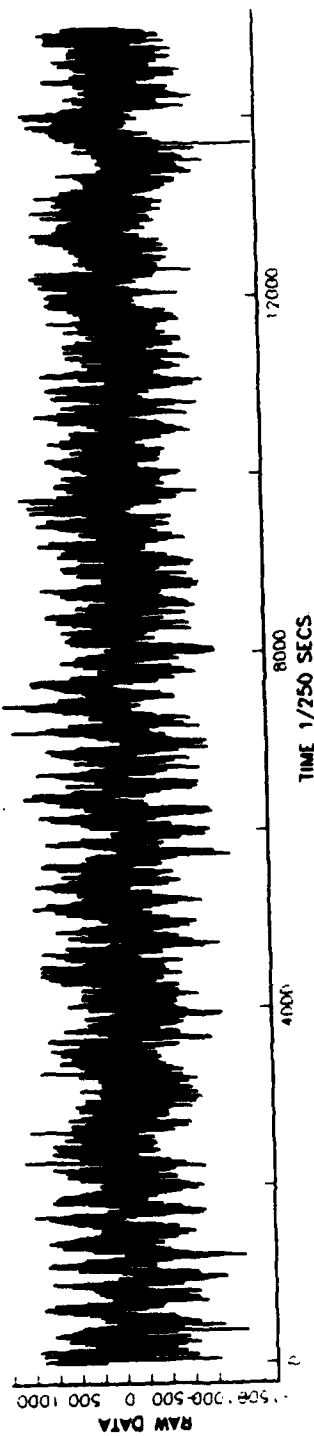
NORMAL PROBABILITY PLOT, N=15000



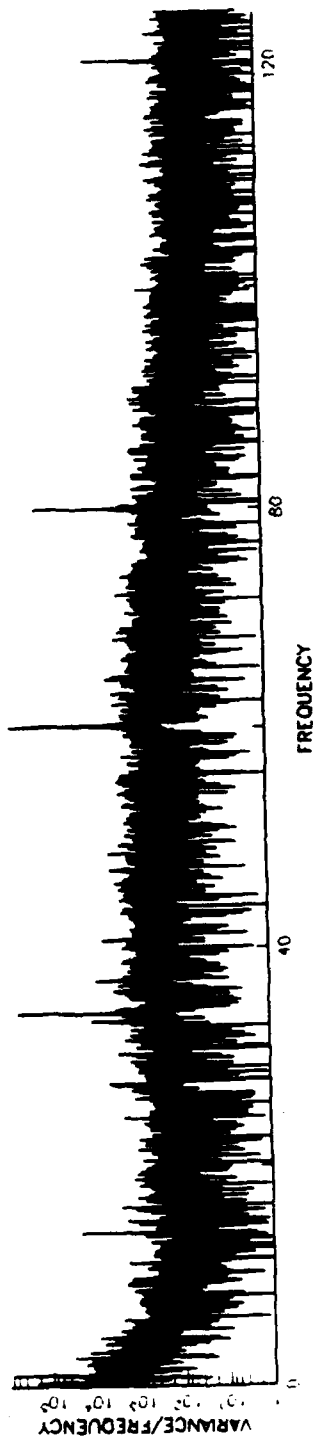
NORMAL DENSITY FUNCTION, N=15000

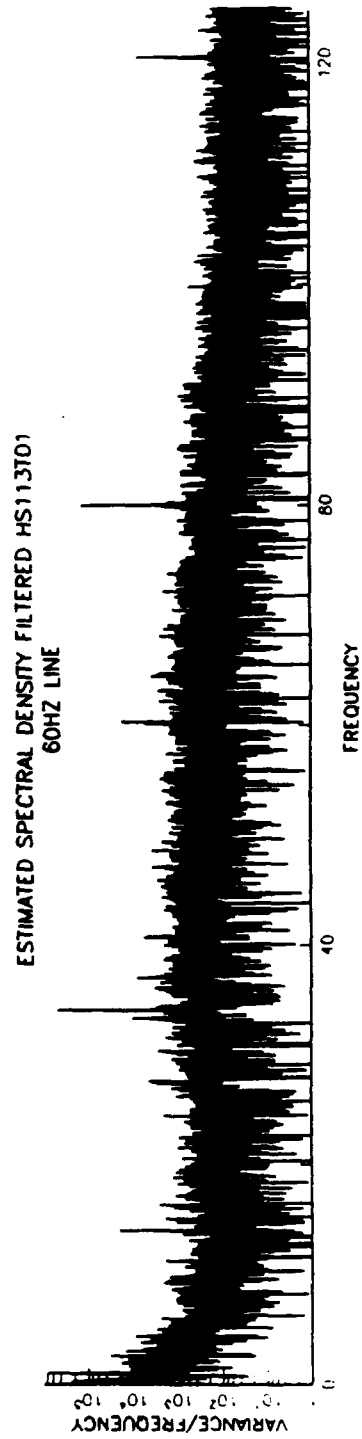
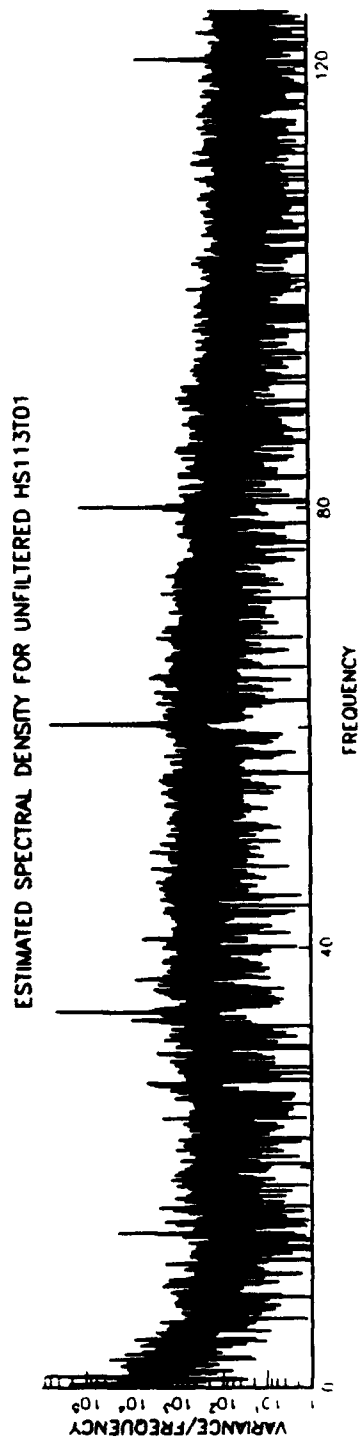


HS113T01, SAMPLED FOR 1 MINUTE. SAMPLED AT
250 SAMPLES PER SECOND.



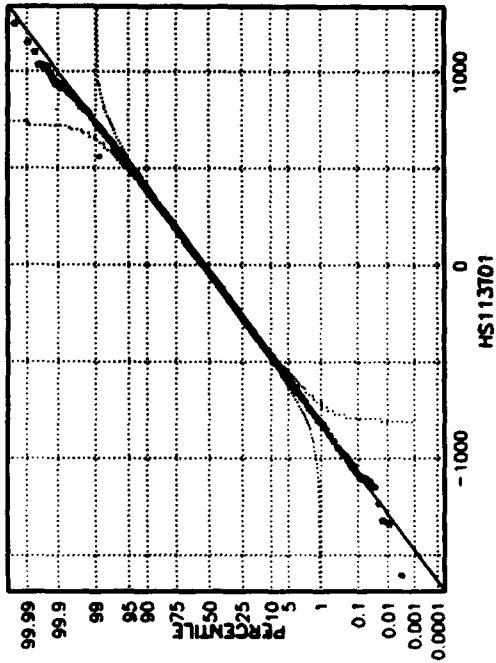
ESTIMATED SPECTRAL DENSITY FOR UNFILTERED HS105T01



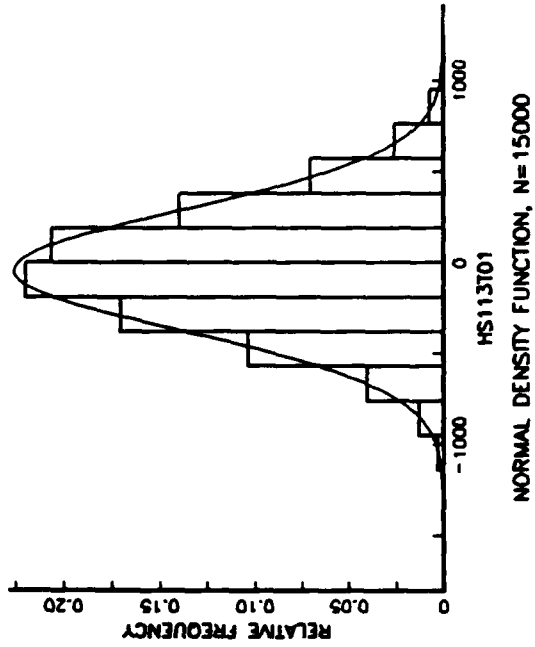


GAUSSIAN GOODNESS OF FIT FOR HS113T01

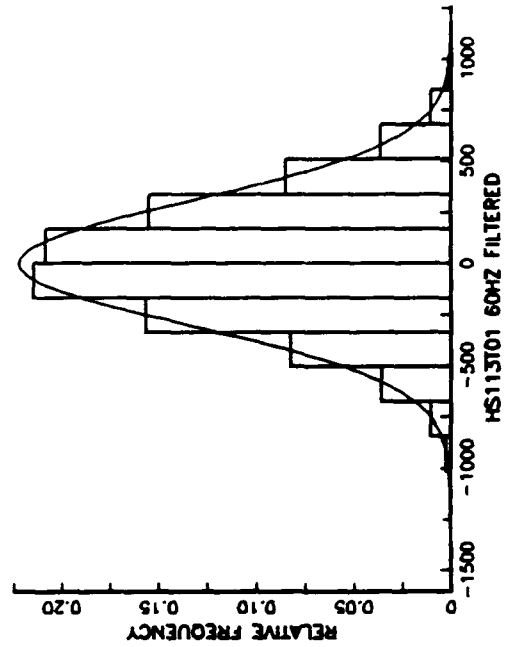
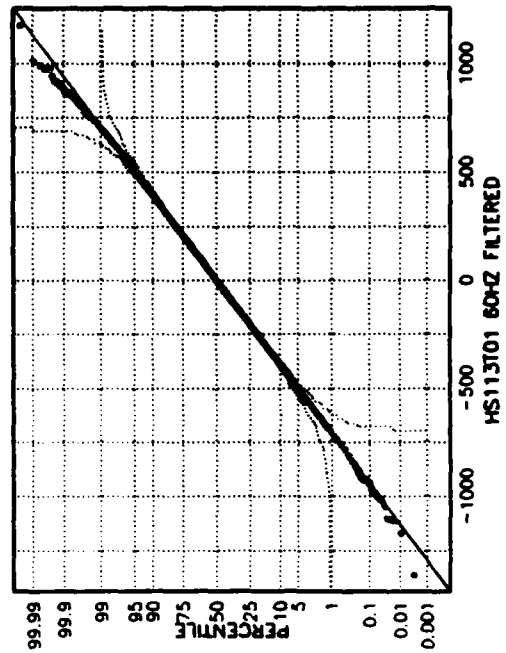
NORMAL PROBABILITY PLOT, N=15000



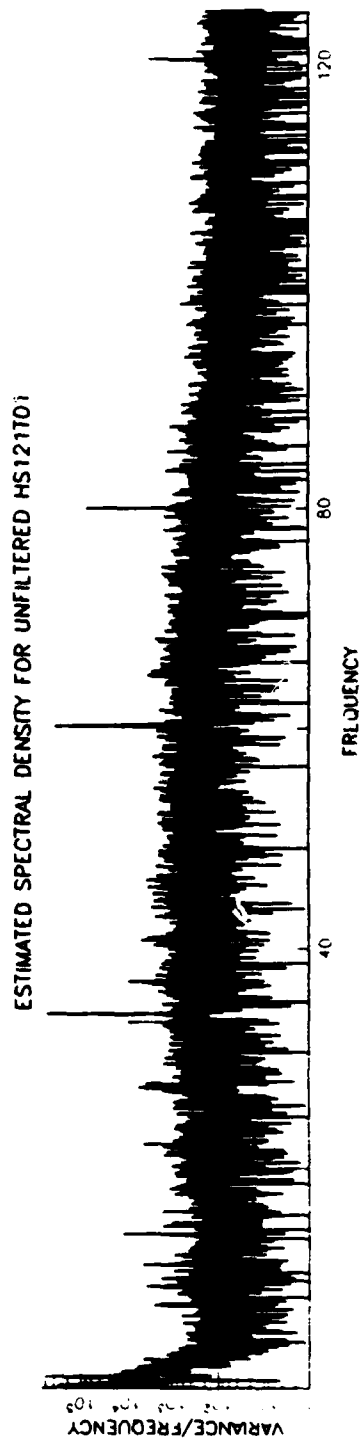
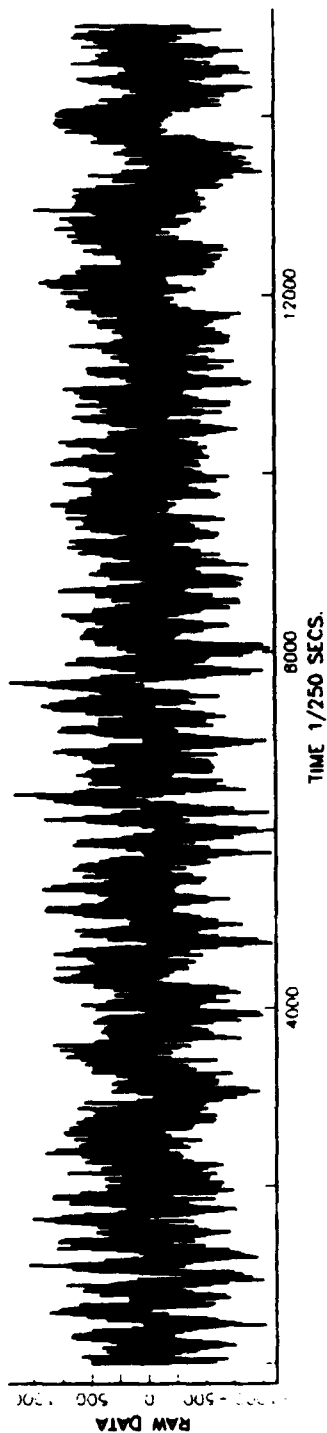
NORMAL DENSITY FUNCTION, N=15000

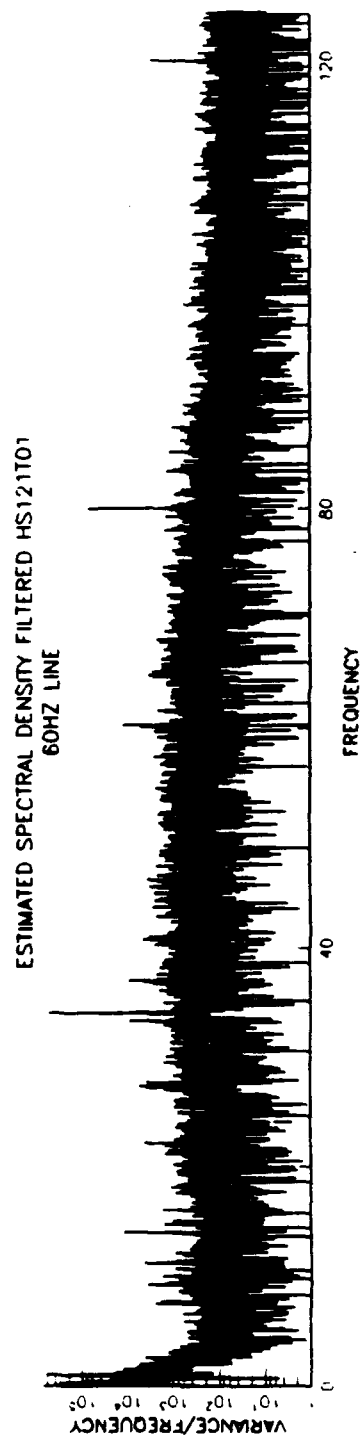
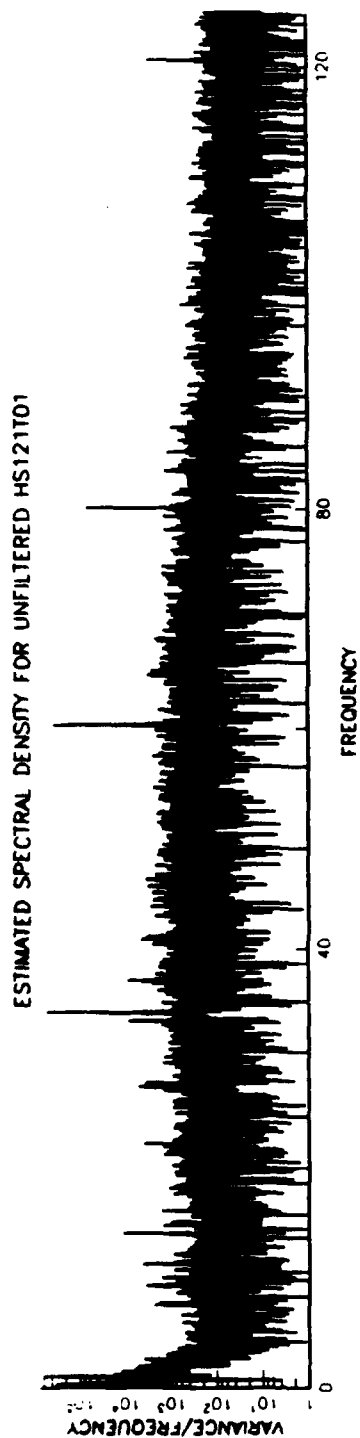


NORMAL PROBABILITY PLOT, N=15000



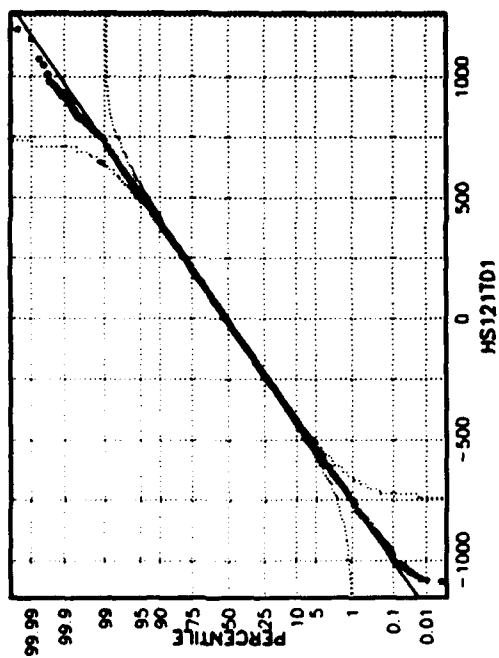
HS121T01, SAMPLED FOR 1 MINUTE. SAMPLED AT
250 SAMPLES PER SECOND.



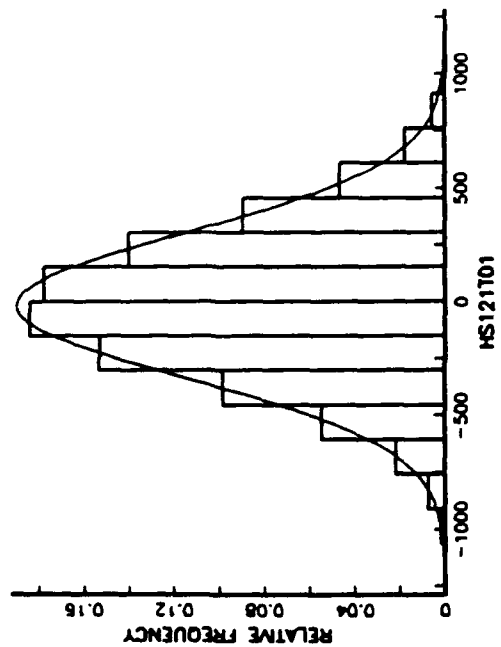


GAUSSIAN GOODNESS OF FIT FOR HS121T01

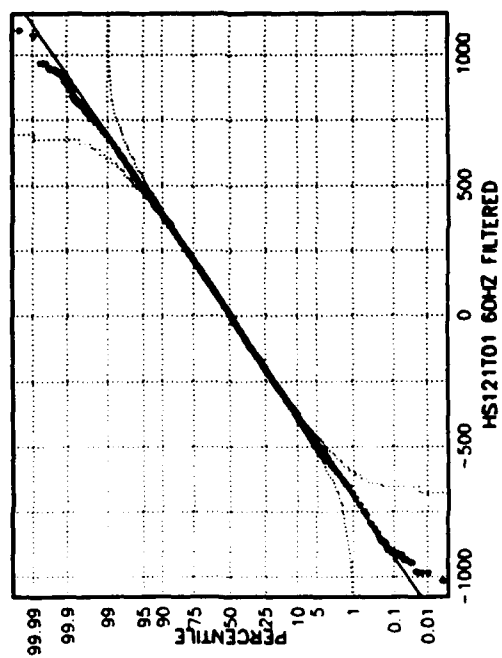
NORMAL PROBABILITY PLOT, N=15000



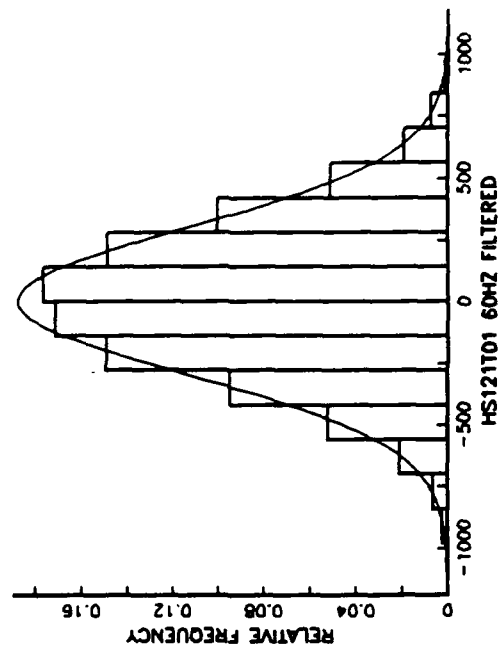
NORMAL DENSITY FUNCTION, N=15000



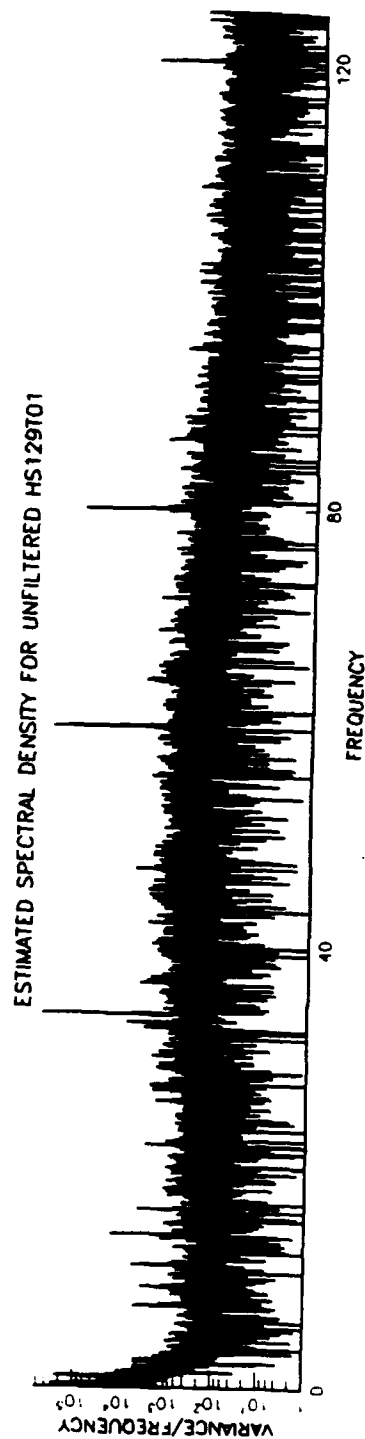
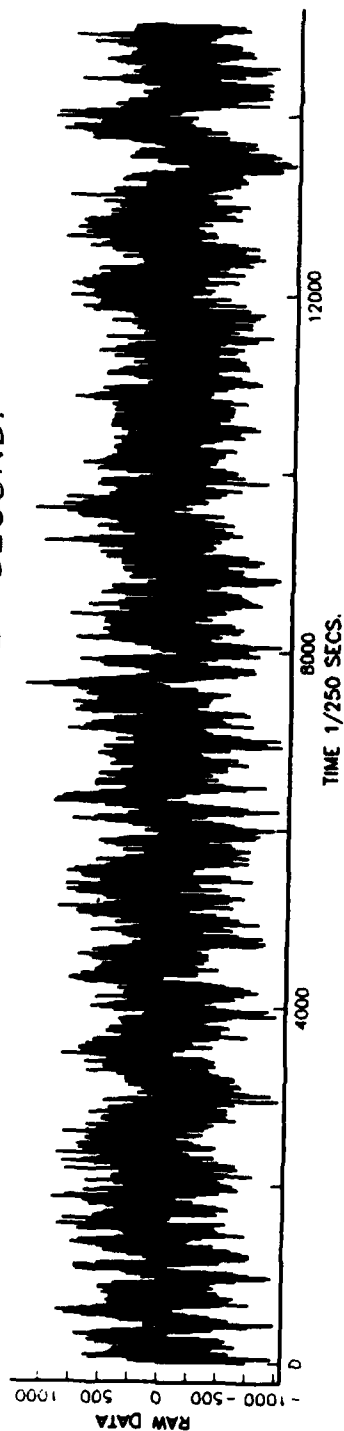
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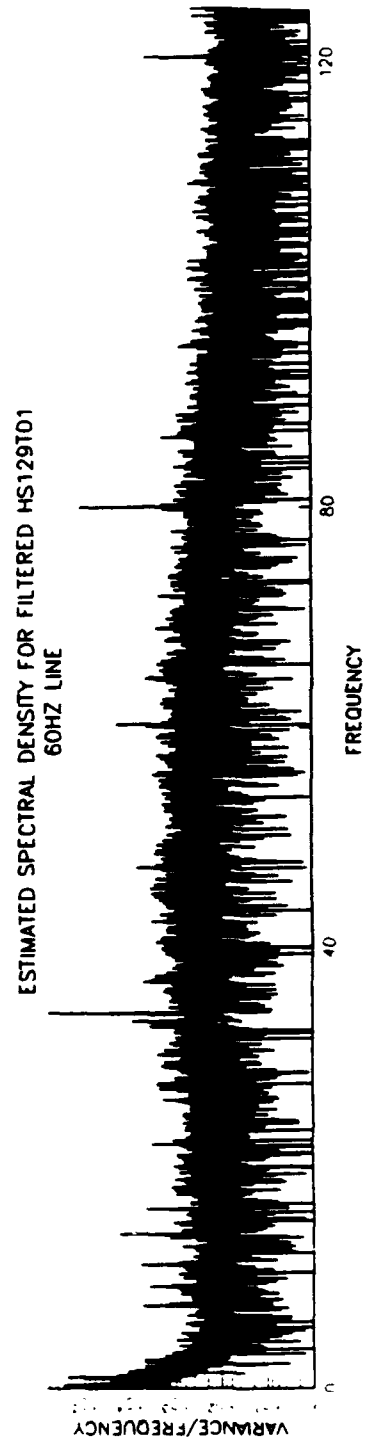
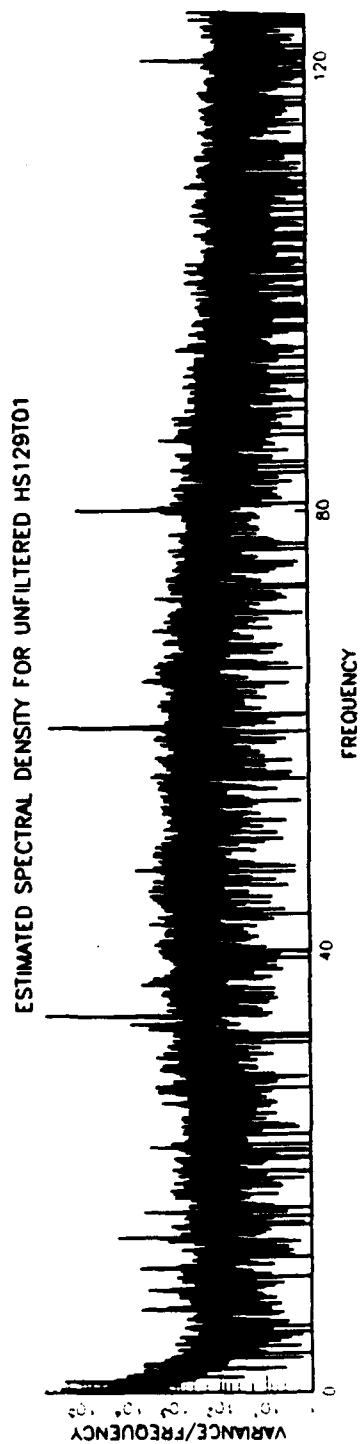


NORMAL DENSITY FUNCTION, N=15000



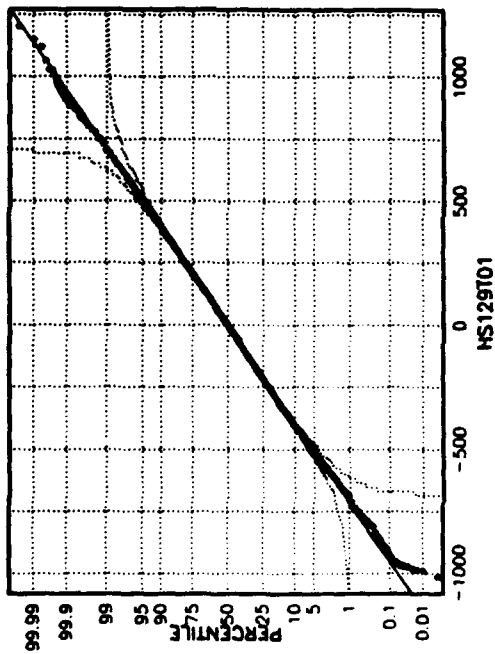
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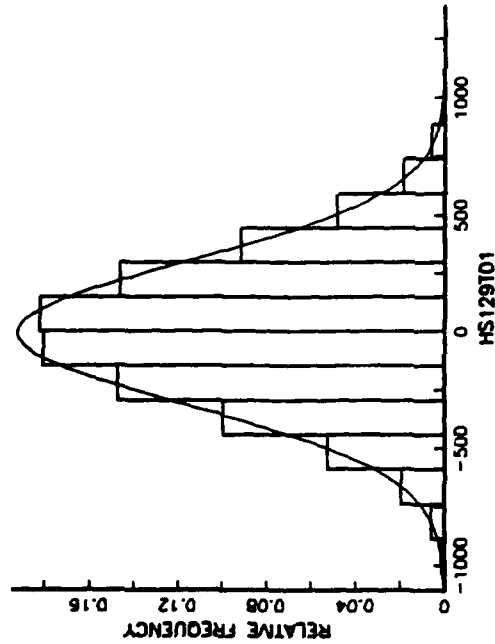


GAUSSIAN GOODNESS OF FIT FOR HS129T01

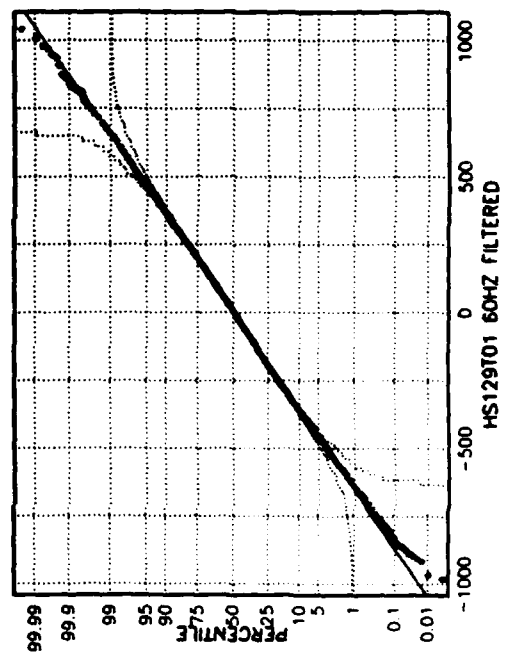
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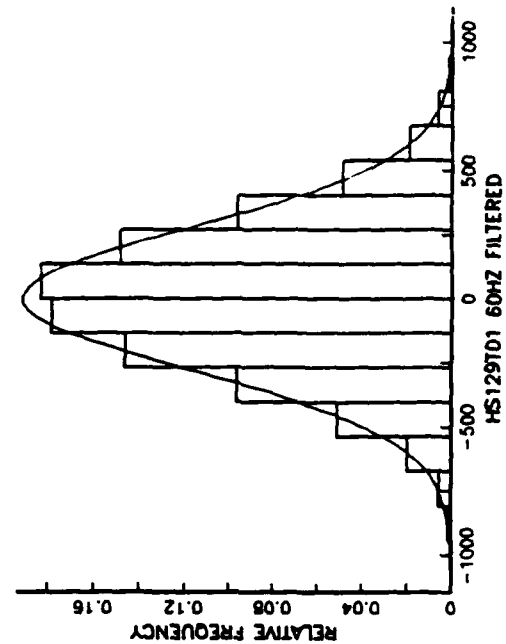
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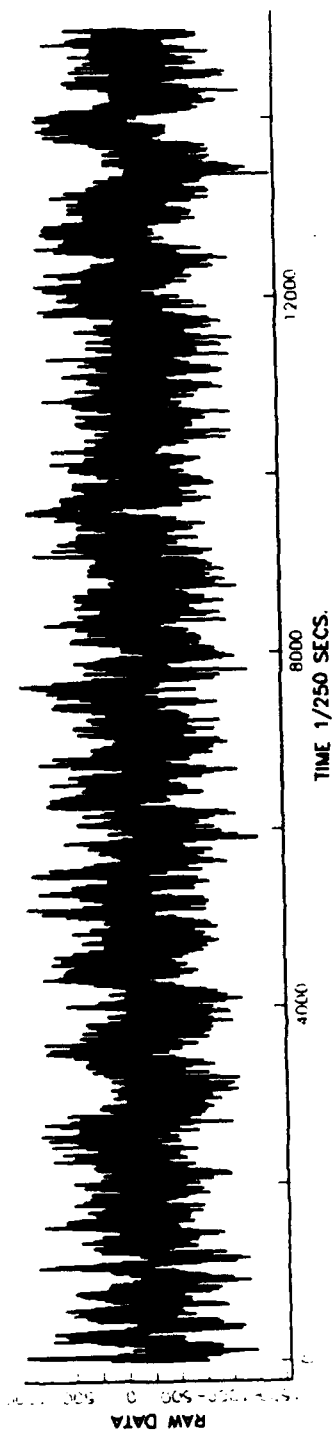
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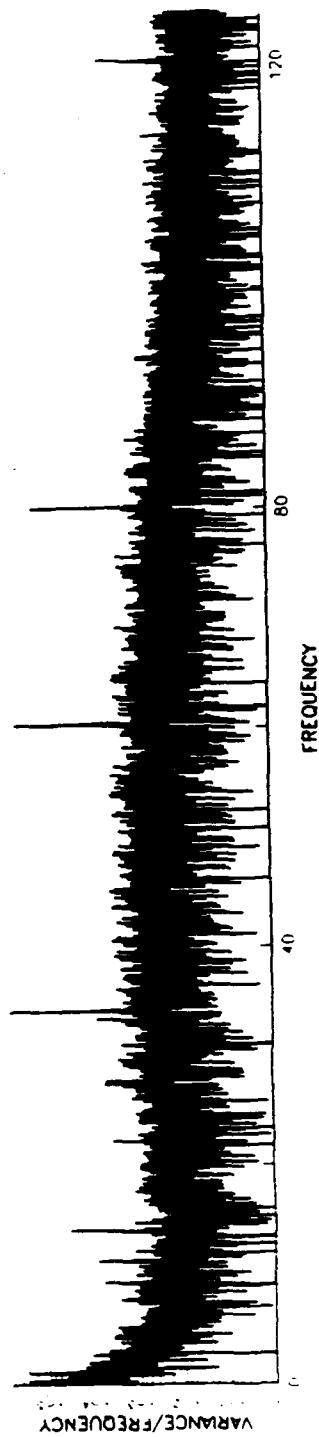
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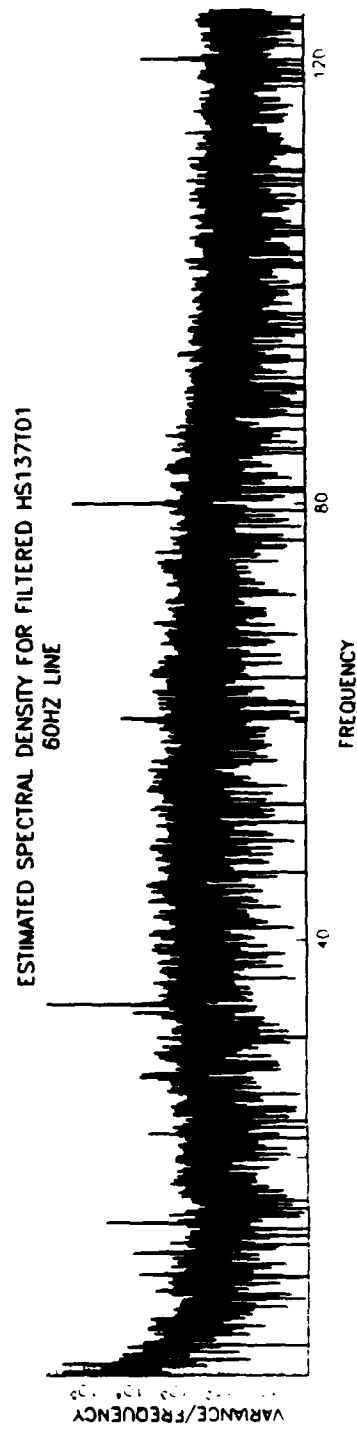
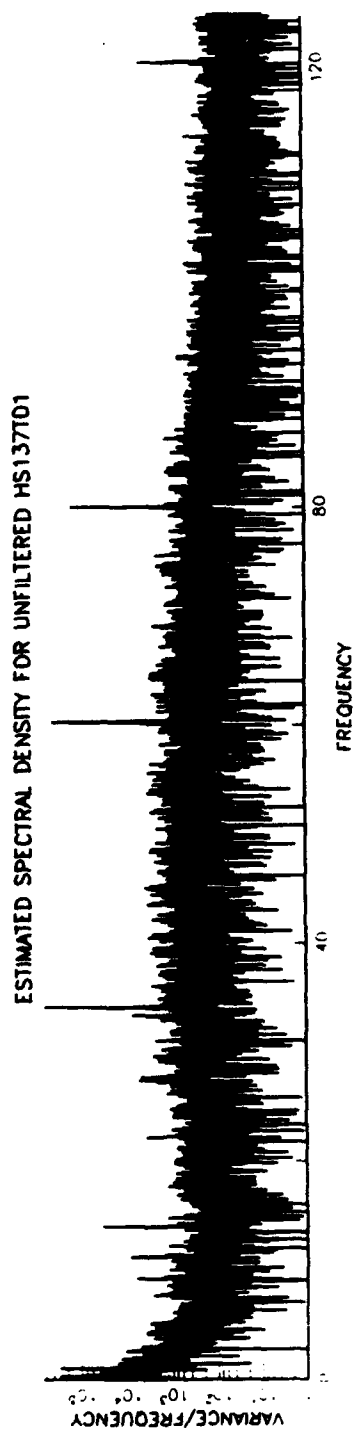


HS137T01, SAMPLED FOR 1 MINUTE. SAMPLED AT
250 SAMPLES PER SECOND.



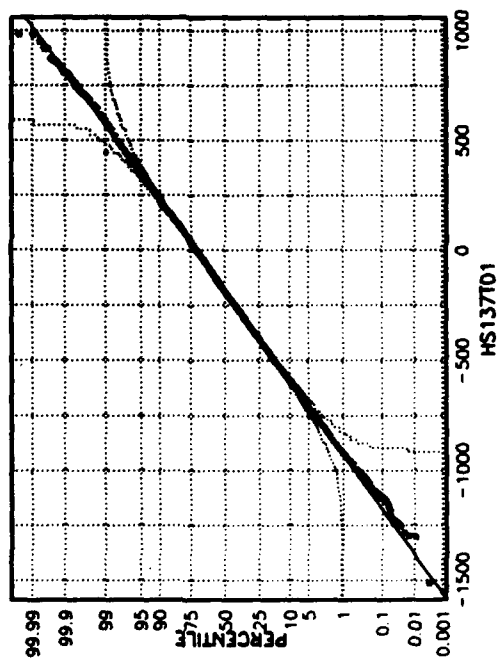
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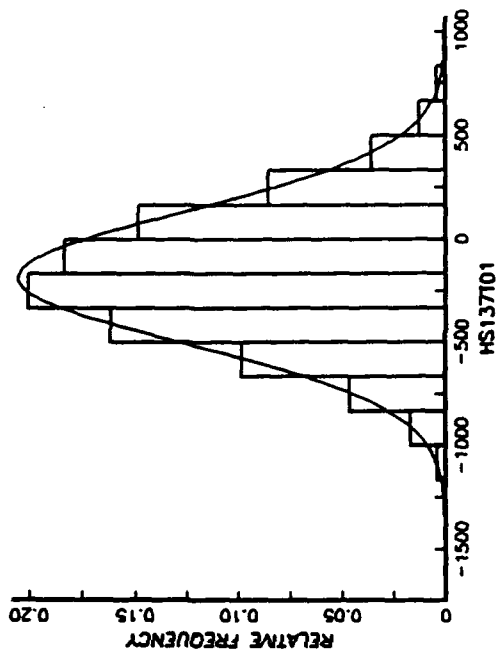


GAUSSIAN GOODNESS OF FIT FOR HS137T01

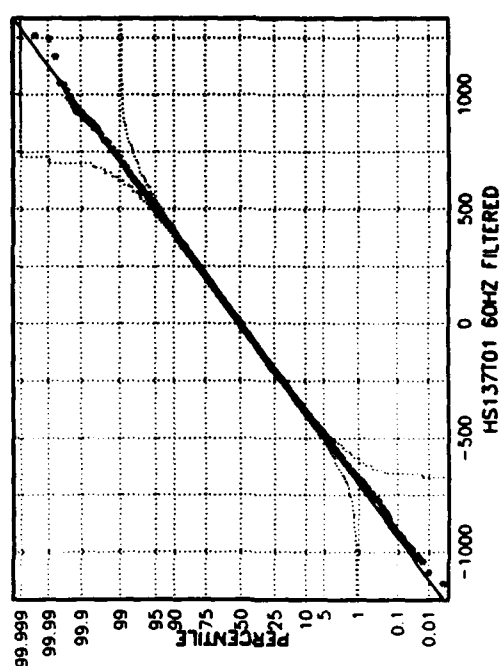
NORMAL PROBABILITY PLOT, N=15000



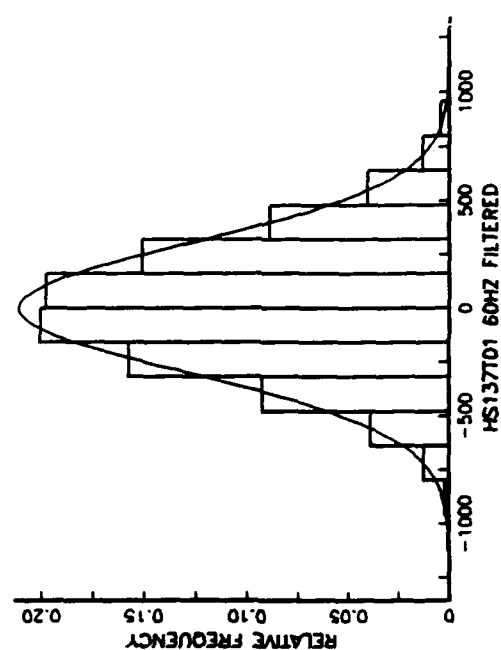
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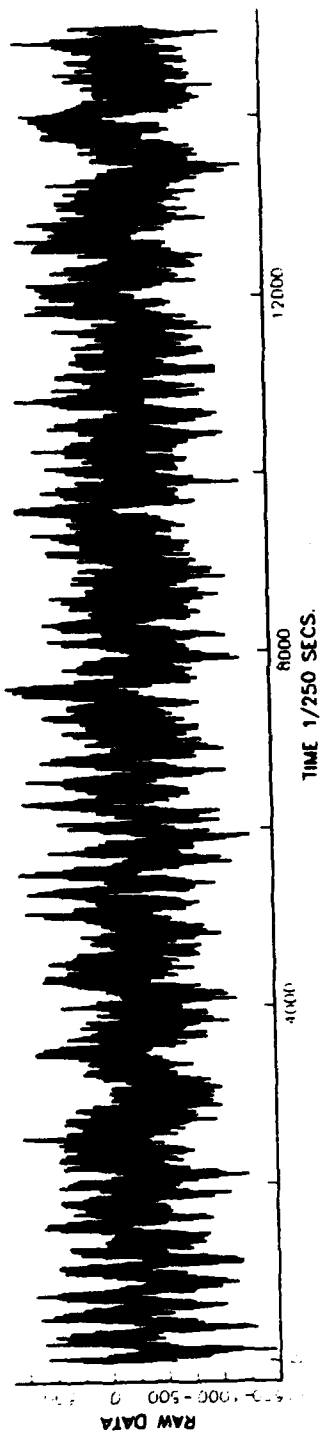
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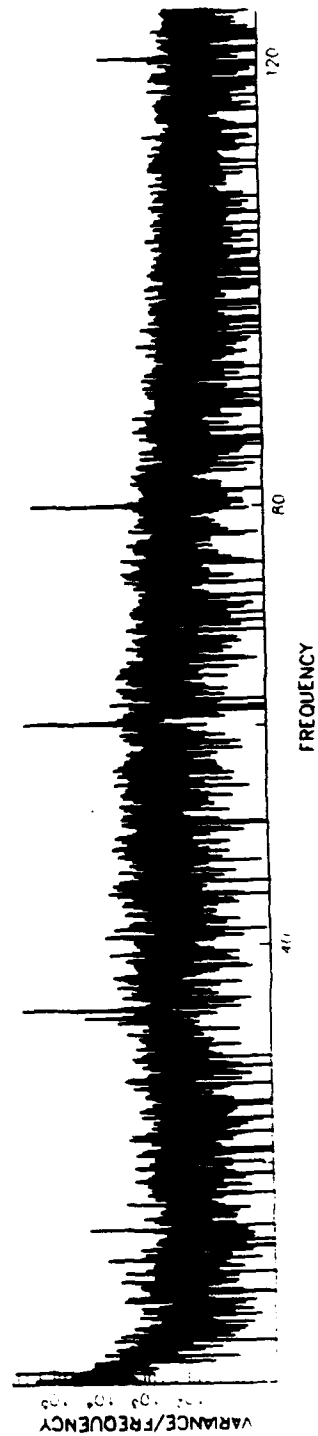
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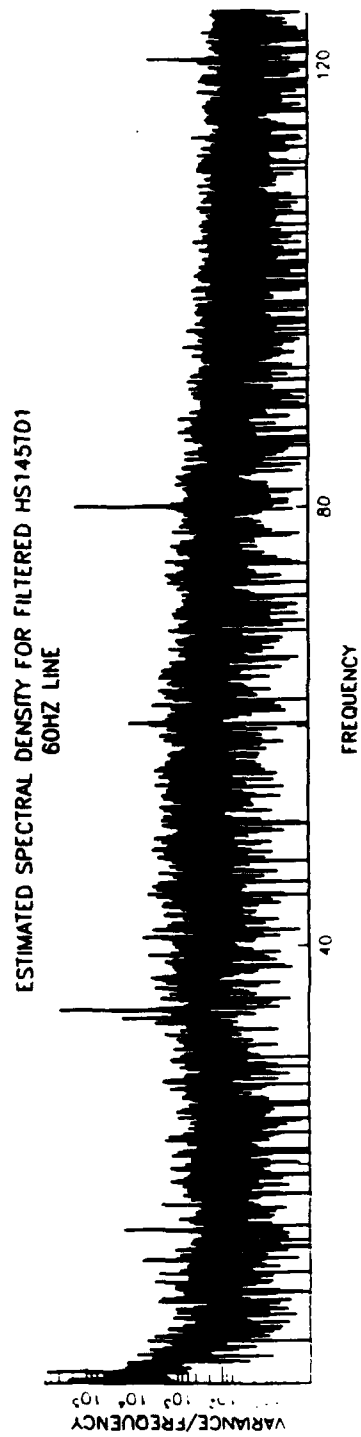
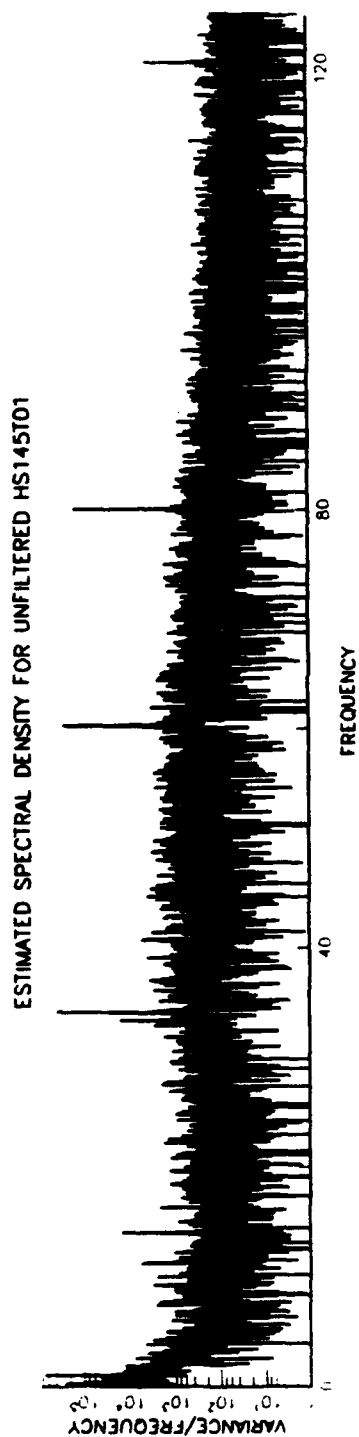


HS145T01, SAMPLED FOR 1 MINUTE. SAMPLED AT
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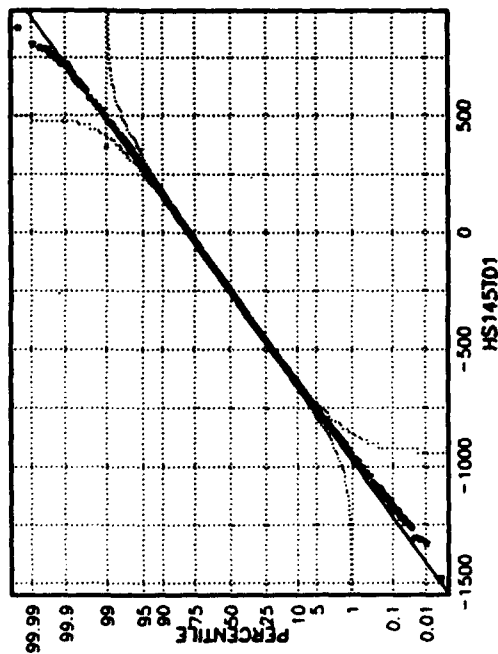
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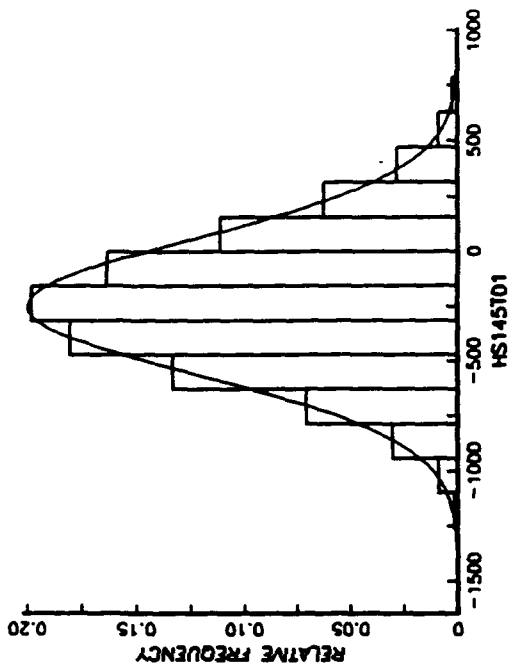


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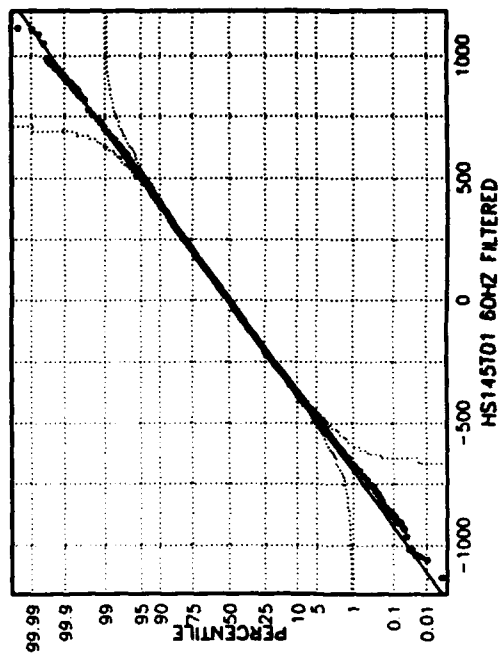
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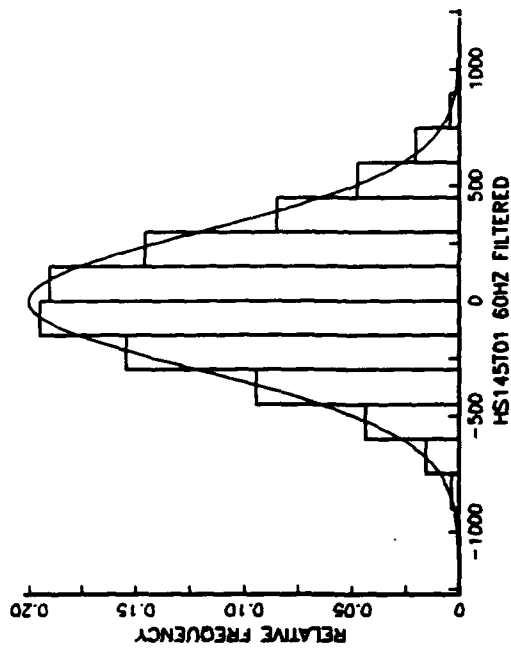
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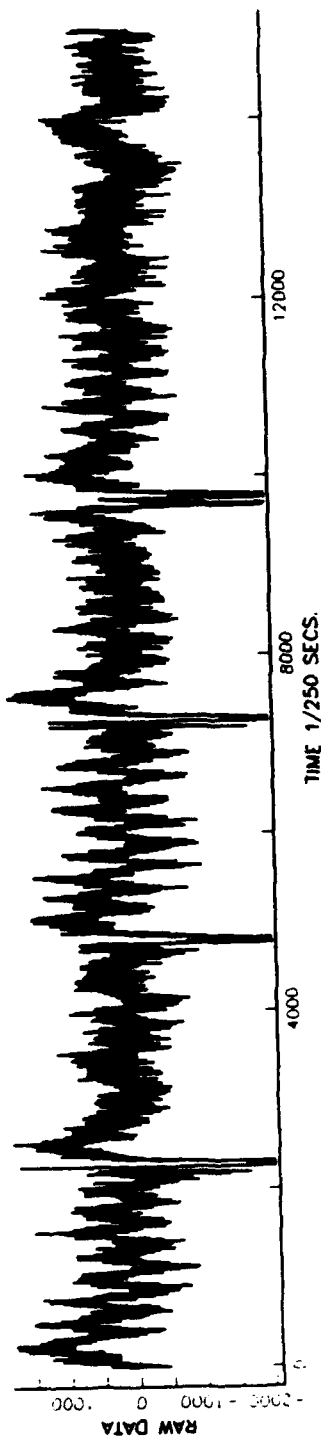
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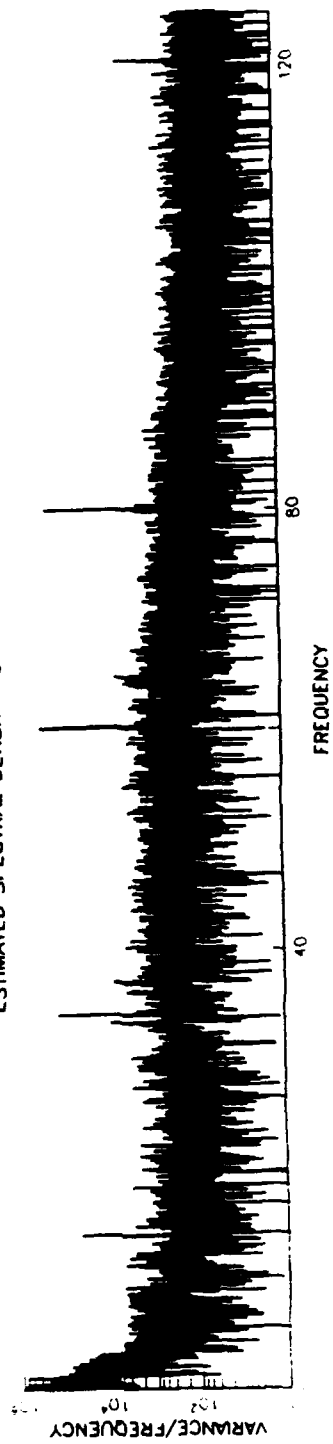
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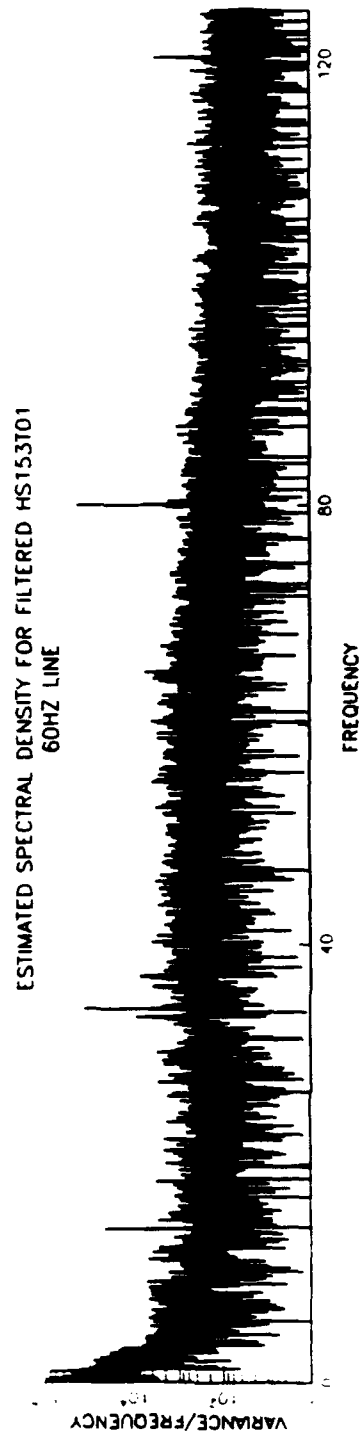
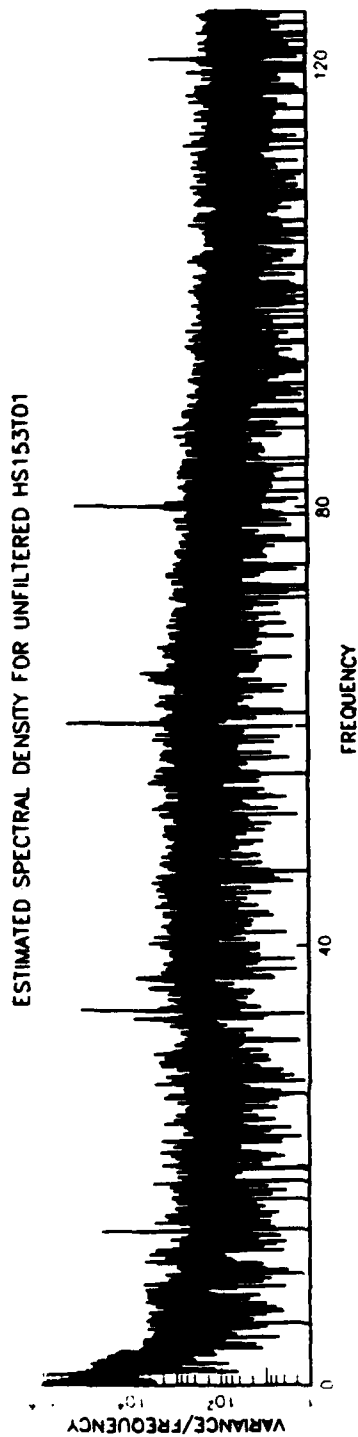


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250 SAMPLES PER SECOND.



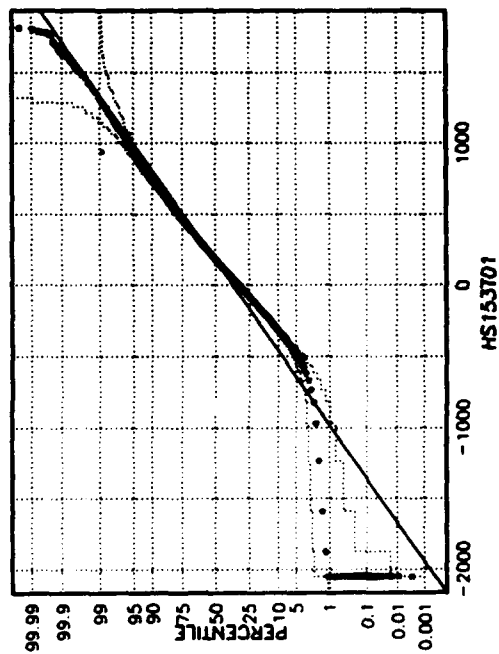
ESTIMATED SPECTRAL DENSITY FOR UNFILTERED HS153T01



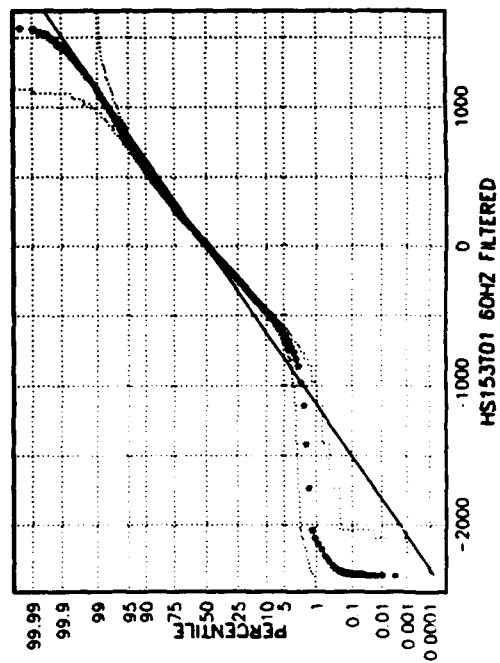


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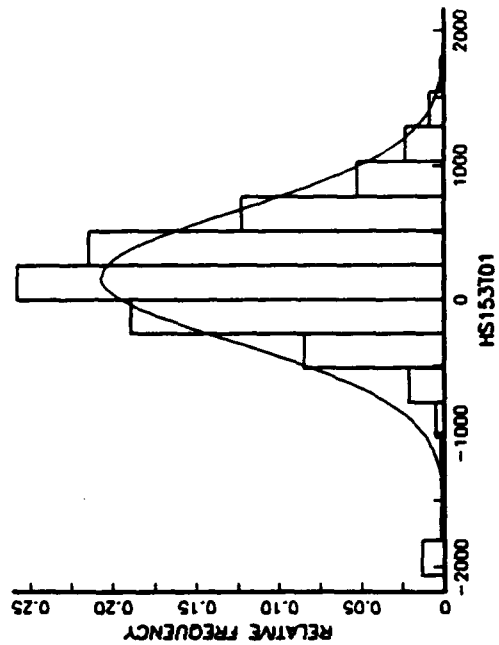
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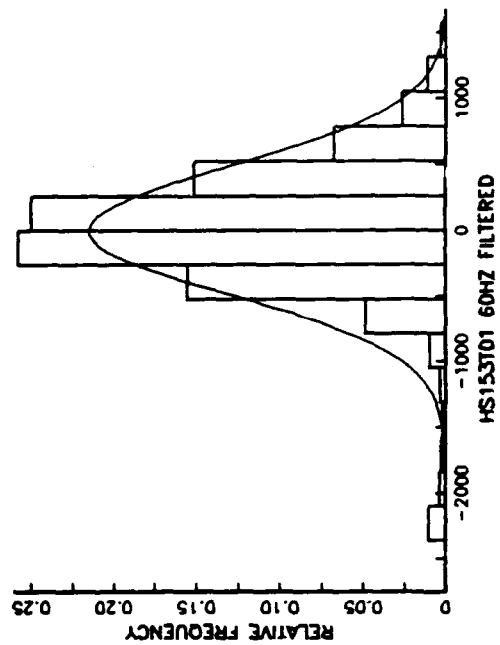
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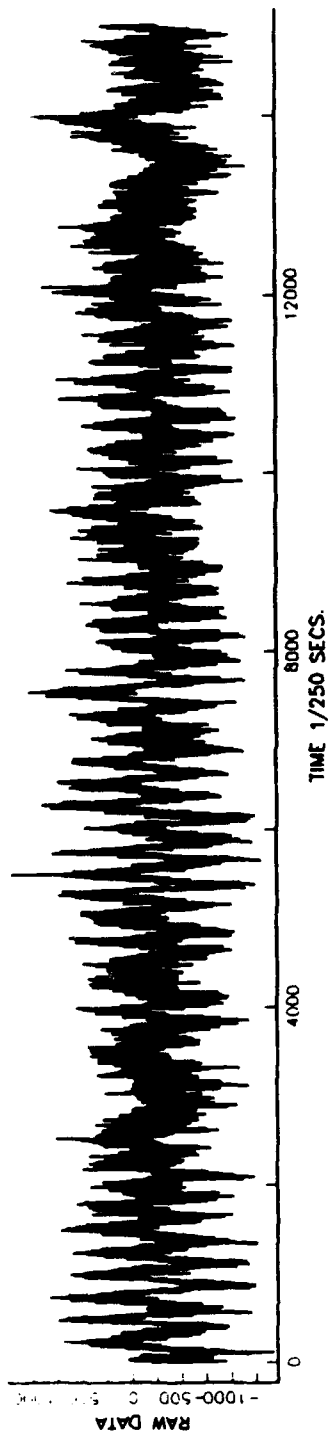
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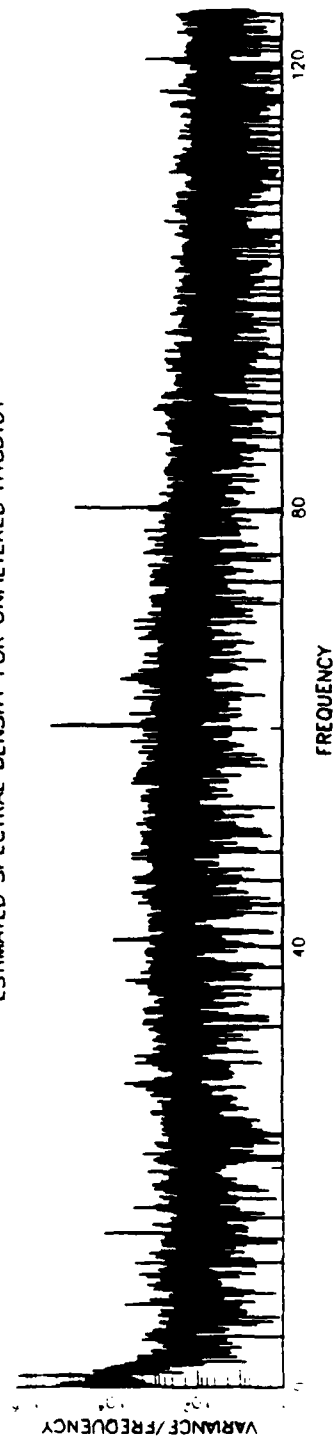
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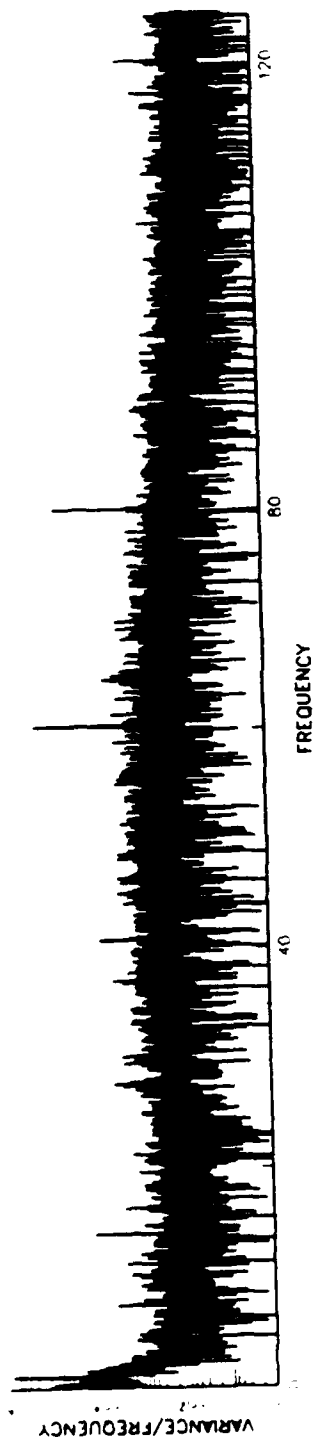
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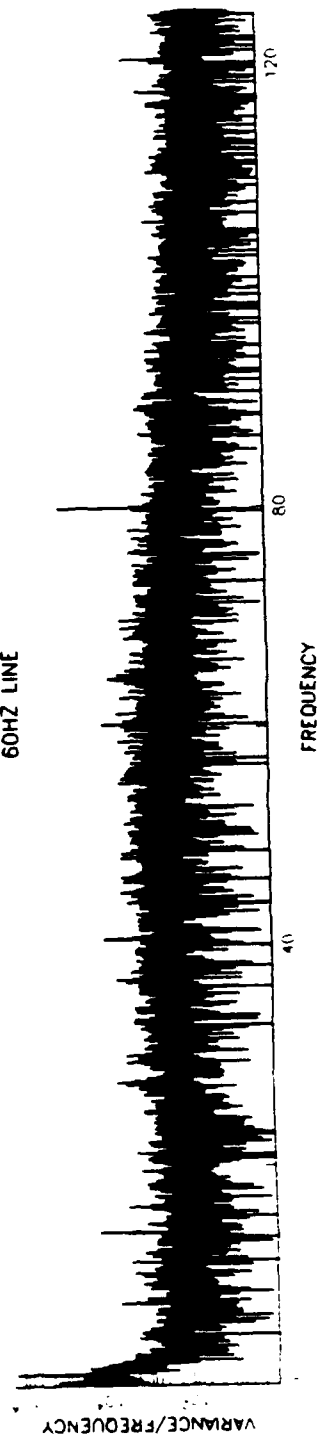
ESTIMATED SPECTRAL DENSITY FOR UNFILTERED H185T01



ESTIMATED SPECTRAL DENSITY FOR UNFILTERED H161101

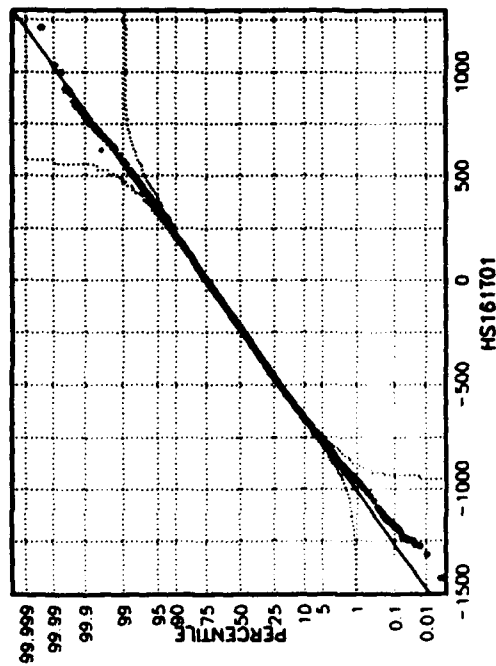


ESTIMATED SPECTRAL DENSITY FOR FILTERED H161101
60HZ LINE

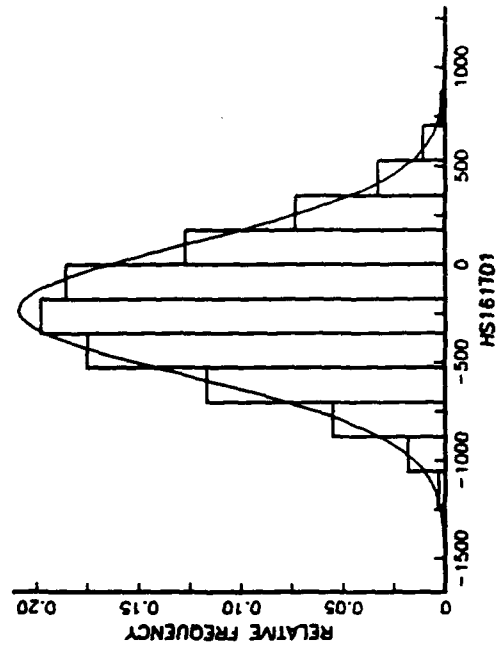


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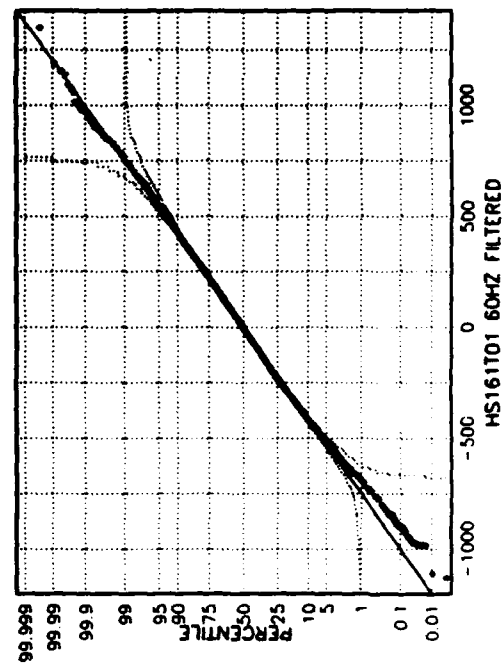
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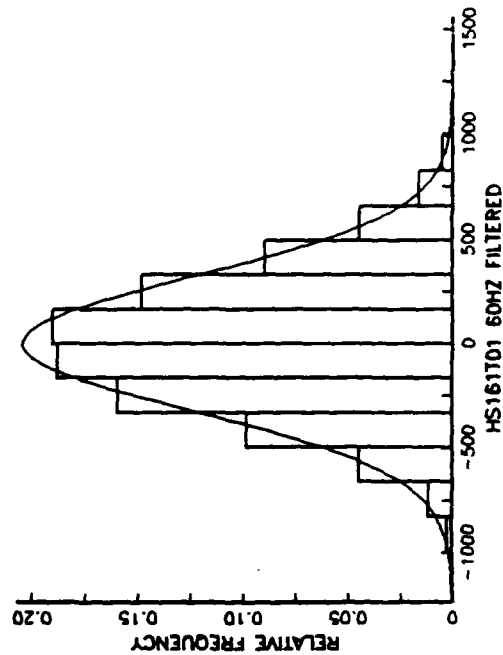
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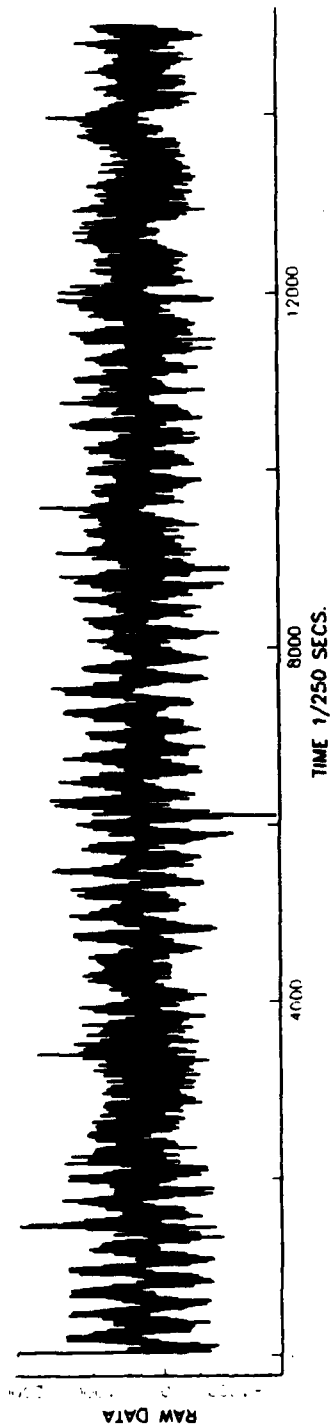
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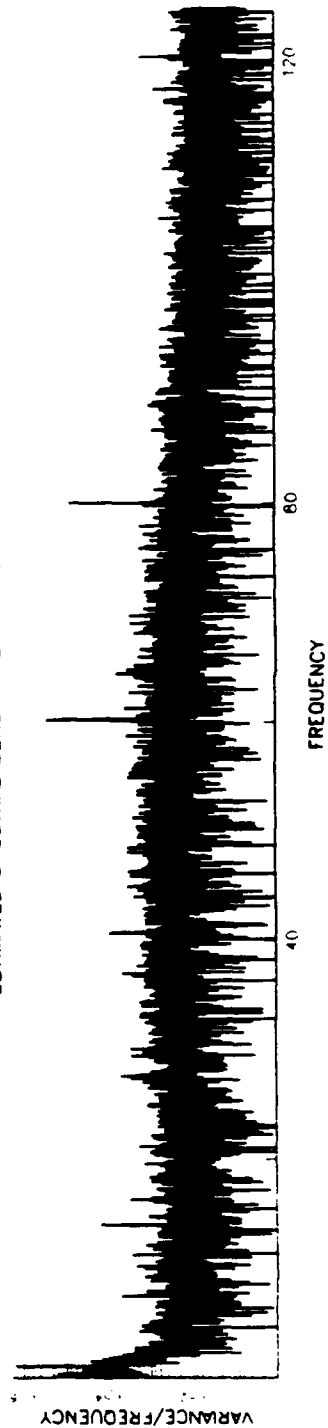
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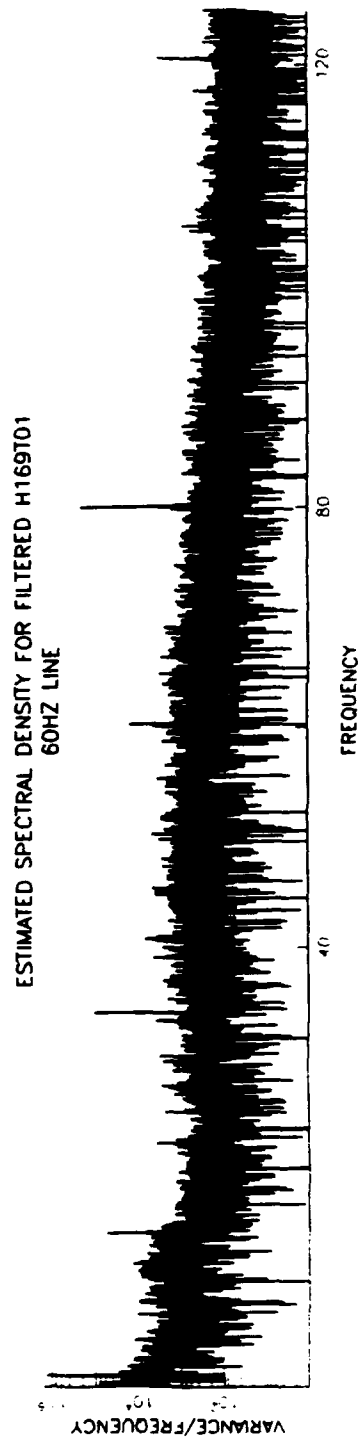
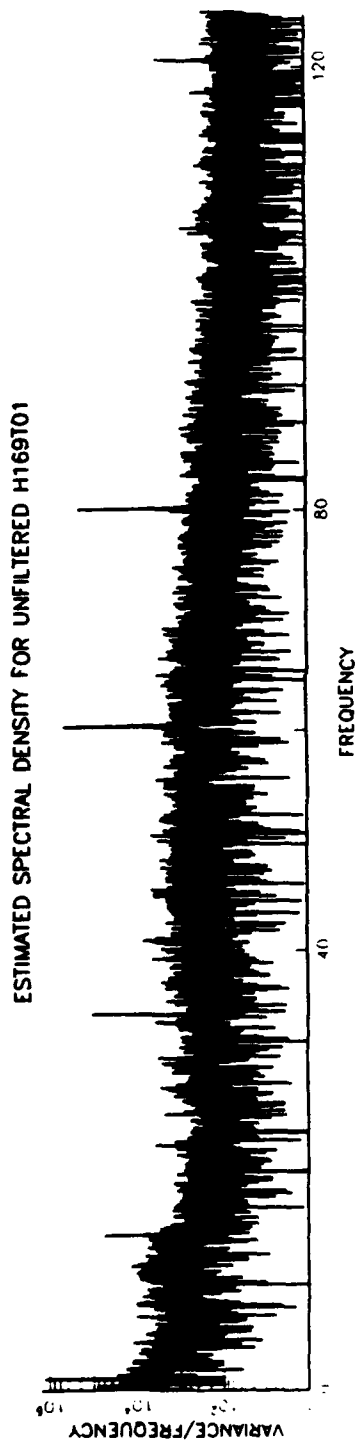


HS169T01, SAMPLED FOR 1 MINUTE. SAMPLED AT
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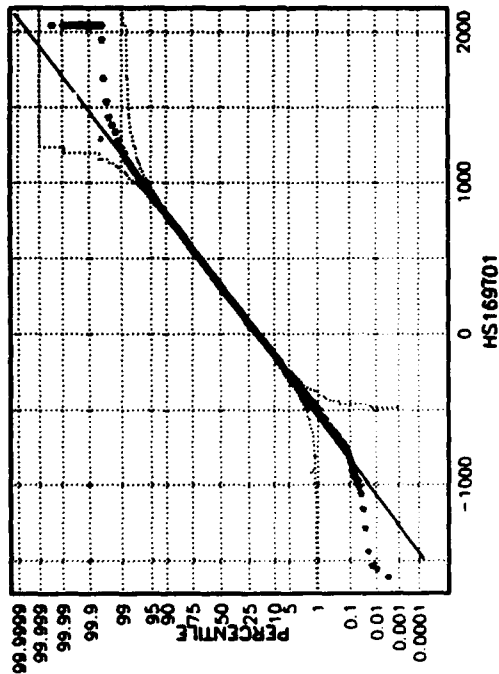
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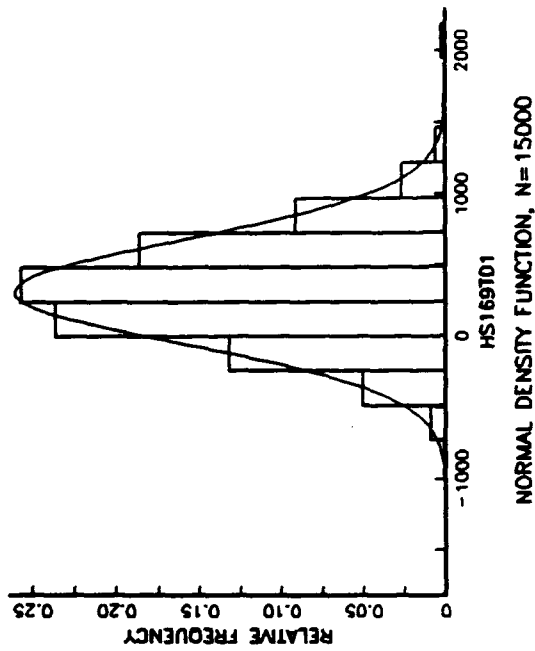


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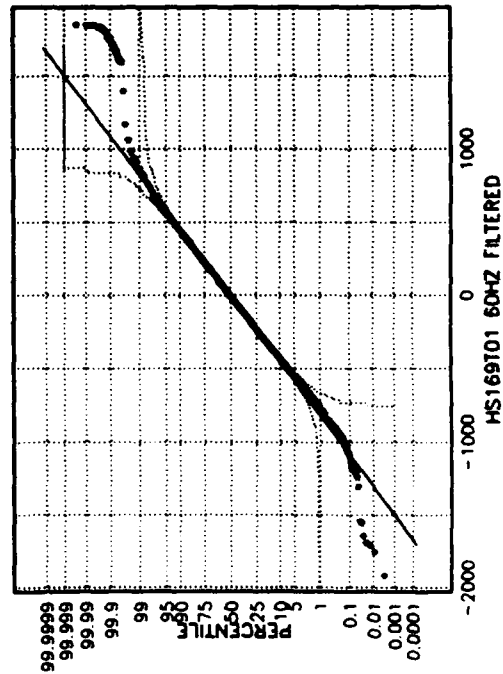
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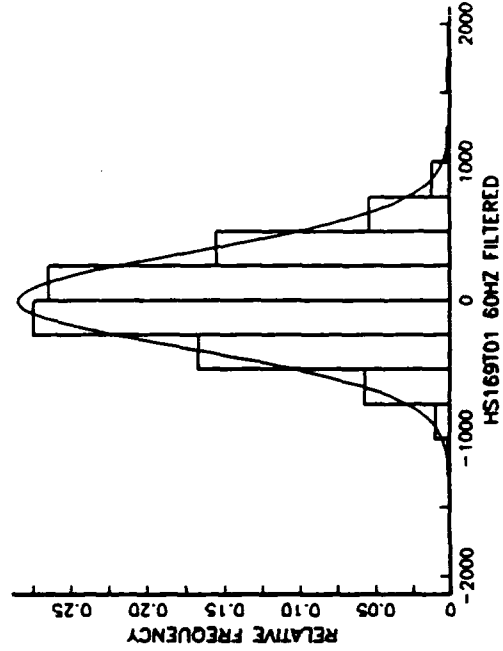
NORMAL DENSITY FUNCTION, N=15000



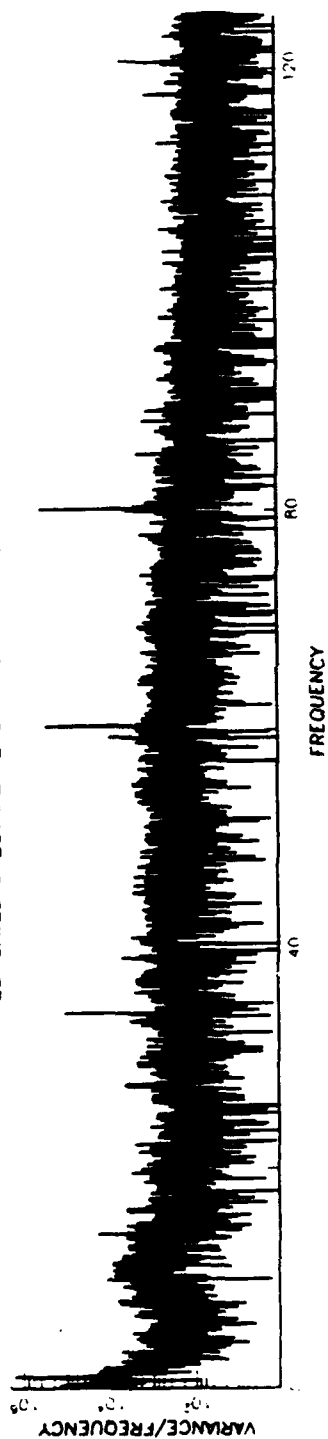
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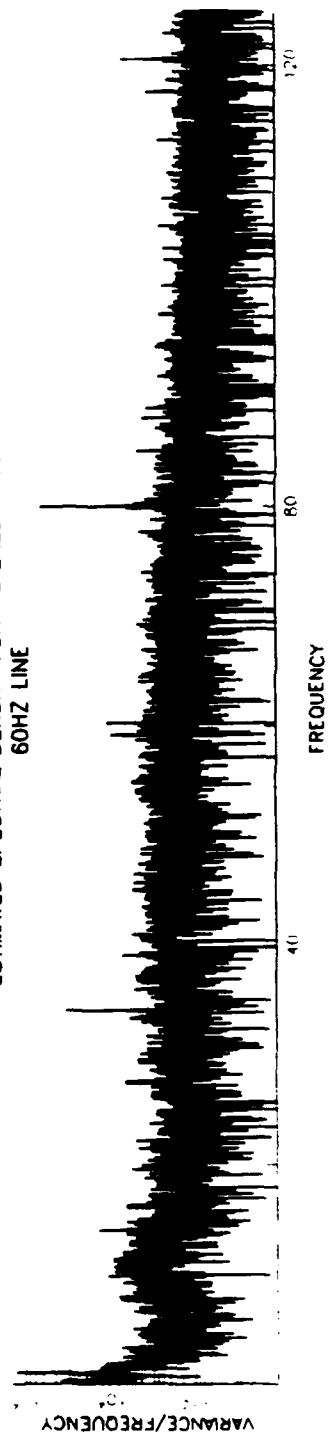
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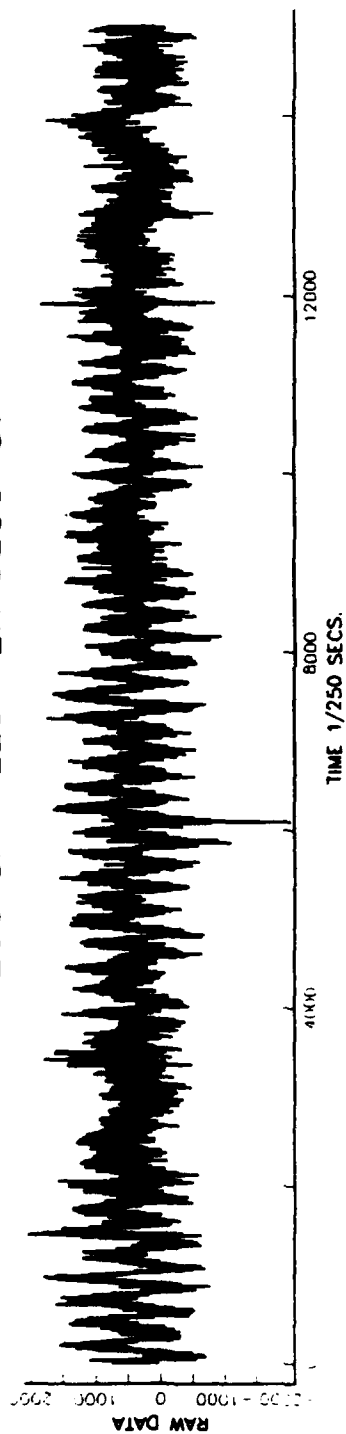
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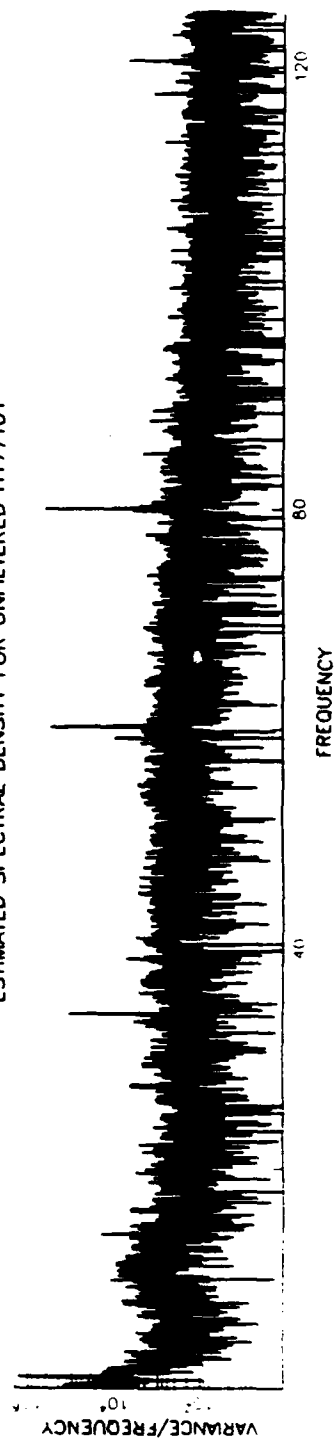
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60HZ LINE



HS177T01, SAMPLED FOR 1 MINUTE, SAMPLED AT
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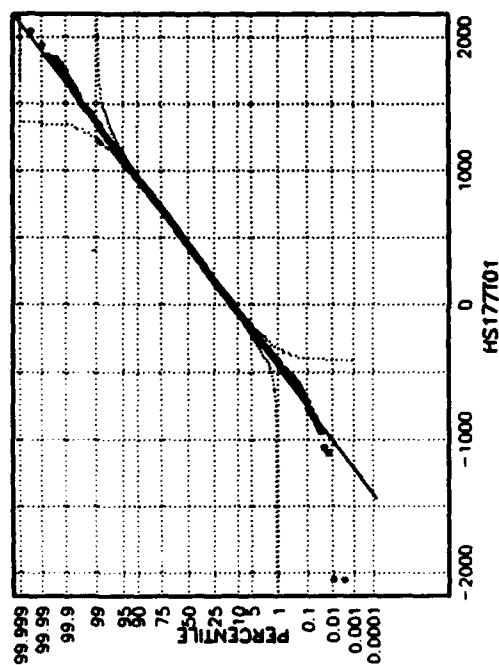


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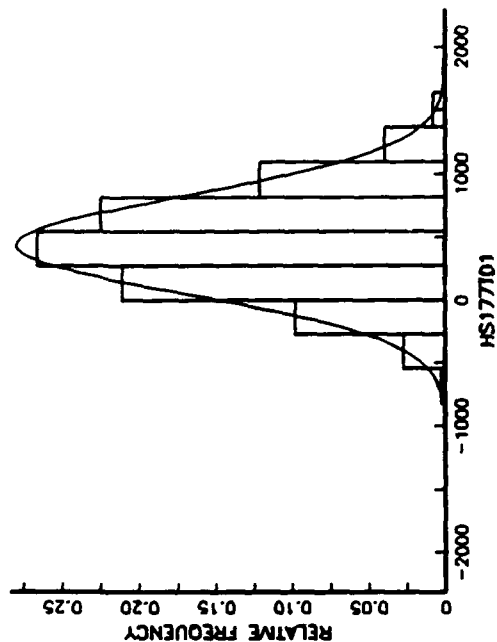


GAUSSIAN GOODNESS OF FIT FOR HS177T01

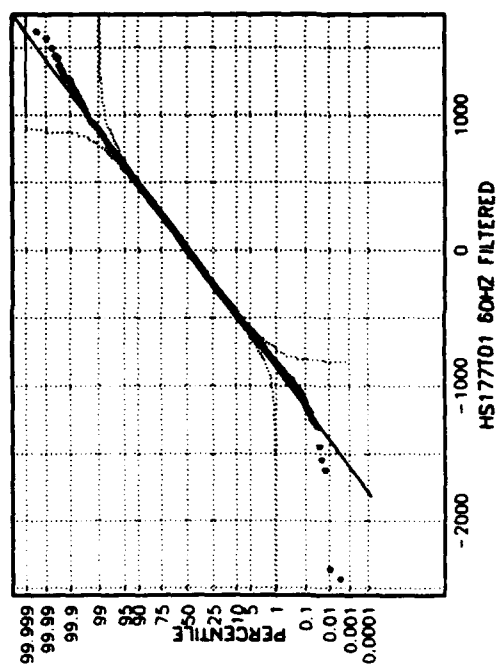
NORMAL PROBABILITY PLOT, N=15000



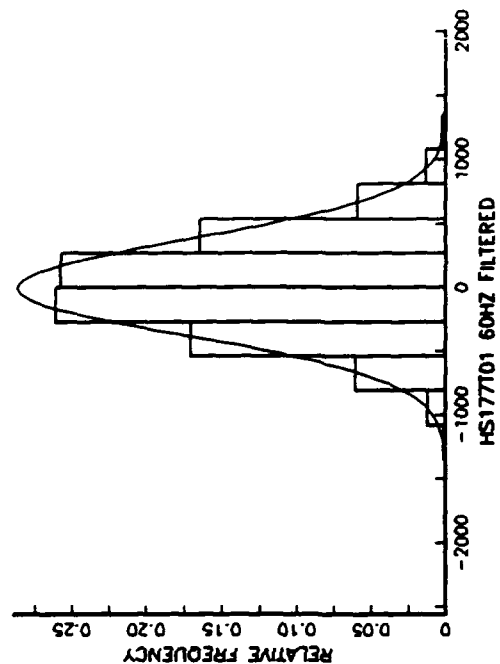
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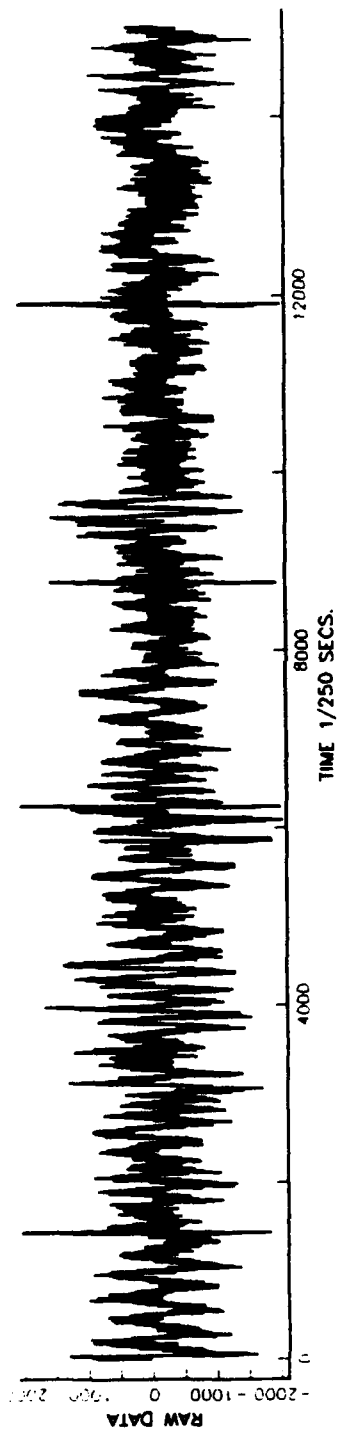
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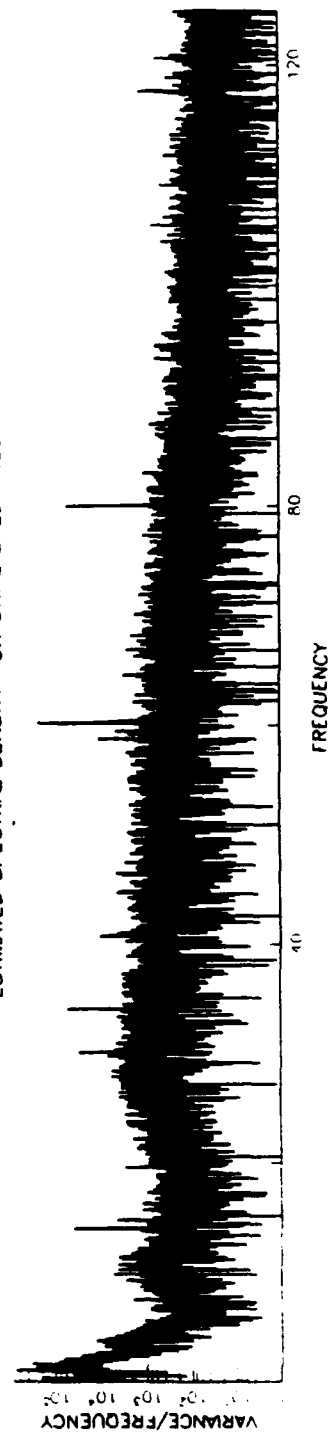
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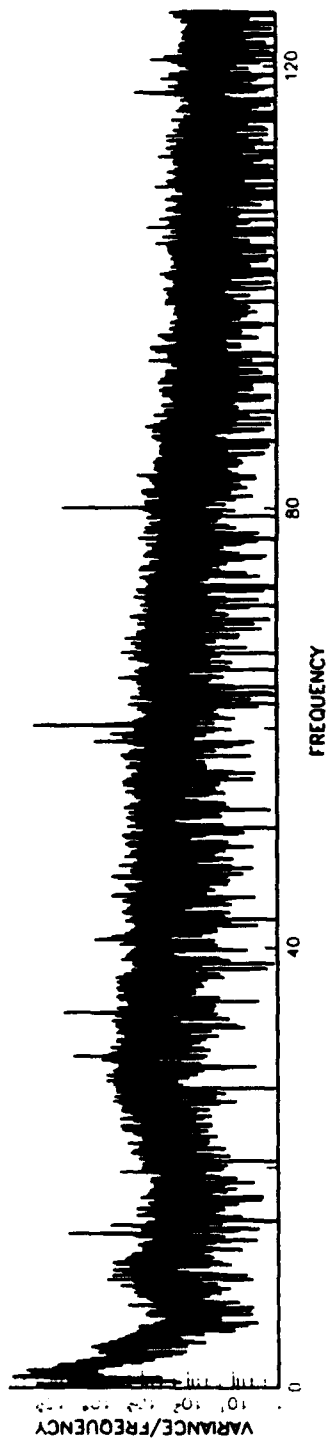
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250 SAMPLES PER SECOND.



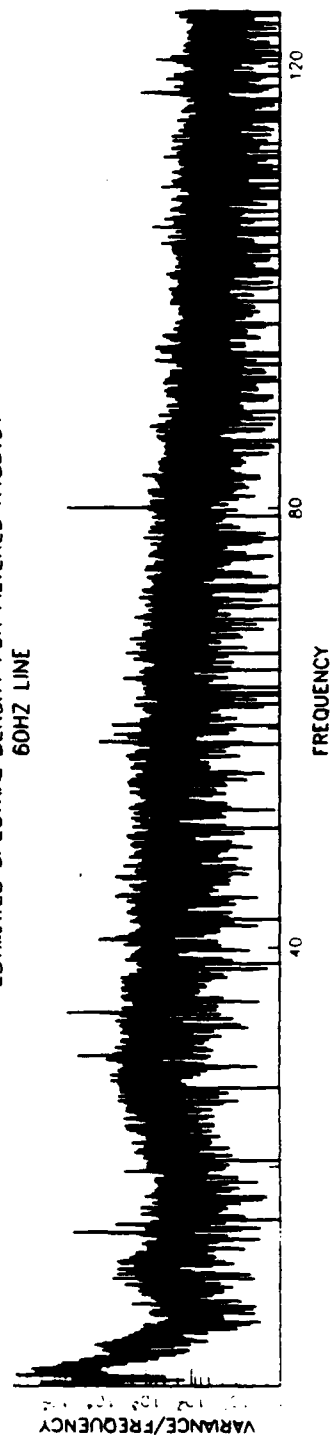
ESTIMATED SPECTRAL DENSITY FOR UNFILTERED H185T01



ESTIMATED SPECTRAL DENSITY FOR UNFILTERED H185T01

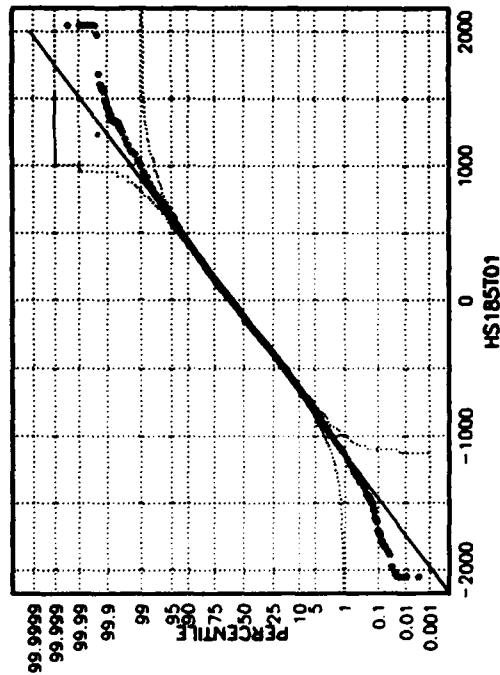


ESTIMATED SPECTRAL DENSITY FOR FILTERED H185T01
60HZ LINE

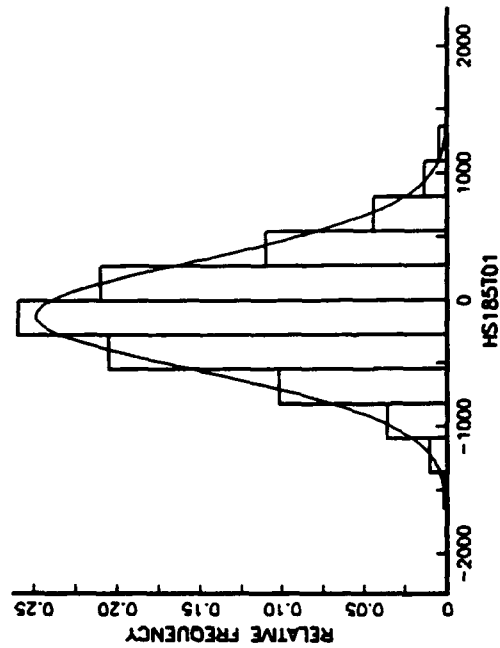


GAUSSIAN GOODNESS OF FIT FOR HS185T01

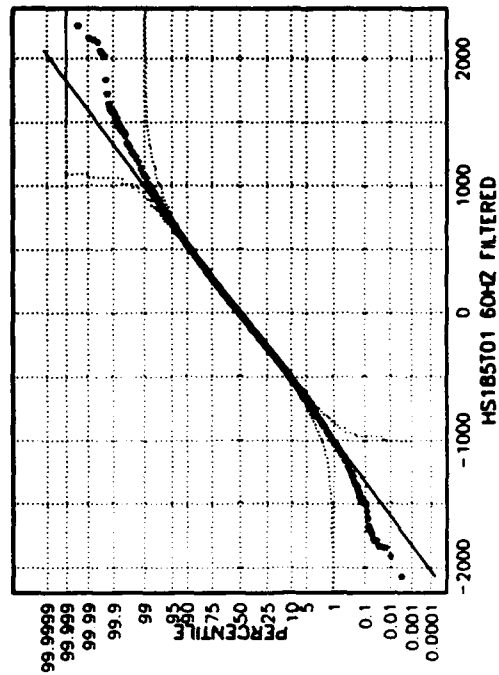
NORMAL PROBABILITY PLOT, N=15000



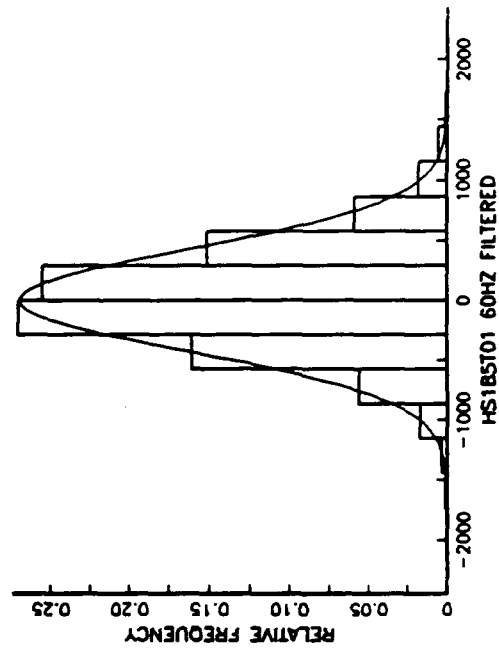
NORMAL DENSITY FUNCTION, N=15000



NORMAL PROBABILITY PLOT, N=15000



NORMAL DENSITY FUNCTION, N=15000



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