

AD-A174 982

DFVLR/FAA (DEUTSCHE FORSCHUNGS-UND VERSUCHSANSTALT FUER 1/3

LUFT UND RAUMFAHR (U) DEUTSCHE FORSCHUNGS- UND

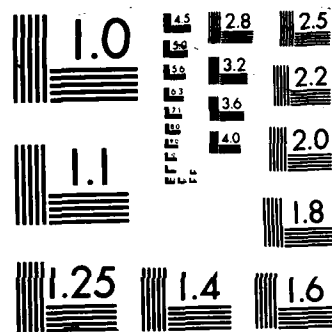
VERSUCHSANSTALT FUER LUFT- UND RAUMF

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XEROCOPY RESOLUTION TEST CHART

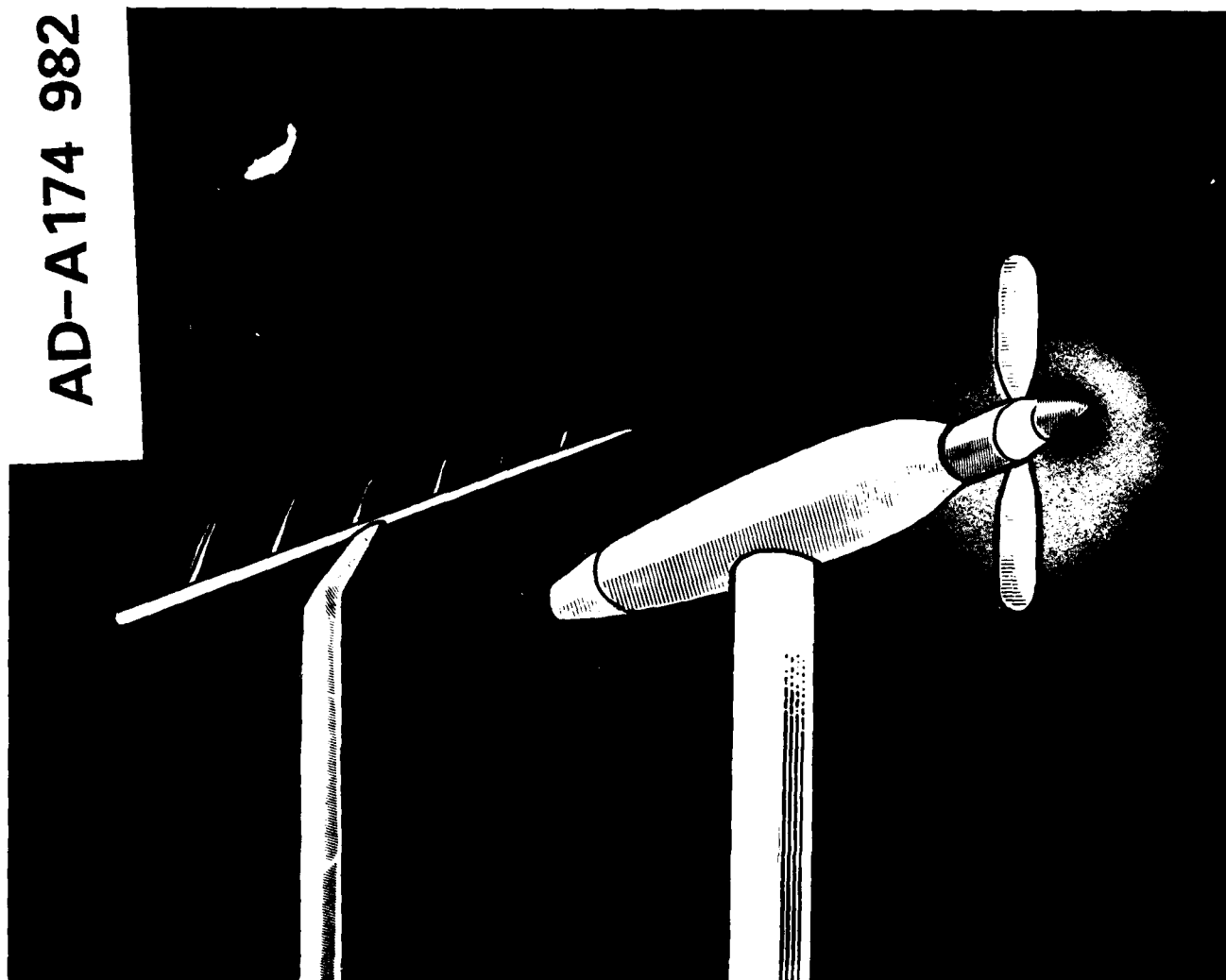
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DFVLR/FAA Propeller Noise Tests in the German-Dutch Wind Tunnel DNW

Appendix VI: The Effect of Engine-cowling Installation.

DFVLR-IB 129-86/3
FAA Report No. AEE 86-3

AD-A174 982



Jointly conducted by:



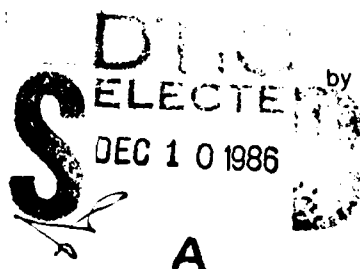
US Department
of Transportation
**Federal Aviation
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Office of Environment
and Energy



Deutsche Forschungs-und
Versuchsanstalt für
Luft-und Raumfahrt e.V.

Inst. für Entwurfsaerodynamik
Abteilung Technische Akustik



by Werner M. Dobrzynski
Hanno H. Heller
John O. Powers
James E. Densmore

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DATA REPORT ON PROPELLER NOISE TESTS
IN THE GERMAN-DUTCH WIND TUNNEL

APPENDIX VI

TEST RESULTS ON THE EFFECT
OF ENGINE-COWLING INSTALLATION

by

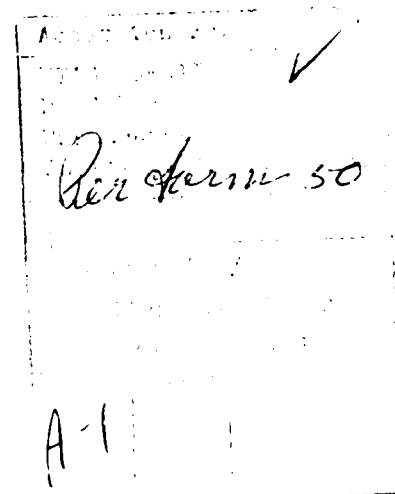
W. Dobrzynski*, H. Heller*
and
J. Powers**, J. Densmore**

* DFVLR, Flughafen, 3300 Braunschweig, W.-Germany

** FAA, 800 Independence Ave., S.W., Washington, D.C. 20591, USA

Table of Content

1. Introduction
2. Microphone Array
3. Environmental and Operational Test-data
4. Overall Noise Levels from Direct Analog Analysis
5. Acoustic Pressure-time Histories and Narrow-band Spectra
6. Propeller Rotational Harmonic Noise- and Overall Noise Levels
7. Comments on Data Interpretation



1. Introduction

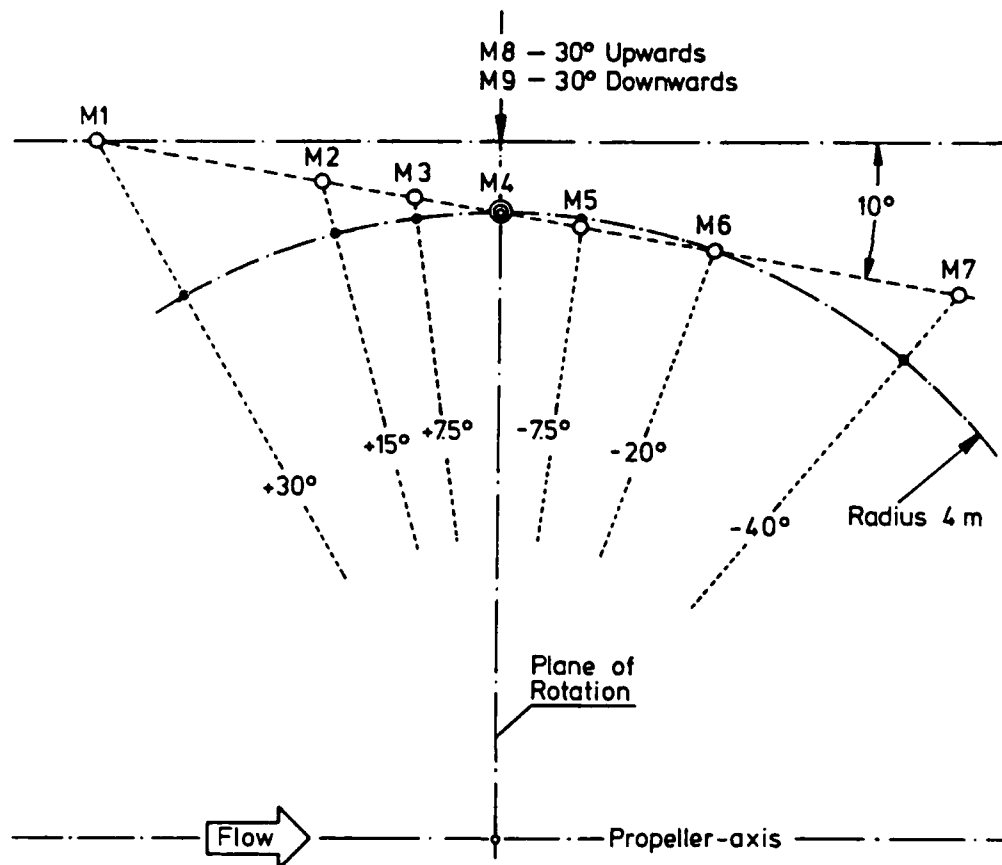
Within a joint effort (and supported by the German Ministry of Research and Technology/BMFT) between the Deutsche Forschungs- und Versuchsanstalt für Luft- und Raumfahrt (DFVLR), the US Federal Aviation Administration (FAA), and the German Ministry of Transportation (BMV), propeller noise tests were conducted in the "Deutsch-Niederländischer Windkanal/German Dutch Wind Tunnel (DNW)" to develop high quality propeller-acoustics data, which could be used by manufacturers for acoustic design purposes, and by researchers to validate established or newly developed theoretical noise prediction methods.

Specifically, the program addressed propeller Mach-number and disc-plane attitude effects as related to noise certification test and evaluation procedures. Changes in Mach-number, as they affect acoustic data adjustments, were explored through independent variation of tunnel flow velocity, propeller rotational speed and ambient air temperature. The tests on the effect of in-flow angle on propeller noise also incorporated the influence of a typical engine nacelle on the flow field and, hence, on the propeller noise.

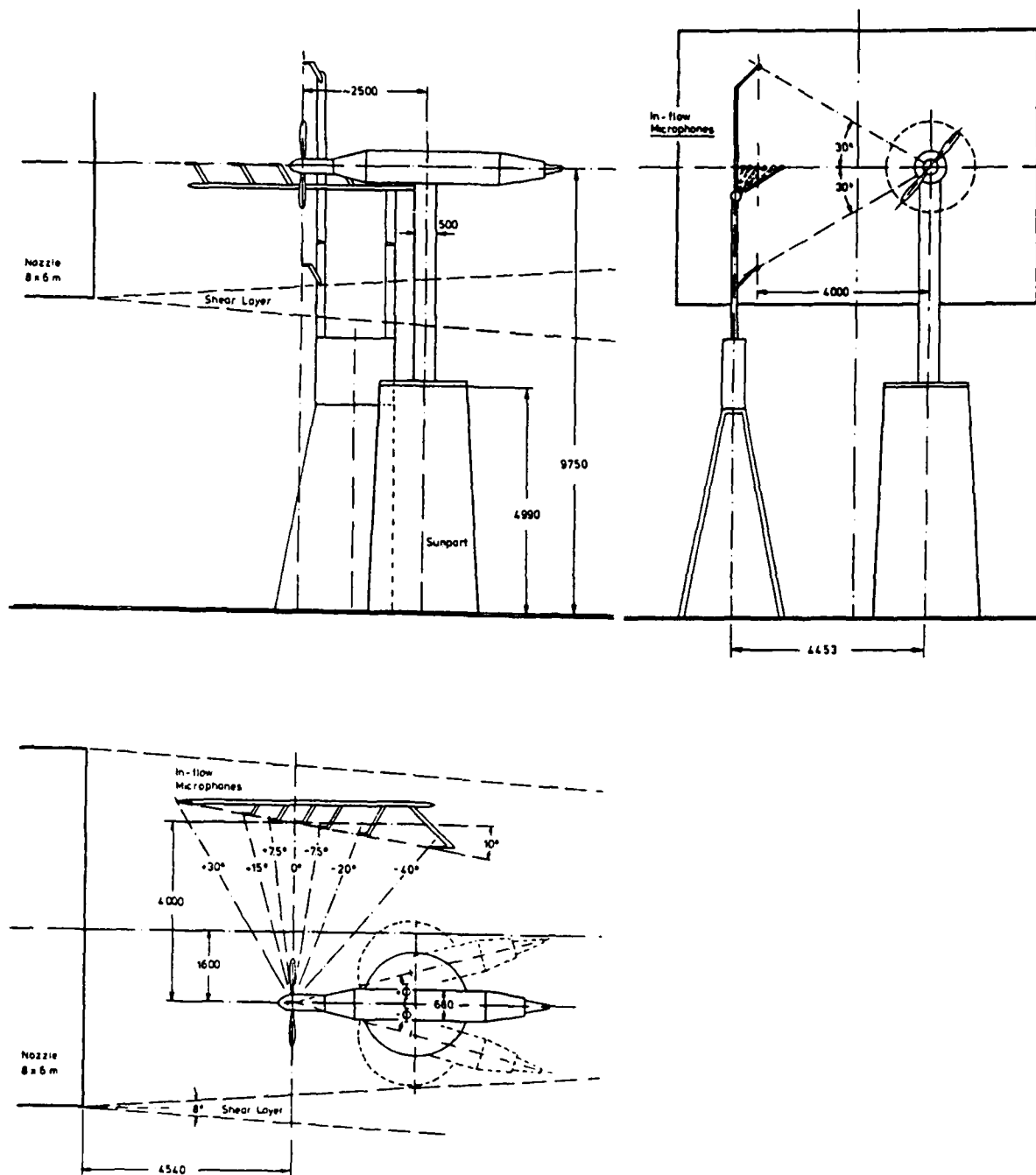
➤ In this Appendix the test results on the effect of engine-cowling installation are documented in terms of pressure-time histories, narrow-band spectra and unweighted as well as A-weighted overall sound pressure levels, together with supplementary information necessary for further data interpretation. A detailed description of data-acquisition and -reduction techniques is provided by the "Executive Report" to this Appendix.

2. Microphone Array

A total of seven in-flow microphones were positioned in the horizontal plane at different streamwise locations corresponding to particular geometric radiation angles from the propeller center. Two additional microphones were positioned in the plane of rotation (4 m lateral distance to the propeller axis) at angles of ± 30 deg respectively above and below the horizontal plane with reference to the propeller center.



In-flow Microphone Positioning



Schematic Representation of Test-rig Arrangement within the Core-flow Regime of the DNW 8x6m² Open Test Section

3. Environmental and Operational Test-data

In the following table(s) the data-point matrix is documented. These table(s) summarise the as-measured data and characteristic propeller operational parameters as calculated from measured data.

RUN NO.	DATA POINT	PITCH ANGLE		ROT. SPEED	FLOW VEL.		POWER KW	THRUST		ATTITUDE ANGLE		FLOW TEMP. KELVIN	FLOW PRES. PASCAL	FLOW DENS. KG/CM	ADV. RATIO	ATTACK ANGLE DEG	POWER COEF.	THRUST COEF.	HEL. MACHN.
		DEG	DEG	RPM	M/S	M/S		NEWTON	NEWTON	DEG	DEG								
179	FNC-7	19.9	19.9	2100.	51.5	51.5	103.6	1760.	1760.	0.0	0.0	287.5	99082.	1.198	0.2305	2.816	0.0582	0.0704	0.6745
180	FNC-8	19.9	19.9	2400.	51.8	51.8	181.5	2864.	2864.	0.0	0.0	287.9	99083.	1.196	0.2029	4.765	0.0685	0.0878	0.7659
181	FNC-9	19.9	19.9	2700.	77.1	77.1	174.7	2045.	2045.	0.0	0.0	288.5	99151.	1.194	0.2684	0.210	0.0464	0.0496	0.8734
182	FNC-10	23.7	23.7	1800.	51.2	51.2	85.8	1486.	1486.	0.0	0.0	287.6	99161.	1.198	0.2673	4.081	0.0766	0.0808	0.5831
183	FNC-11	23.7	23.7	2100.	51.6	51.6	160.8	2540.	2540.	0.0	0.0	288.1	99175.	1.196	0.2309	6.585	0.0905	0.1017	0.6739
184	FNC-12	23.7	23.7	2400.	67.2	67.2	221.4	2849.	2849.	0.0	0.0	288.7	99193.	1.194	0.2632	4.364	0.0837	0.0875	0.7751
176	FNC-1	19.9	19.9	2100.	51.5	51.5	102.3	1760.	1760.	3.6	3.6	287.0	99083.	1.200	0.2305	2.816	0.0574	0.0702	0.6751
177	FNC-2	19.9	19.9	2400.	51.6	51.6	180.0	2893.	2893.	3.6	3.6	287.7	99103.	1.197	0.2021	4.821	0.0678	0.0886	0.7661
178	FNC-3	19.9	19.9	2700.	77.4	77.4	176.4	2079.	2079.	3.6	3.6	288.3	99112.	1.194	0.2694	0.139	0.0468	0.0504	0.8740
175	FNC-4	23.7	23.7	1800.	51.3	51.3	86.0	1510.	1510.	3.6	3.6	287.2	99143.	1.200	0.2679	4.045	0.0766	0.0820	0.5835
174	FNC-5	23.7	23.7	2100.	51.6	51.6	161.2	2599.	2599.	3.6	3.6	287.7	99134.	1.197	0.2309	6.585	0.0906	0.1039	0.6743
173	FNC-6	23.7	23.7	2400.	67.4	67.4	223.2	2893.	2893.	3.6	3.6	286.6	99157.	1.203	0.2640	4.311	0.0837	0.0882	0.7781

4. Overall Noise Levels from Direct Analog Analysis

The following tables provide unweighted (OASPL) and A-weighted (L_A) overall sound pressure levels from quick-look analog data-analysis of measured data for all data-points and microphone positions respectively. Level-numbers which are identified with an asterix are "disturbed data" and should not be interpreted.

INSTALLATION EFFECT, ROUND-TIP PROP.

DNW PROPELLER NOISE TEST

Run No.	Data Point	In-Flow Noise Level								
		M1	M2	M3	M4	M5	M6	M7	M8	M9
179	FNC-7 L -dB(A)	89.5	93.8	95.7	96.8	97.7	--	94.4	99.7*	98.6*
	OASPL-dB	102.4	108.1	109.7	111.6	113.1	--	111.2	113.0*	112.2
180	FNC-8 L -dB(A)	97.7	103.5	106.5	108.1	109.1	--	100.6	106.8	107.2
	OASPL-dB	108.1	112.8	115.5	118.0	119.9	--	116.2	117.2	117.5
181	FNC-9 L -dB(A)	108.9	119.4*	119.5	120.4	120.3	--	119.9*	118.6	120.0
	OASPL-dB	116.4	128.1*	123.4	124.9	127.6	--	133.0*	126.5	129.0*
182	FNC-10 L -dB(A)	87.7	89.7	90.9	93.6	94.1	--	95.5*	99.8*	95.4
	OASPL-dB	101.1	105.9*	106.5	108.4	110.3	--	110.5*	112.7*	111.4
183	FNC-11 L -dB(A)	91.6	96.3	98.4	100.1	101.0	--	97.5*	100.8*	100.3
	OASPL-dB	105.2	111.0*	112.4	114.6	116.0	--	114.7	115.1*	114.6
184	FNC-12 L -dB(A)	99.7	105.5	108.4	110.4	111.0	--	106.7*	109.1	111.2*
	OASPL-dB	111.1	116.1*	117.2	119.8	121.7	--	120.3*	120.3	121.9
176	FNC-1 L -dB(A)	90.8	96.0*	97.2	98.6	99.0	98.0	96.6*	100.5*	99.3
	OASPL-dB	104.5	110.3*	111.1	113.1	114.5	114.5	113.7*	114.1*	113.1
177	FNC-2 L -dB(A)	100.2	106.1	109.0	109.6	110.1	107.5	101.4*	107.7	108.7
	OASPL-dB	109.6	115.1	118.0	119.9	121.4	121.1	117.9*	117.9	119.1
178	FNC-3 L -dB(A)	113.1	122.5*	122.1	122.1	121.1	114.7	119.7*	120.0	121.2
	OASPL-dB	119.2	129.6*	125.3	126.8	128.3	123.9	132.9*	127.4	129.2*
175	FNC-4 L -dB(A)	88.9	91.0	91.7	93.6	95.0	94.6	95.6*	97.6*	95.9
	OASPL-dB	103.4	108.6*	108.4	109.8	111.7	111.1	111.9*	113.7*	112.1
174	FNC-5 L -dB(A)	92.8	98.0	100.0	101.2	102.2	101.2	97.7*	101.4*	102.0
	OASPL-dB	107.2	112.6*	114.3	116.0	117.6	118.0	116.7*	115.2	115.9
173	FNC-6 L -dB(A)	103.1	108.8	110.9	111.7	112.3	109.6	109.3*	110.3	112.2
	OASPL-dB	113.4	117.8	119.7	121.4	123.5	123.2	123.7*	121.0	123.1

All runs with cowling installed.

*Higher "R" values

Linear- and A-weighted Overall Noise Levels from Analog Data-analysis

5. Acoustic Pressure-time Histories and Narrow-band Spectra

Acoustic data as presented in this section have been derived from a computer analysis of digitized analog tape-readings. For each data-point and microphone position respectively the data were processed and are presented in two different ways:

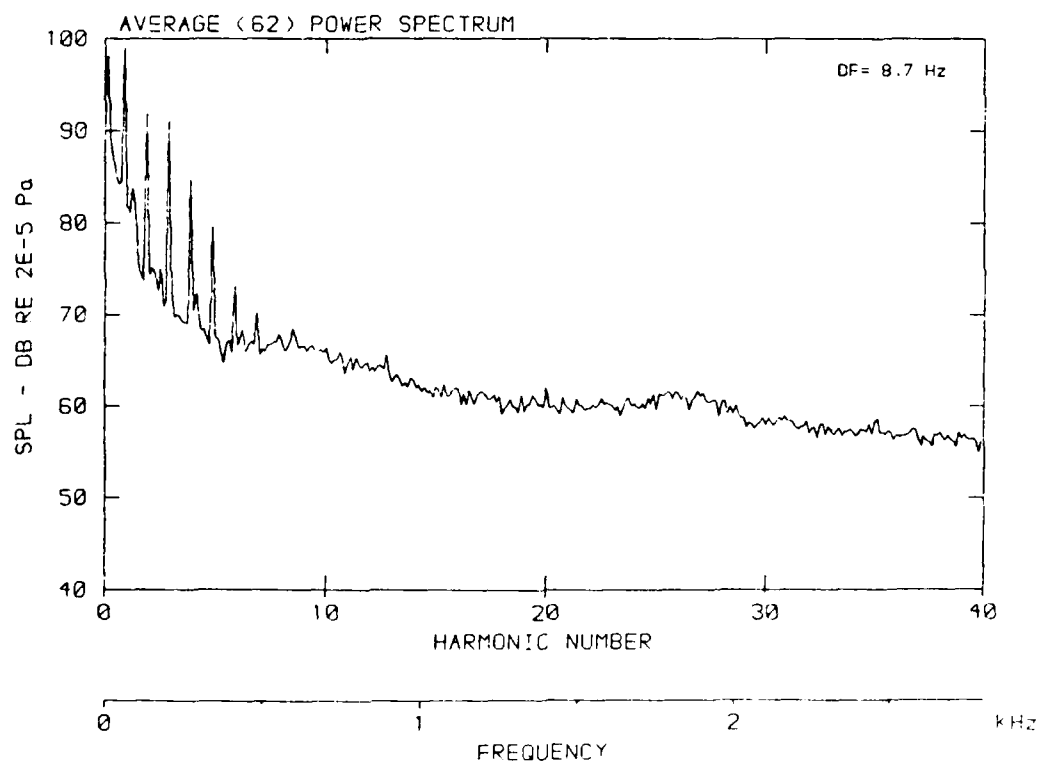
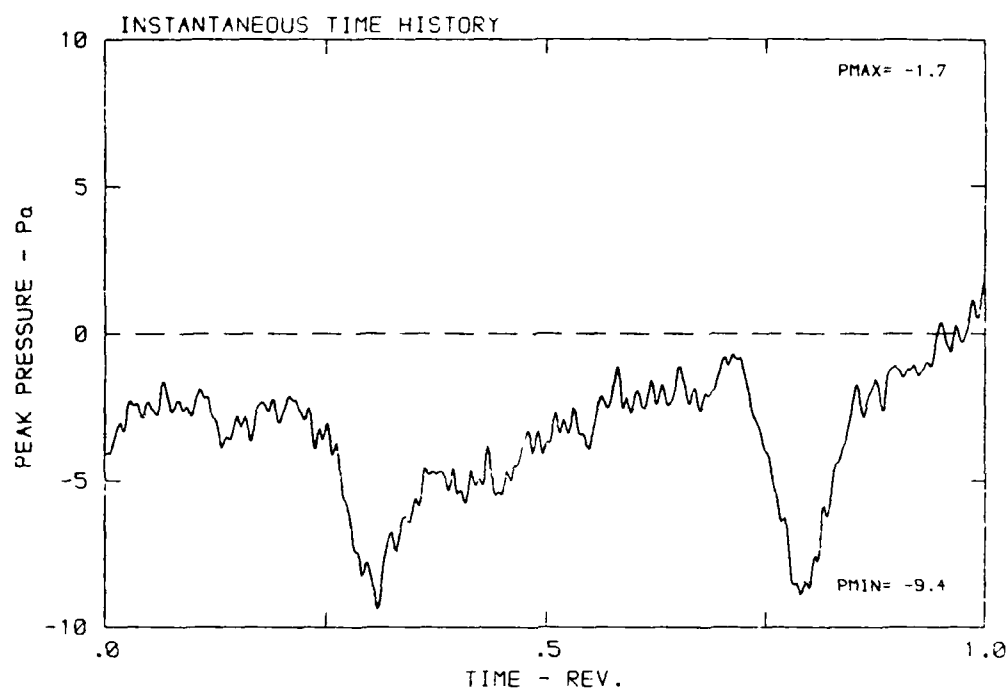
- a) A single instantaneous pressure-time history is presented and labeled "Instantaneous Time History" together with a power spectrum which had been calculated as an energy average of individual power spectra corresponding to a certain number of instantaneous pressure-time histories. This spectrum is labeled "Average (xx) Power Spectrum". The "xx" in the label denotes the number of time histories averaged in that particular spectrum.
- b) A certain number of instantaneous pressure-time histories is averaged in the time-domain and the resulting pressure averaged time-history is labeled "Average (xx) Time History". The "xx" in the label denotes the number of averaged instantaneous time-histories.

The value of ΔP in the brackets behind this label denotes the maximum peak-to-peak pressure amplitude difference in %, when referenced to the minimum peak-to-peak pressure amplitude difference as detected in the "xx" instantaneous time histories. The magnitude of ΔP can be taken as indicator to judge the stationarity (quality) of the respective data-record. If the value of ΔP is in excess of 496% respective data are marked with a triple star (***) to indicate that the data are heavily distorted.

From the pressure-averaged time-history a pressure level spectrum is calculated and labeled "Power Spectrum of Averaged Time History".

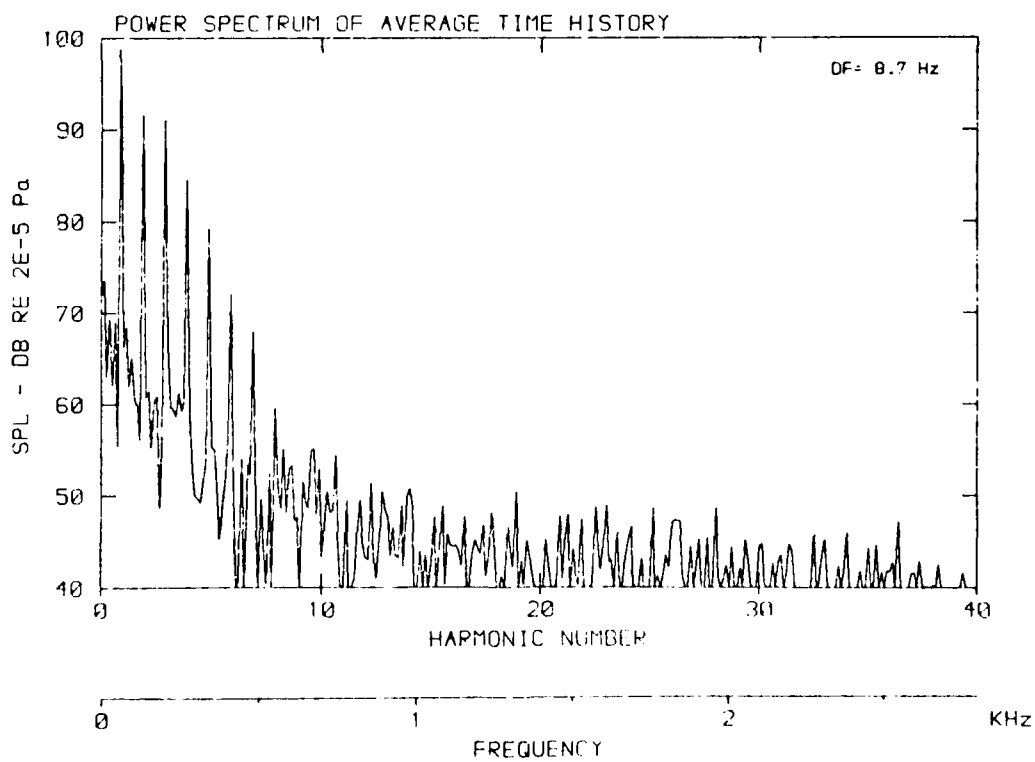
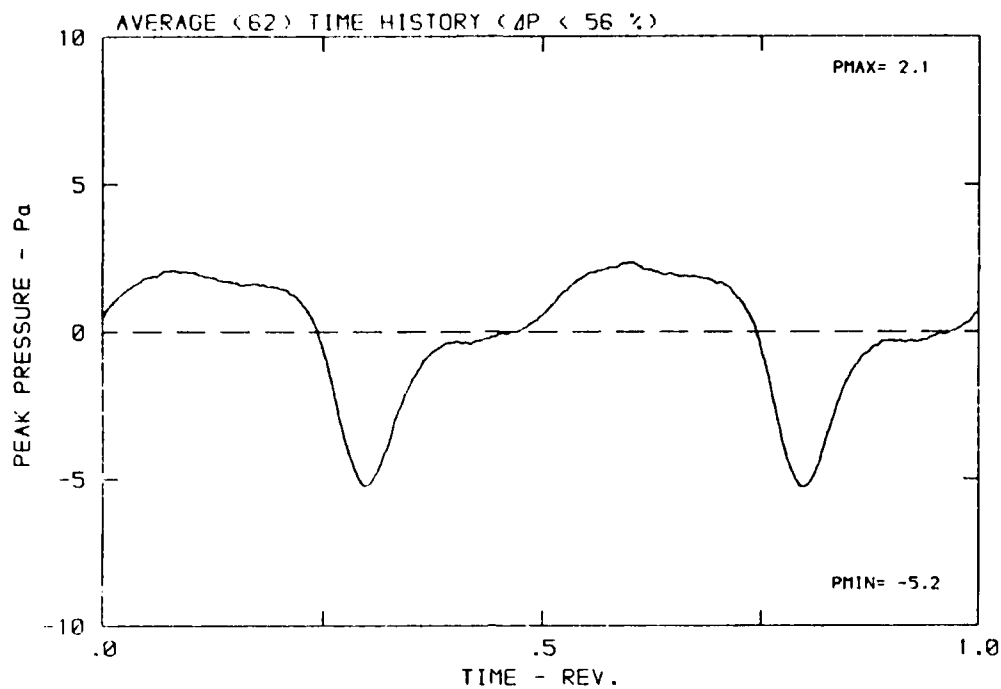
DATA POINT: FNC-7 RUN: 173 MF: 1

β : 19.9° MH: .6745 n: 2100 rpm v/u : .231 ϕ : .0° T: 287.5



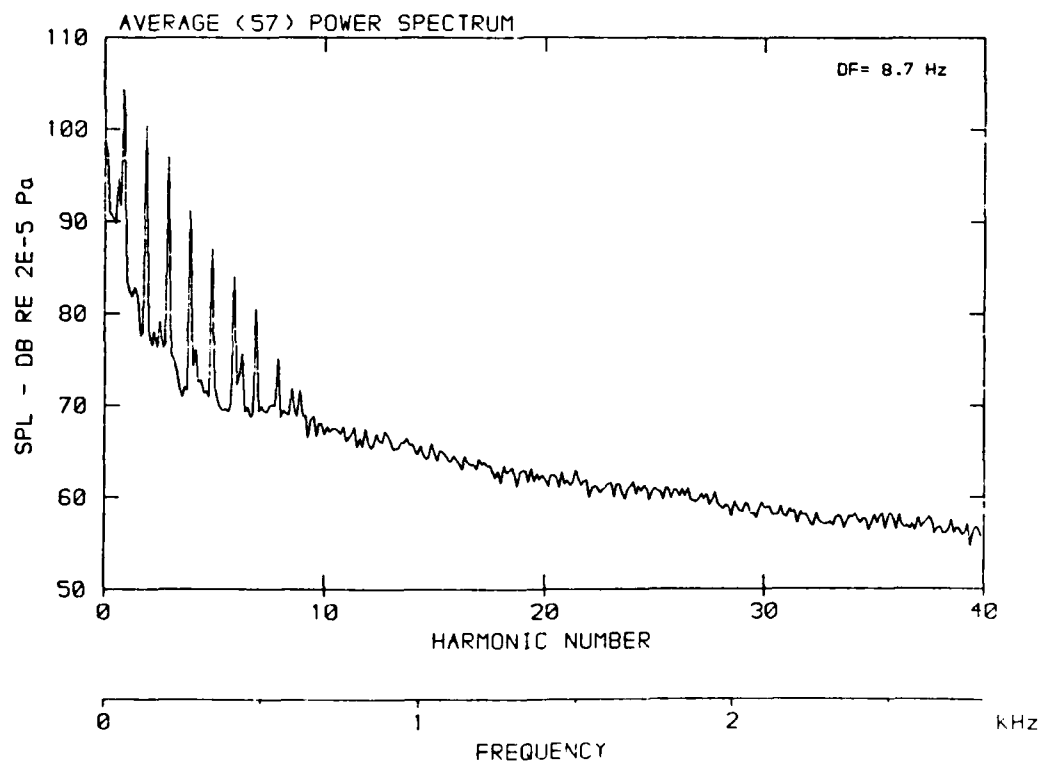
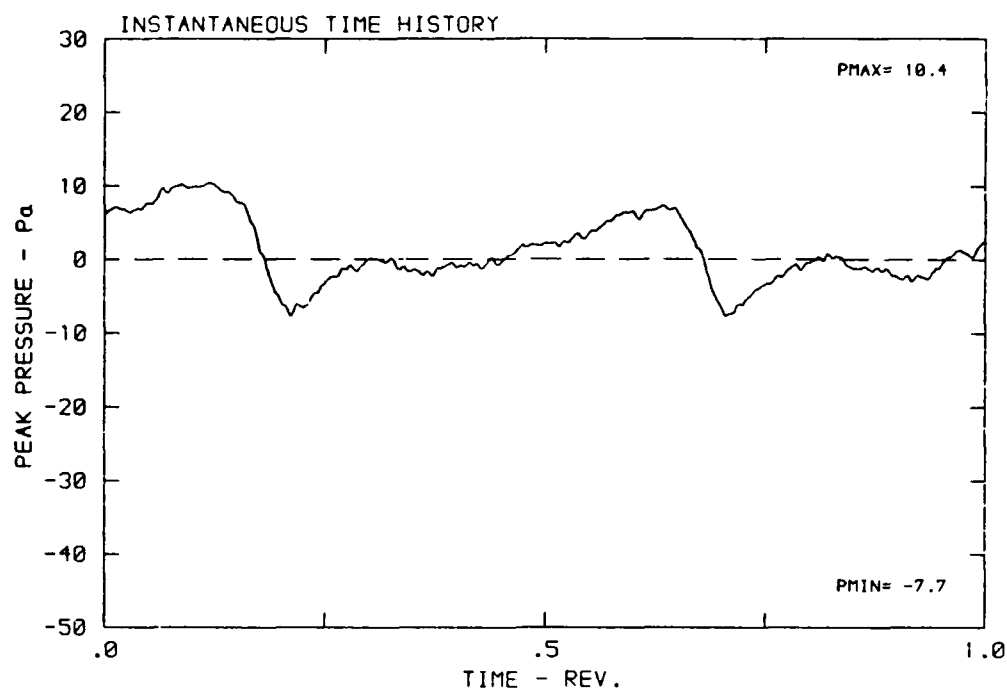
DATA POINT: FNC 7 RUN: 179 MP: 1

β : 19.9° MH: .6745 n: 2100 rpm v/u: .231 ϕ : .0° T: 287.5 K



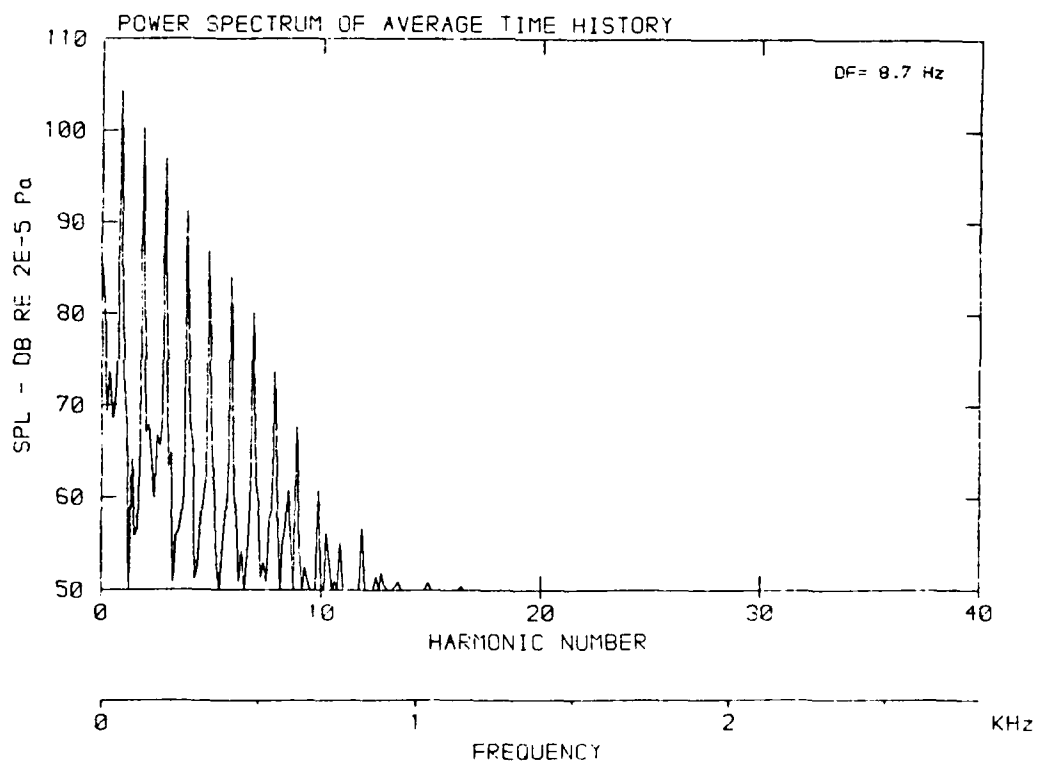
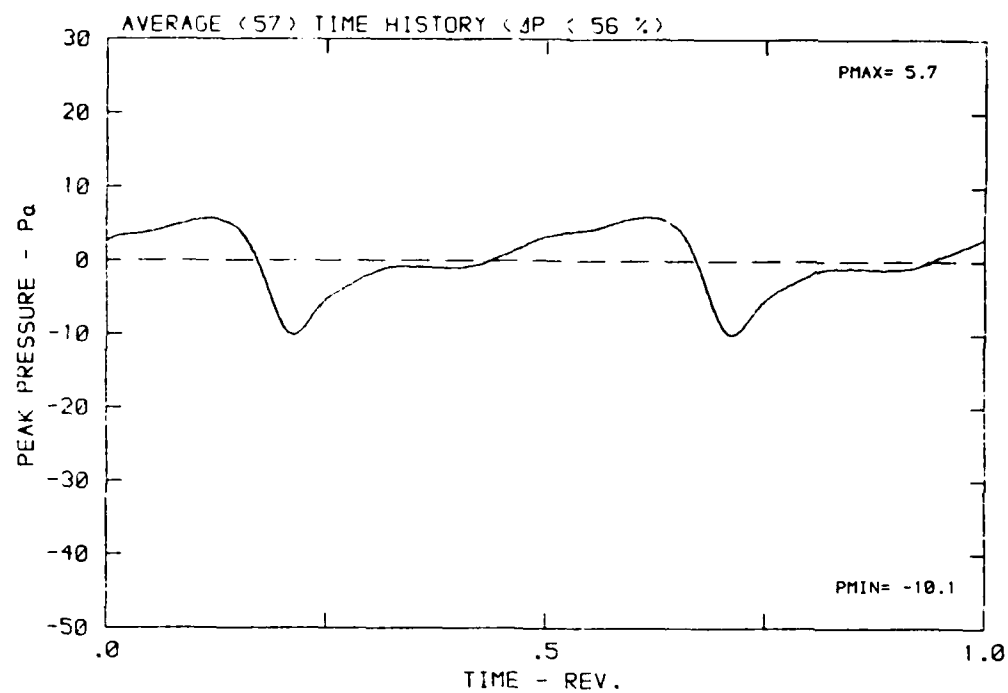
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β : 19.9° MH: .6745 n: 2100 rpm v/u : .231 ϕ : .0° T: 287.5 K



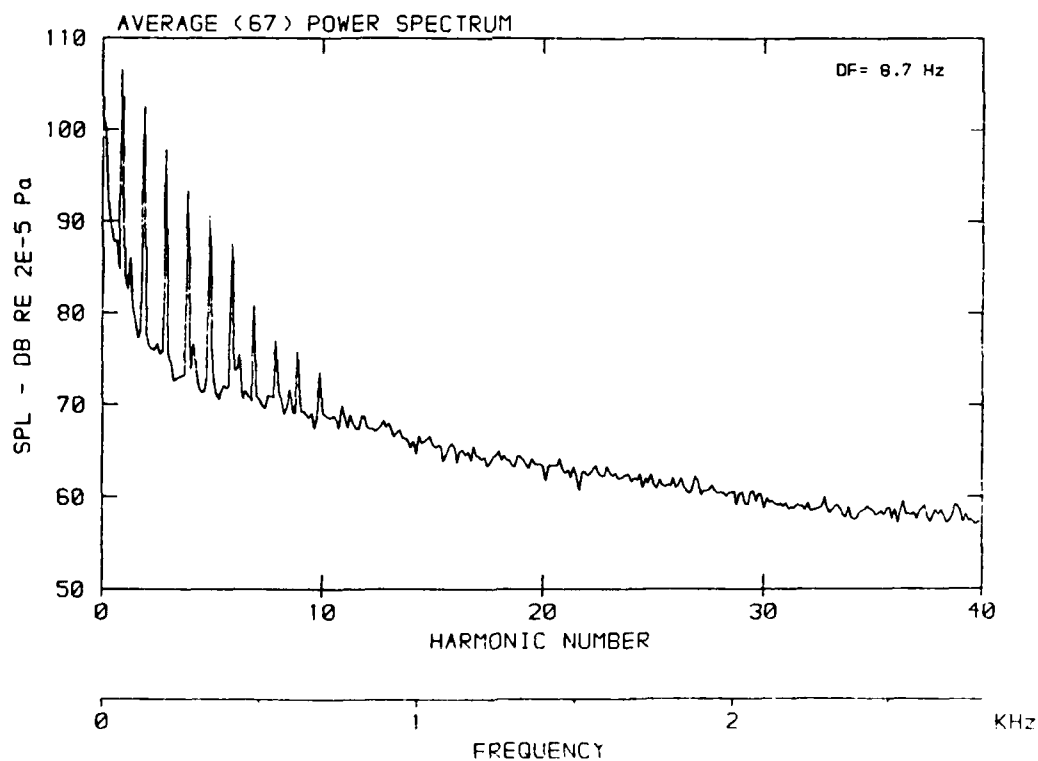
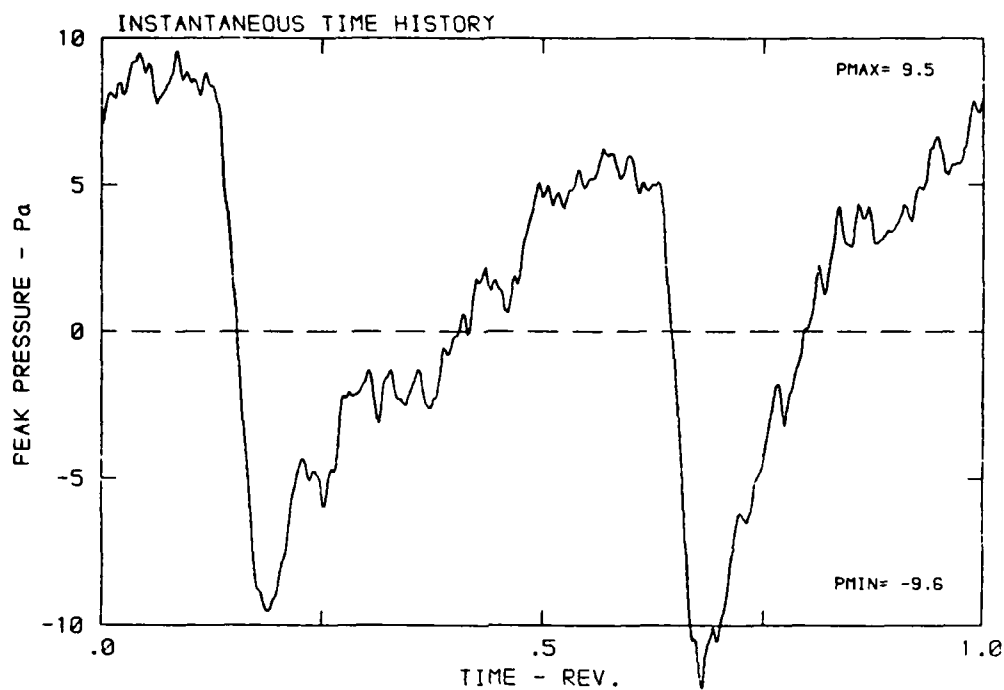
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β : 19.9° MH: .6745 n: 2100 rpm v/u : .231 ϕ : .0° T: 287.5 K



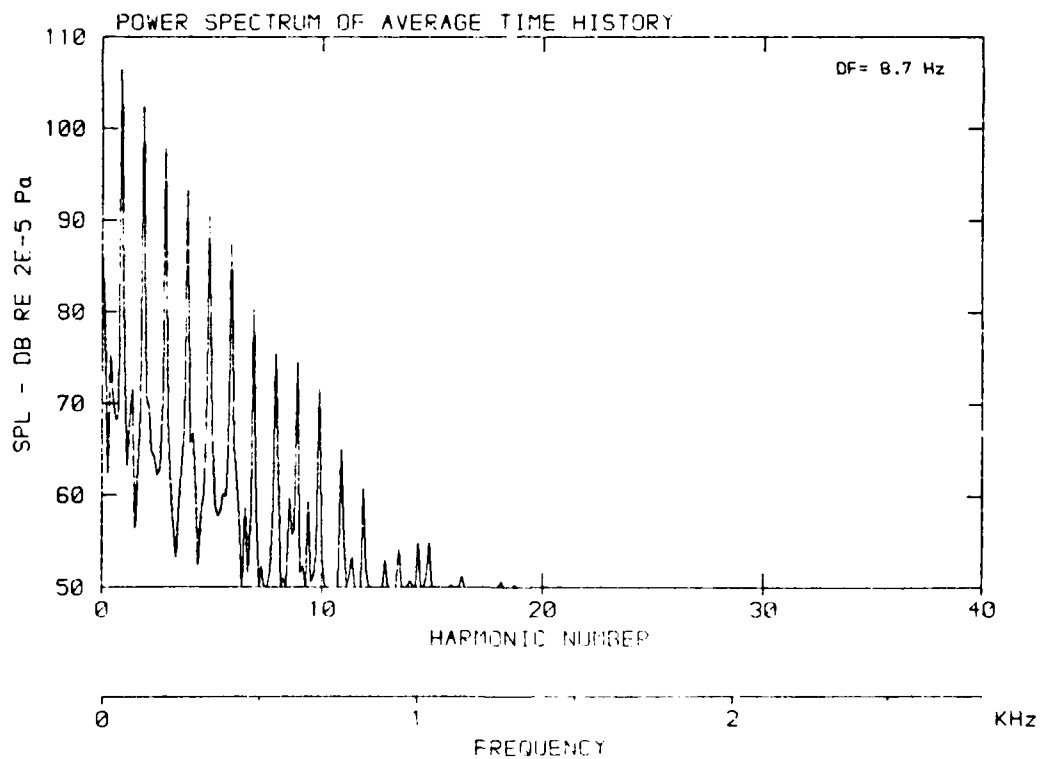
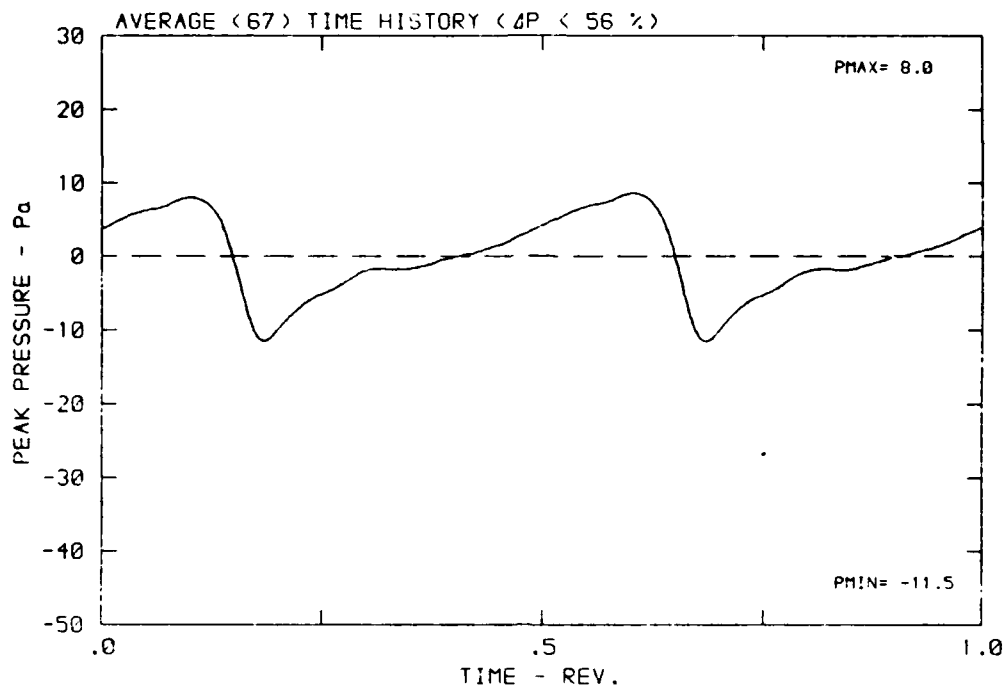
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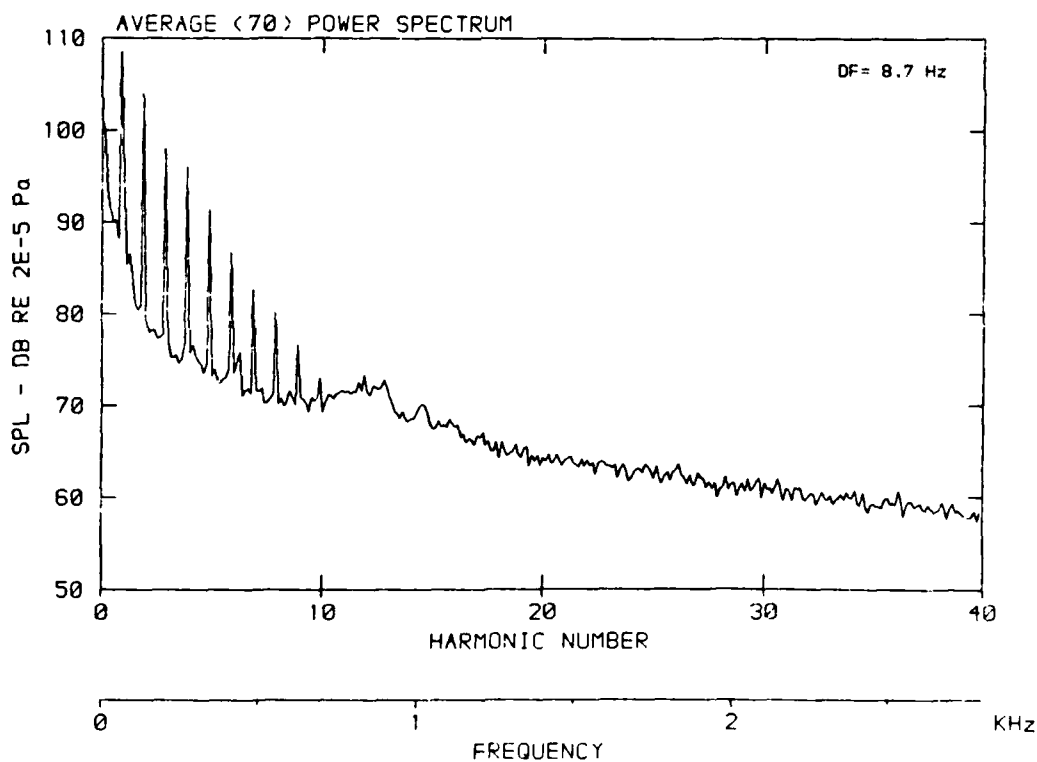
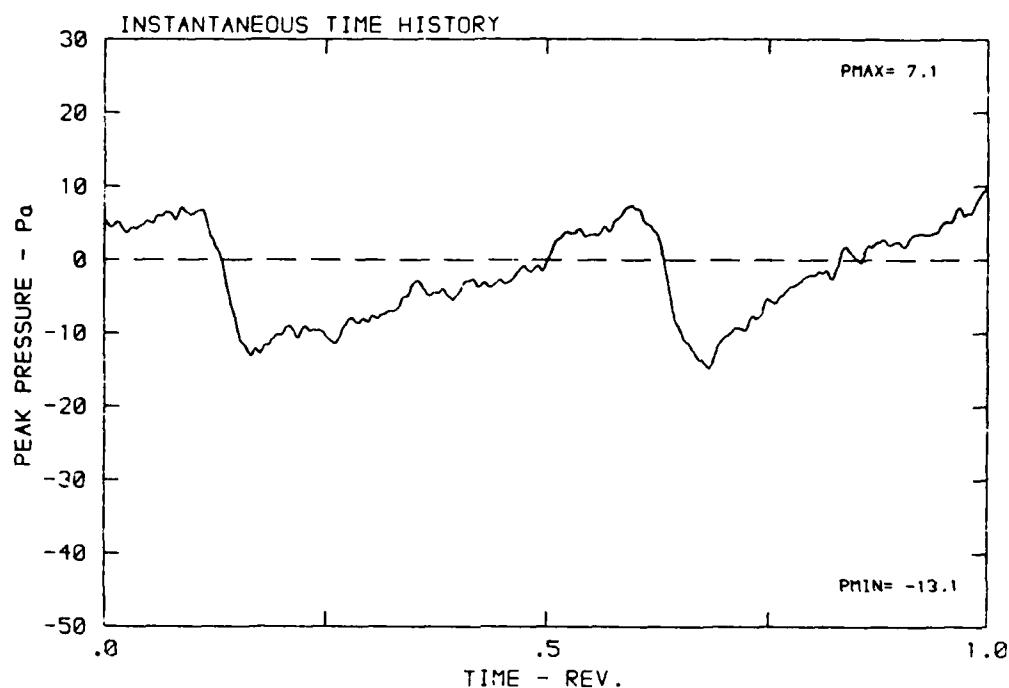
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β : 19.9° MH: .6745 n: 2100 rpm v/u : .231 ϕ : .0° T: 287.5 K



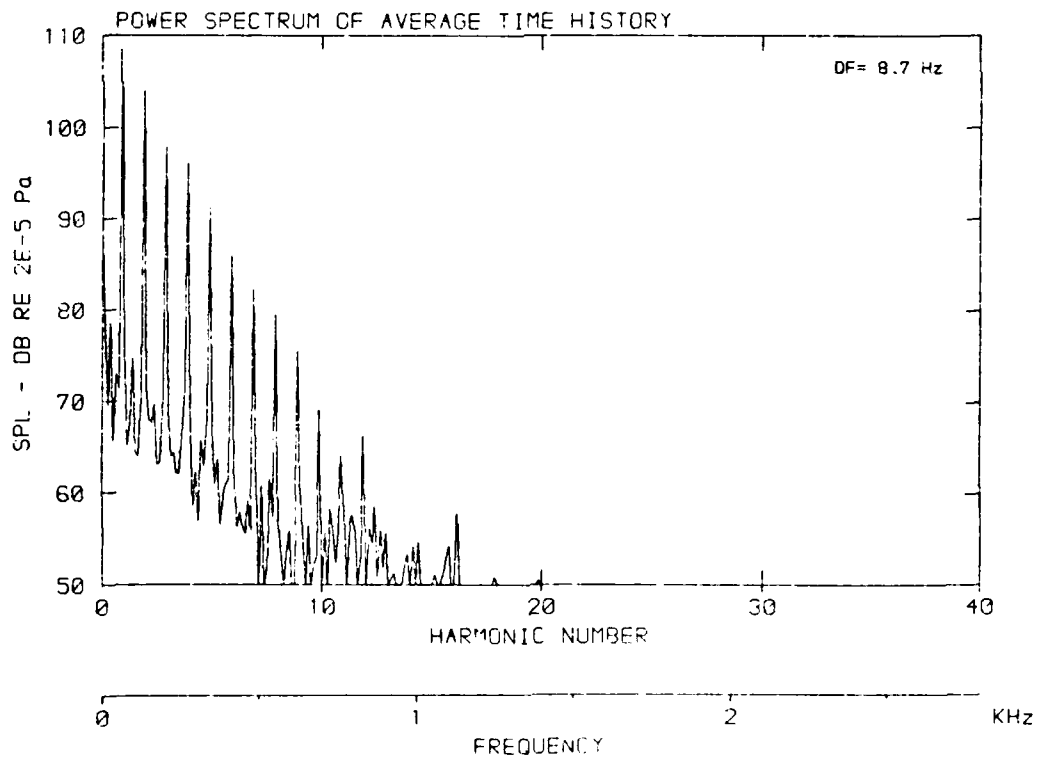
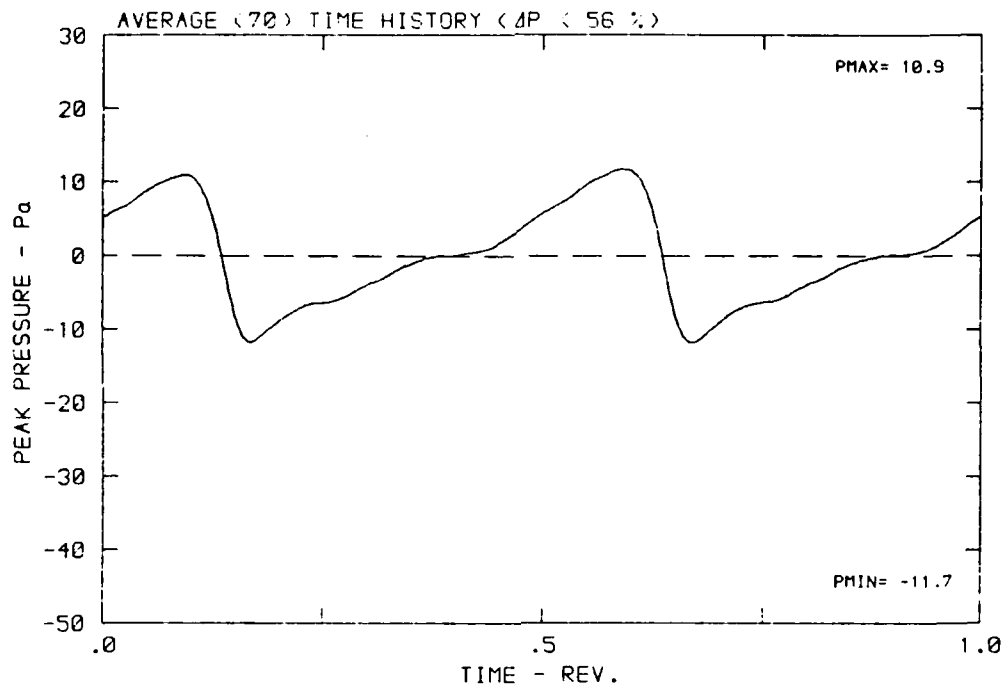
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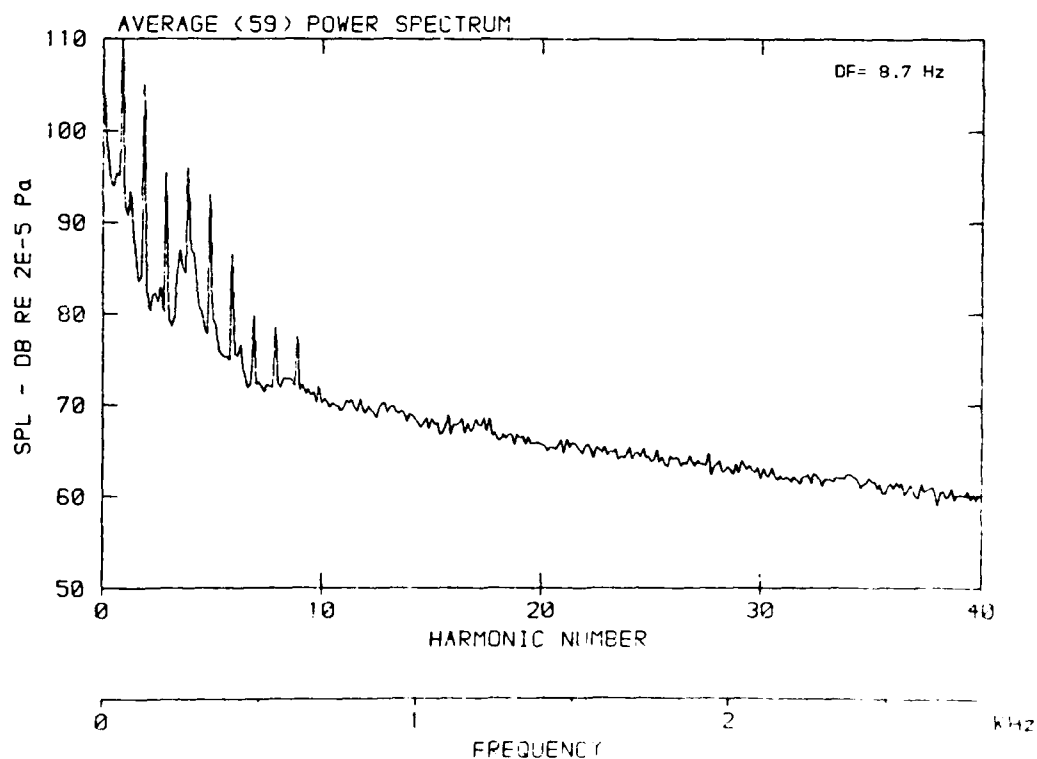
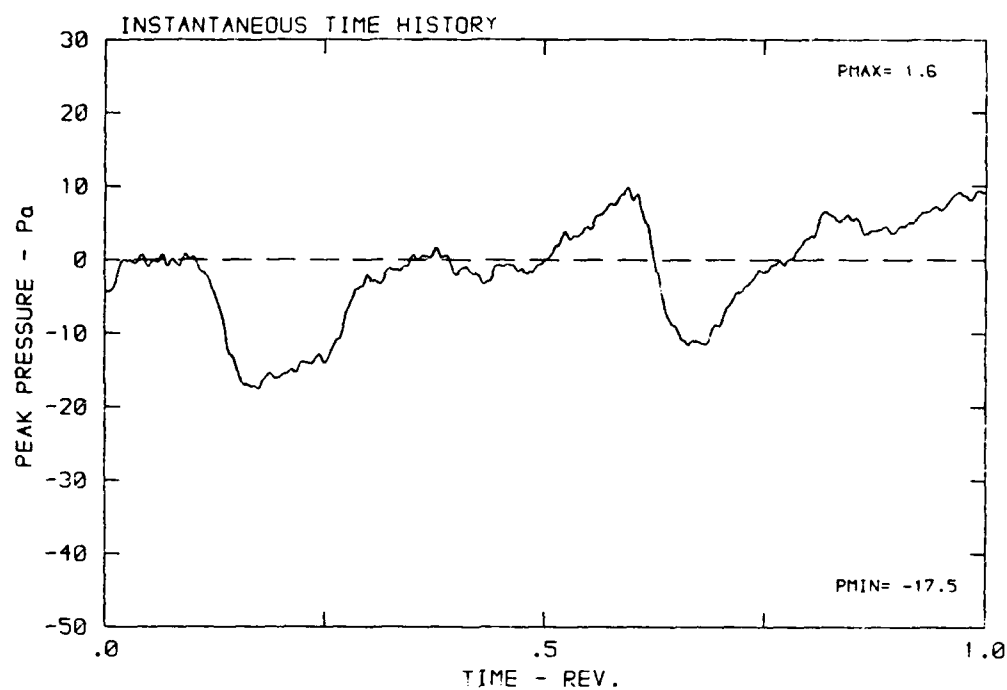
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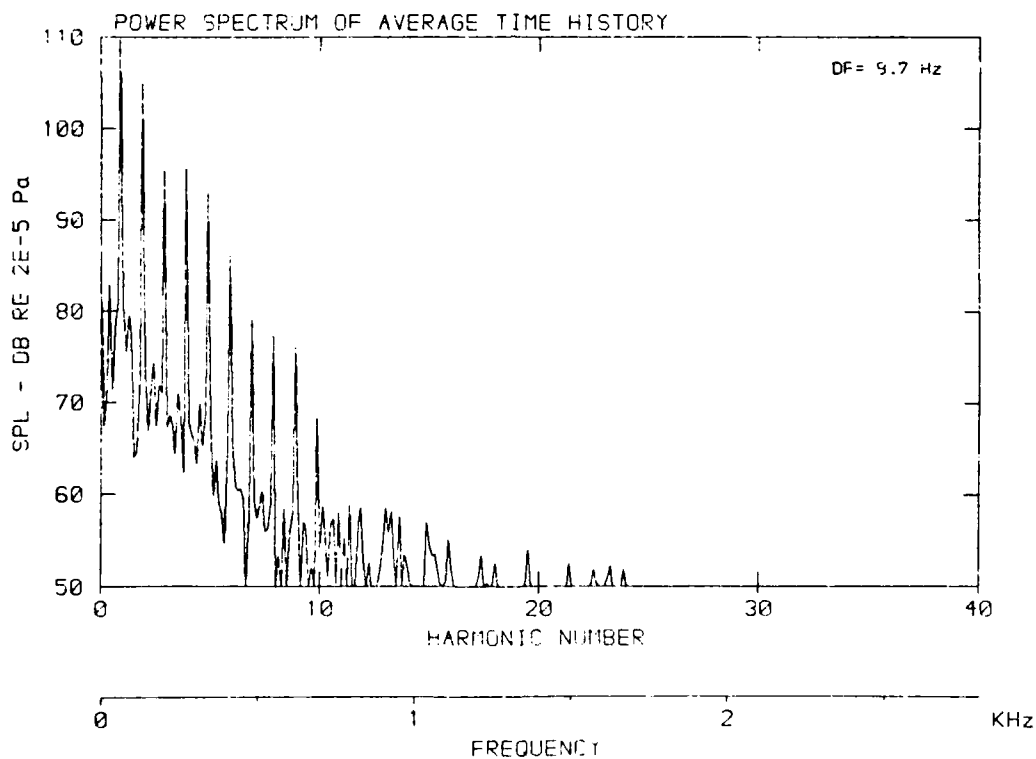
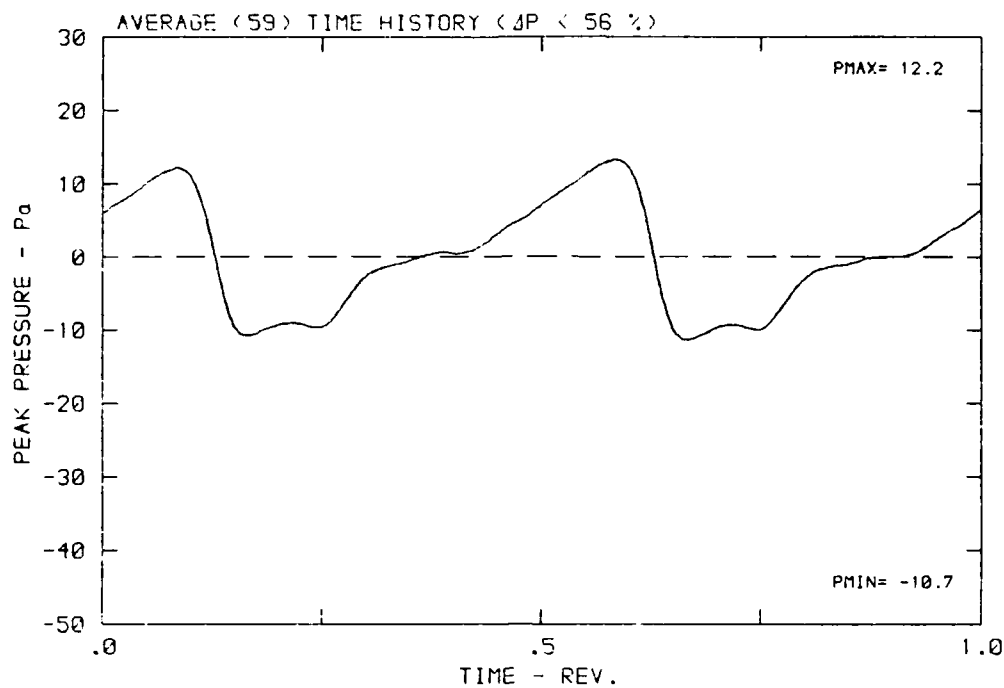
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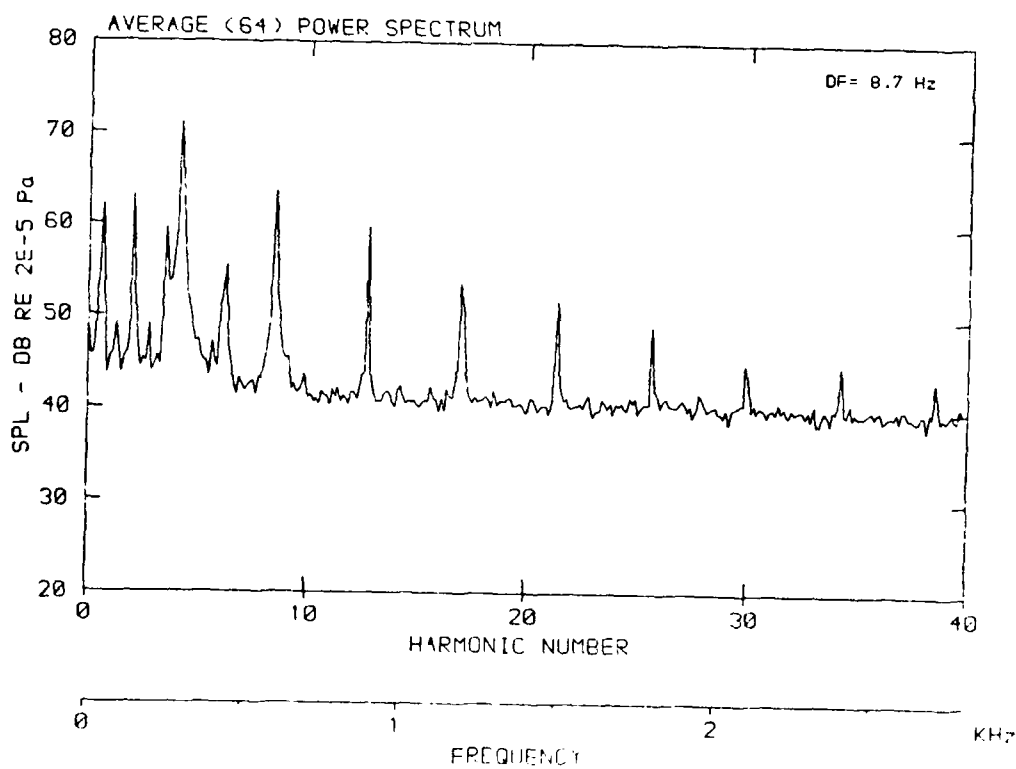
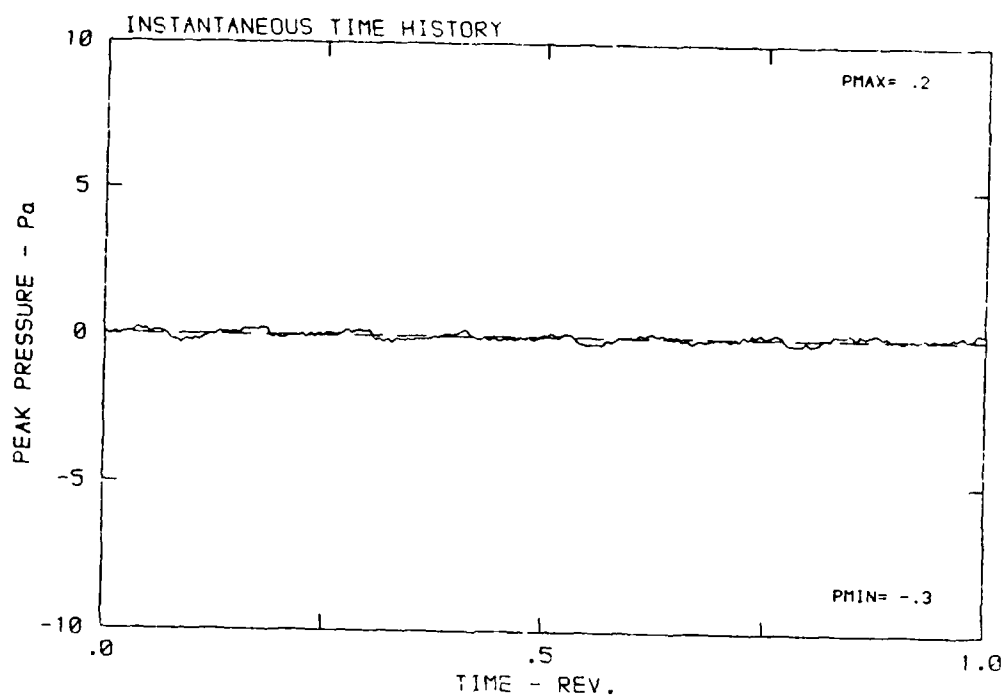
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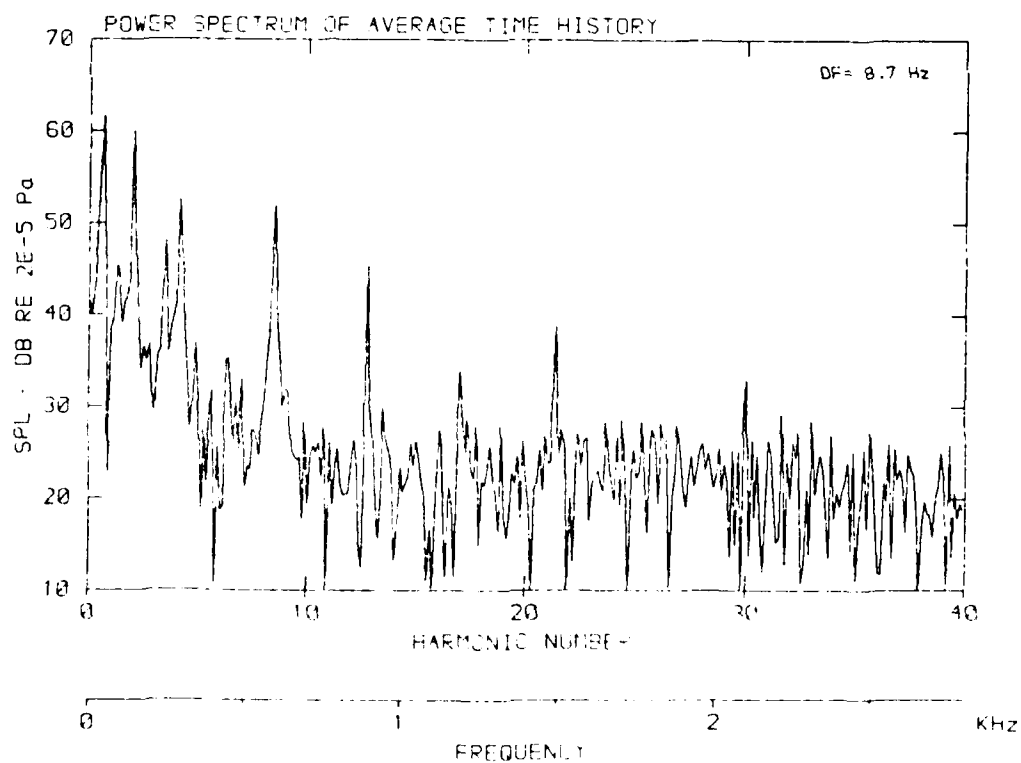
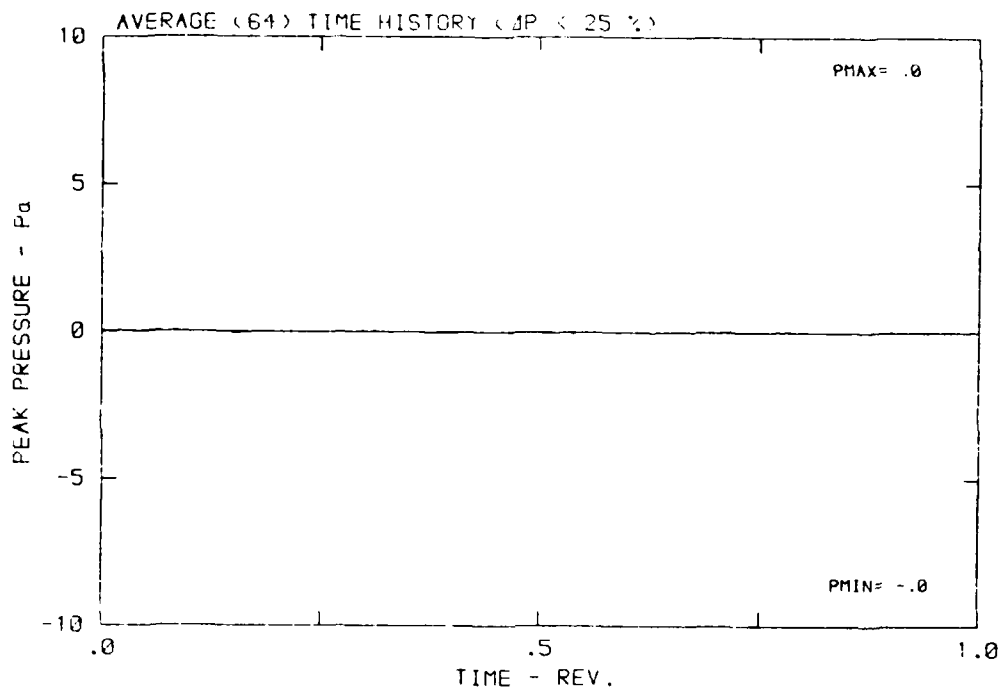
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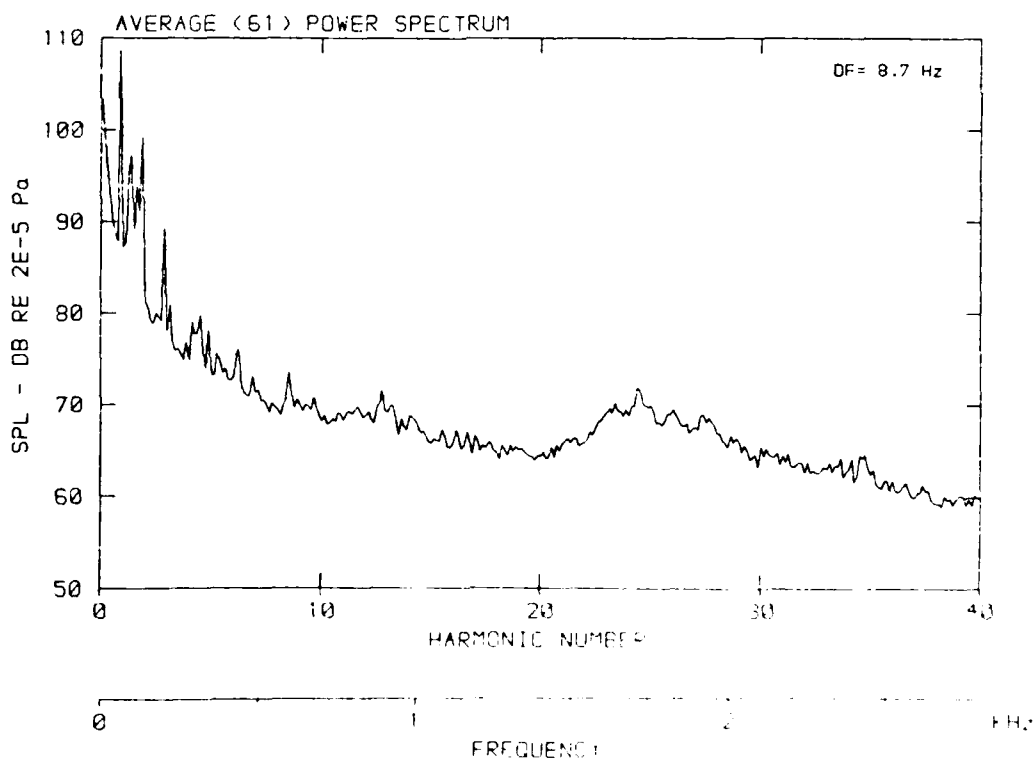
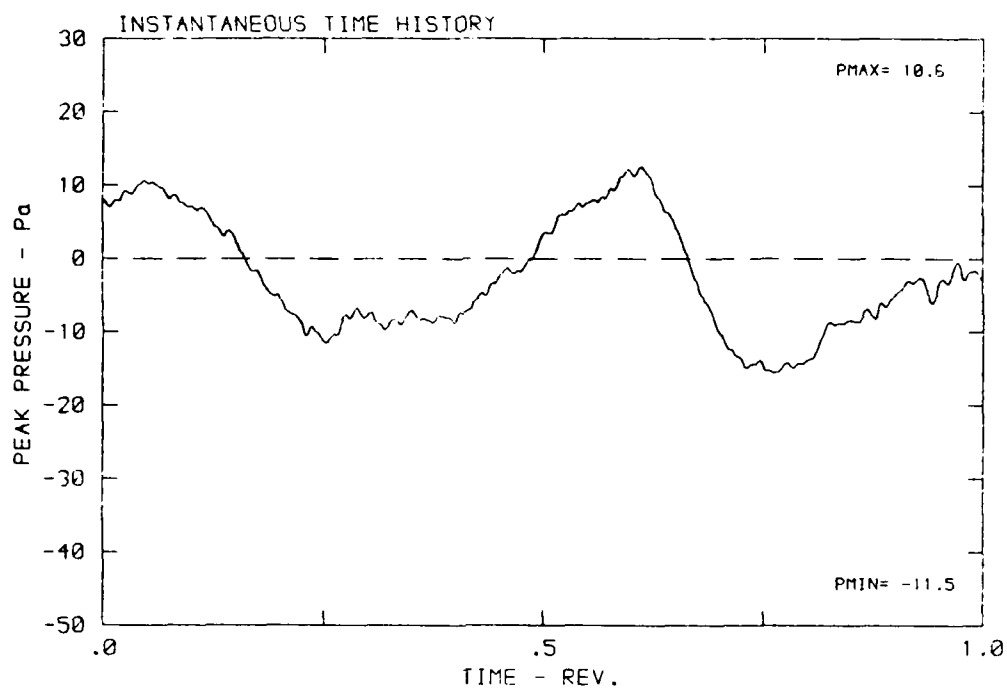
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β : 19.9° MH: .6745 n: 2100 rpm v u: .231 ϕ : .0° T: 287.5 K



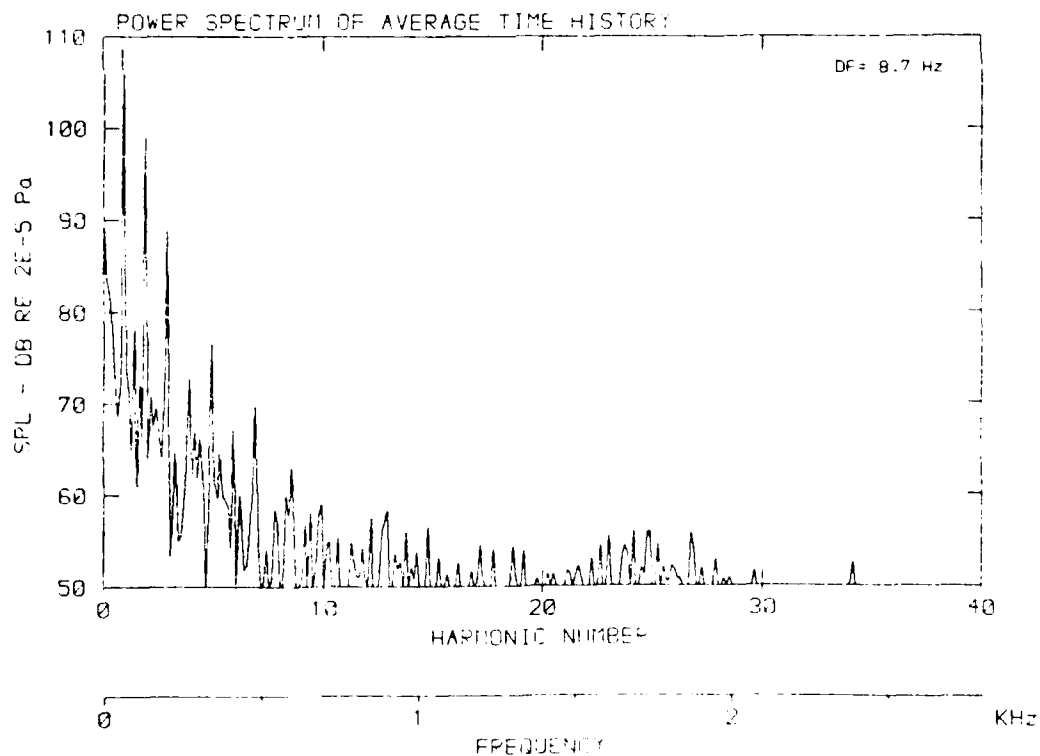
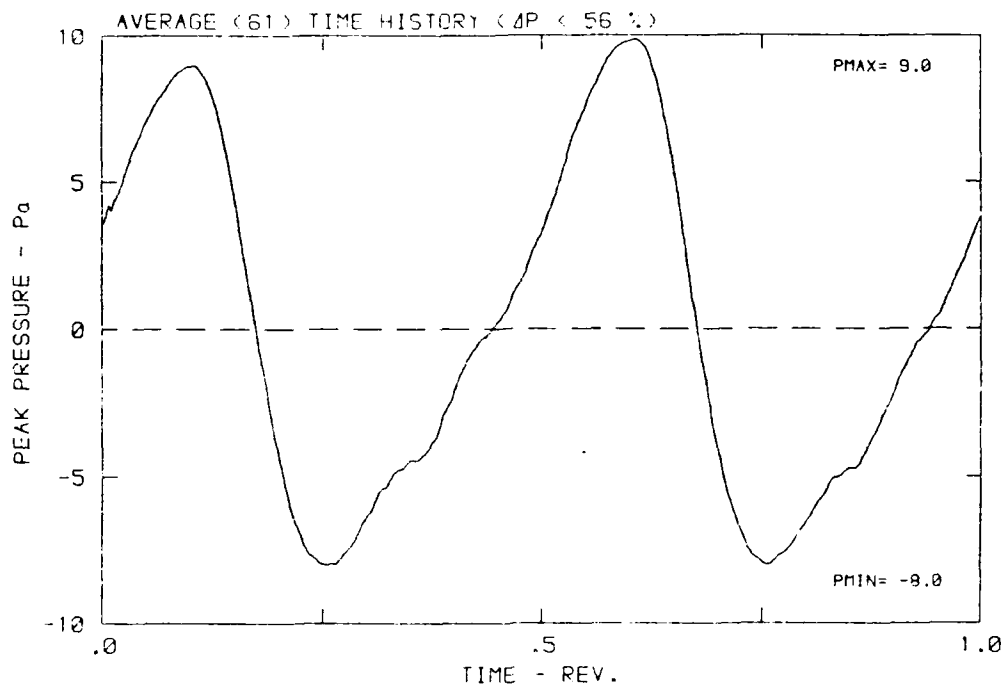
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β : 19.9° MH: .6745 n: 2100 rpm v/u : .231 ϕ : .0° T: 287.5 K



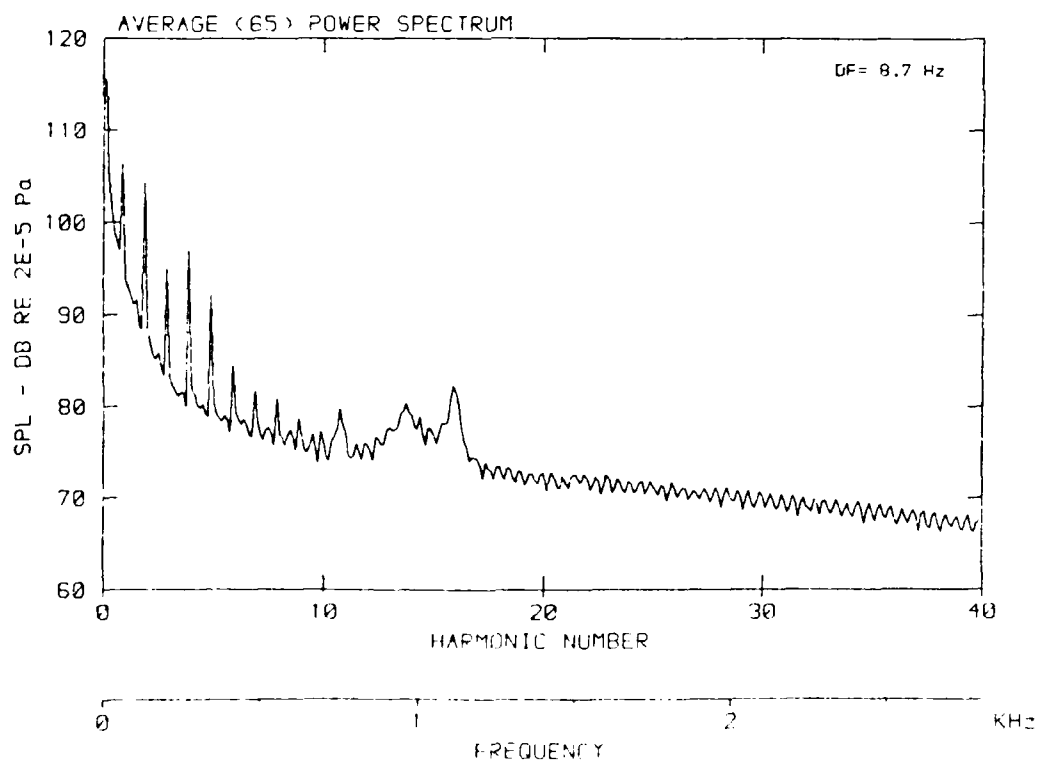
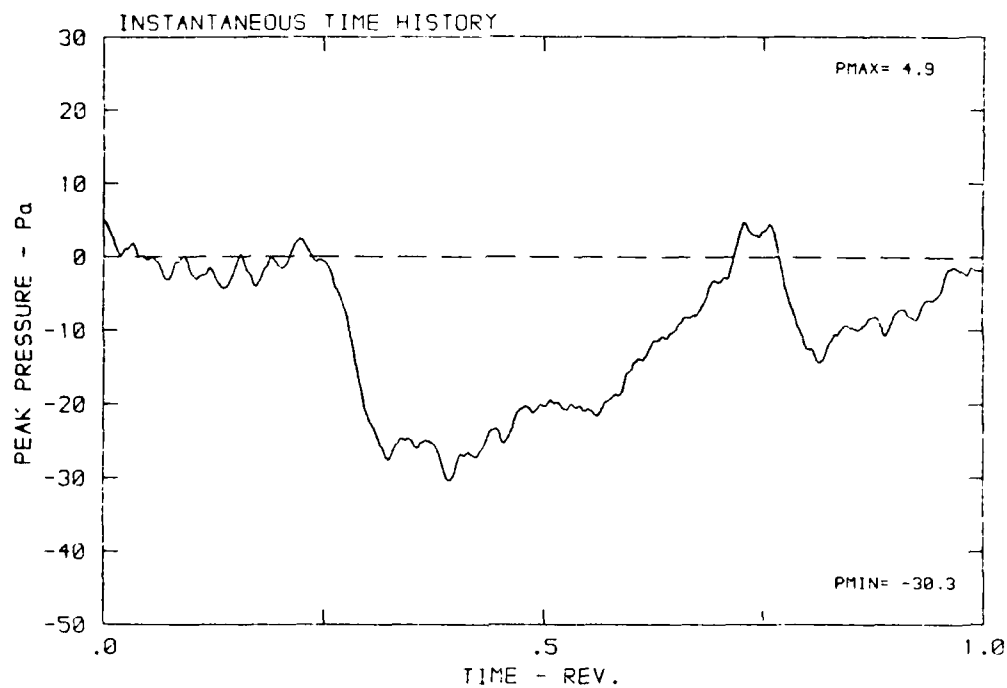
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p: 19.9⁰ MH: .6745 n: 2100 rpm v_{to}: .231 ϕ : .0⁰ T: 287.5 k



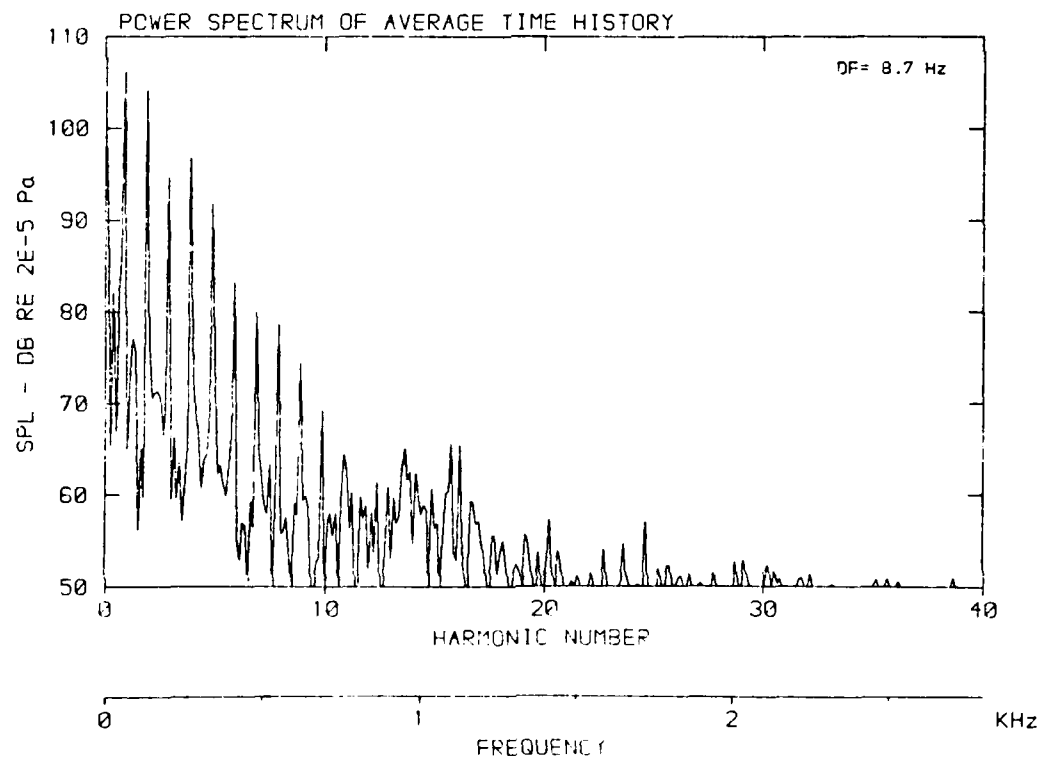
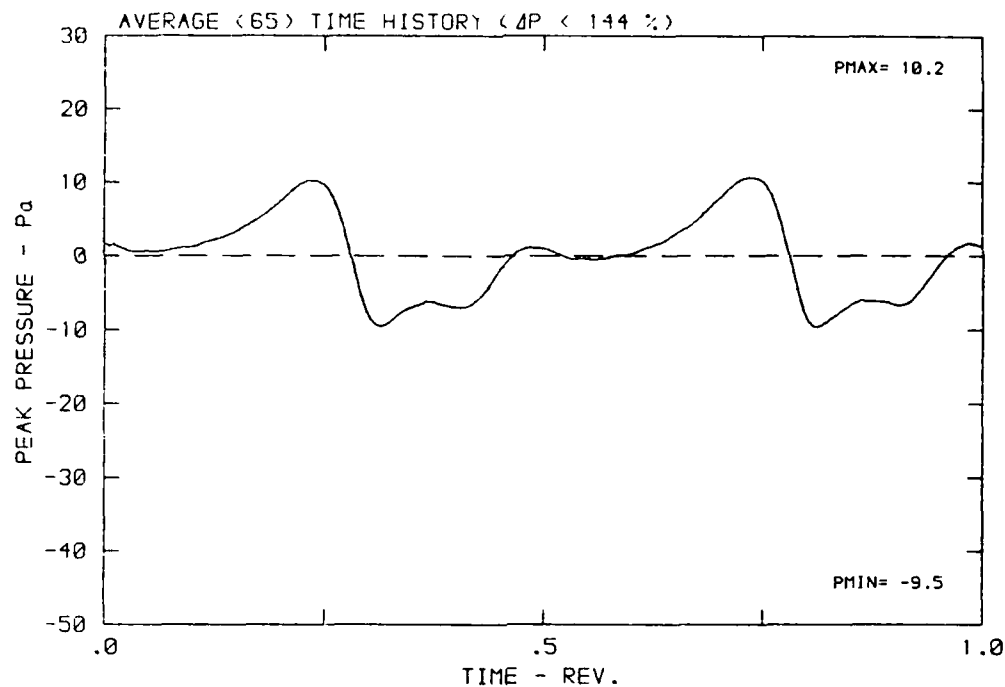
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β : 19.9° MH: .6745 n: 2100 rpm v/u : .231 ϕ : .0° T: 287.3 K



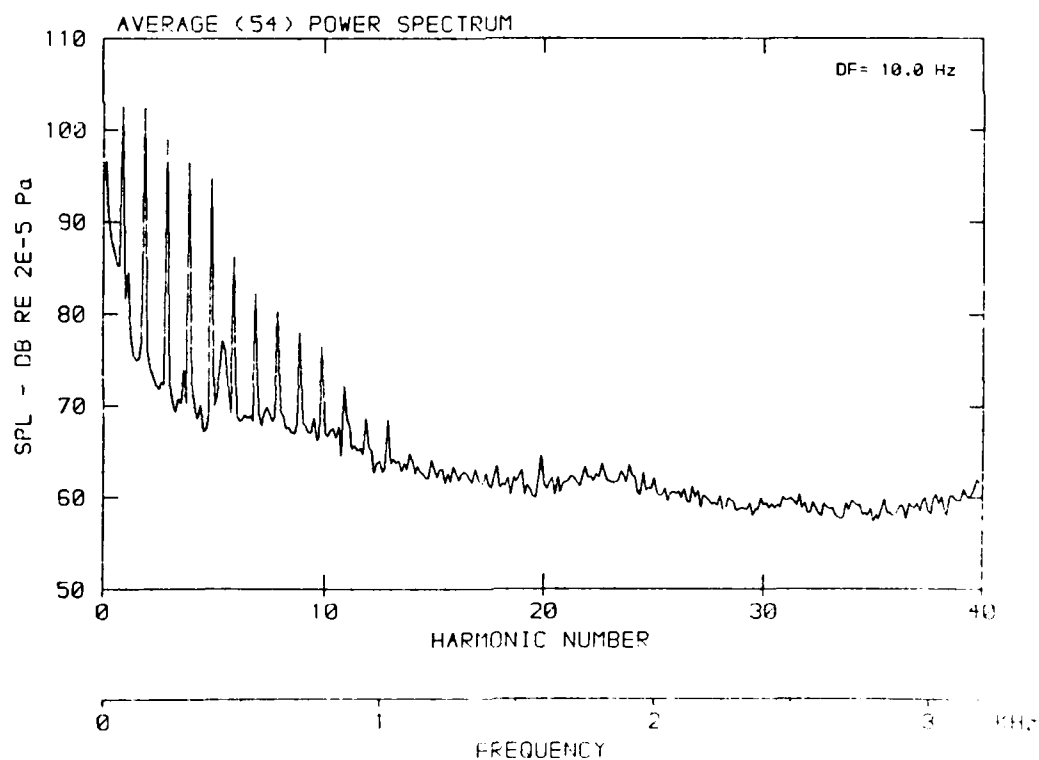
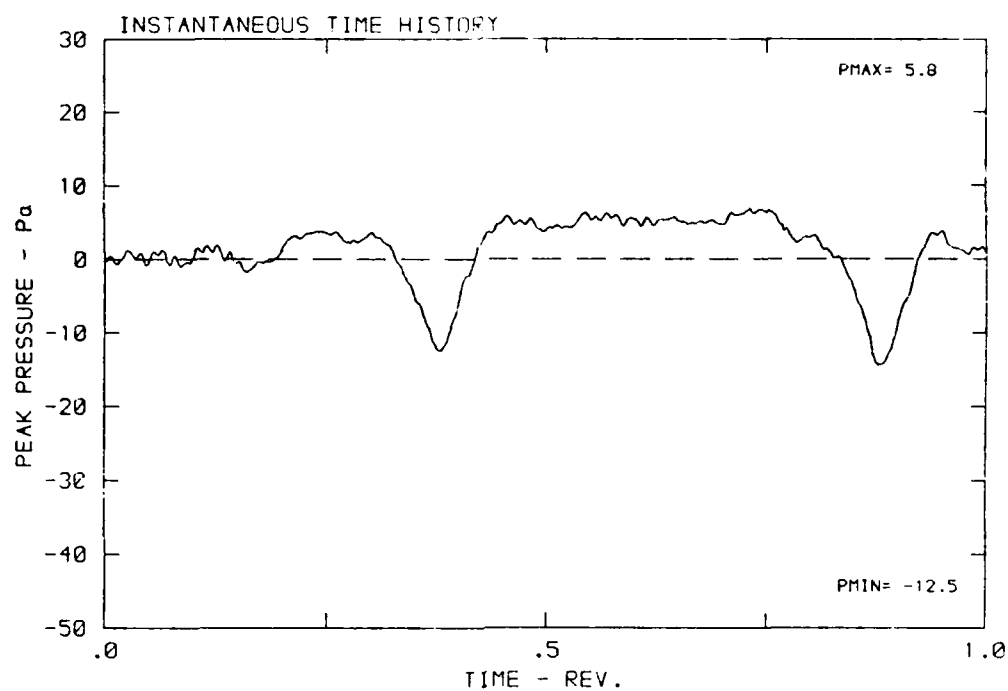
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β : 19.9° MH: .6745 n: 2100 rpm v/u : .231 ϕ : .0° T: 287.5 K



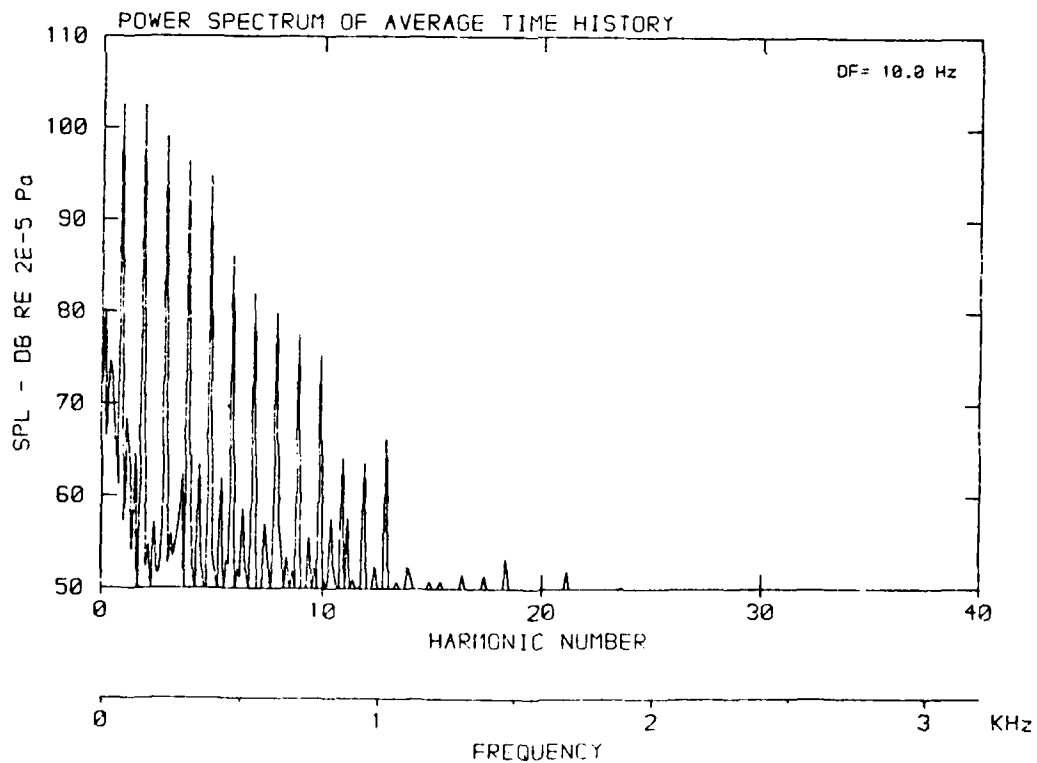
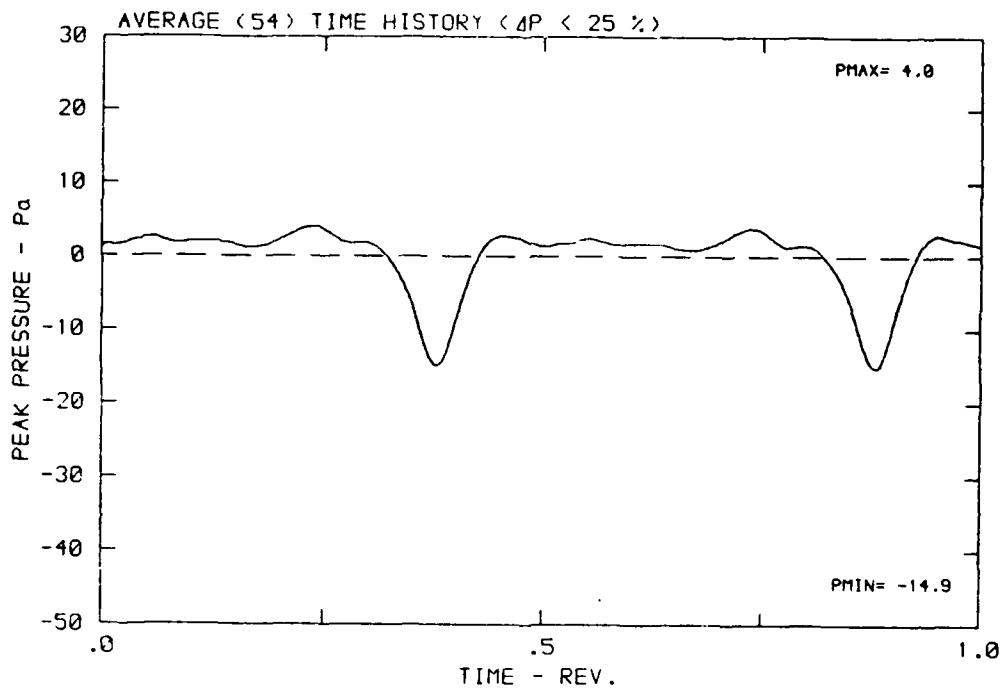
DATA POINT: FNC-E RUN: 180 MP:

β : 19.9° MH: .7659 n: 2400 rpm v/u : .203 ϕ : .0° T: 267.3 K



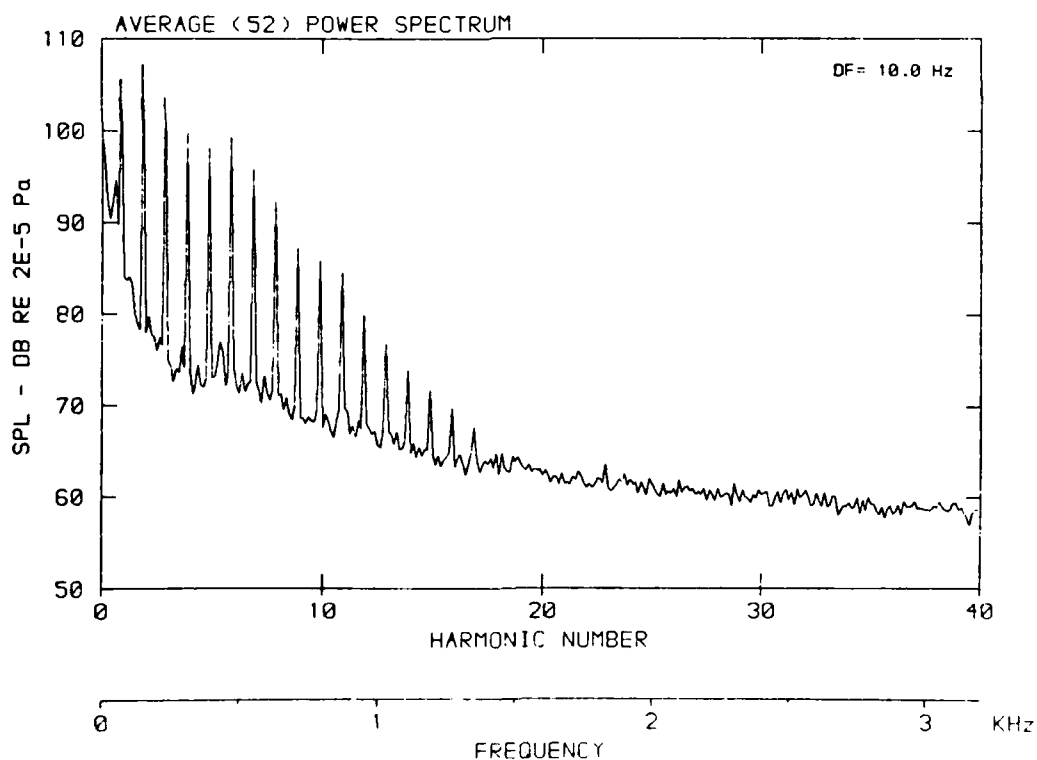
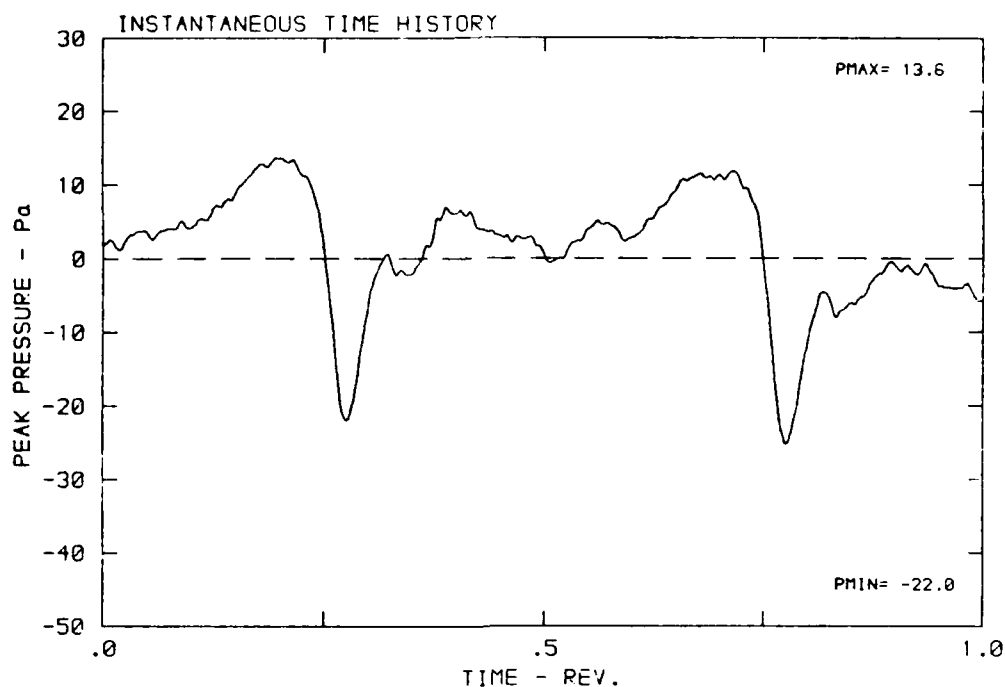
DATA POINT: FNC-8 RUN: 180 MP: 1

β : 19.9° MH: .7659 n: 2400 rpm v/u : .203 ϕ : .0° T: 287.9 K



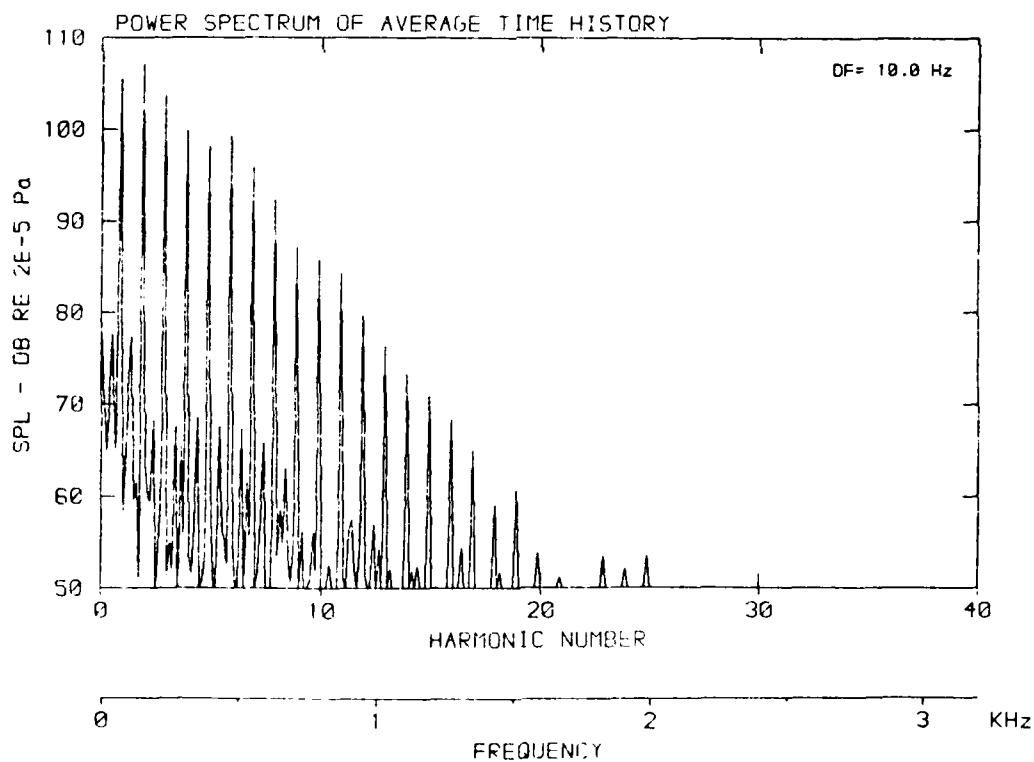
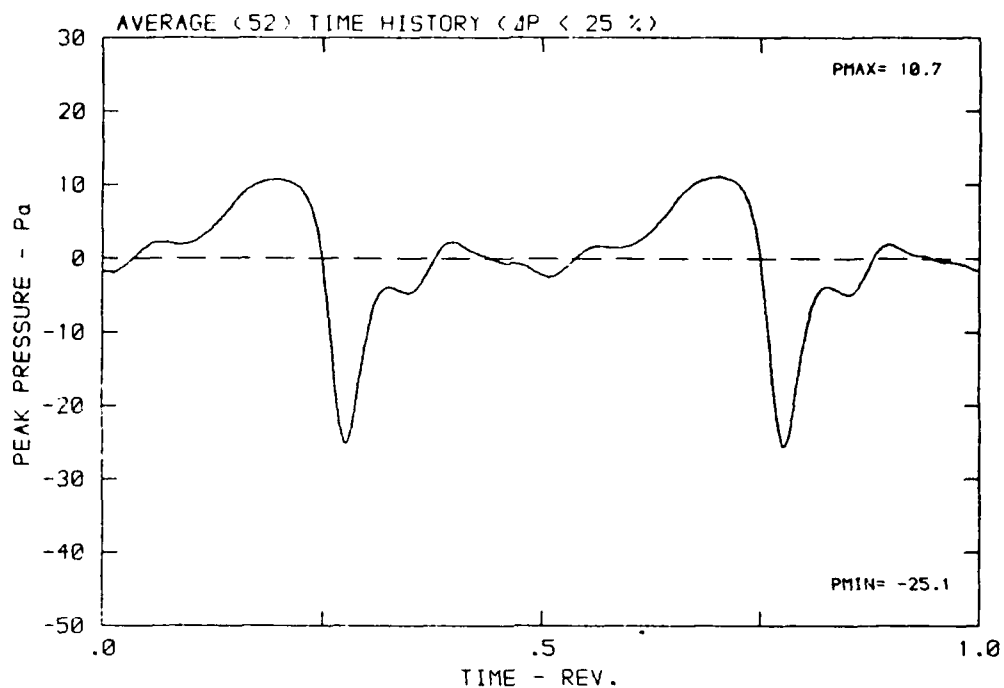
DATA POINT: FNC-8 RUN: 180 MP: 2

β : 19.9° MH: .7659 n: 2400 rpm v/u: .203 ϕ : .0° T: 287.9 K



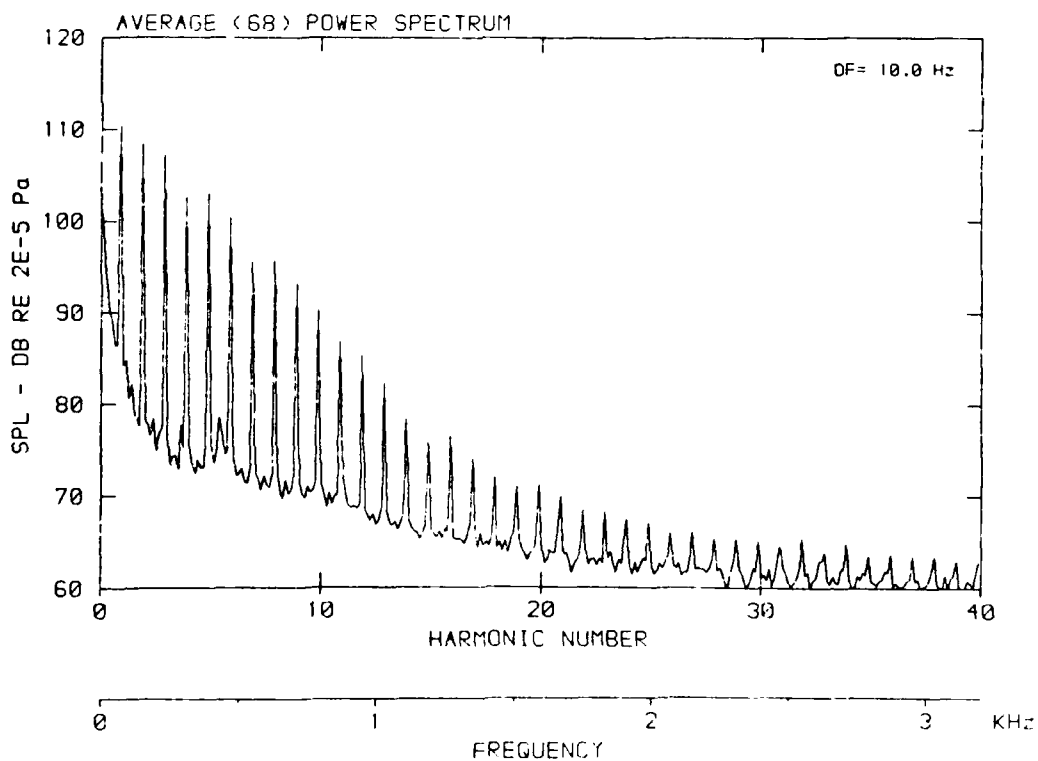
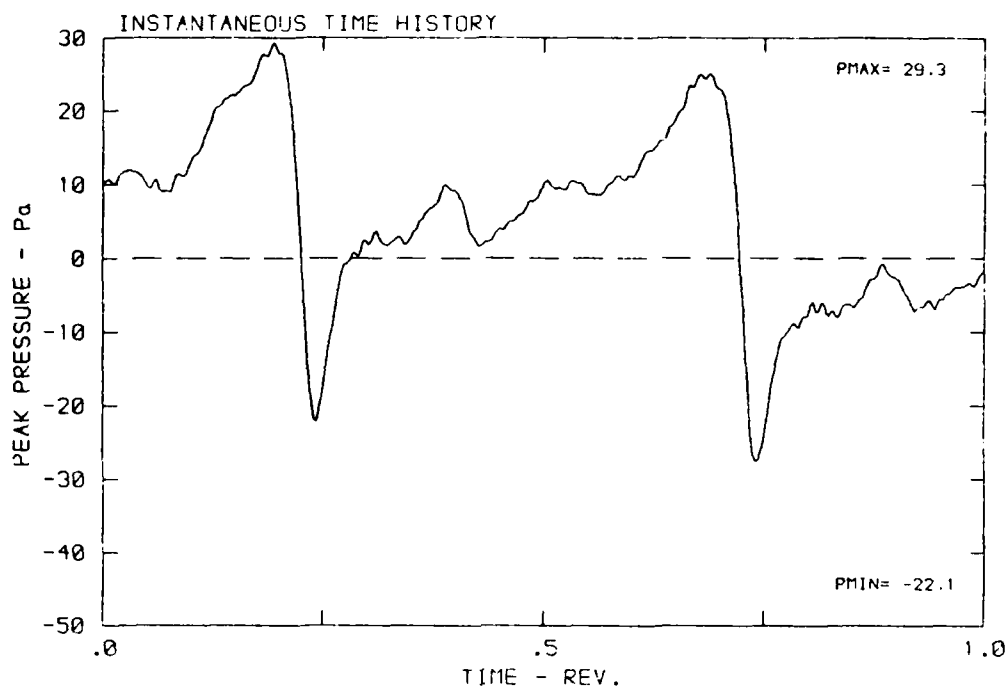
DATA POINT: FNC-8 RUN: 180 MP: 2

β : 19.9° MH: .7659 n: 2400 rpm v/u: .203 ϕ : .0° T: 287.9 K



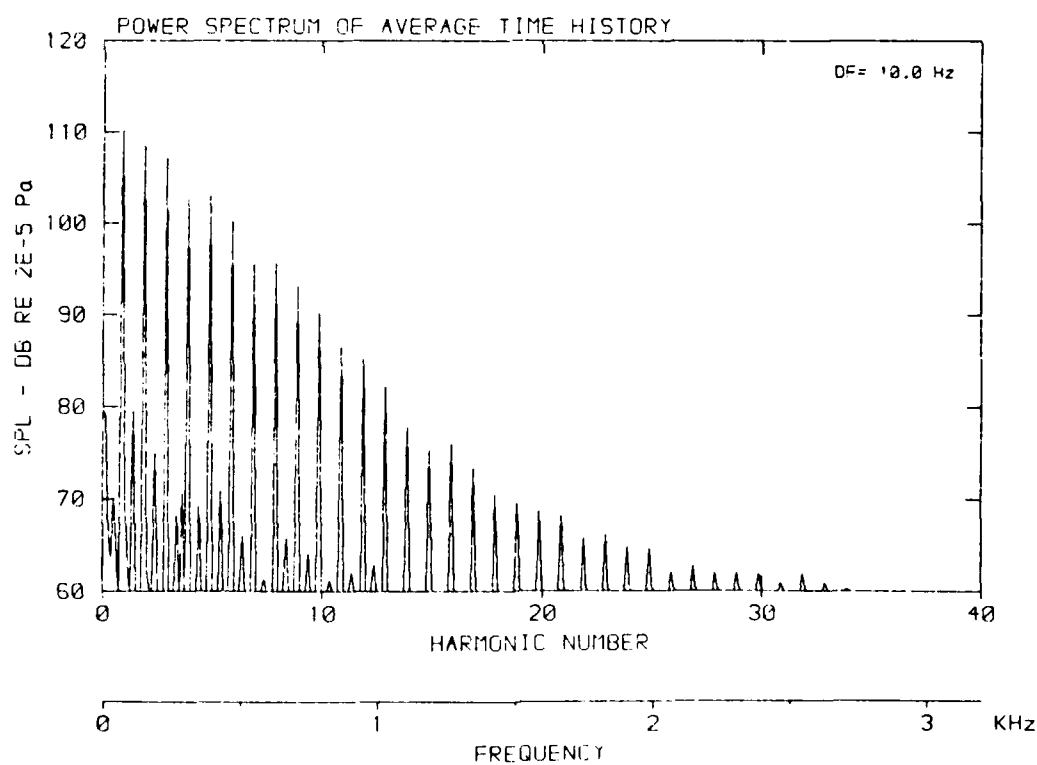
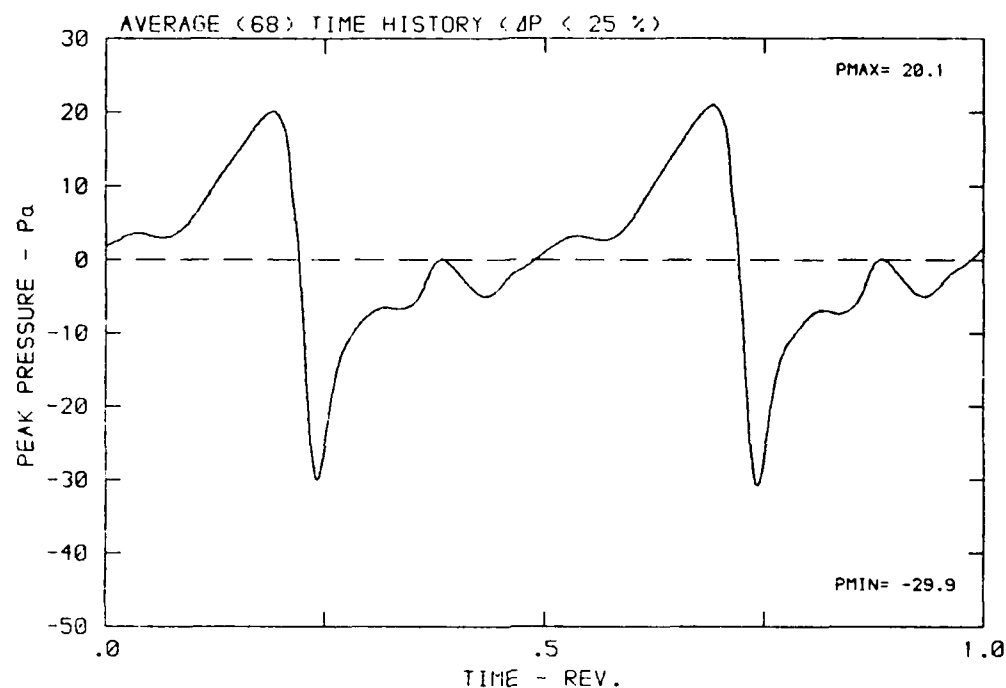
DATA POINT: FNC-8 RUN: 180 MP: 3

β : 19.9° MH: .7659 n: 2400 rpm v/u : .203 ϕ : .0° T: 287.9 K



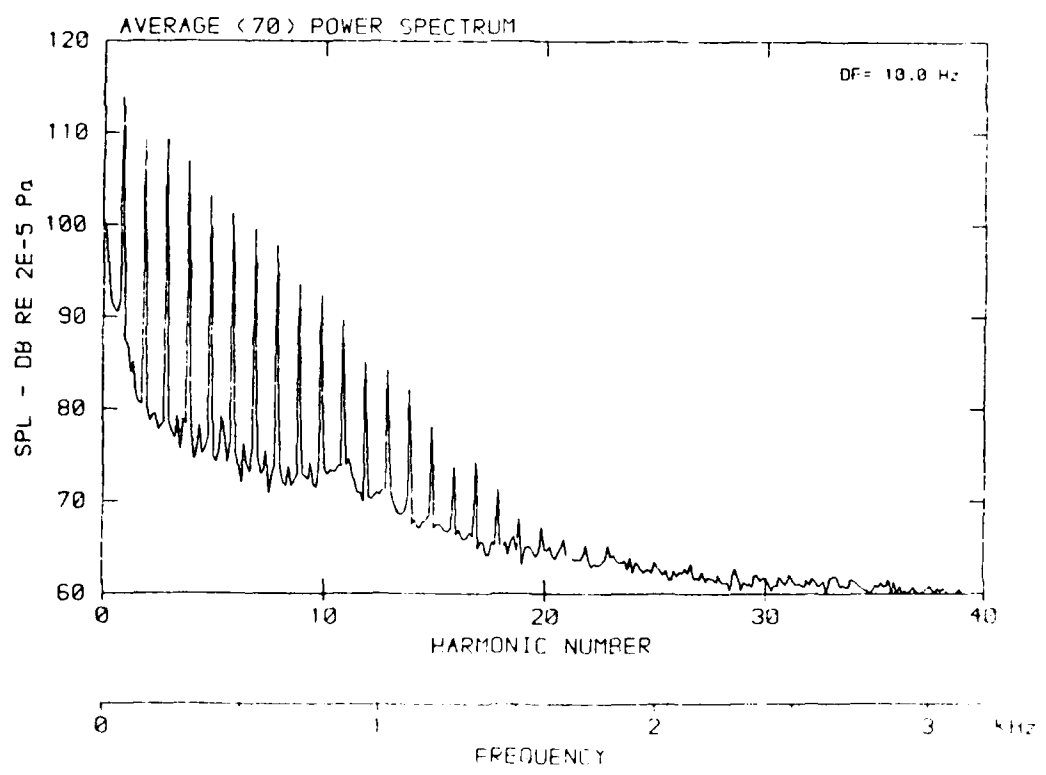
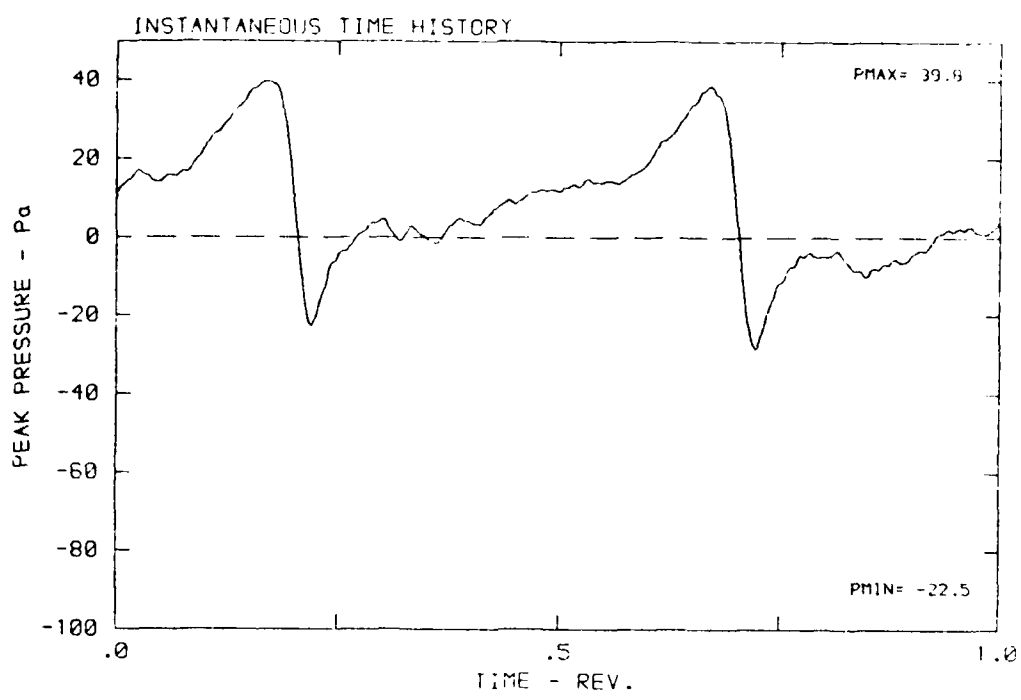
DATA POINT: FNC-8 RUN: 180 MP: 3

β : 19.9° MH: .7659 n: 2400 rpm v/u : .203 ϕ : .0° T: 287.9 K



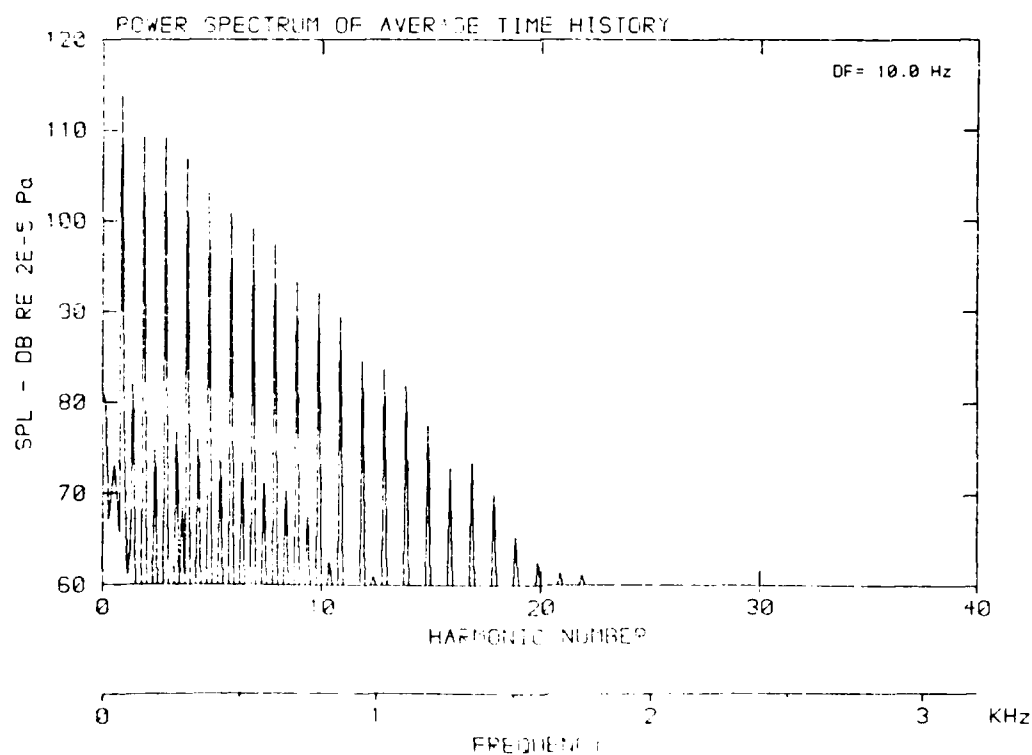
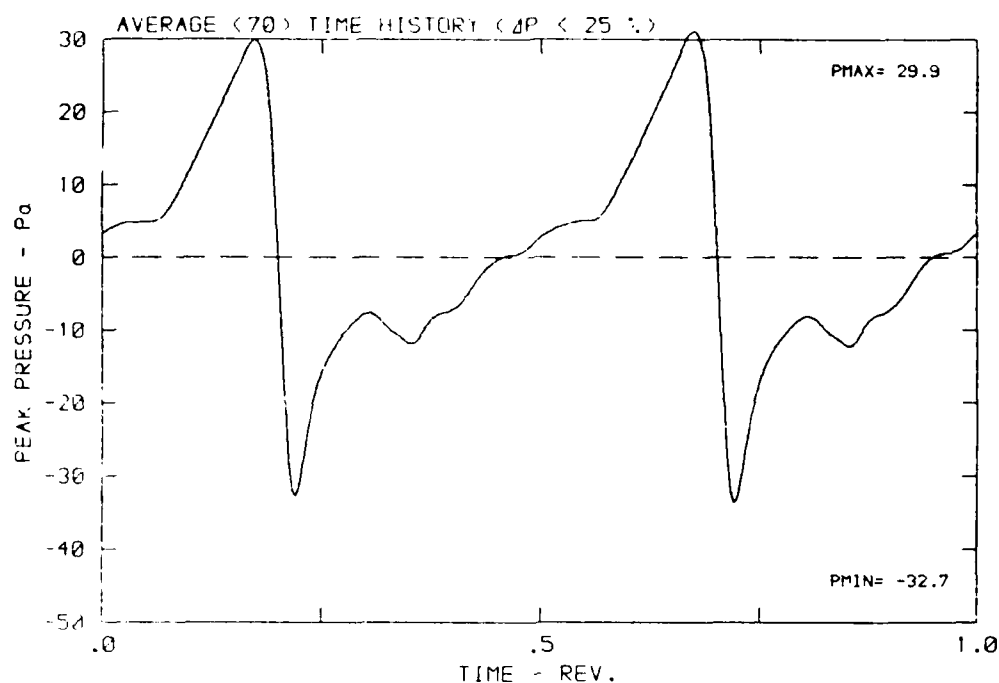
DATA POINT: FNC-8 RUN: 180 MP: 4

β : 19.9° MH: .7659 n: 2400 rpm v/u: .203 ϕ : .0° T: 267.1



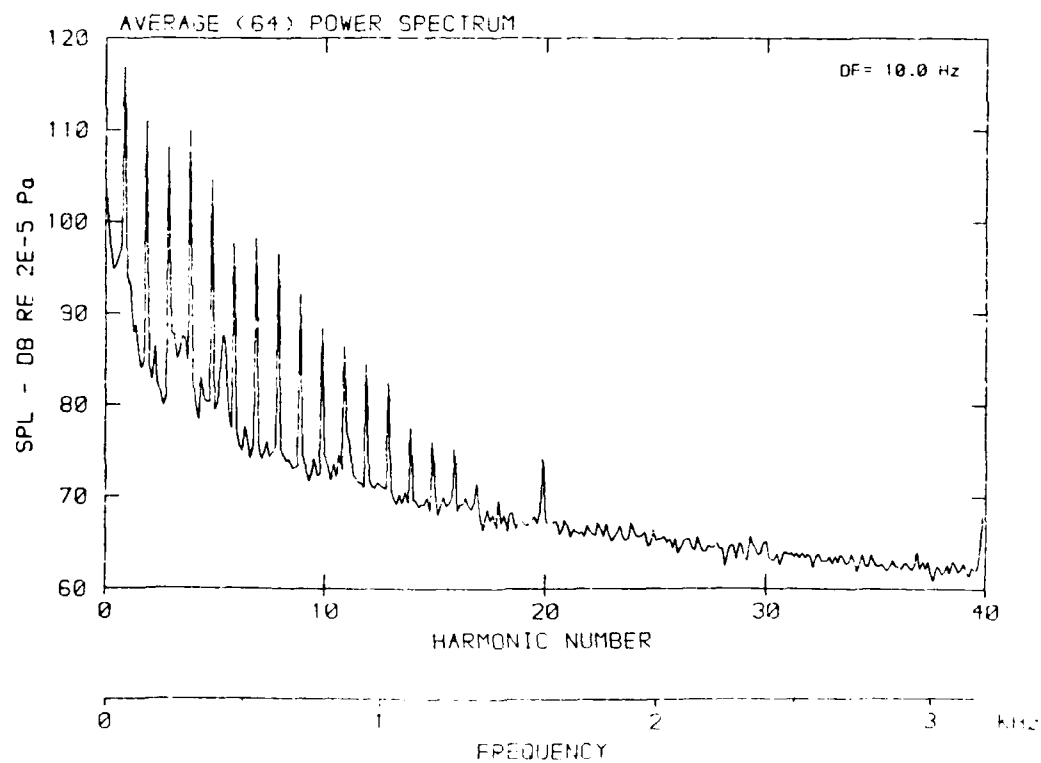
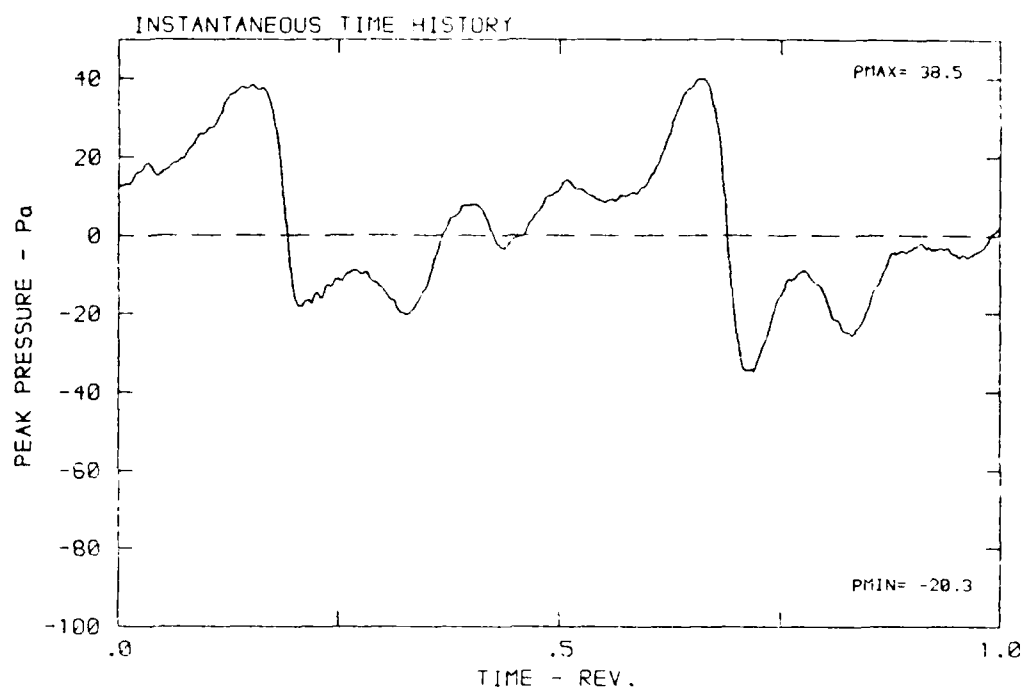
DATA POINT: FNC-8 RUN: 180 MP: 4

β : 19.9° MH: .7659 n: 2400 rpm ν : .203 ϕ : .0° T: 287.9 K



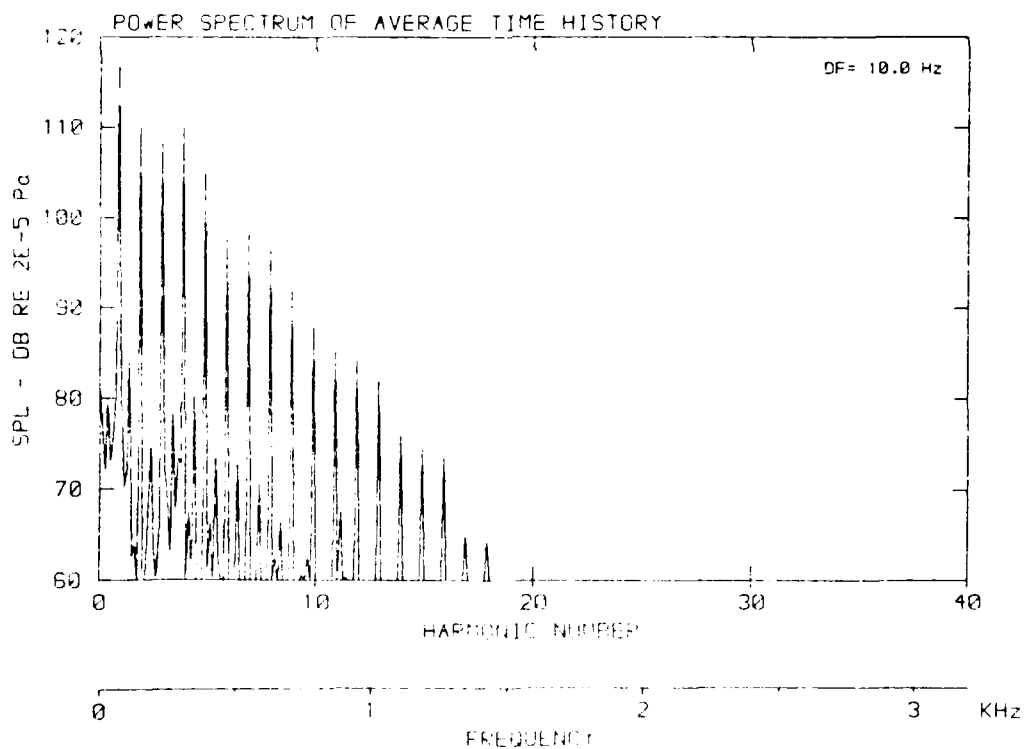
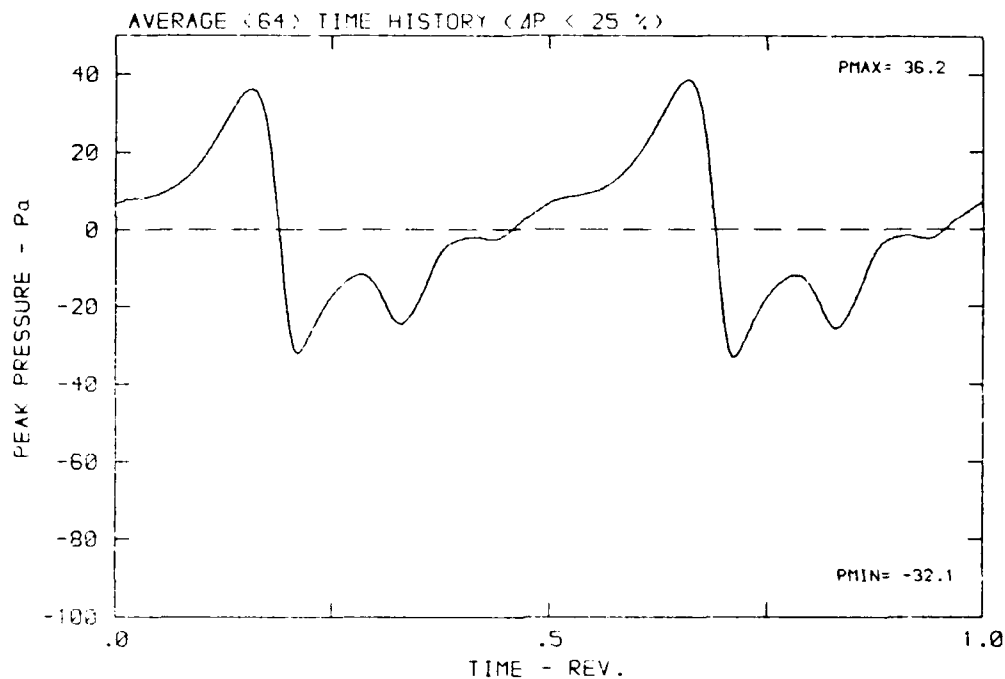
DATA POINT: FNC-8 RUN: 180 MP: 5

β : 19.9° MH: .7659 n: 2400 rpm ν/α : .203 ϕ : .0° T: 287.9



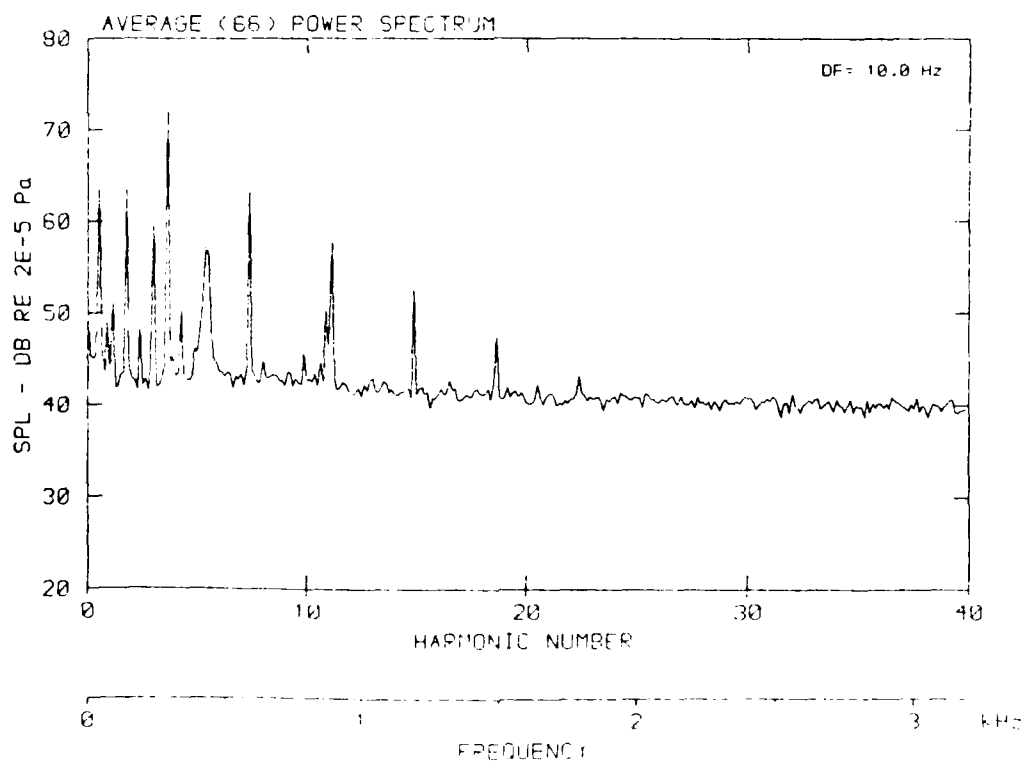
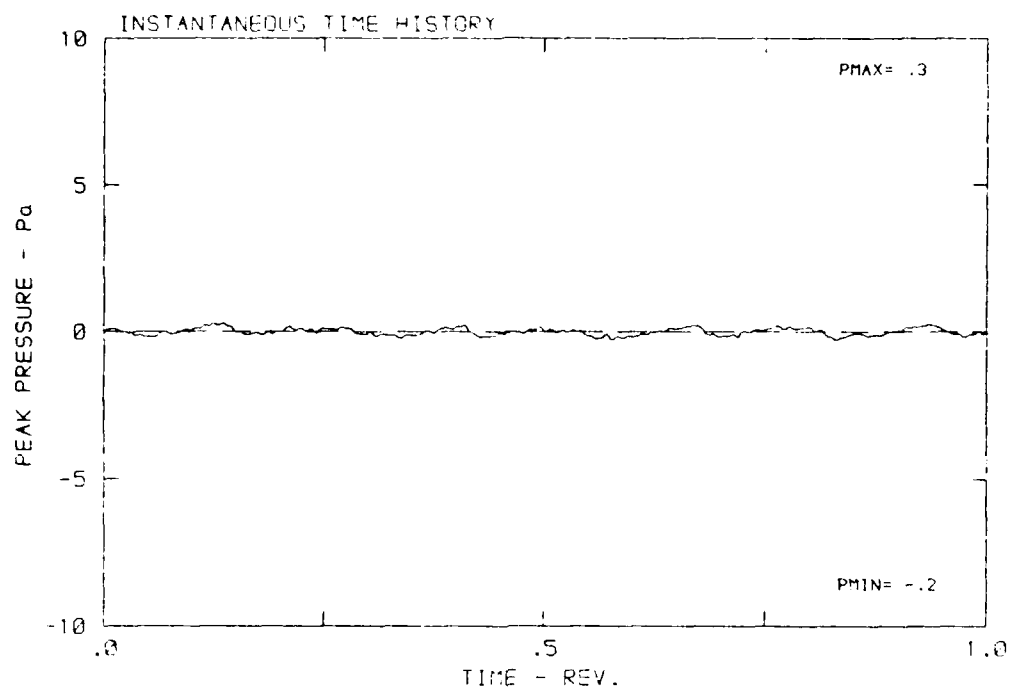
DATA POINT: FNC-8 RUN: 180 MP: 5

β : 19.9° MH: .7659 n: 2400 rpm v/u : .203 ϕ : .0° T: 287.9 K



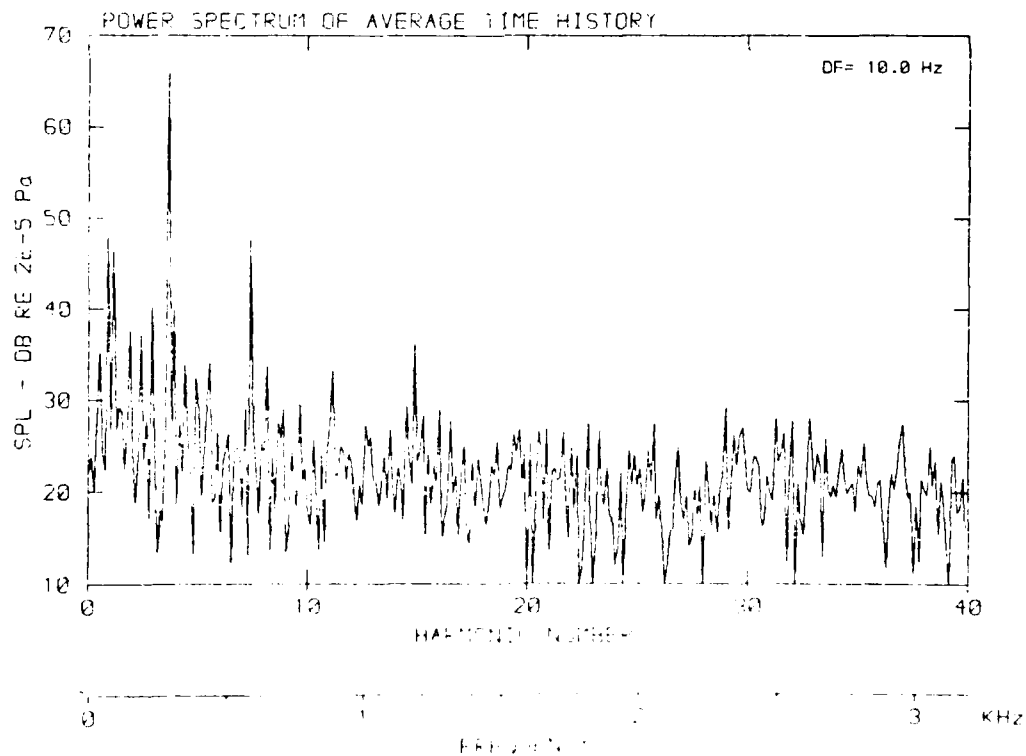
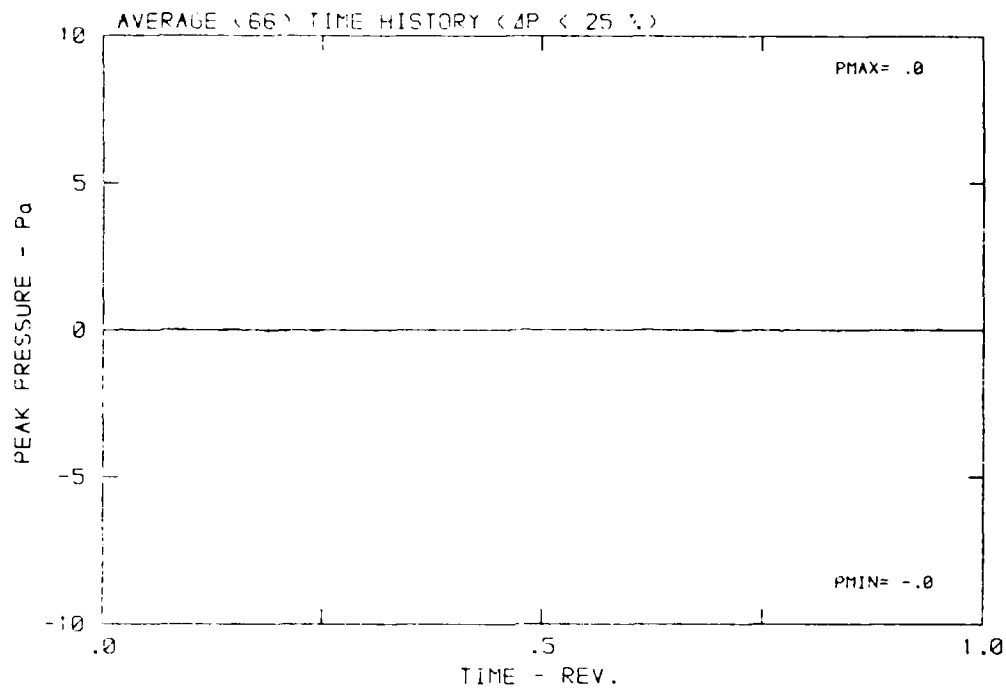
DATA POINT: FNC-8 RUN: 180 MF: 5

β : 19.9° MH: .7659 n: 2400 rpm ν : .203 ϕ : .0° T: 287.3 K



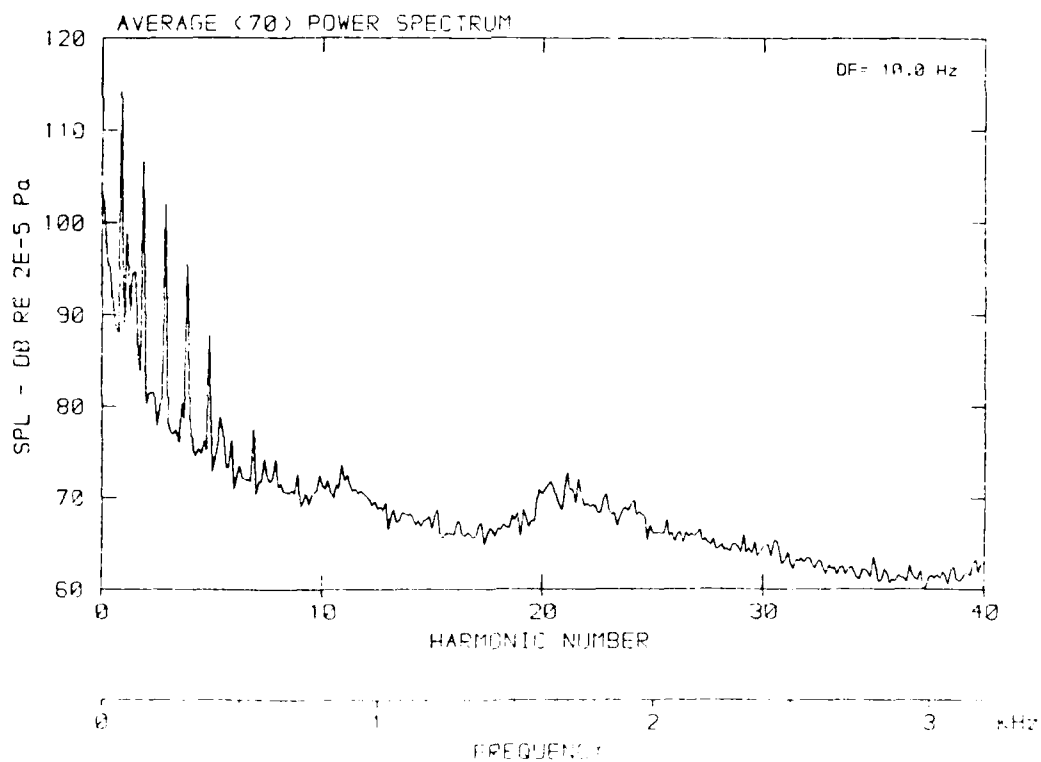
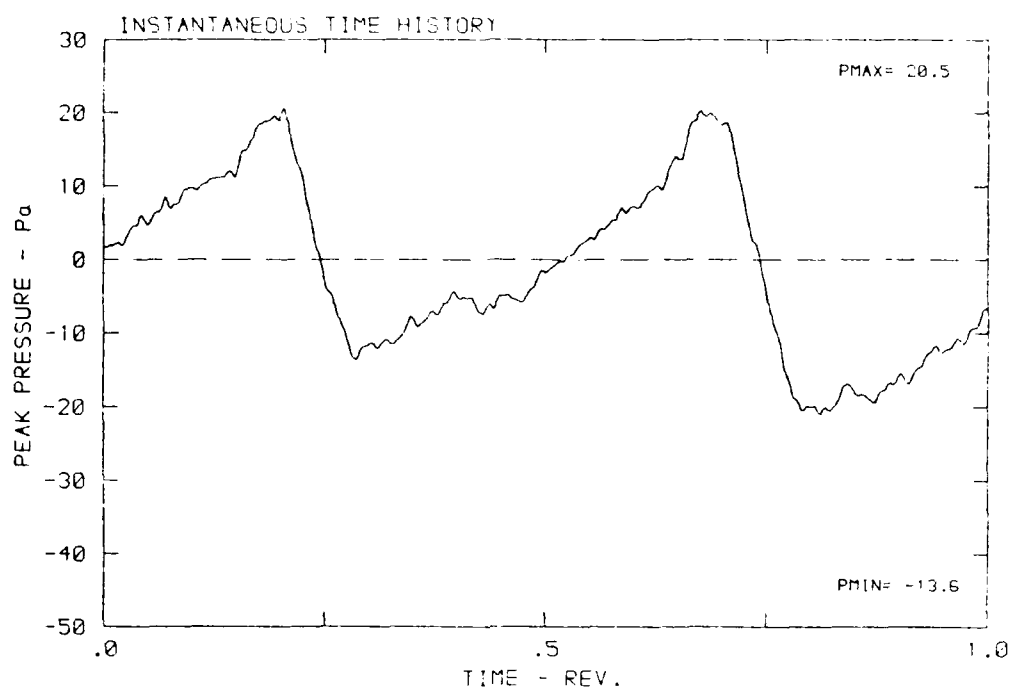
DATA POINT: FNC-8 RUN: 180 MP: 6

β : 19.9° MH: .7659 n: 2400 rpm v/u : .203 ϕ : .0° T: 287.9 K



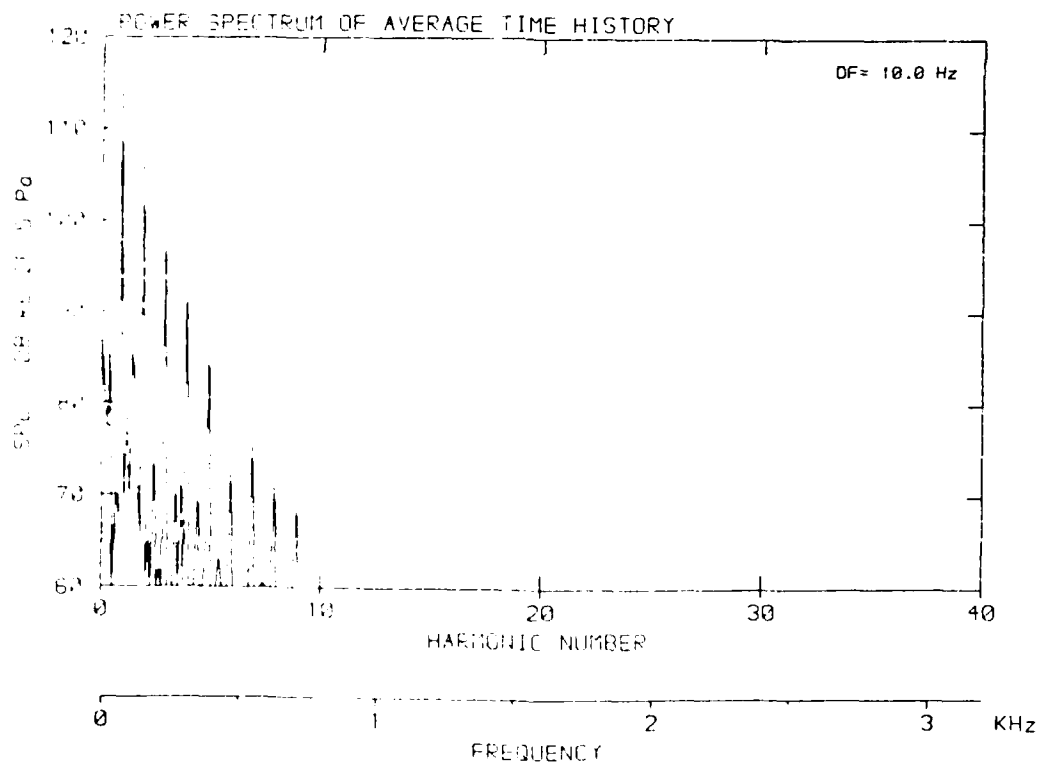
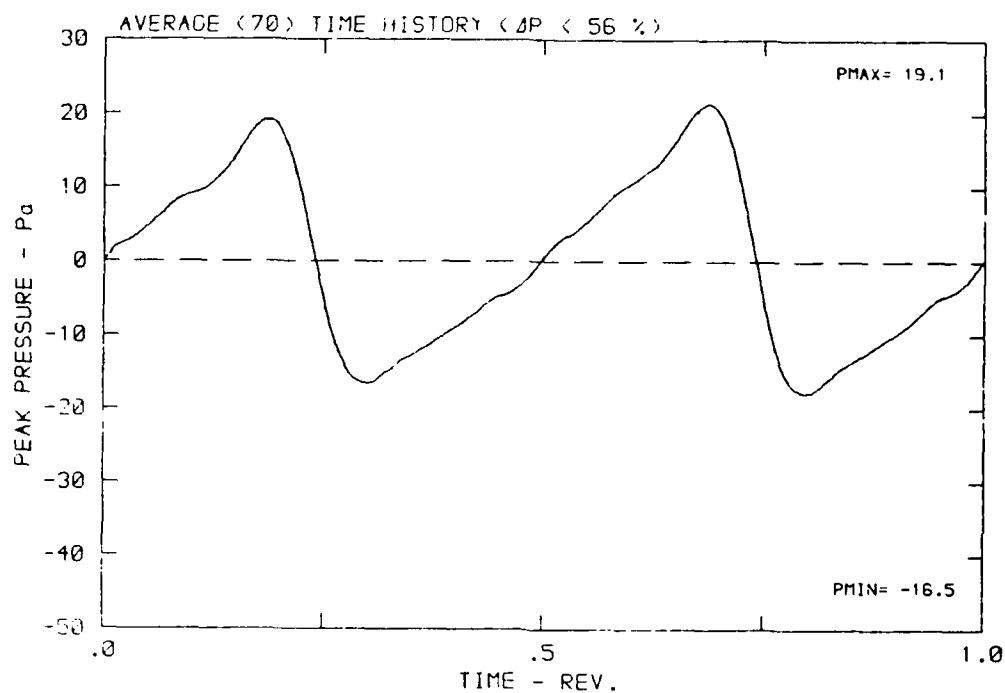
DATA POINT: ENC-8 RUN: 180 MF: 7

β : 19.9° MH: .7659 n: 2400 rpm v/u: .203 ϕ : .0° T: 267.0 s



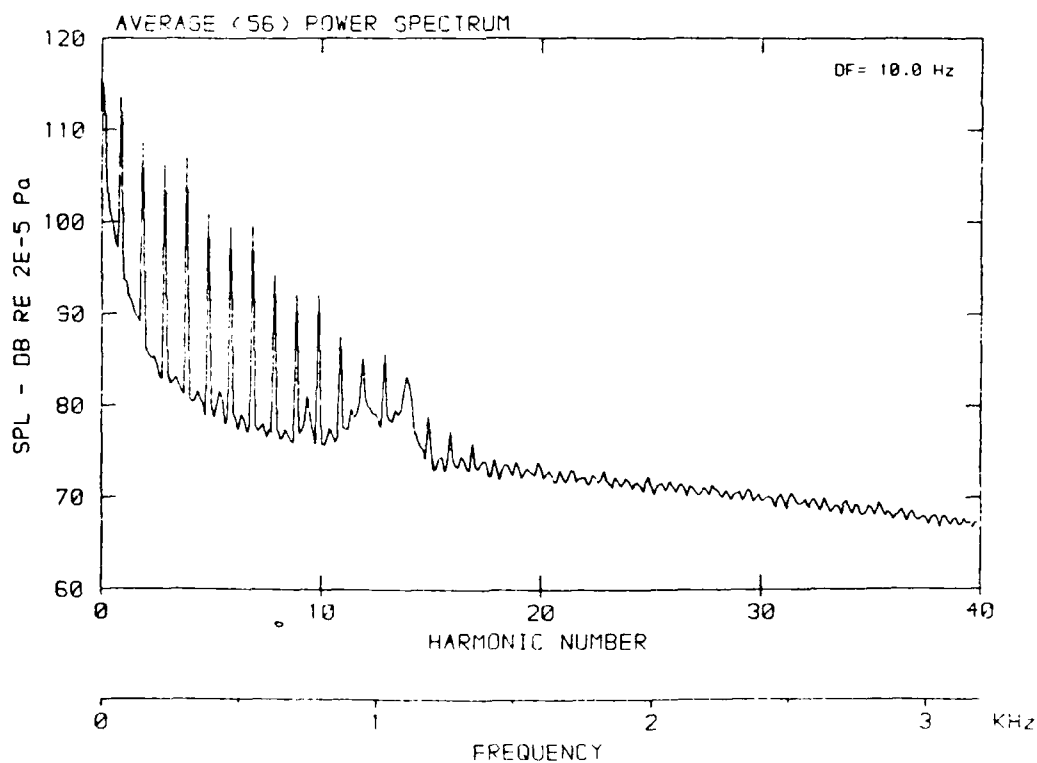
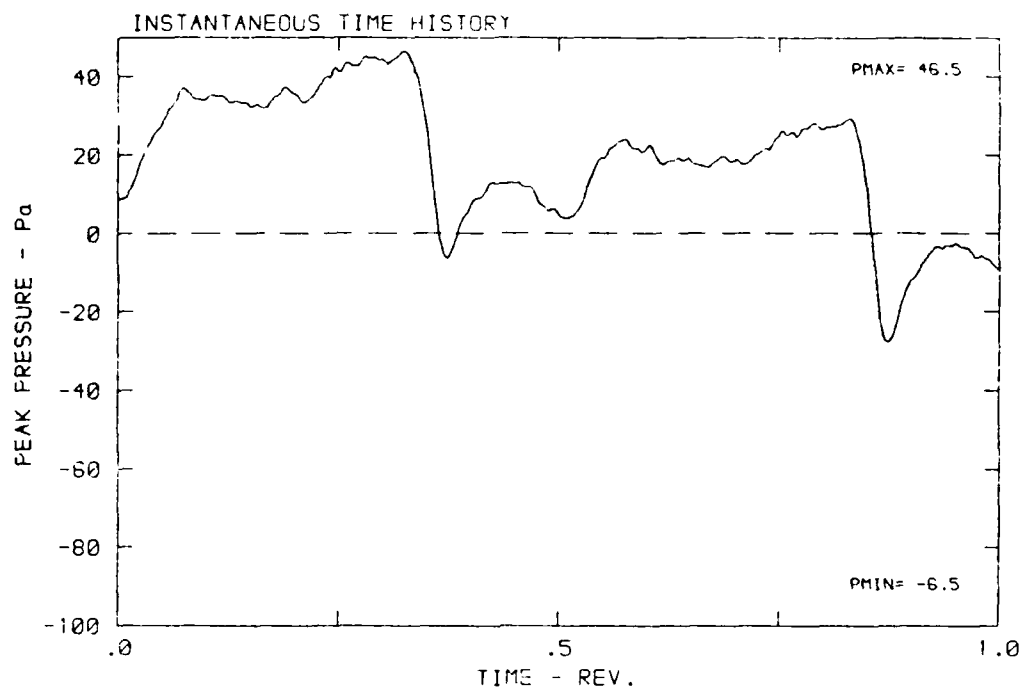
DATA POINT: FNC-8 RUN: 180 MP: 7

β : 19.9° MH: .7659 n: 2400 rpm v/u : .203 ϕ : .0° T: 287.9 K



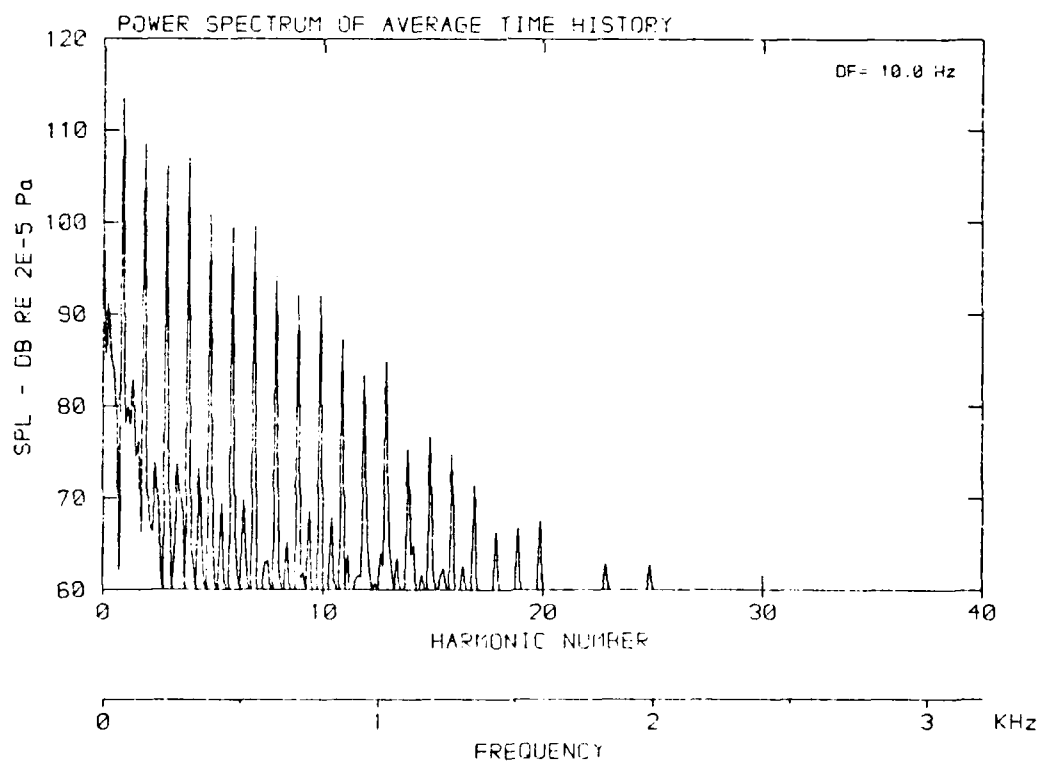
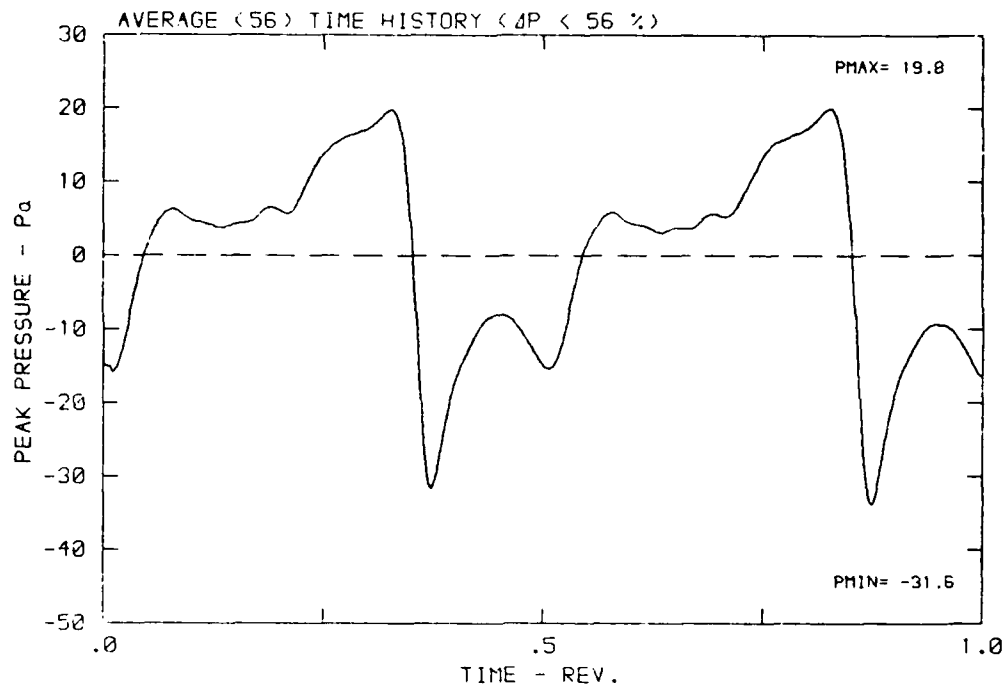
DATA POINT: FNC-8 RUN: 180 MP: 5

β : 19.9° MH: .7659 n: 2400 rpm v/u : .203 ϕ : .0° T: 287.3 K



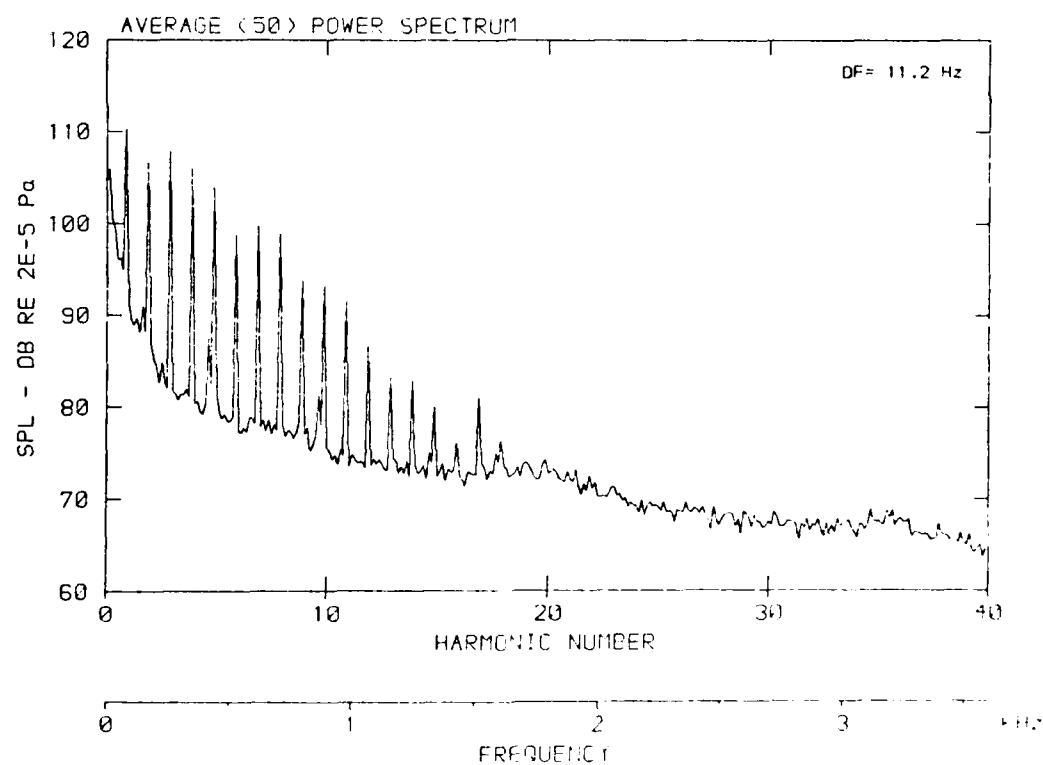
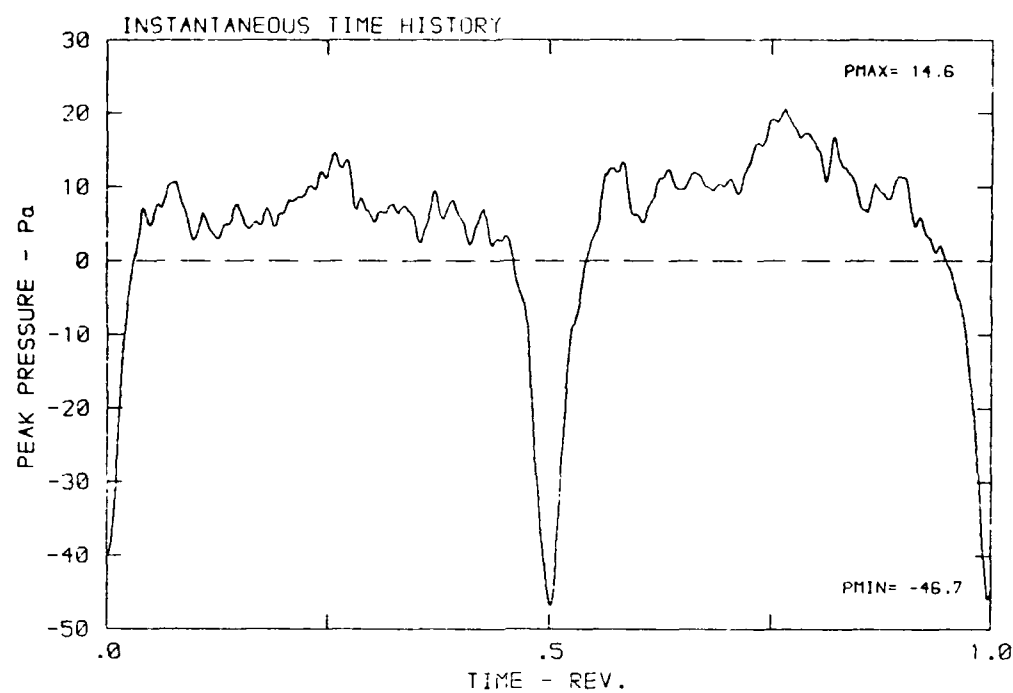
DATA POINT: FNC-8 RUN: 180 MP: 9

β : 19.9° MH: .7659 n: 2400 rpm v/u: .203 ϕ : .0° T: 287.9 K



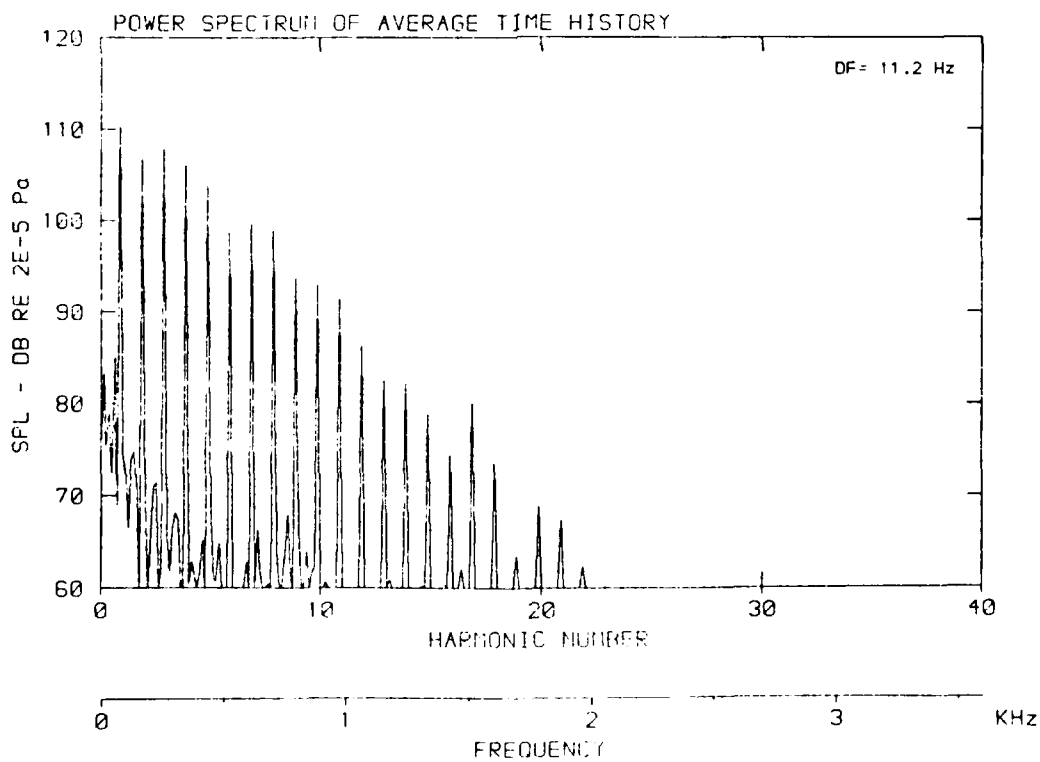
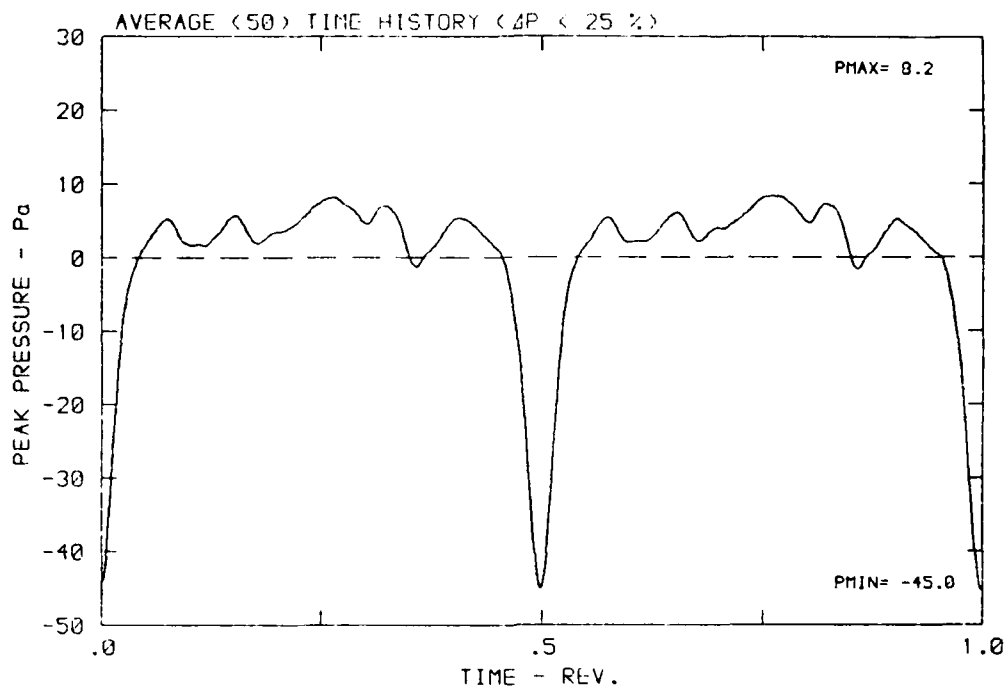
DATA POINT: FNC-9 RUN: 181 MP: 1

β : 19.9° MH: .8734 n: 2700 rpm v/u: .268 ϕ : .0° T: 288.5 K



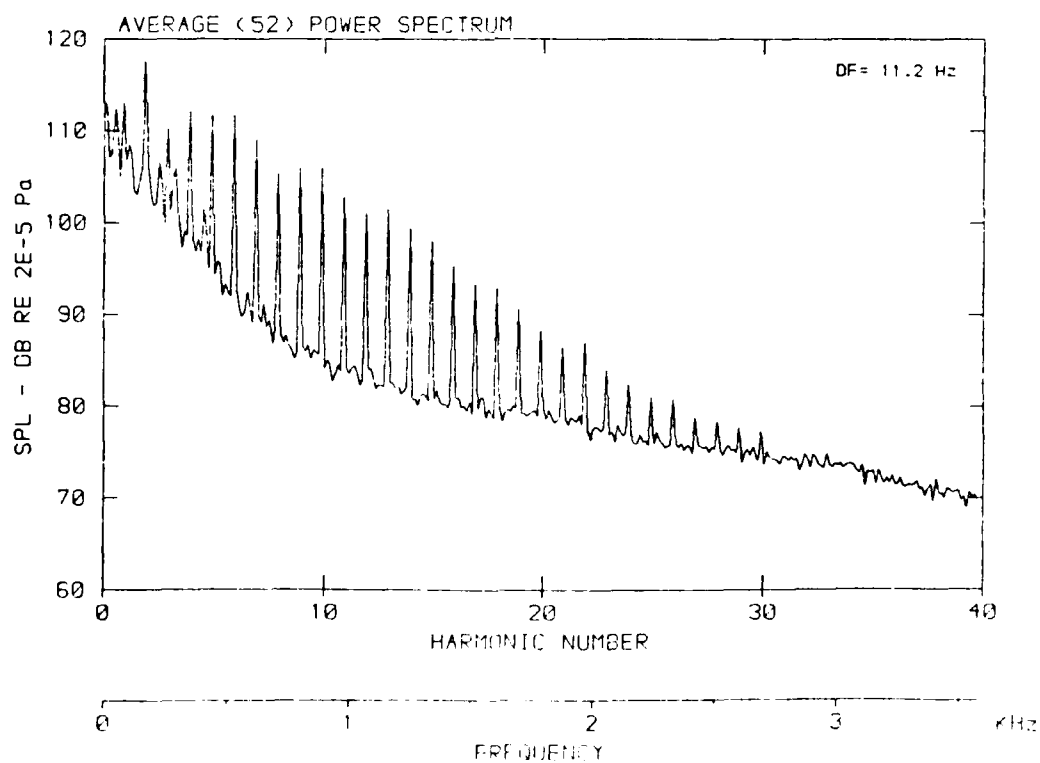
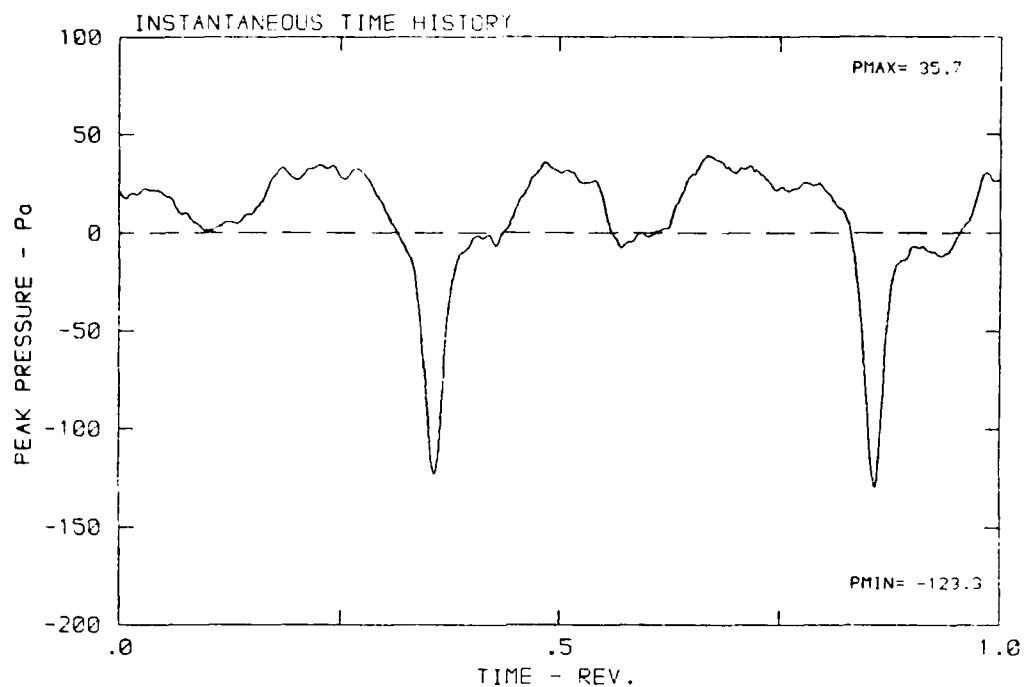
DATA POINT: FNC-9 RUN: 181 MP: 1

β : 19.9° MH: .8734 n: 2700 rpm v/u: .268 ϕ : .0° T: 288.5 K



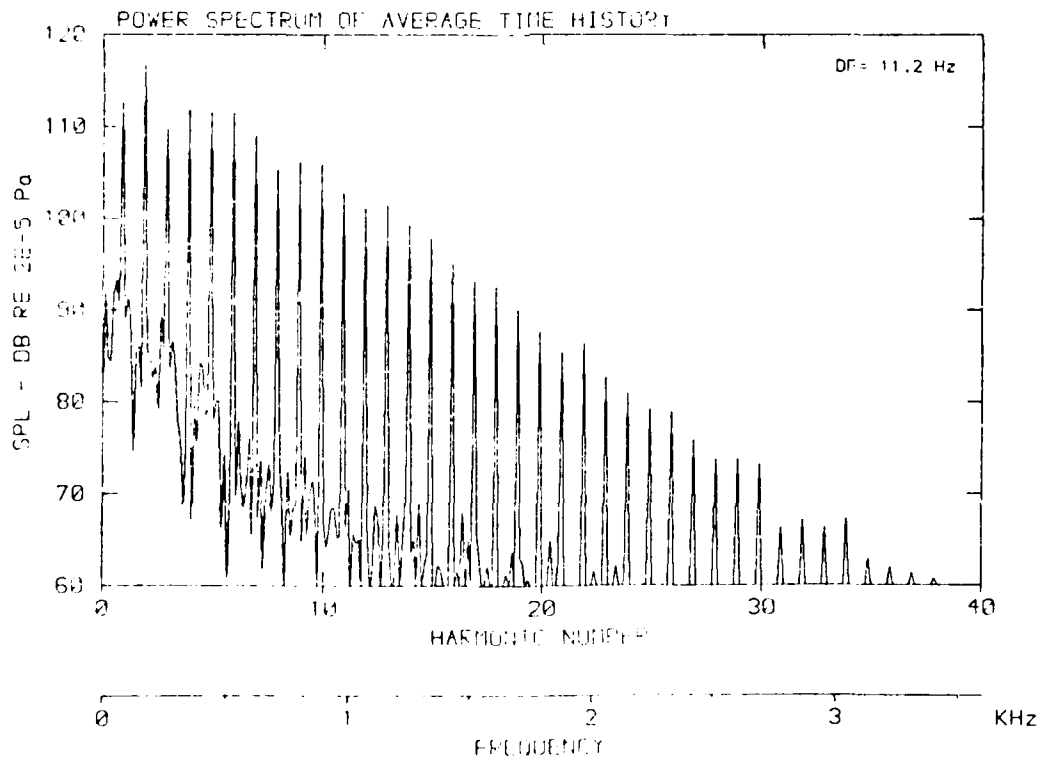
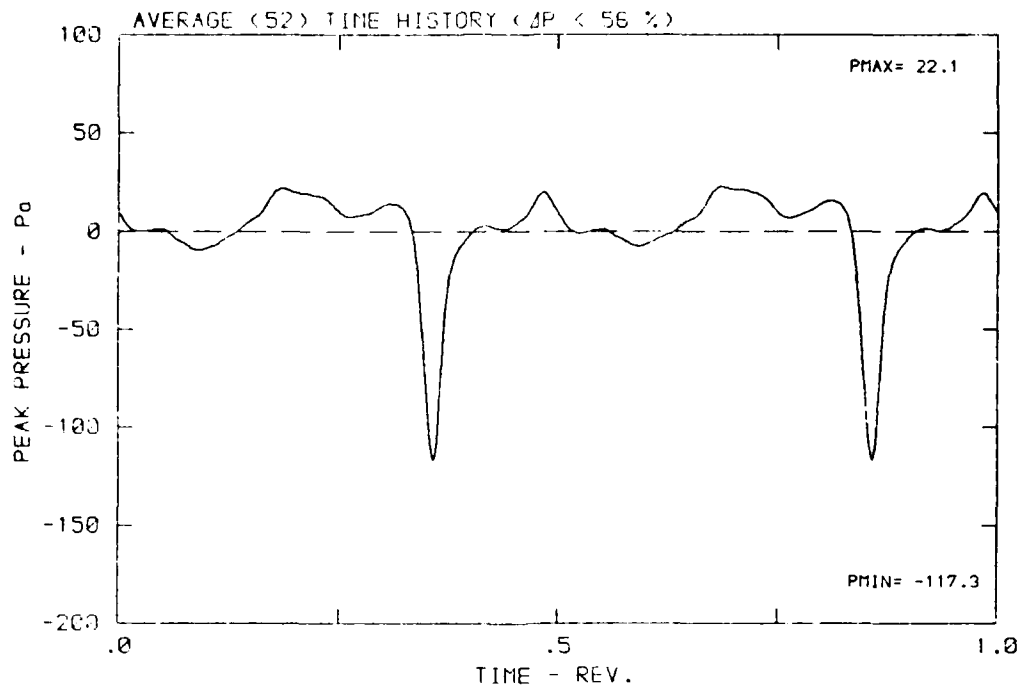
DATA POINT: FNC-9 FUN: 181 MP: 2

β : 19.9° MH: .8734 n: 2700 rpm ν : .268 ϕ : .0° T: 286.0 K



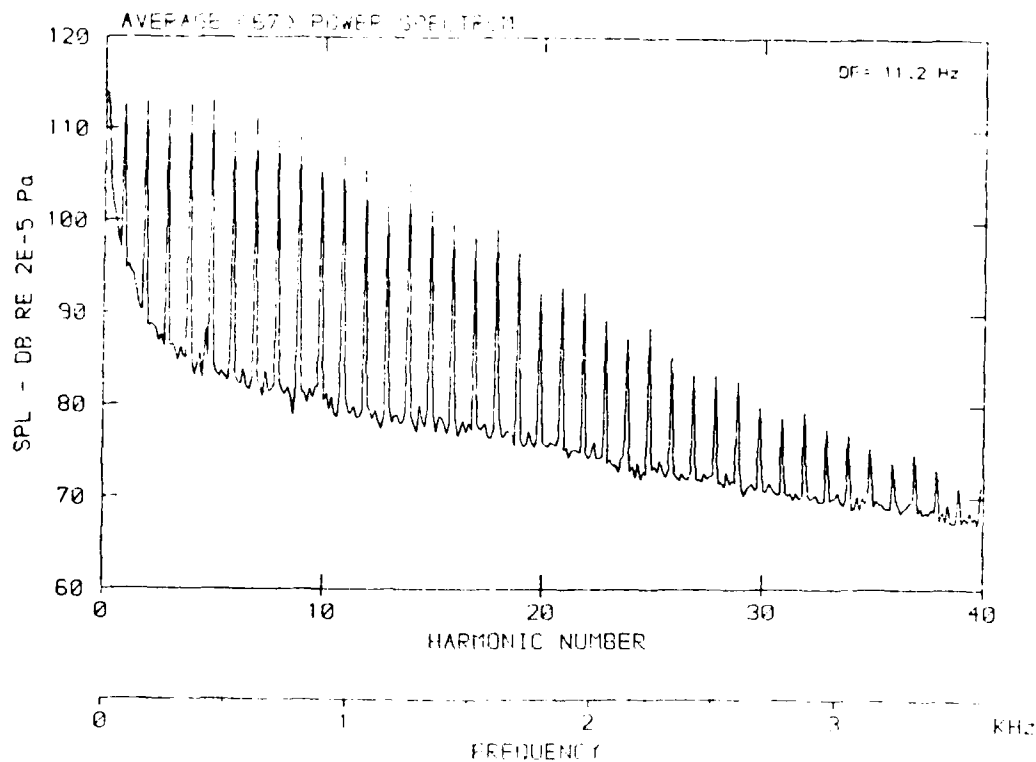
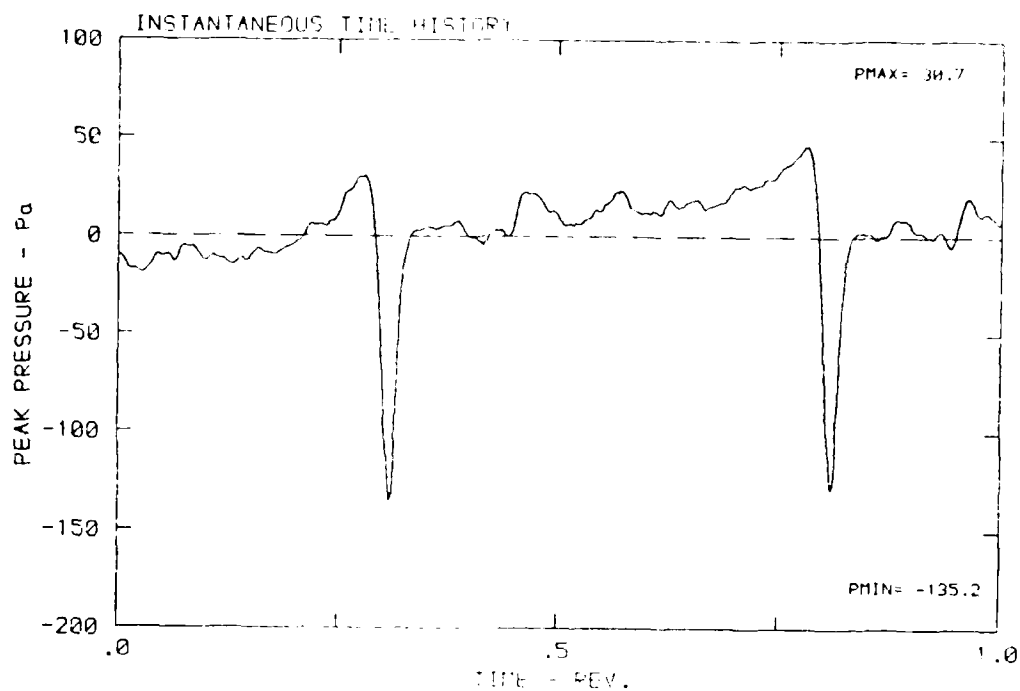
DATA POINT: FNC-9 RUN: 181 MP: 2

β : 19.9° MH: .8734 n: 2700 rpm v/u : .268 ϕ : .0° T: 288.5 K



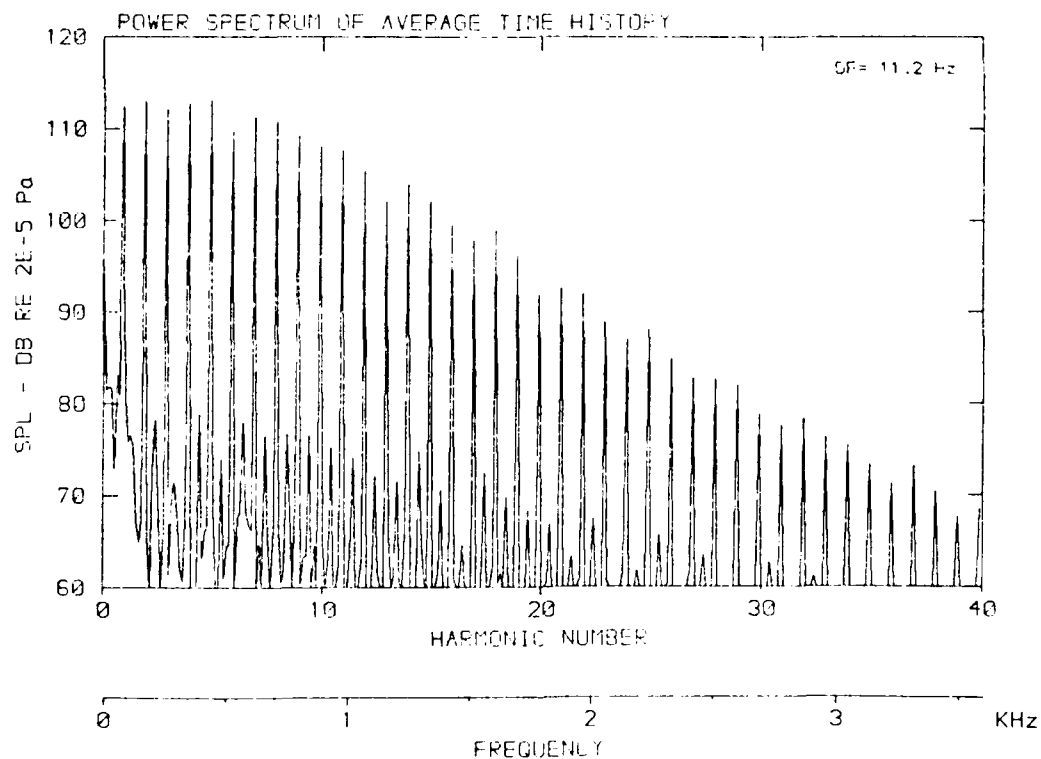
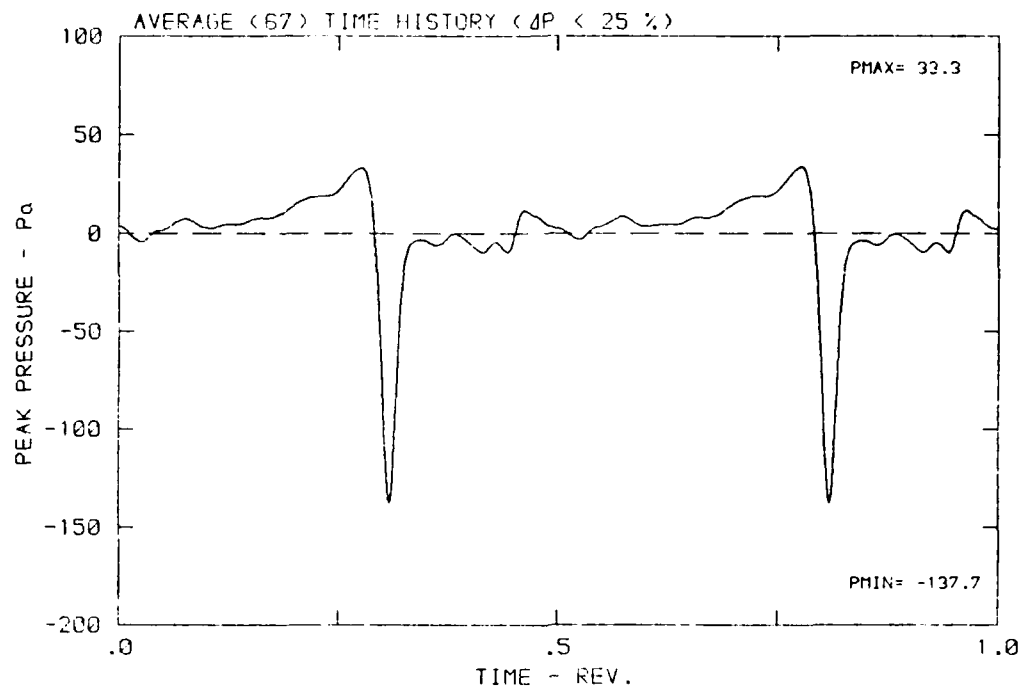
DATA POINT: ENC-5 RUN: 181 ME: 3

β : 19.9° MH: .8734 n: 2700 rpm v/u: .208 ϕ : .0° T: 268.1



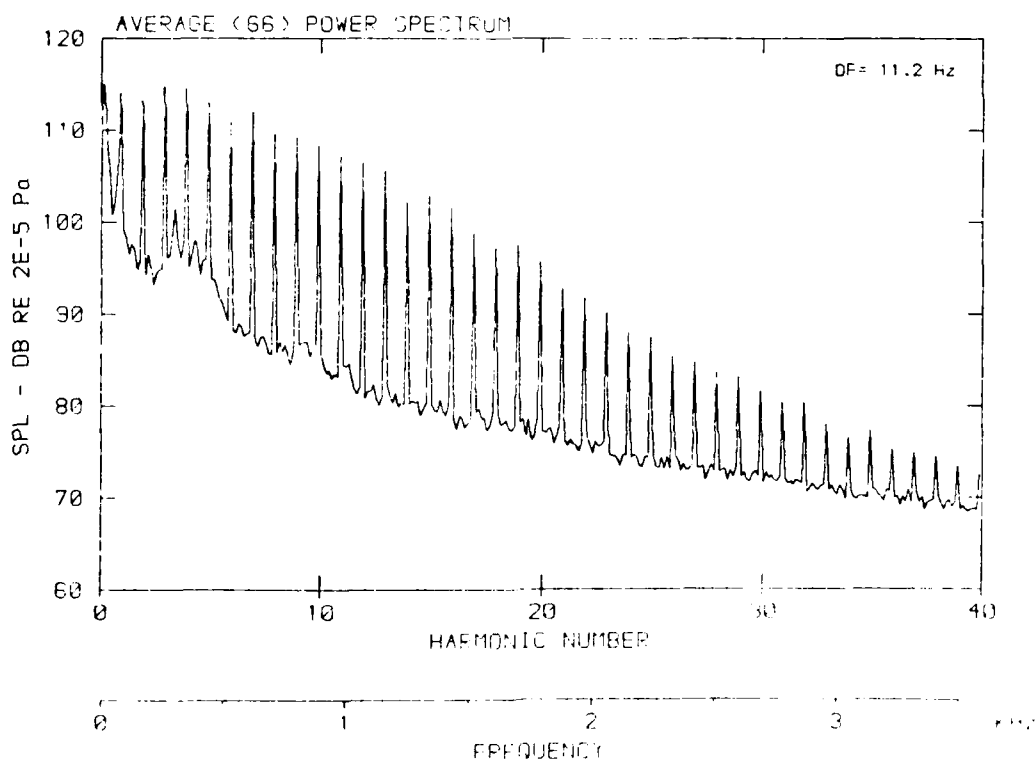
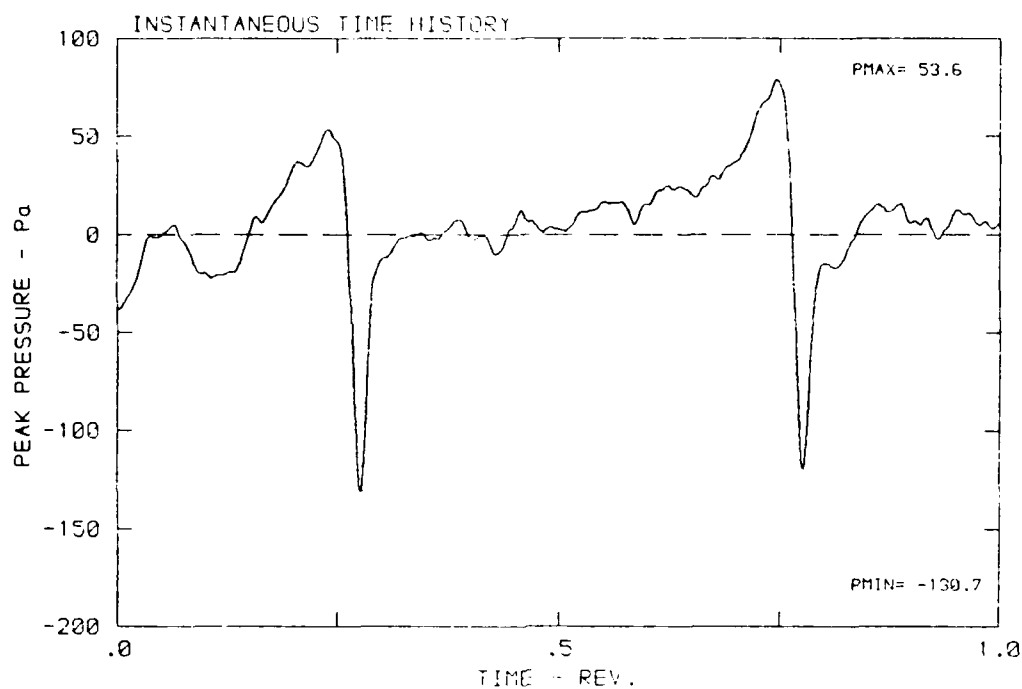
DATA POINT: FNC-9 RUN: 181 MP: 3

β : 19.9° MH: .8734 n: 2700 rpm v/u : .268 ϕ : .0° T: 288.5 K



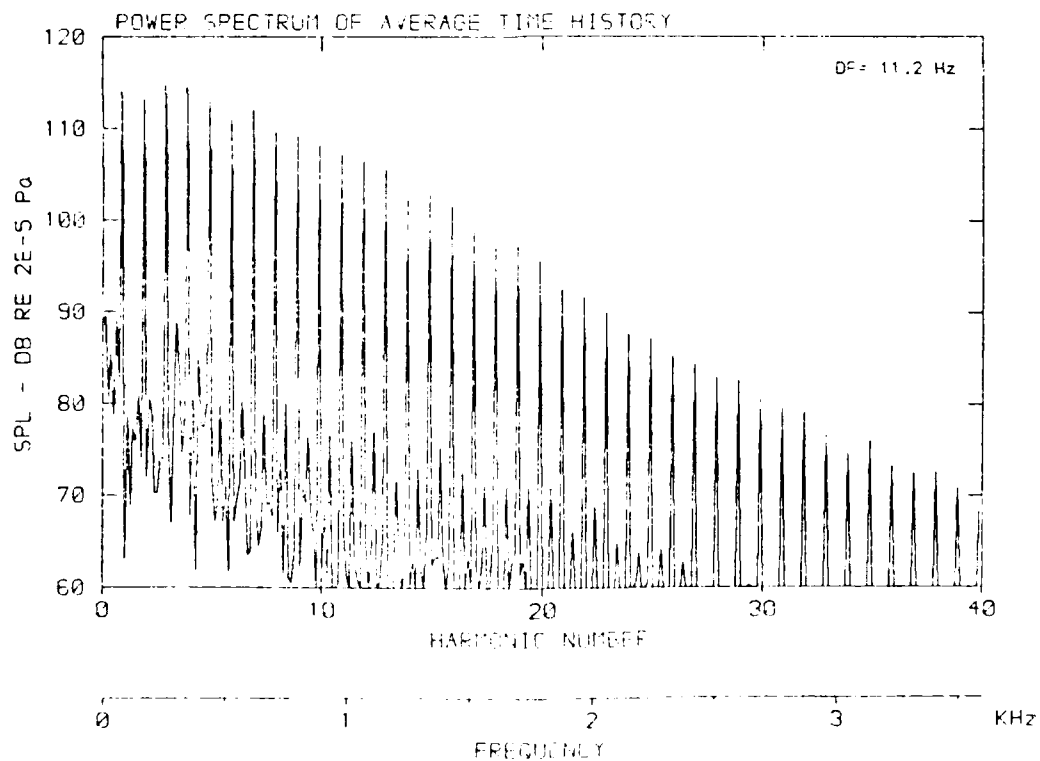
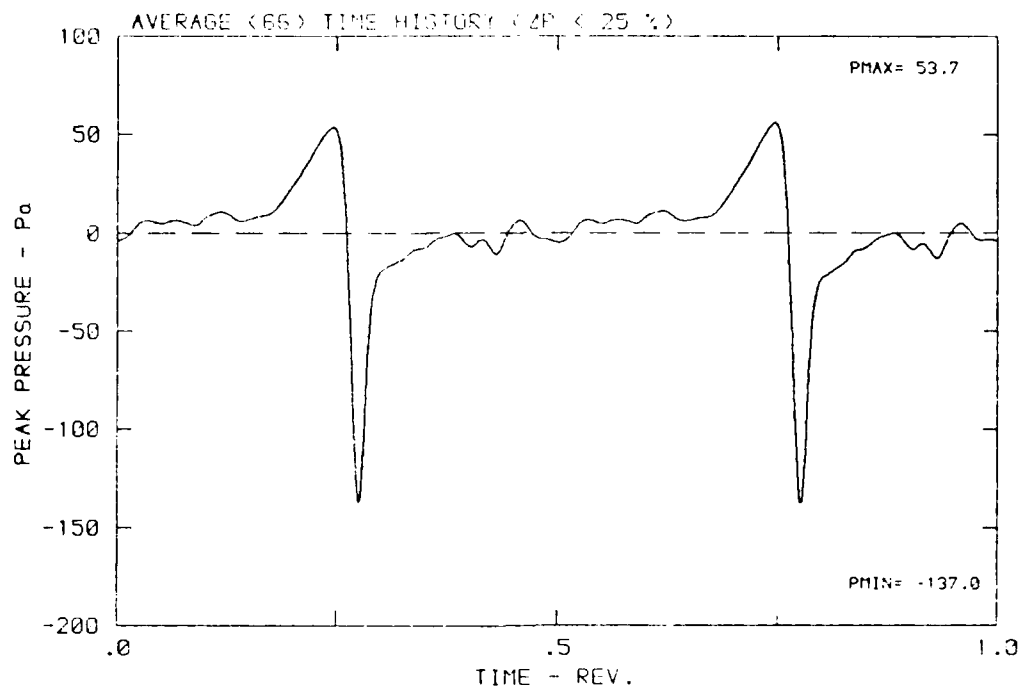
DATA POINT: FNC-9 RUN: 181 MP: 4

β : 19.9° MH: .8734 n: 2700 rpm v/u : .265 ϕ : .0° T: 288.5 K



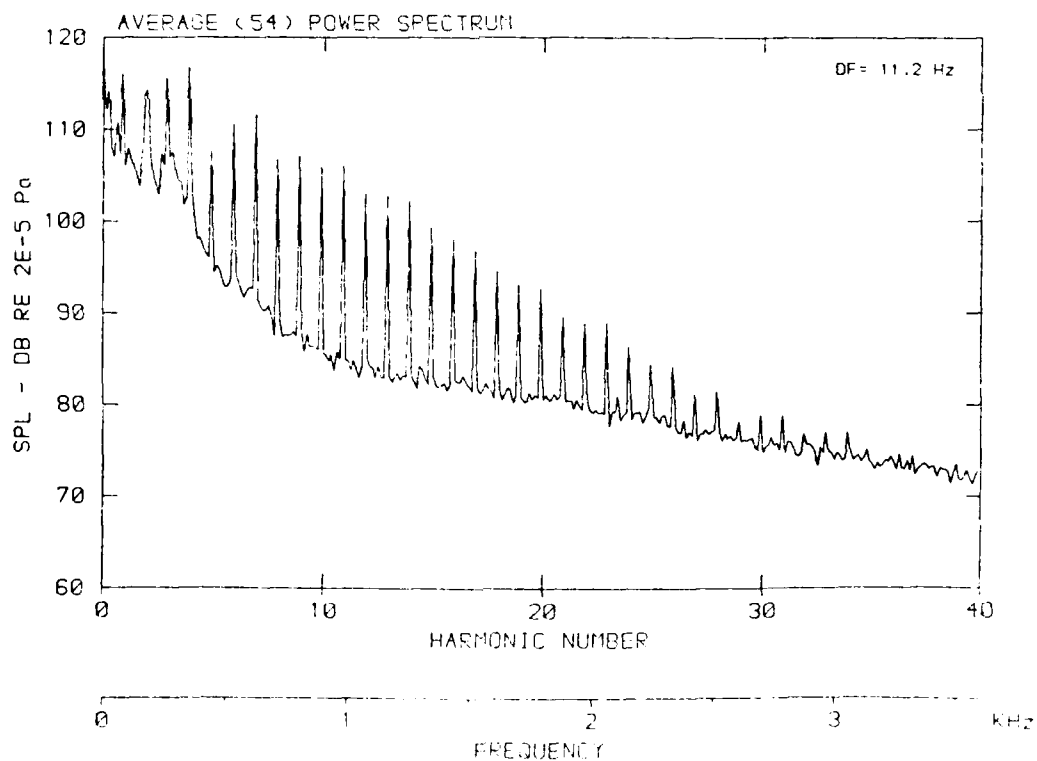
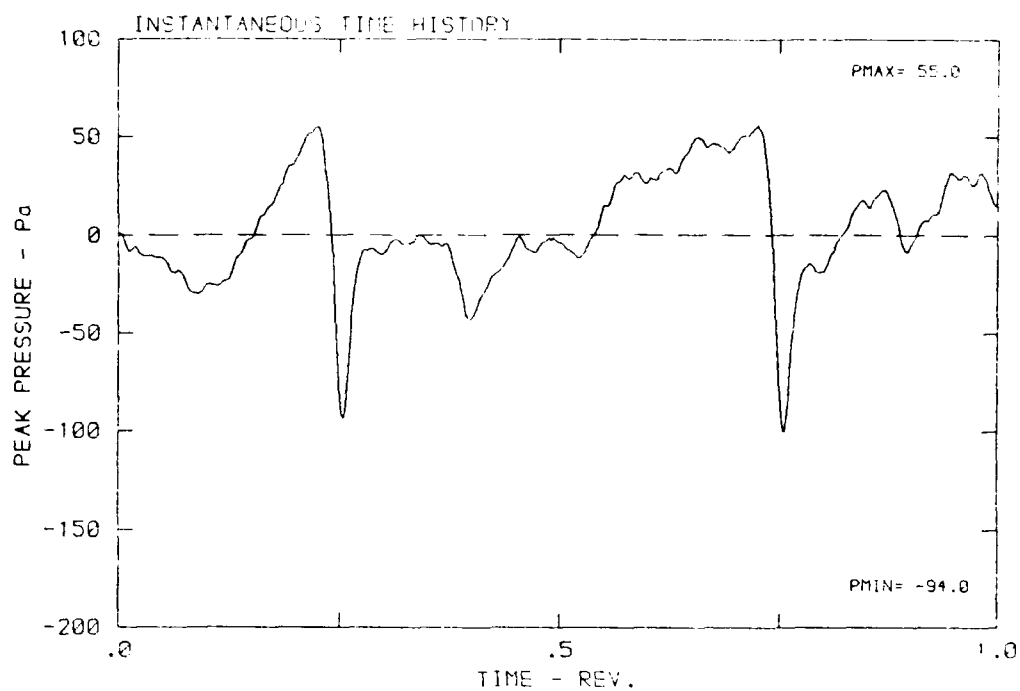
DATA POINT: FNC-9 RUN: 181 MP: 4

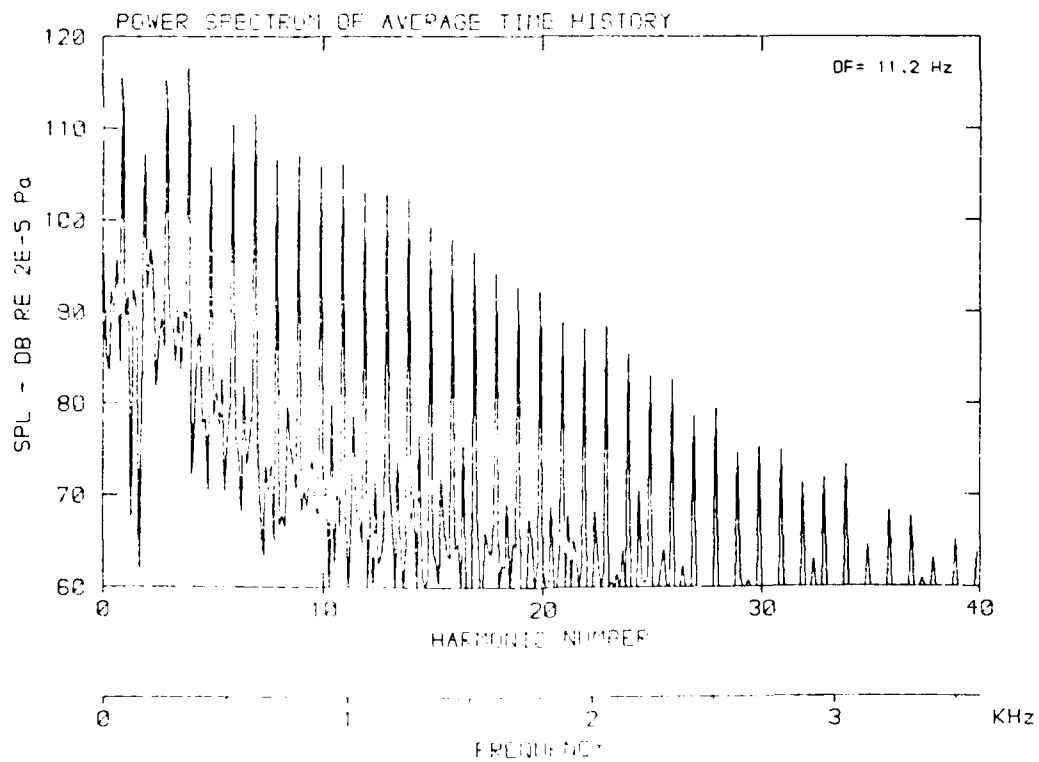
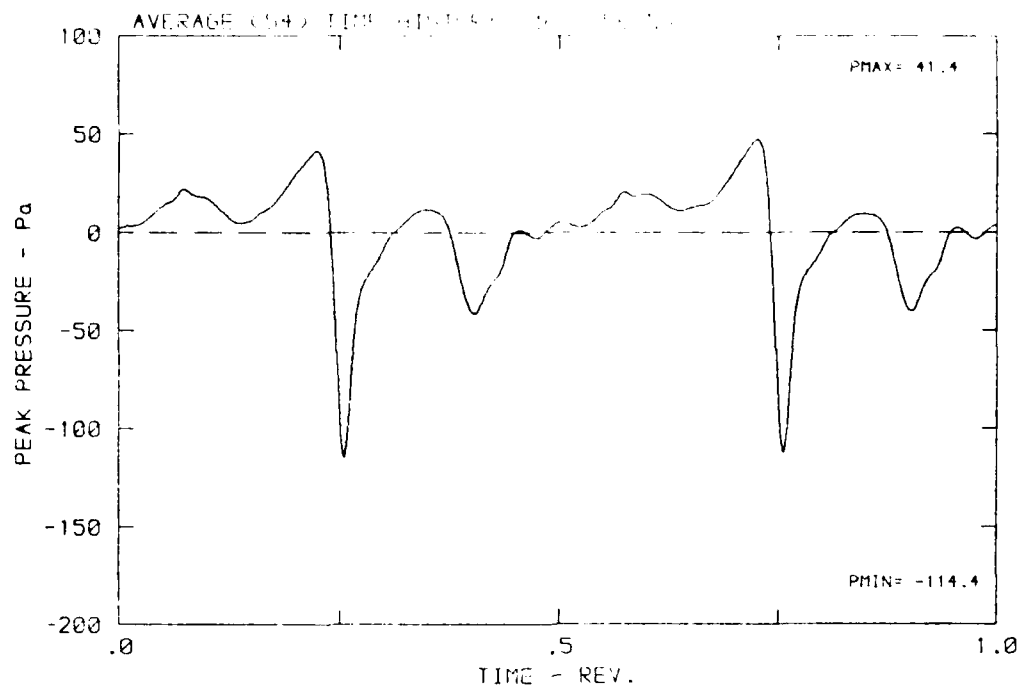
B: 19.9° NH: .8734 n: 2700 rpm v/u: .268 ϕ : .0° T: 288.5 K



DATA POINT: FNC-9 RUN: 181 MF: 5

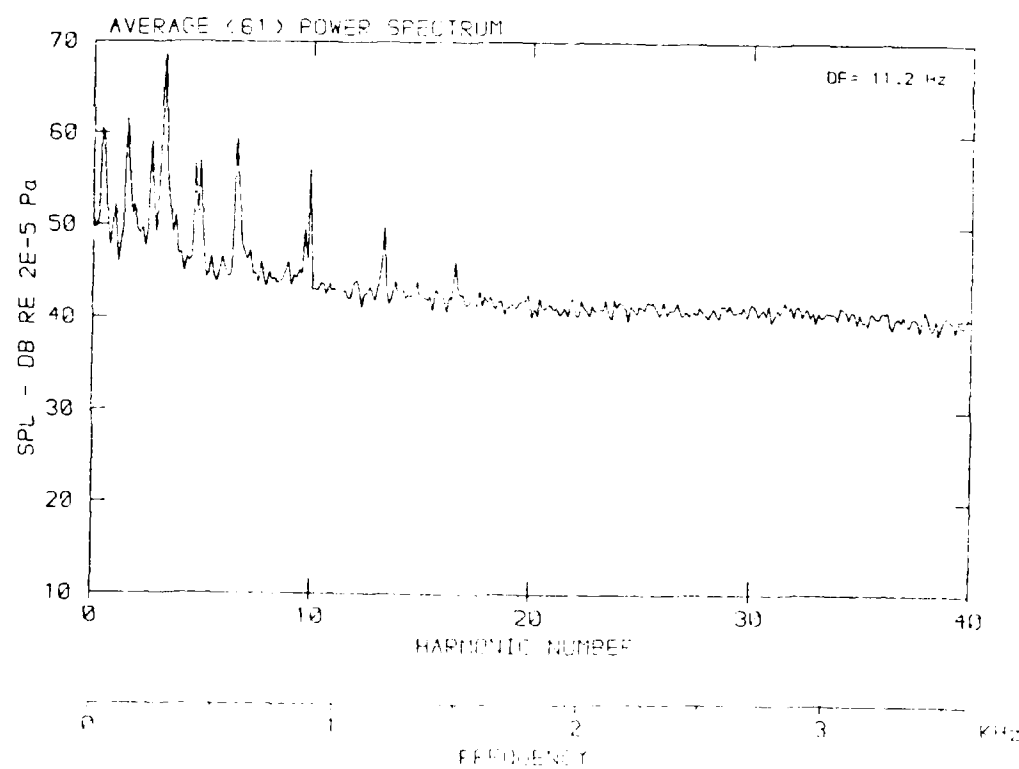
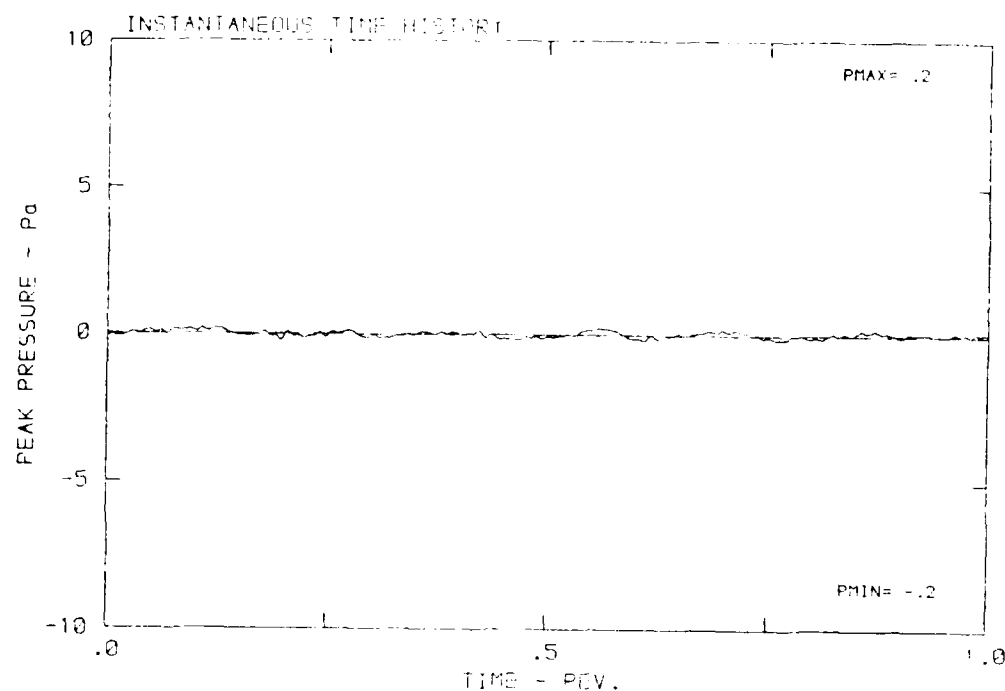
β : 19.9° MH: .8734 n: 2700 rpm ν : .263 ϕ : .0° T: 298.7 K



$$\beta: 19.9^{\circ} \quad \text{MH: } .8734 \quad n: 23.0 \quad \mu: 1.00 \quad \sigma: .00^{\circ} \quad \tau: 188.5^{\circ}$$


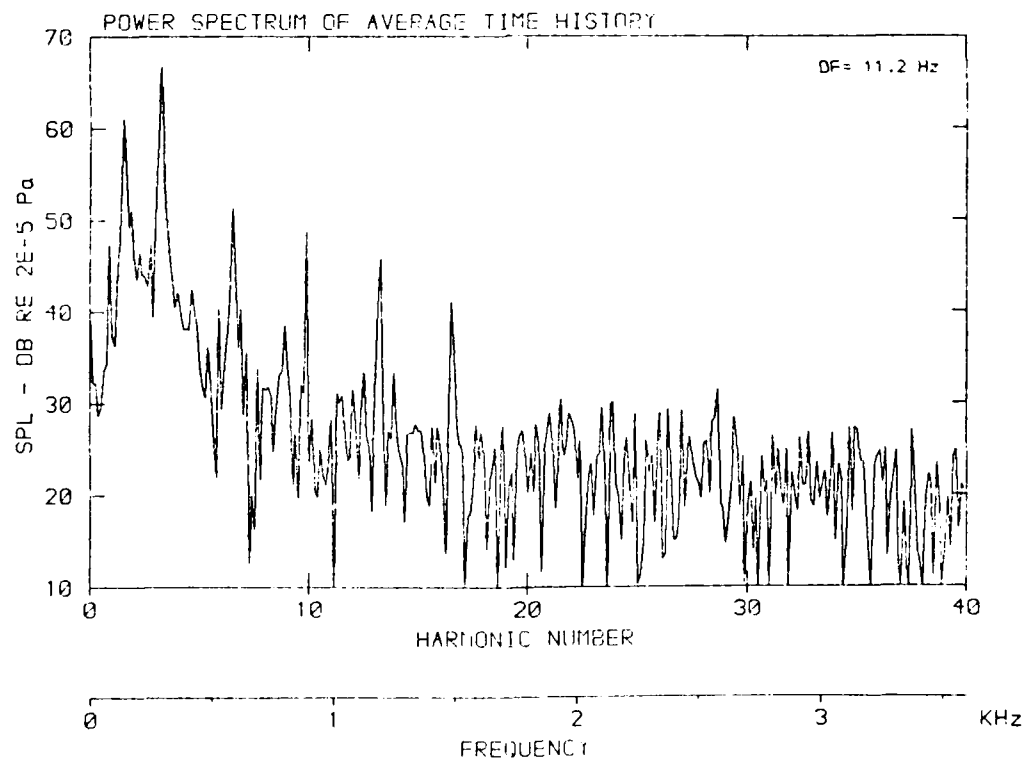
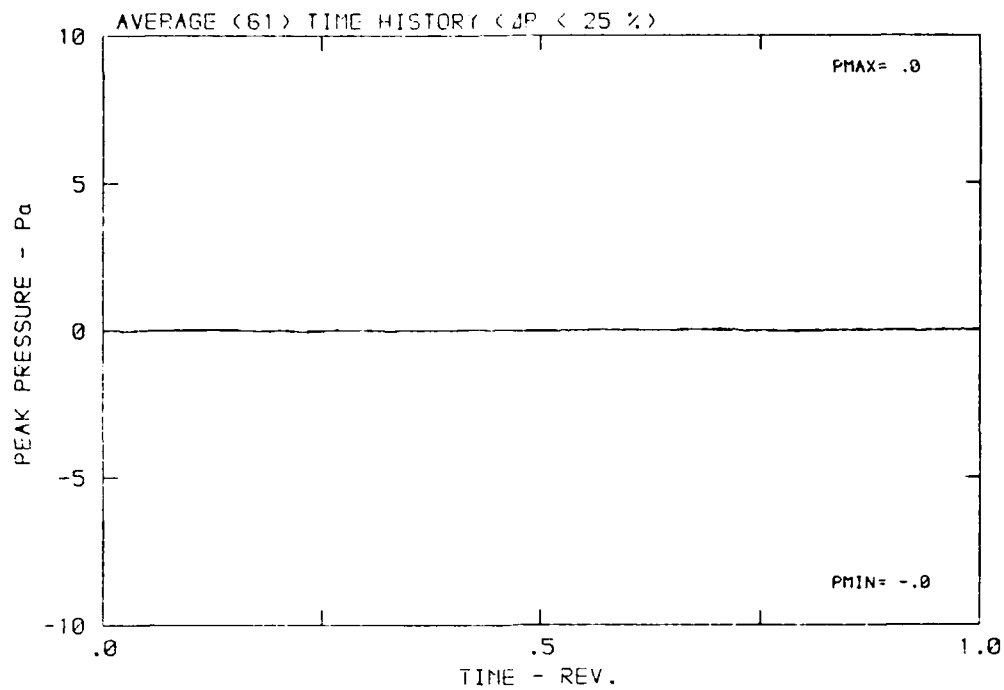
DATA POINT: ENC-9 RUN: 181 MP: 6

β : 19.9° MH: .8734 α : 270.0 ϕ : .268 ψ : .00° I: 388.5



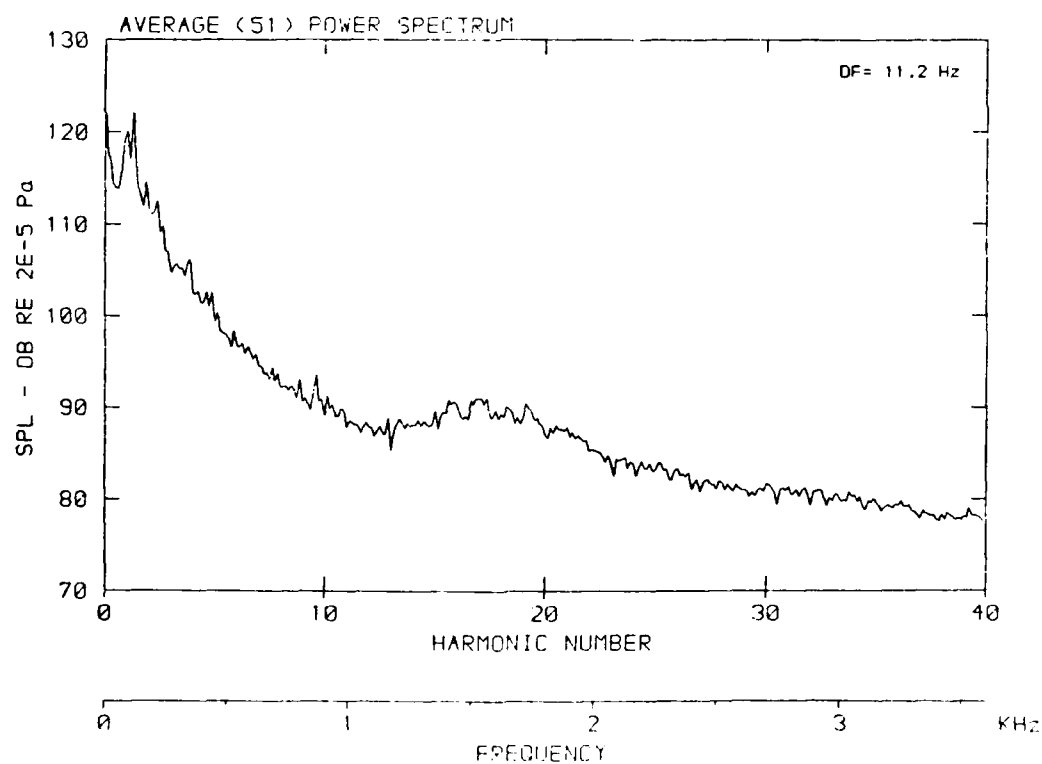
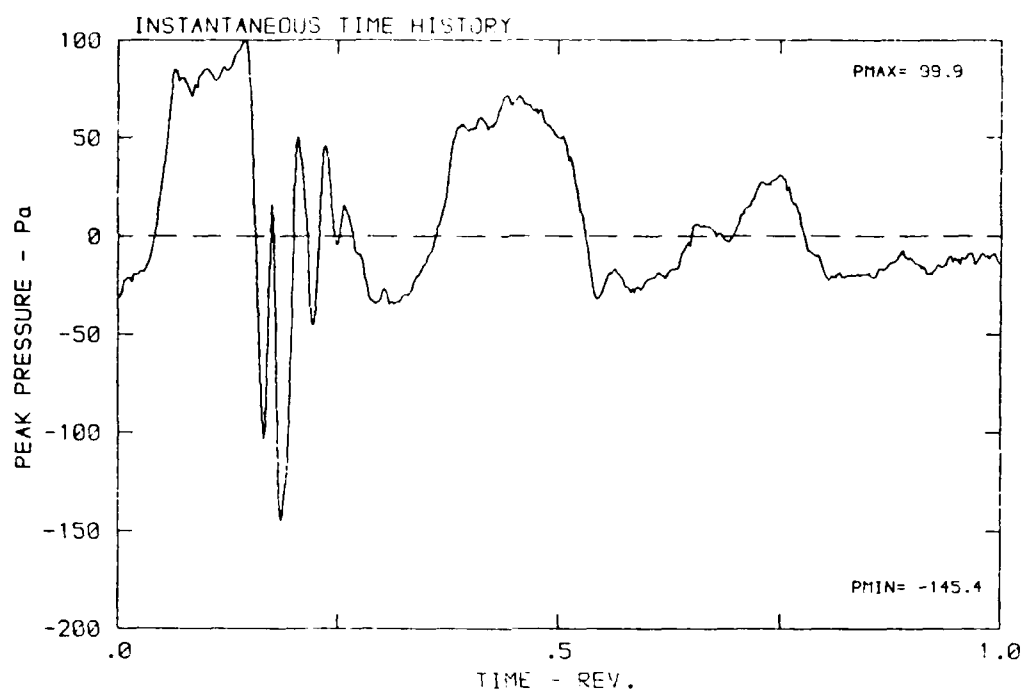
DATA POINT: FNC-9 RUN: 181 MP: 6

β : 19.9° MH: .8734 n: 2700 rpm v/u : .268 ϕ : .0° T: 288.5 K



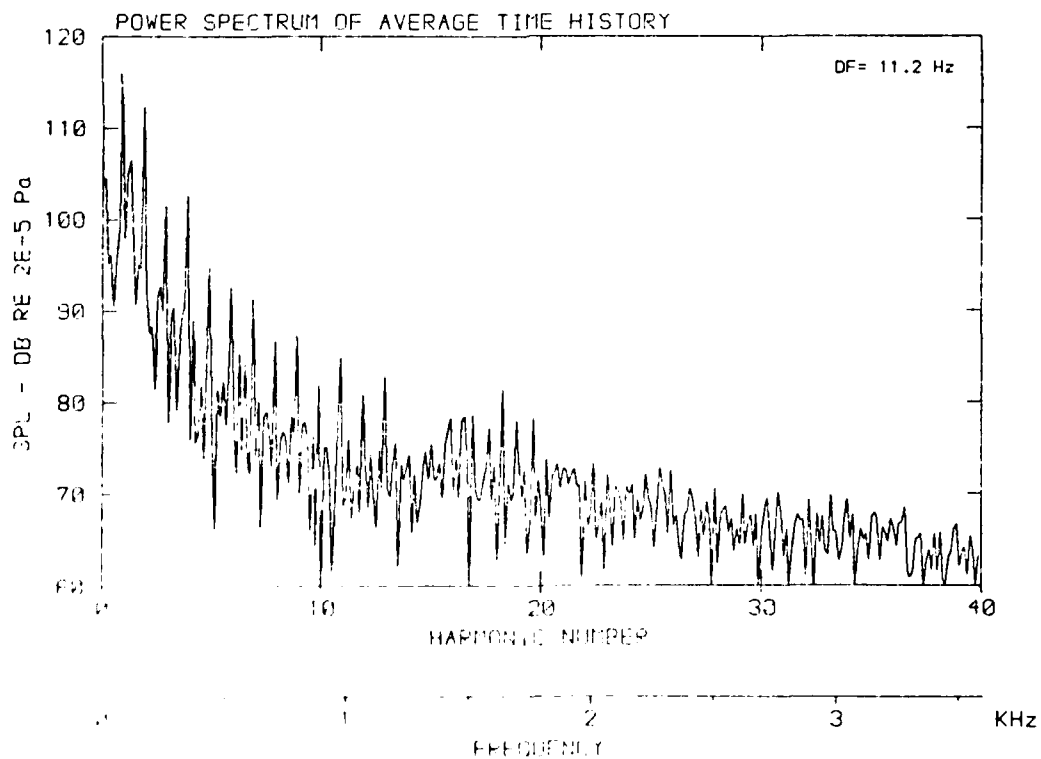
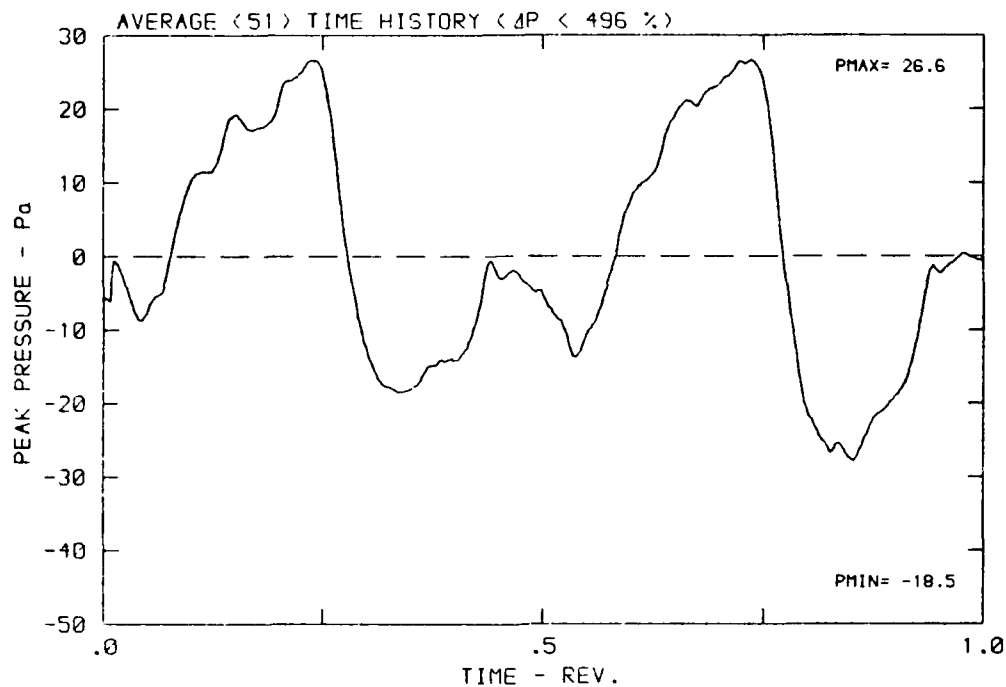
DATA POINT: FNC-8 RUN: 181 MP: 7

β : 19.9° MH: .9734 n: 2700 rpm ν/α : .268 ϕ : .0° T: 293.5 K



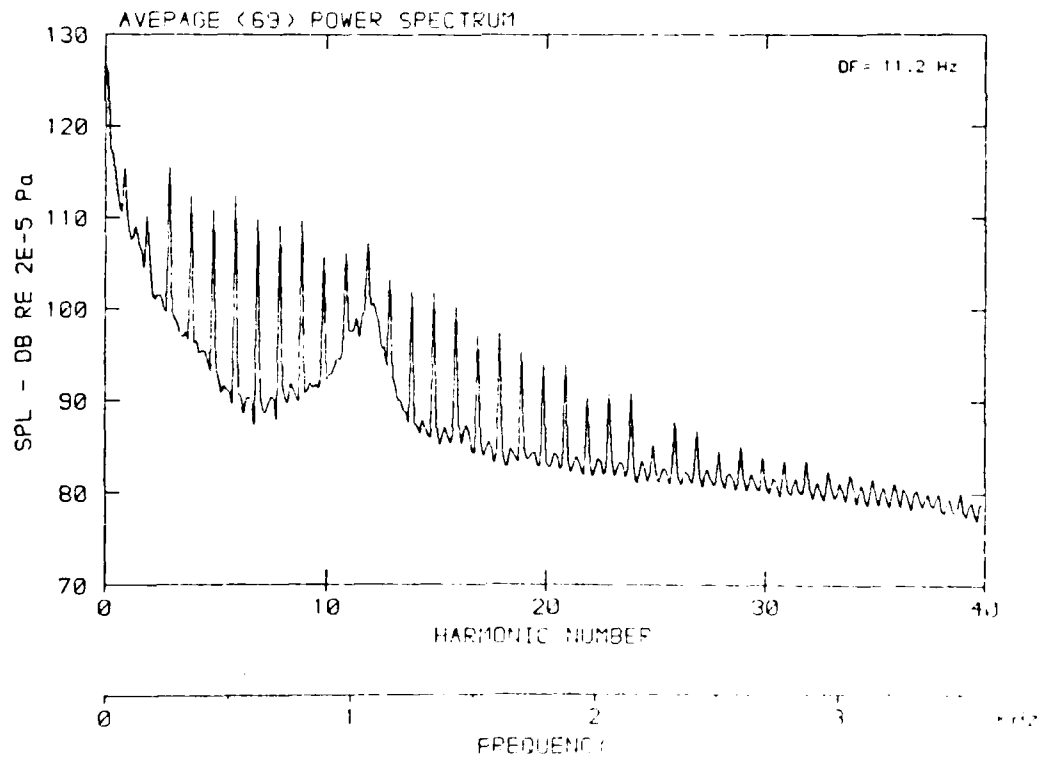
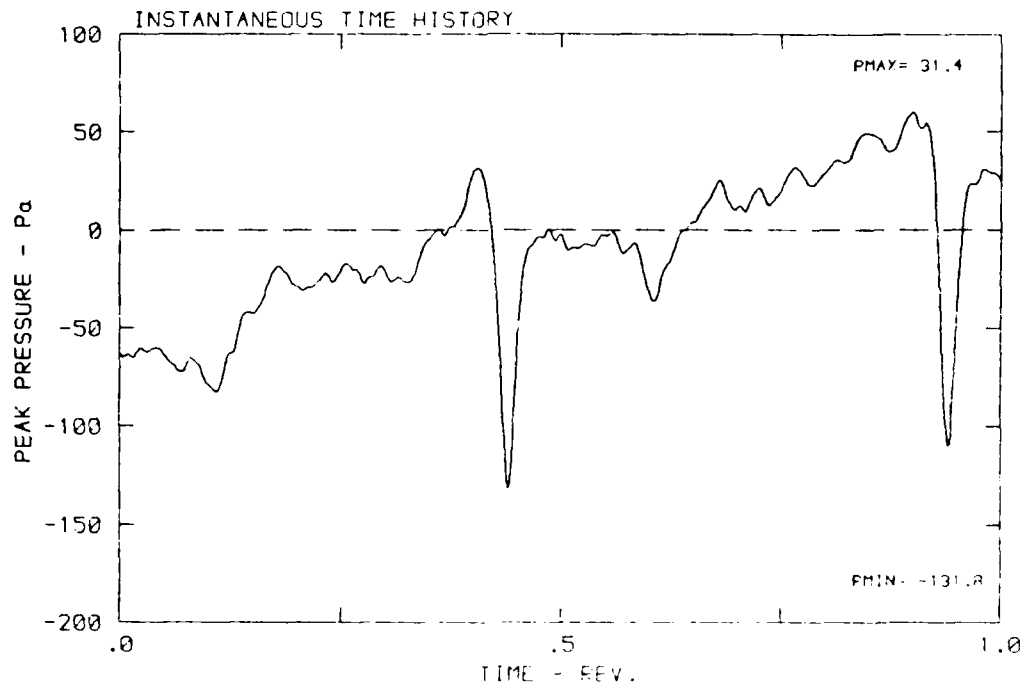
DATA POINT: FNC-9 RUN: 181 MP: 7

β : 19.9° MH: .8734 n: 2700 rpm v/u: .268 ϕ : .0° T: 288.5 K



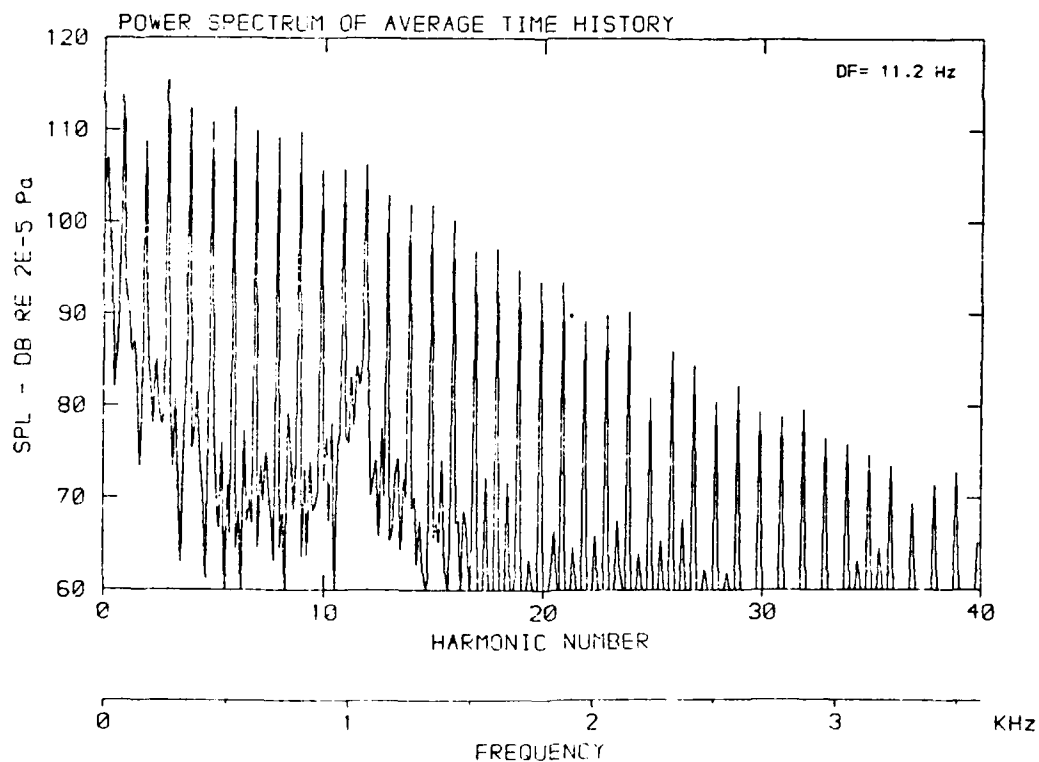
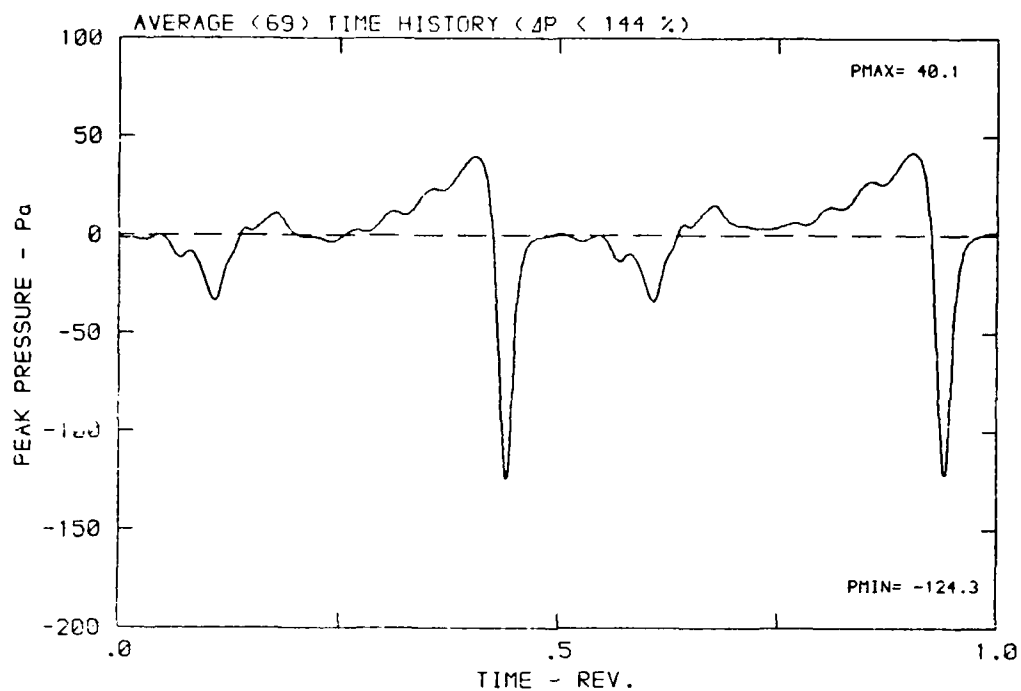
DATA POINT: FNC-9 RUN: 181 MF: E

β : 19.9° MH: .8734 n: 2700 rpm v/u : .268 ϕ : .0° T: 293.5 K



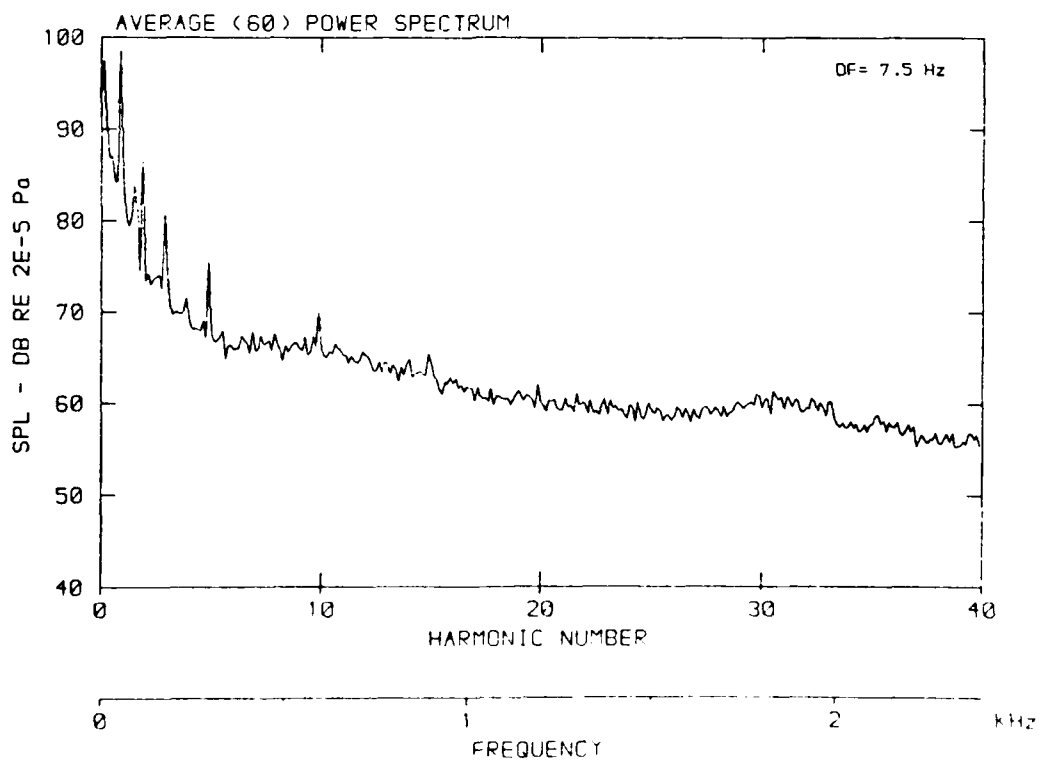
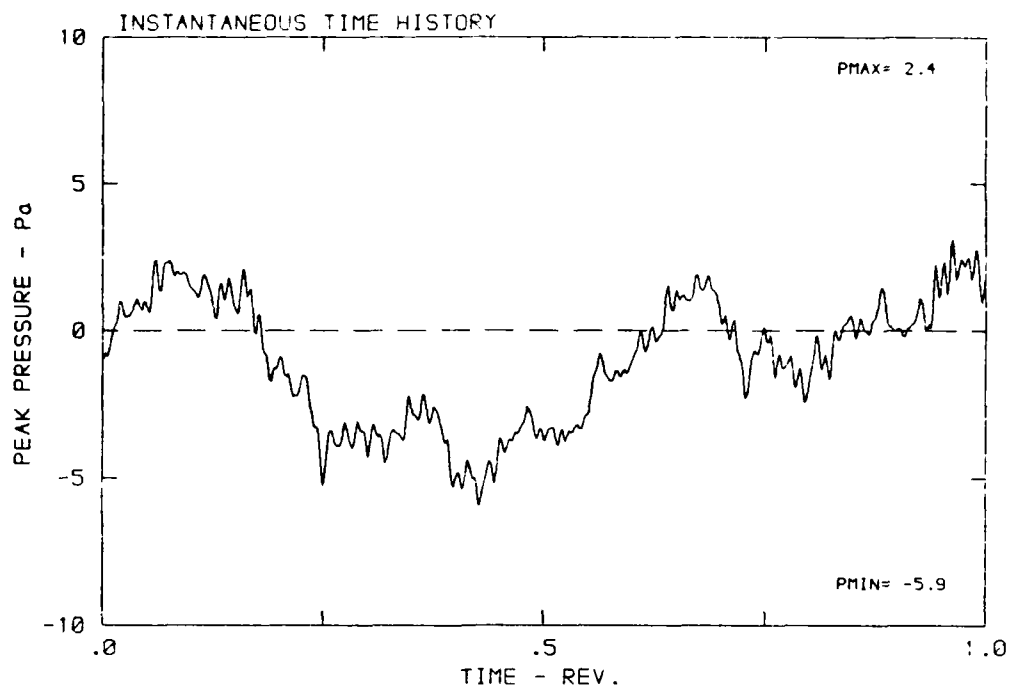
DATA POINT: FNC-9 RUN: 181 MP: 9

β : 19.9° MH: .8734 n: 2700 rpm v/u: .268 ϕ : .0° T: 288.5 K



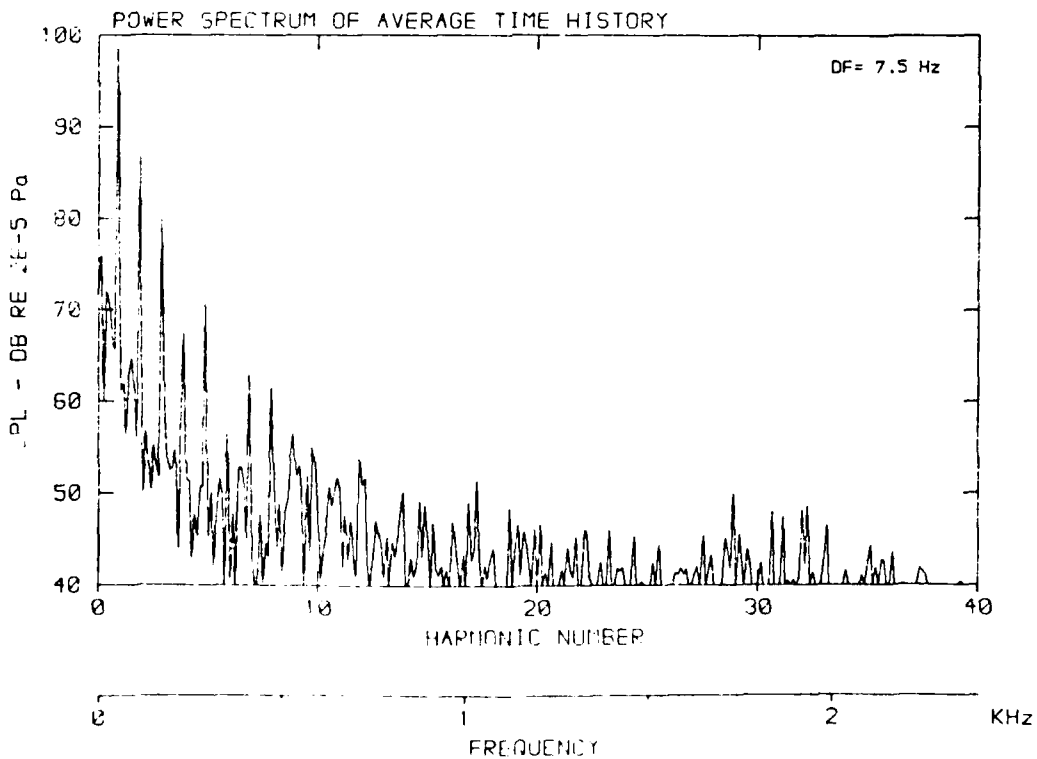
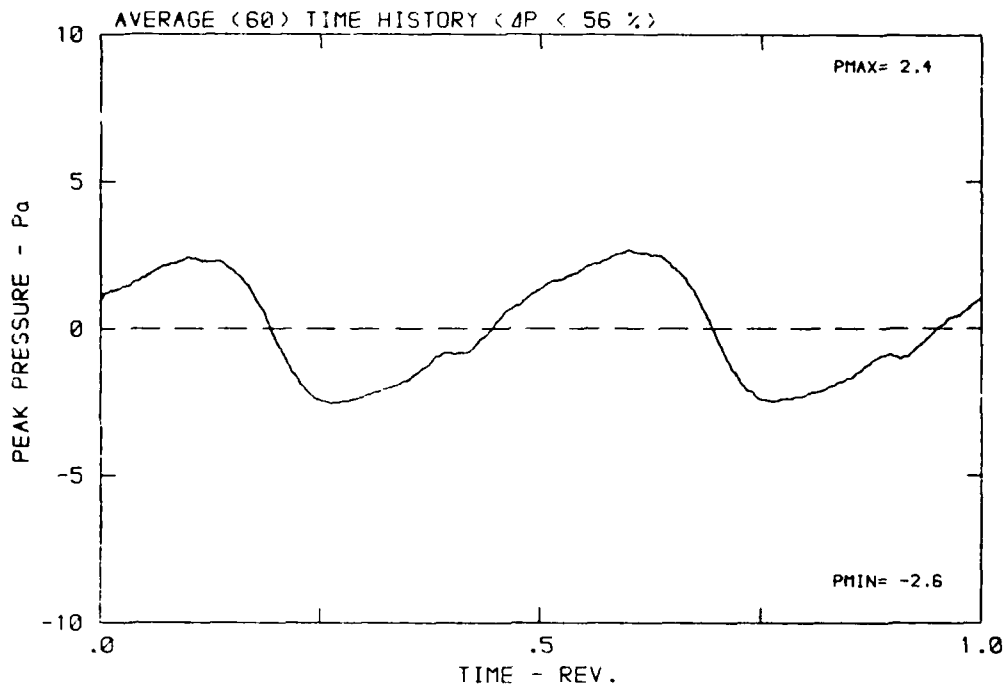
DATA POINT: FNC-10 RUN: 182 MP: 1

β : 23.7° MH: .5830 n: 1800 rpm v/u: .267 ϕ : .0° T: 287.6 K



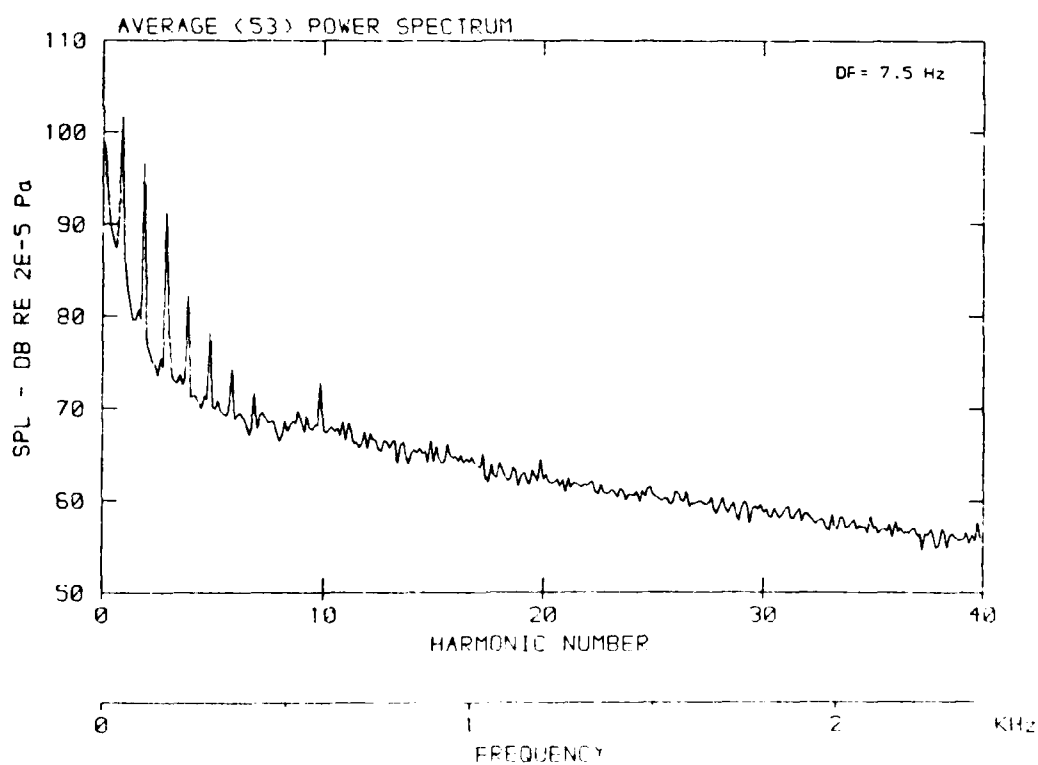
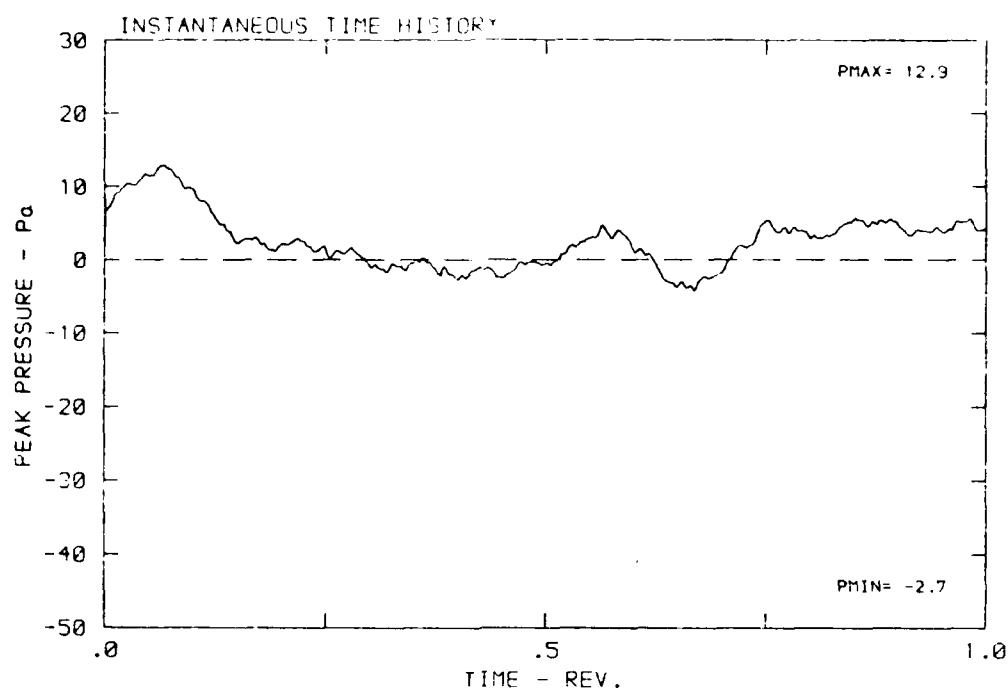
DATA POINT: FNC-10 RUN: 182 MP: 1

β : 23.7° MH: .5830 n: 1800 rpm v/u: .267 ϕ : .0° T: 287.6 K



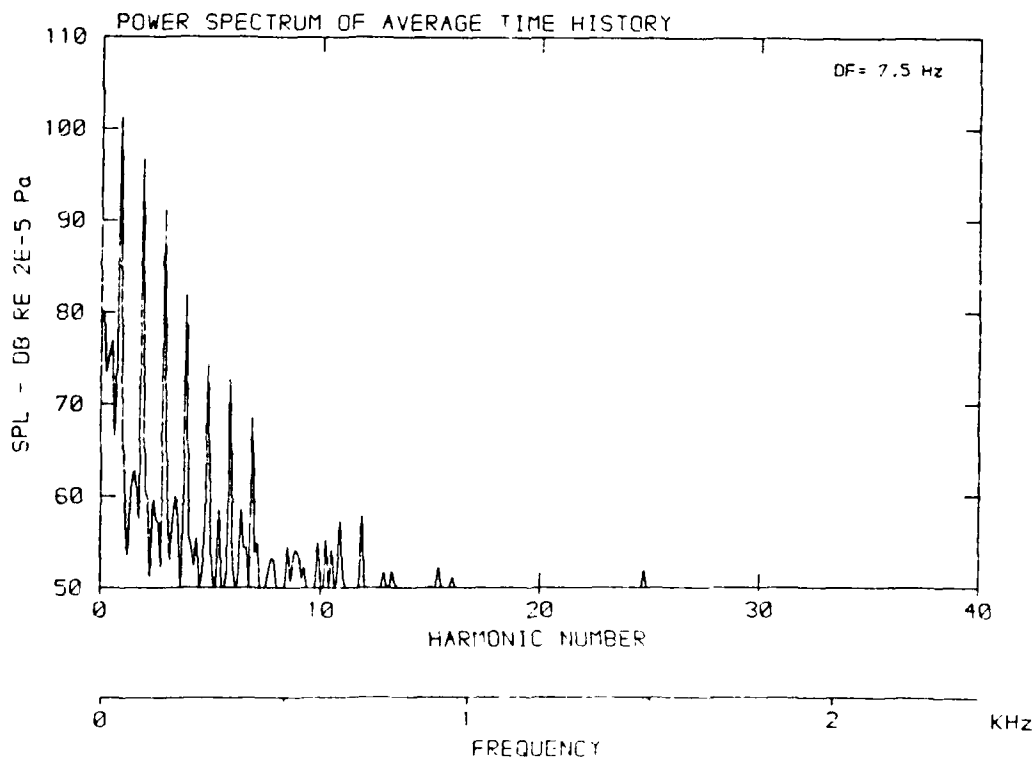
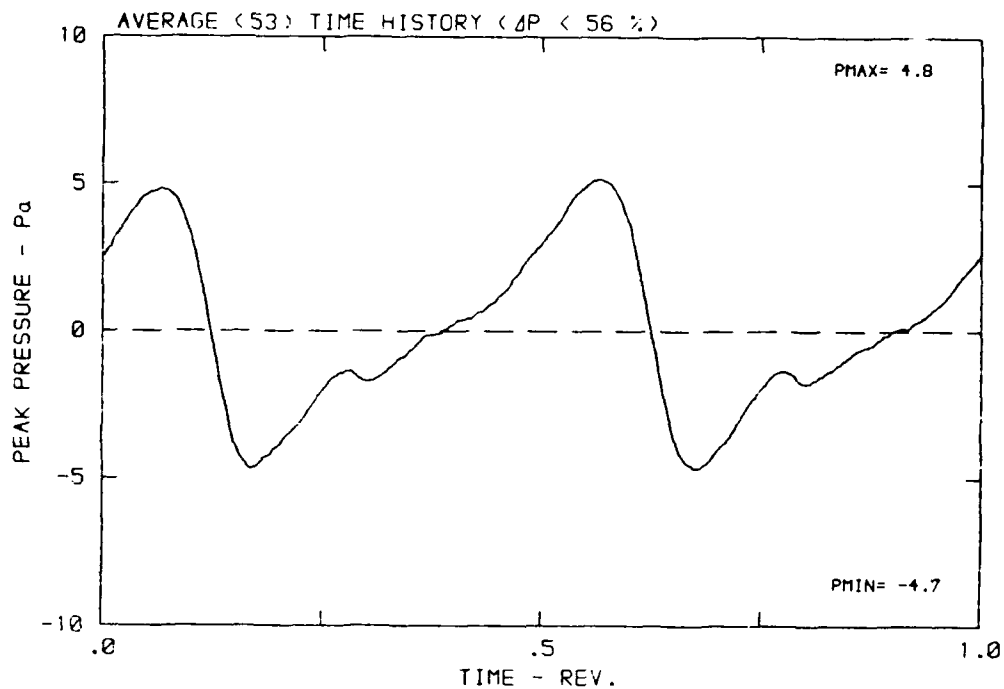
DATA POINT: ENC 10 RUN: 182 MF: 2

β : 23.7° MH: .5830 n: 1800 rpm v/u : .257 ϕ : .0° T: 237.5 K



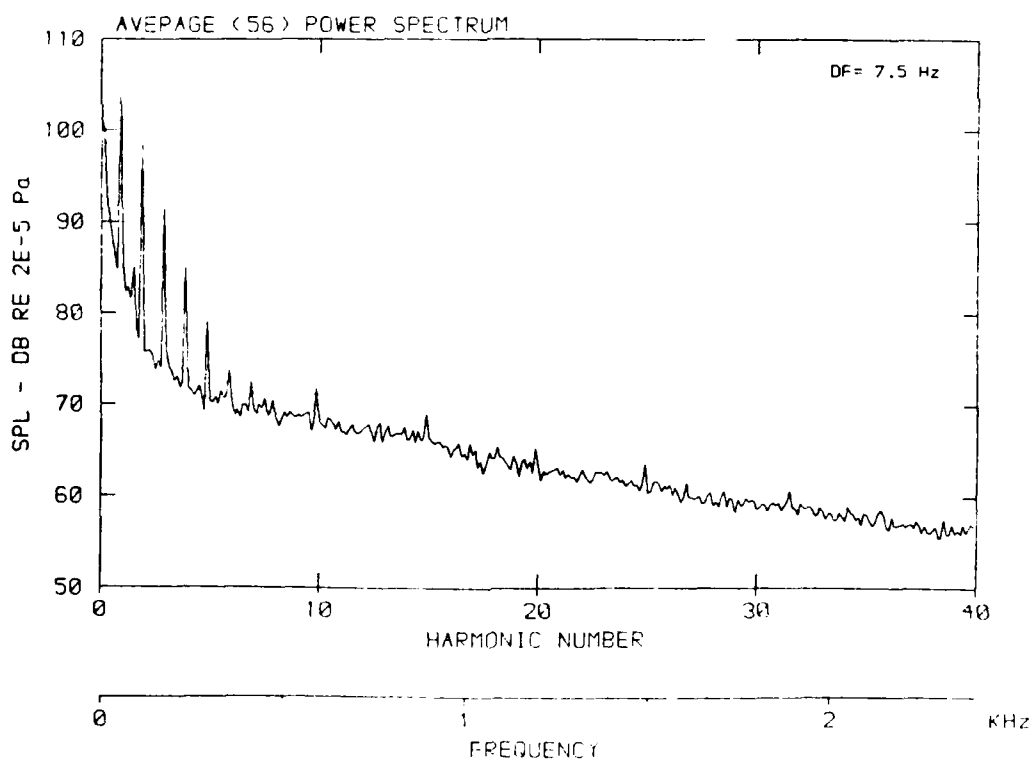
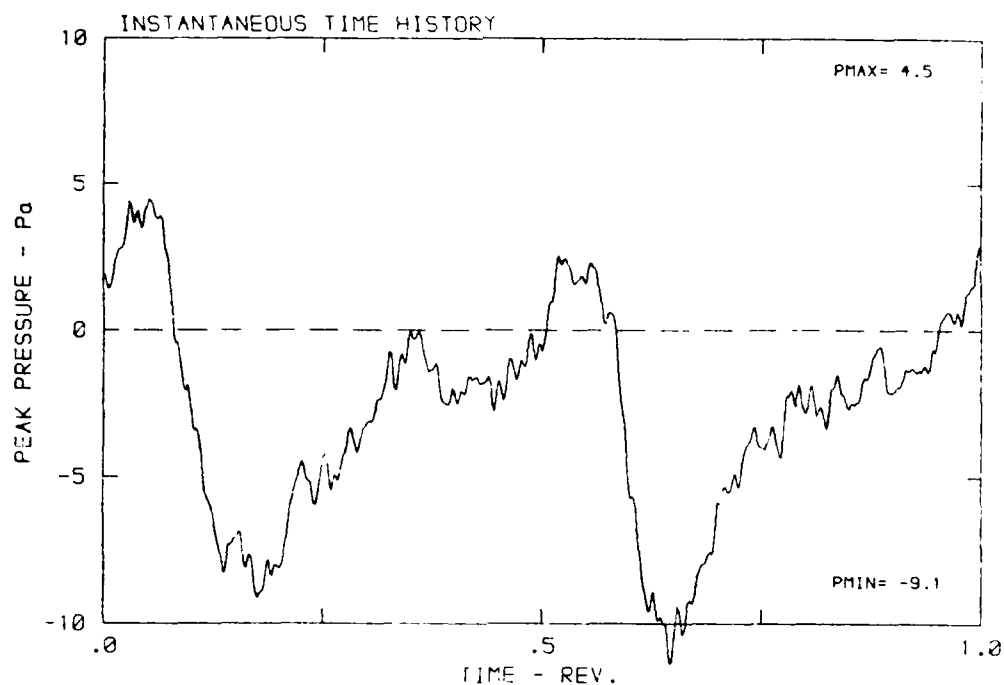
DATA POINT: FNC-10 RUN: 182 MP: 2

β : 23.7° MH: .5830 n: 1800 rpm v/u : .267 ϕ : .0° T: 287.6 K



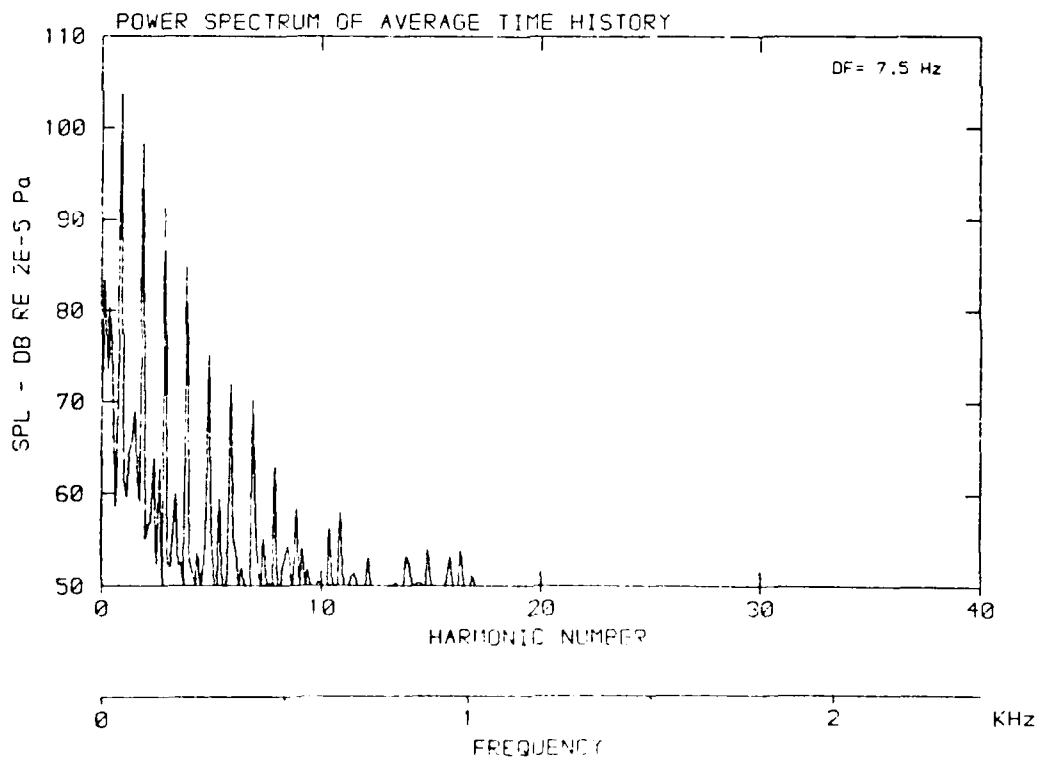
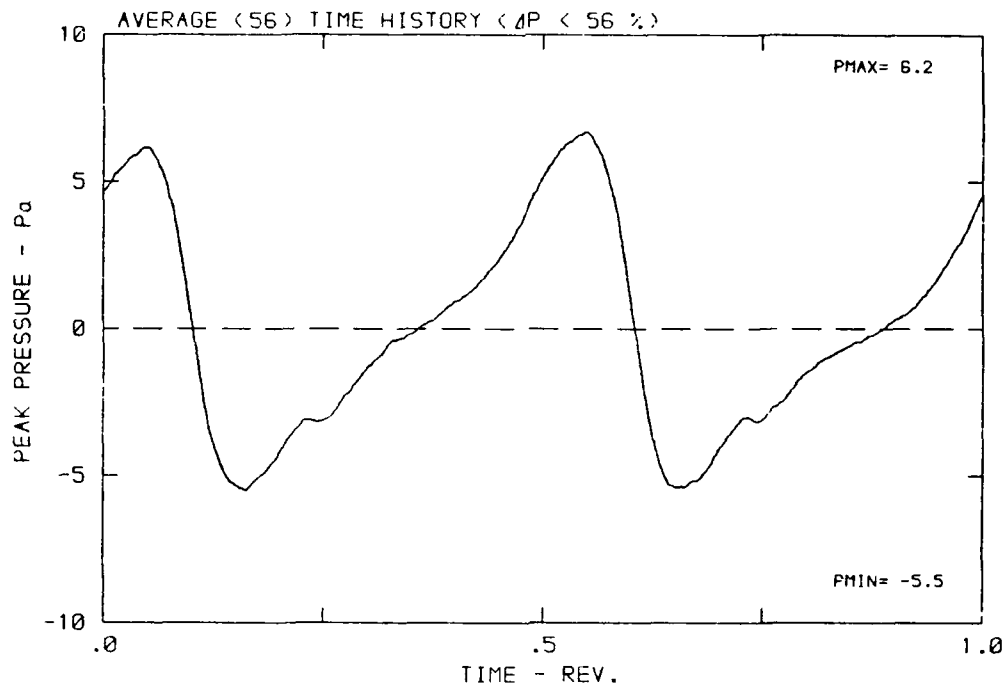
DATA POINT: FNC-10 RUN: 182 MP: 3

β : 23.7° MH: .5830 n: 1800 rpm v/u : .267 ϕ : .0° T: 287.5



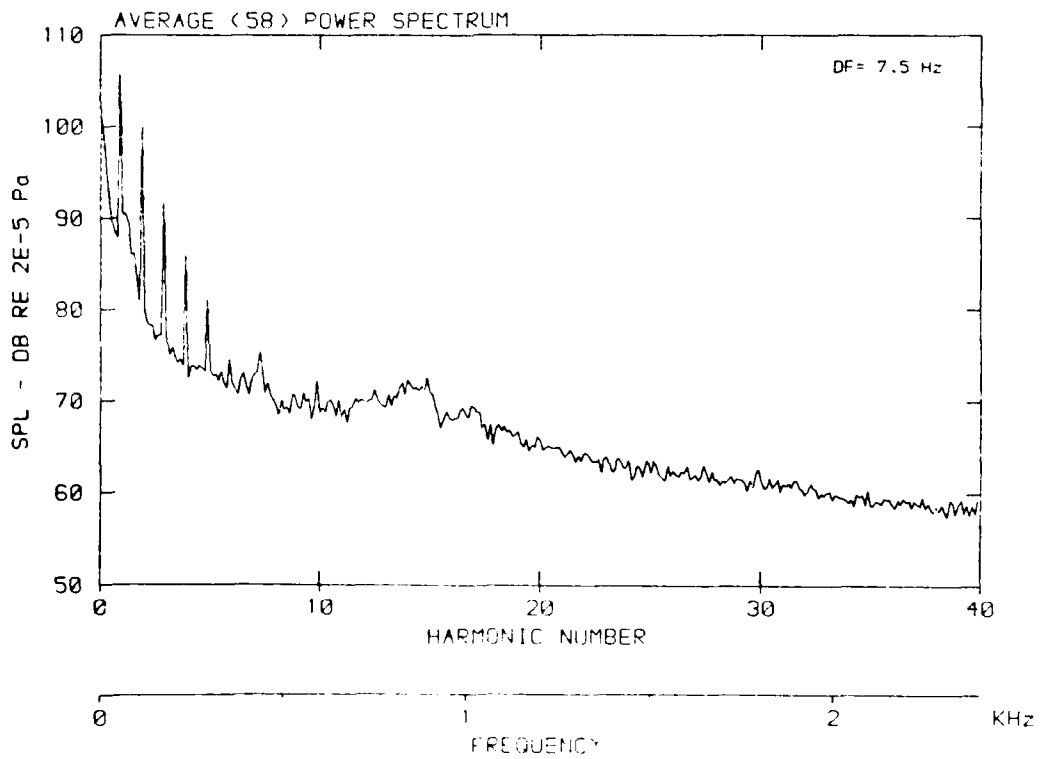
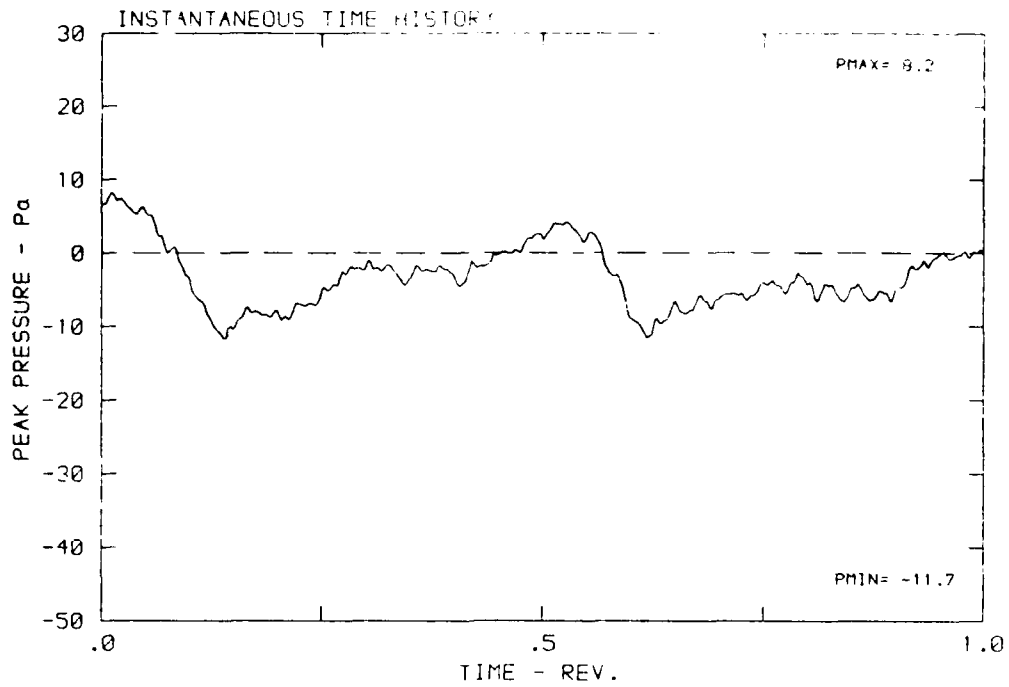
DATA POINT: FNC-10 RUN: 182 MP: 3

β : 23.7° MH: .5830 n: 1800 rpm v/u : .267 ϕ : .0° T: 287.6 K



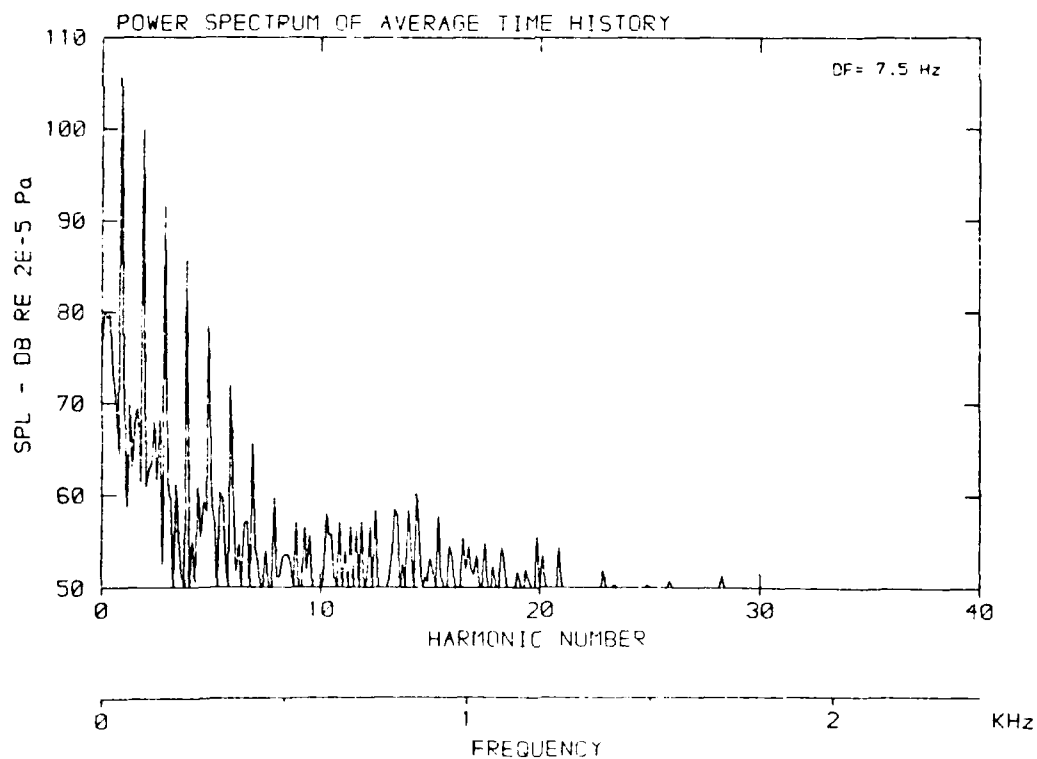
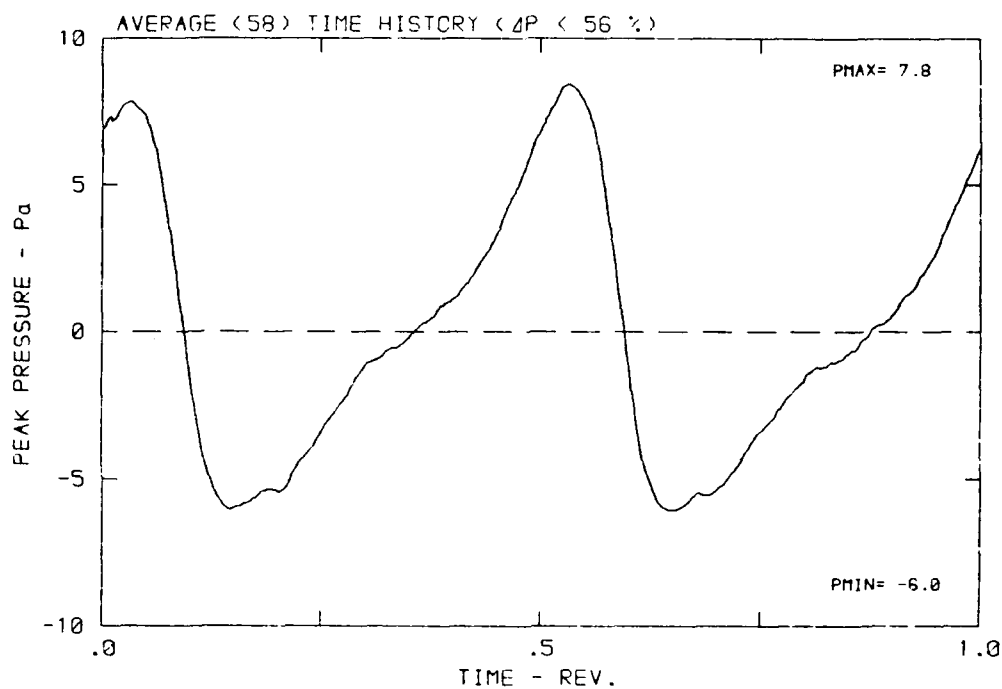
DATA POINT: FNC = 0 RUN: 180 MP: 4

β : 23.7° MH: .5830 n: 1800 rpm v: 0.100 ϕ : .0° T: 287.6 K



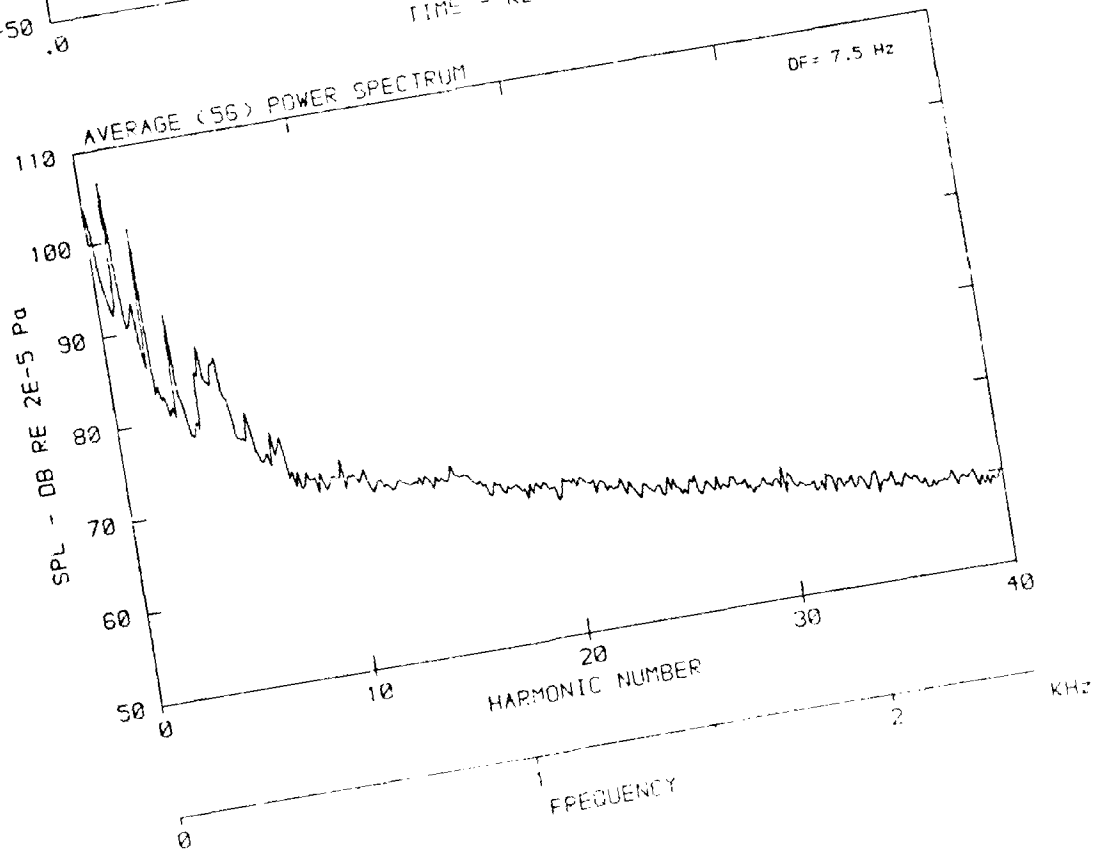
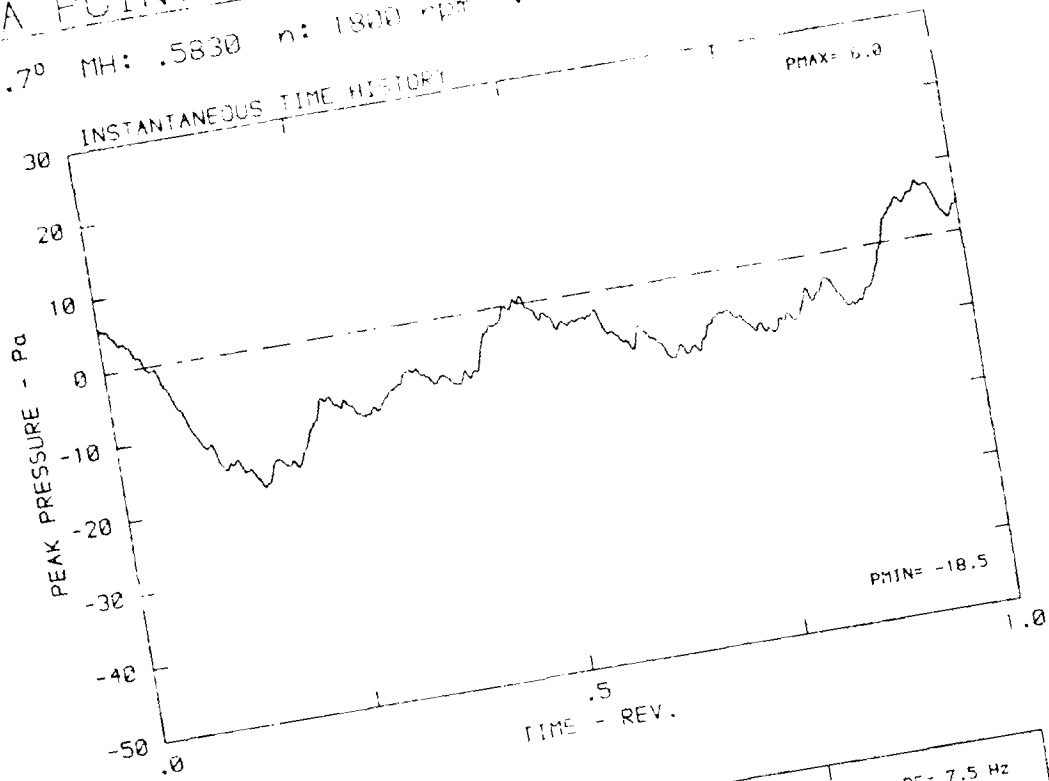
DATA POINT: FNC-10 RUN: 182 MP: 4

β : 23.7° MH: .5830 n: 1800 rpm v/u : .267 ϕ : .0° T: 287.6 K



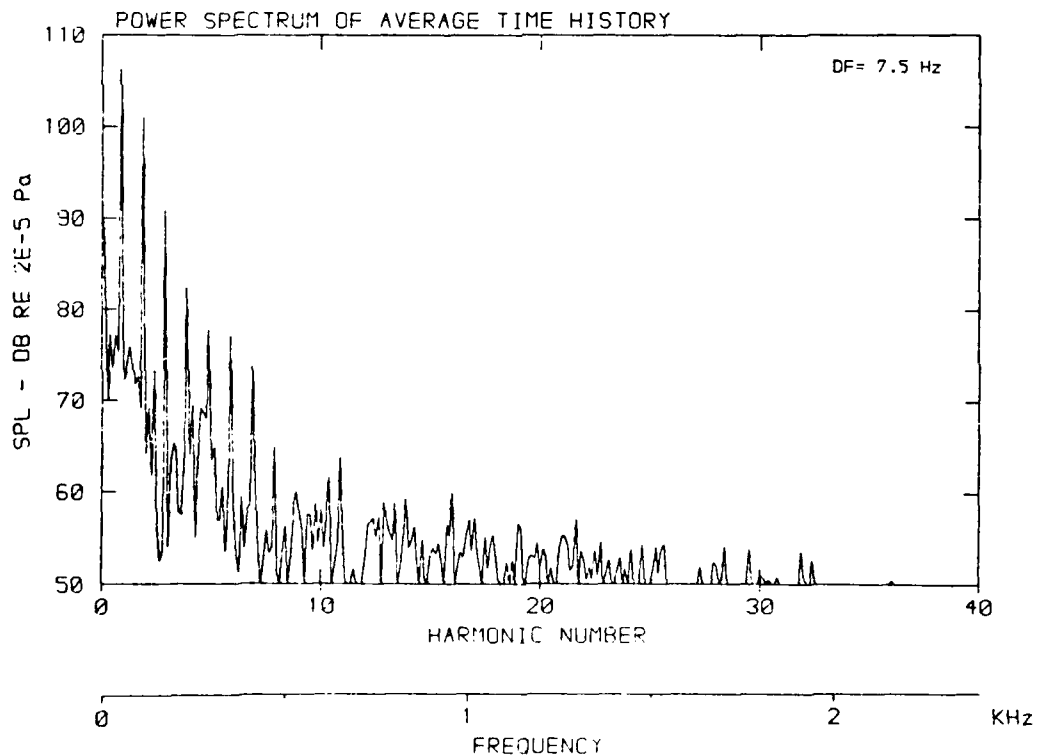
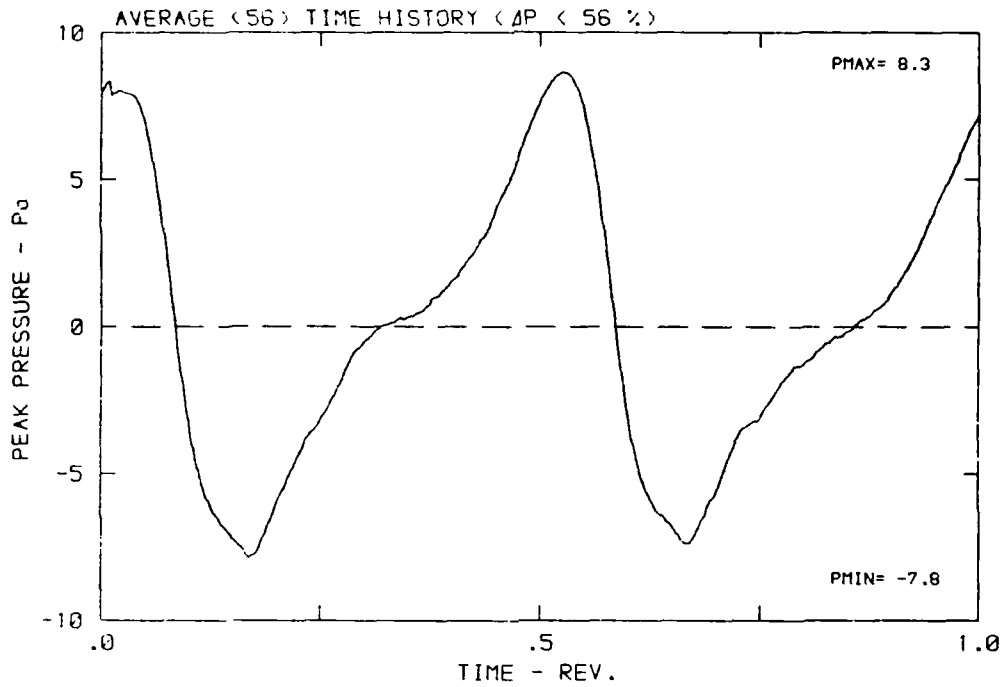
DATA POINT : ENC 1 LINE 183 MP: 3

β : 23.7° MH: .5830 n: 1800 rpm v-u: .257 ϕ : .0° T: 287.6 K



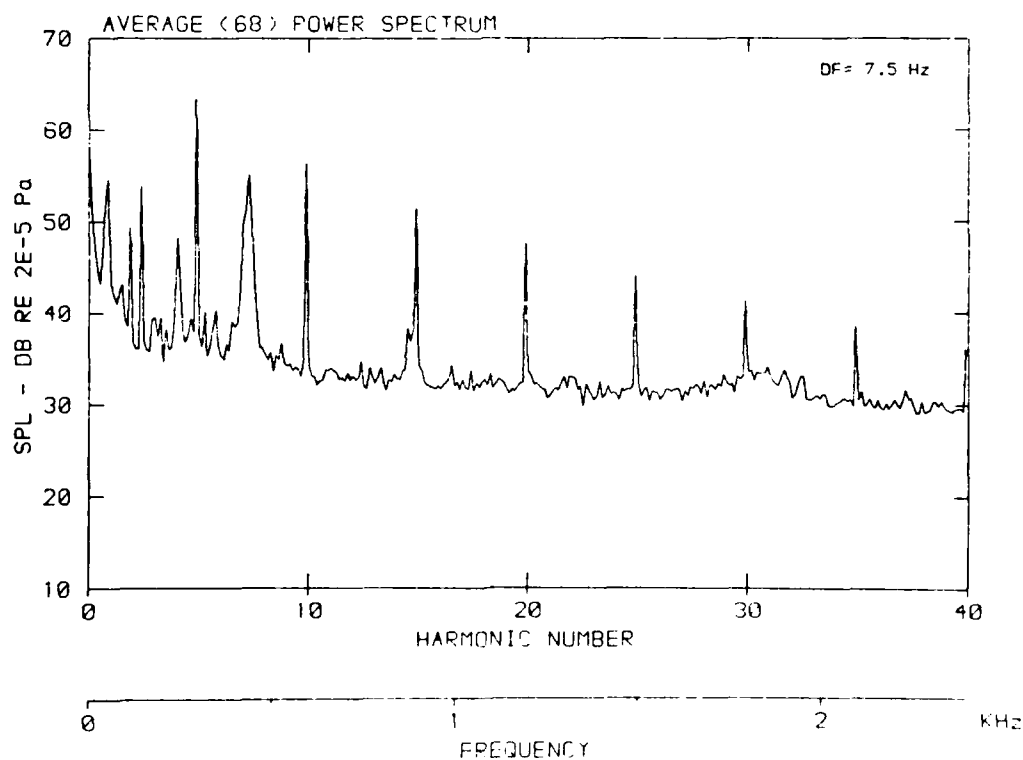
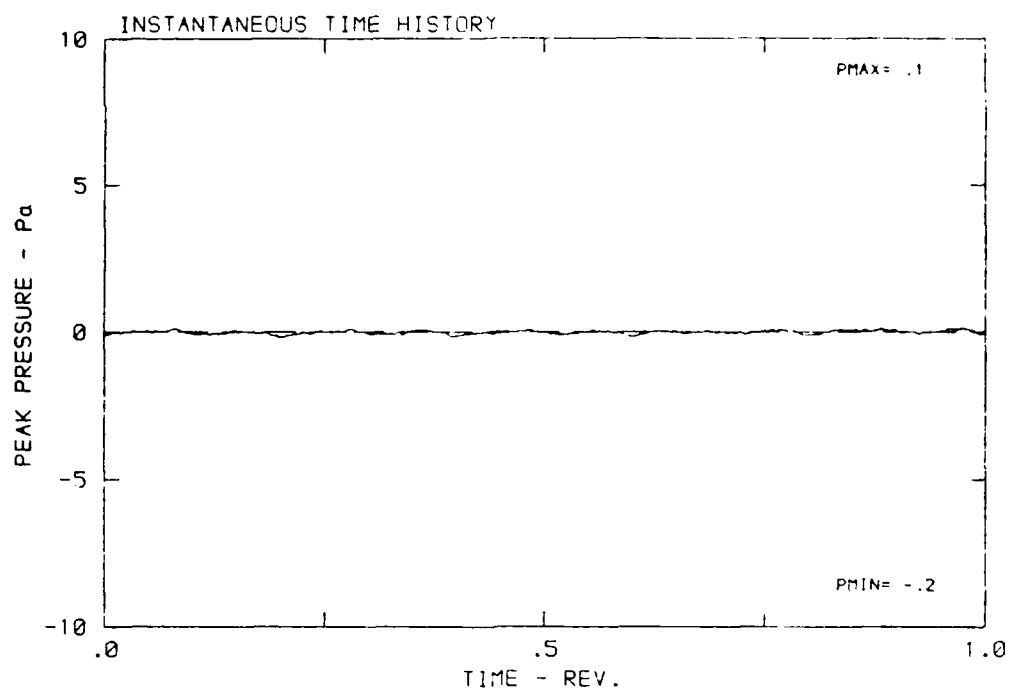
DATA POINT: FNC-10 RUN: 182 MP: 5

β : 23.7° MH: .5830 n: 1800 rpm v/u : .267 ϕ : .0° T: 287.6 K



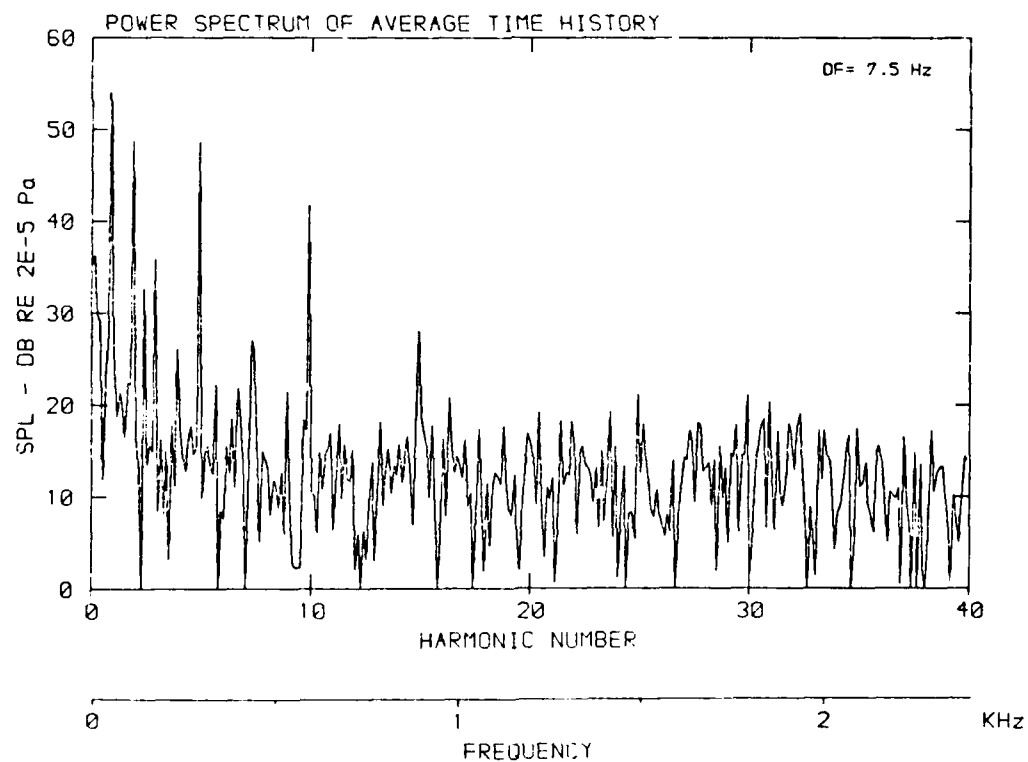
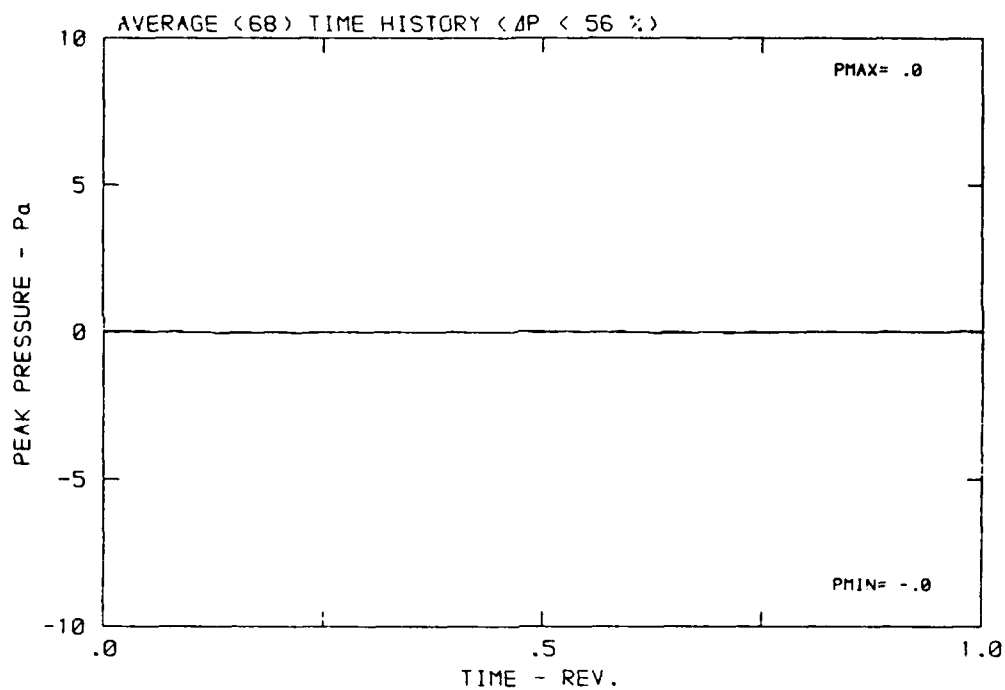
DATA POINT: FNC-10 RUN: 182 NP: 5

β : 23.7° MH: .5630 n: 1800 rpm v_u : .267 ϕ : .0° T: 287.6 K



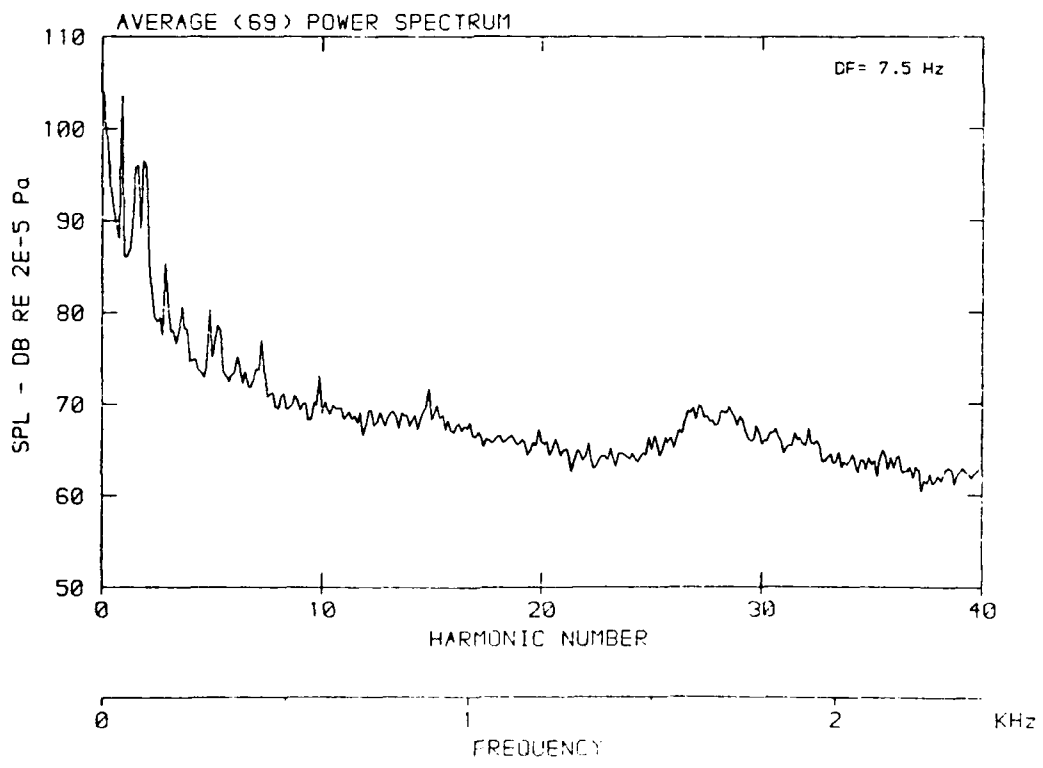
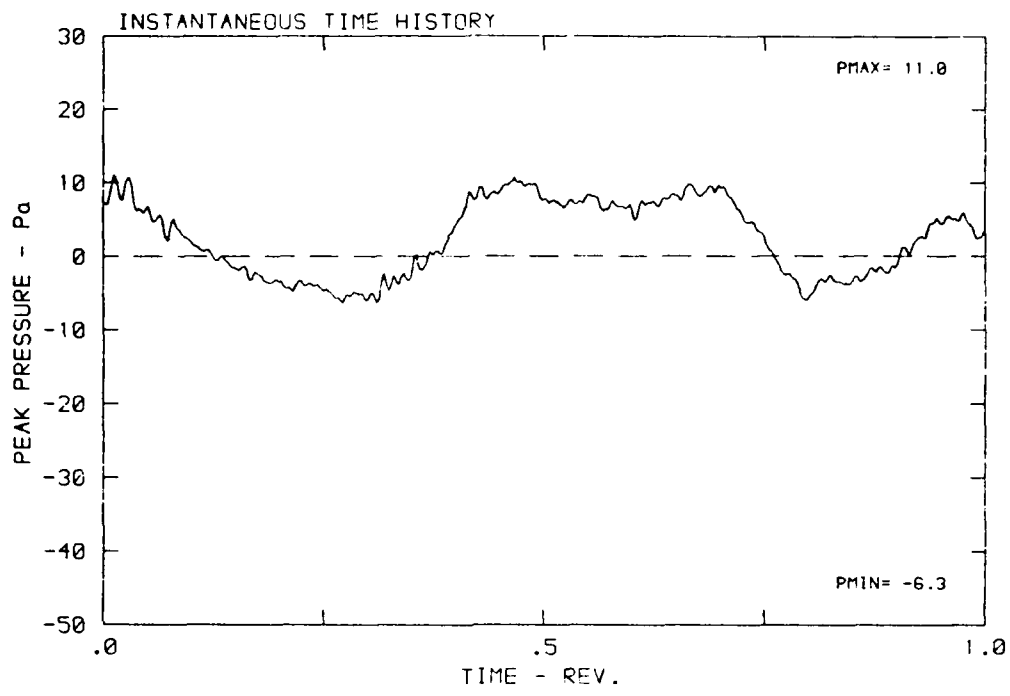
DATA POINT: FNC-10 RUN: 182 MP: 6

β : 23.7° MH: .5830 n: 1800 rpm v/u : .267 ϕ : .0° T: 287.6 K



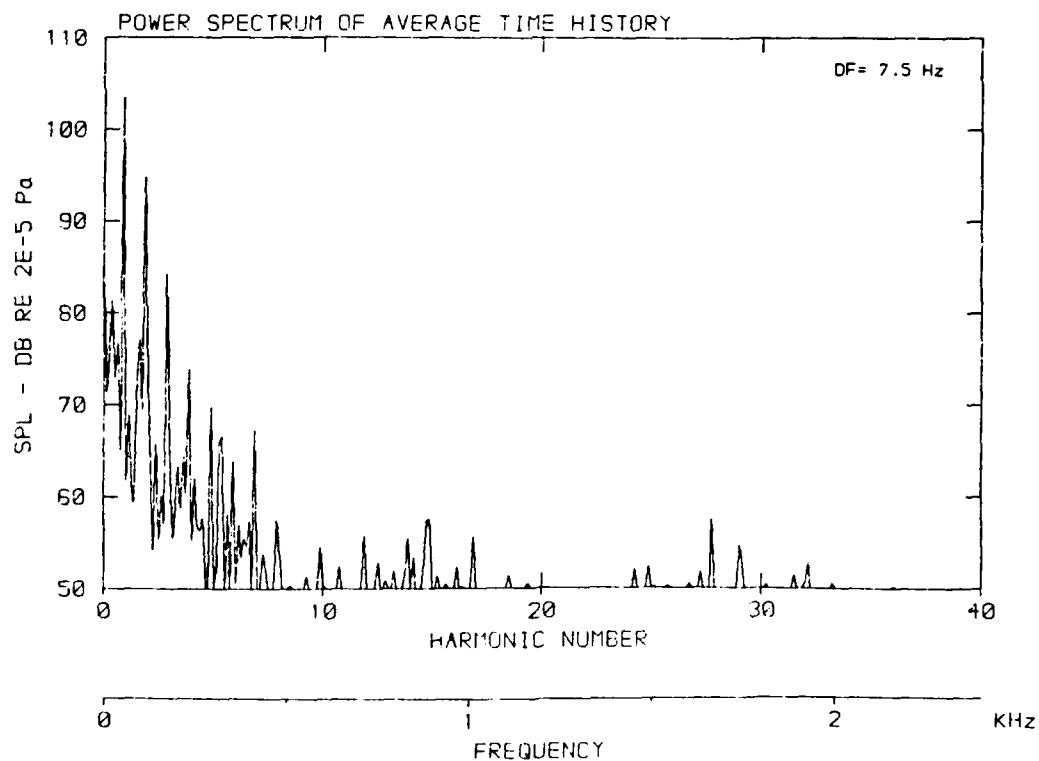
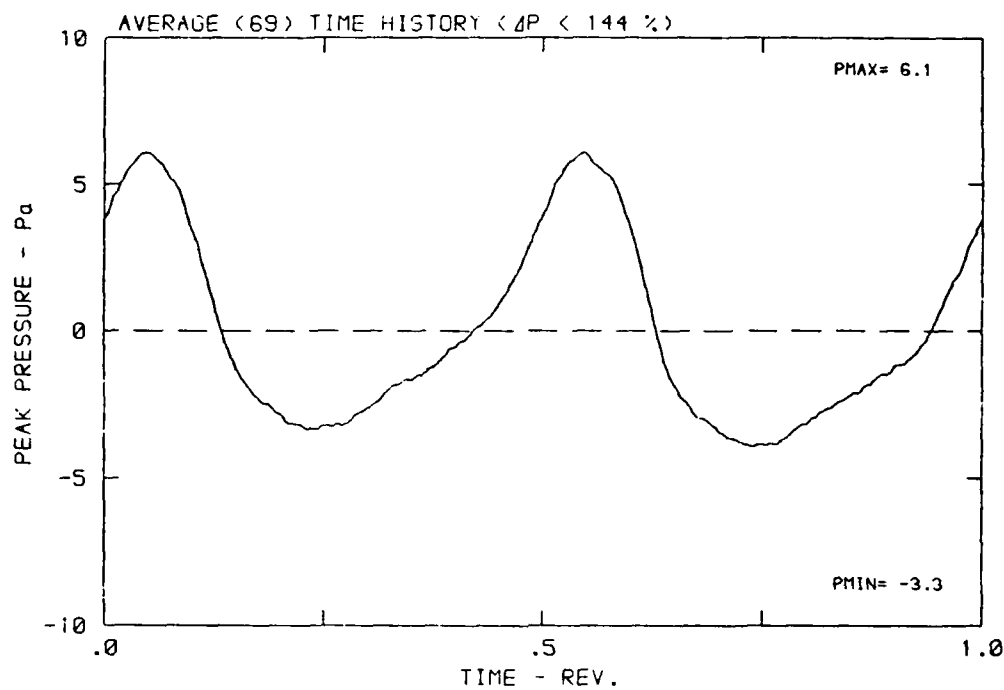
DATA POINT: FNC-10 RUN: 182 MP: 7

β : 23.7° MH: .5930 n: 1800 rpm v/u : .267 ϕ : .0° T: 287.6 K



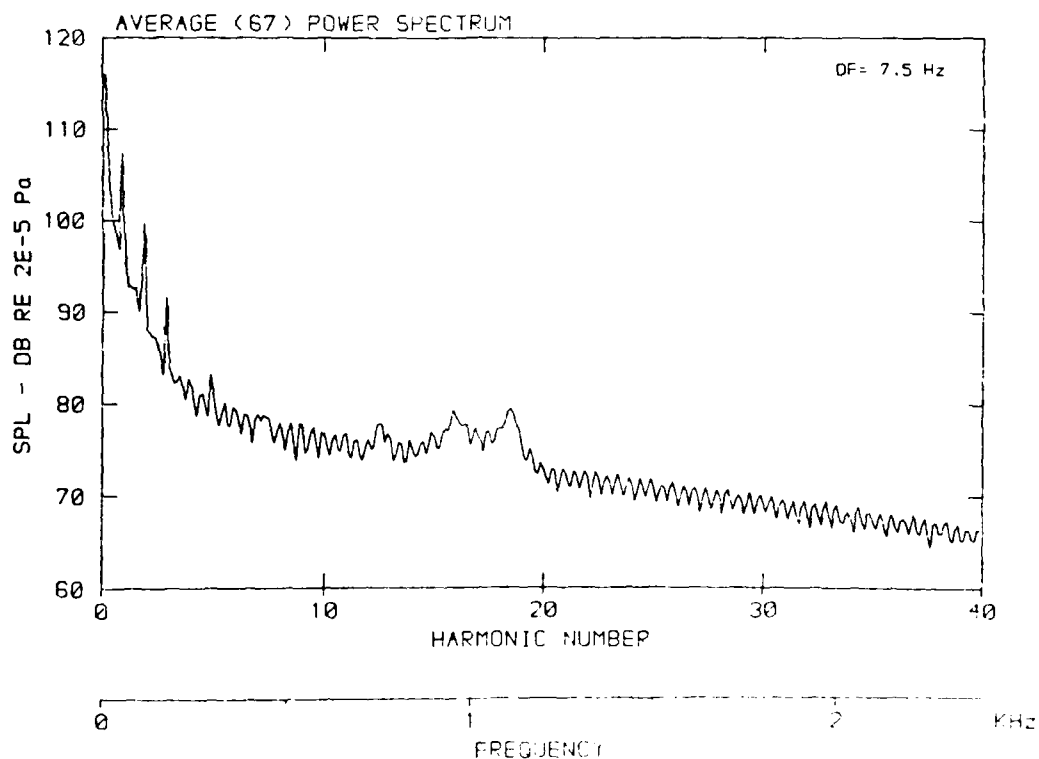
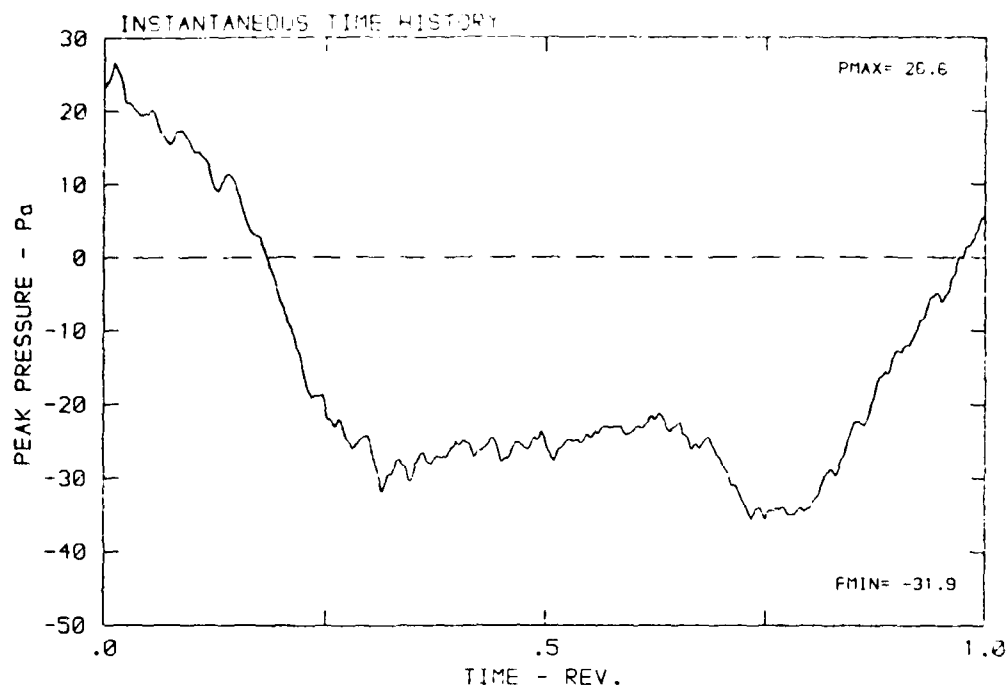
DATA POINT: FNC-10 RUN: 182 MP: 7

β : 23.7° MH: .5830 n: 1800 rpm v/u : .267 ϕ : .0° T: 287.6 K



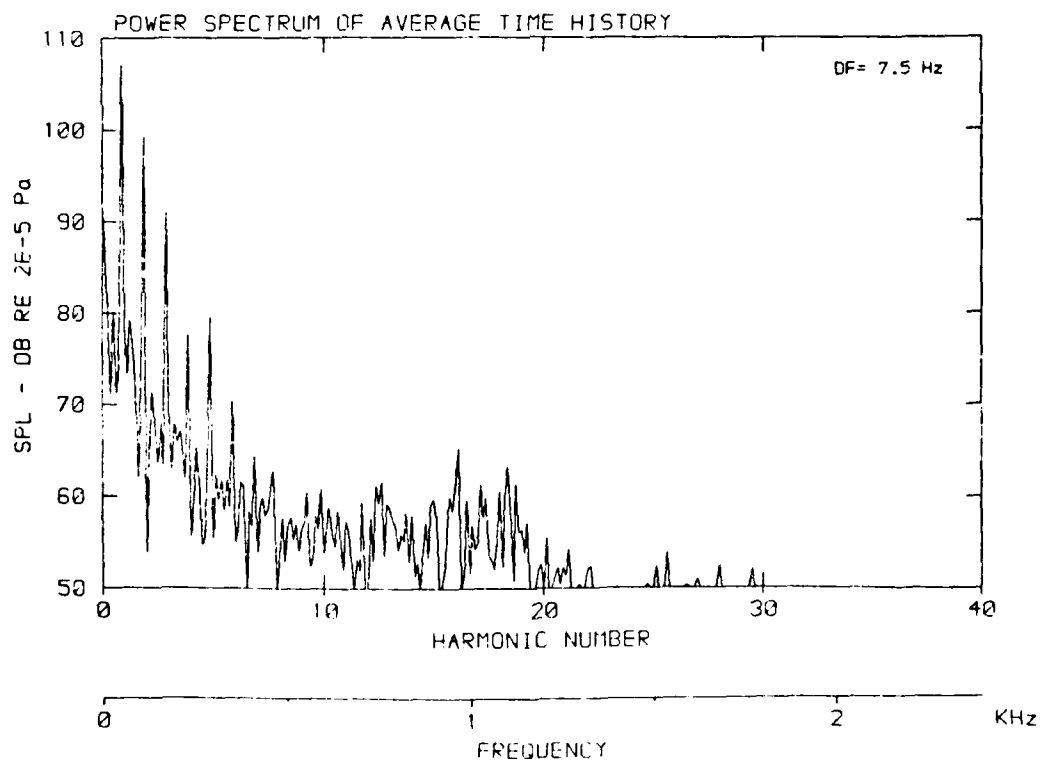
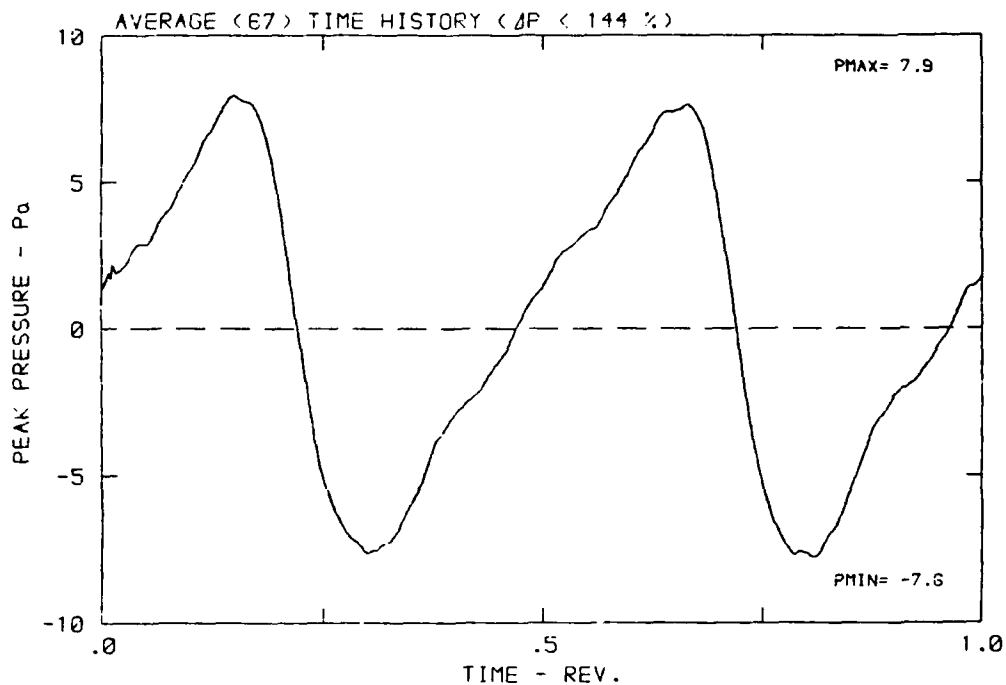
DATA POINT: FNC-10 RUN: 182 MP: 9

β : 23.7° MH: .5830 n: 1800 rpm v/u : .257 ϕ : .0° T: 287.5 K



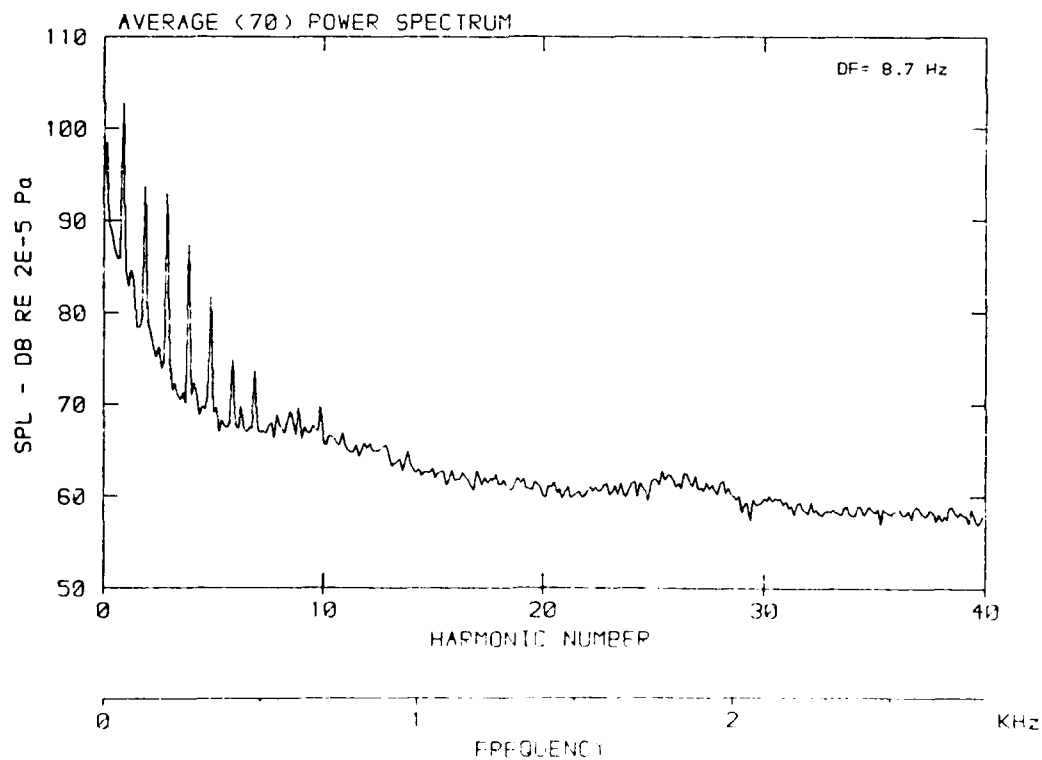
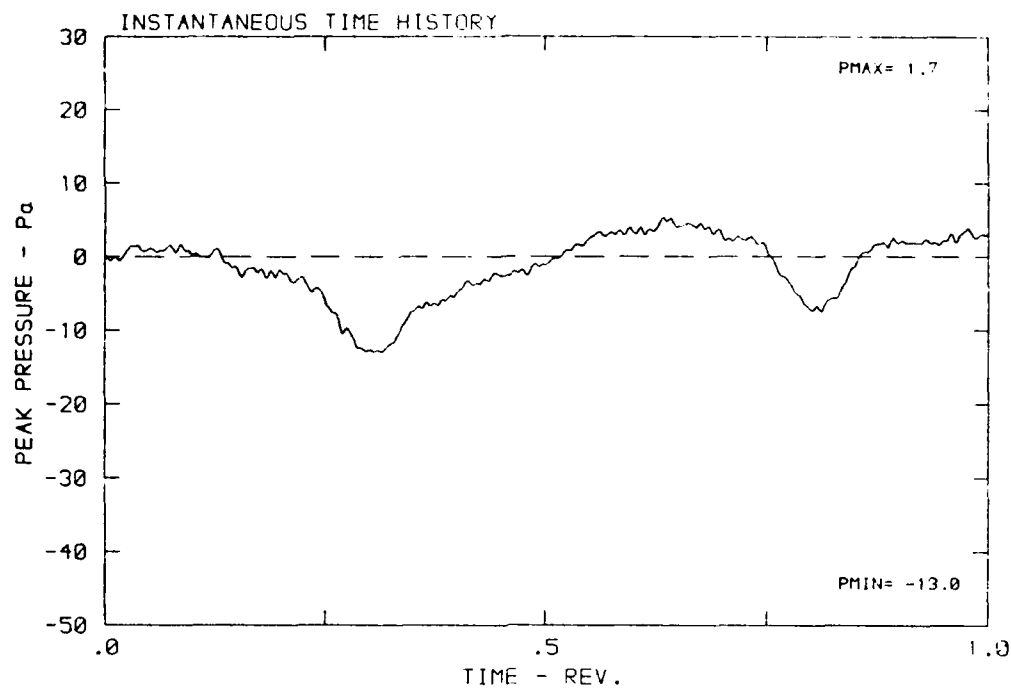
DATA POINT: FNC-10 RUN: 182 MP: 9

β : 23.7° MH: .5830 n: 1800 rpm v/u: .267 ϕ : .0° T: 287.6 K



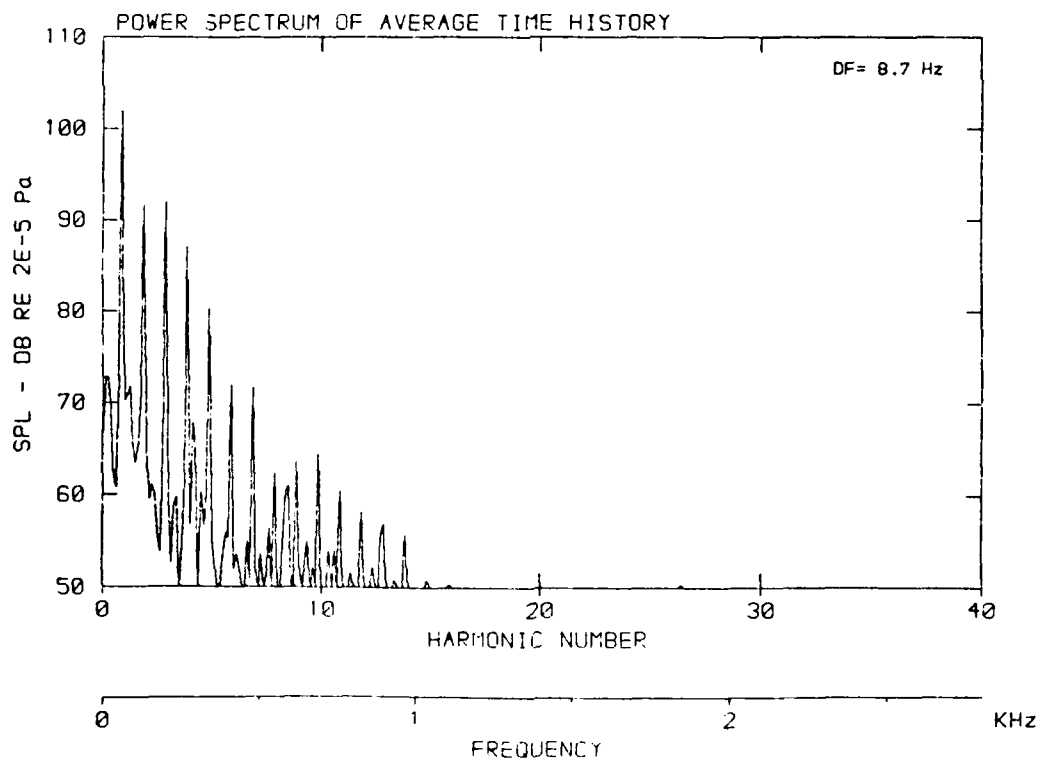
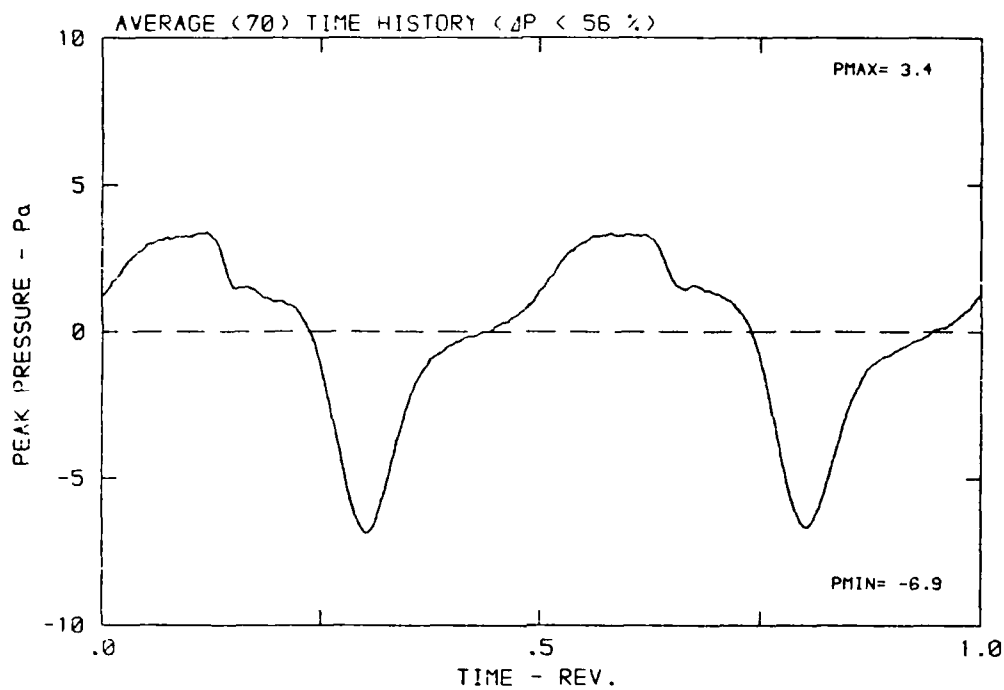
DATA POINT: FNC-11 RUN: 183 MF: 1

β : 23.7° MH: .6738 n: 2100 rpm v/u : .25' ϕ : .0° T: 298.1 K



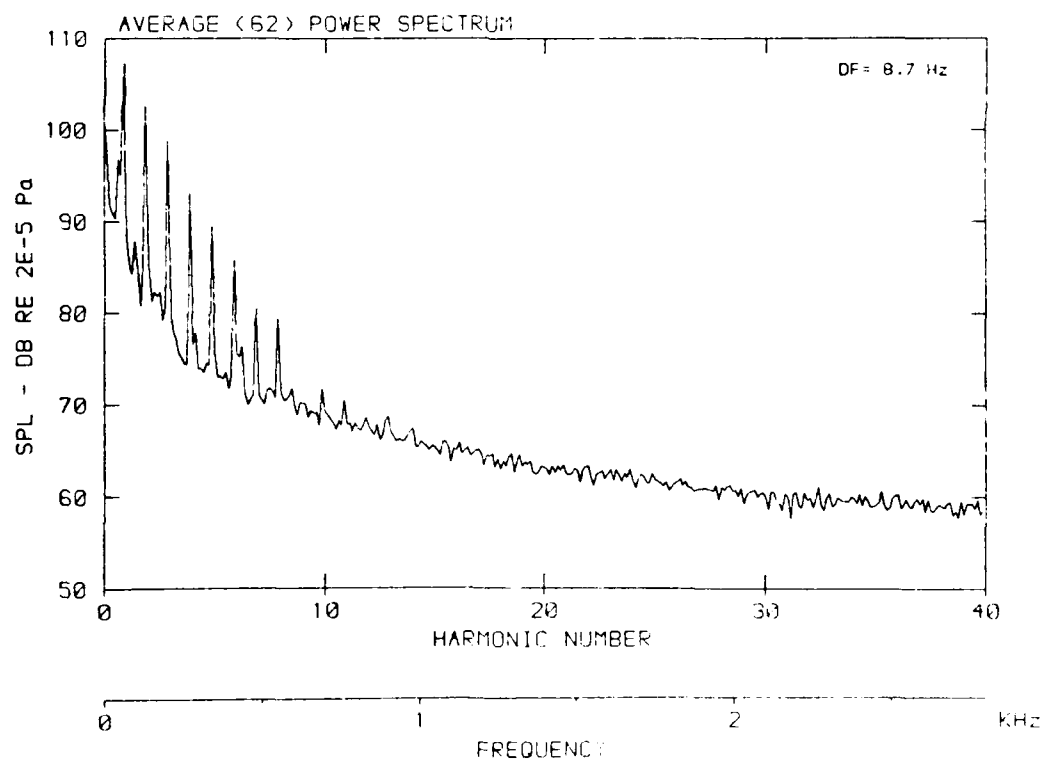
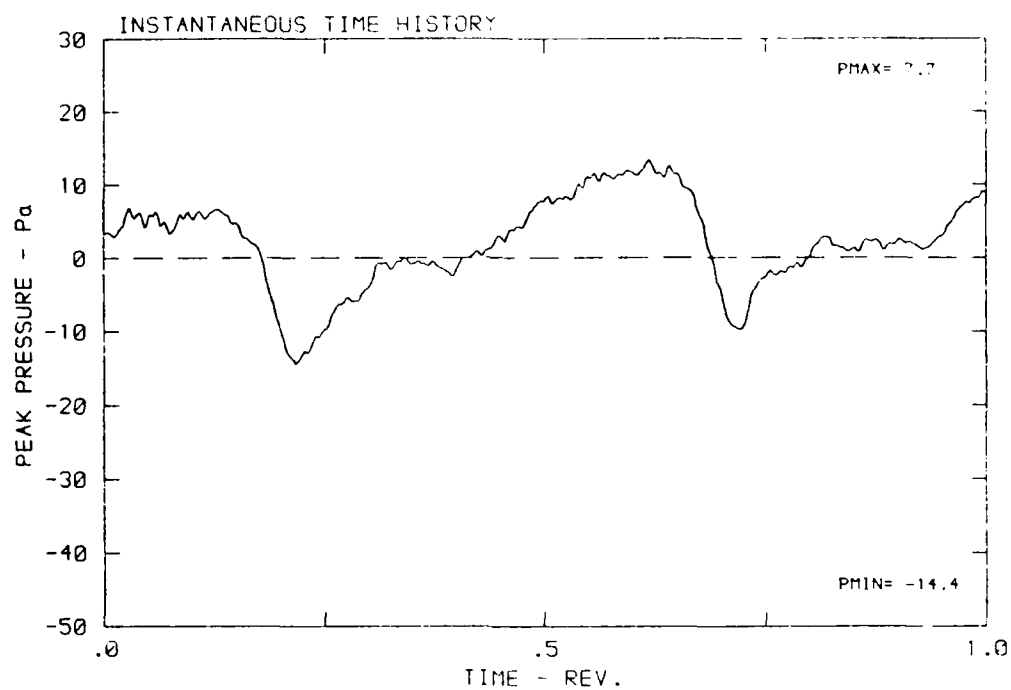
DATA POINT: FNC-11 RUN: 183 MP: 1

β : 23.7° MH: .6738 n: 2100 rpm v/u: .231 ϕ : .0° T: 288.1 K



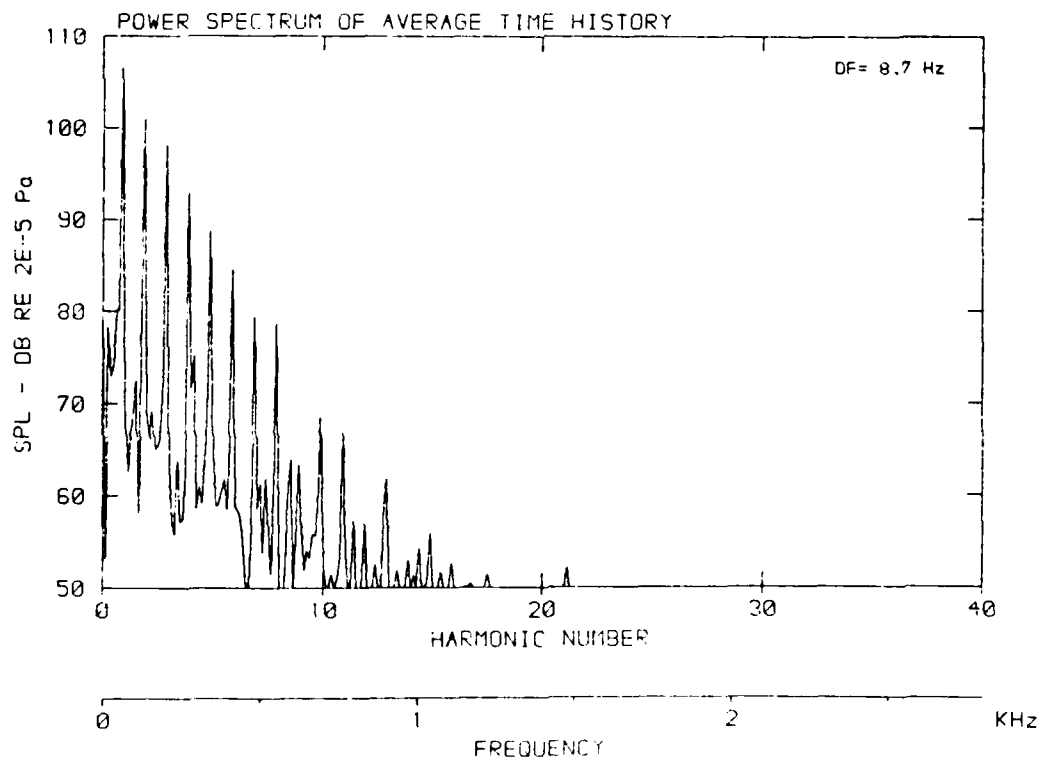
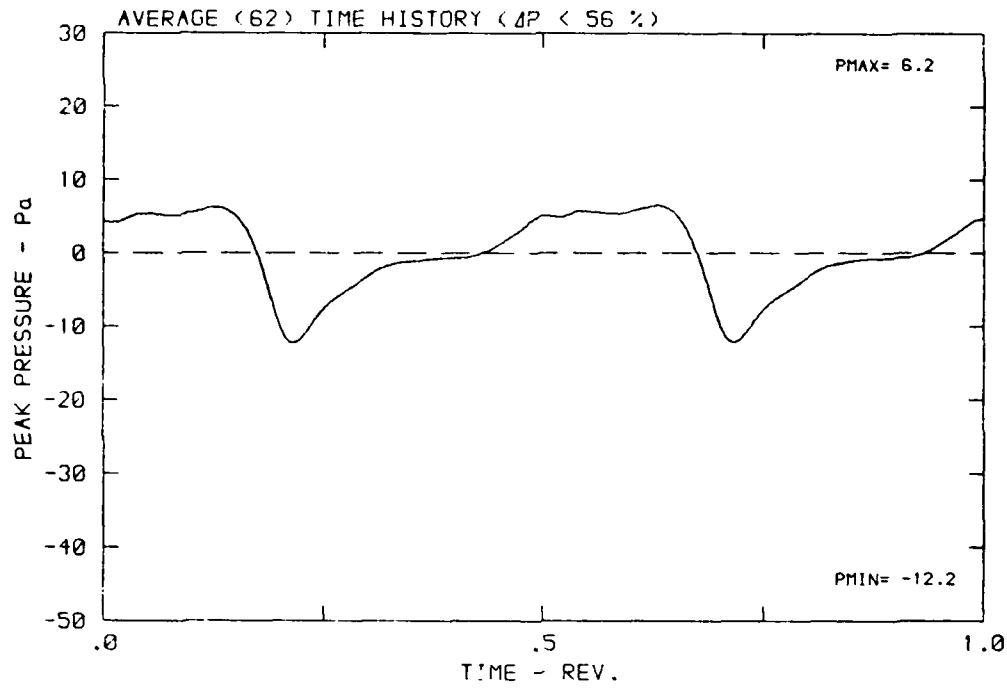
DATA POINT: FNC-11 RUN: 183 MP: 2

β : 23.7° MH: .6738 n: 2100 rpm v/u : .231 ϕ : .0° T: 288.1 K



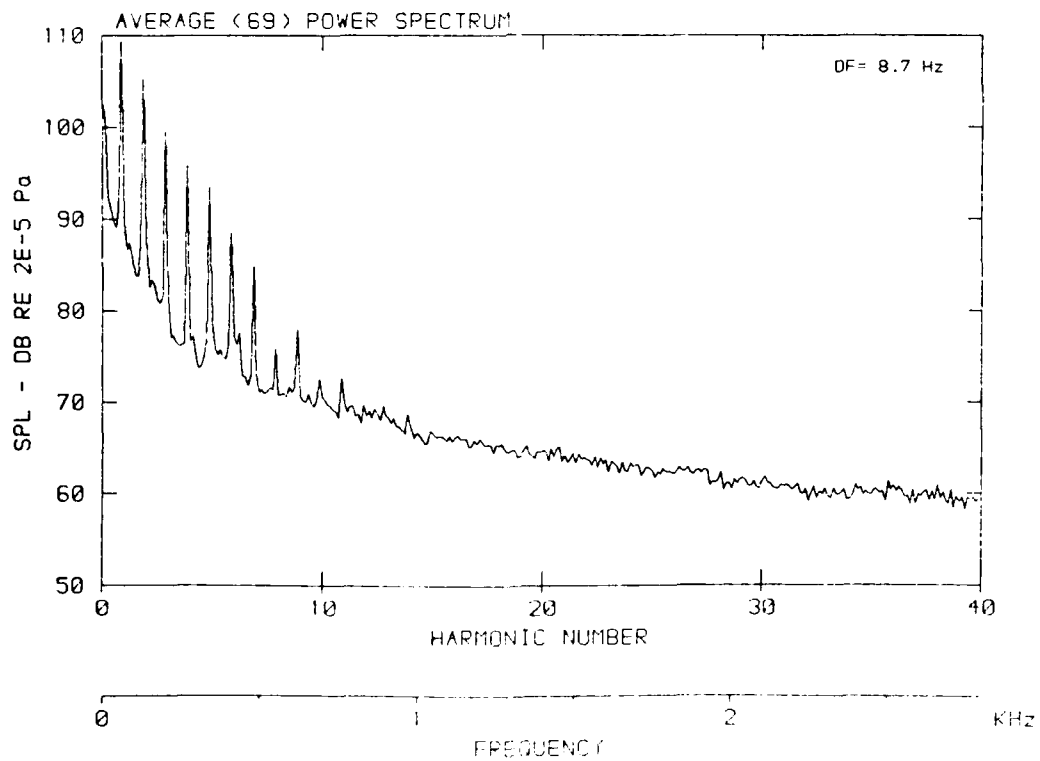
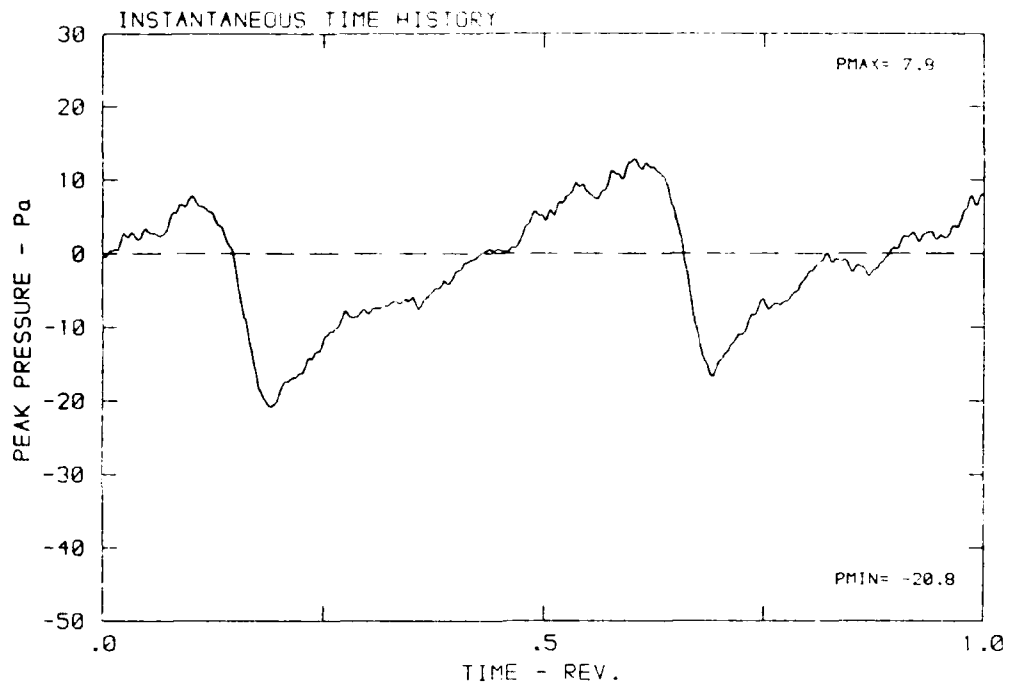
DATA POINT: FNC-11 RUN: 183 MP: 2

β : 23.7° MH: .6738 n: 2100 rpm v/u : .231 ϕ : .0° T: 288.1 K



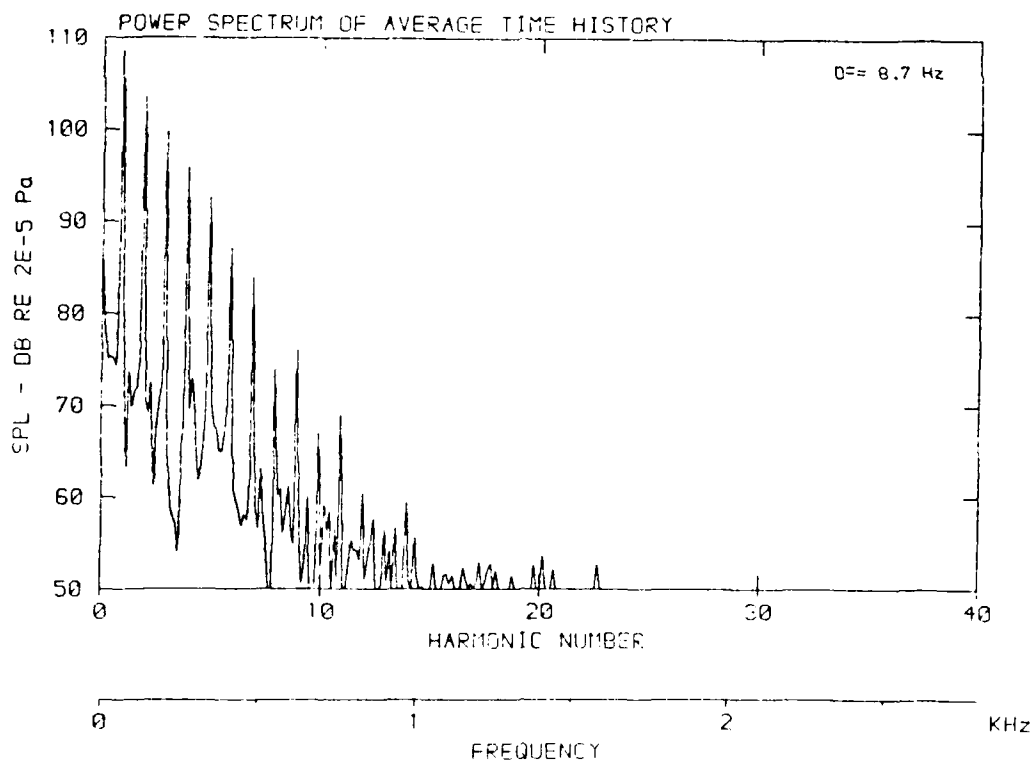
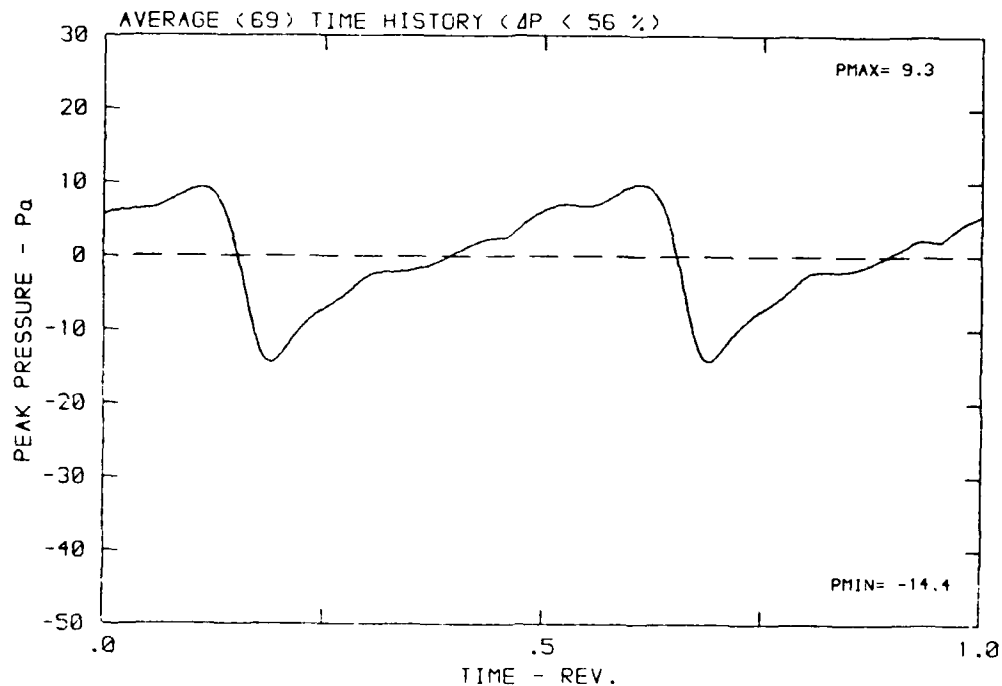
DATA POINT: FNC-11 RUN: 183 MP: 3

β : 23.7° MH: .6738 n: 2100 rpm ν : .231 ϕ : .0° T: 268.1 K



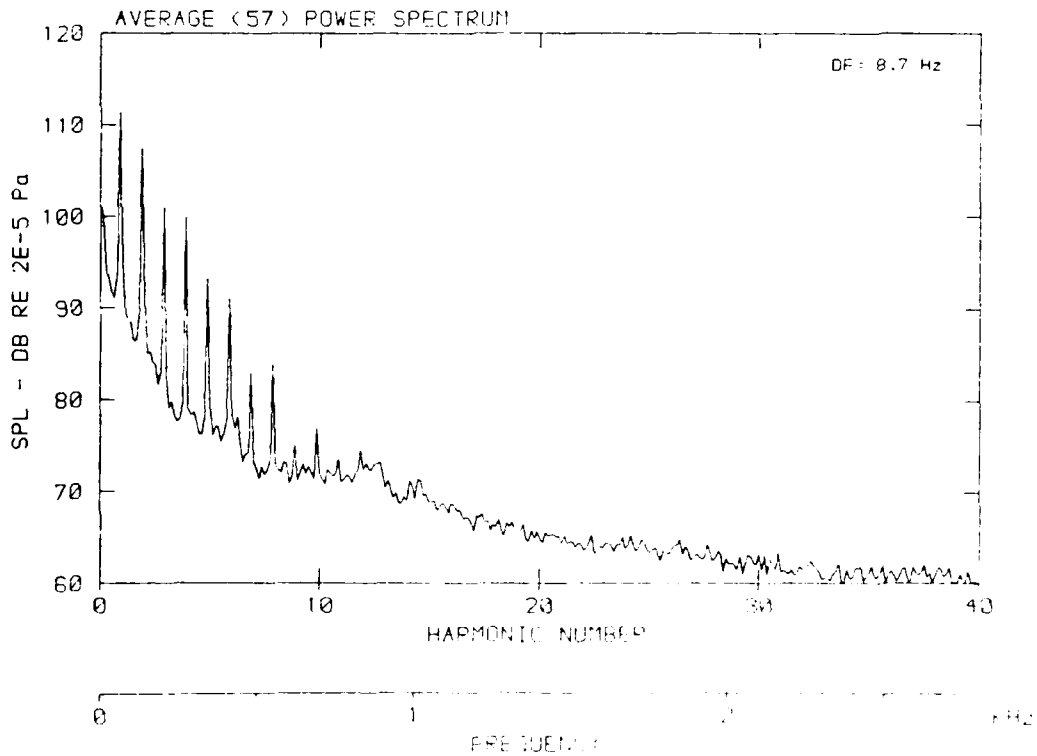
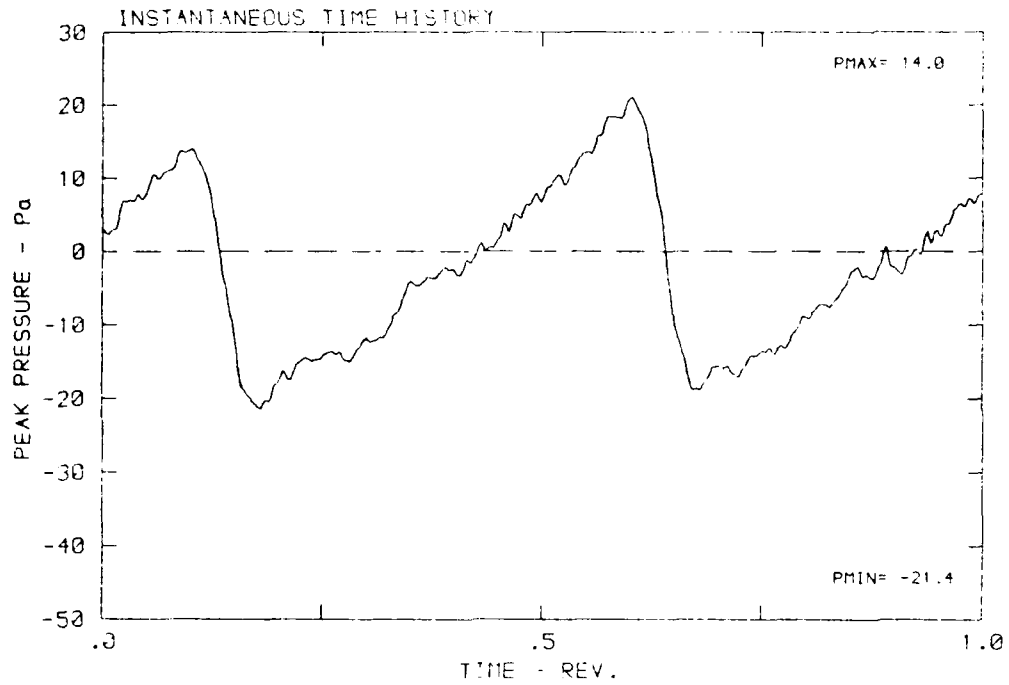
DATA POINT: FNC-11 RUN: 183 MP: 3

β : 23.7° MH: .6738 n: 2100 rpm v/u : .231 ϕ : .0° T: 288.1 K



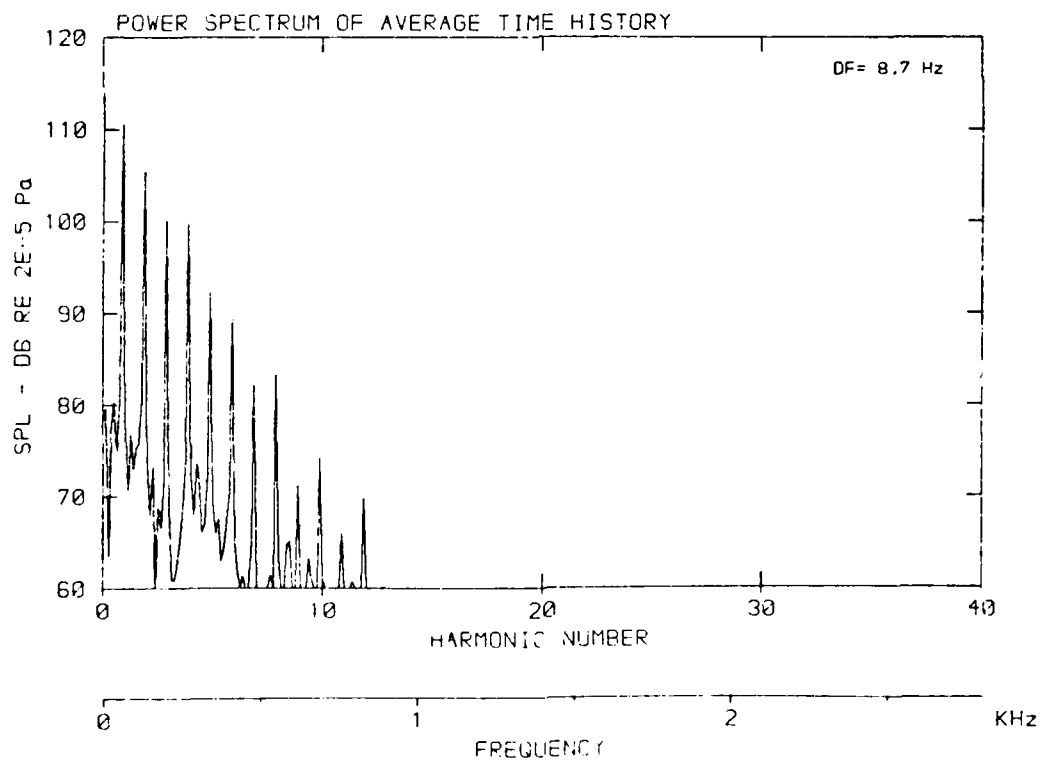
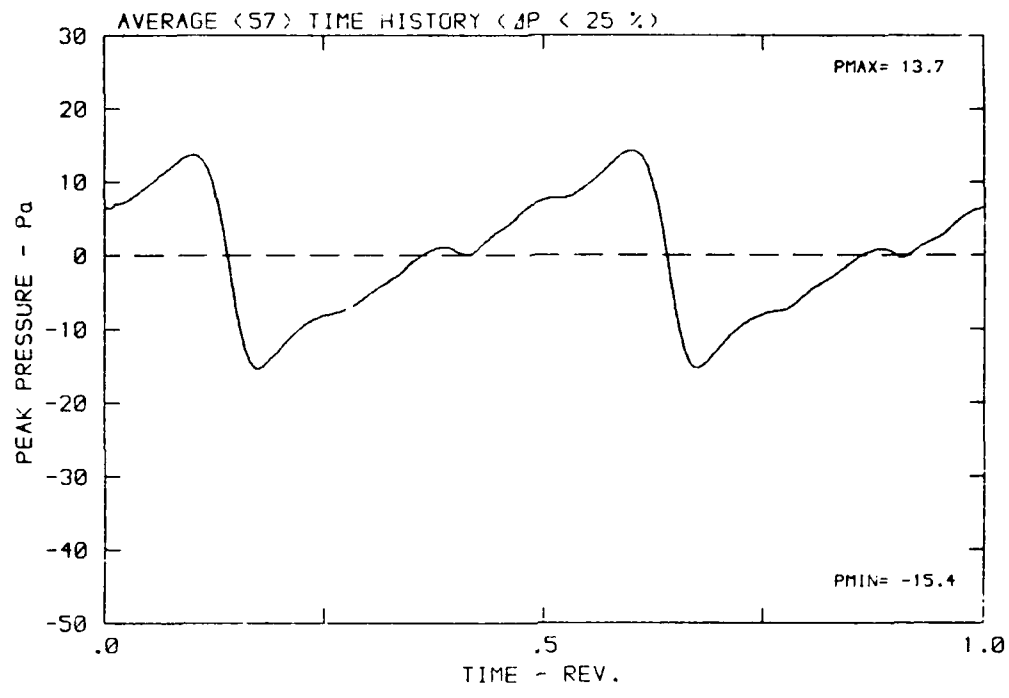
DATA POINT: ENC-11 RUN: 183 MP: 4

β : 23.7° MH: .6738 n: 2100 rpm ν : .231 ϕ : .0° T: 266.1 K



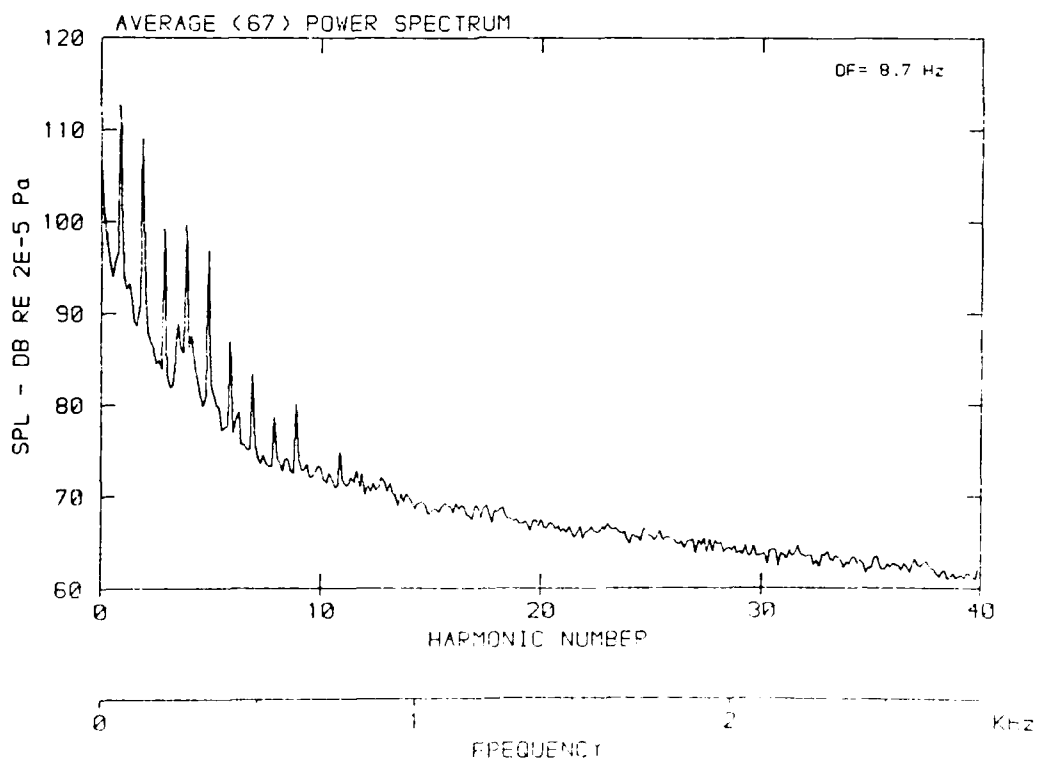
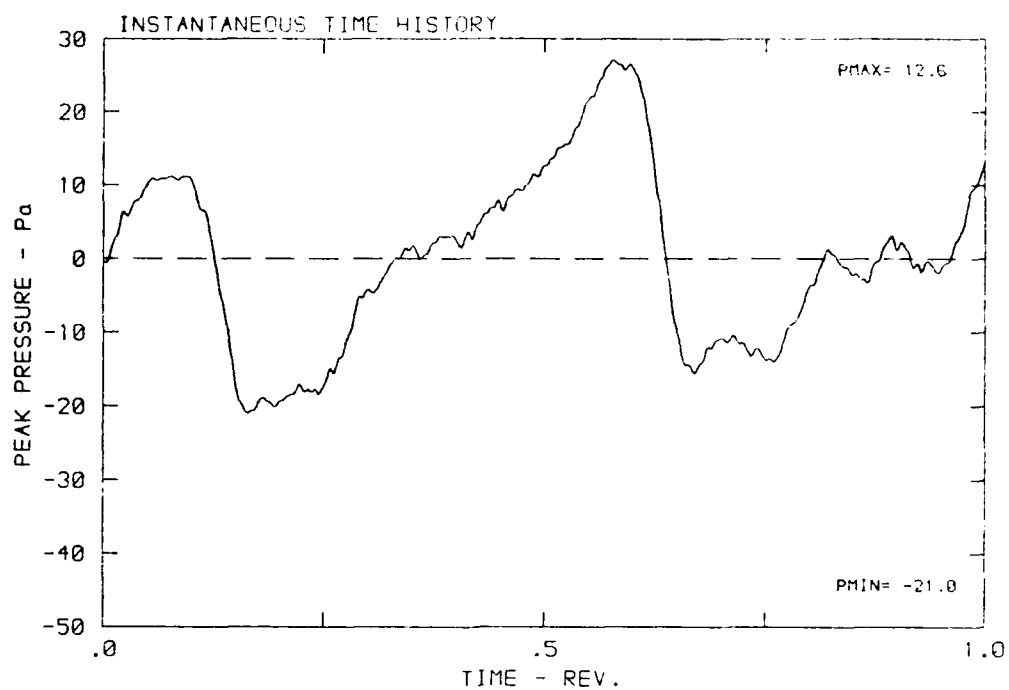
DATA POINT: FNC-11 RUN: 183 MP: 4

β : 23.7° MH: .6738 n: 2100 rpm v/u: .231 ϕ : .0° T: 288.1 K



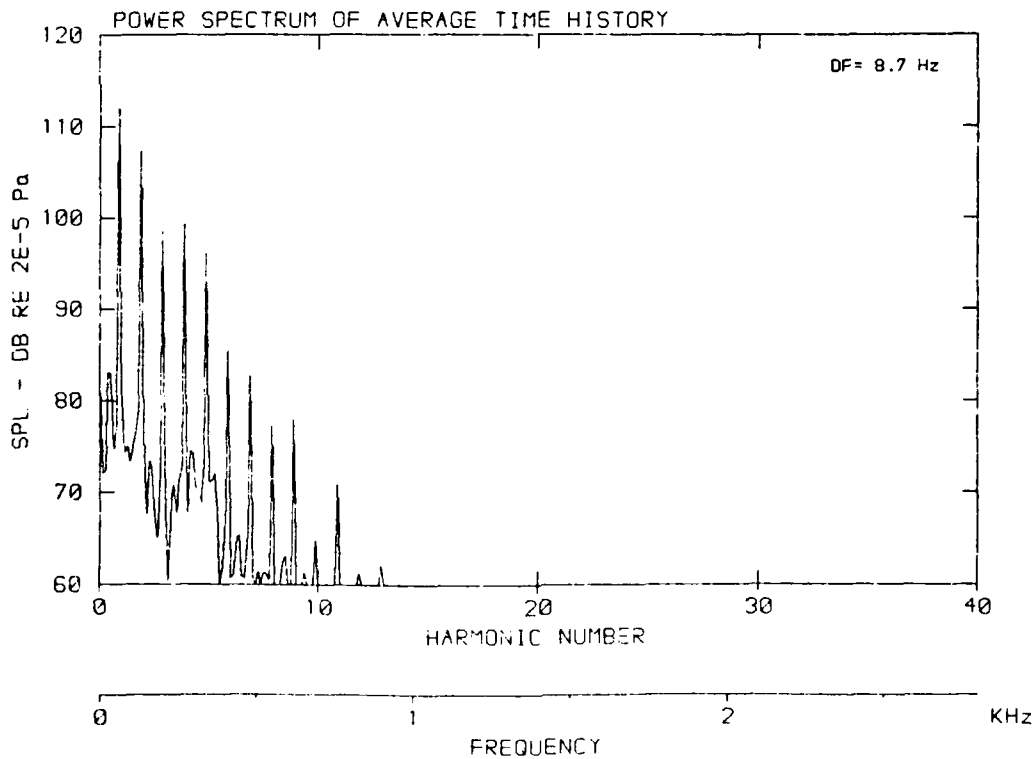
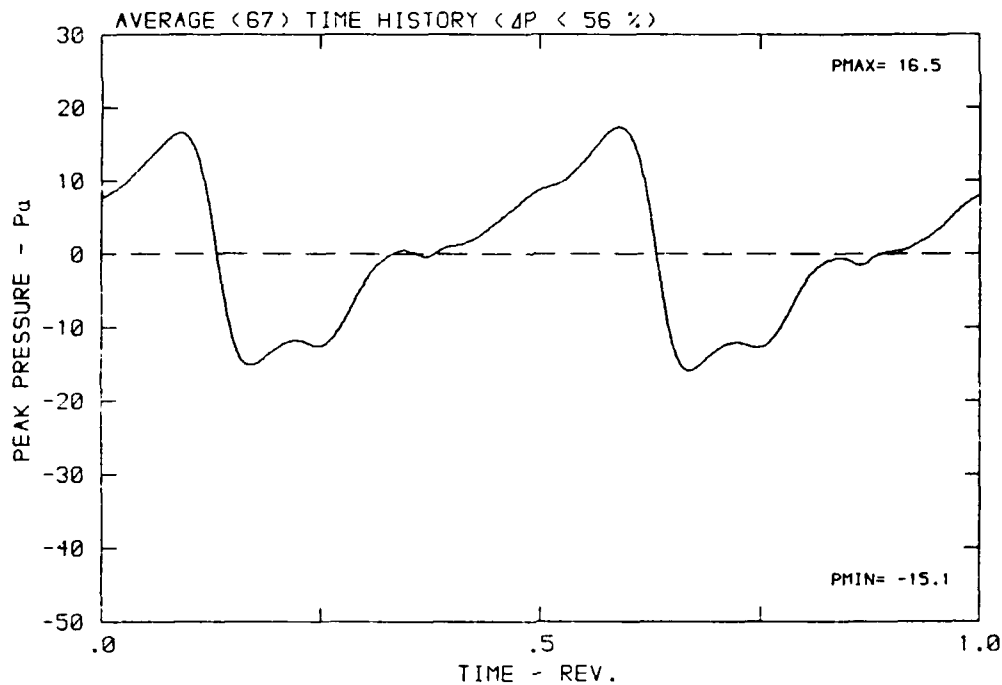
DATA POINT: FNC-11 RUN: 183 NF: 5

β : 23.7° MH: .6738 n: 2100 rpm vru: .231 ϕ : .0° T: 299.1 K



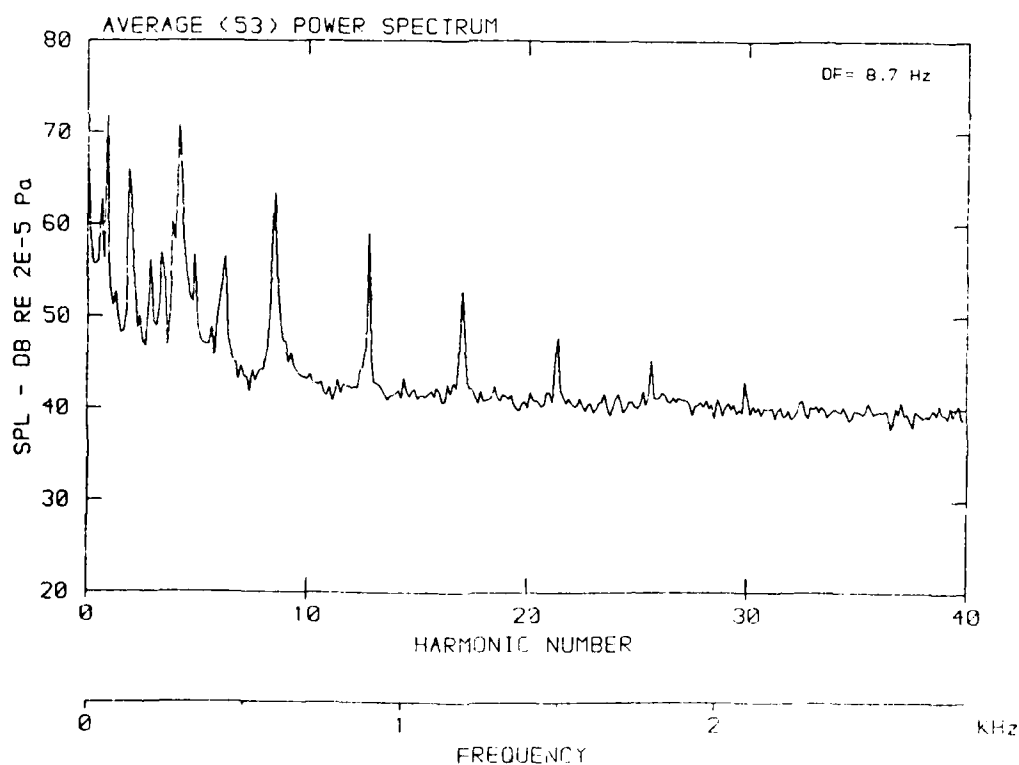
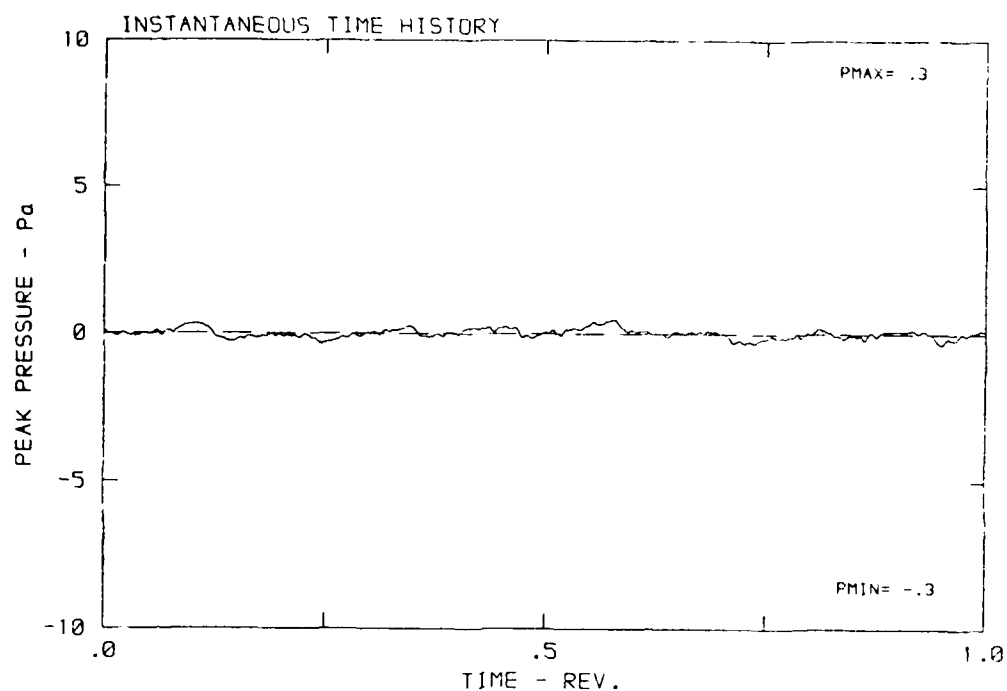
DATA POINT: FNC-11 RUN: 183 MP: 5

β : 23.7° MH: .6738 n: 2100 rpm v/u : .231 ϕ : .0° T: 288.1 K



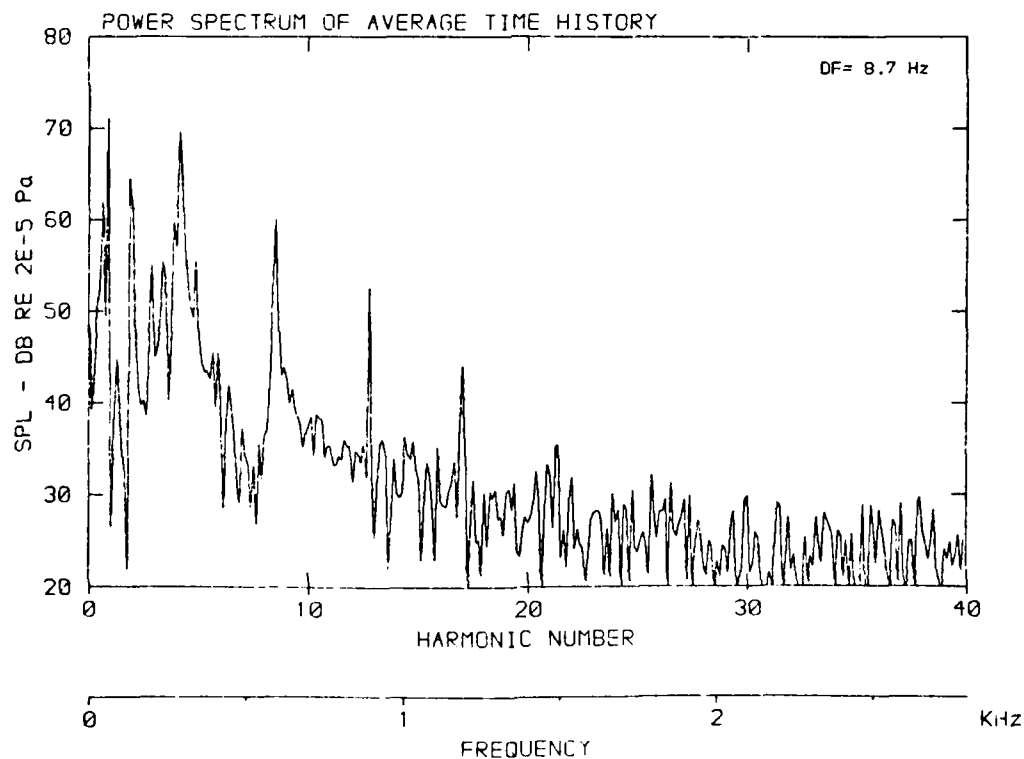
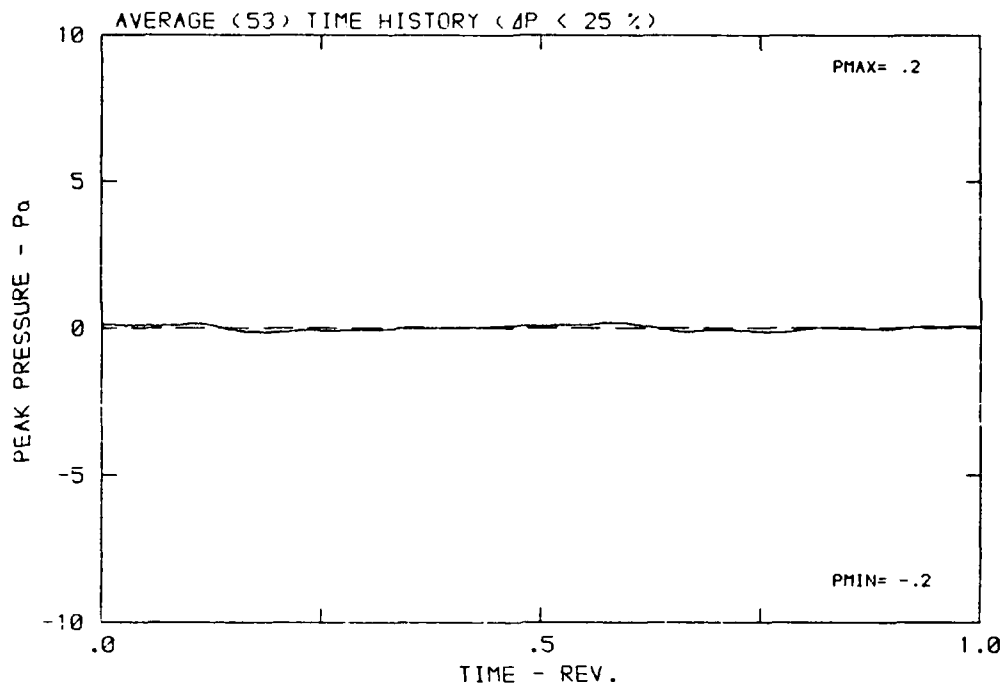
DATA POINT: FNC-11 RUN: 183 MP: 5

β : 23.7° MH: .6738 n: 2100 rpm v/u : .231 ϕ : .0° T: 288.1 K



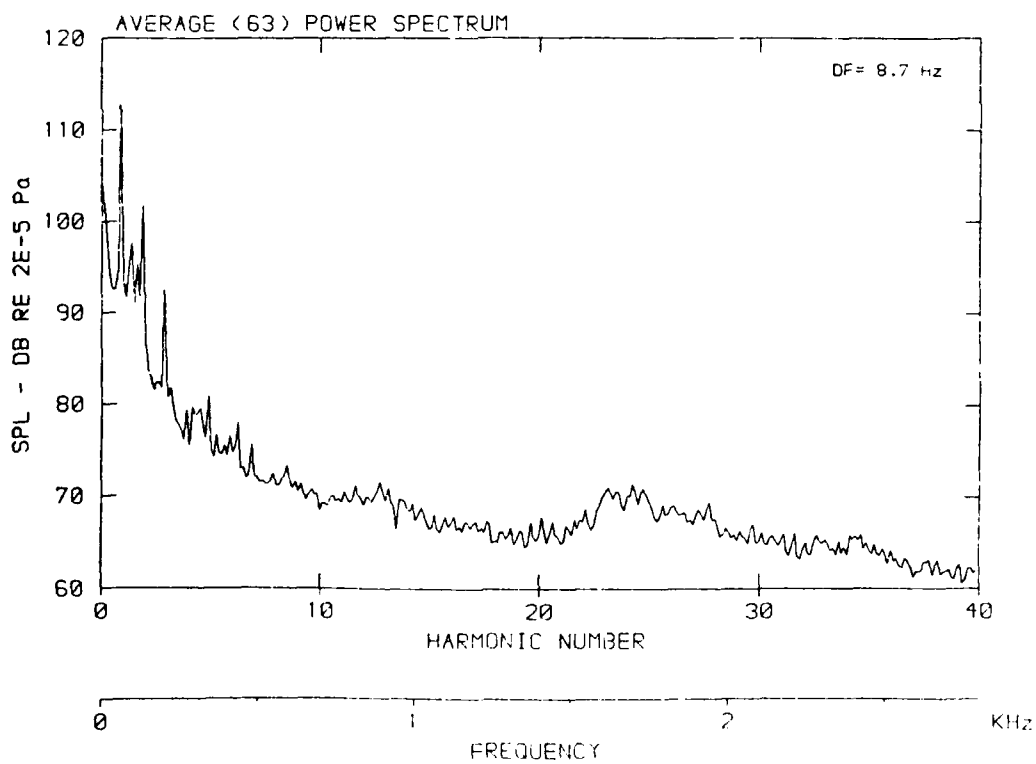
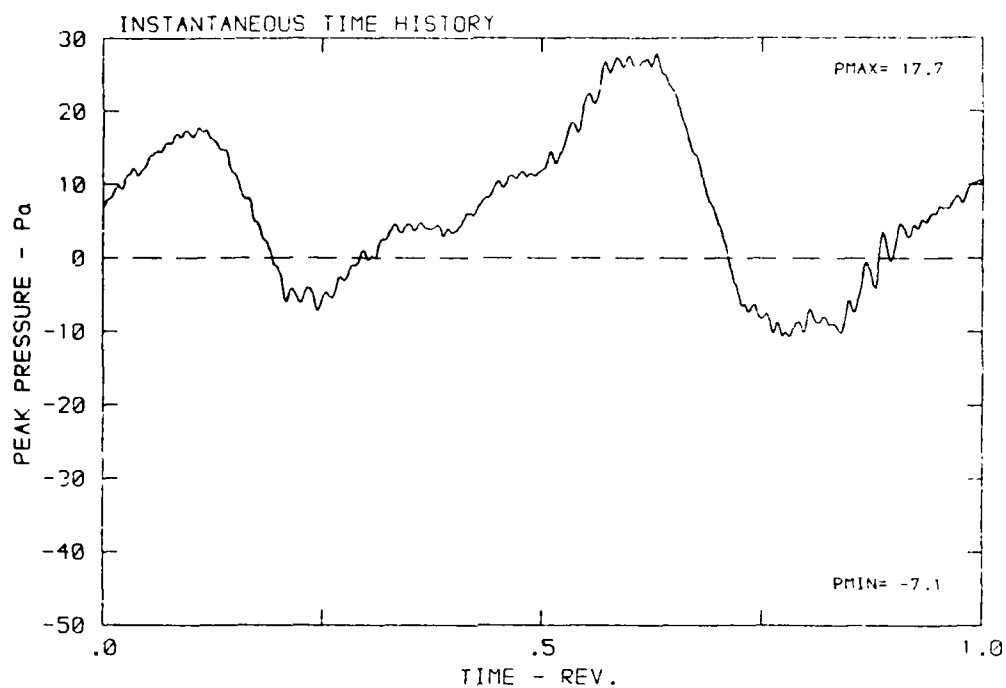
DATA POINT: FNC-11 RUN: 183 MP: 6

β : 23.7° MH: .6738 n: 2100 rpm v/u: .231 ϕ : .0° T: 288.1 K



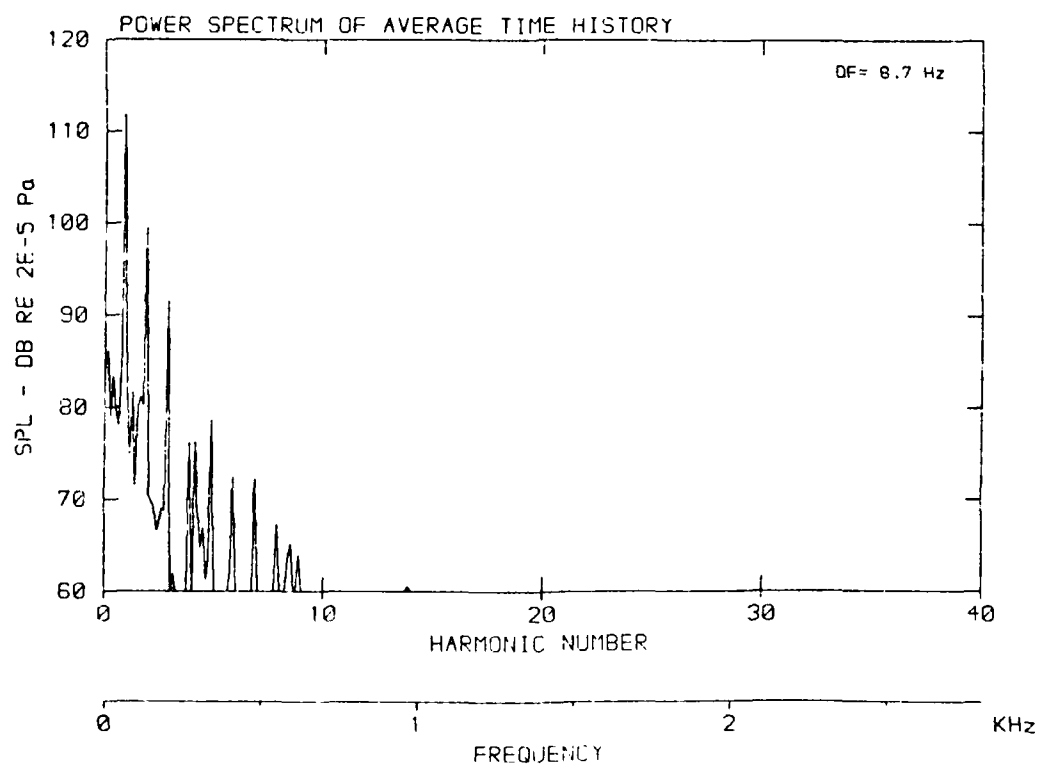
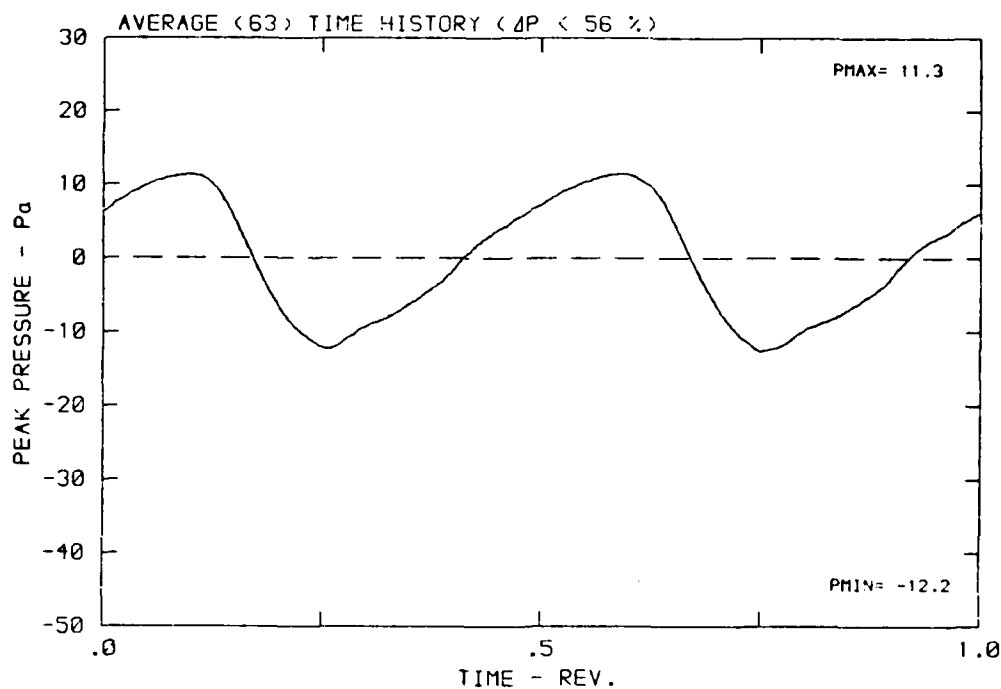
DATA POINT: FNC-11 RUN: 183 MP: 7

β : 23.7° MH: .6738 n: 2100 rpm v/u : .231 ϕ : .0° T: 288.1 K



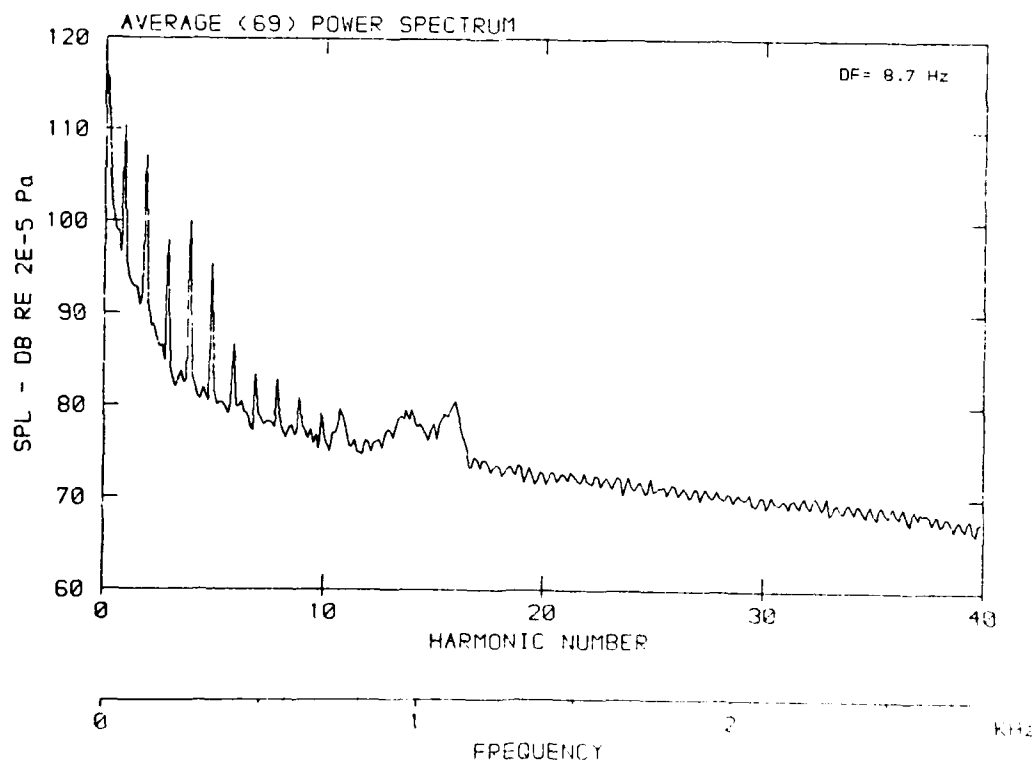
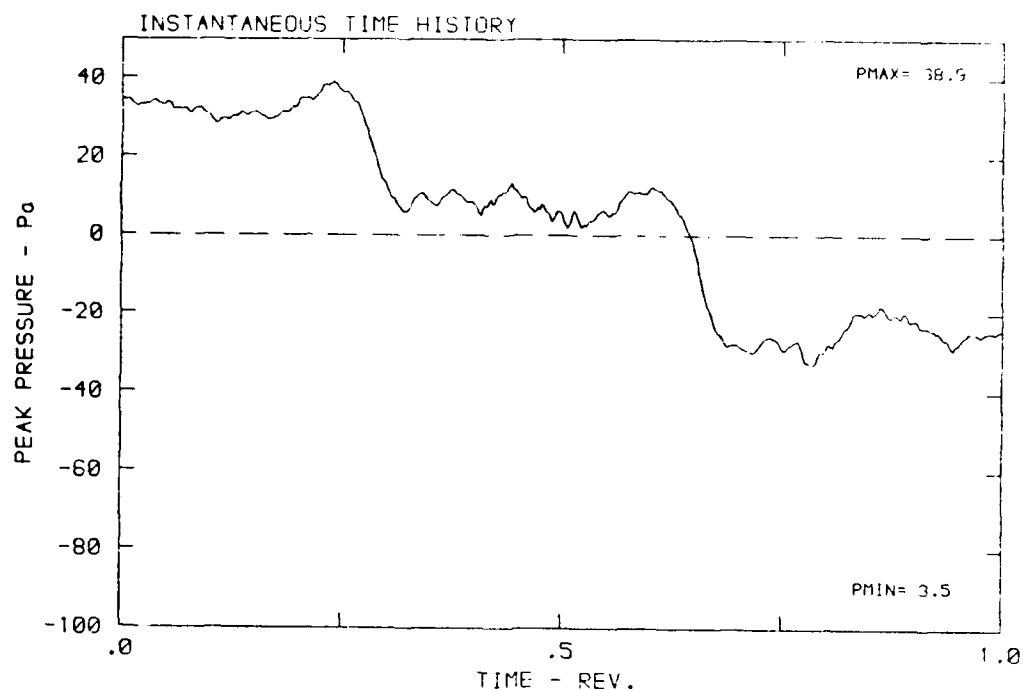
DATA POINT: FNC-11 RUN: 183 MP: 7

β : 23.7° MH: .6738 n: 2100 rpm v/u: .231 ϕ : .0° T: 288.1 K



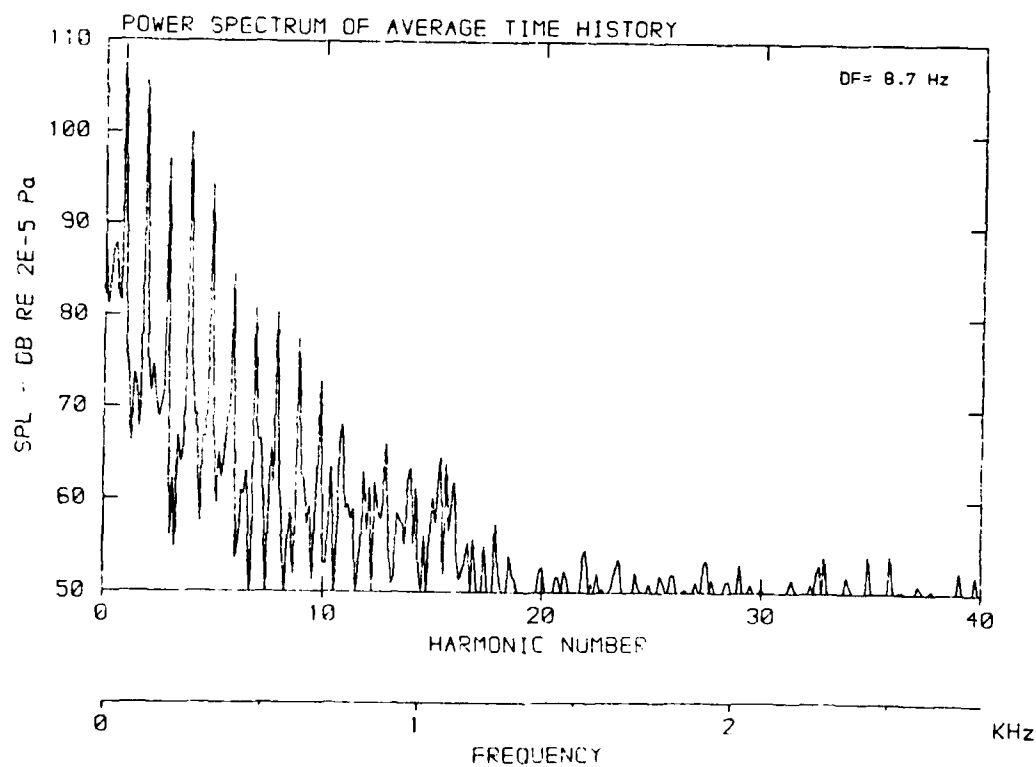
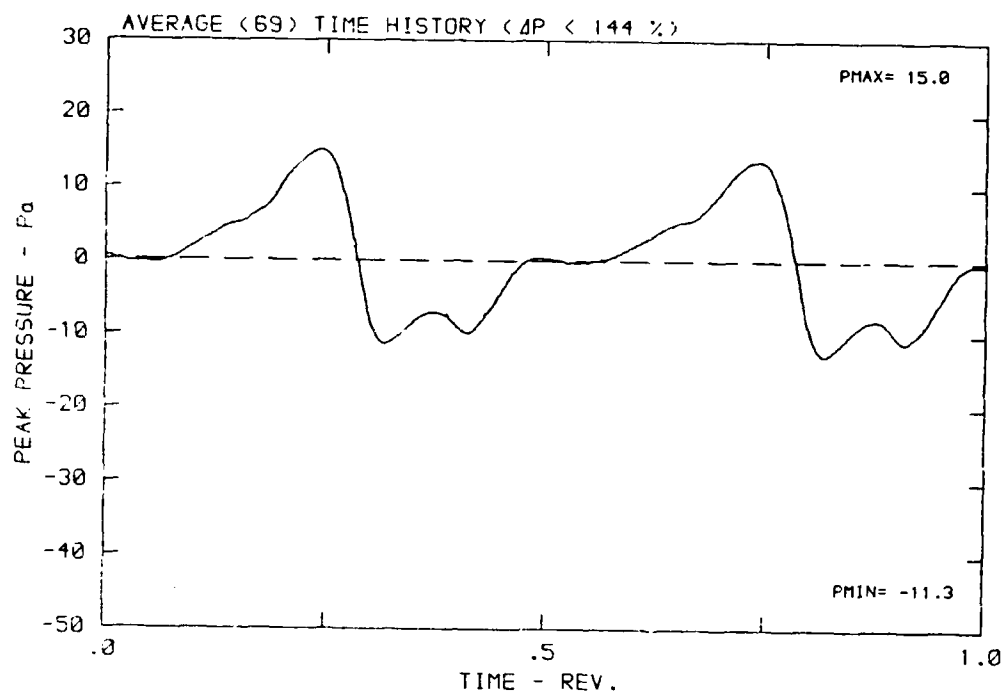
DATA POINT: FNC-11 RUN: 183 MP: 5

β : 23.7° MH: .6738 n: 2100 rpm v/u: .231 ϕ : .0° T: 298.1 K



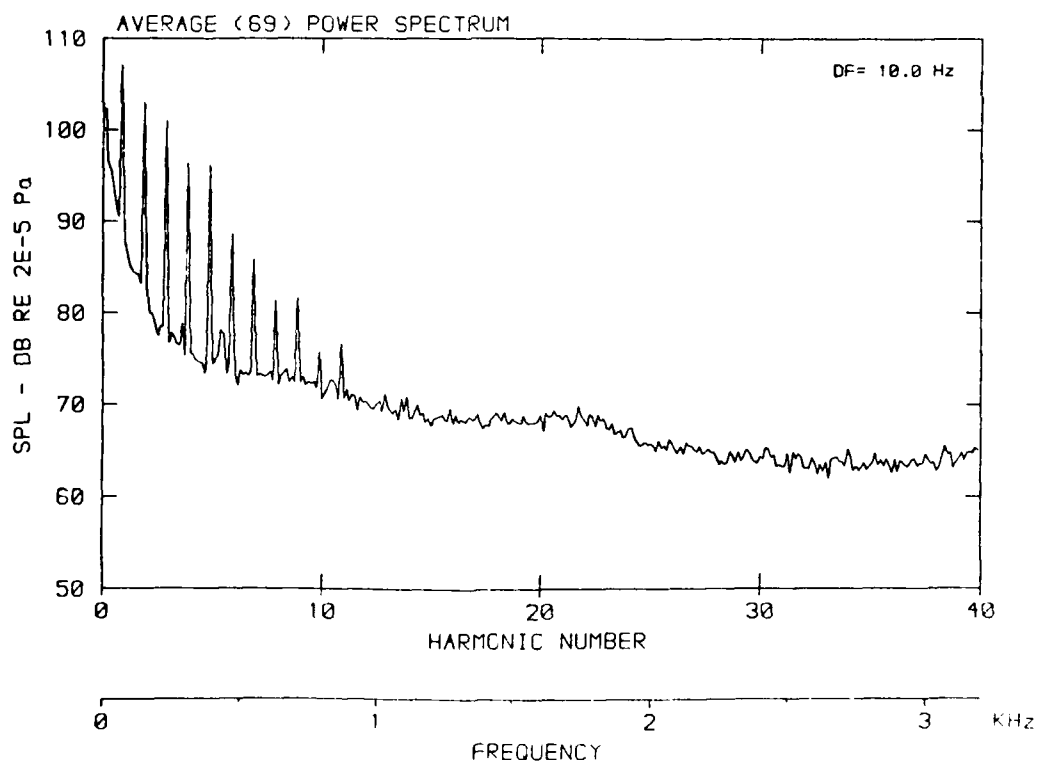
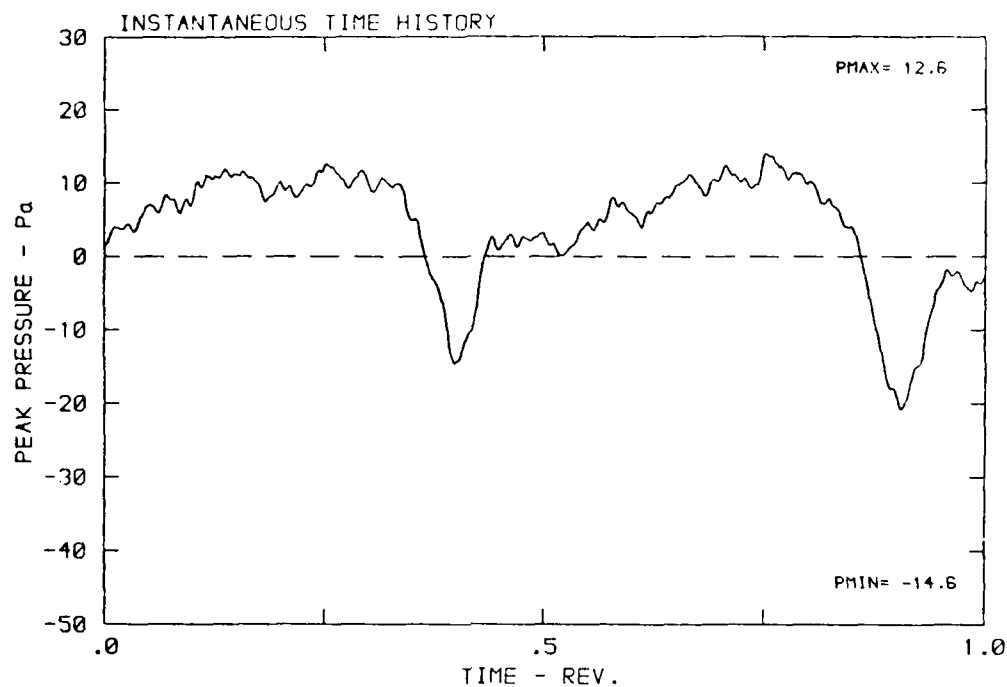
DATA POINT: FNC-11 RUN: 183 MP: 9

β : 23.7° MH: .6738 n: 2100 rpm v/u : .231 ϕ : .0° T: 288.1 K



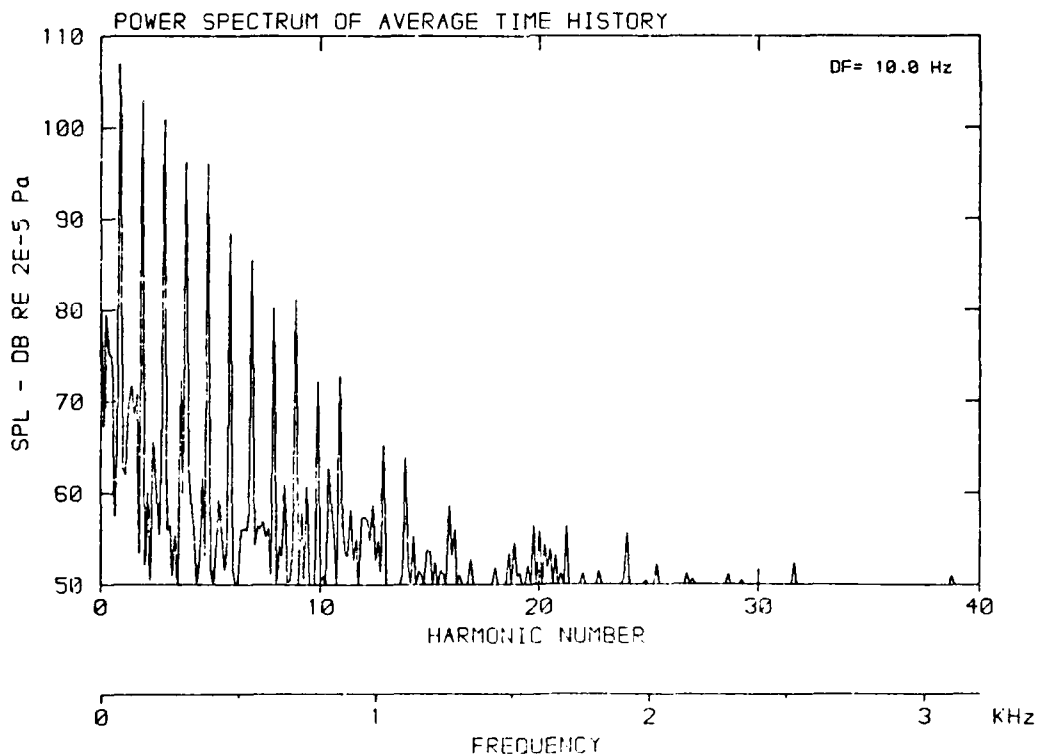
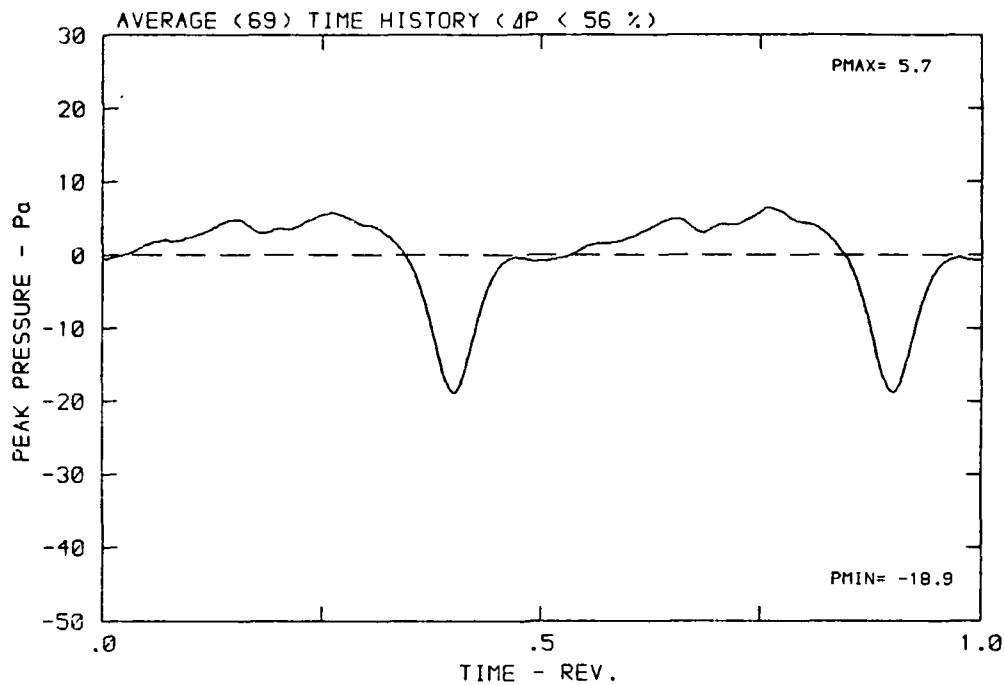
DATA POINT: FNC-12 RUN: 184 MF: 1

β : 23.7° MH: .7751 n: 2400 rpm v/u: .263 ϕ : .0° T: 288.7 K



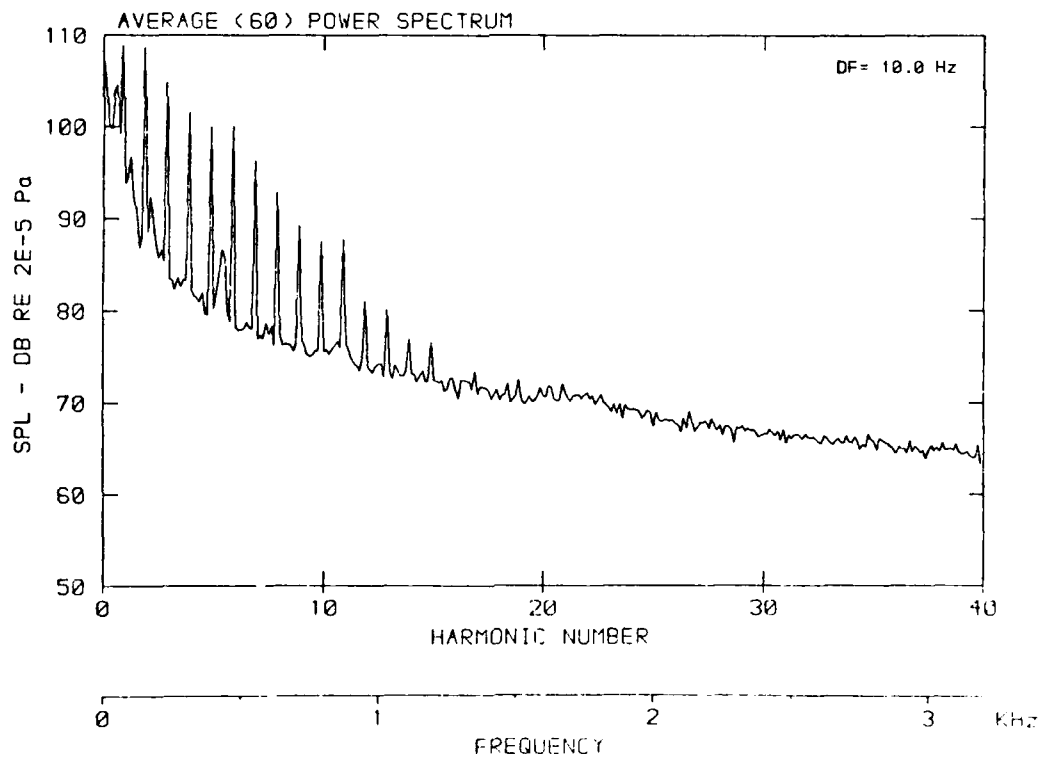
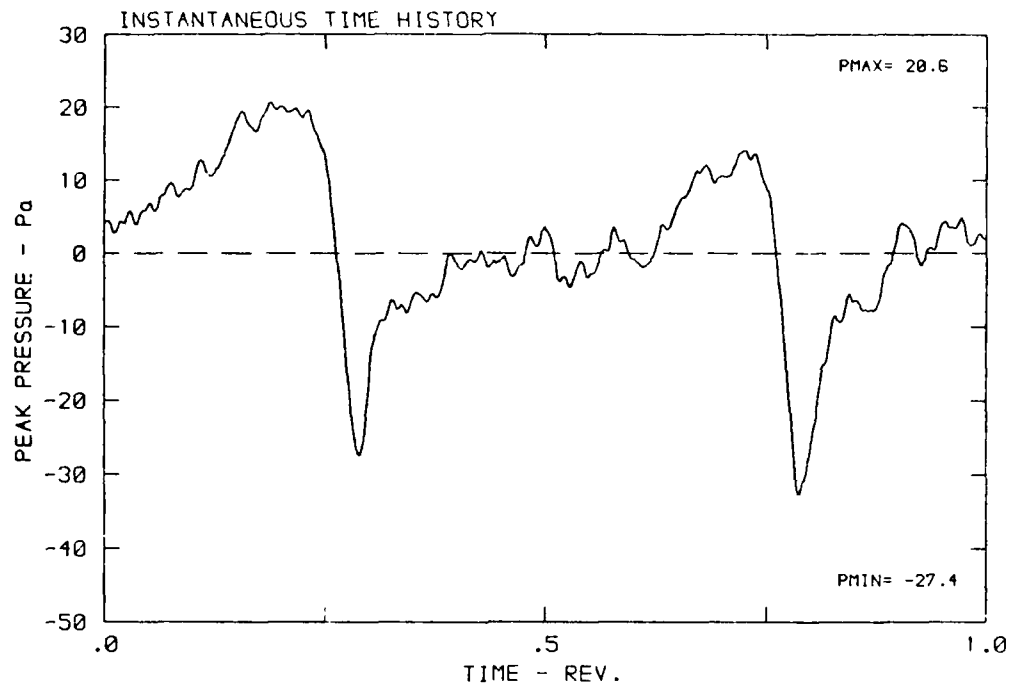
DATA POINT: FNC-12 RUN: 184 MP: 1

β : 23.7° MH: .7751 n: 2400 rpm v/u: .263 ϕ : .0° T: 288.7 K



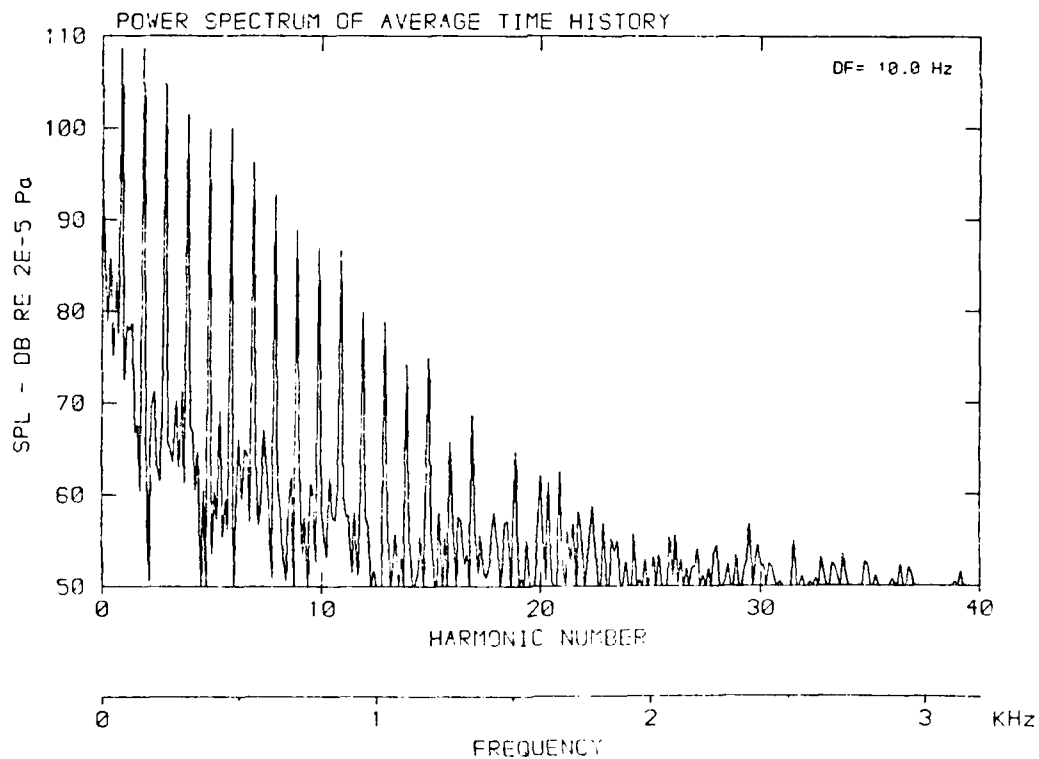
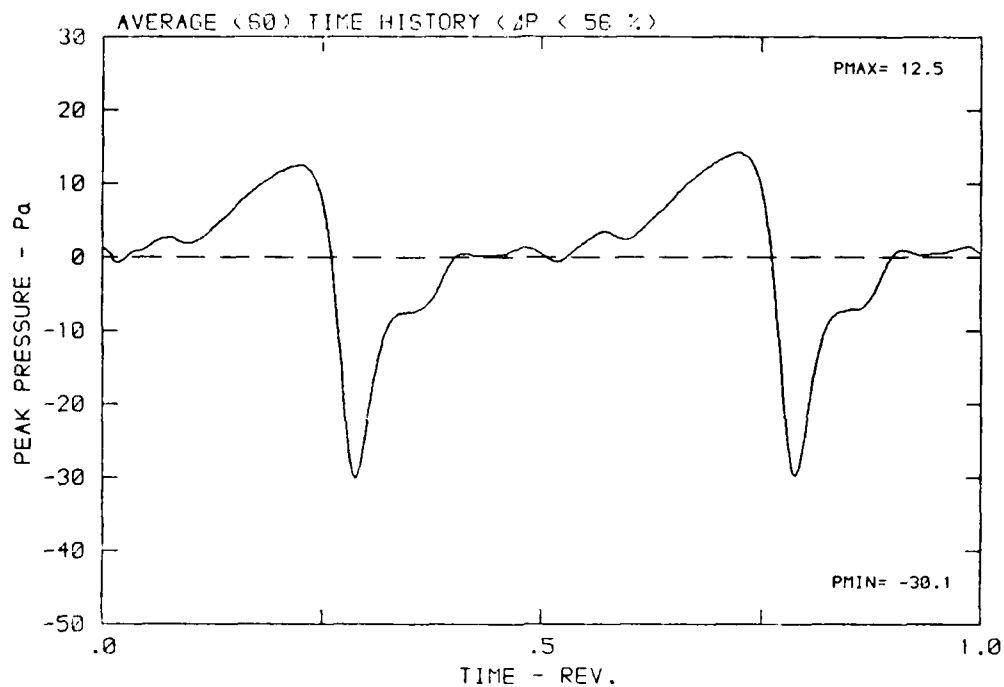
DATA POINT: FNC-12 RUN: 184 MP: 2

β : 23.7° MH: .7751 n: 2400 rpm v/u : .263 ϕ : .0° T: 298.7 K



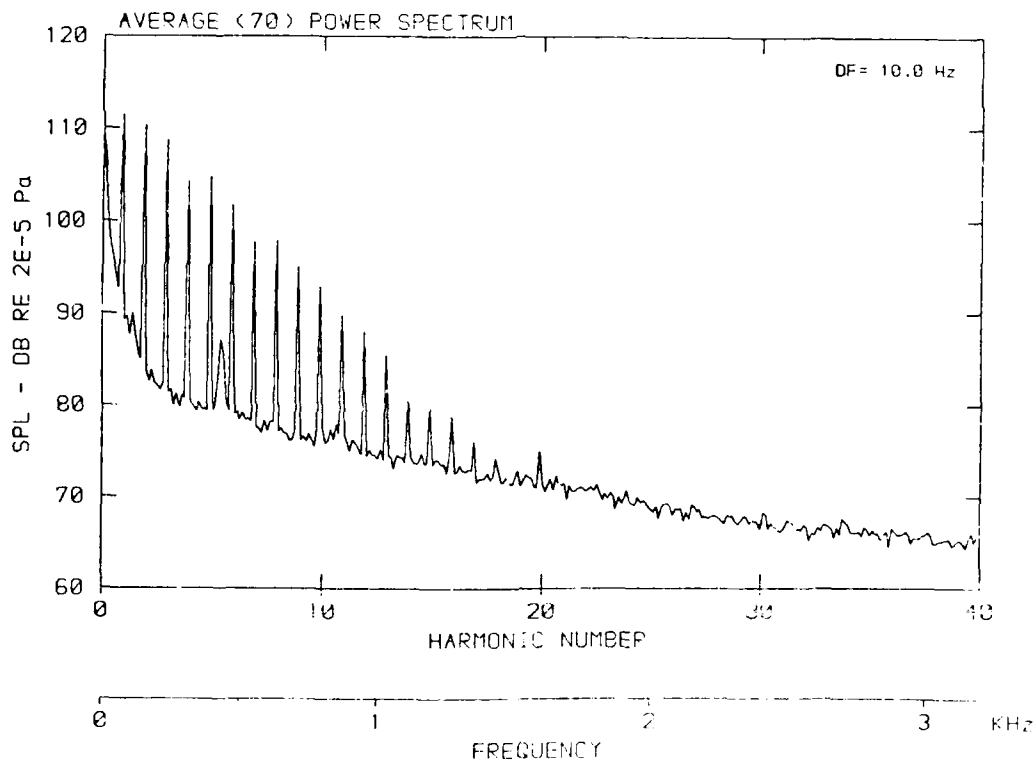
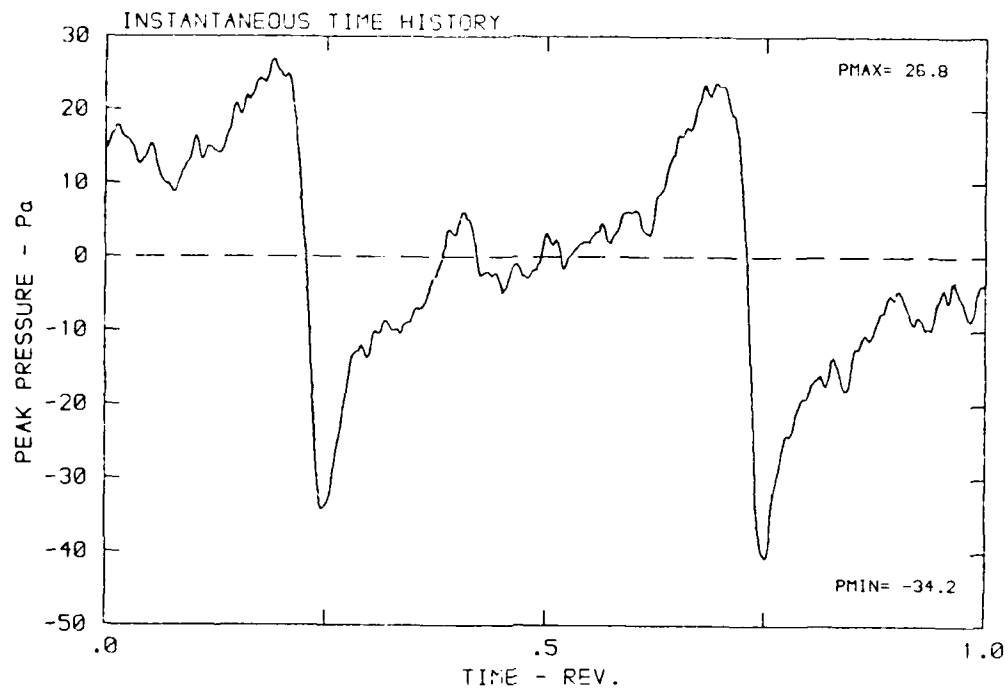
DATA POINT: FNC-12 RUN: 184 MP: 2

β : 23.7° MH: .7751 n: 2400 rpm v/u: .263 ϕ : .0° T: 288.7 K



DATA POINT: FNC-12 RUN: 184 MP: 3

β : 23.7° MH: .7751 n: 2400 rpm v/u : .263 ϕ : .0° T: 288.7 K



AD-A174 982

DFVLR/FAR (DEUTSCHE FORSCHUNGS-UND VERSUCHSANSTALT FUER
LUFT UND RAUMFAHR (U) DEUTSCHE FORSCHUNGS- UND
VERSUCHSANSTALT FUER LUFT- UND RAUMF

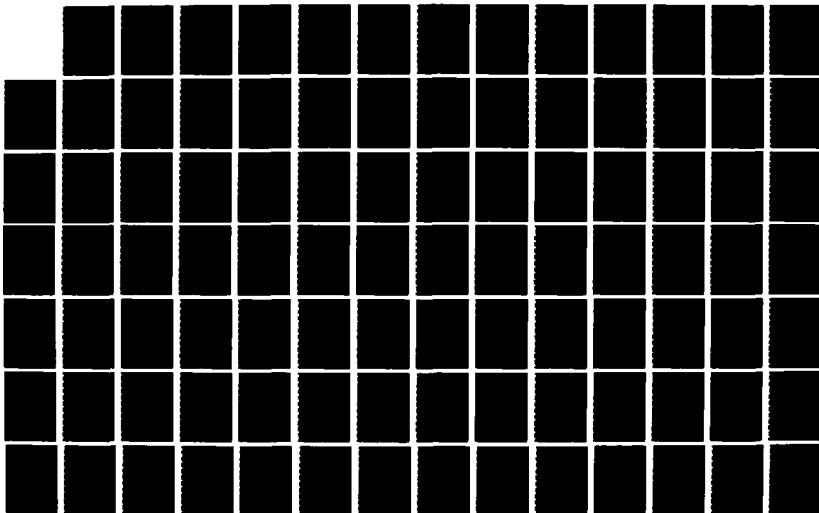
2/3

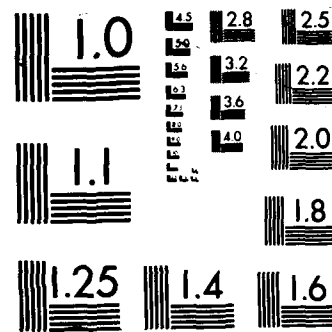
UNCLASSIFIED

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F/G 20/1

NL

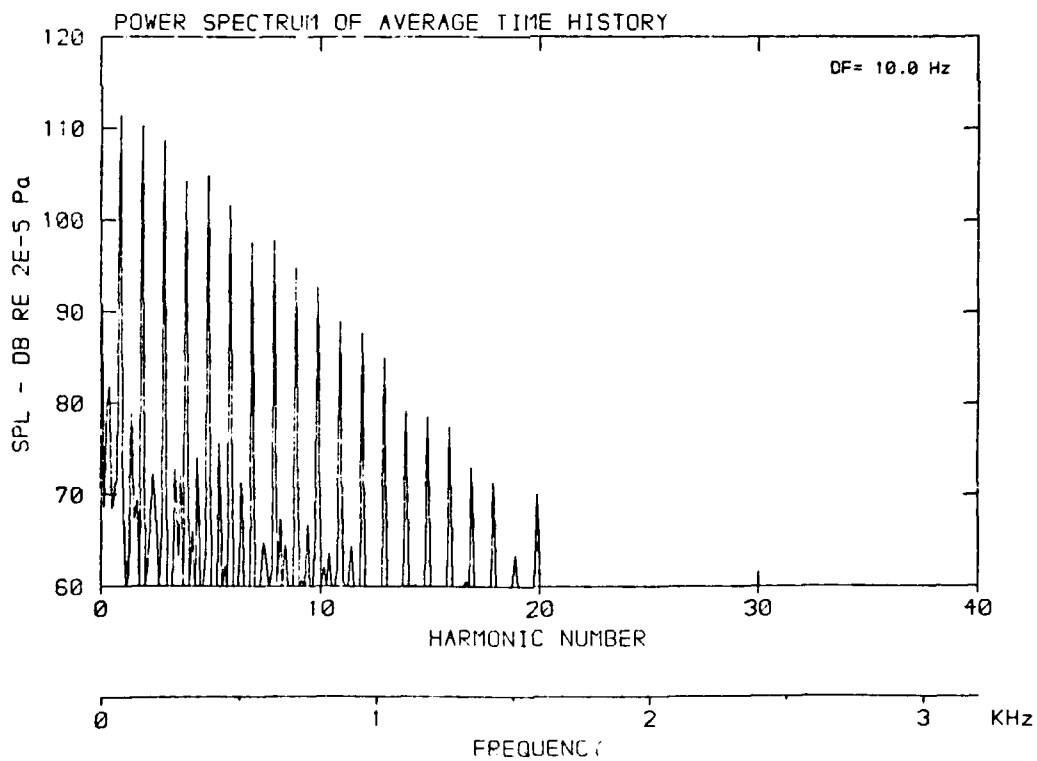
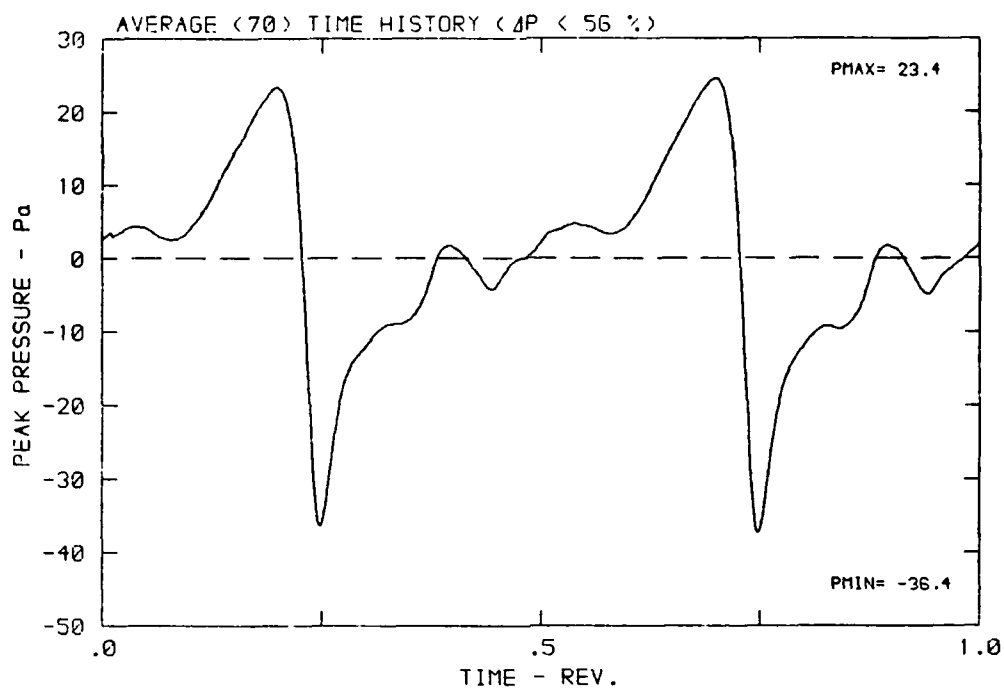




MICROCOPY RESOLUTION TEST CHART

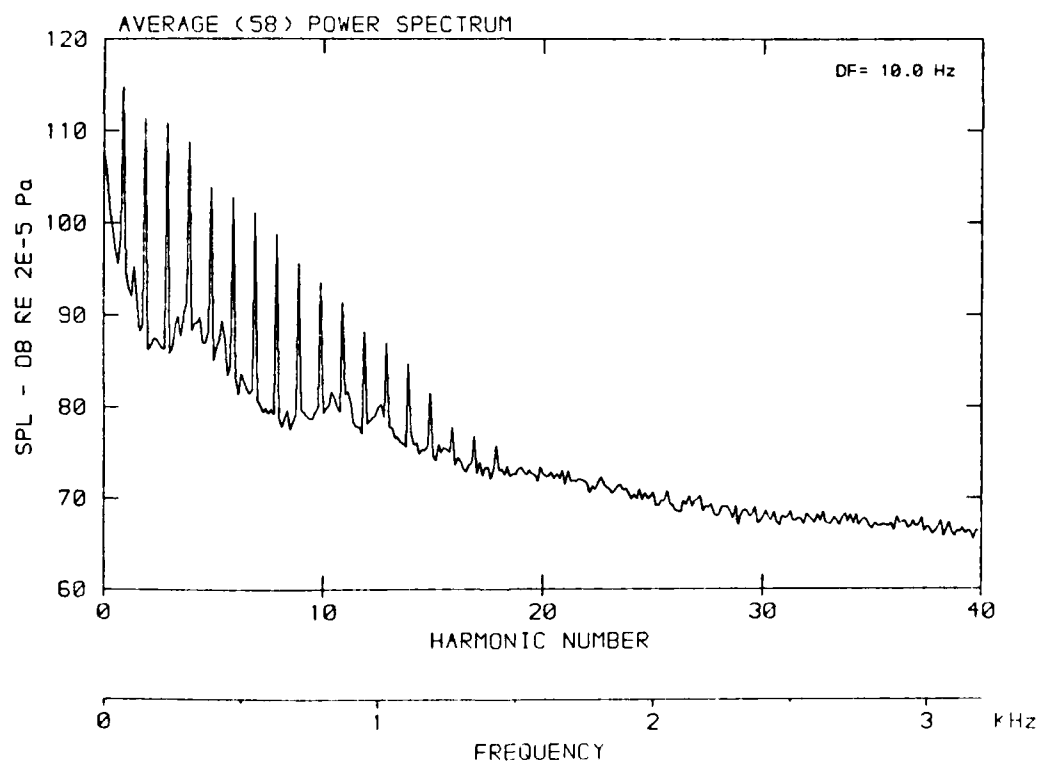
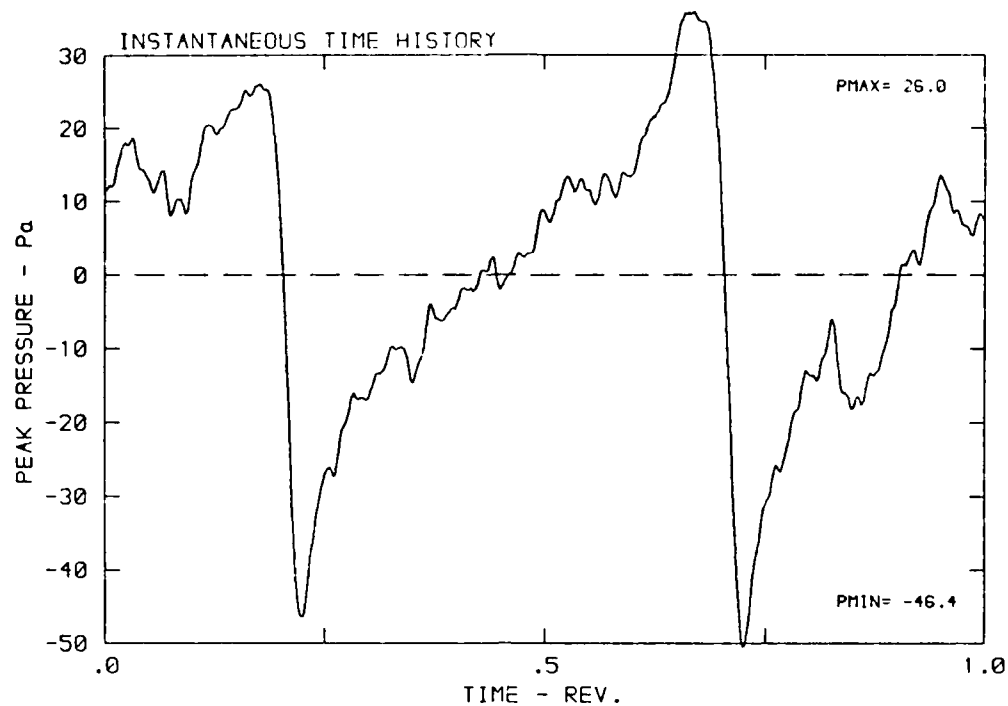
DATA POINT: FNC-12 RUN: 184 MP: 3

β : 23.7° MH: .7751 n: 2400 rpm v/u: .263 ϕ : .0° T: 288.7 K



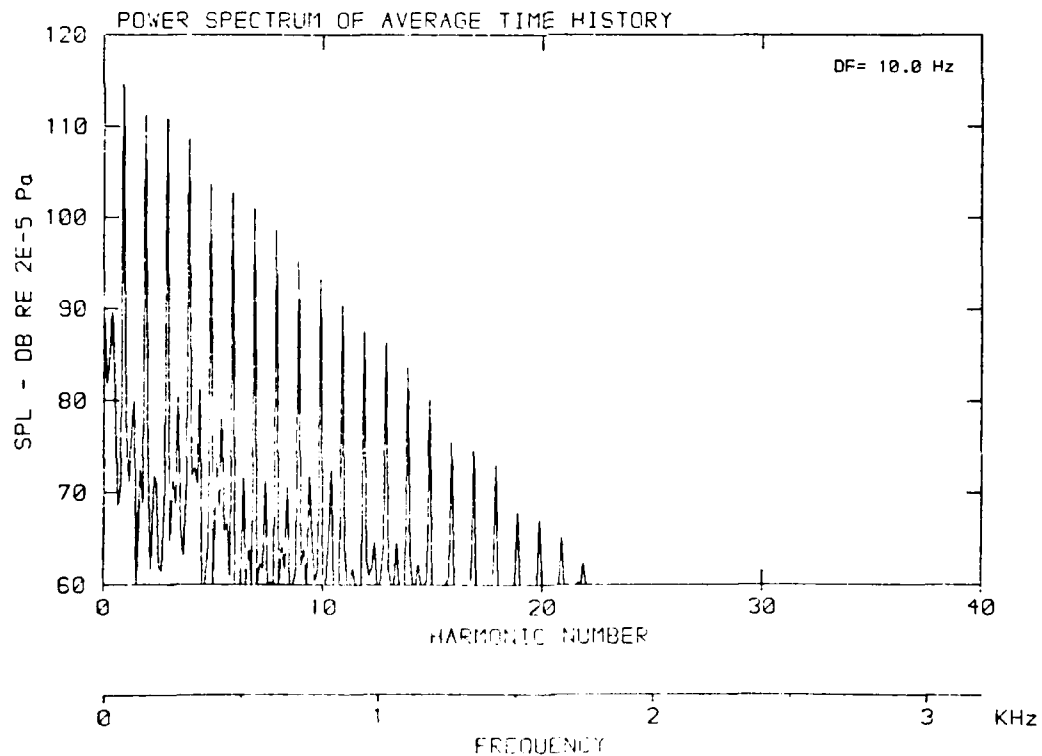
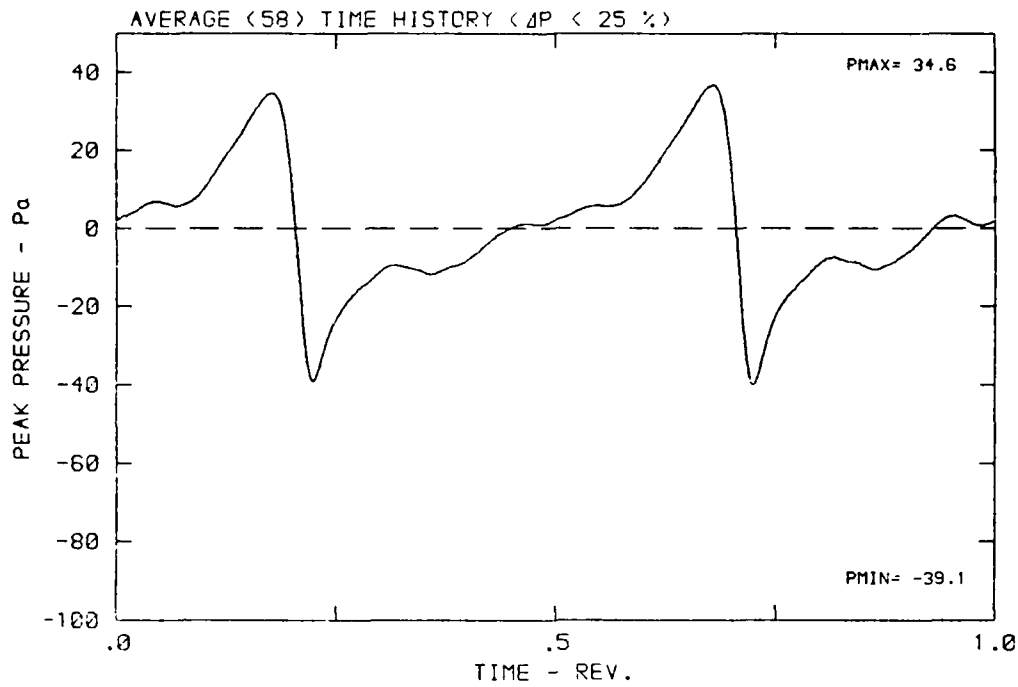
DATA POINT: ENC-12 RUN: 184 MP: 4

β : 23.7° MH: .7751 n: 2400 rpm v/u: .263 ϕ : .0° T: 288.7 K



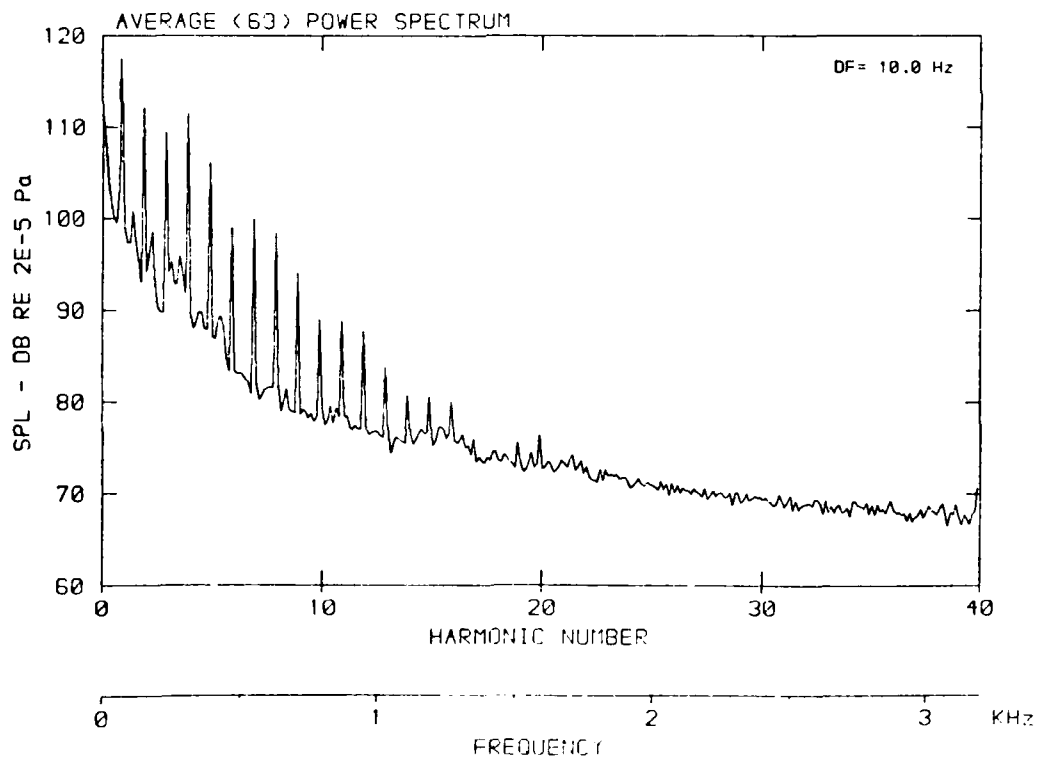
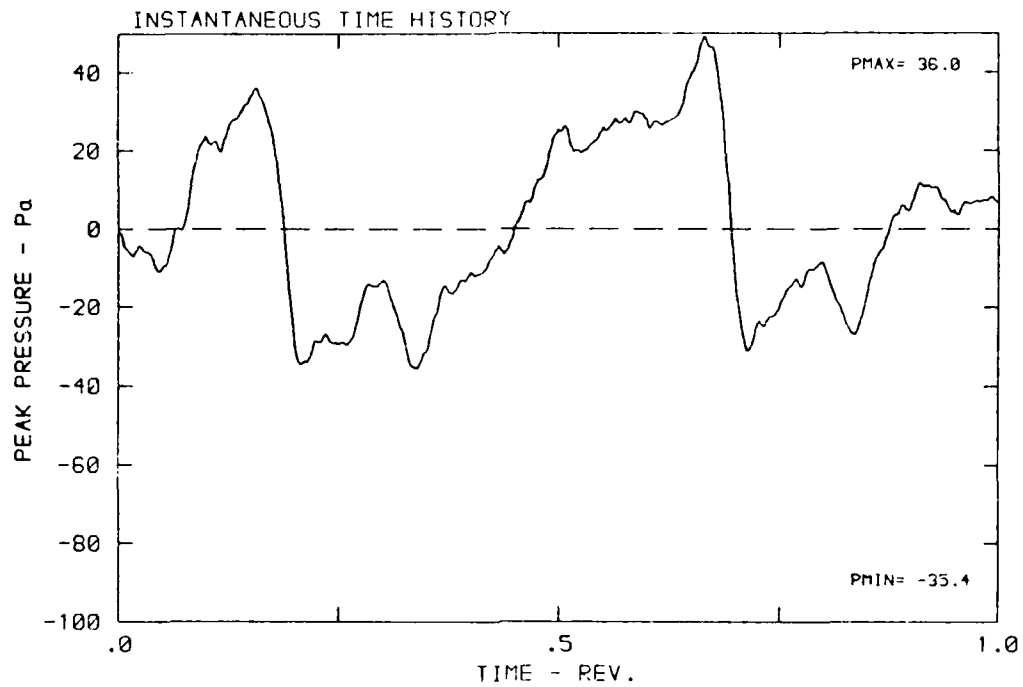
DATA POINT: FNC-12 RUN: 184 MP: 4

β : 23.7° MH: .7751 n: 2400 rpm v/u : .263 ϕ : .0° T: 288.7 K



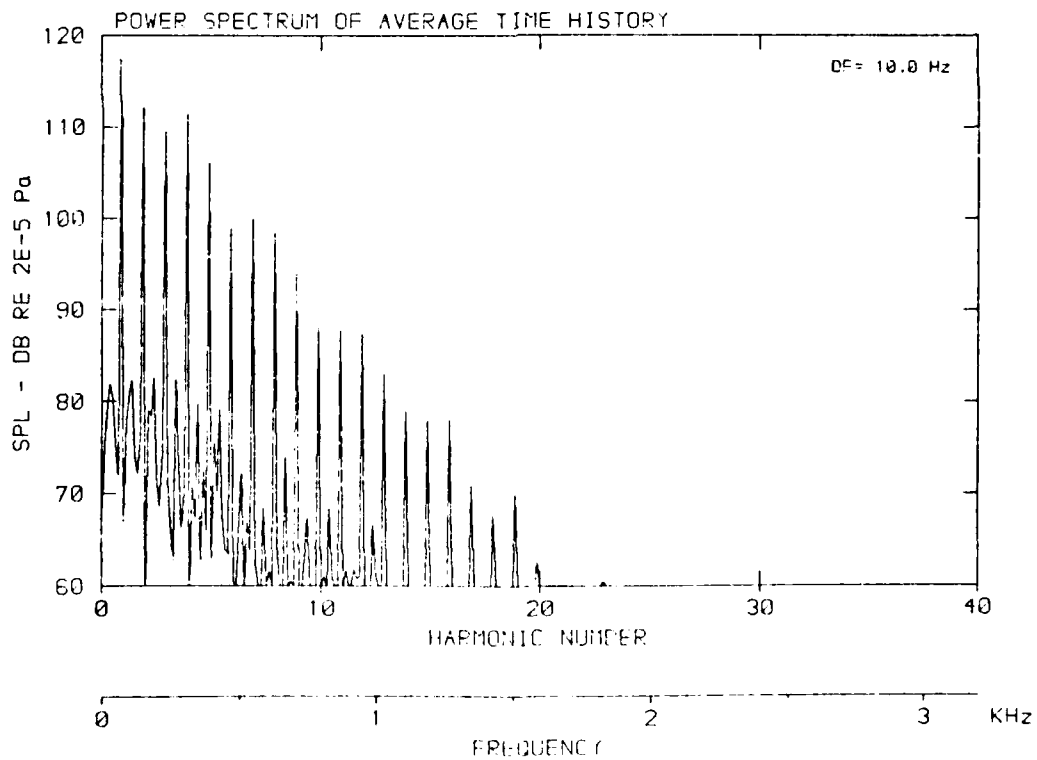
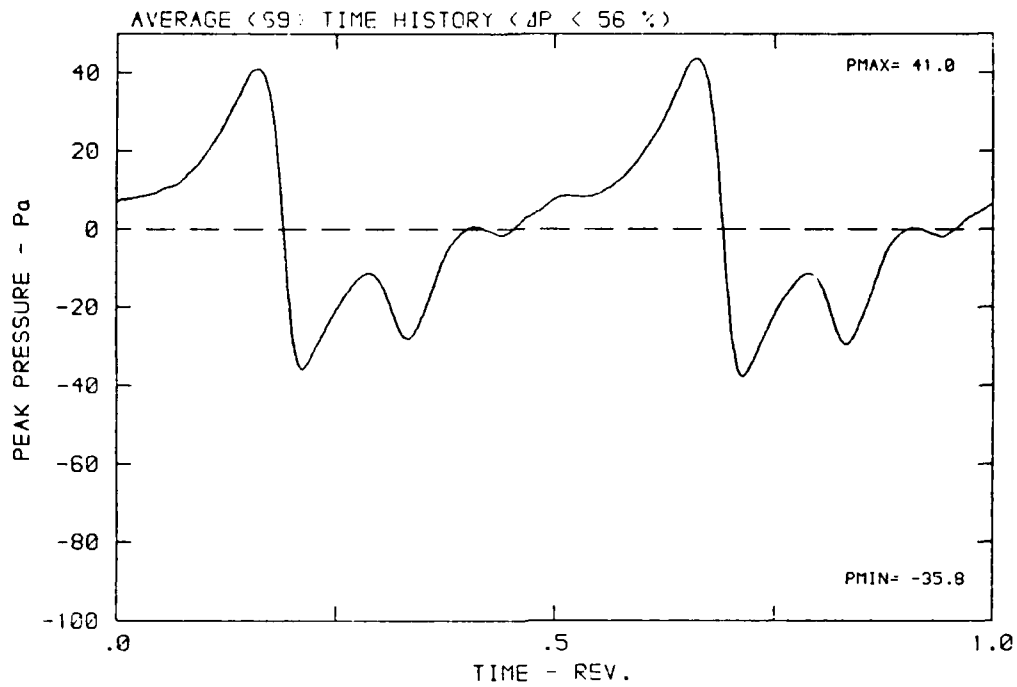
DATA POINT: FNC-12 RUN: 184 MP: 5

β : 23.7° MH: .7751 n: 2400 rpm v/u : .263 ϕ : .0° T: 293.7 K



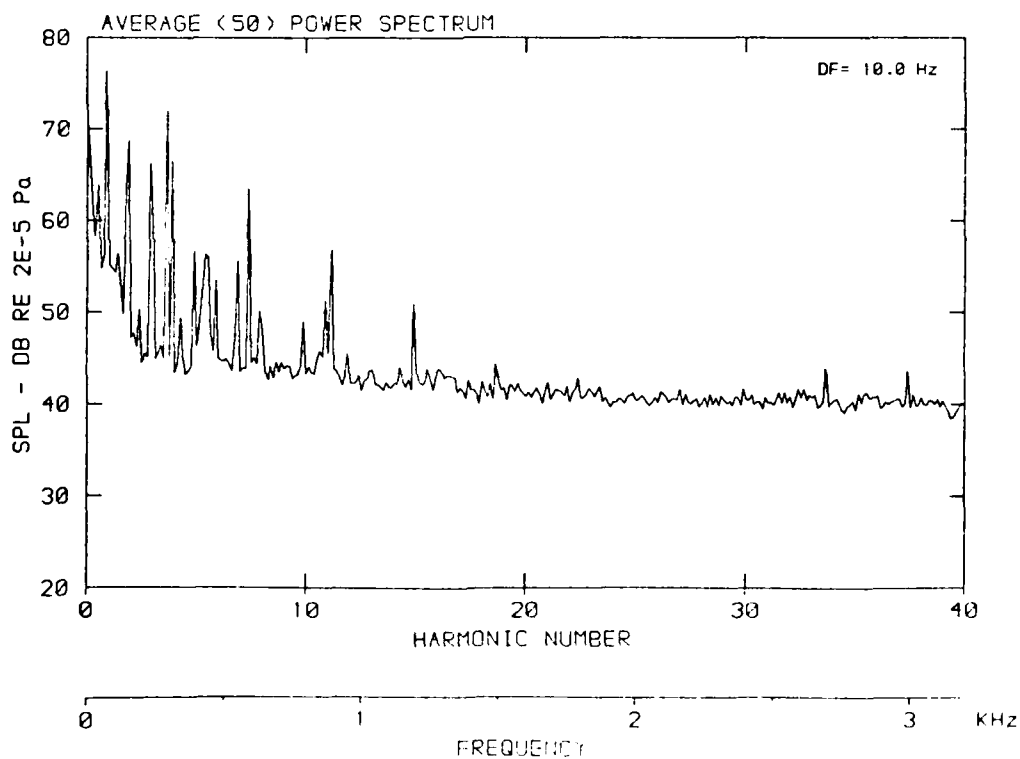
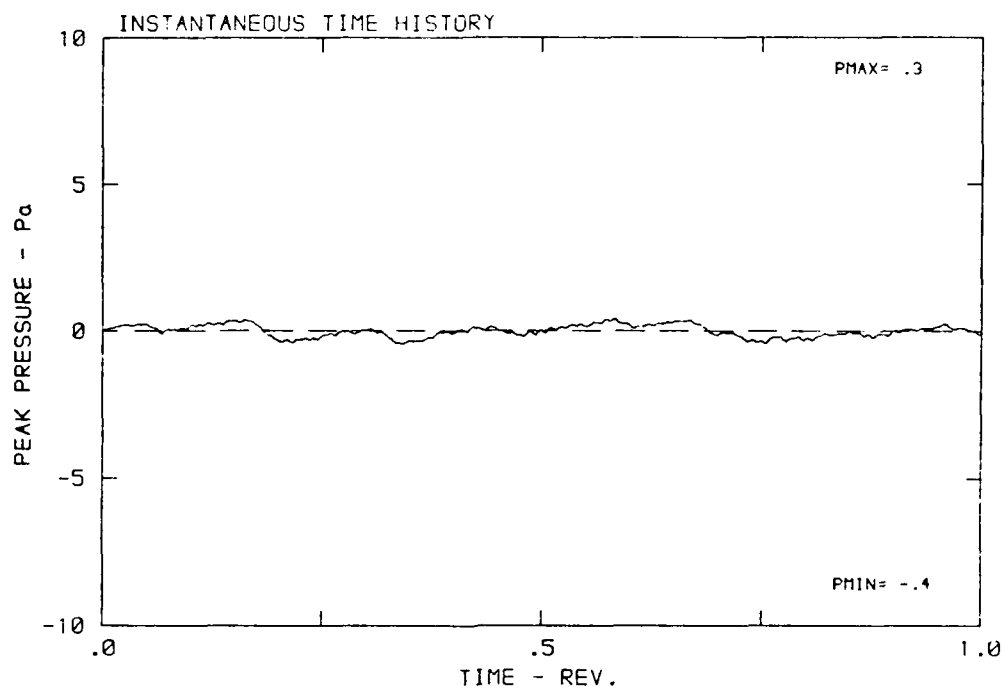
DATA POINT: FNC-12 RUN: 184 MP: 5

β : 23.7° MH: .7751 n: 2400 rpm v/u : .263 ϕ : .0° T: 288.7 K



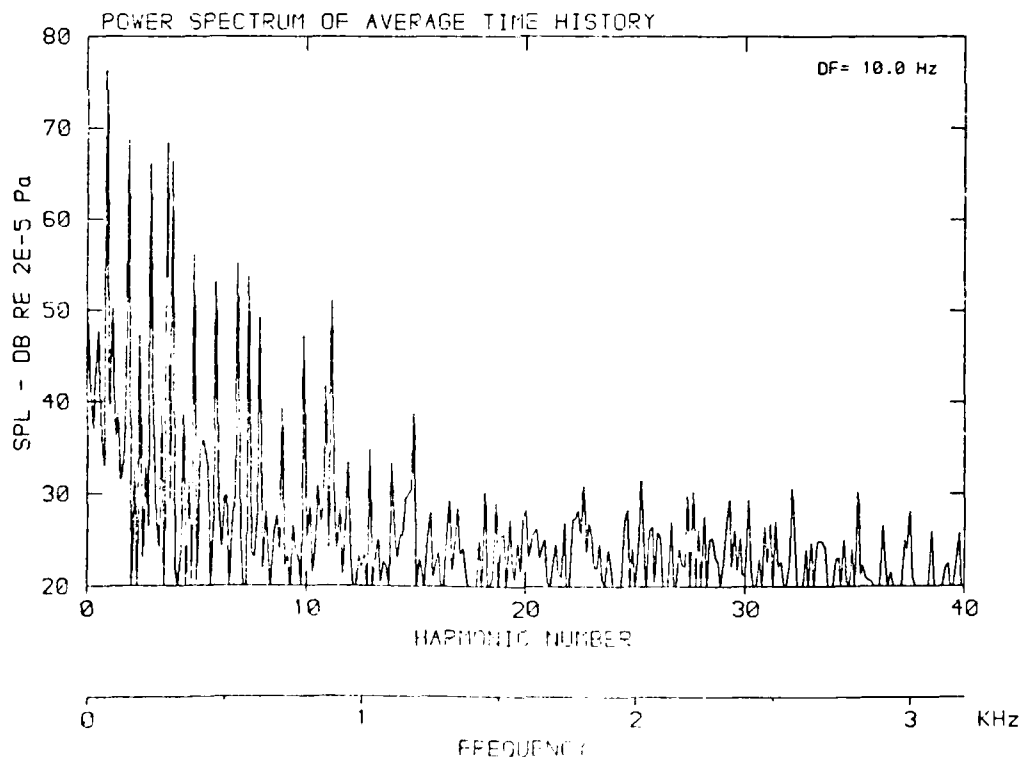
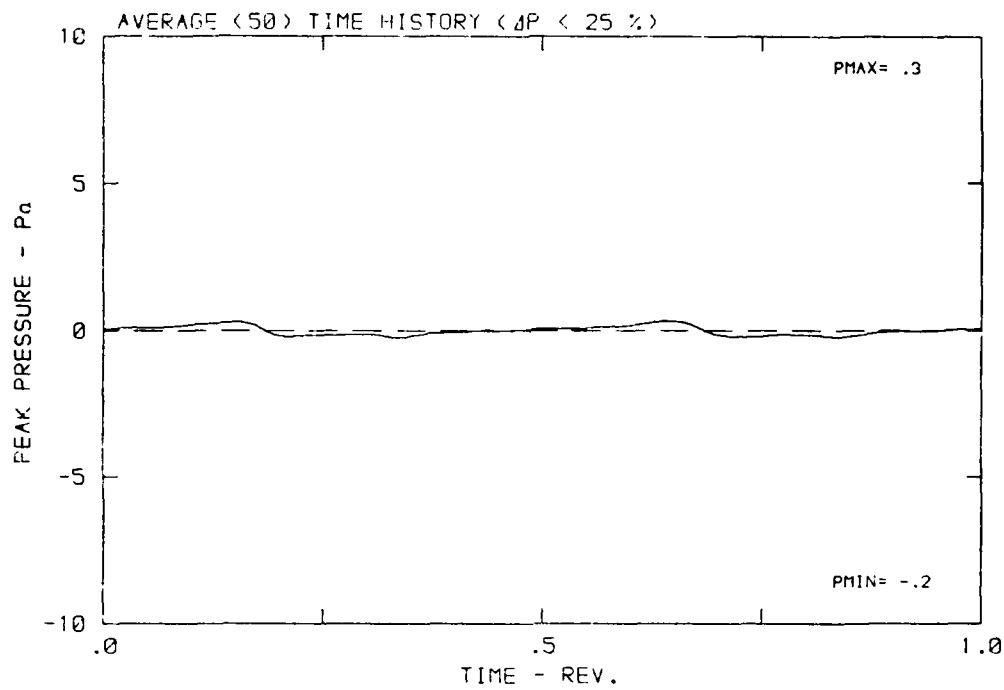
DATA POINT: FNC-12 RUN: 184 MP: 6

β : 23.7° MH: .7751 n: 2400 rpm v/u : .263 ϕ : .0° T: 298.7 K



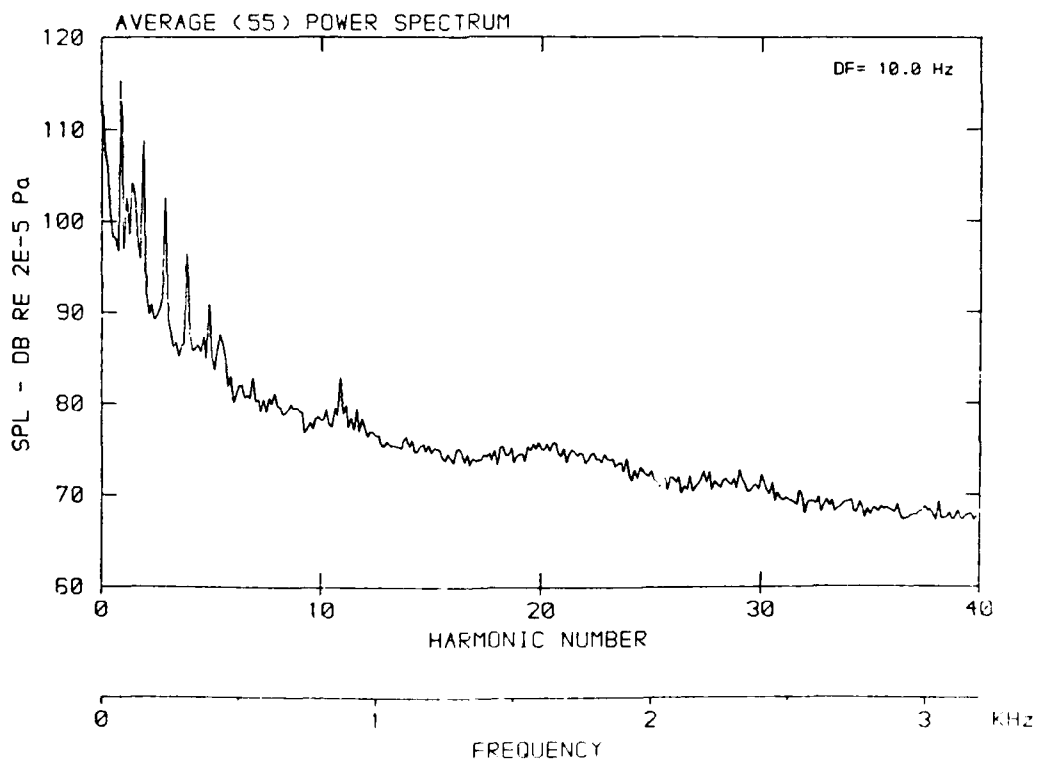
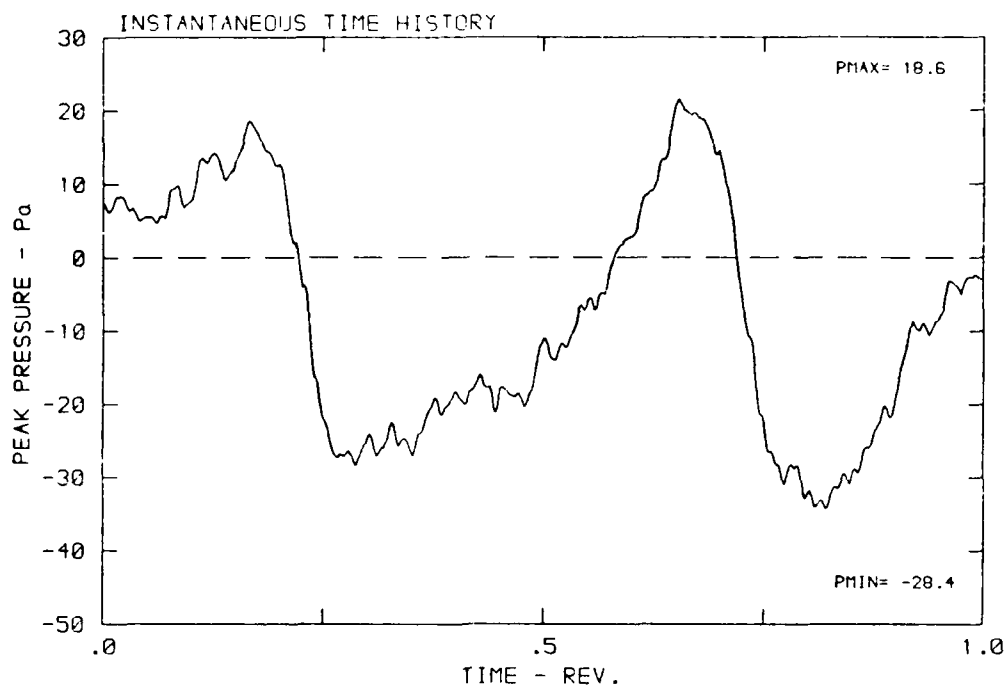
DATA POINT: FNC-12 RUN: 184 MP: 6

β : 23.7° MH: .7751 n: 2400 rpm v/u : .263 ϕ : .0° T: 288.7 K



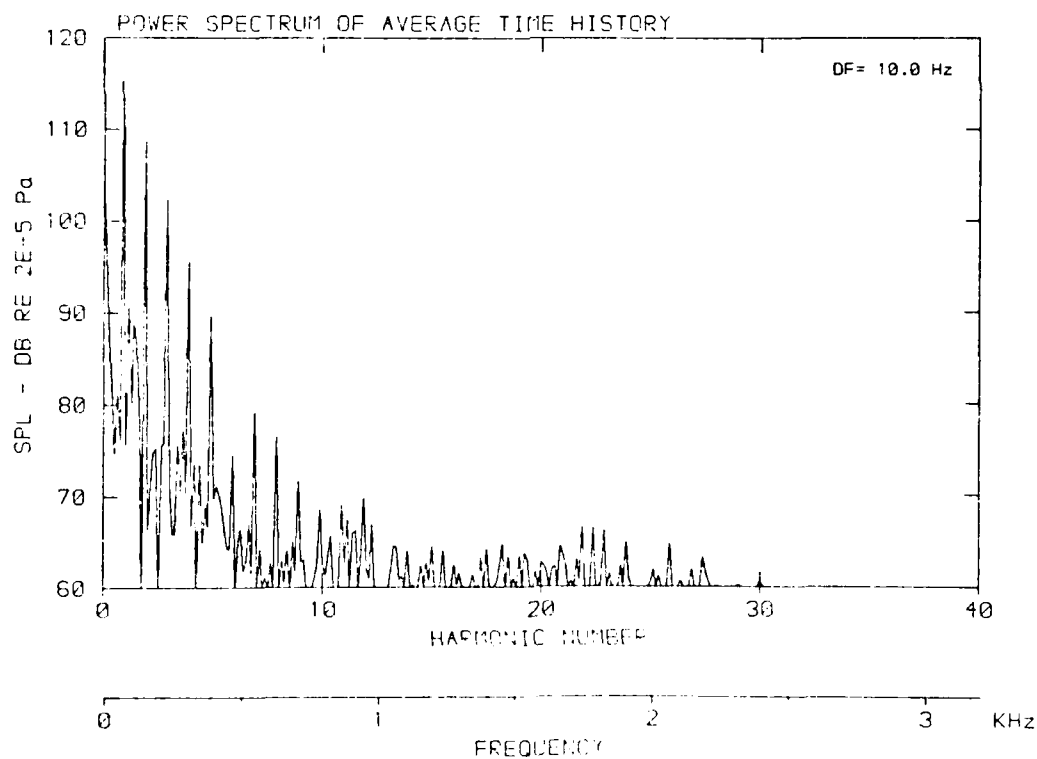
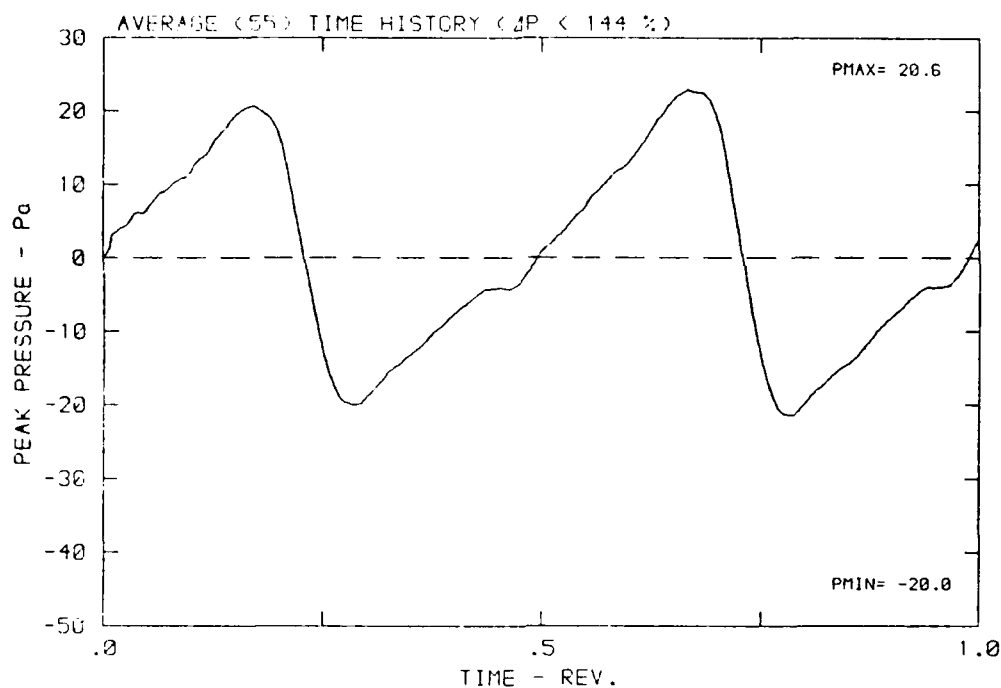
DATA POINT: FNC-12 RUN: 184 MP: 7

β : 23.7° MH: .7751 n: 2400 rpm v/u : .263 ϕ : .0° T: 298.7 K



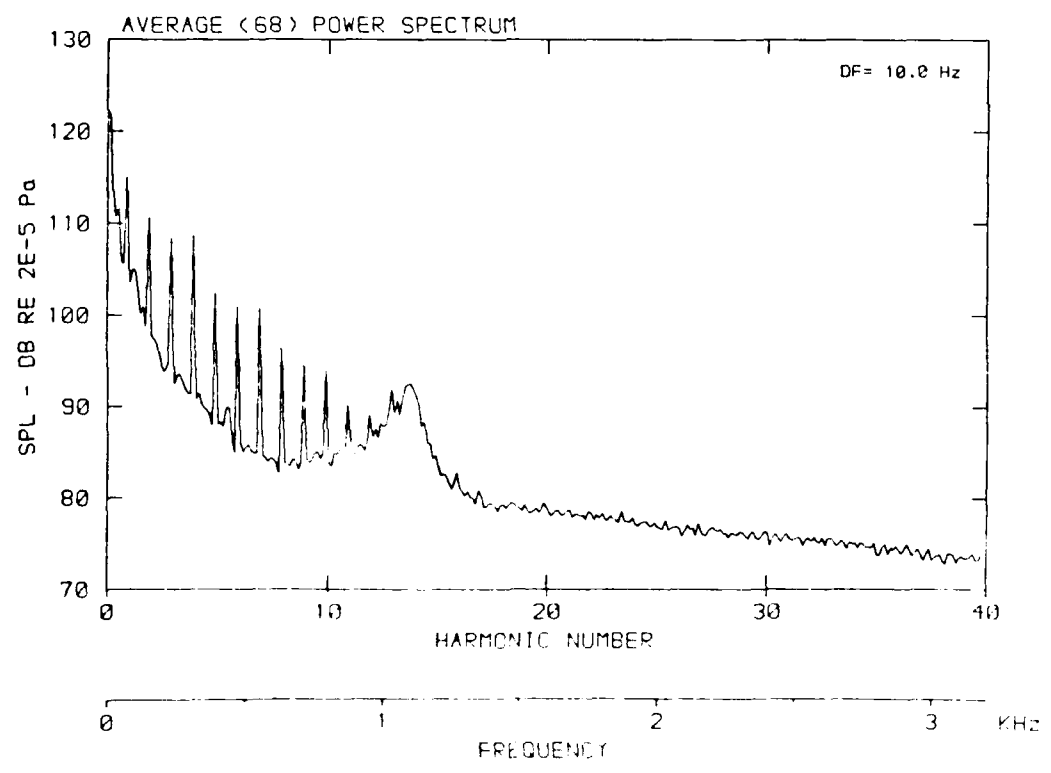
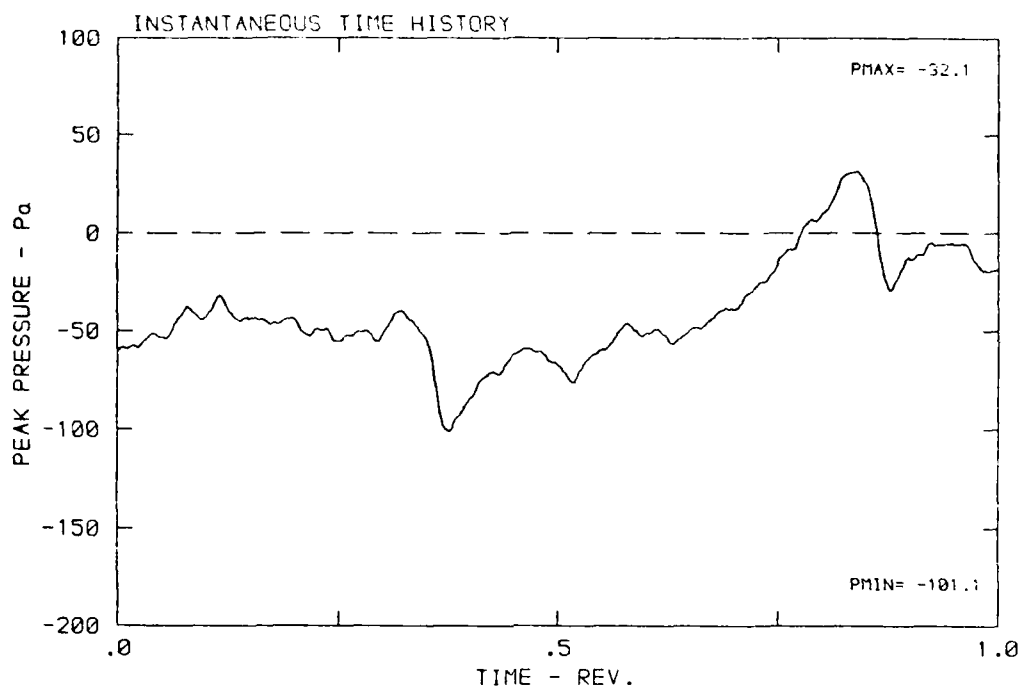
DATA POINT: FNC-12 RUN: 184 MP: 7

β : 23.7° MH: .7751 n: 2400 rpm v/u : .263 ϕ : .0° T: 288.7 K



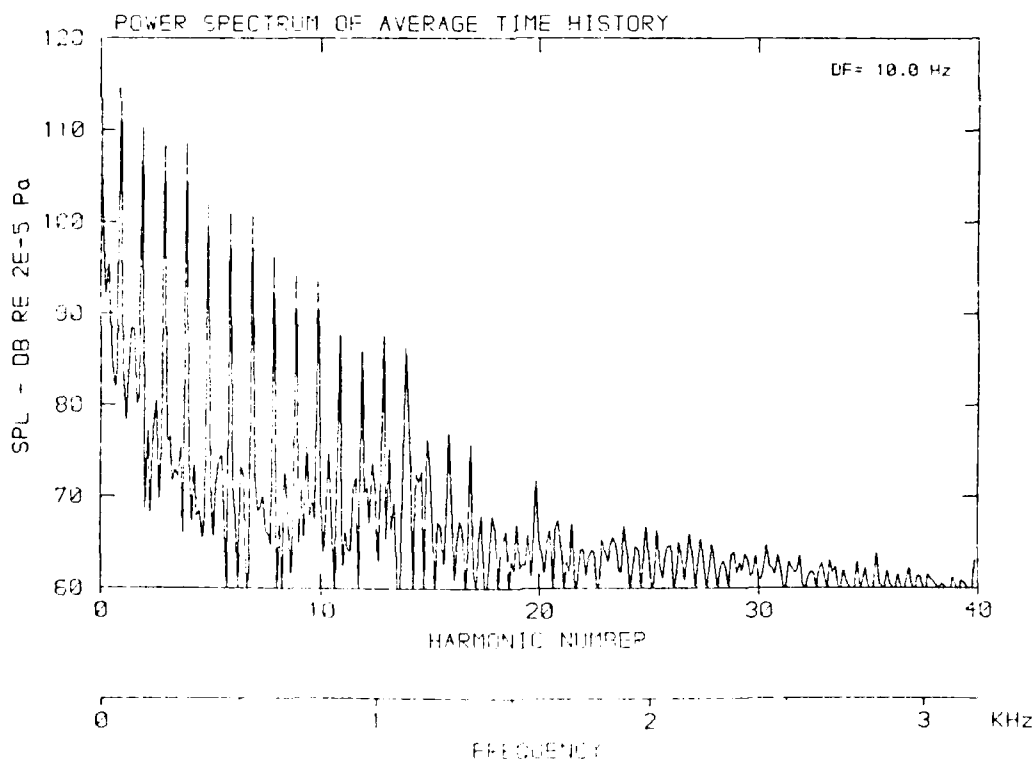
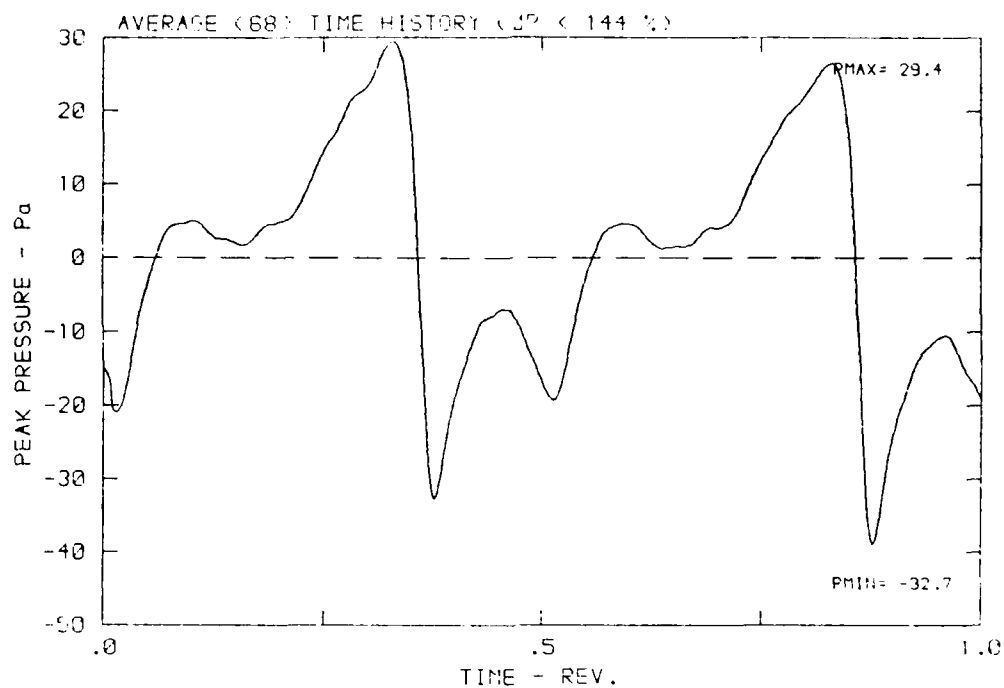
DATA POINT: FNC-12 RUN: 184 MP: 9

β : 23.7° MH: .7751 n: 2400 rpm v/u : .263 ϕ : .0° T: 238.7 K



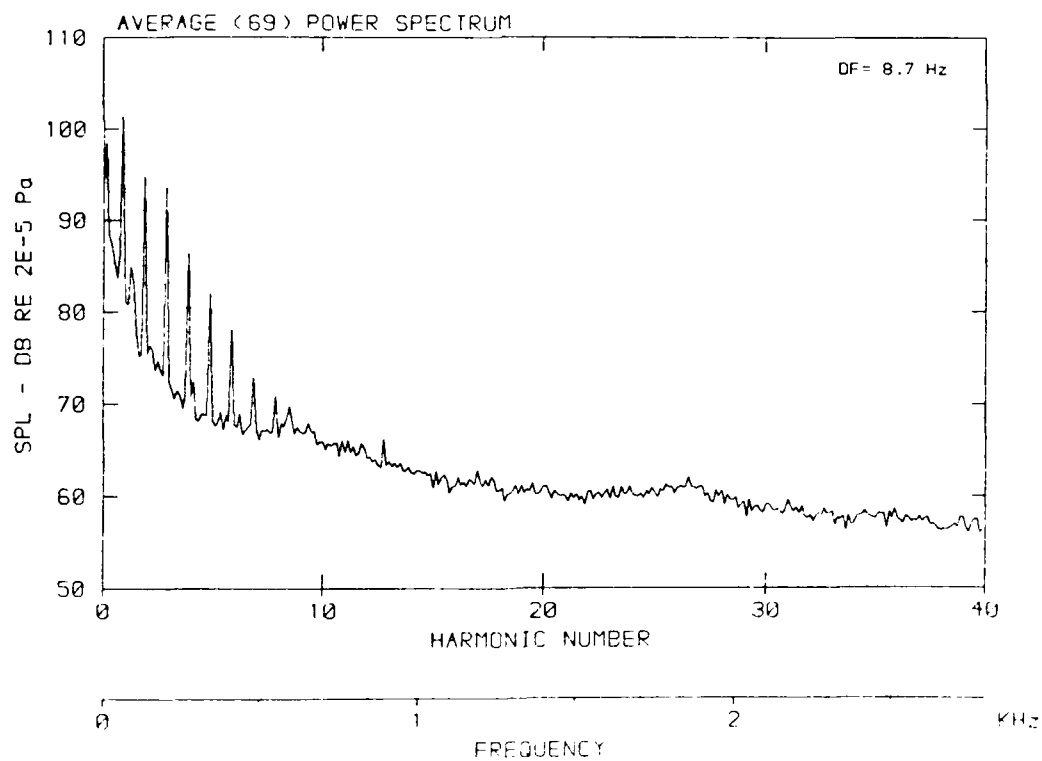
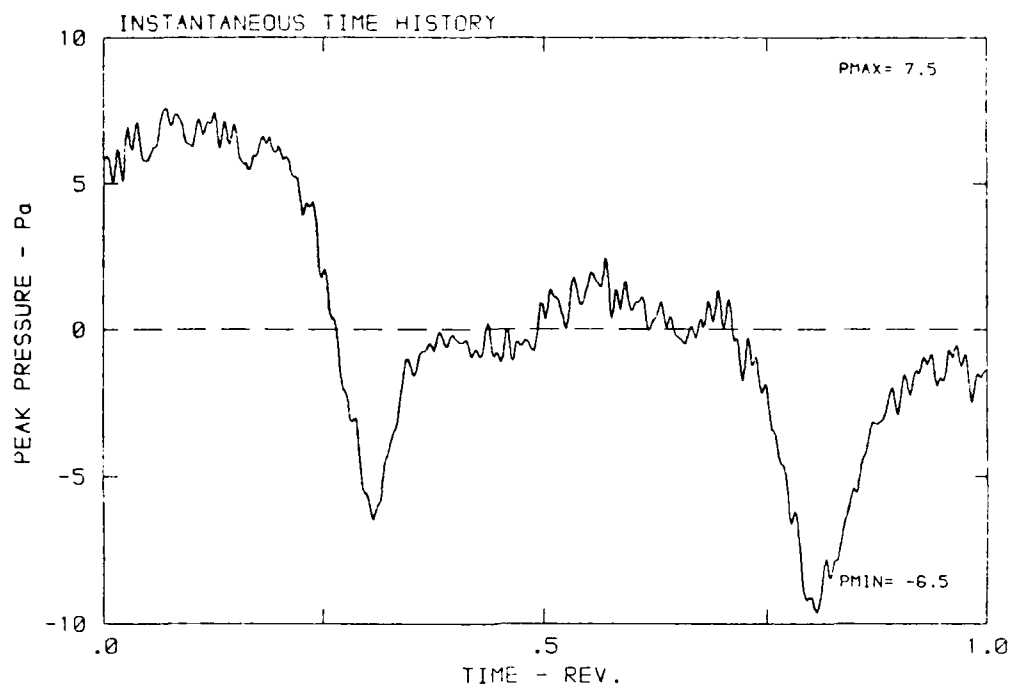
DATA POINT: FND-1 RUN: 184 IP: 9

β : 23.7° MH: .7751 n: 2400 rpm v: .263 ϕ : .0° T: 288.7 K



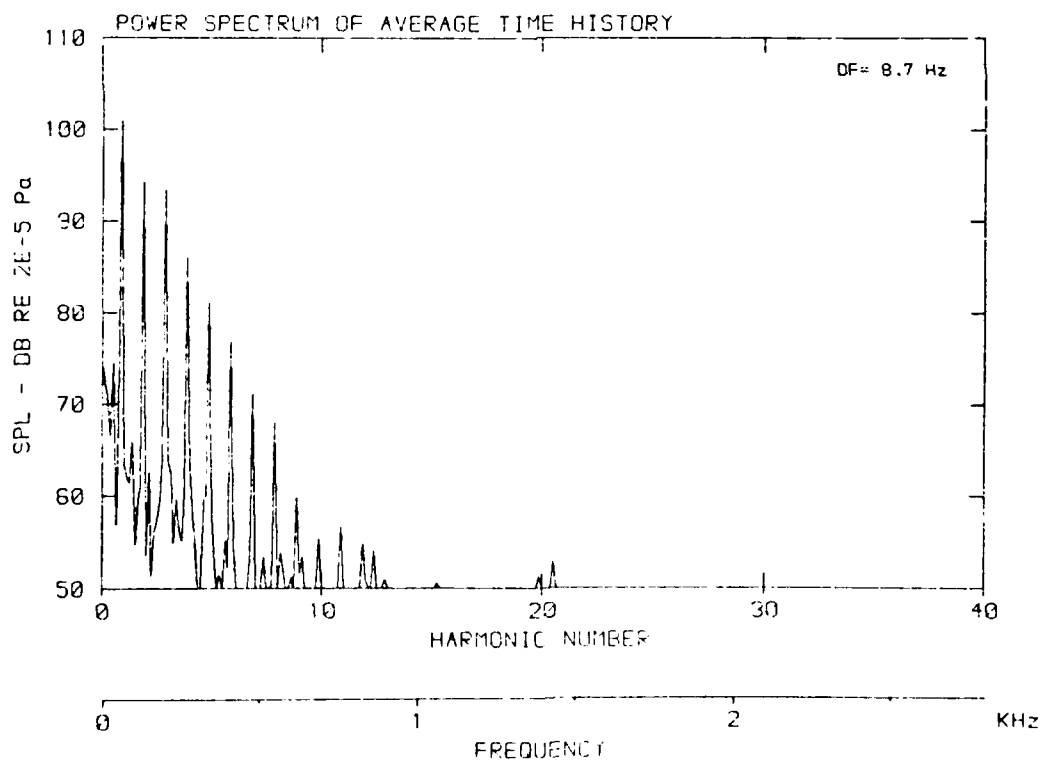
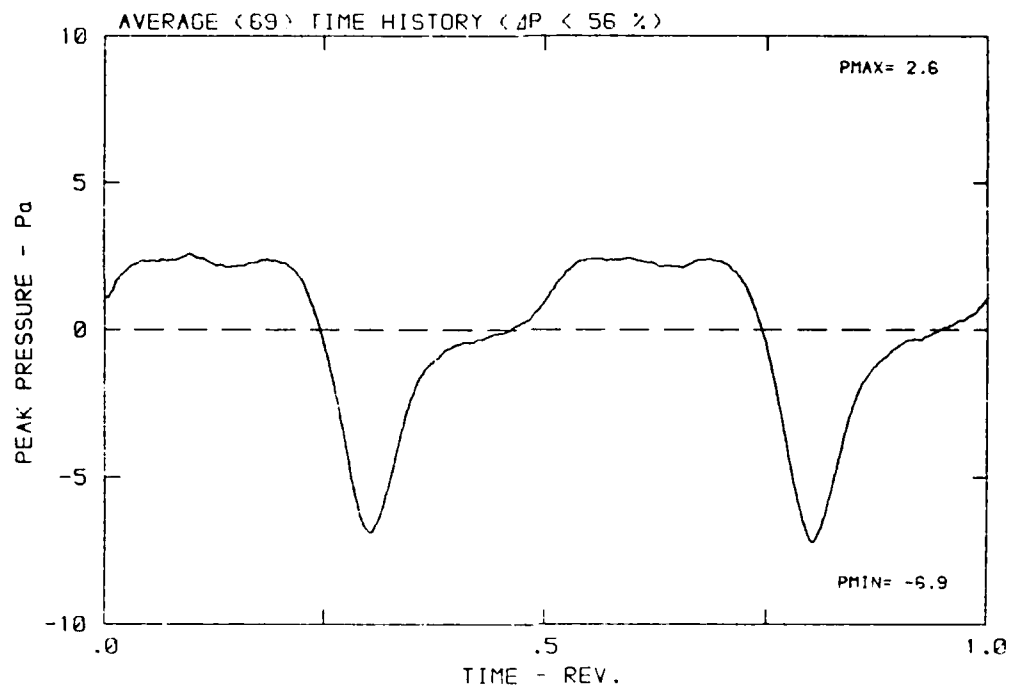
DATA POINT: FNC-1 RUN: 176 MP: 1

β : 19.9° MH: .6751 n: 2100 rpm v/u : .231 ϕ : 3.6° T: 287.0 K



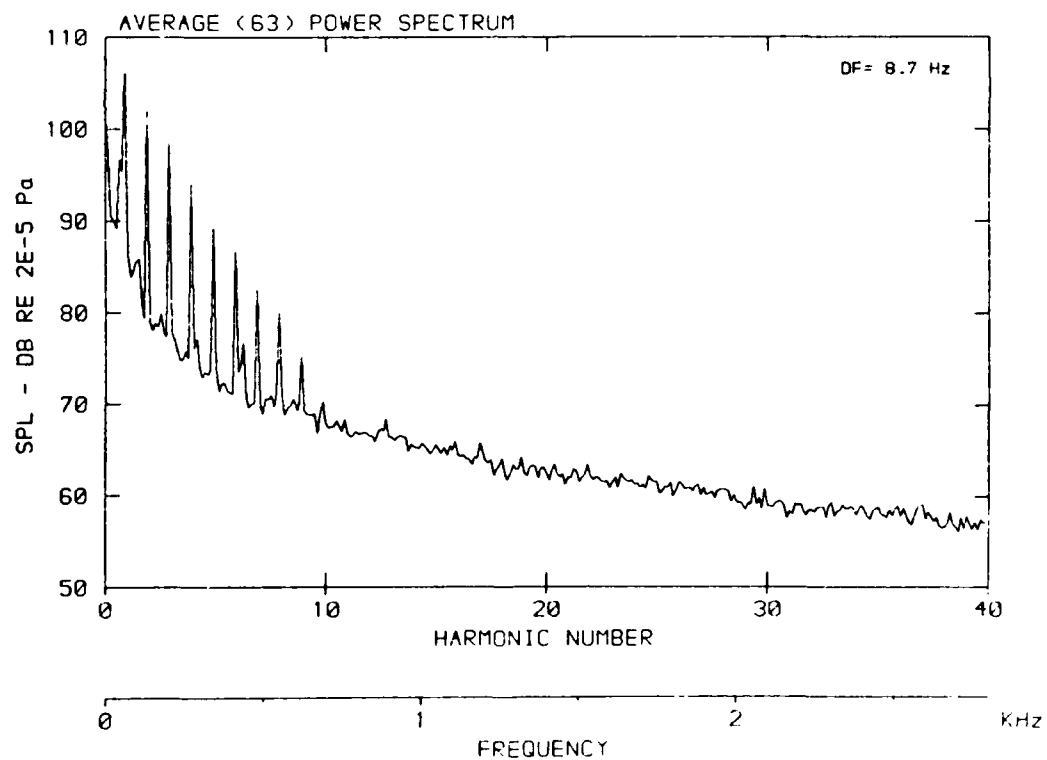
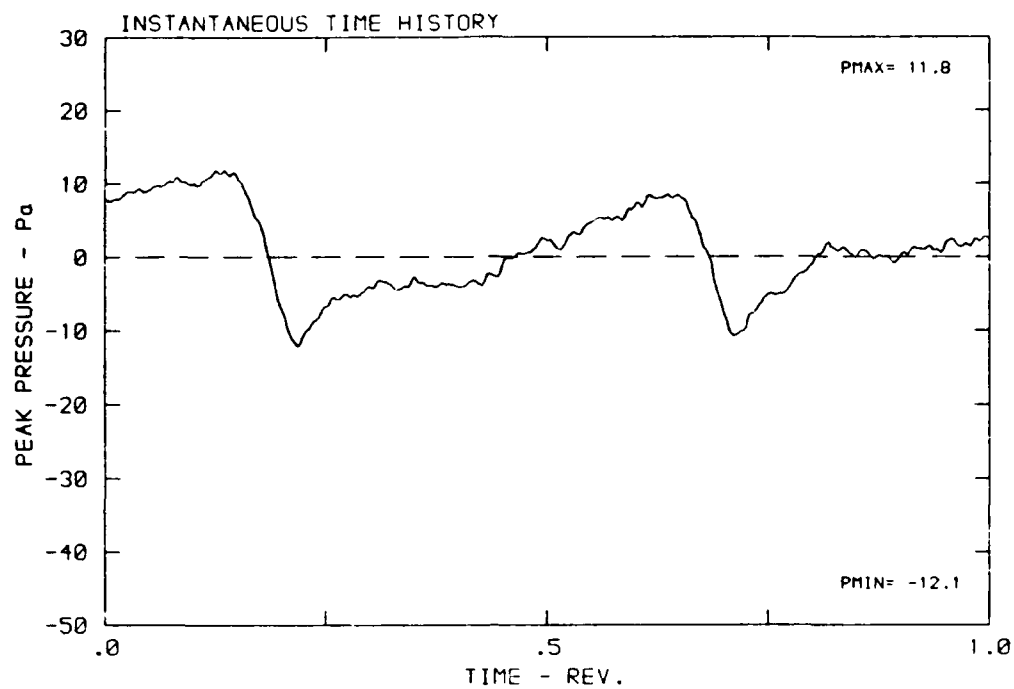
DATA POINT: FNC-1 RUN: 176 MP: 1

β : 19.9° MH: .6751 n: 2100 rpm v/u : .231 ϕ : 3.6° T: 287.0 K



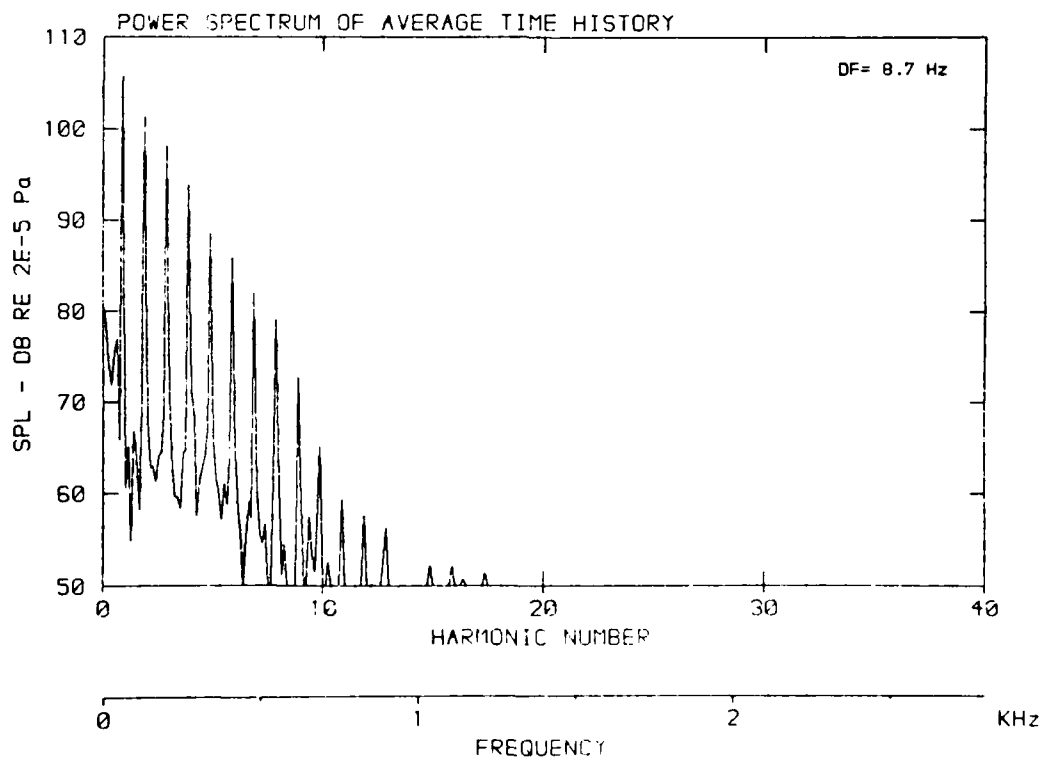
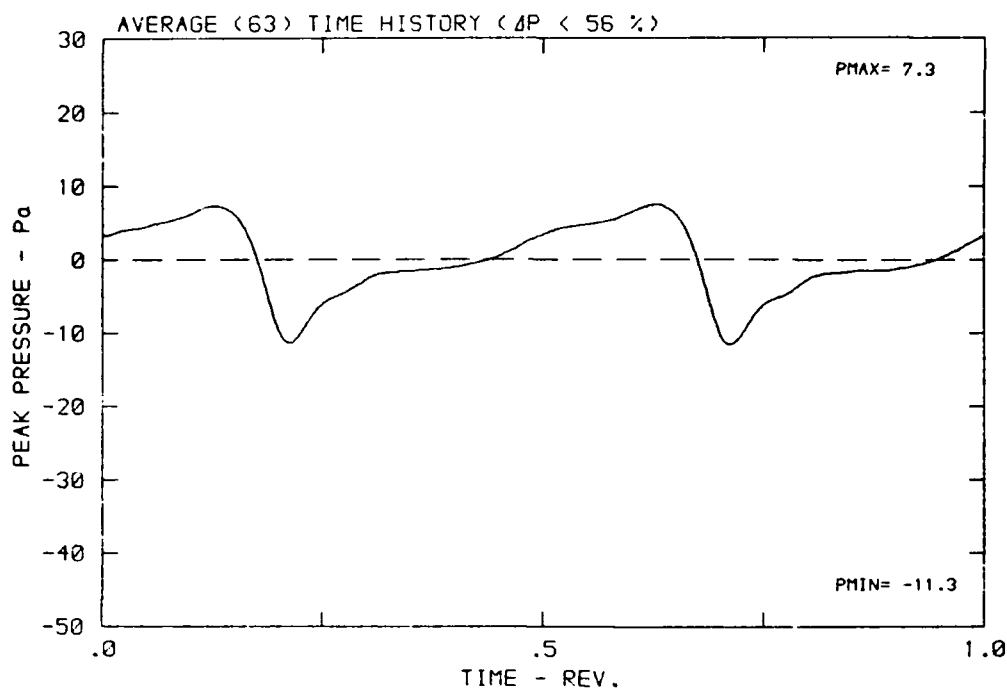
DATA POINT: FNC-1 RUN: 176 MP: 2

β : 19.9° MH: .6751 n: 2100 rpm v/u : .231 ϕ : 3.6° T: 287.0 K



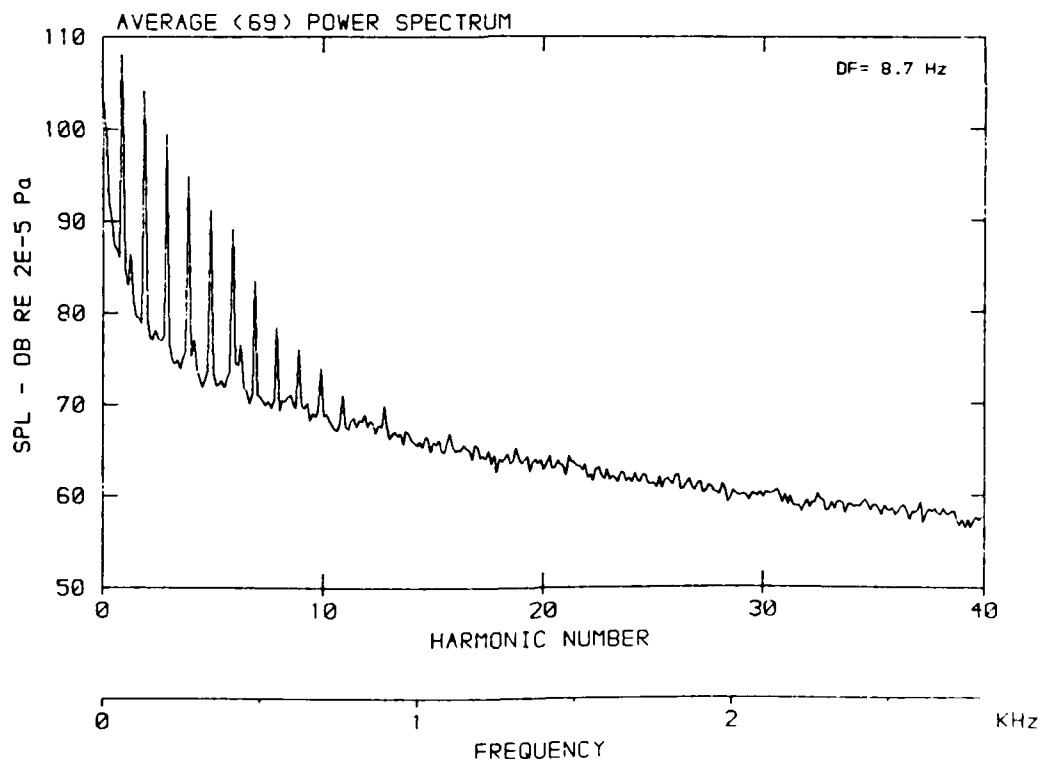
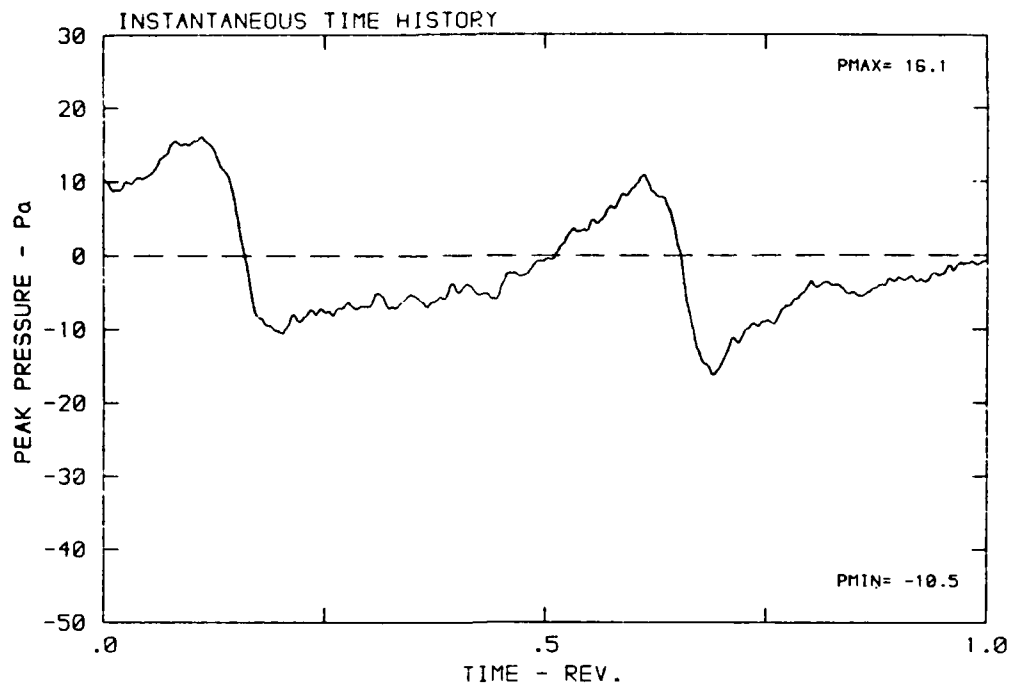
DATA POINT: FNC-1 RUN: 176 MP: 2

β : 19.9° MH: .6751 n: 2100 rpm v/u : .231 ϕ : 3.6° T: 287.0 K



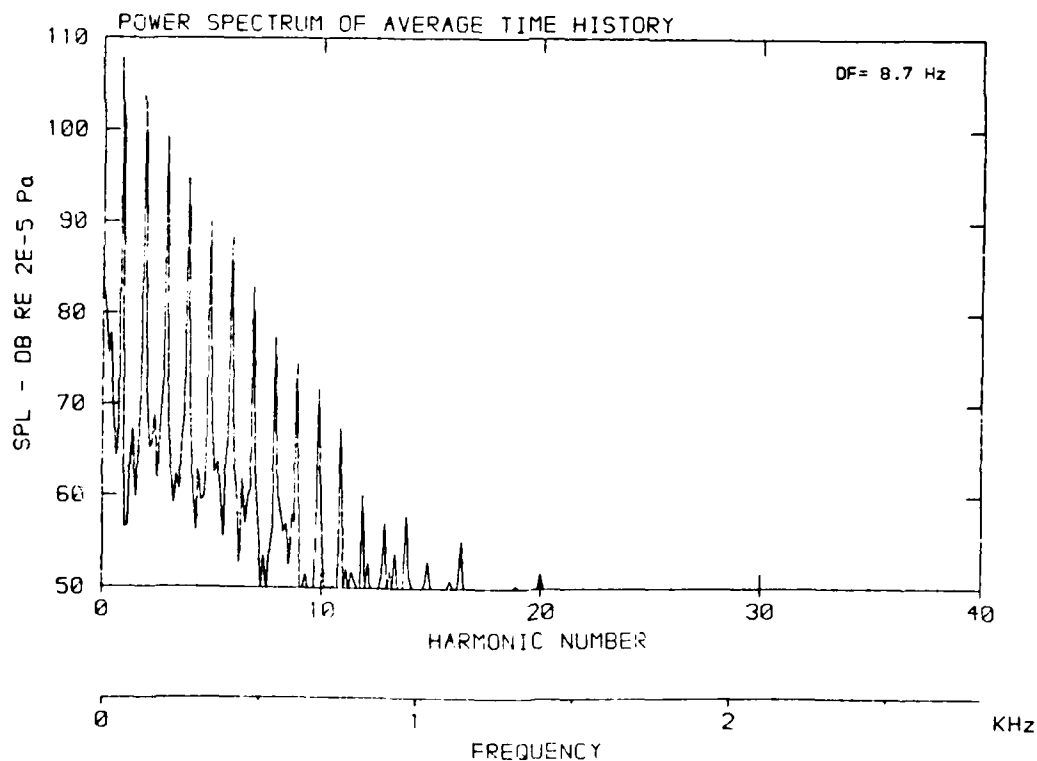
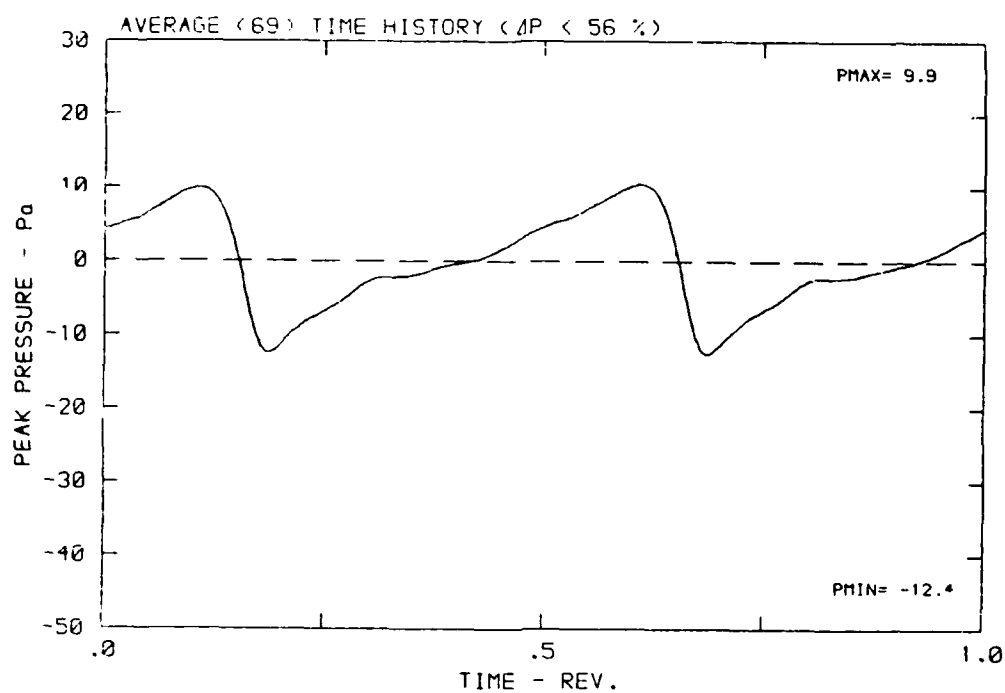
DATA POINT: FNC-1 RUN: 176 MP: 3

β : 19.9° MH: .6751 n: 2100 rpm v/u : .231 ϕ : 3.6° T: 267.0 K



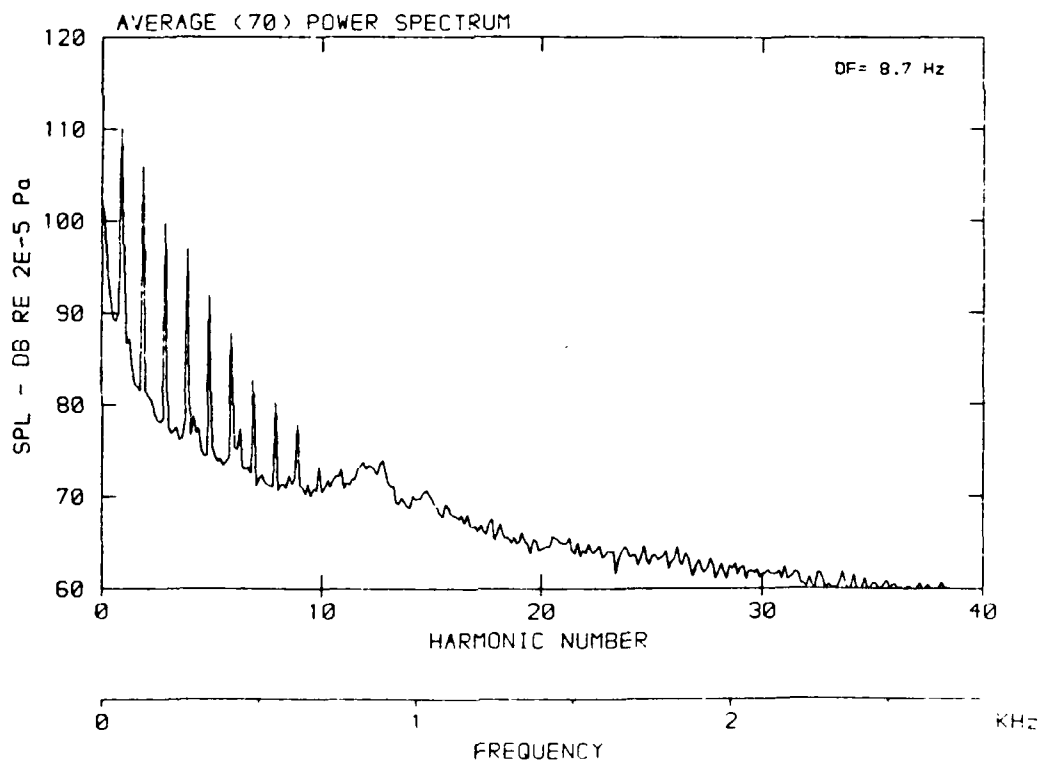
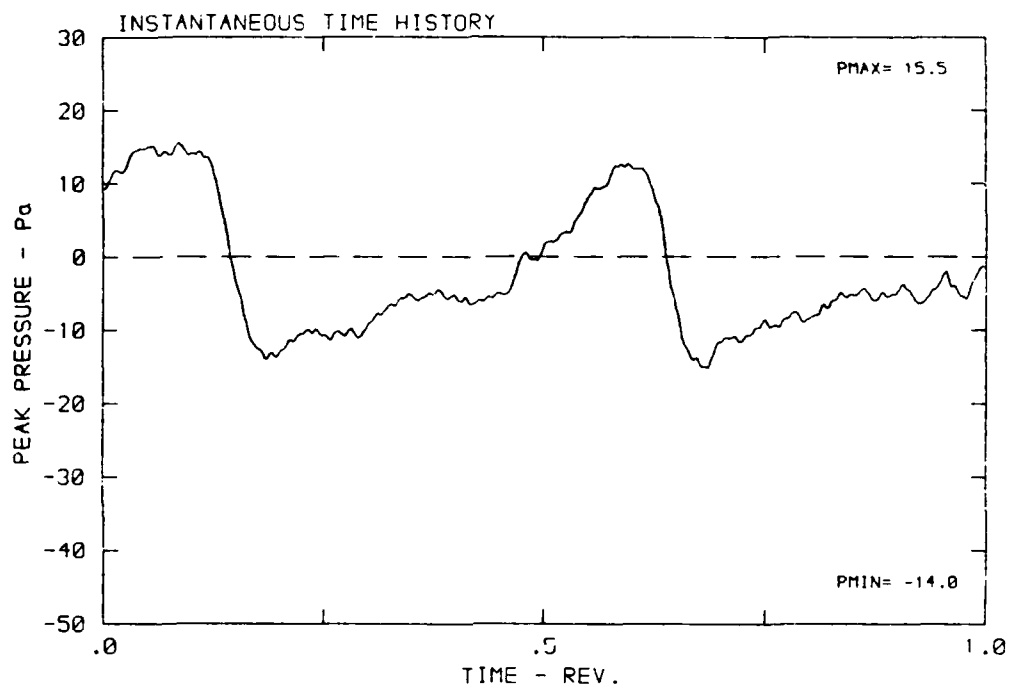
DATA POINT: FNC-1 RUN: 176 MP: 3

β : 19.9° MH: .6751 n: 2100 rpm v/u: .231 ϕ : 3.6° T: 287.0 K



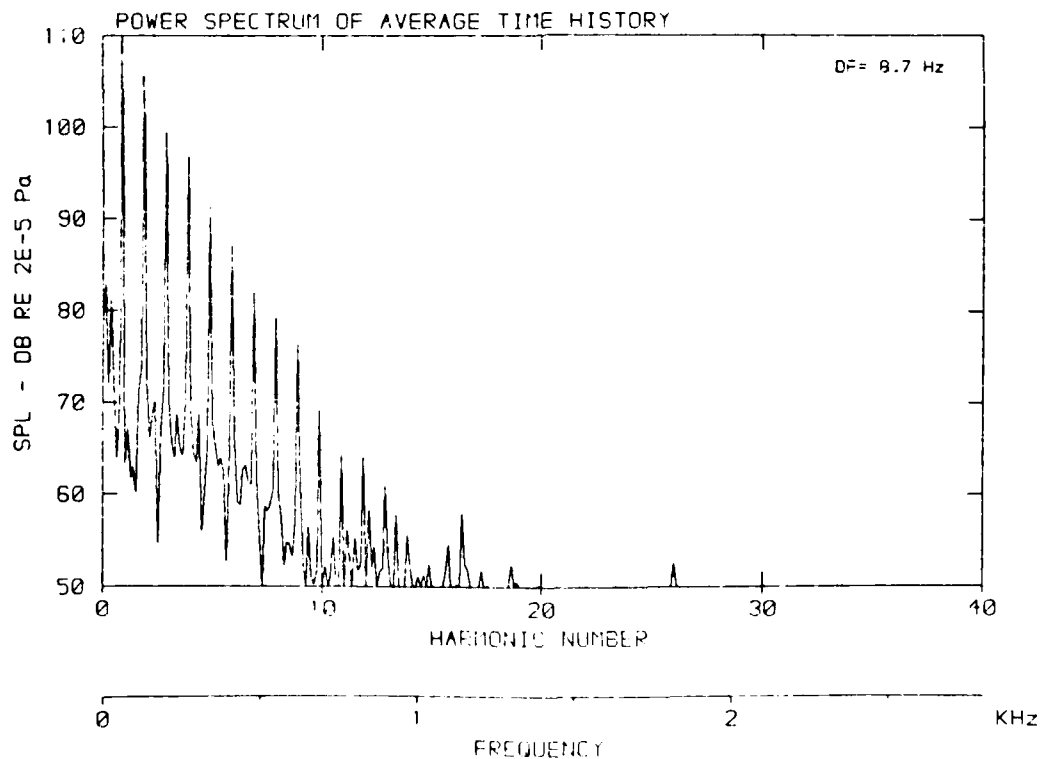
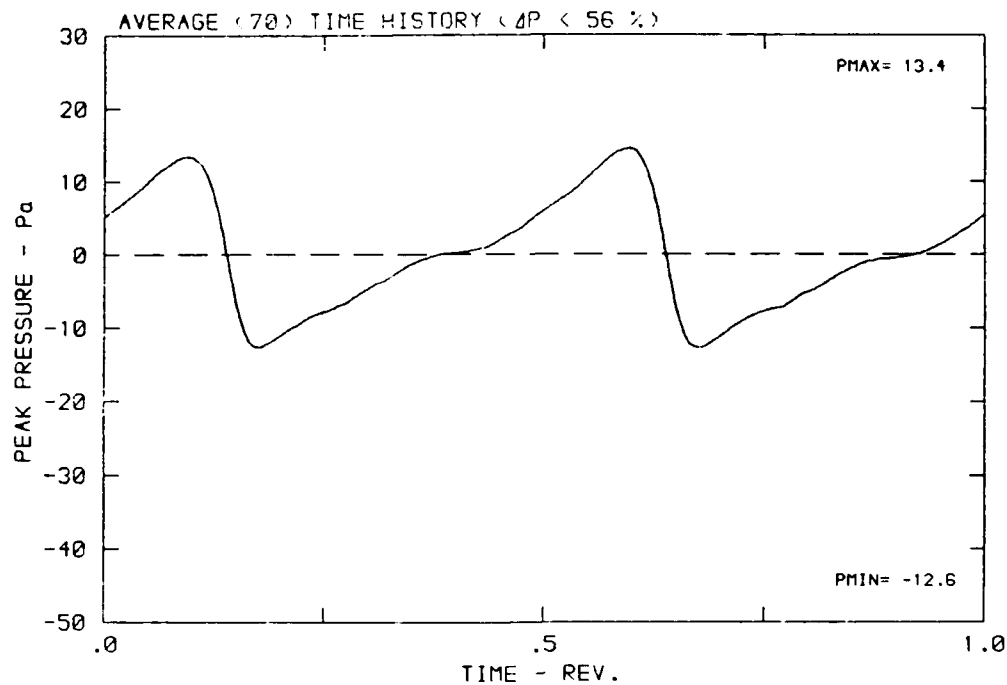
DATA POINT: FNC-1 RUN: 176 MP: 4

β : 19.9° MH: .6751 n: 2100 rpm v/u: .231 ϕ : 3.6° T: 287.0 K



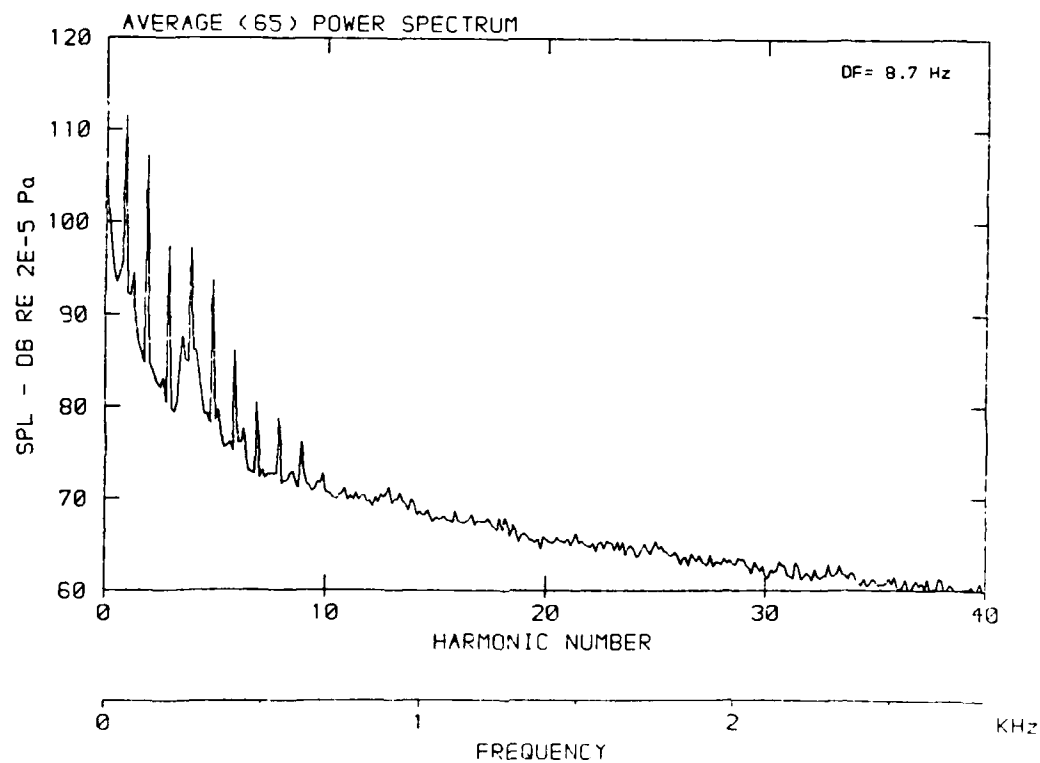
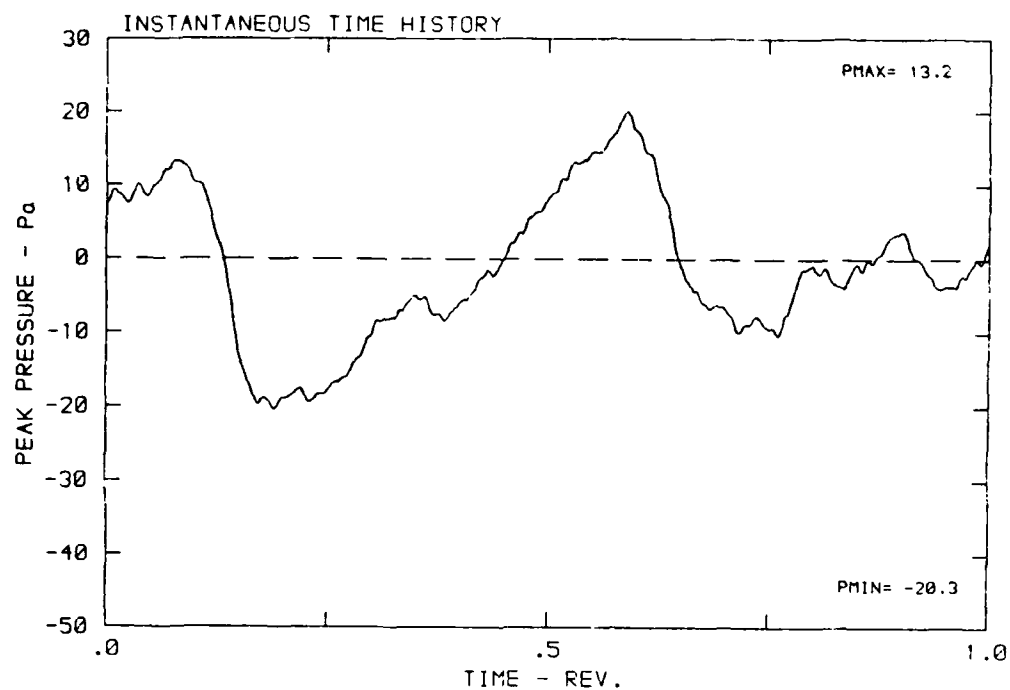
DATA POINT: FNC-1 RUN: 176 MP: 4

β : 19.9° MH: .6751 n: 2100 rpm v/u : .231 ϕ : 3.6° T: 287.0 K



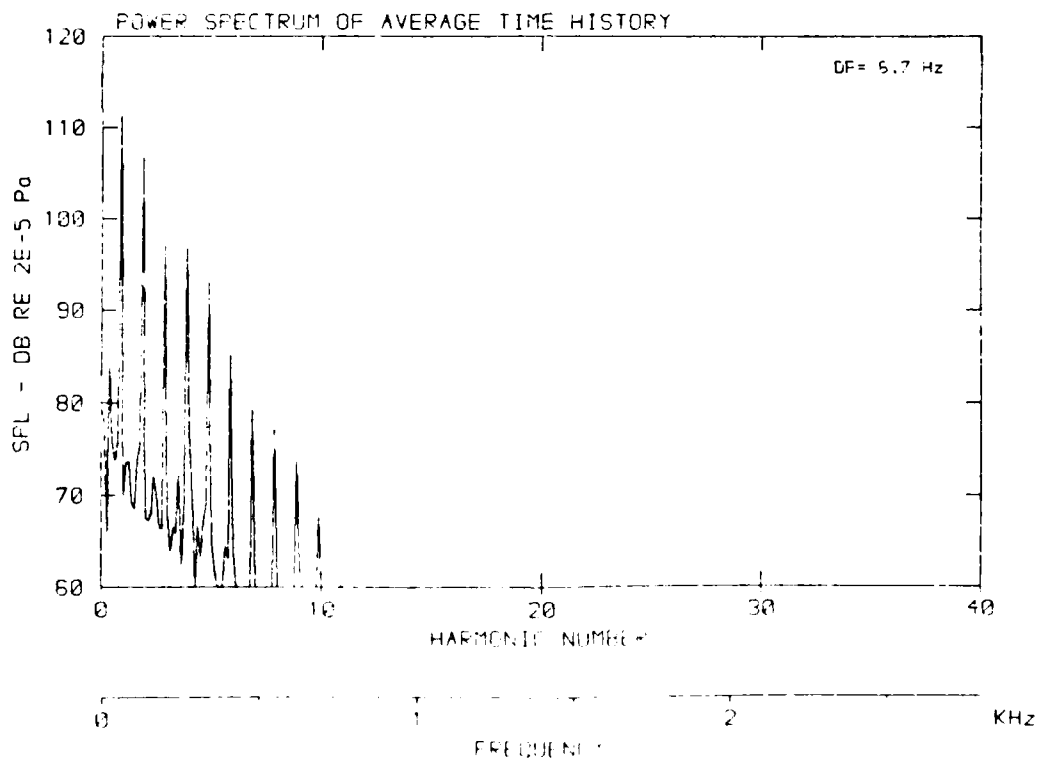
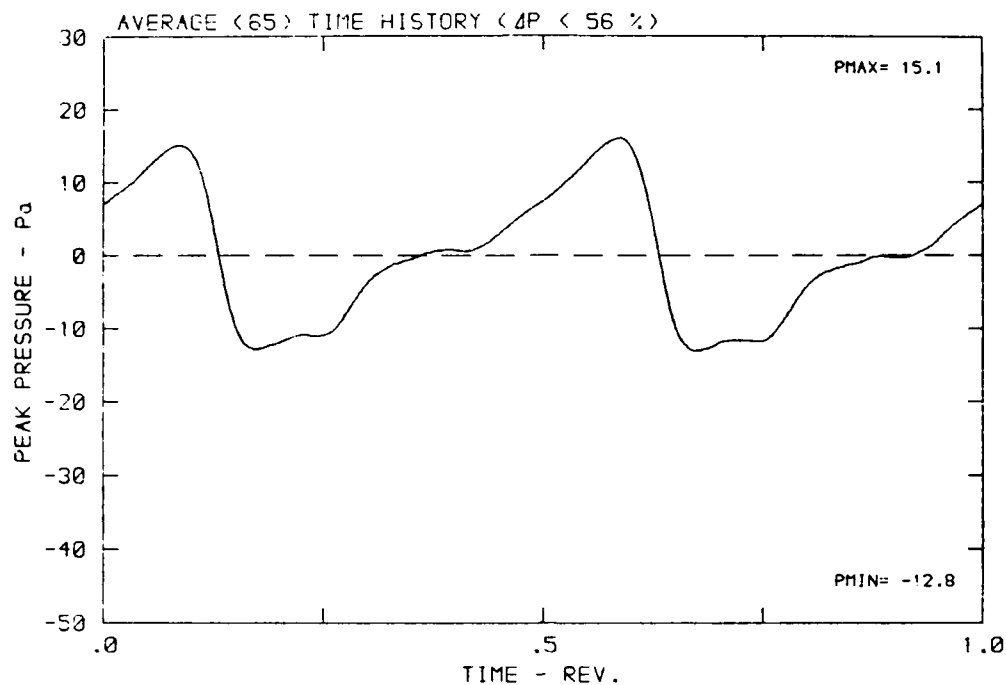
DATA POINT: FNC-1 RUN: 176 MP: 5

β : 19.9° MH: .6751 n: 2100 rpm v/u: .231 ϕ : 3.6° T: 287.0 K



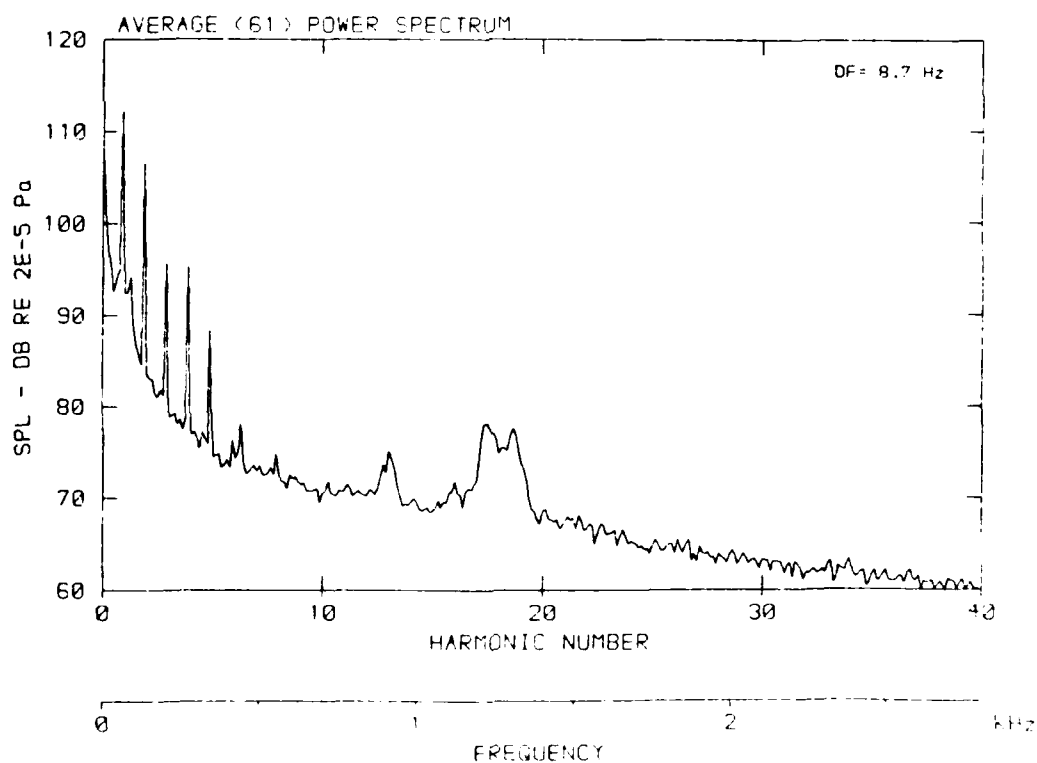
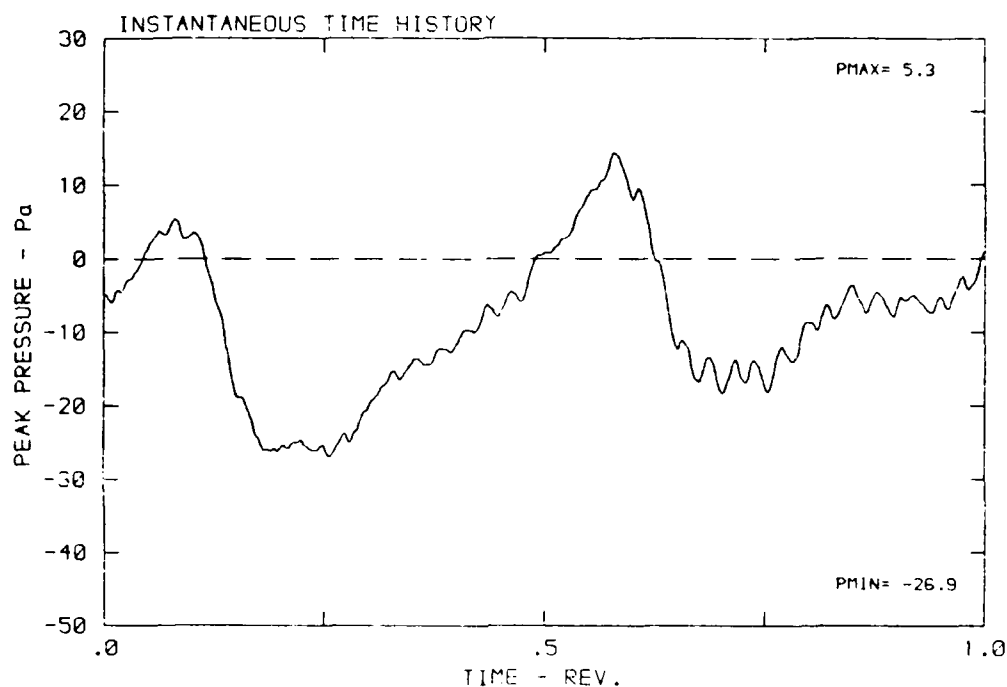
DATA POINT: FNC-1 RUN: 176 MP: 5

β : 19.9° MH: .6751 n: 2100 rpm v/u: .231 ϕ : 3.6° T: 287.0 K



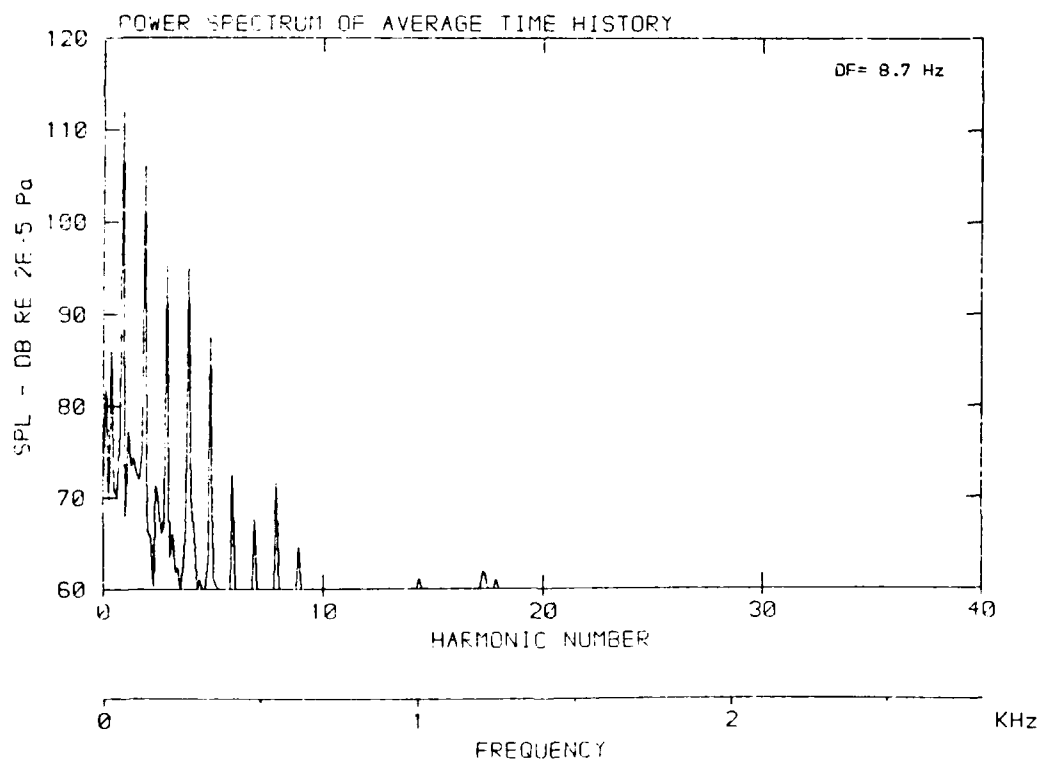
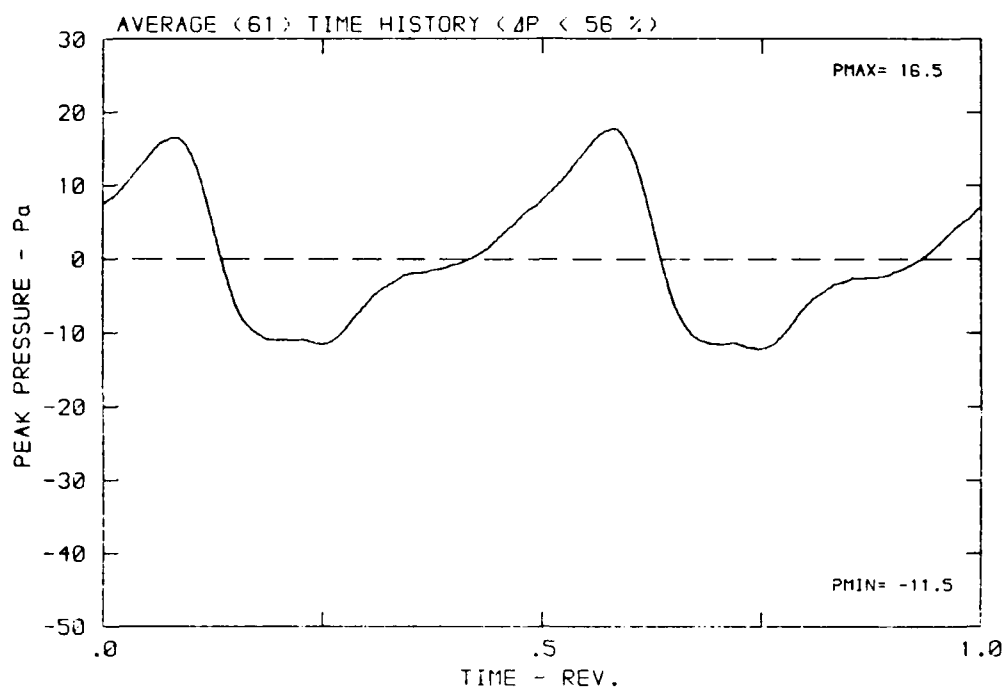
DATA POINT: FNC-1 RUN: 176 MP: 5

β : 19.9° MH: .6751 n: 2100 rpm v/u : .231 ϕ : 3.6° T: 287.0 K



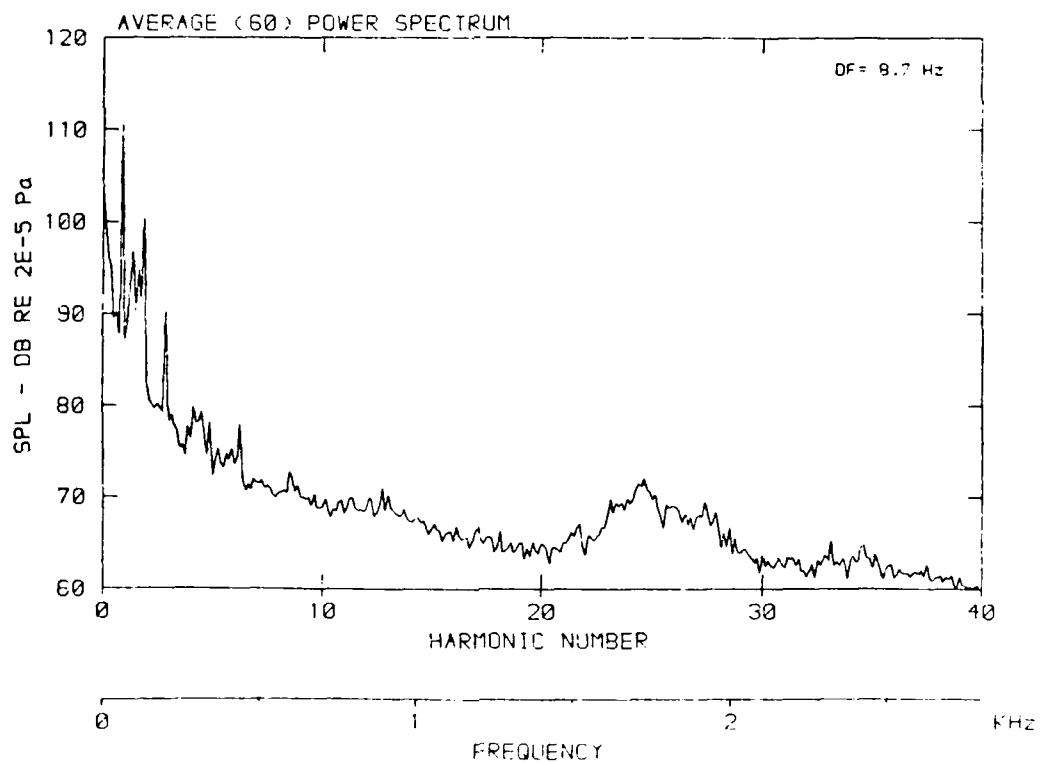
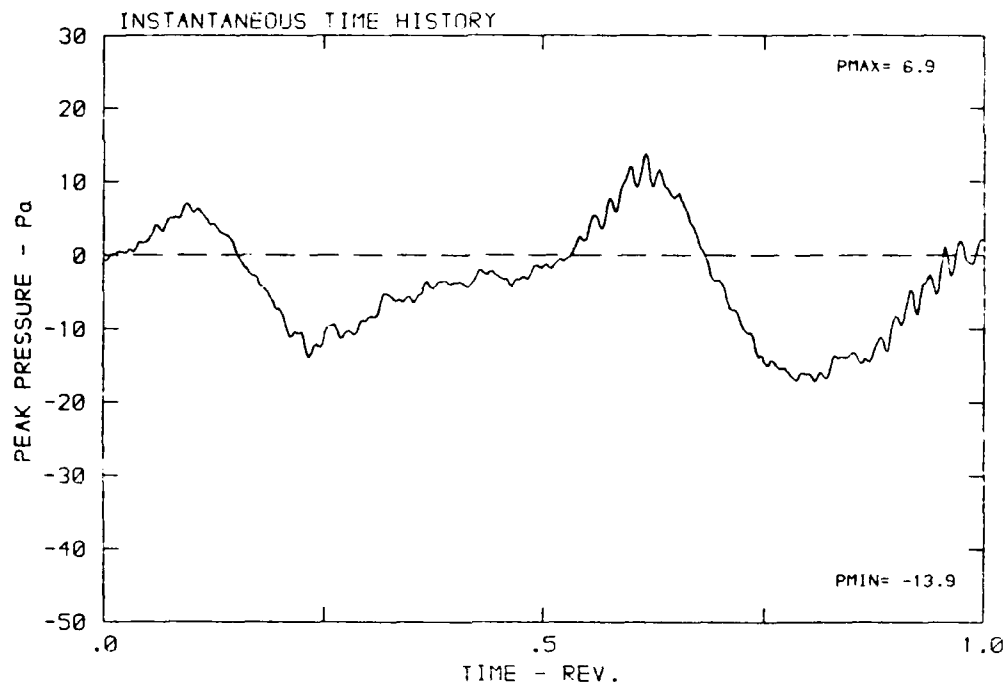
DATA POINT: FNC-1 RUN: 176 MP: 6

β : 19.9° MH: .6751 n: 2100 rpm v/u : .231 ϕ : 3.6° T: 287.0 K



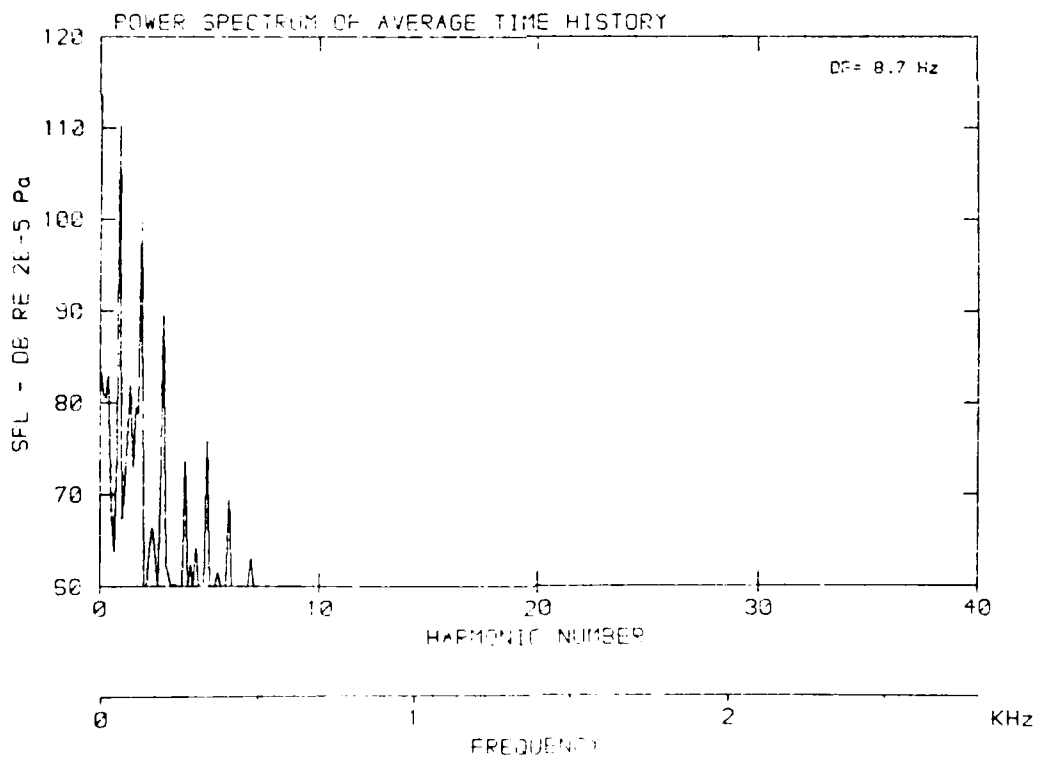
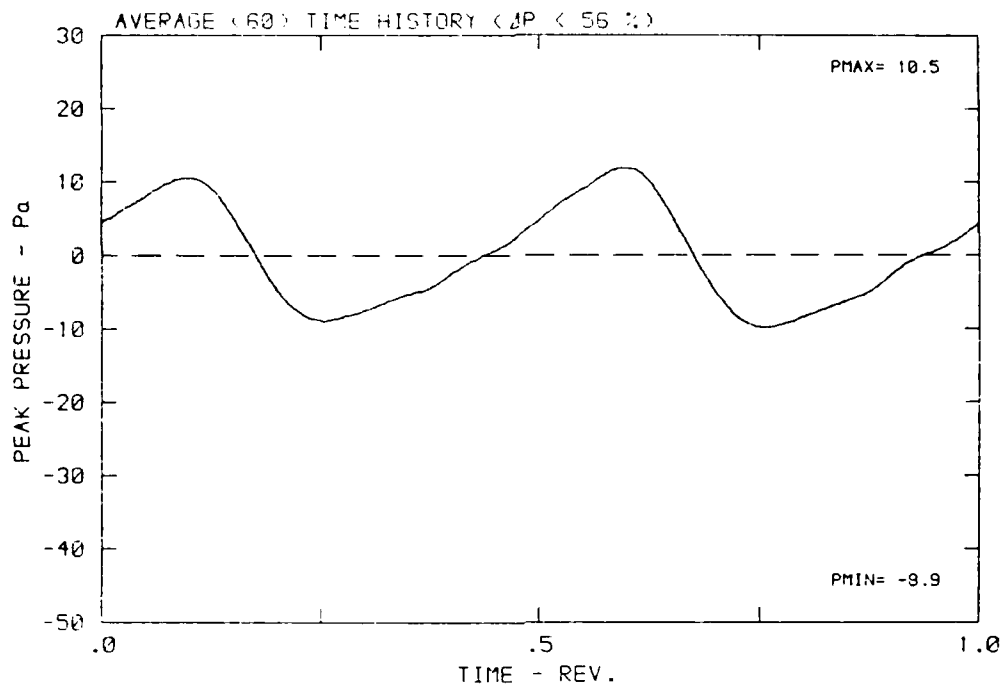
DATA POINT: FNC-1 PUN: 176 MF: 7

β : 19.9° MH: .6751 n: 2100 rpm v/u : .231 ϕ : 3.6° T: 287.0 K



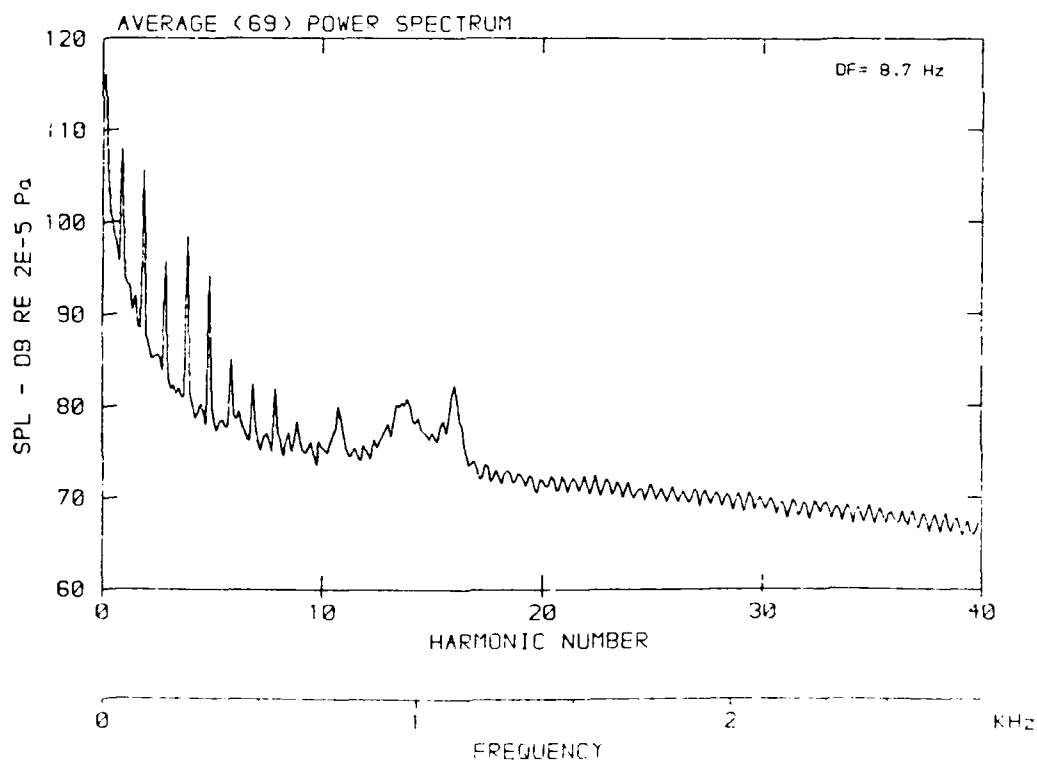
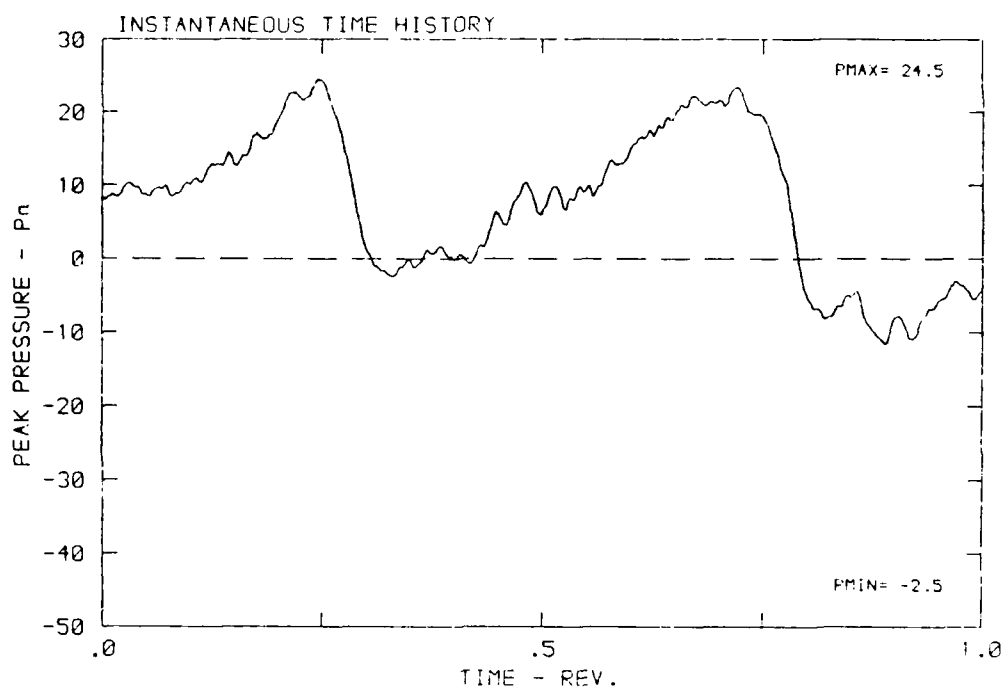
DATA POINT: FNC-1 RUN: 176 MP: 7

β : 19.9° MH: .6751 n: 2100 rpm v/u : .231 ϕ : 3.6° T: 287.0 K



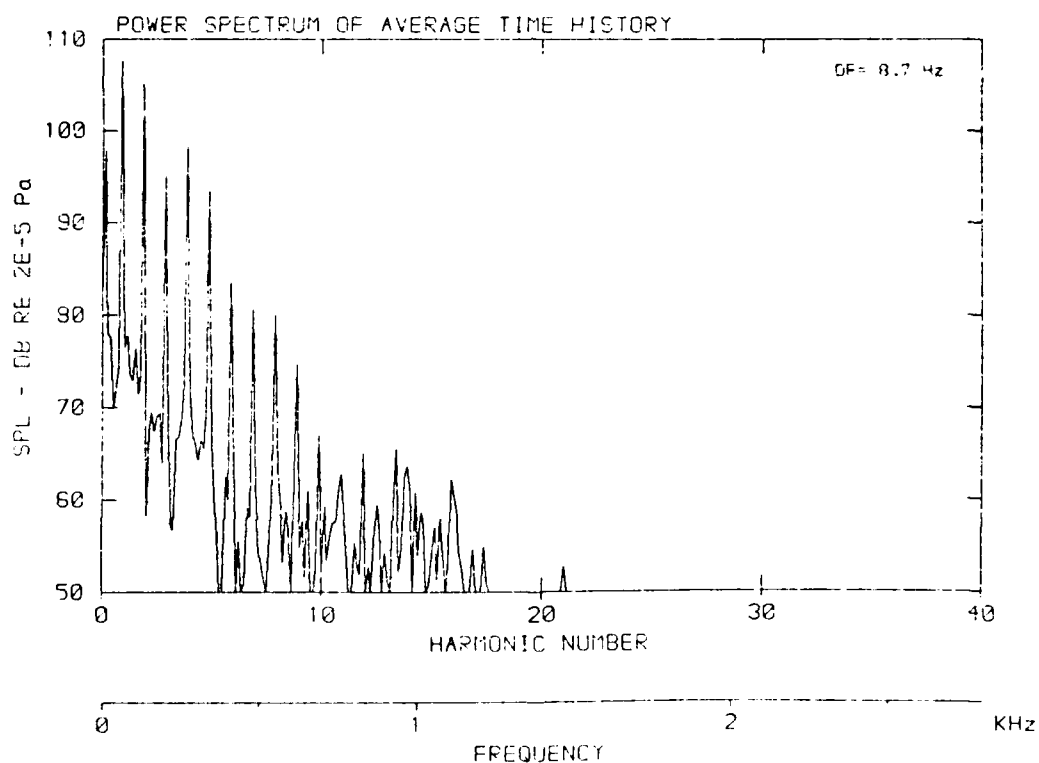
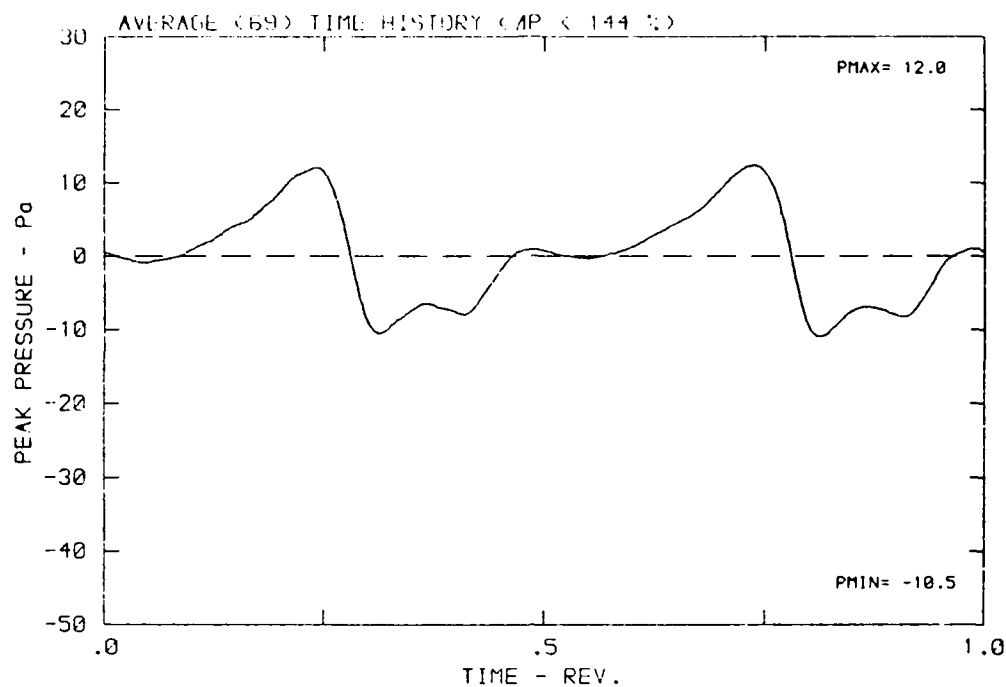
DATA POINT: FNC-1 RUN: 176 MP: 5

β : 19.9° MH: .6751 n: 2100 rpm v/u : .231 ϕ : 3.6° T: 287.0 K



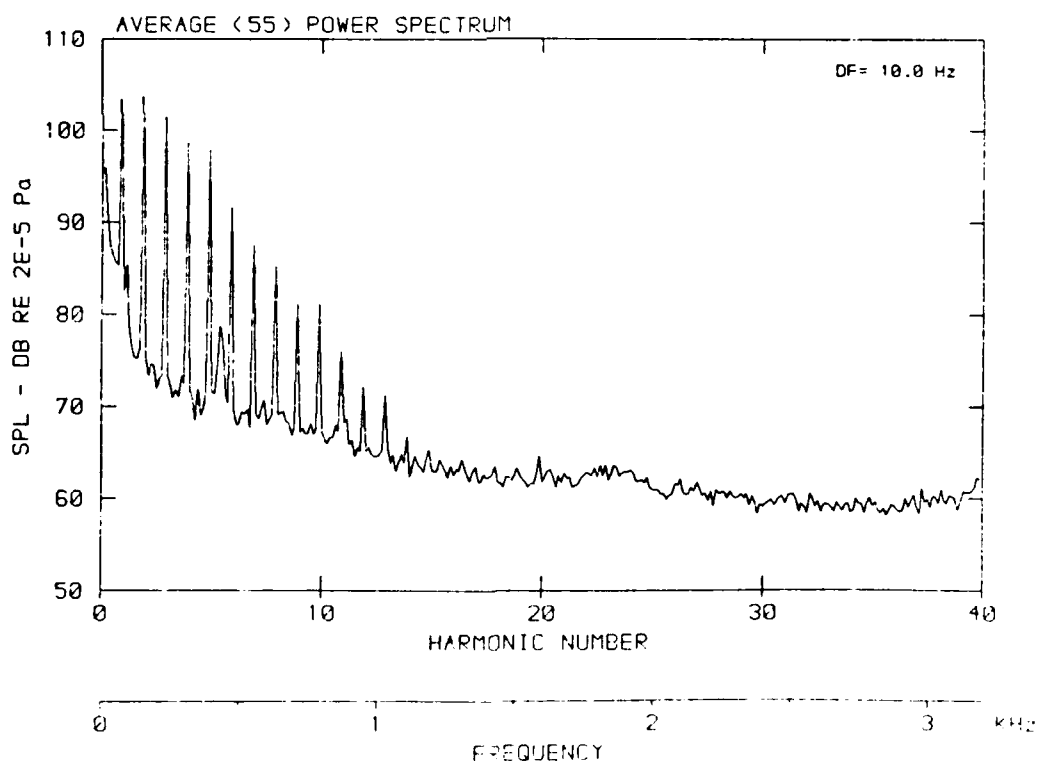
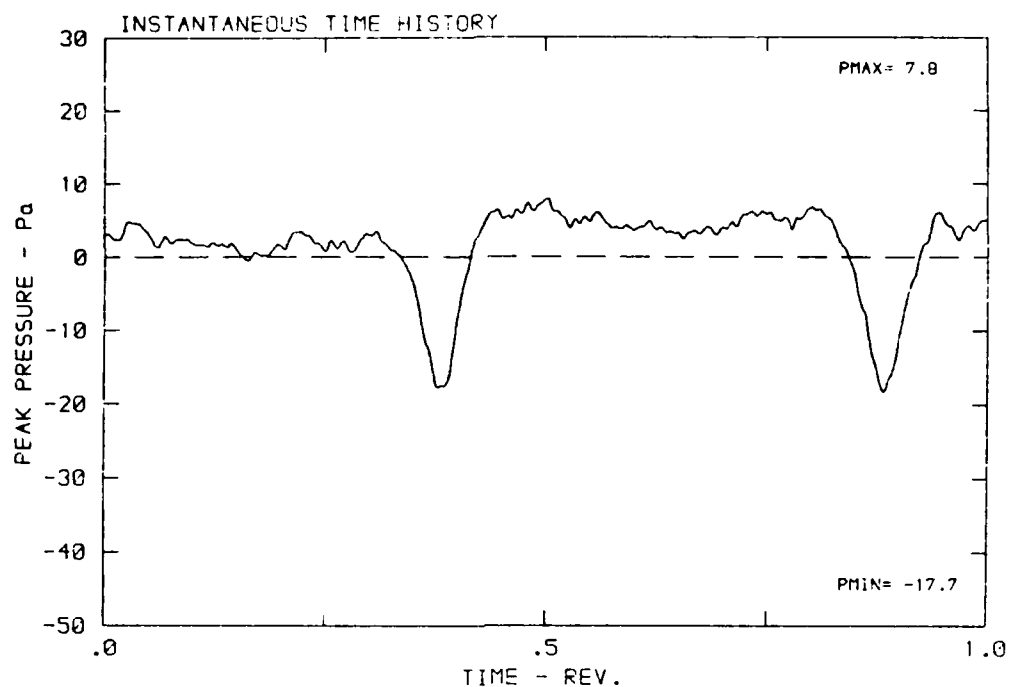
DATA POINT: FNC-1 RUN: 176 MP: 9

β : 19.9° MH: .6751 n: 2100 rpm v/u : .231 ϕ : 3.6° T: 287.0 K



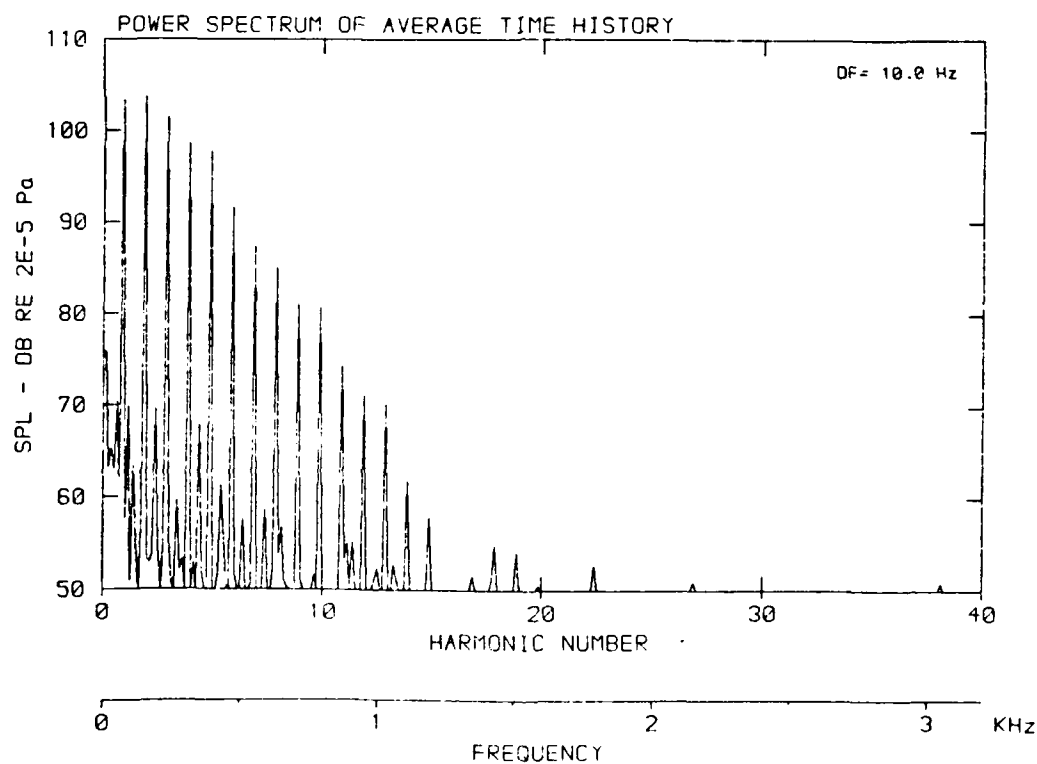
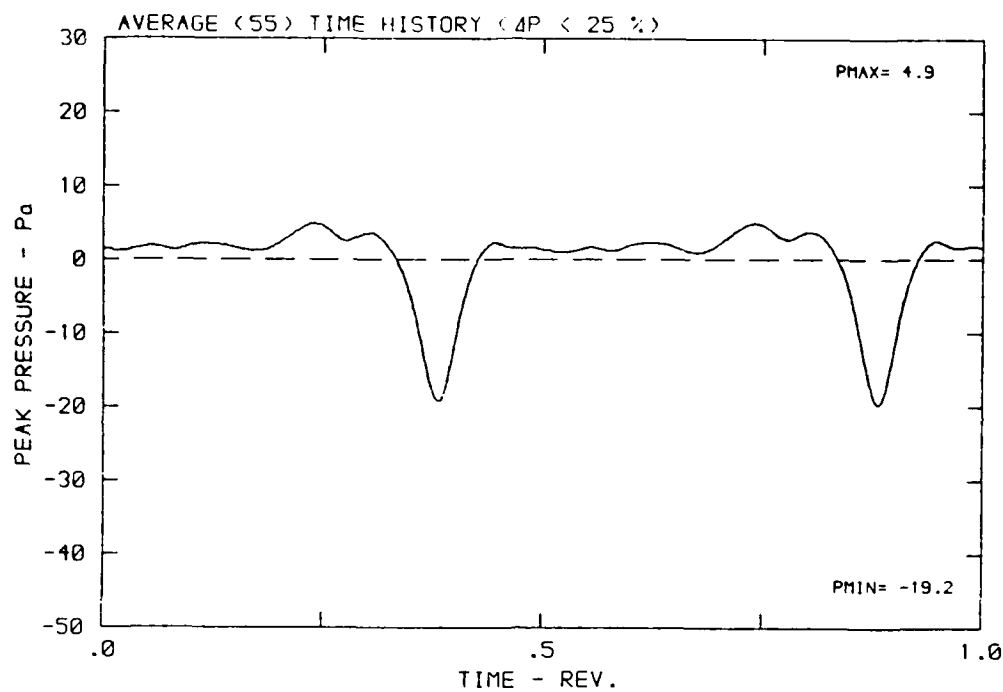
DATA POINT: ENC-2 RUN: 177 MP: 1

β : 19.9° MH: .7661 n: 2400 rpm v/u : .202 ϕ : 3.6° T: 287.7 K



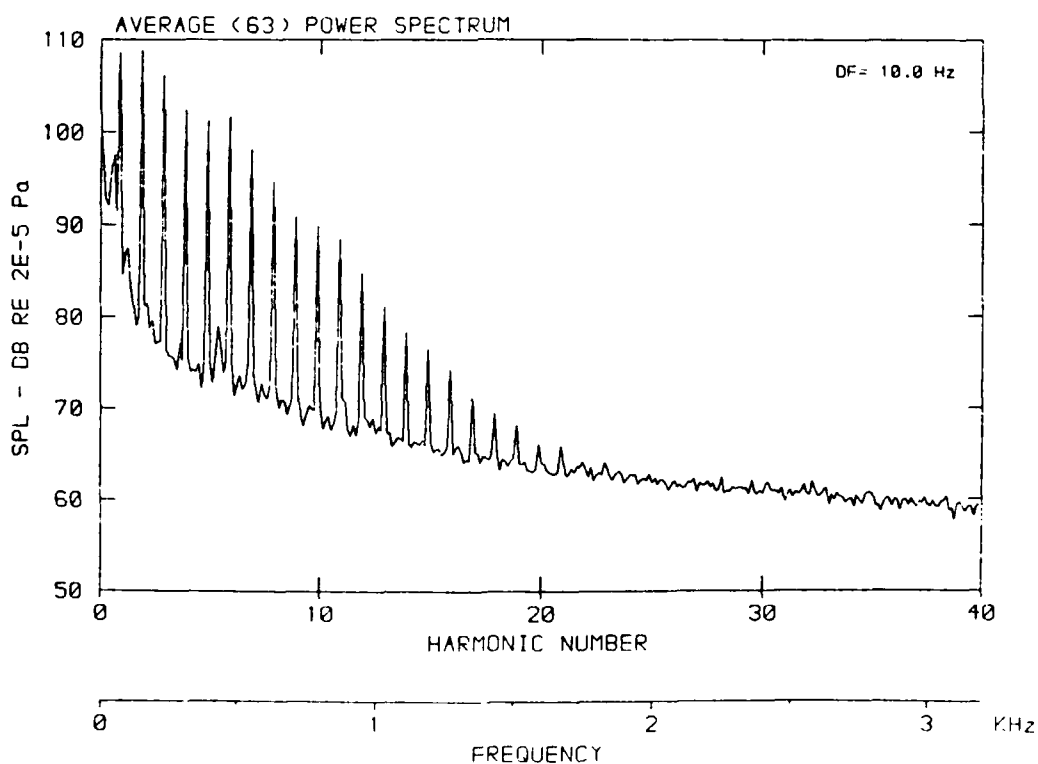
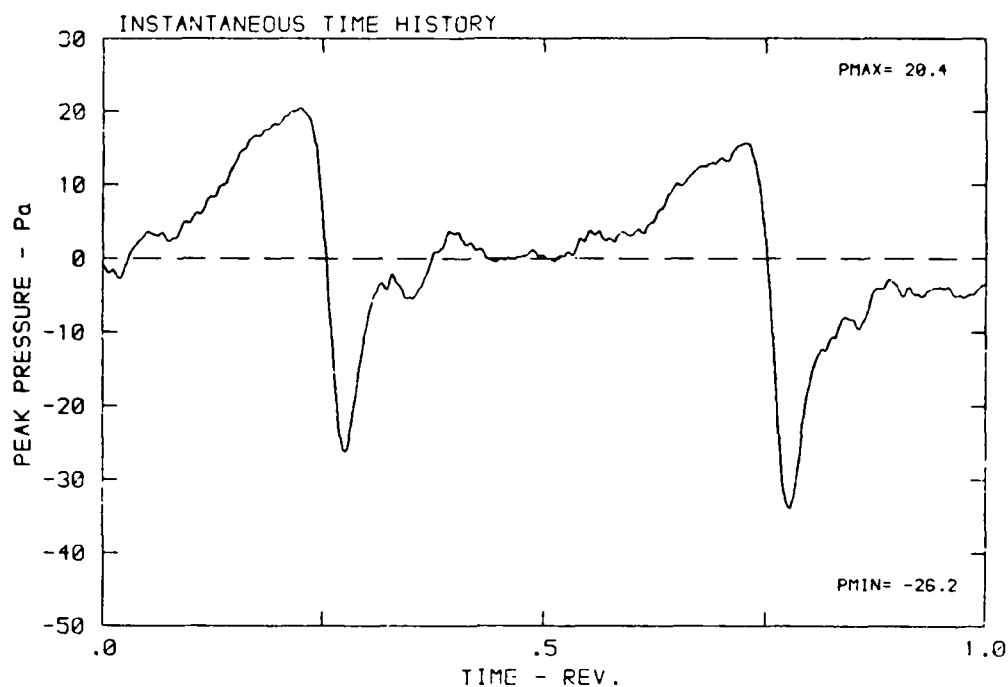
DATA POINT: FNC-2 RUN: 177 MP: 1

β : 19.9° MH: .7661 n: 2400 rpm v/u : .202 ϕ : 3.6° T: 287.7 K



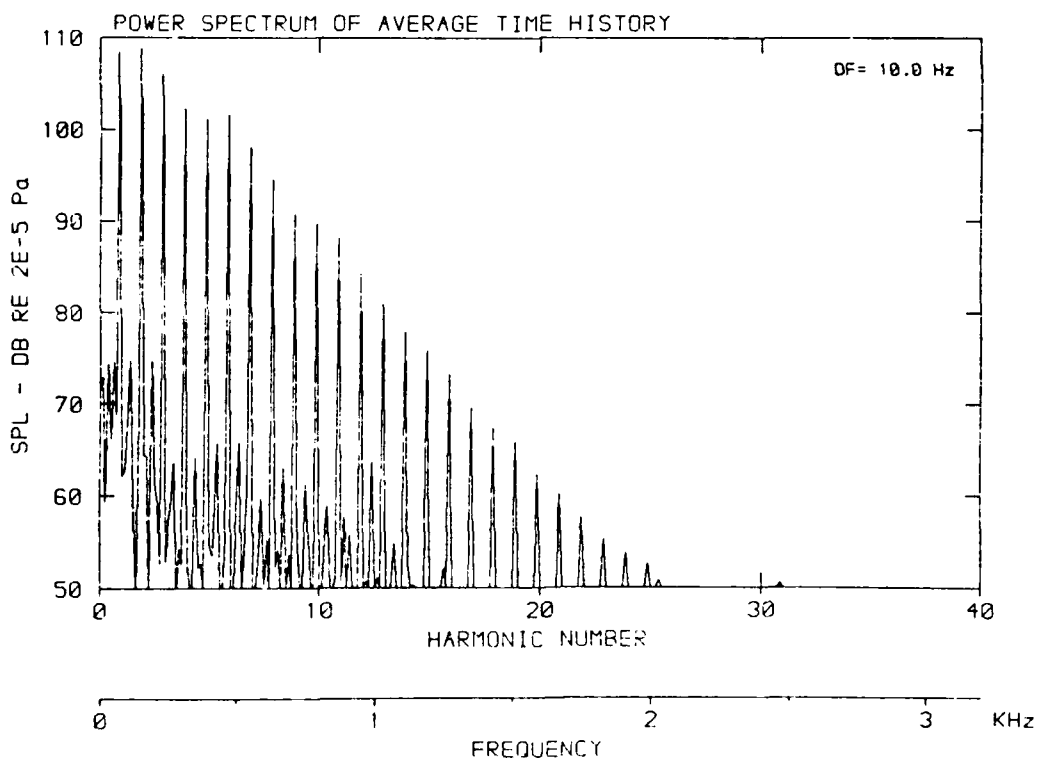
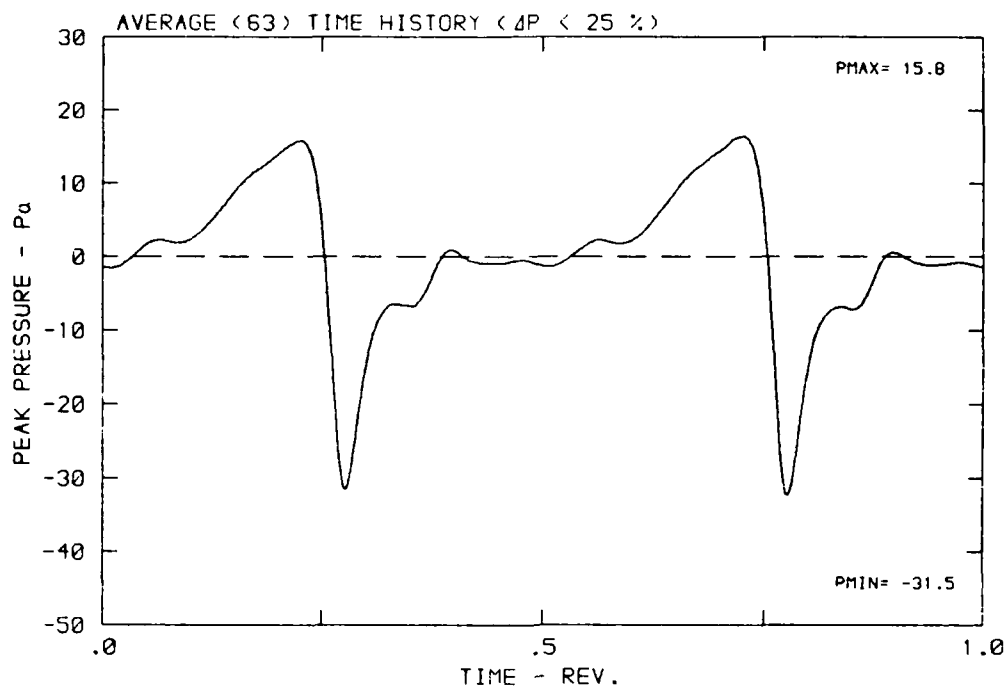
DATA POINT: FNC-2 RUN: 177 MP: 2

β : 19.9° MH: .7661 n: 2400 rpm v/u : .202 ϕ : 3.6° T: 287.7 K



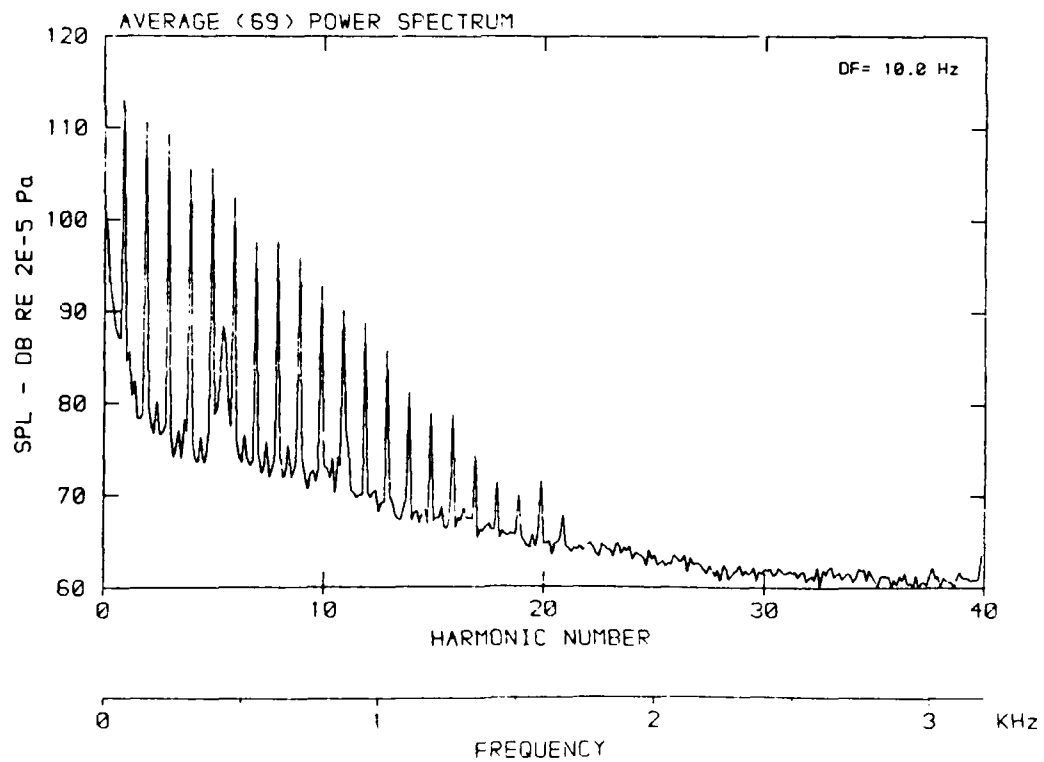
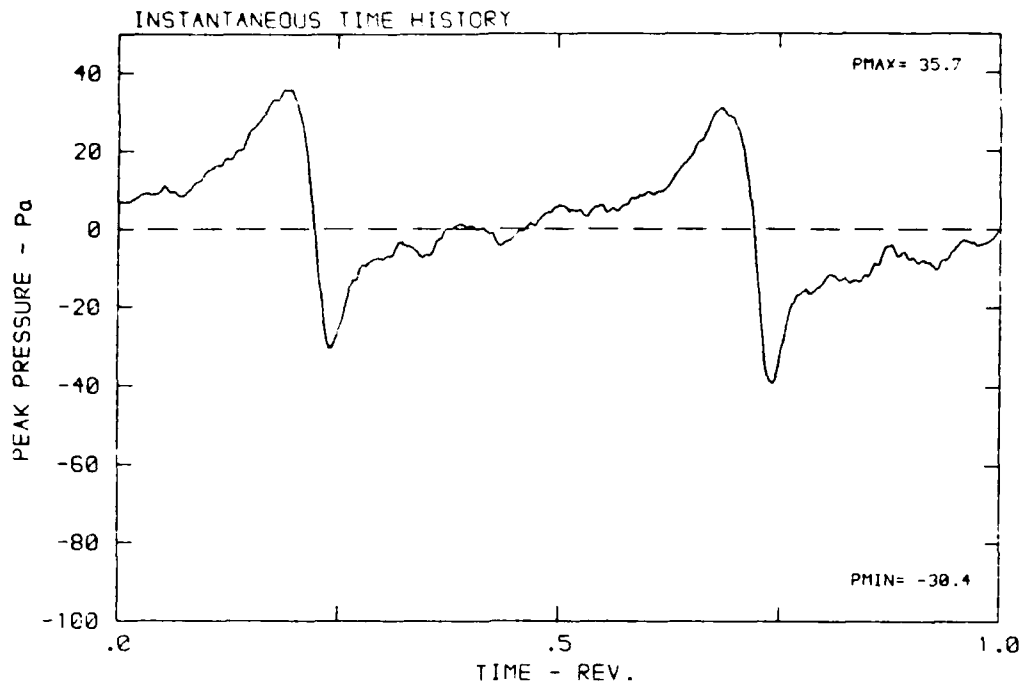
DATA POINT: FNC-2 RUN: 177 MP: 2

β : 19.9° MH: .7661 n: 2400 rpm v/u: .202 ϕ : 3.6° T: 287.7 K



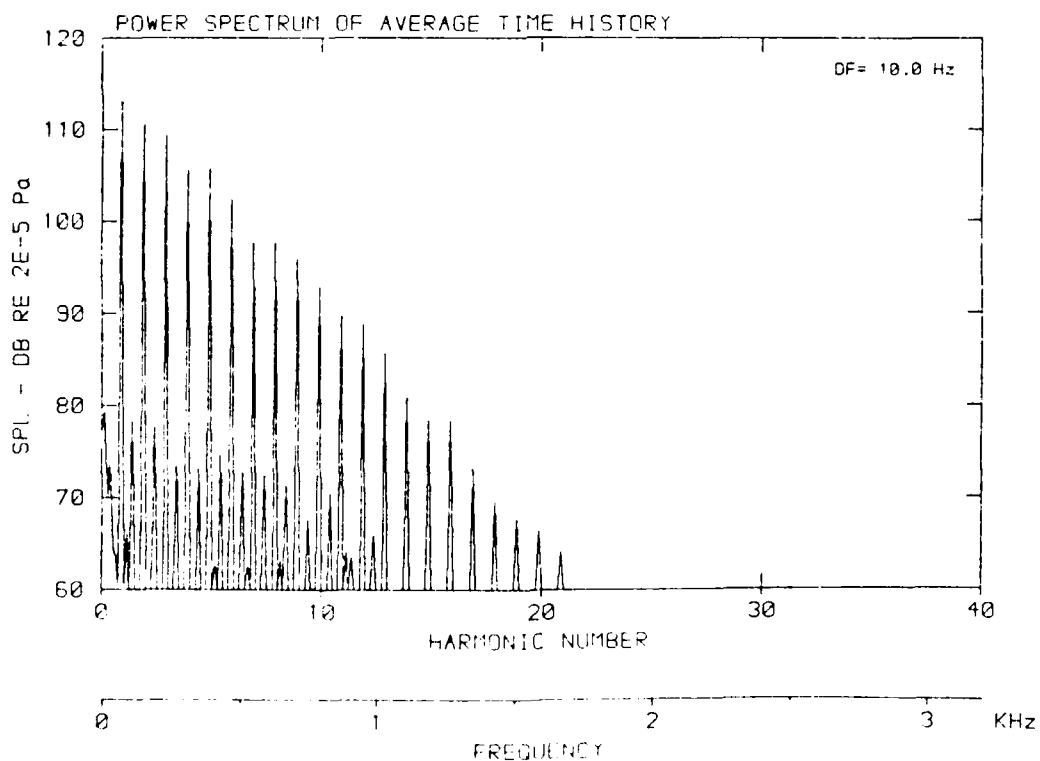
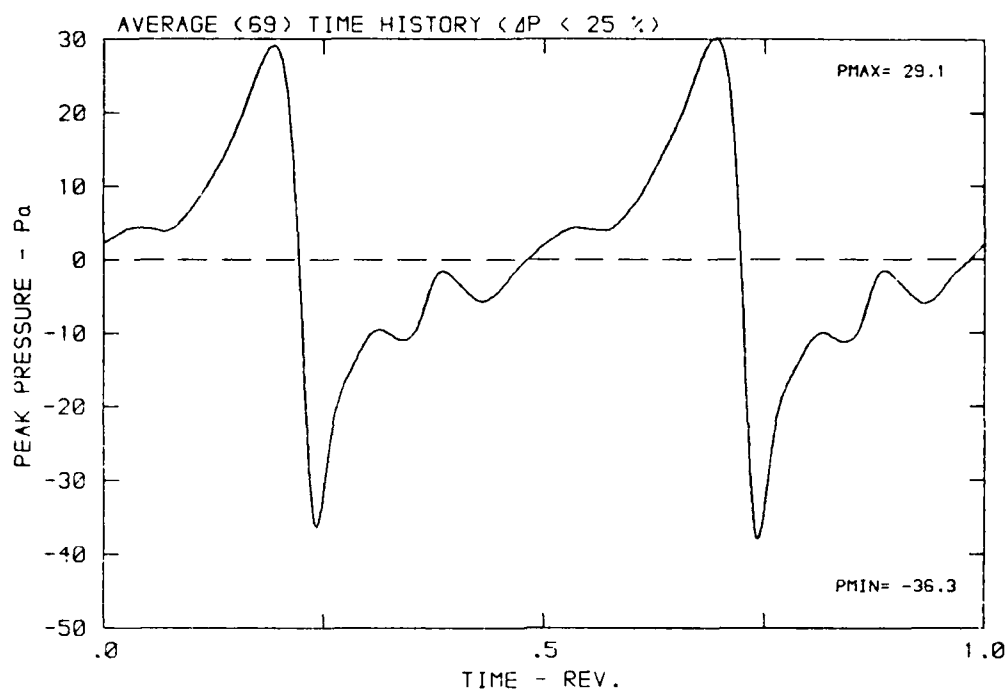
DATA POINT: FNC-2 RUN: 177 MP: 3

β : 19.9° MH: .7661 n: 2400 rpm v/u : .202 ϕ : 3.6° T: 287.7 K



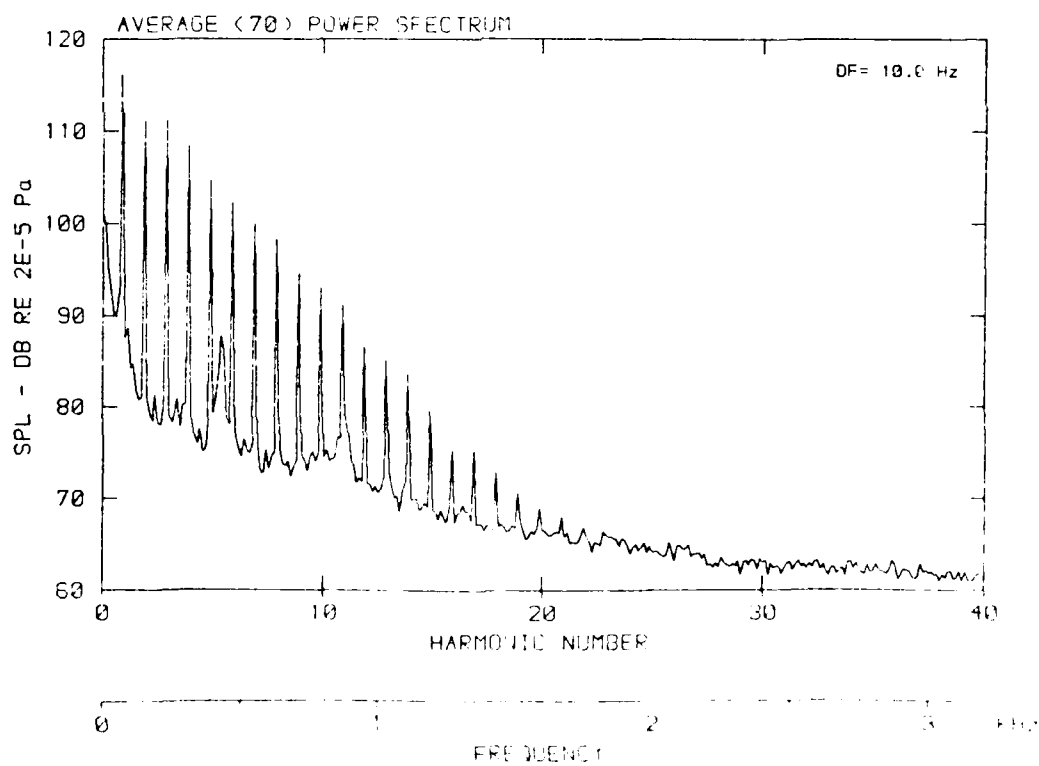
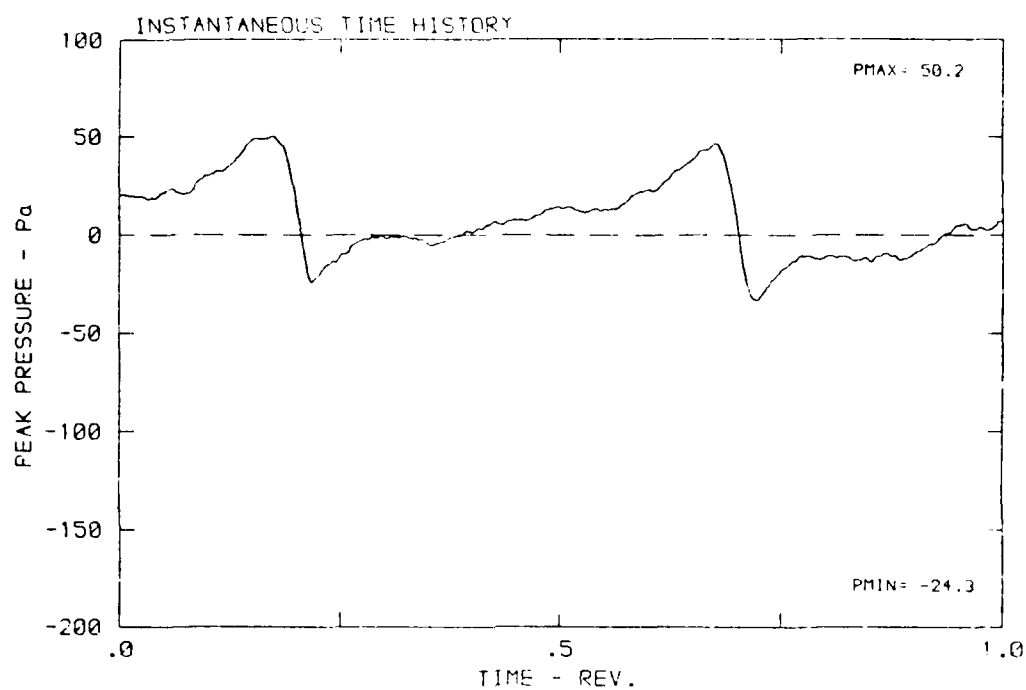
DATA POINT: FNC-2 RUN: 177 MP: 3

β : 19.9° MH: .7661 n: 2400 rpm v/u: .202 ϕ : 3.6° T: 287.7 K



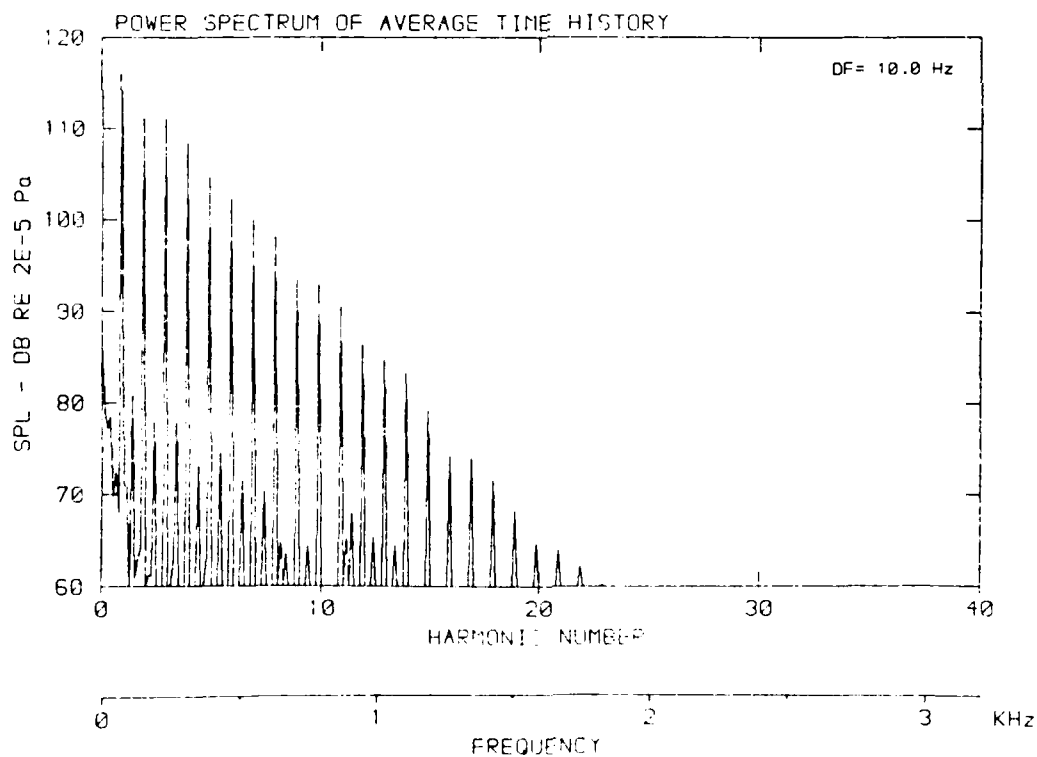
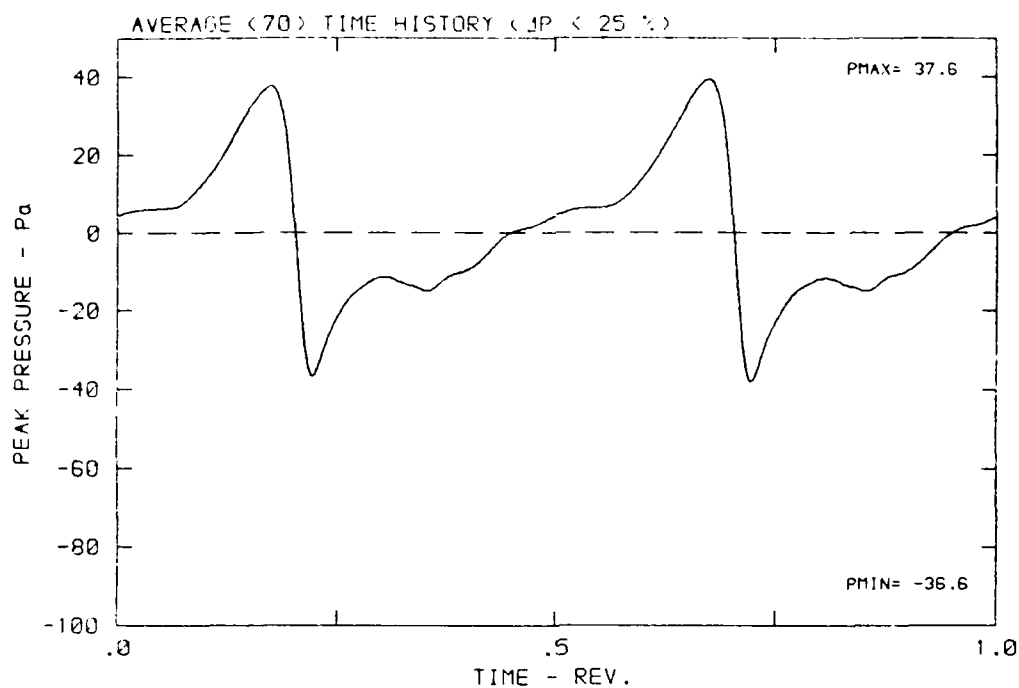
DATA POINT: FNC-2 RUN: 177 MP: 4

β : 19.9° MH: .7661 n: 2400 rpm v/u : .202 ϕ : 3.6° T: 287.7 K



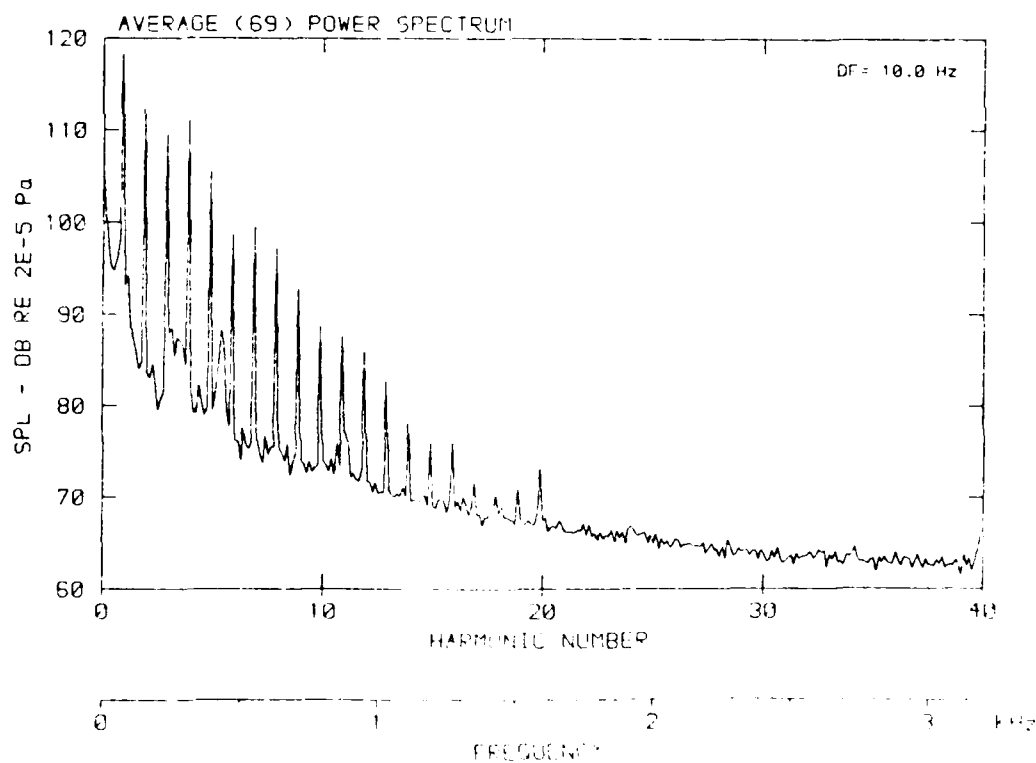
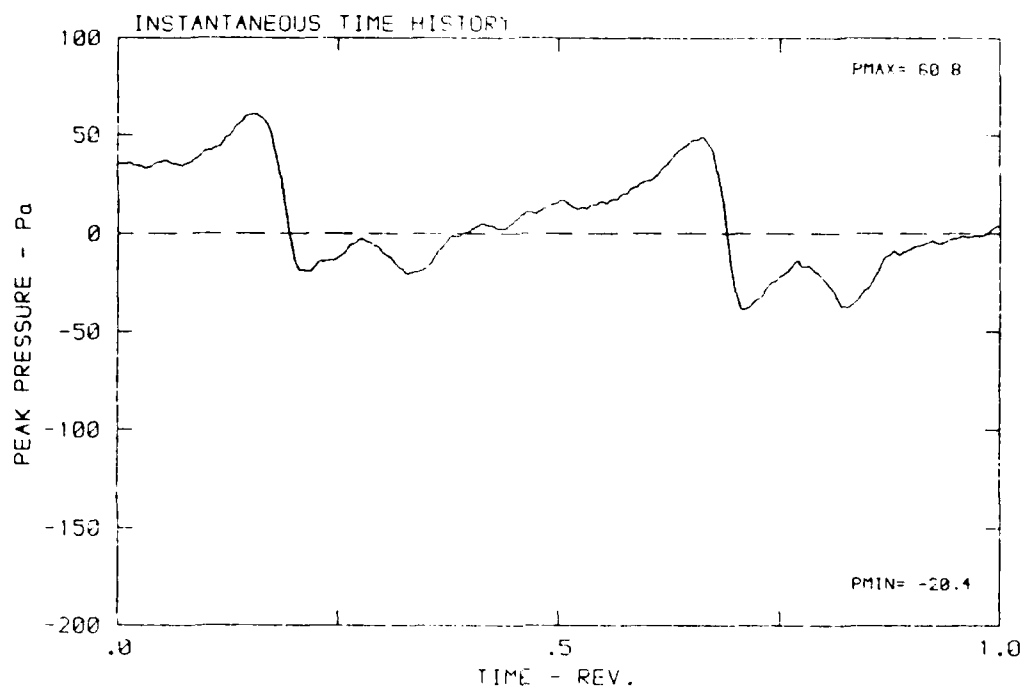
DATA POINT: FNC-2 RUN: 177 MP: 4

β : 19.9° MH: .7661 n: 2400 rpm v/u : .202 ϕ : 3.6° T: 287.7 K



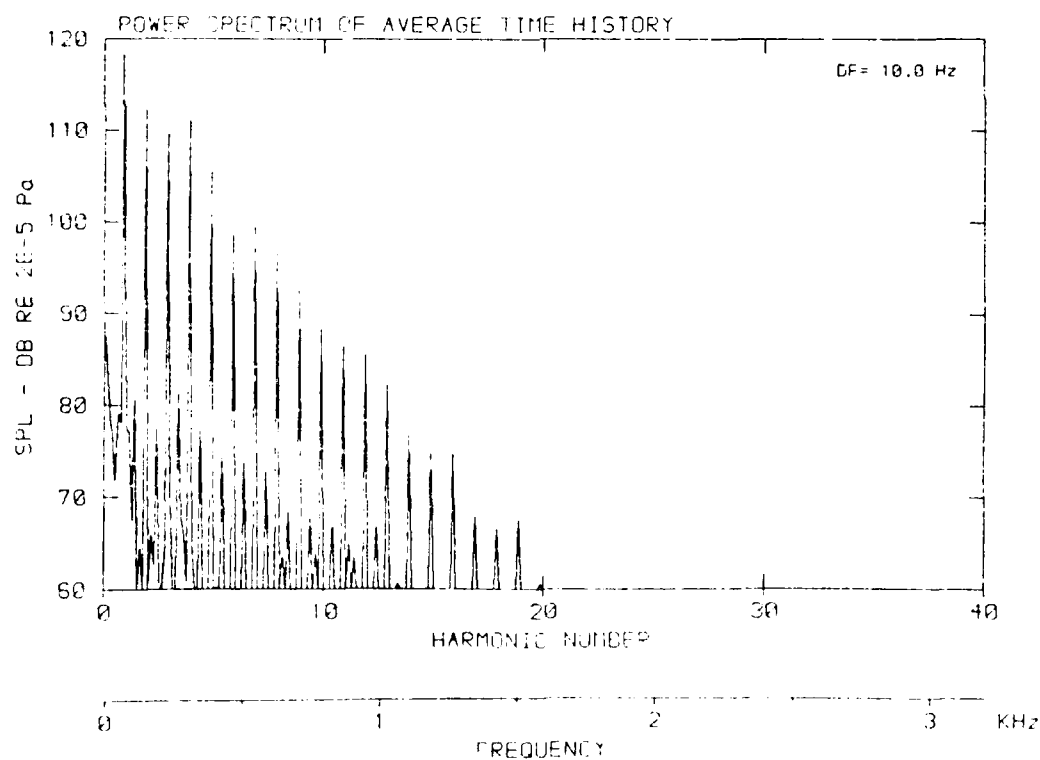
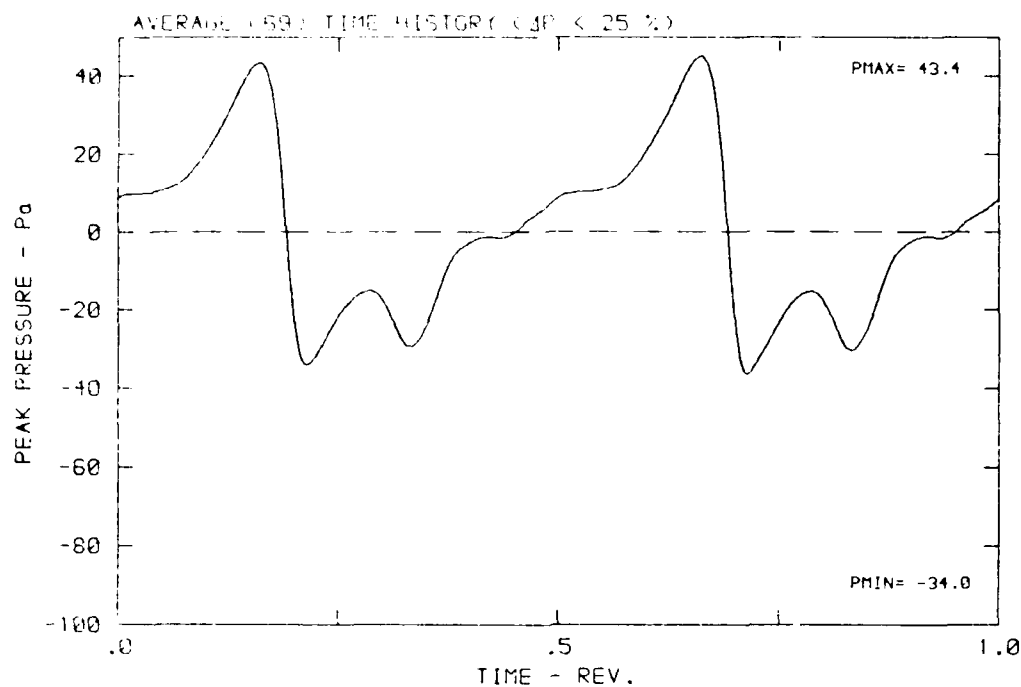
DATA POINT: FNC-2 RUN: 177 MP: 5

β : 19.9° MH: .7661 n: 2400 rpm v_{ru} : .202 ϕ : 3.6° T: 267.7 K



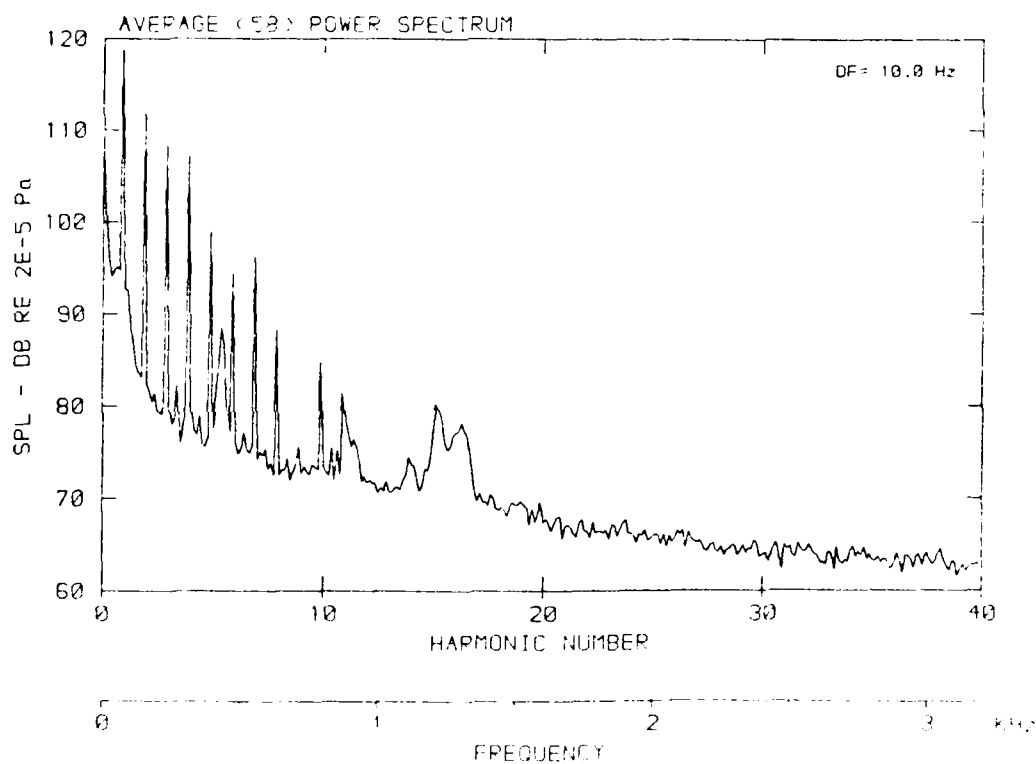
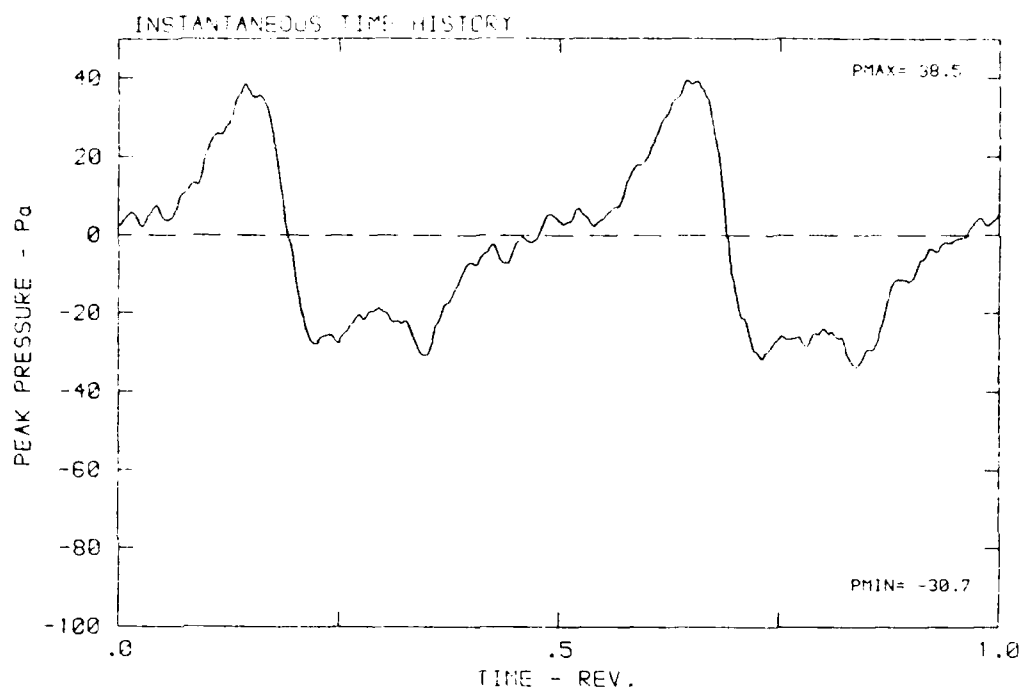
DATA POINT: FNC-2 RUN: 177 MP: 5

β : 19.9° MH: .7661 n: 2400 rpm ν_{cu} : .202 ϕ : 3.6° T: 287.7 K



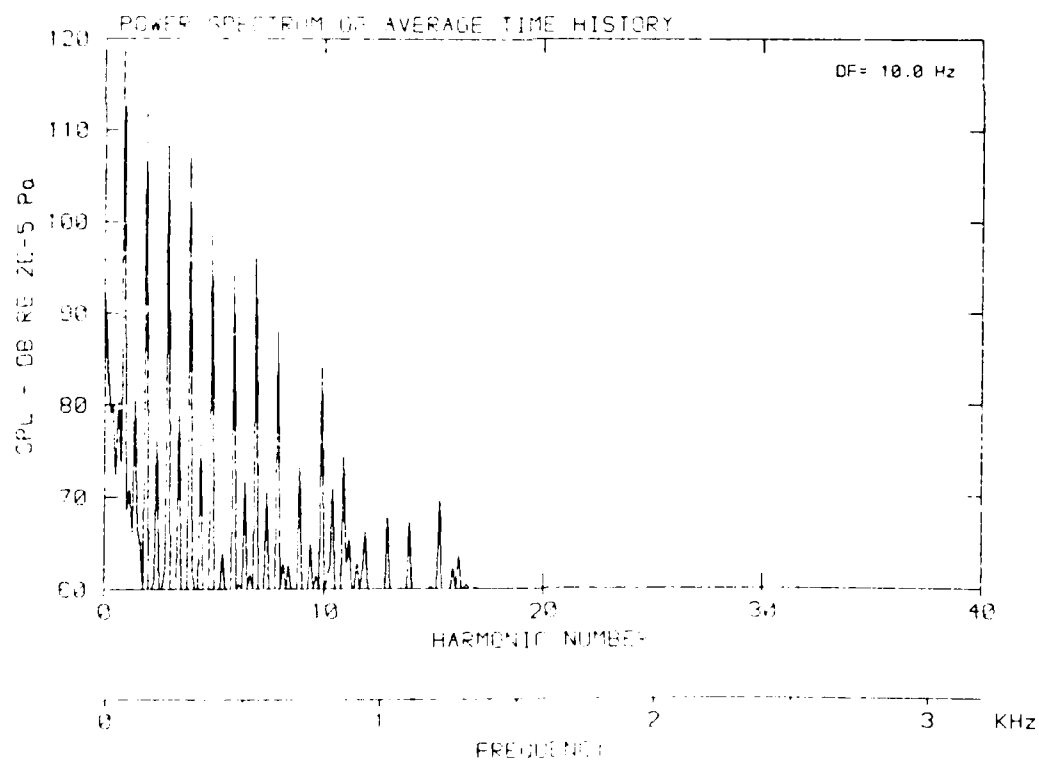
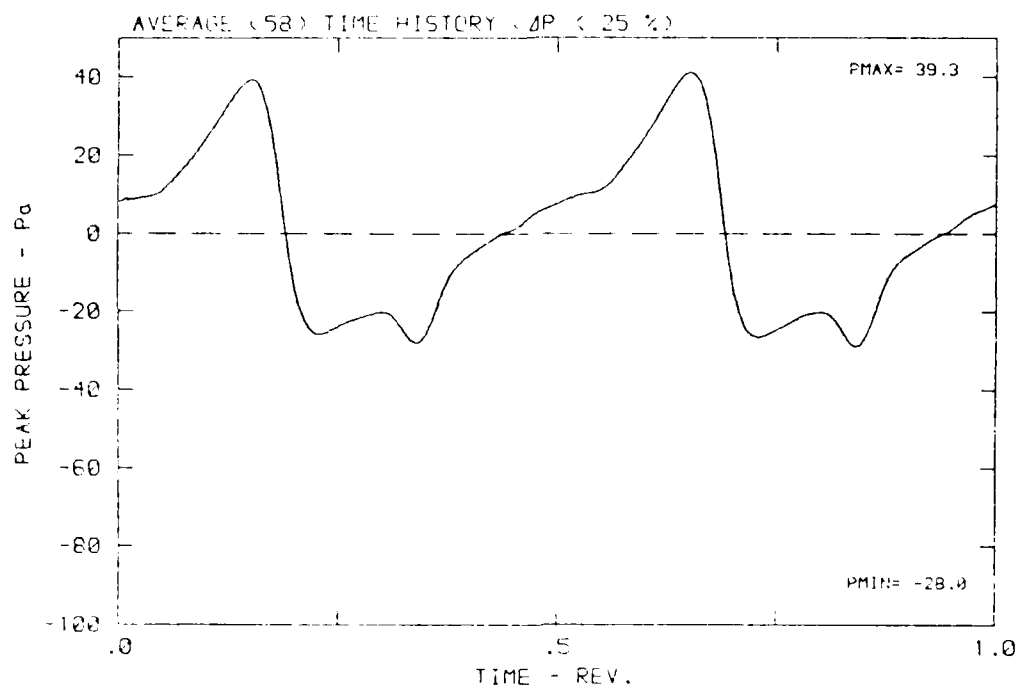
DATA POINT: ENC 2 RUN: 177 MP: E

β : 19.9° MH: .7661 n: 2400 rpm v/u: .202 ϕ : 3.6° T: 280.7°



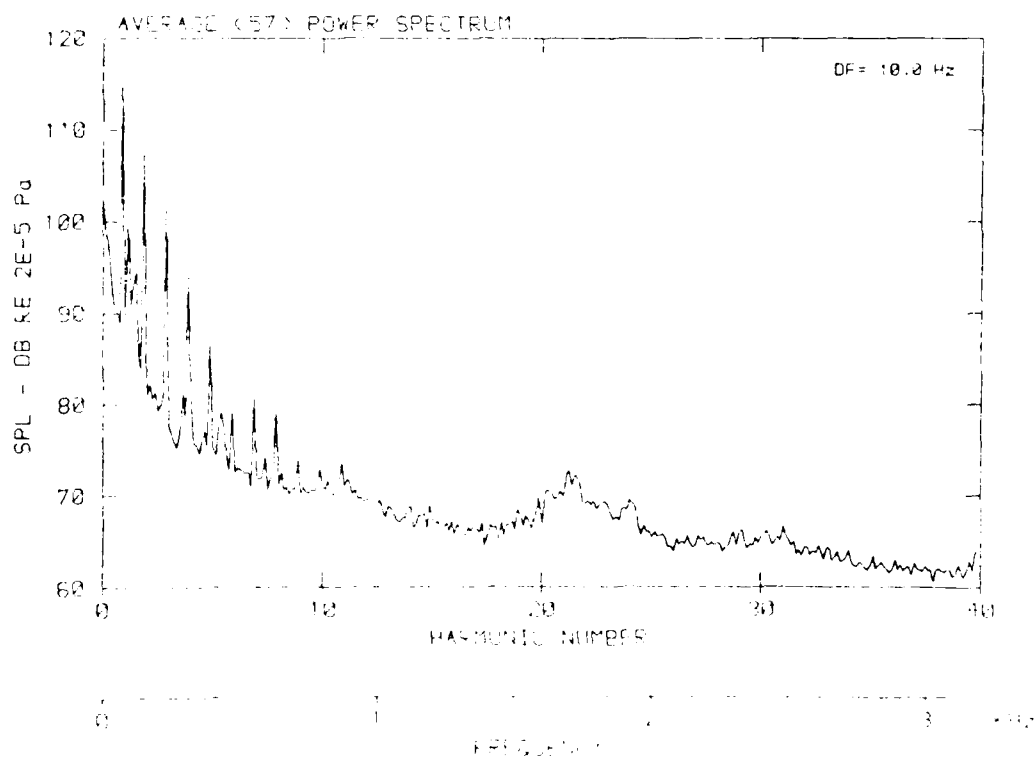
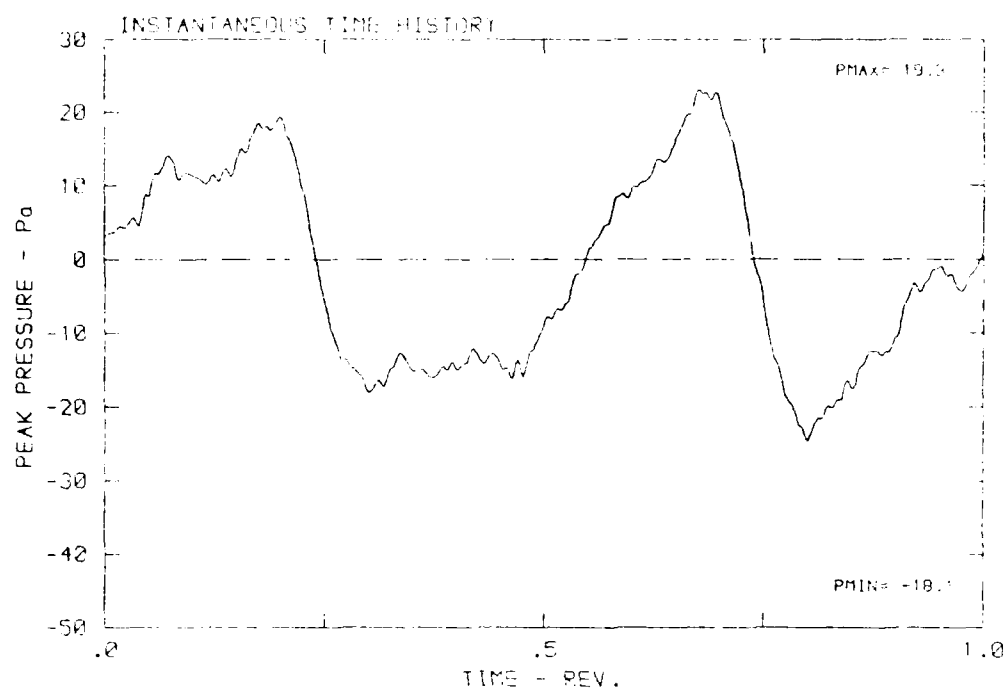
DATA POINT: FNC-2 RUN: 177 MP: 6

β : 19.9° MH: .7661 n: 2400 rpm v/u : .202 ϕ : 3.6° T: 287.7 K



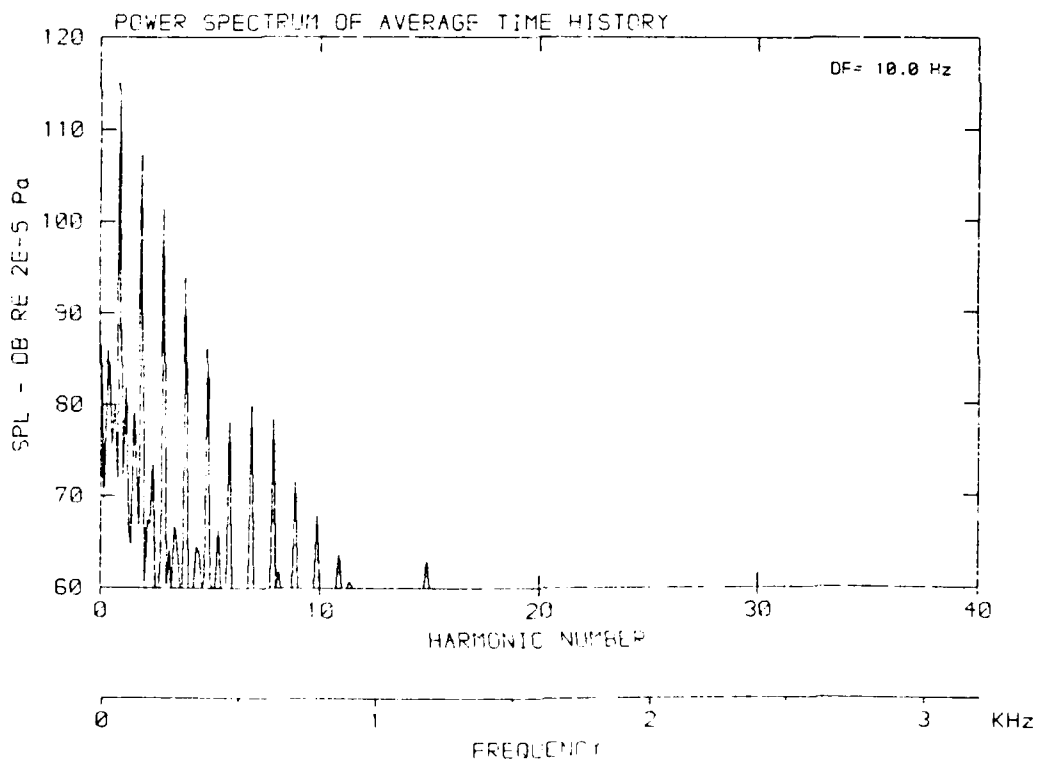
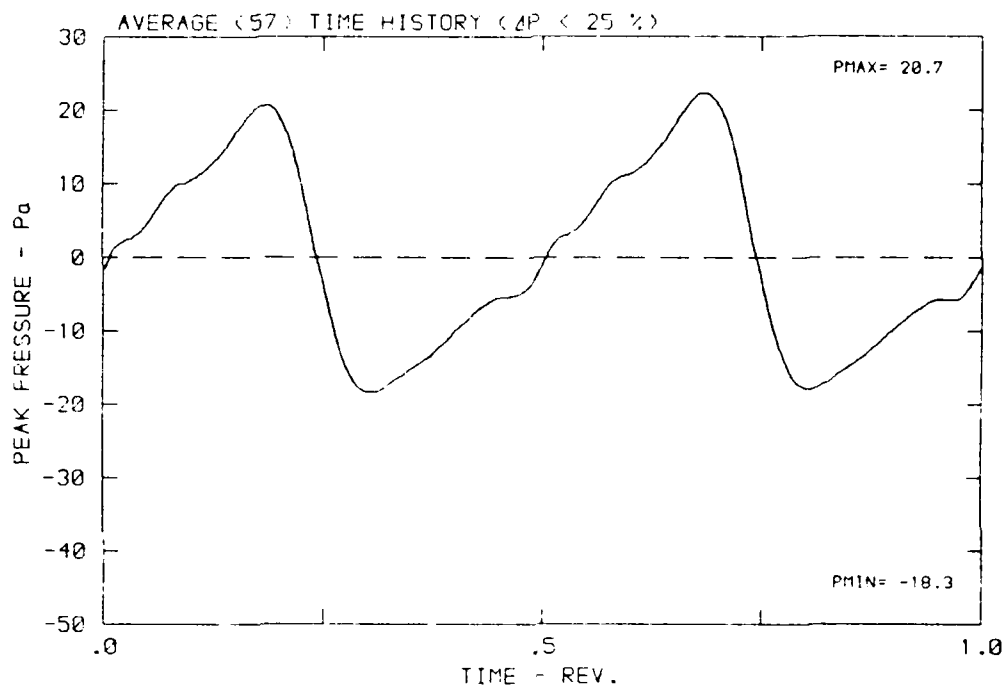
DATA POINT: FND-2 RUN: 177 NF: 7

β : 19.9° MH: .766' n: 2400 rpm v/u : .202 ϕ : 3.5° T: 290.0°



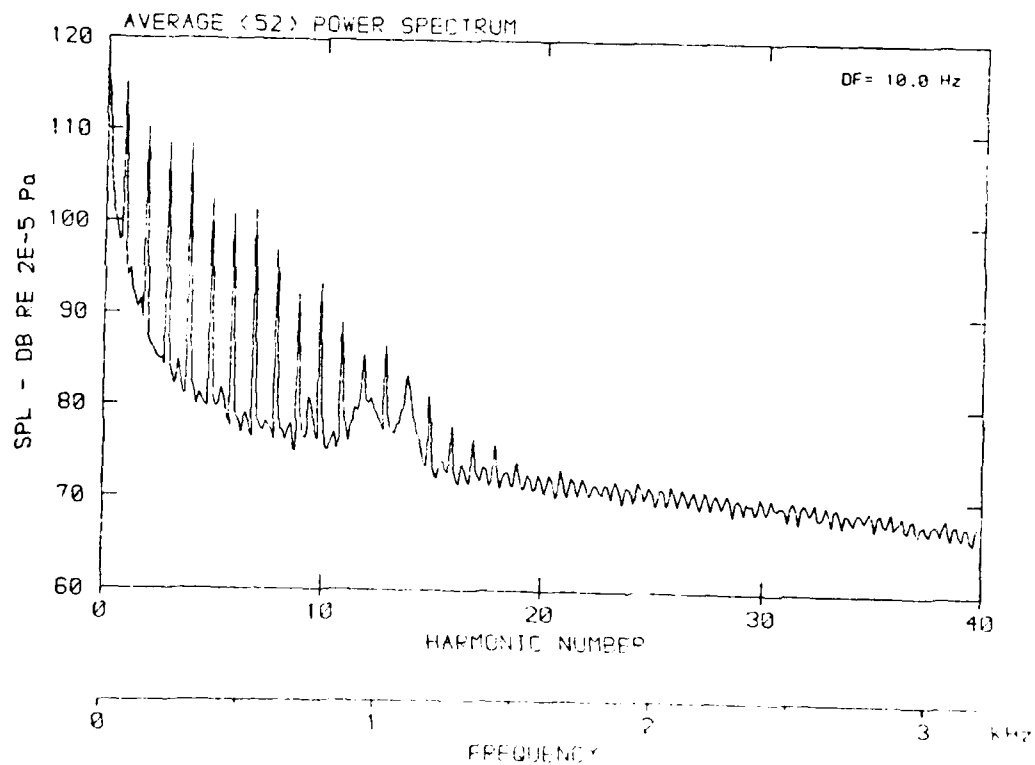
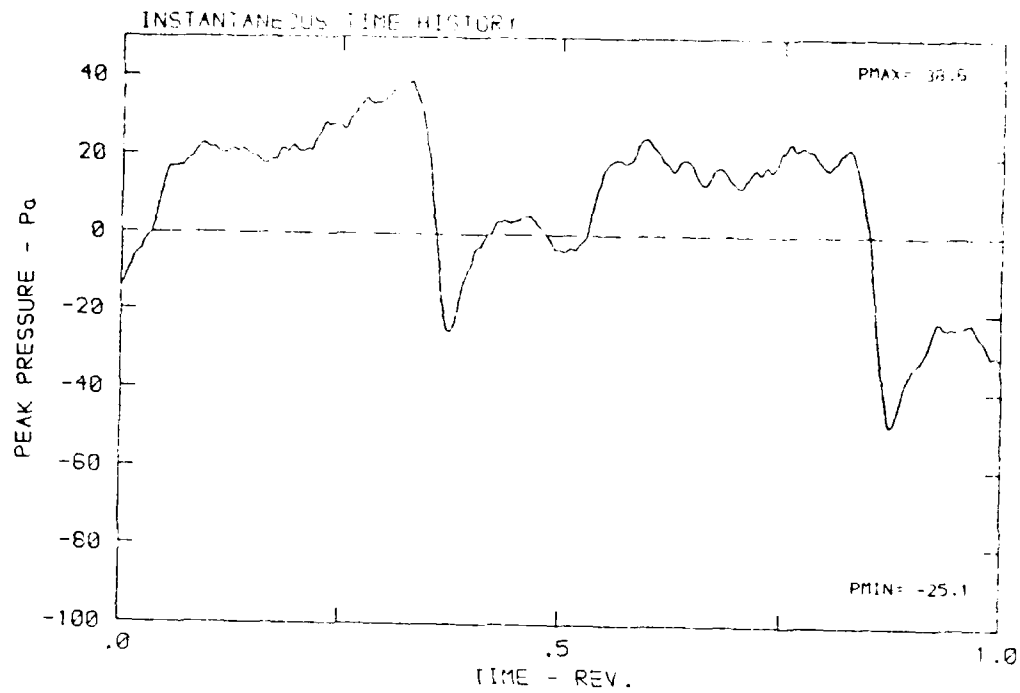
DATA POINT: FNC-2 RUN: 177 MP: 7

β : 19.9° MH: .7661 n: 2400 rpm v/u: .202 ϕ : 3.6° T: 287.7 K



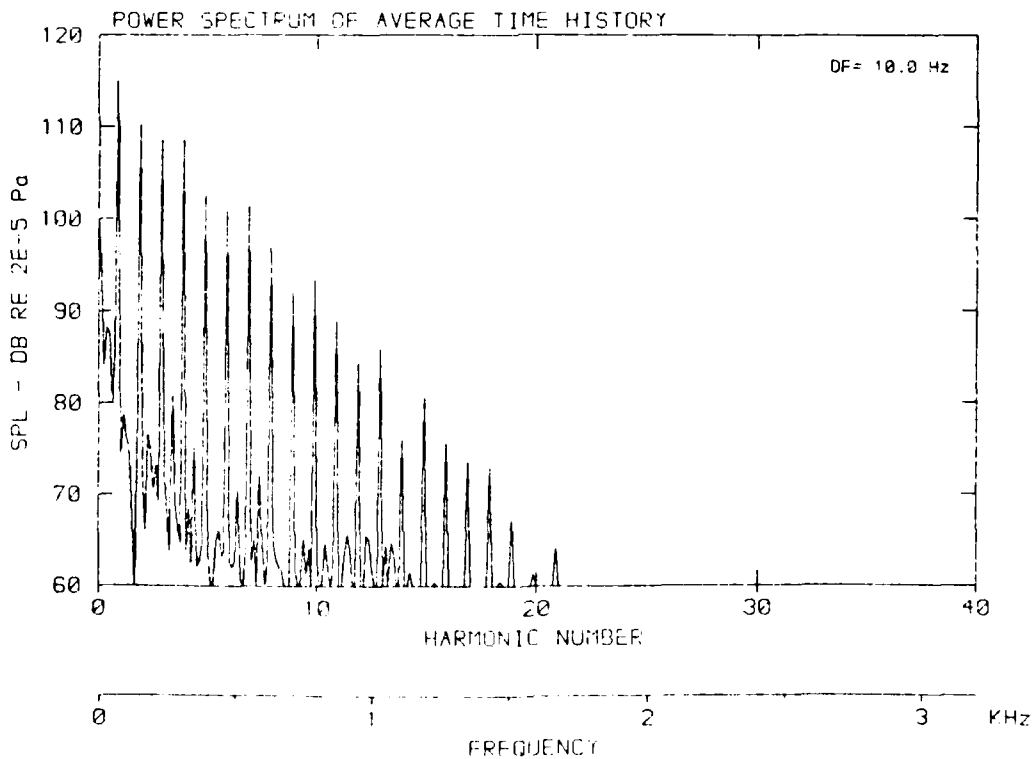
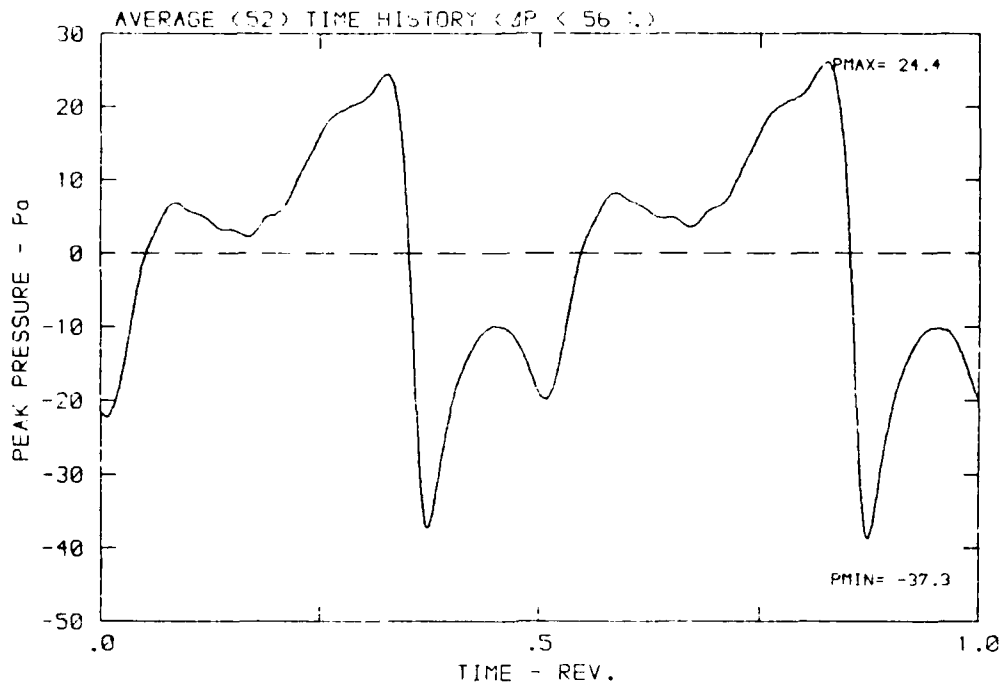
DATA POINT: ENC-1 RUN: 177 MF: 3

β : 19.9° MF: .7561 ω : 2400 rpm ν : .201 ϕ : 3.6° T: 287.7



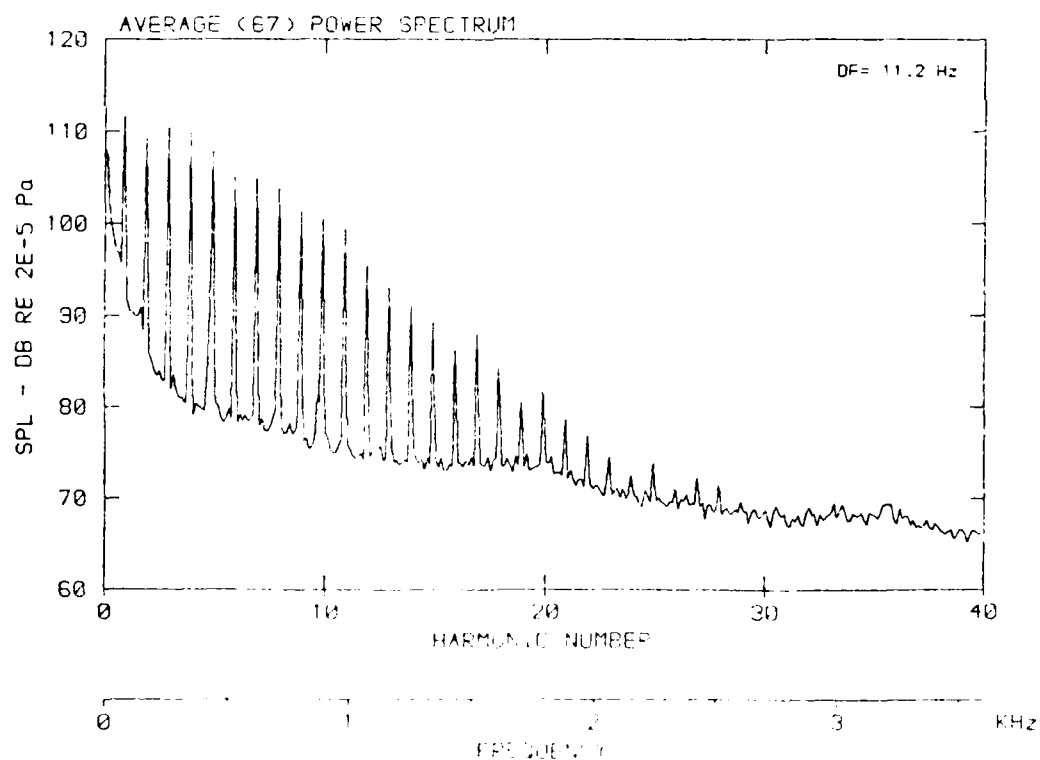
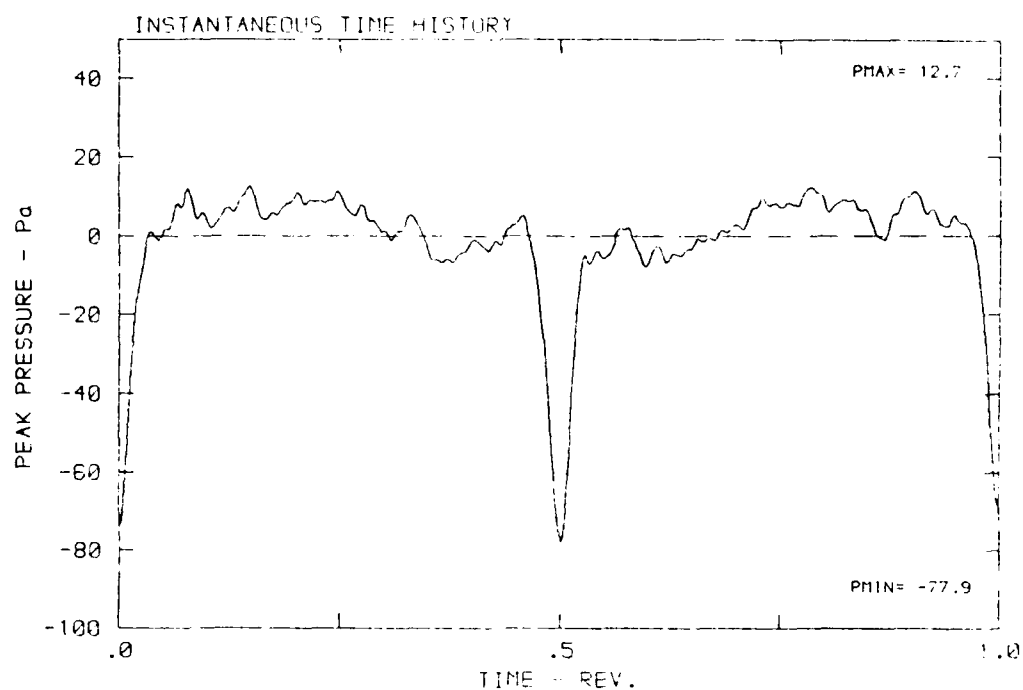
DATA POINT: FNC-2 RUN: 177 MP: 9

β : 19.9° MH: .7661 n: 2400 rpm v: .202 ϕ : 3.6° T: 287.7 K



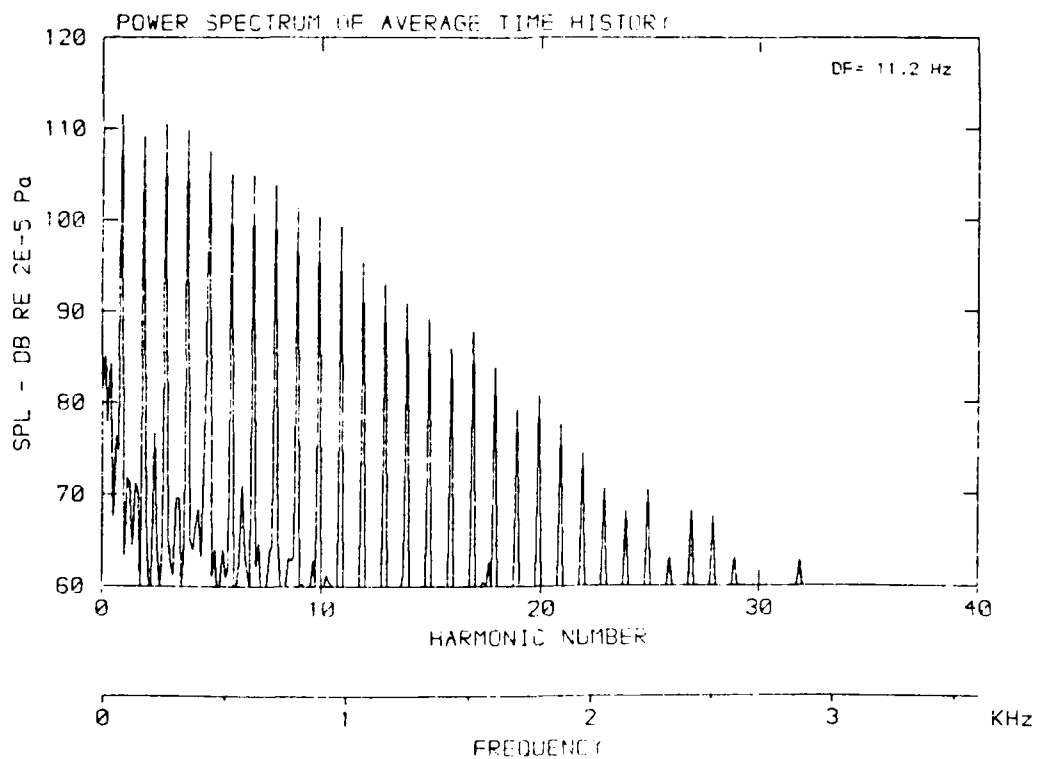
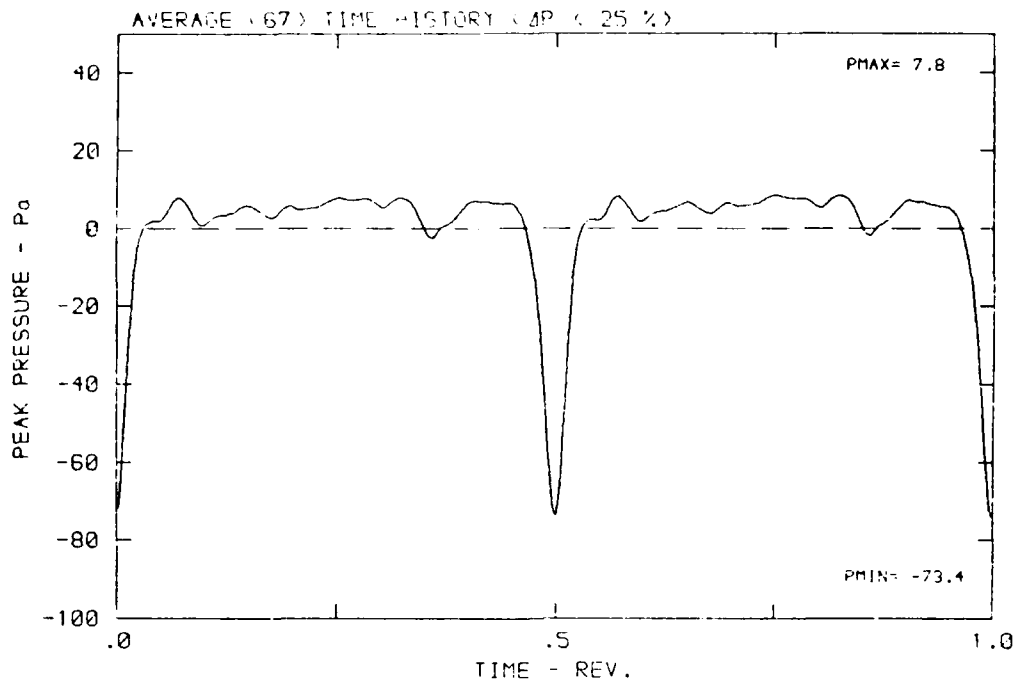
DATA POINT: FNC-3 RUN: 178 MF: 1

β : 19.9° MH: .8740 n: 2700 rpm v/u: .269 ϕ : 3.6° T: 160.3 K



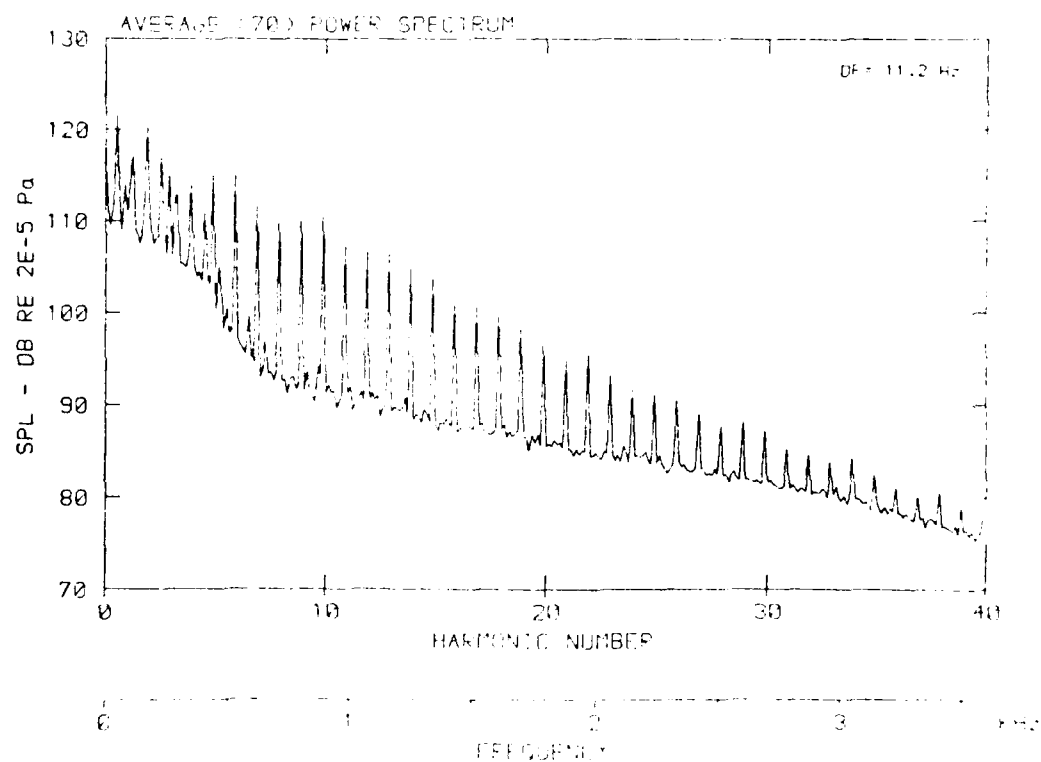
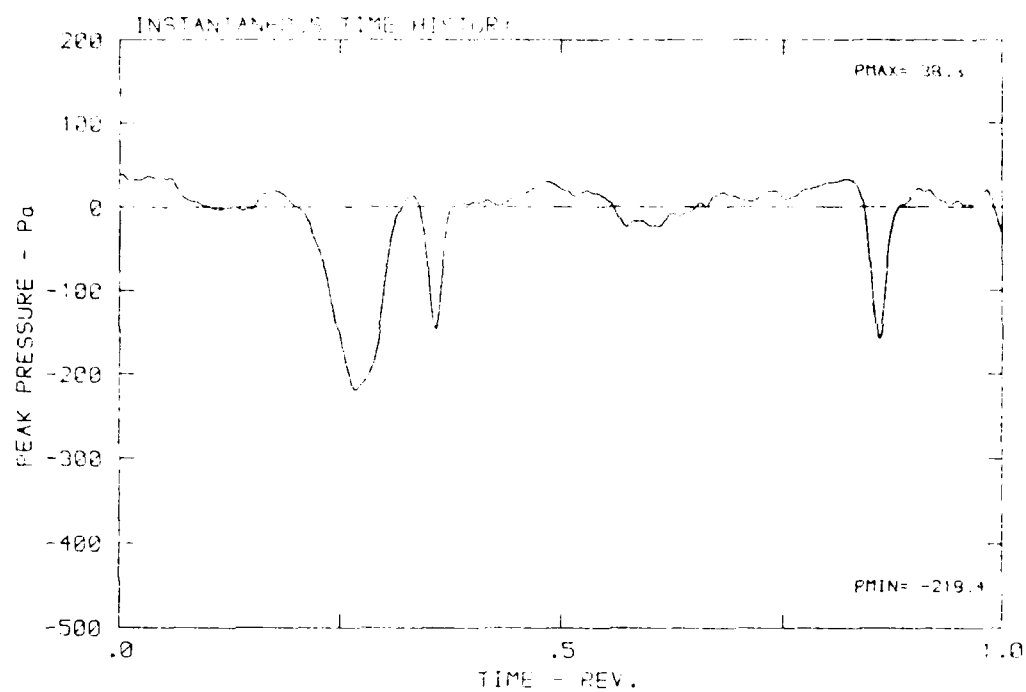
DATA POINT: FNC-3 RUN: 178 MP: 1

β : 19.9° MH: .8740 n: 2700 rpm v/u : .269 ϕ : 3.6° T: 288.3 K



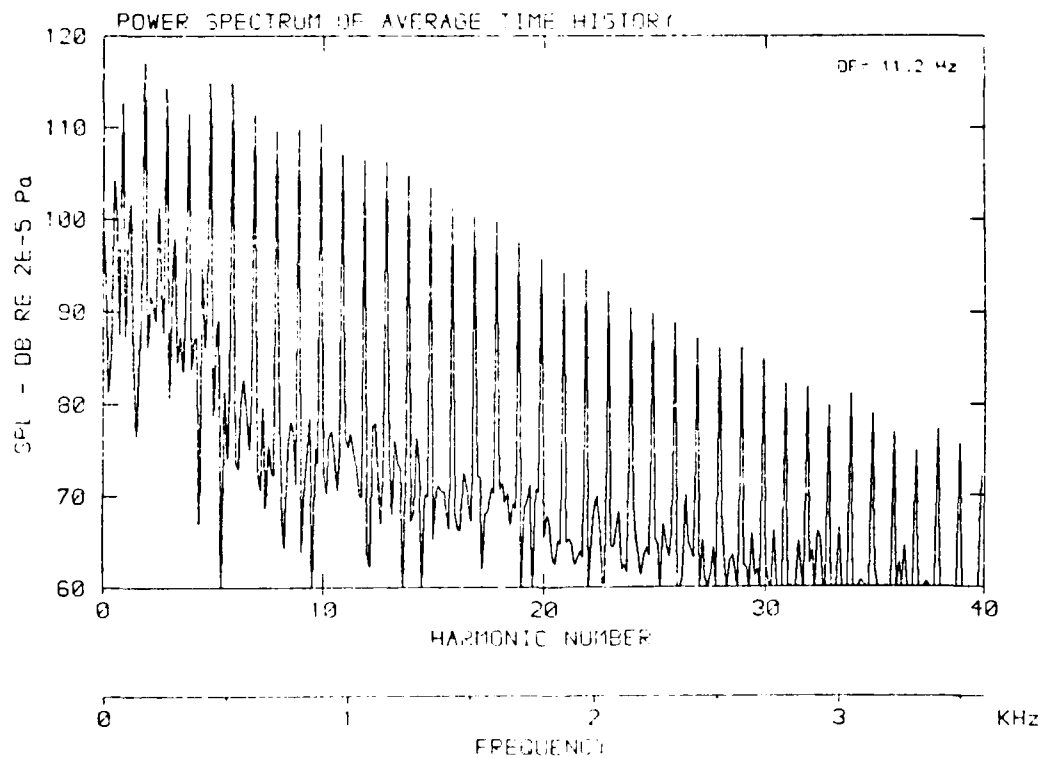
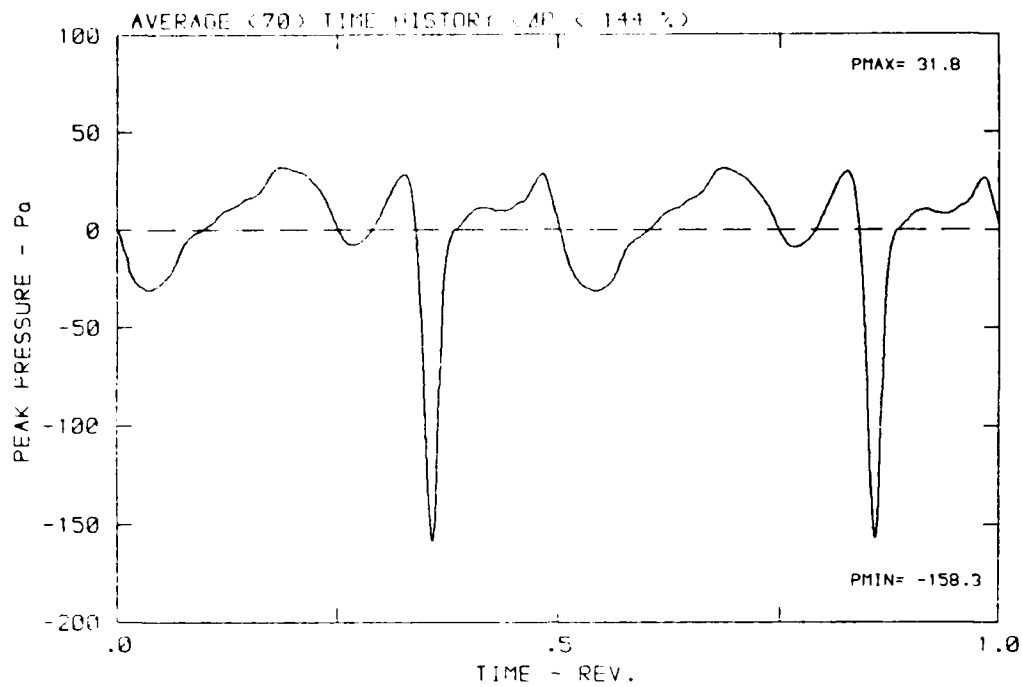
DATA POINT: END-3 RUN: 176 MF: 2

β : 19.9° MH: .3740 n: 2700 rpm v/rot: .280 ϕ : 3.6° τ : 284.2 s



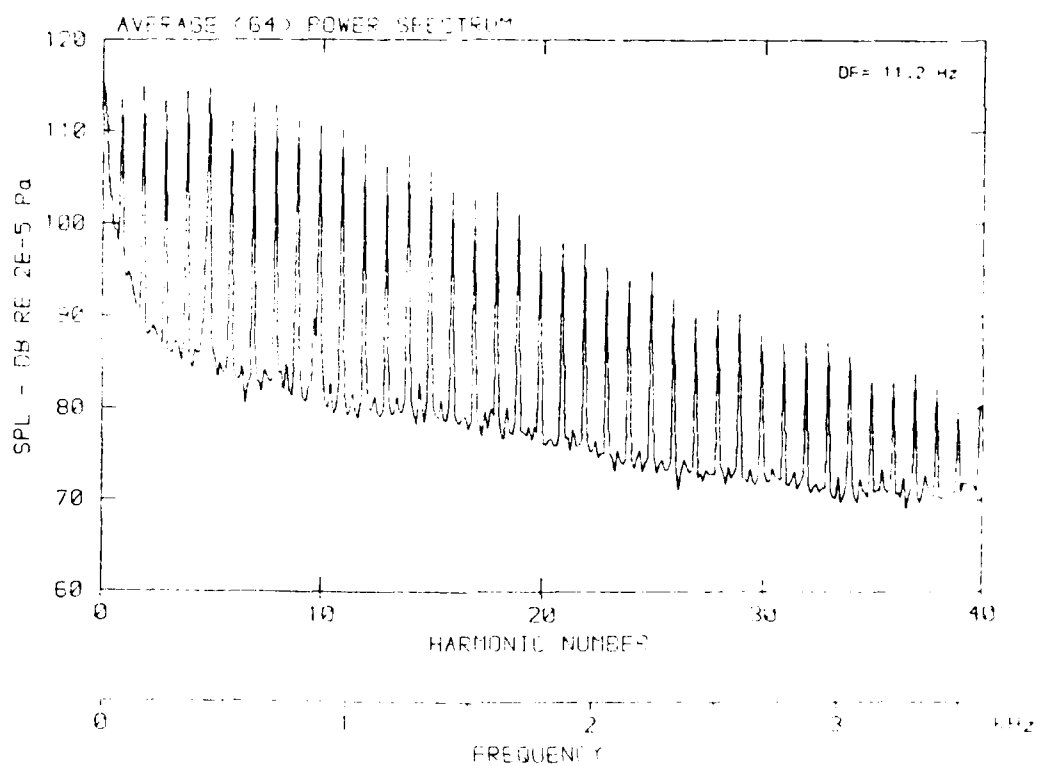
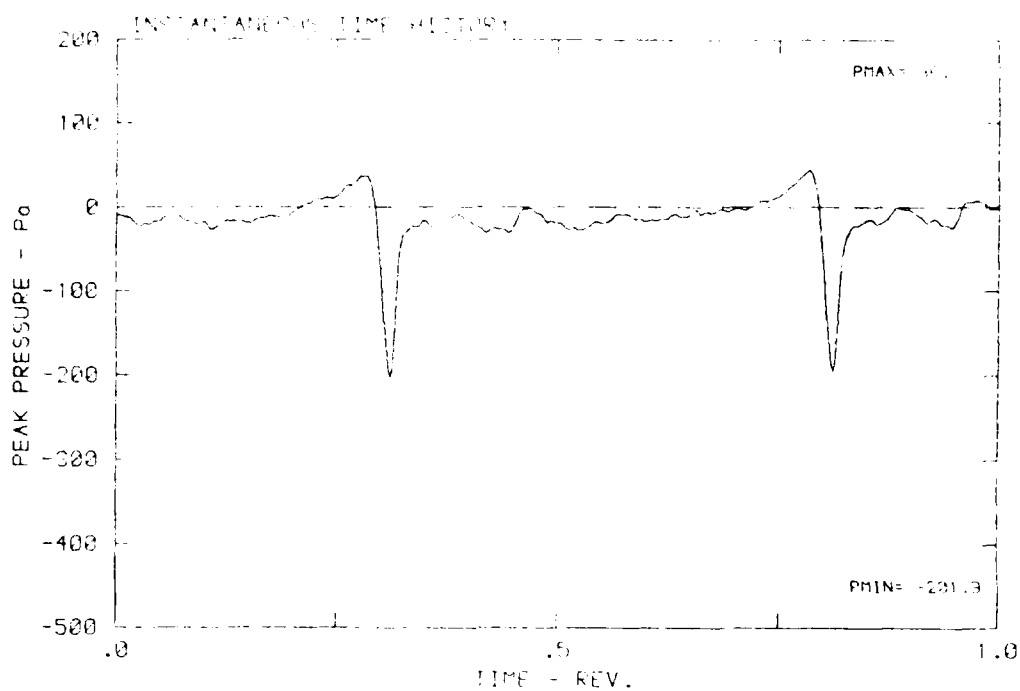
DATA POINT: FNC-3 RUN: 178 MP: 2

β : 19.9° MH: .8740 n: 2700 rpm v: .269 ϕ : 3.6° T: 288.3 K



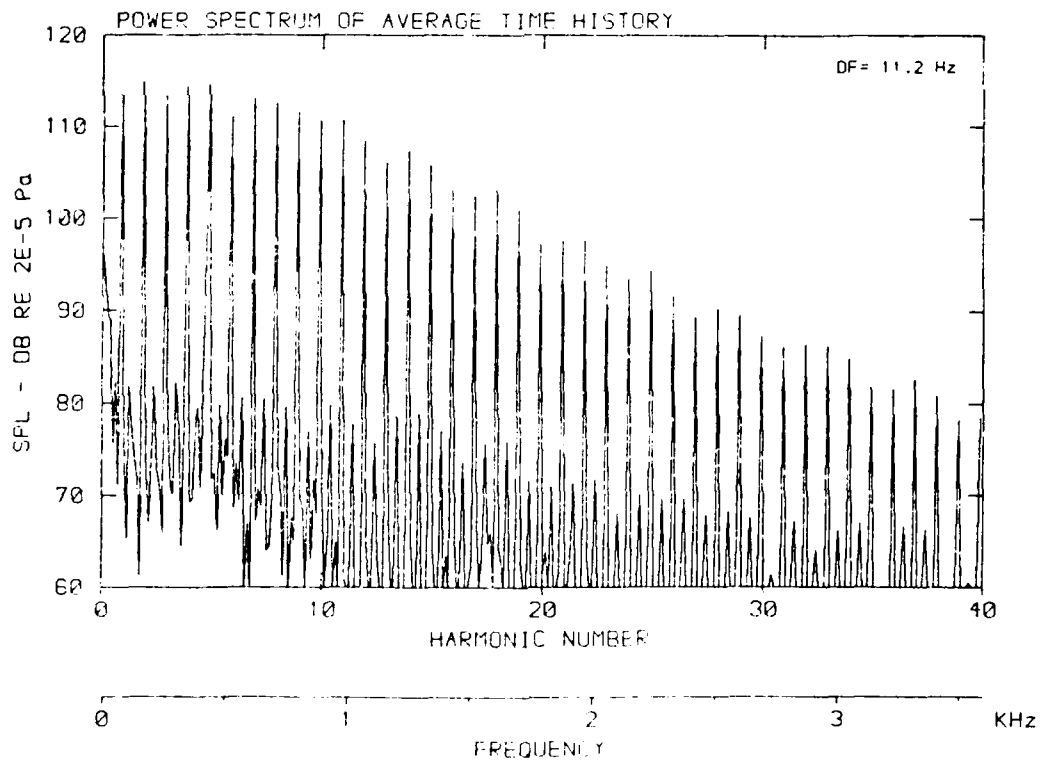
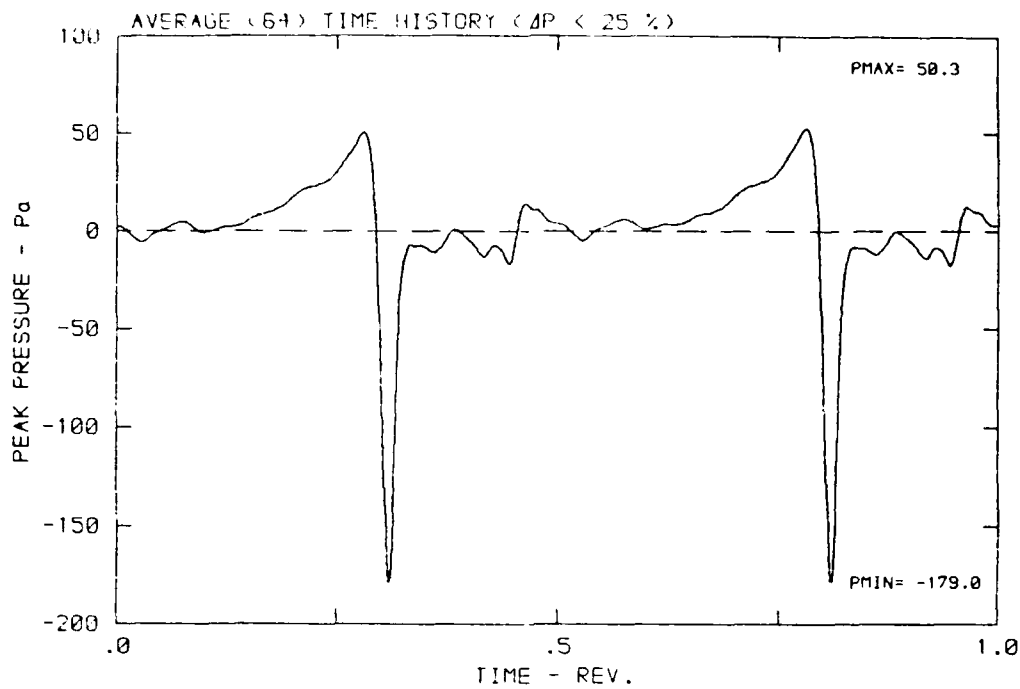
DATA POINT: RUN: 17

β : 19.9° μ : .9740 η : 2700 ν : 1.266 ϕ : 3.6° τ : 1.04



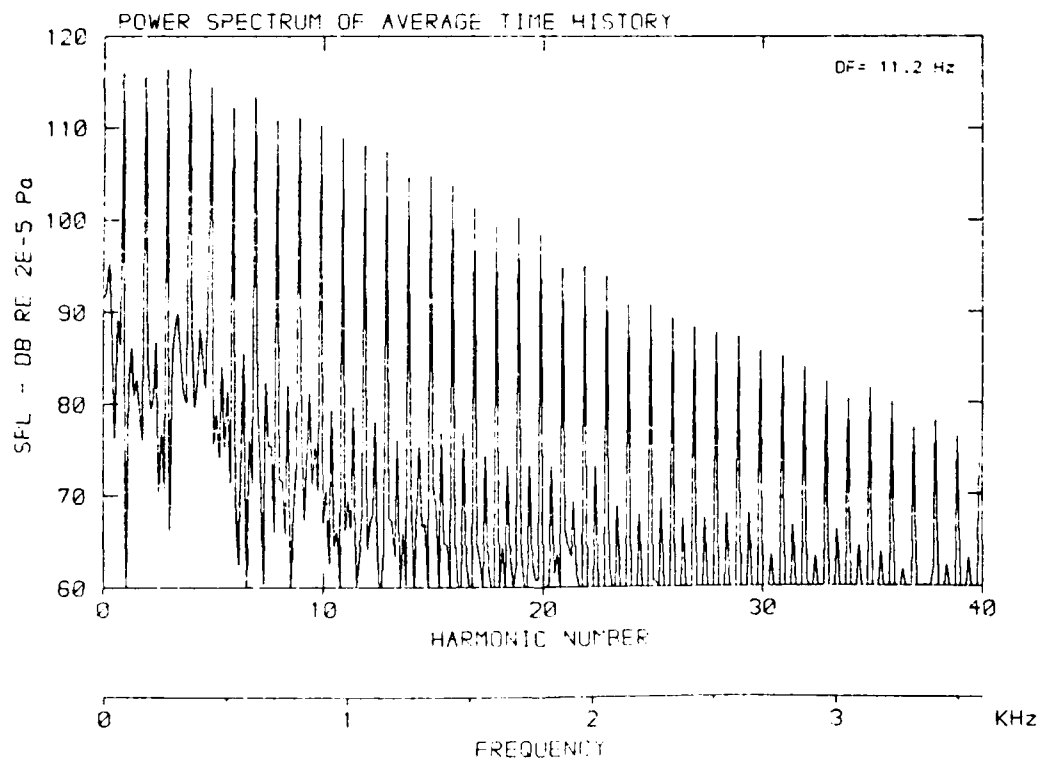
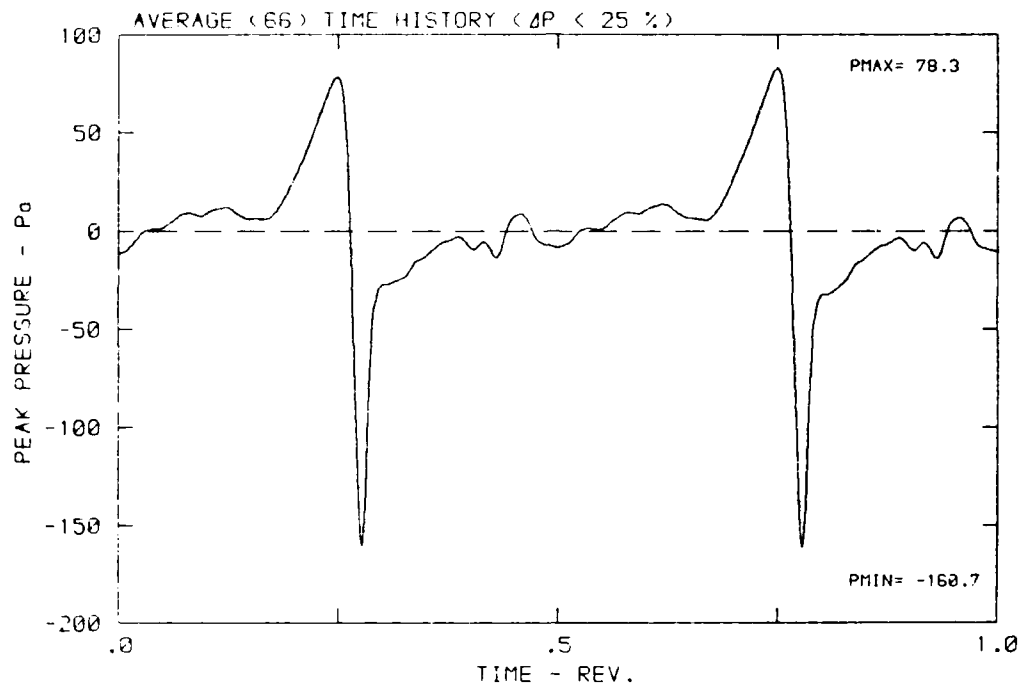
DATA POINT: FNC-3 RUN: 178 MP: 3

β : 19.9° MH: .8740 n: 2700 rpm v/u : .269 ϕ : 3.6° T: 288.3 K

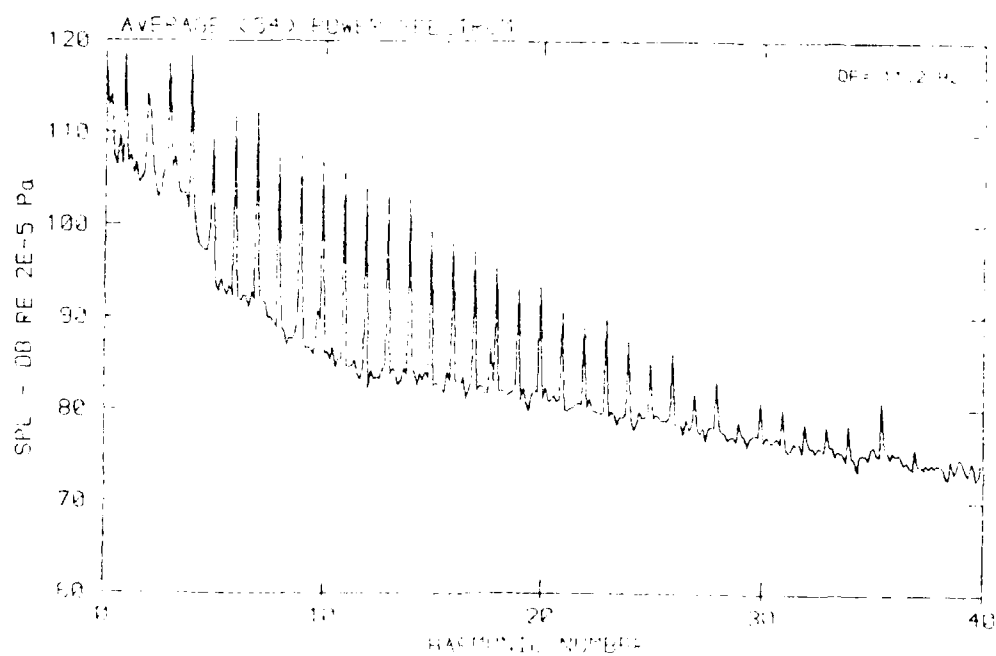
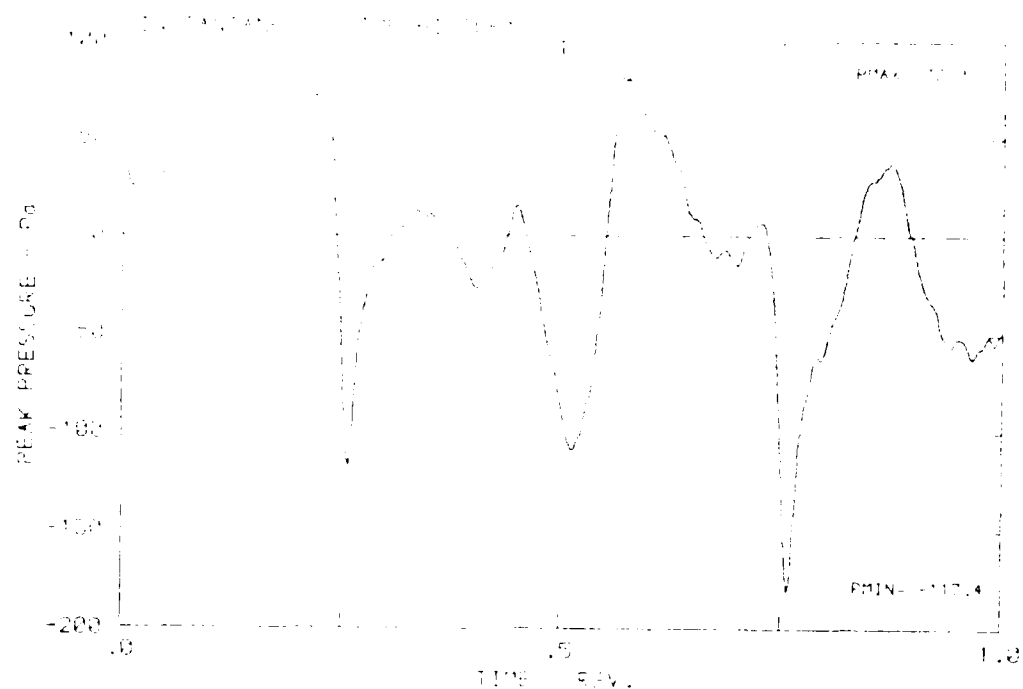


DATA POINT: FNC-3 RUN: 178 MP: 4

β : 19.9° MH: .8740 n: 2700 rpm v/u: .269 ϕ : 3.6° T: 288.3 K

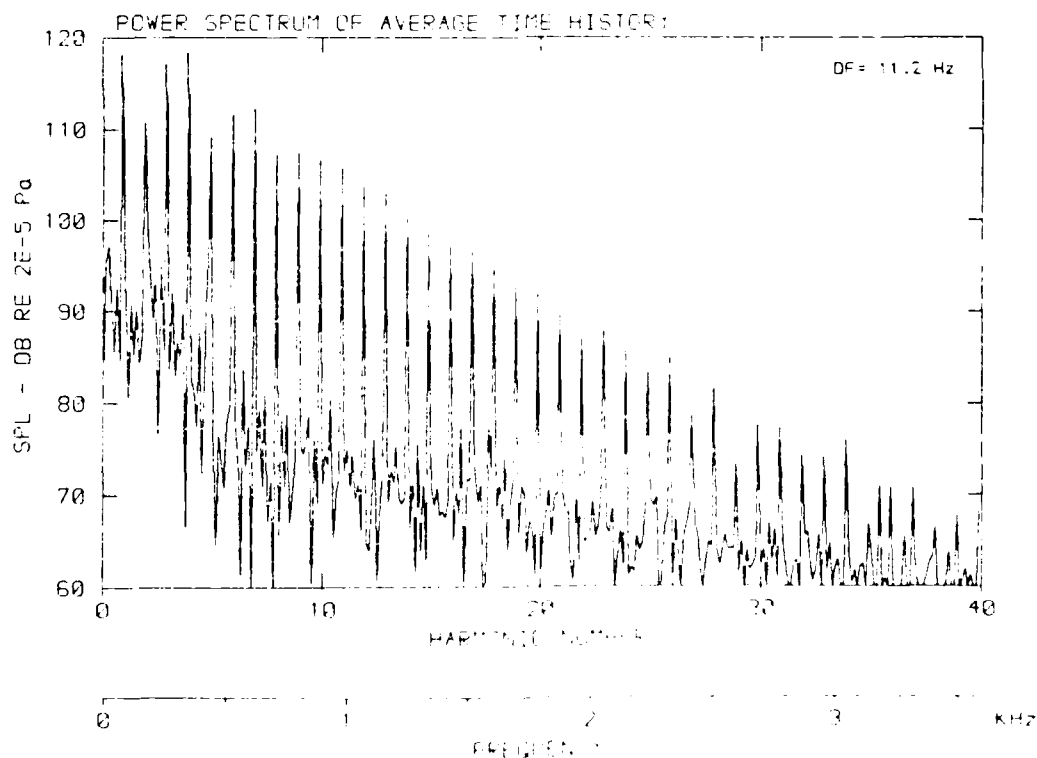
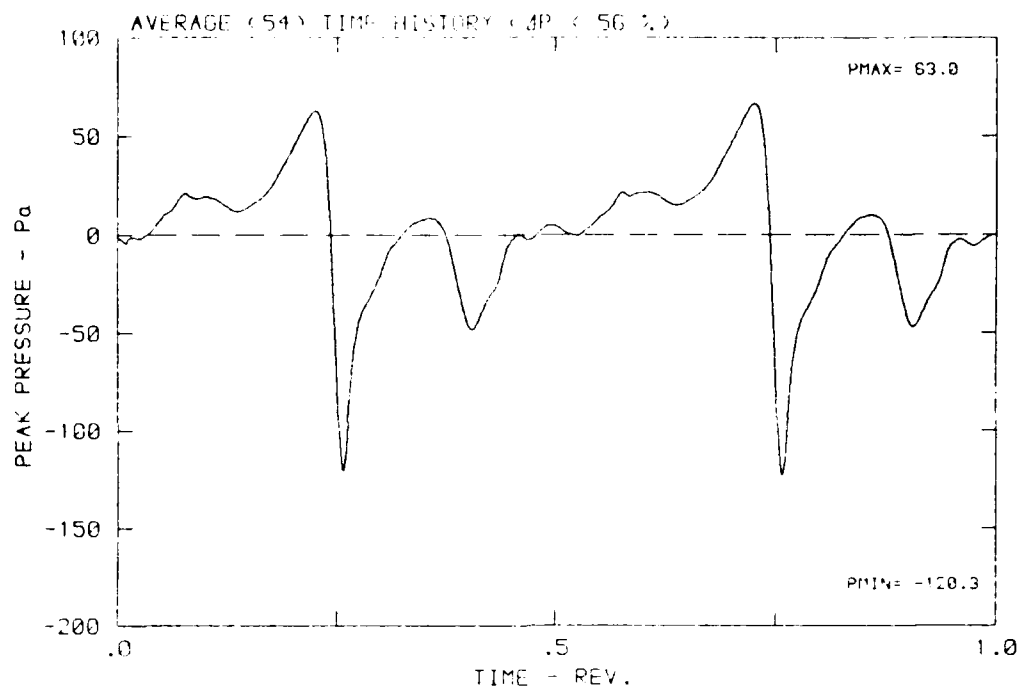


9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 841. 842. 843. 844. 845. 8



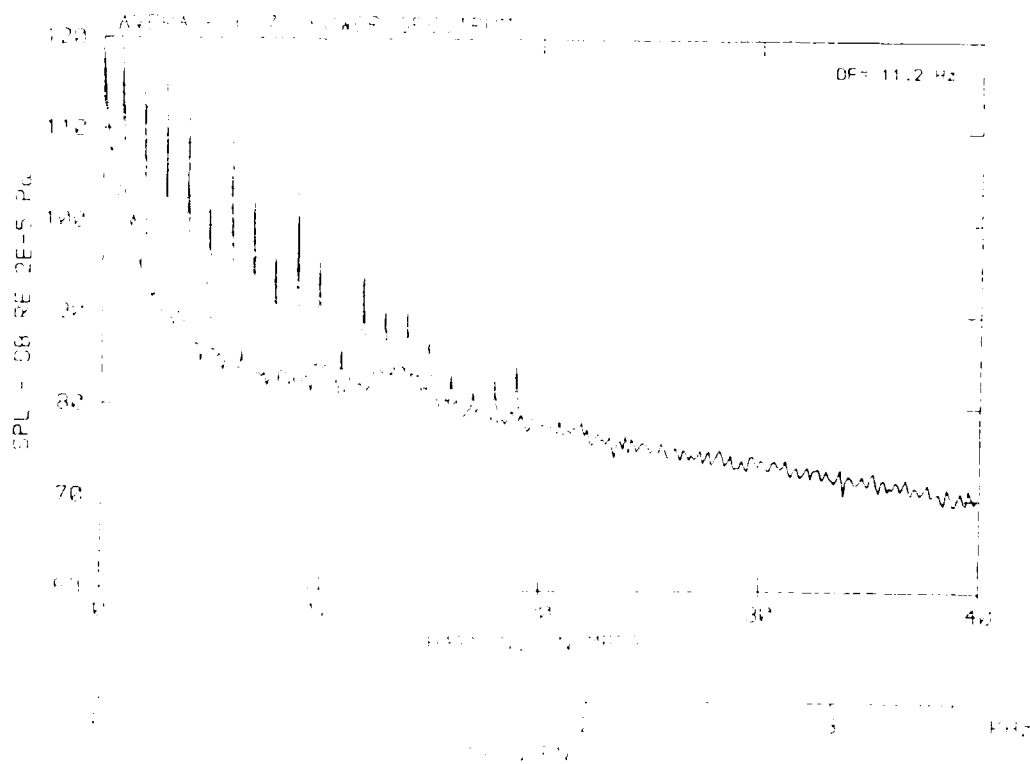
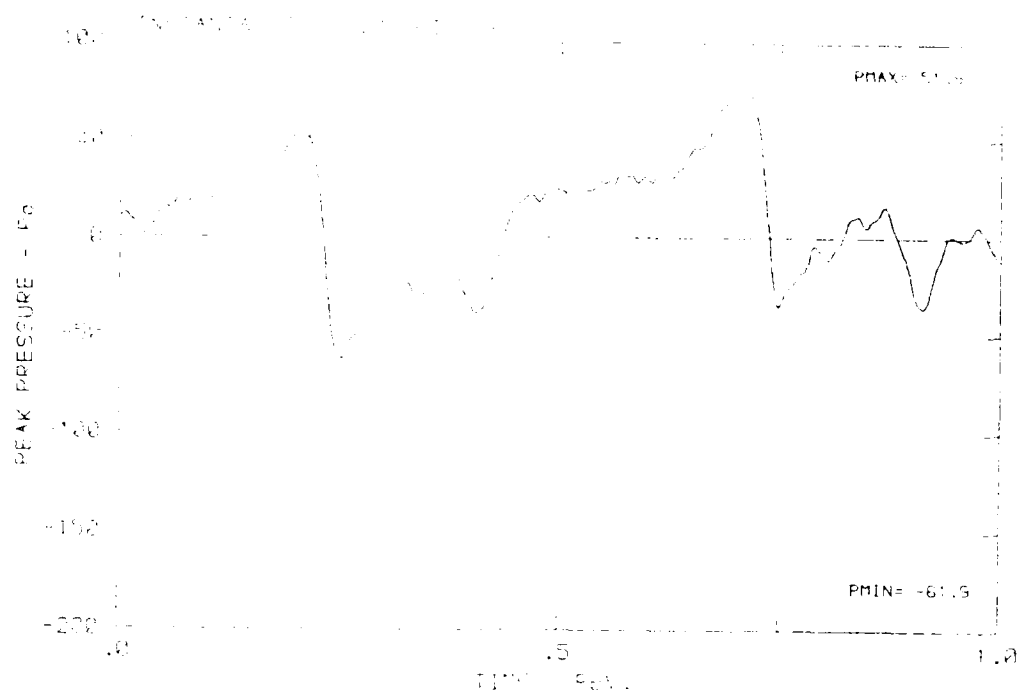
DATA POINT: FNC-3 RUN: 178 MP: 5

β : 19.9° MH: .8740 n: 2700 rpm ν : .269 ϕ : 3.6° T: 288.3 K



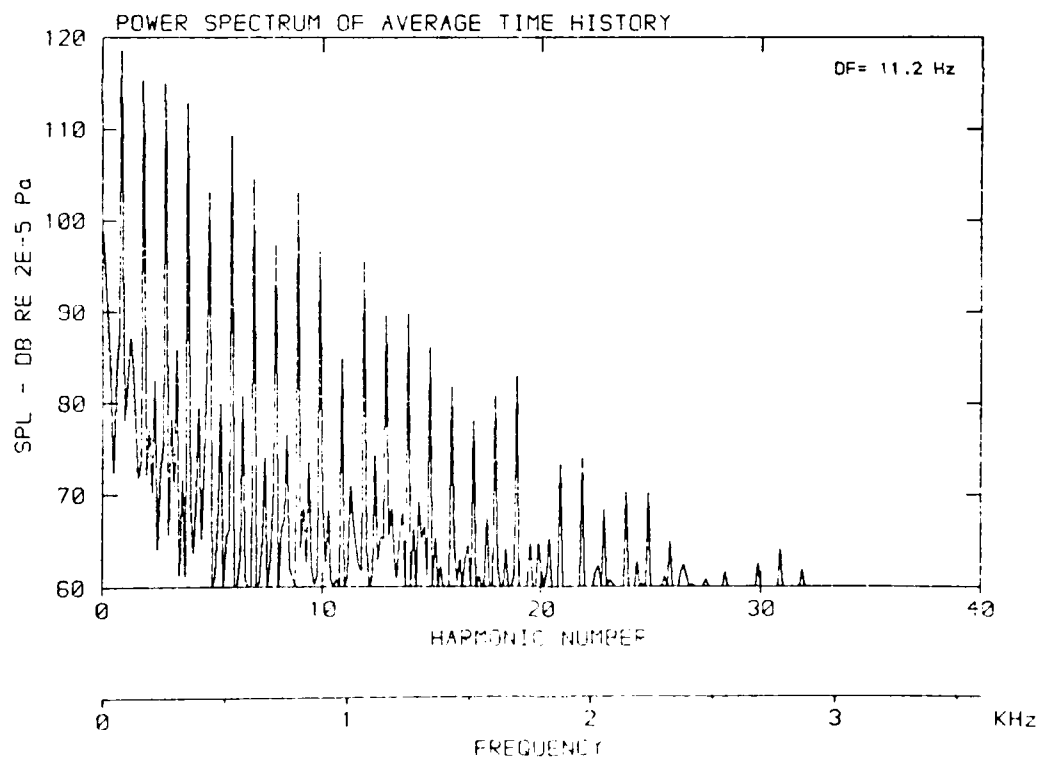
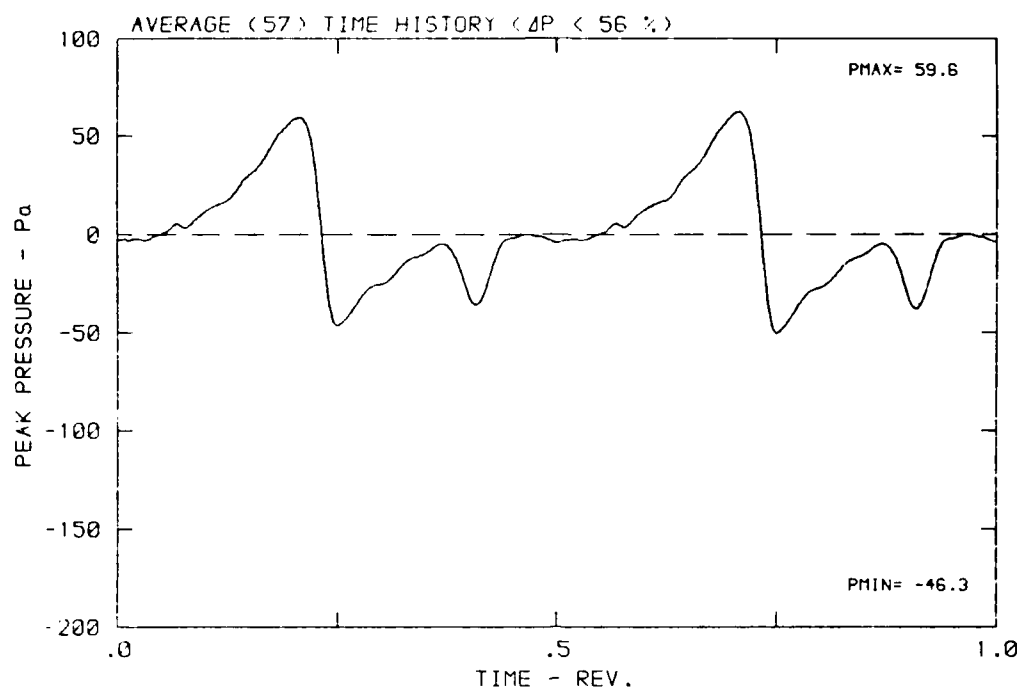
DATA ACQUISITION SYSTEM (PHASE 1)

8: 19.1.17 14:00:00 (TIME) 100.00 (FREQ) 100.00 (PHASE)



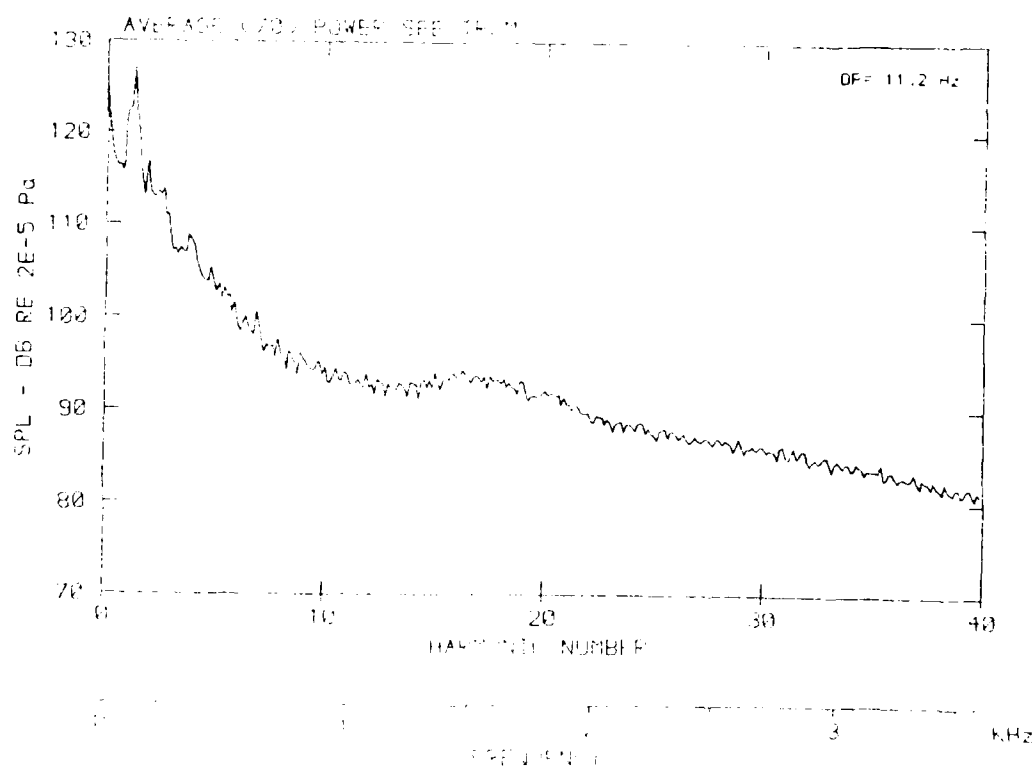
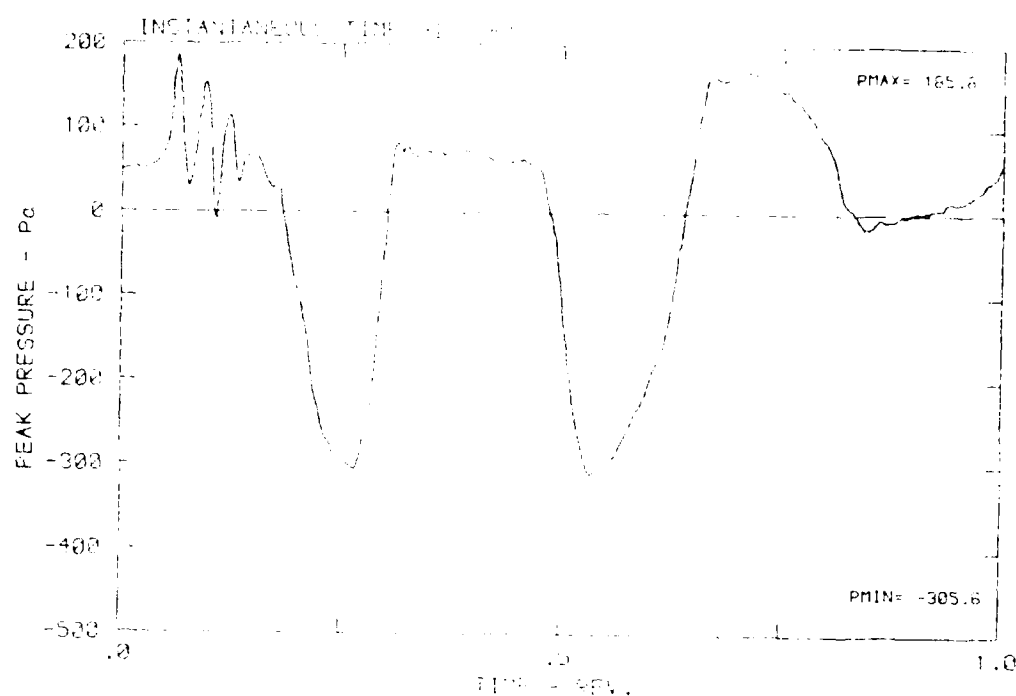
DATA POINT: FNC-3 RUN: 178 MP: 6

β : 19.9° MH: .8740 n: 2700 rpm v/u: .269 ϕ : 3.6° T: 288.3 K



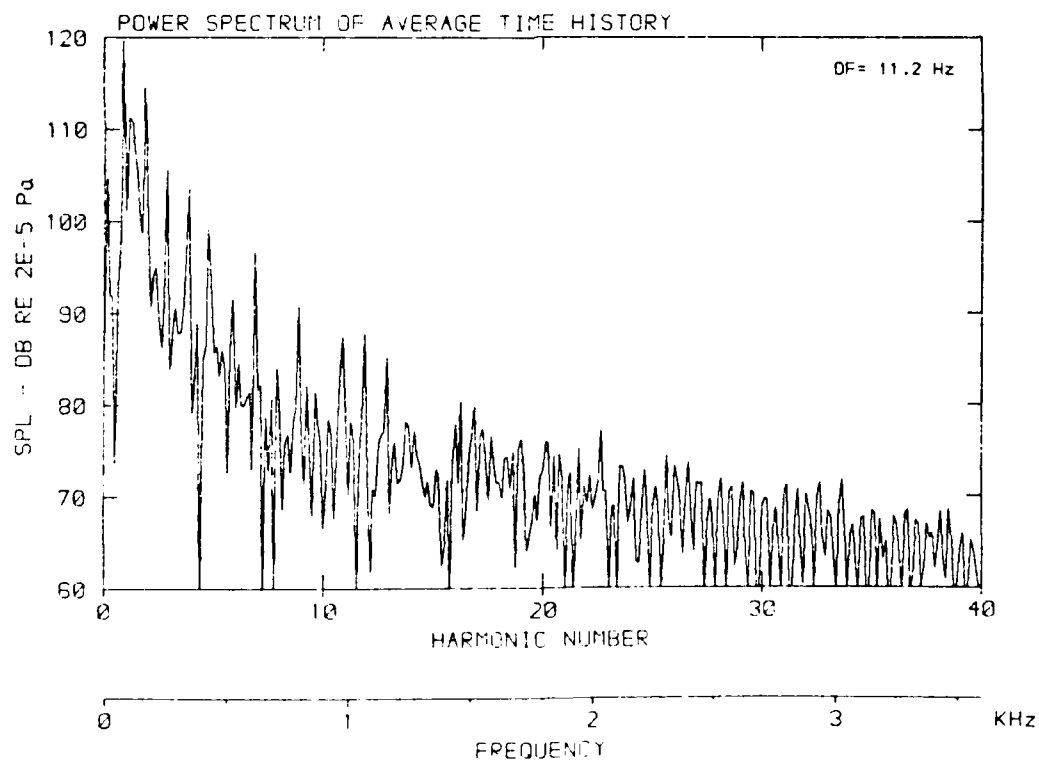
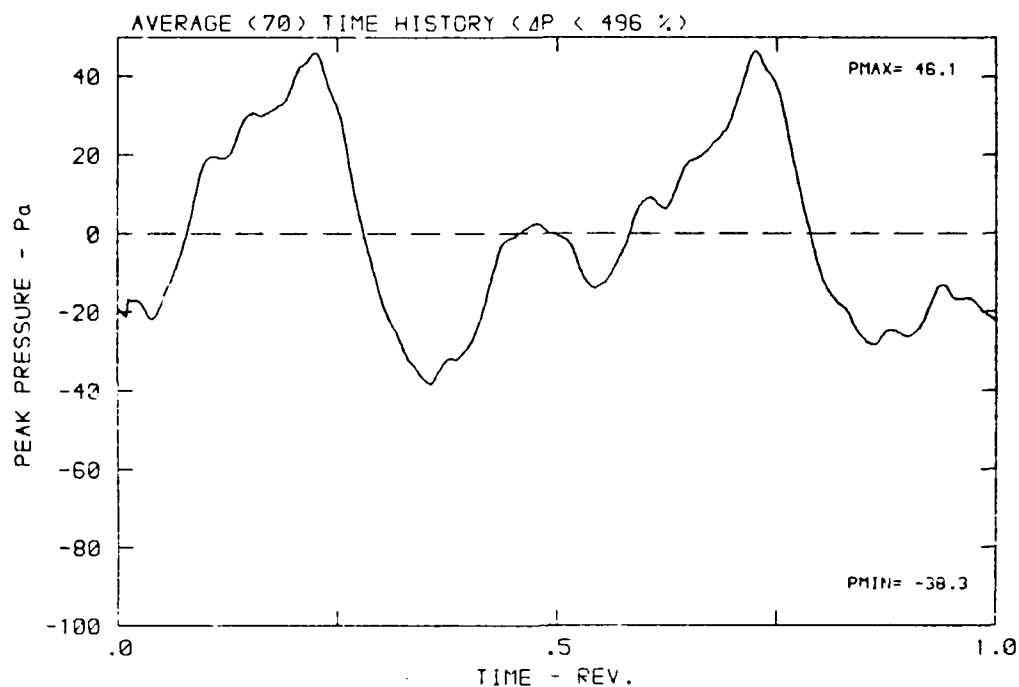
DATA POINTS END 12 H01.1 17K MP: 7

β : 19.9° MP: .8740 K: 2100 Hz ϕ : 3.6° γ : .9813 W



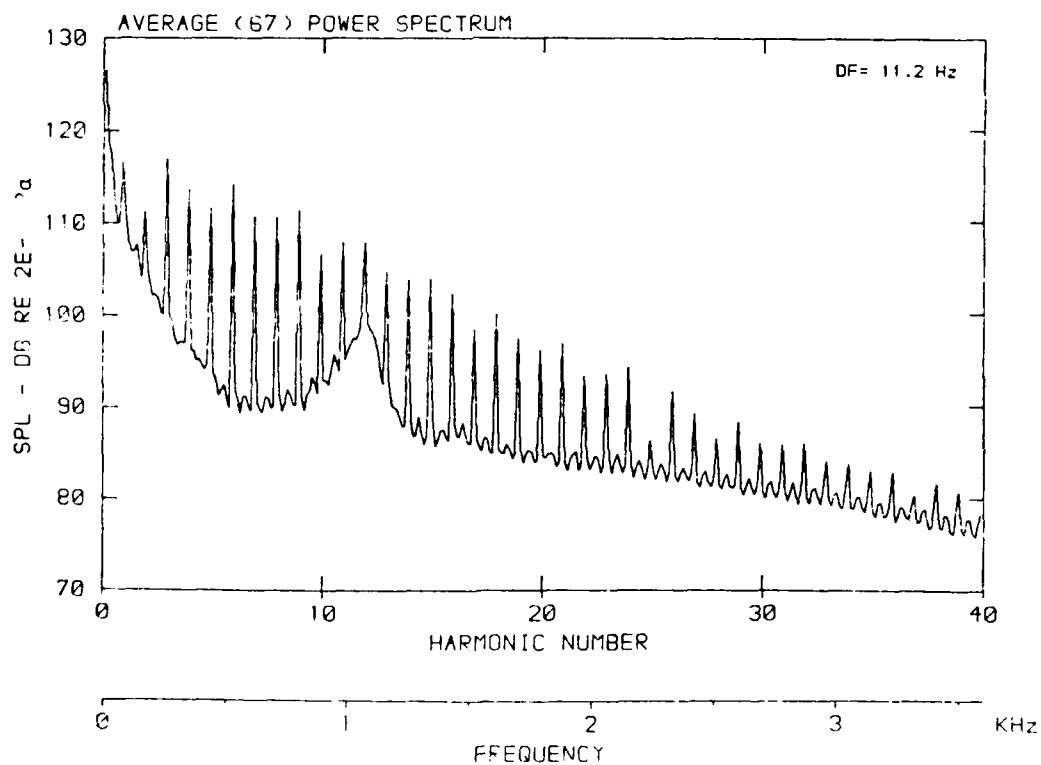
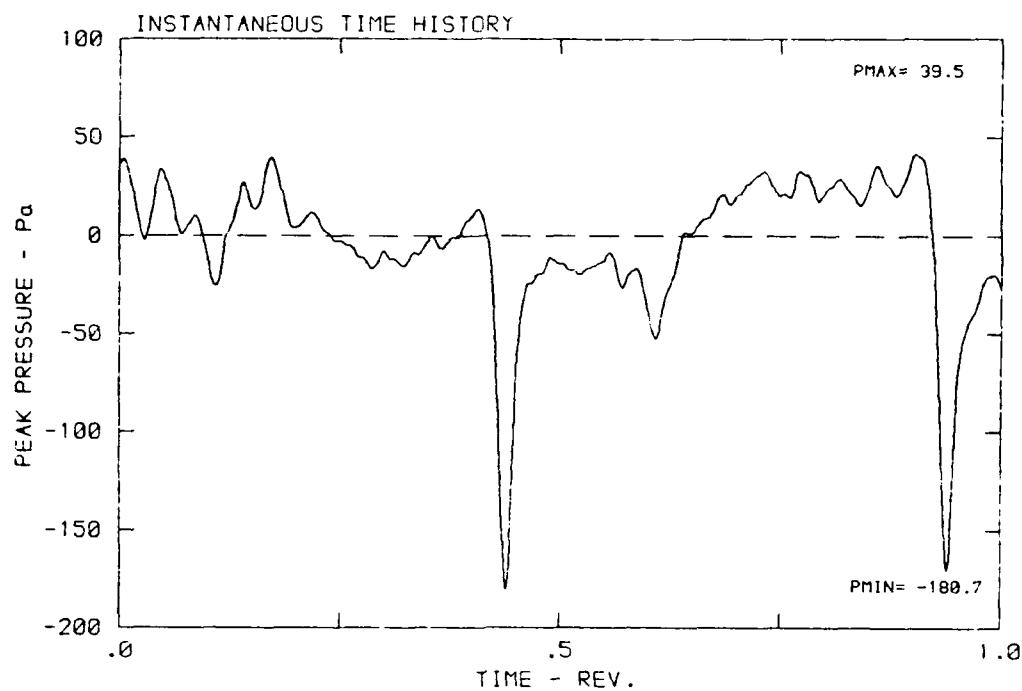
DATA POINT: FNC-3 RUN: 178 MP: 7

β : 19.9° MH: .8740 n: 2700 rpm v/u : .269 ϕ : 3.6° T: 288.3 K



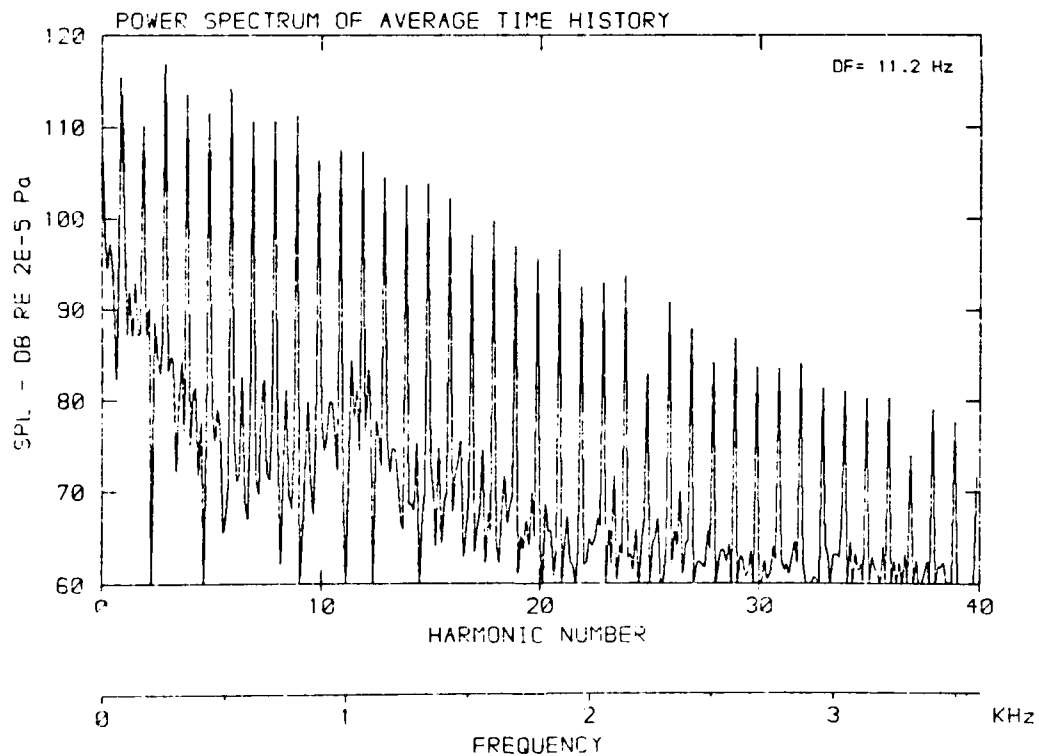
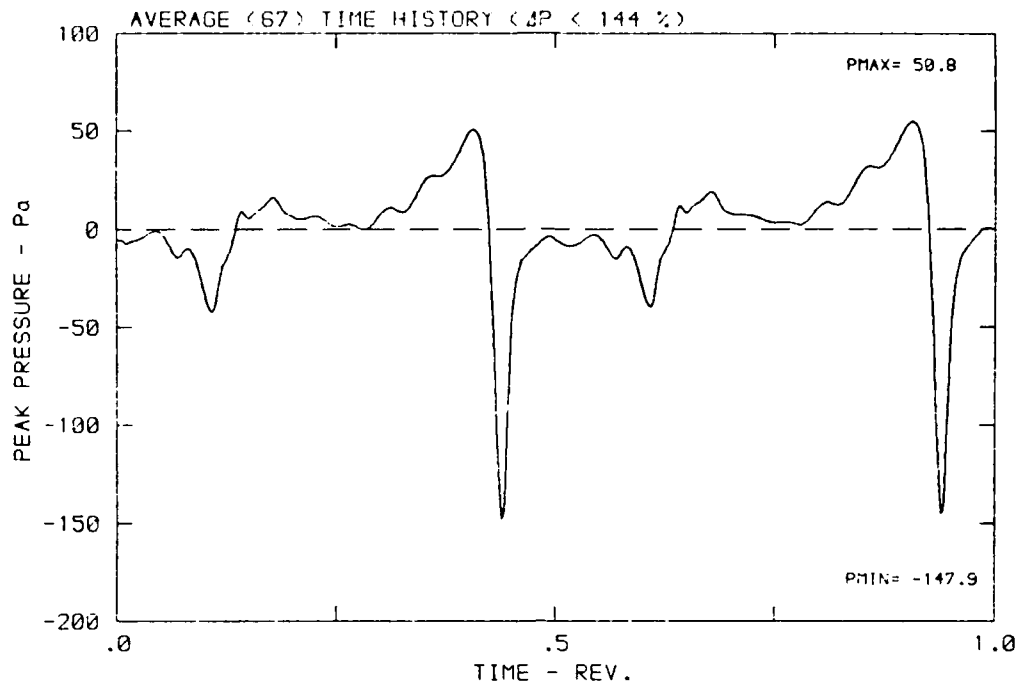
DATA POINT: FNC-3 RUN: 178 MP: 9

β : 19.9° MH: .8740 n: 2700 rpm v/u : .269 ϕ : 3.6° T: 288.3 K



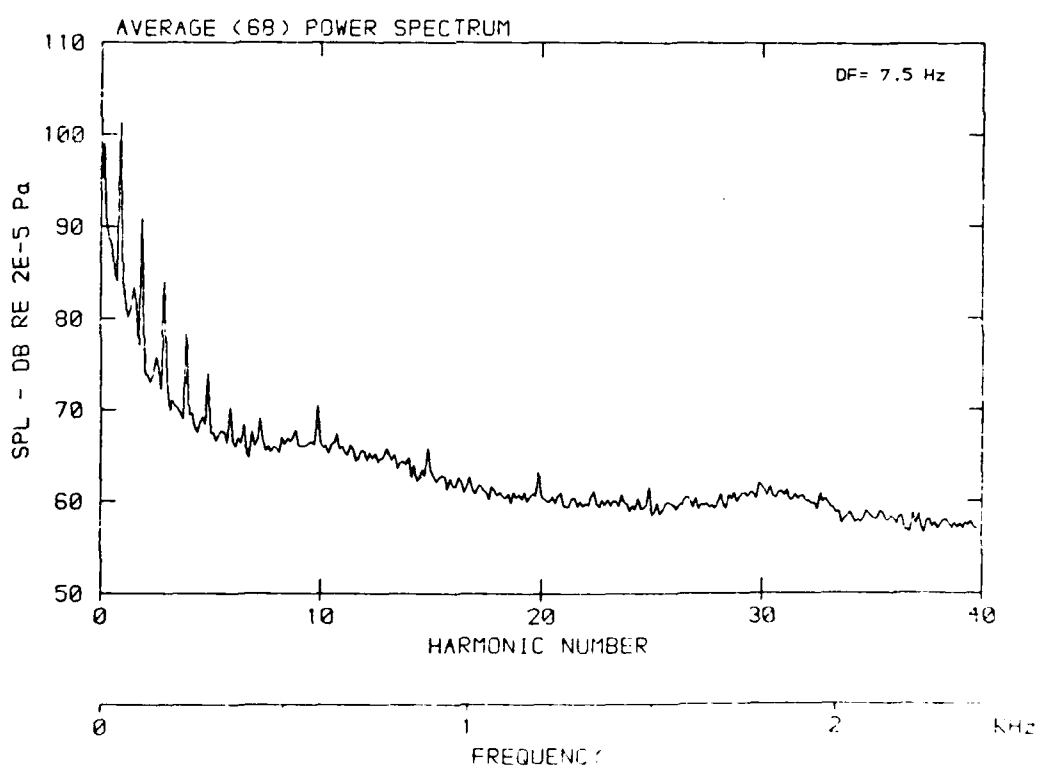
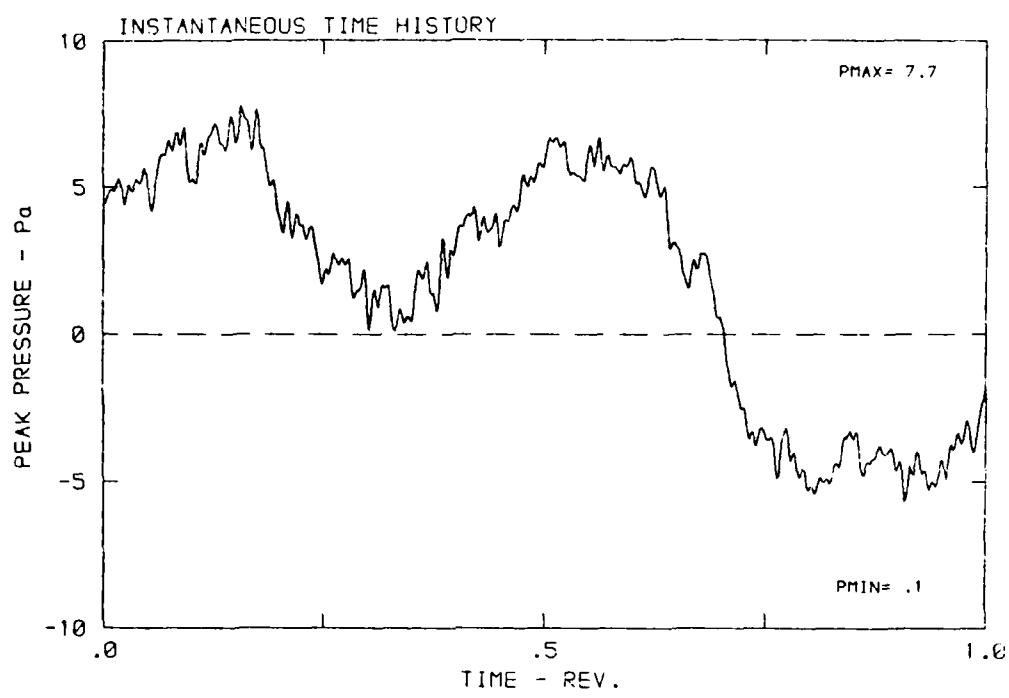
DATA POINT: FNC-3 RUN: 178 MP: 9

β : 19.9° MH: .8740 n: 2700 rpm v/u: .269 ϕ : 3.6° T: 288.3 K



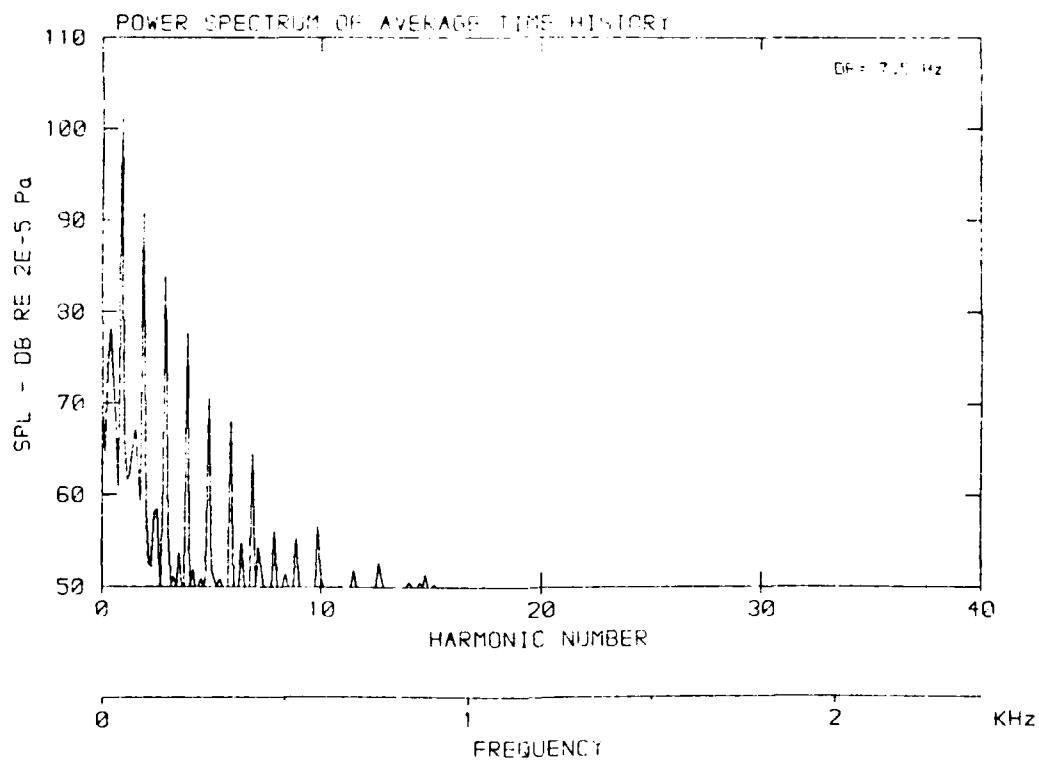
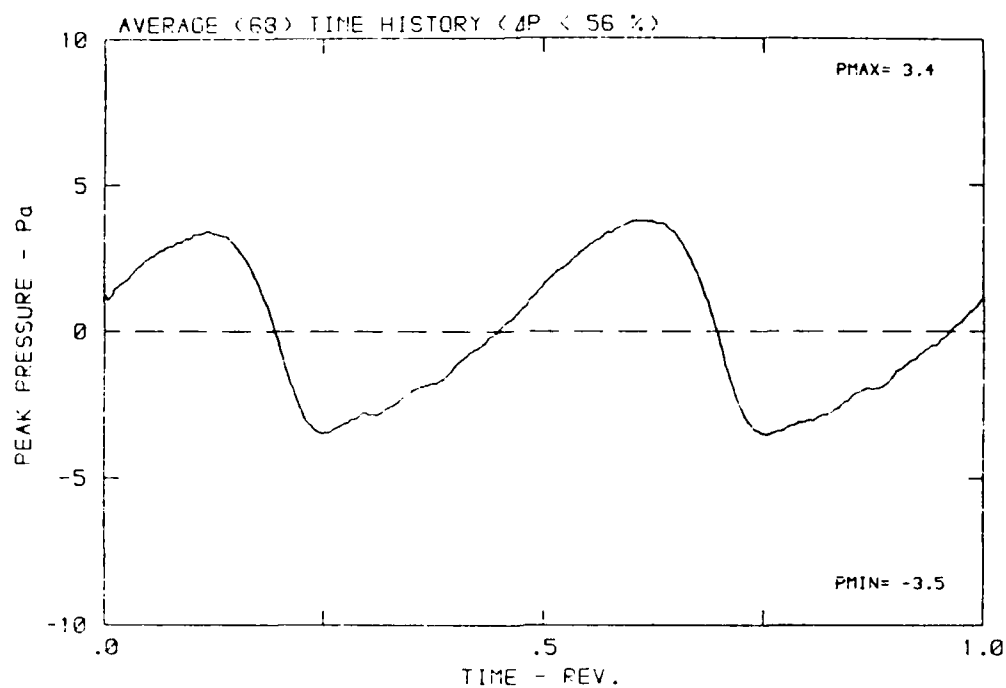
DATA POINT: FNC-4 RUN: 175 MP: 1

β : 23.7° MH: .5835 n: 1800 rpm v/u: .268 ϕ : 3.5° T: 287.2 K



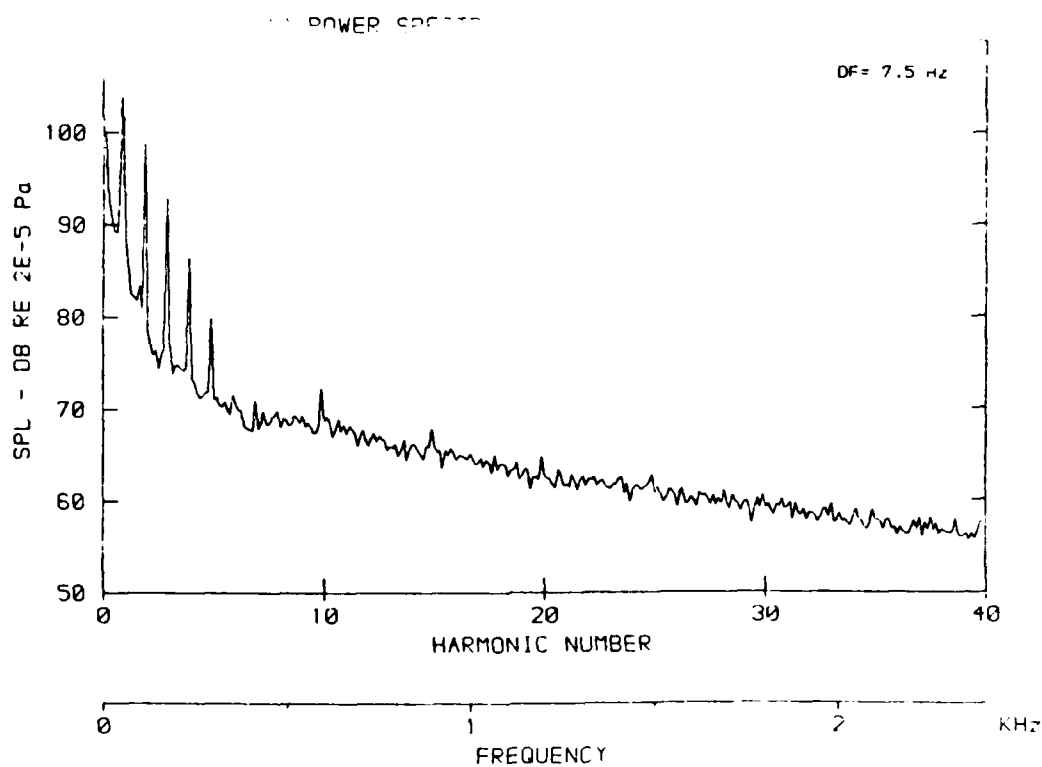
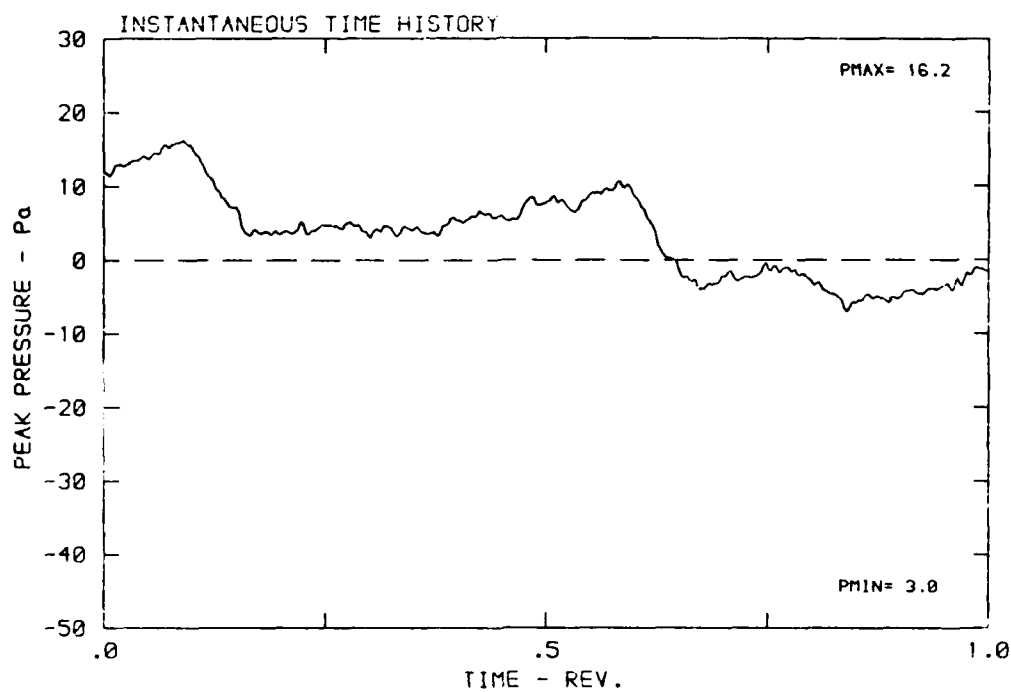
DATA POINT: FNC-4 RUN: 175 MP: 1

β : 23.7° MH: .5835 n: 1800 rpm v/u : .268 ϕ : 3.6° T: 287.2 K



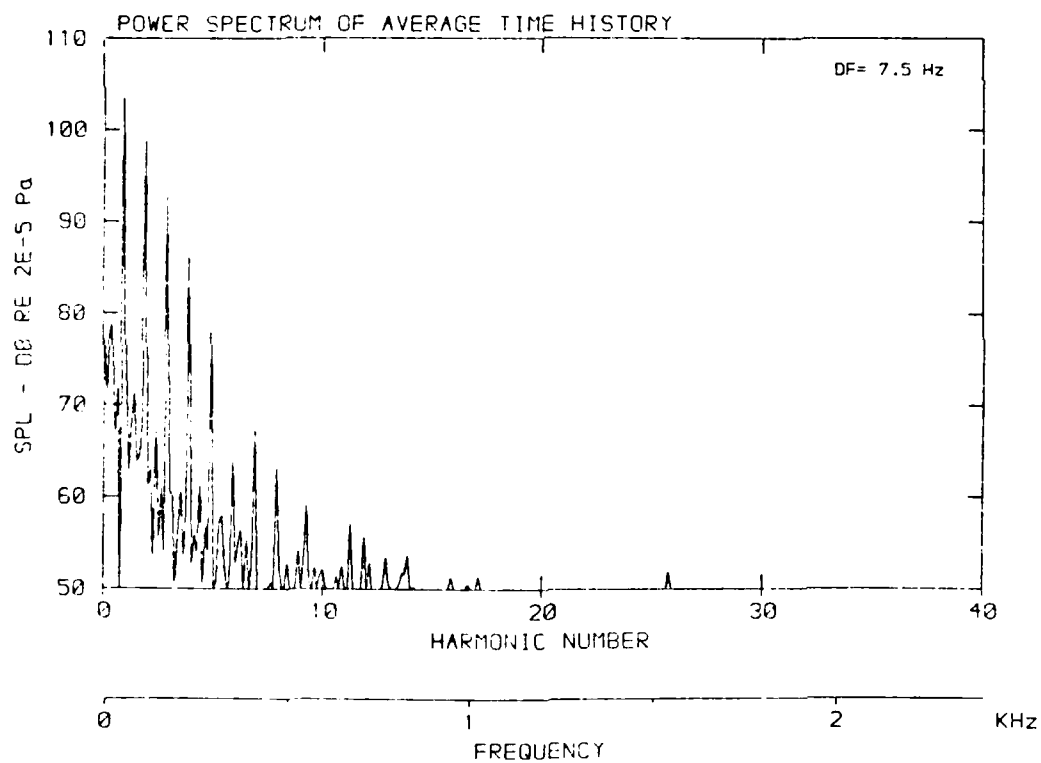
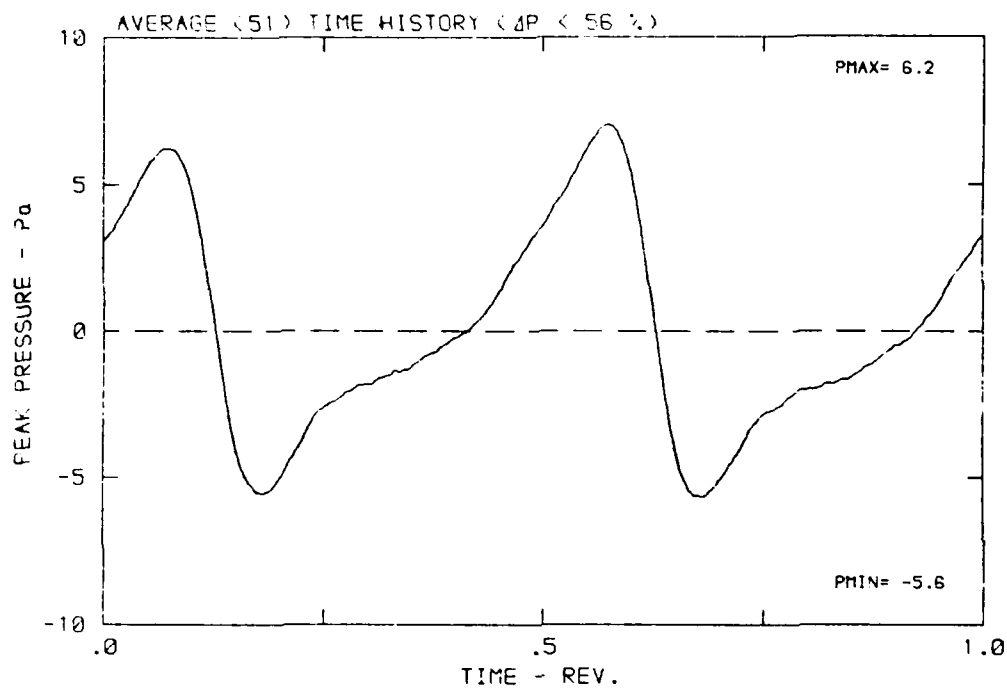
DATA POINT: FNC-4 RUN: 175 MP: 2

β : 23.7° MH: .5835 n: 1800 rpm v/u: .268 ϕ : 3.6° T: 287.2 K



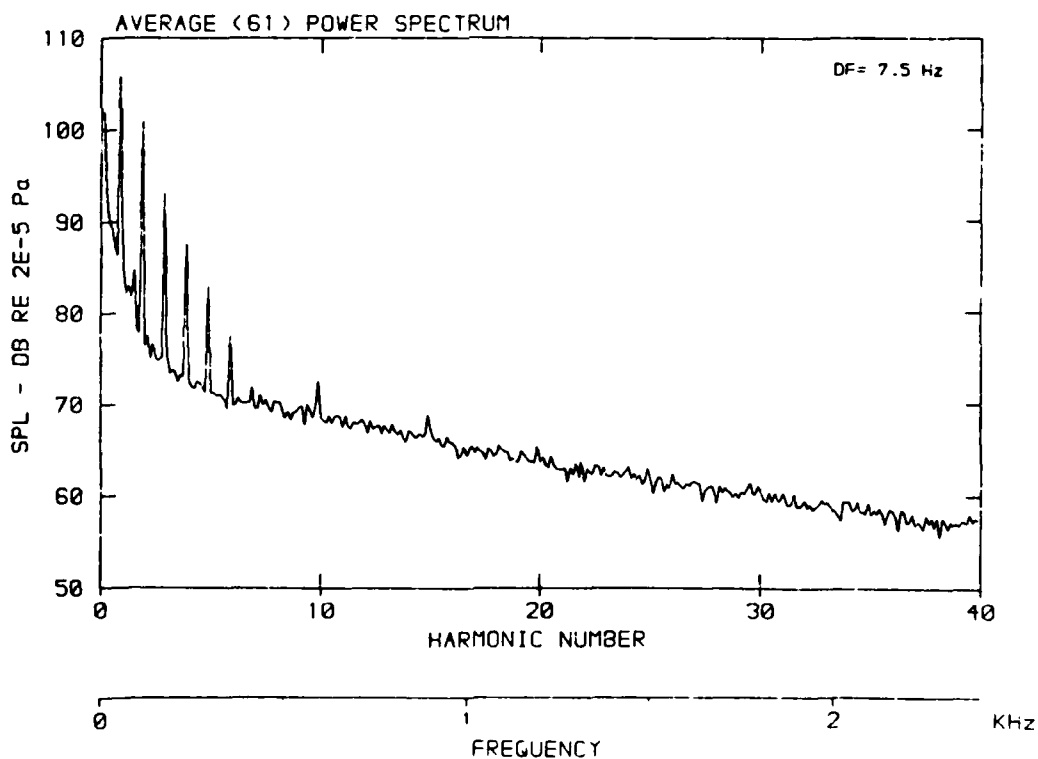
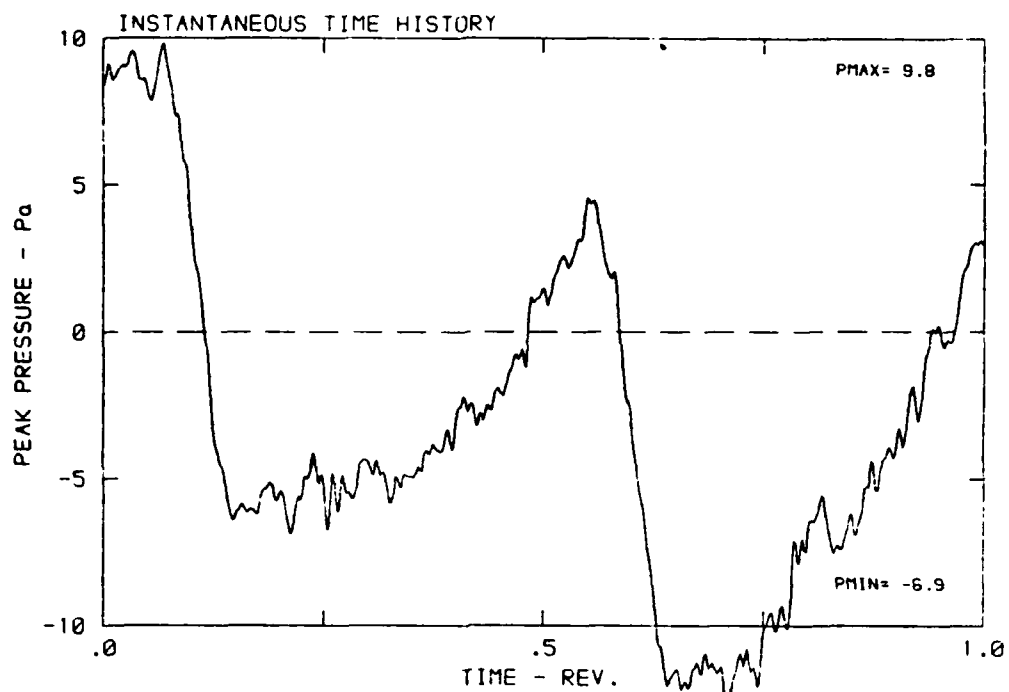
DATA POINT: FNC-4 RUN: 175 MP: 2

β : 23.7° MH: .5835 n: 1800 rpm v/u : .268 ϕ : 3.6° T: 287.2 K



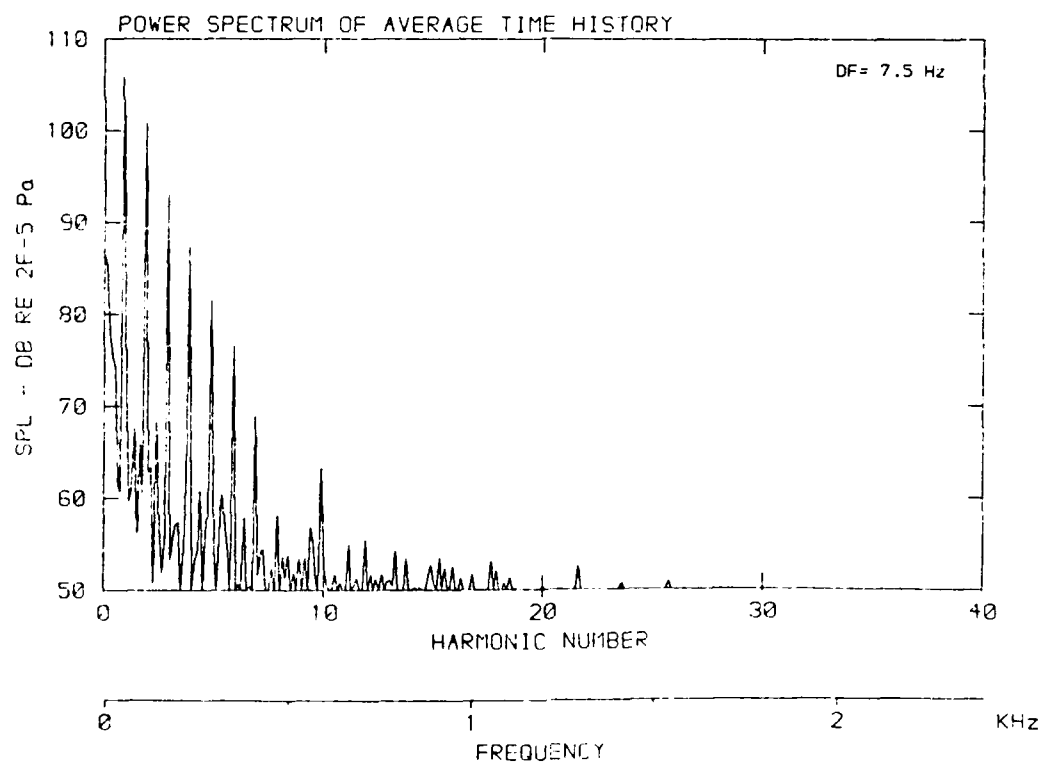
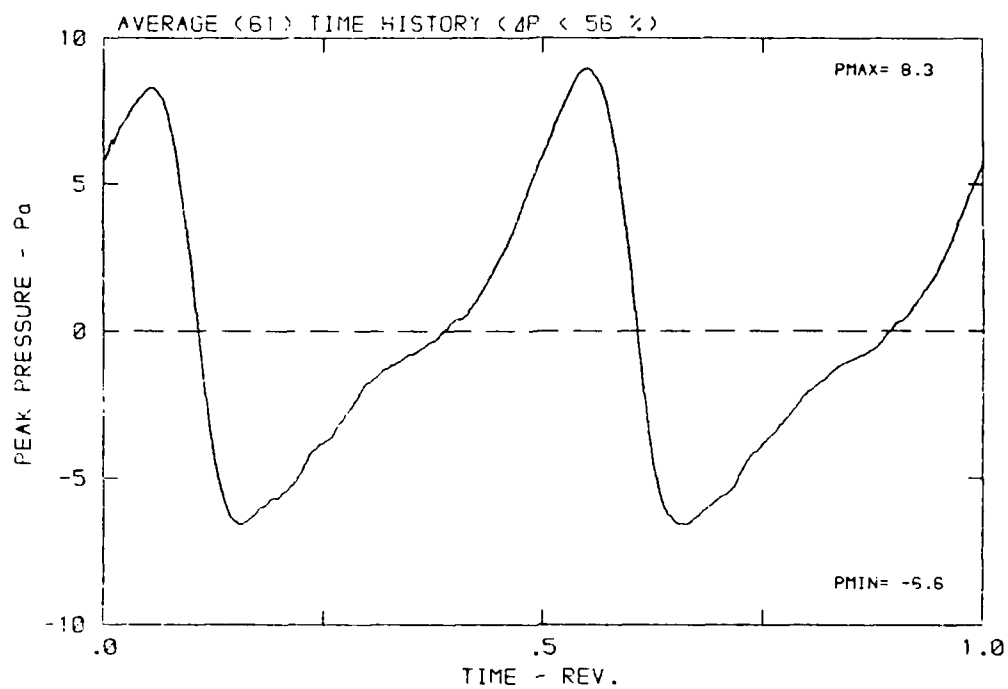
DATA POINT: FNC-4 RUN: 175 MP: 3

β : 23.7° MH: .5835 n: 1800 rpm v/u: .268 ϕ : 3.6° T: 287.2 K



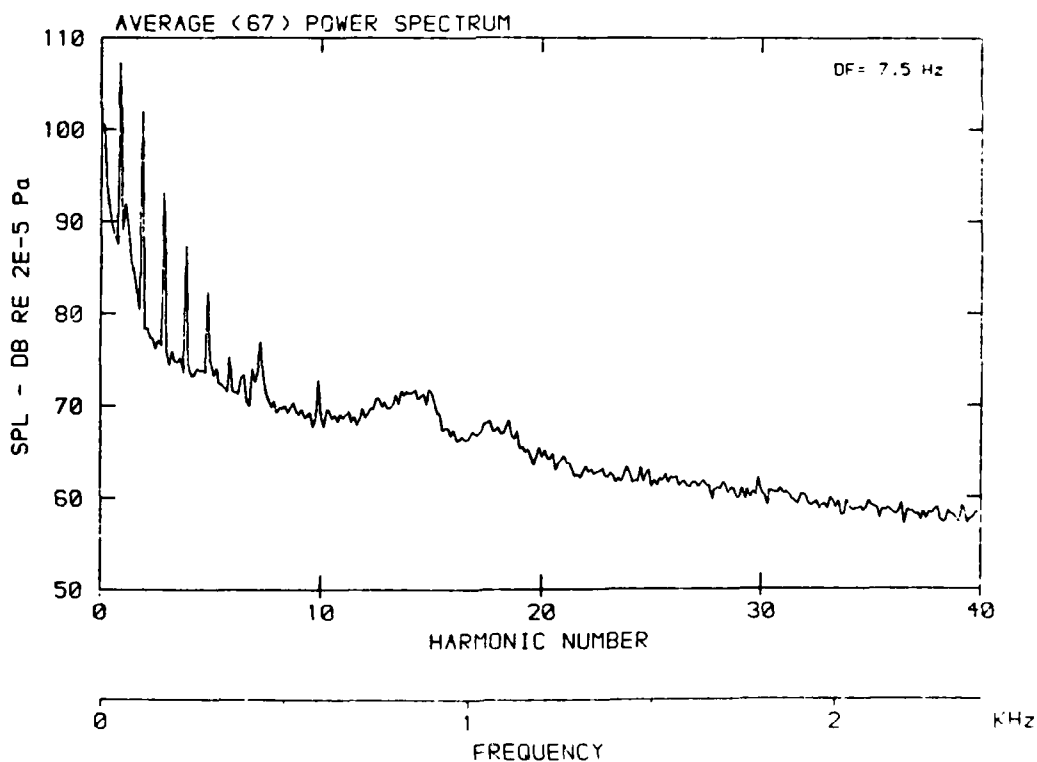
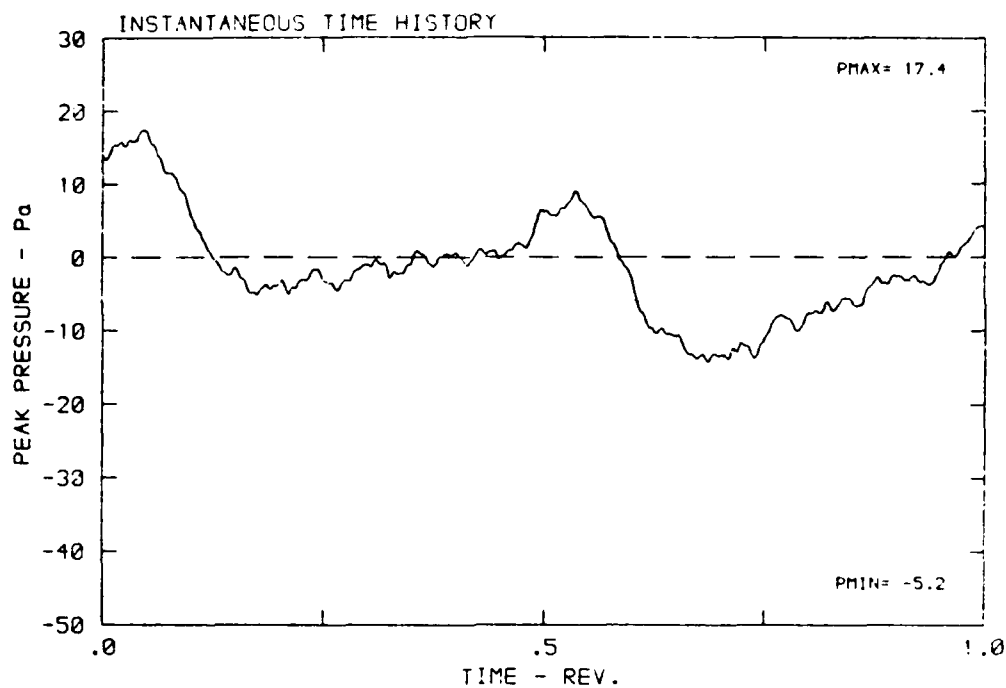
DATA POINT: FNC-4 RUN: 175 MP: 3

β : 23.7° MH: .5835 n: 1800 rpm v/u : .268 ϕ : 3.6° T: 287.2 K



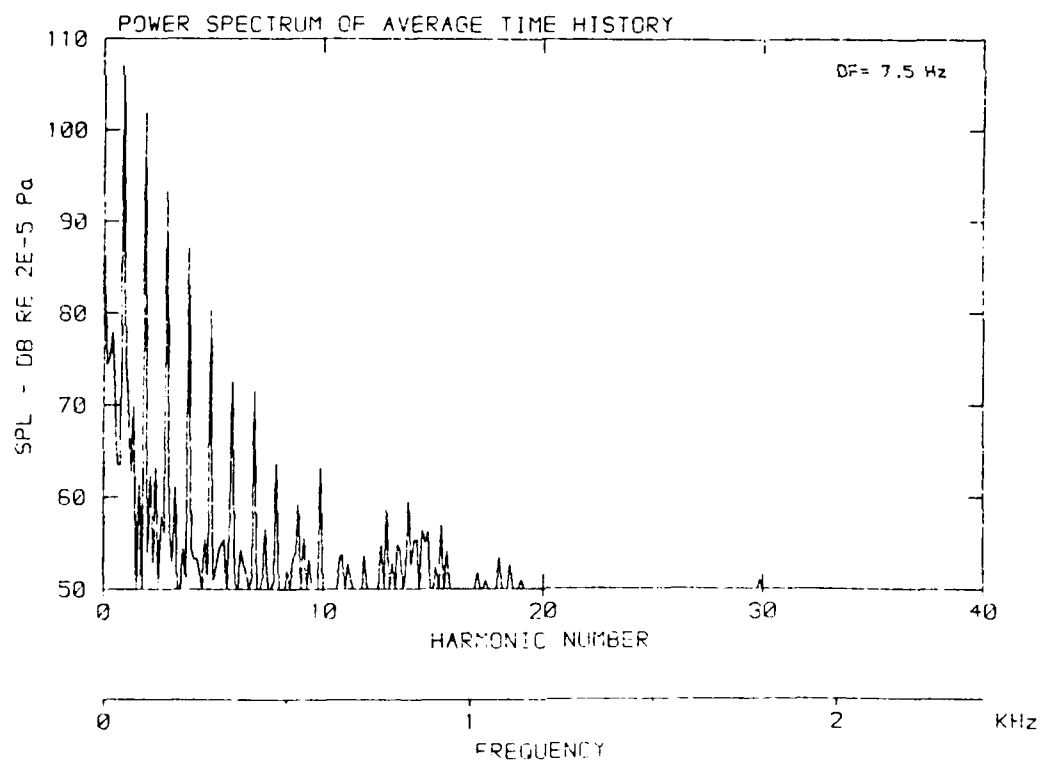
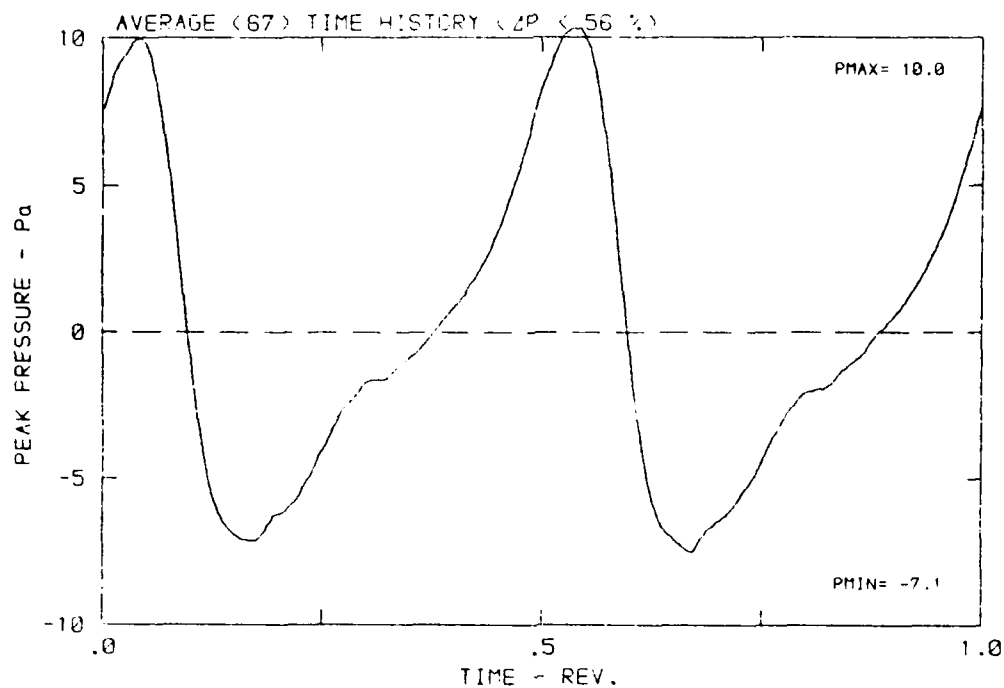
DATA POINT: FNC-4 RUN: 175 MP: 4

β : 23.7° MH: .5835 n: 1800 rpm v/u : .263 ϕ : 3.6° T: 287.2 K



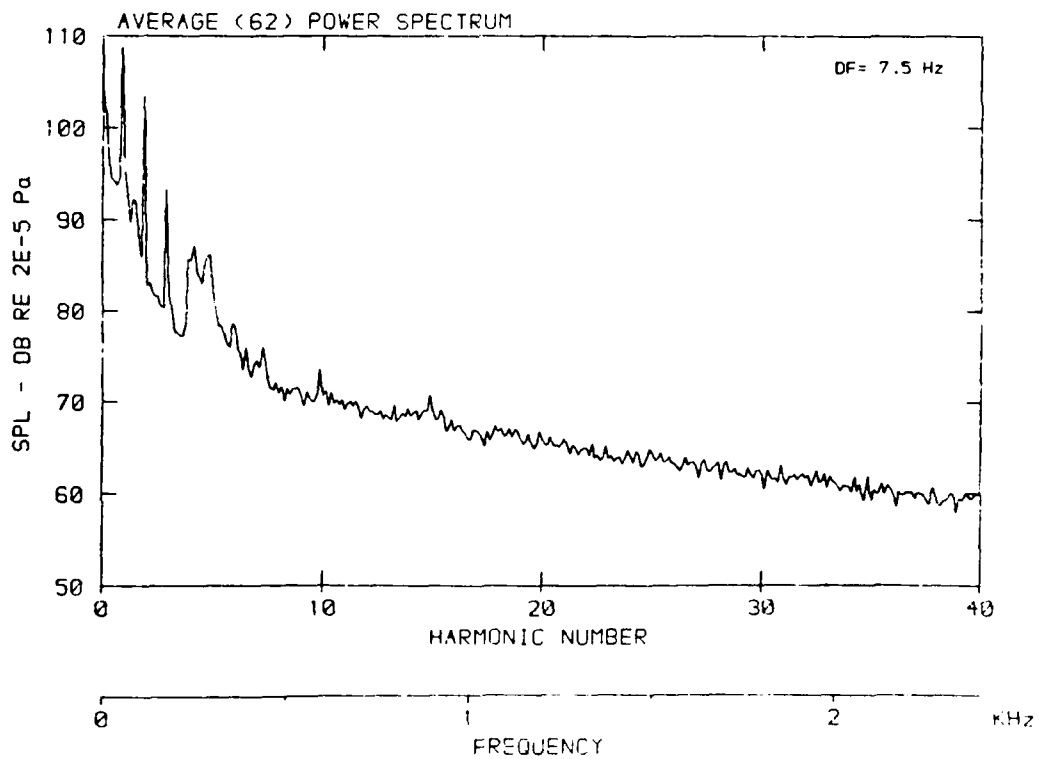
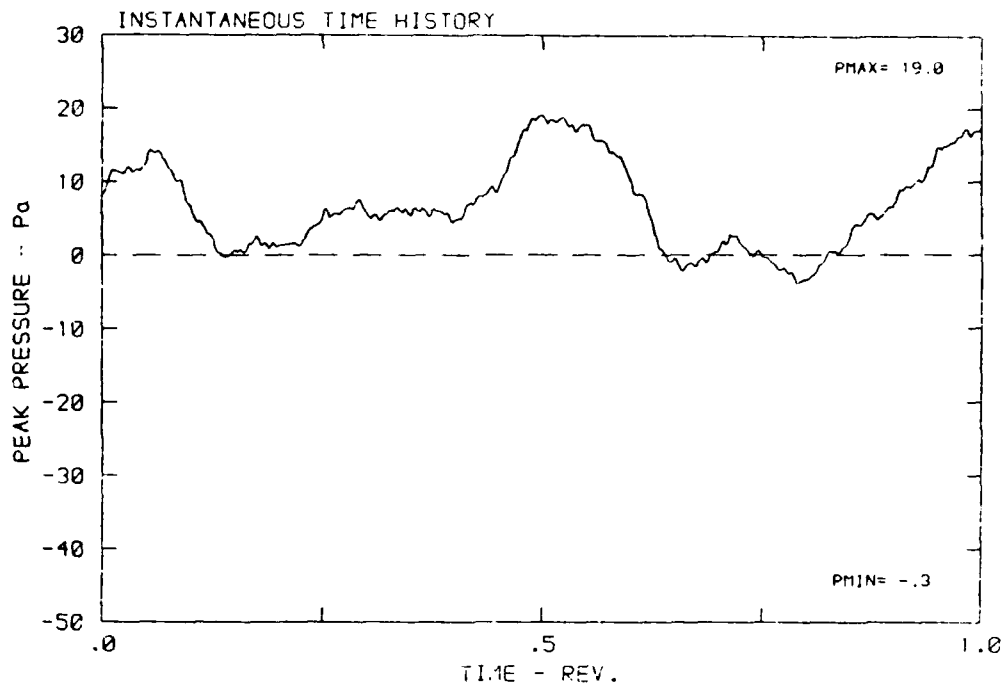
DATA POINT: FNC-4 RUN: 175 MP: 4

β : 23.7° MH: .5835 n: 1500 rpm v/u : .268 ϕ : 3.6° T: 287.2 K



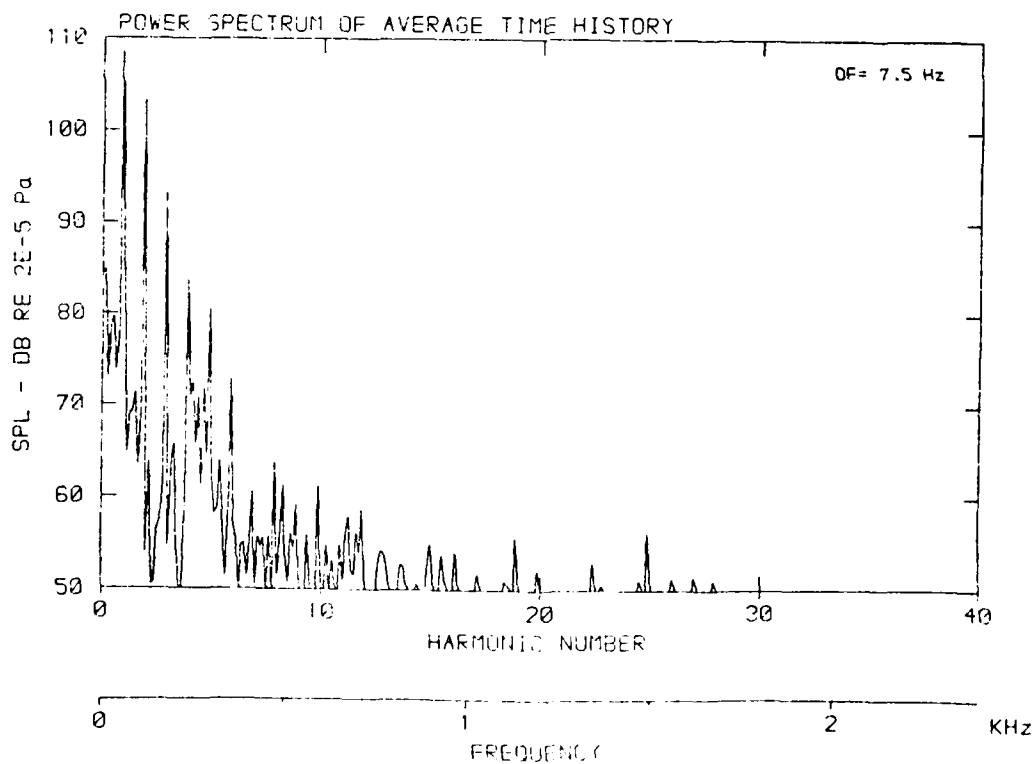
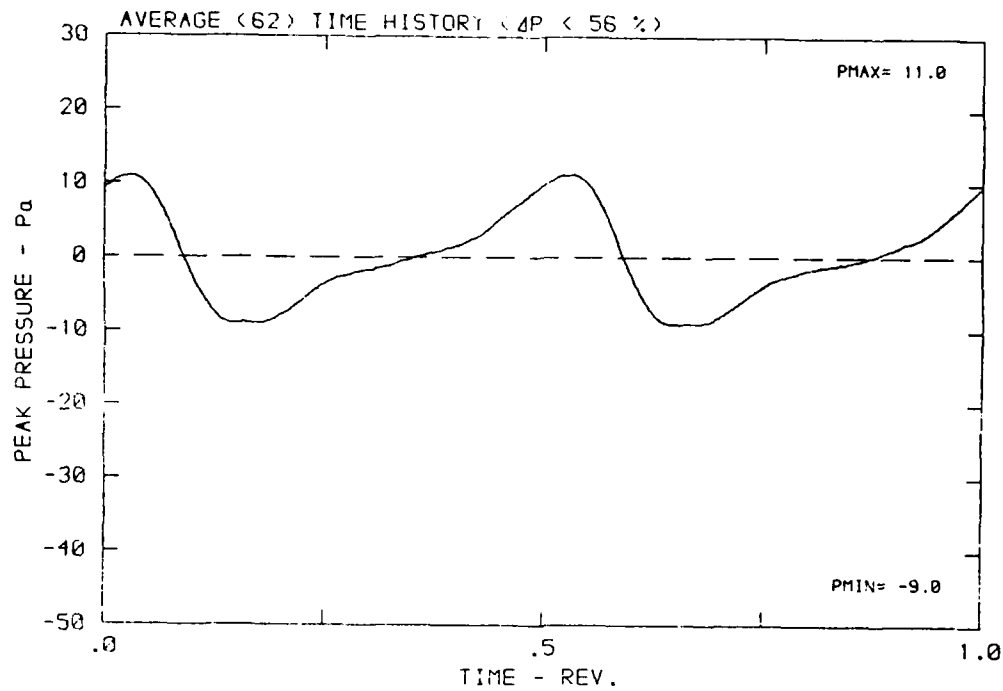
DATA POINT: FNC-4 RUN: 175 MP: 5

β : 23.7° MH: .5835 n: 1800 rpm v/u : .268 ϕ : 3.6° T: 297.2 K



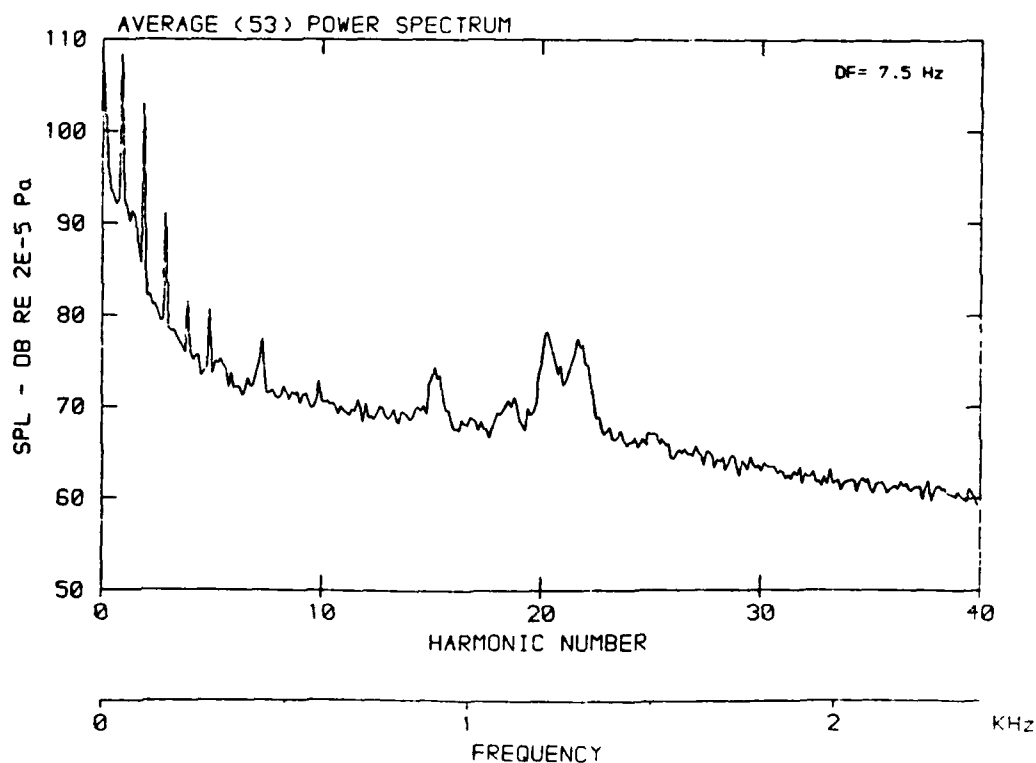
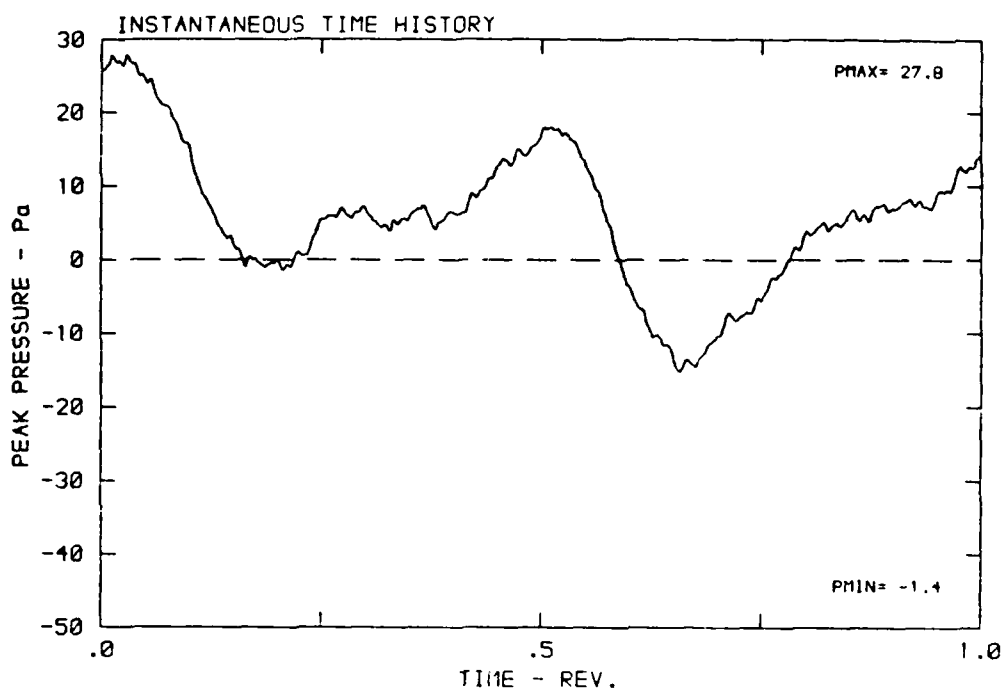
DATA POINT: FNC-4 RUN: 175 MP: 5

β : 23.7° MH: .5835 n: 1800 rpm v/u: .268 ϕ : 3.6° T: 287.2 K



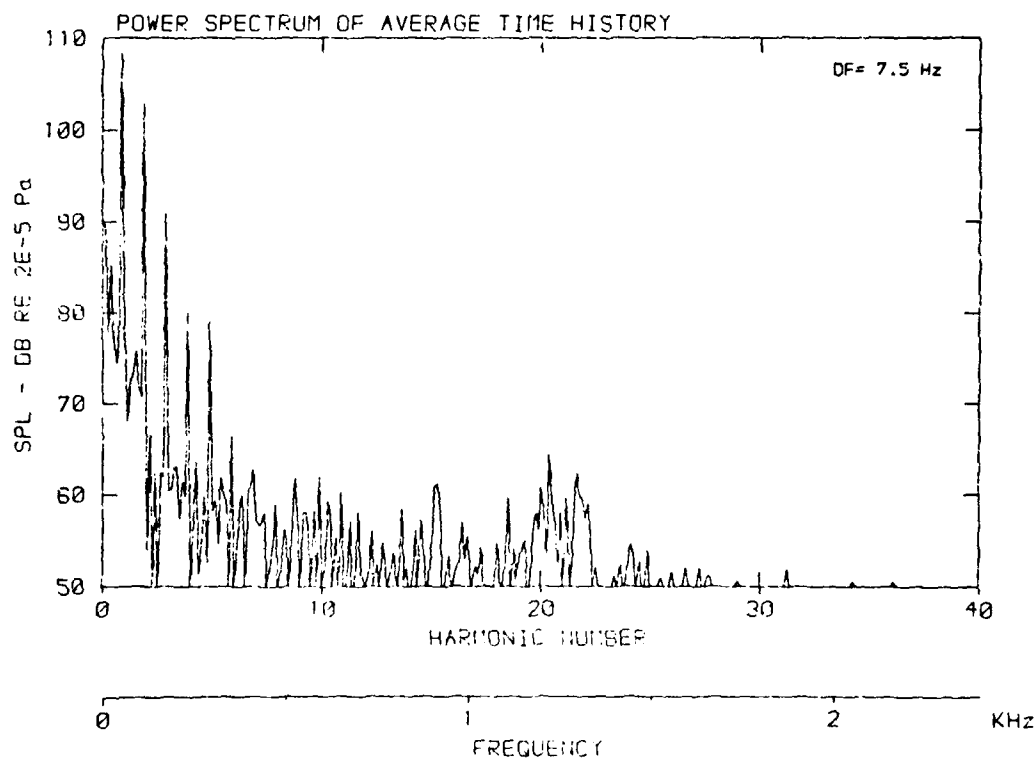
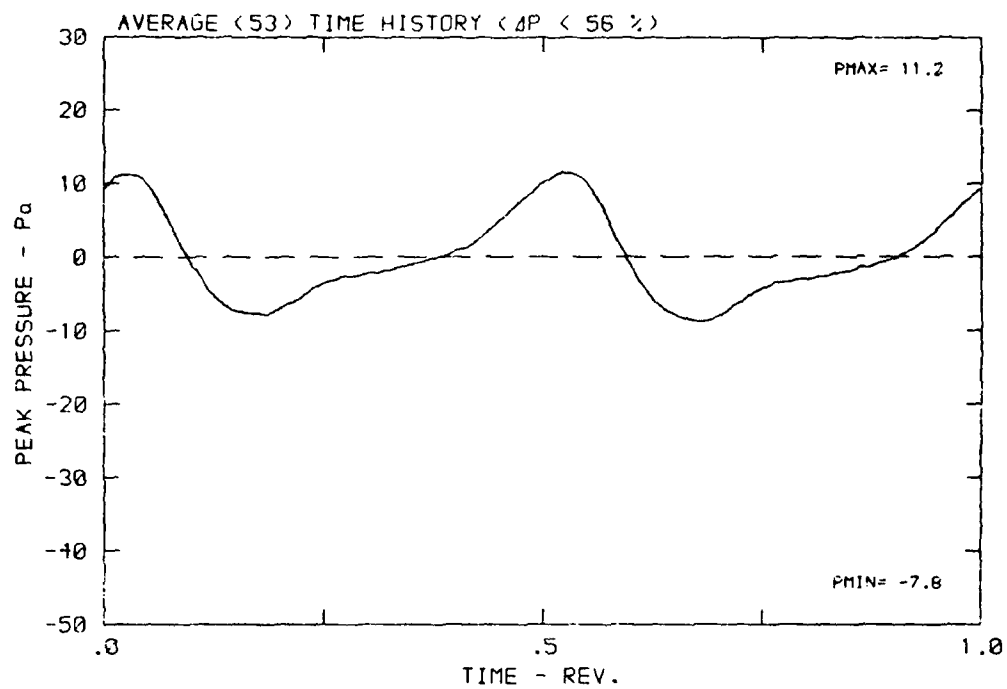
DATA POINT: FNC-4 RUN: 175 MP: 6

β : 23.7° MH: .5835 n: 1800 rpm v/u : .268 ϕ : 3.6° T: 287.2 K



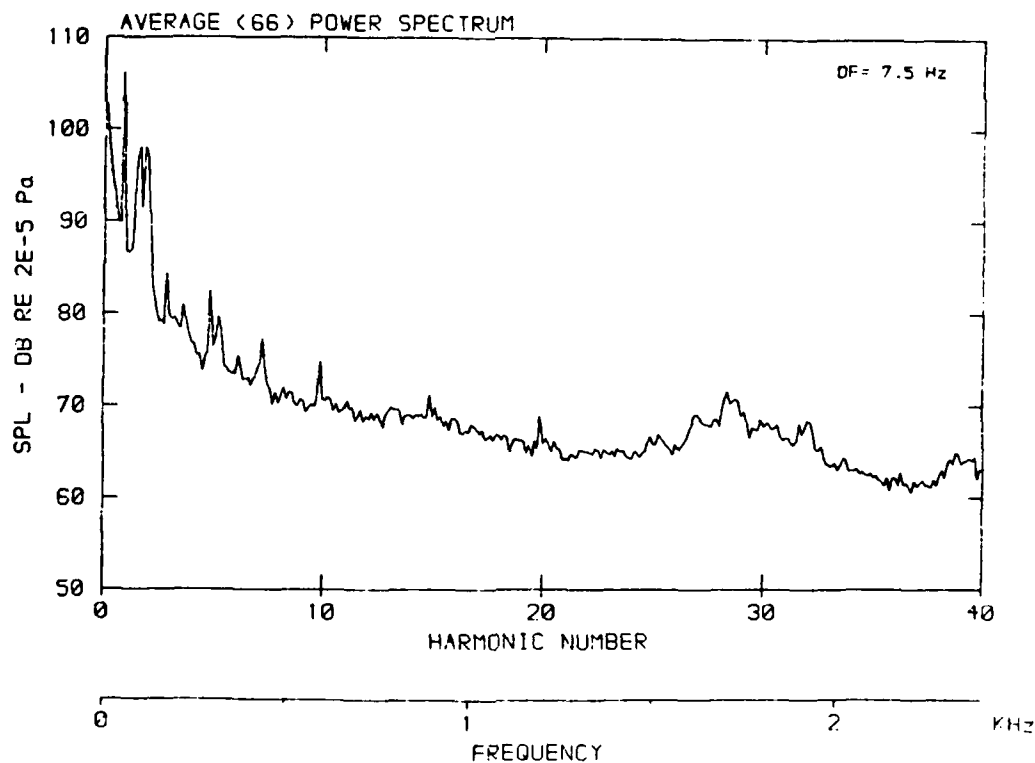
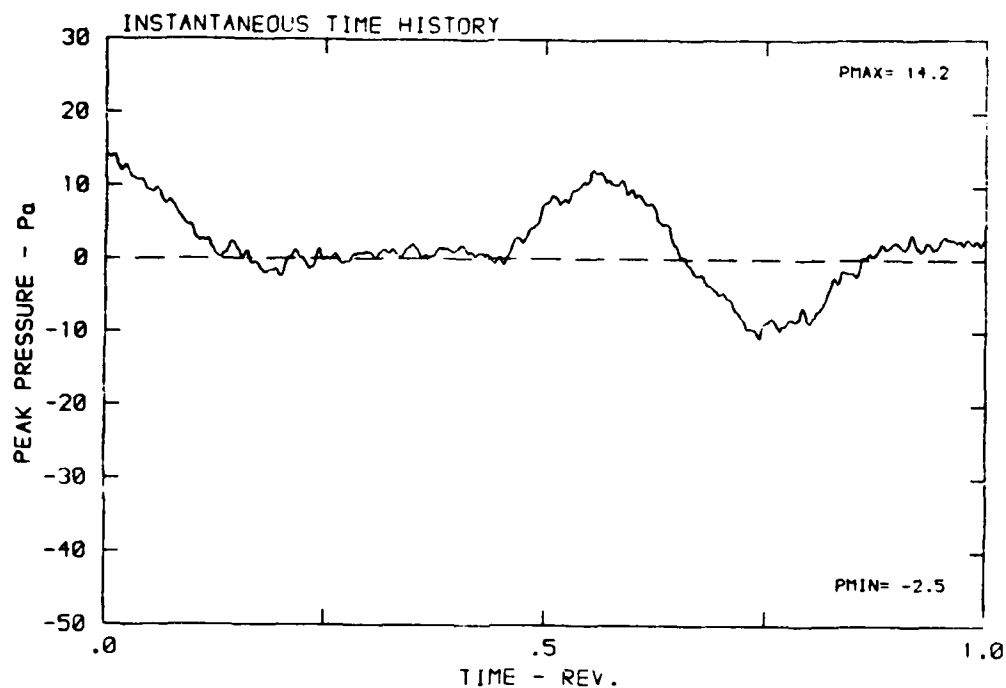
DATA POINT: FNC-4 RUN: 175 MP: 6

β : 23.7° MH: .5835 n: 1800 rpm v/u: .268 ϕ : 3.6° T: 287.2 K



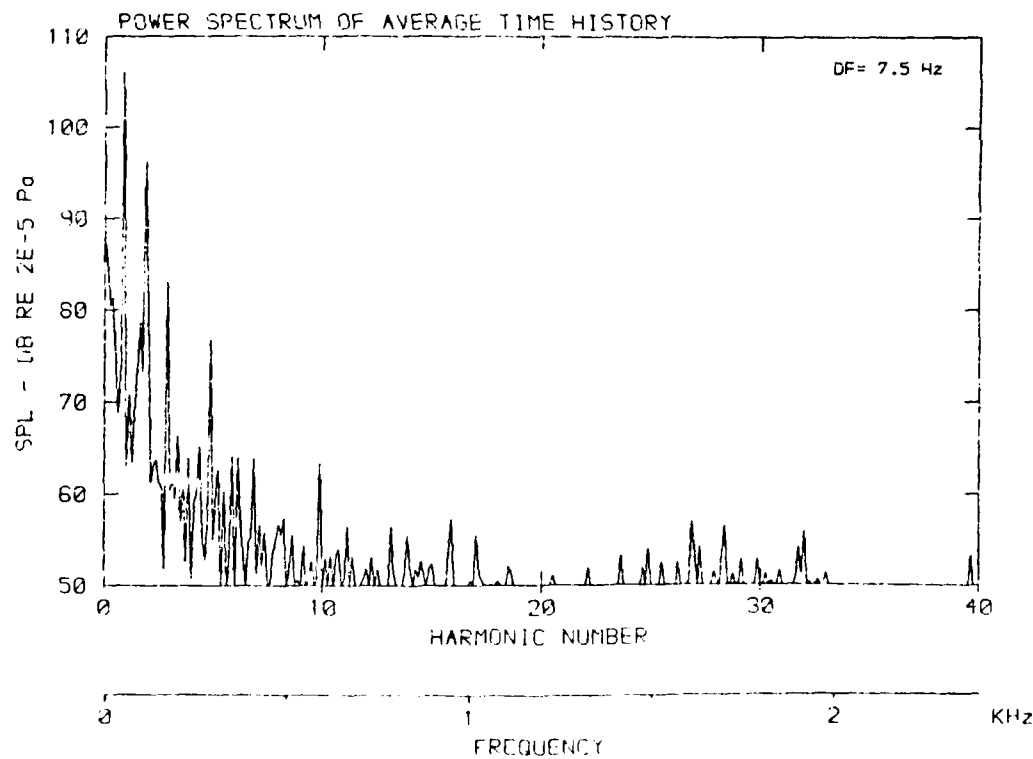
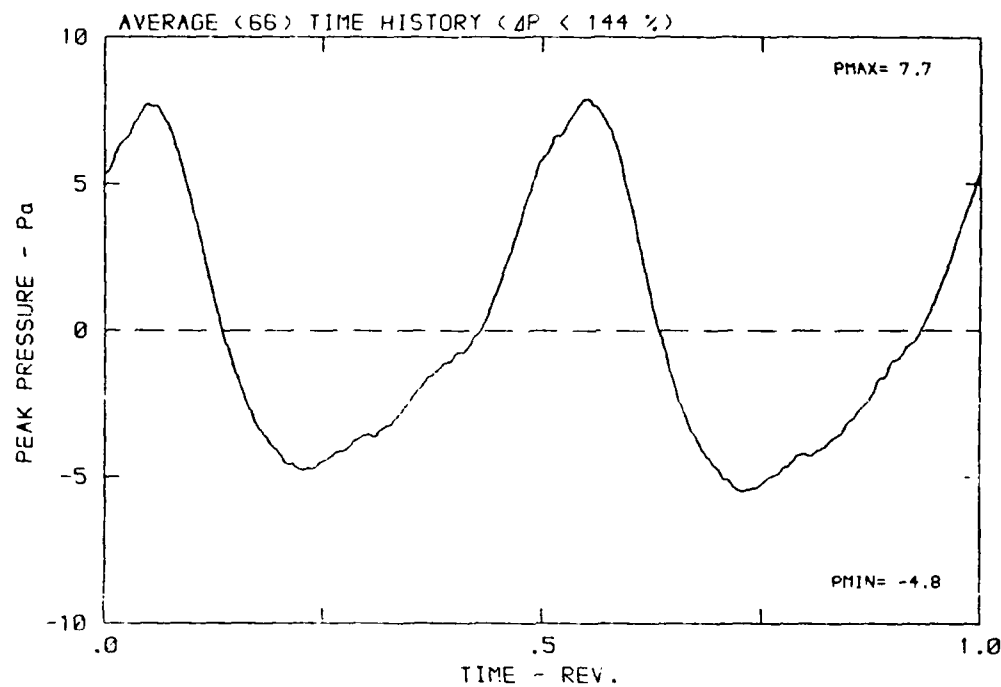
DATA POINT: FNC-4 RUN: 175 MP: 7

β : 23.7° MH: .5835 n: 1800 rpm v/u : .268 ϕ : 3.6° T: 287.2 K



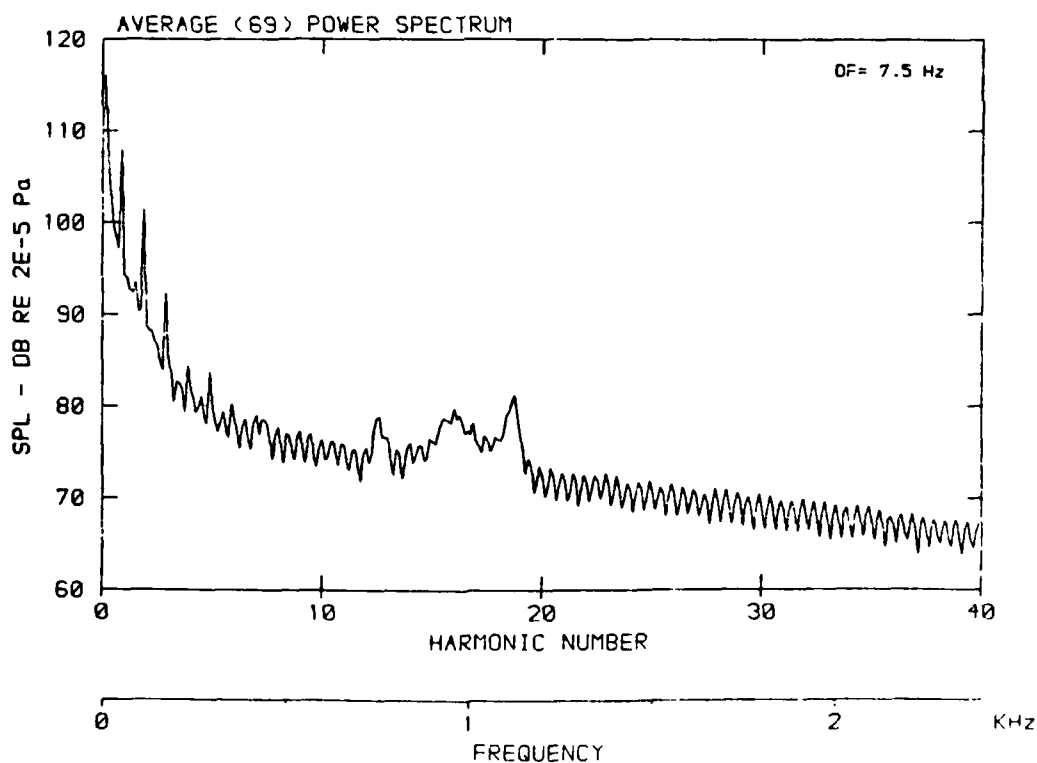
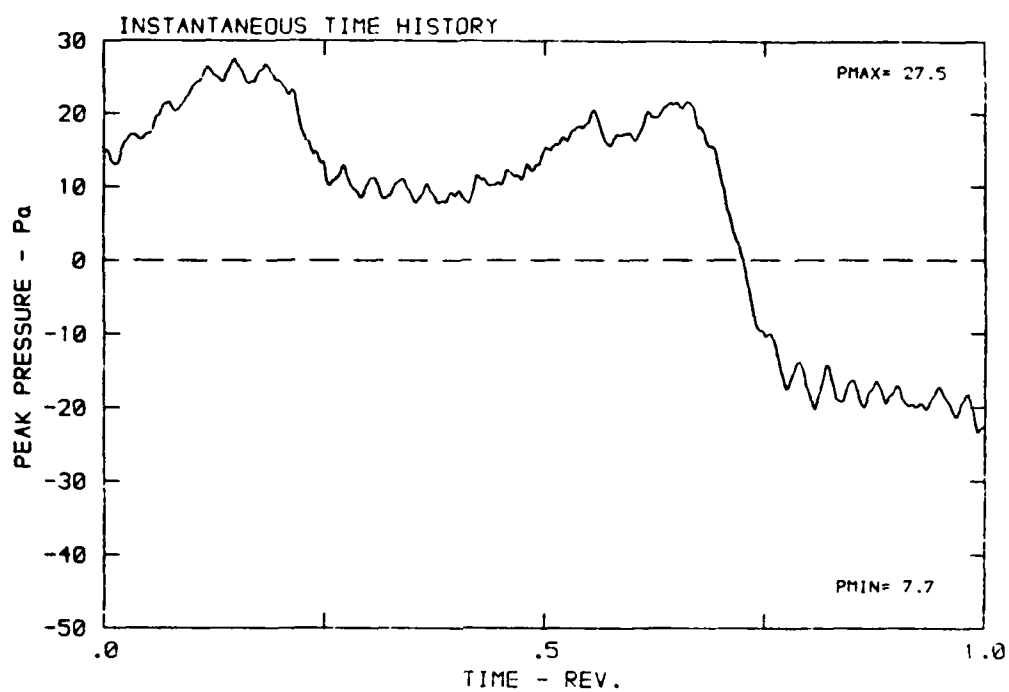
DATA POINT: FNC-4 RUN: 175 MP: 7

β : 23.7° MH: .5835 n: 1800 rpm v/u : .268 ϕ : 3.6° T: 287.2 K



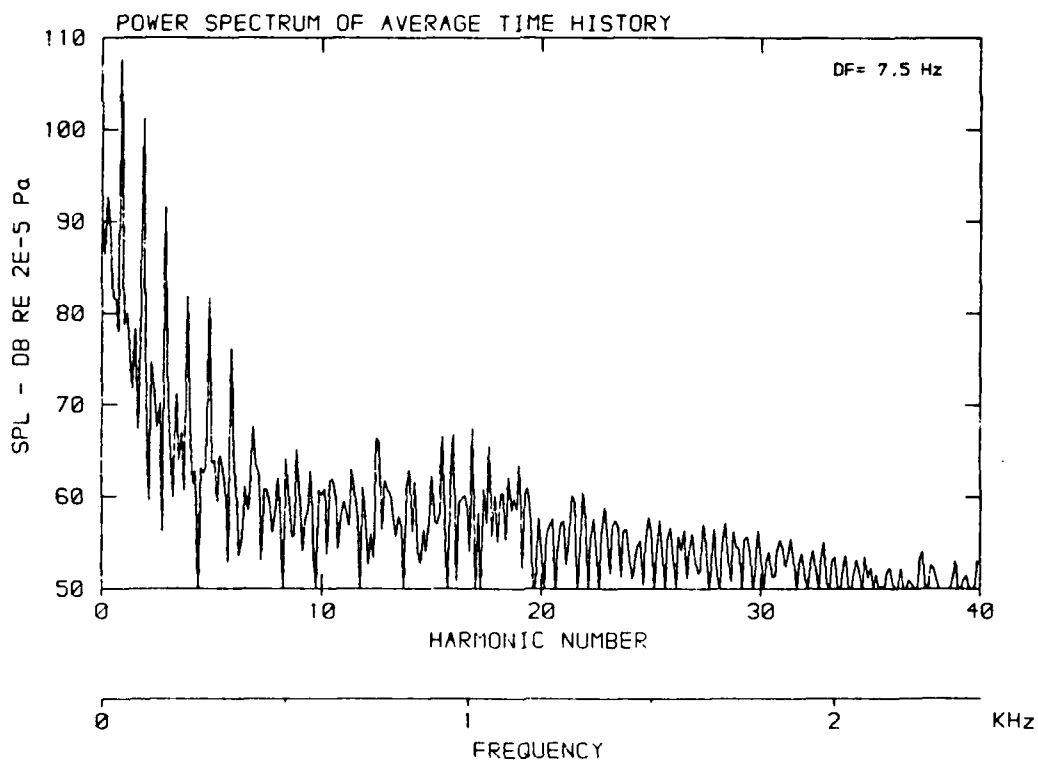
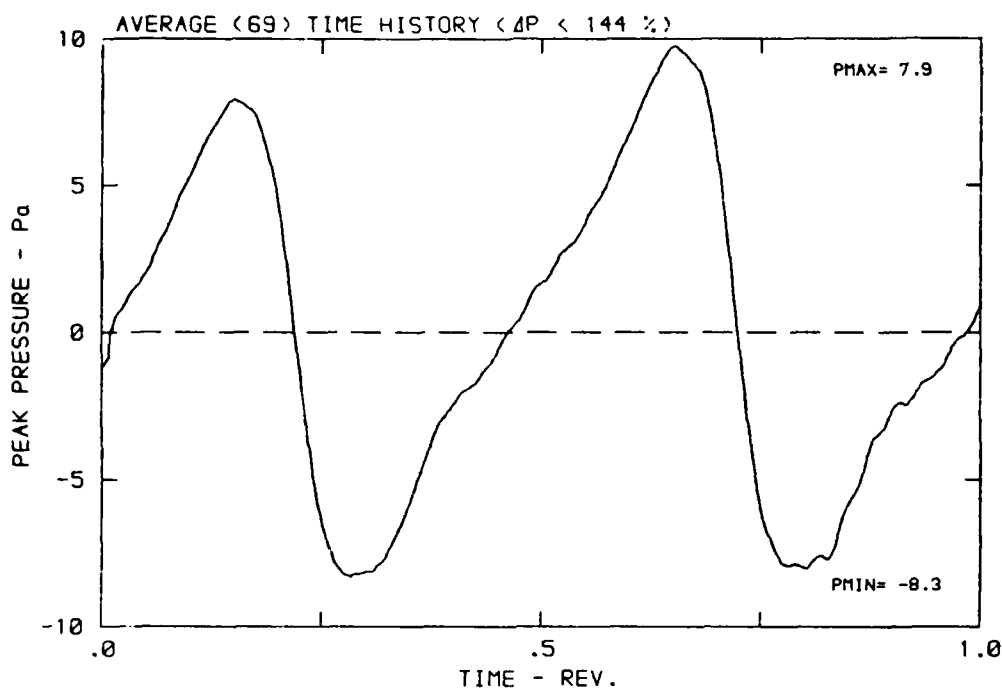
DATA POINT: FNC-4 RUN: 175 MP: 9

β : 23.7° MH: .5835 n: 1800 rpm v/u: .268 ϕ : 3.6° T: 287.2 K



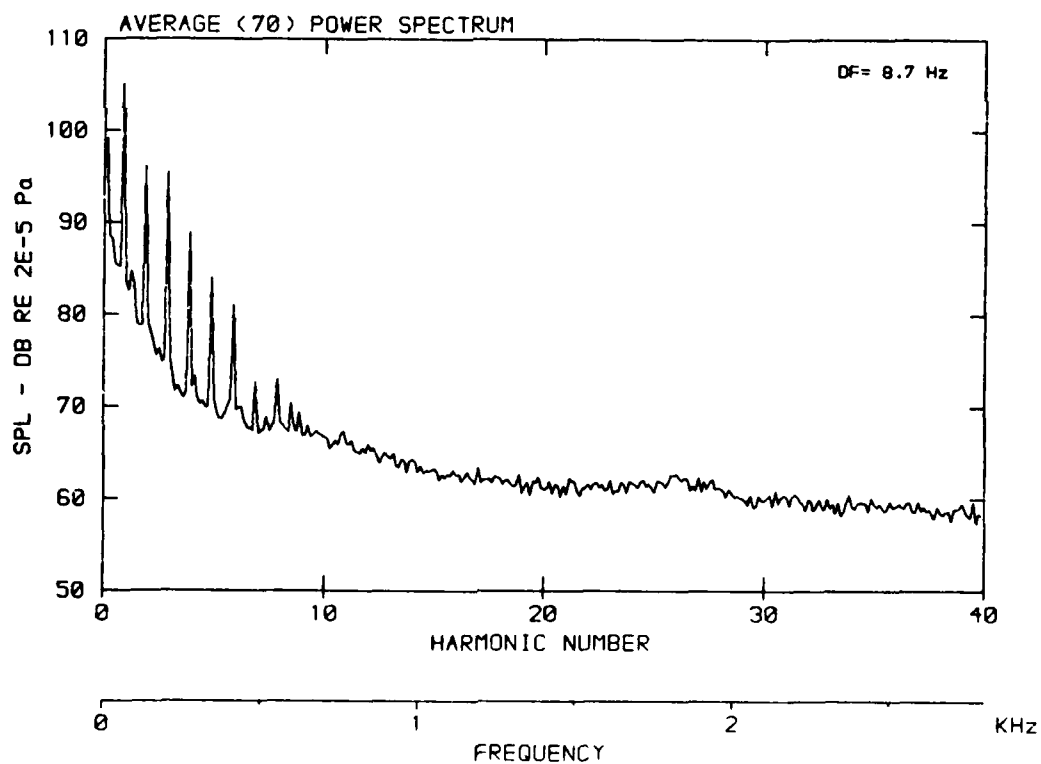
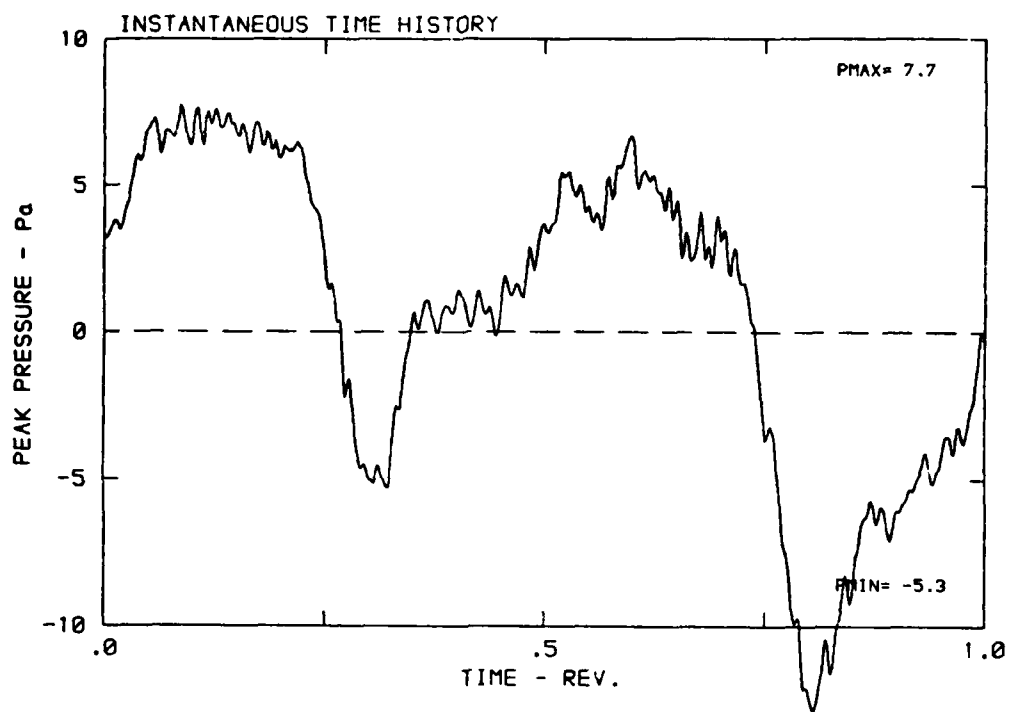
DATA POINT: FNC-4 RUN: 175 MP: 9

β : 23.7° MH: .5835 n: 1800 rpm v/u: .268 ϕ : 3.6° T: 287.2 K



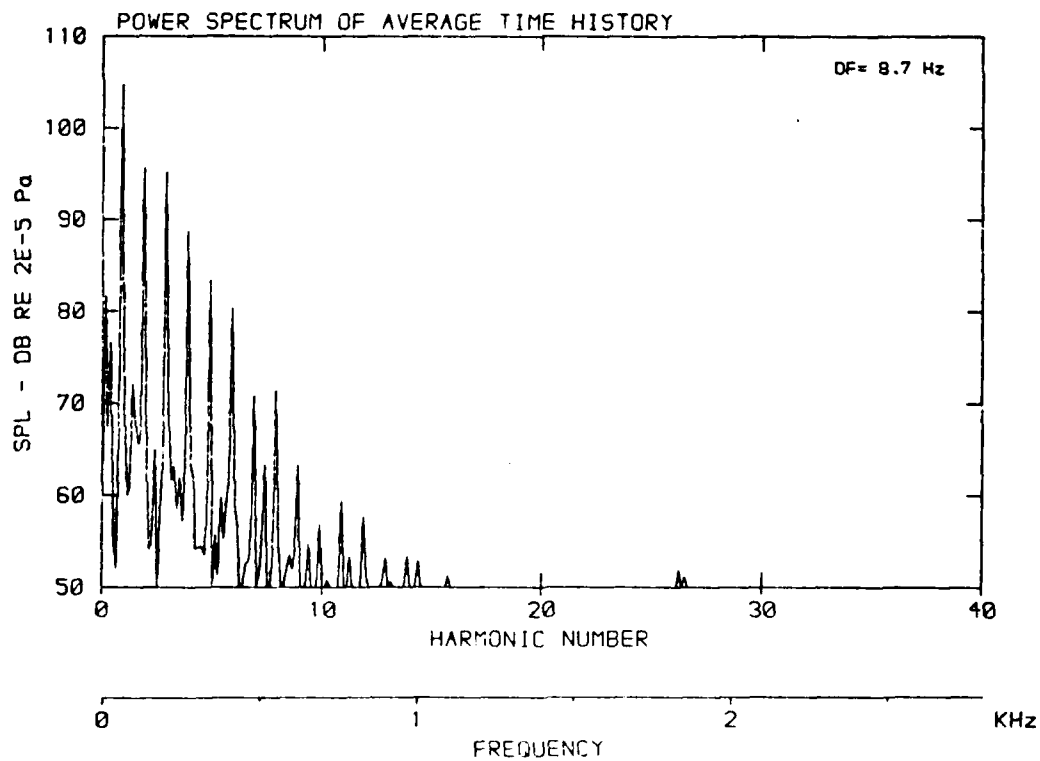
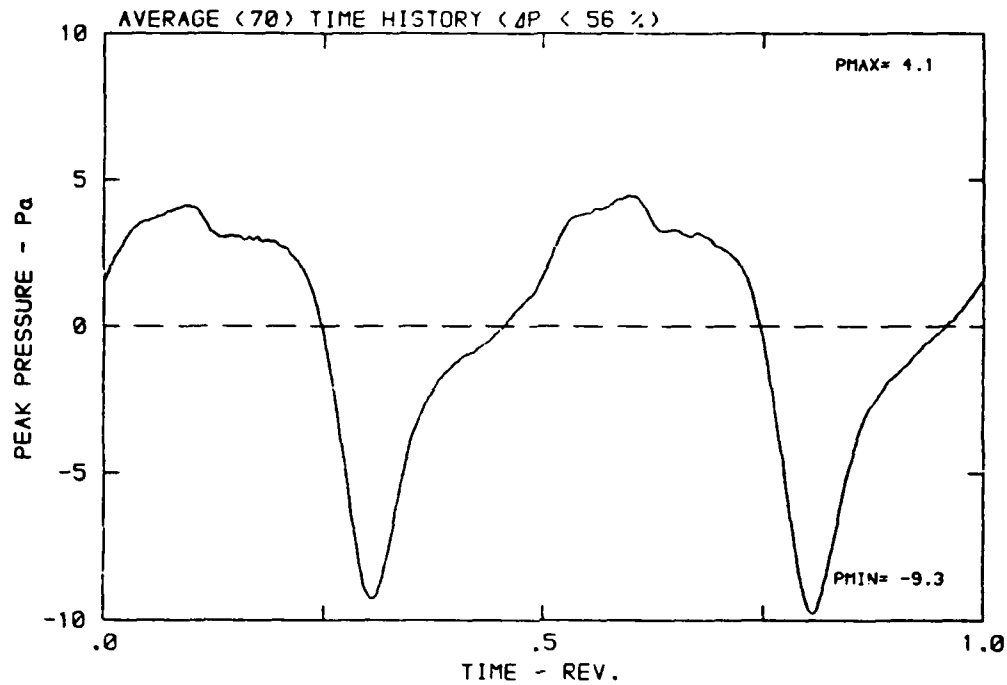
DATA POINT: FNC-5 RUN: 174 MP: 1

β : 23.7° MH: .6743 n: 2100 rpm v/u : .231 ϕ : 3.6° T: 287.7 K



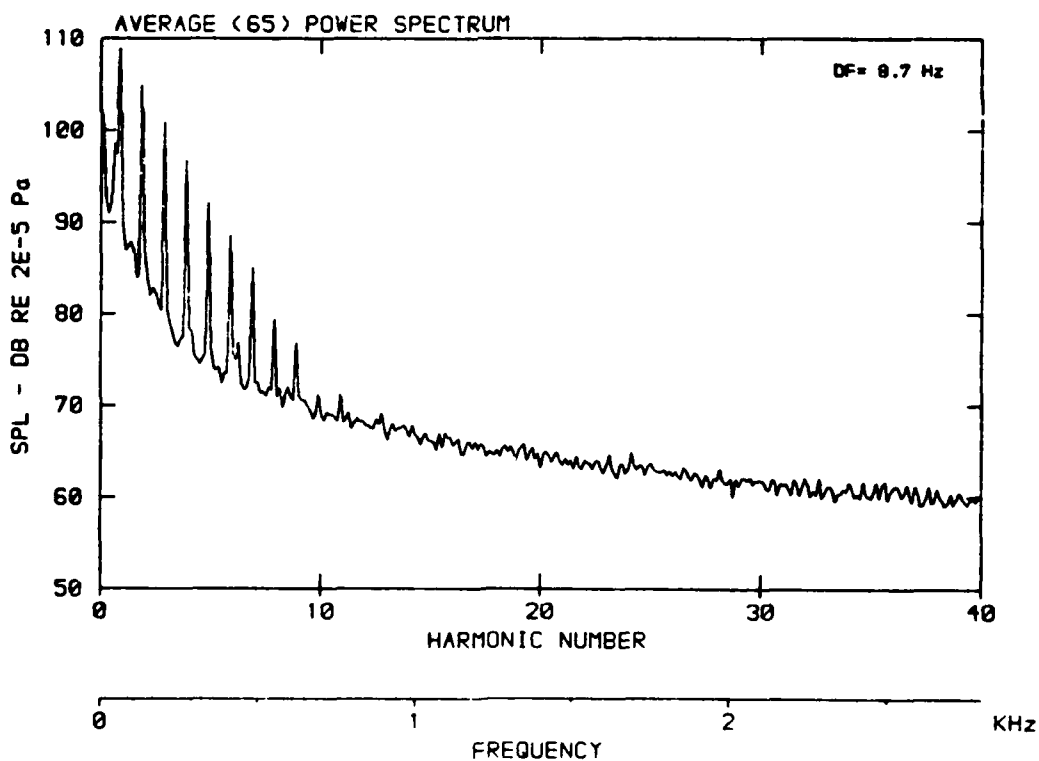
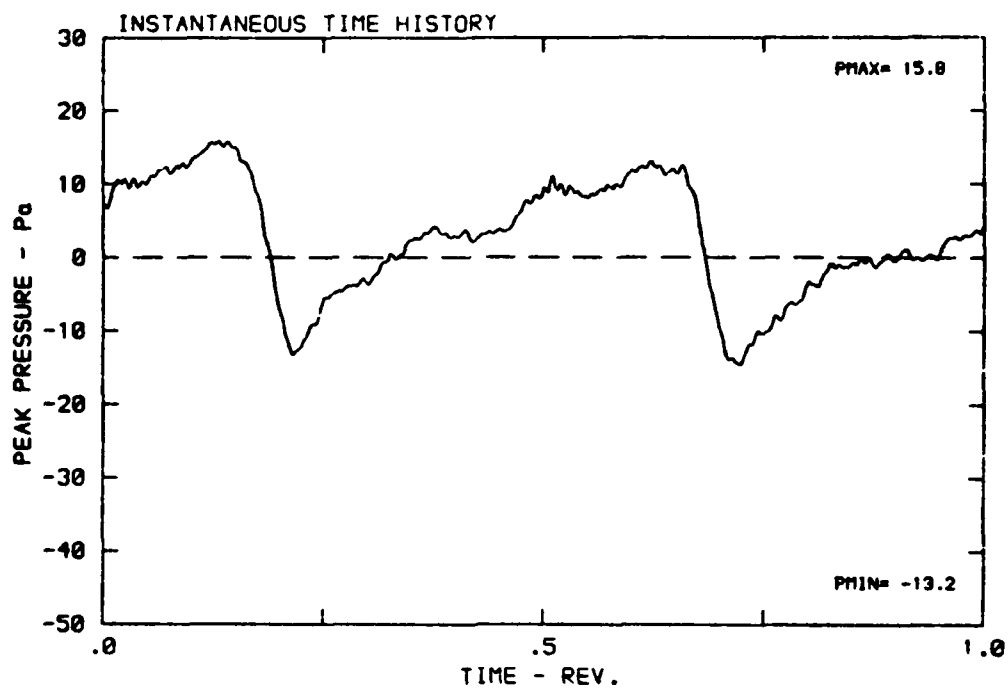
DATA POINT: FNC-5 RUN: 174 MP: 1

β : 23.7° MH: .6743 n: 2100 rpm v/u : .231 ϕ : 3.6° T: 287.7 K



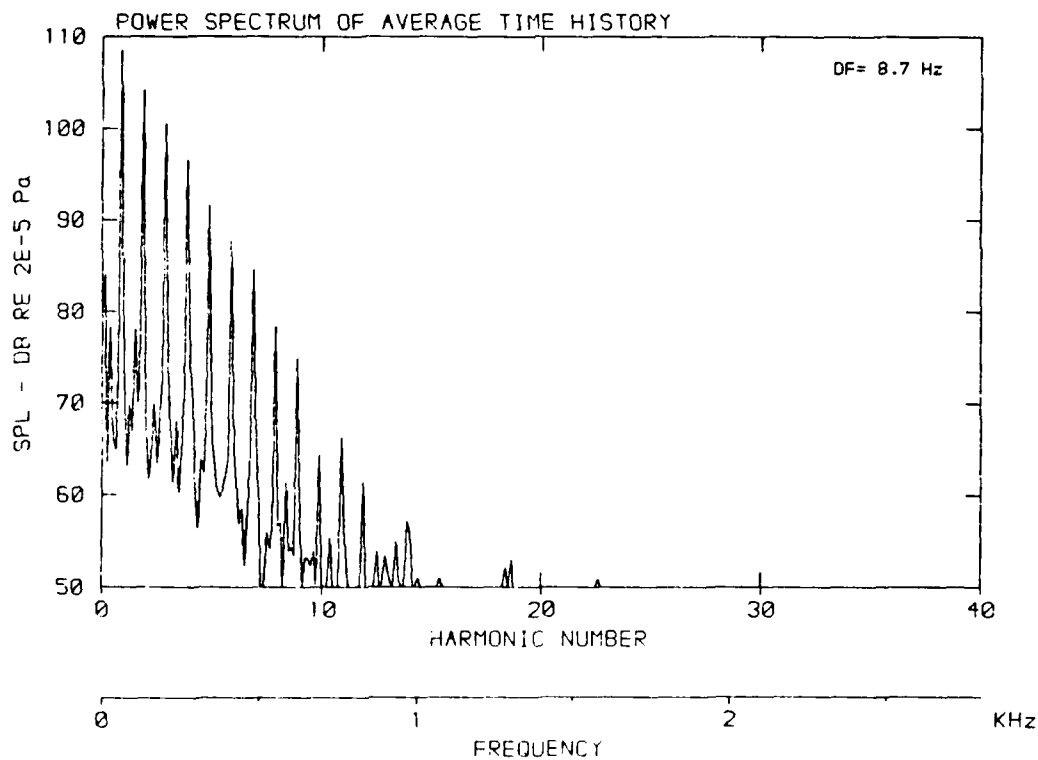
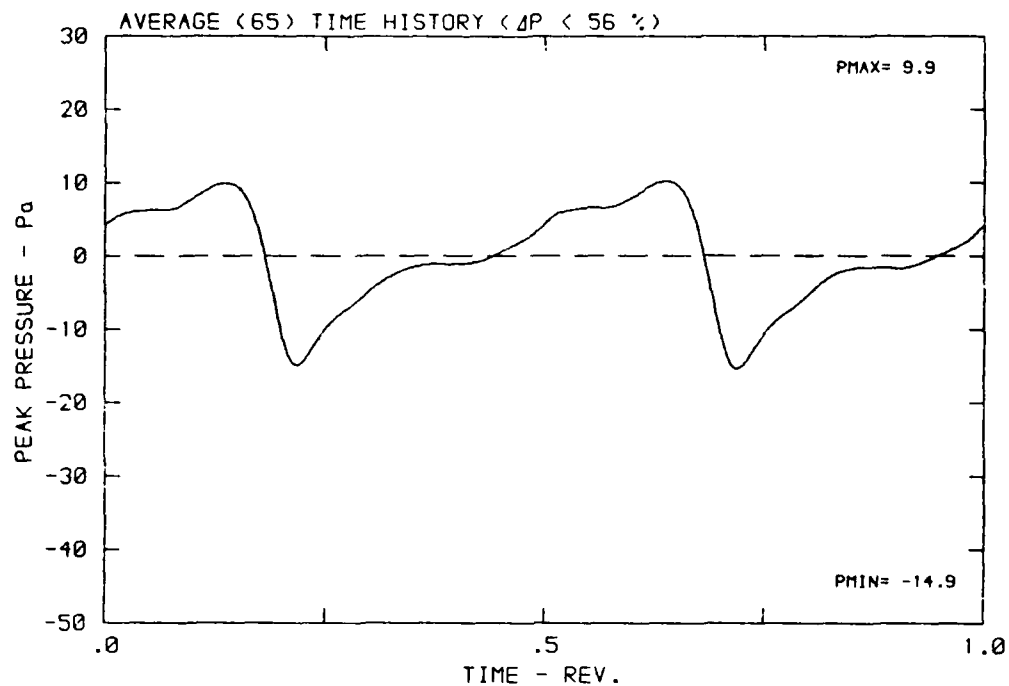
DATA POINT: FNC-5 RUN: 174 MP: 2

β : 23.7° MH: .6743 n: 2100 rpm v/u: .231 ϕ : 3.6° T: 287.7 K



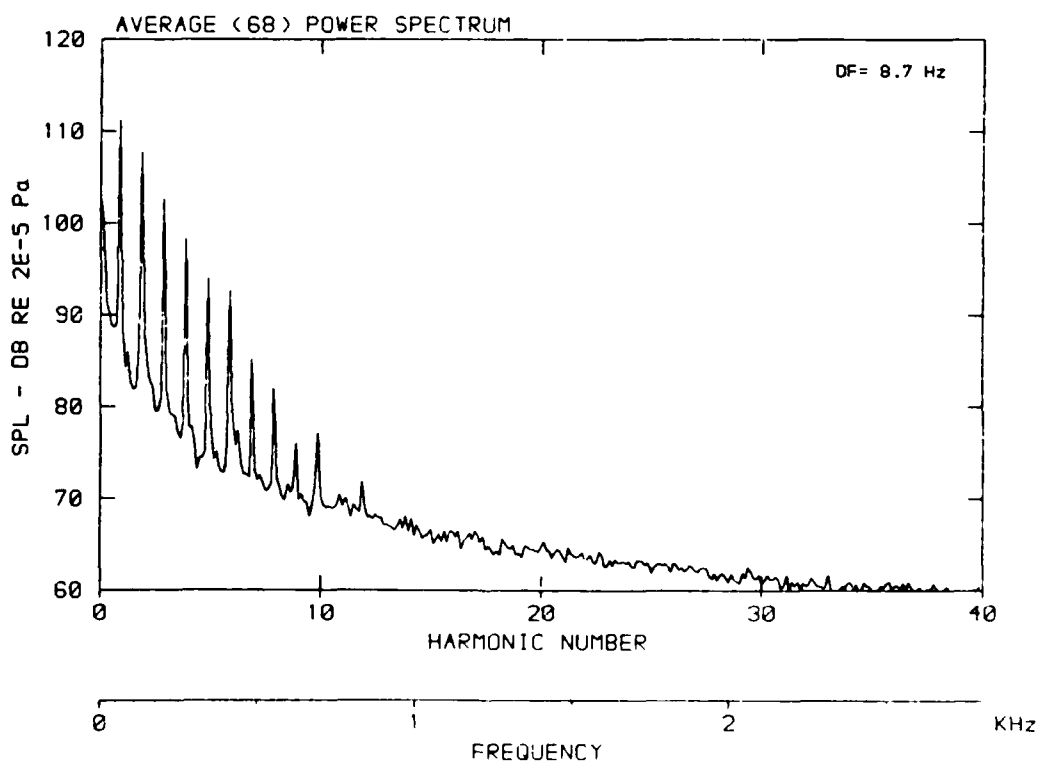
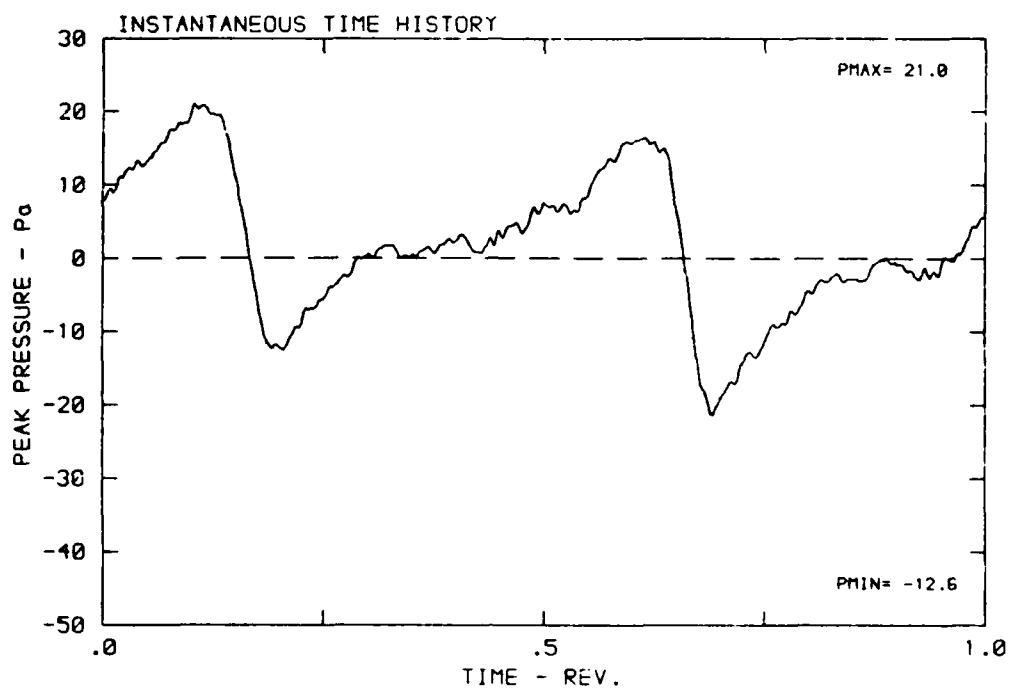
DATA POINT: FNC-5 RUN: 174 MP: 2

β : 23.7° MH: .6743 n: 2100 rpm v/u: .231 ϕ : 3.6° T: 287.7 K



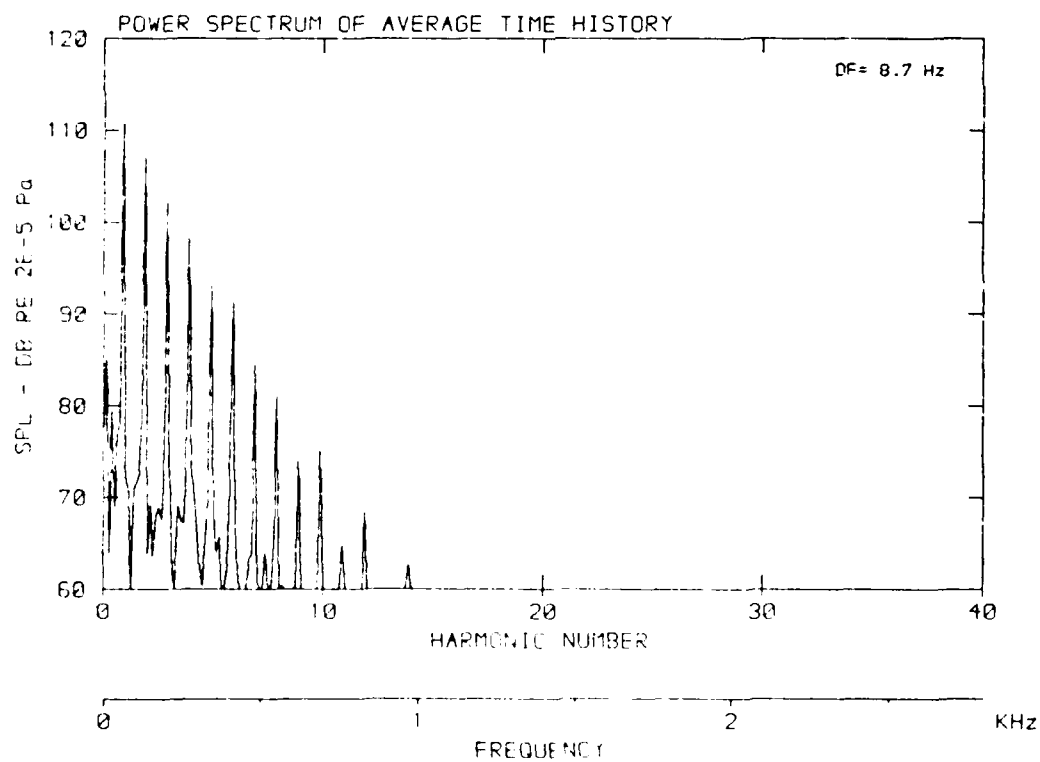
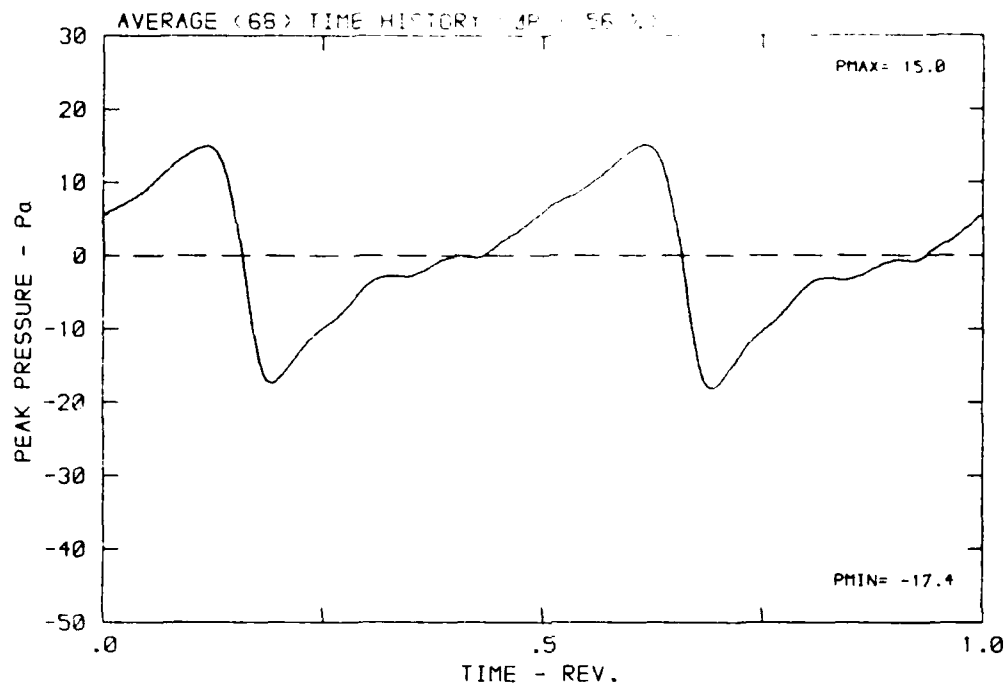
DATA POINT: FNC-5 RUN: 174 MP: 3

β : 23.7° MH: .6743 n: 2100 rpm v/u: .231 ϕ : 3.6° T: 287.7 K



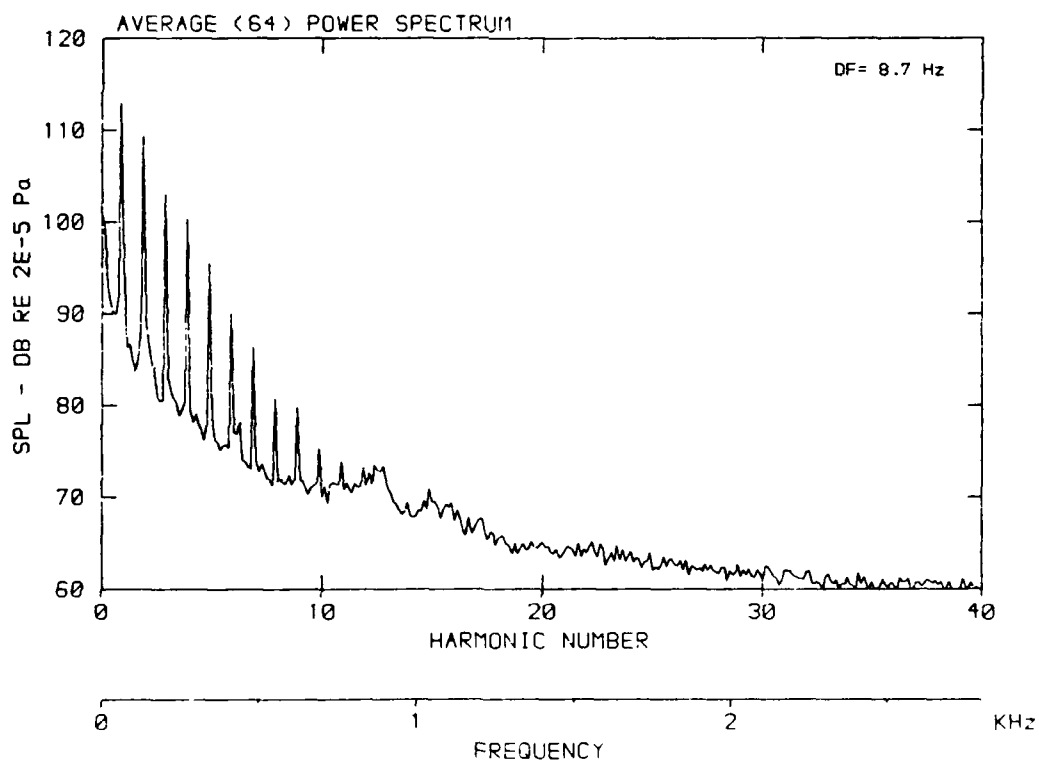
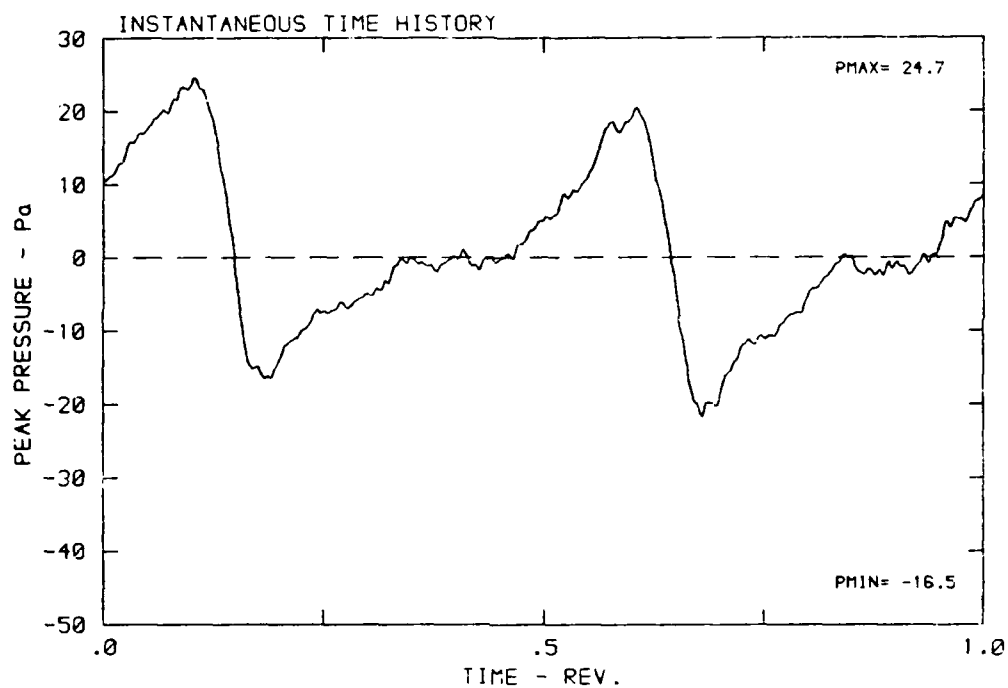
DATA POINT: FNC-5 RUN: 174 MP: 3

β : 23.7° MH: .6743 n: 2100 rpm λ : .231 ϕ : 3.6° T: 287.7 K



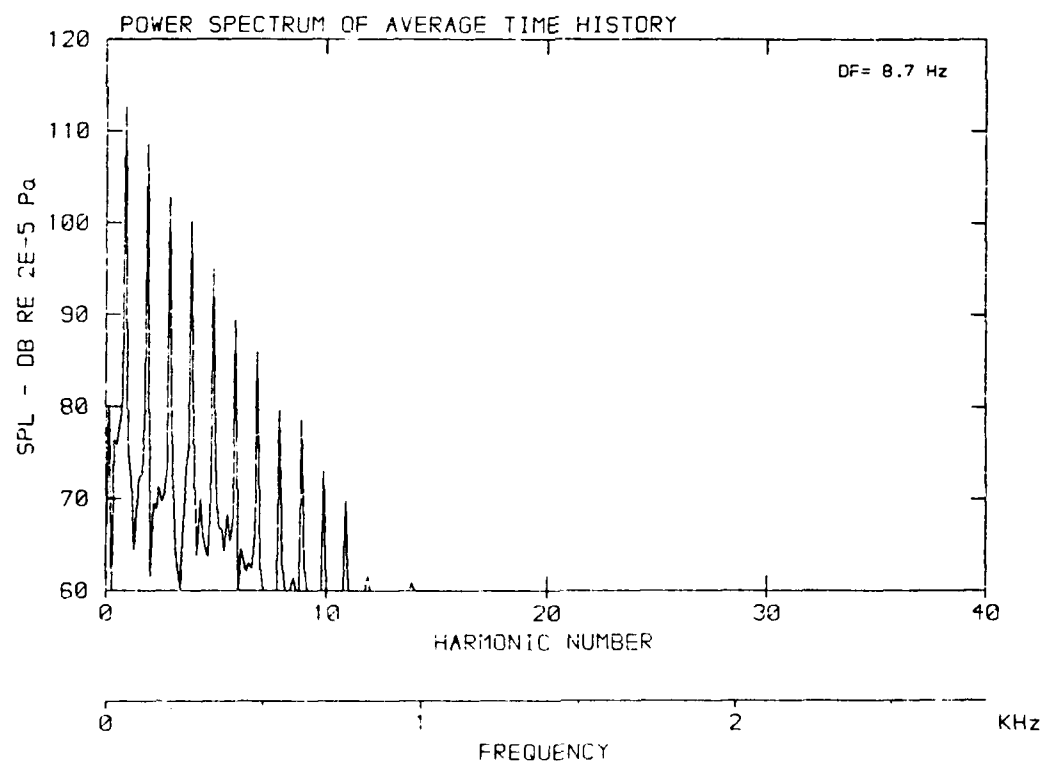
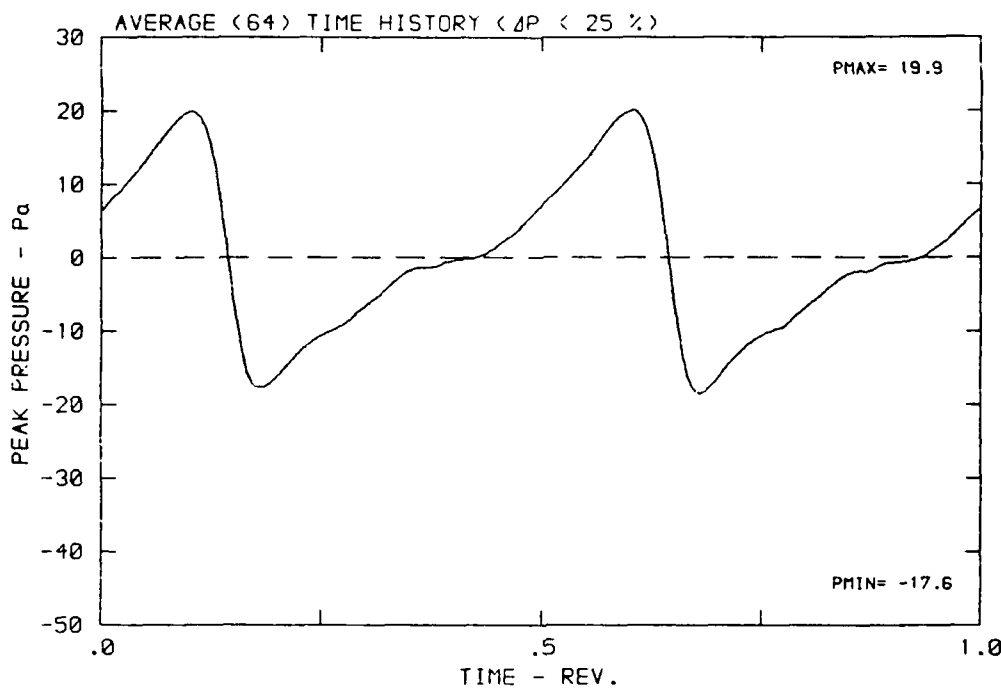
DATA POINT: FNC-5 RUN: 174 MP: 4

β : 23.7° MH: .6743 n: 2100 rpm v/u : .231 ϕ : 3.6° T: 287.7 K



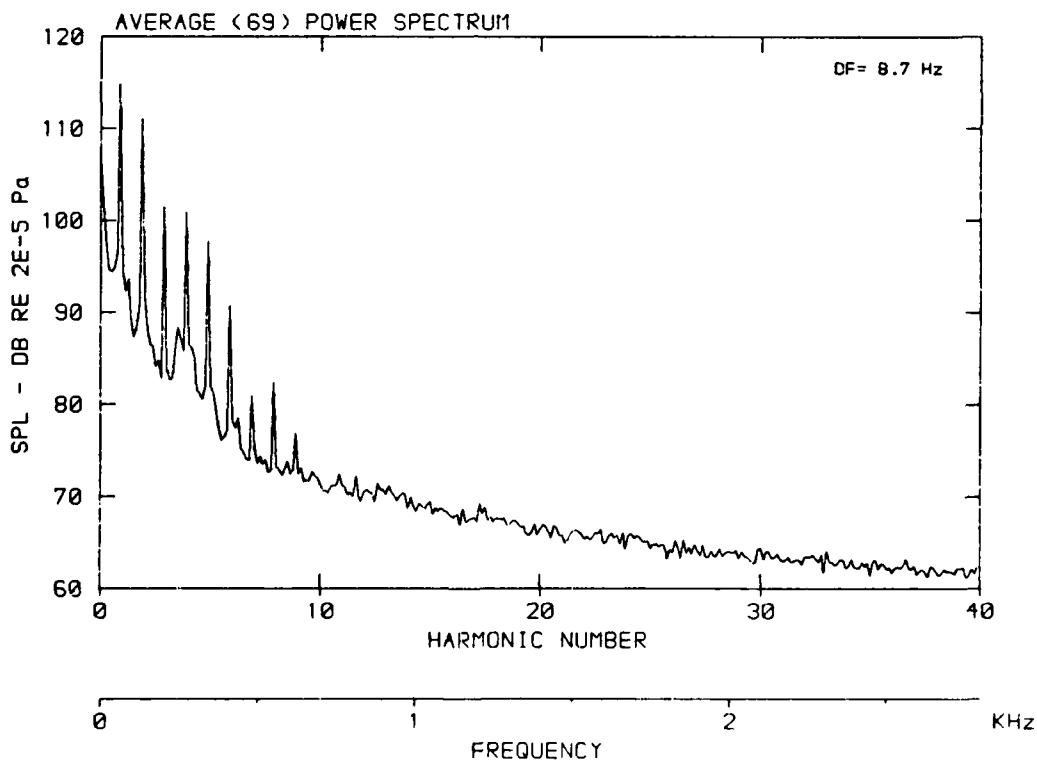
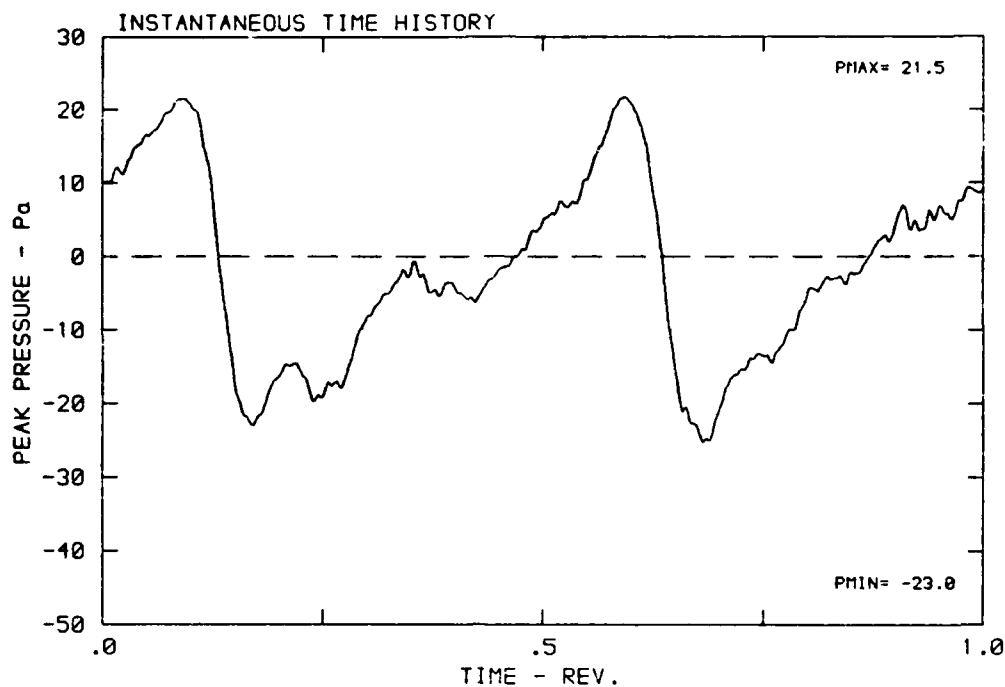
DATA POINT: FNC-5 RUN: 174 MP: 4

β : 23.7° MH: .6743 n: 2100 rpm v/u: .231 ϕ : 3.6° T: 287.7 K



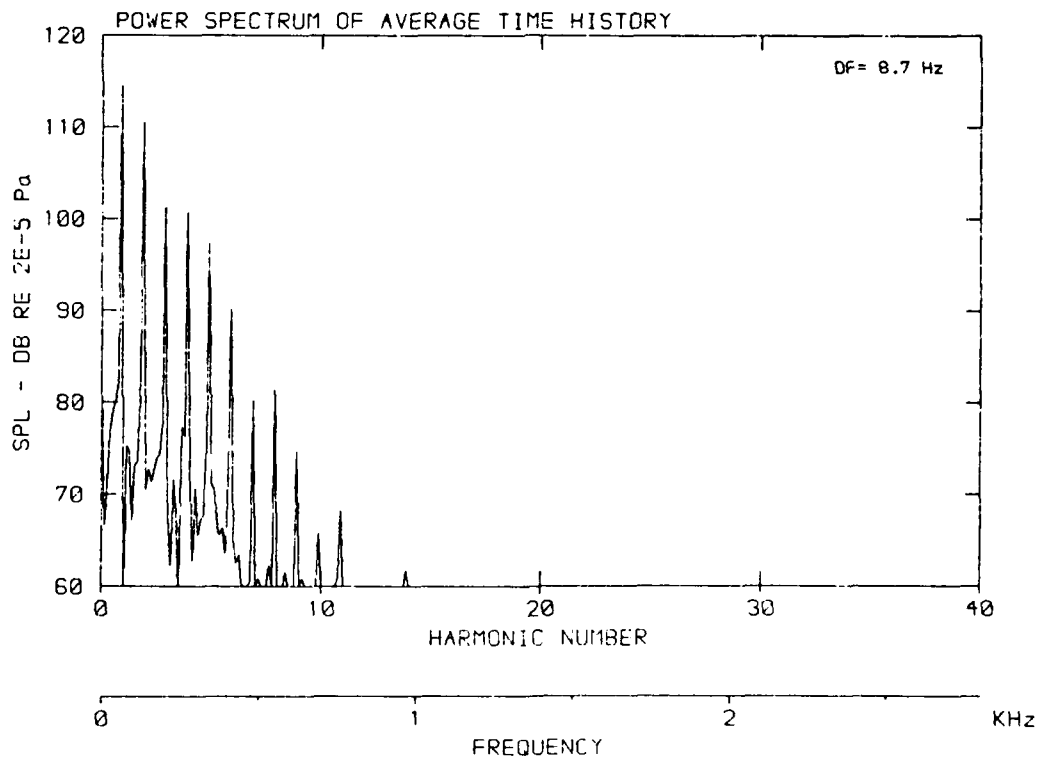
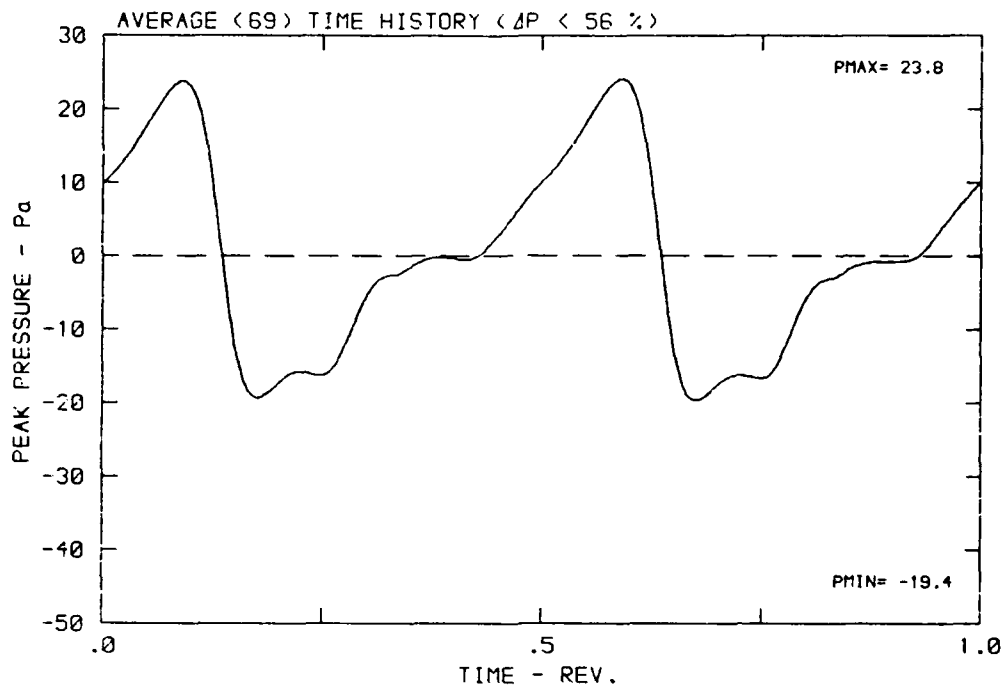
DATA POINT: FNC-5 RUN: 174 MP: 5

β : 23.7° MH: .6743 n: 2100 rpm v/u: .231 ϕ : 3.6° T: 287.7 K



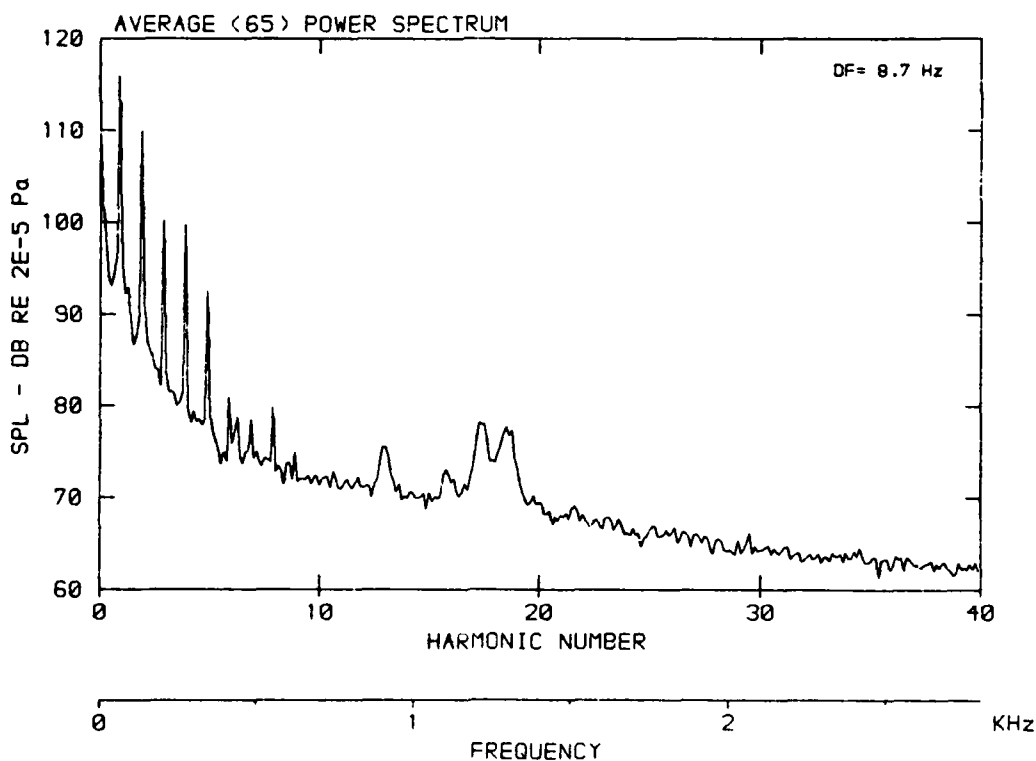
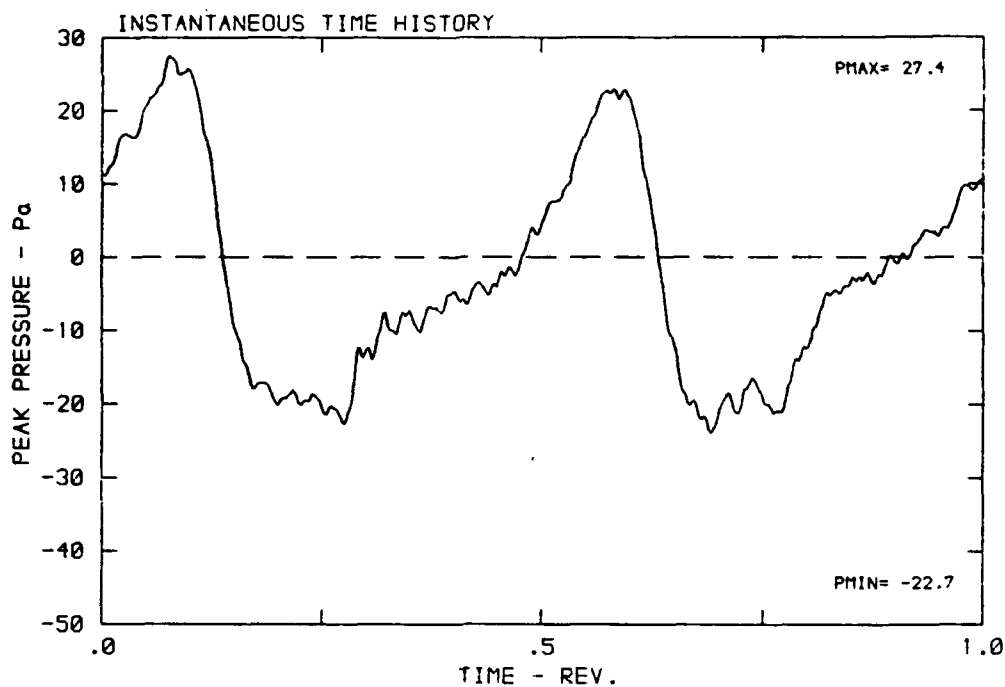
DATA POINT: FNC-5 RUN: 174 MP: 5

β : 23.7° MH: .6743 n: 2100 rpm v/u: .231 ϕ : 3.6° T: 287.7 K



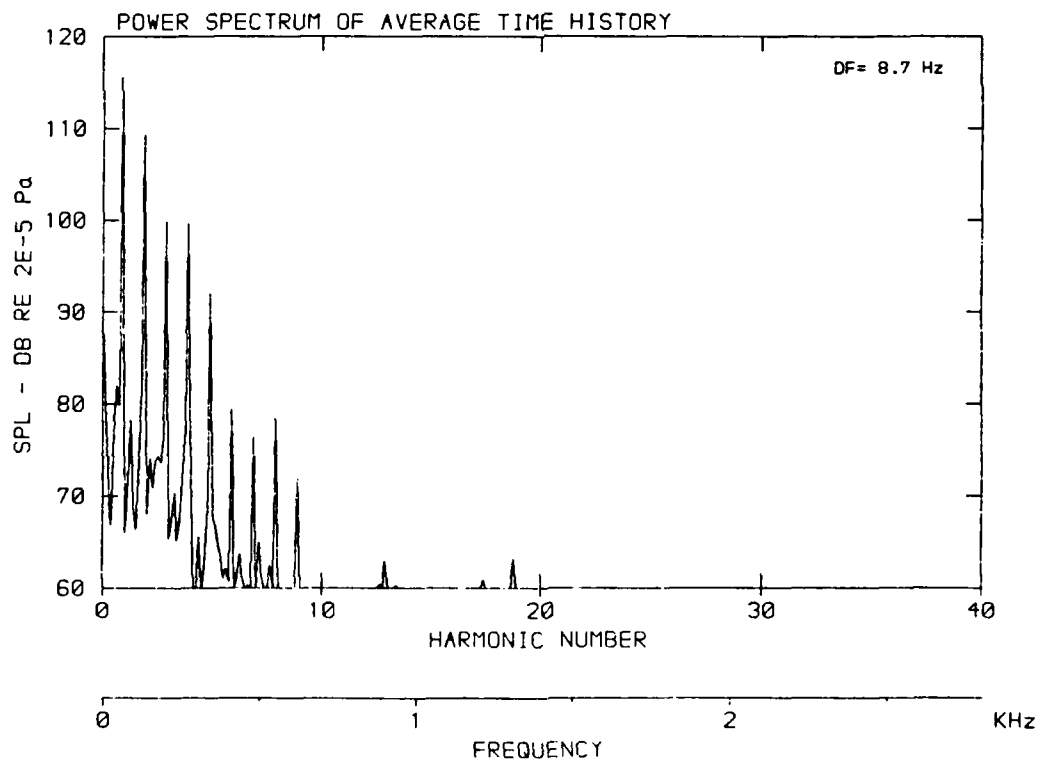
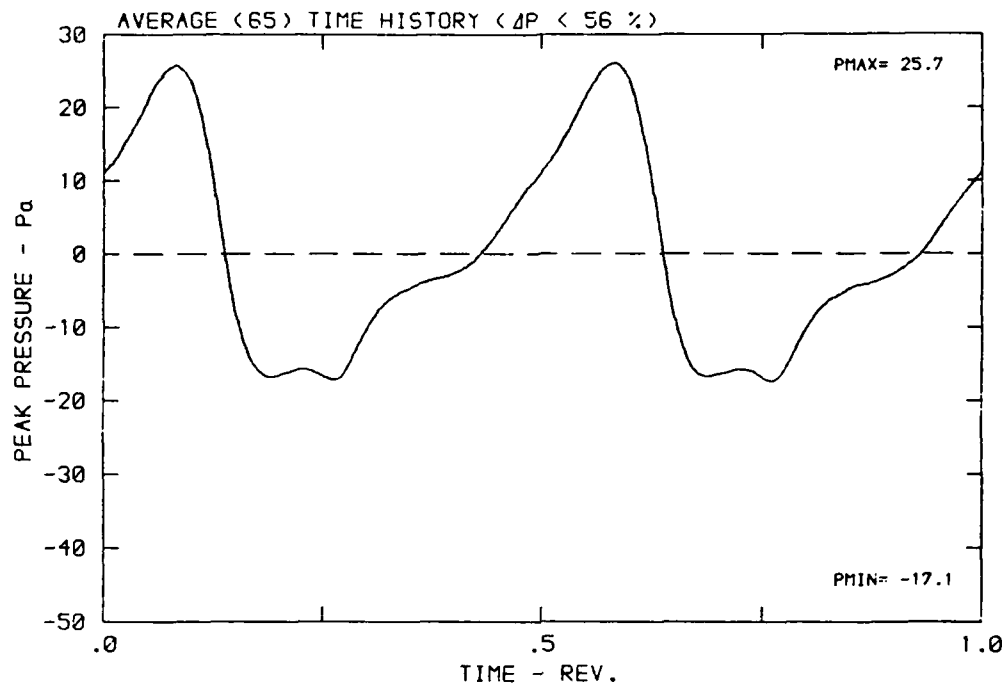
DATA POINT: FNC-5 RUN: 174 MP: 6

β : 23.7° MH: .6743 n: 2100 rpm v/u: .231 ϕ : 3.6° T: 287.7 K



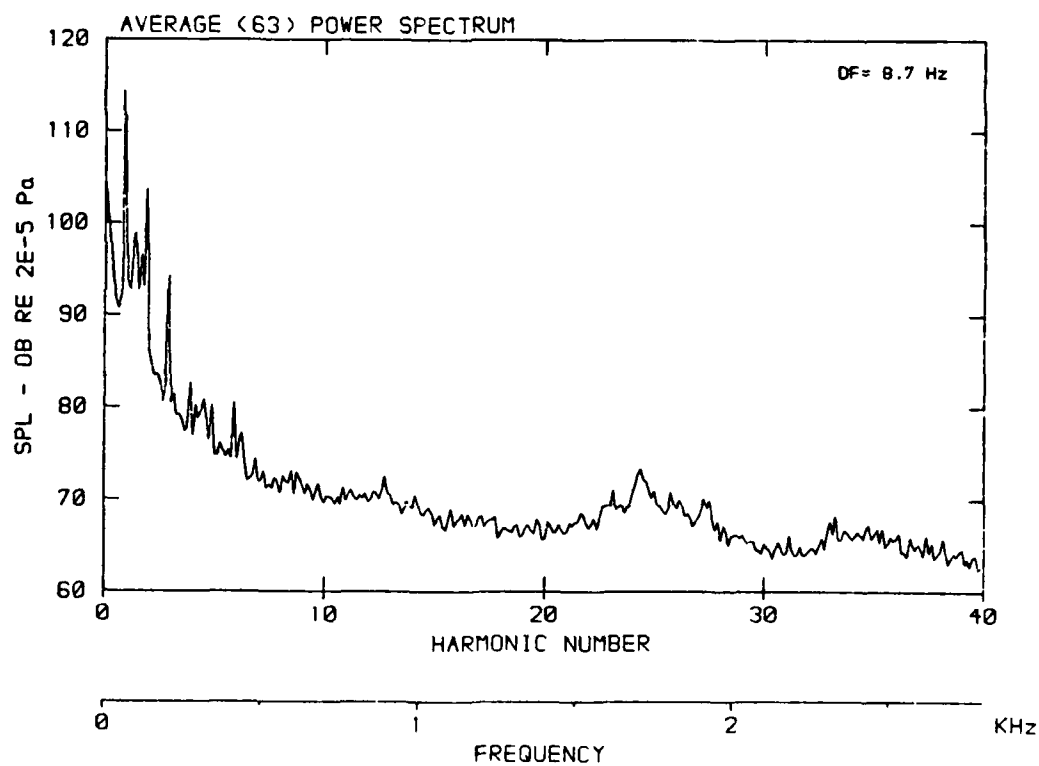
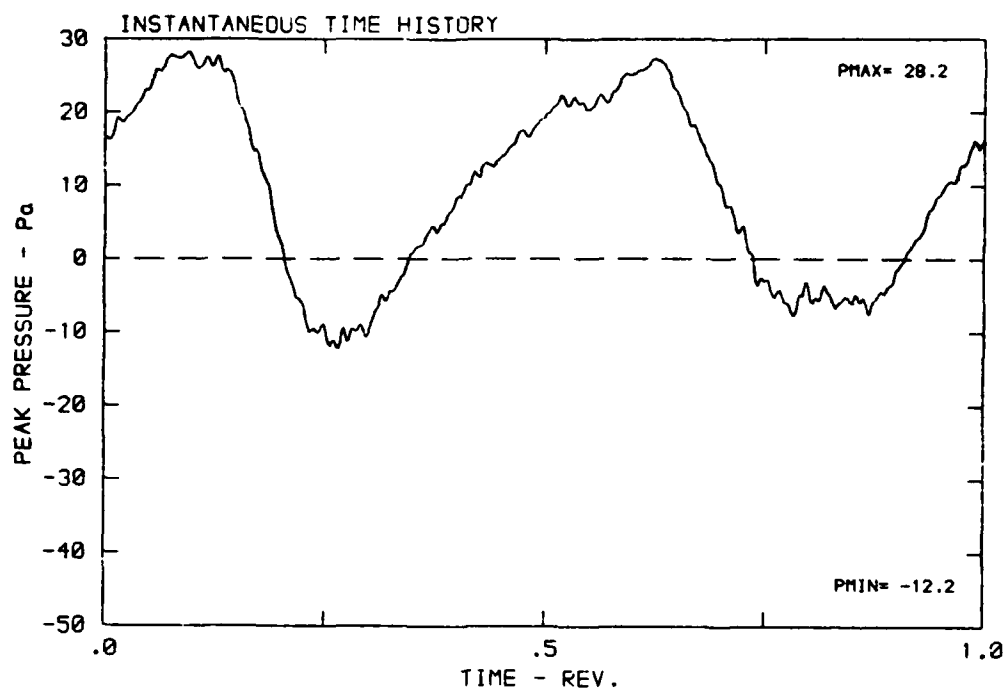
DATA POINT: FNC-5 RUN: 174 MP: 6

β : 23.7° MH: .6743 n: 2100 rpm v/u: .231 ϕ : 3.6° T: 287.7 K



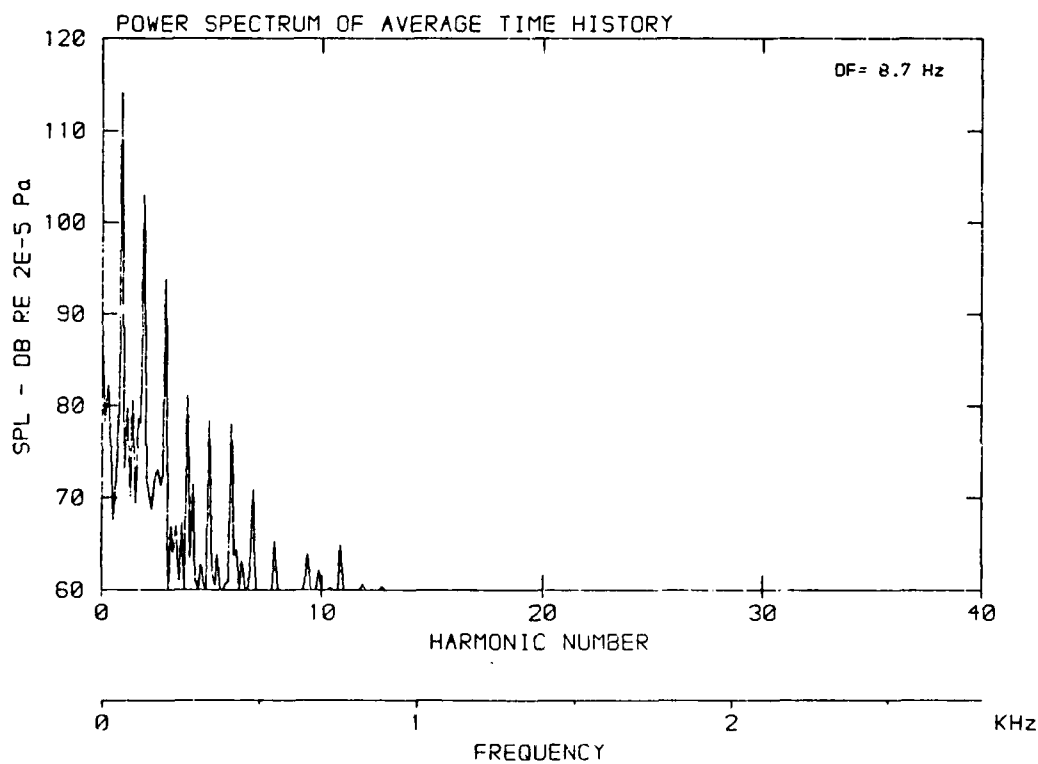
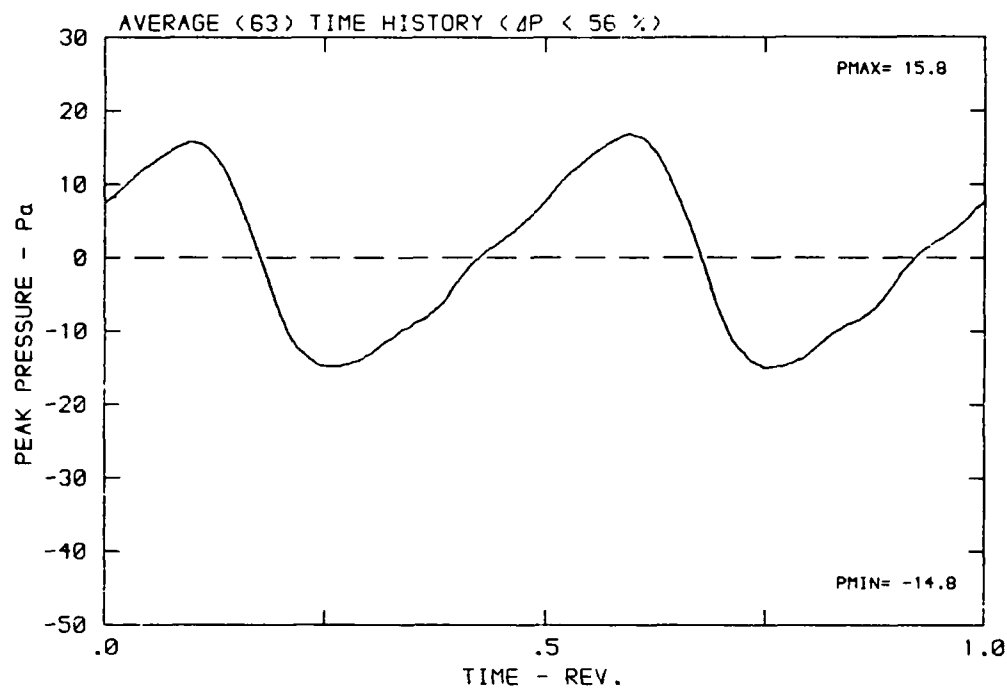
DATA POINT: FNC-5 RUN: 174 MP: 7

β : 23.7° MH: .6743 n: 2100 rpm v/u: .231 ϕ : 3.6° T: 287.7 K



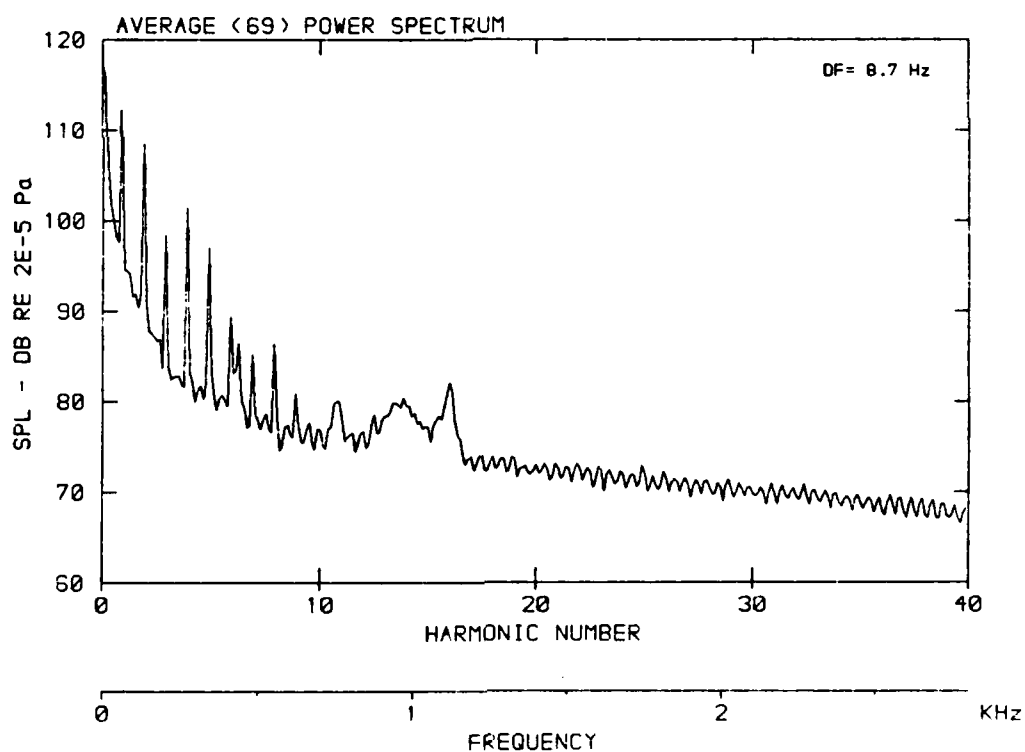
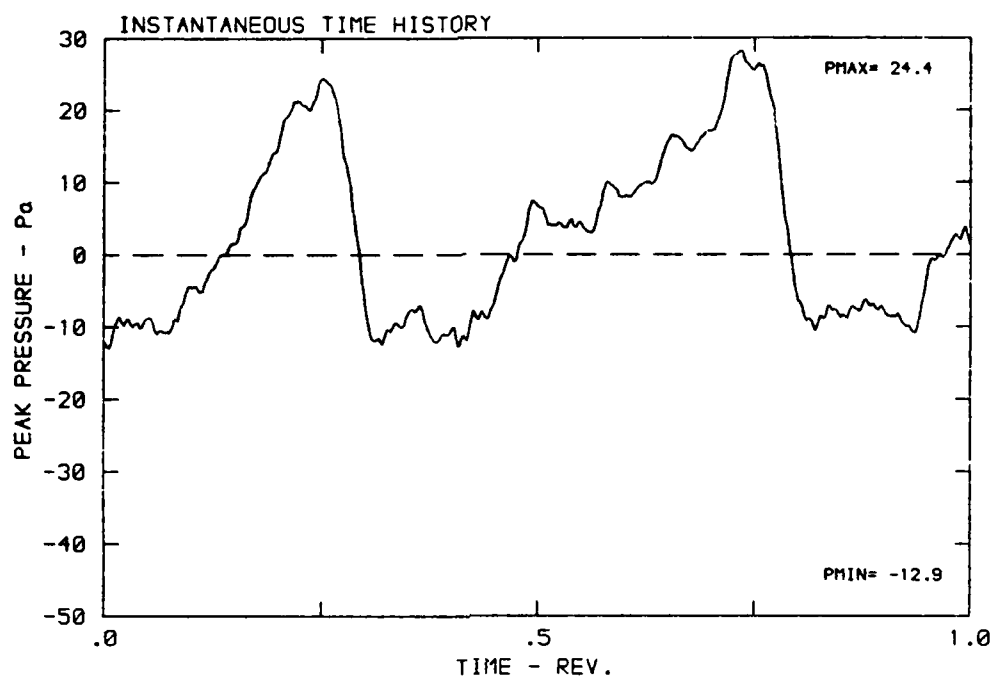
DATA POINT: FNC-5 RUN: 174 MP: 7

β : 23.7° MH: .6743 n: 2100 rpm v/u: .231 ϕ : 3.6° T: 287.7 K



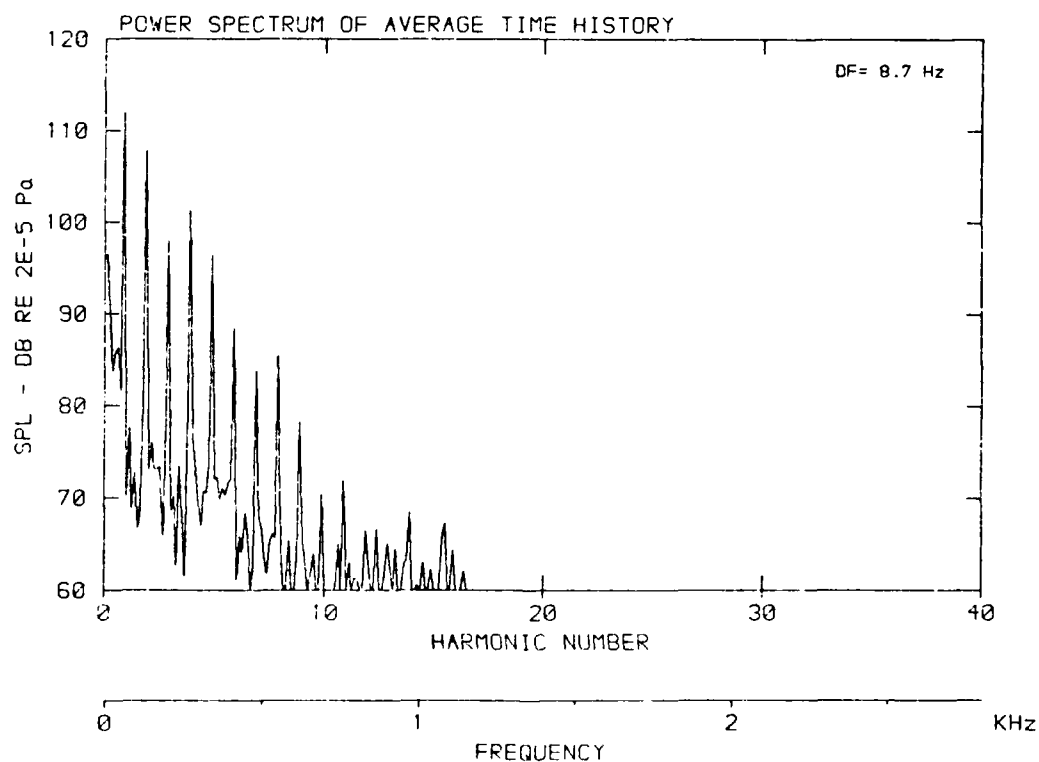
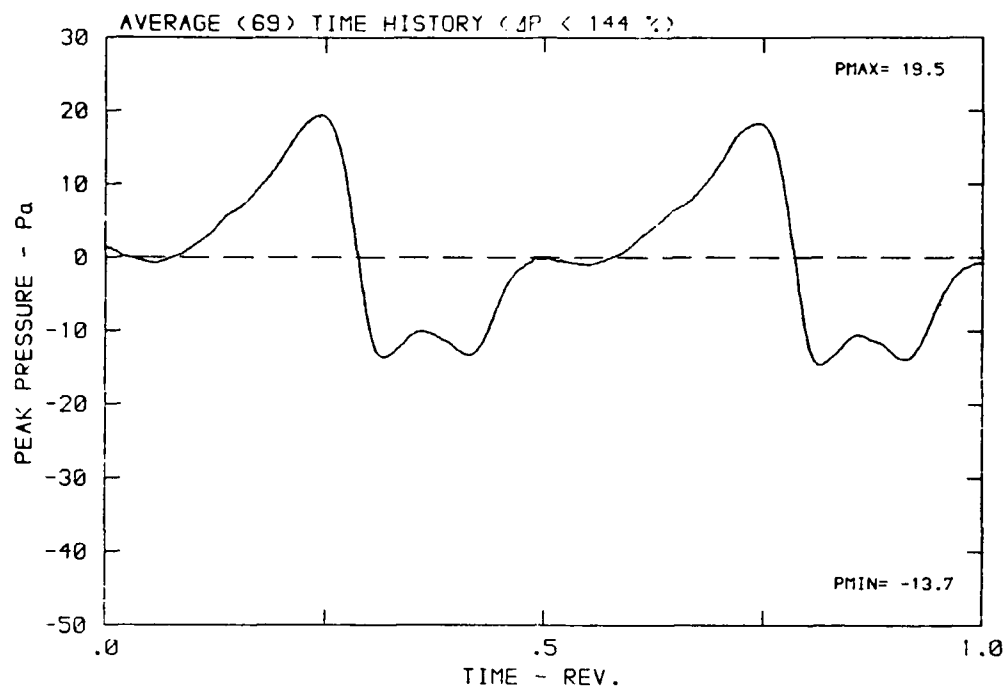
DATA POINT: FNC-5 RUN: 174 MP: 9

β : 23.7° MH: .6743 n: 2100 rpm v/u: .231 ϕ : 3.6° T: 287.7 K



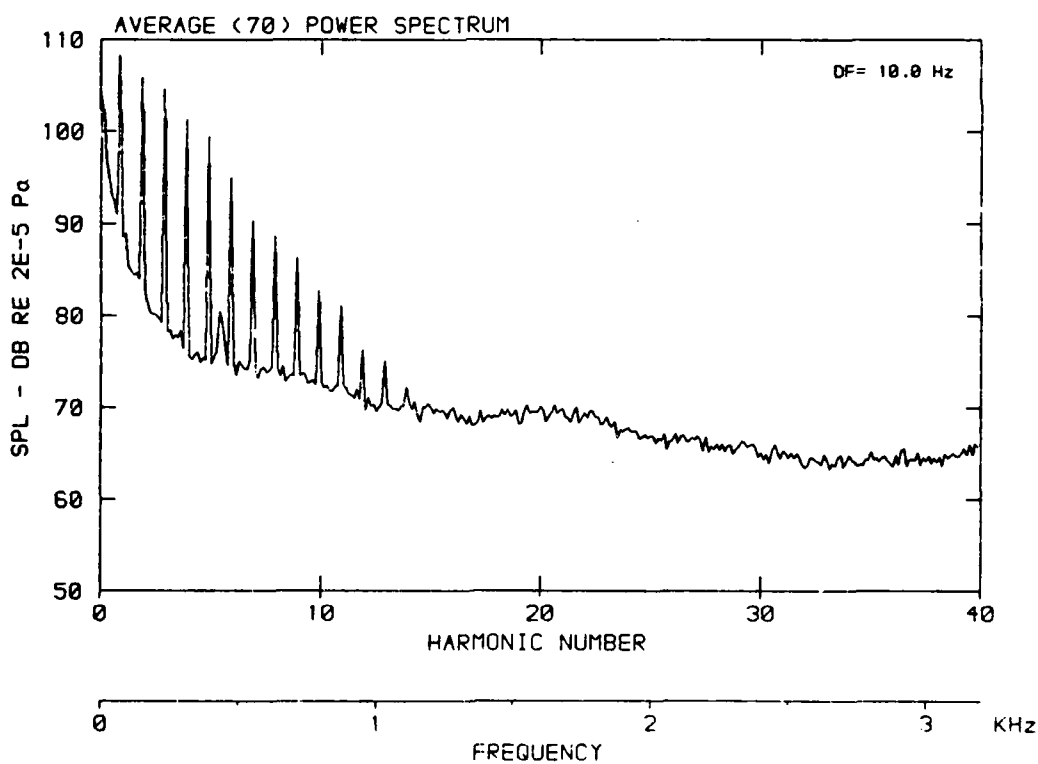
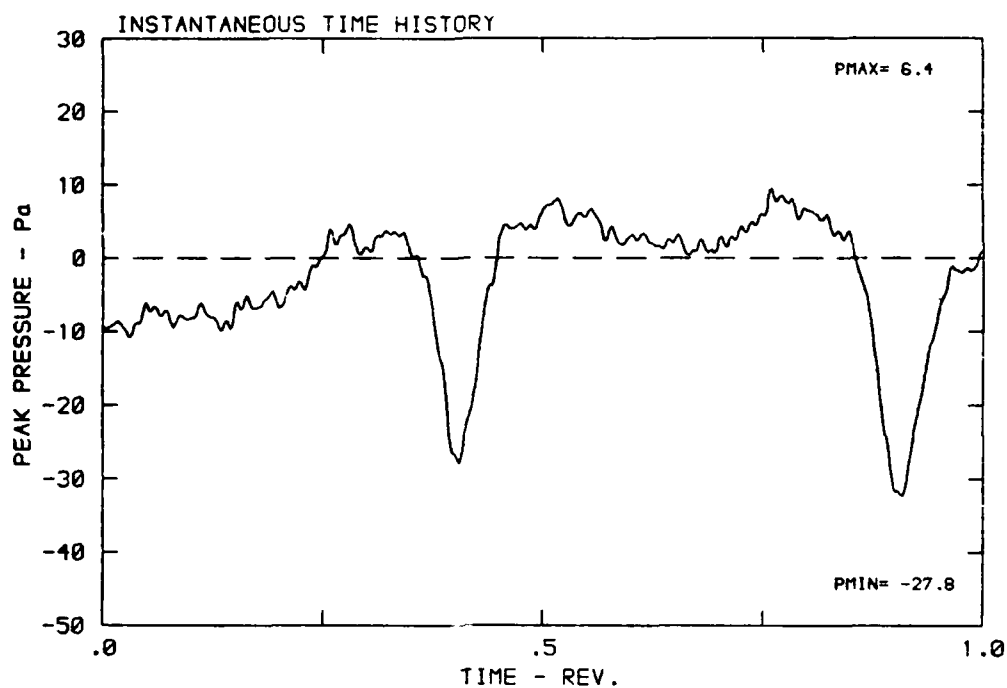
DATA POINT: FNC-5 RUN: 174 MP: 9

β : 23.7° MH: .6743 n: 2100 rpm v/u : .231 ϕ : 3.6° T: 287.7 K



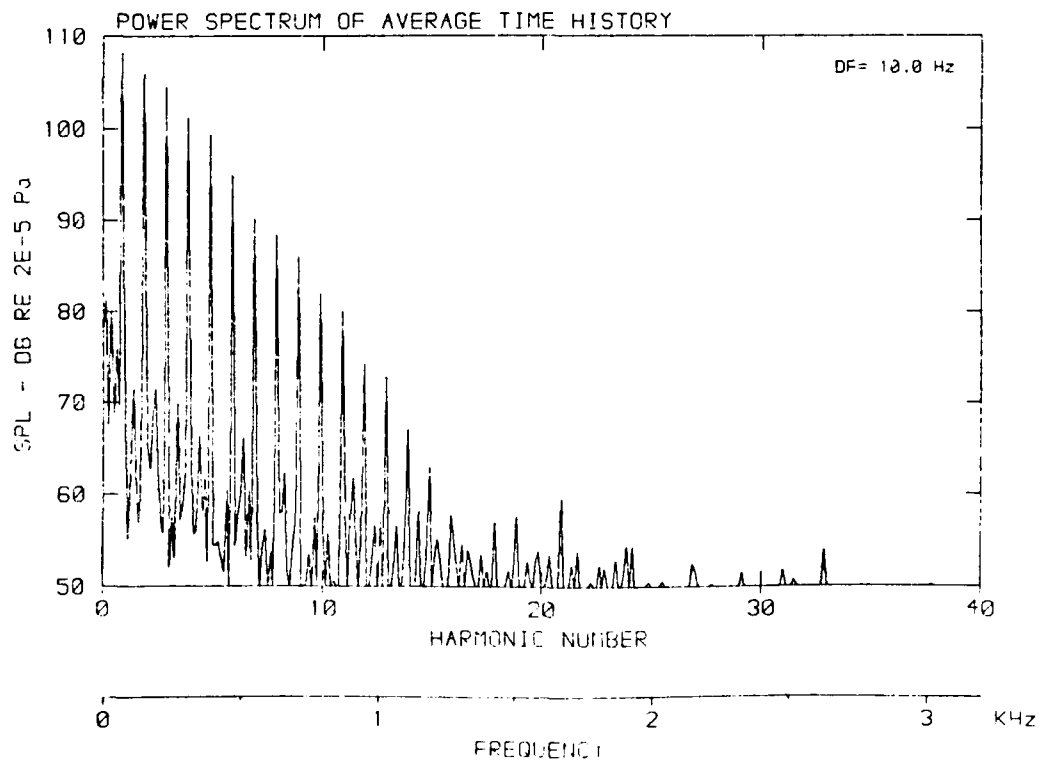
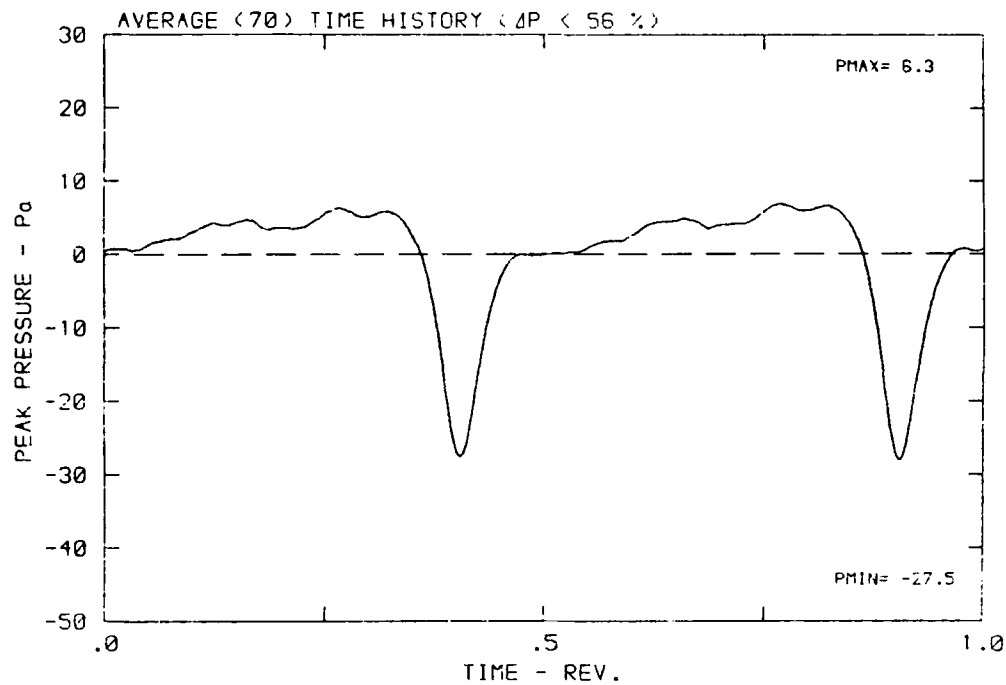
DATA POINT: FNC-6 RUN: 173 MP: 1

β : 23.7° MH: .7781 n: 2400 rpm v/u: .264 ϕ : 3.6° T: 286.6 K



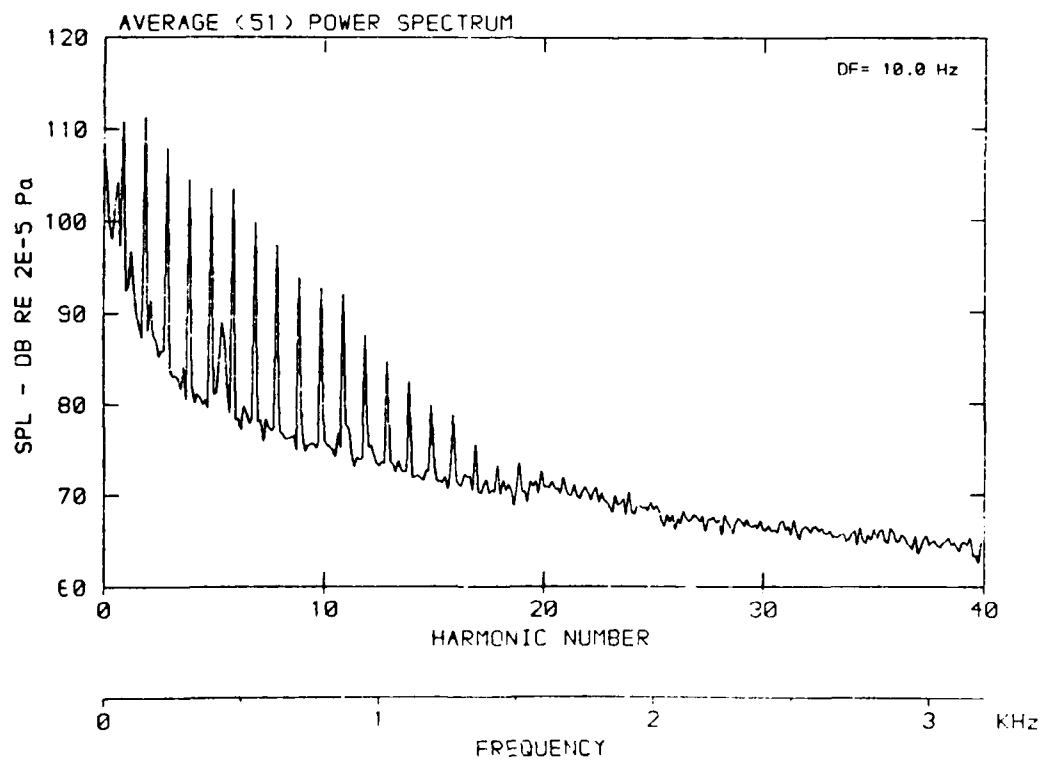
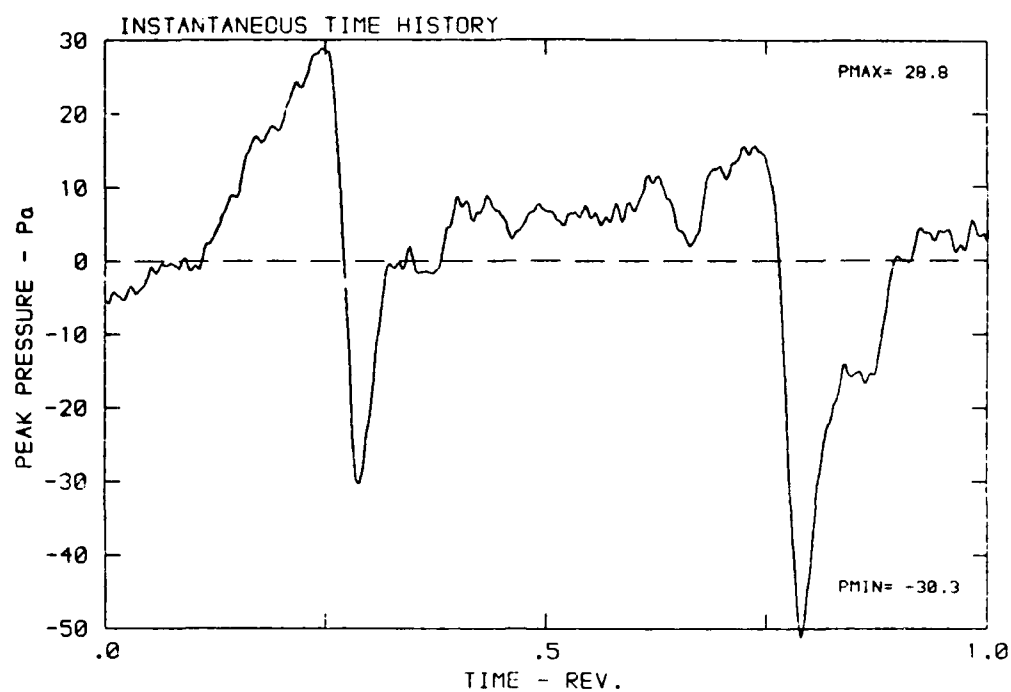
DATA POINT: FNC-6 RUN: 173 MP: 1

β : 23.7° MH: .7781 n: 2400 rpm v/u : .264 ϕ : 3.6° T: 296.6 K



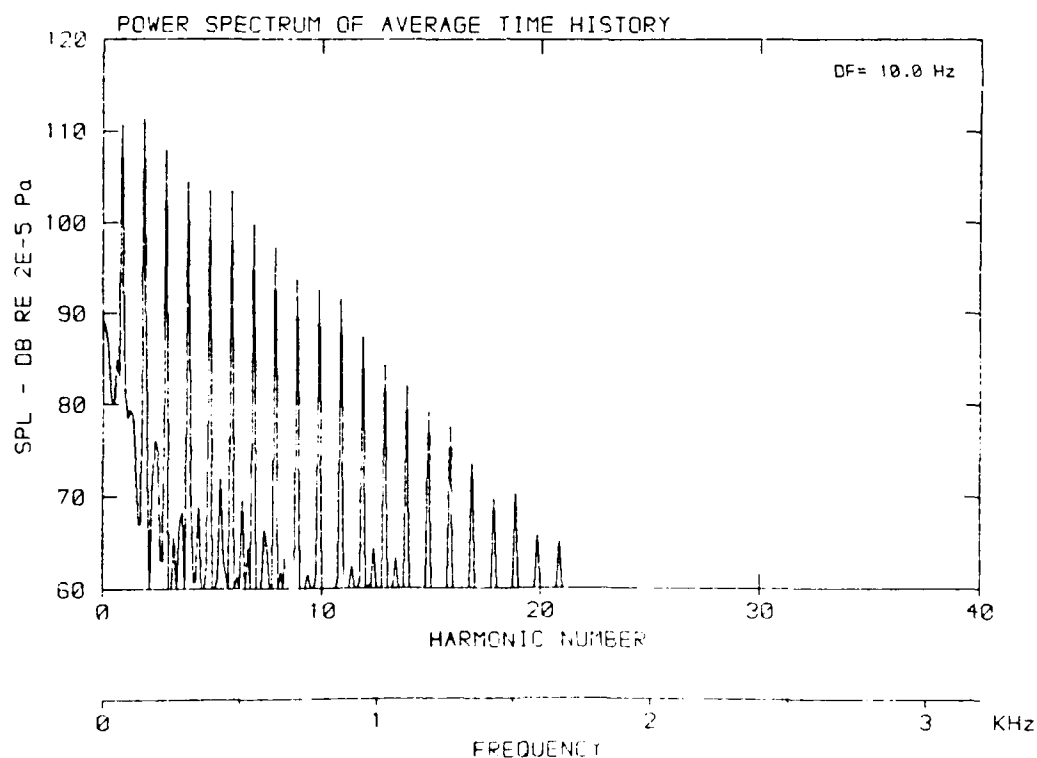
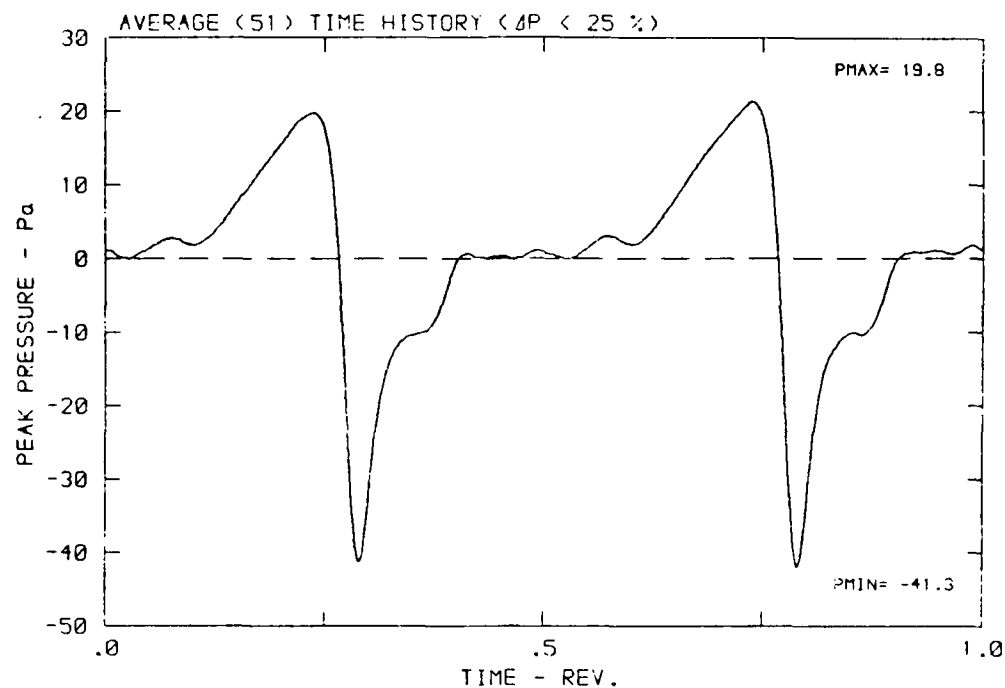
DATA POINT: FNC-6 RUN: 173 MP: 2

β : 23.7° MH: .7781 n: 2400 rpm v/u: .264 ϕ : 3.6° T: 286.6 K



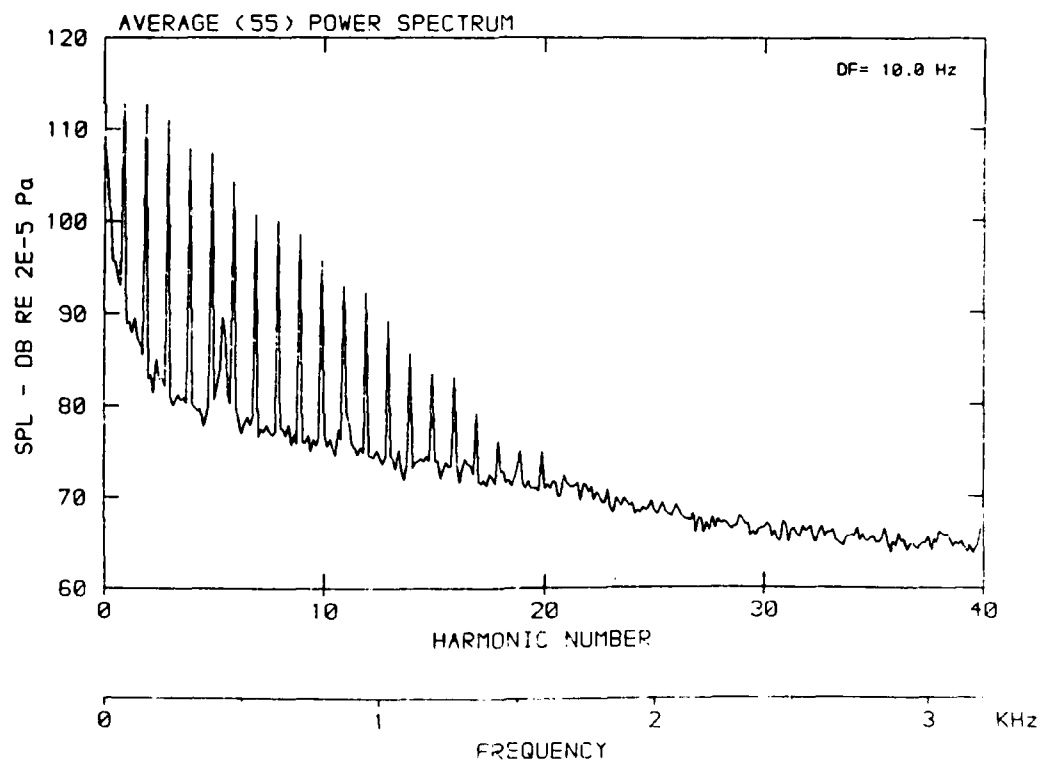
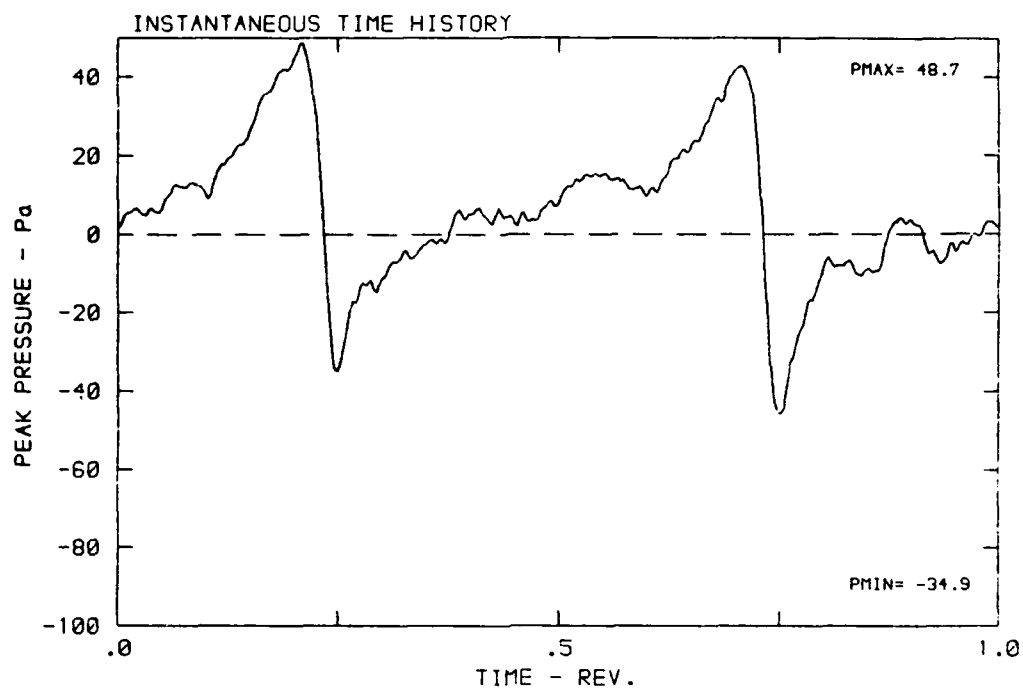
DATA POINT: FNC-6 RUN: 173 MP: 2

β : 23.7° MH: .7781 n: 2400 rpm v/u : .264 ϕ : 3.6° T: 286.6 K

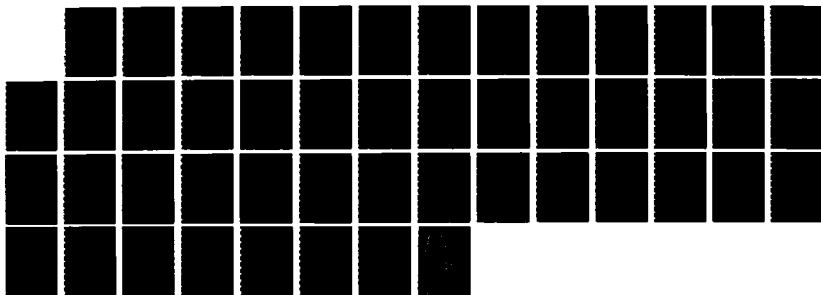


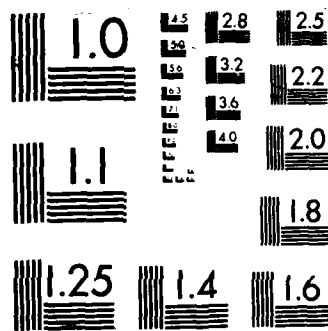
DATA POINT: FNC-6 RUN: 173 MP: 3

β : 23.7° MH: .7781 n: 2400 rpm v/u: .264 ϕ : 3.6° T: 286.6 K



AD-A174 982 DFVLR/FAR (DEUTSCHE FORSCHUNGS-UND VERSUCHSANSTALT FUER 1/3
LUFT UND RAUMFAHR (U) DEUTSCHE FORSCHUNGS- UND
VERSUCHSANSTALT FUER LUFT- UND RAUMF
UNCLASSIFIED W M DOBRZYNSKI ET AL 1986 F/G 28/1 NL

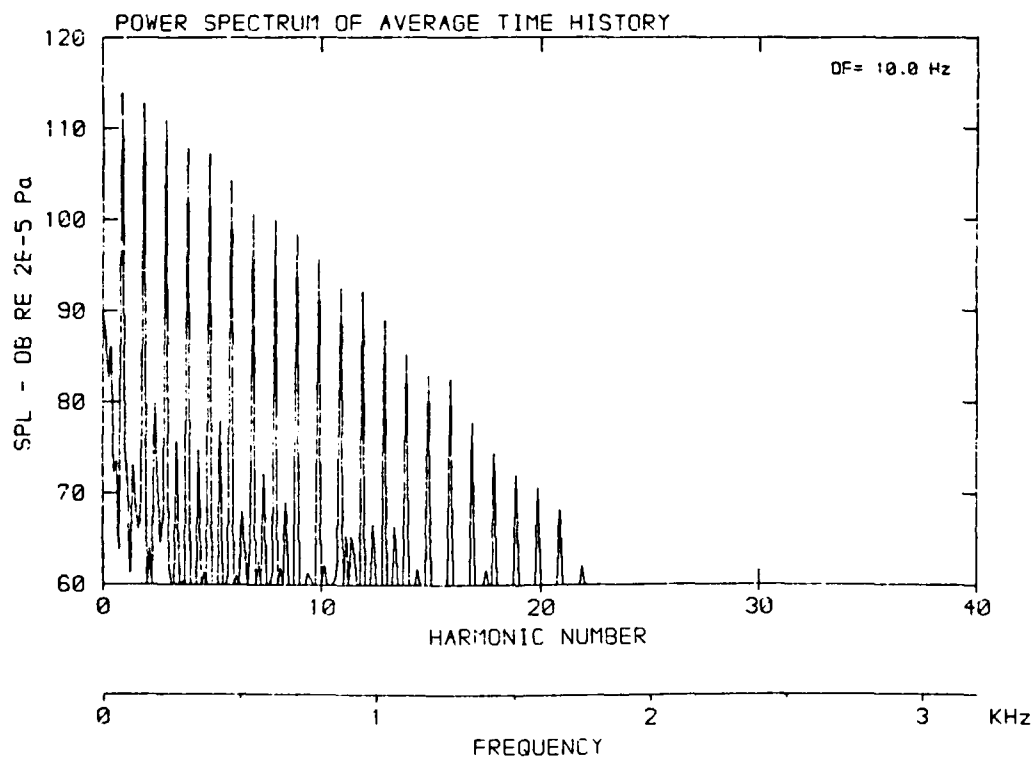
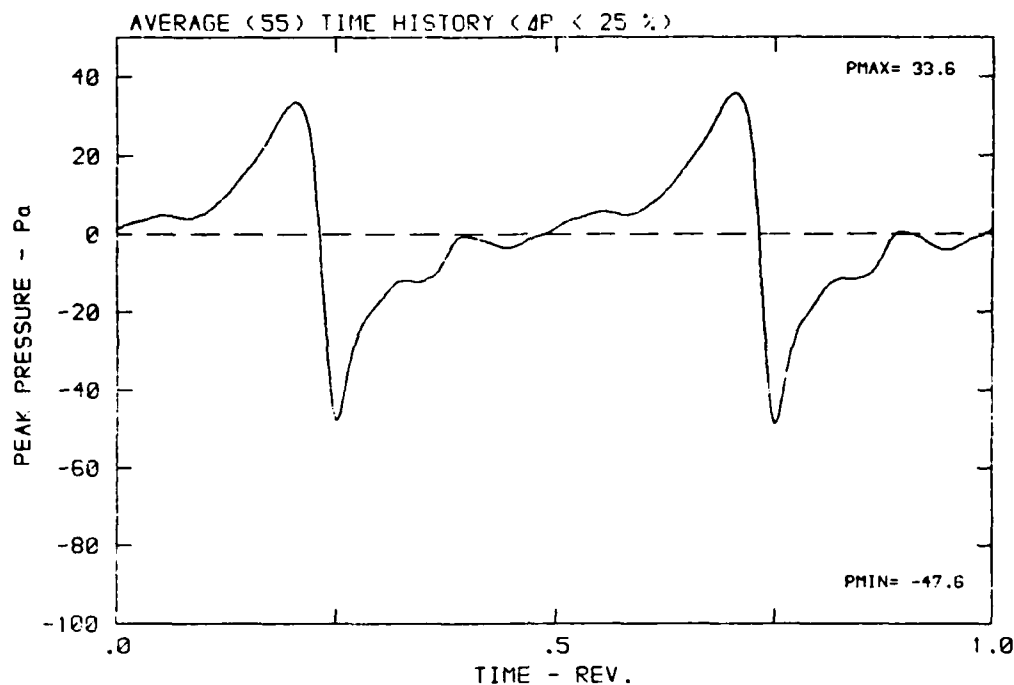




XEROCOPY RESOLUTION TEST CHART

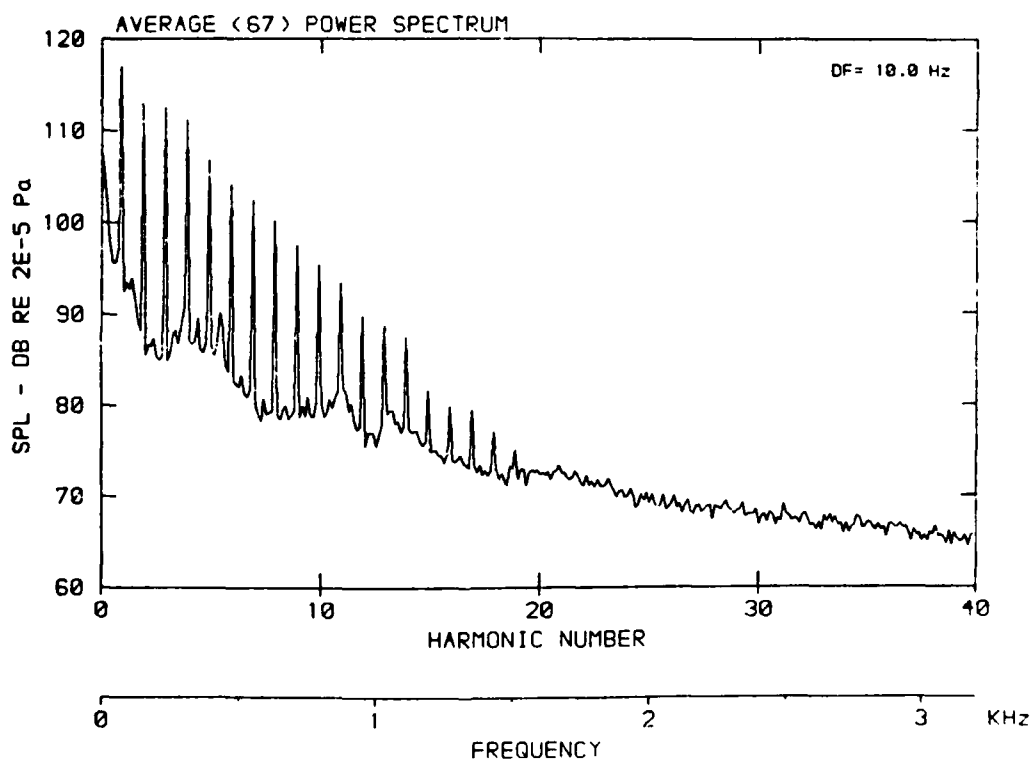
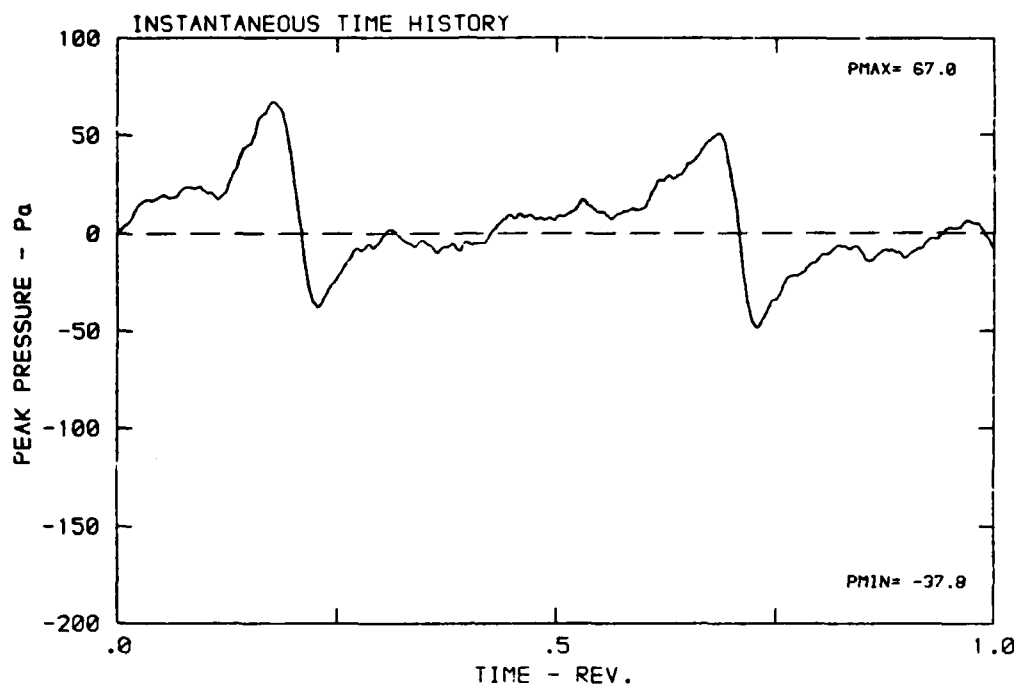
DATA POINT: FNC-6 RUN: 173 MP: 3

β : 23.7° MH: .7781 n: 2400 rpm v/u: .264 ϕ : 3.6° T: 286.6 K



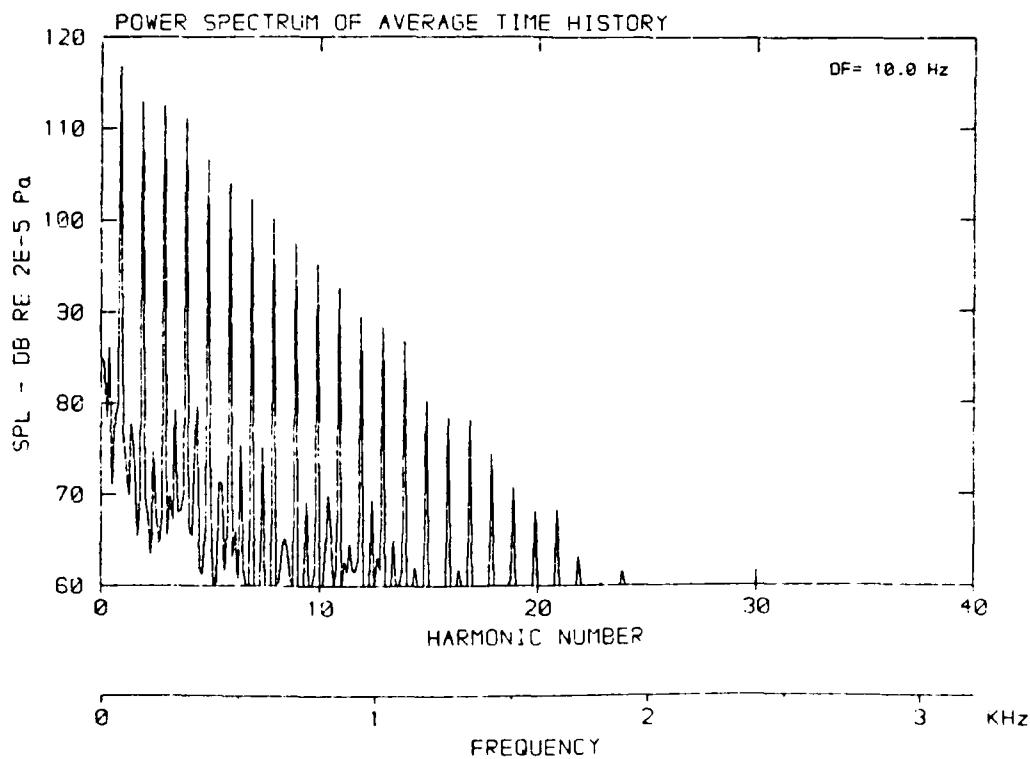
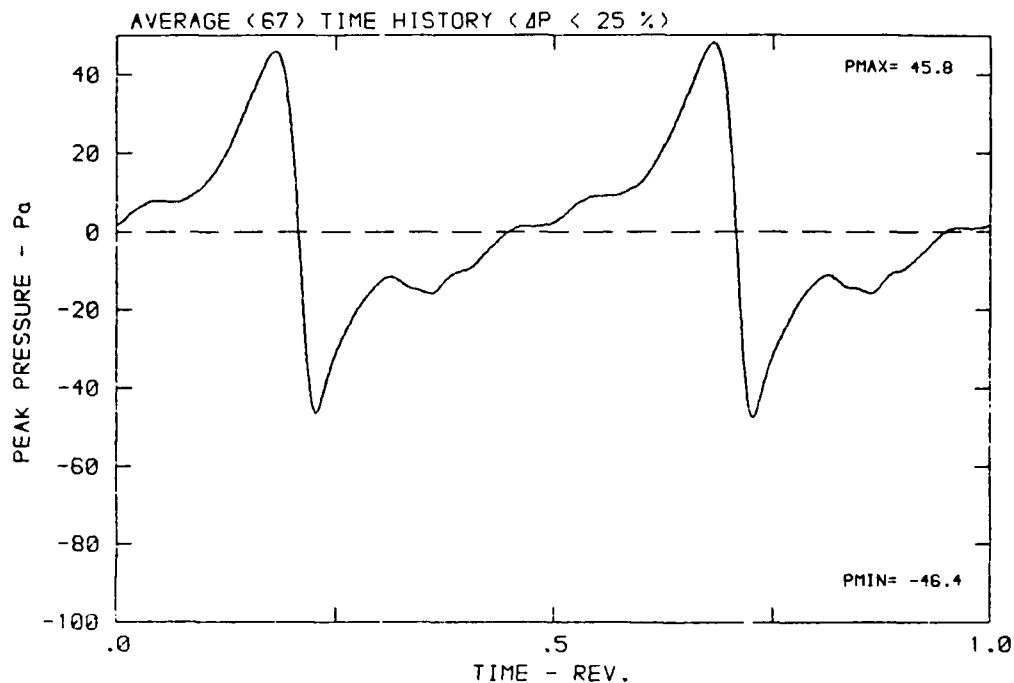
DATA POINT: FNC-6 RUN: 173 MP: 4

β : 23.7° MH: .7781 n: 2400 rpm v/u: .264 ϕ : 3.6° T: 286.6 K



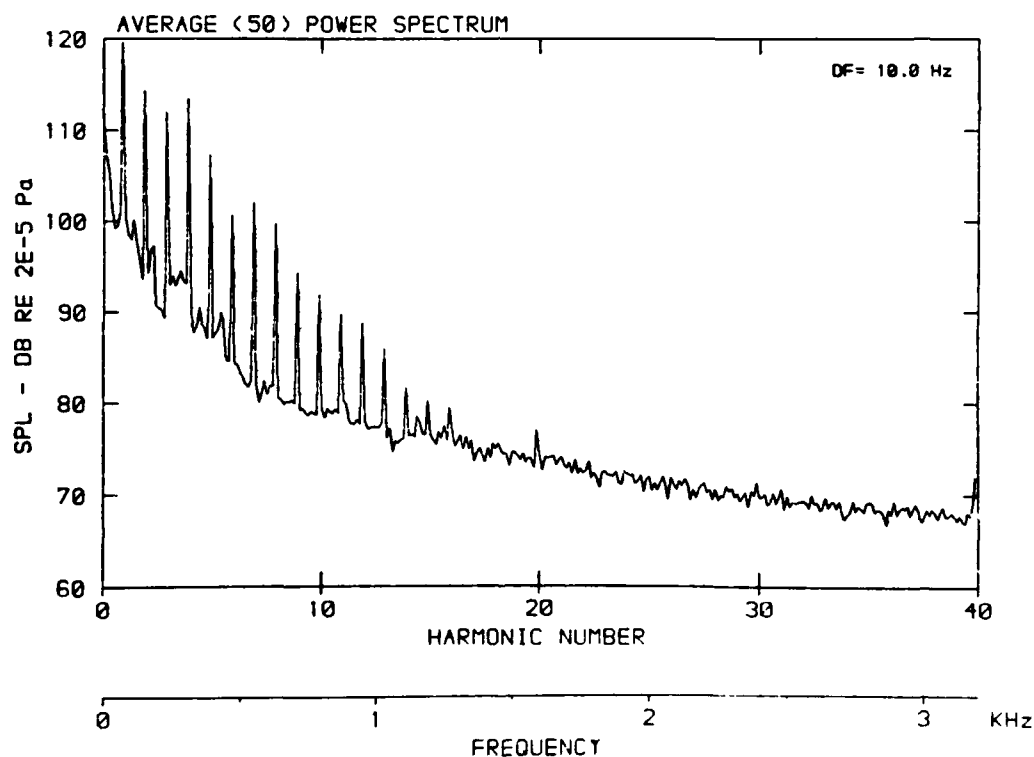
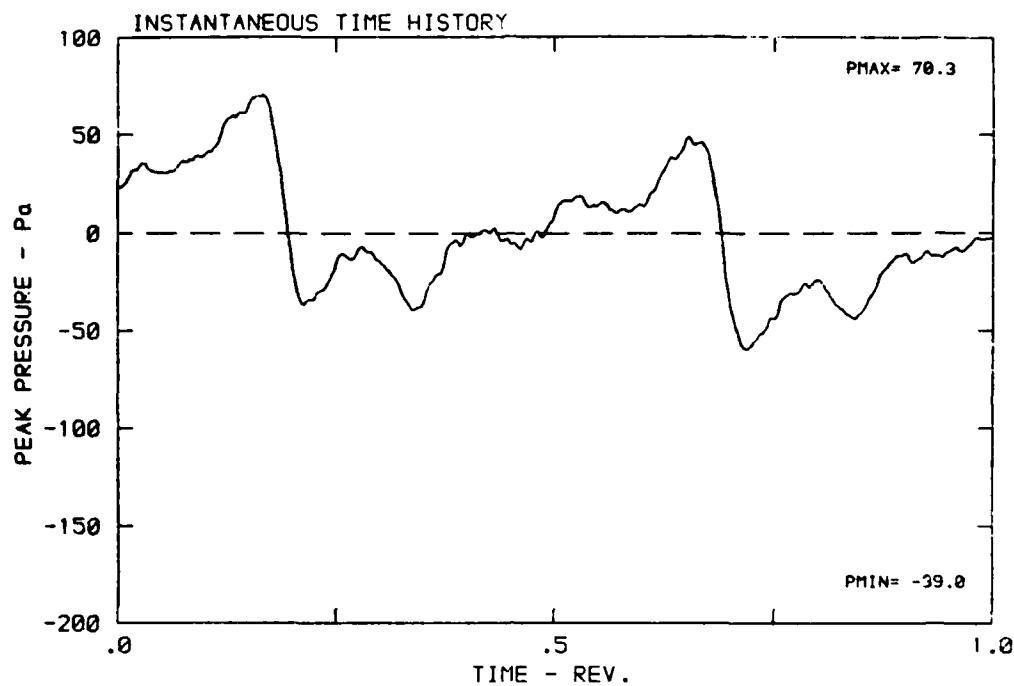
DATA POINT: FNC-6 RUN: 173 MP: 4

β : 23.7° MH: .7781 n: 2400 rpm v/u: .264 ϕ : 3.6° T: 286.6 K



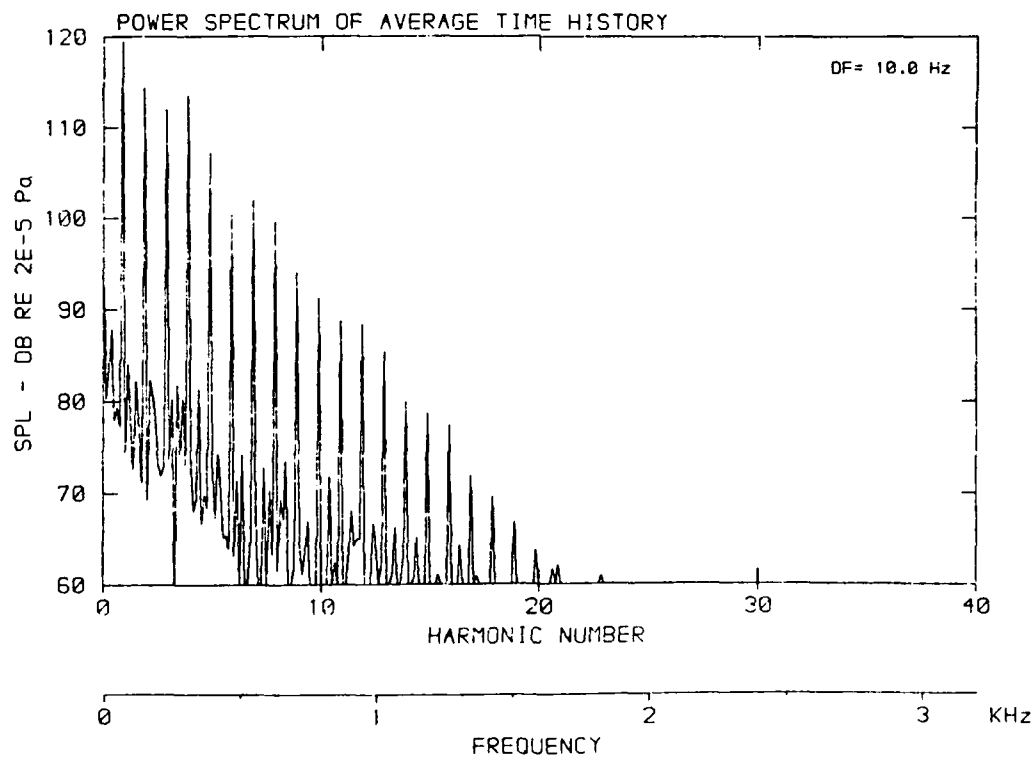
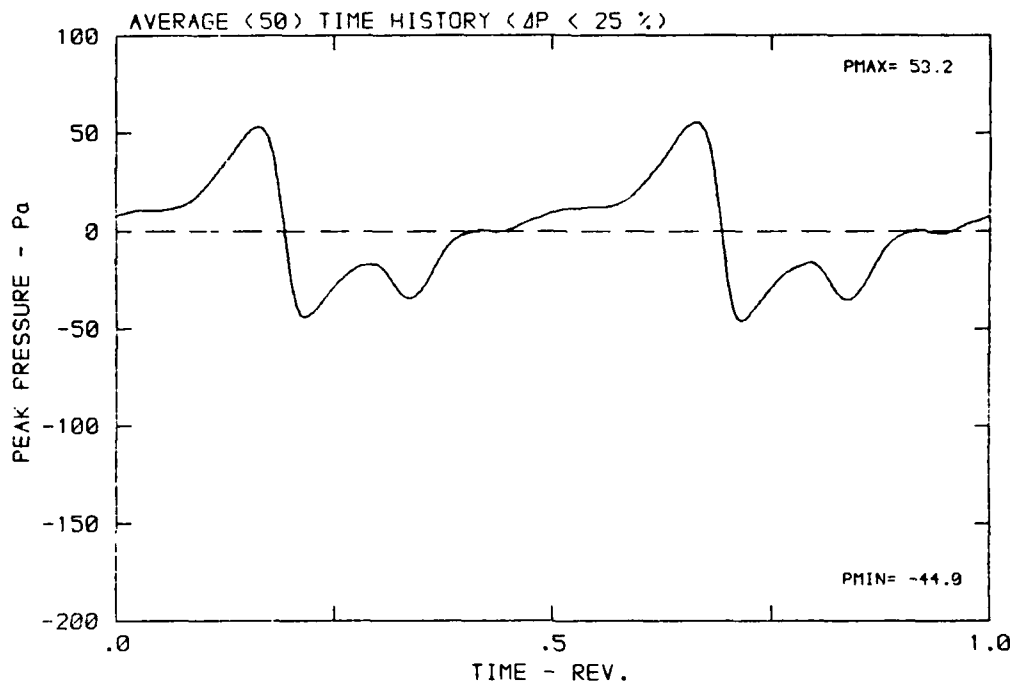
DATA POINT: FNC-6 RUN: 173 MP: 5

β : 23.7° MH: .7781 n: 2400 rpm v/u: .264 ϕ : 3.6° T: 286.6 K



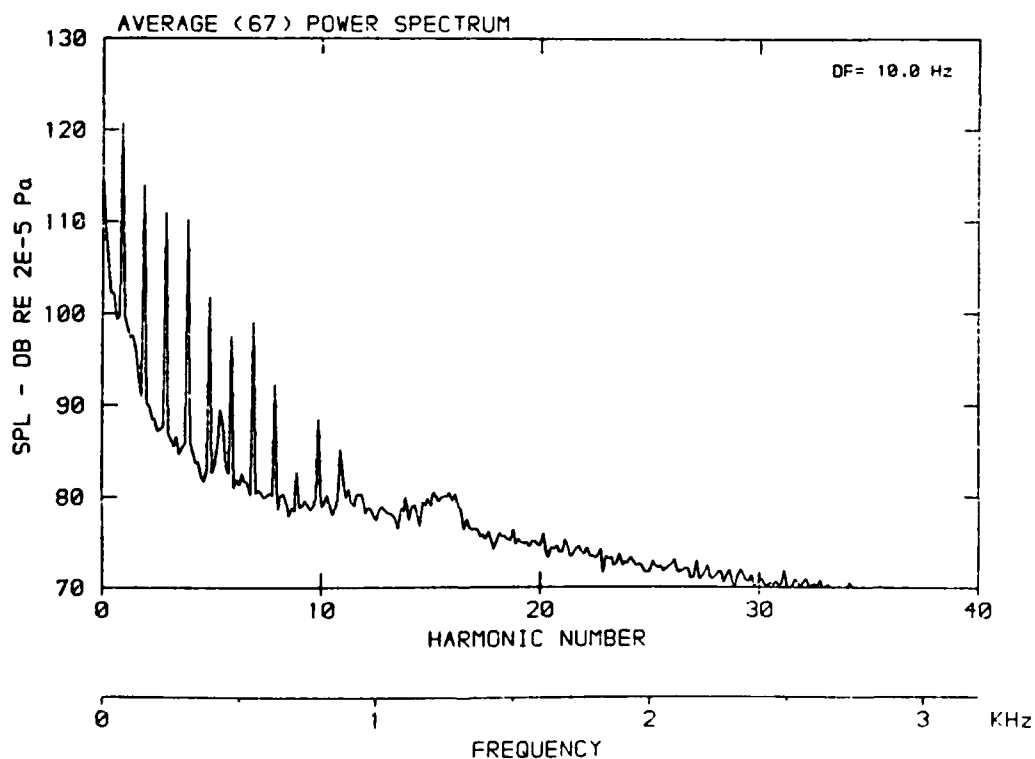
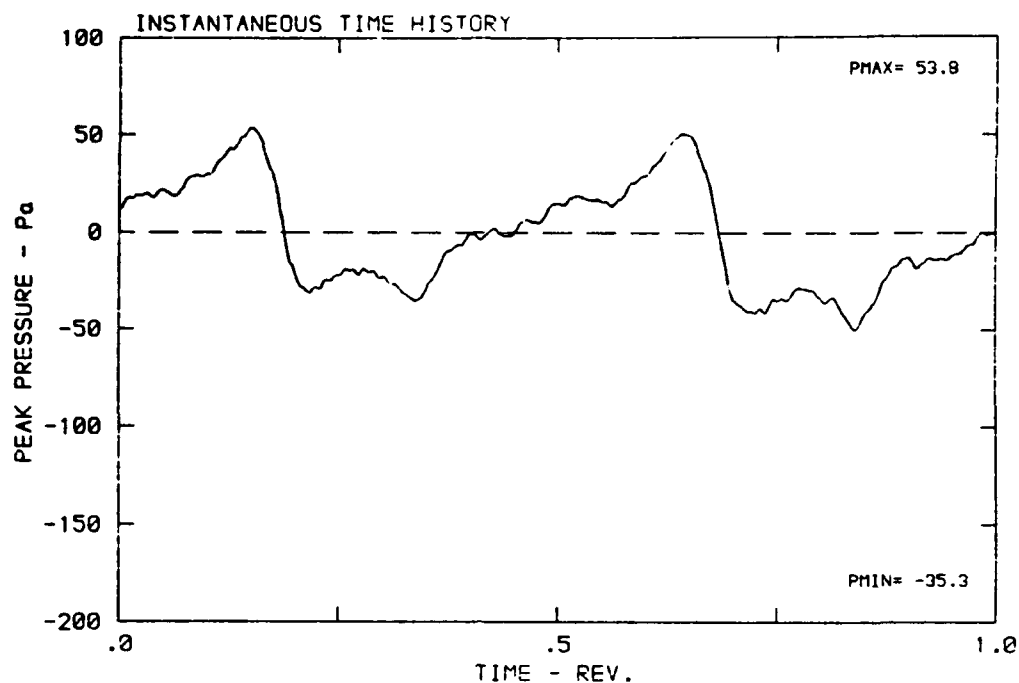
DATA POINT: FNC-6 RUN: 173 MP: 5

β : 23.7° MH: .7781 n: 2400 rpm v/u: .264 ϕ : 3.6° T: 286.6 K



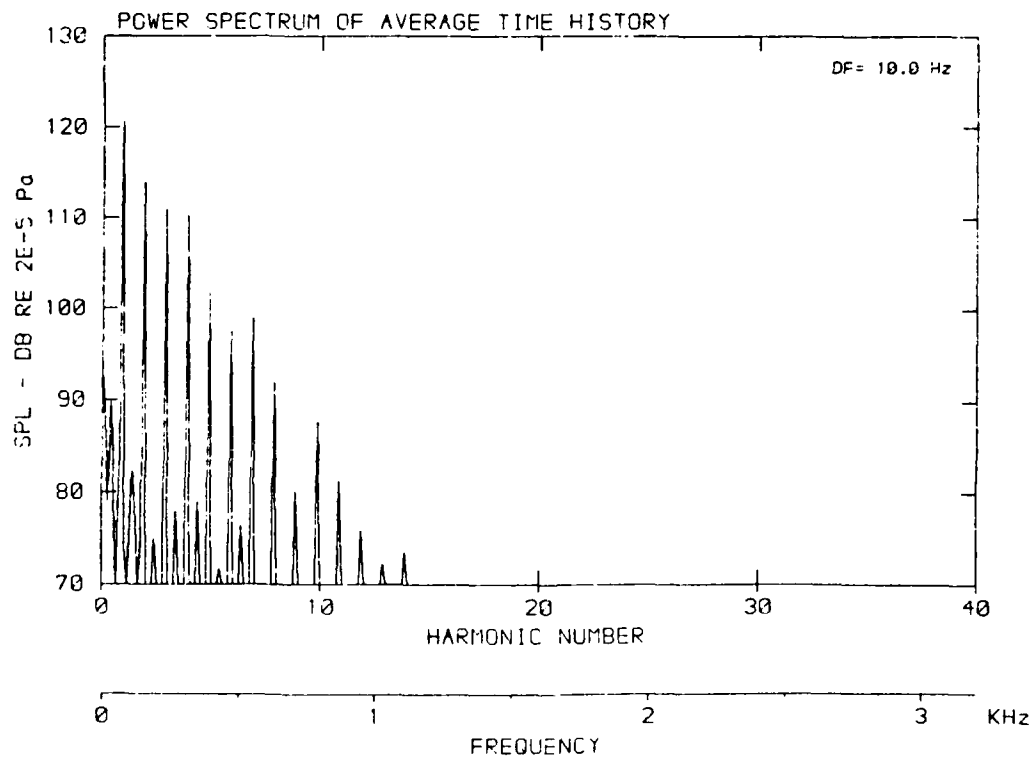
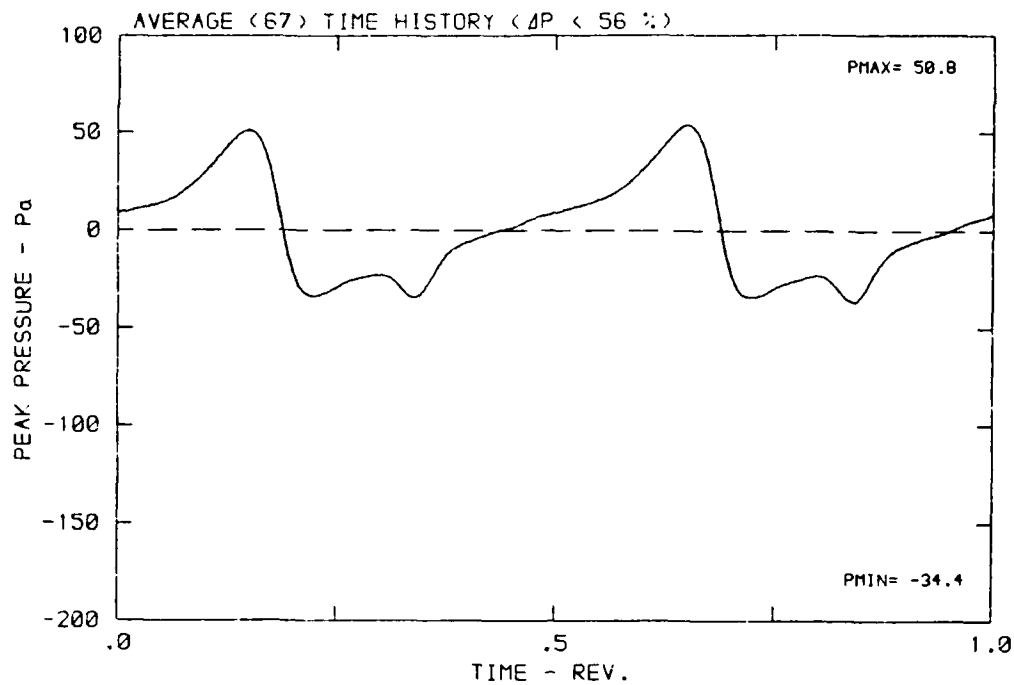
DATA POINT: FNC-6 RUN: 173 MP: 6

β : 23.7° MH: .7781 n: 2400 rpm v/u: .264 ϕ : 3.6° T: 286.6 K



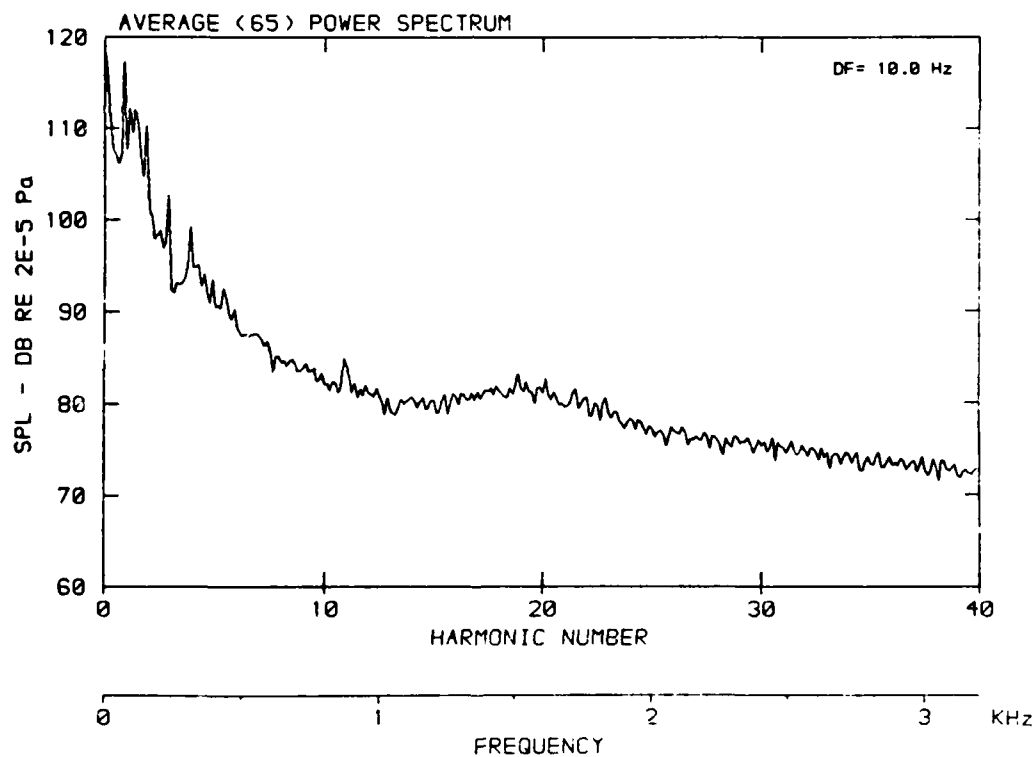
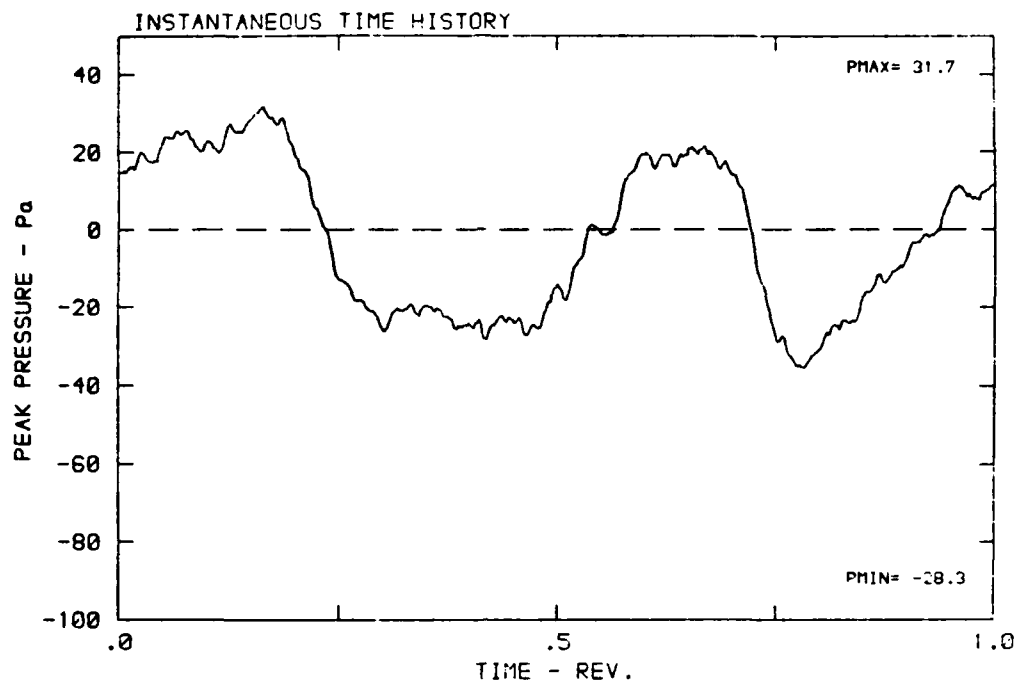
DATA POINT: FNC-6 RUN: 173 MP: 6

β : 23.7° MH: .7781 n: 2400 rpm v/u: .264 ϕ : 3.6° T: 286.6 K



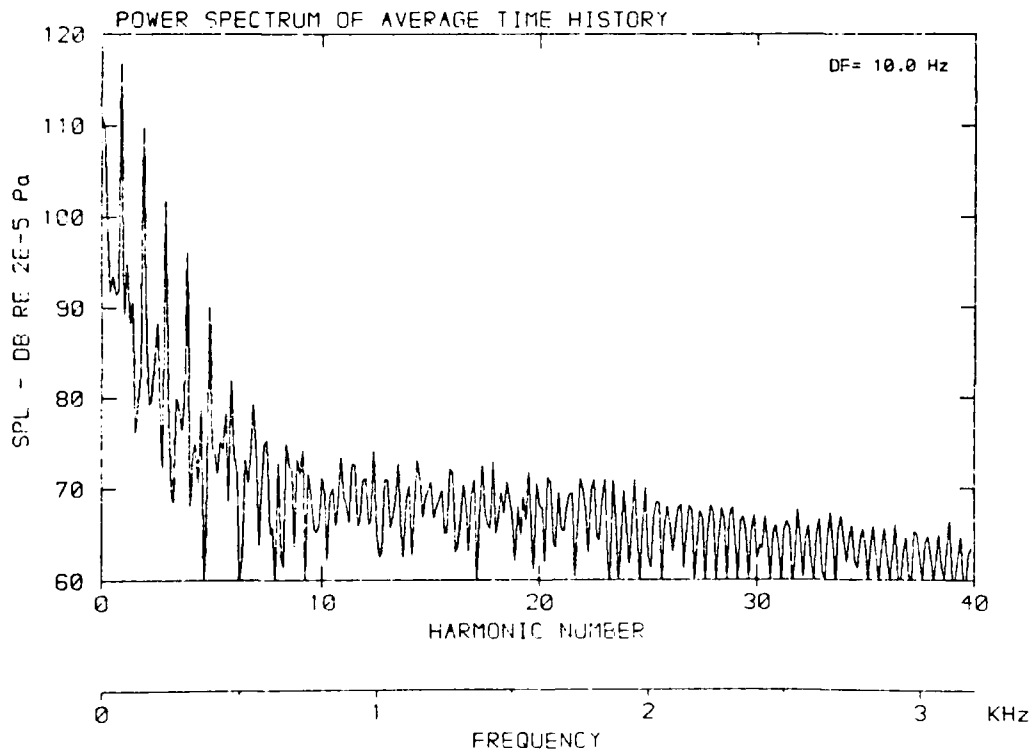
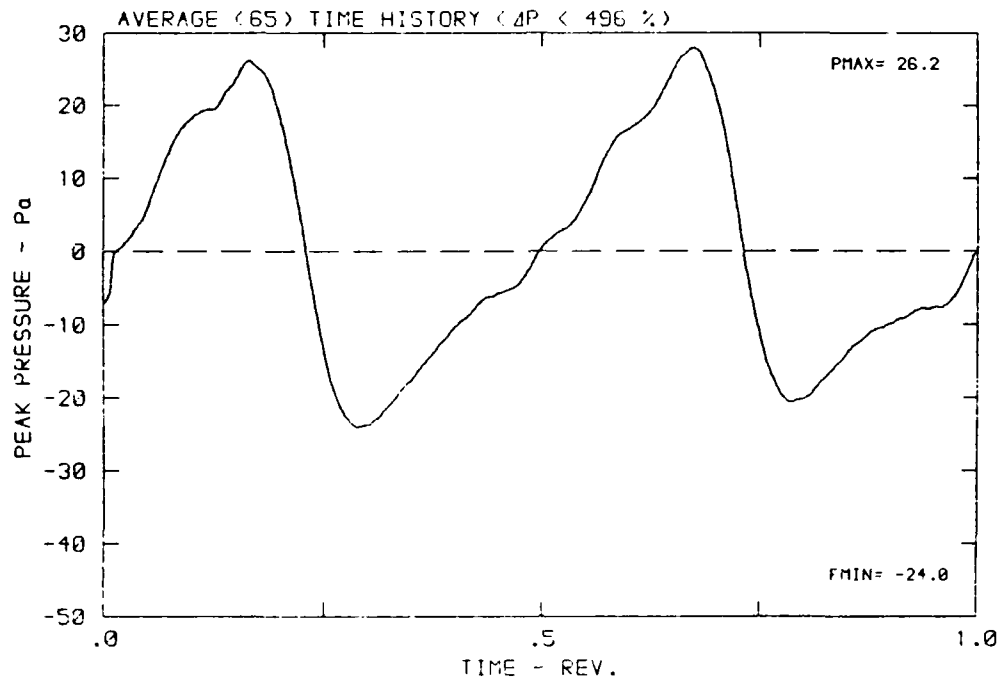
DATA POINT: FNC-6 RUN: 173 MP: 7

β : 23.7° MH: .7781 n: 2400 rpm v/u: .26+ ϕ : 3.6° T: 296.6 K



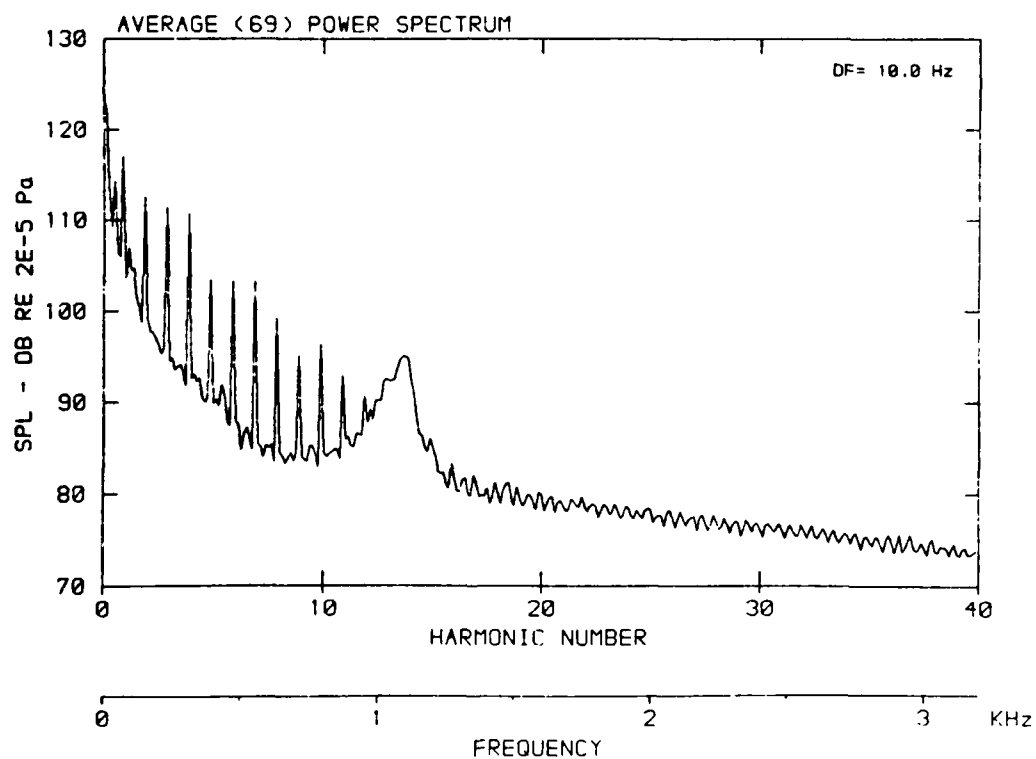
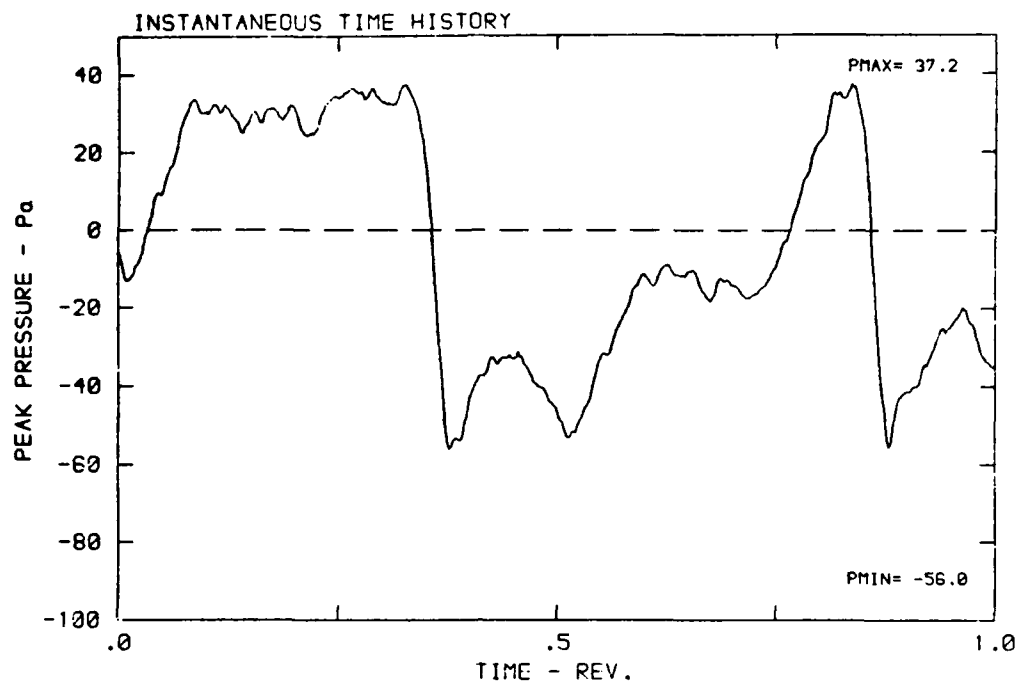
DATA POINT: FNC-6 RUN: 173 MP: 7

β : 23.7° MH: .7781 n: 2400 rpm v/u: .264 ϕ : 3.6° T: 286.6 K



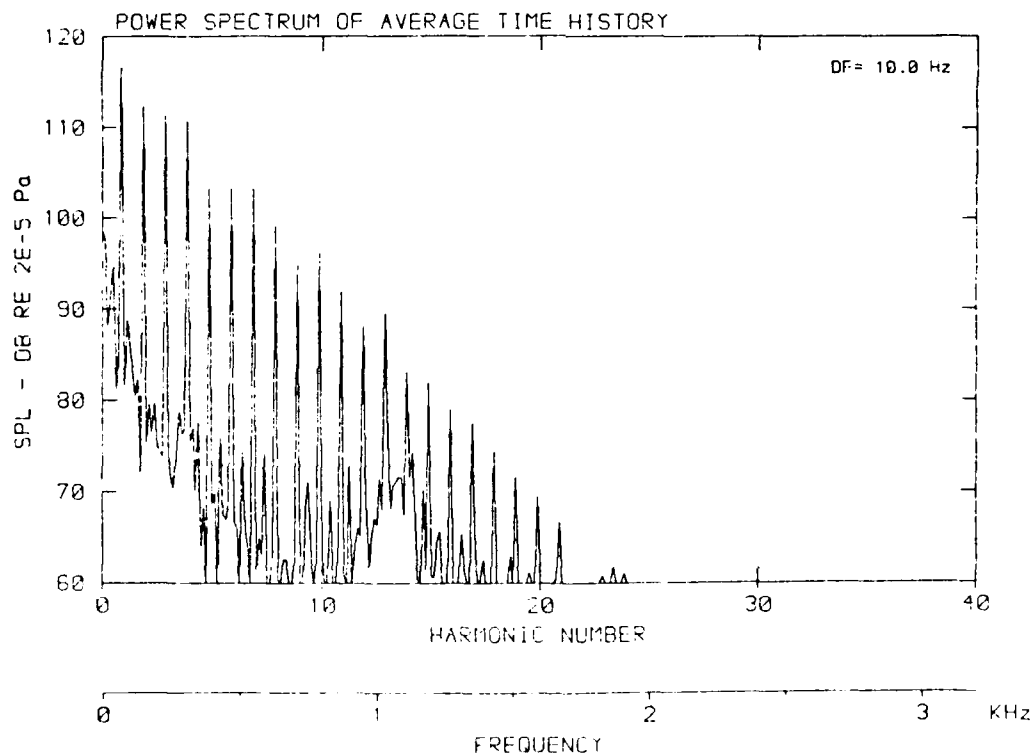
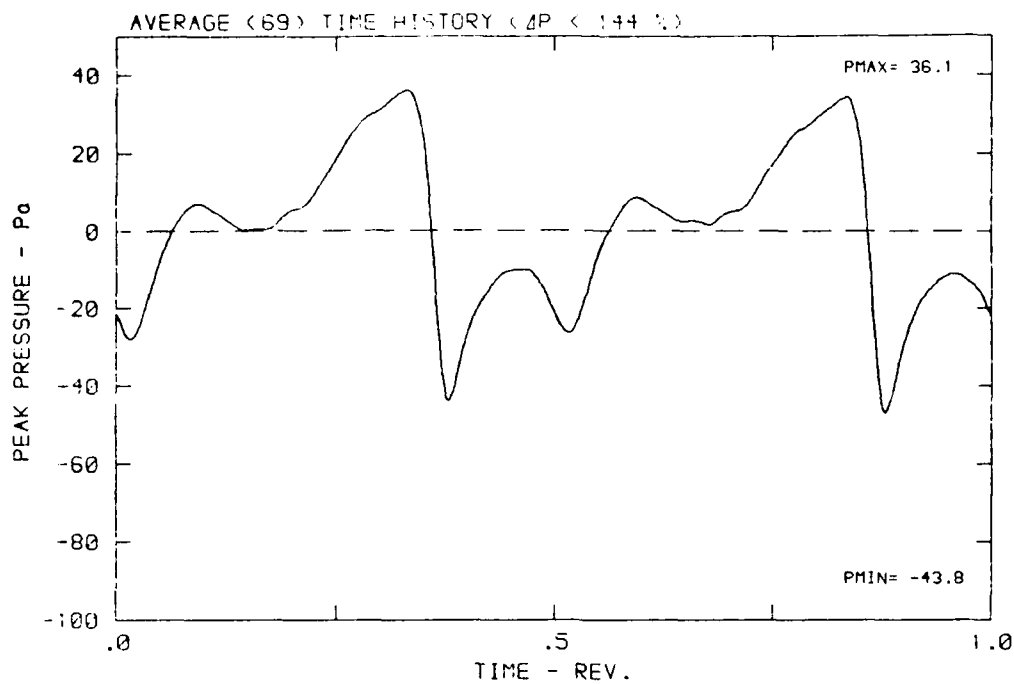
DATA POINT: FNC-6 RUN: 173 MP: 9

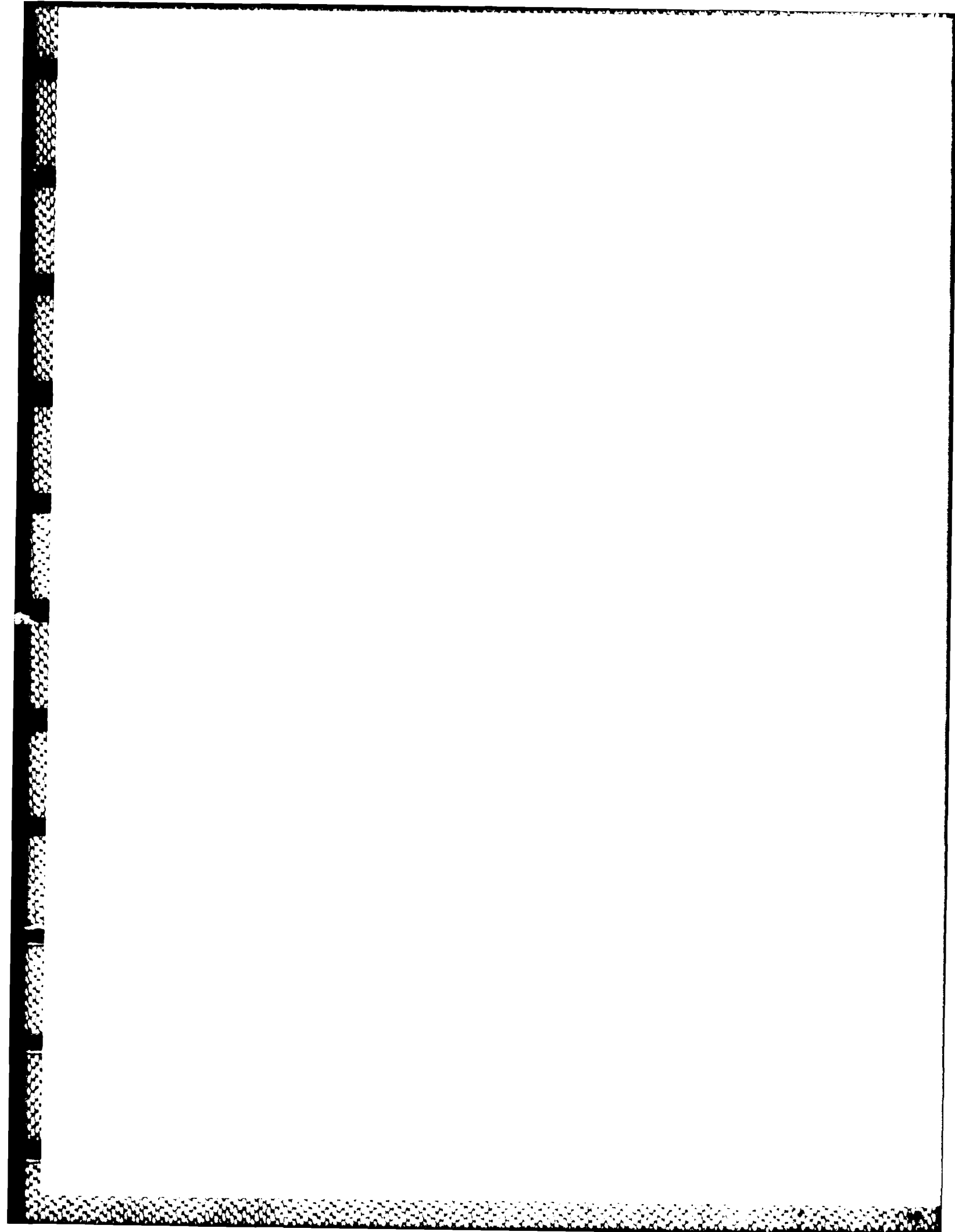
β : 23.7° MH: .7781 n: 2400 rpm v/u: .264 ϕ : 3.6° T: 286.6 K



DATA POINT: FNC-6 RUN: 173 MP: 9

β : 23.7° MH: .7781 n: 2400 rpm v_{tu} : .264 ϕ : 3.6° T: 286.6 K





6. Propeller Rotational Harmonic Noise- and Overall Noise Levels

From all spectra of averaged time-histories the harmonic pressure levels are determined under the presupposition of a 10 dB signal-to-noise ratio, and are submitted to the A-weighting function. Both linear and A-weighted harmonic levels as well as the respective overall pressure levels (calculated from the energy sum of harmonic levels) are listed in the following tables.

DNW PROPELLER NOISE TEST

MICROPHONE: MP 1 (PITCH ANGLE: 19.9 DEG)

| DATA-POINT / RUN | | | | | | | | | | |
|------------------|--------|-------|------|-------------|-------|------|-------------|-------|-------|--|
| FNC-7 / 179 | | | | FNC-8 / 180 | | | FNC-9 / 181 | | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | |
| 1 | 70.0 | 98.8 | 72.6 | 80.0 | 102.6 | 80.1 | 90.0 | 110.2 | 91.1 | |
| 2 | 140.0 | 91.7 | 75.6 | 160.0 | 102.5 | 89.1 | 180.0 | 106.6 | 95.7 | |
| 3 | 210.0 | 91.0 | 80.1 | 240.0 | 99.0 | 90.4 | 270.0 | 107.8 | 99.2 | |
| 4 | 280.0 | 84.6 | 76.0 | 320.0 | 96.4 | 89.8 | 360.0 | 106.0 | 101.2 | |
| 5 | 350.0 | 79.3 | 72.7 | 400.0 | 94.7 | 89.9 | 450.0 | 103.9 | 100.7 | |
| 6 | 420.0 | 72.1 | 67.3 | 480.0 | 86.1 | 82.9 | 540.0 | 98.8 | 95.6 | |
| 7 | 490.0 | 68.0 | 64.8 | 560.0 | 82.0 | 78.8 | 630.0 | 99.7 | 97.8 | |
| 8 | 560.0 | 59.6 | 56.4 | 640.0 | 79.9 | 78.0 | 720.0 | 98.9 | 98.1 | |
| 9 | 630.0 | 0.0 | 0.0 | 720.0 | 77.6 | 76.8 | 810.0 | 93.8 | 93.0 | |
| 10 | 700.0 | 0.0 | 0.0 | 800.0 | 75.2 | 74.4 | 900.0 | 93.1 | 93.1 | |
| 11 | 770.0 | 0.0 | 0.0 | 880.0 | 64.2 | 63.4 | 990.0 | 91.4 | 91.4 | |
| 12 | 840.0 | 0.0 | 0.0 | 960.0 | 0.0 | 0.0 | 1080.0 | 86.4 | 86.4 | |
| 13 | 910.0 | 0.0 | 0.0 | 1040.0 | 0.0 | 0.0 | 1170.0 | 82.6 | 83.2 | |
| 14 | 980.0 | 0.0 | 0.0 | 1120.0 | 0.0 | 0.0 | 1260.0 | 82.4 | 83.0 | |
| 15 | 1050.0 | 0.0 | 0.0 | 1200.0 | 0.0 | 0.0 | 1350.0 | 78.9 | 79.5 | |
| 16 | 1120.0 | 0.0 | 0.0 | 1280.0 | 0.0 | 0.0 | 1440.0 | 74.5 | 75.5 | |
| 17 | 1190.0 | 0.0 | 0.0 | 1360.0 | 0.0 | 0.0 | 1530.0 | 80.1 | 81.1 | |
| 18 | 1260.0 | 0.0 | 0.0 | 1440.0 | 0.0 | 0.0 | 1620.0 | 73.6 | 74.6 | |
| 19 | 1330.0 | 0.0 | 0.0 | 1520.0 | 0.0 | 0.0 | 1710.0 | 63.5 | 64.5 | |
| 20 | 1400.0 | 0.0 | 0.0 | 1600.0 | 0.0 | 0.0 | 1800.0 | 0.0 | 0.0 | |
| 21 | 1470.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | 1890.0 | 0.0 | 0.0 | |
| 22 | 1540.0 | 0.0 | 0.0 | 1760.0 | 0.0 | 0.0 | 1980.0 | 0.0 | 0.0 | |
| 23 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | 2070.0 | 0.0 | 0.0 | |
| 24 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | |
| 25 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | 2250.0 | 0.0 | 0.0 | |
| 26 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | 2340.0 | 0.0 | 0.0 | |
| 27 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | 2430.0 | 0.0 | 0.0 | |
| 28 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2520.0 | 0.0 | 0.0 | |
| 29 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | 2610.0 | 0.0 | 0.0 | |
| 30 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | 2700.0 | 0.0 | 0.0 | |
| 31 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | 2790.0 | 0.0 | 0.0 | |
| 32 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | |
| 33 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | 2970.0 | 0.0 | 0.0 | |
| 34 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | 3060.0 | 0.0 | 0.0 | |
| 35 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3150.0 | 0.0 | 0.0 | |
| 36 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | 3240.0 | 0.0 | 0.0 | |
| 37 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | 3330.0 | 0.0 | 0.0 | |
| 38 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | 3420.0 | 0.0 | 0.0 | |
| 39 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | 3510.0 | 0.0 | 0.0 | |
| 40 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | 3600.0 | 0.0 | 0.0 | |
| OASPL | | 100.3 | 83.5 | 107.2 | | 96.4 | 114.8 | | 107.8 | |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 2 (PITCH ANGLE: 19.9 DEG)

| DATA-POINT / RUN | | | | | | | | | | |
|------------------|--------|-------|------|-------------|-------|-------|-------------|-------|-------|--|
| FNC-7 / 179 | | | | FNC-8 / 180 | | | FNC-9 / 181 | | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | |
| 1 | 70.0 | 104.2 | 78.0 | 80.0 | 105.5 | 83.0 | 90.0 | 112.6 | 93.5 | |
| 2 | 140.0 | 100.3 | 84.2 | 160.0 | 107.2 | 93.8 | 180.0 | 116.6 | 105.7 | |
| 3 | 210.0 | 97.0 | 86.1 | 240.0 | 103.7 | 95.1 | 270.0 | 109.8 | 101.2 | |
| 4 | 280.0 | 91.2 | 82.6 | 320.0 | 99.9 | 93.3 | 360.0 | 111.8 | 107.0 | |
| 5 | 350.0 | 86.9 | 80.3 | 400.0 | 98.2 | 93.4 | 450.0 | 111.6 | 108.4 | |
| 6 | 420.0 | 84.0 | 79.2 | 480.0 | 99.2 | 96.0 | 540.0 | 111.5 | 108.3 | |
| 7 | 490.0 | 80.1 | 76.9 | 560.0 | 95.8 | 92.6 | 630.0 | 109.0 | 107.1 | |
| 8 | 560.0 | 73.7 | 70.5 | 640.0 | 92.3 | 90.4 | 720.0 | 105.2 | 104.4 | |
| 9 | 630.0 | 68.1 | 66.2 | 720.0 | 87.2 | 86.4 | 810.0 | 106.1 | 105.3 | |
| 10 | 700.0 | 60.7 | 58.8 | 800.0 | 85.8 | 85.0 | 900.0 | 105.9 | 105.9 | |
| 11 | 770.0 | 0.0 | 0.0 | 880.0 | 84.3 | 83.5 | 990.0 | 102.7 | 102.7 | |
| 12 | 840.0 | 0.0 | 0.0 | 960.0 | 79.7 | 79.7 | 1080.0 | 101.1 | 101.1 | |
| 13 | 910.0 | 0.0 | 0.0 | 1040.0 | 76.4 | 76.4 | 1170.0 | 101.4 | 102.0 | |
| 14 | 980.0 | 0.0 | 0.0 | 1120.0 | 73.3 | 73.3 | 1260.0 | 99.3 | 99.9 | |
| 15 | 1050.0 | 0.0 | 0.0 | 1200.0 | 70.9 | 71.5 | 1350.0 | 97.9 | 98.5 | |
| 16 | 1120.0 | 0.0 | 0.0 | 1280.0 | 68.3 | 68.9 | 1440.0 | 95.0 | 96.0 | |
| 17 | 1190.0 | 0.0 | 0.0 | 1360.0 | 64.9 | 65.5 | 1530.0 | 93.1 | 94.1 | |
| 18 | 1260.0 | 0.0 | 0.0 | 1440.0 | 59.0 | 60.0 | 1620.0 | 92.6 | 93.6 | |
| 19 | 1330.0 | 0.0 | 0.0 | 1520.0 | 0.0 | 0.0 | 1710.0 | 90.1 | 91.1 | |
| 20 | 1400.0 | 0.0 | 0.0 | 1600.0 | 0.0 | 0.0 | 1800.0 | 87.7 | 88.9 | |
| 21 | 1470.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | 1890.0 | 85.5 | 86.7 | |
| 22 | 1540.0 | 0.0 | 0.0 | 1760.0 | 0.0 | 0.0 | 1980.0 | 86.3 | 87.5 | |
| 23 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | 2070.0 | 82.8 | 84.0 | |
| 24 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | 2160.0 | 81.0 | 82.2 | |
| 25 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | 2250.0 | 79.3 | 80.6 | |
| 26 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | 2340.0 | 79.0 | 80.3 | |
| 27 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | 2430.0 | 75.9 | 77.2 | |
| 28 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2520.0 | 73.8 | 75.1 | |
| 29 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | 2610.0 | 73.8 | 75.1 | |
| 30 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | 2700.0 | 73.3 | 74.6 | |
| 31 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | 2790.0 | 66.3 | 67.6 | |
| 32 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | |
| 33 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | 2970.0 | 0.0 | 0.0 | |
| 34 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | 3060.0 | 0.0 | 0.0 | |
| 35 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3150.0 | 0.0 | 0.0 | |
| 36 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | 3240.0 | 0.0 | 0.0 | |
| 37 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | 3330.0 | 0.0 | 0.0 | |
| 38 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | 3420.0 | 0.0 | 0.0 | |
| 39 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | 3510.0 | 0.0 | 0.0 | |
| 40 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | 3600.0 | 0.0 | 0.0 | |
| OASPL | | 106.5 | 90.7 | | 111.6 | 102.6 | | 121.6 | 116.7 | |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 3 (PITCH ANGLE: 19.9 DEG)

| DATA-POINT / RUN | | | | | | | | | | |
|------------------|--------|-------|------|-------------|-------|-------|-------------|-------|-------|--|
| FNC-7 / 179 | | | | FNC-8 / 180 | | | FNC-9 / 181 | | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | |
| 1 | 70.0 | 106.5 | 80.3 | 80.0 | 110.3 | 87.8 | 90.0 | 112.5 | 93.4 | |
| 2 | 140.0 | 102.4 | 86.3 | 160.0 | 108.4 | 95.0 | 180.0 | 112.9 | 102.0 | |
| 3 | 210.0 | 97.8 | 86.9 | 240.0 | 107.2 | 98.6 | 270.0 | 112.1 | 103.5 | |
| 4 | 280.0 | 93.3 | 84.7 | 320.0 | 102.7 | 96.1 | 360.0 | 112.7 | 107.9 | |
| 5 | 350.0 | 90.4 | 83.8 | 400.0 | 103.1 | 98.3 | 450.0 | 113.1 | 109.9 | |
| 6 | 420.0 | 87.4 | 82.6 | 480.0 | 100.3 | 97.1 | 540.0 | 109.7 | 106.5 | |
| 7 | 490.0 | 80.3 | 77.1 | 560.0 | 95.5 | 92.3 | 630.0 | 111.2 | 109.3 | |
| 8 | 560.0 | 75.4 | 72.2 | 640.0 | 95.6 | 93.7 | 720.0 | 110.8 | 110.0 | |
| 9 | 630.0 | 74.5 | 72.6 | 720.0 | 93.2 | 92.4 | 810.0 | 109.3 | 108.5 | |
| 10 | 700.0 | 72.0 | 70.1 | 800.0 | 90.2 | 89.4 | 900.0 | 108.0 | 108.0 | |
| 11 | 770.0 | 65.0 | 64.2 | 880.0 | 86.6 | 85.8 | 990.0 | 107.6 | 107.6 | |
| 12 | 840.0 | 60.8 | 60.0 | 960.0 | 85.2 | 85.2 | 1080.0 | 105.4 | 105.4 | |
| 13 | 910.0 | 52.9 | 52.9 | 1040.0 | 82.2 | 82.2 | 1170.0 | 102.1 | 102.7 | |
| 14 | 980.0 | 0.0 | 0.0 | 1120.0 | 77.9 | 77.9 | 1260.0 | 104.0 | 104.6 | |
| 15 | 1050.0 | 0.0 | 0.0 | 1200.0 | 75.2 | 75.8 | 1350.0 | 102.1 | 102.7 | |
| 16 | 1120.0 | 0.0 | 0.0 | 1280.0 | 76.0 | 76.6 | 1440.0 | 99.5 | 100.5 | |
| 17 | 1190.0 | 0.0 | 0.0 | 1360.0 | 73.4 | 74.0 | 1530.0 | 97.9 | 98.9 | |
| 18 | 1260.0 | 0.0 | 0.0 | 1440.0 | 70.4 | 71.4 | 1620.0 | 99.0 | 100.0 | |
| 19 | 1330.0 | 0.0 | 0.0 | 1520.0 | 69.5 | 70.5 | 1710.0 | 96.4 | 97.4 | |
| 20 | 1400.0 | 0.0 | 0.0 | 1600.0 | 68.6 | 69.6 | 1800.0 | 91.9 | 93.1 | |
| 21 | 1470.0 | 0.0 | 0.0 | 1680.0 | 68.2 | 69.2 | 1890.0 | 92.6 | 93.8 | |
| 22 | 1540.0 | 0.0 | 0.0 | 1760.0 | 65.7 | 66.7 | 1980.0 | 92.0 | 93.2 | |
| 23 | 1610.0 | 0.0 | 0.0 | 1840.0 | 66.1 | 67.3 | 2070.0 | 88.9 | 90.1 | |
| 24 | 1680.0 | 0.0 | 0.0 | 1920.0 | 64.8 | 66.0 | 2160.0 | 87.0 | 88.2 | |
| 25 | 1750.0 | 0.0 | 0.0 | 2000.0 | 64.6 | 65.8 | 2250.0 | 88.1 | 89.4 | |
| 26 | 1820.0 | 0.0 | 0.0 | 2080.0 | 62.1 | 63.3 | 2340.0 | 85.0 | 86.3 | |
| 27 | 1890.0 | 0.0 | 0.0 | 2160.0 | 62.7 | 63.9 | 2430.0 | 82.8 | 84.1 | |
| 28 | 1960.0 | 0.0 | 0.0 | 2240.0 | 62.0 | 63.3 | 2520.0 | 82.6 | 83.9 | |
| 29 | 2030.0 | 0.0 | 0.0 | 2320.0 | 62.0 | 63.3 | 2610.0 | 82.1 | 83.4 | |
| 30 | 2100.0 | 0.0 | 0.0 | 2400.0 | 62.0 | 63.3 | 2700.0 | 78.9 | 80.2 | |
| 31 | 2170.0 | 0.0 | 0.0 | 2480.0 | 60.9 | 62.2 | 2790.0 | 77.7 | 79.0 | |
| 32 | 2240.0 | 0.0 | 0.0 | 2560.0 | 61.9 | 63.2 | 2880.0 | 78.5 | 79.7 | |
| 33 | 2310.0 | 0.0 | 0.0 | 2640.0 | 60.9 | 62.2 | 2970.0 | 76.4 | 77.6 | |
| 34 | 2380.0 | 0.0 | 0.0 | 2720.0 | 60.3 | 61.6 | 3060.0 | 75.4 | 76.6 | |
| 35 | 2450.0 | 0.0 | 0.0 | 2800.0 | 59.5 | 60.8 | 3150.0 | 73.3 | 74.5 | |
| 36 | 2520.0 | 0.0 | 0.0 | 2880.0 | 59.8 | 61.0 | 3240.0 | 71.3 | 72.5 | |
| 37 | 2590.0 | 0.0 | 0.0 | 2960.0 | 59.2 | 60.4 | 3330.0 | 73.2 | 74.4 | |
| 38 | 2660.0 | 0.0 | 0.0 | 3040.0 | 58.8 | 60.0 | 3420.0 | 70.4 | 71.6 | |
| 39 | 2730.0 | 0.0 | 0.0 | 3120.0 | 58.3 | 59.5 | 3510.0 | 67.7 | 68.9 | |
| 40 | 2800.0 | 0.0 | 0.0 | 3200.0 | 58.1 | 59.3 | 3600.0 | 68.6 | 69.6 | |
| OASPL | | 108.6 | 92.7 | 114.6 | | 105.4 | 122.1 | | 118.9 | |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 4 (PITCH ANGLE: 19.9 DEG)

| DATA-POINT / RUN | | | | | | | | | | |
|------------------|--------|-------|------|-------------|-------|-------|--------|-------------|-------|--|
| FNC-7 / 179 | | | | FNC-8 / 180 | | | | FNC-9 / 181 | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | |
| 1 | 70.0 | 108.5 | 82.3 | 80.0 | 113.9 | 91.4 | 90.0 | 114.0 | 94.9 | |
| 2 | 140.0 | 104.0 | 87.9 | 160.0 | 109.2 | 95.8 | 180.0 | 113.2 | 102.3 | |
| 3 | 210.0 | 98.0 | 87.1 | 240.0 | 109.3 | 100.7 | 270.0 | 114.6 | 106.0 | |
| 4 | 280.0 | 96.1 | 87.5 | 320.0 | 106.9 | 100.3 | 360.0 | 114.5 | 109.7 | |
| 5 | 350.0 | 91.4 | 84.8 | 400.0 | 103.1 | 98.3 | 450.0 | 112.9 | 109.7 | |
| 6 | 420.0 | 86.5 | 81.7 | 480.0 | 101.2 | 98.0 | 540.0 | 111.0 | 107.8 | |
| 7 | 490.0 | 82.3 | 79.1 | 560.0 | 99.5 | 96.3 | 630.0 | 112.0 | 110.1 | |
| 8 | 560.0 | 79.5 | 76.3 | 640.0 | 97.7 | 95.8 | 720.0 | 109.6 | 108.8 | |
| 9 | 630.0 | 75.5 | 73.6 | 720.0 | 93.5 | 92.7 | 810.0 | 109.3 | 108.5 | |
| 10 | 700.0 | 69.2 | 67.3 | 800.0 | 92.2 | 91.4 | 900.0 | 108.3 | 108.3 | |
| 11 | 770.0 | 64.2 | 63.4 | 880.0 | 89.5 | 88.7 | 990.0 | 107.1 | 107.1 | |
| 12 | 840.0 | 0.0 | 0.0 | 960.0 | 84.8 | 84.8 | 1080.0 | 106.4 | 106.4 | |
| 13 | 910.0 | 0.0 | 0.0 | 1040.0 | 83.8 | 83.8 | 1170.0 | 105.6 | 106.2 | |
| 14 | 980.0 | 0.0 | 0.0 | 1120.0 | 81.9 | 81.9 | 1260.0 | 102.1 | 102.7 | |
| 15 | 1050.0 | 0.0 | 0.0 | 1200.0 | 77.5 | 78.1 | 1350.0 | 102.8 | 103.4 | |
| 16 | 1120.0 | 0.0 | 0.0 | 1280.0 | 72.9 | 73.5 | 1440.0 | 101.5 | 102.5 | |
| 17 | 1190.0 | 0.0 | 0.0 | 1360.0 | 73.4 | 74.0 | 1530.0 | 98.7 | 99.7 | |
| 18 | 1260.0 | 0.0 | 0.0 | 1440.0 | 70.0 | 71.0 | 1620.0 | 97.1 | 98.1 | |
| 19 | 1330.0 | 0.0 | 0.0 | 1520.0 | 65.3 | 66.3 | 1710.0 | 97.3 | 98.3 | |
| 20 | 1400.0 | 0.0 | 0.0 | 1600.0 | 62.5 | 63.5 | 1800.0 | 95.5 | 96.7 | |
| 21 | 1470.0 | 0.0 | 0.0 | 1680.0 | 61.4 | 62.4 | 1890.0 | 92.5 | 93.7 | |
| 22 | 1540.0 | 0.0 | 0.0 | 1760.0 | 61.1 | 62.1 | 1980.0 | 91.6 | 92.8 | |
| 23 | 1610.0 | 0.0 | 0.0 | 1840.0 | 58.5 | 59.7 | 2070.0 | 89.9 | 91.1 | |
| 24 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | 2160.0 | 87.7 | 88.9 | |
| 25 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | 2250.0 | 87.2 | 88.5 | |
| 26 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | 2340.0 | 85.2 | 86.5 | |
| 27 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | 2430.0 | 84.4 | 85.7 | |
| 28 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2520.0 | 82.9 | 84.2 | |
| 29 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | 2610.0 | 82.7 | 84.0 | |
| 30 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | 2700.0 | 80.6 | 81.9 | |
| 31 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | 2790.0 | 79.6 | 80.9 | |
| 32 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | 2880.0 | 79.2 | 80.4 | |
| 33 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | 2970.0 | 76.7 | 77.9 | |
| 34 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | 3060.0 | 74.7 | 75.9 | |
| 35 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3150.0 | 76.0 | 77.2 | |
| 36 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | 3240.0 | 73.3 | 74.5 | |
| 37 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | 3330.0 | 72.5 | 73.7 | |
| 38 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | 3420.0 | 72.6 | 73.8 | |
| 39 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | 3510.0 | 70.8 | 72.0 | |
| 40 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | 3600.0 | 69.9 | 70.9 | |
| OASPL | | 110.3 | 93.9 | 117.1 | | 107.3 | 122.9 | | 119.3 | |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 5 (PITCH ANGLE: 19.9 DEG)

| DATA-POINT / RUN | | | | | | | | | | |
|------------------|--------|-------|------|-------------|-------|-------|-------------|-------|-------|--|
| FNC-7 / 179 | | | | FNC-8 / 180 | | | FNC-9 / 181 | | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | |
| 1 | 70.0 | 109.7 | 83.5 | 80.0 | 116.7 | 94.2 | 90.0 | 115.4 | 96.3 | |
| 2 | 140.0 | 105.0 | 88.9 | 160.0 | 110.9 | 97.5 | 180.0 | 107.1 | 96.2 | |
| 3 | 210.0 | 95.4 | 84.5 | 240.0 | 108.2 | 99.6 | 270.0 | 115.2 | 106.6 | |
| 4 | 280.0 | 95.6 | 87.0 | 320.0 | 110.0 | 103.4 | 360.0 | 116.5 | 111.7 | |
| 5 | 350.0 | 93.1 | 86.5 | 400.0 | 104.9 | 100.1 | 450.0 | 107.5 | 104.3 | |
| 6 | 420.0 | 86.3 | 81.5 | 480.0 | 97.7 | 94.5 | 540.0 | 110.4 | 107.2 | |
| 7 | 490.0 | 79.1 | 75.9 | 560.0 | 98.2 | 95.0 | 630.0 | 111.6 | 109.7 | |
| 8 | 560.0 | 77.4 | 74.2 | 640.0 | 96.5 | 94.6 | 720.0 | 106.6 | 105.8 | |
| 9 | 630.0 | 76.3 | 74.4 | 720.0 | 92.1 | 91.3 | 810.0 | 107.1 | 106.3 | |
| 10 | 700.0 | 68.3 | 66.4 | 800.0 | 87.9 | 87.1 | 900.0 | 105.8 | 105.8 | |
| 11 | 770.0 | 0.0 | 0.0 | 880.0 | 85.2 | 84.4 | 990.0 | 106.0 | 106.0 | |
| 12 | 840.0 | 0.0 | 0.0 | 960.0 | 84.2 | 84.2 | 1080.0 | 102.9 | 102.9 | |
| 13 | 910.0 | 0.0 | 0.0 | 1040.0 | 82.0 | 82.0 | 1170.0 | 102.7 | 103.3 | |
| 14 | 980.0 | 0.0 | 0.0 | 1120.0 | 76.0 | 76.0 | 1260.0 | 102.3 | 102.9 | |
| 15 | 1050.0 | 0.0 | 0.0 | 1200.0 | 74.6 | 75.2 | 1350.0 | 99.2 | 99.8 | |
| 16 | 1120.0 | 0.0 | 0.0 | 1280.0 | 73.7 | 74.3 | 1440.0 | 97.9 | 98.9 | |
| 17 | 1190.0 | 0.0 | 0.0 | 1360.0 | 64.9 | 65.5 | 1530.0 | 96.6 | 97.6 | |
| 18 | 1260.0 | 0.0 | 0.0 | 1440.0 | 64.3 | 65.3 | 1620.0 | 94.3 | 95.3 | |
| 19 | 1330.0 | 0.0 | 0.0 | 1520.0 | 59.5 | 60.5 | 1710.0 | 92.7 | 93.7 | |
| 20 | 1400.0 | 0.0 | 0.0 | 1600.0 | 0.0 | 0.0 | 1800.0 | 92.3 | 93.5 | |
| 21 | 1470.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | 1890.0 | 88.9 | 90.1 | |
| 22 | 1540.0 | 0.0 | 0.0 | 1760.0 | 0.0 | 0.0 | 1980.0 | 88.2 | 89.4 | |
| 23 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | 2070.0 | 88.4 | 89.6 | |
| 24 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | 2160.0 | 85.5 | 86.7 | |
| 25 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | 2250.0 | 83.0 | 84.3 | |
| 26 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | 2340.0 | 82.7 | 84.0 | |
| 27 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | 2430.0 | 78.7 | 80.0 | |
| 28 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2520.0 | 79.6 | 80.9 | |
| 29 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | 2610.0 | 74.7 | 76.0 | |
| 30 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | 2700.0 | 75.3 | 76.6 | |
| 31 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | 2790.0 | 75.0 | 76.3 | |
| 32 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | 2880.0 | 71.3 | 72.5 | |
| 33 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | 2970.0 | 71.8 | 73.0 | |
| 34 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | 3060.0 | 73.3 | 74.5 | |
| 35 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3150.0 | 64.6 | 65.8 | |
| 36 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | 3240.0 | 0.0 | 0.0 | |
| 37 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | 3330.0 | 0.0 | 0.0 | |
| 38 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | 3420.0 | 0.0 | 0.0 | |
| 39 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | 3510.0 | 0.0 | 0.0 | |
| 40 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | 3600.0 | 0.0 | 0.0 | |
| OASPL | | 111.3 | 93.9 | 119.1 | | 107.9 | 122.4 | | 118.0 | |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 6 (PITCH ANGLE: 19.9 DEG)

| DATA-POINT / RUN | | | | | | | | | | | |
|------------------|--------|------|------|-------------|------|------|--------|-------------|------|--|--|
| FNC-7 / 179 | | | | FNC-8 / 180 | | | | FNC-9 / 181 | | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | | |
| 1 | 70.0 | 22.9 | -3.3 | 80.0 | 47.9 | 25.4 | 90.0 | 47.3 | 28.2 | | |
| 2 | 140.0 | 0.0 | 0.0 | 160.0 | 0.0 | 0.0 | 180.0 | 0.0 | 0.0 | | |
| 3 | 210.0 | 0.0 | 0.0 | 240.0 | 0.0 | 0.0 | 270.0 | 0.0 | 0.0 | | |
| 4 | 280.0 | 0.0 | 0.0 | 320.0 | 0.0 | 0.0 | 360.0 | 0.0 | 0.0 | | |
| 5 | 350.0 | 0.0 | 0.0 | 400.0 | 0.0 | 0.0 | 450.0 | 0.0 | 0.0 | | |
| 6 | 420.0 | 0.0 | 0.0 | 480.0 | 0.0 | 0.0 | 540.0 | 0.0 | 0.0 | | |
| 7 | 490.0 | 0.0 | 0.0 | 560.0 | 0.0 | 0.0 | 630.0 | 0.0 | 0.0 | | |
| 8 | 560.0 | 0.0 | 0.0 | 640.0 | 0.0 | 0.0 | 720.0 | 0.0 | 0.0 | | |
| 9 | 630.0 | 0.0 | 0.0 | 720.0 | 0.0 | 0.0 | 810.0 | 0.0 | 0.0 | | |
| 10 | 700.0 | 0.0 | 0.0 | 800.0 | 0.0 | 0.0 | 900.0 | 0.0 | 0.0 | | |
| 11 | 770.0 | 0.0 | 0.0 | 880.0 | 0.0 | 0.0 | 990.0 | 0.0 | 0.0 | | |
| 12 | 840.0 | 0.0 | 0.0 | 960.0 | 0.0 | 0.0 | 1080.0 | 0.0 | 0.0 | | |
| 13 | 910.0 | 0.0 | 0.0 | 1040.0 | 0.0 | 0.0 | 1170.0 | 0.0 | 0.0 | | |
| 14 | 980.0 | 0.0 | 0.0 | 1120.0 | 0.0 | 0.0 | 1260.0 | 0.0 | 0.0 | | |
| 15 | 1050.0 | 0.0 | 0.0 | 1200.0 | 0.0 | 0.0 | 1350.0 | 0.0 | 0.0 | | |
| 16 | 1120.0 | 0.0 | 0.0 | 1280.0 | 0.0 | 0.0 | 1440.0 | 0.0 | 0.0 | | |
| 17 | 1190.0 | 0.0 | 0.0 | 1360.0 | 0.0 | 0.0 | 1530.0 | 0.0 | 0.0 | | |
| 18 | 1260.0 | 0.0 | 0.0 | 1440.0 | 0.0 | 0.0 | 1620.0 | 0.0 | 0.0 | | |
| 19 | 1330.0 | 0.0 | 0.0 | 1520.0 | 0.0 | 0.0 | 1710.0 | 0.0 | 0.0 | | |
| 20 | 1400.0 | 0.0 | 0.0 | 1600.0 | 0.0 | 0.0 | 1800.0 | 0.0 | 0.0 | | |
| 21 | 1470.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | 1890.0 | 0.0 | 0.0 | | |
| 22 | 1540.0 | 0.0 | 0.0 | 1760.0 | 0.0 | 0.0 | 1980.0 | 0.0 | 0.0 | | |
| 23 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | 2070.0 | 0.0 | 0.0 | | |
| 24 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | | |
| 25 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | 2250.0 | 0.0 | 0.0 | | |
| 26 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | 2340.0 | 0.0 | 0.0 | | |
| 27 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | 2430.0 | 0.0 | 0.0 | | |
| 28 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2520.0 | 0.0 | 0.0 | | |
| 29 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | 2610.0 | 0.0 | 0.0 | | |
| 30 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | 2700.0 | 0.0 | 0.0 | | |
| 31 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | 2790.0 | 0.0 | 0.0 | | |
| 32 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | | |
| 33 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | 2970.0 | 0.0 | 0.0 | | |
| 34 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | 3060.0 | 0.0 | 0.0 | | |
| 35 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3150.0 | 0.0 | 0.0 | | |
| 36 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | 3240.0 | 0.0 | 0.0 | | |
| 37 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | 3330.0 | 0.0 | 0.0 | | |
| 38 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | 3420.0 | 0.0 | 0.0 | | |
| 39 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | 3510.0 | 0.0 | 0.0 | | |
| 40 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | 3600.0 | 0.0 | 0.0 | | |
| OASPL | | | | | 47.9 | 25.4 | | 47.3 | 28.2 | | |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 7 (PITCH ANGLE: 19.9 DEG)

| DATA-POINT / RUN | | | | | | | | | | |
|------------------|--------|-------|------|-------------|-------|------|-------------|-------|------|--|
| FNC-7 / 179 | | | | FNC-8 / 180 | | | FNC-9 / 181 | | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | |
| 1 | 70.0 | 108.6 | 82.4 | 80.0 | 114.2 | 91.7 | 90.0 | 115.9 | 96.8 | |
| 2 | 140.0 | 99.1 | 83.0 | 160.0 | 106.7 | 93.3 | 180.0 | 0.0 | 0.0 | |
| 3 | 210.0 | 88.8 | 77.9 | 240.0 | 102.0 | 93.4 | 270.0 | 0.0 | 0.0 | |
| 4 | 280.0 | 72.8 | 64.2 | 320.0 | 95.4 | 88.8 | 360.0 | 0.0 | 0.0 | |
| 5 | 350.0 | 0.0 | 0.0 | 400.0 | 87.4 | 82.6 | 450.0 | 0.0 | 0.0 | |
| 6 | 420.0 | 0.0 | 0.0 | 480.0 | 72.9 | 69.7 | 540.0 | 0.0 | 0.0 | |
| 7 | 490.0 | 0.0 | 0.0 | 560.0 | 75.9 | 72.7 | 630.0 | 0.0 | 0.0 | |
| 8 | 560.0 | 0.0 | 0.0 | 640.0 | 71.0 | 69.1 | 720.0 | 0.0 | 0.0 | |
| 9 | 630.0 | 0.0 | 0.0 | 720.0 | 69.0 | 68.2 | 810.0 | 0.0 | 0.0 | |
| 10 | 700.0 | 0.0 | 0.0 | 800.0 | 54.8 | 54.0 | 900.0 | 0.0 | 0.0 | |
| 11 | 770.0 | 0.0 | 0.0 | 880.0 | 0.0 | 0.0 | 990.0 | 0.0 | 0.0 | |
| 12 | 840.0 | 0.0 | 0.0 | 960.0 | 0.0 | 0.0 | 1080.0 | 0.0 | 0.0 | |
| 13 | 910.0 | 0.0 | 0.0 | 1040.0 | 0.0 | 0.0 | 1170.0 | 0.0 | 0.0 | |
| 14 | 980.0 | 0.0 | 0.0 | 1120.0 | 0.0 | 0.0 | 1260.0 | 0.0 | 0.0 | |
| 15 | 1050.0 | 0.0 | 0.0 | 1200.0 | 0.0 | 0.0 | 1350.0 | 0.0 | 0.0 | |
| 16 | 1120.0 | 0.0 | 0.0 | 1280.0 | 0.0 | 0.0 | 1440.0 | 0.0 | 0.0 | |
| 17 | 1190.0 | 0.0 | 0.0 | 1360.0 | 0.0 | 0.0 | 1530.0 | 0.0 | 0.0 | |
| 18 | 1260.0 | 0.0 | 0.0 | 1440.0 | 0.0 | 0.0 | 1620.0 | 0.0 | 0.0 | |
| 19 | 1330.0 | 0.0 | 0.0 | 1520.0 | 0.0 | 0.0 | 1710.0 | 0.0 | 0.0 | |
| 20 | 1400.0 | 0.0 | 0.0 | 1600.0 | 0.0 | 0.0 | 1800.0 | 0.0 | 0.0 | |
| 21 | 1470.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | 1890.0 | 0.0 | 0.0 | |
| 22 | 1540.0 | 0.0 | 0.0 | 1760.0 | 0.0 | 0.0 | 1980.0 | 0.0 | 0.0 | |
| 23 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | 2070.0 | 0.0 | 0.0 | |
| 24 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | |
| 25 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | 2250.0 | 0.0 | 0.0 | |
| 26 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | 2340.0 | 0.0 | 0.0 | |
| 27 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | 2430.0 | 0.0 | 0.0 | |
| 28 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2520.0 | 0.0 | 0.0 | |
| 29 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | 2610.0 | 0.0 | 0.0 | |
| 30 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | 2700.0 | 0.0 | 0.0 | |
| 31 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | 2790.0 | 0.0 | 0.0 | |
| 32 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | |
| 33 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | 2970.0 | 0.0 | 0.0 | |
| 34 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | 3060.0 | 0.0 | 0.0 | |
| 35 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3150.0 | 0.0 | 0.0 | |
| 36 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | 3240.0 | 0.0 | 0.0 | |
| 37 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | 3330.0 | 0.0 | 0.0 | |
| 38 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | 3420.0 | 0.0 | 0.0 | |
| 39 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | 3510.0 | 0.0 | 0.0 | |
| 40 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | 3600.0 | 0.0 | 0.0 | |
| OASPL | | 109.1 | 86.4 | 115.2 | | 98.3 | 115.9 | | 96.8 | |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 9 (PITCH ANGLE: 19.9 DEG)

| DATA-POINT / RUN | | | | | | | | | | |
|------------------|--------|-------|------|-------------|-------|-------|--------|-------------|-------|--|
| FNC-7 / 179 | | | | FNC-8 / 180 | | | | FNC-9 / 181 | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | |
| 1 | 70.0 | 106.1 | 79.9 | 80.0 | 113.5 | 91.0 | 90.0 | 113.7 | 94.6 | |
| 2 | 140.0 | 104.2 | 88.1 | 160.0 | 108.6 | 95.2 | 180.0 | 108.7 | 97.8 | |
| 3 | 210.0 | 94.7 | 83.8 | 240.0 | 106.2 | 97.6 | 270.0 | 115.4 | 106.8 | |
| 4 | 280.0 | 96.8 | 88.2 | 320.0 | 107.0 | 100.4 | 360.0 | 112.3 | 107.5 | |
| 5 | 350.0 | 91.9 | 85.3 | 400.0 | 100.9 | 96.1 | 450.0 | 110.8 | 107.6 | |
| 6 | 420.0 | 83.3 | 78.5 | 480.0 | 99.5 | 96.3 | 540.0 | 112.5 | 109.3 | |
| 7 | 490.0 | 80.1 | 76.9 | 560.0 | 99.6 | 96.4 | 630.0 | 109.9 | 108.0 | |
| 8 | 560.0 | 78.7 | 75.5 | 640.0 | 94.3 | 92.4 | 720.0 | 109.2 | 108.4 | |
| 9 | 630.0 | 74.4 | 72.5 | 720.0 | 92.2 | 91.4 | 810.0 | 109.8 | 109.0 | |
| 10 | 700.0 | 69.3 | 67.4 | 800.0 | 92.1 | 91.3 | 900.0 | 105.7 | 105.7 | |
| 11 | 770.0 | 64.6 | 63.8 | 880.0 | 87.3 | 86.5 | 990.0 | 105.7 | 105.7 | |
| 12 | 840.0 | 0.0 | 0.0 | 960.0 | 83.5 | 83.5 | 1080.0 | 106.1 | 106.1 | |
| 13 | 910.0 | 0.0 | 0.0 | 1040.0 | 84.9 | 84.9 | 1170.0 | 102.9 | 103.5 | |
| 14 | 980.0 | 0.0 | 0.0 | 1120.0 | 75.4 | 75.4 | 1260.0 | 101.8 | 102.4 | |
| 15 | 1050.0 | 0.0 | 0.0 | 1200.0 | 76.7 | 77.3 | 1350.0 | 101.8 | 102.4 | |
| 16 | 1120.0 | 0.0 | 0.0 | 1280.0 | 74.9 | 75.5 | 1440.0 | 100.2 | 101.2 | |
| 17 | 1190.0 | 0.0 | 0.0 | 1360.0 | 71.5 | 72.1 | 1530.0 | 96.9 | 97.9 | |
| 18 | 1260.0 | 0.0 | 0.0 | 1440.0 | 66.3 | 67.3 | 1620.0 | 97.1 | 98.1 | |
| 19 | 1330.0 | 0.0 | 0.0 | 1520.0 | 0.0 | 0.0 | 1710.0 | 94.9 | 95.9 | |
| 20 | 1400.0 | 0.0 | 0.0 | 1600.0 | 0.0 | 0.0 | 1800.0 | 93.5 | 94.7 | |
| 21 | 1470.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | 1890.0 | 93.5 | 94.7 | |
| 22 | 1540.0 | 0.0 | 0.0 | 1760.0 | 0.0 | 0.0 | 1980.0 | 89.3 | 90.5 | |
| 23 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | 2070.0 | 89.9 | 91.1 | |
| 24 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | 2160.0 | 90.3 | 91.5 | |
| 25 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | 2250.0 | 81.0 | 82.3 | |
| 26 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | 2340.0 | 86.0 | 87.3 | |
| 27 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | 2430.0 | 84.5 | 85.8 | |
| 28 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2520.0 | 80.5 | 81.8 | |
| 29 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | 2610.0 | 82.2 | 83.5 | |
| 30 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | 2700.0 | 79.5 | 80.8 | |
| 31 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | 2790.0 | 78.9 | 80.2 | |
| 32 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | 2880.0 | 79.6 | 80.8 | |
| 33 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | 2970.0 | 76.6 | 77.8 | |
| 34 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | 3060.0 | 75.9 | 77.1 | |
| 35 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3150.0 | 74.7 | 75.9 | |
| 36 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | 3240.0 | 73.6 | 74.8 | |
| 37 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | 3330.0 | 69.4 | 70.6 | |
| 38 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | 3420.0 | 71.5 | 72.7 | |
| 39 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | 3510.0 | 72.8 | 74.0 | |
| 40 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | 3600.0 | 65.2 | 66.2 | |
| OASPL | | 108.8 | 93.3 | 116.3 | | 106.0 | 122.0 | | 118.3 | |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 1 (PITCH ANGLE: 23.7 DEG)

| DATA-POINT / RUN | | | | | | | | | | |
|------------------|--------|------|------|--------------|-------|------|--------------|-------|------|--|
| FNC-10 / 182 | | | | FNC-11 / 183 | | | FNC-12 / 184 | | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | |
| 1 | 60.0 | 98.4 | 72.2 | 70.0 | 101.9 | 75.7 | 80.0 | 107.0 | 84.5 | |
| 2 | 120.0 | 86.7 | 70.6 | 140.0 | 91.9 | 75.8 | 160.0 | 103.0 | 89.6 | |
| 3 | 180.0 | 79.9 | 69.0 | 210.0 | 92.1 | 81.2 | 240.0 | 100.9 | 92.3 | |
| 4 | 240.0 | 67.5 | 58.9 | 280.0 | 87.2 | 78.6 | 320.0 | 96.3 | 89.7 | |
| 5 | 300.0 | 70.7 | 64.1 | 350.0 | 80.5 | 73.9 | 400.0 | 96.1 | 91.3 | |
| 6 | 360.0 | 56.5 | 51.7 | 420.0 | 72.2 | 67.4 | 480.0 | 88.5 | 85.3 | |
| 7 | 420.0 | 0.0 | 0.0 | 490.0 | 71.9 | 68.7 | 560.0 | 85.6 | 82.4 | |
| 8 | 480.0 | 0.0 | 0.0 | 560.0 | 62.5 | 59.3 | 640.0 | 80.4 | 78.5 | |
| 9 | 540.0 | 0.0 | 0.0 | 630.0 | 0.0 | 0.0 | 720.0 | 81.2 | 80.4 | |
| 10 | 600.0 | 0.0 | 0.0 | 700.0 | 0.0 | 0.0 | 800.0 | 72.3 | 71.5 | |
| 11 | 660.0 | 0.0 | 0.0 | 770.0 | 0.0 | 0.0 | 880.0 | 72.8 | 72.0 | |
| 12 | 720.0 | 0.0 | 0.0 | 840.0 | 0.0 | 0.0 | 960.0 | 57.4 | 57.4 | |
| 13 | 780.0 | 0.0 | 0.0 | 910.0 | 0.0 | 0.0 | 1040.0 | 0.0 | 0.0 | |
| 14 | 840.0 | 0.0 | 0.0 | 980.0 | 0.0 | 0.0 | 1120.0 | 0.0 | 0.0 | |
| 15 | 900.0 | 0.0 | 0.0 | 1050.0 | 0.0 | 0.0 | 1200.0 | 0.0 | 0.0 | |
| 16 | 960.0 | 0.0 | 0.0 | 1120.0 | 0.0 | 0.0 | 1280.0 | 0.0 | 0.0 | |
| 17 | 1020.0 | 0.0 | 0.0 | 1190.0 | 0.0 | 0.0 | 1360.0 | 0.0 | 0.0 | |
| 18 | 1080.0 | 0.0 | 0.0 | 1260.0 | 0.0 | 0.0 | 1440.0 | 0.0 | 0.0 | |
| 19 | 1140.0 | 0.0 | 0.0 | 1330.0 | 0.0 | 0.0 | 1520.0 | 0.0 | 0.0 | |
| 20 | 1200.0 | 0.0 | 0.0 | 1400.0 | 0.0 | 0.0 | 1600.0 | 0.0 | 0.0 | |
| 21 | 1260.0 | 0.0 | 0.0 | 1470.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | |
| 22 | 1320.0 | 0.0 | 0.0 | 1540.0 | 0.0 | 0.0 | 1760.0 | 0.0 | 0.0 | |
| 23 | 1380.0 | 0.0 | 0.0 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | |
| 24 | 1440.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | |
| 25 | 1500.0 | 0.0 | 0.0 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | |
| 26 | 1560.0 | 0.0 | 0.0 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | |
| 27 | 1620.0 | 0.0 | 0.0 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | |
| 28 | 1680.0 | 0.0 | 0.0 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | |
| 29 | 1740.0 | 0.0 | 0.0 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | |
| 30 | 1800.0 | 0.0 | 0.0 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | |
| 31 | 1860.0 | 0.0 | 0.0 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | |
| 32 | 1920.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | |
| 33 | 1980.0 | 0.0 | 0.0 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | |
| 34 | 2040.0 | 0.0 | 0.0 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | |
| 35 | 2100.0 | 0.0 | 0.0 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | |
| 36 | 2160.0 | 0.0 | 0.0 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | |
| 37 | 2220.0 | 0.0 | 0.0 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | |
| 38 | 2280.0 | 0.0 | 0.0 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | |
| 39 | 2340.0 | 0.0 | 0.0 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | |
| 40 | 2400.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | |
| OASPL | | 98.8 | 76.0 | | 102.9 | 85.0 | | 109.6 | 97.7 | |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 2 (PITCH ANGLE: 23.7 DEG)

| DATA-POINT / RUN | | | | | | | | | | |
|------------------|--------|-------|------|--------------|-------|------|--------|--------------|-------|--|
| FNC-10 / 182 | | | | FNC-11 / 183 | | | | FNC-12 / 184 | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | |
| 1 | 60.0 | 101.3 | 75.1 | 70.0 | 106.6 | 80.4 | 80.0 | 108.6 | 86.1 | |
| 2 | 120.0 | 96.6 | 80.5 | 140.0 | 101.0 | 84.9 | 160.0 | 108.6 | 95.2 | |
| 3 | 180.0 | 91.1 | 80.2 | 210.0 | 98.1 | 87.2 | 240.0 | 104.8 | 96.2 | |
| 4 | 240.0 | 81.9 | 73.3 | 280.0 | 93.0 | 84.4 | 320.0 | 101.4 | 94.8 | |
| 5 | 300.0 | 74.4 | 67.8 | 350.0 | 88.7 | 82.1 | 400.0 | 99.9 | 95.1 | |
| 6 | 360.0 | 72.8 | 68.0 | 420.0 | 84.5 | 79.7 | 480.0 | 100.0 | 96.8 | |
| 7 | 420.0 | 68.6 | 63.8 | 490.0 | 79.4 | 76.2 | 560.0 | 96.2 | 93.0 | |
| 8 | 480.0 | 52.9 | 49.7 | 560.0 | 78.7 | 75.5 | 640.0 | 92.7 | 90.8 | |
| 9 | 540.0 | 0.0 | 0.0 | 630.0 | 63.4 | 61.5 | 720.0 | 88.9 | 88.1 | |
| 10 | 600.0 | 0.0 | 0.0 | 700.0 | 0.0 | 0.0 | 800.0 | 87.2 | 86.4 | |
| 11 | 660.0 | 0.0 | 0.0 | 770.0 | 0.0 | 0.0 | 880.0 | 86.6 | 85.8 | |
| 12 | 720.0 | 0.0 | 0.0 | 840.0 | 0.0 | 0.0 | 960.0 | 80.0 | 80.0 | |
| 13 | 780.0 | 0.0 | 0.0 | 910.0 | 0.0 | 0.0 | 1040.0 | 78.9 | 78.9 | |
| 14 | 840.0 | 0.0 | 0.0 | 980.0 | 0.0 | 0.0 | 1120.0 | 74.3 | 74.3 | |
| 15 | 900.0 | 0.0 | 0.0 | 1050.0 | 0.0 | 0.0 | 1200.0 | 74.9 | 75.5 | |
| 16 | 960.0 | 0.0 | 0.0 | 1120.0 | 0.0 | 0.0 | 1280.0 | 65.8 | 66.4 | |
| 17 | 1020.0 | 0.0 | 0.0 | 1190.0 | 0.0 | 0.0 | 1360.0 | 0.0 | 0.0 | |
| 18 | 1080.0 | 0.0 | 0.0 | 1260.0 | 0.0 | 0.0 | 1440.0 | 0.0 | 0.0 | |
| 19 | 1140.0 | 0.0 | 0.0 | 1330.0 | 0.0 | 0.0 | 1520.0 | 0.0 | 0.0 | |
| 20 | 1200.0 | 0.0 | 0.0 | 1400.0 | 0.0 | 0.0 | 1600.0 | 0.0 | 0.0 | |
| 21 | 1260.0 | 0.0 | 0.0 | 1470.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | |
| 22 | 1320.0 | 0.0 | 0.0 | 1540.0 | 0.0 | 0.0 | 1760.0 | 0.0 | 0.0 | |
| 23 | 1380.0 | 0.0 | 0.0 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | |
| 24 | 1440.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | |
| 25 | 1500.0 | 0.0 | 0.0 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | |
| 26 | 1560.0 | 0.0 | 0.0 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | |
| 27 | 1620.0 | 0.0 | 0.0 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | |
| 28 | 1680.0 | 0.0 | 0.0 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | |
| 29 | 1740.0 | 0.0 | 0.0 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | |
| 30 | 1800.0 | 0.0 | 0.0 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | |
| 31 | 1860.0 | 0.0 | 0.0 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | |
| 32 | 1920.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | |
| 33 | 1980.0 | 0.0 | 0.0 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | |
| 34 | 2040.0 | 0.0 | 0.0 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | |
| 35 | 2100.0 | 0.0 | 0.0 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | |
| 36 | 2160.0 | 0.0 | 0.0 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | |
| 37 | 2220.0 | 0.0 | 0.0 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | |
| 38 | 2280.0 | 0.0 | 0.0 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | |
| 39 | 2340.0 | 0.0 | 0.0 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | |
| 40 | 2400.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | |
| OASPL | | 102.9 | 84.6 | | 108.3 | 91.9 | | 113.4 | 103.8 | |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 3 (PITCH ANGLE: 23.7 DEG)

| DATA-POINT / RUN | | | | | | | | | | |
|------------------|--------|-------|------|--------------|-------|------|--------|--------------|-------|--|
| FNC-10 / 182 | | | | FNC-11 / 183 | | | | FNC-12 / 184 | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | |
| 1 | 60.0 | 103.7 | 77.5 | 70.0 | 108.6 | 82.4 | 80.0 | 111.4 | 88.9 | |
| 2 | 120.0 | 98.3 | 82.2 | 140.0 | 103.4 | 87.3 | 160.0 | 110.3 | 96.9 | |
| 3 | 180.0 | 91.4 | 80.5 | 210.0 | 99.8 | 88.9 | 240.0 | 108.7 | 100.1 | |
| 4 | 240.0 | 84.9 | 76.3 | 280.0 | 95.8 | 87.2 | 320.0 | 104.2 | 97.6 | |
| 5 | 300.0 | 75.2 | 68.6 | 350.0 | 92.6 | 86.0 | 400.0 | 104.8 | 100.0 | |
| 6 | 360.0 | 72.0 | 67.2 | 420.0 | 87.1 | 82.3 | 480.0 | 101.6 | 98.4 | |
| 7 | 420.0 | 70.3 | 65.5 | 490.0 | 84.0 | 80.8 | 560.0 | 97.6 | 94.4 | |
| 8 | 480.0 | 63.0 | 59.8 | 560.0 | 74.0 | 70.8 | 640.0 | 97.8 | 95.9 | |
| 9 | 540.0 | 0.0 | 0.0 | 630.0 | 76.1 | 74.2 | 720.0 | 94.8 | 94.0 | |
| 10 | 600.0 | 0.0 | 0.0 | 700.0 | 67.0 | 65.1 | 800.0 | 92.7 | 91.9 | |
| 11 | 660.0 | 0.0 | 0.0 | 770.0 | 0.0 | 0.0 | 880.0 | 89.0 | 88.2 | |
| 12 | 720.0 | 0.0 | 0.0 | 840.0 | 0.0 | 0.0 | 960.0 | 87.8 | 87.8 | |
| 13 | 780.0 | 0.0 | 0.0 | 910.0 | 0.0 | 0.0 | 1040.0 | 85.0 | 85.0 | |
| 14 | 840.0 | 0.0 | 0.0 | 980.0 | 0.0 | 0.0 | 1120.0 | 79.3 | 79.3 | |
| 15 | 900.0 | 0.0 | 0.0 | 1050.0 | 0.0 | 0.0 | 1200.0 | 78.6 | 79.2 | |
| 16 | 960.0 | 0.0 | 0.0 | 1120.0 | 0.0 | 0.0 | 1280.0 | 77.4 | 78.0 | |
| 17 | 1020.0 | 0.0 | 0.0 | 1190.0 | 0.0 | 0.0 | 1360.0 | 73.1 | 73.7 | |
| 18 | 1080.0 | 0.0 | 0.0 | 1260.0 | 0.0 | 0.0 | 1440.0 | 71.4 | 72.4 | |
| 19 | 1140.0 | 0.0 | 0.0 | 1330.0 | 0.0 | 0.0 | 1520.0 | 63.4 | 64.4 | |
| 20 | 1200.0 | 0.0 | 0.0 | 1400.0 | 0.0 | 0.0 | 1600.0 | 0.0 | 0.0 | |
| 21 | 1260.0 | 0.0 | 0.0 | 1470.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | |
| 22 | 1320.0 | 0.0 | 0.0 | 1540.0 | 0.0 | 0.0 | 1760.0 | 0.0 | 0.0 | |
| 23 | 1380.0 | 0.0 | 0.0 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | |
| 24 | 1440.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | |
| 25 | 1500.0 | 0.0 | 0.0 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | |
| 26 | 1560.0 | 0.0 | 0.0 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | |
| 27 | 1620.0 | 0.0 | 0.0 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | |
| 28 | 1680.0 | 0.0 | 0.0 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | |
| 29 | 1740.0 | 0.0 | 0.0 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | |
| 30 | 1800.0 | 0.0 | 0.0 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | |
| 31 | 1860.0 | 0.0 | 0.0 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | |
| 32 | 1920.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | |
| 33 | 1980.0 | 0.0 | 0.0 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | |
| 34 | 2040.0 | 0.0 | 0.0 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | |
| 35 | 2100.0 | 0.0 | 0.0 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | |
| 36 | 2160.0 | 0.0 | 0.0 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | |
| 37 | 2220.0 | 0.0 | 0.0 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | |
| 38 | 2280.0 | 0.0 | 0.0 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | |
| 39 | 2340.0 | 0.0 | 0.0 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | |
| 40 | 2400.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | |
| OASPL | | 105.0 | 86.0 | | 110.4 | 94.4 | | 116.1 | 107.1 | |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 4 (PITCH ANGLE: 23.7 DEG)

| DATA-POINT / RUN | | | | | | | | | | | |
|------------------|--------|-------|------|--------------|-------|-------|--------|--------------|-------|-------|-------|
| FNC-10 / 182 | | | | FNC-11 / 183 | | | | FNC-12 / 184 | | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | | |
| 1 | 60.0 | 105.6 | 79.4 | 70.0 | 110.5 | 84.3 | 80.0 | 114.6 | 92.1 | | |
| 2 | 120.0 | 100.0 | 83.9 | 140.0 | 105.5 | 89.4 | 160.0 | 111.2 | 97.8 | | |
| 3 | 180.0 | 91.6 | 80.7 | 210.0 | 100.1 | 89.2 | 240.0 | 110.8 | 102.2 | | |
| 4 | 240.0 | 85.7 | 77.1 | 280.0 | 99.7 | 91.1 | 320.0 | 108.7 | 102.1 | | |
| 5 | 300.0 | 78.5 | 71.9 | 350.0 | 92.3 | 85.7 | 400.0 | 103.7 | 98.9 | | |
| 6 | 360.0 | 72.0 | 67.2 | 420.0 | 89.6 | 84.8 | 480.0 | 102.7 | 99.5 | | |
| 7 | 420.0 | 65.6 | 60.8 | 490.0 | 82.3 | 79.1 | 560.0 | 101.0 | 97.8 | | |
| 8 | 480.0 | 59.8 | 56.5 | 560.0 | 83.3 | 80.1 | 640.0 | 98.6 | 96.7 | | |
| 9 | 540.0 | 0.0 | 0.0 | 630.0 | 71.2 | 69.3 | 720.0 | 95.4 | 94.6 | | |
| 10 | 600.0 | 0.0 | 0.0 | 700.0 | 74.2 | 72.3 | 800.0 | 93.3 | 92.5 | | |
| 11 | 660.0 | 0.0 | 0.0 | 770.0 | 66.0 | 65.2 | 880.0 | 90.5 | 89.7 | | |
| 12 | 720.0 | 0.0 | 0.0 | 840.0 | 0.0 | 0.0 | 960.0 | 87.6 | 87.6 | | |
| 13 | 780.0 | 0.0 | 0.0 | 910.0 | 0.0 | 0.0 | 1040.0 | 86.4 | 86.4 | | |
| 14 | 840.0 | 0.0 | 0.0 | 980.0 | 0.0 | 0.0 | 1120.0 | 83.8 | 83.8 | | |
| 15 | 900.0 | 0.0 | 0.0 | 1050.0 | 0.0 | 0.0 | 1200.0 | 80.2 | 80.8 | | |
| 16 | 960.0 | 0.0 | 0.0 | 1120.0 | 0.0 | 0.0 | 1280.0 | 75.6 | 76.2 | | |
| 17 | 1020.0 | 0.0 | 0.0 | 1190.0 | 0.0 | 0.0 | 1360.0 | 74.7 | 75.3 | | |
| 18 | 1080.0 | 0.0 | 0.0 | 1260.0 | 0.0 | 0.0 | 1440.0 | 73.1 | 74.1 | | |
| 19 | 1140.0 | 0.0 | 0.0 | 1330.0 | 0.0 | 0.0 | 1520.0 | 68.0 | 69.0 | | |
| 20 | 1200.0 | 0.0 | 0.0 | 1400.0 | 0.0 | 0.0 | 1600.0 | 0.0 | 0.0 | | |
| 21 | 1260.0 | 0.0 | 0.0 | 1470.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | | |
| 22 | 1320.0 | 0.0 | 0.0 | 1540.0 | 0.0 | 0.0 | 1760.0 | 0.0 | 0.0 | | |
| 23 | 1380.0 | 0.0 | 0.0 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | | |
| 24 | 1440.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | | |
| 25 | 1500.0 | 0.0 | 0.0 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | | |
| 26 | 1560.0 | 0.0 | 0.0 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | | |
| 27 | 1620.0 | 0.0 | 0.0 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | | |
| 28 | 1680.0 | 0.0 | 0.0 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | | |
| 29 | 1740.0 | 0.0 | 0.0 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | | |
| 30 | 1800.0 | 0.0 | 0.0 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | | |
| 31 | 1860.0 | 0.0 | 0.0 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | | |
| 32 | 1920.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | | |
| 33 | 1980.0 | 0.0 | 0.0 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | | |
| 34 | 2040.0 | 0.0 | 0.0 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | | |
| 35 | 2100.0 | 0.0 | 0.0 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | | |
| 36 | 2160.0 | 0.0 | 0.0 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | | |
| 37 | 2220.0 | 0.0 | 0.0 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | | |
| 38 | 2280.0 | 0.0 | 0.0 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | | |
| 39 | 2340.0 | 0.0 | 0.0 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | | |
| 40 | 2400.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | | |
| OASPL | | 106.8 | 87.2 | | | 112.3 | 96.2 | | | 118.3 | 108.7 |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 5 (PITCH ANGLE: 23.7 DEG)

| DATA-POINT / RUN | | | | | | | | | | |
|------------------|--------|-------|------|--------------|-------|-------|--------|--------------|-------|-------------|
| FNC-10 / 182 | | | | FNC-11 / 183 | | | | FNC-12 / 184 | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | |
| 1 | 60.0 | 106.3 | 80.1 | 70.0 | 112.0 | 85.8 | 80.0 | 117.4 | 94.9 | |
| 2 | 120.0 | 101.1 | 85.0 | 140.0 | 107.4 | 91.3 | 160.0 | 112.1 | 98.7 | |
| 3 | 180.0 | 90.9 | 80.0 | 210.0 | 98.5 | 87.6 | 240.0 | 109.5 | 100.9 | |
| 4 | 240.0 | 82.5 | 73.9 | 280.0 | 99.4 | 90.8 | 320.0 | 111.5 | 104.9 | |
| 5 | 300.0 | 77.7 | 71.1 | 350.0 | 96.1 | 89.5 | 400.0 | 106.1 | 101.3 | |
| 6 | 360.0 | 77.1 | 72.3 | 420.0 | 85.4 | 80.6 | 480.0 | 98.9 | 95.7 | |
| 7 | 420.0 | 73.8 | 69.0 | 490.0 | 82.8 | 79.6 | 560.0 | 99.9 | 96.7 | |
| 8 | 480.0 | 65.0 | 61.8 | 560.0 | 77.3 | 74.1 | 640.0 | 98.4 | 96.5 | |
| 9 | 540.0 | 60.1 | 56.9 | 630.0 | 78.1 | 76.2 | 720.0 | 94.0 | 93.2 | |
| 10 | 600.0 | 0.0 | 0.0 | 700.0 | 64.9 | 63.0 | 800.0 | 88.3 | 87.5 | |
| 11 | 660.0 | 0.0 | 0.0 | 770.0 | 0.0 | 0.0 | 880.0 | 87.7 | 86.9 | |
| 12 | 720.0 | 0.0 | 0.0 | 840.0 | 0.0 | 0.0 | 960.0 | 87.4 | 87.4 | |
| 13 | 780.0 | 0.0 | 0.0 | 910.0 | 0.0 | 0.0 | 1040.0 | 83.1 | 83.1 | |
| 14 | 840.0 | 0.0 | 0.0 | 980.0 | 0.0 | 0.0 | 1120.0 | 79.1 | 79.1 | |
| 15 | 900.0 | 0.0 | 0.0 | 1050.0 | 0.0 | 0.0 | 1200.0 | 77.9 | 78.5 | |
| 16 | 960.0 | 0.0 | 0.0 | 1120.0 | 0.0 | 0.0 | 1280.0 | 78.1 | 78.7 | |
| 17 | 1020.0 | 0.0 | 0.0 | 1190.0 | 0.0 | 0.0 | 1360.0 | 70.9 | 71.5 | |
| 18 | 1080.0 | 0.0 | 0.0 | 1260.0 | 0.0 | 0.0 | 1440.0 | 67.8 | 68.8 | |
| 19 | 1140.0 | 0.0 | 0.0 | 1330.0 | 0.0 | 0.0 | 1520.0 | 70.0 | 71.0 | |
| 20 | 1200.0 | 0.0 | 0.0 | 1400.0 | 0.0 | 0.0 | 1600.0 | 62.6 | 63.6 | |
| 21 | 1260.0 | 0.0 | 0.0 | 1470.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | |
| 22 | 1320.0 | 0.0 | 0.0 | 1540.0 | 0.0 | 0.0 | 1760.0 | 0.0 | 0.0 | |
| 23 | 1380.0 | 0.0 | 0.0 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | |
| 24 | 1440.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | |
| 25 | 1500.0 | 0.0 | 0.0 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | |
| 26 | 1560.0 | 0.0 | 0.0 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | |
| 27 | 1620.0 | 0.0 | 0.0 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | |
| 28 | 1680.0 | 0.0 | 0.0 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | |
| 29 | 1740.0 | 0.0 | 0.0 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | |
| 30 | 1800.0 | 0.0 | 0.0 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | |
| 31 | 1860.0 | 0.0 | 0.0 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | |
| 32 | 1920.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | |
| 33 | 1980.0 | 0.0 | 0.0 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | |
| 34 | 2040.0 | 0.0 | 0.0 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | |
| 35 | 2100.0 | 0.0 | 0.0 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | |
| 36 | 2160.0 | 0.0 | 0.0 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | |
| 37 | 2220.0 | 0.0 | 0.0 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | |
| 38 | 2280.0 | 0.0 | 0.0 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | |
| 39 | 2340.0 | 0.0 | 0.0 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | |
| 40 | 2400.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | |
| OASPL | | 107.5 | 87.6 | | | 113.7 | 96.7 | | | 120.0 109.2 |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 6 (PITCH ANGLE: 23.7 DEG)

| DATA-POINT / RUN | | | | | | | | | | | |
|------------------|--------|------|------|--------------|------|------|--------|--------------|------|--|--|
| FNC-10 / 182 | | | | FNC-11 / 183 | | | | FNC-12 / 184 | | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | | |
| 1 | 60.0 | 54.1 | 27.9 | 70.0 | 71.2 | 45.0 | 80.0 | 76.2 | 53.7 | | |
| 2 | 120.0 | 48.8 | 32.7 | 140.0 | 64.5 | 48.4 | 160.0 | 68.7 | 55.3 | | |
| 3 | 180.0 | 35.9 | 25.0 | 210.0 | 55.0 | 44.1 | 240.0 | 66.1 | 57.5 | | |
| 4 | 240.0 | 26.1 | 17.5 | 280.0 | 0.0 | 0.0 | 320.0 | 0.0 | 0.0 | | |
| 5 | 300.0 | 0.0 | 0.0 | 350.0 | 0.0 | 0.0 | 400.0 | 0.0 | 0.0 | | |
| 6 | 360.0 | 0.0 | 0.0 | 420.0 | 0.0 | 0.0 | 480.0 | 0.0 | 0.0 | | |
| 7 | 420.0 | 0.0 | 0.0 | 490.0 | 0.0 | 0.0 | 560.0 | 0.0 | 0.0 | | |
| 8 | 480.0 | 0.0 | 0.0 | 560.0 | 0.0 | 0.0 | 640.0 | 0.0 | 0.0 | | |
| 9 | 540.0 | 0.0 | 0.0 | 630.0 | 0.0 | 0.0 | 720.0 | 0.0 | 0.0 | | |
| 10 | 600.0 | 0.0 | 0.0 | 700.0 | 0.0 | 0.0 | 800.0 | 0.0 | 0.0 | | |
| 11 | 660.0 | 0.0 | 0.0 | 770.0 | 0.0 | 0.0 | 880.0 | 0.0 | 0.0 | | |
| 12 | 720.0 | 0.0 | 0.0 | 840.0 | 0.0 | 0.0 | 960.0 | 0.0 | 0.0 | | |
| 13 | 780.0 | 0.0 | 0.0 | 910.0 | 0.0 | 0.0 | 1040.0 | 0.0 | 0.0 | | |
| 14 | 840.0 | 0.0 | 0.0 | 980.0 | 0.0 | 0.0 | 1120.0 | 0.0 | 0.0 | | |
| 15 | 900.0 | 0.0 | 0.0 | 1050.0 | 0.0 | 0.0 | 1200.0 | 0.0 | 0.0 | | |
| 16 | 960.0 | 0.0 | 0.0 | 1120.0 | 0.0 | 0.0 | 1280.0 | 0.0 | 0.0 | | |
| 17 | 1020.0 | 0.0 | 0.0 | 1190.0 | 0.0 | 0.0 | 1360.0 | 0.0 | 0.0 | | |
| 18 | 1080.0 | 0.0 | 0.0 | 1260.0 | 0.0 | 0.0 | 1440.0 | 0.0 | 0.0 | | |
| 19 | 1140.0 | 0.0 | 0.0 | 1330.0 | 0.0 | 0.0 | 1520.0 | 0.0 | 0.0 | | |
| 20 | 1200.0 | 0.0 | 0.0 | 1400.0 | 0.0 | 0.0 | 1600.0 | 0.0 | 0.0 | | |
| 21 | 1260.0 | 0.0 | 0.0 | 1470.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | | |
| 22 | 1320.0 | 0.0 | 0.0 | 1540.0 | 0.0 | 0.0 | 1760.0 | 0.0 | 0.0 | | |
| 23 | 1380.0 | 0.0 | 0.0 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | | |
| 24 | 1440.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | | |
| 25 | 1500.0 | 0.0 | 0.0 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | | |
| 26 | 1560.0 | 0.0 | 0.0 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | | |
| 27 | 1620.0 | 0.0 | 0.0 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | | |
| 28 | 1680.0 | 0.0 | 0.0 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | | |
| 29 | 1740.0 | 0.0 | 0.0 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | | |
| 30 | 1800.0 | 0.0 | 0.0 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | | |
| 31 | 1860.0 | 0.0 | 0.0 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | | |
| 32 | 1920.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | | |
| 33 | 1980.0 | 0.0 | 0.0 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | | |
| 34 | 2040.0 | 0.0 | 0.0 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | | |
| 35 | 2100.0 | 0.0 | 0.0 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | | |
| 36 | 2160.0 | 0.0 | 0.0 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | | |
| 37 | 2220.0 | 0.0 | 0.0 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | | |
| 38 | 2280.0 | 0.0 | 0.0 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | | |
| 39 | 2340.0 | 0.0 | 0.0 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | | |
| 40 | 2400.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | | |
| OASPL | | 55.3 | 34.5 | | 72.1 | 51.0 | | 77.3 | 60.6 | | |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 7 (PITCH ANGLE: 23.7 DEG)

| DATA-POINT / RUN | | | | | | | | | | |
|------------------|--------|-------|------|--------------|-------|------|--------------|-------|------|--|
| FNC-10 / 182 | | | | FNC-11 / 183 | | | FNC-12 / 184 | | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | |
| 1 | 60.0 | 103.4 | 77.2 | 70.0 | 111.8 | 85.6 | 80.0 | 115.2 | 92.7 | |
| 2 | 120.0 | 94.8 | 78.7 | 140.0 | 99.5 | 83.4 | 160.0 | 108.7 | 95.3 | |
| 3 | 180.0 | 84.2 | 73.3 | 210.0 | 91.5 | 80.6 | 240.0 | 102.4 | 93.8 | |
| 4 | 240.0 | 73.8 | 65.2 | 280.0 | 76.2 | 67.6 | 320.0 | 95.9 | 89.3 | |
| 5 | 300.0 | 69.7 | 63.1 | 350.0 | 0.0 | 0.0 | 400.0 | 89.7 | 84.9 | |
| 6 | 360.0 | 0.0 | 0.0 | 420.0 | 0.0 | 0.0 | 480.0 | 74.6 | 71.4 | |
| 7 | 420.0 | 0.0 | 0.0 | 490.0 | 0.0 | 0.0 | 560.0 | 0.0 | 0.0 | |
| 8 | 480.0 | 0.0 | 0.0 | 560.0 | 0.0 | 0.0 | 640.0 | 0.0 | 0.0 | |
| 9 | 540.0 | 0.0 | 0.0 | 630.0 | 0.0 | 0.0 | 720.0 | 0.0 | 0.0 | |
| 10 | 600.0 | 0.0 | 0.0 | 700.0 | 0.0 | 0.0 | 800.0 | 0.0 | 0.0 | |
| 11 | 660.0 | 0.0 | 0.0 | 770.0 | 0.0 | 0.0 | 880.0 | 0.0 | 0.0 | |
| 12 | 720.0 | 0.0 | 0.0 | 840.0 | 0.0 | 0.0 | 960.0 | 0.0 | 0.0 | |
| 13 | 780.0 | 0.0 | 0.0 | 910.0 | 0.0 | 0.0 | 1040.0 | 0.0 | 0.0 | |
| 14 | 840.0 | 0.0 | 0.0 | 980.0 | 0.0 | 0.0 | 1120.0 | 0.0 | 0.0 | |
| 15 | 900.0 | 0.0 | 0.0 | 1050.0 | 0.0 | 0.0 | 1200.0 | 0.0 | 0.0 | |
| 16 | 960.0 | 0.0 | 0.0 | 1120.0 | 0.0 | 0.0 | 1280.0 | 0.0 | 0.0 | |
| 17 | 1020.0 | 0.0 | 0.0 | 1190.0 | 0.0 | 0.0 | 1360.0 | 0.0 | 0.0 | |
| 18 | 1080.0 | 0.0 | 0.0 | 1260.0 | 0.0 | 0.0 | 1440.0 | 0.0 | 0.0 | |
| 19 | 1140.0 | 0.0 | 0.0 | 1330.0 | 0.0 | 0.0 | 1520.0 | 0.0 | 0.0 | |
| 20 | 1200.0 | 0.0 | 0.0 | 1400.0 | 0.0 | 0.0 | 1600.0 | 0.0 | 0.0 | |
| 21 | 1260.0 | 0.0 | 0.0 | 1470.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | |
| 22 | 1320.0 | 0.0 | 0.0 | 1540.0 | 0.0 | 0.0 | 1760.0 | 0.0 | 0.0 | |
| 23 | 1380.0 | 0.0 | 0.0 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | |
| 24 | 1440.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | |
| 25 | 1500.0 | 0.0 | 0.0 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | |
| 26 | 1560.0 | 0.0 | 0.0 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | |
| 27 | 1620.0 | 0.0 | 0.0 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | |
| 28 | 1680.0 | 0.0 | 0.0 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | |
| 29 | 1740.0 | 0.0 | 0.0 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | |
| 30 | 1800.0 | 0.0 | 0.0 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | |
| 31 | 1860.0 | 0.0 | 0.0 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | |
| 32 | 1920.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | |
| 33 | 1980.0 | 0.0 | 0.0 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | |
| 34 | 2040.0 | 0.0 | 0.0 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | |
| 35 | 2100.0 | 0.0 | 0.0 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | |
| 36 | 2160.0 | 0.0 | 0.0 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | |
| 37 | 2220.0 | 0.0 | 0.0 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | |
| 38 | 2280.0 | 0.0 | 0.0 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | |
| 39 | 2340.0 | 0.0 | 0.0 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | |
| 40 | 2400.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | |
| OASPL | | 104.0 | 81.8 | | 112.1 | 88.5 | | 116.3 | 99.5 | |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 9 (PITCH ANGLE: 23.7 DEG)

| DATA-POINT / RUN | | | | | | | | | | | |
|------------------|--------|-------|------|--------------|-------|------|--------|--------------|-------|--|--|
| FNC-10 / 182 | | | | FNC-11 / 183 | | | | FNC-12 / 184 | | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | | |
| 1 | 60.0 | 107.1 | 80.9 | 70.0 | 109.5 | 83.3 | 80.0 | 114.6 | 92.1 | | |
| 2 | 120.0 | 99.4 | 83.3 | 140.0 | 105.4 | 89.3 | 160.0 | 110.3 | 96.9 | | |
| 3 | 180.0 | 90.9 | 80.0 | 210.0 | 97.0 | 86.1 | 240.0 | 108.3 | 99.7 | | |
| 4 | 240.0 | 77.8 | 69.2 | 280.0 | 99.9 | 91.3 | 320.0 | 108.7 | 102.1 | | |
| 5 | 300.0 | 79.7 | 73.1 | 350.0 | 94.3 | 87.7 | 400.0 | 102.3 | 97.5 | | |
| 6 | 360.0 | 70.4 | 65.6 | 420.0 | 84.6 | 79.8 | 480.0 | 100.9 | 97.7 | | |
| 7 | 420.0 | 0.0 | 0.0 | 490.0 | 80.9 | 77.7 | 560.0 | 100.7 | 97.5 | | |
| 8 | 480.0 | 0.0 | 0.0 | 560.0 | 80.8 | 77.6 | 640.0 | 96.3 | 94.4 | | |
| 9 | 540.0 | 0.0 | 0.0 | 630.0 | 77.7 | 75.8 | 720.0 | 94.2 | 93.4 | | |
| 10 | 600.0 | 0.0 | 0.0 | 700.0 | 72.9 | 71.0 | 800.0 | 93.6 | 92.8 | | |
| 11 | 660.0 | 0.0 | 0.0 | 770.0 | 68.2 | 67.4 | 880.0 | 87.8 | 87.0 | | |
| 12 | 720.0 | 0.0 | 0.0 | 840.0 | 0.0 | 0.0 | 960.0 | 85.9 | 85.9 | | |
| 13 | 780.0 | 0.0 | 0.0 | 910.0 | 0.0 | 0.0 | 1040.0 | 87.6 | 87.6 | | |
| 14 | 840.0 | 0.0 | 0.0 | 980.0 | 0.0 | 0.0 | 1120.0 | 86.4 | 86.4 | | |
| 15 | 900.0 | 0.0 | 0.0 | 1050.0 | 0.0 | 0.0 | 1200.0 | 76.2 | 76.8 | | |
| 16 | 960.0 | 0.0 | 0.0 | 1120.0 | 0.0 | 0.0 | 1280.0 | 0.0 | 0.0 | | |
| 17 | 1020.0 | 0.0 | 0.0 | 1190.0 | 0.0 | 0.0 | 1360.0 | 0.0 | 0.0 | | |
| 18 | 1080.0 | 0.0 | 0.0 | 1260.0 | 0.0 | 0.0 | 1440.0 | 0.0 | 0.0 | | |
| 19 | 1140.0 | 0.0 | 0.0 | 1330.0 | 0.0 | 0.0 | 1520.0 | 0.0 | 0.0 | | |
| 20 | 1200.0 | 0.0 | 0.0 | 1400.0 | 0.0 | 0.0 | 1600.0 | 0.0 | 0.0 | | |
| 21 | 1260.0 | 0.0 | 0.0 | 1470.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | | |
| 22 | 1320.0 | 0.0 | 0.0 | 1540.0 | 0.0 | 0.0 | 1760.0 | 0.0 | 0.0 | | |
| 23 | 1380.0 | 0.0 | 0.0 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | | |
| 24 | 1440.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | | |
| 25 | 1500.0 | 0.0 | 0.0 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | | |
| 26 | 1560.0 | 0.0 | 0.0 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | | |
| 27 | 1620.0 | 0.0 | 0.0 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | | |
| 28 | 1680.0 | 0.0 | 0.0 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | | |
| 29 | 1740.0 | 0.0 | 0.0 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | | |
| 30 | 1800.0 | 0.0 | 0.0 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | | |
| 31 | 1860.0 | 0.0 | 0.0 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | | |
| 32 | 1920.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | | |
| 33 | 1980.0 | 0.0 | 0.0 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | | |
| 34 | 2040.0 | 0.0 | 0.0 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | | |
| 35 | 2100.0 | 0.0 | 0.0 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | | |
| 36 | 2160.0 | 0.0 | 0.0 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | | |
| 37 | 2220.0 | 0.0 | 0.0 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | | |
| 38 | 2280.0 | 0.0 | 0.0 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | | |
| 39 | 2340.0 | 0.0 | 0.0 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | | |
| 40 | 2400.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | | |
| OASPL | | 107.9 | 86.7 | | 111.5 | 95.7 | | 117.7 | 107.6 | | |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 1 (PITCH ANGLE: 19.9 DEG)

| DATA-POINT / RUN | | | | | | | | | | |
|------------------|--------|-------|------|-------------|-------|------|-------------|-------|-------|--|
| FNC-1 / 176 | | | | FNC-2 / 177 | | | FNC-3 / 178 | | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | |
| 1 | 70.0 | 101.0 | 74.8 | 80.0 | 103.4 | 80.9 | 90.0 | 111.5 | 92.4 | |
| 2 | 140.0 | 94.2 | 78.1 | 160.0 | 103.6 | 90.2 | 180.0 | 109.2 | 98.3 | |
| 3 | 210.0 | 93.3 | 82.4 | 240.0 | 101.4 | 92.8 | 270.0 | 110.5 | 101.9 | |
| 4 | 280.0 | 86.1 | 77.5 | 320.0 | 98.6 | 92.0 | 360.0 | 109.9 | 105.1 | |
| 5 | 350.0 | 81.5 | 74.9 | 400.0 | 97.8 | 93.0 | 450.0 | 107.8 | 104.6 | |
| 6 | 420.0 | 77.0 | 72.2 | 480.0 | 91.5 | 88.3 | 540.0 | 105.0 | 101.8 | |
| 7 | 490.0 | 71.2 | 68.0 | 560.0 | 87.4 | 84.2 | 630.0 | 104.9 | 103.0 | |
| 8 | 560.0 | 68.1 | 64.9 | 640.0 | 85.1 | 83.2 | 720.0 | 103.7 | 102.9 | |
| 9 | 630.0 | 59.9 | 58.0 | 720.0 | 81.0 | 80.2 | 810.0 | 101.3 | 100.5 | |
| 10 | 700.0 | 0.0 | 0.0 | 800.0 | 80.7 | 79.9 | 900.0 | 100.4 | 100.4 | |
| 11 | 770.0 | 0.0 | 0.0 | 880.0 | 74.4 | 73.6 | 990.0 | 99.3 | 99.3 | |
| 12 | 840.0 | 0.0 | 0.0 | 960.0 | 71.2 | 71.2 | 1080.0 | 95.4 | 95.4 | |
| 13 | 910.0 | 0.0 | 0.0 | 1040.0 | 70.2 | 70.2 | 1170.0 | 92.9 | 93.5 | |
| 14 | 980.0 | 0.0 | 0.0 | 1120.0 | 61.8 | 61.8 | 1260.0 | 90.9 | 91.5 | |
| 15 | 1050.0 | 0.0 | 0.0 | 1200.0 | 57.9 | 58.5 | 1350.0 | 89.1 | 89.7 | |
| 16 | 1120.0 | 0.0 | 0.0 | 1280.0 | 0.0 | 0.0 | 1440.0 | 85.9 | 86.9 | |
| 17 | 1190.0 | 0.0 | 0.0 | 1360.0 | 0.0 | 0.0 | 1530.0 | 87.7 | 88.7 | |
| 18 | 1260.0 | 0.0 | 0.0 | 1440.0 | 0.0 | 0.0 | 1620.0 | 83.8 | 84.8 | |
| 19 | 1330.0 | 0.0 | 0.0 | 1520.0 | 0.0 | 0.0 | 1710.0 | 79.2 | 80.2 | |
| 20 | 1400.0 | 0.0 | 0.0 | 1600.0 | 0.0 | 0.0 | 1800.0 | 80.8 | 82.0 | |
| 21 | 1470.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | 1890.0 | 77.5 | 78.7 | |
| 22 | 1540.0 | 0.0 | 0.0 | 1760.0 | 0.0 | 0.0 | 1980.0 | 74.5 | 75.7 | |
| 23 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | 2070.0 | 70.7 | 71.9 | |
| 24 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | 2160.0 | 68.2 | 69.4 | |
| 25 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | 2250.0 | 70.4 | 71.7 | |
| 26 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | 2340.0 | 63.2 | 64.5 | |
| 27 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | 2430.0 | 0.0 | 0.0 | |
| 28 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2520.0 | 0.0 | 0.0 | |
| 29 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | 2610.0 | 0.0 | 0.0 | |
| 30 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | 2700.0 | 0.0 | 0.0 | |
| 31 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | 2790.0 | 0.0 | 0.0 | |
| 32 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | |
| 33 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | 2970.0 | 0.0 | 0.0 | |
| 34 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | 3060.0 | 0.0 | 0.0 | |
| 35 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3150.0 | 0.0 | 0.0 | |
| 36 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | 3240.0 | 0.0 | 0.0 | |
| 37 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | 3330.0 | 0.0 | 0.0 | |
| 38 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | 3420.0 | 0.0 | 0.0 | |
| 39 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | 3510.0 | 0.0 | 0.0 | |
| 40 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | 3600.0 | 0.0 | 0.0 | |
| OASPL | | 102.6 | 85.8 | 108.7 | | 99.1 | 117.9 | | 112.6 | |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 2 (PITCH ANGLE: 19.9 DEG)

| DATA-POINT / RUN | | | | | | | | | | |
|------------------|--------|-------|------|-------------|-------|-------|--------|-------------|-------|--|
| FNC-1 / 176 | | | | FNC-2 / 177 | | | | FNC-3 / 178 | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | |
| 1 | 70.0 | 105.7 | 79.5 | 80.0 | 108.5 | 86.0 | 90.0 | 112.7 | 93.6 | |
| 2 | 140.0 | 101.3 | 85.2 | 160.0 | 108.8 | 95.4 | 180.0 | 117.1 | 106.2 | |
| 3 | 210.0 | 98.1 | 87.2 | 240.0 | 106.0 | 97.4 | 270.0 | 114.3 | 105.7 | |
| 4 | 280.0 | 93.9 | 85.3 | 320.0 | 102.3 | 95.7 | 360.0 | 111.5 | 106.7 | |
| 5 | 350.0 | 88.7 | 82.1 | 400.0 | 101.1 | 96.3 | 450.0 | 114.9 | 111.7 | |
| 6 | 420.0 | 85.9 | 81.1 | 480.0 | 101.6 | 98.4 | 540.0 | 114.8 | 111.6 | |
| 7 | 490.0 | 82.1 | 78.9 | 560.0 | 98.1 | 94.9 | 630.0 | 111.6 | 109.7 | |
| 8 | 560.0 | 79.1 | 75.9 | 640.0 | 94.6 | 92.7 | 720.0 | 109.6 | 108.8 | |
| 9 | 630.0 | 72.8 | 70.9 | 720.0 | 90.8 | 90.0 | 810.0 | 109.8 | 109.0 | |
| 10 | 700.0 | 65.2 | 63.3 | 800.0 | 89.8 | 89.0 | 900.0 | 110.4 | 110.4 | |
| 11 | 770.0 | 59.5 | 58.7 | 880.0 | 88.2 | 87.4 | 990.0 | 107.0 | 107.0 | |
| 12 | 840.0 | 57.7 | 56.9 | 960.0 | 84.5 | 84.5 | 1080.0 | 106.4 | 106.4 | |
| 13 | 910.0 | 0.0 | 0.0 | 1040.0 | 81.0 | 81.0 | 1170.0 | 106.2 | 106.8 | |
| 14 | 980.0 | 0.0 | 0.0 | 1120.0 | 78.0 | 78.0 | 1260.0 | 104.8 | 105.4 | |
| 15 | 1050.0 | 0.0 | 0.0 | 1200.0 | 76.0 | 76.6 | 1350.0 | 103.5 | 104.1 | |
| 16 | 1120.0 | 0.0 | 0.0 | 1280.0 | 73.4 | 74.0 | 1440.0 | 101.3 | 102.3 | |
| 17 | 1190.0 | 0.0 | 0.0 | 1360.0 | 69.7 | 70.3 | 1530.0 | 100.2 | 101.2 | |
| 18 | 1260.0 | 0.0 | 0.0 | 1440.0 | 67.5 | 68.5 | 1620.0 | 99.8 | 100.8 | |
| 19 | 1330.0 | 0.0 | 0.0 | 1520.0 | 65.9 | 66.9 | 1710.0 | 97.6 | 98.6 | |
| 20 | 1400.0 | 0.0 | 0.0 | 1600.0 | 62.4 | 63.4 | 1800.0 | 95.8 | 97.0 | |
| 21 | 1470.0 | 0.0 | 0.0 | 1680.0 | 60.2 | 61.2 | 1890.0 | 94.2 | 95.4 | |
| 22 | 1540.0 | 0.0 | 0.0 | 1760.0 | 57.7 | 58.7 | 1980.0 | 94.5 | 95.7 | |
| 23 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | 2070.0 | 92.2 | 93.4 | |
| 24 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | 2160.0 | 90.5 | 91.7 | |
| 25 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | 2250.0 | 89.9 | 91.2 | |
| 26 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | 2340.0 | 88.9 | 90.2 | |
| 27 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | 2430.0 | 87.2 | 88.5 | |
| 28 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2520.0 | 86.1 | 87.4 | |
| 29 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | 2610.0 | 86.2 | 87.5 | |
| 30 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | 2700.0 | 85.0 | 86.3 | |
| 31 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | 2790.0 | 82.4 | 83.7 | |
| 32 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | 2880.0 | 81.9 | 83.1 | |
| 33 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | 2970.0 | 80.0 | 81.2 | |
| 34 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | 3060.0 | 81.2 | 82.4 | |
| 35 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3150.0 | 79.1 | 80.3 | |
| 36 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | 3240.0 | 76.9 | 78.1 | |
| 37 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | 3330.0 | 74.8 | 76.0 | |
| 38 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | 3420.0 | 77.3 | 78.5 | |
| 39 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | 3510.0 | 75.6 | 76.8 | |
| 40 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | 3600.0 | 72.1 | 73.1 | |
| OASPL | | 107.8 | 92.3 | 113.9 | | 105.1 | 123.8 | | 120.2 | |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 3 (PITCH ANGLE: 19.9 DEG)

| DATA-POINT / RUN | | | | | | | | | | |
|------------------|--------|-------|------|---------------|-------|-------|---------------|-------|-------|--|
| FNC-1 / 176 | | | | FNC-2 / 177 | | | FNC-3 / 178 | | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | |
| 1 | 70.0 | 107.8 | 81.6 | 80.0 | 113.0 | 90.5 | 90.0 | 113.5 | 94.4 | |
| 2 | 140.0 | 103.7 | 87.6 | 160.0 | 110.5 | 97.1 | 180.0 | 114.9 | 104.0 | |
| 3 | 210.0 | 99.2 | 88.3 | 240.0 | 109.4 | 100.8 | 270.0 | 113.4 | 104.8 | |
| 4 | 280.0 | 94.8 | 86.2 | 320.0 | 105.5 | 98.9 | 360.0 | 114.4 | 109.6 | |
| 5 | 350.0 | 90.7 | 84.1 | 400.0 | 105.7 | 100.9 | 450.0 | 114.7 | 111.5 | |
| 6 | 420.0 | 88.5 | 83.7 | 480.0 | 102.3 | 99.1 | 540.0 | 111.1 | 107.9 | |
| 7 | 490.0 | 83.0 | 79.8 | 560.0 | 97.6 | 94.4 | 630.0 | 113.0 | 111.1 | |
| 8 | 560.0 | 77.5 | 74.3 | 640.0 | 97.6 | 95.7 | 720.0 | 112.8 | 112.0 | |
| 9 | 630.0 | 74.7 | 72.8 | 720.0 | 95.9 | 95.1 | 810.0 | 111.6 | 110.8 | |
| 10 | 700.0 | 72.0 | 70.1 | 800.0 | 92.8 | 92.0 | 900.0 | 110.6 | 110.6 | |
| 11 | 770.0 | 67.6 | 66.8 | 880.0 | 89.7 | 88.9 | 990.0 | 110.6 | 110.6 | |
| 12 | 840.0 | 60.3 | 59.5 | 960.0 | 88.7 | 88.7 | 1080.0 | 108.5 | 108.5 | |
| 13 | 910.0 | 0.0 | 0.0 | 1040.0 | 85.7 | 85.7 | 1170.0 | 106.1 | 106.7 | |
| 14 | 980.0 | 0.0 | 0.0 | 1120.0 | 80.8 | 80.8 | 1260.0 | 107.4 | 108.0 | |
| 15 | 1050.0 | 0.0 | 0.0 | 1200.0 | 78.4 | 79.0 | 1350.0 | 105.7 | 106.3 | |
| 16 | 1120.0 | 0.0 | 0.0 | 1280.0 | 78.4 | 79.0 | 1440.0 | 103.3 | 104.3 | |
| 17 | 1190.0 | 0.0 | 0.0 | 1360.0 | 73.3 | 73.9 | 1530.0 | 102.4 | 103.4 | |
| 18 | 1260.0 | 0.0 | 0.0 | 1440.0 | 69.6 | 70.6 | 1620.0 | 103.2 | 104.2 | |
| 19 | 1330.0 | 0.0 | 0.0 | 1520.0 | 67.7 | 68.7 | 1710.0 | 100.9 | 101.9 | |
| 20 | 1400.0 | 0.0 | 0.0 | 1600.0 | 66.4 | 67.4 | 1800.0 | 97.3 | 98.5 | |
| 21 | 1470.0 | 0.0 | 0.0 | 1680.0 | 64.2 | 65.2 | 1890.0 | 97.6 | 98.8 | |
| 22 | 1540.0 | 0.0 | 0.0 | 1760.0 | 57.5 | 58.5 | 1980.0 | 97.6 | 98.8 | |
| 23 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | 2070.0 | 95.0 | 96.2 | |
| 24 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | 2160.0 | 93.5 | 94.7 | |
| 25 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | 2250.0 | 94.5 | 95.8 | |
| 26 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | 2340.0 | 91.7 | 93.0 | |
| 27 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | 2430.0 | 89.4 | 90.7 | |
| 28 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2520.0 | 90.3 | 91.6 | |
| 29 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | 2610.0 | 89.6 | 90.9 | |
| 30 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | 2700.0 | 87.4 | 88.7 | |
| 31 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | 2790.0 | 86.2 | 87.5 | |
| 32 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | 2880.0 | 86.4 | 87.6 | |
| 33 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | 2970.0 | 86.2 | 87.4 | |
| 34 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | 3060.0 | 84.9 | 86.1 | |
| 35 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3150.0 | 81.8 | 83.0 | |
| 36 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | 3240.0 | 81.6 | 82.8 | |
| 37 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | 3330.0 | 82.6 | 83.8 | |
| 38 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | 3420.0 | 80.9 | 82.1 | |
| 39 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | 3510.0 | 78.2 | 79.4 | |
| 40 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | 3600.0 | 78.6 | 79.6 | |
| OASPL | | 109.9 | 93.9 | 117.1 107.8 | | | 124.0 121.3 | | | |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 4 (PITCH ANGLE: 19.9 DEG)

| DATA-POINT / RUN | | | | | | | | | | |
|------------------|--------|-------|------|-------------|-------|-------|--------|-------------|-------|--|
| FNC-1 / 176 | | | | FNC-2 / 177 | | | | FNC-3 / 178 | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | |
| 1 | 70.0 | 109.9 | 83.7 | 80.0 | 116.0 | 93.5 | 90.0 | 115.9 | 96.8 | |
| 2 | 140.0 | 105.5 | 89.4 | 160.0 | 111.1 | 97.7 | 180.0 | 115.5 | 104.6 | |
| 3 | 210.0 | 99.5 | 88.6 | 240.0 | 111.1 | 102.5 | 270.0 | 116.3 | 107.7 | |
| 4 | 280.0 | 96.8 | 88.2 | 320.0 | 108.4 | 101.8 | 360.0 | 116.5 | 111.7 | |
| 5 | 350.0 | 91.4 | 84.8 | 400.0 | 104.7 | 99.9 | 450.0 | 114.5 | 111.3 | |
| 6 | 420.0 | 87.1 | 82.3 | 480.0 | 102.2 | 99.0 | 540.0 | 112.2 | 109.0 | |
| 7 | 490.0 | 82.0 | 78.8 | 560.0 | 100.0 | 96.8 | 630.0 | 113.4 | 111.5 | |
| 8 | 560.0 | 79.3 | 76.1 | 640.0 | 98.2 | 96.3 | 720.0 | 110.9 | 110.1 | |
| 9 | 630.0 | 76.4 | 74.5 | 720.0 | 94.6 | 93.8 | 810.0 | 111.0 | 110.2 | |
| 10 | 700.0 | 69.3 | 67.4 | 800.0 | 93.1 | 92.3 | 900.0 | 110.3 | 110.3 | |
| 11 | 770.0 | 64.3 | 63.5 | 880.0 | 90.7 | 89.9 | 990.0 | 108.9 | 108.9 | |
| 12 | 840.0 | 0.0 | 0.0 | 960.0 | 86.5 | 86.5 | 1080.0 | 108.1 | 108.1 | |
| 13 | 910.0 | 0.0 | 0.0 | 1040.0 | 84.9 | 84.9 | 1170.0 | 107.5 | 108.1 | |
| 14 | 980.0 | 0.0 | 0.0 | 1120.0 | 83.4 | 83.4 | 1260.0 | 104.7 | 105.3 | |
| 15 | 1050.0 | 0.0 | 0.0 | 1200.0 | 79.4 | 80.0 | 1350.0 | 104.8 | 105.4 | |
| 16 | 1120.0 | 0.0 | 0.0 | 1280.0 | 74.4 | 75.0 | 1440.0 | 103.8 | 104.8 | |
| 17 | 1190.0 | 0.0 | 0.0 | 1360.0 | 74.1 | 74.7 | 1530.0 | 101.3 | 102.3 | |
| 18 | 1260.0 | 0.0 | 0.0 | 1440.0 | 71.7 | 72.7 | 1620.0 | 99.4 | 100.4 | |
| 19 | 1330.0 | 0.0 | 0.0 | 1520.0 | 68.4 | 69.4 | 1710.0 | 100.2 | 101.2 | |
| 20 | 1400.0 | 0.0 | 0.0 | 1600.0 | 64.7 | 65.7 | 1800.0 | 98.5 | 99.7 | |
| 21 | 1470.0 | 0.0 | 0.0 | 1680.0 | 64.0 | 65.0 | 1890.0 | 94.9 | 96.1 | |
| 22 | 1540.0 | 0.0 | 0.0 | 1760.0 | 62.2 | 63.2 | 1980.0 | 95.0 | 96.2 | |
| 23 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | 2070.0 | 94.0 | 95.2 | |
| 24 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | 2160.0 | 91.1 | 92.3 | |
| 25 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | 2250.0 | 90.9 | 92.2 | |
| 26 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | 2340.0 | 89.5 | 90.8 | |
| 27 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | 2430.0 | 88.4 | 89.7 | |
| 28 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2520.0 | 87.8 | 89.1 | |
| 29 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | 2610.0 | 87.3 | 88.6 | |
| 30 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | 2700.0 | 85.8 | 87.1 | |
| 31 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | 2790.0 | 85.2 | 86.5 | |
| 32 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | 2880.0 | 84.1 | 85.3 | |
| 33 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | 2970.0 | 82.5 | 83.7 | |
| 34 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | 3060.0 | 80.6 | 81.8 | |
| 35 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3150.0 | 81.7 | 82.9 | |
| 36 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | 3240.0 | 80.2 | 81.4 | |
| 37 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | 3330.0 | 77.4 | 78.6 | |
| 38 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | 3420.0 | 78.1 | 79.3 | |
| 39 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | 3510.0 | 76.3 | 77.5 | |
| 40 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | 3600.0 | 73.9 | 74.9 | |
| OASPL | | 111.7 | 94.9 | | 119.0 | 108.7 | | 124.7 | 121.1 | |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 5 (PITCH ANGLE: 19.9 DEG)

| DATA-POINT / RUN | | | | | | | | | | |
|------------------|--------|-------|------|-------------|-------|-------|--------|-------------|-------|--|
| FNC-1 / 176 | | | | FNC-2 / 177 | | | | FNC-3 / 178 | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | |
| 1 | 70.0 | 111.2 | 85.0 | 80.0 | 118.3 | 95.8 | 90.0 | 118.2 | 99.1 | |
| 2 | 140.0 | 106.7 | 90.6 | 160.0 | 112.3 | 98.9 | 180.0 | 110.7 | 99.8 | |
| 3 | 210.0 | 97.2 | 86.3 | 240.0 | 109.6 | 101.0 | 270.0 | 117.1 | 108.5 | |
| 4 | 280.0 | 96.8 | 88.2 | 320.0 | 111.1 | 104.5 | 360.0 | 118.3 | 113.5 | |
| 5 | 350.0 | 93.1 | 86.5 | 400.0 | 105.6 | 100.8 | 450.0 | 109.2 | 106.0 | |
| 6 | 420.0 | 85.2 | 80.4 | 480.0 | 98.6 | 95.4 | 540.0 | 111.6 | 108.4 | |
| 7 | 490.0 | 79.3 | 76.1 | 560.0 | 99.5 | 96.3 | 630.0 | 112.2 | 110.3 | |
| 8 | 560.0 | 77.1 | 73.9 | 640.0 | 97.1 | 95.2 | 720.0 | 107.3 | 106.5 | |
| 9 | 630.0 | 73.8 | 71.9 | 720.0 | 92.7 | 91.9 | 810.0 | 107.4 | 106.6 | |
| 10 | 700.0 | 67.7 | 65.8 | 800.0 | 88.4 | 87.6 | 900.0 | 106.6 | 106.6 | |
| 11 | 770.0 | 60.2 | 59.4 | 880.0 | 86.5 | 85.7 | 990.0 | 105.9 | 105.9 | |
| 12 | 840.0 | 0.0 | 0.0 | 960.0 | 85.7 | 85.7 | 1080.0 | 103.8 | 103.8 | |
| 13 | 910.0 | 0.0 | 0.0 | 1040.0 | 82.4 | 82.4 | 1170.0 | 102.9 | 103.5 | |
| 14 | 980.0 | 0.0 | 0.0 | 1120.0 | 77.0 | 77.0 | 1260.0 | 102.6 | 103.2 | |
| 15 | 1050.0 | 0.0 | 0.0 | 1200.0 | 75.1 | 75.7 | 1350.0 | 99.1 | 99.7 | |
| 16 | 1120.0 | 0.0 | 0.0 | 1280.0 | 74.8 | 75.4 | 1440.0 | 98.4 | 99.4 | |
| 17 | 1190.0 | 0.0 | 0.0 | 1360.0 | 68.0 | 68.6 | 1530.0 | 96.7 | 97.7 | |
| 18 | 1260.0 | 0.0 | 0.0 | 1440.0 | 66.6 | 67.6 | 1620.0 | 94.8 | 95.8 | |
| 19 | 1330.0 | 0.0 | 0.0 | 1520.0 | 67.6 | 68.6 | 1710.0 | 92.5 | 93.5 | |
| 20 | 1400.0 | 0.0 | 0.0 | 1600.0 | 60.7 | 61.7 | 1800.0 | 92.8 | 94.0 | |
| 21 | 1470.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | 1890.0 | 89.8 | 91.0 | |
| 22 | 1540.0 | 0.0 | 0.0 | 1760.0 | 0.0 | 0.0 | 1980.0 | 88.5 | 89.7 | |
| 23 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | 2070.0 | 89.0 | 90.2 | |
| 24 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | 2160.0 | 86.3 | 87.5 | |
| 25 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | 2250.0 | 83.3 | 84.6 | |
| 26 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | 2340.0 | 84.8 | 86.1 | |
| 27 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | 2430.0 | 78.5 | 79.8 | |
| 28 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2520.0 | 81.6 | 82.9 | |
| 29 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | 2610.0 | 73.3 | 74.6 | |
| 30 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | 2700.0 | 0.0 | 0.0 | |
| 31 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | 2790.0 | 0.0 | 0.0 | |
| 32 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | |
| 33 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | 2970.0 | 0.0 | 0.0 | |
| 34 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | 3060.0 | 0.0 | 0.0 | |
| 35 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3150.0 | 0.0 | 0.0 | |
| 36 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | 3240.0 | 0.0 | 0.0 | |
| 37 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | 3330.0 | 0.0 | 0.0 | |
| 38 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | 3420.0 | 0.0 | 0.0 | |
| 39 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | 3510.0 | 0.0 | 0.0 | |
| 40 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | 3600.0 | 0.0 | 0.0 | |
| OASPL | | 112.8 | 95.0 | | 120.5 | 109.0 | | 124.2 | 119.1 | |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 6 (PITCH ANGLE: 19.9 DEG)

| DATA-POINT / RUN | | | | | | | | | | |
|------------------|--------|-------|------|-------------|-------|-------|--------|-------------|-------|--|
| FNC-1 / 176 | | | | FNC-2 / 177 | | | | FNC-3 / 178 | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | |
| 1 | 70.0 | 111.9 | 85.7 | 80.0 | 118.8 | 96.3 | 90.0 | 118.7 | 99.6 | |
| 2 | 140.0 | 106.0 | 89.9 | 160.0 | 111.9 | 98.5 | 180.0 | 115.3 | 104.4 | |
| 3 | 210.0 | 95.3 | 84.4 | 240.0 | 108.4 | 99.8 | 270.0 | 114.9 | 106.3 | |
| 4 | 280.0 | 95.1 | 86.5 | 320.0 | 107.1 | 100.5 | 360.0 | 112.8 | 108.0 | |
| 5 | 350.0 | 87.6 | 81.0 | 400.0 | 98.9 | 94.1 | 450.0 | 103.1 | 99.9 | |
| 6 | 420.0 | 72.5 | 67.7 | 480.0 | 94.3 | 91.1 | 540.0 | 109.2 | 106.0 | |
| 7 | 490.0 | 67.6 | 64.4 | 560.0 | 96.1 | 92.9 | 630.0 | 104.6 | 102.7 | |
| 8 | 560.0 | 0.0 | 0.0 | 640.0 | 88.2 | 86.3 | 720.0 | 97.4 | 96.6 | |
| 9 | 630.0 | 0.0 | 0.0 | 720.0 | 73.3 | 72.5 | 810.0 | 103.1 | 102.3 | |
| 10 | 700.0 | 0.0 | 0.0 | 800.0 | 84.3 | 83.5 | 900.0 | 97.2 | 97.2 | |
| 11 | 770.0 | 0.0 | 0.0 | 880.0 | 74.4 | 73.6 | 990.0 | 84.9 | 84.9 | |
| 12 | 840.0 | 0.0 | 0.0 | 960.0 | 0.0 | 0.0 | 1080.0 | 95.5 | 95.5 | |
| 13 | 910.0 | 0.0 | 0.0 | 1040.0 | 0.0 | 0.0 | 1170.0 | 89.8 | 90.4 | |
| 14 | 980.0 | 0.0 | 0.0 | 1120.0 | 0.0 | 0.0 | 1260.0 | 90.0 | 90.6 | |
| 15 | 1050.0 | 0.0 | 0.0 | 1200.0 | 0.0 | 0.0 | 1350.0 | 86.3 | 86.9 | |
| 16 | 1120.0 | 0.0 | 0.0 | 1280.0 | 0.0 | 0.0 | 1440.0 | 81.9 | 82.9 | |
| 17 | 1190.0 | 0.0 | 0.0 | 1360.0 | 0.0 | 0.0 | 1530.0 | 78.3 | 79.3 | |
| 18 | 1260.0 | 0.0 | 0.0 | 1440.0 | 0.0 | 0.0 | 1620.0 | 80.9 | 81.9 | |
| 19 | 1330.0 | 0.0 | 0.0 | 1520.0 | 0.0 | 0.0 | 1710.0 | 83.1 | 84.1 | |
| 20 | 1400.0 | 0.0 | 0.0 | 1600.0 | 0.0 | 0.0 | 1800.0 | 64.8 | 66.0 | |
| 21 | 1470.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | 1890.0 | 0.0 | 0.0 | |
| 22 | 1540.0 | 0.0 | 0.0 | 1760.0 | 0.0 | 0.0 | 1980.0 | 0.0 | 0.0 | |
| 23 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | 2070.0 | 0.0 | 0.0 | |
| 24 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | |
| 25 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | 2250.0 | 0.0 | 0.0 | |
| 26 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | 2340.0 | 0.0 | 0.0 | |
| 27 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | 2430.0 | 0.0 | 0.0 | |
| 28 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2520.0 | 0.0 | 0.0 | |
| 29 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | 2610.0 | 0.0 | 0.0 | |
| 30 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | 2700.0 | 0.0 | 0.0 | |
| 31 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | 2790.0 | 0.0 | 0.0 | |
| 32 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | |
| 33 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | 2970.0 | 0.0 | 0.0 | |
| 34 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | 3060.0 | 0.0 | 0.0 | |
| 35 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3150.0 | 0.0 | 0.0 | |
| 36 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | 3240.0 | 0.0 | 0.0 | |
| 37 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | 3330.0 | 0.0 | 0.0 | |
| 38 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | 3420.0 | 0.0 | 0.0 | |
| 39 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | 3510.0 | 0.0 | 0.0 | |
| 40 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | 3600.0 | 0.0 | 0.0 | |
| OASPL | | 113.1 | 93.4 | 120.2 | | 105.9 | 122.4 | | 113.9 | |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 7 (PITCH ANGLE: 19.9 DEG)

| DATA-POINT / RUN | | | | | | | | | | |
|------------------|--------|-------|------|-------------|-------|------|--------|-------------|-------|--|
| FNC-1 / 176 | | | | FNC-2 / 177 | | | | FNC-3 / 178 | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | |
| 1 | 70.0 | 110.2 | 84.0 | 80.0 | 115.0 | 92.5 | 90.0 | 119.7 | 100.6 | |
| 2 | 140.0 | 99.8 | 83.7 | 160.0 | 107.3 | 93.9 | 180.0 | 0.0 | 0.0 | |
| 3 | 210.0 | 89.8 | 78.9 | 240.0 | 101.3 | 92.7 | 270.0 | 0.0 | 0.0 | |
| 4 | 280.0 | 73.7 | 65.1 | 320.0 | 94.0 | 87.4 | 360.0 | 0.0 | 0.0 | |
| 5 | 350.0 | 75.8 | 69.2 | 400.0 | 86.1 | 81.3 | 450.0 | 0.0 | 0.0 | |
| 6 | 420.0 | 69.5 | 64.7 | 480.0 | 78.3 | 75.1 | 540.0 | 0.0 | 0.0 | |
| 7 | 490.0 | 0.0 | 0.0 | 560.0 | 80.0 | 76.8 | 630.0 | 0.0 | 0.0 | |
| 8 | 560.0 | 0.0 | 0.0 | 640.0 | 78.4 | 76.5 | 720.0 | 0.0 | 0.0 | |
| 9 | 630.0 | 0.0 | 0.0 | 720.0 | 71.6 | 70.8 | 810.0 | 0.0 | 0.0 | |
| 10 | 700.0 | 0.0 | 0.0 | 800.0 | 67.8 | 67.0 | 900.0 | 0.0 | 0.0 | |
| 11 | 770.0 | 0.0 | 0.0 | 880.0 | 63.6 | 62.8 | 990.0 | 0.0 | 0.0 | |
| 12 | 840.0 | 0.0 | 0.0 | 960.0 | 0.0 | 0.0 | 1080.0 | 0.0 | 0.0 | |
| 13 | 910.0 | 0.0 | 0.0 | 1040.0 | 0.0 | 0.0 | 1170.0 | 0.0 | 0.0 | |
| 14 | 980.0 | 0.0 | 0.0 | 1120.0 | 0.0 | 0.0 | 1260.0 | 0.0 | 0.0 | |
| 15 | 1050.0 | 0.0 | 0.0 | 1200.0 | 0.0 | 0.0 | 1350.0 | 0.0 | 0.0 | |
| 16 | 1120.0 | 0.0 | 0.0 | 1280.0 | 0.0 | 0.0 | 1440.0 | 0.0 | 0.0 | |
| 17 | 1190.0 | 0.0 | 0.0 | 1360.0 | 0.0 | 0.0 | 1530.0 | 0.0 | 0.0 | |
| 18 | 1260.0 | 0.0 | 0.0 | 1440.0 | 0.0 | 0.0 | 1620.0 | 0.0 | 0.0 | |
| 19 | 1330.0 | 0.0 | 0.0 | 1520.0 | 0.0 | 0.0 | 1710.0 | 0.0 | 0.0 | |
| 20 | 1400.0 | 0.0 | 0.0 | 1600.0 | 0.0 | 0.0 | 1800.0 | 0.0 | 0.0 | |
| 21 | 1470.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | 1890.0 | 0.0 | 0.0 | |
| 22 | 1540.0 | 0.0 | 0.0 | 1760.0 | 0.0 | 0.0 | 1980.0 | 0.0 | 0.0 | |
| 23 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | 2070.0 | 0.0 | 0.0 | |
| 24 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | |
| 25 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | 2250.0 | 0.0 | 0.0 | |
| 26 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | 2340.0 | 0.0 | 0.0 | |
| 27 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | 2430.0 | 0.0 | 0.0 | |
| 28 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2520.0 | 0.0 | 0.0 | |
| 29 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | 2610.0 | 0.0 | 0.0 | |
| 30 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | 2700.0 | 0.0 | 0.0 | |
| 31 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | 2790.0 | 0.0 | 0.0 | |
| 32 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | |
| 33 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | 2970.0 | 0.0 | 0.0 | |
| 34 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | 3060.0 | 0.0 | 0.0 | |
| 35 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3150.0 | 0.0 | 0.0 | |
| 36 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | 3240.0 | 0.0 | 0.0 | |
| 37 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | 3330.0 | 0.0 | 0.0 | |
| 38 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | 3420.0 | 0.0 | 0.0 | |
| 39 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | 3510.0 | 0.0 | 0.0 | |
| 40 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | 3600.0 | 0.0 | 0.0 | |
| OASPL | | 110.6 | 87.6 | 115.9 | | 98.4 | 119.7 | | 100.6 | |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 9 (PITCH ANGLE: 19.9 DEG)

| DATA-POINT / RUN | | | | | | | | | | |
|------------------|--------|-------|------|-------------|-------|-------|--------|-------------|-------|--|
| FNC-1 / 176 | | | | FNC-2 / 177 | | | | FNC-3 / 178 | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | |
| 1 | 70.0 | 107.6 | 81.4 | 80.0 | 115.0 | 92.5 | 90.0 | 115.4 | 96.3 | |
| 2 | 140.0 | 105.0 | 88.9 | 160.0 | 110.2 | 96.8 | 180.0 | 110.1 | 99.2 | |
| 3 | 210.0 | 95.2 | 84.3 | 240.0 | 108.5 | 99.9 | 270.0 | 116.9 | 108.3 | |
| 4 | 280.0 | 98.2 | 89.6 | 320.0 | 108.5 | 101.9 | 360.0 | 113.6 | 108.8 | |
| 5 | 350.0 | 93.6 | 87.0 | 400.0 | 102.5 | 97.7 | 450.0 | 111.6 | 108.4 | |
| 6 | 420.0 | 83.7 | 78.9 | 480.0 | 100.8 | 97.6 | 540.0 | 114.2 | 111.0 | |
| 7 | 490.0 | 80.6 | 77.4 | 560.0 | 101.3 | 98.1 | 630.0 | 110.6 | 108.7 | |
| 8 | 560.0 | 80.0 | 76.8 | 640.0 | 96.9 | 95.0 | 720.0 | 110.6 | 109.8 | |
| 9 | 630.0 | 74.7 | 72.8 | 720.0 | 92.0 | 91.2 | 810.0 | 111.3 | 110.5 | |
| 10 | 700.0 | 67.0 | 65.1 | 800.0 | 93.3 | 92.5 | 900.0 | 106.4 | 106.4 | |
| 11 | 770.0 | 0.0 | 0.0 | 880.0 | 88.9 | 88.1 | 990.0 | 107.5 | 107.5 | |
| 12 | 840.0 | 0.0 | 0.0 | 960.0 | 84.4 | 84.4 | 1080.0 | 107.3 | 107.3 | |
| 13 | 910.0 | 0.0 | 0.0 | 1040.0 | 85.9 | 85.9 | 1170.0 | 104.6 | 105.2 | |
| 14 | 980.0 | 0.0 | 0.0 | 1120.0 | 76.0 | 76.0 | 1260.0 | 103.7 | 104.3 | |
| 15 | 1050.0 | 0.0 | 0.0 | 1200.0 | 80.5 | 81.1 | 1350.0 | 103.8 | 104.4 | |
| 16 | 1120.0 | 0.0 | 0.0 | 1280.0 | 75.6 | 76.2 | 1440.0 | 102.3 | 103.3 | |
| 17 | 1190.0 | 0.0 | 0.0 | 1360.0 | 73.6 | 74.2 | 1530.0 | 98.2 | 99.2 | |
| 18 | 1260.0 | 0.0 | 0.0 | 1440.0 | 72.9 | 73.9 | 1620.0 | 99.9 | 100.9 | |
| 19 | 1330.0 | 0.0 | 0.0 | 1520.0 | 67.2 | 68.2 | 1710.0 | 97.1 | 98.1 | |
| 20 | 1400.0 | 0.0 | 0.0 | 1600.0 | 61.3 | 62.3 | 1800.0 | 95.7 | 96.9 | |
| 21 | 1470.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | 1890.0 | 96.6 | 97.8 | |
| 22 | 1540.0 | 0.0 | 0.0 | 1760.0 | 0.0 | 0.0 | 1980.0 | 92.6 | 93.8 | |
| 23 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | 2070.0 | 93.1 | 94.3 | |
| 24 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | 2160.0 | 93.8 | 95.0 | |
| 25 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | 2250.0 | 83.0 | 84.3 | |
| 26 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | 2340.0 | 90.9 | 92.2 | |
| 27 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | 2430.0 | 88.0 | 89.3 | |
| 28 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2520.0 | 84.3 | 85.6 | |
| 29 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | 2610.0 | 87.0 | 88.3 | |
| 30 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | 2700.0 | 83.8 | 85.1 | |
| 31 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | 2790.0 | 83.7 | 85.0 | |
| 32 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | 2880.0 | 84.2 | 85.4 | |
| 33 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | 2970.0 | 81.4 | 82.6 | |
| 34 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | 3060.0 | 81.2 | 82.4 | |
| 35 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3150.0 | 80.3 | 81.5 | |
| 36 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | 3240.0 | 80.4 | 81.6 | |
| 37 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | 3330.0 | 74.1 | 75.3 | |
| 38 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | 3420.0 | 79.0 | 80.2 | |
| 39 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | 3510.0 | 77.7 | 78.9 | |
| 40 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | 3600.0 | 71.8 | 72.8 | |
| OASPL | | 110.1 | 94.5 | 117.9 | | 107.6 | 123.5 | | 119.8 | |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 1 (PITCH ANGLE: 23.7 DEG)

| DATA-POINT / RUN | | | | | | | | | | | |
|------------------|--------|-------|------|-------------|-------|-------|--------|-------------|------|-------|-------|
| FNC-4 / 175 | | | | FNC-5 / 174 | | | | FNC-6 / 173 | | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | | |
| 1 | 60.0 | 101.2 | 75.0 | 70.0 | 104.7 | 78.5 | 80.0 | 108.2 | 85.7 | | |
| 2 | 120.0 | 90.8 | 74.7 | 140.0 | 95.6 | 79.5 | 160.0 | 105.8 | 92.4 | | |
| 3 | 180.0 | 83.8 | 72.9 | 210.0 | 95.2 | 84.3 | 240.0 | 104.6 | 96.0 | | |
| 4 | 240.0 | 77.7 | 69.1 | 280.0 | 88.8 | 80.2 | 320.0 | 101.2 | 94.6 | | |
| 5 | 300.0 | 70.7 | 64.1 | 350.0 | 83.4 | 76.8 | 400.0 | 99.4 | 94.6 | | |
| 6 | 360.0 | 68.2 | 63.4 | 420.0 | 80.4 | 75.6 | 480.0 | 94.9 | 91.7 | | |
| 7 | 420.0 | 64.5 | 59.7 | 490.0 | 70.8 | 67.6 | 560.0 | 90.2 | 87.0 | | |
| 8 | 480.0 | 56.1 | 52.9 | 560.0 | 71.3 | 68.1 | 640.0 | 88.5 | 86.6 | | |
| 9 | 540.0 | 0.0 | 0.0 | 630.0 | 63.3 | 61.4 | 720.0 | 86.0 | 85.2 | | |
| 10 | 600.0 | 0.0 | 0.0 | 700.0 | 56.9 | 55.0 | 800.0 | 82.0 | 81.2 | | |
| 11 | 660.0 | 0.0 | 0.0 | 770.0 | 0.0 | 0.0 | 880.0 | 80.0 | 79.2 | | |
| 12 | 720.0 | 0.0 | 0.0 | 840.0 | 0.0 | 0.0 | 960.0 | 74.2 | 74.2 | | |
| 13 | 780.0 | 0.0 | 0.0 | 910.0 | 0.0 | 0.0 | 1040.0 | 72.8 | 72.8 | | |
| 14 | 840.0 | 0.0 | 0.0 | 980.0 | 0.0 | 0.0 | 1120.0 | 67.1 | 67.1 | | |
| 15 | 900.0 | 0.0 | 0.0 | 1050.0 | 0.0 | 0.0 | 1200.0 | 63.0 | 63.6 | | |
| 16 | 960.0 | 0.0 | 0.0 | 1120.0 | 0.0 | 0.0 | 1280.0 | 0.0 | 0.0 | | |
| 17 | 1020.0 | 0.0 | 0.0 | 1190.0 | 0.0 | 0.0 | 1360.0 | 0.0 | 0.0 | | |
| 18 | 1080.0 | 0.0 | 0.0 | 1260.0 | 0.0 | 0.0 | 1440.0 | 0.0 | 0.0 | | |
| 19 | 1140.0 | 0.0 | 0.0 | 1330.0 | 0.0 | 0.0 | 1520.0 | 0.0 | 0.0 | | |
| 20 | 1200.0 | 0.0 | 0.0 | 1400.0 | 0.0 | 0.0 | 1600.0 | 0.0 | 0.0 | | |
| 21 | 1260.0 | 0.0 | 0.0 | 1470.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | | |
| 22 | 1320.0 | 0.0 | 0.0 | 1540.0 | 0.0 | 0.0 | 1760.0 | 0.0 | 0.0 | | |
| 23 | 1380.0 | 0.0 | 0.0 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | | |
| 24 | 1440.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | | |
| 25 | 1500.0 | 0.0 | 0.0 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | | |
| 26 | 1560.0 | 0.0 | 0.0 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | | |
| 27 | 1620.0 | 0.0 | 0.0 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | | |
| 28 | 1680.0 | 0.0 | 0.0 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | | |
| 29 | 1740.0 | 0.0 | 0.0 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | | |
| 30 | 1800.0 | 0.0 | 0.0 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | | |
| 31 | 1860.0 | 0.0 | 0.0 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | | |
| 32 | 1920.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | | |
| 33 | 1980.0 | 0.0 | 0.0 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | | |
| 34 | 2040.0 | 0.0 | 0.0 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | | |
| 35 | 2100.0 | 0.0 | 0.0 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | | |
| 36 | 2160.0 | 0.0 | 0.0 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | | |
| 37 | 2220.0 | 0.0 | 0.0 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | | |
| 38 | 2280.0 | 0.0 | 0.0 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | | |
| 39 | 2340.0 | 0.0 | 0.0 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | | |
| 40 | 2400.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | | |
| OASPL | | 101.6 | 79.7 | | | 105.8 | 88.0 | | | 112.1 | 101.7 |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-⁻ PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 2 (PITCH ANGLE: 23.7 DEG)

| DATA-POINT / RUN | | | | | | | | | | |
|------------------|--------|-------|------|-------------|-------|------|-------------|-------|-------|--|
| FNC-4 / 175 | | | | FNC-5 / 174 | | | FNC-6 / 173 | | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | |
| 1 | 60.0 | 103.4 | 77.2 | 70.0 | 108.6 | 82.4 | 80.0 | 110.7 | 88.2 | |
| 2 | 120.0 | 98.8 | 82.7 | 140.0 | 104.2 | 88.1 | 160.0 | 111.3 | 97.9 | |
| 3 | 180.0 | 92.6 | 81.7 | 210.0 | 100.5 | 89.6 | 240.0 | 107.9 | 99.3 | |
| 4 | 240.0 | 86.1 | 77.5 | 280.0 | 96.6 | 88.0 | 320.0 | 104.4 | 97.8 | |
| 5 | 300.0 | 77.9 | 71.3 | 350.0 | 91.7 | 85.1 | 400.0 | 103.5 | 98.7 | |
| 6 | 360.0 | 63.8 | 59.0 | 420.0 | 87.6 | 82.8 | 480.0 | 103.4 | 100.2 | |
| 7 | 420.0 | 0.0 | 0.0 | 490.0 | 84.5 | 81.3 | 560.0 | 99.8 | 96.6 | |
| 8 | 480.0 | 0.0 | 0.0 | 560.0 | 78.4 | 75.2 | 640.0 | 97.3 | 95.4 | |
| 9 | 540.0 | 0.0 | 0.0 | 630.0 | 75.0 | 73.1 | 720.0 | 93.8 | 93.0 | |
| 10 | 600.0 | 0.0 | 0.0 | 700.0 | 64.4 | 62.5 | 800.0 | 92.6 | 91.8 | |
| 11 | 660.0 | 0.0 | 0.0 | 770.0 | 66.3 | 65.5 | 880.0 | 91.6 | 90.8 | |
| 12 | 720.0 | 0.0 | 0.0 | 840.0 | 61.4 | 60.6 | 960.0 | 87.4 | 87.4 | |
| 13 | 780.0 | 0.0 | 0.0 | 910.0 | 0.0 | 0.0 | 1040.0 | 84.3 | 84.3 | |
| 14 | 840.0 | 0.0 | 0.0 | 980.0 | 0.0 | 0.0 | 1120.0 | 82.0 | 82.0 | |
| 15 | 900.0 | 0.0 | 0.0 | 1050.0 | 0.0 | 0.0 | 1200.0 | 79.2 | 79.8 | |
| 16 | 960.0 | 0.0 | 0.0 | 1120.0 | 0.0 | 0.0 | 1280.0 | 77.6 | 78.2 | |
| 17 | 1020.0 | 0.0 | 0.0 | 1190.0 | 0.0 | 0.0 | 1360.0 | 73.6 | 74.2 | |
| 18 | 1080.0 | 0.0 | 0.0 | 1260.0 | 0.0 | 0.0 | 1440.0 | 69.7 | 70.7 | |
| 19 | 1140.0 | 0.0 | 0.0 | 1330.0 | 0.0 | 0.0 | 1520.0 | 70.3 | 71.3 | |
| 20 | 1200.0 | 0.0 | 0.0 | 1400.0 | 0.0 | 0.0 | 1600.0 | 65.8 | 66.8 | |
| 21 | 1260.0 | 0.0 | 0.0 | 1470.0 | 0.0 | 0.0 | 1680.0 | 65.1 | 66.1 | |
| 22 | 1320.0 | 0.0 | 0.0 | 1540.0 | 0.0 | 0.0 | 1760.0 | 57.3 | 58.3 | |
| 23 | 1380.0 | 0.0 | 0.0 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | |
| 24 | 1440.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | |
| 25 | 1500.0 | 0.0 | 0.0 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | |
| 26 | 1560.0 | 0.0 | 0.0 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | |
| 27 | 1620.0 | 0.0 | 0.0 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | |
| 28 | 1680.0 | 0.0 | 0.0 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | |
| 29 | 1740.0 | 0.0 | 0.0 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | |
| 30 | 1800.0 | 0.0 | 0.0 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | |
| 31 | 1860.0 | 0.0 | 0.0 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | |
| 32 | 1920.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | |
| 33 | 1980.0 | 0.0 | 0.0 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | |
| 34 | 2040.0 | 0.0 | 0.0 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | |
| 35 | 2100.0 | 0.0 | 0.0 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | |
| 36 | 2160.0 | 0.0 | 0.0 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | |
| 37 | 2220.0 | 0.0 | 0.0 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | |
| 38 | 2280.0 | 0.0 | 0.0 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | |
| 39 | 2340.0 | 0.0 | 0.0 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | |
| 40 | 2400.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | |
| OASPL | | 105.0 | 86.6 | 110.7 | | 94.9 | 116.1 | | 107.3 | |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 3 (PITCH ANGLE: 23.7 DEG)

| DATA-POINT / RUN | | | | | | | | | | | |
|------------------|--------|-------|------|-------------|-------|-------|--------|-------------|-------|-------|-------|
| FNC-4 / 175 | | | | FNC-5 / 174 | | | | FNC-6 / 173 | | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | | |
| 1 | 60.0 | 105.8 | 79.6 | 70.0 | 110.8 | 84.6 | 80.0 | 113.9 | 91.4 | | |
| 2 | 120.0 | 100.9 | 84.8 | 140.0 | 107.2 | 91.1 | 160.0 | 112.7 | 99.3 | | |
| 3 | 180.0 | 93.1 | 82.2 | 210.0 | 102.4 | 91.5 | 240.0 | 111.0 | 102.4 | | |
| 4 | 240.0 | 87.4 | 78.8 | 280.0 | 98.3 | 89.7 | 320.0 | 107.8 | 101.2 | | |
| 5 | 300.0 | 81.7 | 75.1 | 350.0 | 93.5 | 86.9 | 400.0 | 107.2 | 102.4 | | |
| 6 | 360.0 | 76.6 | 71.8 | 420.0 | 92.0 | 87.2 | 480.0 | 104.2 | 101.0 | | |
| 7 | 420.0 | 68.9 | 64.1 | 490.0 | 84.7 | 81.5 | 560.0 | 100.6 | 97.4 | | |
| 8 | 480.0 | 58.1 | 54.9 | 560.0 | 81.2 | 78.0 | 640.0 | 100.0 | 98.1 | | |
| 9 | 540.0 | 0.0 | 0.0 | 630.0 | 74.0 | 72.1 | 720.0 | 98.5 | 97.7 | | |
| 10 | 600.0 | 0.0 | 0.0 | 700.0 | 75.1 | 73.2 | 800.0 | 95.5 | 94.7 | | |
| 11 | 660.0 | 0.0 | 0.0 | 770.0 | 64.8 | 64.0 | 880.0 | 92.5 | 91.7 | | |
| 12 | 720.0 | 0.0 | 0.0 | 840.0 | 68.4 | 67.6 | 960.0 | 92.1 | 92.1 | | |
| 13 | 780.0 | 0.0 | 0.0 | 910.0 | 53.5 | 53.5 | 1040.0 | 89.0 | 89.0 | | |
| 14 | 840.0 | 0.0 | 0.0 | 980.0 | 0.0 | 0.0 | 1120.0 | 85.2 | 85.2 | | |
| 15 | 900.0 | 0.0 | 0.0 | 1050.0 | 0.0 | 0.0 | 1200.0 | 82.9 | 83.5 | | |
| 16 | 960.0 | 0.0 | 0.0 | 1120.0 | 0.0 | 0.0 | 1280.0 | 82.5 | 83.1 | | |
| 17 | 1020.0 | 0.0 | 0.0 | 1190.0 | 0.0 | 0.0 | 1360.0 | 77.7 | 78.3 | | |
| 18 | 1080.0 | 0.0 | 0.0 | 1260.0 | 0.0 | 0.0 | 1440.0 | 74.3 | 75.3 | | |
| 19 | 1140.0 | 0.0 | 0.0 | 1330.0 | 0.0 | 0.0 | 1520.0 | 72.0 | 73.0 | | |
| 20 | 1200.0 | 0.0 | 0.0 | 1400.0 | 0.0 | 0.0 | 1600.0 | 70.5 | 71.5 | | |
| 21 | 1260.0 | 0.0 | 0.0 | 1470.0 | 0.0 | 0.0 | 1680.0 | 68.2 | 69.2 | | |
| 22 | 1320.0 | 0.0 | 0.0 | 1540.0 | 0.0 | 0.0 | 1760.0 | 62.0 | 63.0 | | |
| 23 | 1380.0 | 0.0 | 0.0 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | | |
| 24 | 1440.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | | |
| 25 | 1500.0 | 0.0 | 0.0 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | | |
| 26 | 1560.0 | 0.0 | 0.0 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | | |
| 27 | 1620.0 | 0.0 | 0.0 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | | |
| 28 | 1680.0 | 0.0 | 0.0 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | | |
| 29 | 1740.0 | 0.0 | 0.0 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | | |
| 30 | 1800.0 | 0.0 | 0.0 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | | |
| 31 | 1860.0 | 0.0 | 0.0 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | | |
| 32 | 1920.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | | |
| 33 | 1980.0 | 0.0 | 0.0 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | | |
| 34 | 2040.0 | 0.0 | 0.0 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | | |
| 35 | 2100.0 | 0.0 | 0.0 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | | |
| 36 | 2160.0 | 0.0 | 0.0 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | | |
| 37 | 2220.0 | 0.0 | 0.0 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | | |
| 38 | 2280.0 | 0.0 | 0.0 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | | |
| 39 | 2340.0 | 0.0 | 0.0 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | | |
| 40 | 2400.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | | |
| OASPL | | 107.3 | 88.3 | | | 113.1 | 97.1 | | | 118.6 | 109.8 |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 4 (PITCH ANGLE: 23.7 DEG)

| DATA-POINT / RUN | | | | | | | | | | |
|------------------|--------|-------|------|-------------|-------|------|--------|-------------|-------|--|
| FNC-4 / 175 | | | | FNC-5 / 174 | | | | FNC-6 / 173 | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | |
| 1 | 60.0 | 107.2 | 81.0 | 70.0 | 112.5 | 86.3 | 80.0 | 116.8 | 94.3 | |
| 2 | 120.0 | 101.9 | 85.8 | 140.0 | 108.8 | 92.7 | 160.0 | 112.9 | 99.5 | |
| 3 | 180.0 | 93.3 | 82.4 | 210.0 | 102.7 | 91.8 | 240.0 | 112.5 | 103.9 | |
| 4 | 240.0 | 87.1 | 78.5 | 280.0 | 100.2 | 91.6 | 320.0 | 111.1 | 104.5 | |
| 5 | 300.0 | 80.3 | 73.7 | 350.0 | 95.0 | 88.4 | 400.0 | 106.7 | 101.9 | |
| 6 | 360.0 | 72.6 | 67.8 | 420.0 | 89.3 | 84.5 | 480.0 | 104.0 | 100.8 | |
| 7 | 420.0 | 71.5 | 66.7 | 490.0 | 85.9 | 82.7 | 560.0 | 102.2 | 99.0 | |
| 8 | 480.0 | 63.7 | 60.5 | 560.0 | 79.7 | 76.5 | 640.0 | 100.1 | 98.2 | |
| 9 | 540.0 | 59.3 | 56.1 | 630.0 | 78.6 | 76.7 | 720.0 | 97.4 | 96.6 | |
| 10 | 600.0 | 0.0 | 0.0 | 700.0 | 73.1 | 71.2 | 800.0 | 95.1 | 94.3 | |
| 11 | 660.0 | 0.0 | 0.0 | 770.0 | 69.8 | 69.0 | 880.0 | 92.7 | 91.9 | |
| 12 | 720.0 | 0.0 | 0.0 | 840.0 | 61.6 | 60.8 | 960.0 | 89.4 | 89.4 | |
| 13 | 780.0 | 0.0 | 0.0 | 910.0 | 0.0 | 0.0 | 1040.0 | 88.3 | 88.3 | |
| 14 | 840.0 | 0.0 | 0.0 | 980.0 | 0.0 | 0.0 | 1120.0 | 86.8 | 86.8 | |
| 15 | 900.0 | 0.0 | 0.0 | 1050.0 | 0.0 | 0.0 | 1200.0 | 80.4 | 81.0 | |
| 16 | 960.0 | 0.0 | 0.0 | 1120.0 | 0.0 | 0.0 | 1280.0 | 78.4 | 79.0 | |
| 17 | 1020.0 | 0.0 | 0.0 | 1190.0 | 0.0 | 0.0 | 1360.0 | 78.1 | 78.7 | |
| 18 | 1080.0 | 0.0 | 0.0 | 1260.0 | 0.0 | 0.0 | 1440.0 | 74.5 | 75.5 | |
| 19 | 1140.0 | 0.0 | 0.0 | 1330.0 | 0.0 | 0.0 | 1520.0 | 70.7 | 71.7 | |
| 20 | 1200.0 | 0.0 | 0.0 | 1400.0 | 0.0 | 0.0 | 1600.0 | 68.2 | 69.2 | |
| 21 | 1260.0 | 0.0 | 0.0 | 1470.0 | 0.0 | 0.0 | 1680.0 | 68.3 | 69.3 | |
| 22 | 1320.0 | 0.0 | 0.0 | 1540.0 | 0.0 | 0.0 | 1760.0 | 63.2 | 64.2 | |
| 23 | 1380.0 | 0.0 | 0.0 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | |
| 24 | 1440.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | |
| 25 | 1500.0 | 0.0 | 0.0 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | |
| 26 | 1560.0 | 0.0 | 0.0 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | |
| 27 | 1620.0 | 0.0 | 0.0 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | |
| 28 | 1680.0 | 0.0 | 0.0 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | |
| 29 | 1740.0 | 0.0 | 0.0 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | |
| 30 | 1800.0 | 0.0 | 0.0 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | |
| 31 | 1860.0 | 0.0 | 0.0 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | |
| 32 | 1920.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | |
| 33 | 1980.0 | 0.0 | 0.0 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | |
| 34 | 2040.0 | 0.0 | 0.0 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | |
| 35 | 2100.0 | 0.0 | 0.0 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | |
| 36 | 2160.0 | 0.0 | 0.0 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | |
| 37 | 2220.0 | 0.0 | 0.0 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | |
| 38 | 2280.0 | 0.0 | 0.0 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | |
| 39 | 2340.0 | 0.0 | 0.0 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | |
| 40 | 2400.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | |
| OASPL | | 108.5 | 89.0 | 114.6 | | 98.1 | 120.4 | | 110.7 | |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 5 (PITCH ANGLE: 23.7 DEG)

| DATA-POINT / RUN | | | | | | | | | | |
|------------------|--------|-------|------|-------------|-------|------|-------------|-------|-------|--|
| FNC-4 / 175 | | | | FNC-5 / 174 | | | FNC-6 / 173 | | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | |
| 1 | 60.0 | 108.5 | 82.3 | 70.0 | 114.4 | 88.2 | 80.0 | 119.5 | 97.0 | |
| 2 | 120.0 | 103.4 | 87.3 | 140.0 | 110.4 | 94.3 | 160.0 | 114.3 | 100.9 | |
| 3 | 180.0 | 93.1 | 82.2 | 210.0 | 101.2 | 90.3 | 240.0 | 112.0 | 103.4 | |
| 4 | 240.0 | 83.7 | 75.1 | 280.0 | 100.7 | 92.1 | 320.0 | 113.4 | 106.8 | |
| 5 | 300.0 | 80.5 | 73.9 | 350.0 | 97.3 | 90.7 | 400.0 | 107.2 | 102.4 | |
| 6 | 360.0 | 72.8 | 68.0 | 420.0 | 90.2 | 85.4 | 480.0 | 100.6 | 97.4 | |
| 7 | 420.0 | 60.6 | 55.8 | 490.0 | 80.2 | 77.0 | 560.0 | 101.9 | 98.7 | |
| 8 | 480.0 | 0.0 | 0.0 | 560.0 | 81.4 | 78.2 | 640.0 | 99.6 | 97.7 | |
| 9 | 540.0 | 0.0 | 0.0 | 630.0 | 74.7 | 72.8 | 720.0 | 94.2 | 93.4 | |
| 10 | 600.0 | 0.0 | 0.0 | 700.0 | 65.8 | 63.9 | 800.0 | 91.2 | 90.4 | |
| 11 | 660.0 | 0.0 | 0.0 | 770.0 | 68.2 | 67.4 | 880.0 | 88.8 | 88.0 | |
| 12 | 720.0 | 0.0 | 0.0 | 840.0 | 54.9 | 54.1 | 960.0 | 88.4 | 88.4 | |
| 13 | 780.0 | 0.0 | 0.0 | 910.0 | 0.0 | 0.0 | 1040.0 | 85.3 | 85.3 | |
| 14 | 840.0 | 0.0 | 0.0 | 980.0 | 0.0 | 0.0 | 1120.0 | 80.0 | 80.0 | |
| 15 | 900.0 | 0.0 | 0.0 | 1050.0 | 0.0 | 0.0 | 1200.0 | 78.7 | 79.3 | |
| 16 | 960.0 | 0.0 | 0.0 | 1120.0 | 0.0 | 0.0 | 1280.0 | 77.3 | 77.9 | |
| 17 | 1020.0 | 0.0 | 0.0 | 1190.0 | 0.0 | 0.0 | 1360.0 | 71.8 | 72.4 | |
| 18 | 1080.0 | 0.0 | 0.0 | 1260.0 | 0.0 | 0.0 | 1440.0 | 69.5 | 70.5 | |
| 19 | 1140.0 | 0.0 | 0.0 | 1330.0 | 0.0 | 0.0 | 1520.0 | 66.7 | 67.7 | |
| 20 | 1200.0 | 0.0 | 0.0 | 1400.0 | 0.0 | 0.0 | 1600.0 | 0.0 | 0.0 | |
| 21 | 1260.0 | 0.0 | 0.0 | 1470.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | |
| 22 | 1320.0 | 0.0 | 0.0 | 1540.0 | 0.0 | 0.0 | 1760.0 | 0.0 | 0.0 | |
| 23 | 1380.0 | 0.0 | 0.0 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | |
| 24 | 1440.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | |
| 25 | 1500.0 | 0.0 | 0.0 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | |
| 26 | 1560.0 | 0.0 | 0.0 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | |
| 27 | 1620.0 | 0.0 | 0.0 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | |
| 28 | 1680.0 | 0.0 | 0.0 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | |
| 29 | 1740.0 | 0.0 | 0.0 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | |
| 30 | 1800.0 | 0.0 | 0.0 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | |
| 31 | 1860.0 | 0.0 | 0.0 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | |
| 32 | 1920.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | |
| 33 | 1980.0 | 0.0 | 0.0 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | |
| 34 | 2040.0 | 0.0 | 0.0 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | |
| 35 | 2100.0 | 0.0 | 0.0 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | |
| 36 | 2160.0 | 0.0 | 0.0 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | |
| 37 | 2220.0 | 0.0 | 0.0 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | |
| 38 | 2280.0 | 0.0 | 0.0 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | |
| 39 | 2340.0 | 0.0 | 0.0 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | |
| 40 | 2400.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | |
| OASPL | | 109.8 | 89.7 | 116.2 | | 98.9 | 122.1 | | 111.1 | |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 6 (PITCH ANGLE: 23.7 DEG)

| DATA-POINT / RUN | | | | | | | | | | |
|------------------|--------|-------|------|-------------|-------|------|-------------|-------|-------|--|
| FNC-4 / 175 | | | | FNC-5 / 174 | | | FNC-6 / 173 | | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | |
| 1 | 60.0 | 108.2 | 82.0 | 70.0 | 115.5 | 89.3 | 80.0 | 120.6 | 98.1 | |
| 2 | 120.0 | 102.9 | 86.8 | 140.0 | 109.4 | 93.3 | 160.0 | 113.9 | 100.5 | |
| 3 | 180.0 | 90.9 | 80.0 | 210.0 | 99.9 | 89.0 | 240.0 | 111.0 | 102.4 | |
| 4 | 240.0 | 80.1 | 71.5 | 280.0 | 99.6 | 91.0 | 320.0 | 110.1 | 103.5 | |
| 5 | 300.0 | 79.1 | 72.5 | 350.0 | 92.0 | 85.4 | 400.0 | 101.7 | 96.9 | |
| 6 | 360.0 | 66.5 | 61.7 | 420.0 | 79.4 | 74.6 | 480.0 | 97.4 | 94.2 | |
| 7 | 420.0 | 0.0 | 0.0 | 490.0 | 76.3 | 73.1 | 560.0 | 98.9 | 95.7 | |
| 8 | 480.0 | 0.0 | 0.0 | 560.0 | 78.4 | 75.2 | 640.0 | 91.9 | 90.0 | |
| 9 | 540.0 | 0.0 | 0.0 | 630.0 | 71.9 | 70.0 | 720.0 | 80.1 | 79.3 | |
| 10 | 600.0 | 0.0 | 0.0 | 700.0 | 57.2 | 55.3 | 800.0 | 87.6 | 86.8 | |
| 11 | 660.0 | 0.0 | 0.0 | 770.0 | 0.0 | 0.0 | 880.0 | 81.2 | 80.4 | |
| 12 | 720.0 | 0.0 | 0.0 | 840.0 | 0.0 | 0.0 | 960.0 | 75.9 | 75.9 | |
| 13 | 780.0 | 0.0 | 0.0 | 910.0 | 0.0 | 0.0 | 1040.0 | 72.3 | 72.3 | |
| 14 | 840.0 | 0.0 | 0.0 | 980.0 | 0.0 | 0.0 | 1120.0 | 0.0 | 0.0 | |
| 15 | 900.0 | 0.0 | 0.0 | 1050.0 | 0.0 | 0.0 | 1200.0 | 0.0 | 0.0 | |
| 16 | 960.0 | 0.0 | 0.0 | 1120.0 | 0.0 | 0.0 | 1280.0 | 0.0 | 0.0 | |
| 17 | 1020.0 | 0.0 | 0.0 | 1190.0 | 0.0 | 0.0 | 1360.0 | 0.0 | 0.0 | |
| 18 | 1080.0 | 0.0 | 0.0 | 1260.0 | 0.0 | 0.0 | 1440.0 | 0.0 | 0.0 | |
| 19 | 1140.0 | 0.0 | 0.0 | 1330.0 | 0.0 | 0.0 | 1520.0 | 0.0 | 0.0 | |
| 20 | 1200.0 | 0.0 | 0.0 | 1400.0 | 0.0 | 0.0 | 1600.0 | 0.0 | 0.0 | |
| 21 | 1260.0 | 0.0 | 0.0 | 1470.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | |
| 22 | 1320.0 | 0.0 | 0.0 | 1540.0 | 0.0 | 0.0 | 1760.0 | 0.0 | 0.0 | |
| 23 | 1380.0 | 0.0 | 0.0 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | |
| 24 | 1440.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | |
| 25 | 1500.0 | 0.0 | 0.0 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | |
| 26 | 1560.0 | 0.0 | 0.0 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | |
| 27 | 1620.0 | 0.0 | 0.0 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | |
| 28 | 1680.0 | 0.0 | 0.0 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | |
| 29 | 1740.0 | 0.0 | 0.0 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | |
| 30 | 1800.0 | 0.0 | 0.0 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | |
| 31 | 1860.0 | 0.0 | 0.0 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | |
| 32 | 1920.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | |
| 33 | 1980.0 | 0.0 | 0.0 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | |
| 34 | 2040.0 | 0.0 | 0.0 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | |
| 35 | 2100.0 | 0.0 | 0.0 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | |
| 36 | 2160.0 | 0.0 | 0.0 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | |
| 37 | 2220.0 | 0.0 | 0.0 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | |
| 38 | 2280.0 | 0.0 | 0.0 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | |
| 39 | 2340.0 | 0.0 | 0.0 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | |
| 40 | 2400.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | |
| OASPL | | 109.4 | 88.9 | 116.7 | | 97.4 | 122.2 | | 108.5 | |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 7 (PITCH ANGLE: 23.7 DEG)

| DATA-POINT / RUN | | | | | | | | | | | |
|------------------|--------|-------|------|-------------|-------|-------|--------|-------------|------|-------|-------|
| FNC-4 / 175 | | | | FNC-5 / 174 | | | | FNC-6 / 173 | | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | | |
| 1 | 60.0 | 106.1 | 79.9 | 70.0 | 114.1 | 87.9 | 80.0 | 116.8 | 94.3 | | |
| 2 | 120.0 | 96.3 | 80.2 | 140.0 | 102.9 | 86.8 | 160.0 | 109.7 | 96.3 | | |
| 3 | 180.0 | 83.1 | 72.2 | 210.0 | 93.8 | 82.9 | 240.0 | 101.7 | 93.1 | | |
| 4 | 240.0 | 63.8 | 55.2 | 280.0 | 81.1 | 72.5 | 320.0 | 96.4 | 89.8 | | |
| 5 | 300.0 | 0.0 | 0.0 | 350.0 | 0.0 | 0.0 | 400.0 | 90.1 | 85.3 | | |
| 6 | 360.0 | 0.0 | 0.0 | 420.0 | 0.0 | 0.0 | 480.0 | 82.1 | 78.9 | | |
| 7 | 420.0 | 0.0 | 0.0 | 490.0 | 0.0 | 0.0 | 560.0 | 0.0 | 0.0 | | |
| 8 | 480.0 | 0.0 | 0.0 | 560.0 | 0.0 | 0.0 | 640.0 | 0.0 | 0.0 | | |
| 9 | 540.0 | 0.0 | 0.0 | 630.0 | 0.0 | 0.0 | 720.0 | 0.0 | 0.0 | | |
| 10 | 600.0 | 0.0 | 0.0 | 700.0 | 0.0 | 0.0 | 800.0 | 0.0 | 0.0 | | |
| 11 | 660.0 | 0.0 | 0.0 | 770.0 | 0.0 | 0.0 | 880.0 | 0.0 | 0.0 | | |
| 12 | 720.0 | 0.0 | 0.0 | 840.0 | 0.0 | 0.0 | 960.0 | 0.0 | 0.0 | | |
| 13 | 780.0 | 0.0 | 0.0 | 910.0 | 0.0 | 0.0 | 1040.0 | 0.0 | 0.0 | | |
| 14 | 840.0 | 0.0 | 0.0 | 980.0 | 0.0 | 0.0 | 1120.0 | 0.0 | 0.0 | | |
| 15 | 900.0 | 0.0 | 0.0 | 1050.0 | 0.0 | 0.0 | 1200.0 | 0.0 | 0.0 | | |
| 16 | 960.0 | 0.0 | 0.0 | 1120.0 | 0.0 | 0.0 | 1280.0 | 0.0 | 0.0 | | |
| 17 | 1020.0 | 0.0 | 0.0 | 1190.0 | 0.0 | 0.0 | 1360.0 | 0.0 | 0.0 | | |
| 18 | 1080.0 | 0.0 | 0.0 | 1260.0 | 0.0 | 0.0 | 1440.0 | 0.0 | 0.0 | | |
| 19 | 1140.0 | 0.0 | 0.0 | 1330.0 | 0.0 | 0.0 | 1520.0 | 0.0 | 0.0 | | |
| 20 | 1200.0 | 0.0 | 0.0 | 1400.0 | 0.0 | 0.0 | 1600.0 | 0.0 | 0.0 | | |
| 21 | 1260.0 | 0.0 | 0.0 | 1470.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | | |
| 22 | 1320.0 | 0.0 | 0.0 | 1540.0 | 0.0 | 0.0 | 1760.0 | 0.0 | 0.0 | | |
| 23 | 1380.0 | 0.0 | 0.0 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | | |
| 24 | 1440.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | | |
| 25 | 1500.0 | 0.0 | 0.0 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | | |
| 26 | 1560.0 | 0.0 | 0.0 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | | |
| 27 | 1620.0 | 0.0 | 0.0 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | | |
| 28 | 1680.0 | 0.0 | 0.0 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | | |
| 29 | 1740.0 | 0.0 | 0.0 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | | |
| 30 | 1800.0 | 0.0 | 0.0 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | | |
| 31 | 1860.0 | 0.0 | 0.0 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | | |
| 32 | 1920.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | | |
| 33 | 1980.0 | 0.0 | 0.0 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | | |
| 34 | 2040.0 | 0.0 | 0.0 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | | |
| 35 | 2100.0 | 0.0 | 0.0 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | | |
| 36 | 2160.0 | 0.0 | 0.0 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | | |
| 37 | 2220.0 | 0.0 | 0.0 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | | |
| 38 | 2280.0 | 0.0 | 0.0 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | | |
| 39 | 2340.0 | 0.0 | 0.0 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | | |
| 40 | 2400.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | | |
| OASPL | | 106.6 | 83.4 | | | 114.4 | 91.2 | | | 117.7 | 100.2 |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

DNW PROPELLER NOISE TEST

MICROPHONE: MP 9 (PITCH ANGLE: 23.7 DEG)

| DATA-POINT / RUN | | | | | | | | | | |
|------------------|--------|-------|------|-------------|-------|------|-------------|-------|-------|--|
| FNC-4 / 175 | | | | FNC-5 / 174 | | | FNC-6 / 173 | | | |
| HN | F | SPL | SPLA | F | SPL | SPLA | F | SPL | SPLA | |
| 1 | 60.0 | 107.6 | 81.4 | 70.0 | 111.9 | 85.7 | 80.0 | 116.7 | 94.2 | |
| 2 | 120.0 | 101.2 | 85.1 | 140.0 | 107.9 | 91.8 | 160.0 | 112.3 | 98.9 | |
| 3 | 180.0 | 91.6 | 80.7 | 210.0 | 98.0 | 87.1 | 240.0 | 111.3 | 102.7 | |
| 4 | 240.0 | 81.9 | 73.3 | 280.0 | 101.3 | 92.7 | 320.0 | 110.7 | 104.1 | |
| 5 | 300.0 | 81.7 | 75.1 | 350.0 | 96.5 | 89.9 | 400.0 | 103.2 | 98.4 | |
| 6 | 360.0 | 76.1 | 71.3 | 420.0 | 88.4 | 83.6 | 480.0 | 103.2 | 100.0 | |
| 7 | 420.0 | 67.7 | 62.9 | 490.0 | 83.8 | 80.6 | 560.0 | 103.2 | 100.0 | |
| 8 | 480.0 | 0.0 | 0.0 | 560.0 | 85.4 | 82.2 | 640.0 | 99.0 | 97.1 | |
| 9 | 540.0 | 0.0 | 0.0 | 630.0 | 78.3 | 76.4 | 720.0 | 94.8 | 94.0 | |
| 10 | 600.0 | 0.0 | 0.0 | 700.0 | 70.4 | 68.5 | 800.0 | 96.1 | 95.3 | |
| 11 | 660.0 | 0.0 | 0.0 | 770.0 | 0.0 | 0.0 | 880.0 | 91.8 | 91.0 | |
| 12 | 720.0 | 0.0 | 0.0 | 840.0 | 0.0 | 0.0 | 960.0 | 88.0 | 88.0 | |
| 13 | 780.0 | 0.0 | 0.0 | 910.0 | 0.0 | 0.0 | 1040.0 | 89.3 | 89.3 | |
| 14 | 840.0 | 0.0 | 0.0 | 980.0 | 0.0 | 0.0 | 1120.0 | 83.0 | 83.0 | |
| 15 | 900.0 | 0.0 | 0.0 | 1050.0 | 0.0 | 0.0 | 1200.0 | 0.0 | 0.0 | |
| 16 | 960.0 | 0.0 | 0.0 | 1120.0 | 0.0 | 0.0 | 1280.0 | 0.0 | 0.0 | |
| 17 | 1020.0 | 0.0 | 0.0 | 1190.0 | 0.0 | 0.0 | 1360.0 | 0.0 | 0.0 | |
| 18 | 1080.0 | 0.0 | 0.0 | 1260.0 | 0.0 | 0.0 | 1440.0 | 0.0 | 0.0 | |
| 19 | 1140.0 | 0.0 | 0.0 | 1330.0 | 0.0 | 0.0 | 1520.0 | 0.0 | 0.0 | |
| 20 | 1200.0 | 0.0 | 0.0 | 1400.0 | 0.0 | 0.0 | 1600.0 | 0.0 | 0.0 | |
| 21 | 1260.0 | 0.0 | 0.0 | 1470.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | |
| 22 | 1320.0 | 0.0 | 0.0 | 1540.0 | 0.0 | 0.0 | 1760.0 | 0.0 | 0.0 | |
| 23 | 1380.0 | 0.0 | 0.0 | 1610.0 | 0.0 | 0.0 | 1840.0 | 0.0 | 0.0 | |
| 24 | 1440.0 | 0.0 | 0.0 | 1680.0 | 0.0 | 0.0 | 1920.0 | 0.0 | 0.0 | |
| 25 | 1500.0 | 0.0 | 0.0 | 1750.0 | 0.0 | 0.0 | 2000.0 | 0.0 | 0.0 | |
| 26 | 1560.0 | 0.0 | 0.0 | 1820.0 | 0.0 | 0.0 | 2080.0 | 0.0 | 0.0 | |
| 27 | 1620.0 | 0.0 | 0.0 | 1890.0 | 0.0 | 0.0 | 2160.0 | 0.0 | 0.0 | |
| 28 | 1680.0 | 0.0 | 0.0 | 1960.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | |
| 29 | 1740.0 | 0.0 | 0.0 | 2030.0 | 0.0 | 0.0 | 2320.0 | 0.0 | 0.0 | |
| 30 | 1800.0 | 0.0 | 0.0 | 2100.0 | 0.0 | 0.0 | 2400.0 | 0.0 | 0.0 | |
| 31 | 1860.0 | 0.0 | 0.0 | 2170.0 | 0.0 | 0.0 | 2480.0 | 0.0 | 0.0 | |
| 32 | 1920.0 | 0.0 | 0.0 | 2240.0 | 0.0 | 0.0 | 2560.0 | 0.0 | 0.0 | |
| 33 | 1980.0 | 0.0 | 0.0 | 2310.0 | 0.0 | 0.0 | 2640.0 | 0.0 | 0.0 | |
| 34 | 2040.0 | 0.0 | 0.0 | 2380.0 | 0.0 | 0.0 | 2720.0 | 0.0 | 0.0 | |
| 35 | 2100.0 | 0.0 | 0.0 | 2450.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | |
| 36 | 2160.0 | 0.0 | 0.0 | 2520.0 | 0.0 | 0.0 | 2880.0 | 0.0 | 0.0 | |
| 37 | 2220.0 | 0.0 | 0.0 | 2590.0 | 0.0 | 0.0 | 2960.0 | 0.0 | 0.0 | |
| 38 | 2280.0 | 0.0 | 0.0 | 2660.0 | 0.0 | 0.0 | 3040.0 | 0.0 | 0.0 | |
| 39 | 2340.0 | 0.0 | 0.0 | 2730.0 | 0.0 | 0.0 | 3120.0 | 0.0 | 0.0 | |
| 40 | 2400.0 | 0.0 | 0.0 | 2800.0 | 0.0 | 0.0 | 3200.0 | 0.0 | 0.0 | |
| OASPL | | 108.6 | 88.1 | | 113.9 | 97.7 | | 119.9 | 109.8 | |

F - FREQUENCY HZ

SPL - SOUND PRESSURE LEVEL DB RE 2E-5 PA

SPLA - A-WEIGHTED SOUND PRESSURE LEVEL DBA RE 2E-5 PA

7. Comments on Data Interpretation

In the preceeding chapters acoustic as-measured data are presented in terms of pressure-time histories and narrow-band spectra for all microphone positions MP 1 to MP 9*.

As stated in the "Executive Report" to this Appendix all data have been analysed regardless of occasional microphone drop-outs or the occurrence of external pressure disturbances which may distort the propeller noise-signature completely.

To avoid erroneous data interpretation, the following list summarizes all those data-points (within the total test-program) which should be deleted with respect to the microphone position indicated:

Microphone Position MP 3:

Delete analyses of Data Points BC-4
 BC-5.

Microphone Position MP 6:

| Subprogram | Delete analyses of Data Points |
|---------------------|--|
| Basic Program | AN-1,2,3,4,5,7; BN-1,2,3,4,5,6,61,7
BC-1,2,3,4,5,6,61,7 |
| Temperature Effect | HN-3; IN-1,2,3; JN-1,2,3; KN-1,2
HC-1,2; IC-1,2,3; |
| Attitude Effect | - |
| Installation Effect | FNC-7,8,9,10,11,12 |

* MP 8 has only been analysed for data points within the "Attitude-effect" test-program.

In addition, noise data acquired at microphone position MP 7 should be interpreted with care for such data-points which combine low propeller rotational speeds with high tunnel flow-velocities. Respective data are often disturbed due to the effects of microphone vibration. In each of these cases the respective averaged pressure-time history and the corresponding level-spectrum should be inspected carefully. If both data representations do not exhibit any periodic behaviour the respective analysis should not be interpreted.

On top of the averaged pressure-time history plot the number of averages as well as the magnitude of "disturbance-pressure-amplitudes" (which have been detected and deleted within the analysed time-interval) are indicated, the latter by ΔP . In case of completely distorted propeller noise signatures, ΔP generally assumes values of 496% (referenced to the minimum peak-to-peak pressure amplitude within the total number of propeller revolutions analysed). If even higher disturbance amplitudes occur, respective data analyses are marked by $\Delta P > ***$ and should be deleted. Lists of harmonic levels in this case often contain just one level-value for the fundamental frequency ($HN=1$) which then however has no physical meaning.

Therefore, data interpretation should not be solely based on the listing of harmonic levels. In particular, if only one harmonic level at $HN=1$ is listed, a careful inspection of the respective level-spectrum (as calculated from the averaged time-history) is necessary to ensure the physical relevance of this harmonic level.

END

1-87

DTIC