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TEST OF ACOUSTIC TONE SOURCE AND PROPULSION PERFORMANCE OF C8A BUFFALO SUPPRESSOR NOZZLE

by C. C. Marrs, D. L. Harkonen, and J. V. O'Keefe

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16. Abstract

Results are presented for a static acoustic and propulsion performance ground test conducted at the Boeing hot nozzle facility on the C8A Buffalo noise suppressor nozzle.

Various methods to remove a nozzle-associated 2000-Hz tone are evaluated. Results of testing this rectangular-array lobed nozzle for propulsion performance and acoustic directivity are reported. Recommendations for future nozzle modifications and further testing are included.

Appendix A contains the test plan. Appendix B presents the test log. Appendix C contains plots of the one-third octave sound pressure levels recorded during the test. Appendix D describes the acoustic data recording and reduction systems. The performance data is tabulated in Appendix E.

NOTE:

Further work, based on the conclusion/recommendations listed here, is reported in NASA CR-137522.

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INTRODUCTION AND SUMMARY

Following completion of the full scale test of the suppressor nozzle on the C8A Buffalo airplane (ref. 1), three factors still required clarification: (1) the origin and removal of a 2000-Hz tone believed to be caused by the lobed nozzle, (2) the acoustic directivity effect relative to the major and minor axis of the rectangular-array nozzle, and (3) measurement of the nozzle performance.

To accomplish the above objectives, one of the lobed nozzles was tested on the hot nozzle facility, figures 1 and 2, at North Boeing Field. This facility could not provide sufficient air to flow the full nozzle area: therefore, the four outside lobes were blocked initially. With this blockage, nozzle pressure ratios up to 1.5 were achieved with exhaust gas temperatures up to 510°C (950°F).

Acoustic data, on a 15.2-m (50-ft) polar array, were recorded simultaneously with performance data. Ground-mounted microphones were used so that ground reflections would be eliminated and not confuse the acoustic analysis. (For use of flush-mounted microphones, see ref. 2). Various configurations were evaluated in a step-by-step procedure until the 2000-Hz tone was eliminated.

The testing showed that no appreciable change in the tone came about with internal upstream fairing changes, but that when the lobe exits were suitably altered, in relation to each other, the tone was eliminated. The lobe exit relationship was changed in three ways: by blocking every other lobe, as in figure 3, thus doubling the lobe spacing; by adding a splitter plate between the lobes per figures 4 and 5, extending 12.7 cm (5 in.) aft of the nozzle exit; and by adding plugs with tubes for more exit breakup, per figure 6. All three of these procedures eliminated the tone. The assumption that the tone is generated by the nozzle exit geometry and spacing seems well-founded. The exact mechanism involved is still not completely understood.

The acoustic directivity of the rectangular-array nozzle was determined by recording data with the nozzle in the horizontal and then in the vertical plane. Figure 7 shows the nozzle in the vertical position. A marked reduction in the one-third octave SPL and OASPL levels occurs when the data is recorded off the minor axis of the nozzle. The original estimate (ref. 1) of 2 PNdB reduction (at 1.5 NPR) due to directivity has now been altered to 6 PNdB per the results of this test program. Figure 8 (from ref. 1) shows the acoustic characteristics confirmed during this test program, and predicted levels for an advanced (BNS-3) nozzle discussed in the recommendation section of this report.

Velocity- and discharge-coefficient measurements were made on the partially blocked nozzle by using the facility's single-component thrust measurement cell and sonic venturi airflow meter. As indicated in figure 9, a velocity coefficient of 0.95 was measured at a nozzle pressure ratio of 1.5. This can be extrapolated to about 0.96 at the Buffalo airplane takeoff pressure ratio of 1.9. Some air leakage was evident around the rotation bearing attachment flange, with resultant lowering of the C_V value. The measured C_V levels are therefore somewhat below the true level. As indicated in figure 9, the fences installed in the secondary passages did not result in any measurable penalty in static performance.

It is recommended that research be continued to identify the mechanism of the 2000-Hz tone and to specify the means for eliminating or avoiding it.

PROCEDURAL DISCUSSION

TEST HARDWARE AND FACILITY DESCRIPTION

The hot nozzle facility, located at the north end of Boeing Field, is capable of airflows in the order of 20 kg (40 lb) per second at temperatures of 500°C (950°F). The interface duct at the exit of the facility is 30.5 cm (12 in.) in diameter. Thus, to adapt the "pants" section from a Spey split-flow Rolls Royce engine, a transition was fabricated (fig. 1) connecting the duct to the pants section.

As the facility was to be used for testing only one nozzle, a splitter plate was installed in the pants section and transition so the flow would duplicate as much as possible the full scale flow lines. The exit for the second nozzle on the pants section was sealed off at the rotation flange.

The airflow capacity of the test facility was not adequate to fill all 13 lobes of the nozzle; therefore the four outer lobes were blocked internally. This did not impair the acoustic characteristics of the nozzle: the baseline sound spectrums obtained from this test closely matched those obtained from the airplane static test reported in reference 1.

The area surrounding the test facility is made up of smooth concrete and is ideal for ground surface mounted microphone installations (ref. 2).

Nine microphones were located on a 15.2-m (50-ft) polar array, as measured from the nozzle exit plane and centerline. The microphones were located with the diaphragm 1.27 cm (0.5 in.) above the concrete surface, at angles of 90°, 100°, 110°, 115°, 120°, 125°, 130°, 135°, 140° relative to the inlet (see appendix A).

As illustrated in appendix A, total pressure and temperature instrumentation was installed at the entrance to the split-flow plenum and pants section, and total pressure rakes were fitted at the lobe nozzle exit plane. Performance coefficients (velocity and discharge) were computed using both rake locations as charging stations. The thrust produced by the lobe nozzle was measured by a single-component load cell of 900-kg (2000-lb) range. Nozzle airflow was measured with a calibrated sonic venturi installed upstream of the facility burner.

TEST PROCEDURES

Following the completion of a configuration buildup, the propulsion and acoustic instrumentation was checked and calibrated. If the weather was within specifications shown in appendix A, the test was started with a nozzle pressure ratio (NPR) of 1.2 and an exhaust gas temperature of 371.1 °C (700 °F). Then the pressure ratio and temperature were increased in 0.1 NPR steps to a maximum of 1.7 NPR at 510 °C (950 °F). Propulsion and acoustic data were recorded at each NPR increment.

In the event of light rain, a single microphone at 115° from the inlet was used to measure the acoustic data. This data was displayed on-line from the one-third octave analyzer described in appendix D. No magnetic tape recording was made. It should be noted that even when the weather was good and the full microphone array was being recorded, the 115° microphone was tied into the on-line one-third octave analyzer and the traces recorded. Therefore, a quick comparison could be made between the various configurations.

TEST RESULTS

ACOUSTIC MEASUREMENTS

The first step in the test program was to run the lobed nozzle on the test rig and establish a baseline, with emphasis on being able to produce the 2000-Hz tone which existed during the NASA Ames airplane test program (ref. 1).

Runs 1 and 2 were made with nine lobes of the nozzle flowing. The weather was very marginal but data was recorded "on-line" at the 115° location for nozzle pressure ratios of 1.2 through 1.6. The acoustic results proved to be satisfactory and the 2000-Hz tone was reproduced at NPR 1.6. See figure 10.

Attempts were made to remove the 2000-Hz tone by a process of elimination. Figure 11 shows that adding a fairing to the leading and trailing edge of the secondary flow area struts was ineffective. It had been thought that the angle of attack of these struts, relative to the airstream, could have caused turbulence which resulted in the problem tone. Next it was decided to block all flow through the secondary channels. This was accomplished by fitting a piece of aluminum sheet over all the lobes and filling any voids with asbestos cloth. Results of this run (No. 4) are also shown in figure 11. No reduction of the tone occurred.

The next step was to remove an aerodynamic fairing which originally was installed internally between each lobe. This fairing was closed on the upstream end, but open on the downstream end, a configuration which left the possibility of the creation of a resonating chamber or whistle type of noise generator. Results of removing the tube fairings are shown in figure 12. The tone was still not affected.

In order to reduce the number of lobes involved in the remaining tone source tests, the nozzle was blocked down to five lobes flowing. Figure 13 shows the resultant one-third octave spectra; the 2000-Hz tone is still evident. In the remainder of the acoustic tests five lobes were used and run 6 was considered the baseline. Tube nozzle ends were then added (fig. 6) to the exit of the primary lobes. Nine lobes were fitted with these tube ends, with a resultant flow area equivalent to five lobes in the normal configuration. The tube ends removed the 2000-Hz tone, and effectively reduced the noise level relative to the lobed nozzle (fig. 13). However, this was not a practical solution due to the high thrust loss and weight penalties for a flight tube nozzle configuration.

While the tube nozzle ends were installed, the acoustic directivity of the rectangular array nozzle was evaluated before continuing the tone source tests. This evaluation was best made at this point of the test program because of the number of lobes in operation (nine) and hardware for the next test configuration was in fabrication.

To determine the nozzle directivity, an acoustic run was made with the nozzle major axis projecting through the centerline of the 90° microphone; then the nozzle was rotated 90° and acoustic data were again recorded. Figures 14 through 18 show the results. In summary, the noise measured off the short axis was 2 to 6 dB quieter than off the long axis. This difference depended on the power setting, with the directivity effect diminishing as the NPR was increased. It should be noted that the tube ends were installed in this test series, but as the overall aspect ratio was near three, the results of the directivity evaluation should be valid for the proposed BNS-3 lobe nozzle.

The tests completed prior to the directivity evaluation indicated that the 2000-Hz tone was related to an interaction between the lobes of the nozzle, probably at the exit plane. In an attempt to pinpoint the exact cause, three test configurations were run: five alternate lobes flowing, with four blocked (fig. 19); four alternate lobes flowing (fig. 19), namely the lobes which were blocked for the previous run; and with fences or splitters installed in the secondary flow channels extending 12.7 cm (5 in.) aft of the nozzle exit plane (fig. 20.). All three configurations removed the tone. It was originally thought that the tone was caused by upstream turbulence in each lobe, and that because of the relationship of the lobe exits the tones were amplified externally. Narrow band analysis (10-cycle bandwidth) per figures 21 through 29 shows that no such tone exists in the individual lobes and therefore the amplification theory is invalid.

The final conclusion as to the cause of the tone is that it is created by an interaction engendered by the shape and spacing of the lobes. It is not known what effect small changes in lobe spacing would have on the frequency of the tones, nor just what the minimum spacing change would be to completely eliminate the tone.

Methods of eliminating the tone are:

1) Change the lobe spacing.

2) Alter the lobe exit by converging near the exit plane, in effect, changing the exit flow characteristics slightly. (This solution is speculative.)

3) Change the lobe exit shape to a multi-element, large breakup configuration (deep corrugations on lobe exits).

4) Add a splitter (fence) between the lobes. Further testing would be required to determine the minimum size fence required.

NOZZLE PERFORMANCE

It was hoped that the transition-diffuser with the internal splitter plate would provide even pressure profiles at the entrance to the engine split-flow "pants" section. Examination of the pressures sensed by the two 4-probe total pressure rakes at the "D" shaped section revealed considerable distortion (as much as 3.5 psia out of 23 psia) at an average nozzle pressure ratio of 1.5. The brief test period did not allow investigation of the cause of the problem but evidently the area rate change was too severe to control the flow expansion immediately downstream of the burner choke plate. Performance data based on the distorted upstream conditions would be meaningless and are not presented here.

Nozzle performance was instead computed on the basis of total pressure measurements at the lobe exit plane. Two 4-probe rakes were positioned in the center of the lobes to sense the nozzle supply pressure. This is a sound practice provided the lobes are not unreasonably long. To minimize the effects of spanwise distortion, believed caused by the poor entrance conditions, the total pressure rakes were alternately positioned on lobes 1 and 4 and lobes 2 and 3, as shown in figure 9. Because of facility airflow limitations, six of the outer lobes were blocked to decrease the flow area. This was accomplished during the first tests by internally blocking the lobes. Levels of C_V as low as 0.90 were measured. The problem was traced to a large amount of leakage around the nozzle internal blocker plates. In the C_V equation, any mass flow that is leaking (not producing thrust) will drive the C_V parameter down. The unused lobes were then sealed externally. The C_V level rose to 0.95 at a nozzle pressure of 1.5 as indicated in figure 9. This level can be extrapolated to about 0.96 at takeoff power (NPR = 1.9). Some leakage is still evident around the nozzle-rotation bearing-attachment flange. This means that the measured C_V level is somewhat below the true level.

The discharge coefficient (C_D) level of the lobe nozzle was measured also. The C_D levels for ambient and heated air, presented in figure 30, are essentially constant at 0.95 through the range of pressure ratios tested. The discharge coefficient levels are not particularly important with regard to nozzle thrust performance but are useful in selecting the target nozzle exit area to provide proper engine match. The C_D values measured with 11 lobes flowing during the engine tests (ref. 1) varied from 0.93 to 0.94 for this range of pressure ratios.

RECOMMENDATIONS

This test program has shown that the 2000-Hz tone can be eliminated, and that greater noise suppression exists due to nozzle directivity than was originally predicted. With this knowledge in mind, it is recommended that further design and testing can provide a flight nozzle with the suppression shown in figure 8 (shown as BNS-3).

Model BNS-3 would consist of a lobe-type nozzle similar to the one tested (BNS-1), the main change occurring in the lobe exits. These would have deep penetration (high perimeter) corrugated ends.

To determine the actual effect of changing the lobe exit geometry, a Boeing hot-nozzle-facility test of a BNS-1 nozzle modified to BNS-3 geometry is recommended. The lobes of the BNS-1 nozzle would be removed, and seven new lobes of the BNS-3 configuration would be welded in place.

Propulsion and acoustic tests would be performed on the modified nozzle, and the results supplied in time to support a design effort for flight hardware.

Boeing Commercial Airplane Company
P.O. Box 3707
Seattle, Washington 98124, May 30, 1974

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2. McKaig, Merle B.: Use of Flush-Mounted Microphone to Acquire Free-Field Data. AIAA paper 74-92, February 1974.

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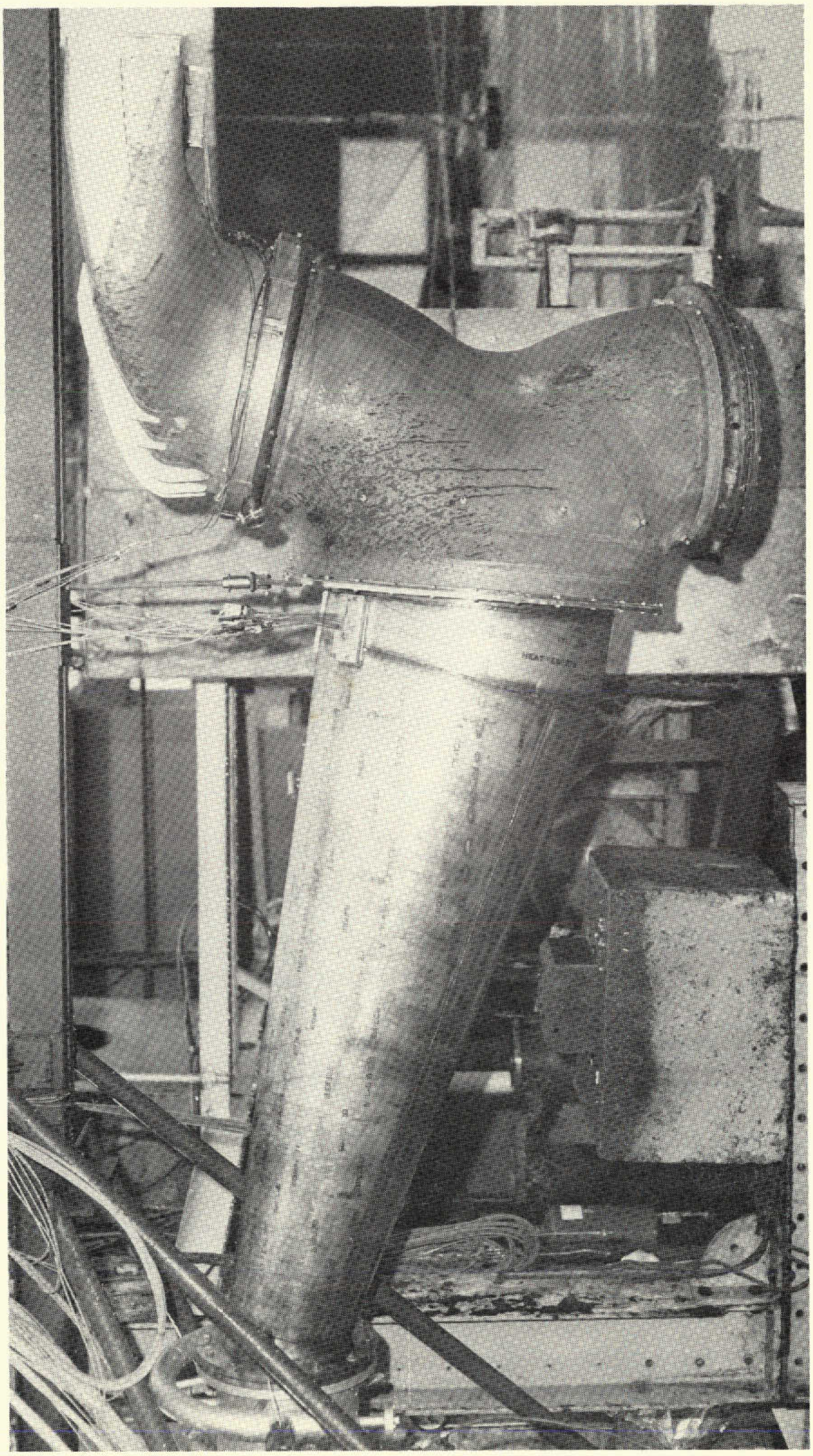


FIGURE 1.—C8A BUFFALO LOBED NOZZLE MOUNTED ON BOEING HOT NOZZLE TEST FACILITY

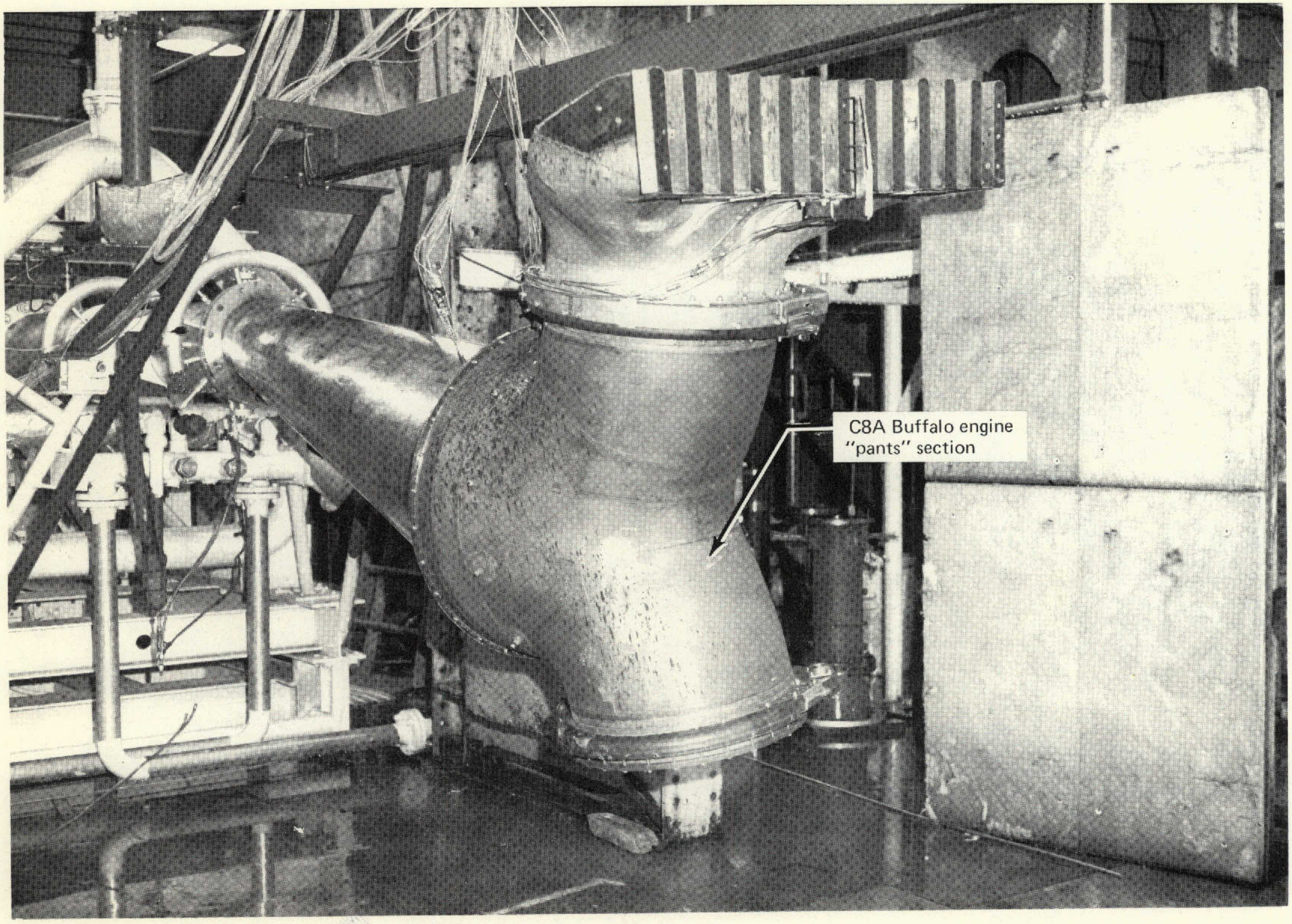


FIGURE 2.—C8A BUFFALO 13-LOBE SUPPRESSOR NOZZLE

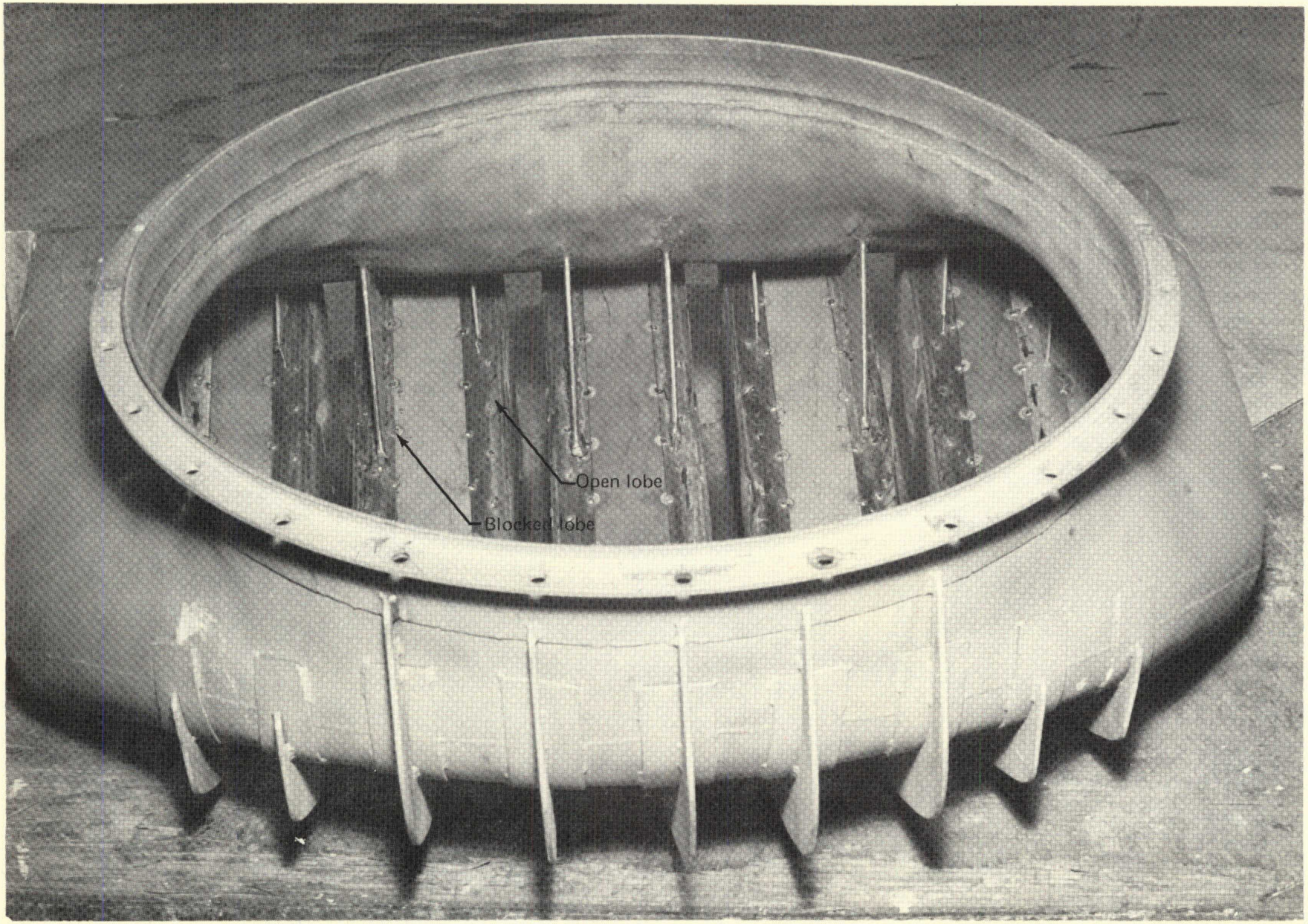


FIGURE 3.—INSIDE VIEW OF C8A BUFFALO SUPPRESSOR NOZZLE, UPSTREAM LOBE BLOCKERS INSTALLED

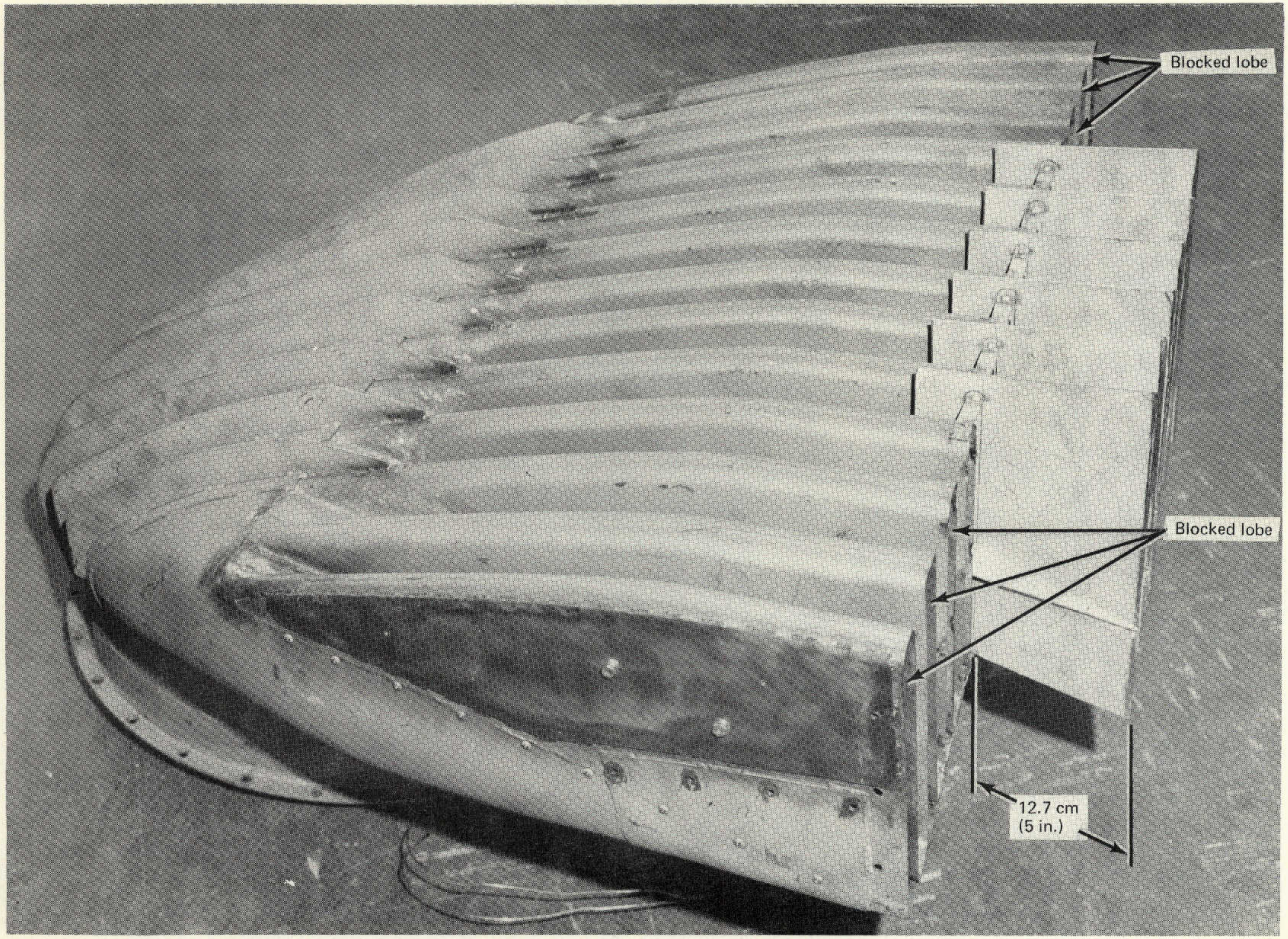


FIGURE 4.—C8A BUFFALO LOBED NOZZLED WITH SECONDARY FLOW SPLITTERS (FENCES) INSTALLED

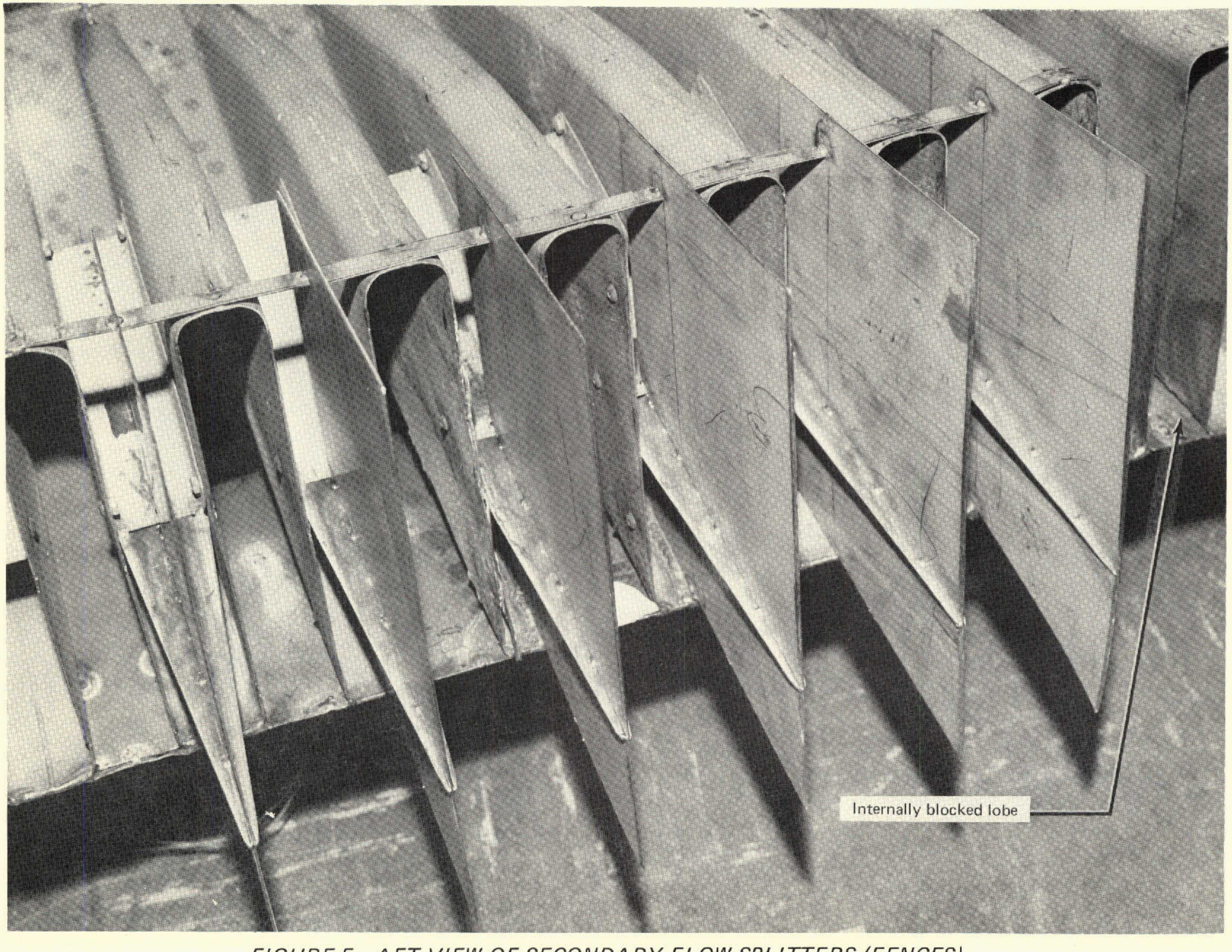


FIGURE 5.—AFT VIEW OF SECONDARY FLOW SPLITTERS (FENCES)

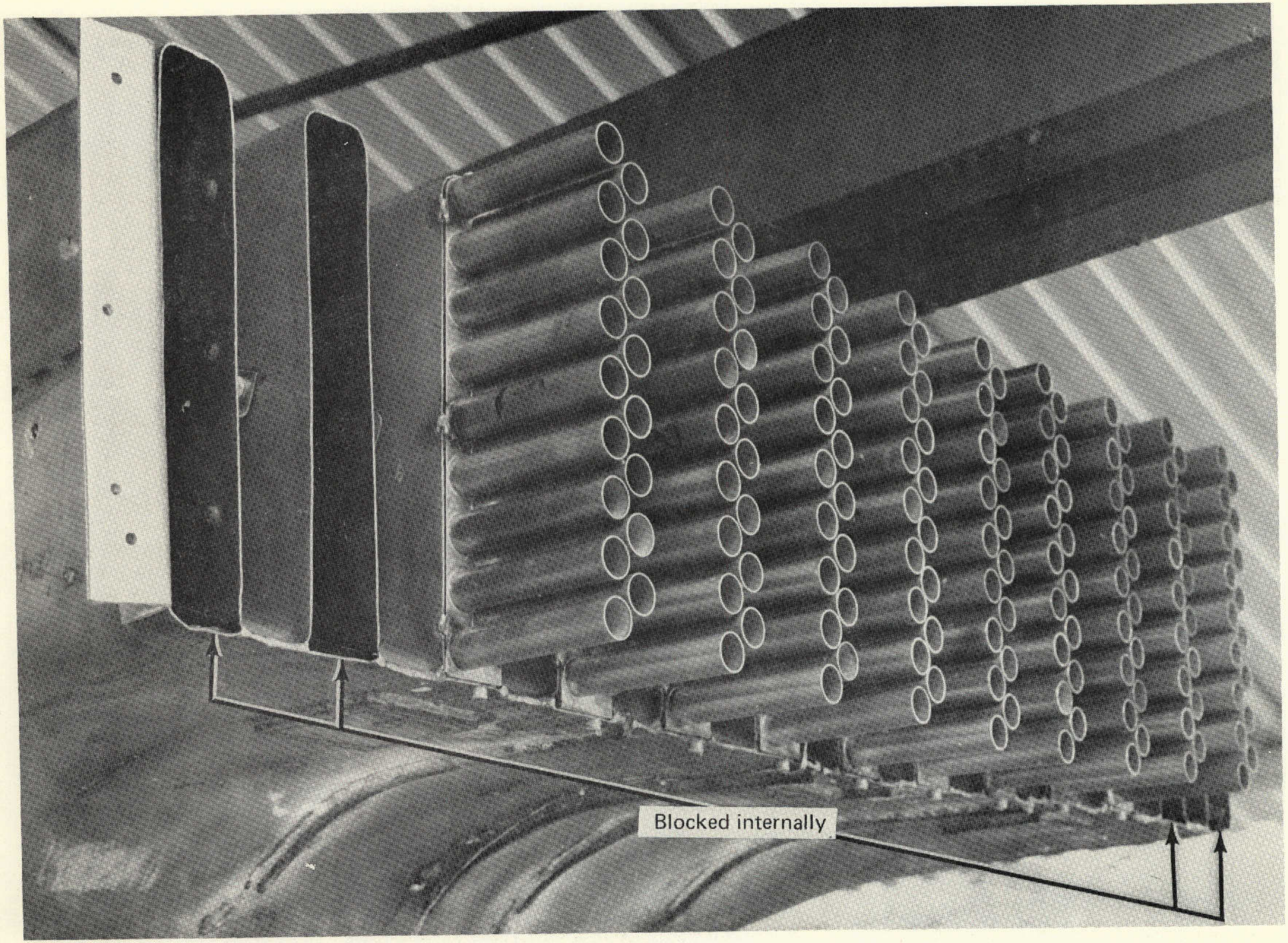


FIGURE 6.—TUBE ENDS INSTALLED ON NINE LOBES, REMAINING FOUR BLOCKED

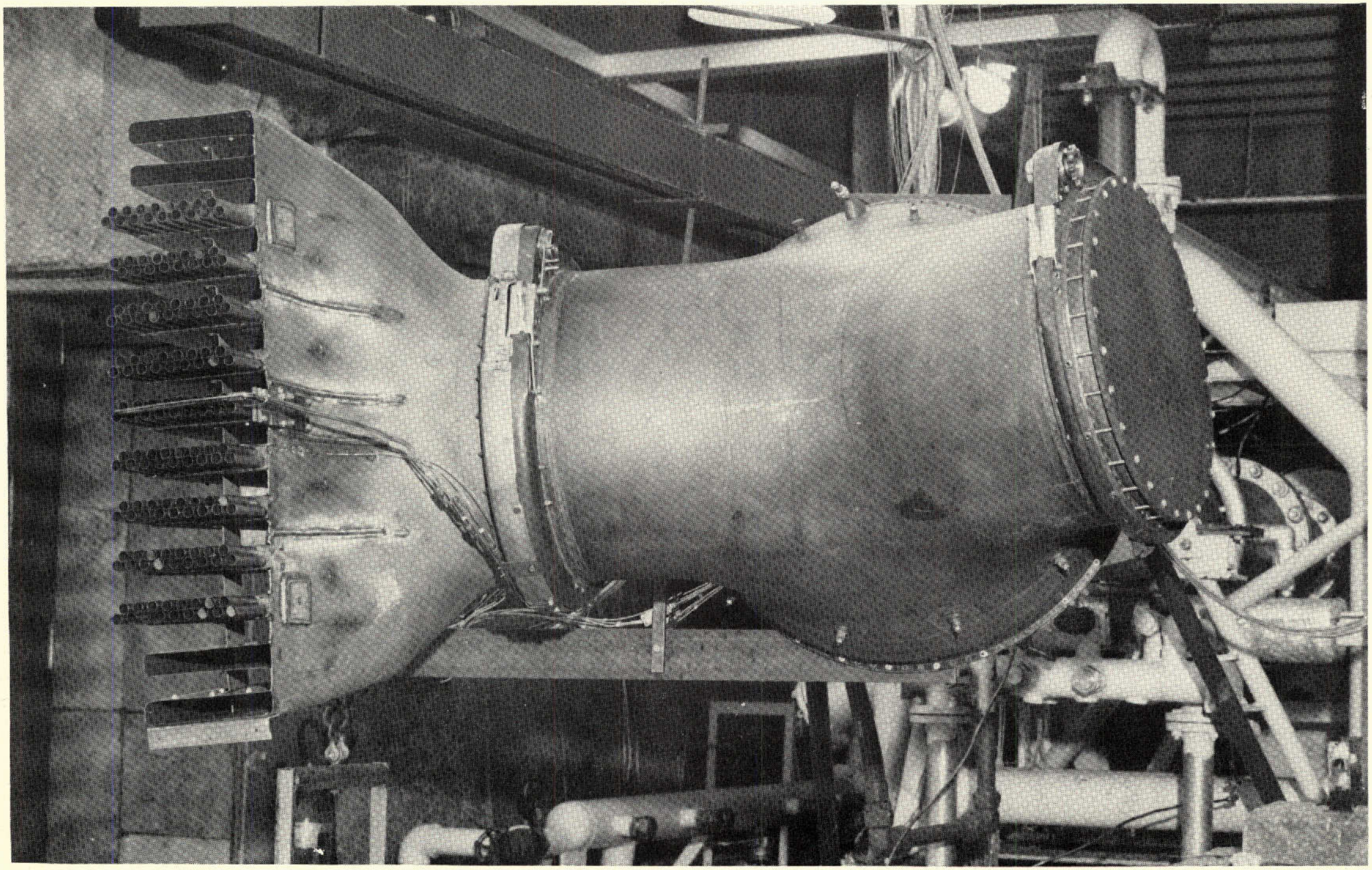
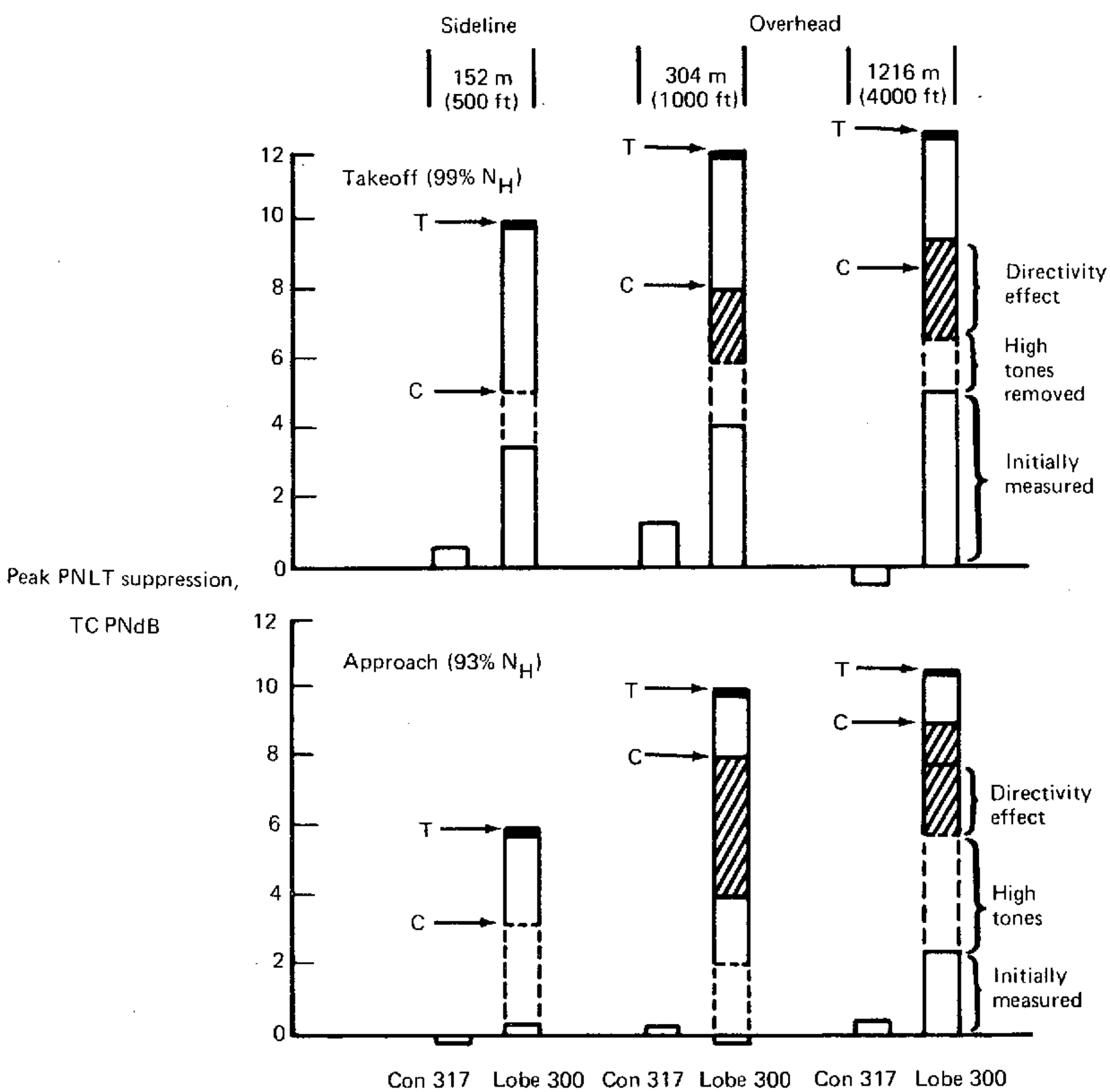
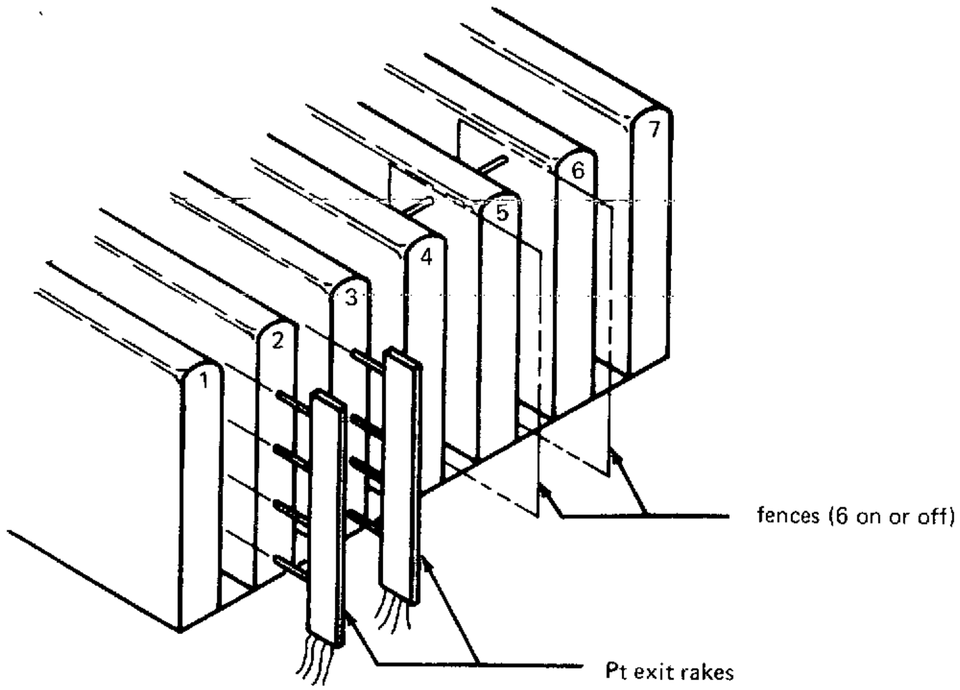


FIGURE 7.—C8A LOBE NOZZLE IN VERTICAL POSITION FOR DIRECTIVITY EVALUATION

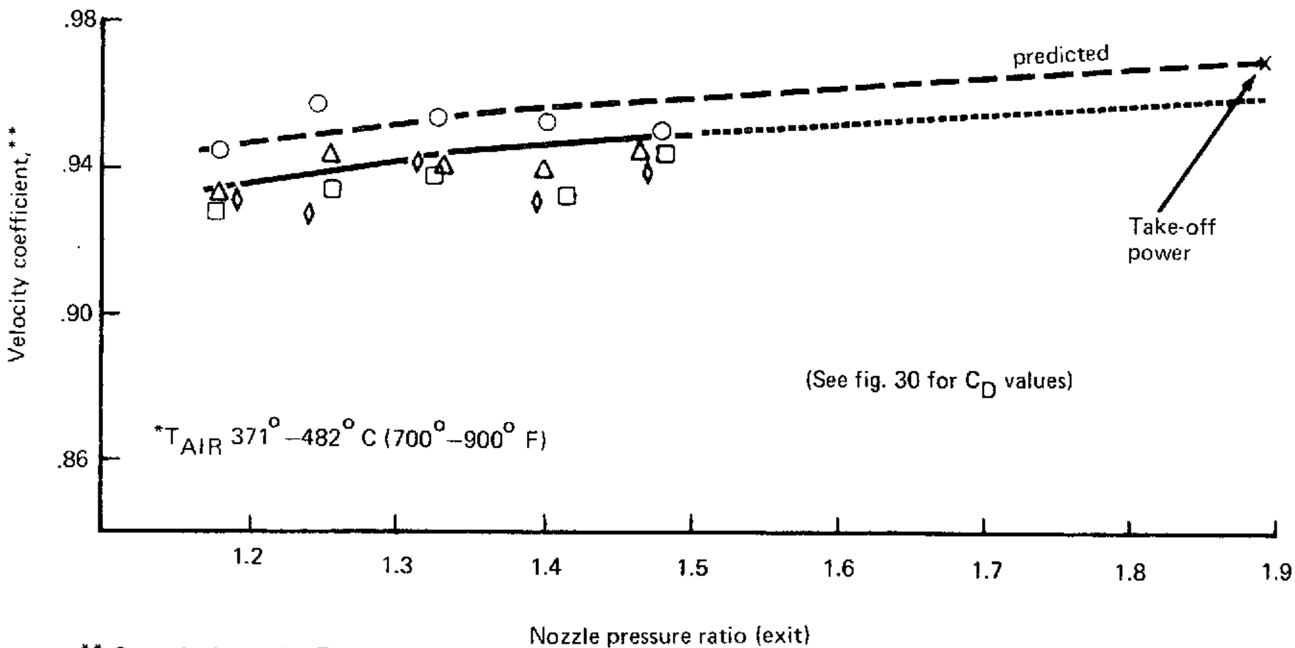


All data, colander removed.
Con 317 = conical, 2045 cm^2 (317 in.^{2})
Lobe 300= lobe, 1936 cm^2 (300 in.^{2})
C = peak reduction confirmed during hot nozzle rig test
T = BNS-3 target values

FIGURE 8.—FIXED AREA NOZZLE ACOUSTIC SUMMARY CHART



run	exit rake loc.	T_{AIR}	fences (6)
○ 14	lobes 1 & 4	hot*	on
□ 16	lobes 2 & 3	hot	on
◊ 18	lobes 2 & 3	hot	off
△ 19	lobes 1 & 4	hot	off



** C_{VPE} in Appendix E data output

FIGURE 9.—LOBE NOZZLE PERFORMANCE, SEVEN LOBES FLOWING

Add 4.9 dB to obtain octave band level

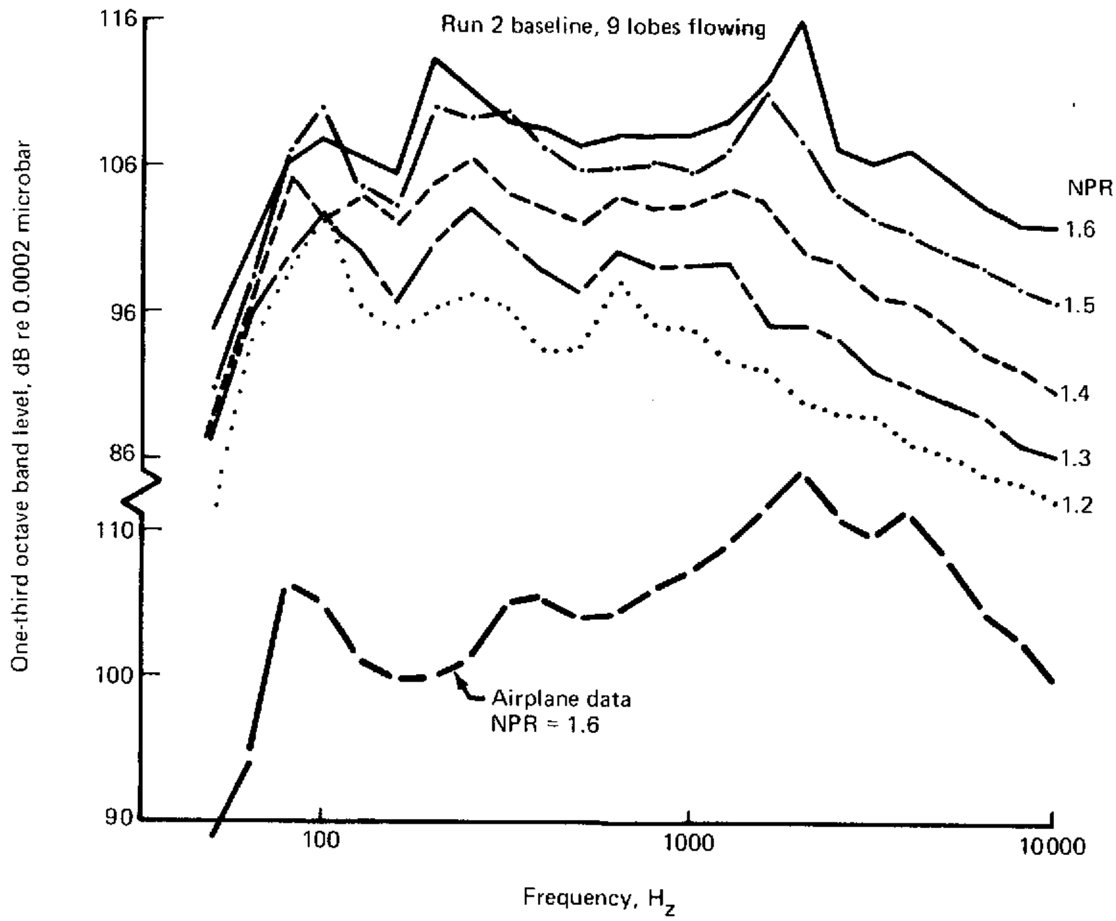


FIGURE 10.—LOBED NOZZLE SPL BASELINE, 115° LOCATION

Add 4.9 DB to obtain octave band level

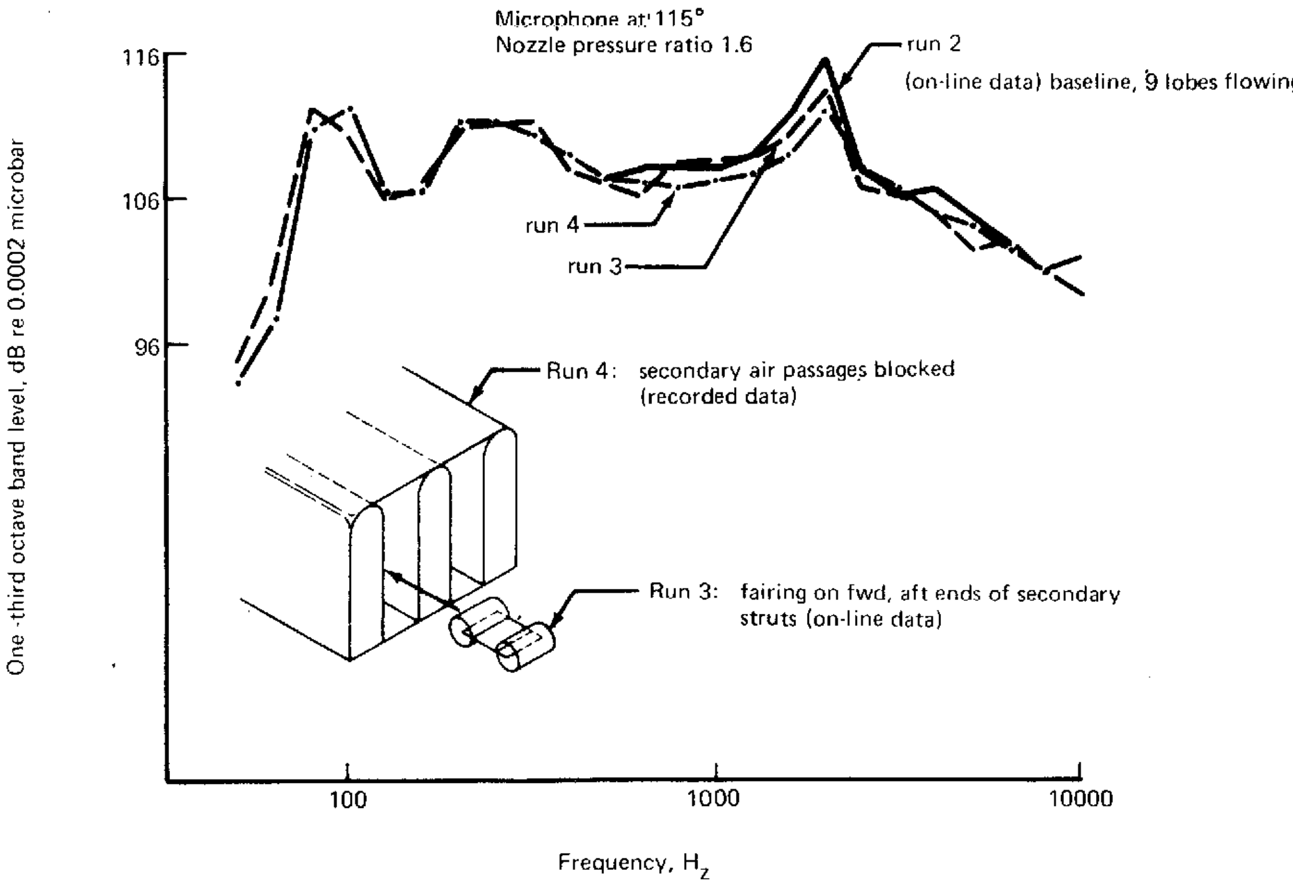


FIGURE 11.—FAIRING AND SECONDARY FLOW BLOCKAGE EFFECTS ON SPL SPIKE

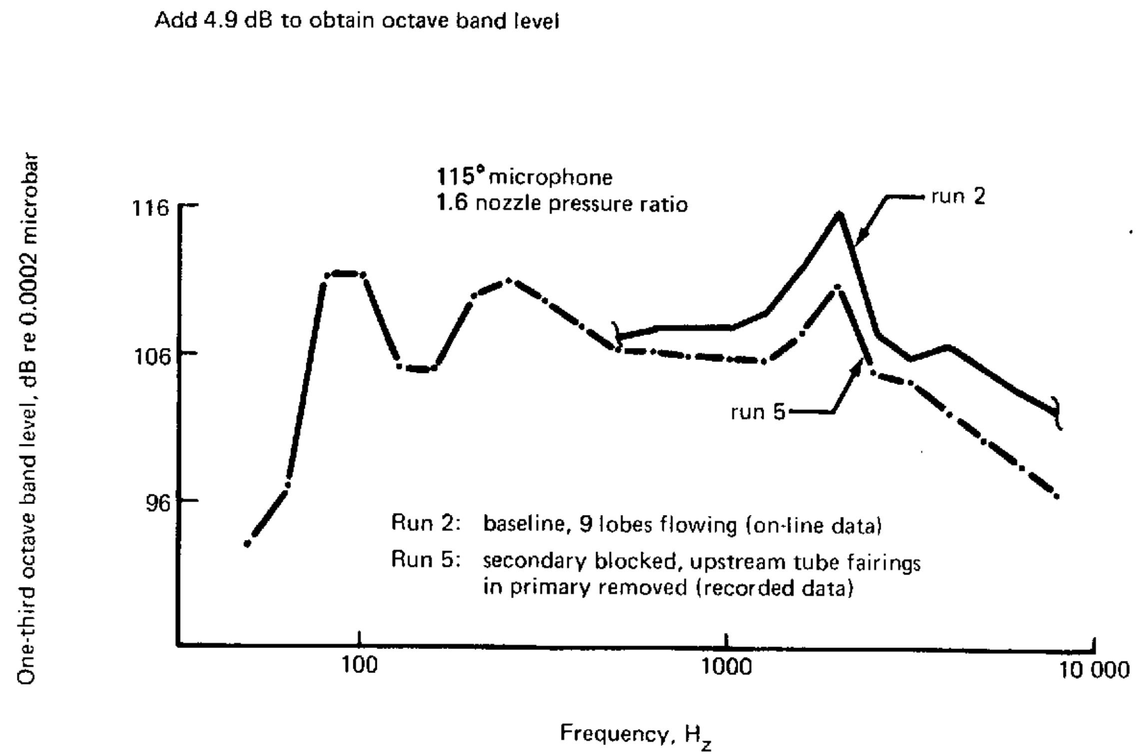


FIGURE 12.—EFFECT ON SPL SPIKE OF REMOVING UPSTREAM TUBE FAIRINGS

Add 4.9 dB to obtain octave band level

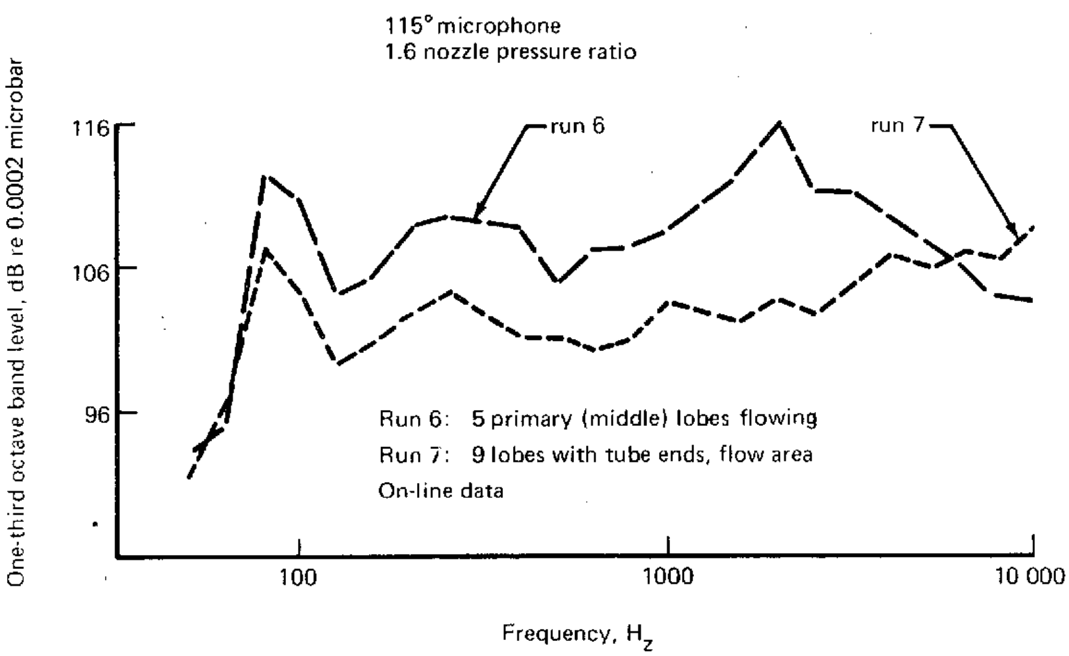


FIGURE 13.—EFFECT ON SPL SPIKE UPON ADDING TUBE ENDS

See figure 16 for nozzle orientation with respect to michrophones

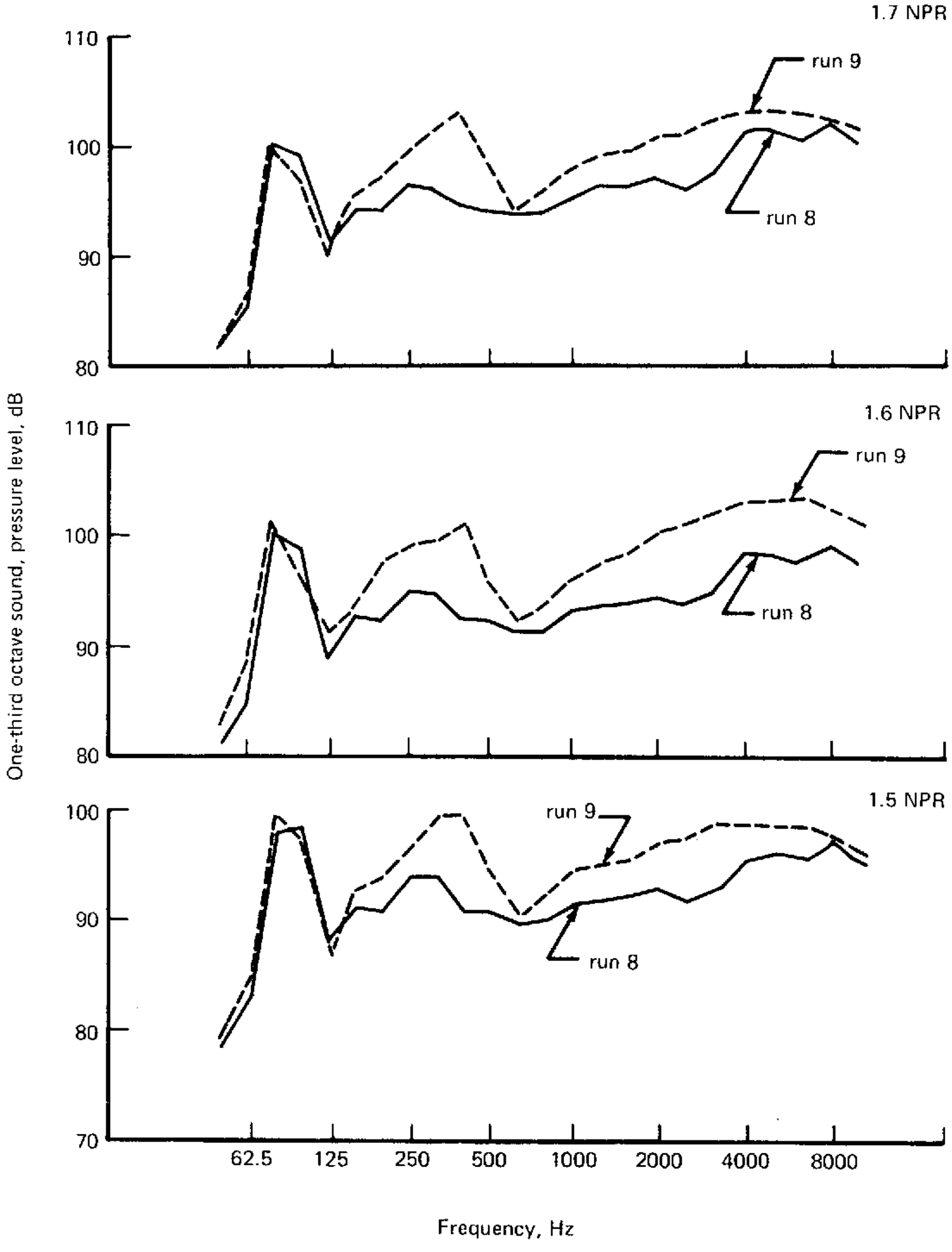


FIGURE 14.–ACOUSTIC DIRECTIVITY EFFECT AT 110° ANGLE

See figure 16 for nozzle orientation with respect to microphones

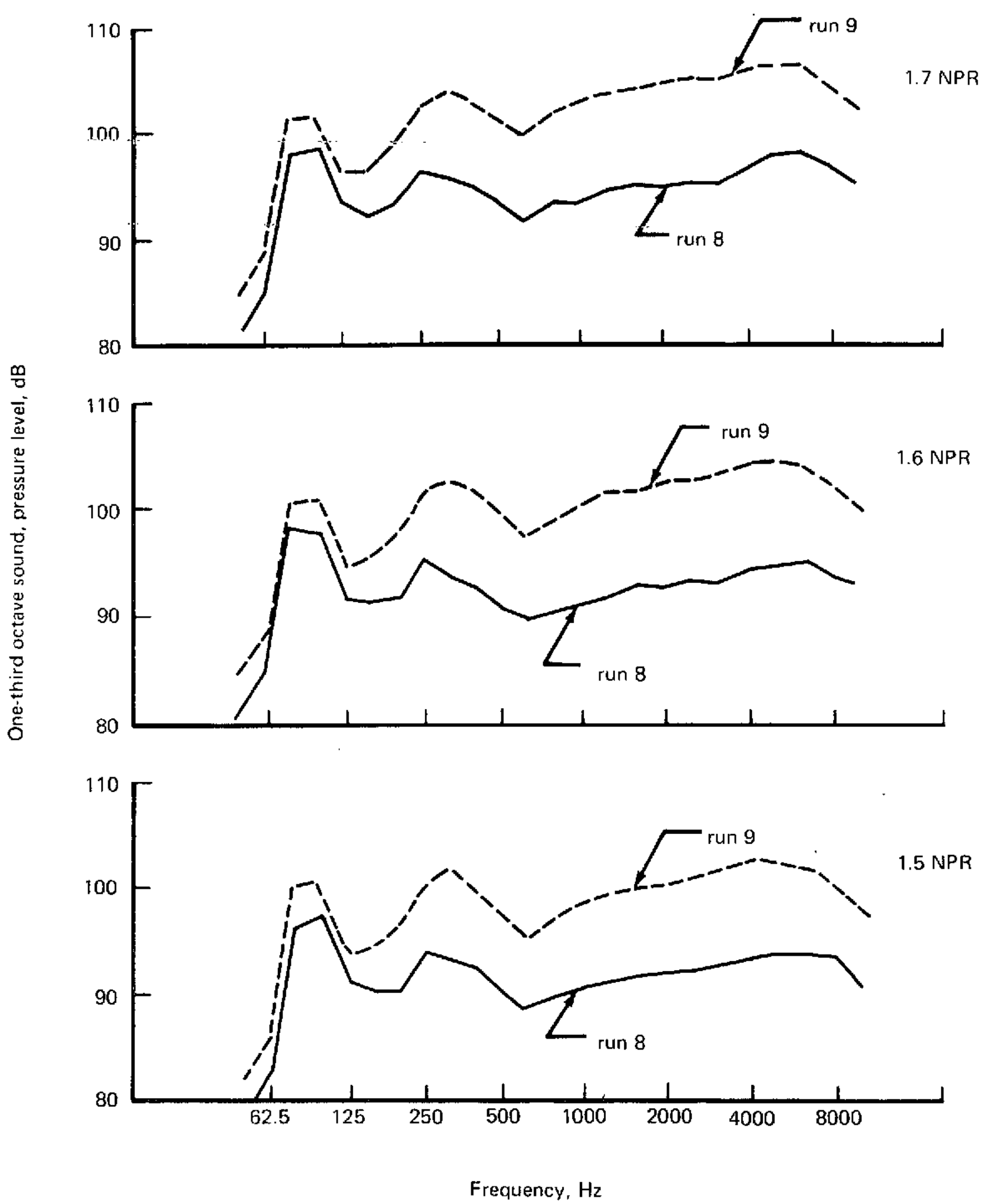


FIGURE 15.—ACOUSTIC DIRECTIVITY EFFECT AT 130° ANGLE

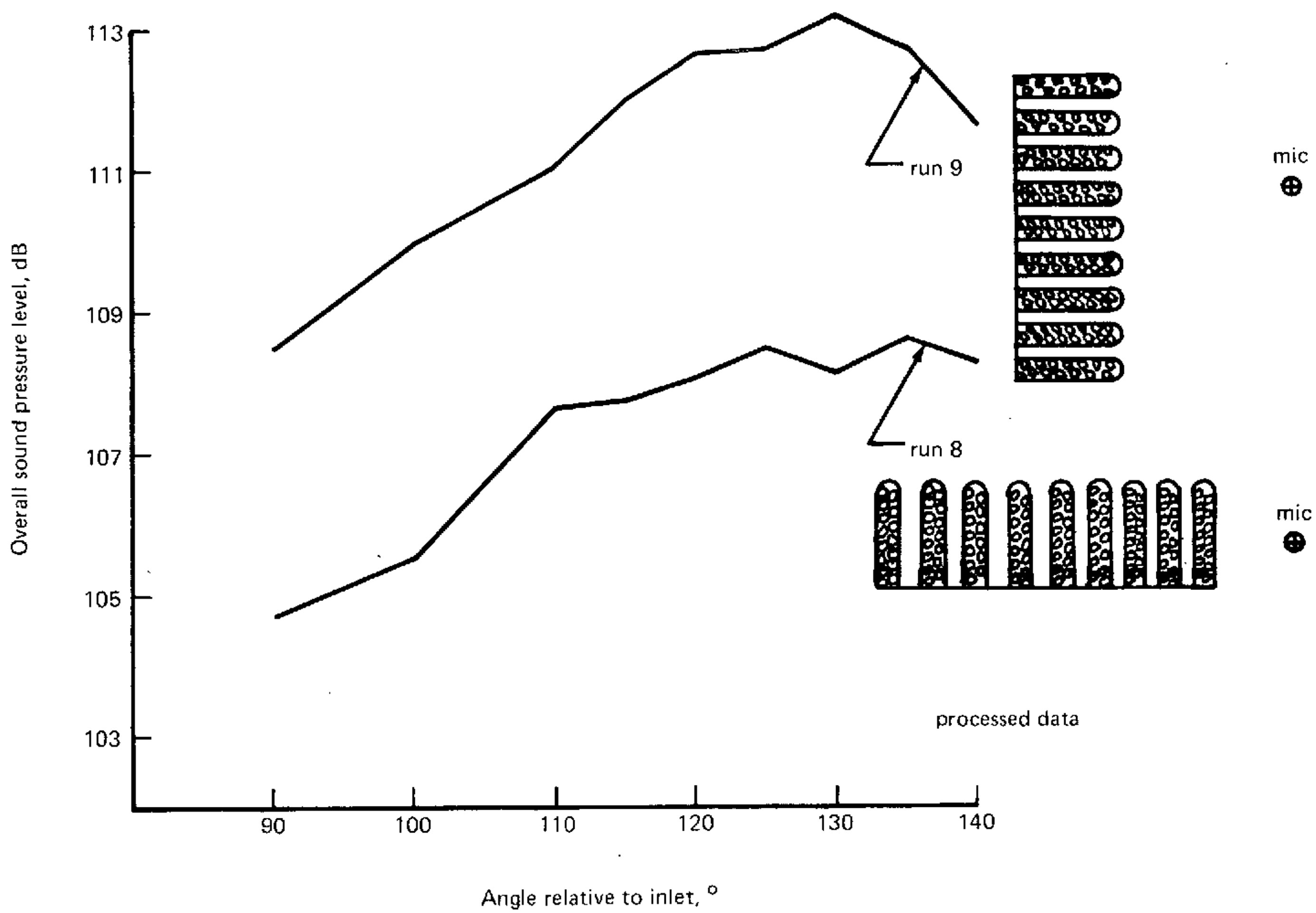


FIGURE 16.—ACOUSTIC DIRECTIVITY AT NOZZLE PRESSURE RATIO OF 1.5

See figure 16 for nozzle orientation with respect to microphones

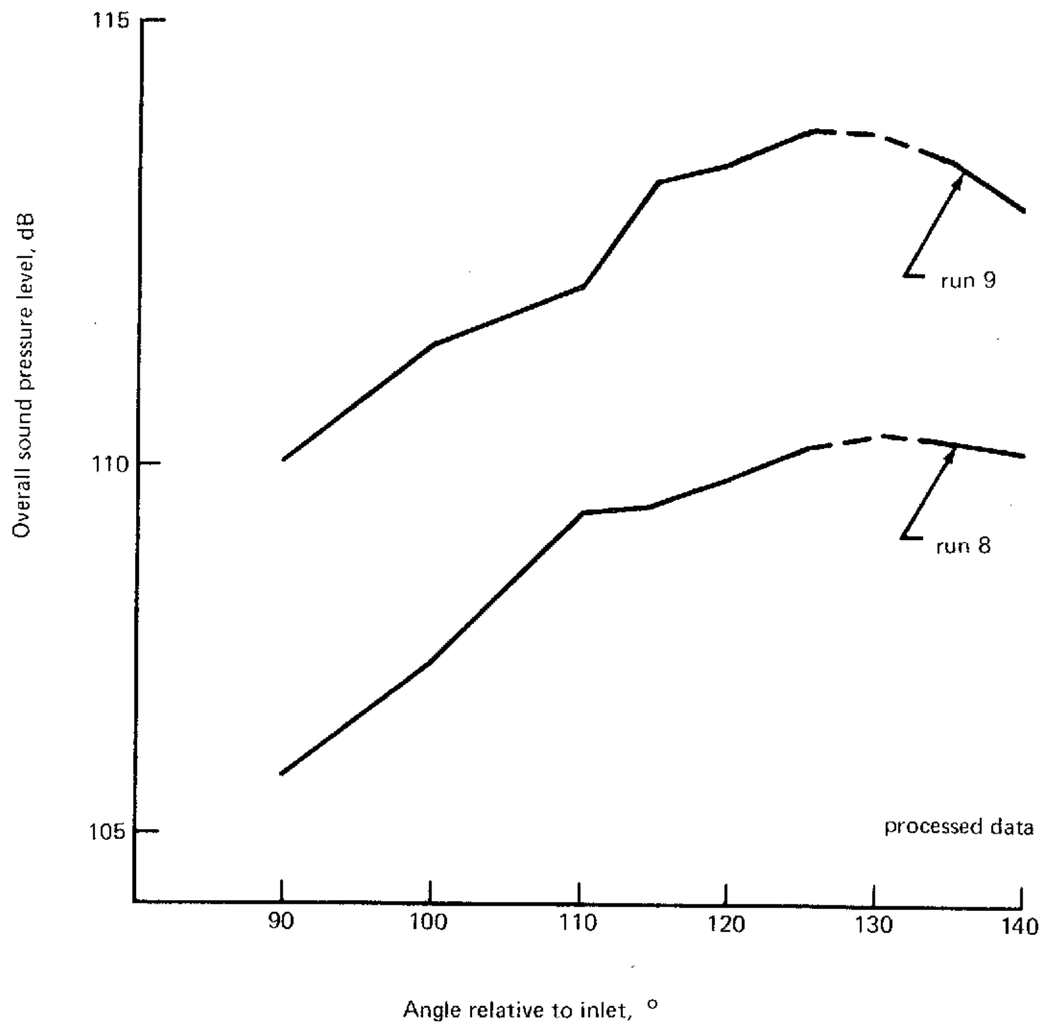


FIGURE 17.—ACOUSTIC DIRECTIVITY AT NOZZLE PRESSURE RATIO OF 1.6

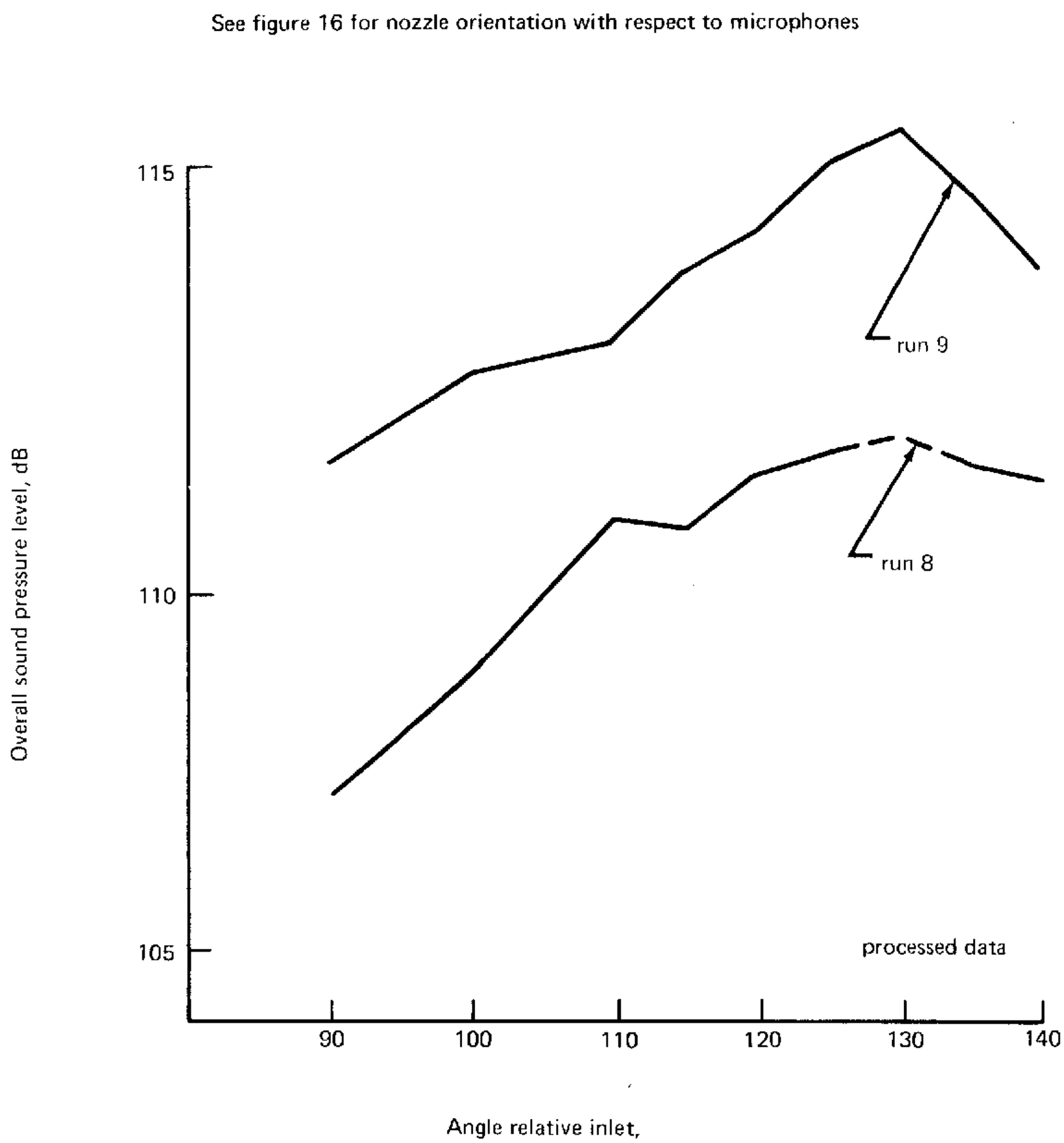
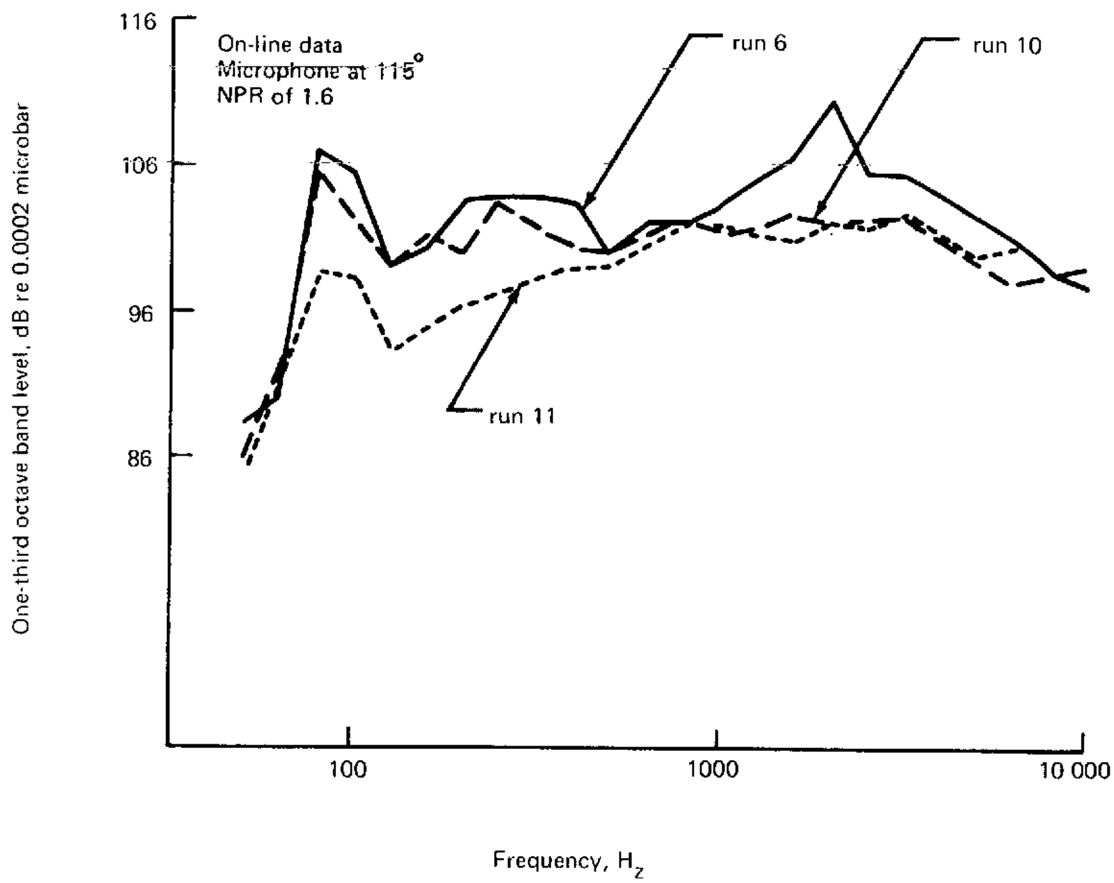
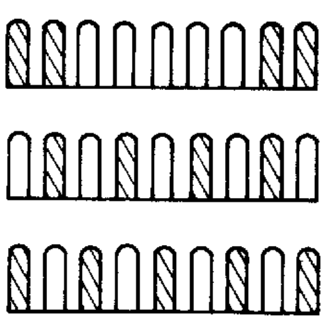


FIGURE 18.—ACOUSTIC DIRECTIVITY AT NOZZLE PRESSURE RATIO OF 1.7





Run 6: 5 center primary lobes flowing.

Run 10: 5 alternate primary lobes flowing.

Run 11: 4 alternate primary lobes flowing.

FIGURE 19.—SPL SPIKE REMOVAL WITH ALTERNATE LOBES FLOWING

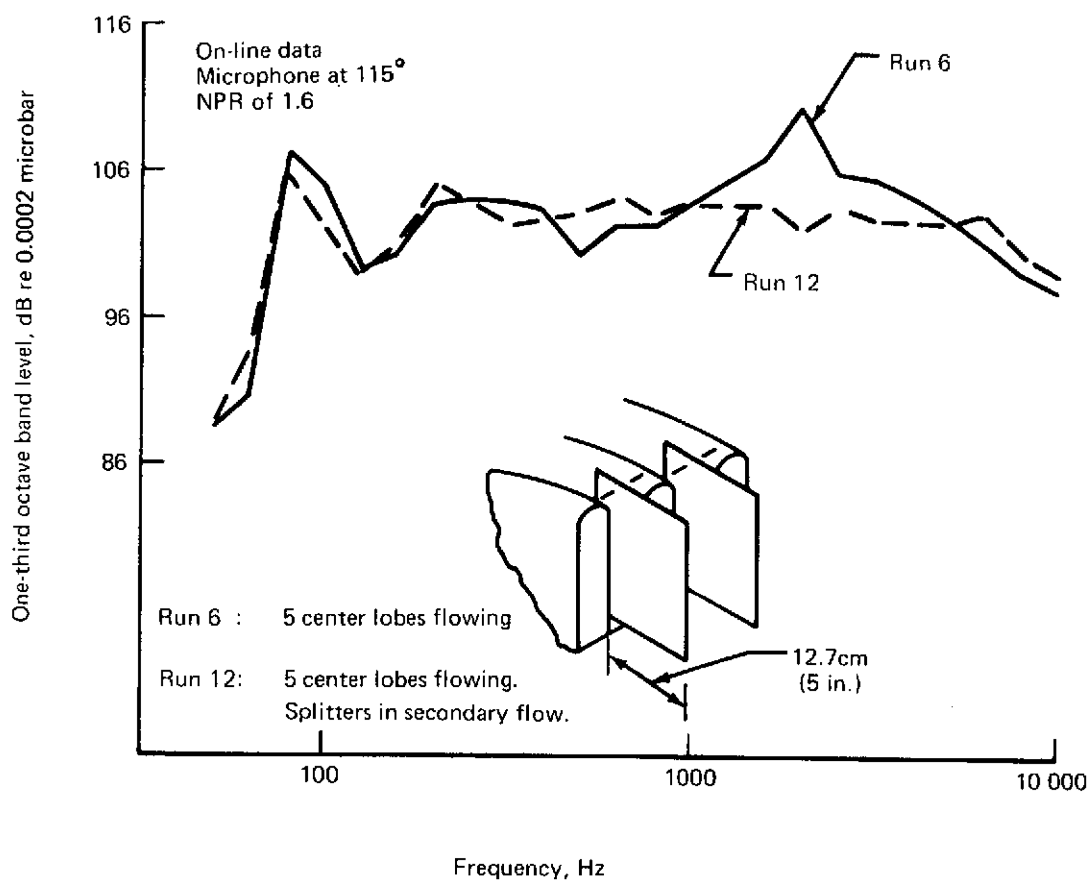


FIGURE 20.—SPL SPIKE REMOVAL WITH SECONDARY-FLOW SPLITTERS

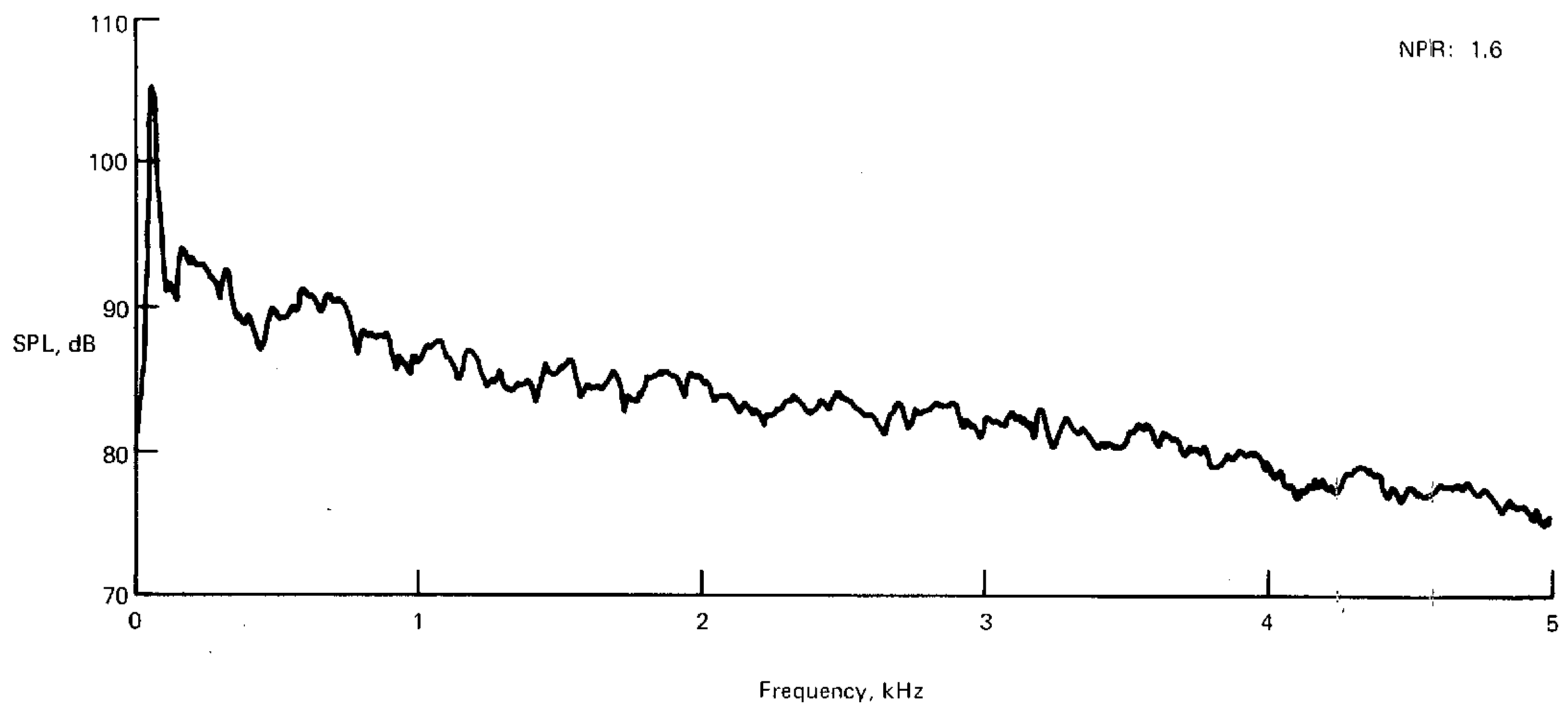


FIGURE 21.—NARROW-BAND ACOUSTICS OF RUN 10 AT 115° ANGLE

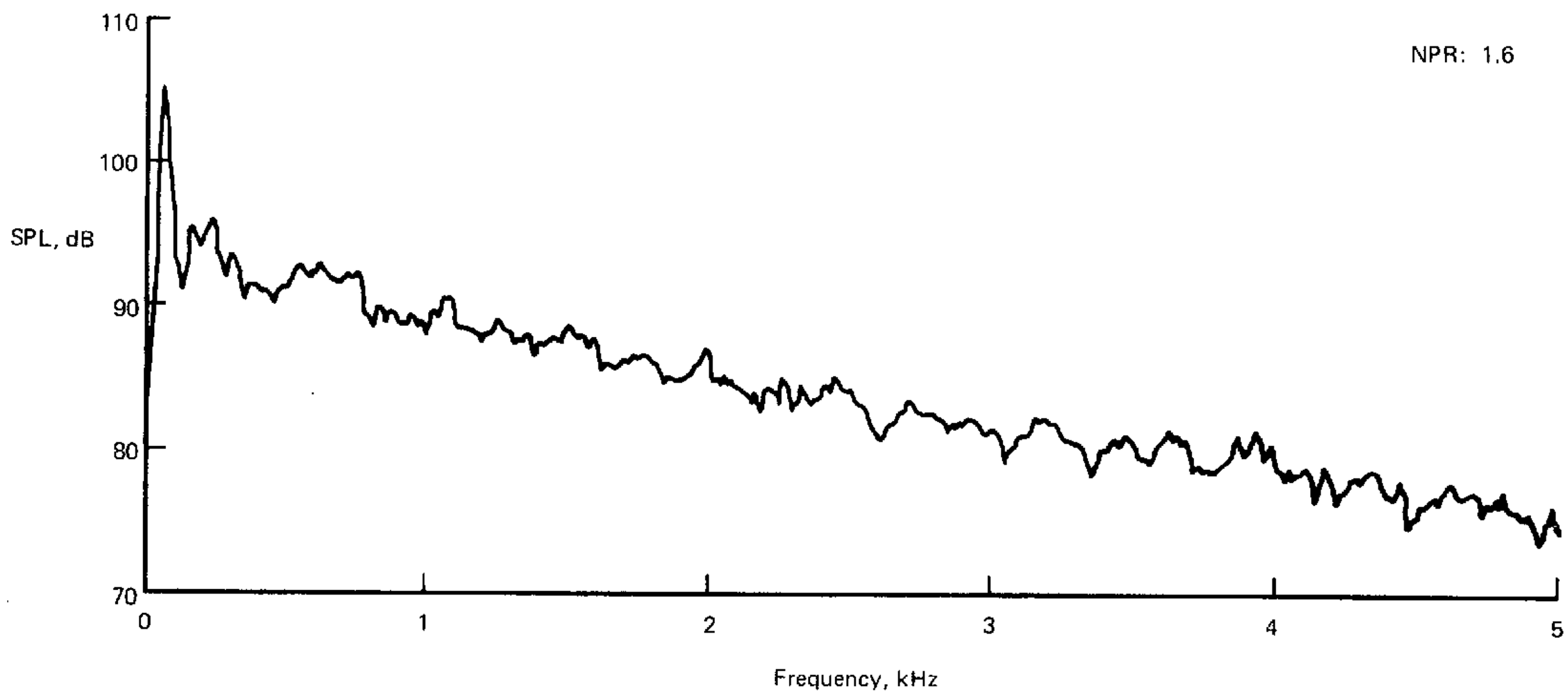


FIGURE 22.—NARROW-BAND ACOUSTICS OF RUN 10 AT 120° ANGLE

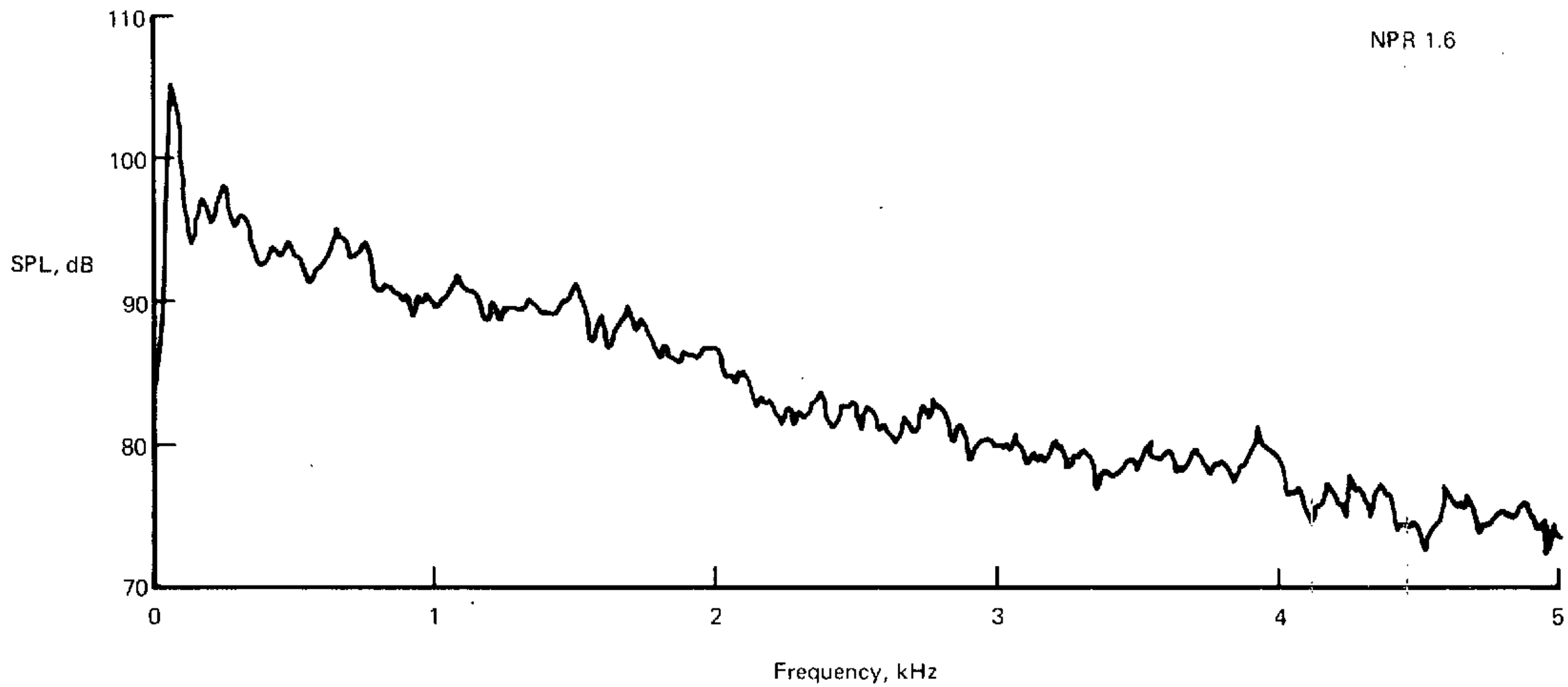


FIGURE 23.—NARROW-BAND ACOUSTICS OF RUN 10 AT 130° ANGLE

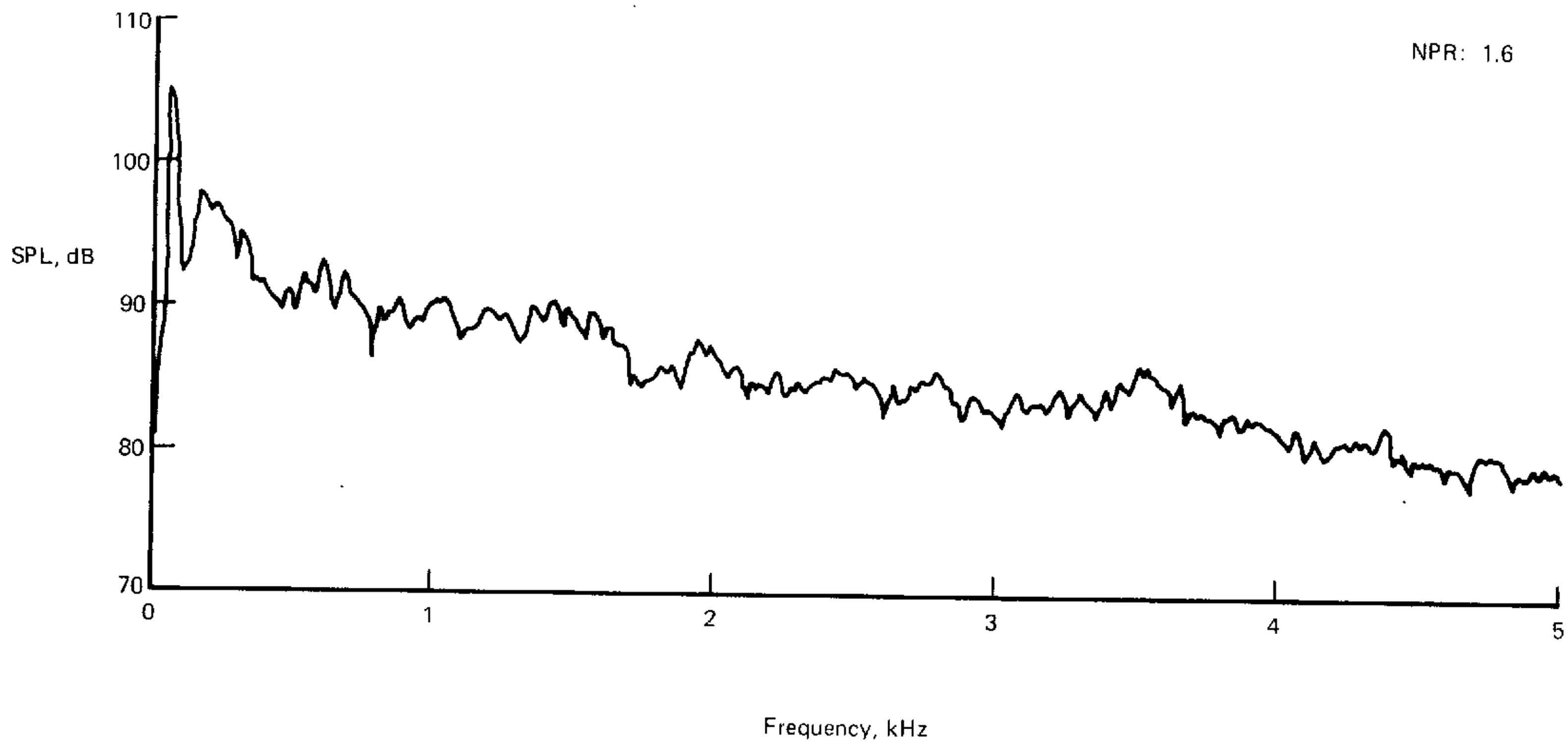


FIGURE 24.—NARROW-BAND ACOUSTICS OF RUN 11 AT 115° ANGLE

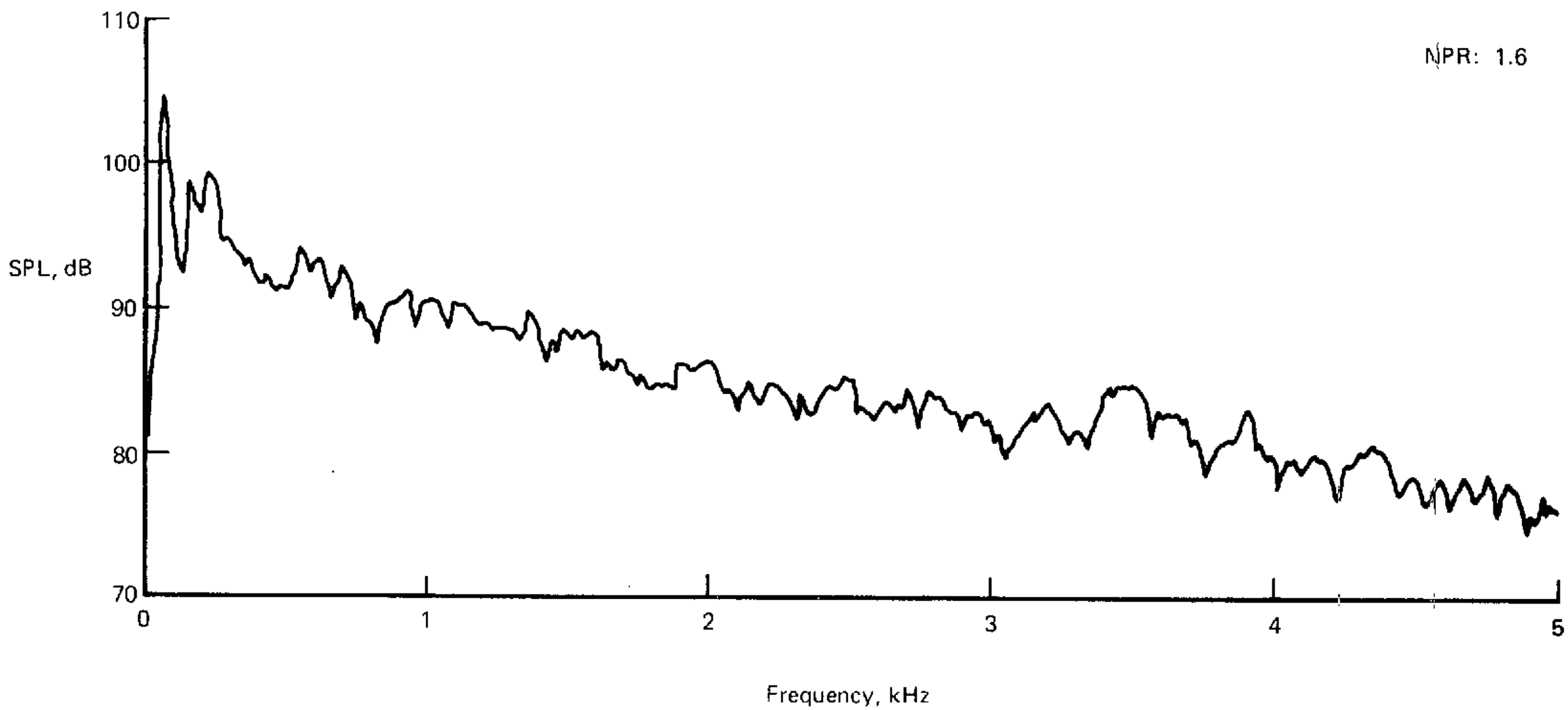


FIGURE 25.—NARROW-BAND ACOUSTICS OF RUN 11 AT 120° ANGLE

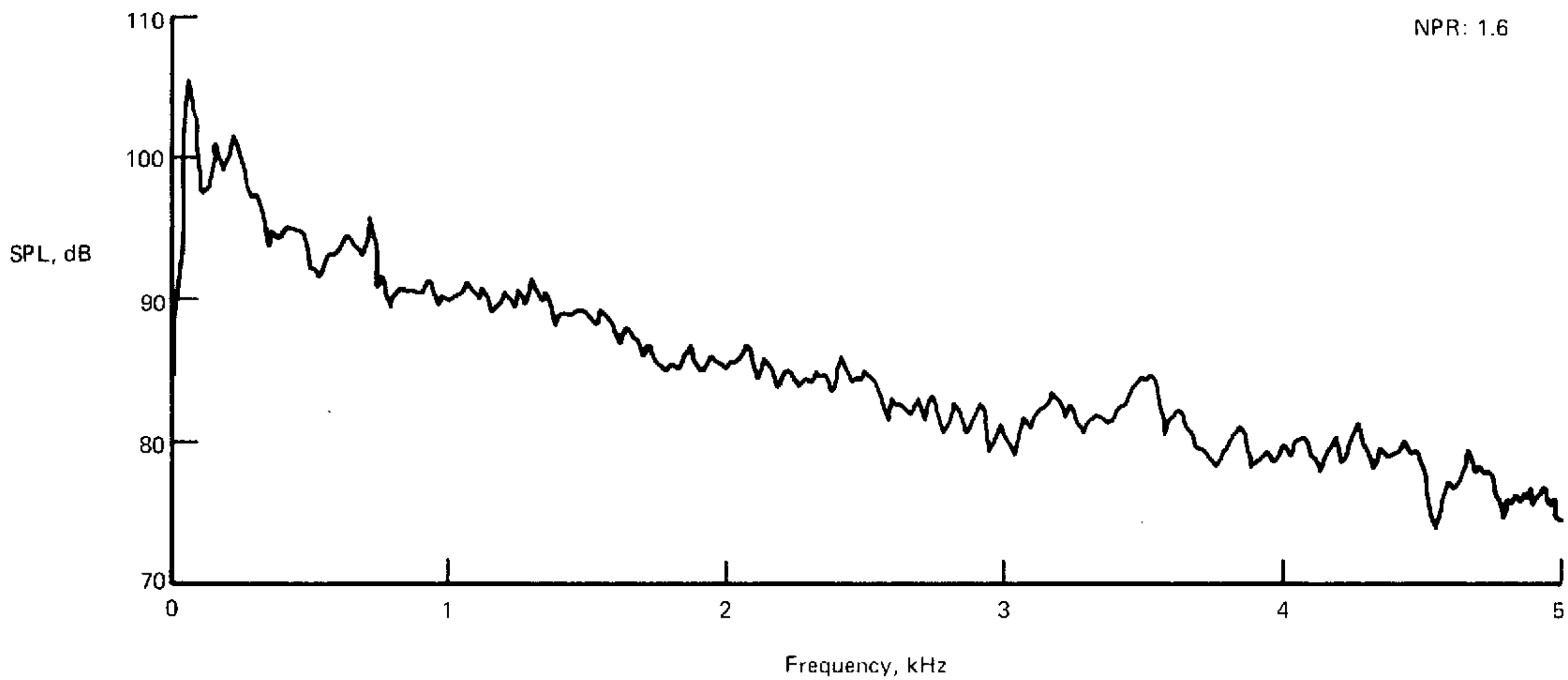


FIGURE 26.—NARROW-BAND ACOUSTICS OF RUN 11 AT 130° ANGLE

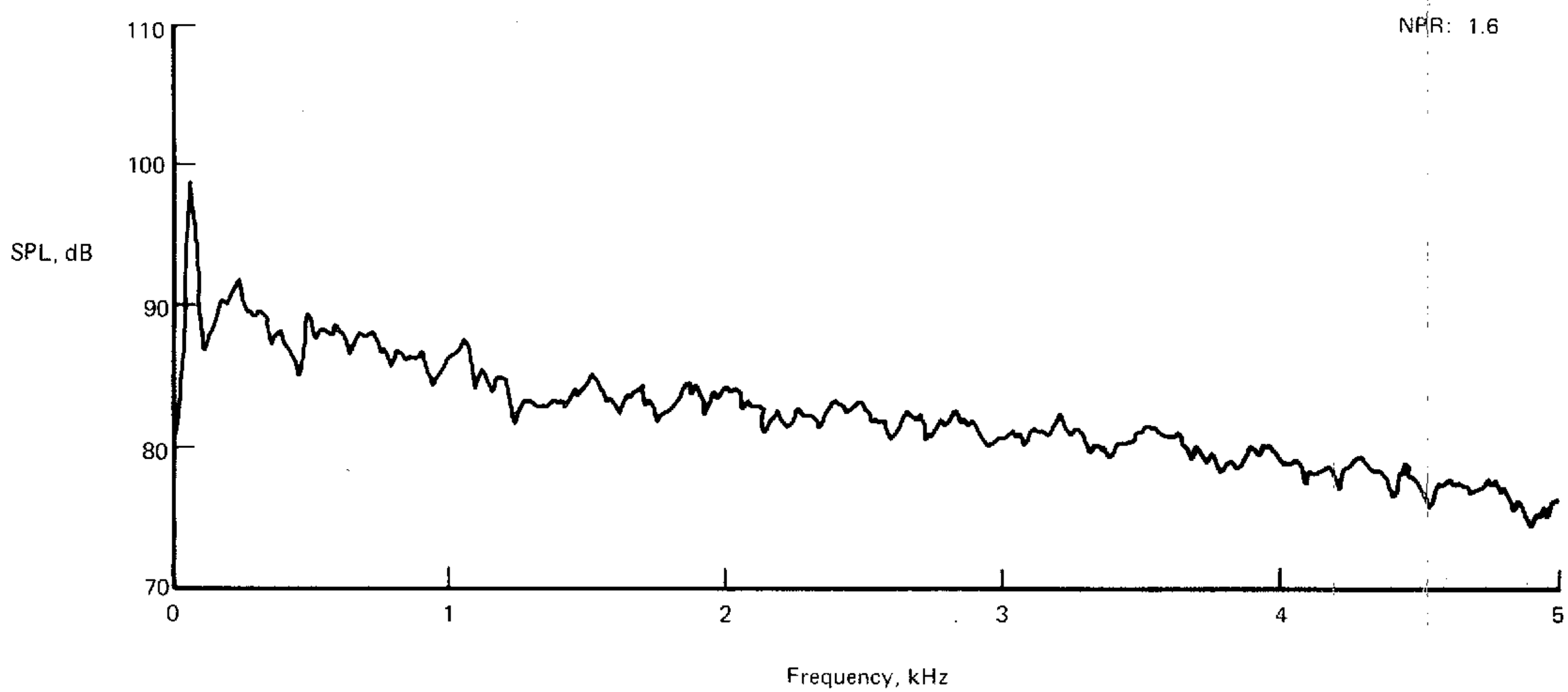


FIGURE 27.—NARROW-BAND ACOUSTICS OF RUN 12 AT 115° ANGLE

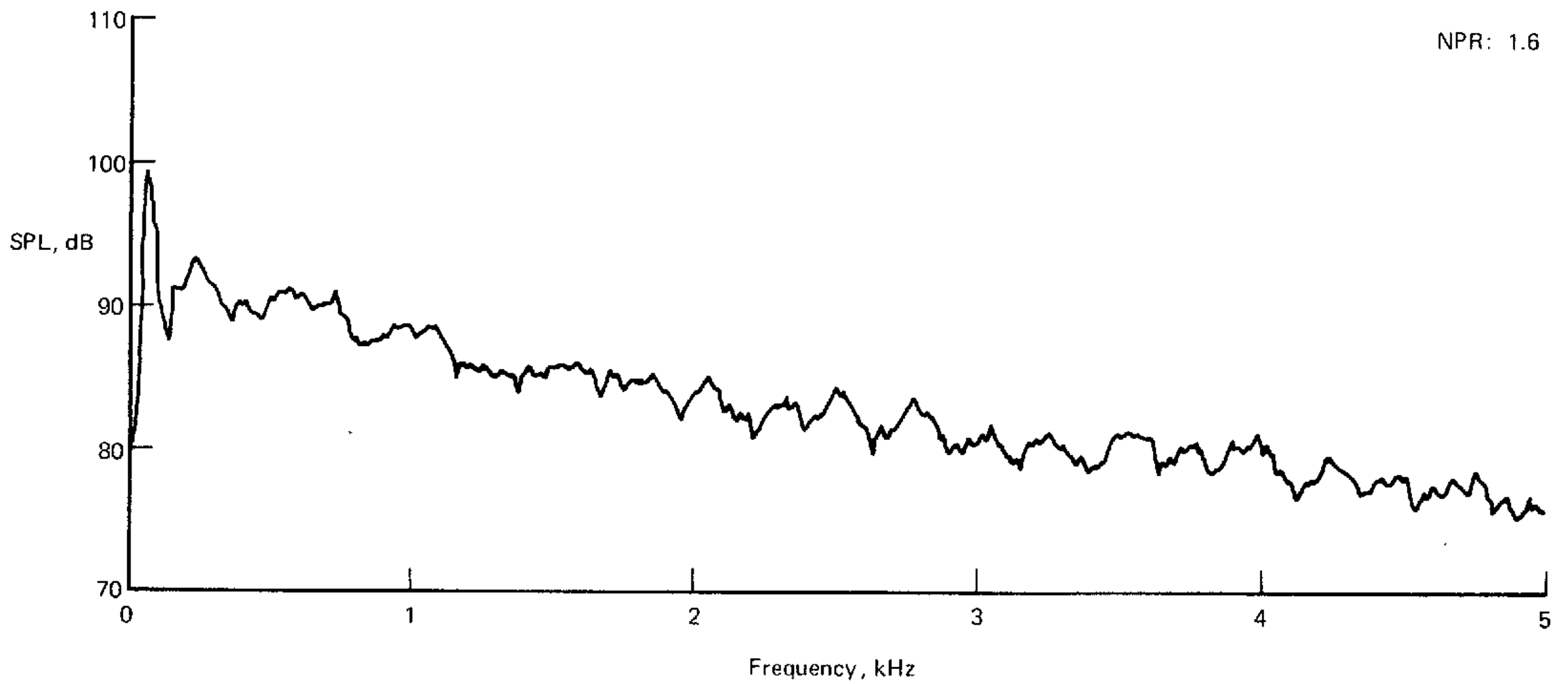


FIGURE 28.—NARROW-BAND ACOUSTICS OF RUN 12 AT 120° ANGLE

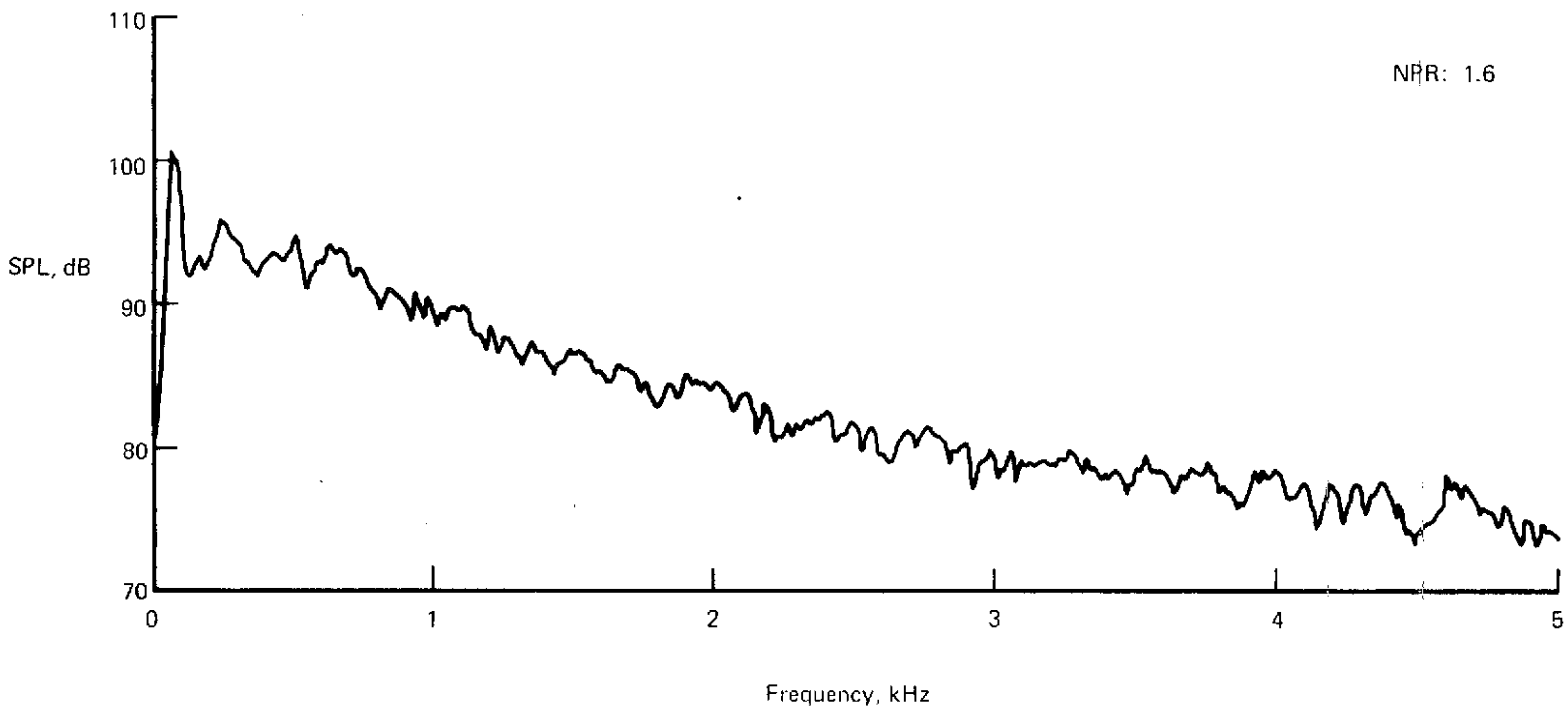


FIGURE 29.—NARROW-BAND ACOUSTICS OF RUN 12 AT 130° ANGLE

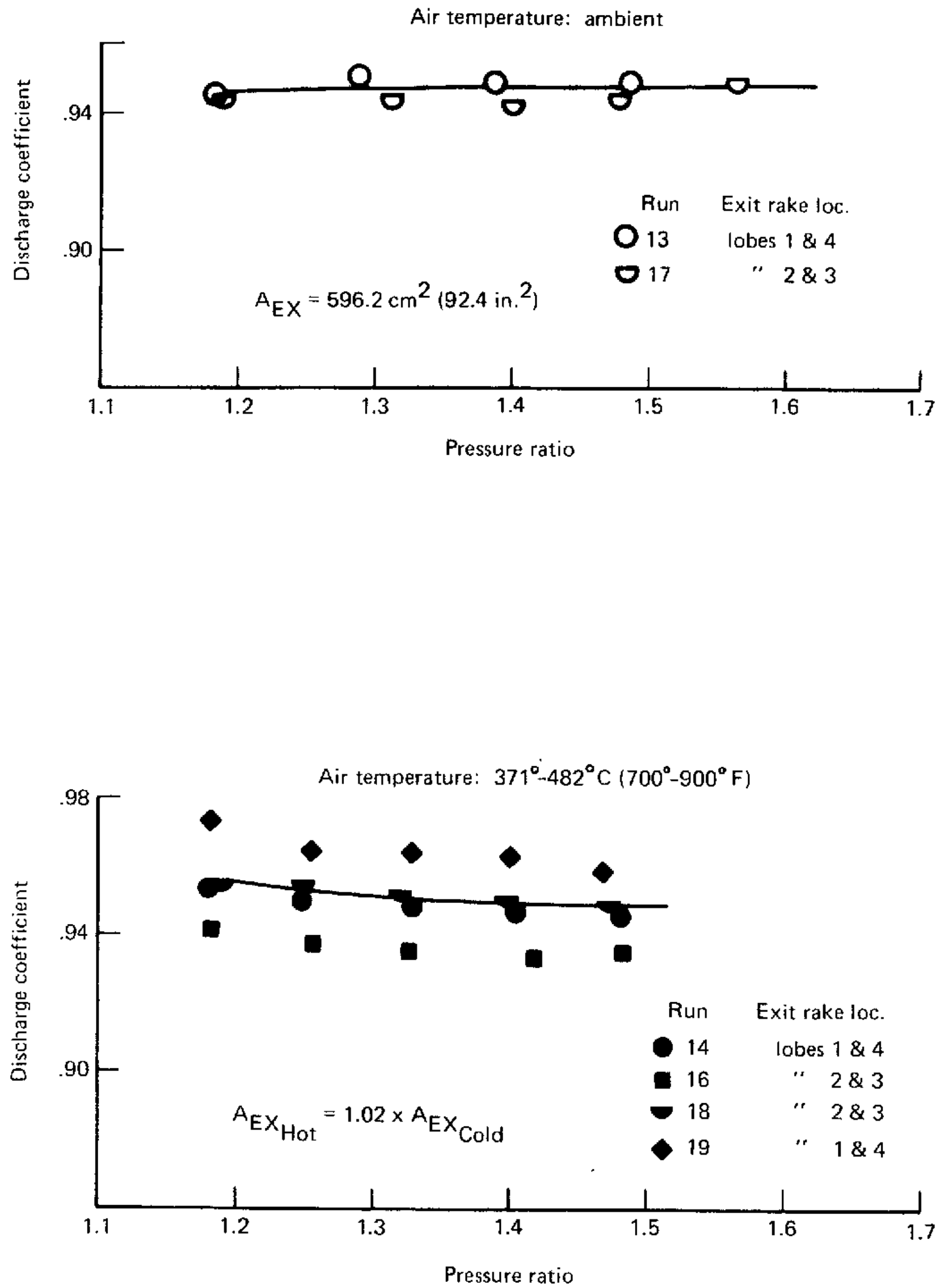


FIGURE 30.—LOBE NOZZLE PERFORMANCE, DISCHARGE COEFFICIENT VERSUS PRESSURE RATIO

APPENDIX A

ORIGINAL TEST PLAN

Acoustic and performance tests will be conducted on one of the lobe suppressor nozzles that was tested on the Buffalo aircraft. The mechanical laboratories' hot nozzle test facility (HNTF) will be used; it is equipped with heated air and thrust measurement capability and is located in an acoustic arena. A transition diffuser will be built to adapt the facility interface to the split-flow plenum "pants" and nozzle assembly. Facility burner and airflow limitations allow tests on only one lobe nozzle with several lobes blocked.

The objectives of the test are to:

1) Identify and eliminate a 2000-Hz tone that was measured during a previous test.

2) Measure the acoustic directivity effect of the rectangular-array lobe nozzle.

3) Measure the thrust performance of the suppressor nozzle.

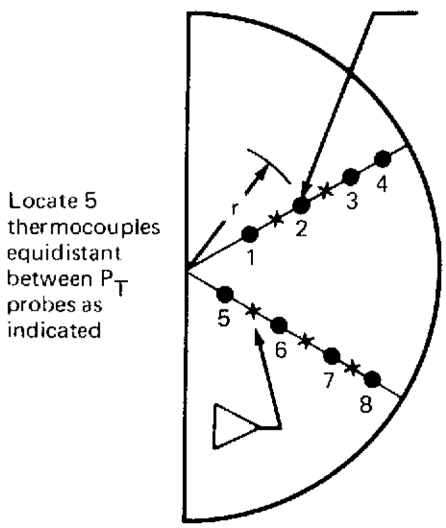
See figure A-1 for a plan view of the test setup, acoustic arena, and the proposed tone source identification tests. The tone source identification tests are exploratory in nature and will examine several potential causes of the tone, varying from edge effects (Aeolian tones) in both secondary and primary passages to lobe nozzle aerodynamic characteristics. The tube breakup nozzles are intended to completely alter the lobe nozzle flow characteristics in the event that the tones are not eliminated by any of the other methods. See figure A-2 for tone source hardware.

The acoustic directivity effect of the nozzle will be measured by recording acoustic data with the nozzle rotated 90° relative to the normal position. The maximum nozzle pressure ratio will be limited to about 1.3 (T_{air} = 750°F) with four lobes blocked (nine lobes flowing).

Facility thrust and mass flow measurement capability will be used to determine the nozzle velocity and discharge coefficients under heated air conditions. The performance coefficients will be determined at two charging stations: (1) entrance to the split-flow plenum; and (2) the nozzle exit station (see fig. A-1).

PERFORMANCE INSTRUMENTATION AND CALCULATIONS

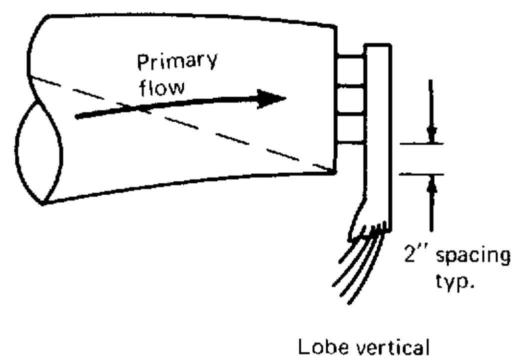
Station 1 (plenum entrance)



P_T probe radii, in.	
r_1	= 4
r_2	= 8
r_3	= 11
r_4	= 12.5
r_5	= 2
r_6	= 6
r_7	= 9
r_8	= 11.5

Station 2 (nozzle exit)

4 P_T probes



The fully expanded jet velocity and the ideal mass flow will be computed from the arithmetic average of the two P_T rakes at station 1 and the arithmetic average of the probes on the nozzle exit rake at station 2.

$$V_{I1} = \sqrt{\frac{2\gamma g R T_1}{\gamma - 1}\left[1 - \left(\frac{P_A}{\overline{P}_{T1}}\right)^{\frac{\gamma-1}{\gamma}}\right]}$$

$$W_{I1} = A_{geo}\frac{\overline{P}_{T1}}{\sqrt{T_1}}\sqrt{\frac{\gamma g}{R}}\sqrt{\frac{2}{\gamma - 1}\left[\left(\frac{\overline{P}_{T1}}{P_A}\right)^{\frac{\gamma-1}{\gamma}} - 1\right]}\sqrt{\left(\frac{\overline{P}_{T1}}{P_A}\right)^{-\frac{\gamma+1}{\gamma}}}$$

Repeat the above computations based on the average pressure ratio measured at the nozzle exit station and obtain V_{I2} and W_{I2}. Compute and print out the velocity and discharge coefficients for the two charging stations:

$$C_V = \frac{F_m}{m_m \cdot V_I}, \quad C_D = \frac{m_m}{m_I}$$

The total temperature to be used will be the average of the five measured at station 1. The geometric nozzle exit area will be the cold area plus 2 percent:

$$A_{geo} = \text{No. of Lobes Flowing} \times 13.2 \text{ in.}^2 \times 1.02$$

Compute γ as a function of the total temperature at station 1.

Print out the individual total pressure and temperature measurements for each probe in psia and degrees fahrenheit.

ACOUSTICS

The acoustic microphone array will consist of eight 1/2-in. microphones located on a 50-ft radius centered on the nozzle exit. All microphones on the 50-ft radius will be ground mounted with the microphone face 1/2 in. above the ground surface.

The acoustic data will be recorded on 1-in. magnetic tape with a record speed of 30 in./sec.

Data presentation will be in one-third octave, and OASPL at the microphone location. Extrapolation to sideline distances, if required, will be decided on later in the program.

On-line one-third octave data will be used for the 110 microphone location. This will help in making decisions which will support the 2 kHz tone evaluation.

Atmospheric conditions will fall within the following limits:

Wind:	no greater than 10 kt maximum no gusts greater than ± 1.5 kt
Humidity:	30 to 90 percent (no mist or rain)
Temperature:	32° to 90°F

TEST CONFIGURATIONS AND TEST CONDITIONS

Nozzle	Tone source configuration	Nozzle rotation	P_T exit rake	Station^{-1} pressure ratios and temperature settings
9 Lobe	None	90°	On	1.1, 650° F; 1.2, 700° F; 1.3, 750° F[a]
9 Lobe	None	0°	On	1.1, 650° F; 1.2, 700° F; 1.3, 750° F[a]
7 Lobe	None[b]	0°	On	1.3, 750° F; 1.4, 800° F; 1.5, 850° F; 1.6, 900° F[c]
	None[b]	0°	Off	1.3, 750° F; 1.4, 800° F; 1.5, 850° F; 1.6, 900° F[c]
	1	0°	Off	c
	2	0°	Off	c
	3	0°	Off	c
	4	0°	Off	c
	5 d	0°	Off	c
7 Lobe	6 d	0°	Off	c

[a]Max. flow condition will be controlled by burner operation limits.

[b]Baseline.

[c]Flow conditions where 2 kHz tone occurs will be noted and set during tone source tests.

[d]These configuration changes will require nozzle removal and installation in the fabrication shop.

Note: A back pressure device (choke plate) may be required at the facility - transition interface to keep the burner mach number (0.2) within operation limits. The acoustic signature and level produced by the choke plate versus flow rate will be identified and accounted for prior to recording any test nozzle data.

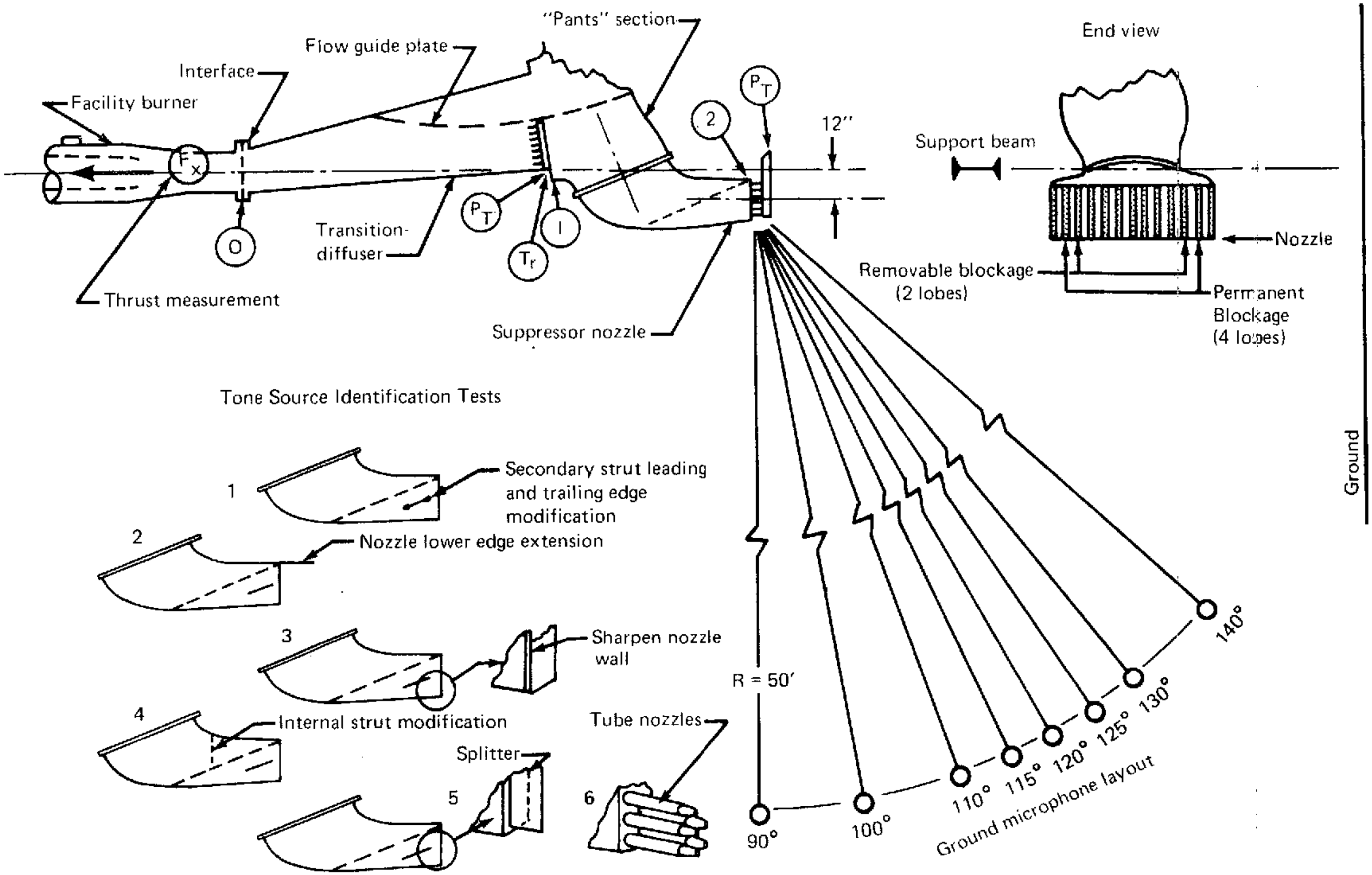


FIGURE A-1.—TONE SOURCE IDENTIFICATION FACILITY AND TESTS

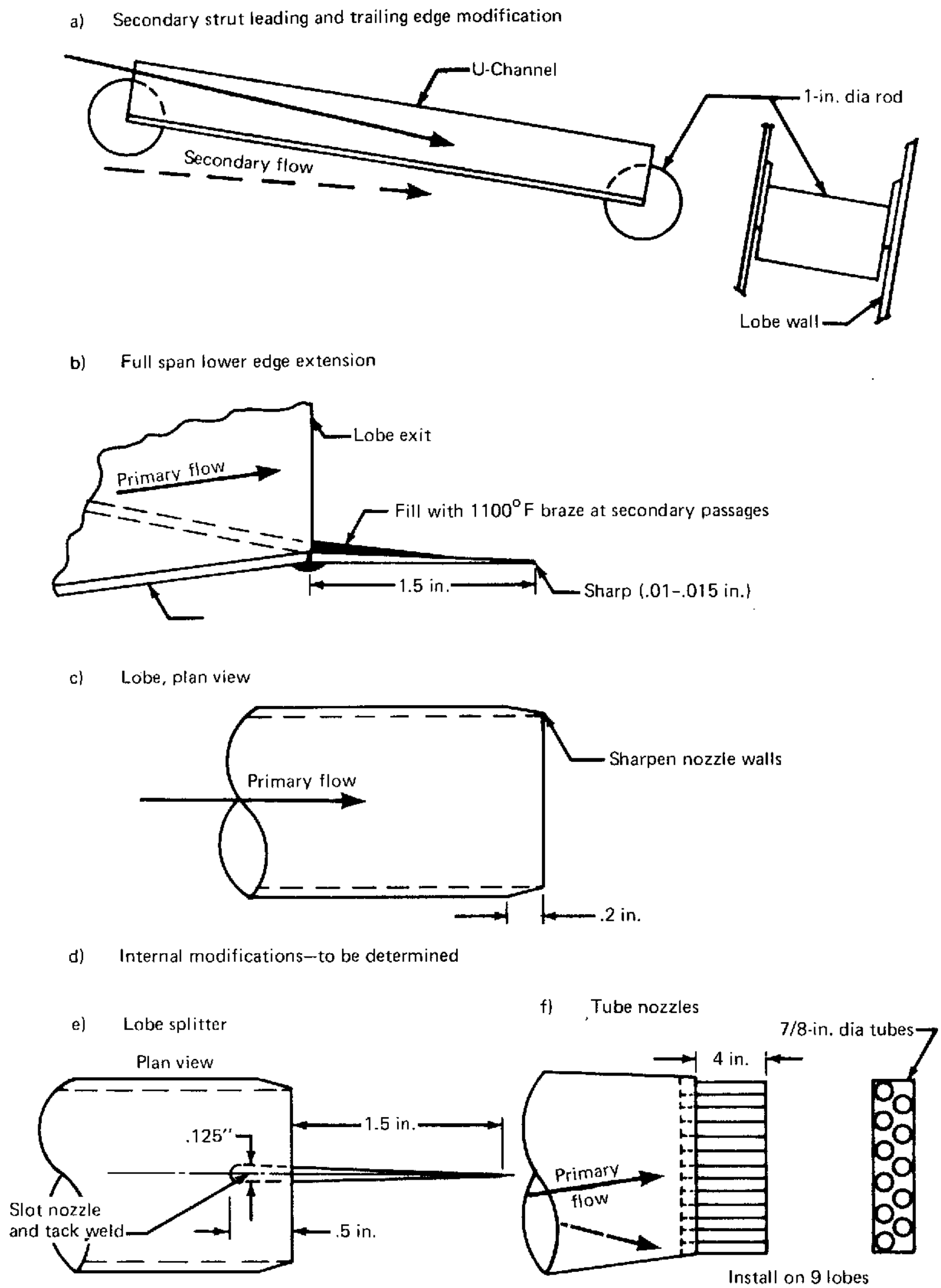


FIGURE A-2.—TONE SOURCE IDENTIFICATION HARDWARE

APPENDIX B

TEST LOG

Run	Condition	O.A.T. °F	Humidity	Pressure ratio	Exhaust temp. °F	Configuration	Notes
1[a]	1		Rain	1.6	900	Baseline 9 lobes flowing.	1 microphone, in a plastic bag, at 115° F loc. 12-12-73
2	1	47	92	1.2	700	Baseline 9 lobes flowing.	1 microphone at 115° loc. (no bag) on line data only. 12-17-73
	2	47	92	1.3	750		
	3	47	92	1.4	800		
	4	47	92	1.5	850		
	5	47	92	1.6	900		
3	1	48	86	1.4	800	Fairings on fwd and aft. end of secondary struts.	1 microphone at 115° loc. on line data only. 12-17-73
	2	48	86	1.5	850		
	3	48	86	1.6	900		
4	1	47	86	1.4	800	All flow through secondary al. plate over top. of lobes and asbestor in secondary channels.	Full microphone array recorded. 12-18-73
	2	47	86	1.5	850		
	3	47	86	1.6	900		
5	1	52	82	1.4	800	Secondary blocked per run #4, tube fairings. In primary flow removed.	Full microphone array recorded, extra exit probe. In outer lobe number 5 press probe broke. Splitter in diffuser broken loose on one side. 12-19-73
	2	52	82	1.5	850		
	3	52	82	1.6	900		
6	1	51	62	1.3	750	5 primary lobes flowing. No secondary block.	Single microphone at 115° on line data only. 12-19-73
	2	51	62	1.4	800		
	3	51	62	1.5	850		
	4	51	62	1.6	900		
7	1	52	88	1.3	750	9 lobes with tube ends.	1 microphone at 115°F location, on line data only. No 5 press probe repaired-no exit rakes. 12-20-73
	2	52	88	1.4	800		
	3	52	88	1.5	850		
	4	52	88	1.6	900		

Run	Condition	O.A.T. °F	Humidity	Pressure ratio	Exhaust temp. °F	Configuration	Notes
8	1	52	88	1.3	750	9 lobes with tube ends.	Directionality test. Full microphone array 12-20-73
	2	52	11	1.4	800		
	3	52	11	1.5	850		
	4	52	11	1.6	900		
	5	52	11	1.7	950		
9	1	34	66	1.3	750	9 lobes with tube ends.	Directionality test. 1-2-74
	2	34	66	1.4	800		
	3	34	66	1.5	850		
	4	34	66	1.6	900		
	5	34	66	1.7	950		
10	1	32		1.3	750	5 lobes flowing alternate lobes blocked	Tone source test, full mic. array. 1-3-74
	2	32		1.4	800		
	3	32		1.5	850		
	4	32		1.6	900		
11	1	21		1.3	750	4 lobes flowing alternate but opposite lobes from run 10.	Full microphone array. 1-7-74
	2	21		1.4	800		
	3	21		1.5	850		
	4	21		1.6	900		
12	1	21		1.3	750	5 center lobes flowing with splitters in the secondary flow, extending 5" aft of the nozzle exit.	Full microphone array.
	2	21		1.4	800		
	3	21		1.5	850		
	4	21		1.6	900		
13	1			1.2	Amb	7 lobes-fences in secondary exit rakes on lobes 1 & 4.	Performance run only.
	2			1.3			
	3			1.4			
	4			1.5			

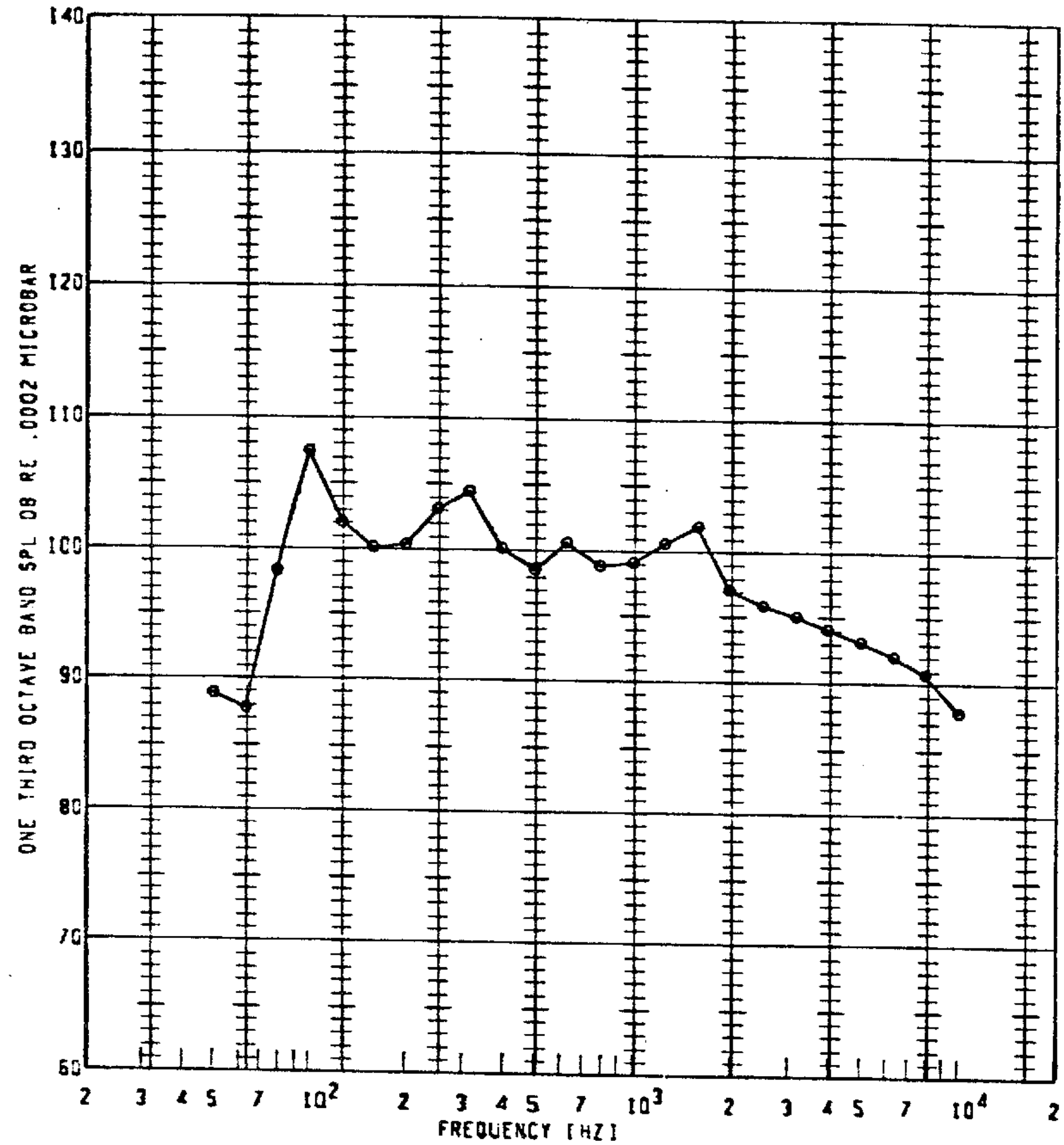
Run	Condition	O.A.T. °F	Humidity	Pressure ratio	Exhaust temp. °F	Configuration	Notes
14	1			1.2	700	Same as run 13.	Performance run only.
	2			1.3	750		
	3			1.4	800		
	4			1.5	850		
	5			1.6	900		
15	1			1.2	Amb	Same as run 13 except rakes on lobes (2) & (3)	Performance only cold flow.
	2			1.3			
	3			1.4			
	4			1.5			
16	1			1.2	700	Same as run 15	Performance only hot flow.
	2			1.3	750		
	3			1.4	800		
	4			1.5	850		
	5			1.6	900		
17	1			1.2	Amb	7 lobes flowing. Secondary fences removed.	P.T. rakes on lobes 2 & 3
	2			1.3			Performance, only, cold flow.
	3			1.4			
	4			1.5			
	5			1.6			
18	1			1.2	700	Same as run 17 rakes on 2 & 3	Hot flow. performance only.
	2			1.3	750		
	3			1.4	800		
	4			1.5	850		
	5			1.6	900		
19	1			1.2	700	Baseline rakes on 1, 4	Performance only 1-16-74
	2			1.3	750		
	3			1.4	800		
	4			1.5	850		
	5			1.6	900		

Run	Condition	O.A.T. °F	Humidity	Pressure ratio	Exhaust temp. °F	Configuration	Notes
20	1	49	56	1.2	700	Baseline 7 lobes flowing	Acoustic array (full) 1-17-74
	2	49	56	1.3	750		
	3	49	56	1.4	800		
	4	49	56	1.5	850		
	5	49	56	1.6	900		EGT thermocouple broke on cond 5.

APPENDIX C

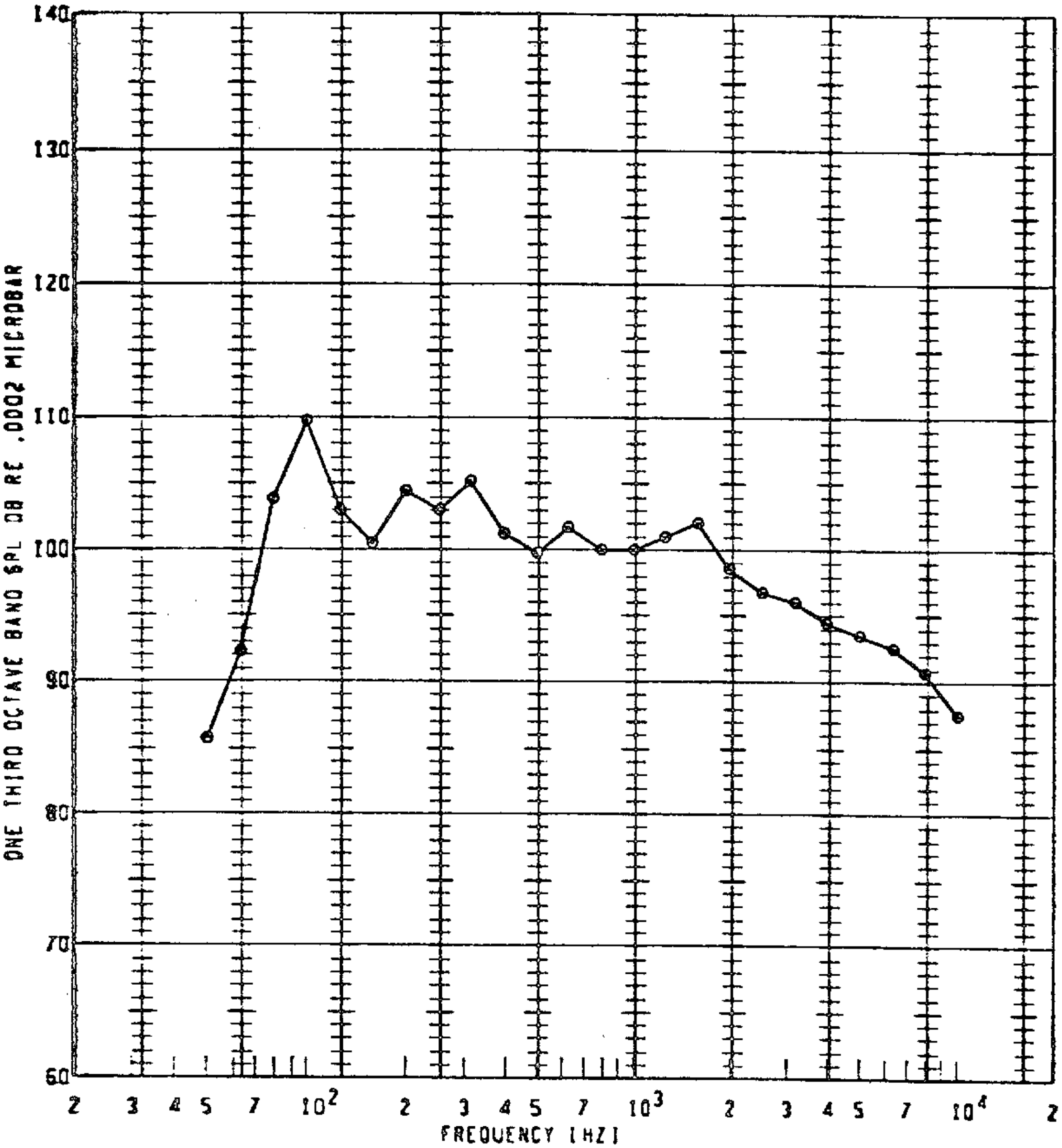
PLOTS OF RECORDED DATA, ONE-THIRD OCTAVE BAND SOUND PRESSURE LEVEL

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



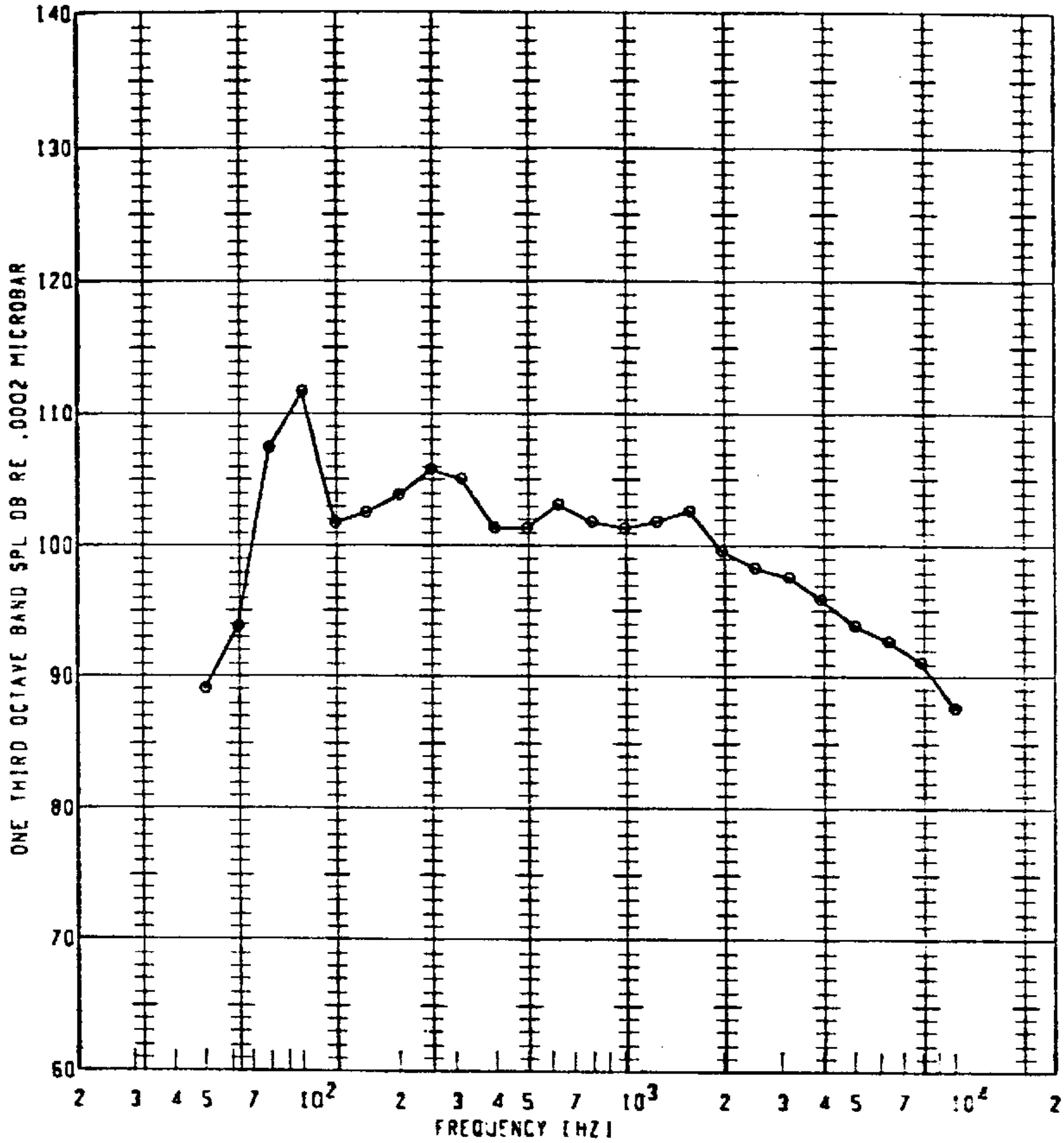
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	45	800	1.400	90	50'P	113.8	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



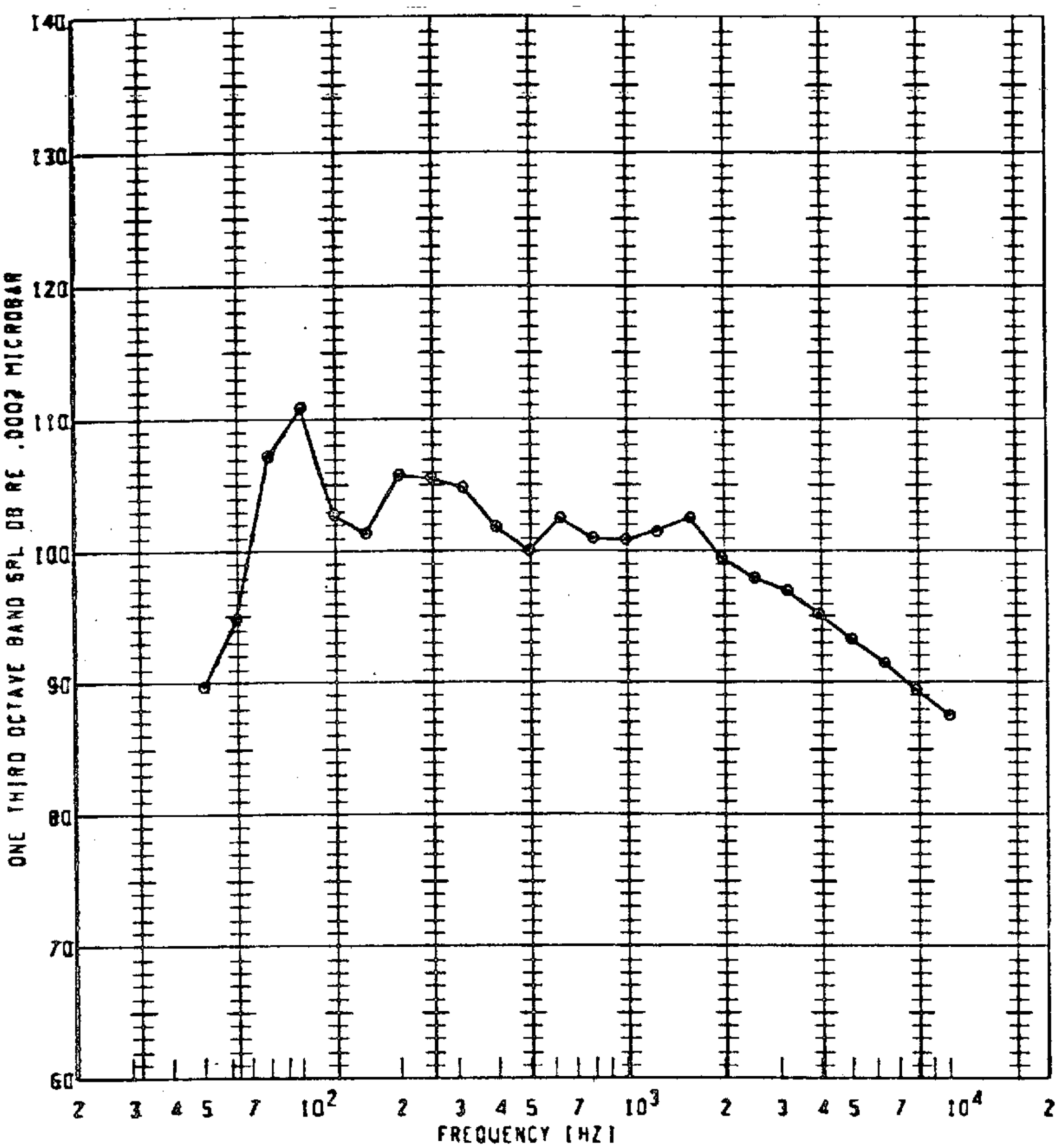
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊕	4G	800	1.400	100	50FP	115.3	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



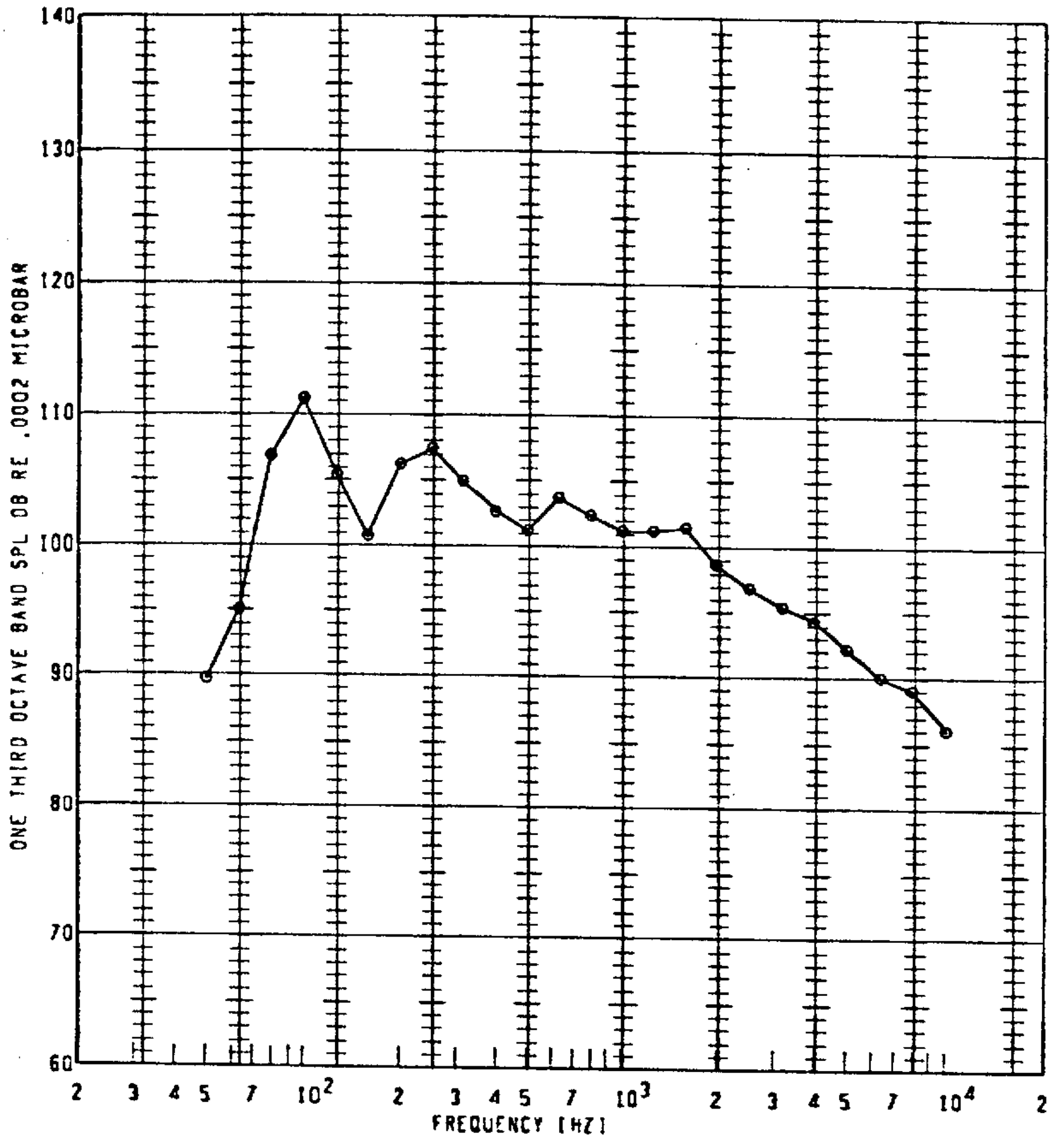
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	4G	800	1.400	110	50FP	116.8	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



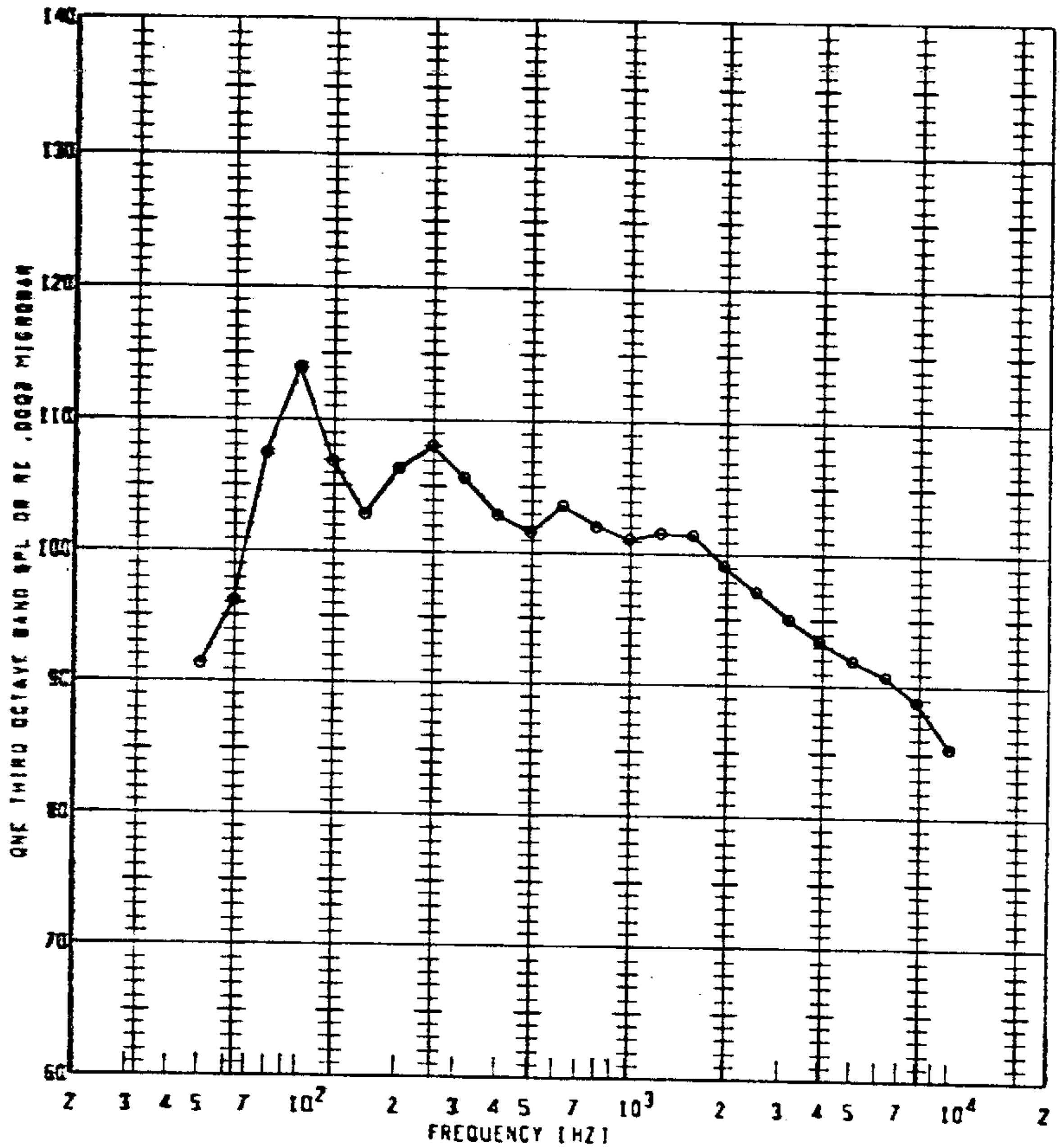
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	4G	800	1.400	115	50FP	116.4	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



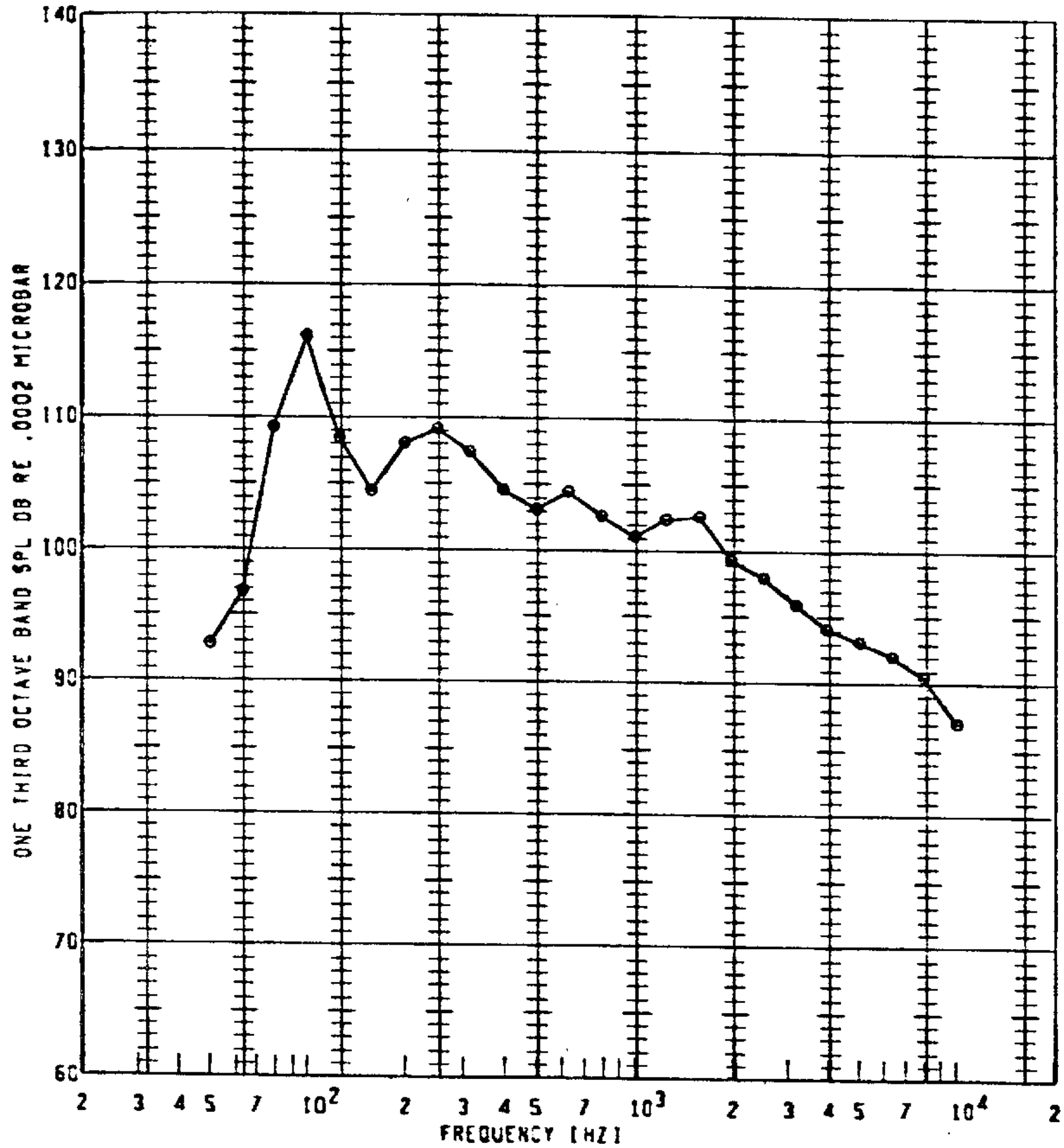
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	46	800	1.400	120	50FP	116.9	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



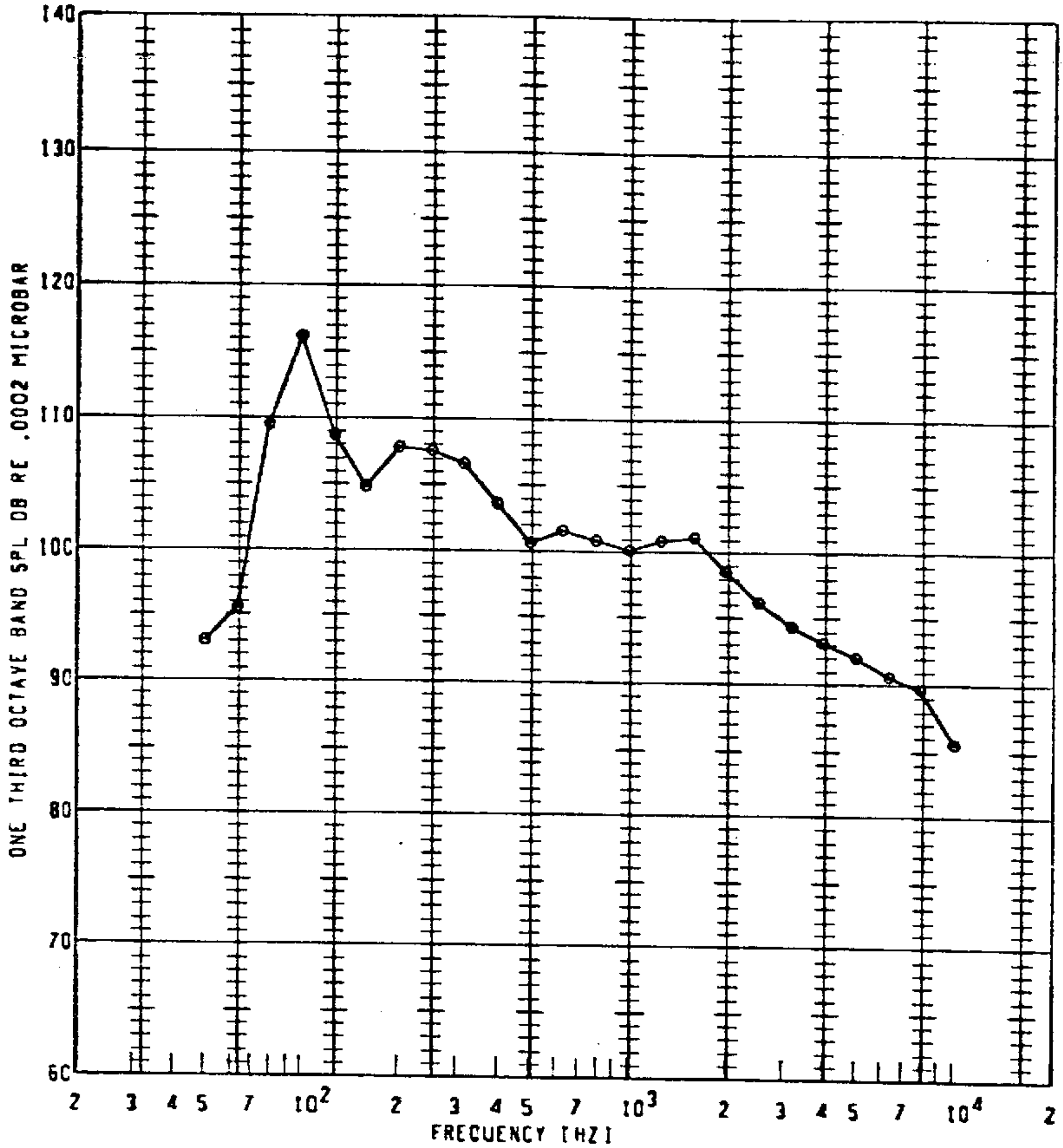
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	46	800	1.400	125	50FP	118.2	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



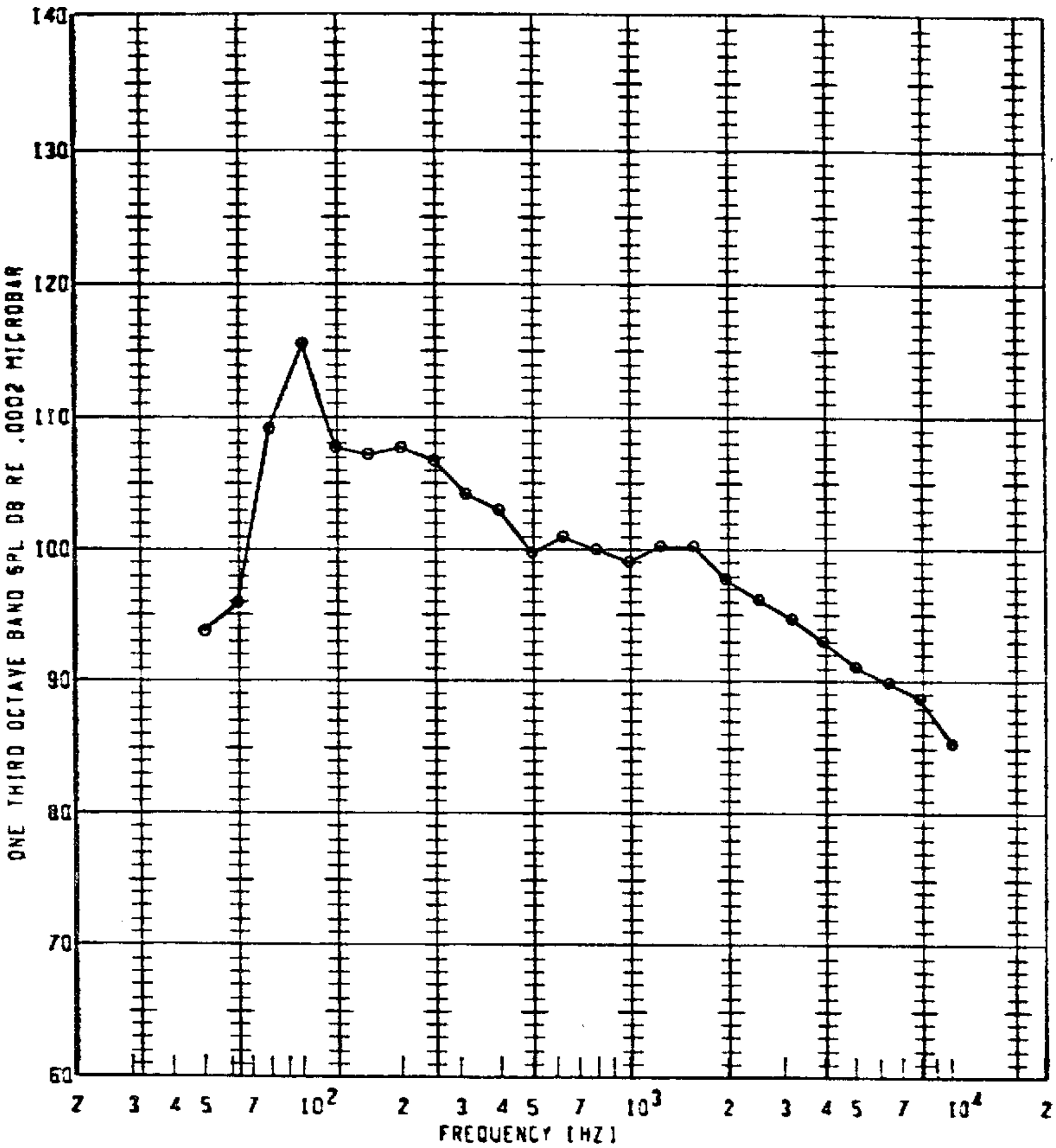
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	46	800	1.400	130	50FP	119.9	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



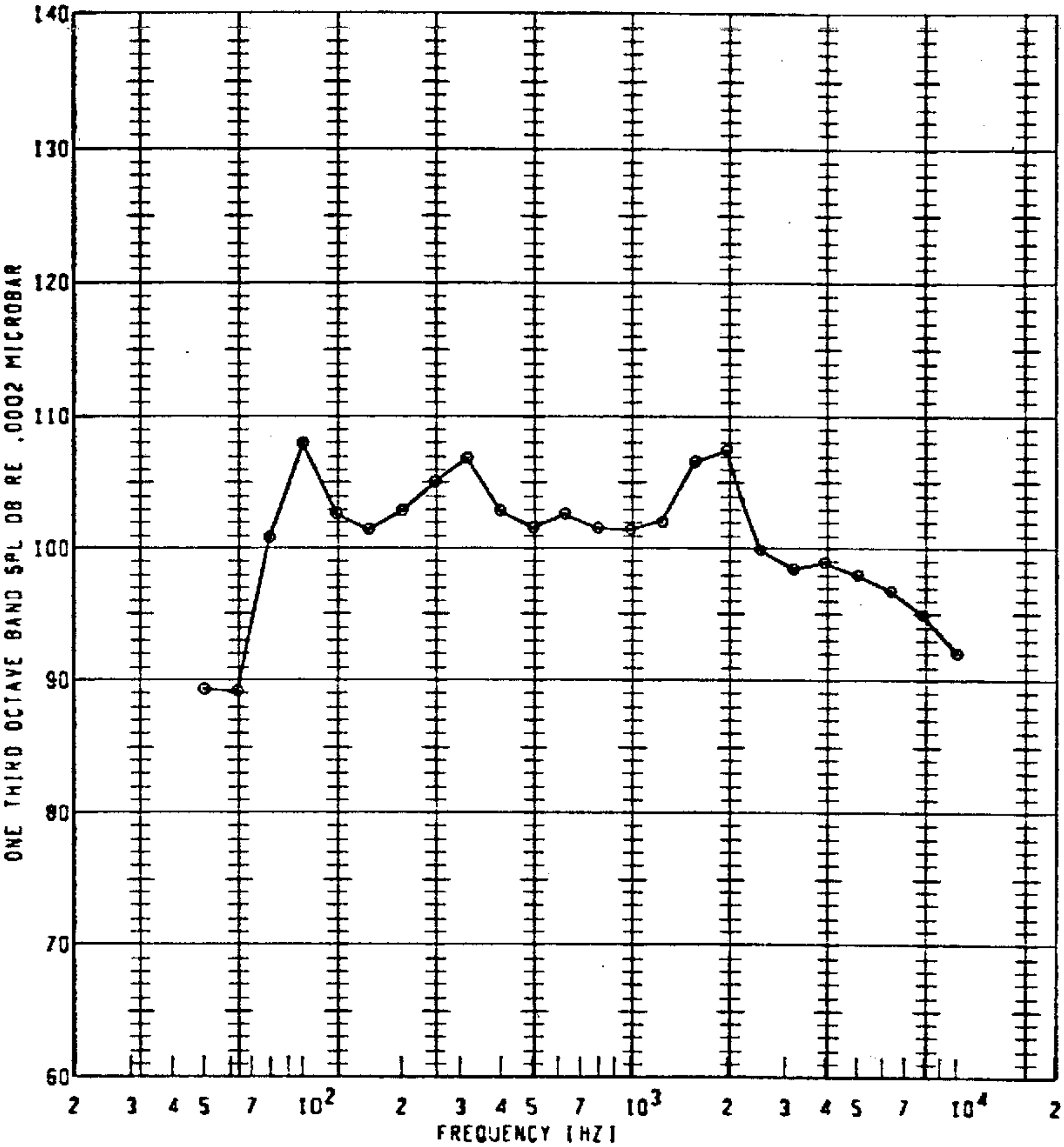
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊖	46	800	1.400	135	50FP	119.5	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



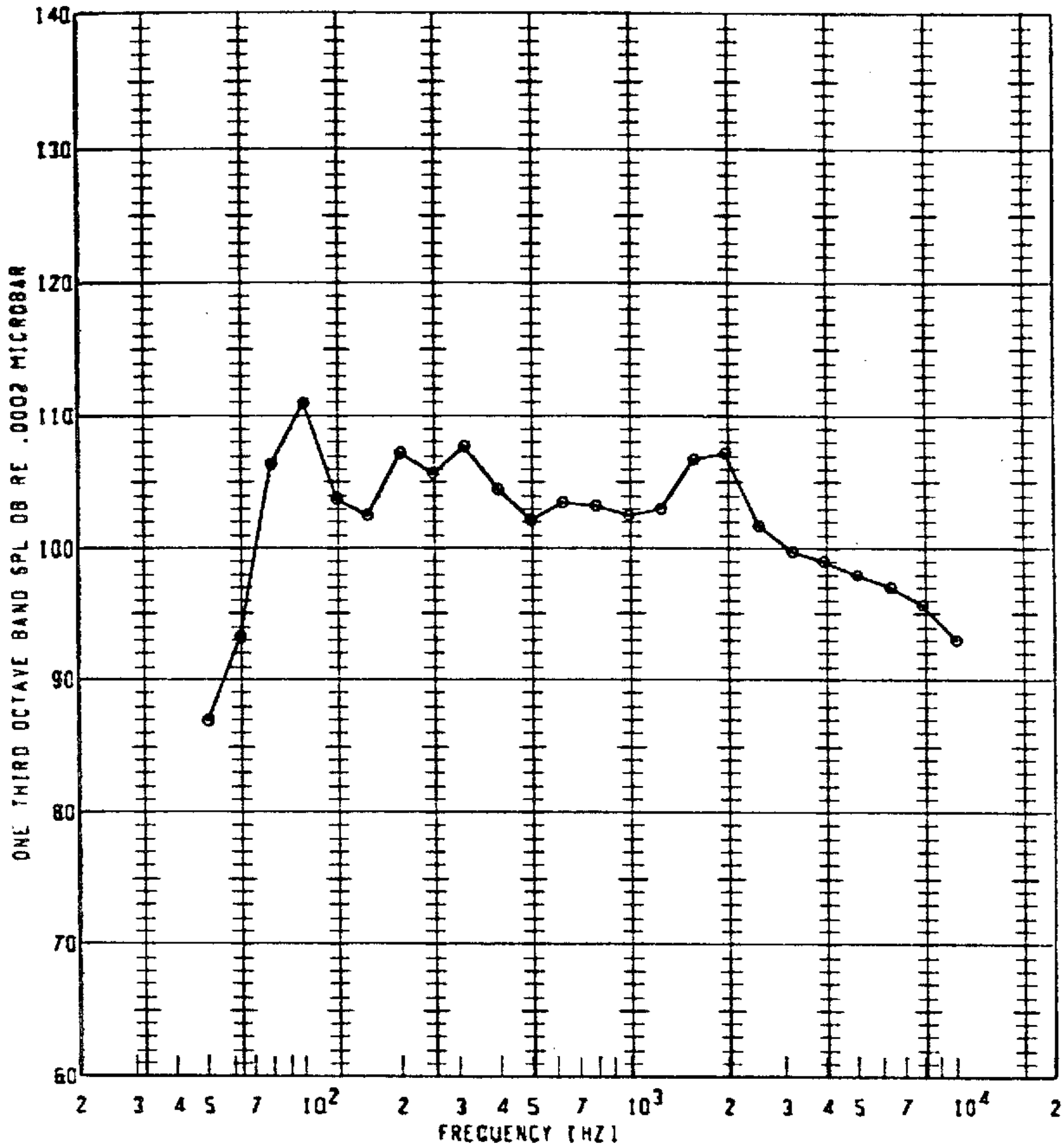
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	45	800	1.400	140	SOFP	119.0	10	

~~BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY~~



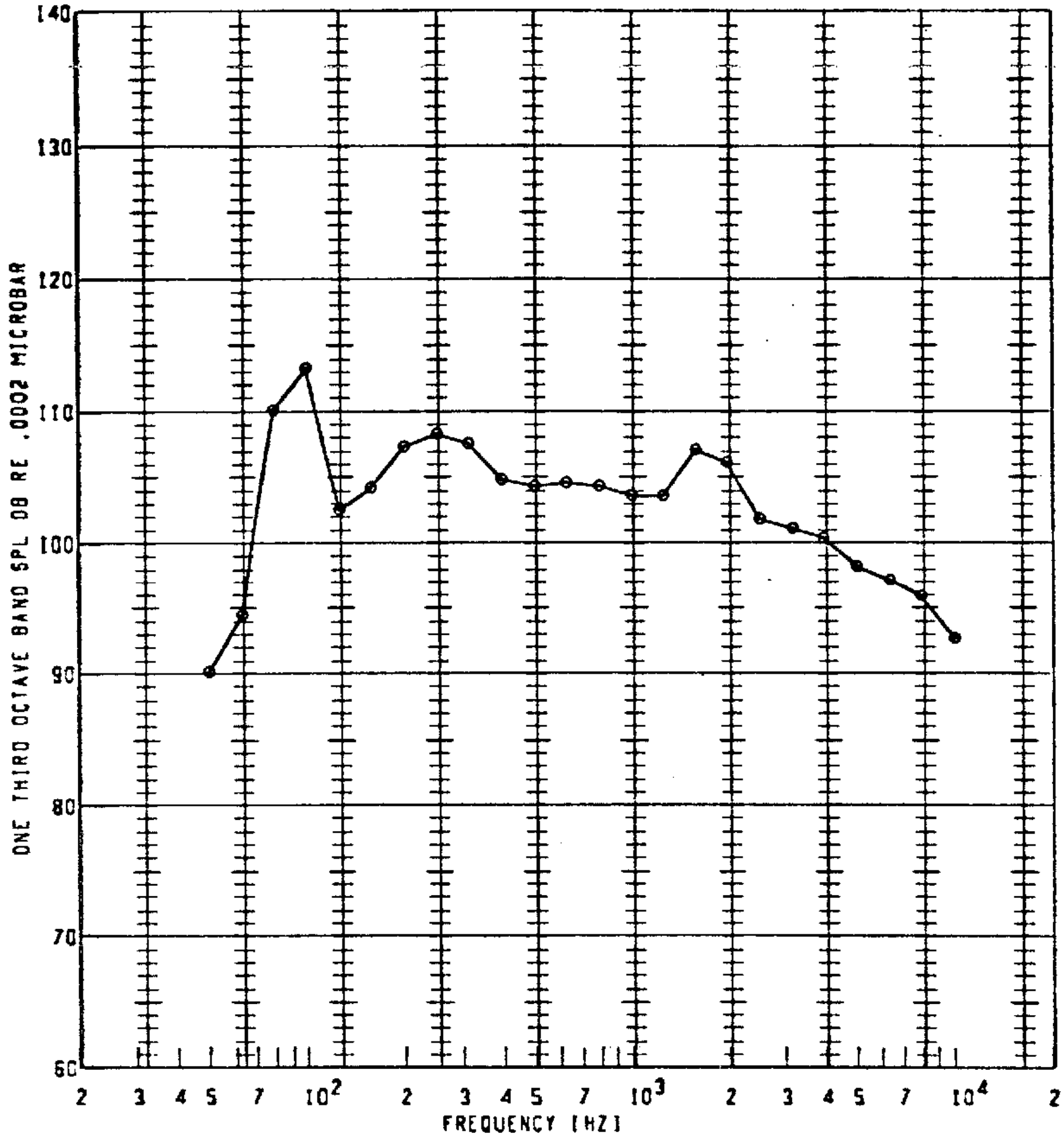
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	4G	850	1.500	90	50FP	116.5	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



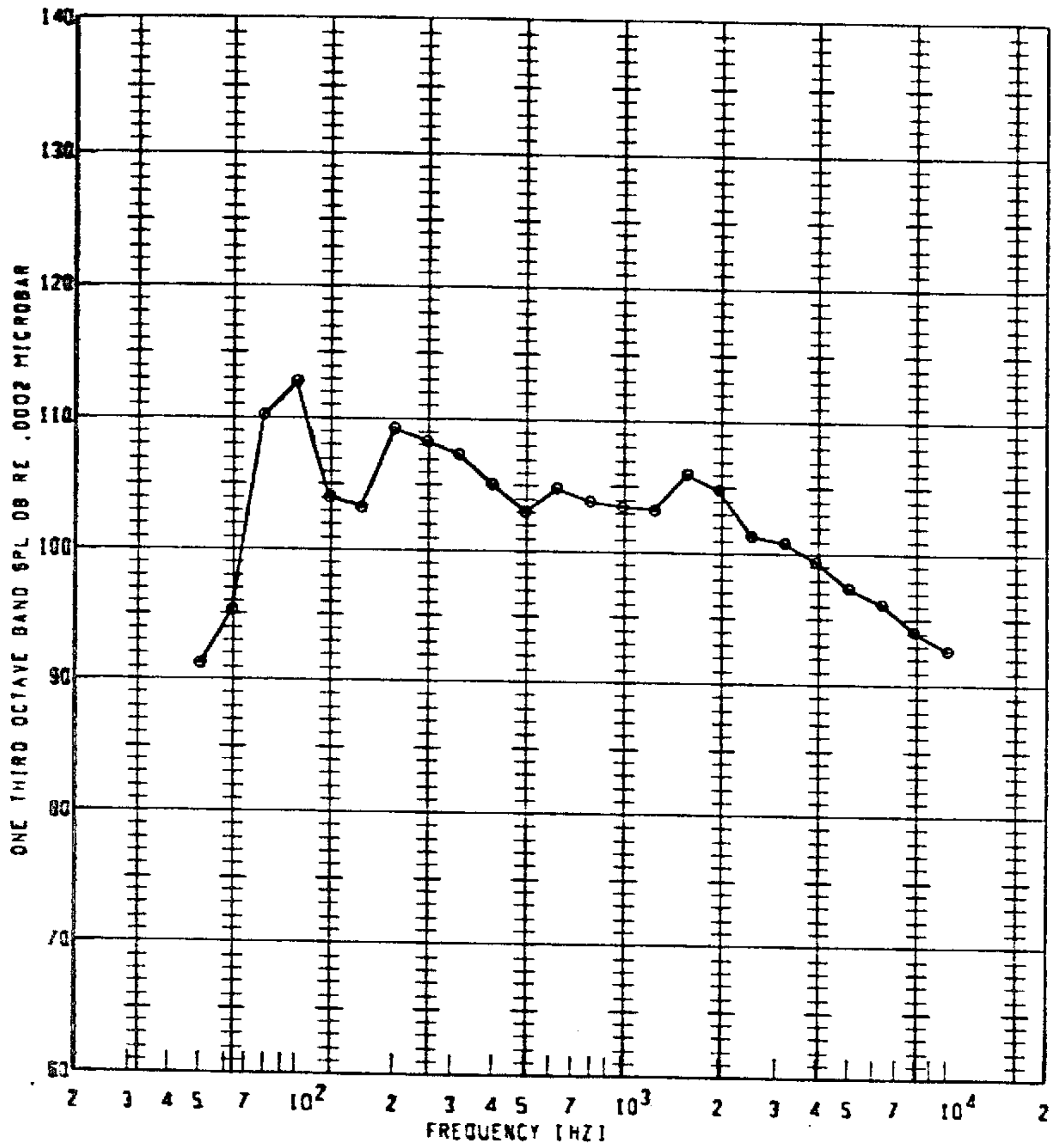
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	4G	850	1.500	100	50FP	118.0	0	

BUFFALO SUPPRESSOR NOZZLE TONE 10 TEST - HOT NOZZLE TEST FACILITY



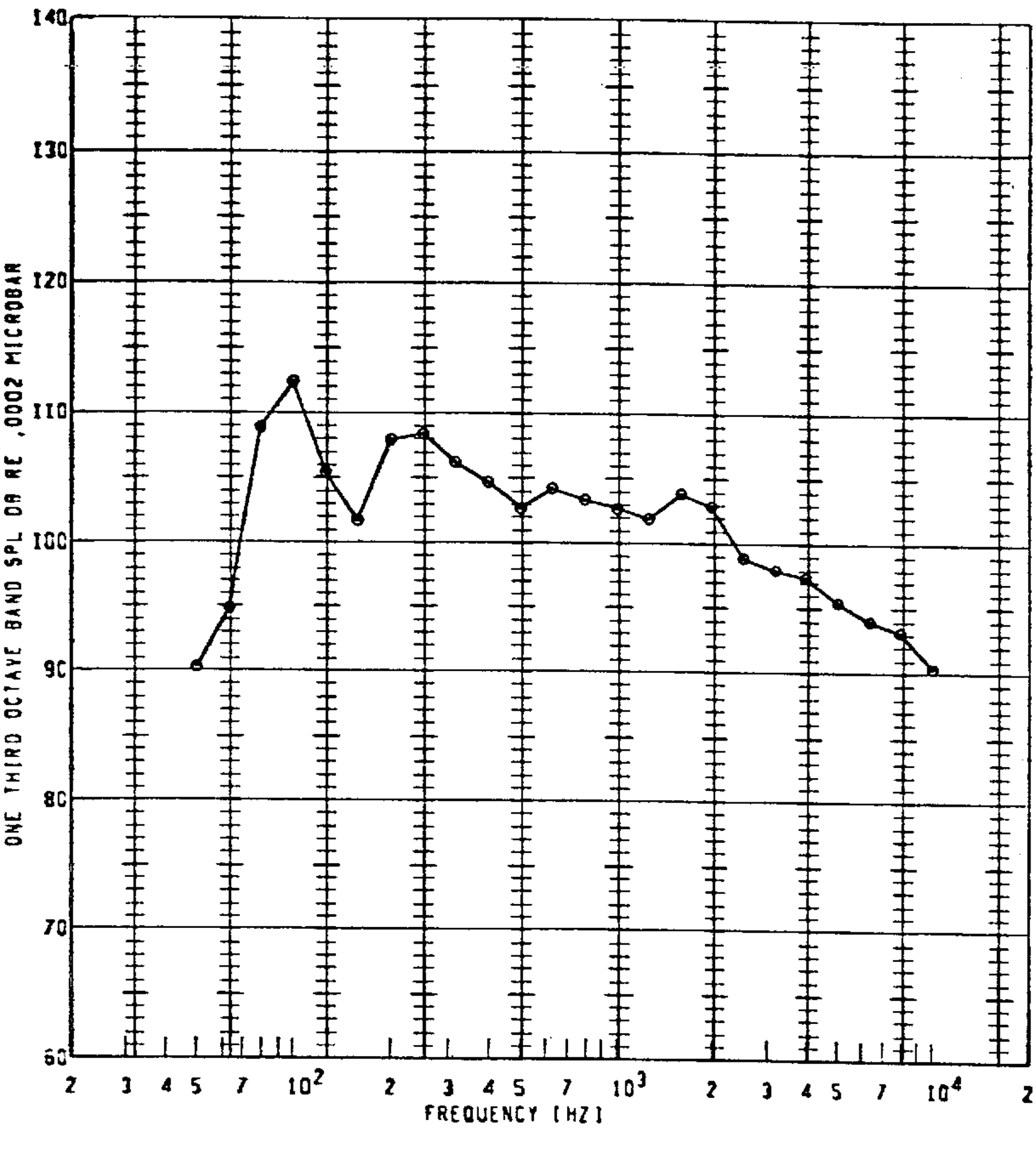
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊖	45	850	1.500	110	50FP	119.3	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



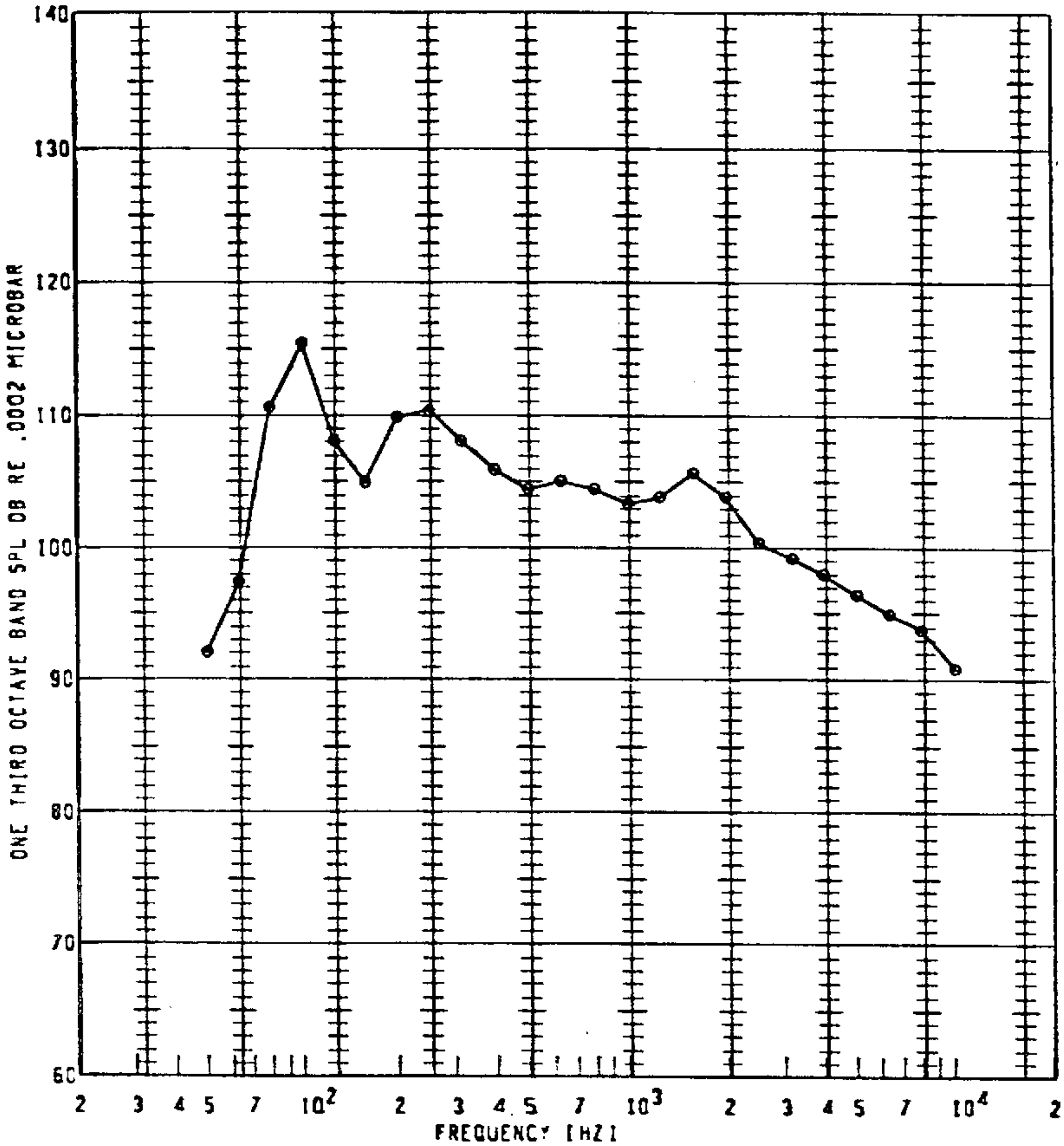
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊕	46	850	1.500	115	SCFP	119.1	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



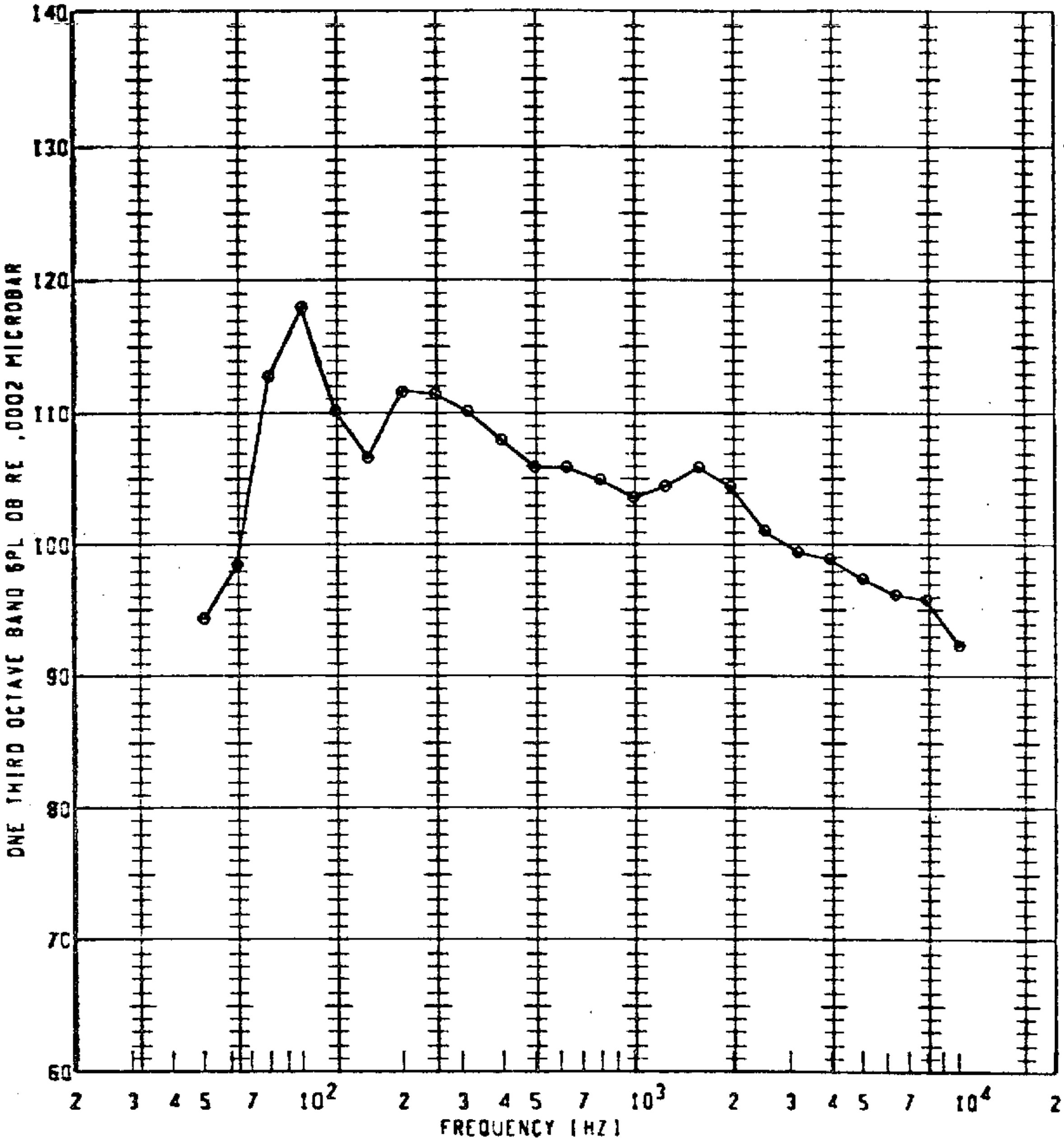
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	46	850	1.500	120	50FP	118.3	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



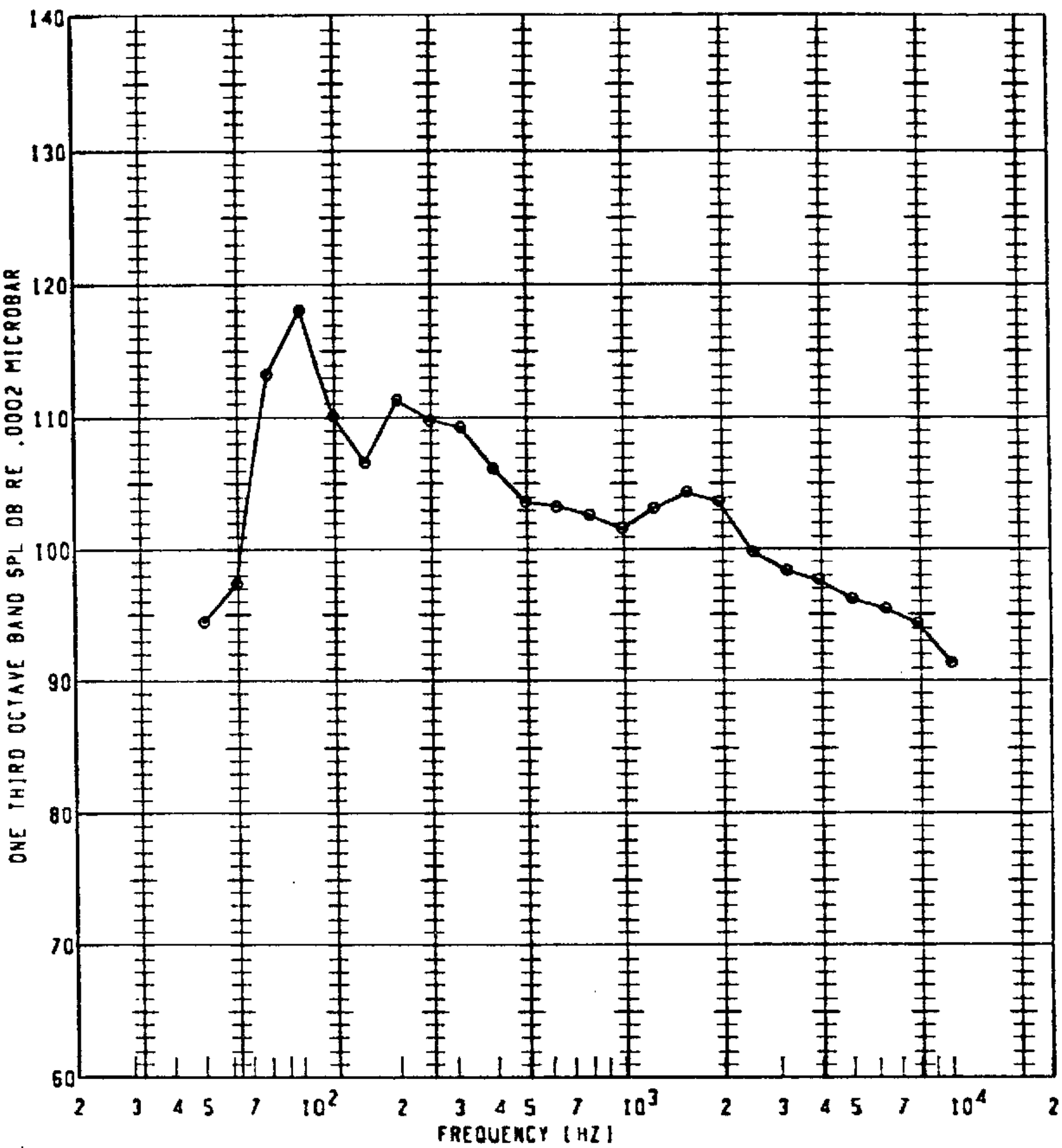
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	46	850	1.500	125	50FP	120.4	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



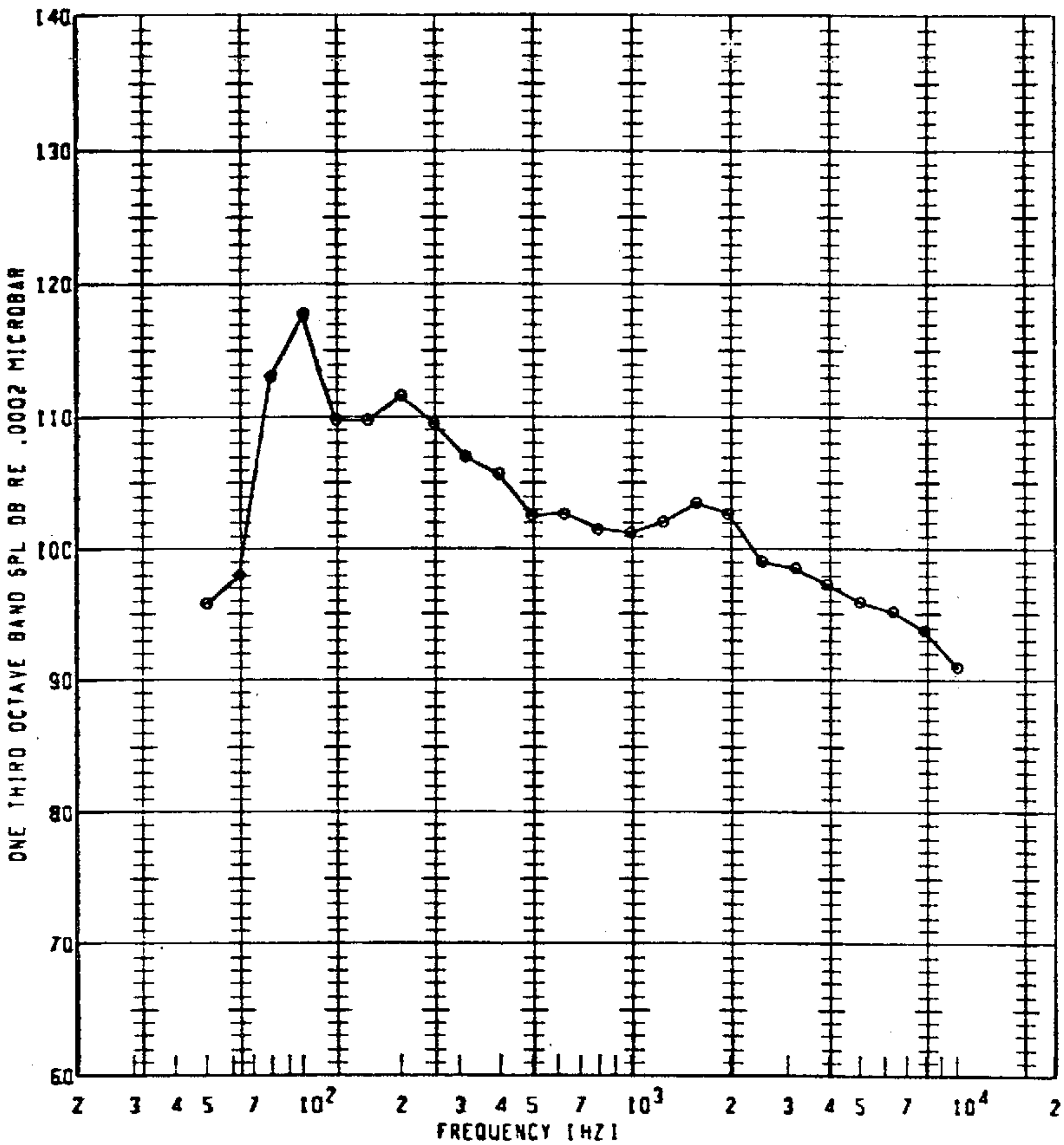
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	46	850	1.500	130	50FP	122.3	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



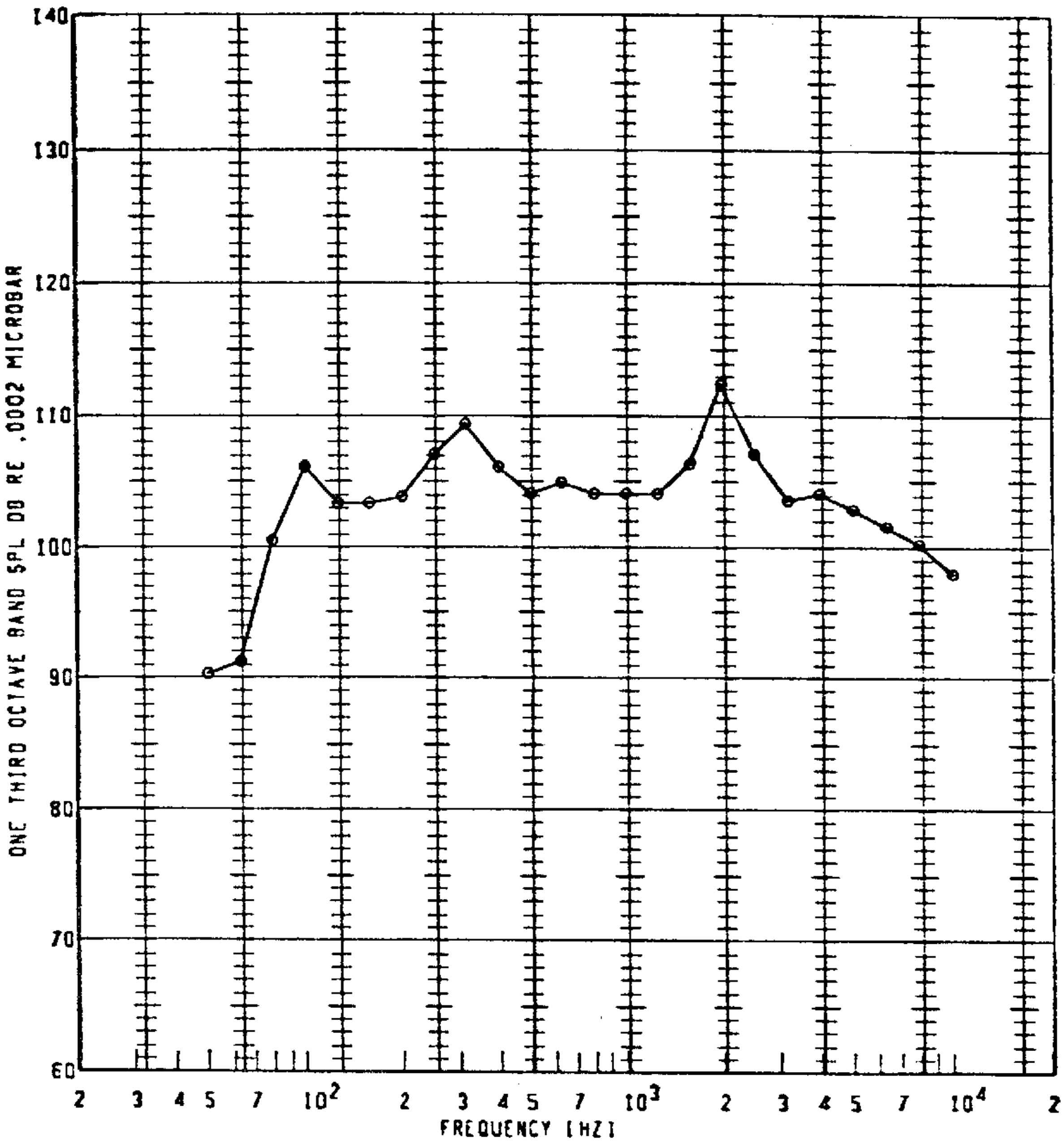
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	4G	850	1.500	135	50FP	121.9	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



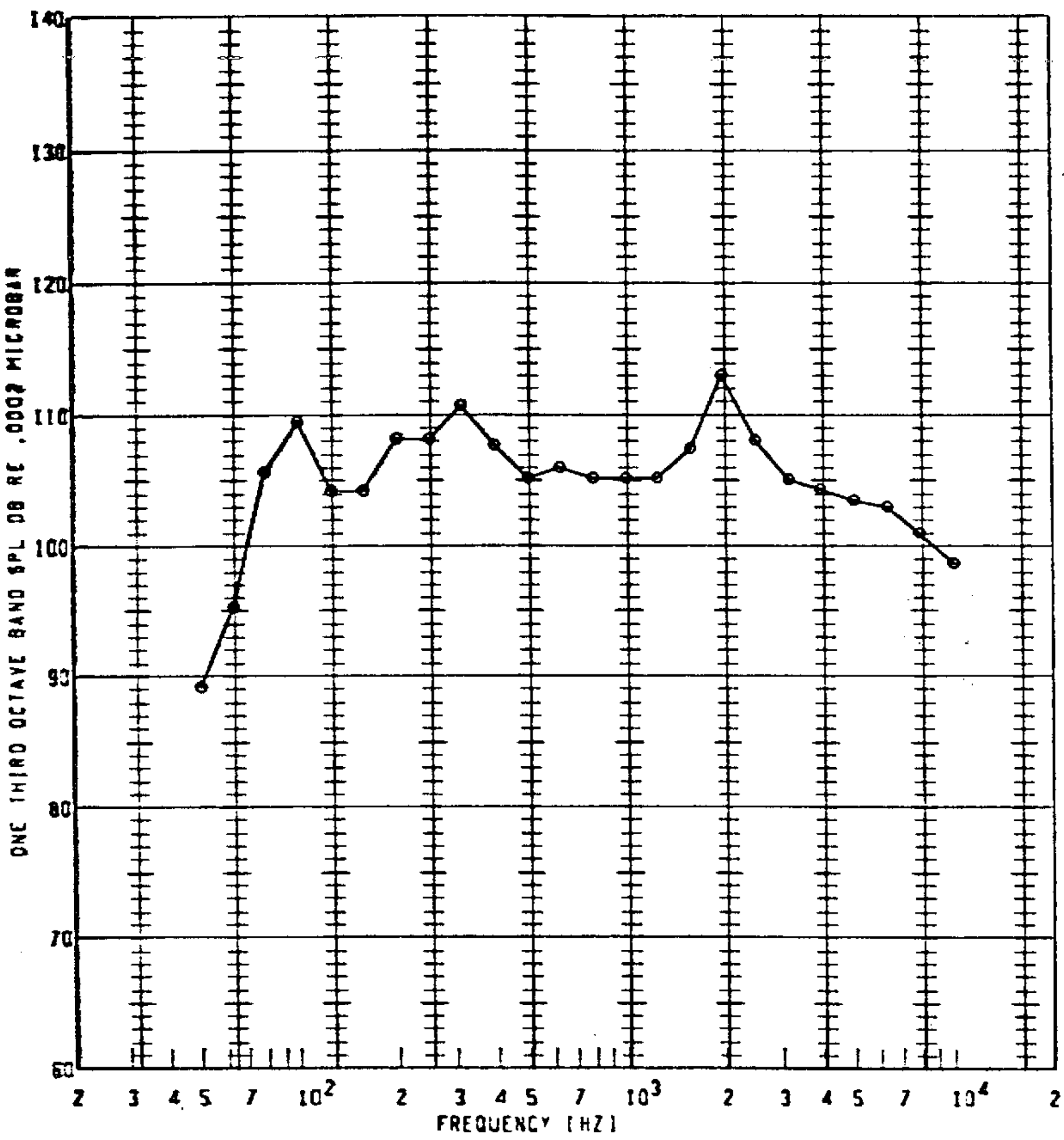
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	4G	850	1.500	140	50FP	121.6	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



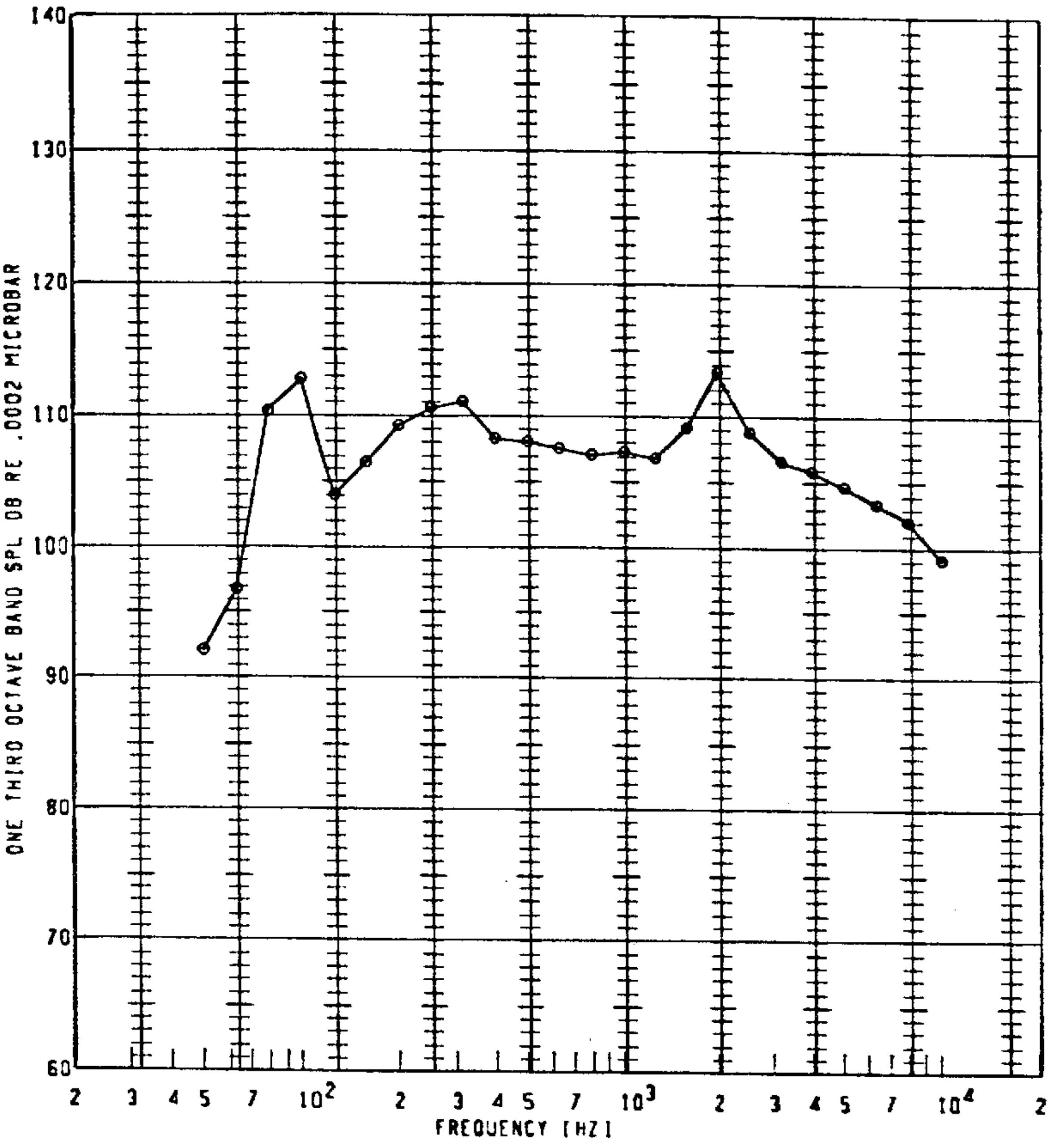
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	46	900	1.600	90	50FP	119.0	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



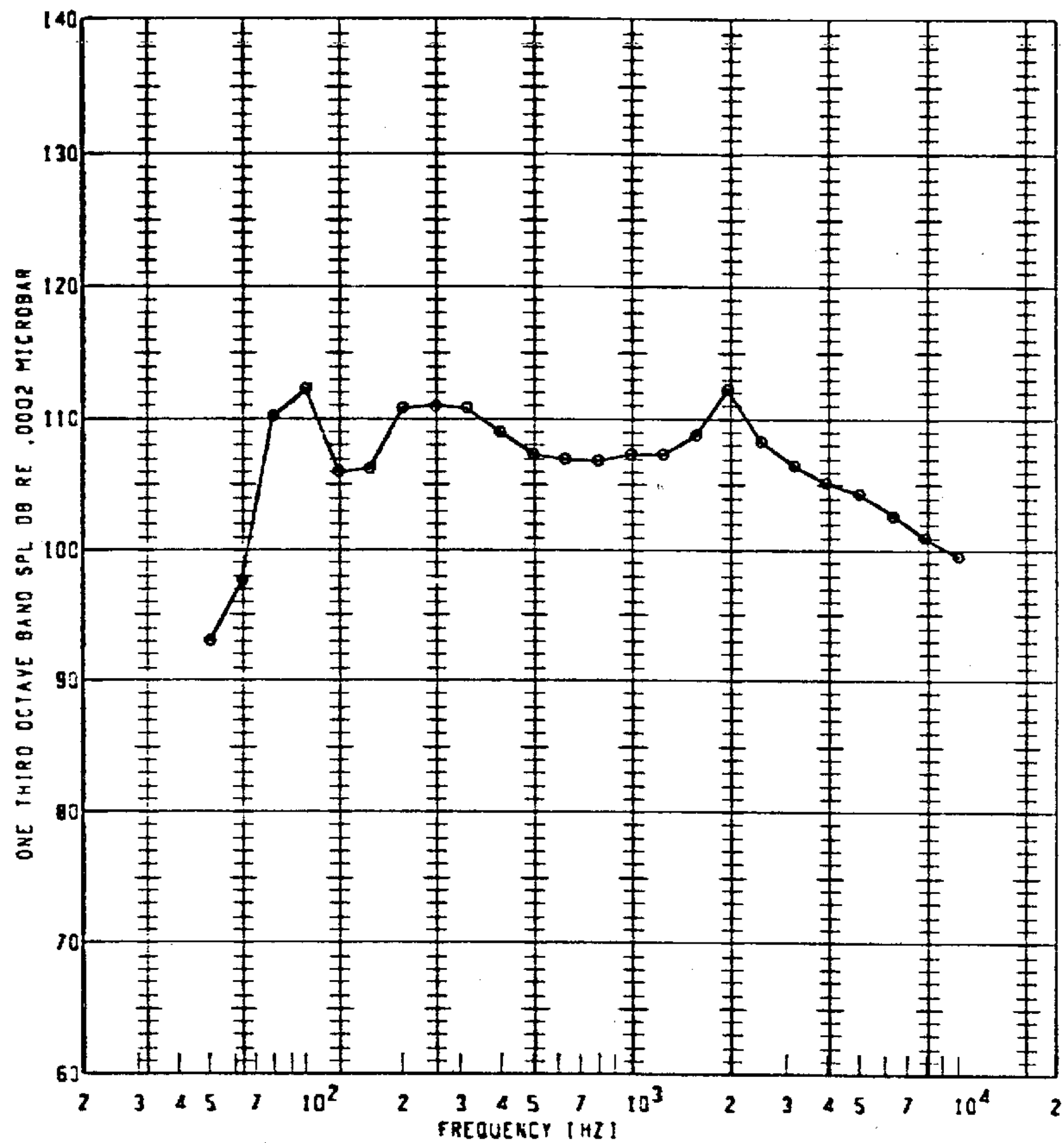
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	46	900	1.600	100	50FP	120.4	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



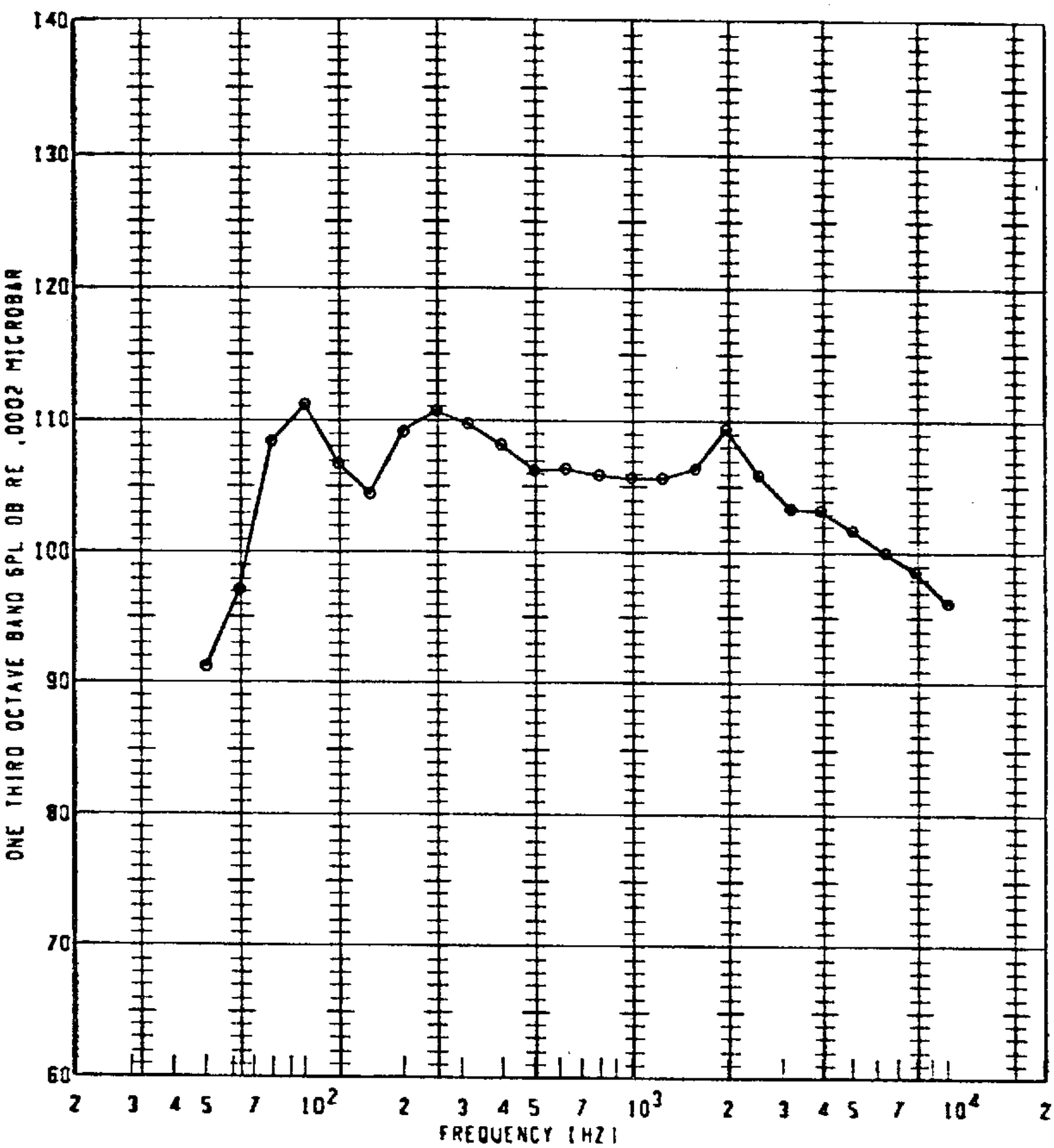
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	4G	900	1.600	110	50FP	122.0	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



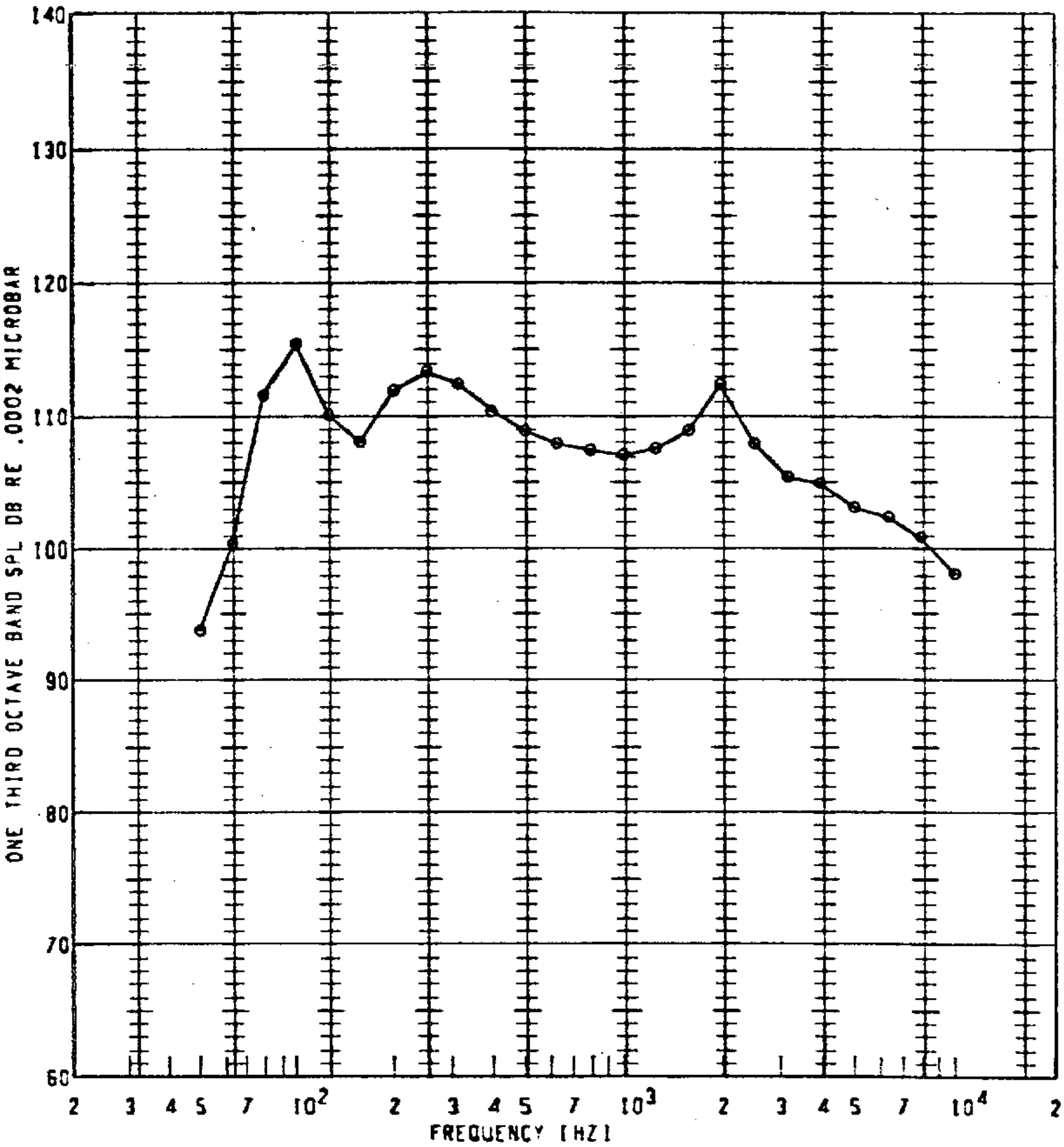
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	46	900	1.600	115	50FP	121.8	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



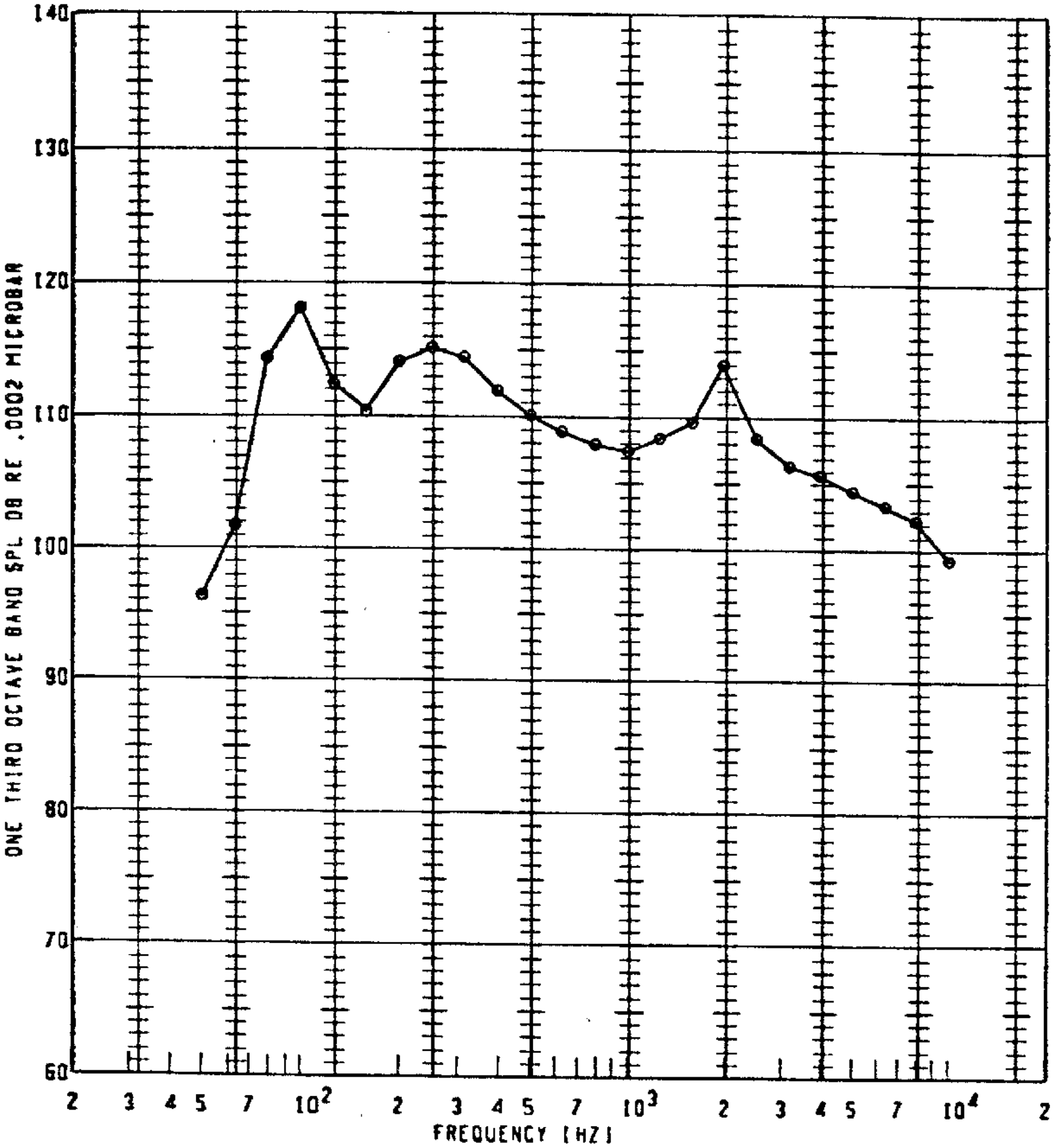
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	46	900	1.600	120	50FP	120.4	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



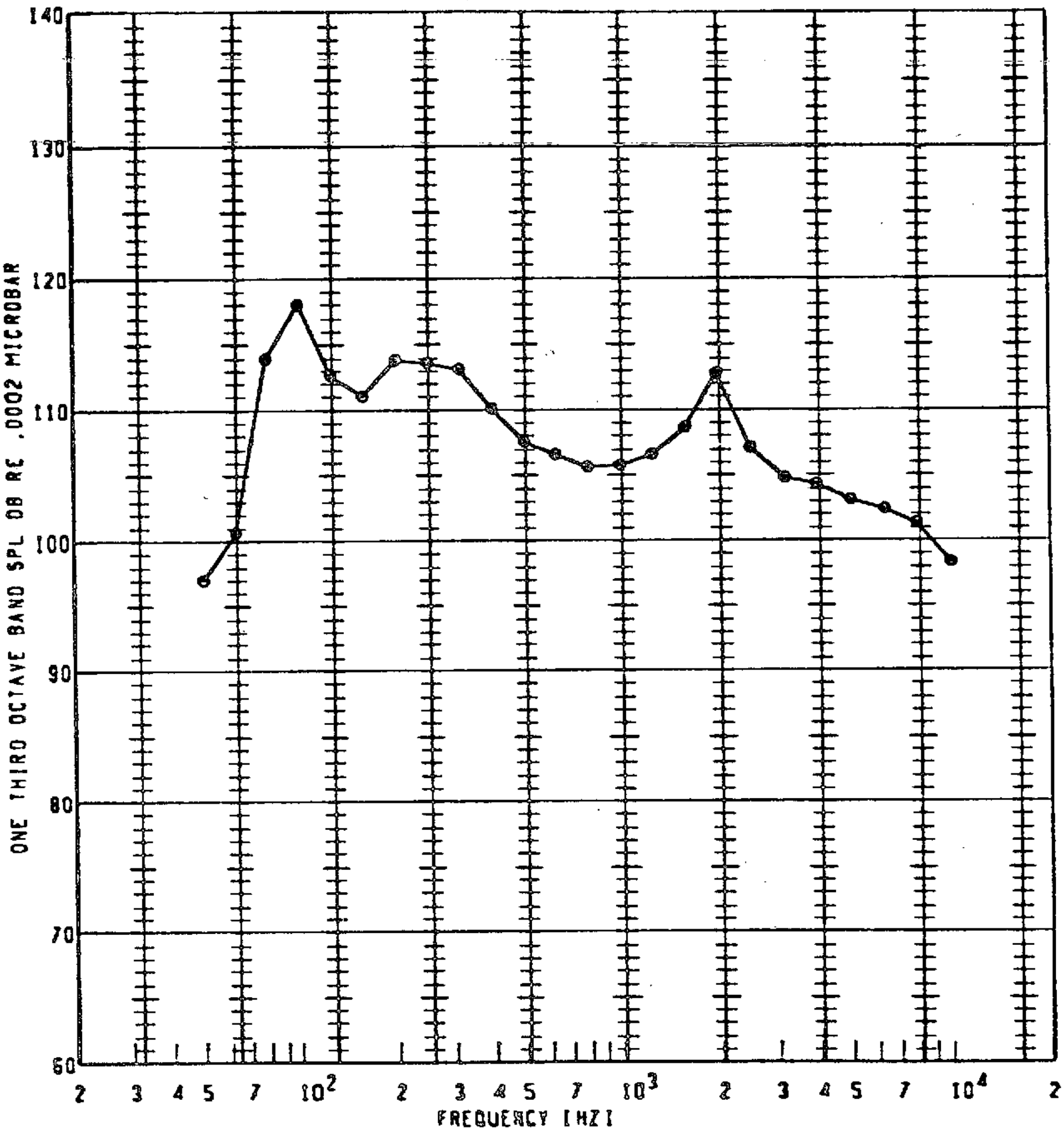
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	46	900	1.603	125	50FP	123.2	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



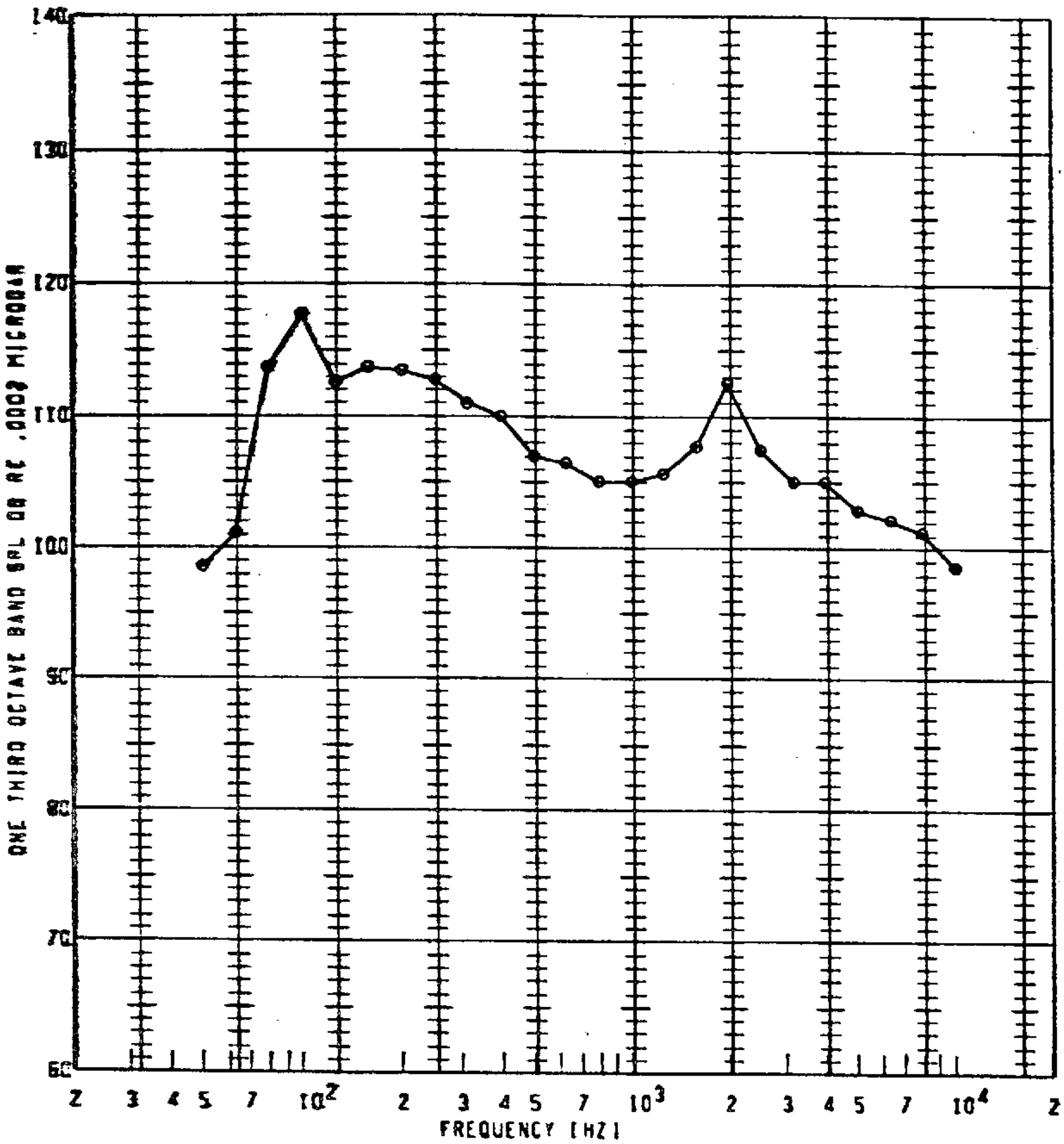
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	46	900	1.600	130	50FP	125.0	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



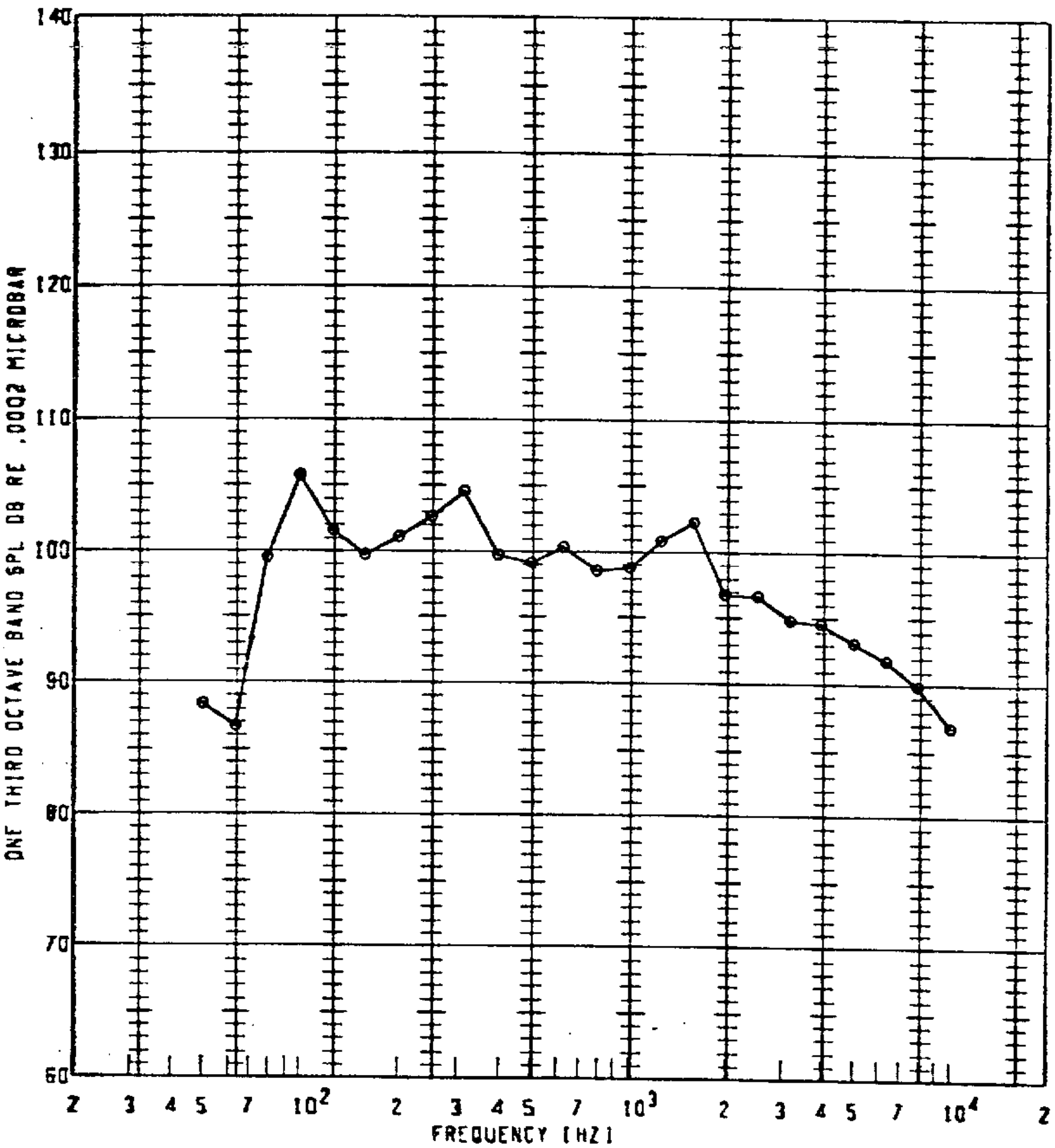
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊖	46	900	1.600	135	50FP	124.2	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



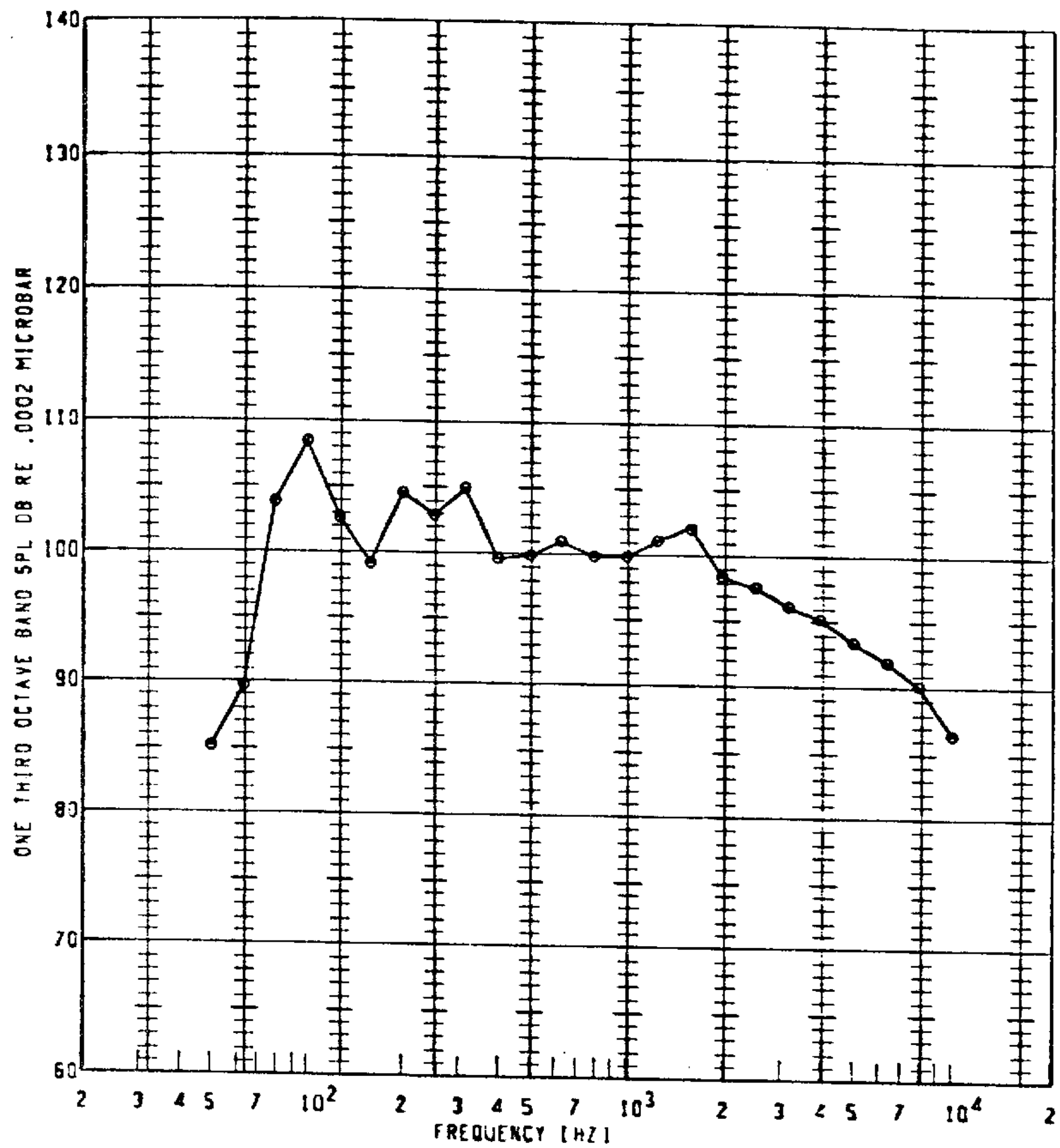
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊕	46	900	1.603	140	50FP	124.0	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



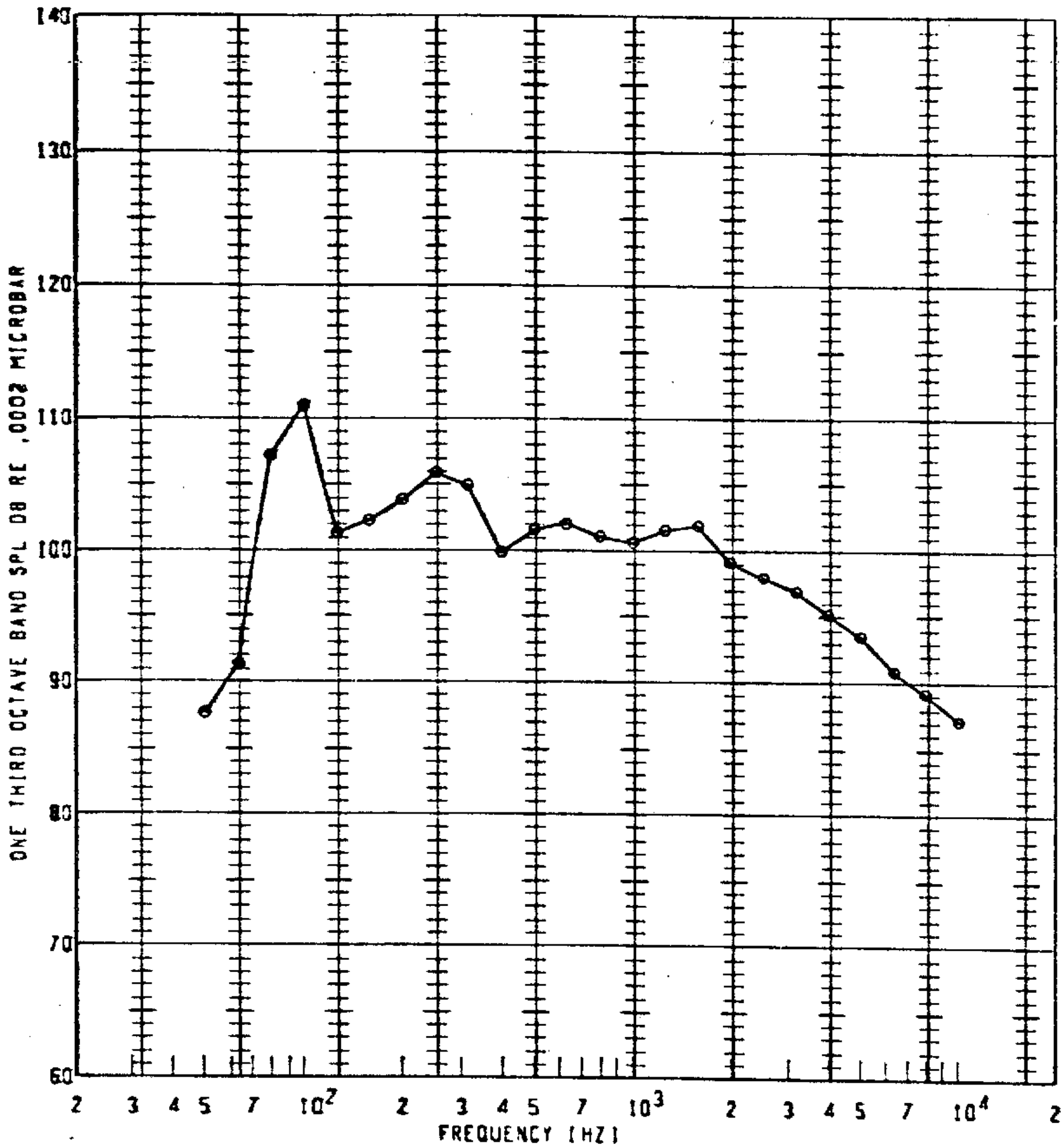
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	56	800	1.400	90	50FP	113.5	10	REF NOZZLE

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



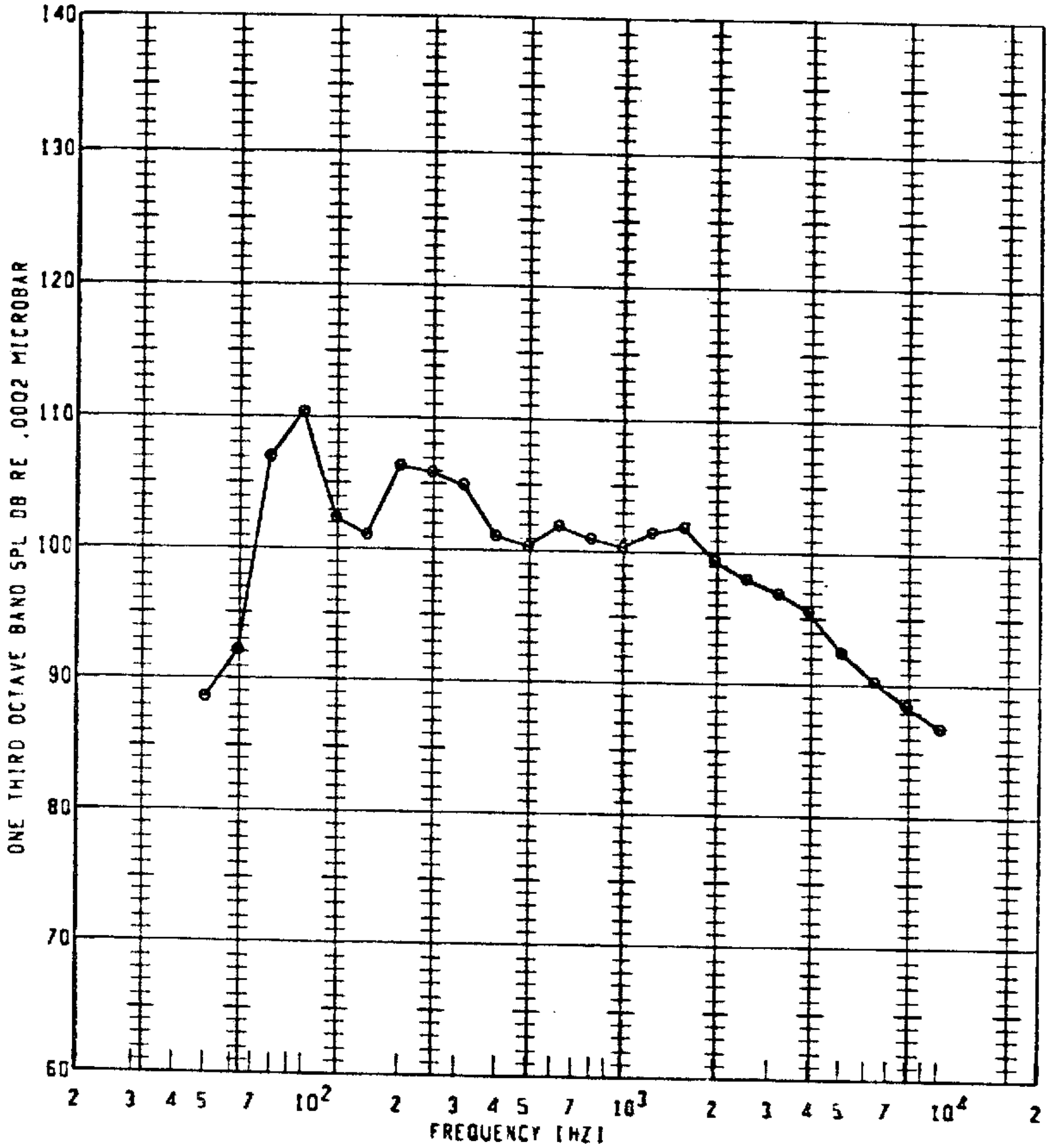
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	5G	800	1.400	100	50FP	114.8	10	REF NOZZLE

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



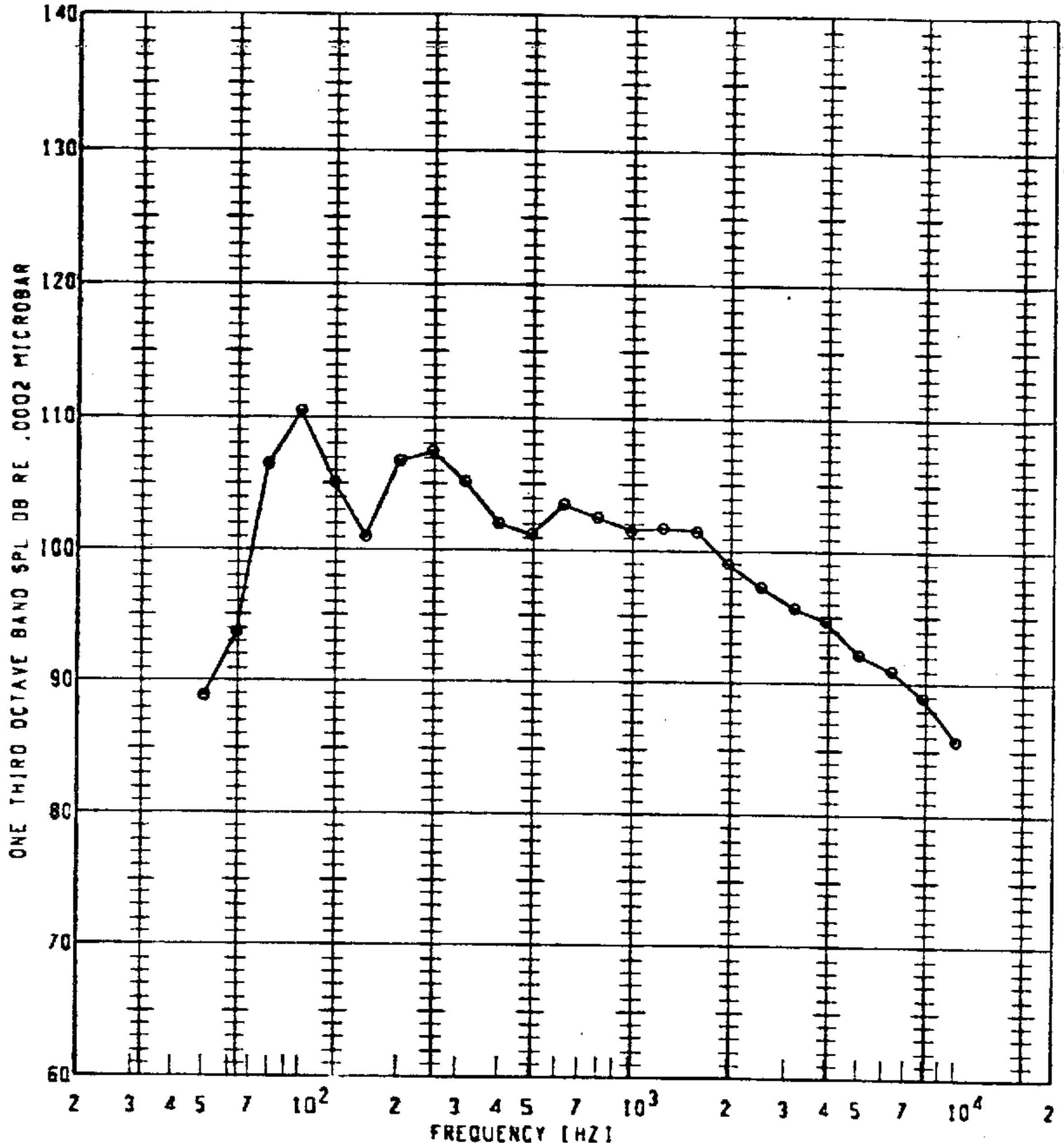
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	5G	800	1.400	110	50FP	116.3	10	REF NOZZLE

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



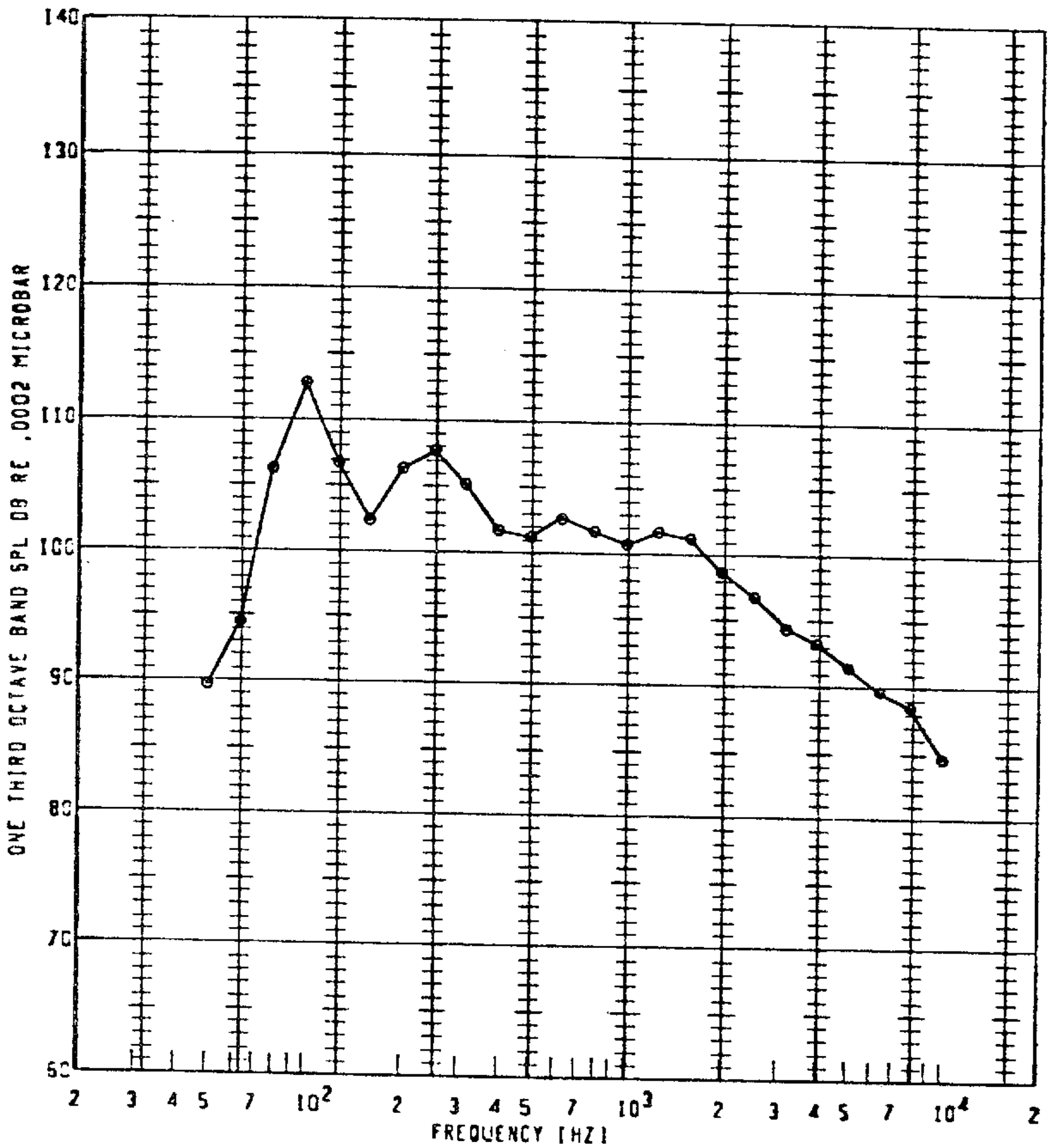
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	5G	800	1.400	115	50FP	116.3	10	REF NOZZLE

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



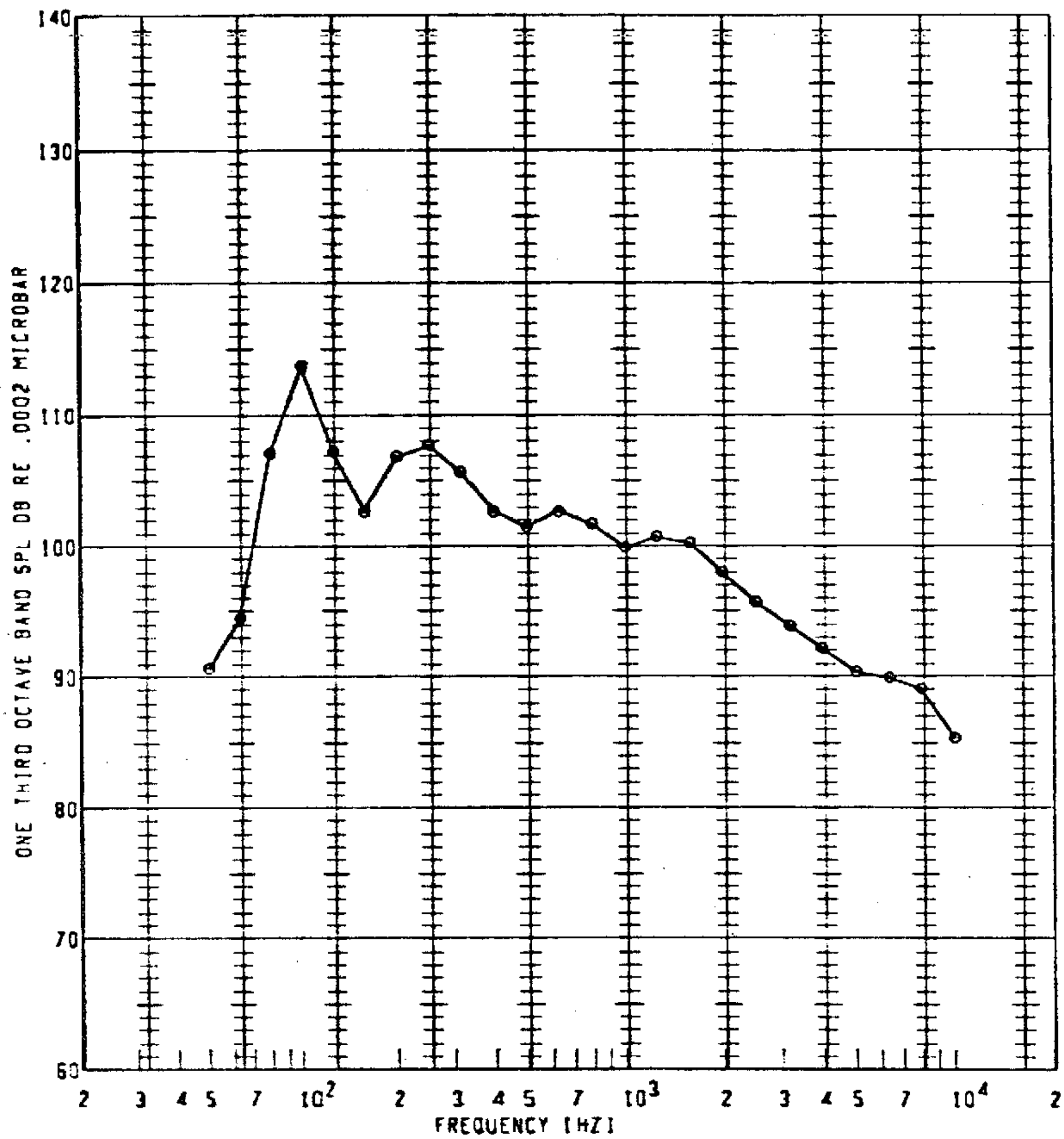
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊖	5G	800	1.400	120	50FP	116.8	10	REF NOZZLE

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



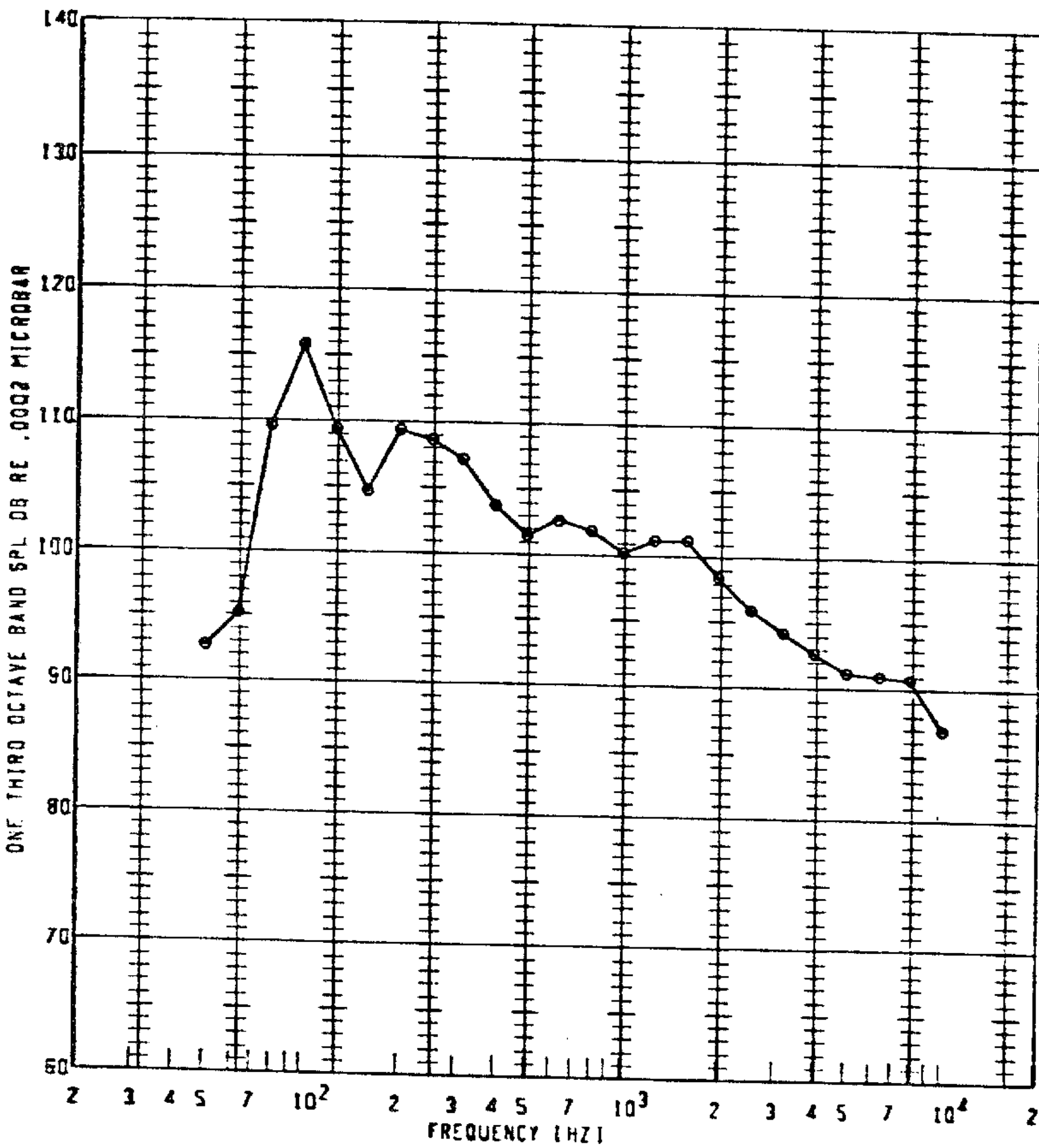
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	50	800	1.400	125	50FP	117.4	10	REF NOZZLE

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



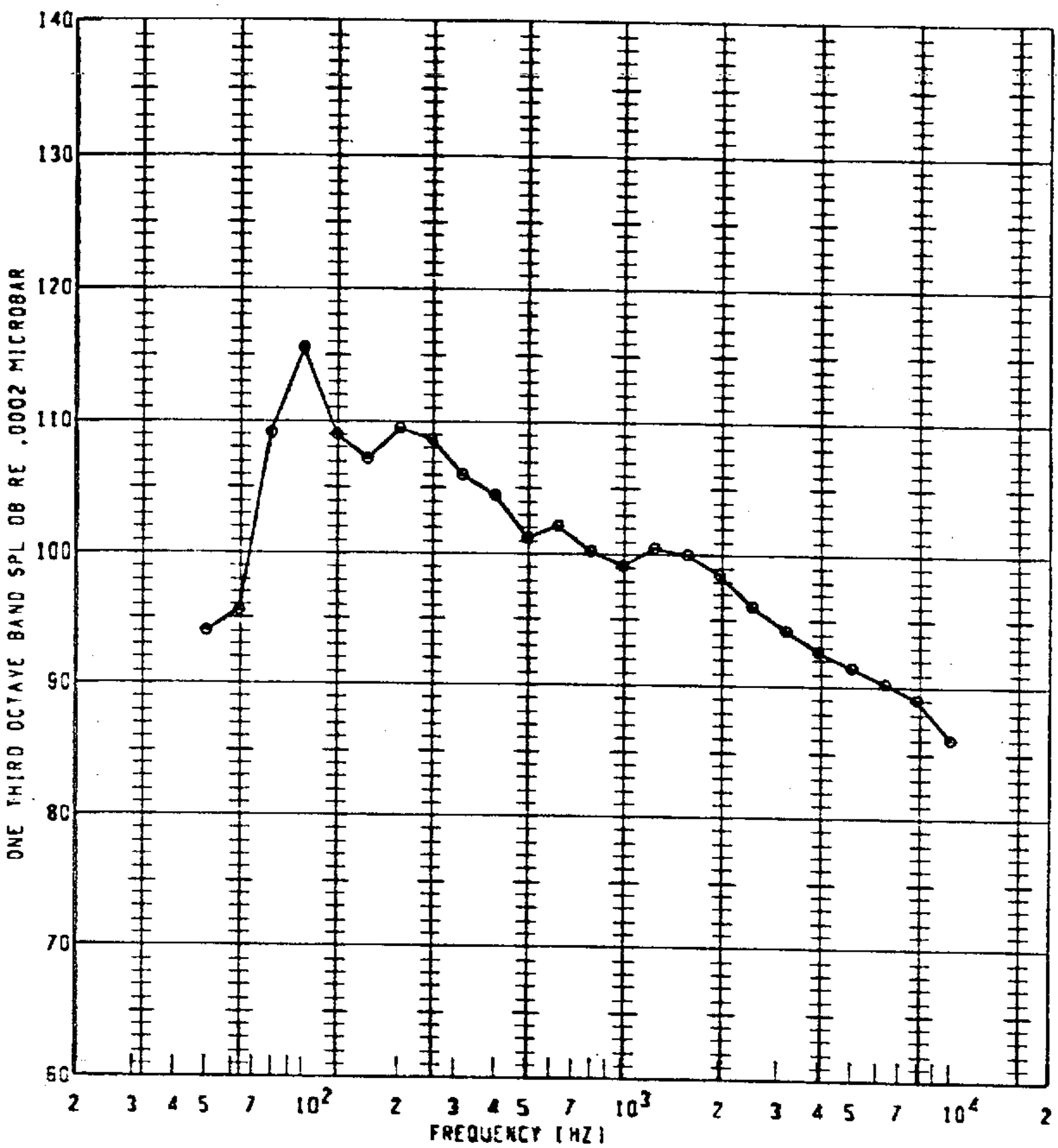
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	5G	800	1.400	130	50FP	117.9	10	REF NOZZLE

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



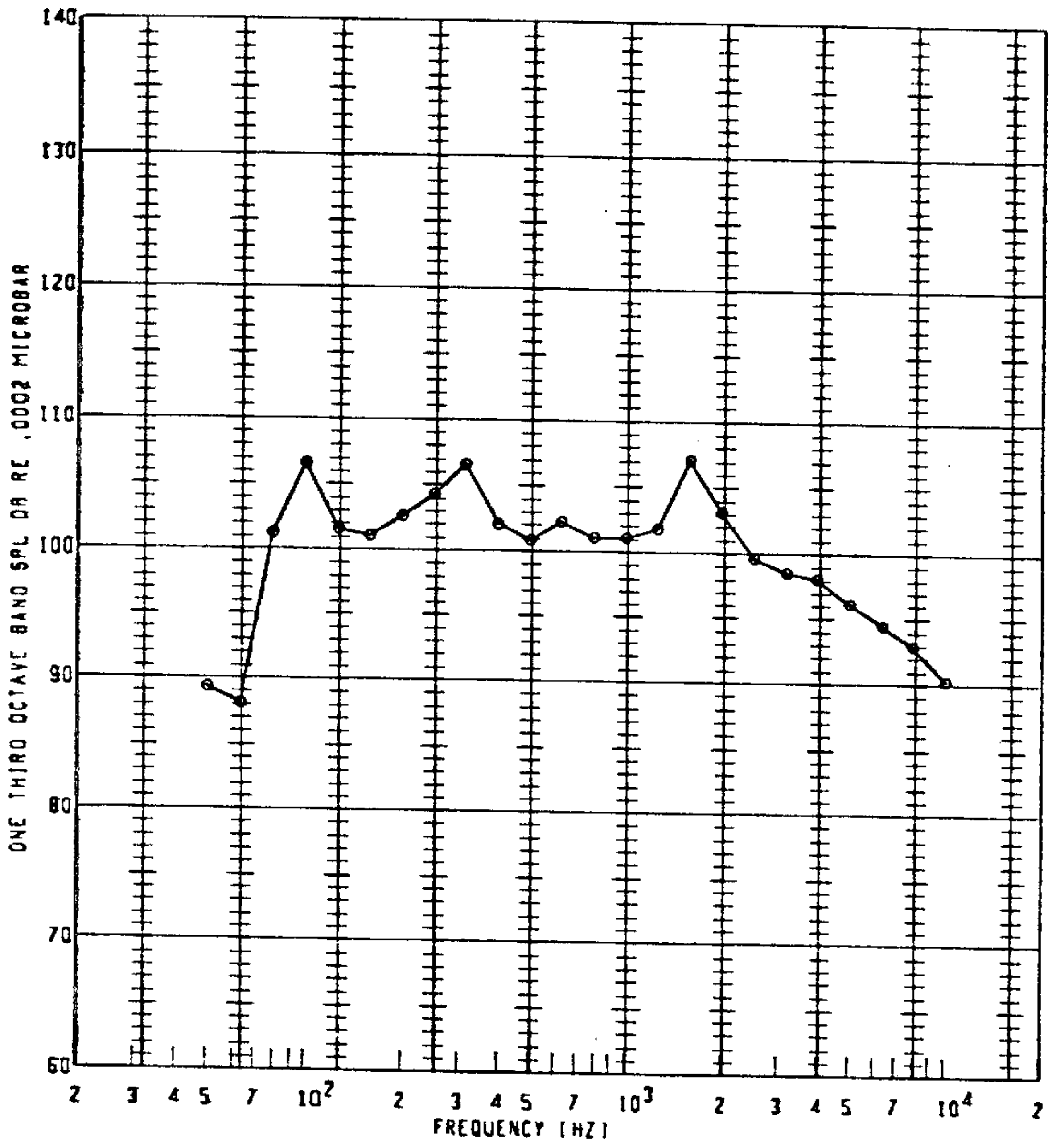
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	56	800	1.400	135	50FP	119.7	10	REF NOZZLE

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



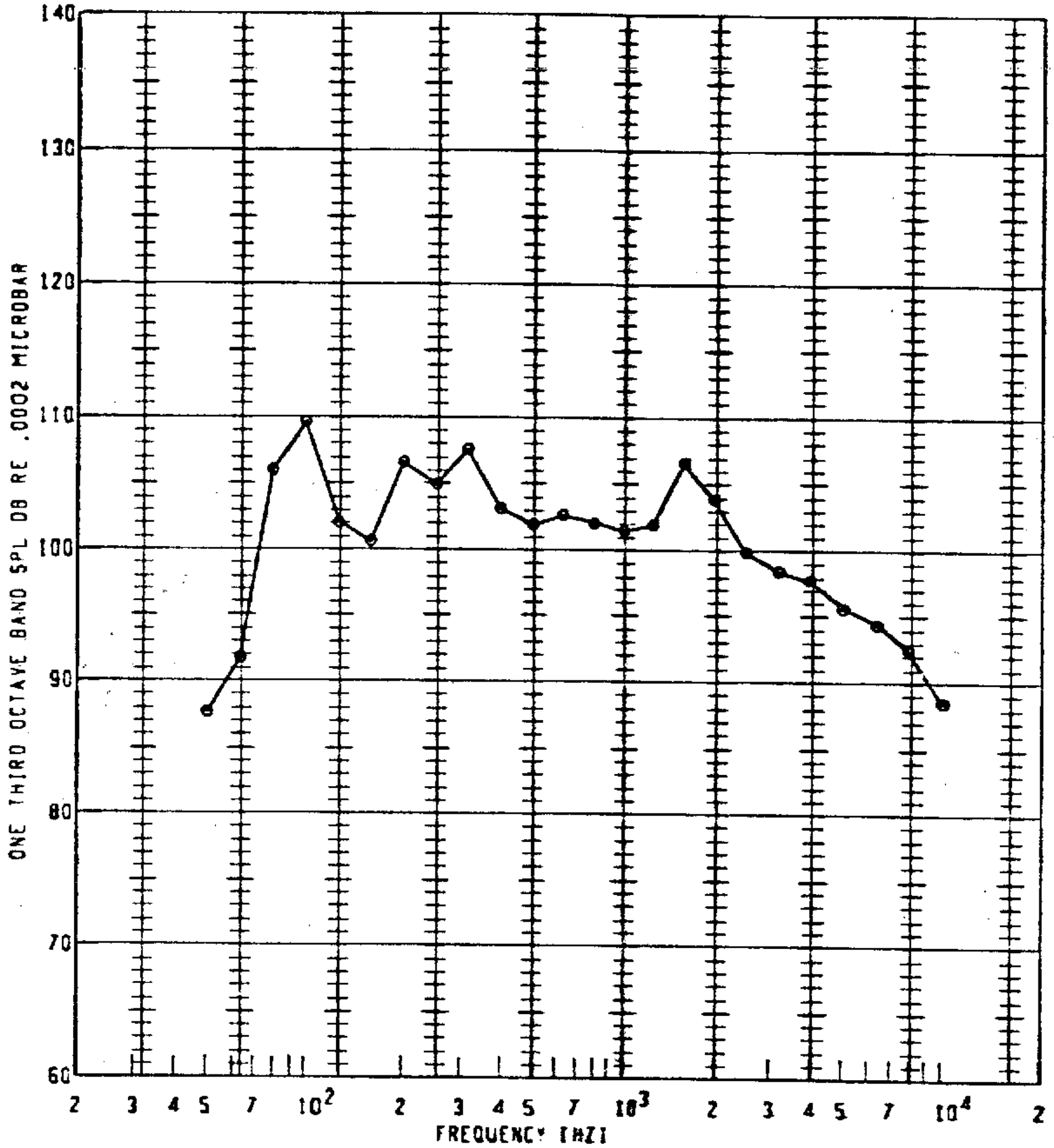
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	56	800	1.400	140	50FP	119.5	10	REF NOZZLE

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



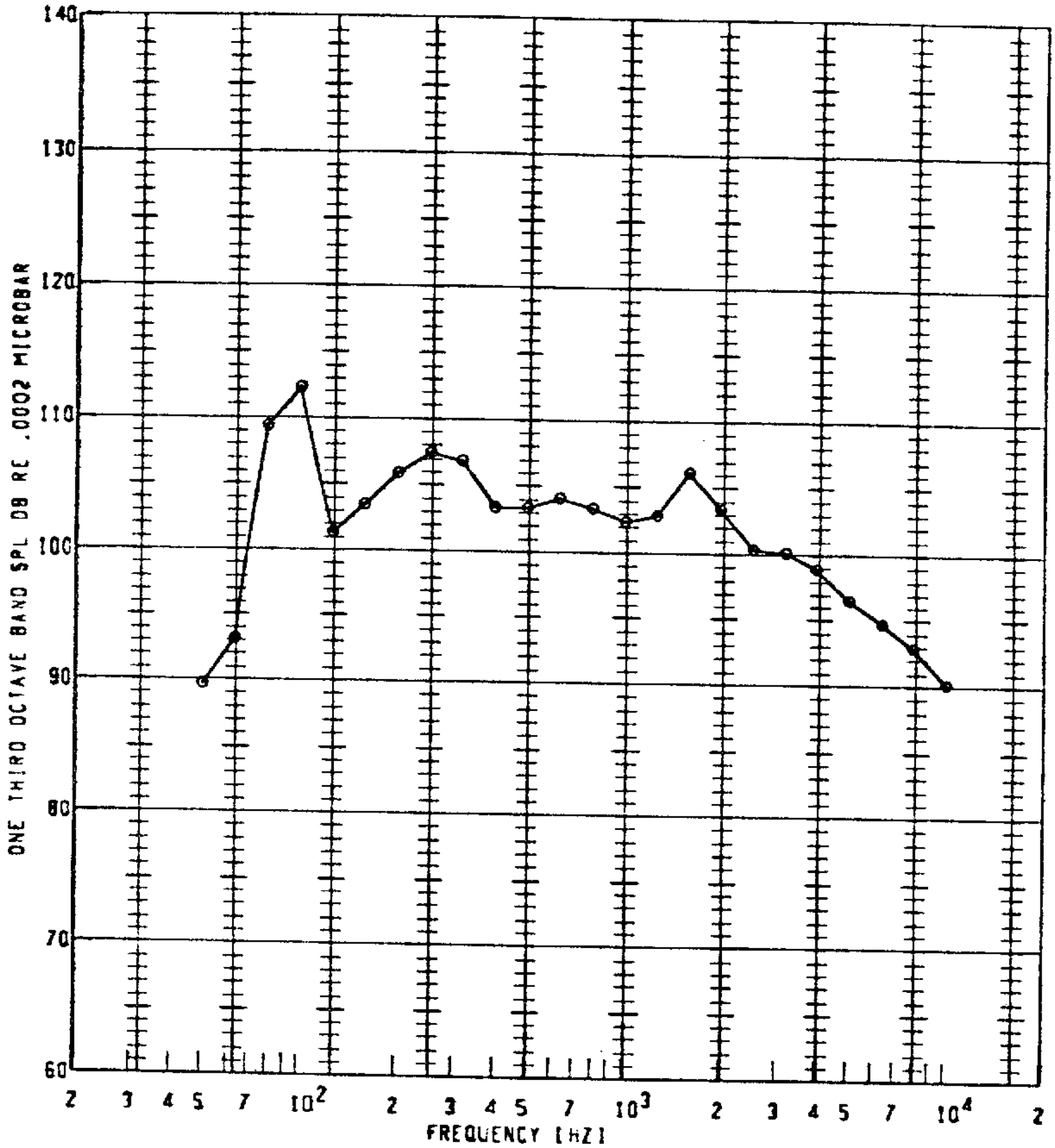
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	5G	850	1.500	90	50FP	115.7	C	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



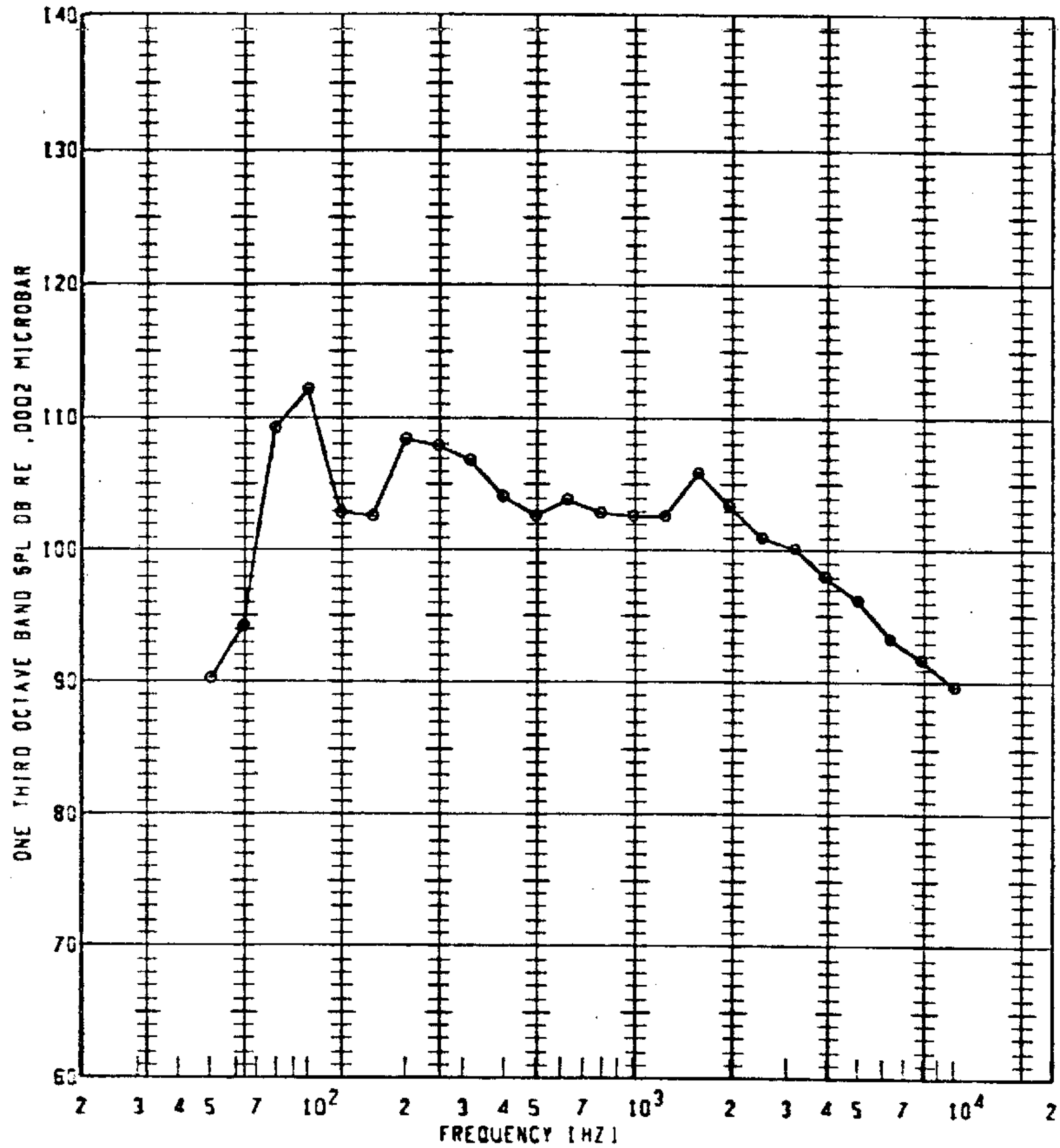
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	59	850	1.500	100	50FP	117.0	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



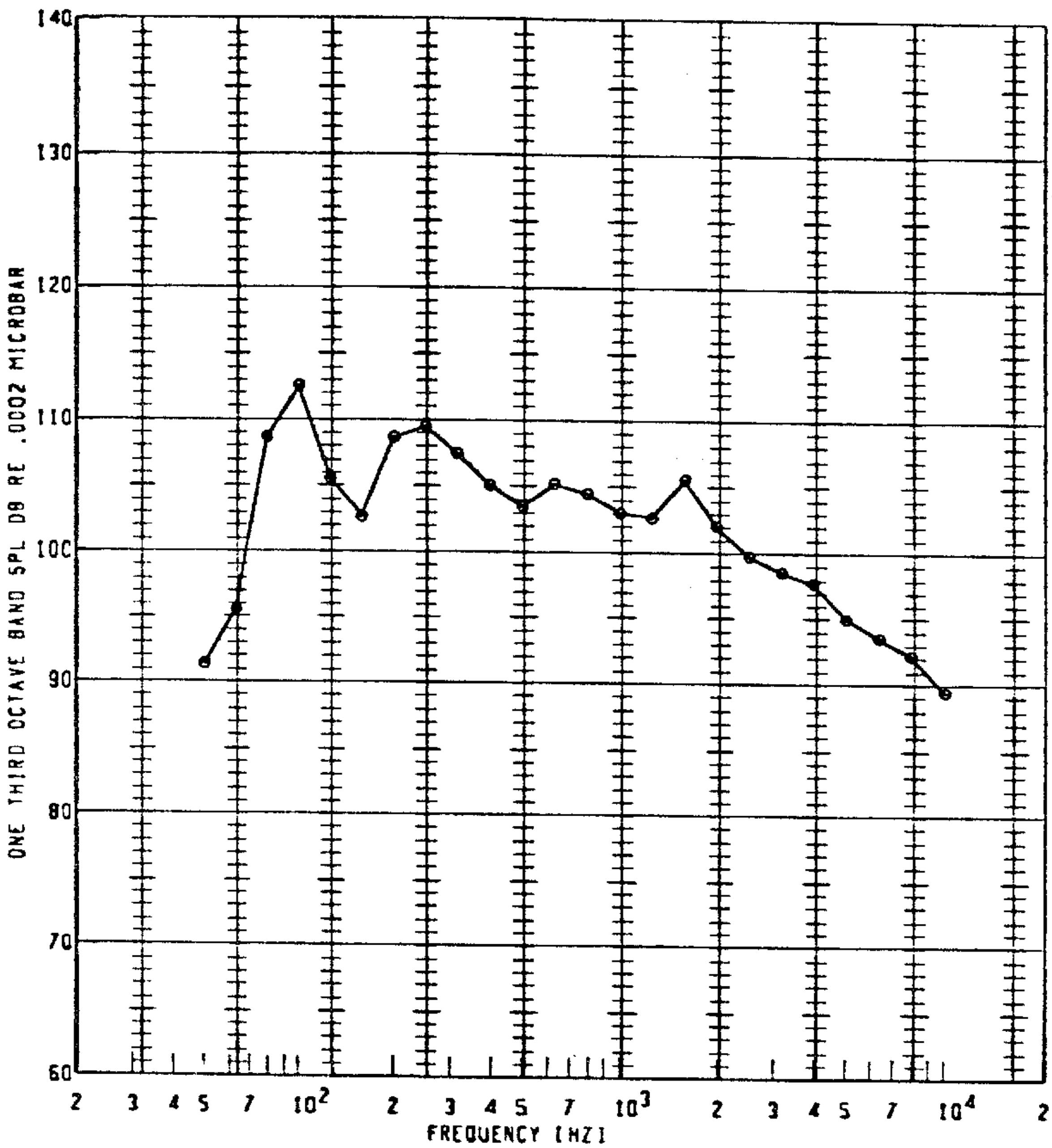
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	56	850	1.500	110	50FP	118.3	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



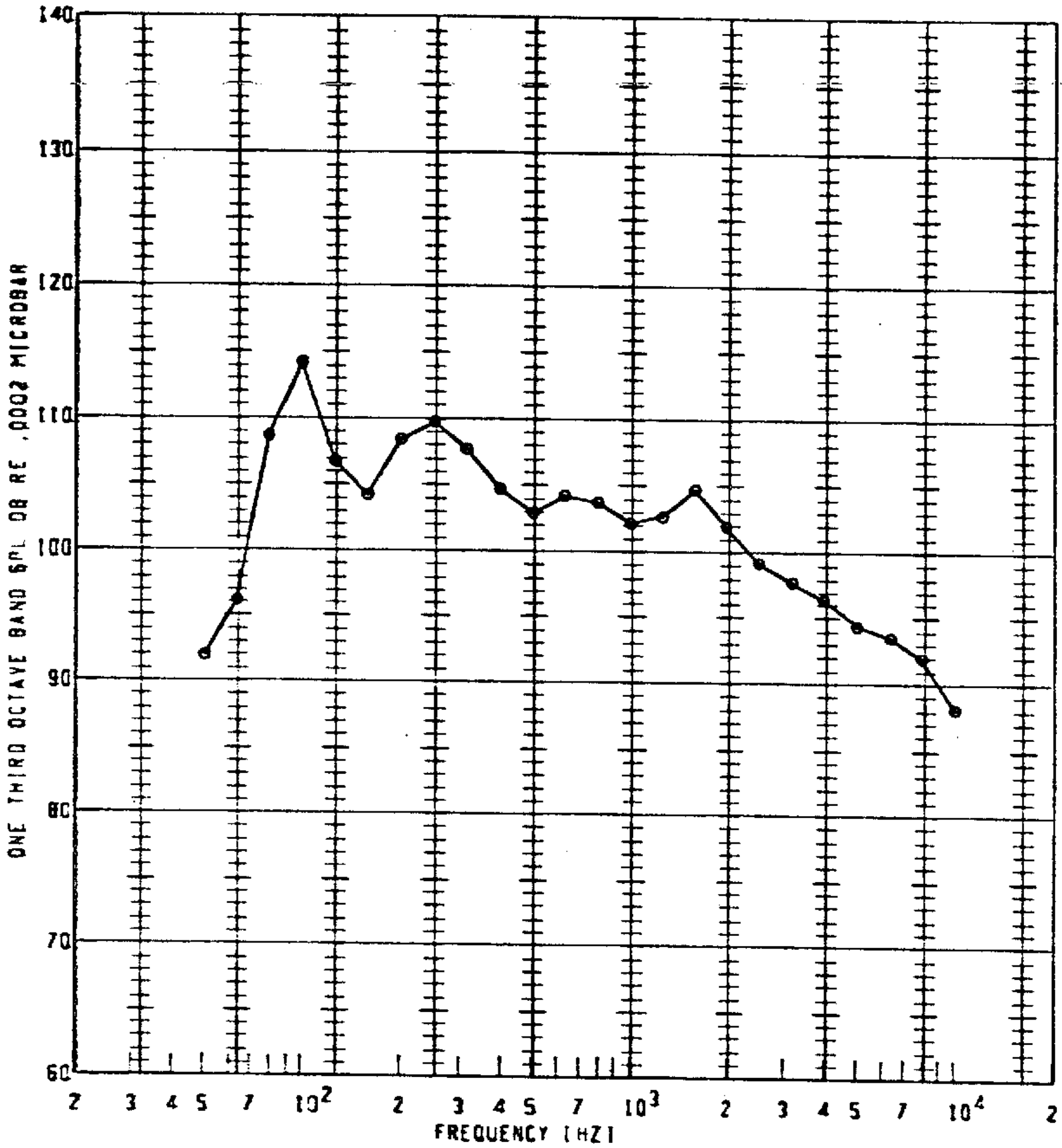
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	5G	850	1.500	115	50FP	118.4	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



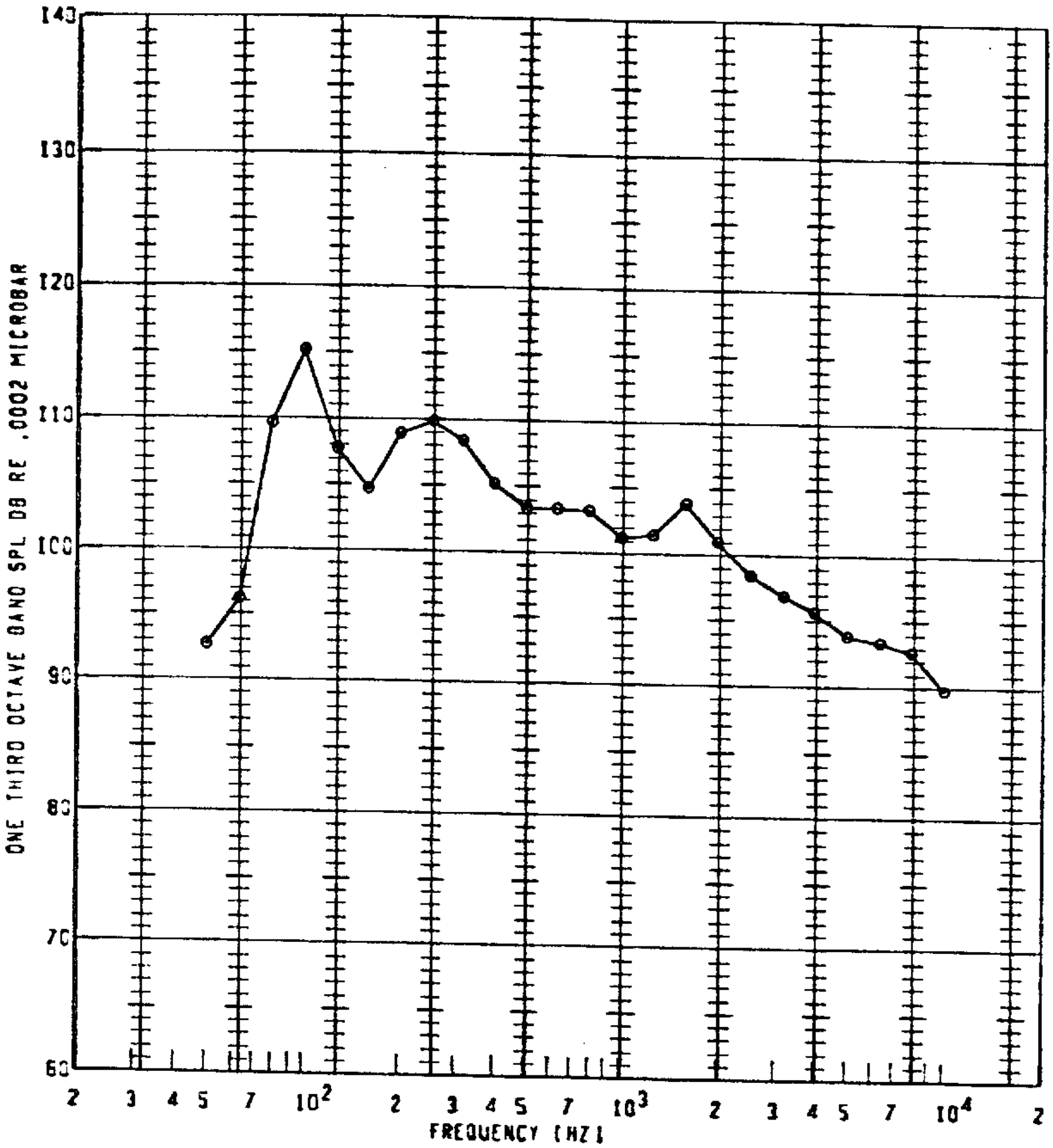
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	5G	850	1.500	120	50FP	118.8	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



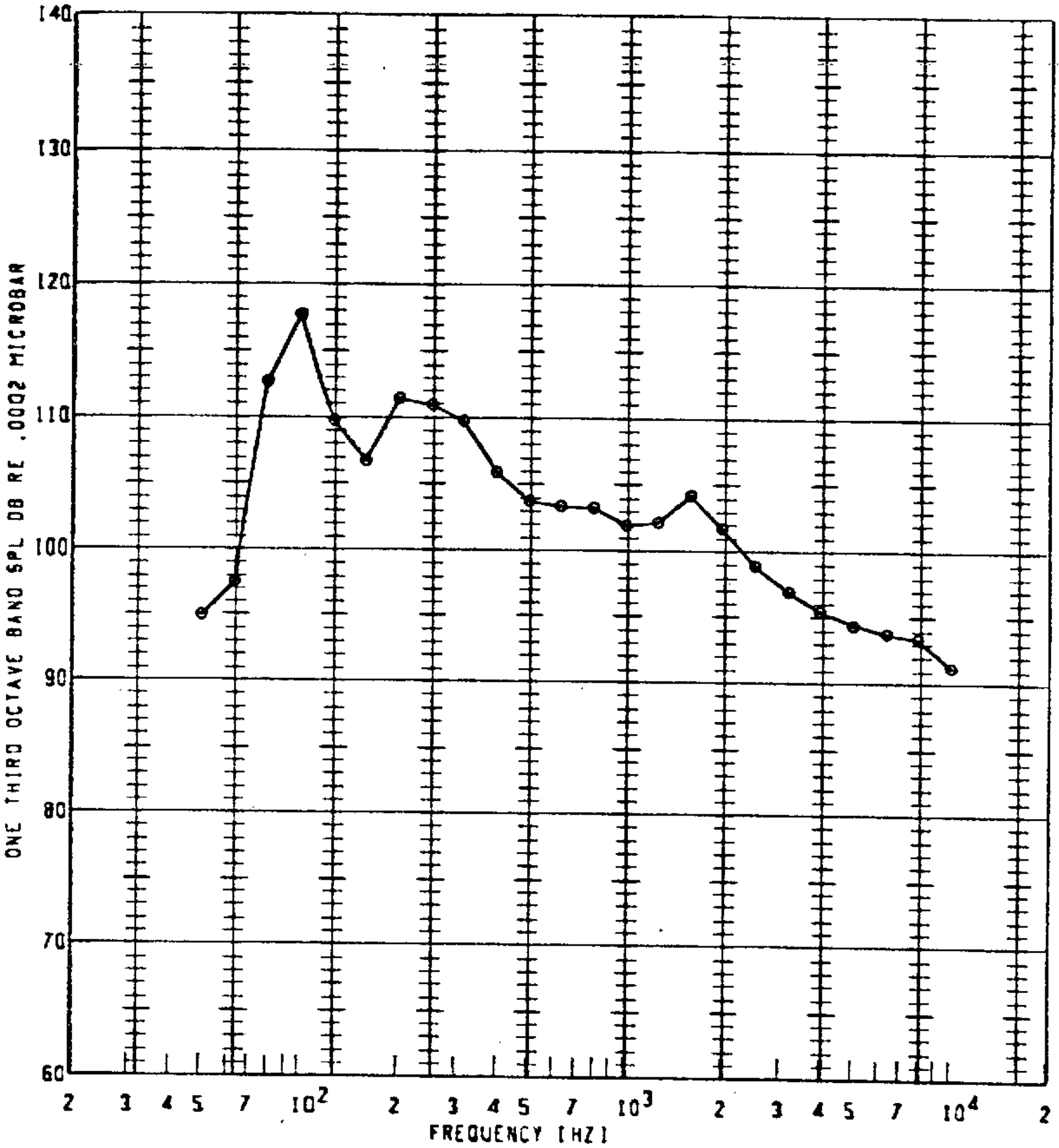
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	56	850	1.503	125	50FP	119.3	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	5G	850	1.500	130	50FP	119.8	C	

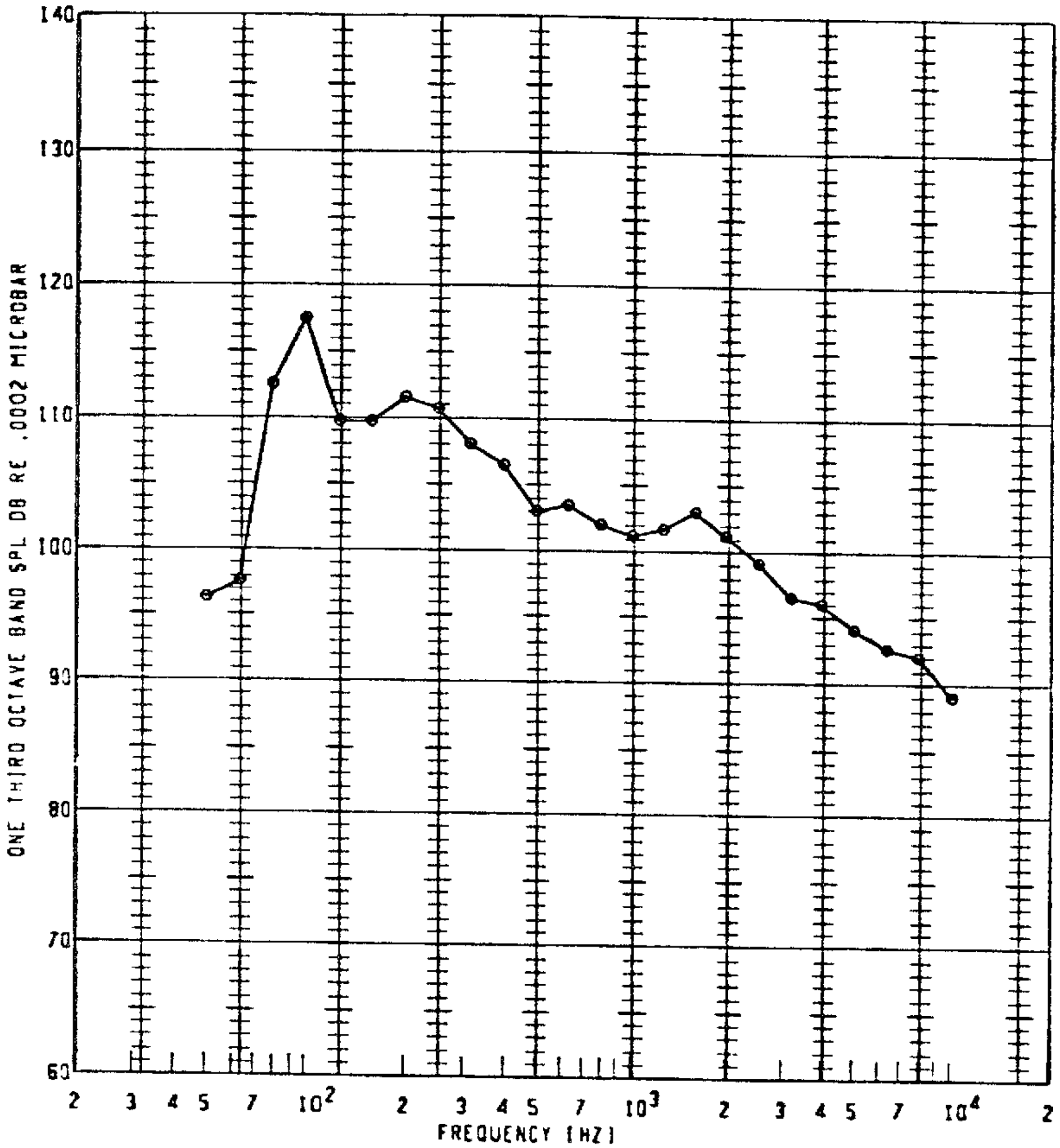
BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	5G	850	1.500	135	50FP	121.7	0	

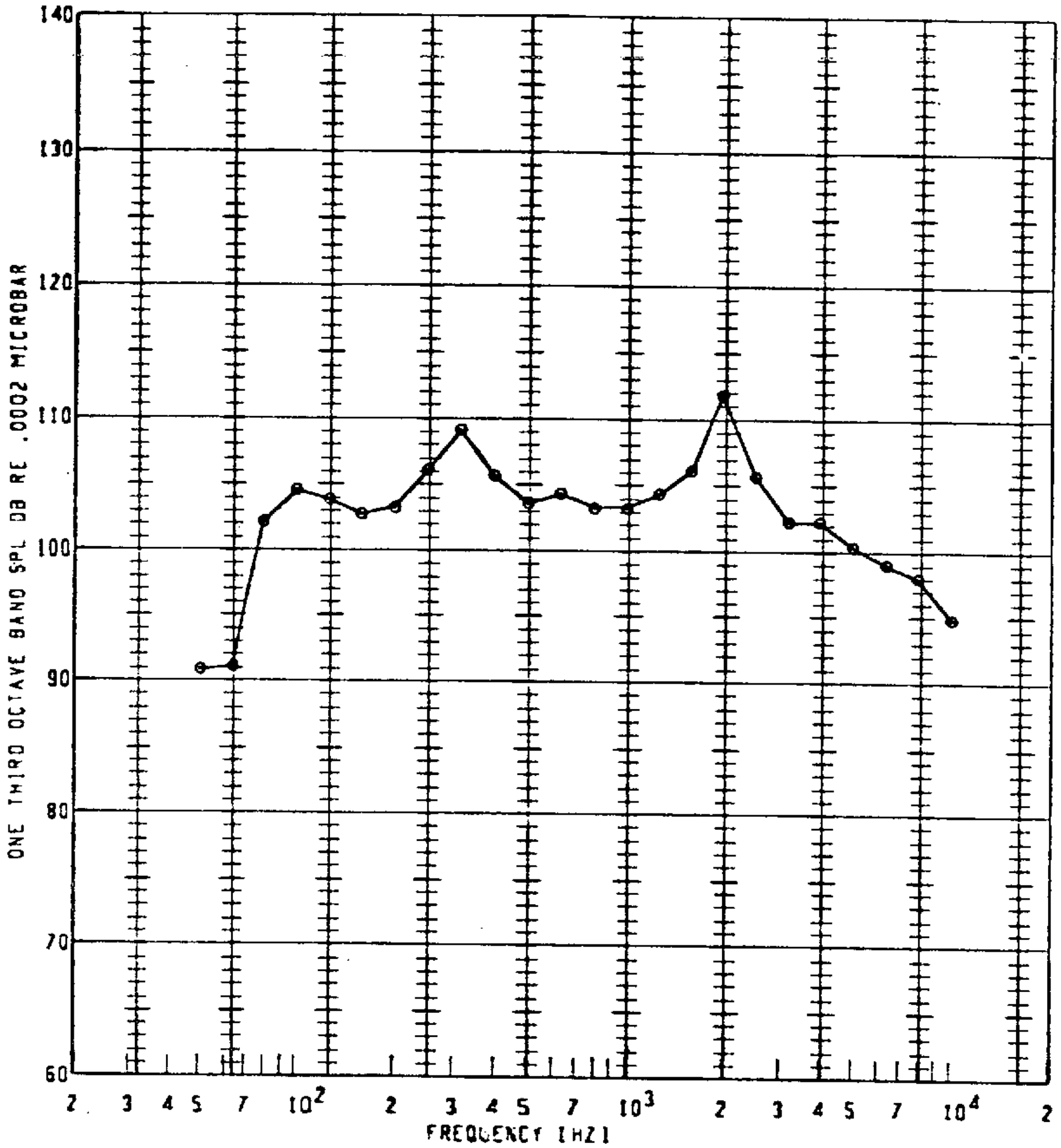
C-2

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



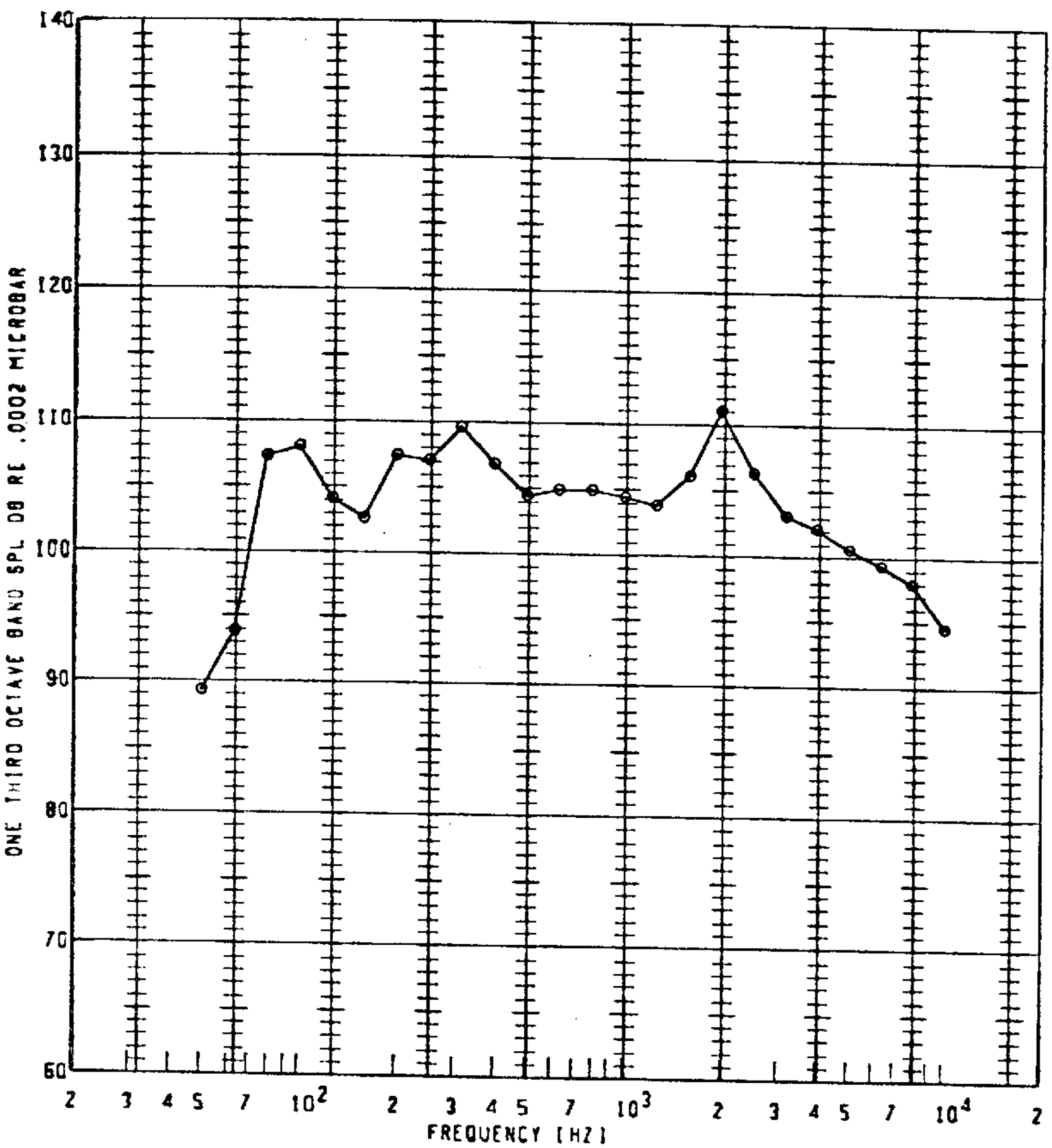
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	5G	850	1.500	140	50FP	121.6	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



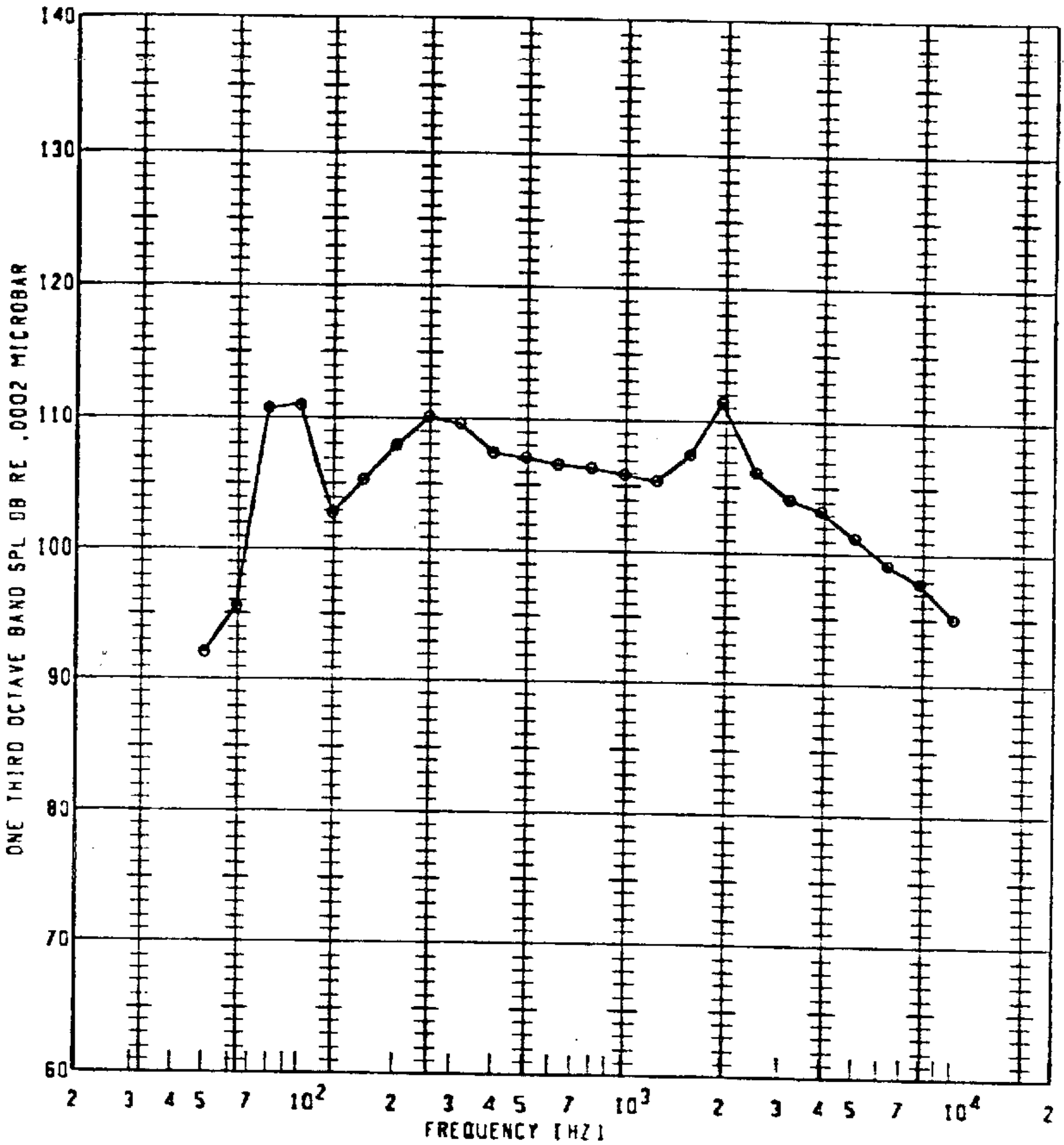
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	56	900	1.600	90	50FP	118.3	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



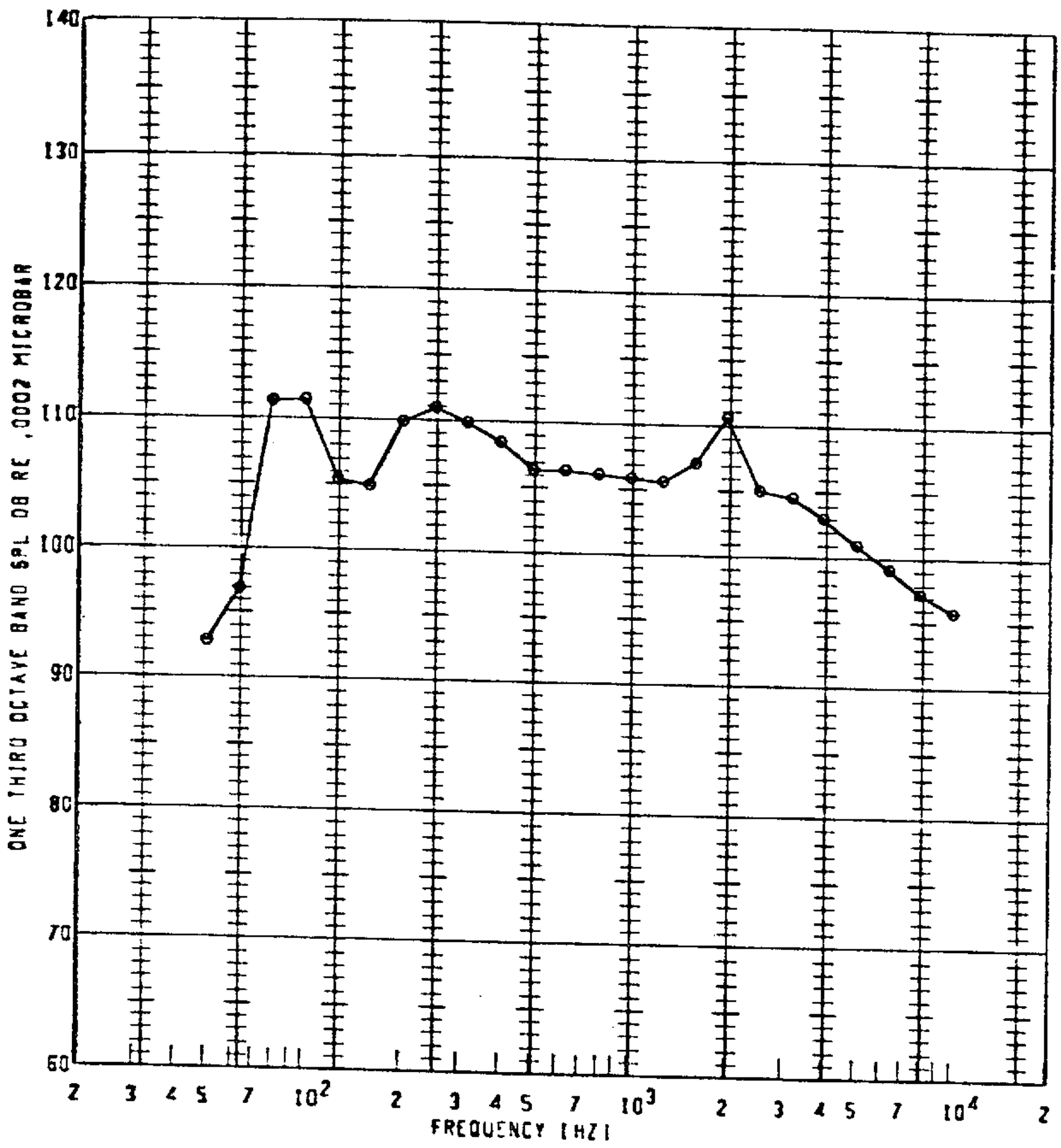
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	5G	900	1.600	100	50FP	119.2	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



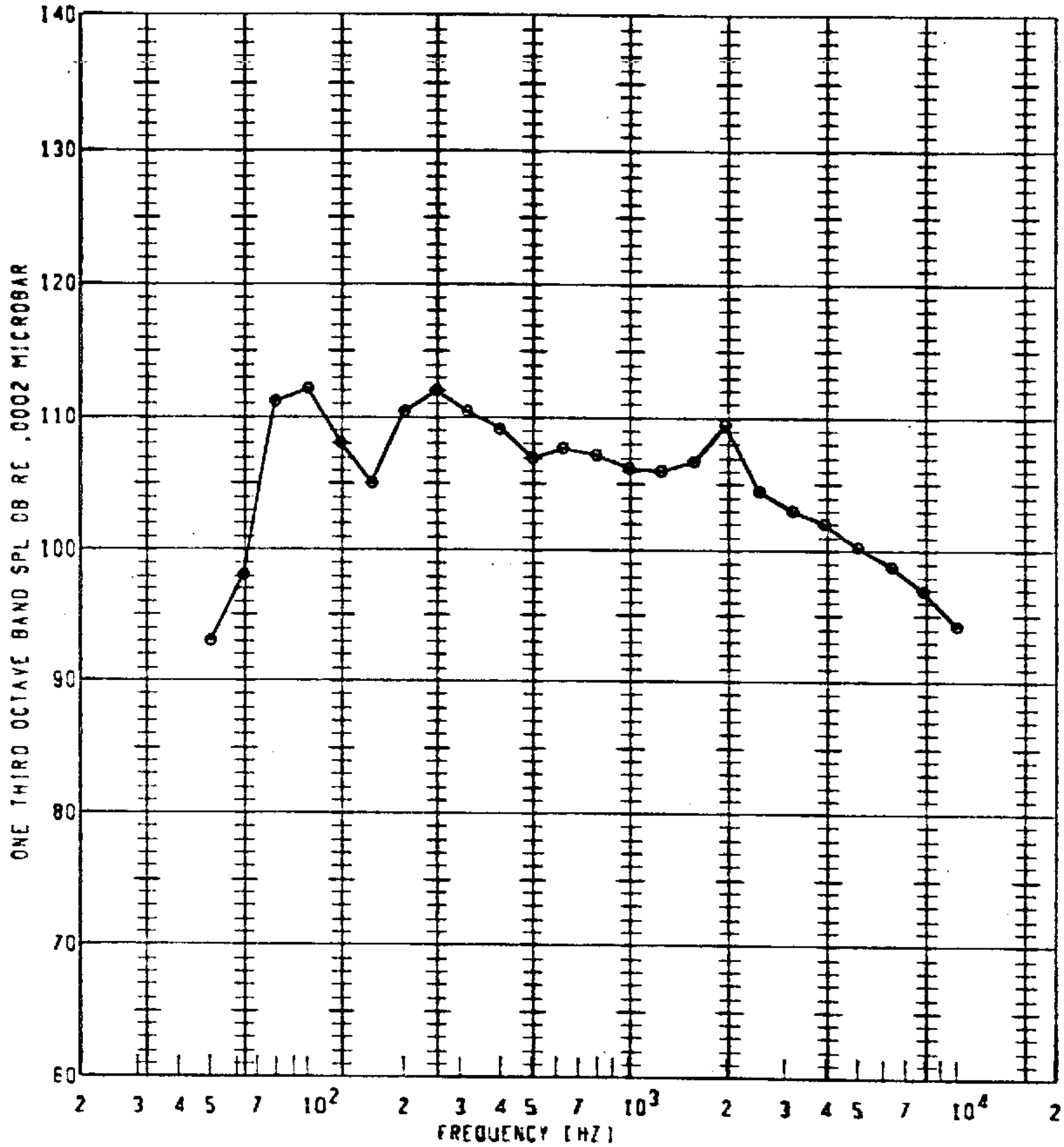
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	56	900	1.600	110	50FP	120.6	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



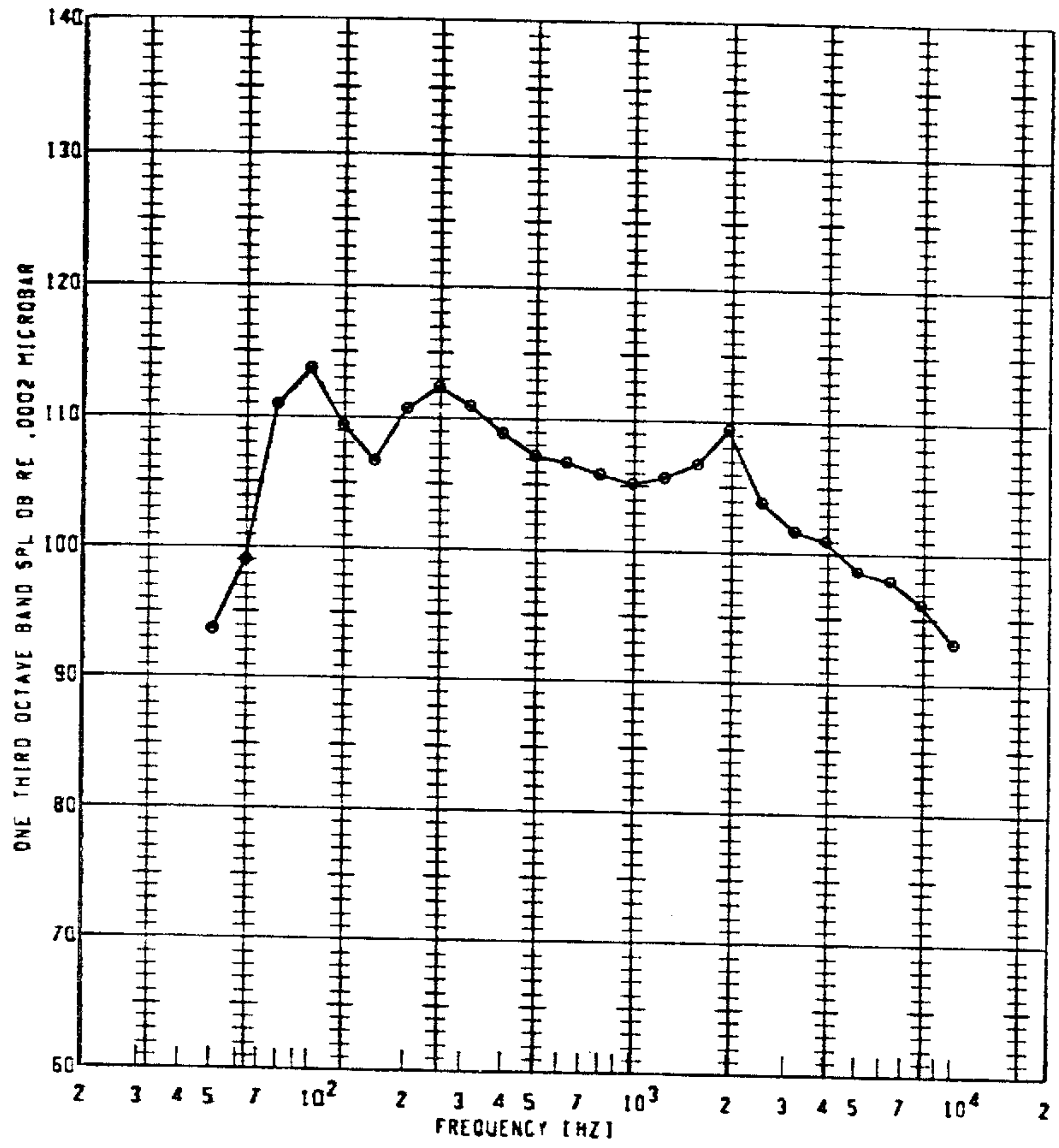
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	5G	900	1.600	115	50'P	120.8	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



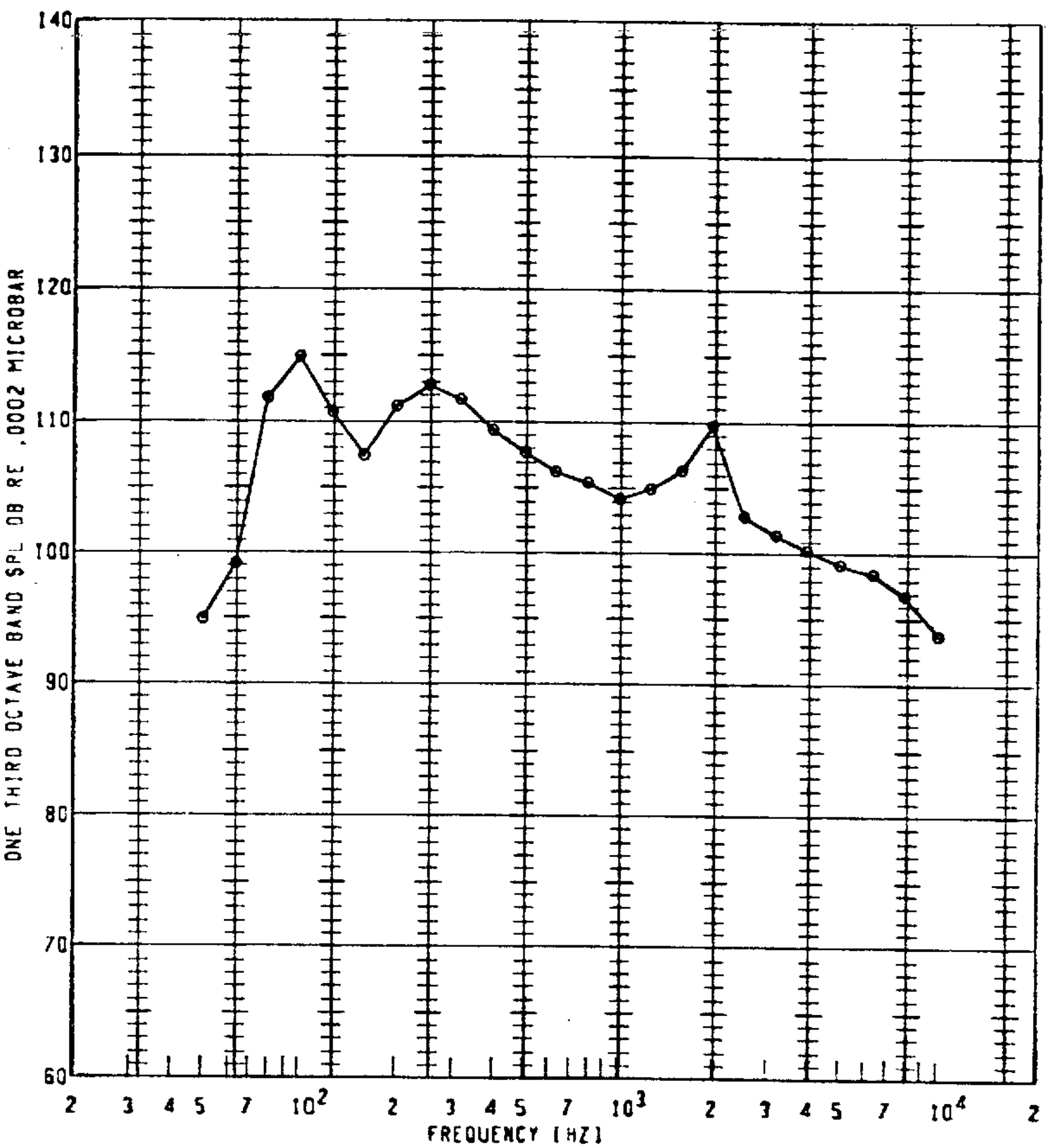
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	56	900	1.600	120	50FP	121.3	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



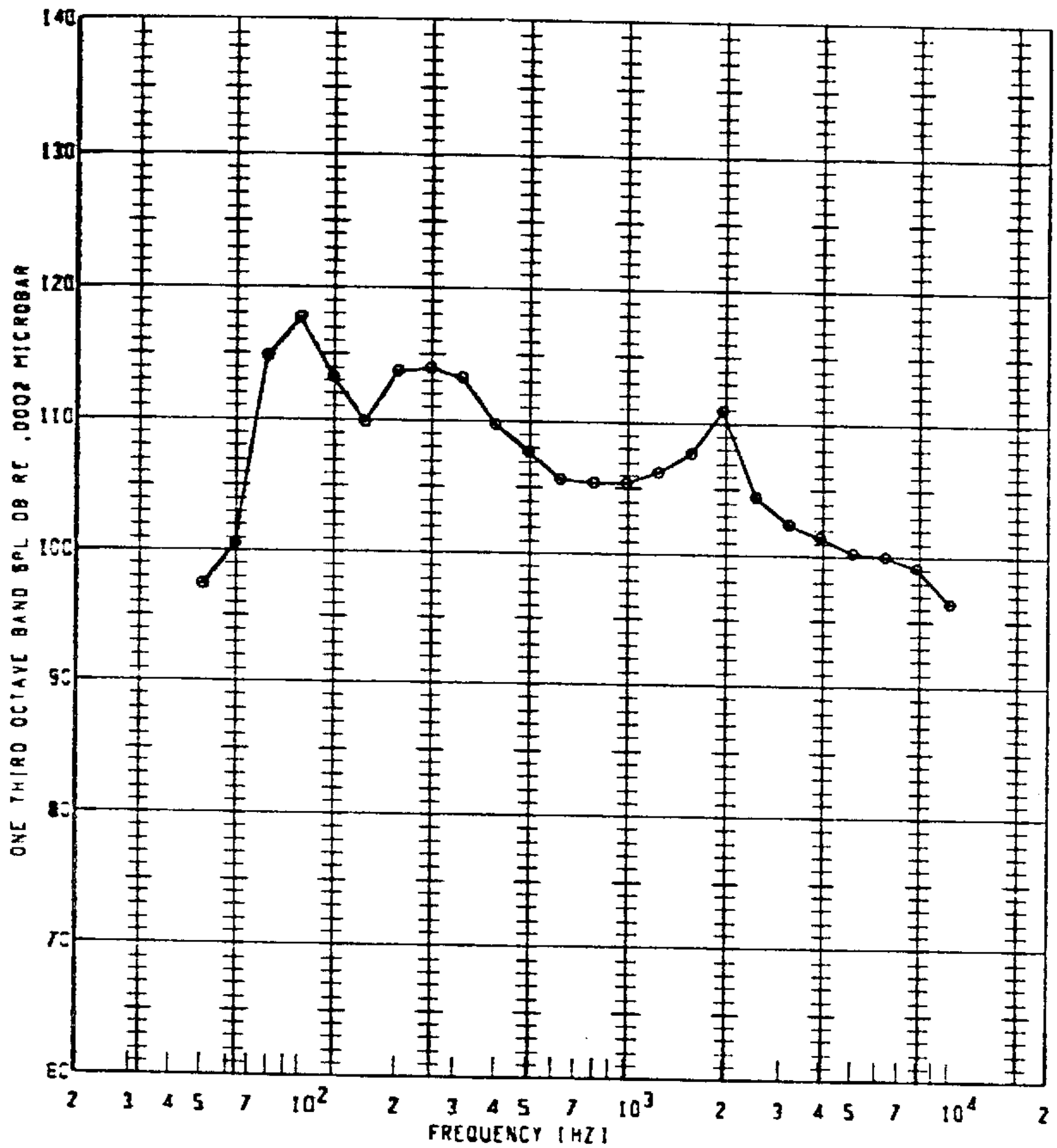
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊖	55	900	1.600	125	50FP	121.5	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



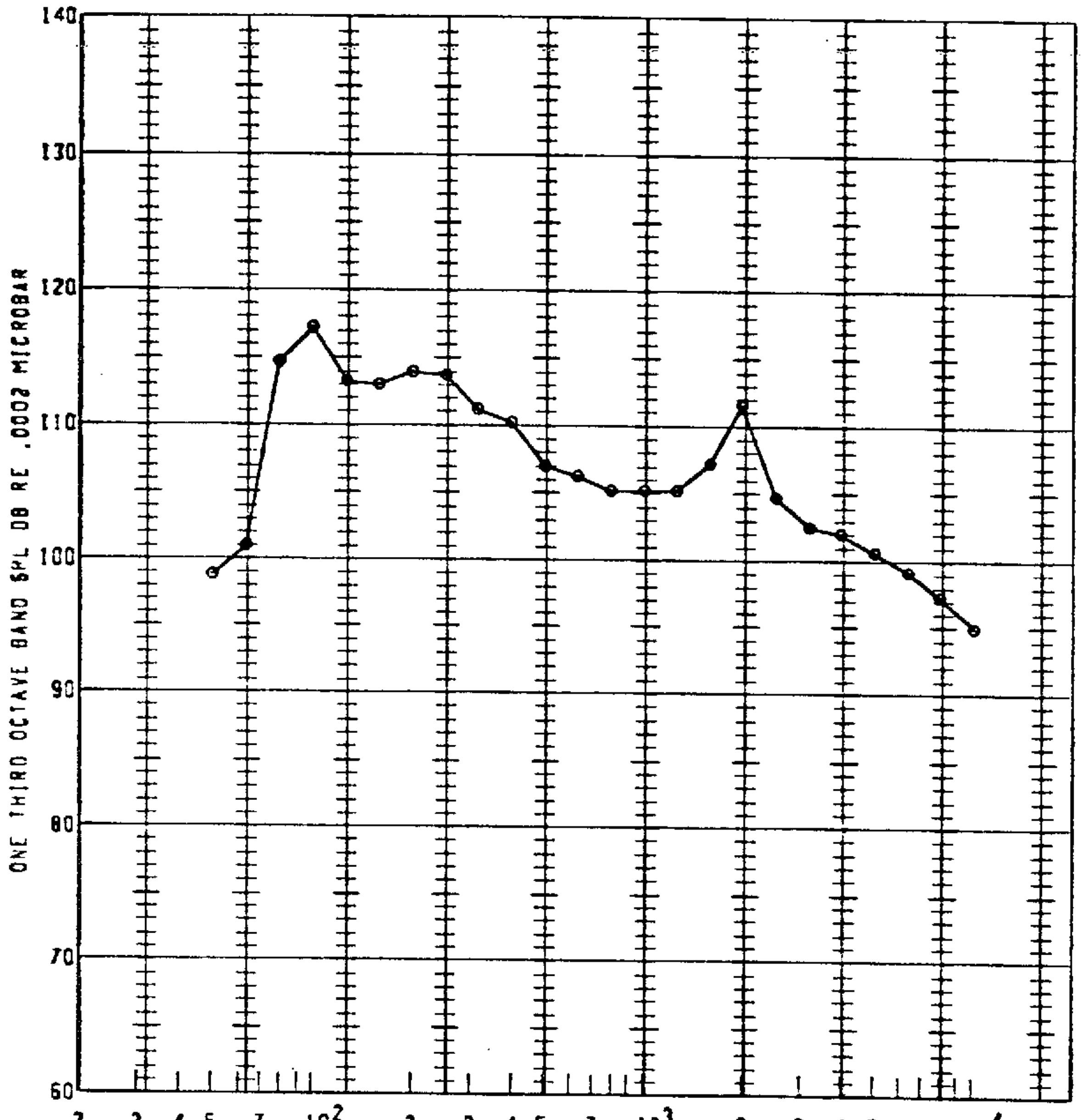
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	56	900	1.600	130	50FP	122.0	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



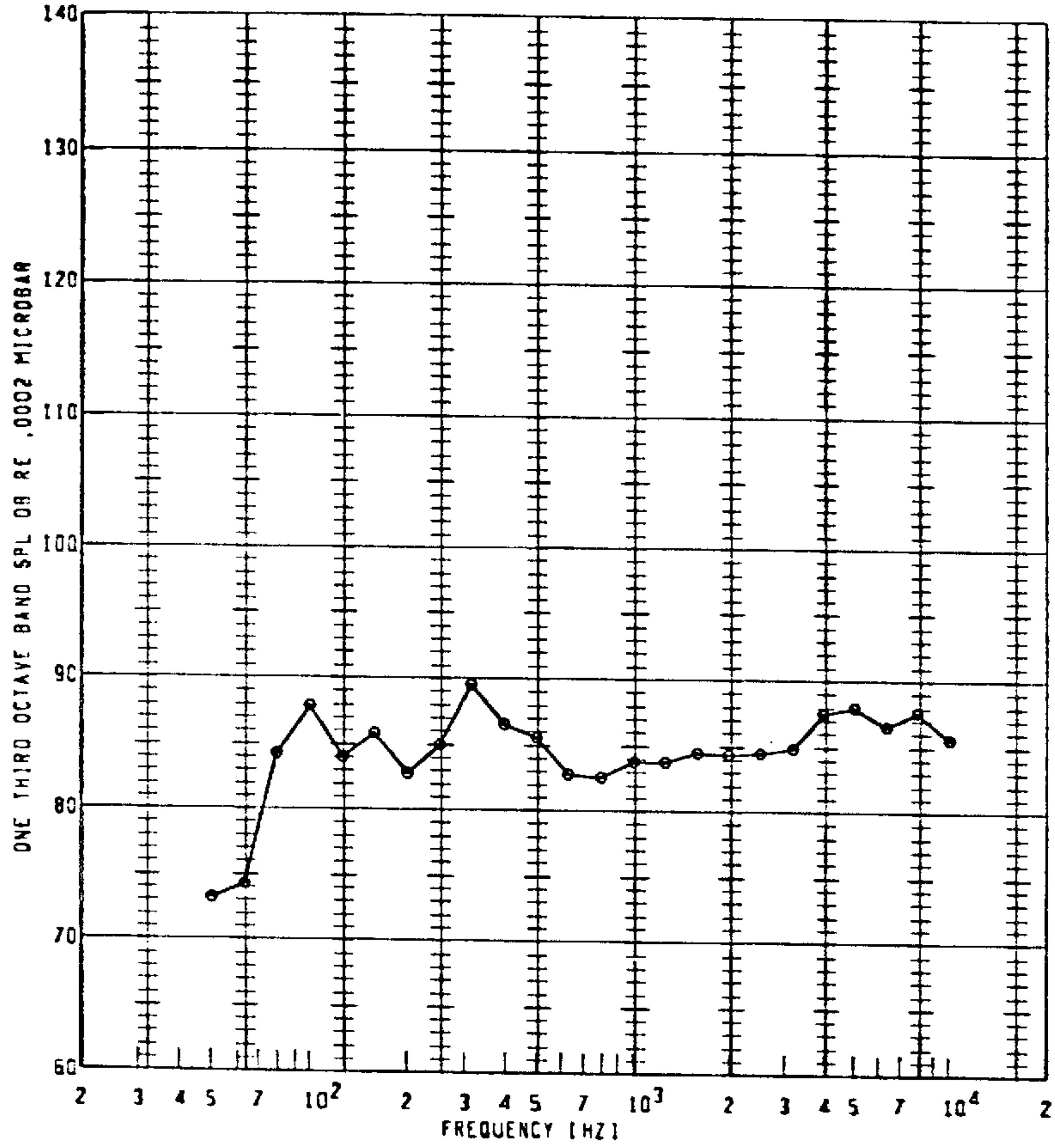
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	5G	900	1.600	135	50FP	123.9	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



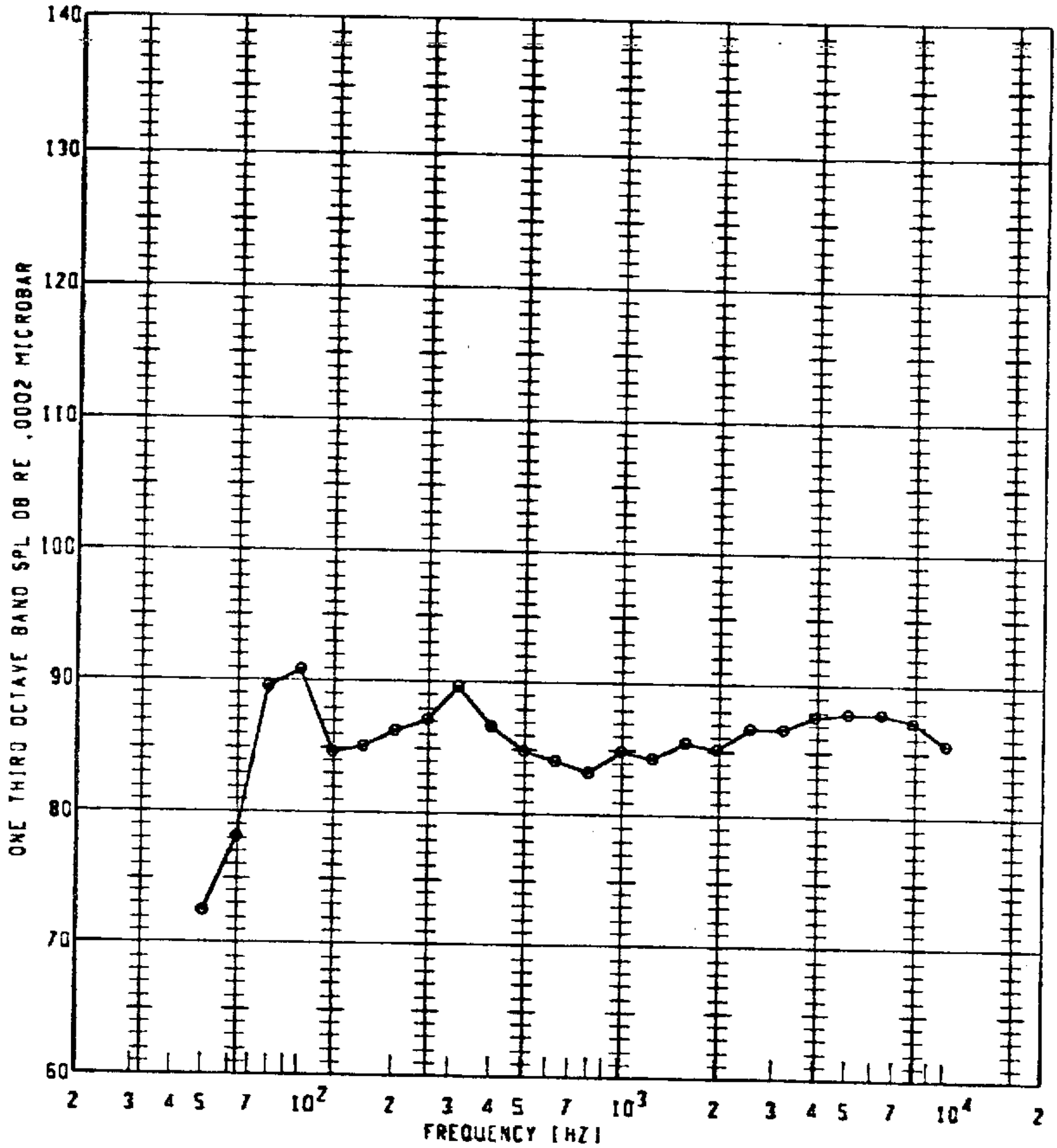
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	5G	900	1.600	140	50FP	123.9	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



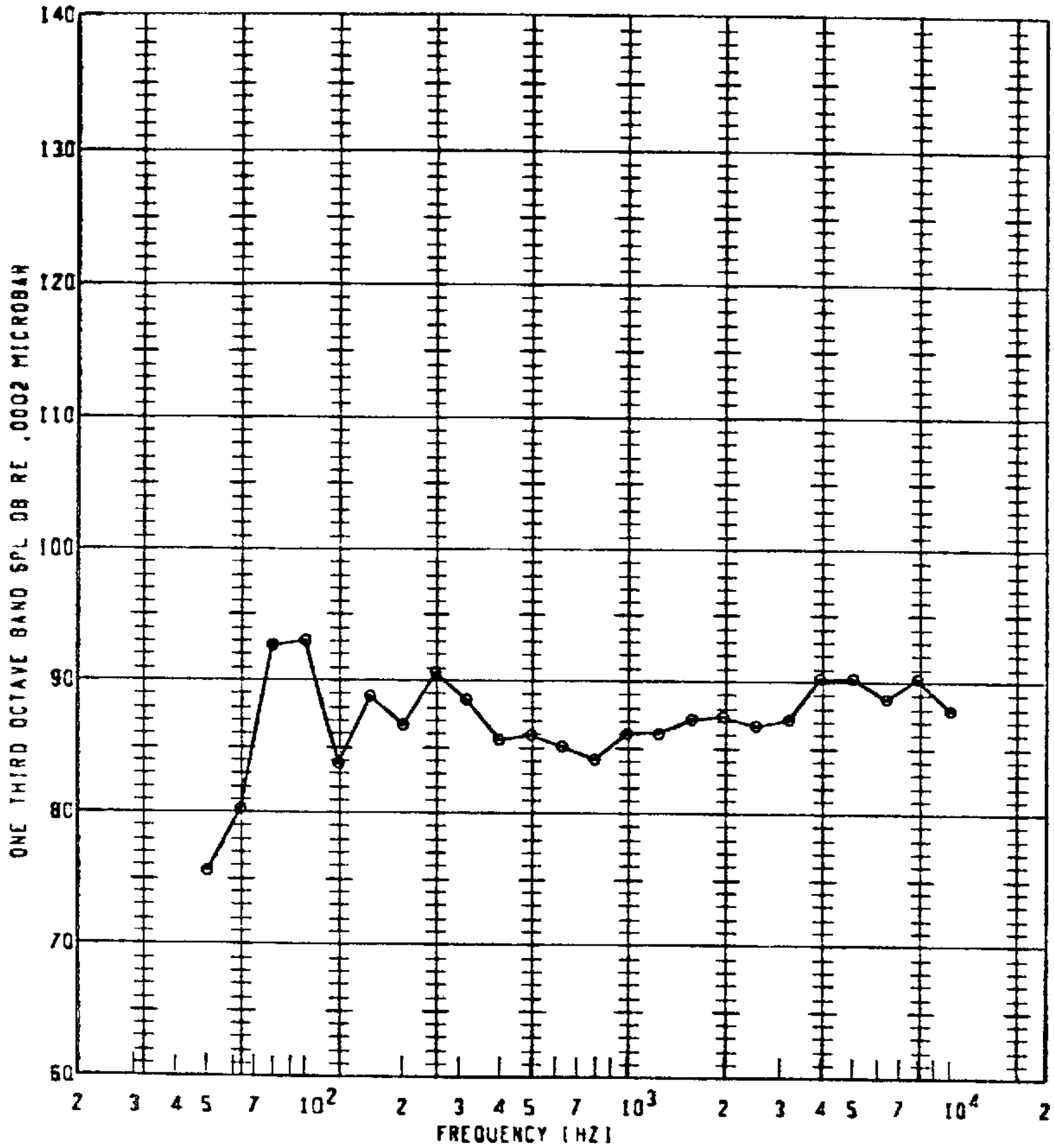
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊖	86	750	1.300	90	SOFP	99.2	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



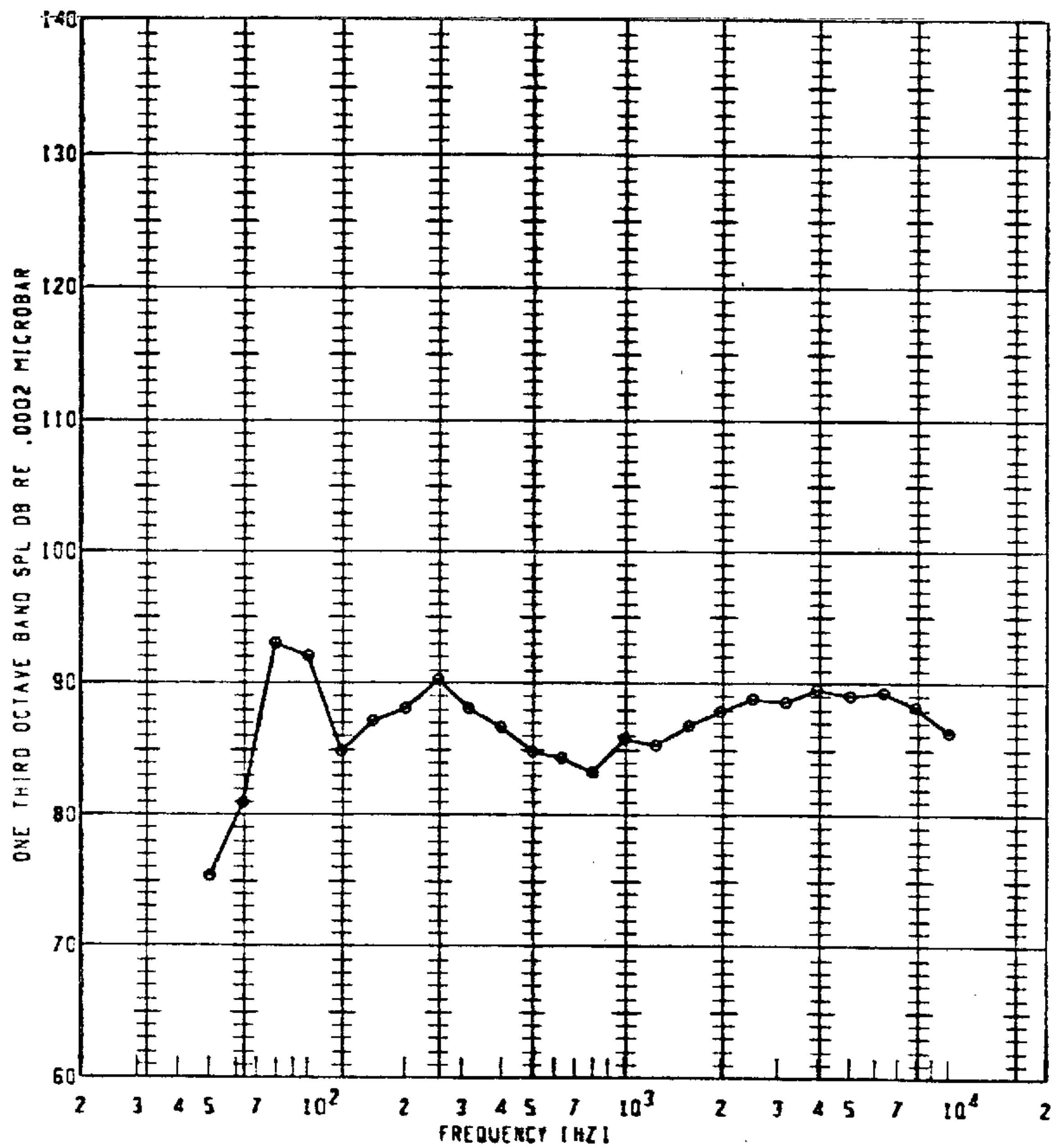
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	8G	750	1.300	100	50FP	100.3	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



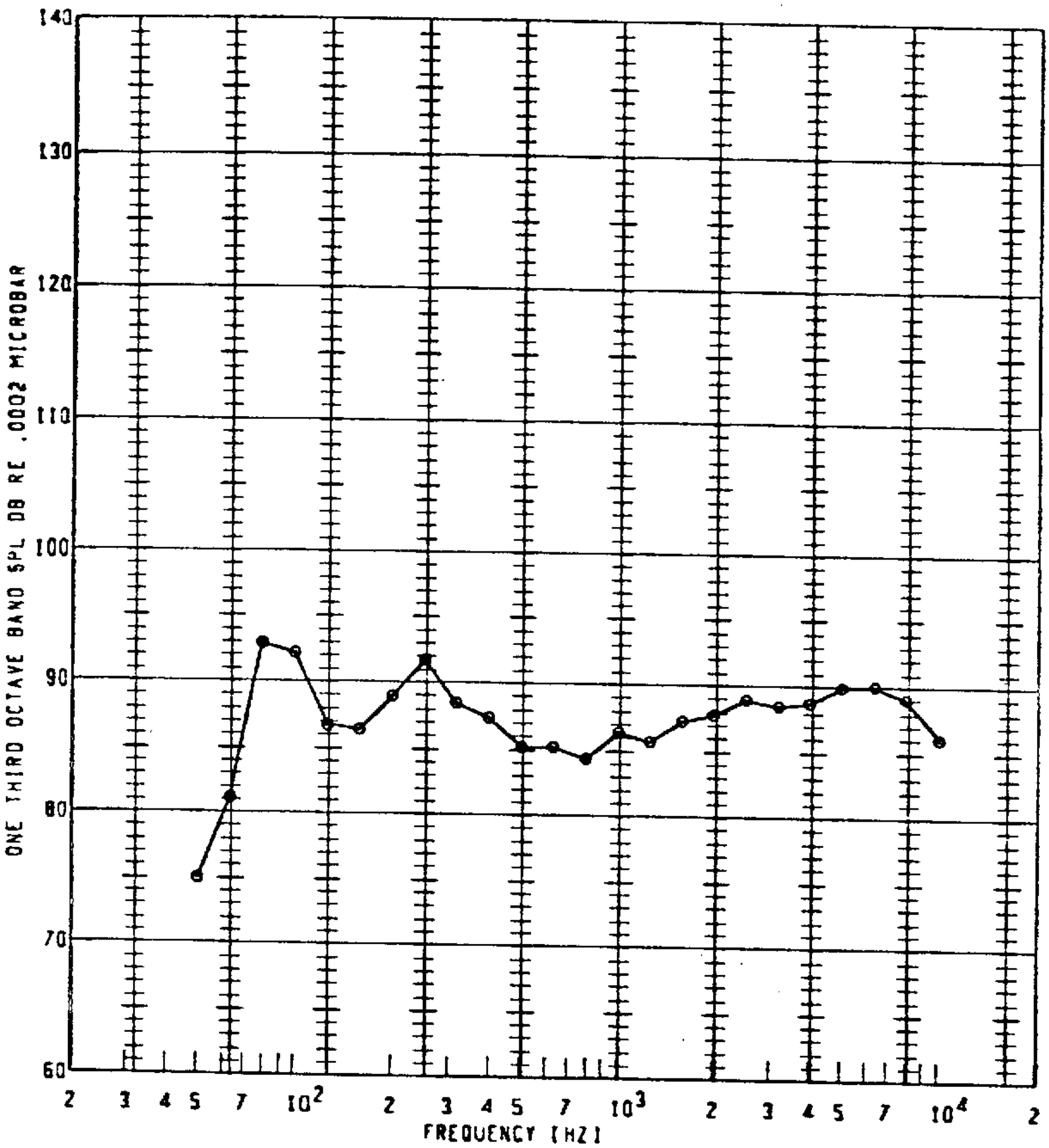
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	80	750	1.303	110	50FP	102.0	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - [redacted] NOZZLE TEST FACILITY



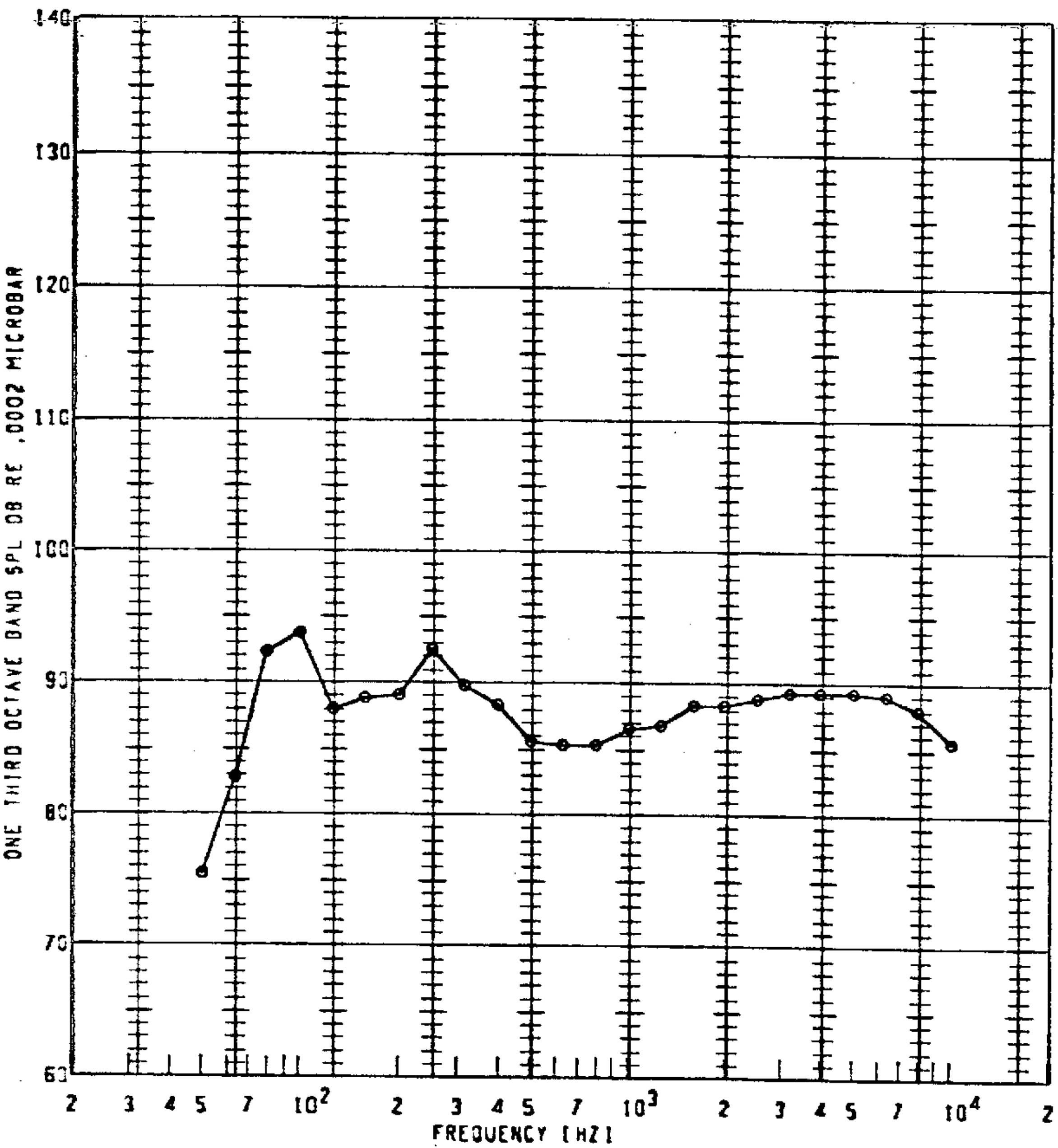
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	80	750	1.300	115	50FP	101.8	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



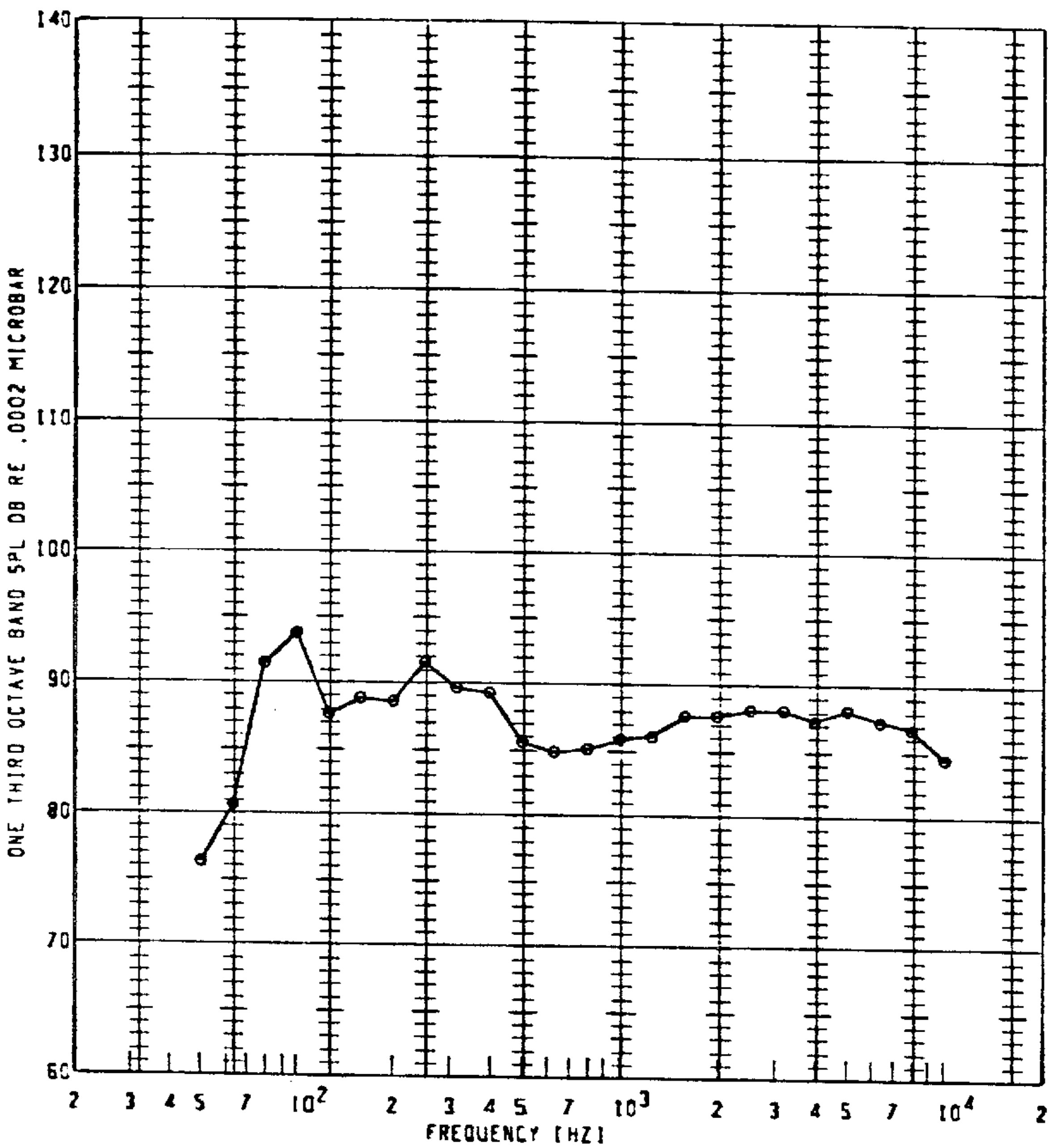
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	8G	750	1.300	120	50FP	102.2	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY

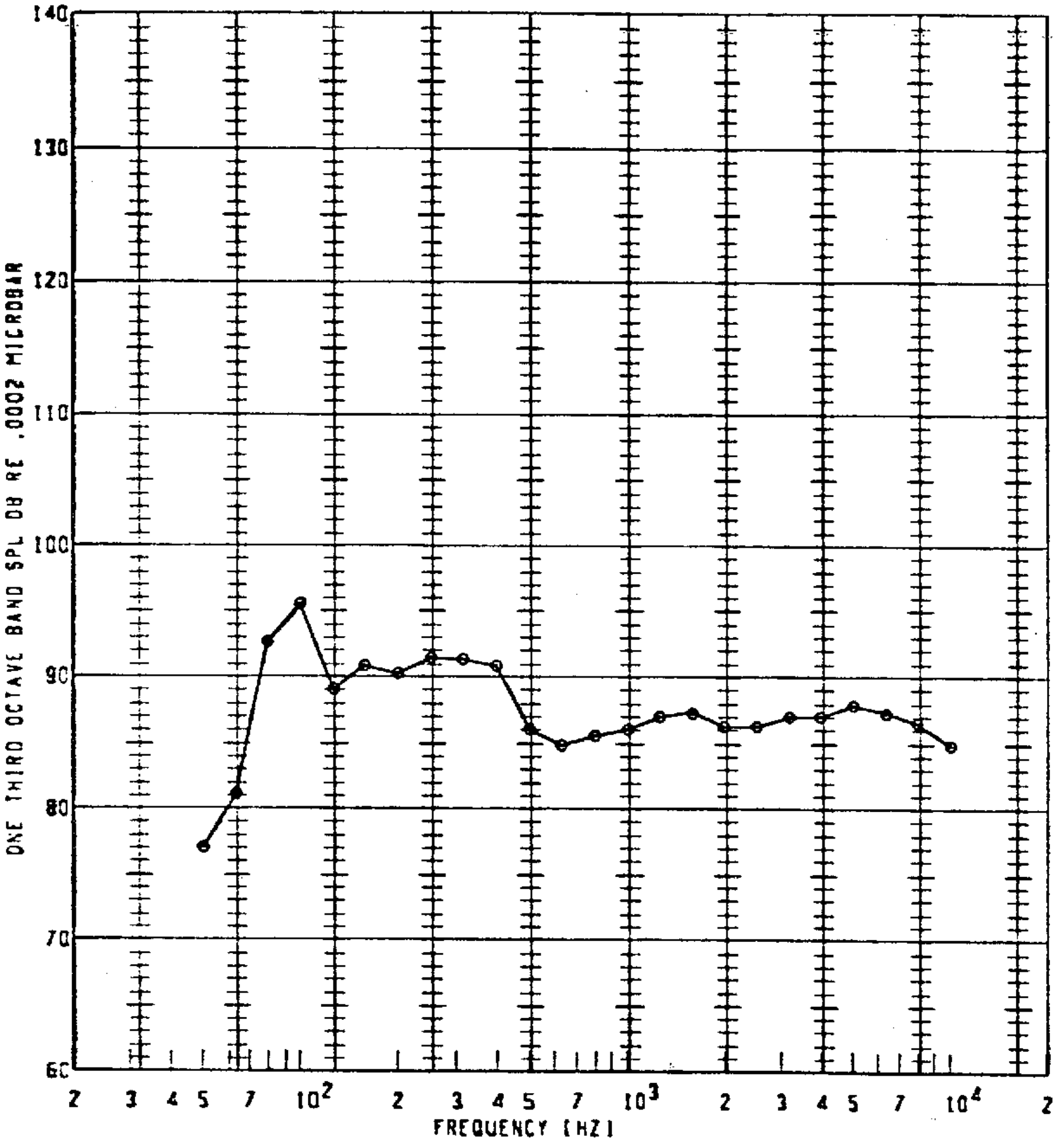


PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	86	750	1.300	125	50FP	102.6	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY

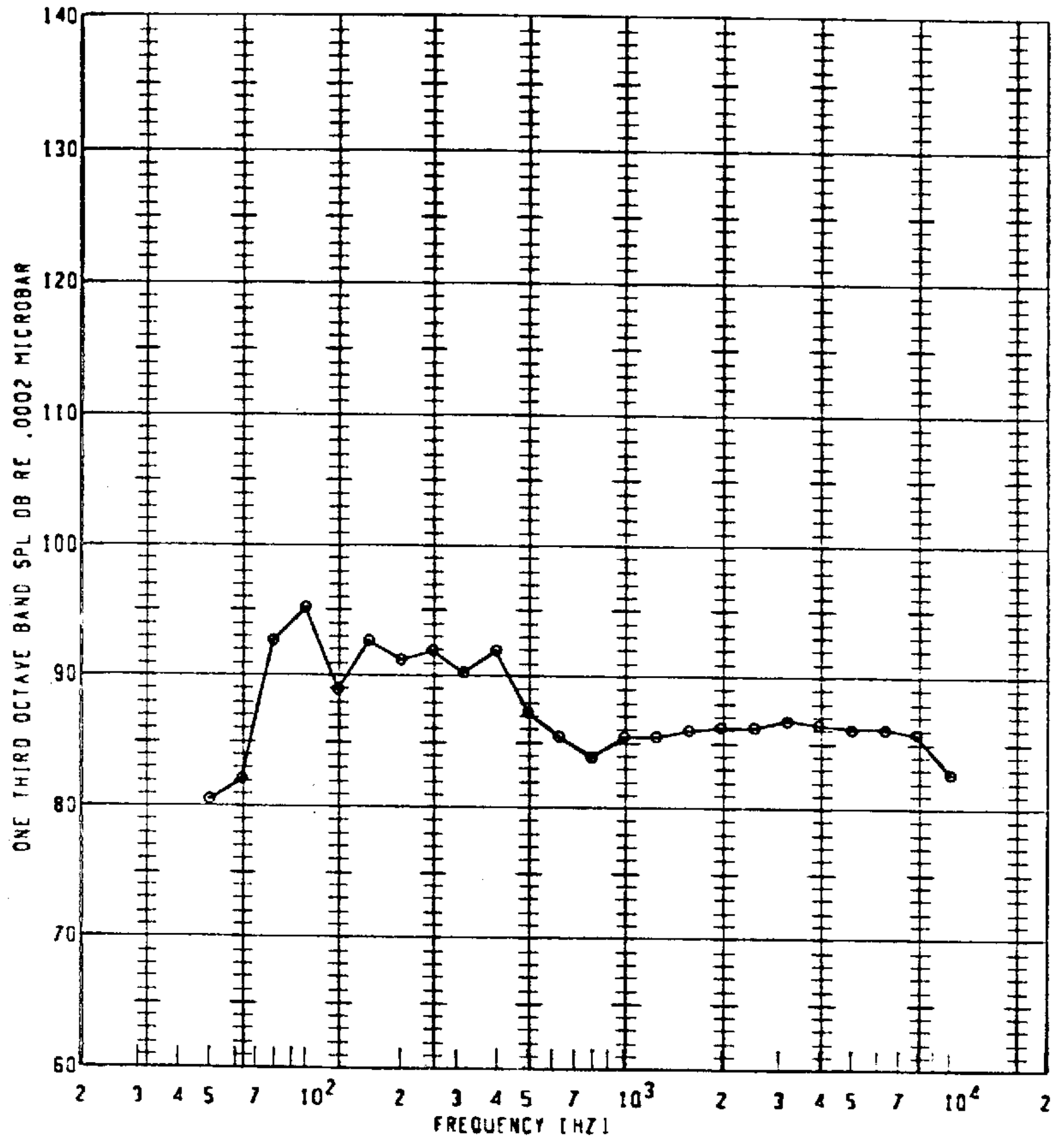


PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	8G	750	1.300	130	50FP	102.0	20	



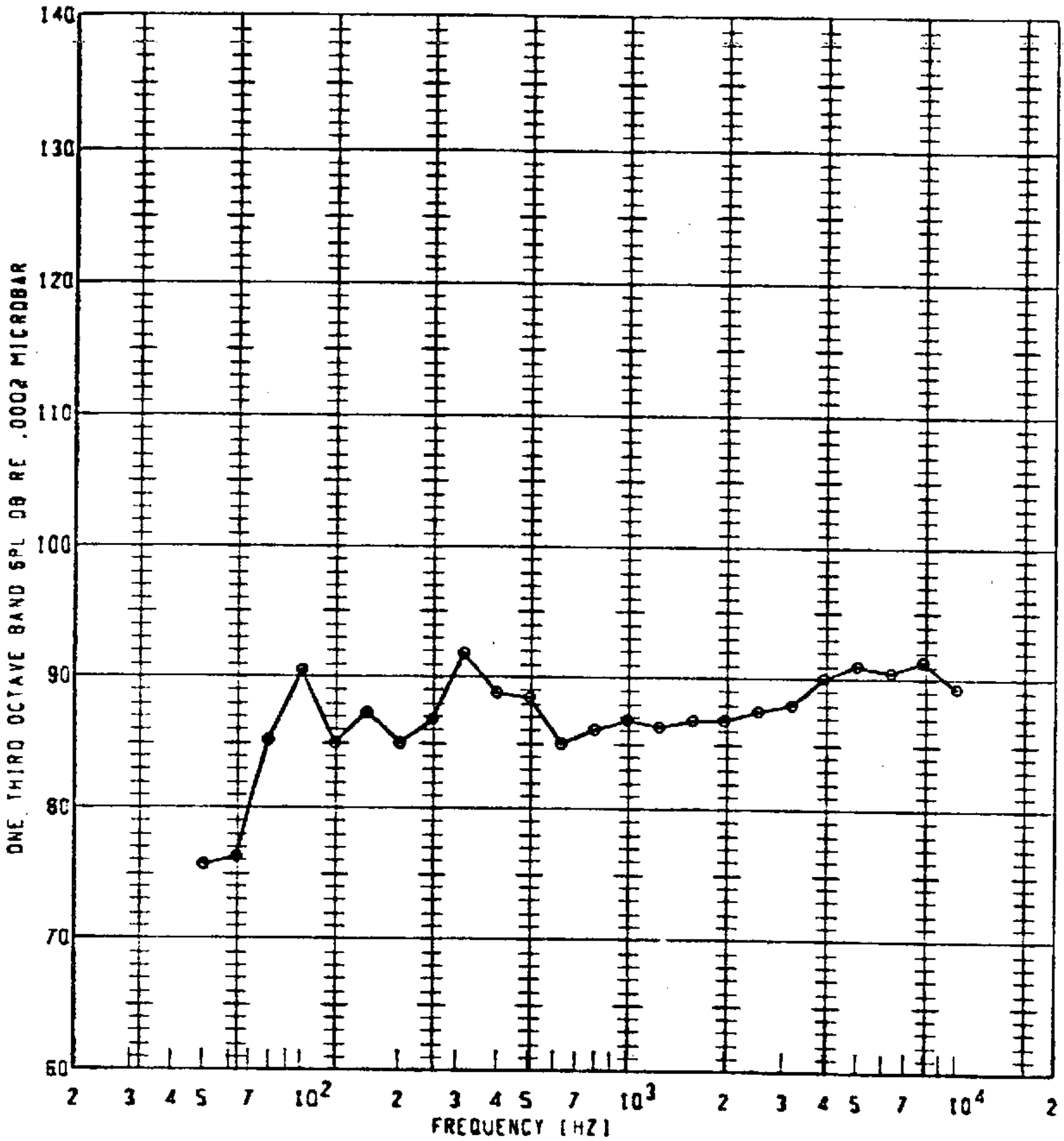
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊕	80	750	1.300	135	50FP	102.8	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



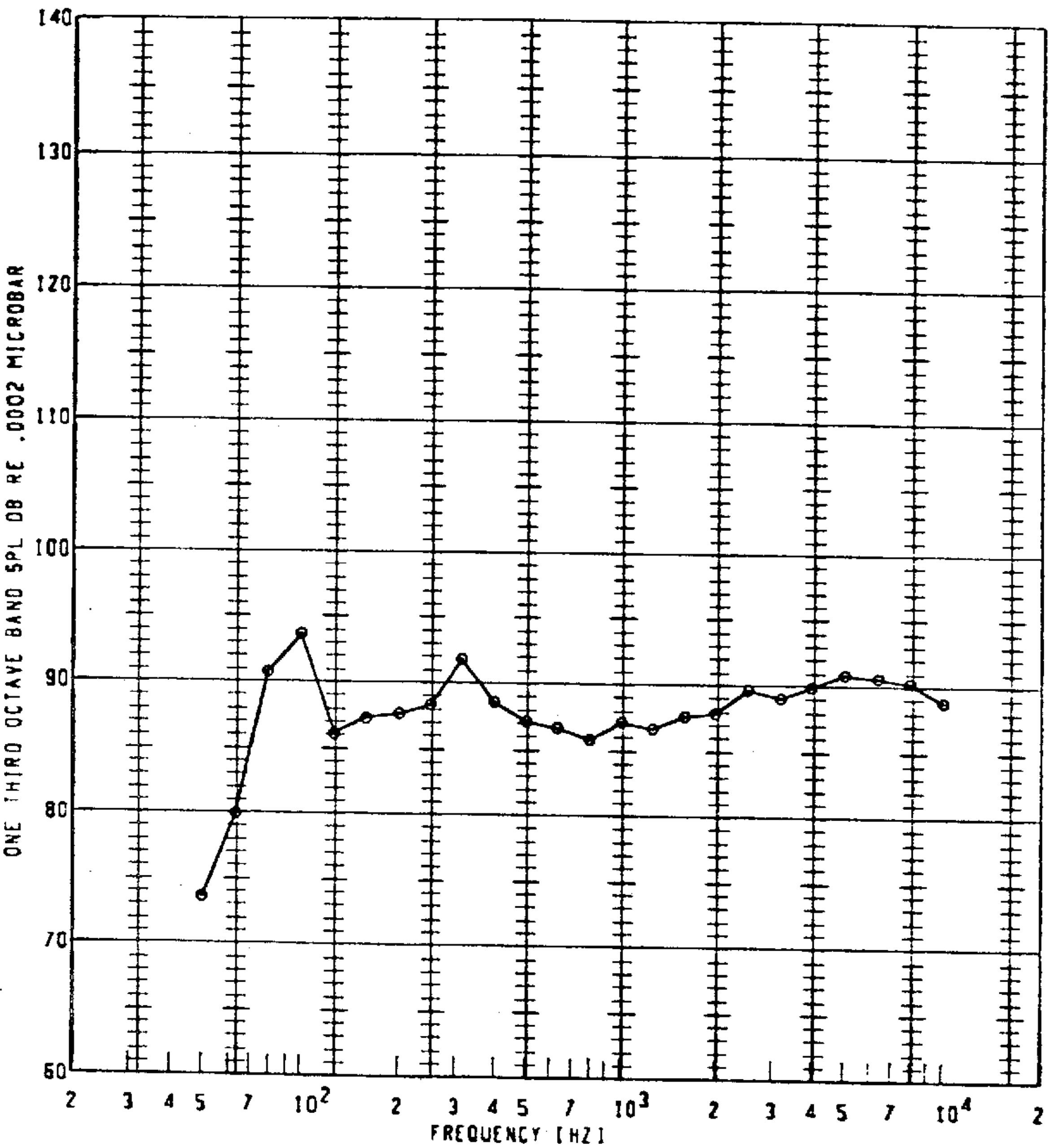
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	8G	750	1.300	140	50FP	102.8	2[illegible]	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



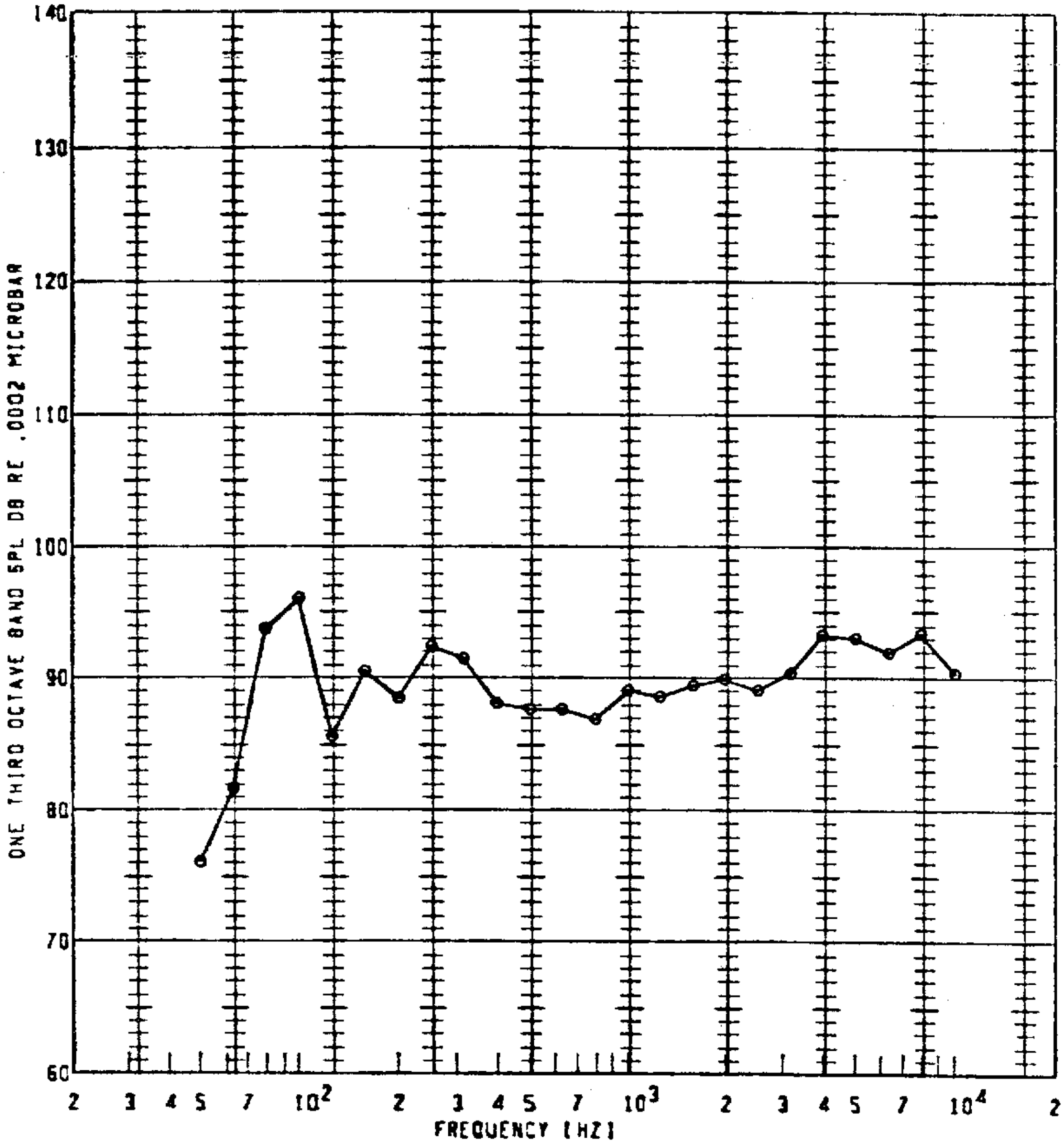
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	8G	830	1.400	90	50FP	101.9	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



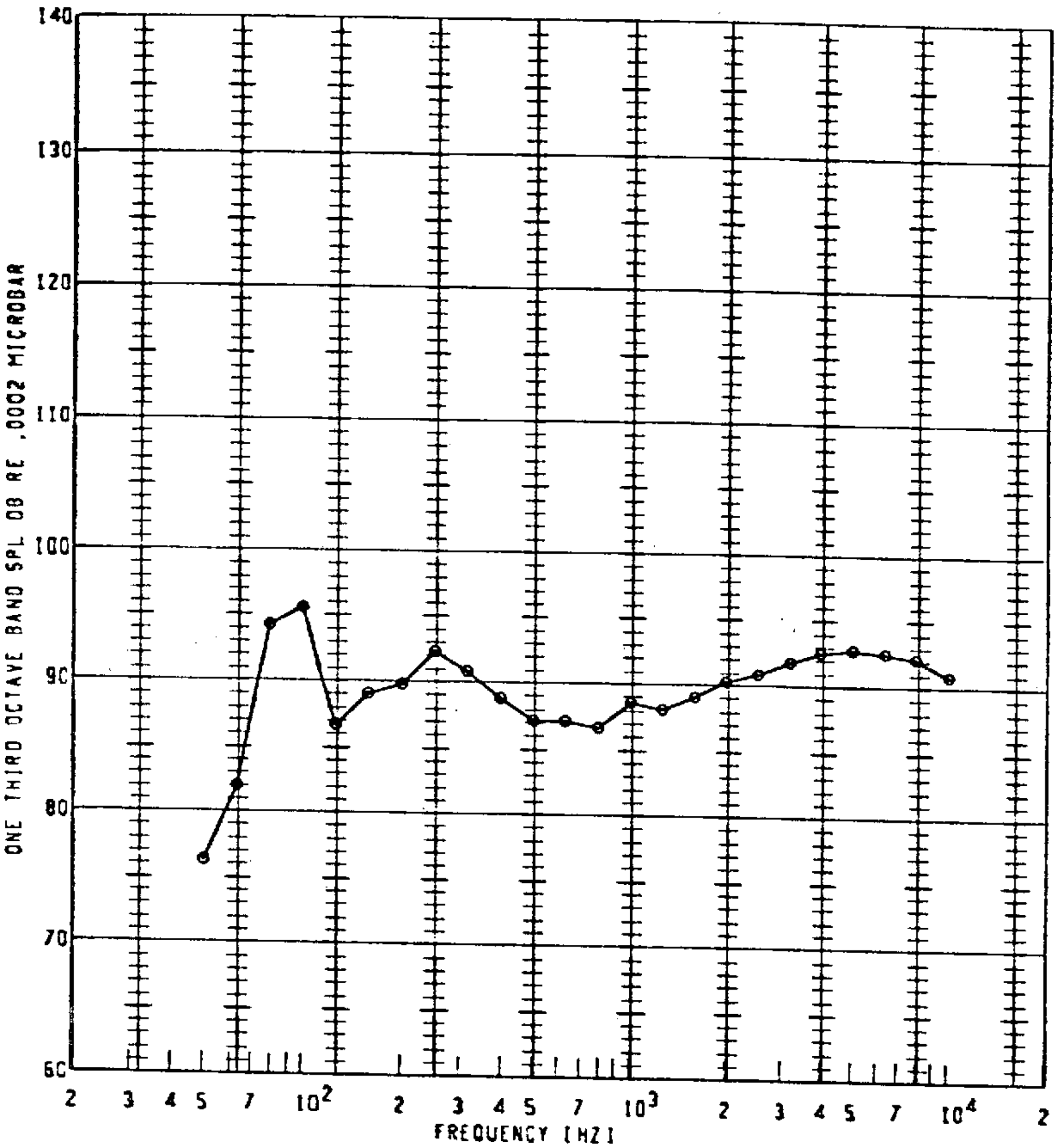
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊖	86	800	1.400	100	50FP	102.6	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



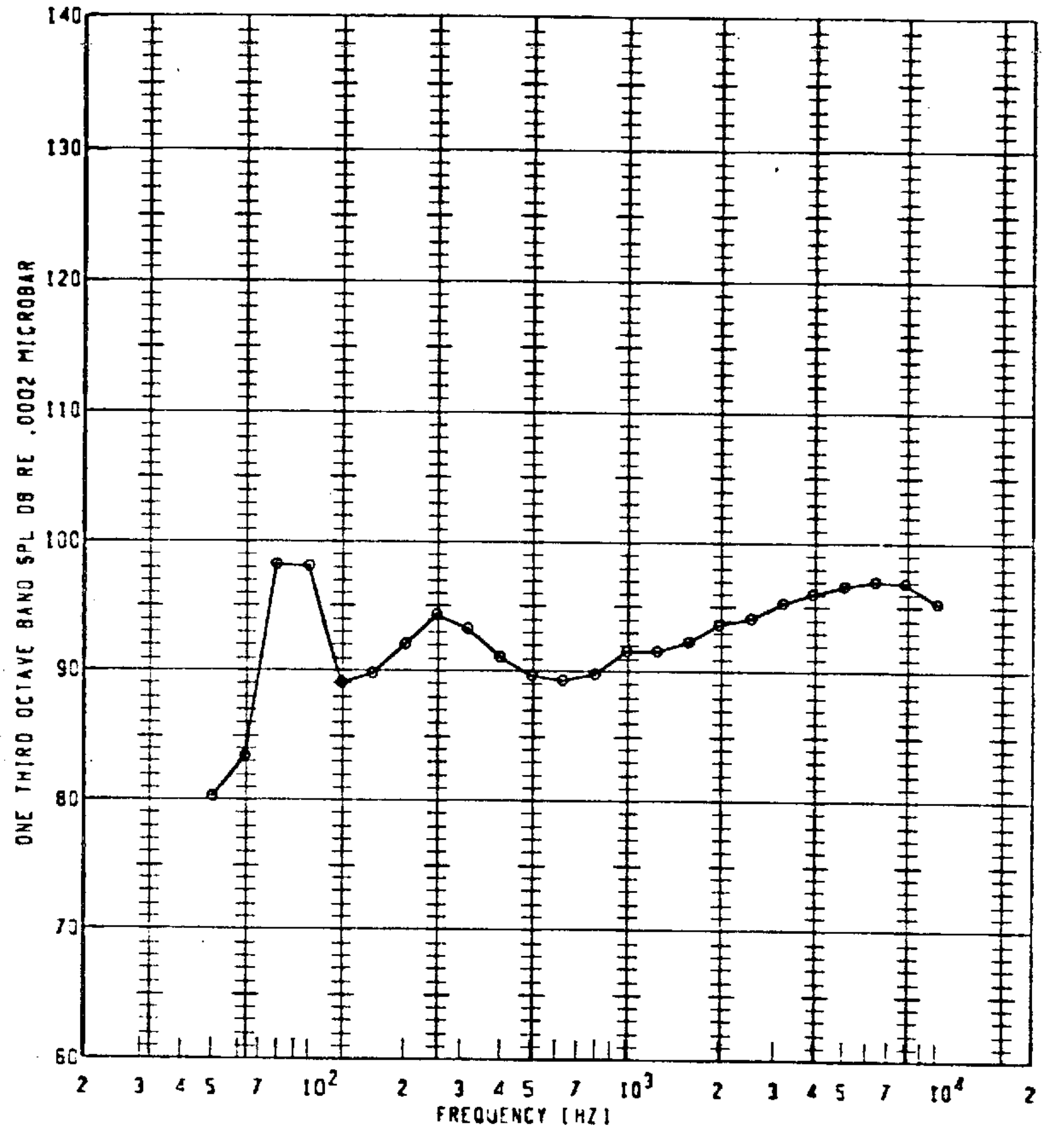
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	8G	800	1.400	110	50FP	104.5	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



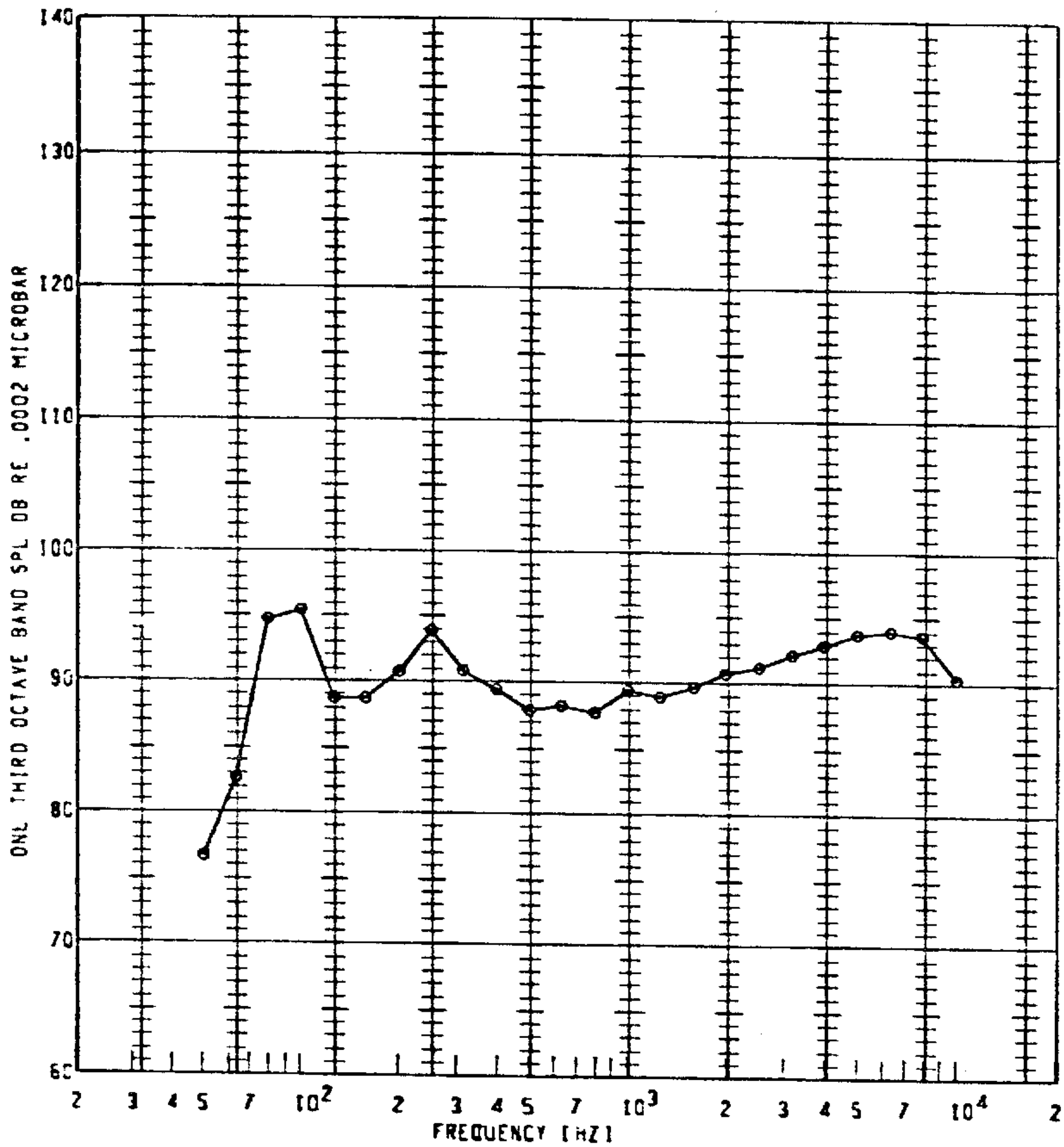
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	8G	800	1.400	115	50FP	104.5	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



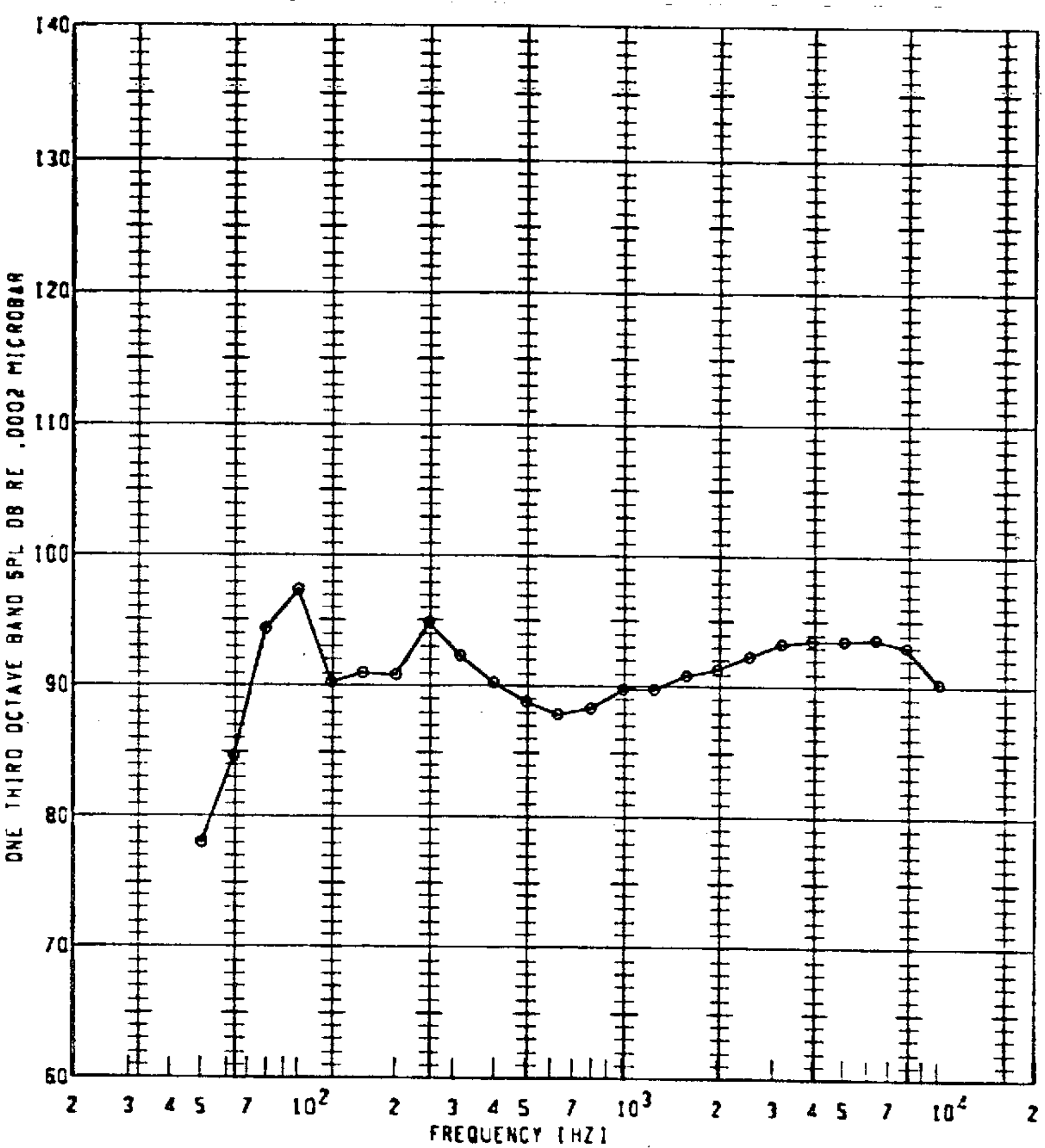
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	86	850	1.500	115	50FP	107.8	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



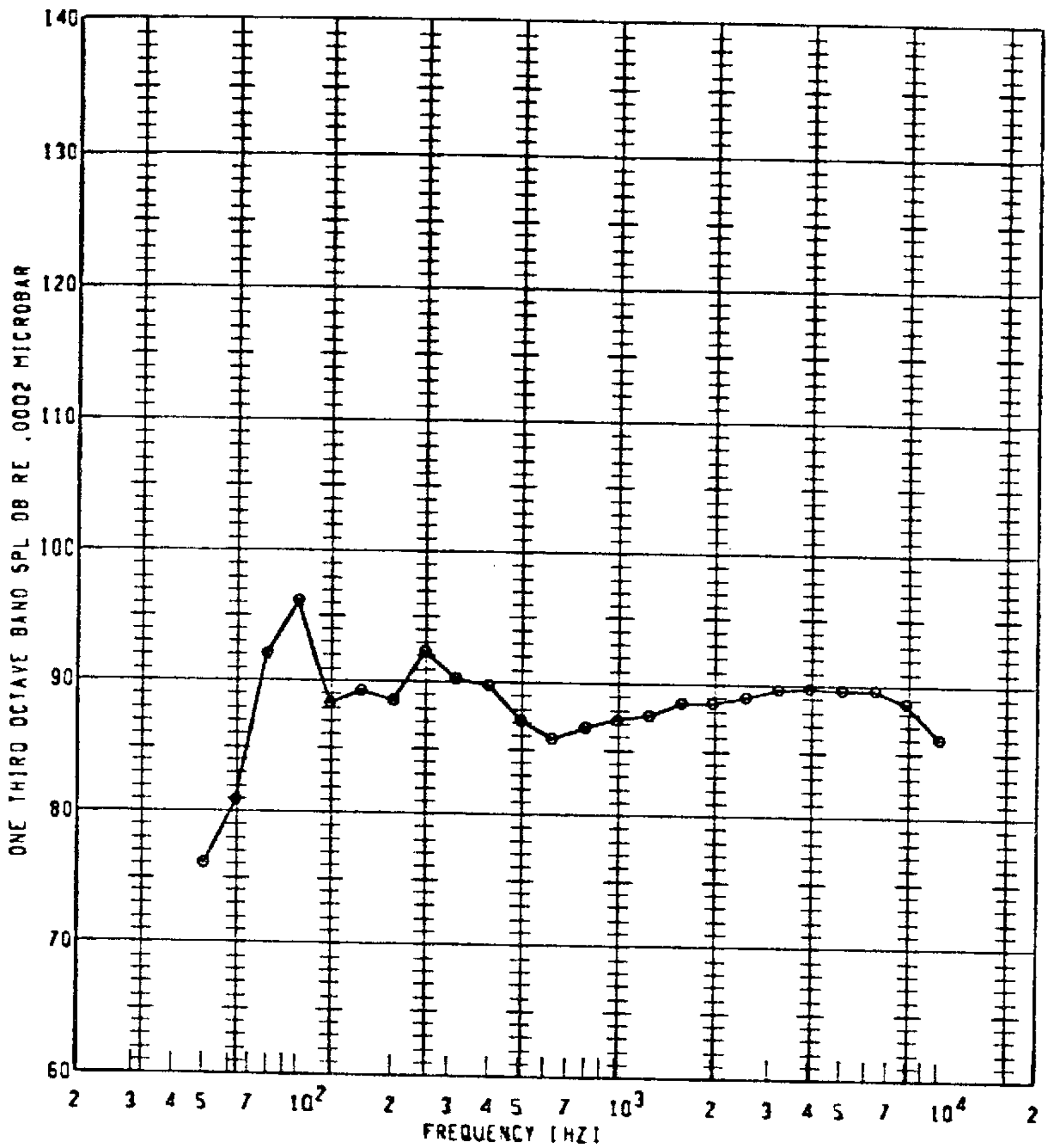
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊖	8G	800	1.400	120	50FP	105.1	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



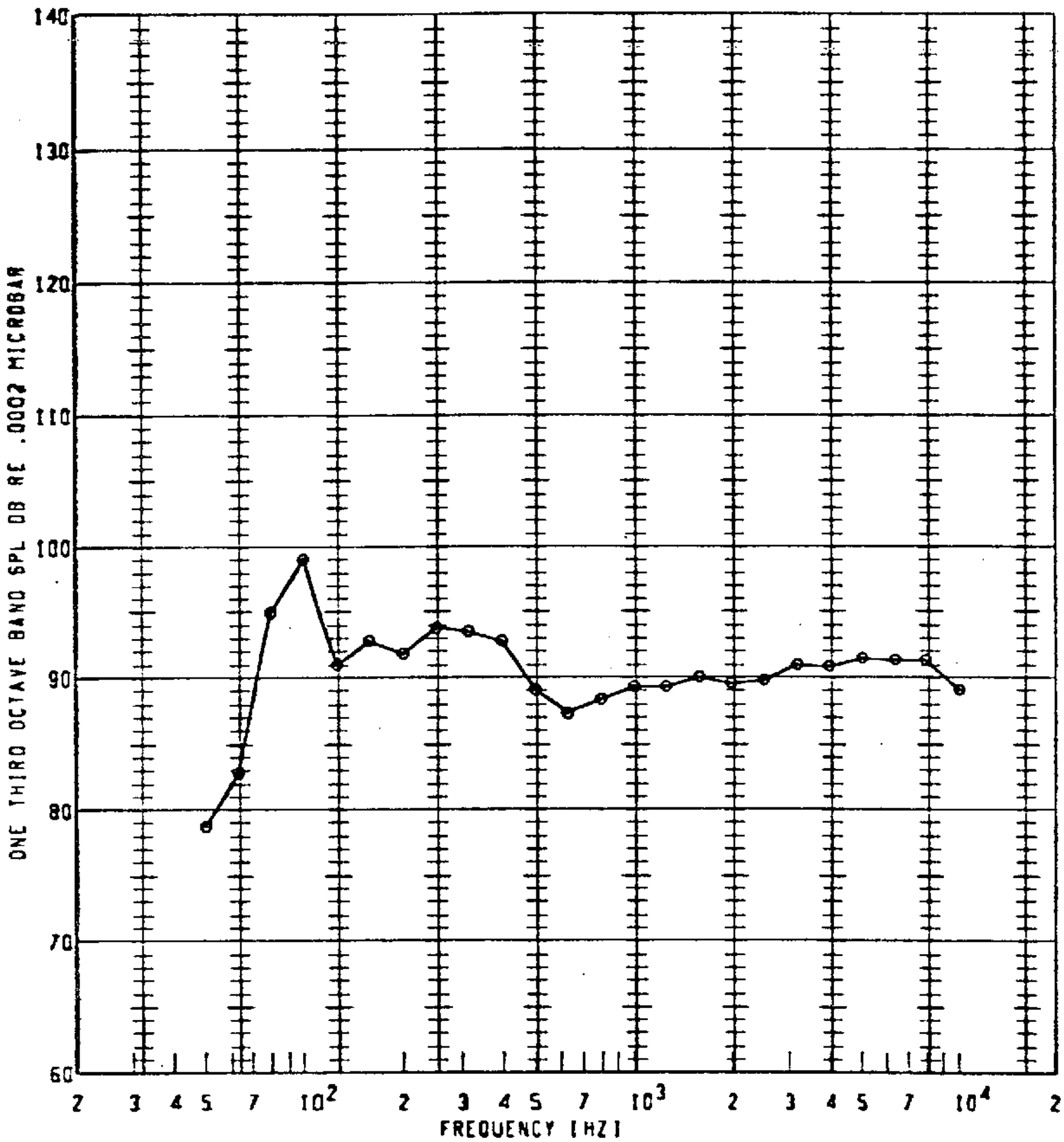
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	8G	800	1.400	125	50FP	105.8	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



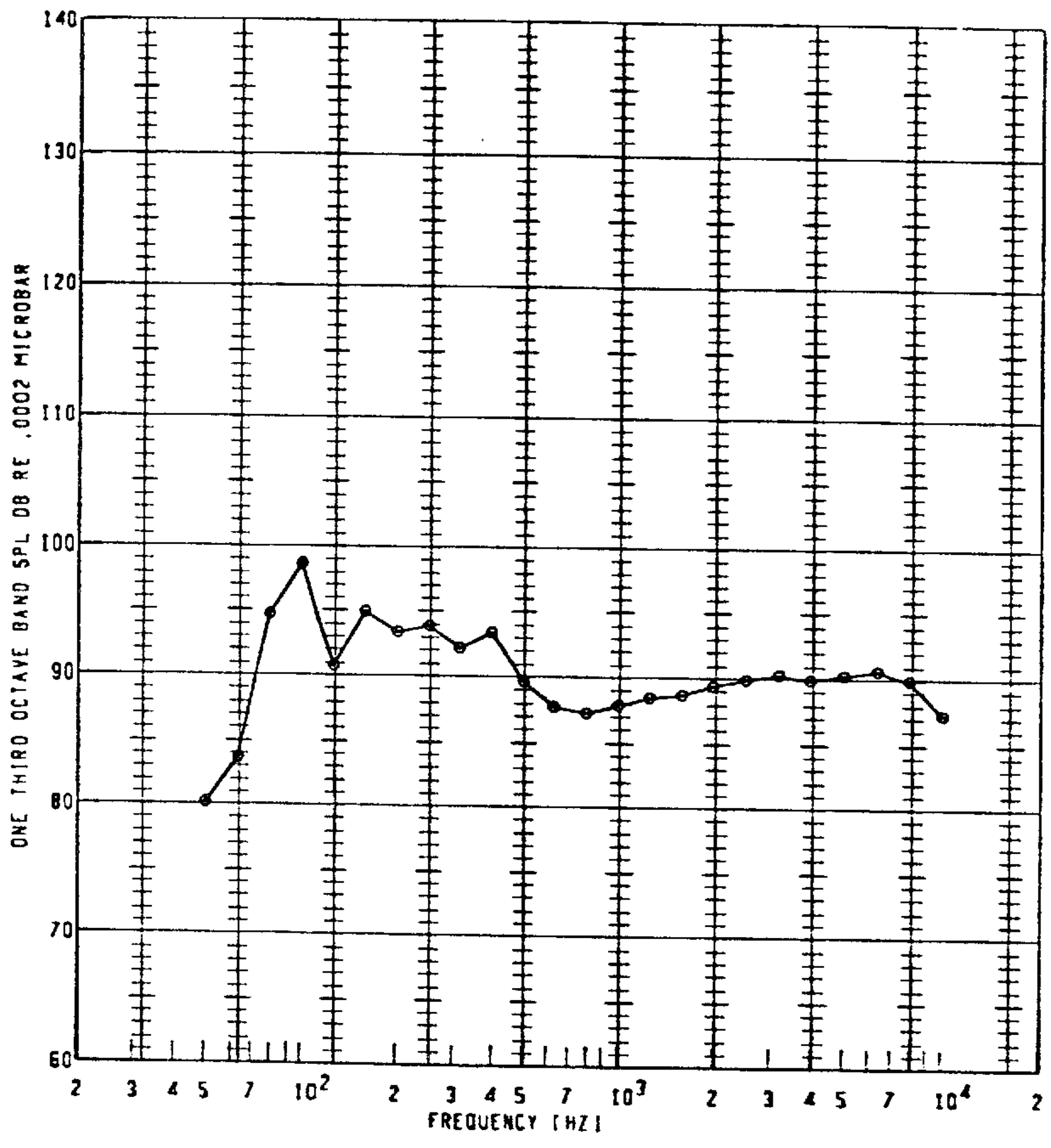
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	86	800	1.400	130	50FP	103.3	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



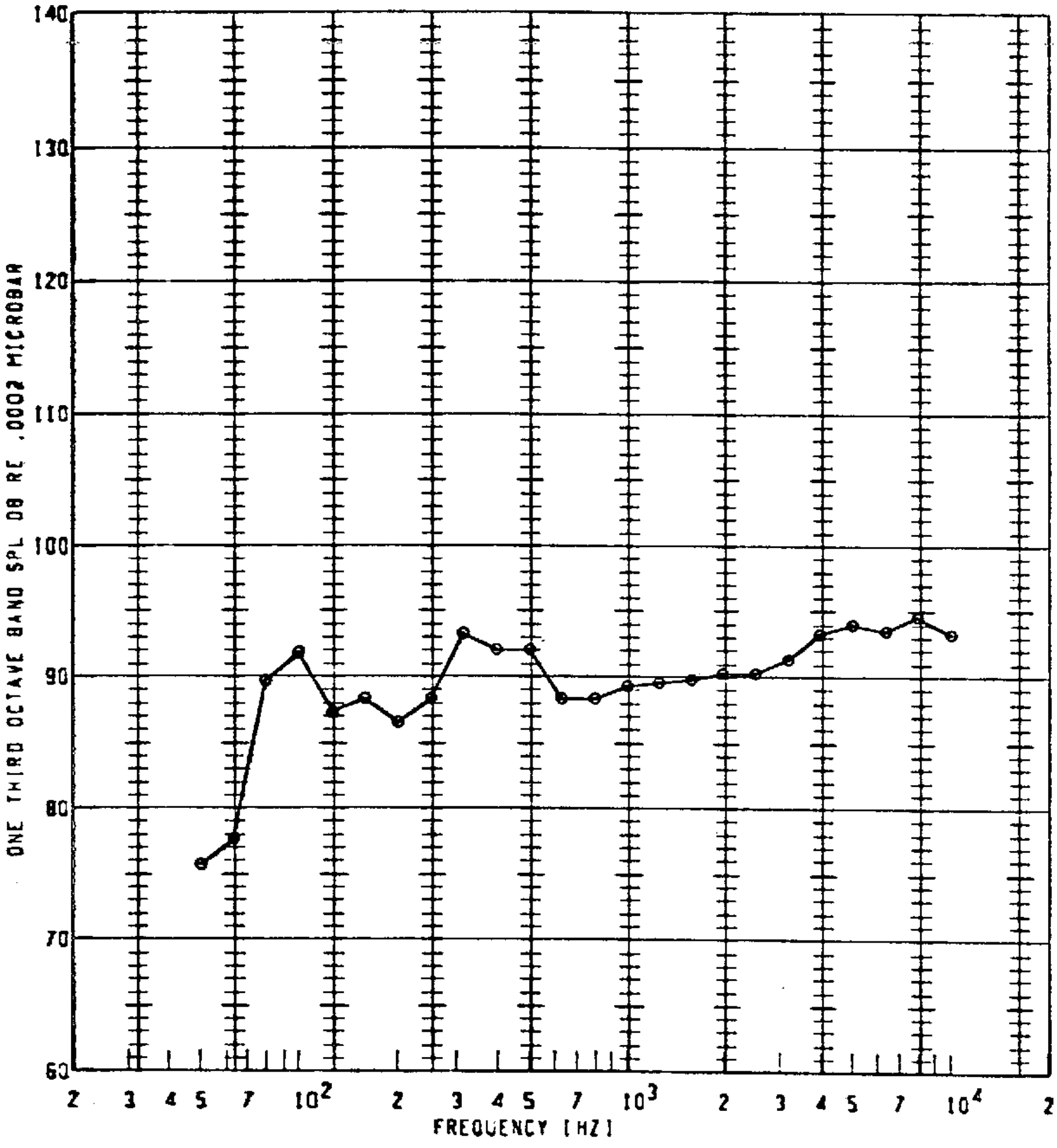
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	86	800	1.400	135	50FP	105.6	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



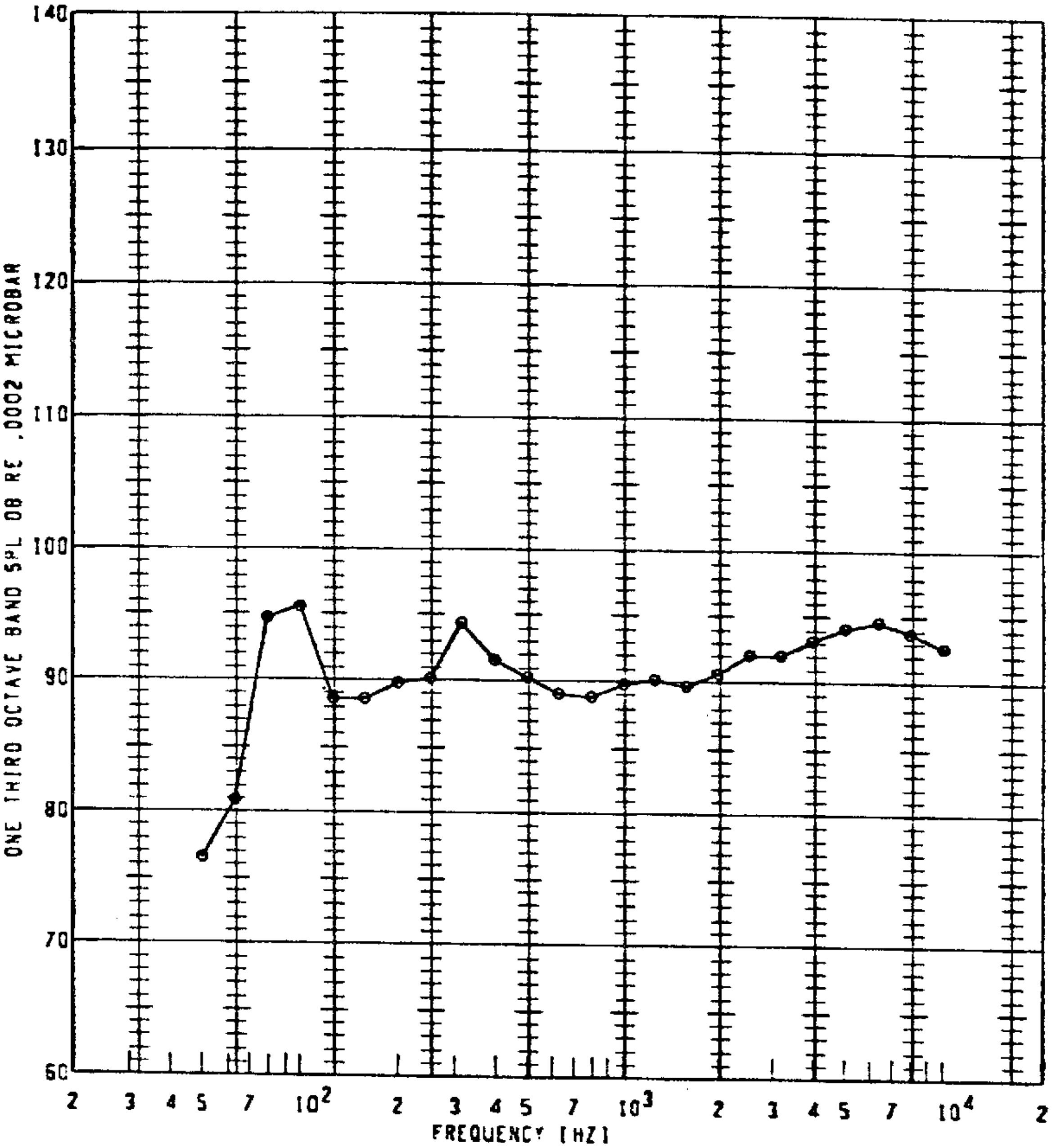
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	80	800	1.400	140	50FP	105.5	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



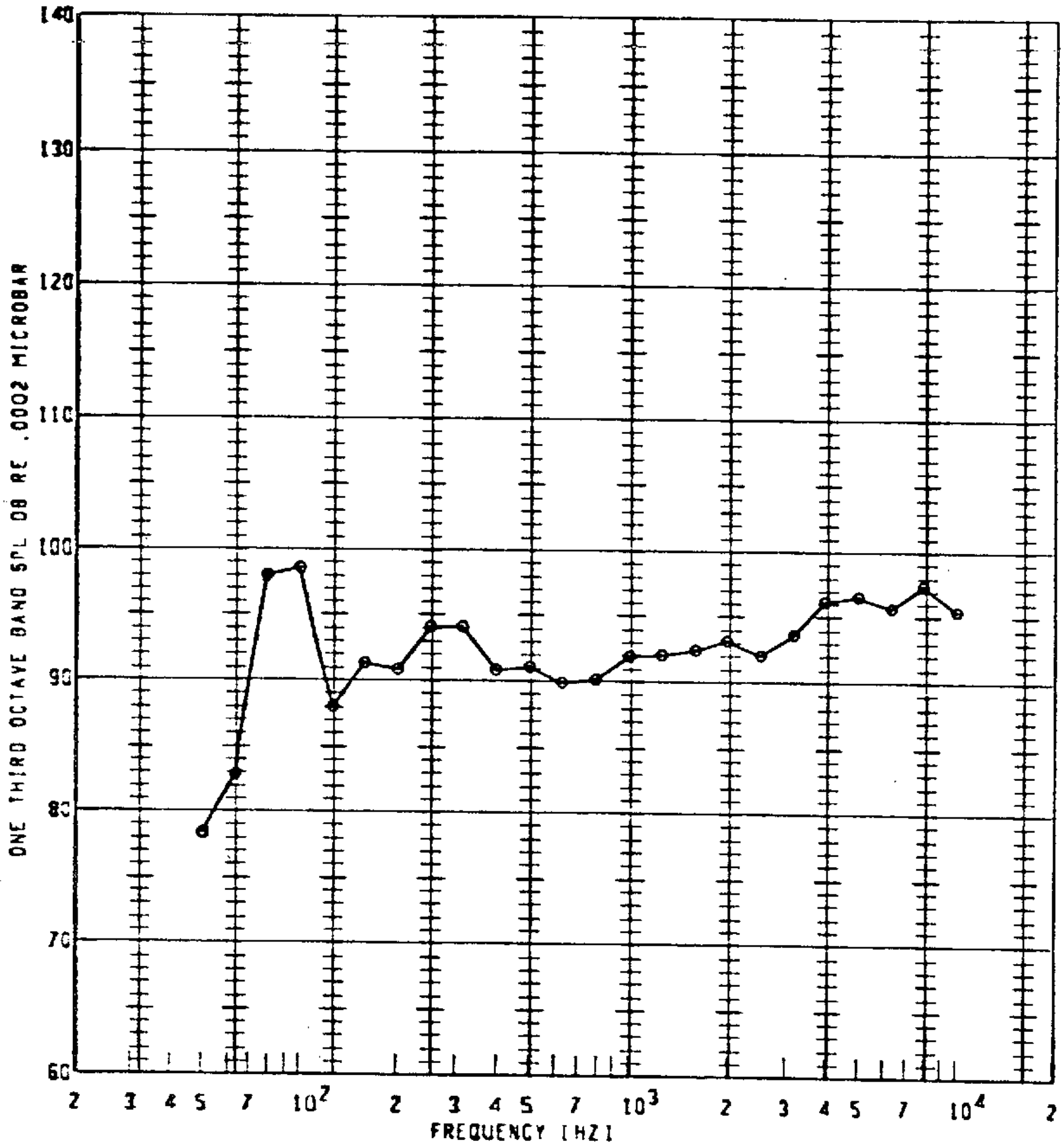
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊖	86	850	1.500	90	50FP	104.7	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



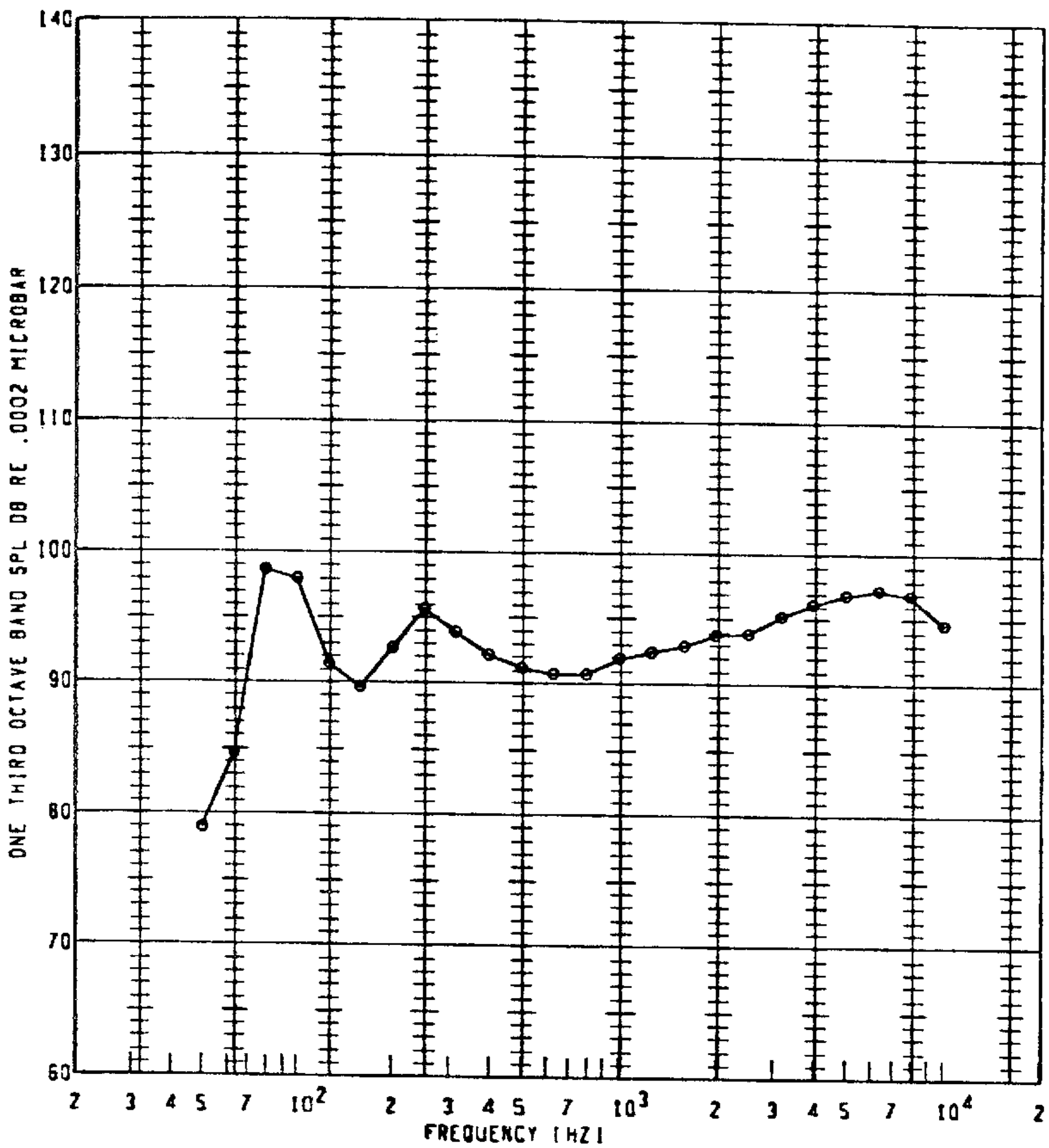
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	CASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	86	850	1.500	100	50FP	105.6	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



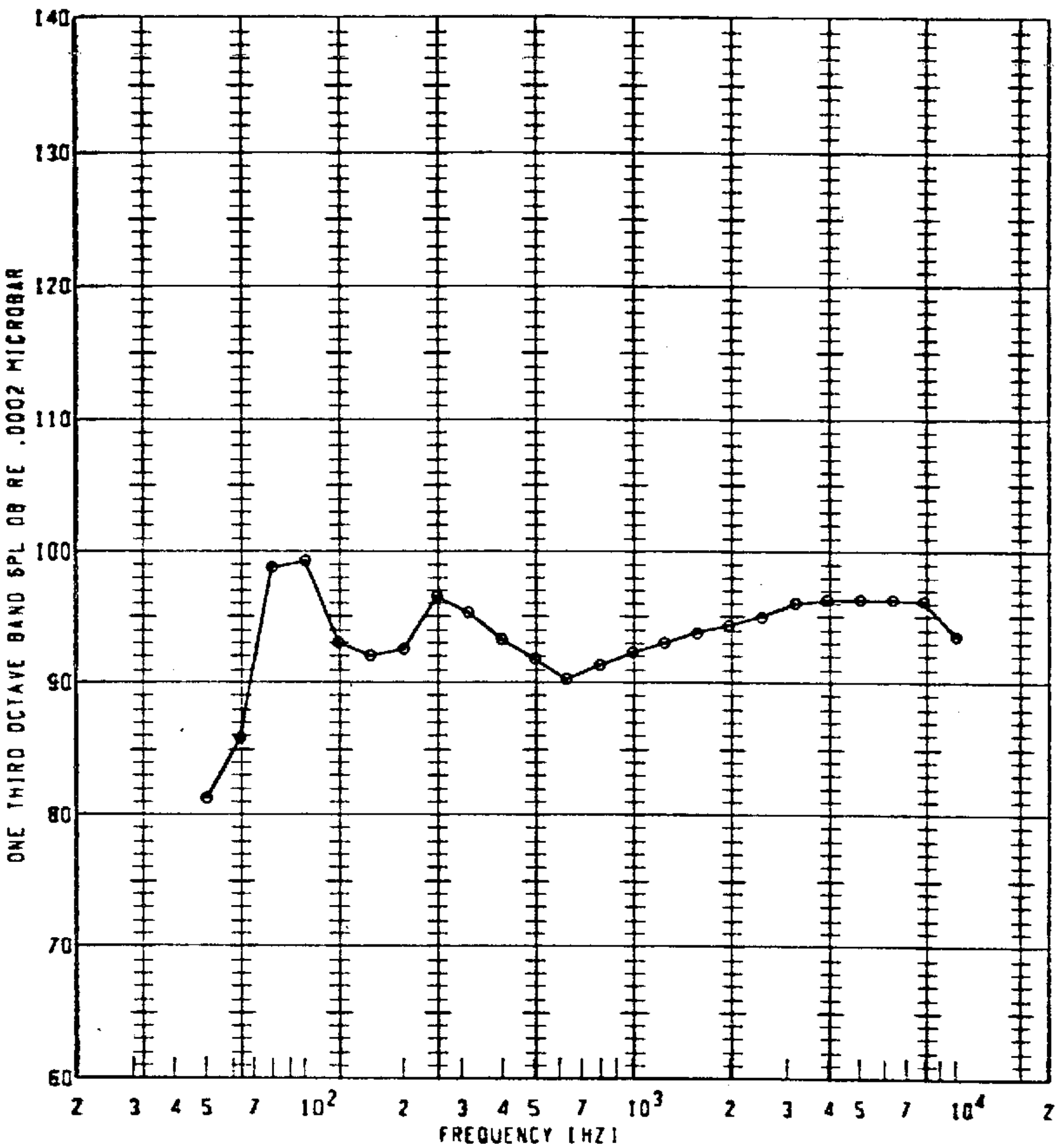
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	8G	850	1.500	110	50FP	107.7	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



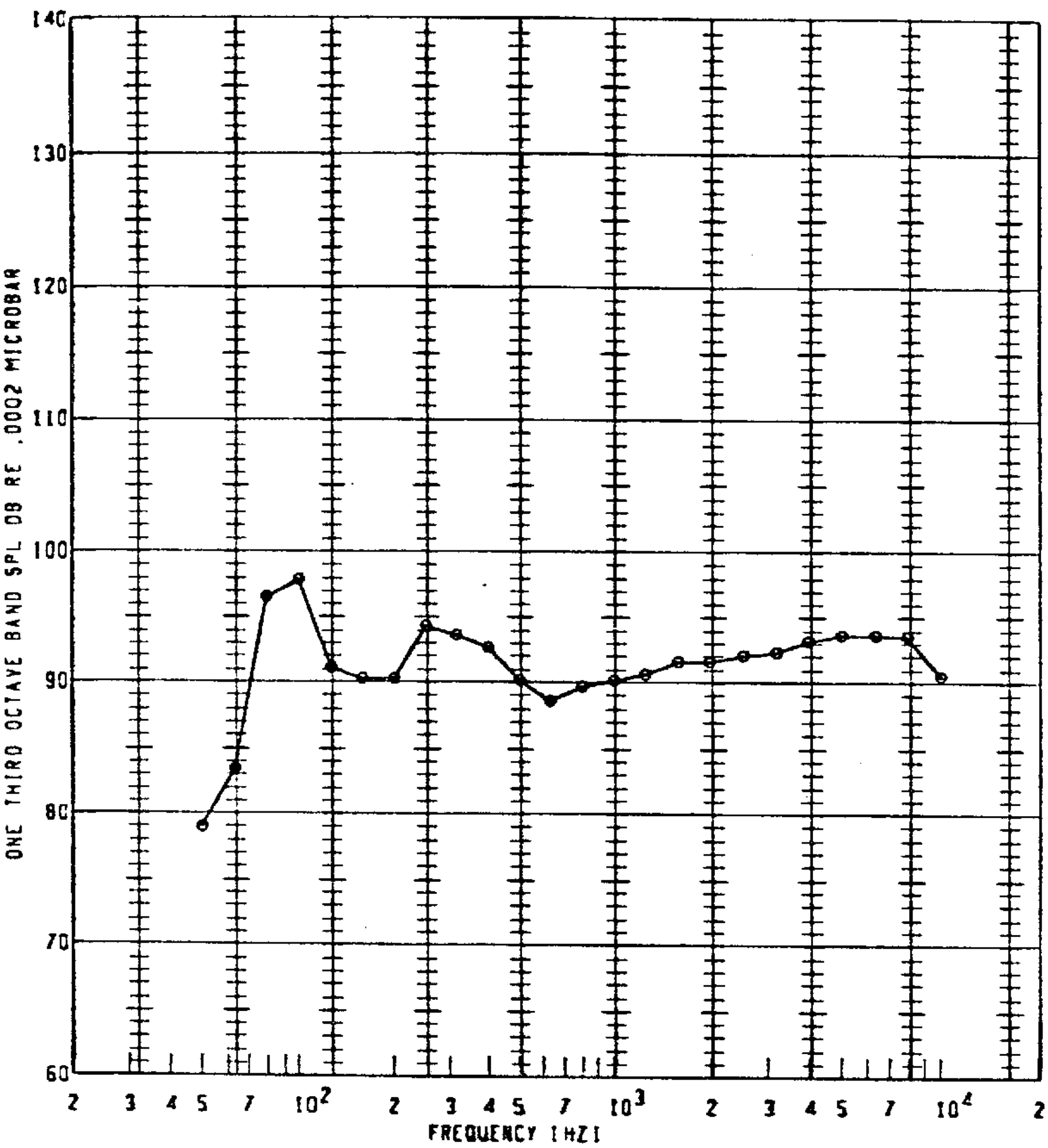
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	86	850	1.500	120	50FP	108.1	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



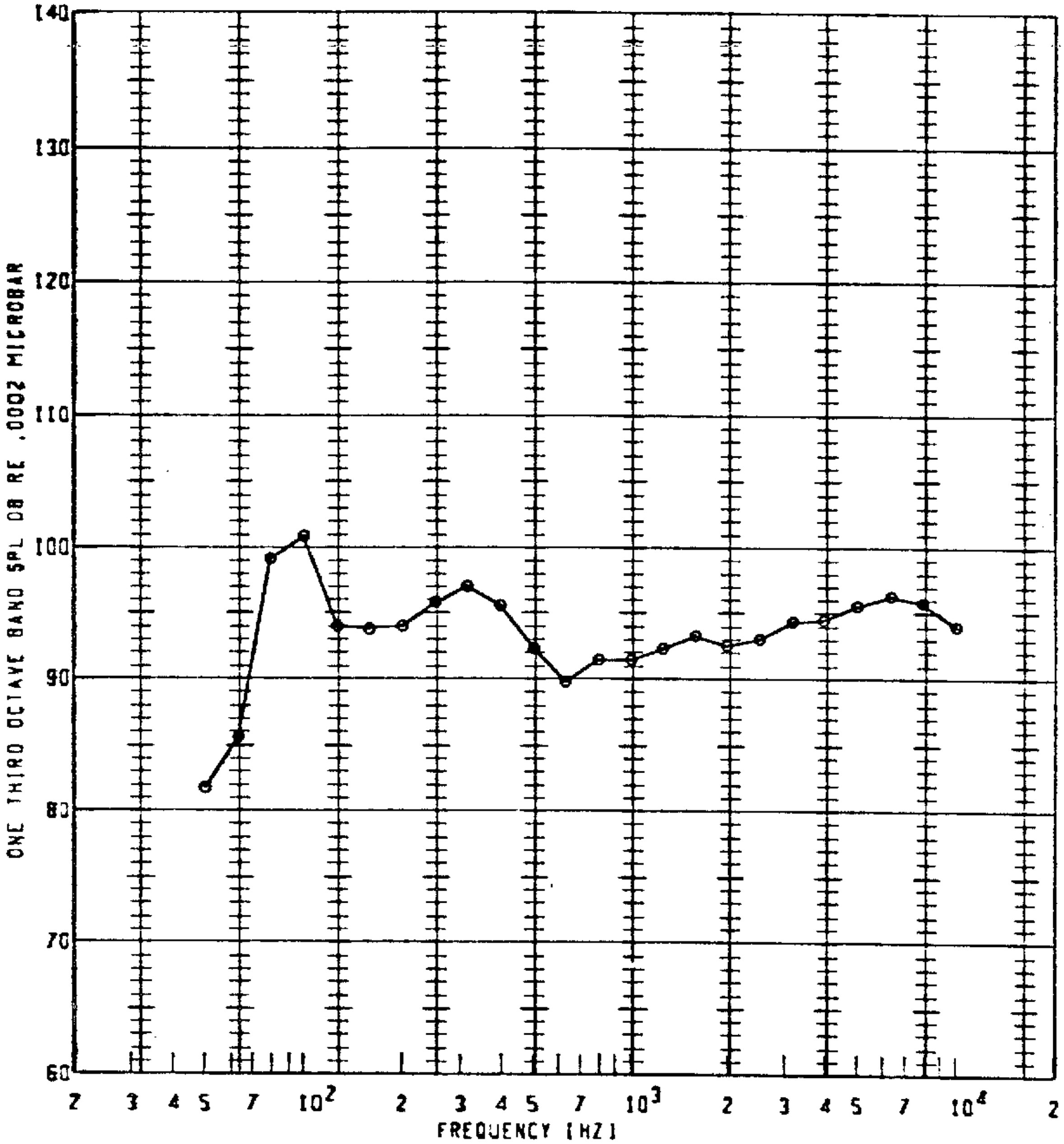
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	86	850	1.500	125	50FP	108.5	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



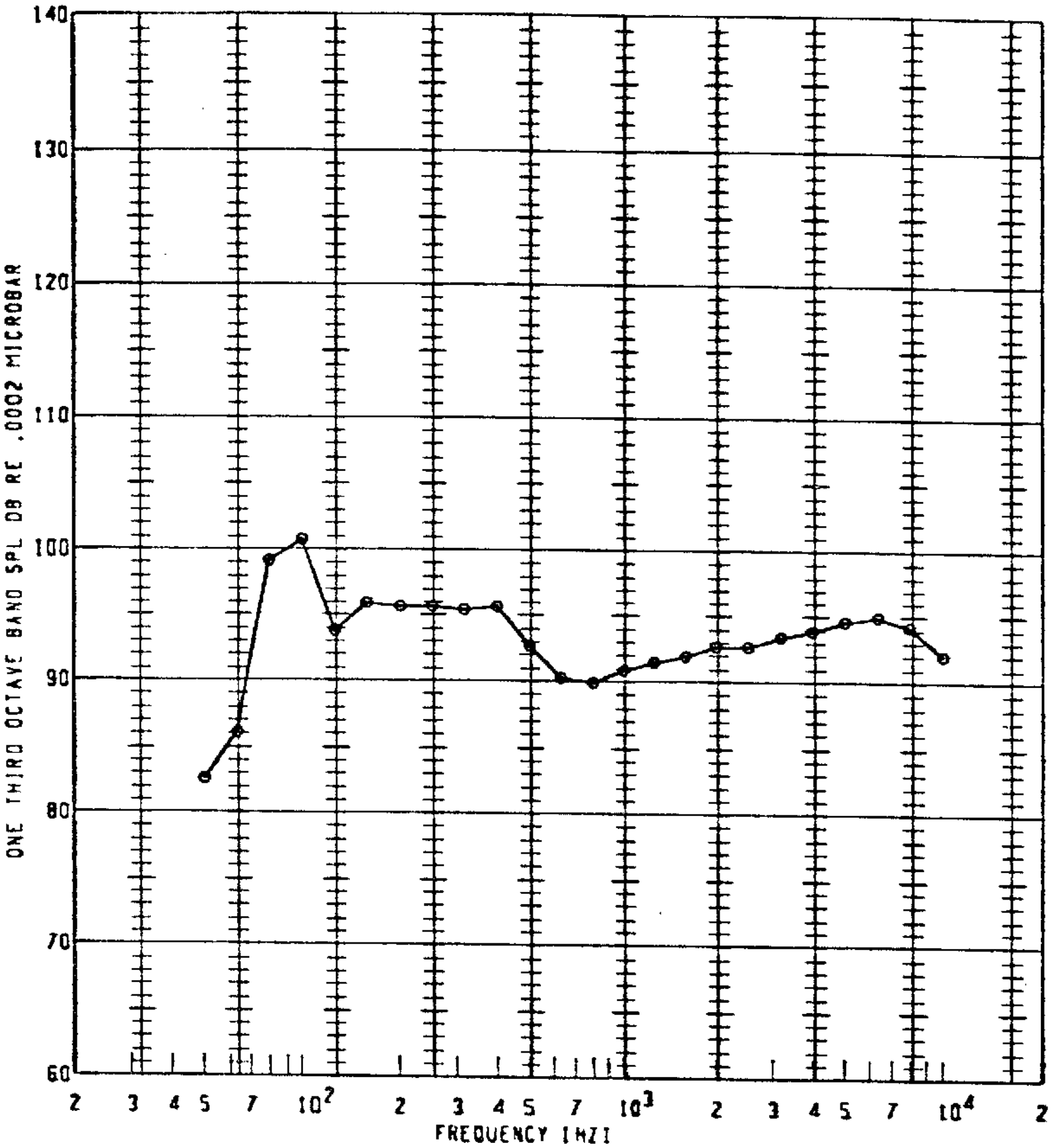
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	8G	850	1.500	130	50FP	108.2	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



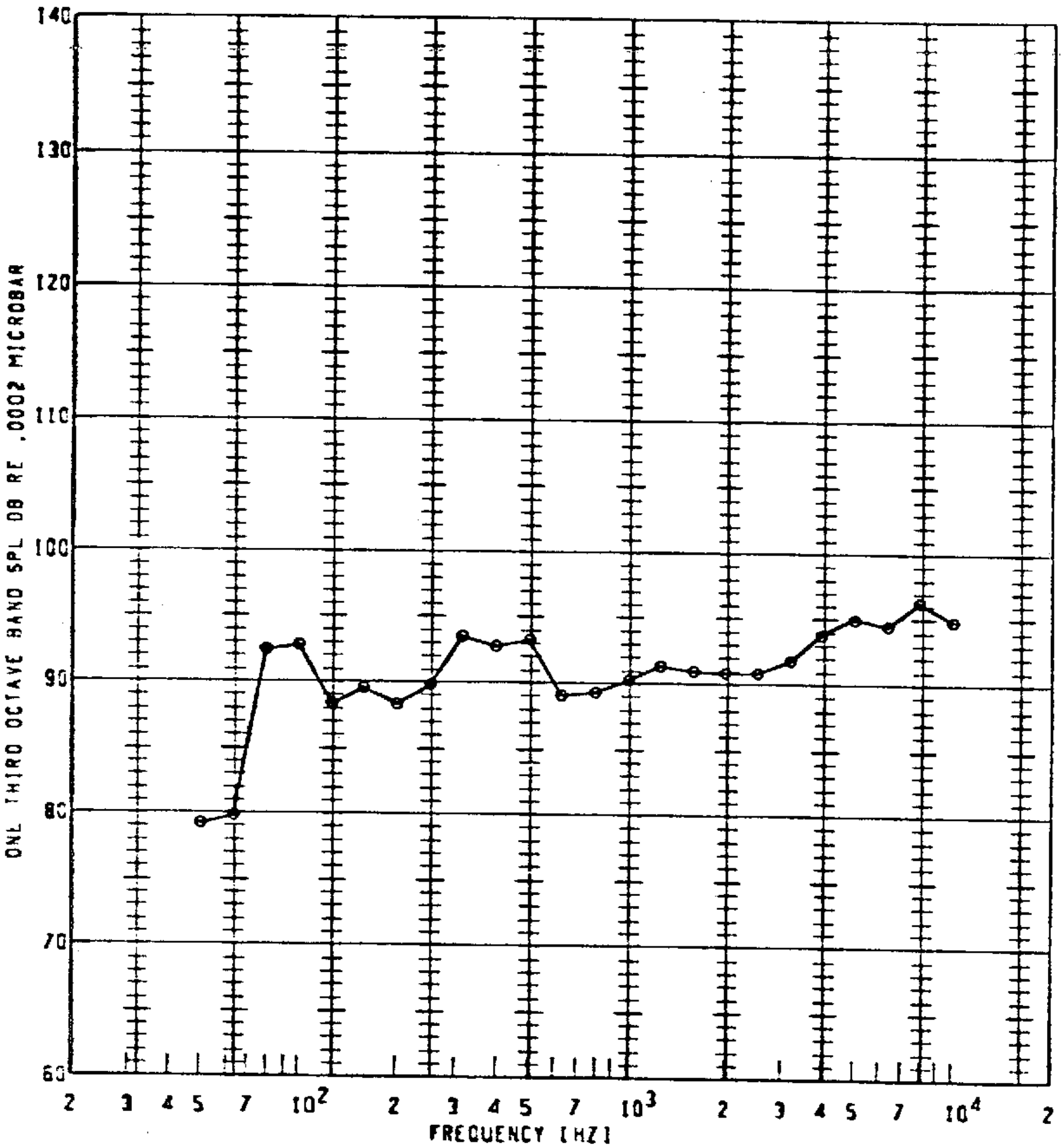
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	86	850	1.500	135	50FP	108.7	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



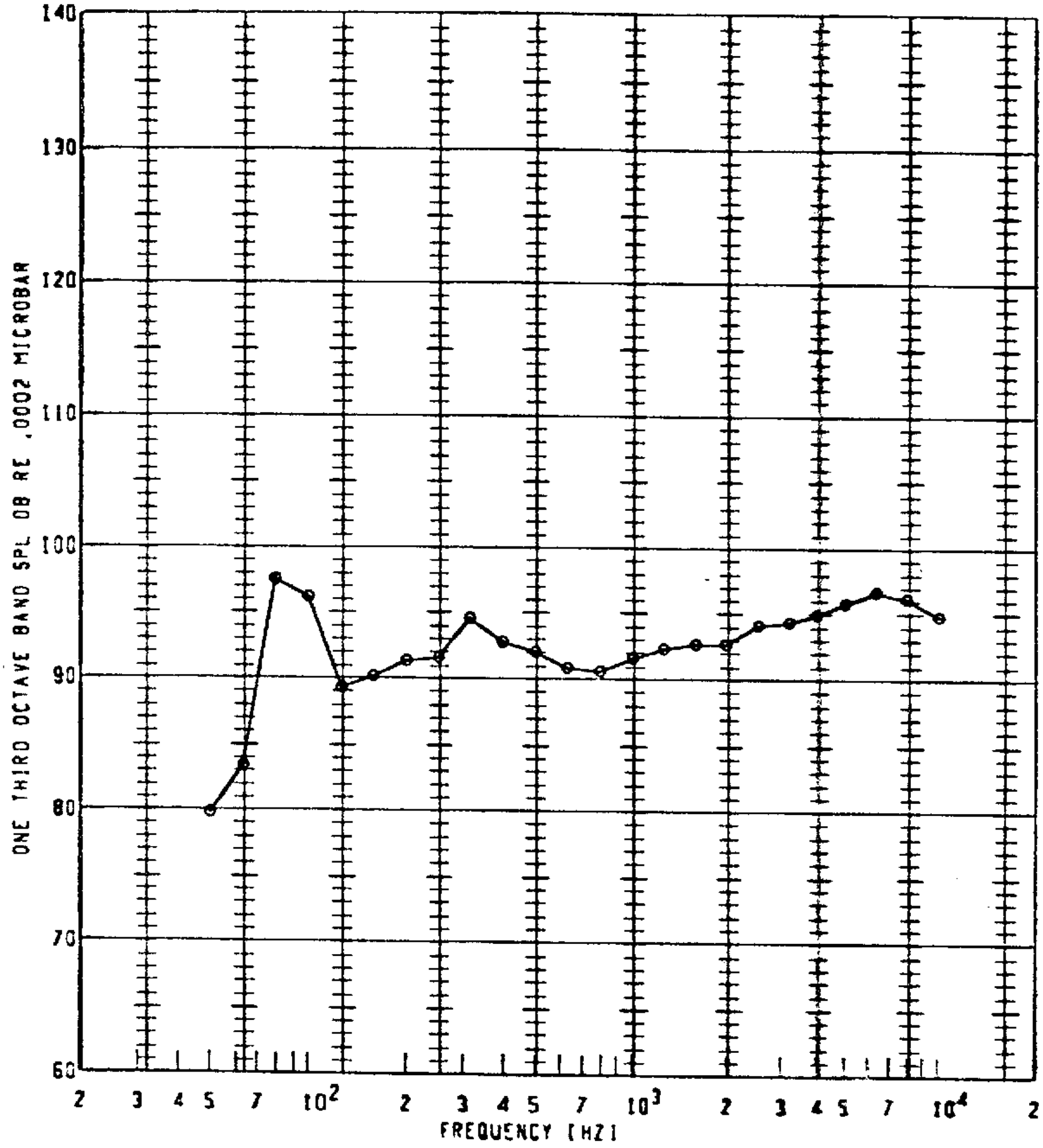
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	86	850	1.500	140	SOFP	108.3	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



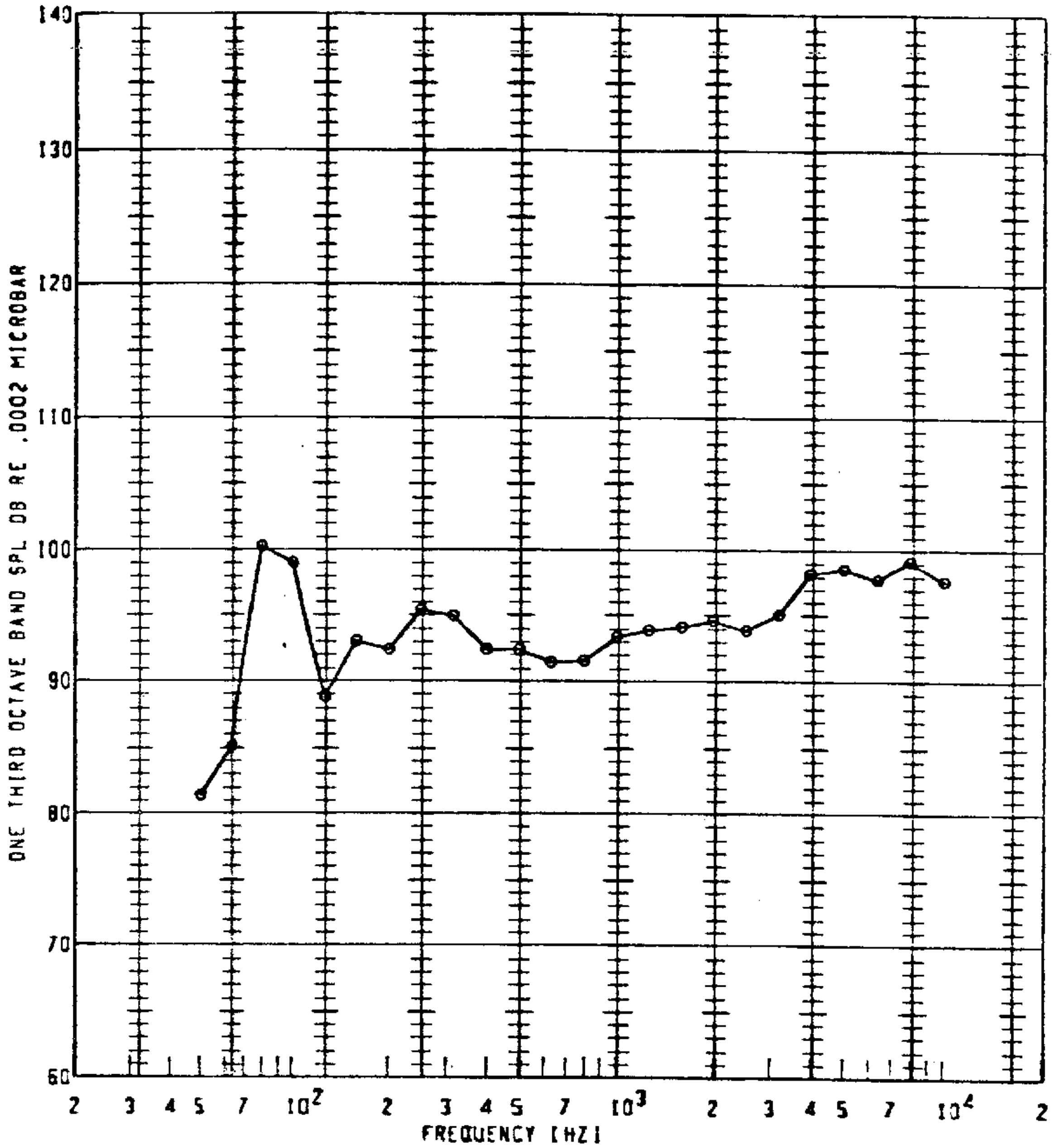
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	8G	900	1.600	90	50FP	105.8	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



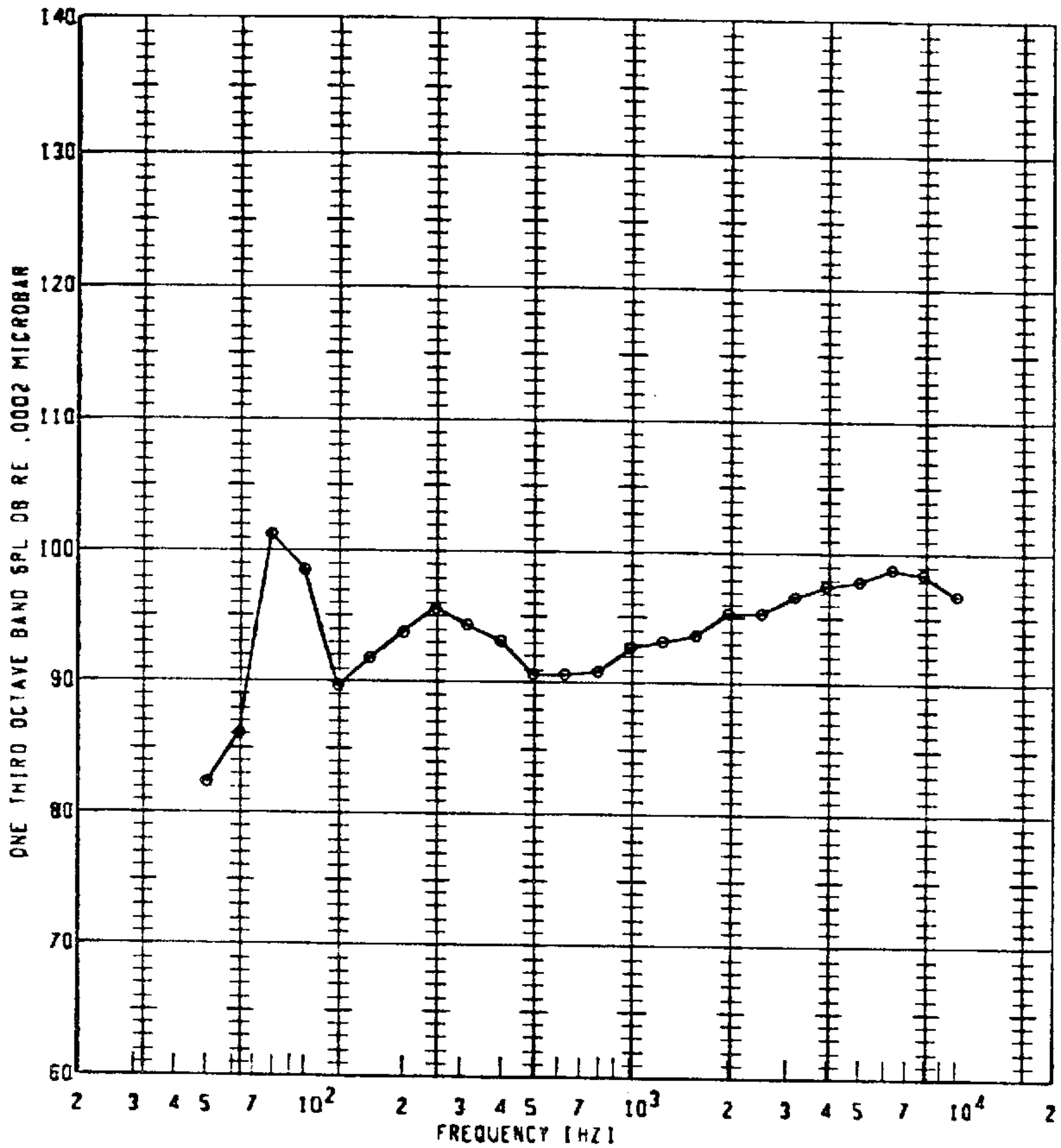
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	8G	900	1.600	100	50FP	107.3	2C	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



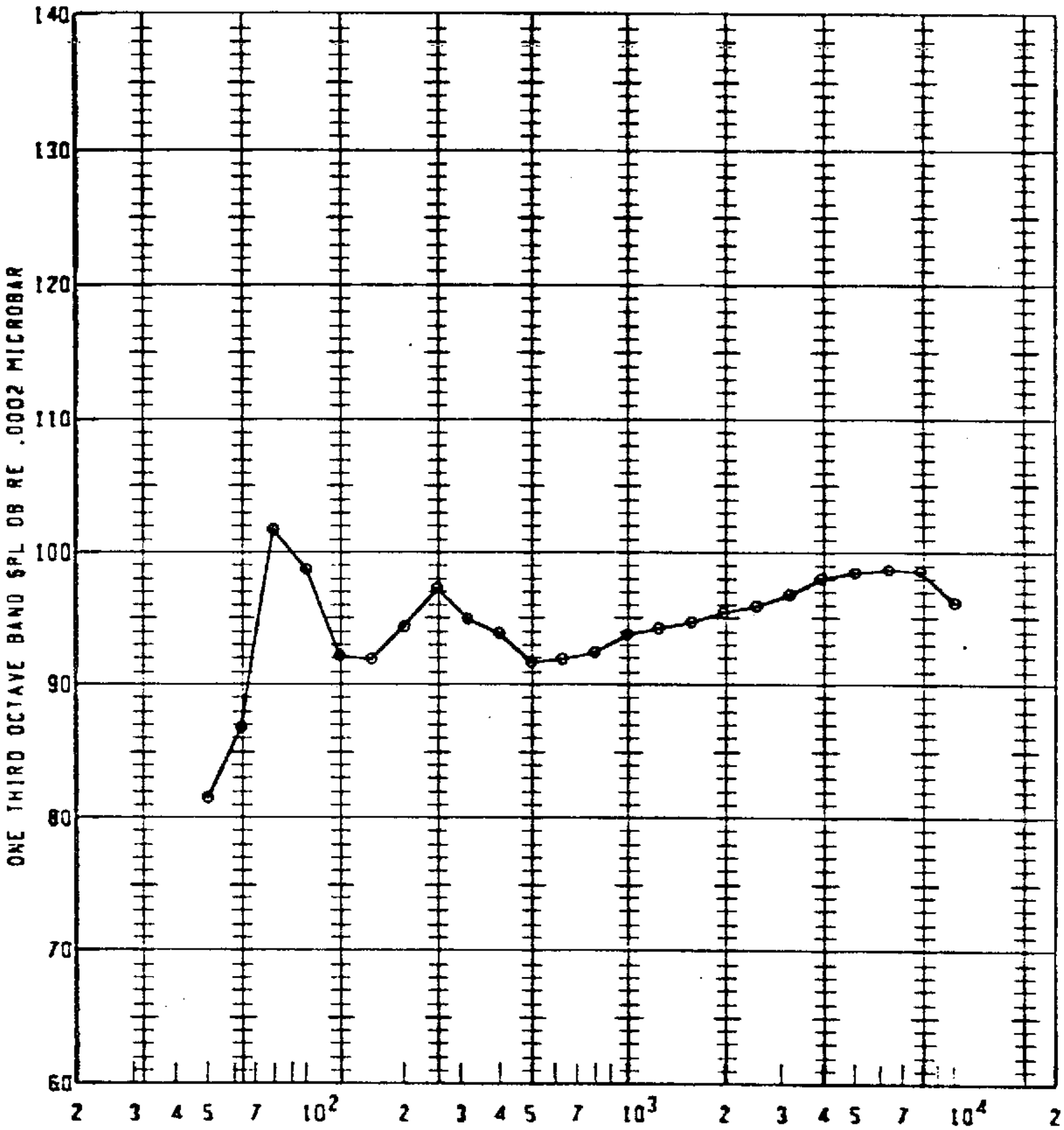
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	86	900	1.600	110	50FP	109.3	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



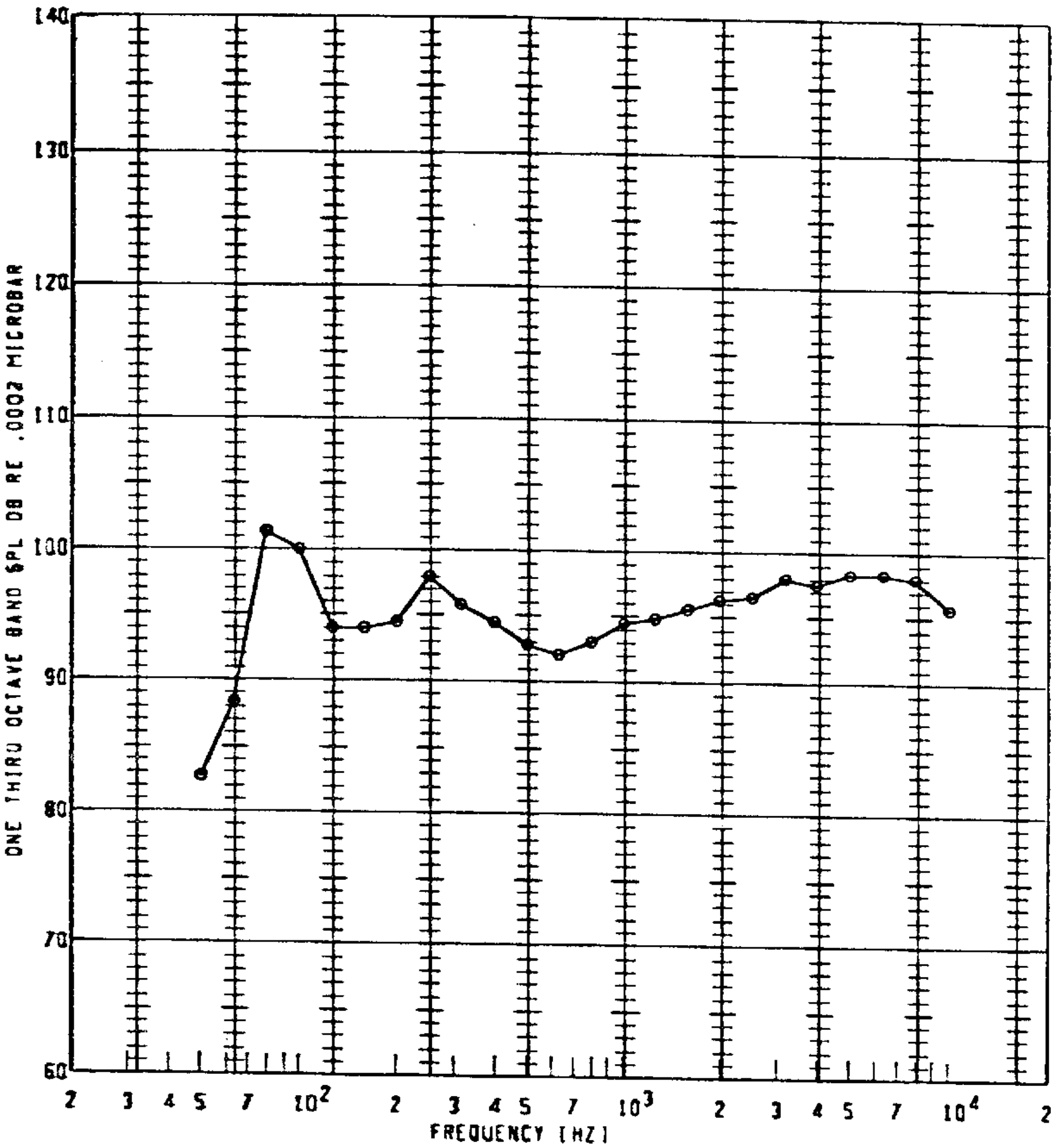
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	85	900	1.600	115	50FP	109.4	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



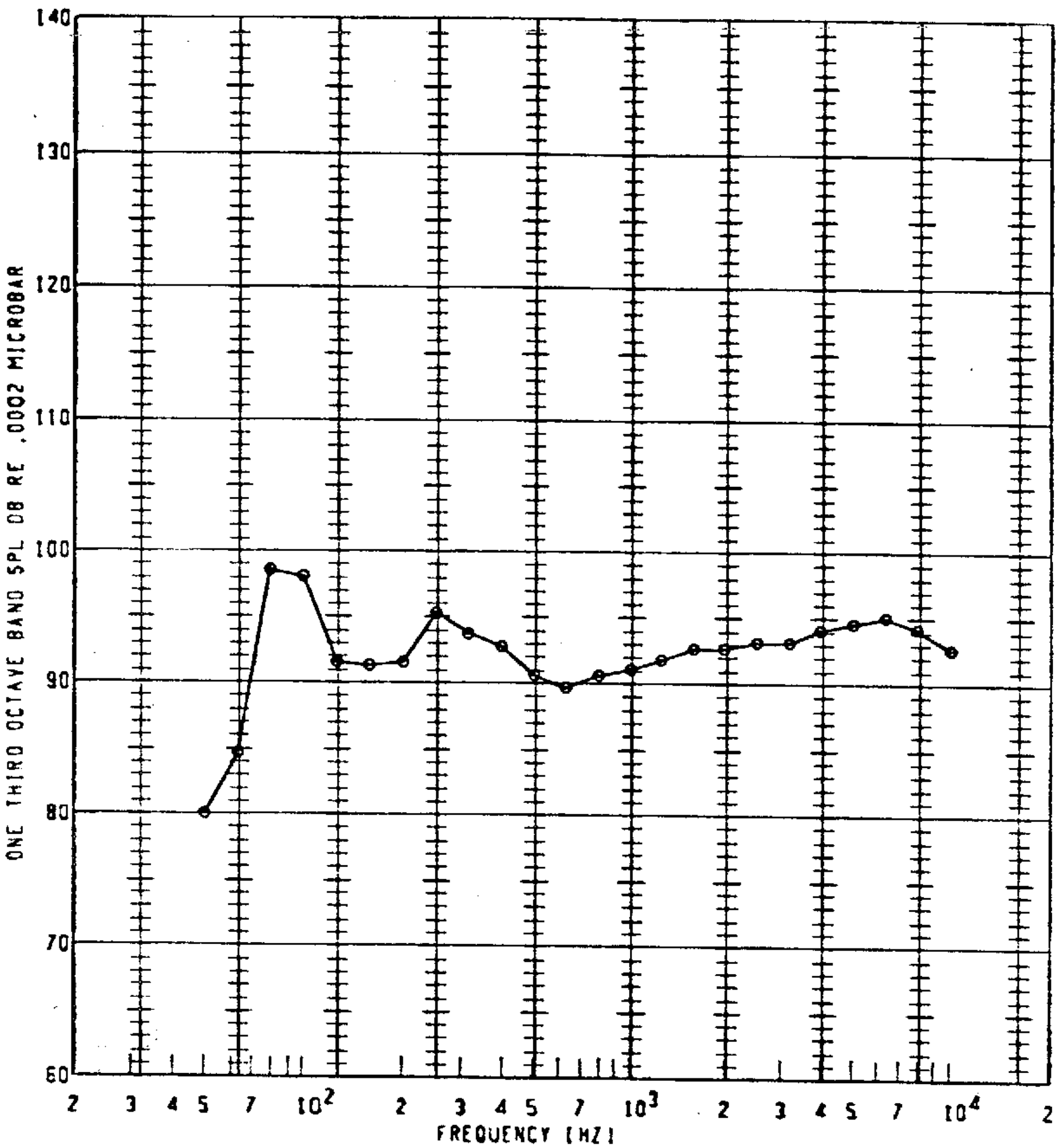
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	86	900	1.600	120	50FP	109.8	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



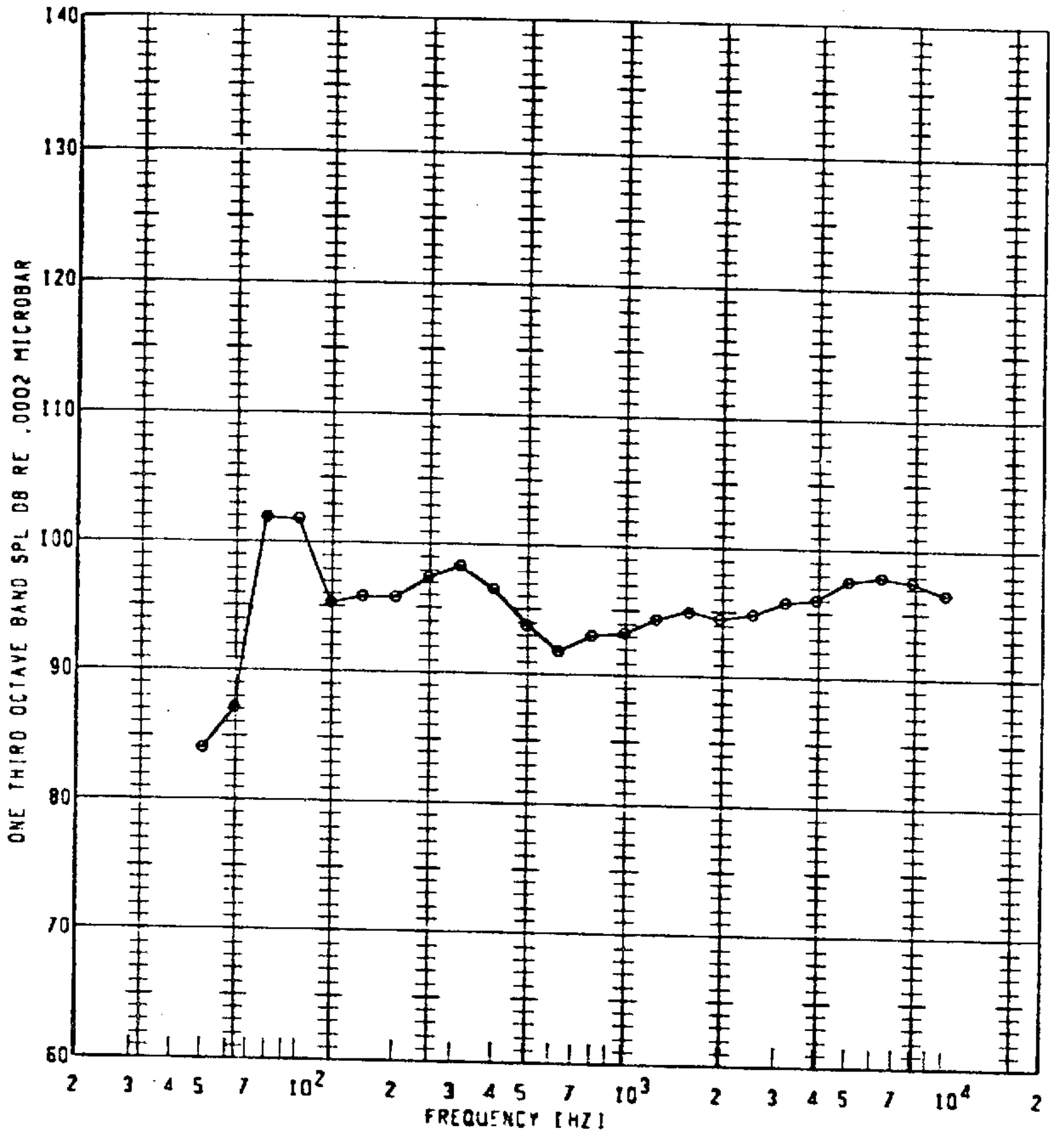
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	86	900	1.600	125	50FP	110.2	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



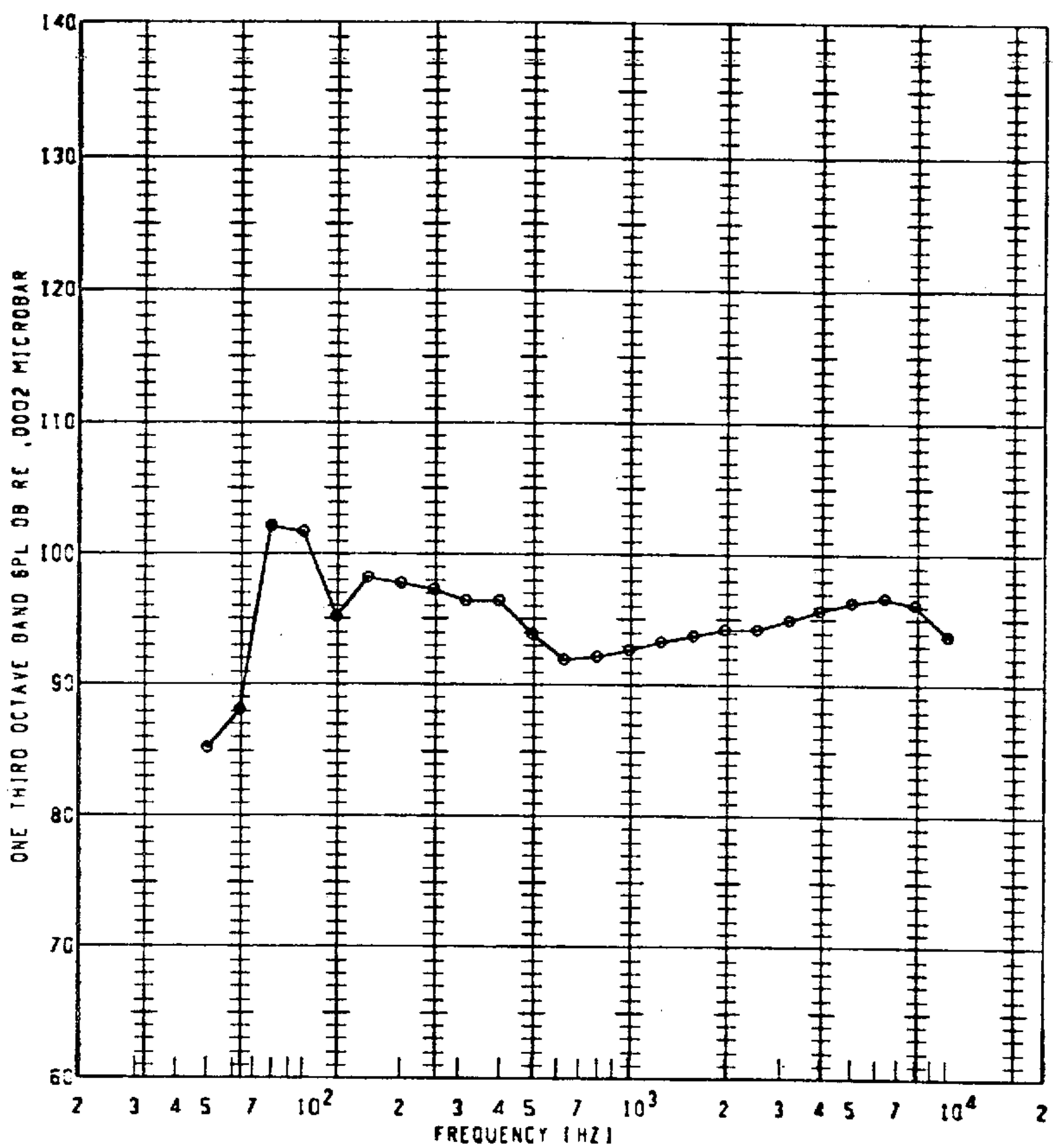
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	86	900	1.600	130	50FP	107.2	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



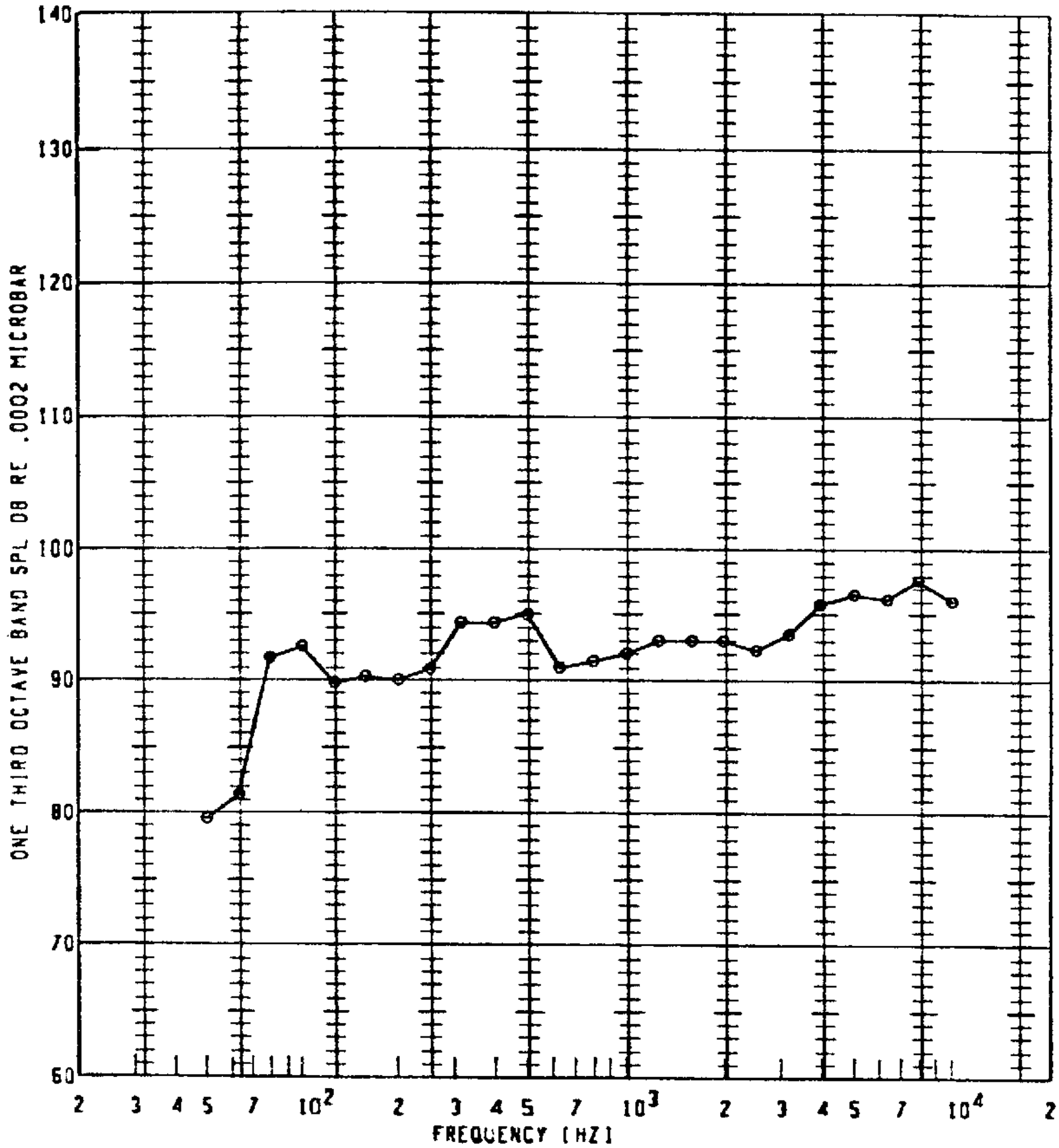
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	8G	900	1.603	135	50FP	110.3	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



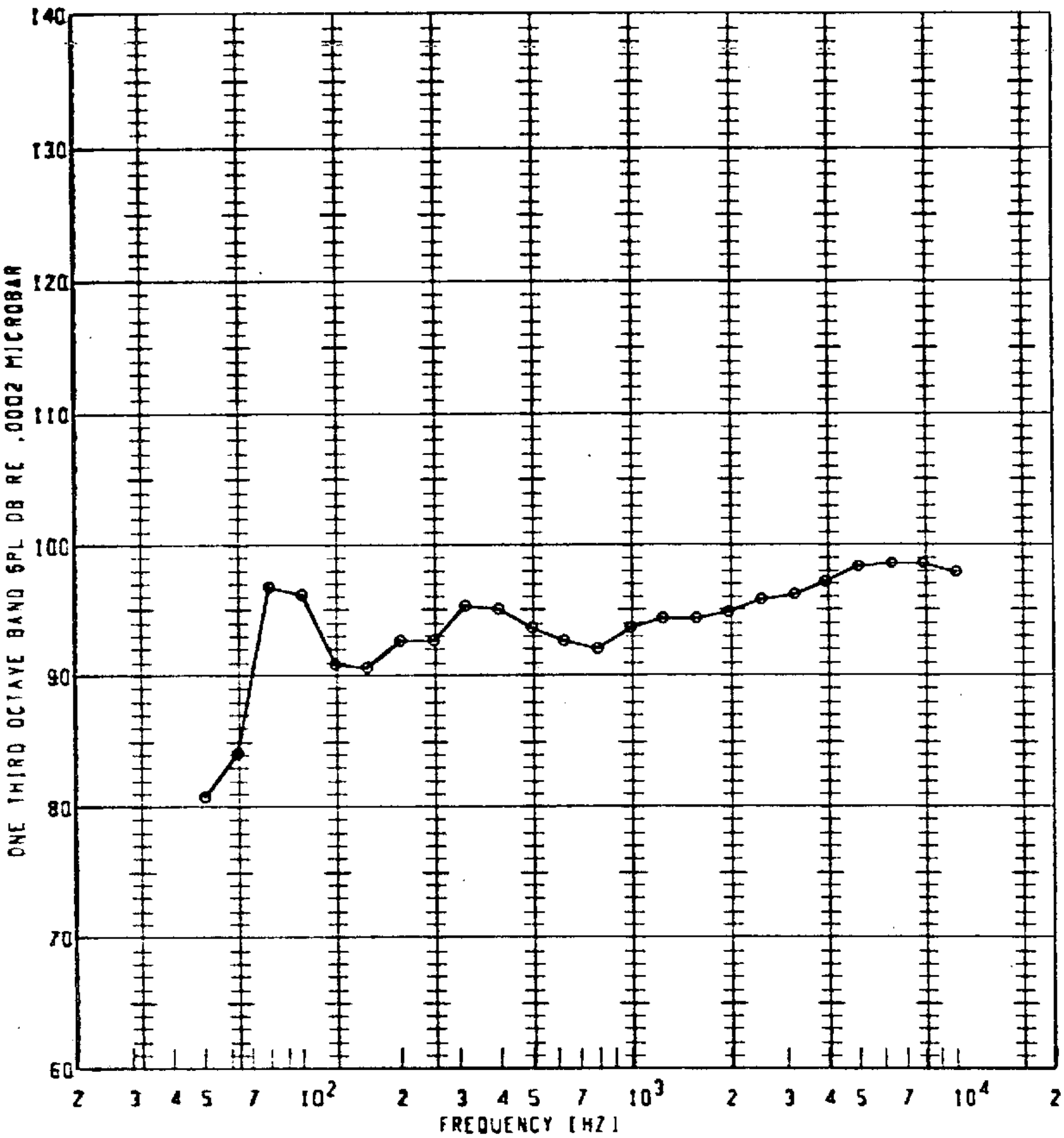
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	8G	900	1.600	140	50FP	110.1	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



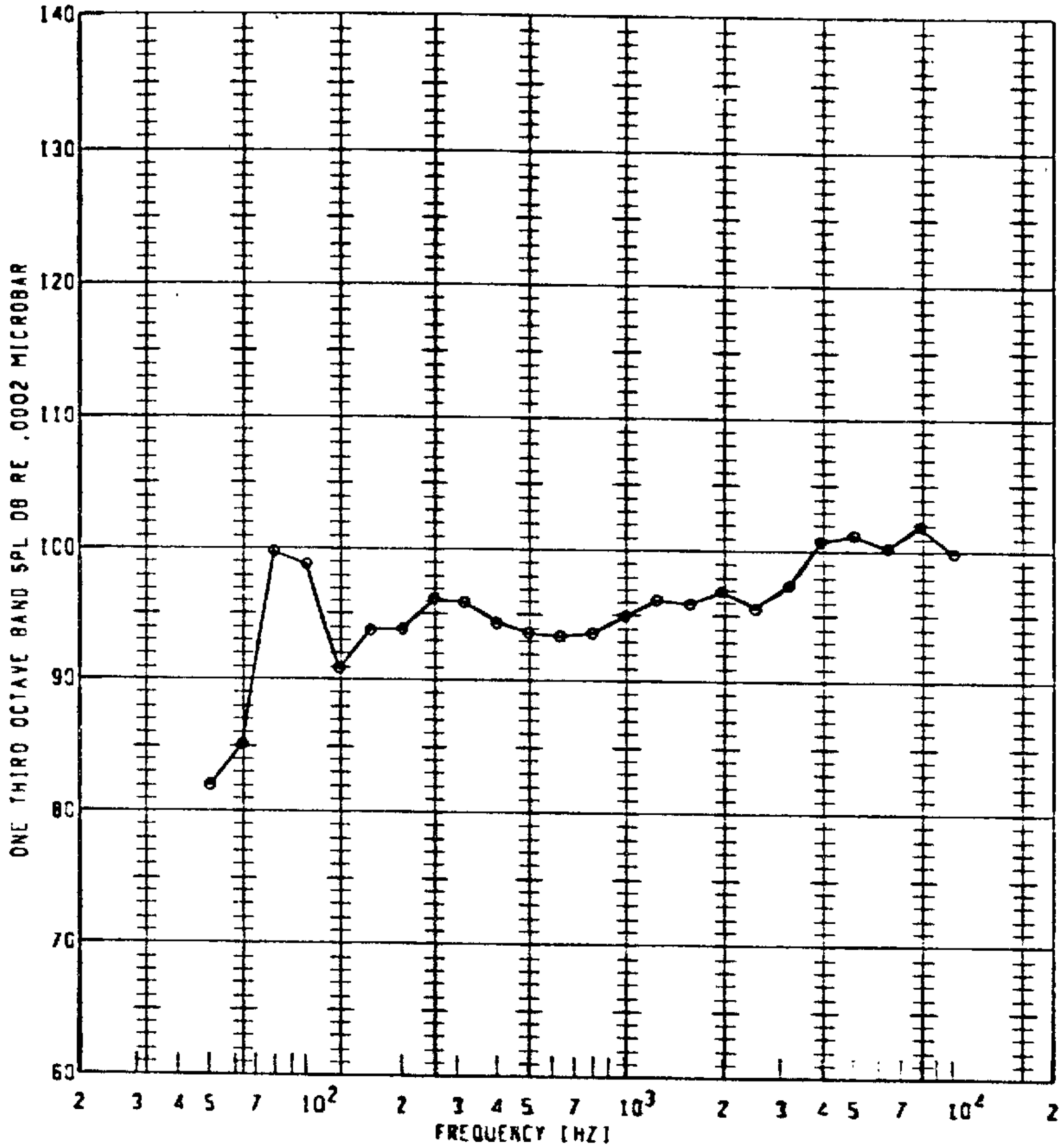
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	85	950	1.700	90	50FP	107.2	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



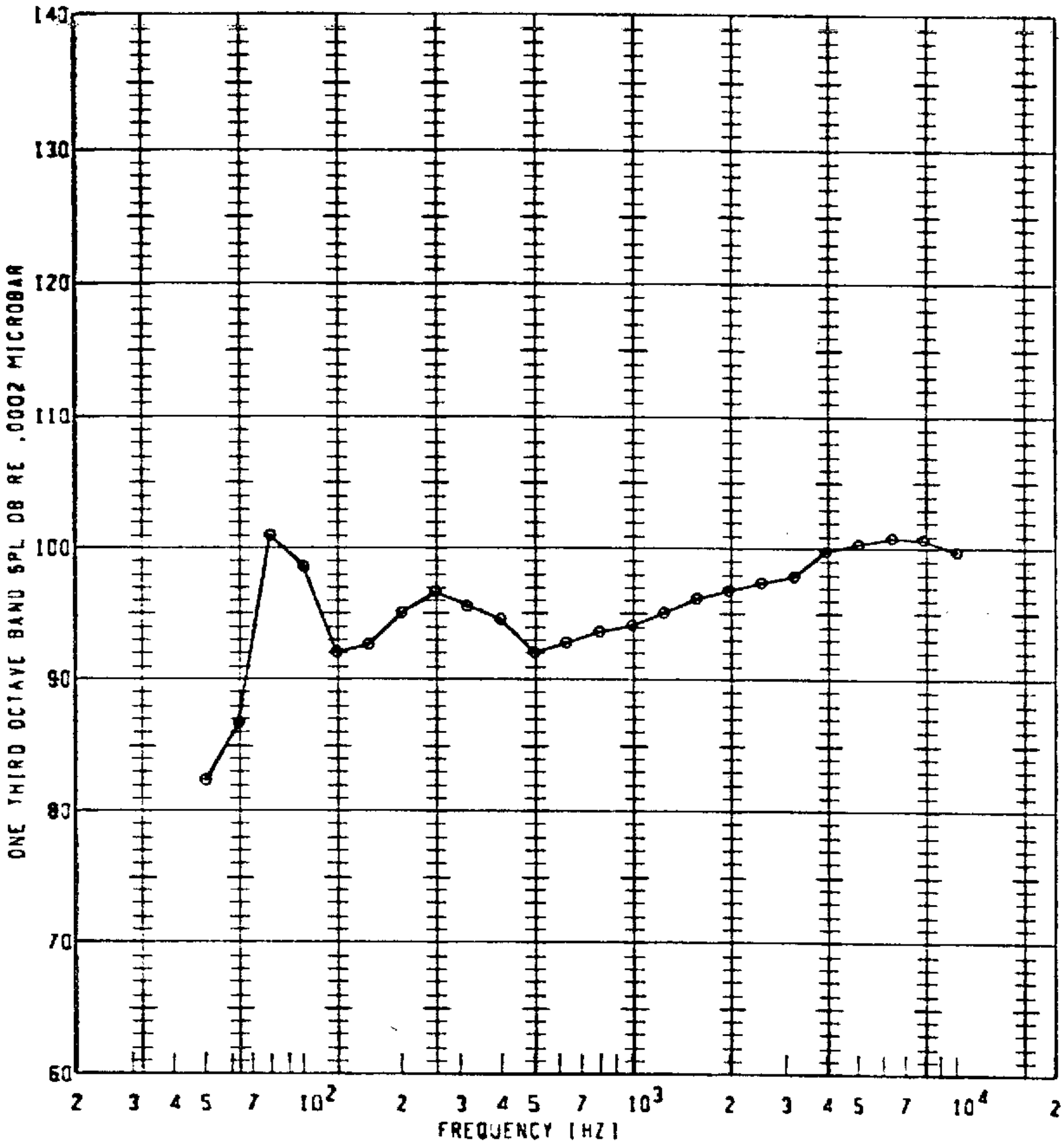
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	8G	950	1.700	100	50FP	108.9	10	

BUFFALO SUPPRESSOR NOZZLE TONE IB TEST - HOT NOZZLE TEST FACILITY



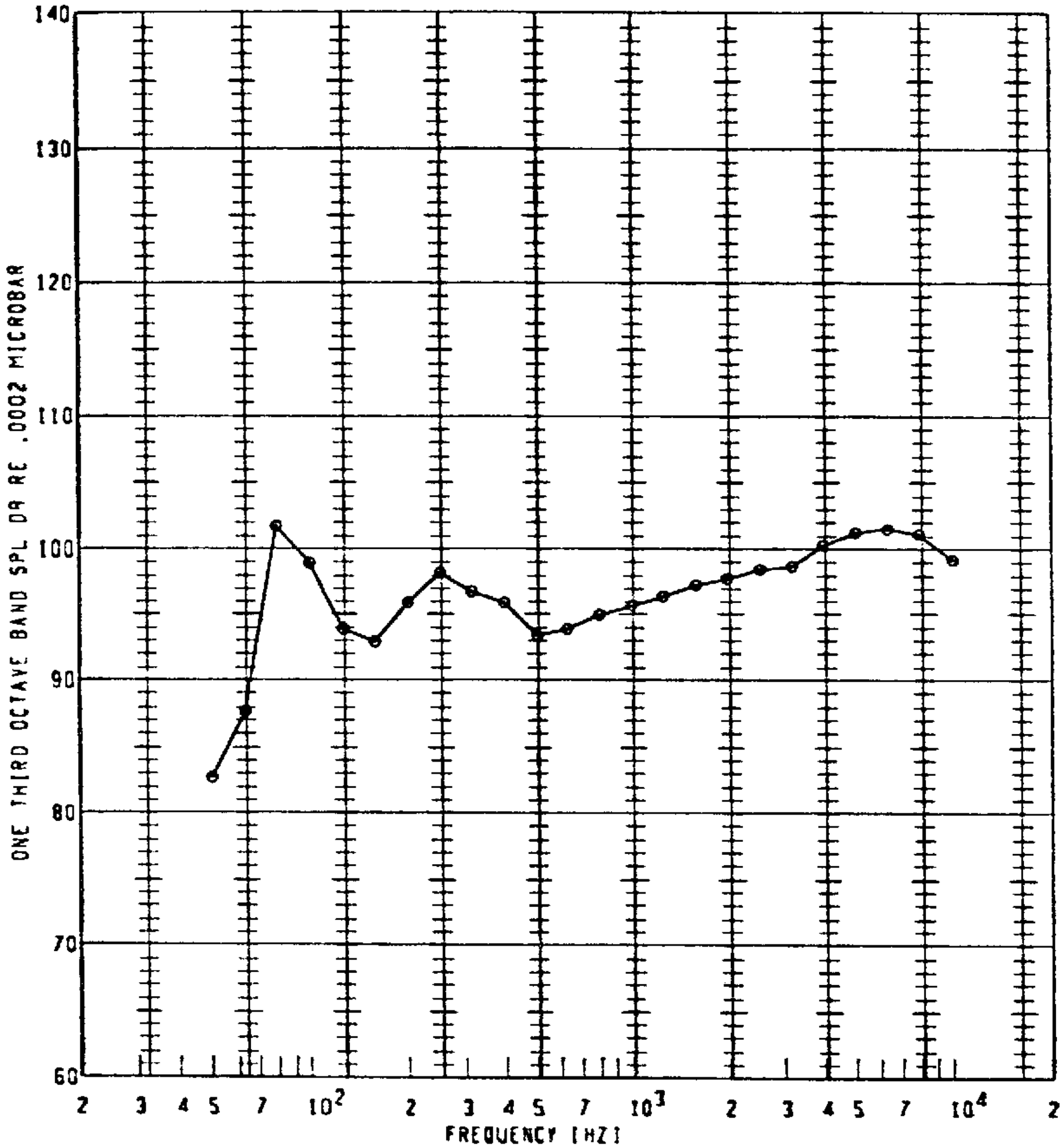
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	86	950	1.700	110	50FP	111.0	10	

~~BUFFALO SUPPRESSOR NOZZLE TONE ID TEST~~ - ~~HOT NOZZLE TEST FACILITY~~



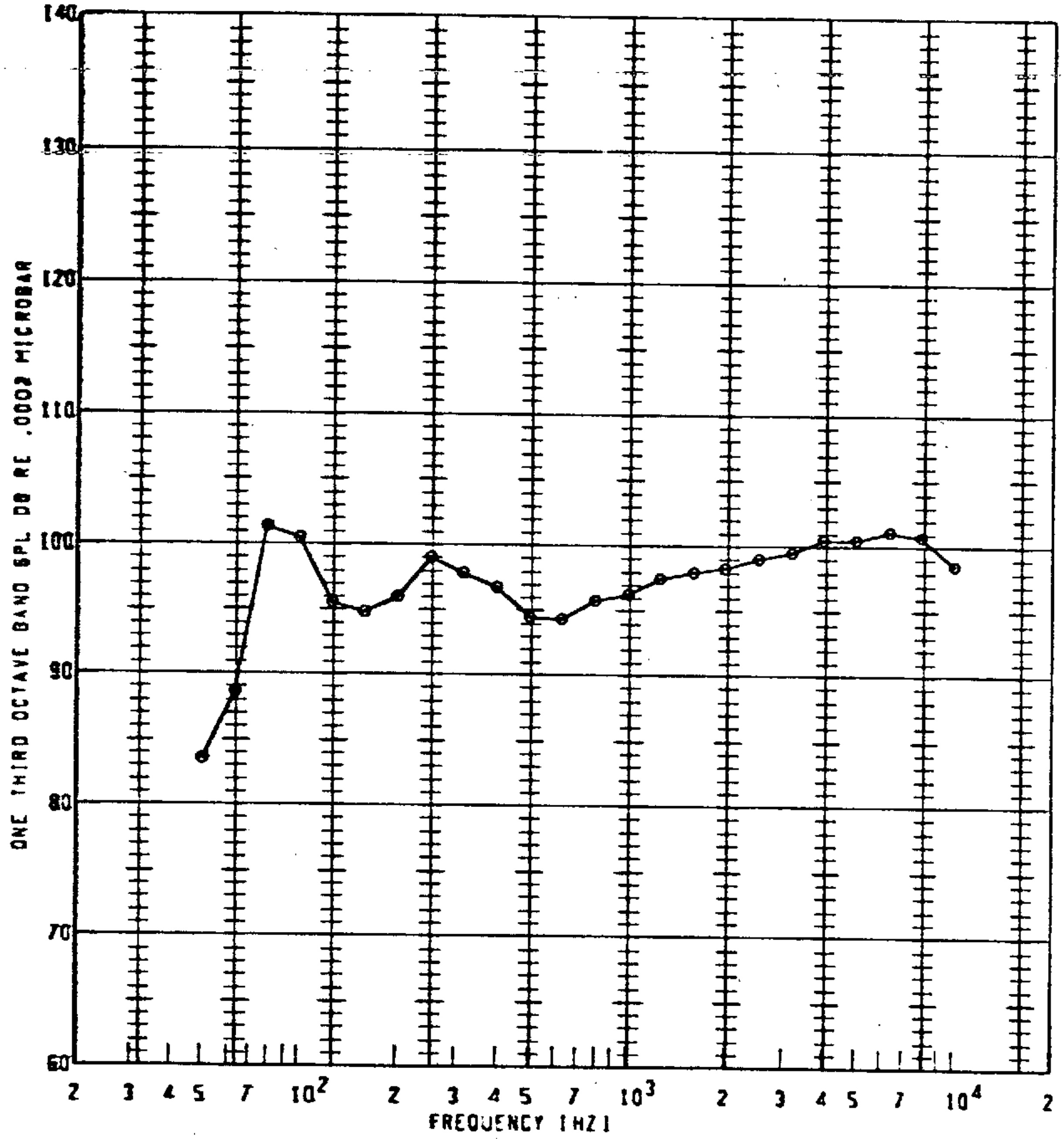
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	86	950	1.700	115	50'P	110.9	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



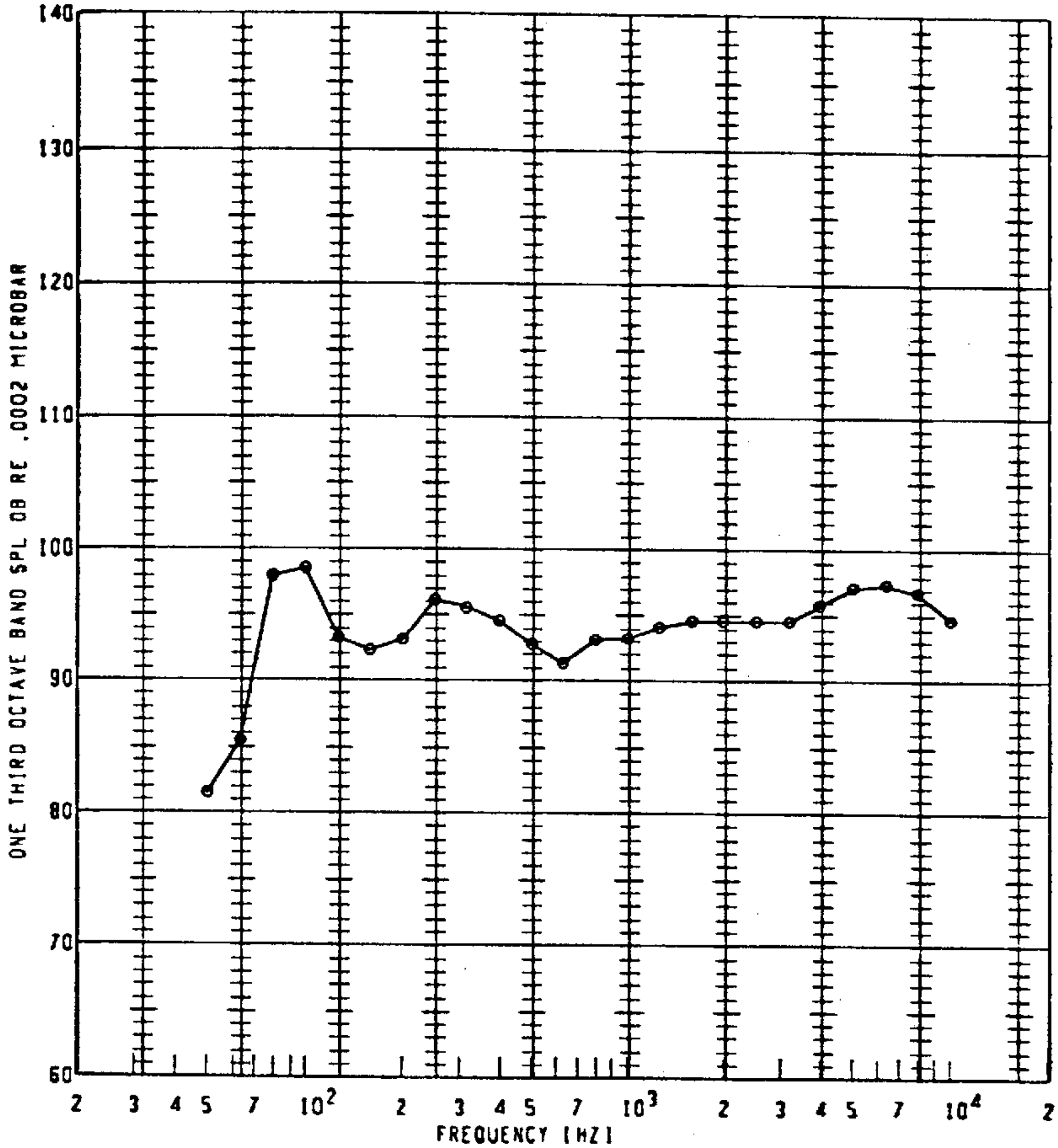
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	86	950	1.700	120	50FP	111.7	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



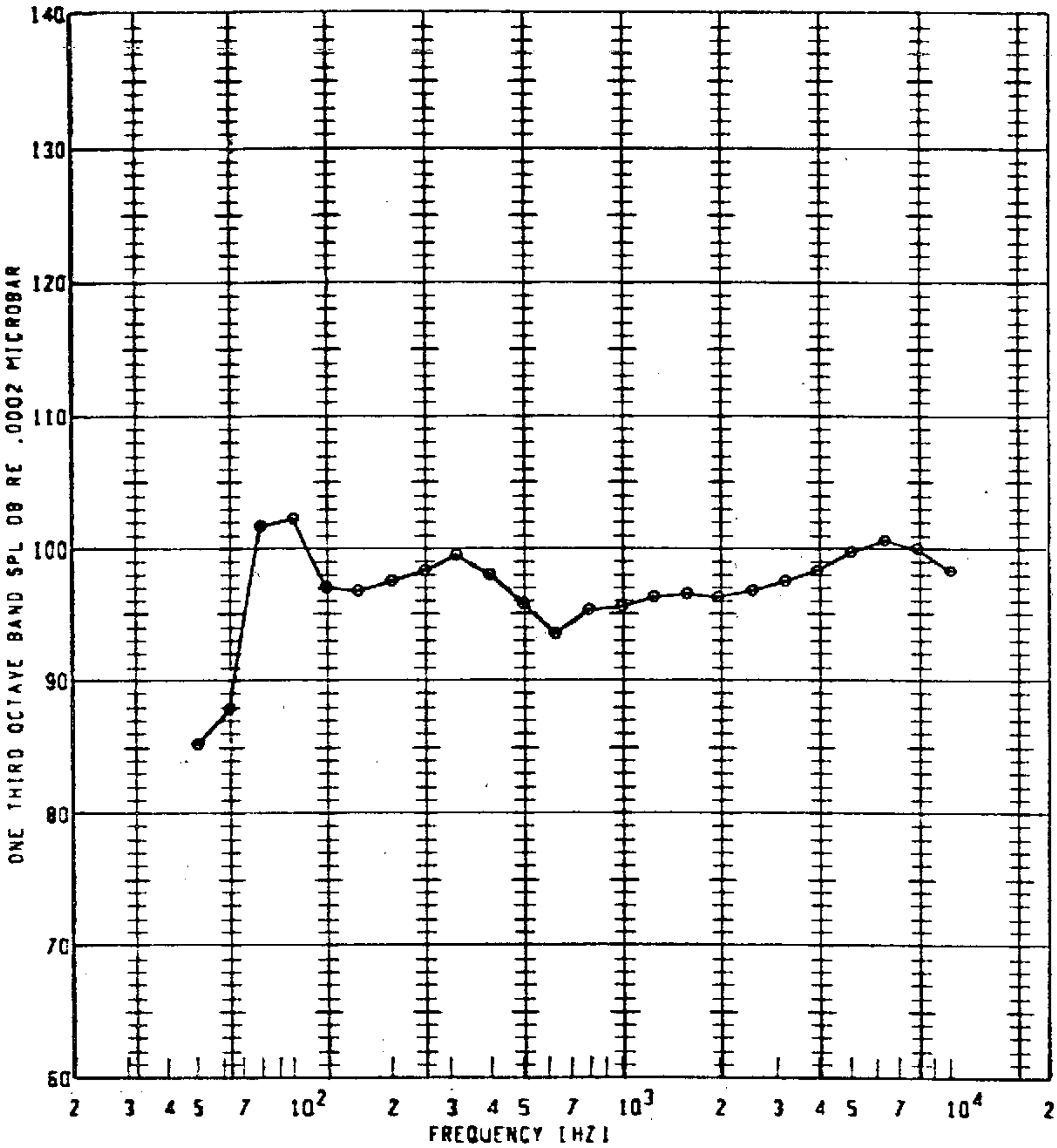
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊕	86	950	1.700	125	50FP	112.0	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



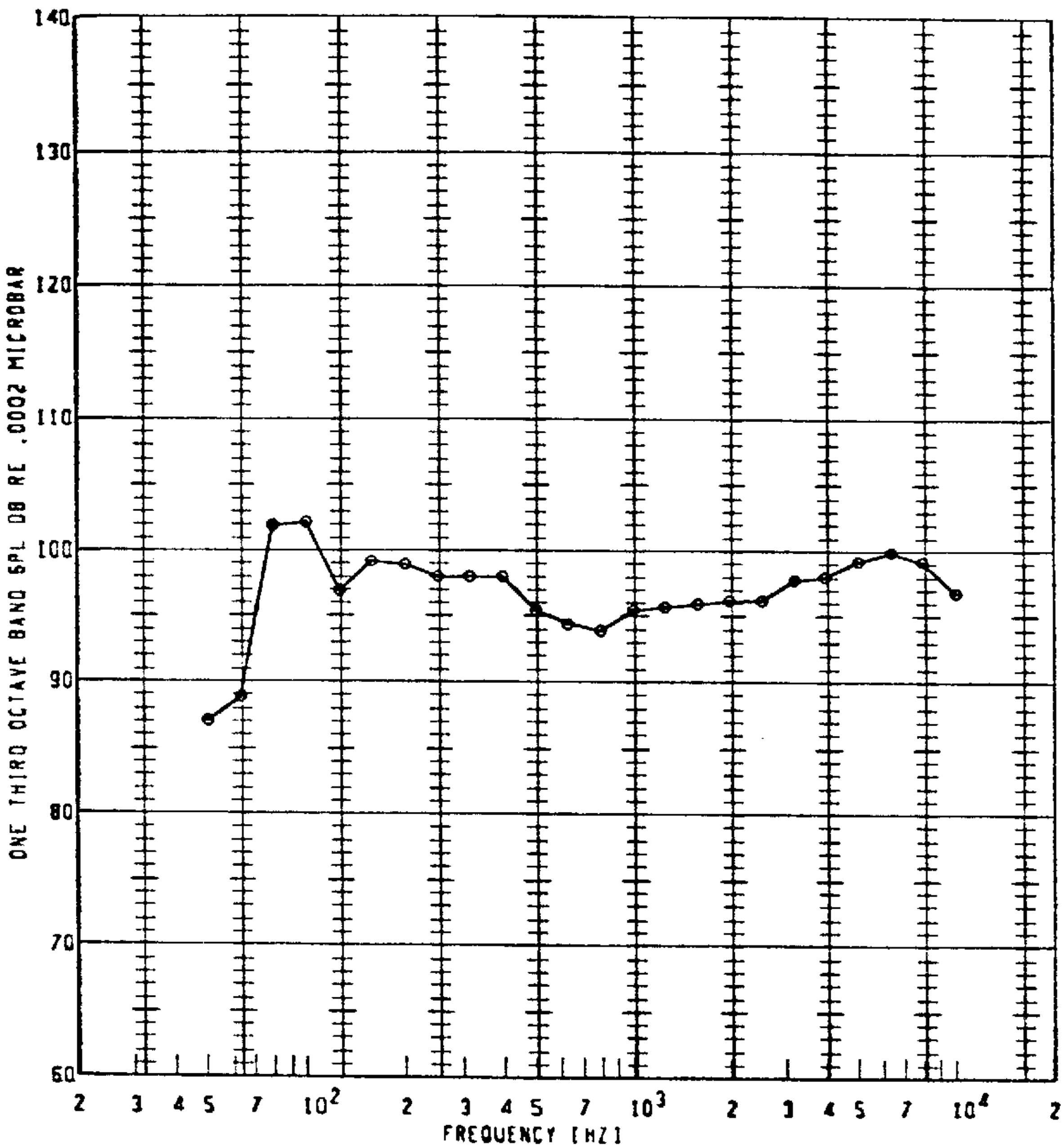
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊕	8G	950	1.700	130	50FP	108.7	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



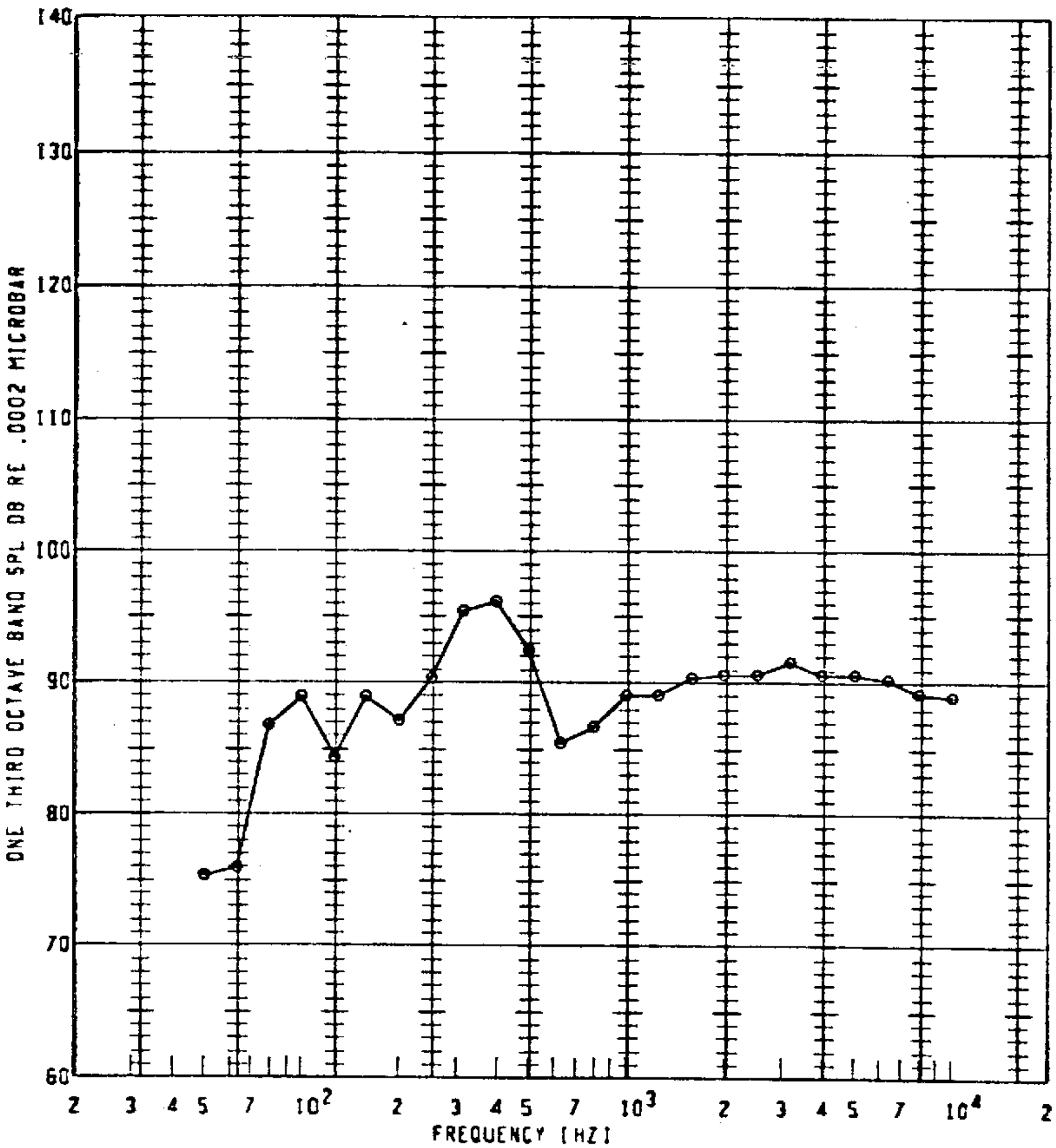
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊖	86	950	1.700	135	SCFP	111.8	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



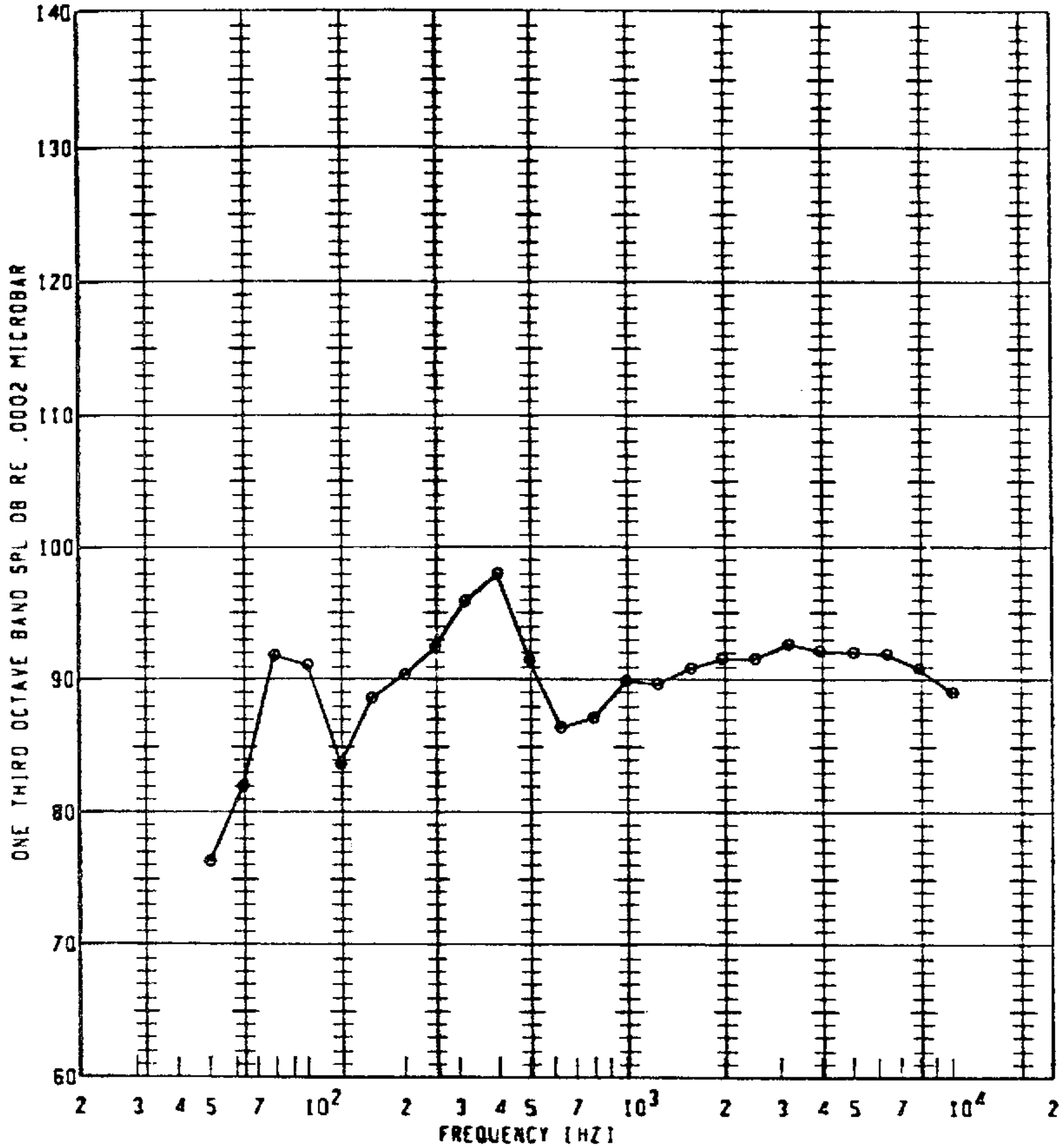
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊕	86	950	1.700	140	SOFP	111.6	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



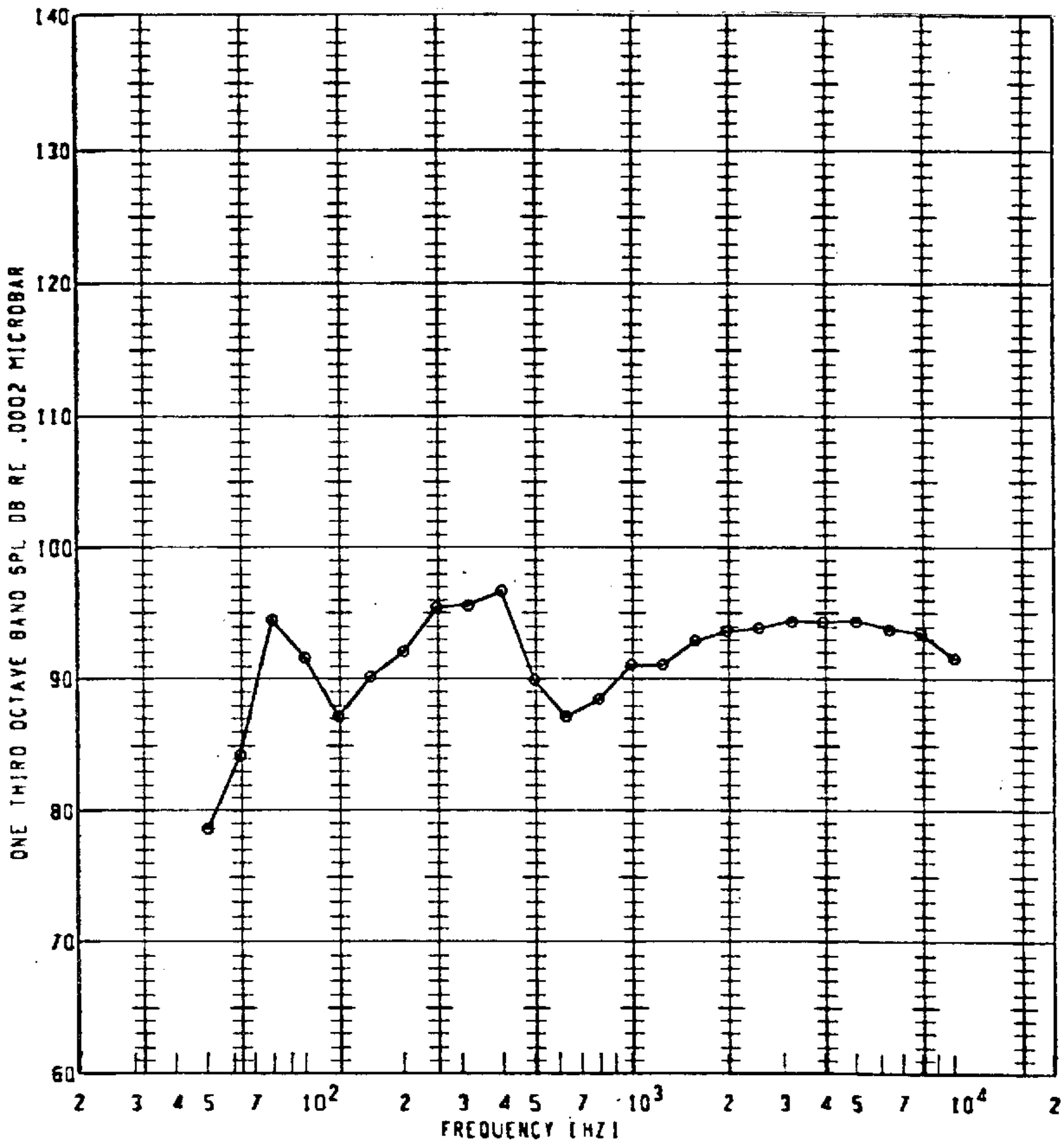
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	90	750	1.300	90	50FP	104.1	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



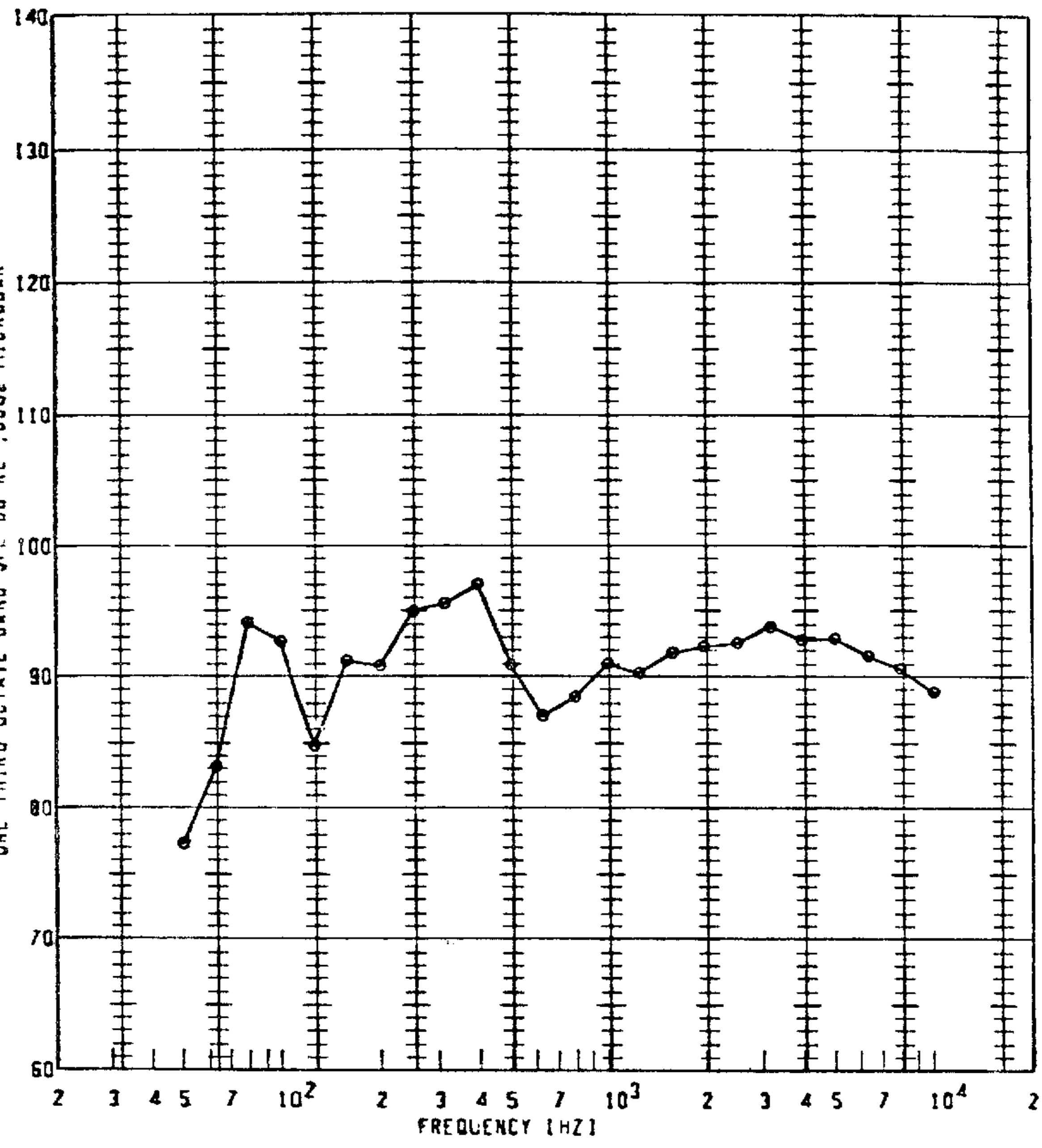
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	96	750	1.300	100	50FP	105.3	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



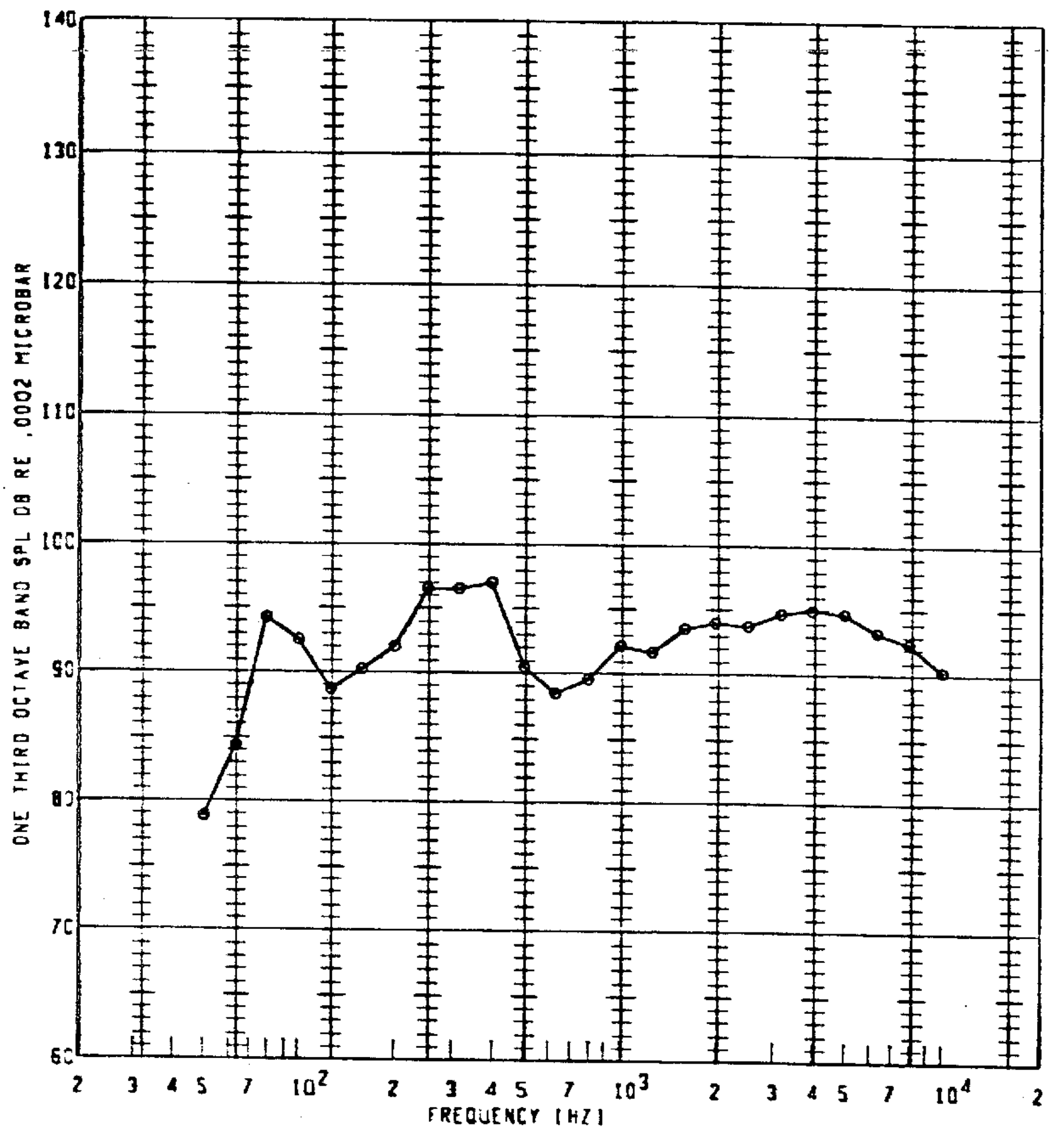
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	90	750	1.300	115	50'P	106.5	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



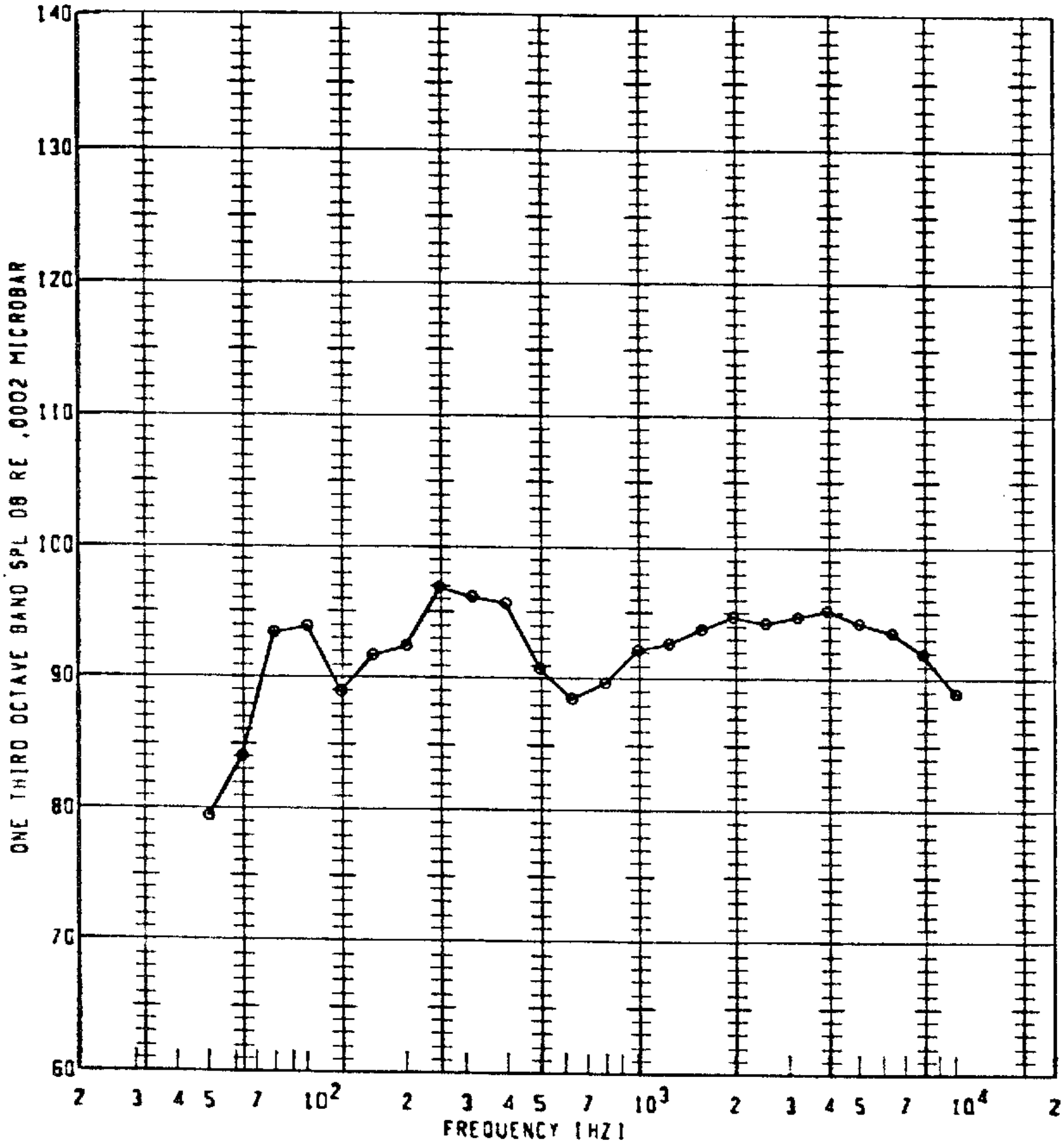
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	96	750	1.300	110	50FP	105.9	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



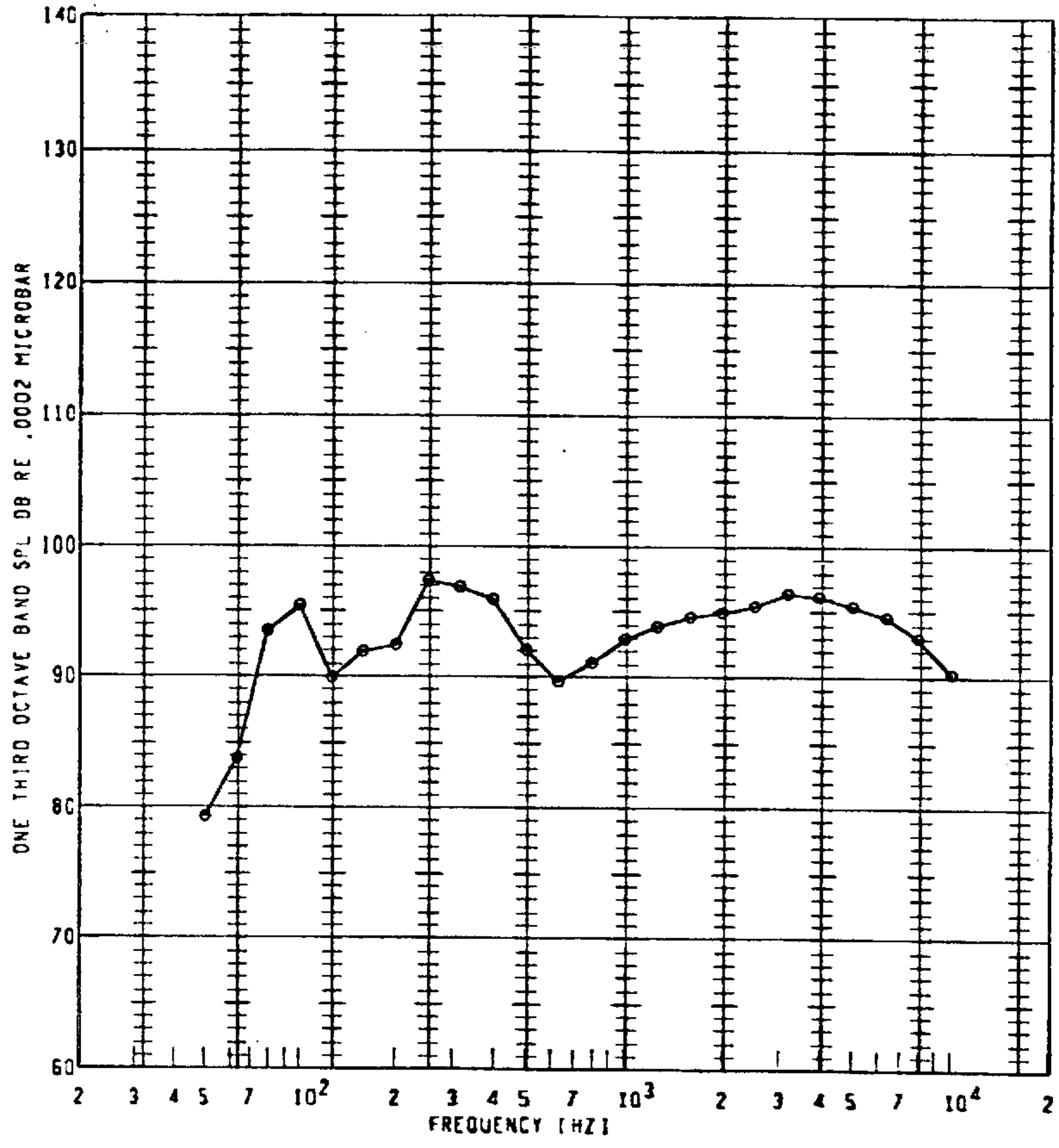
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	96	750	1.300	120	50FP	106.9	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



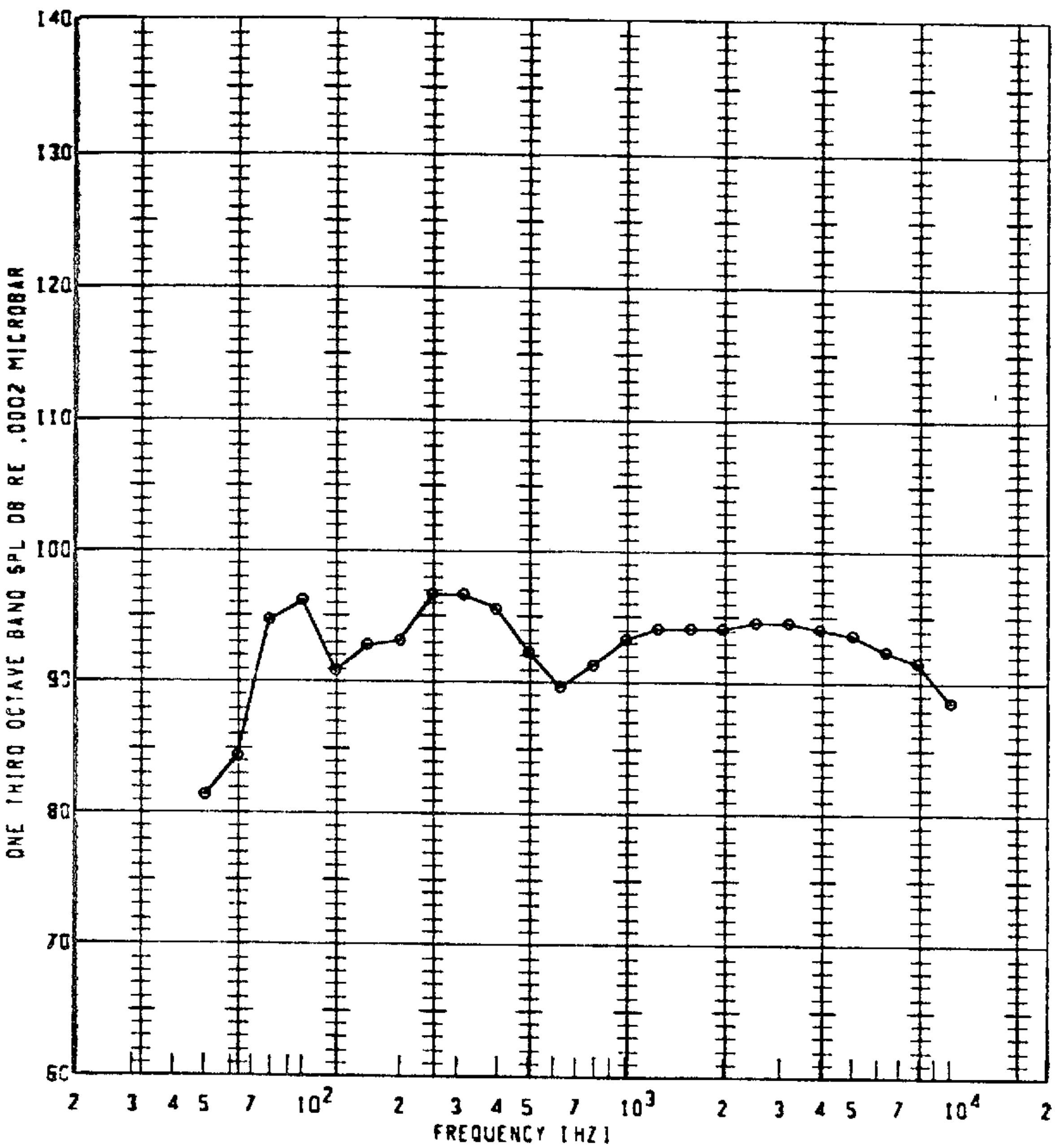
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	96	750	1.300	125	50FP	106.9	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



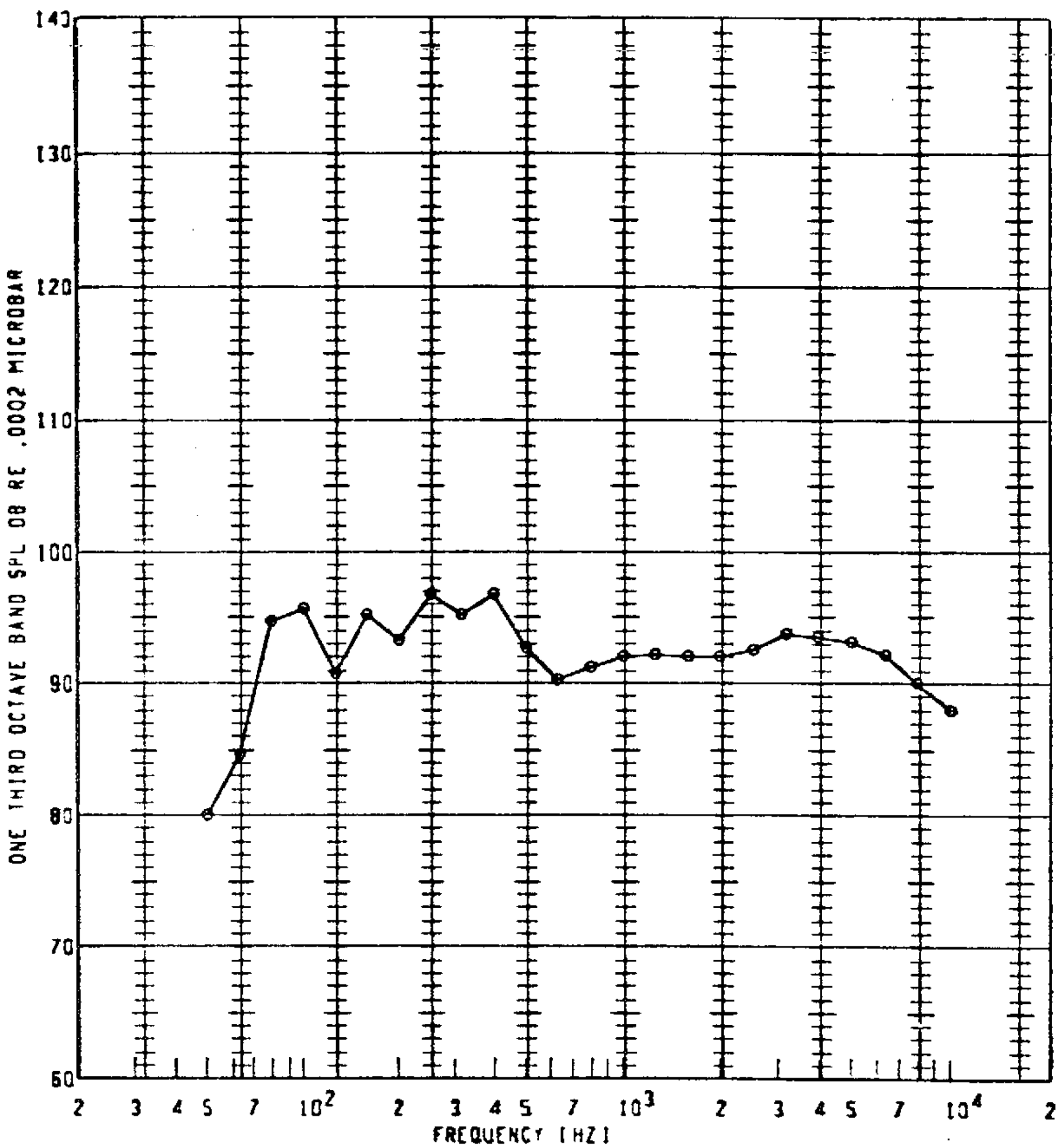
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	96	750	1.300	130	50FP	107.8	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



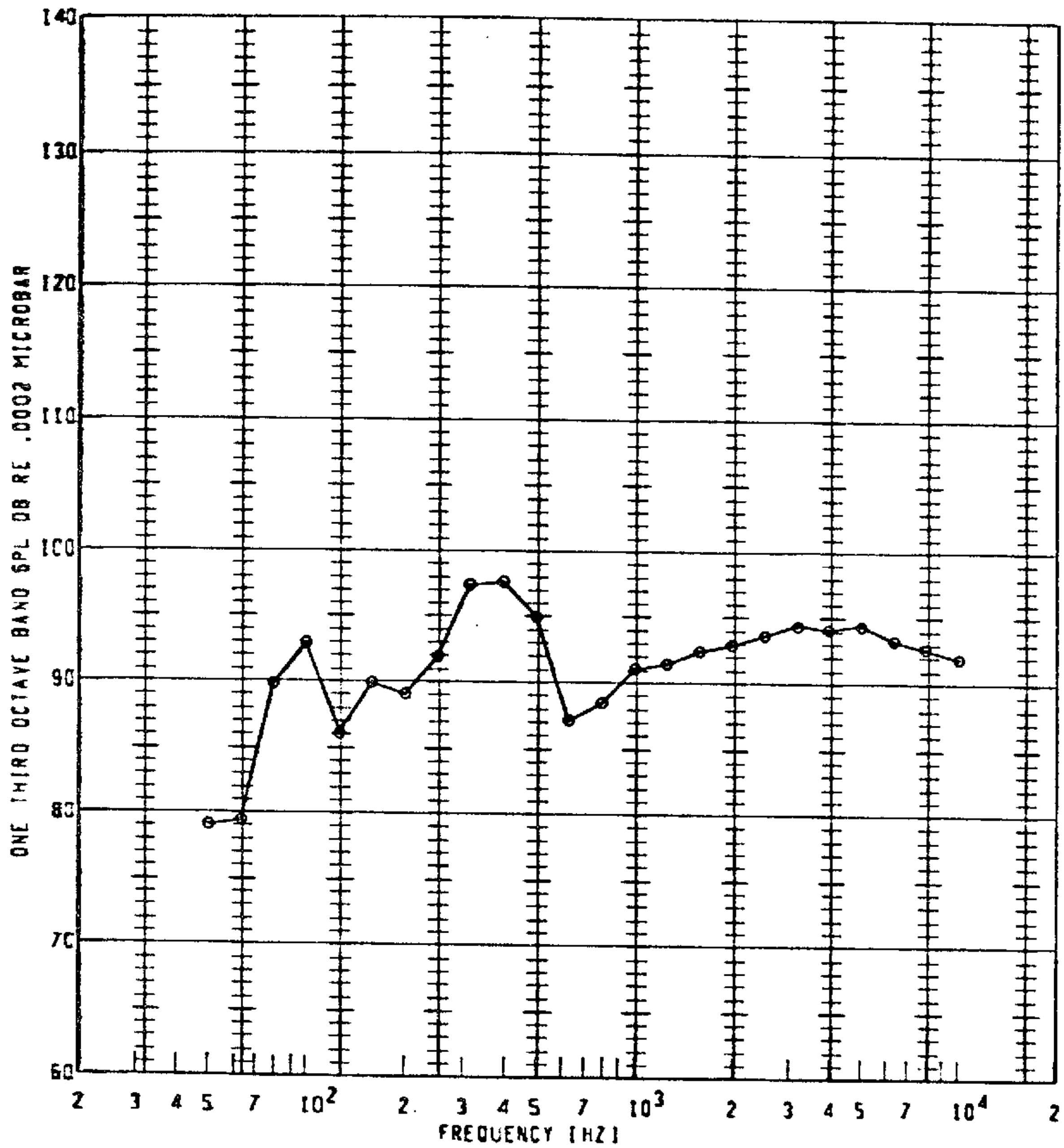
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	CASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	96	750	1.300	135	50FP	107.3	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



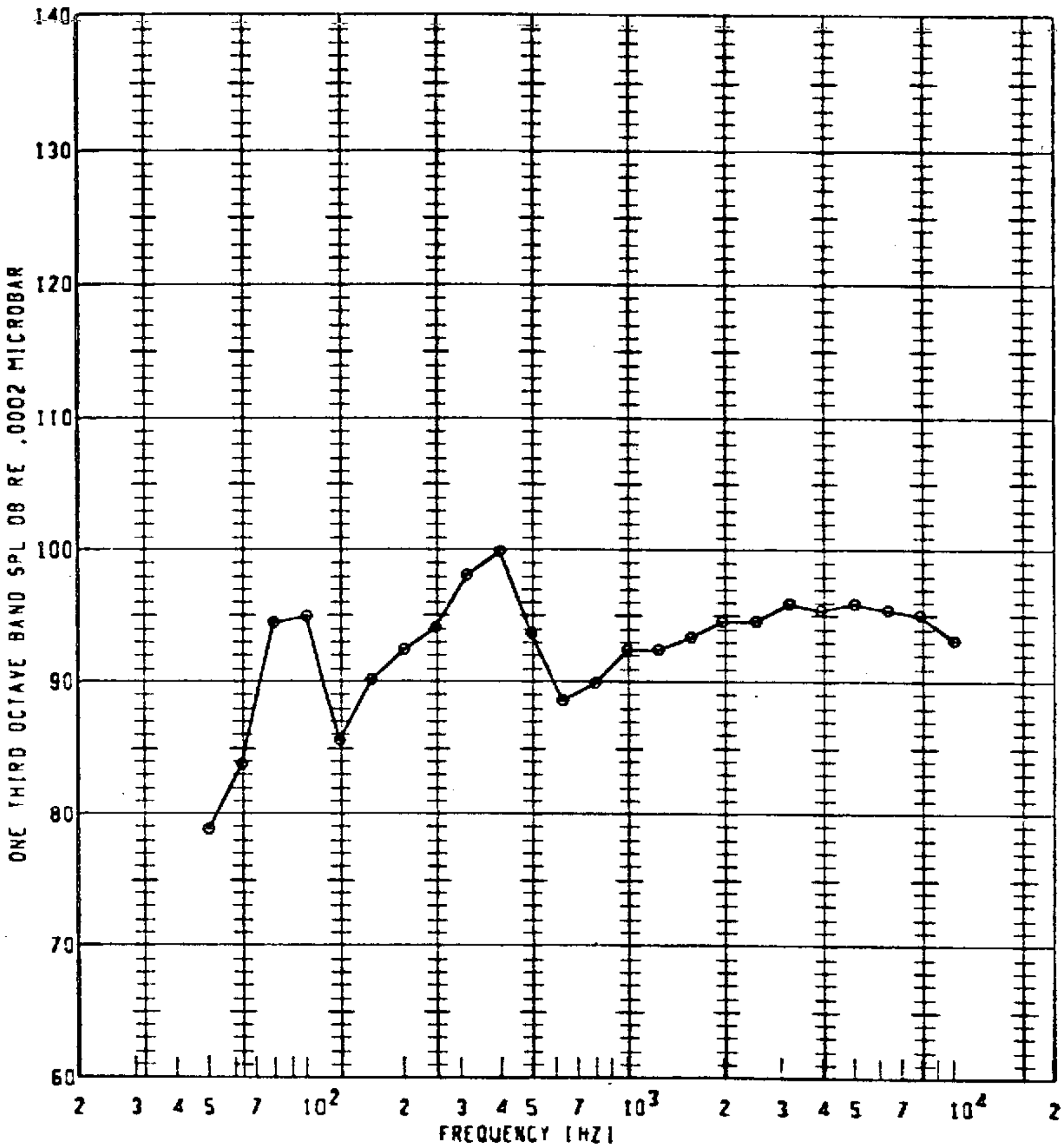
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	96	750	1.300	140	50FP	106.9	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



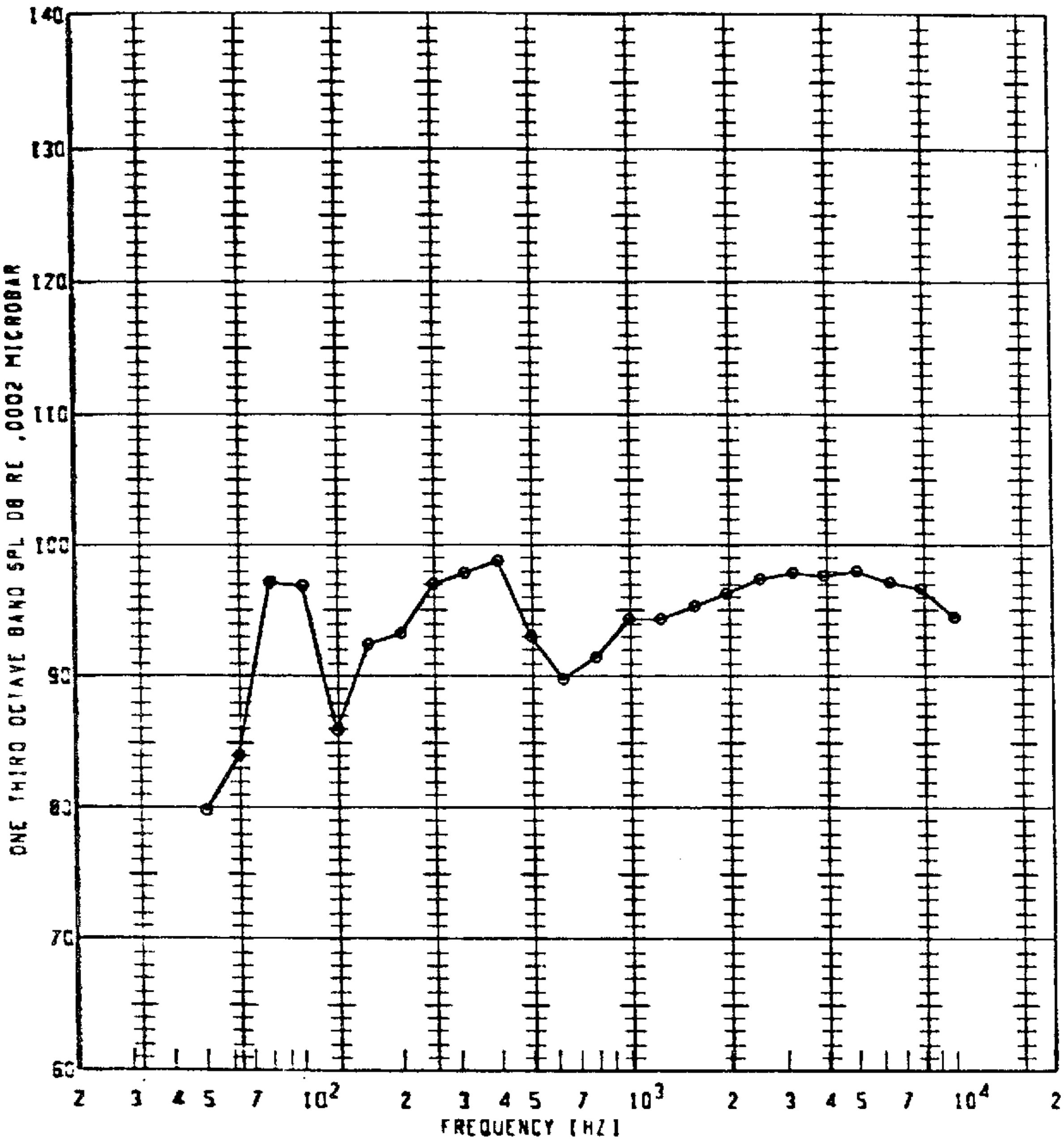
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	90	800	1.400	90	50FP	106.5	10	

~~BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY~~



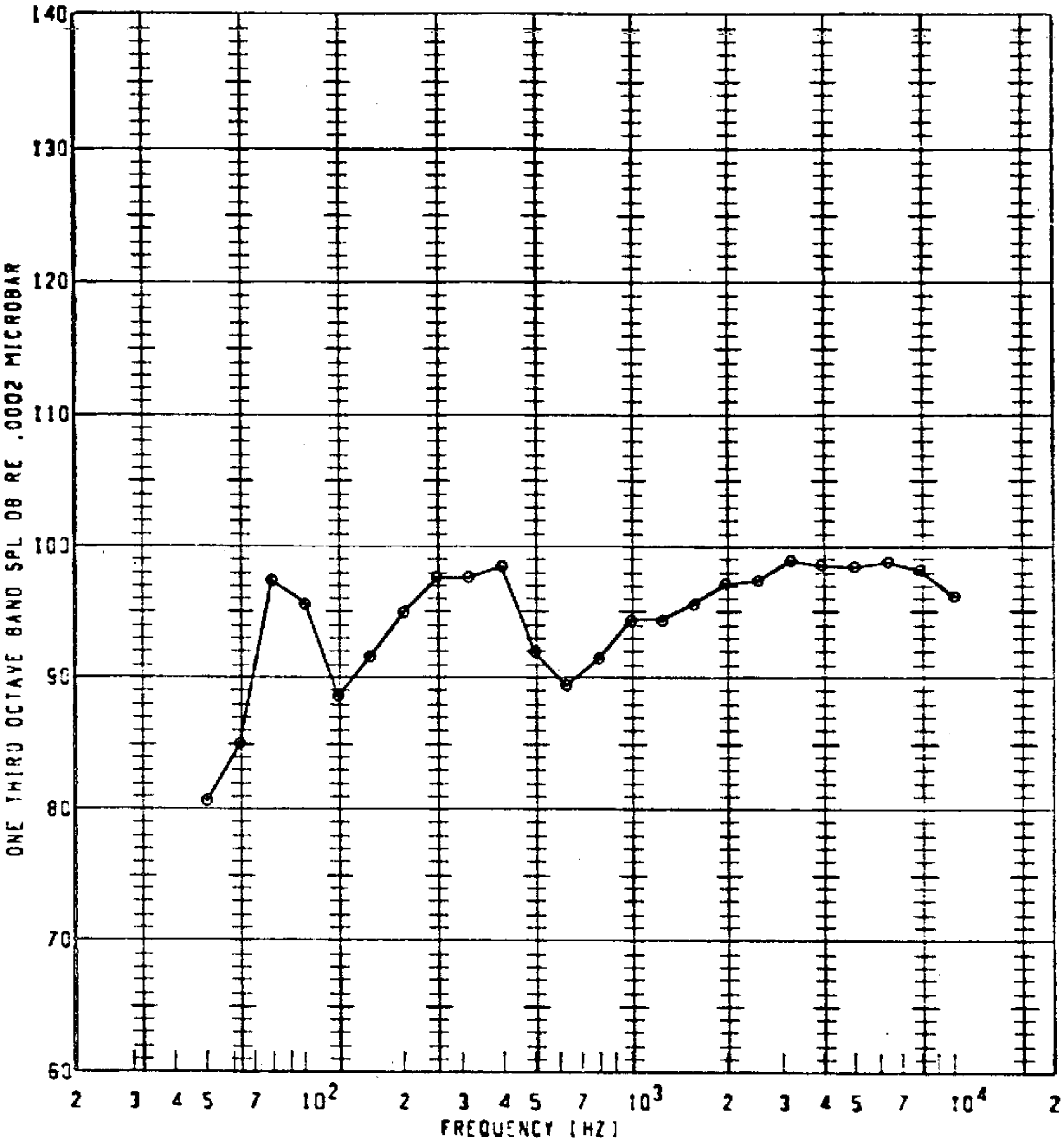
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊖	90	800	1.400	100	50FP	108.0	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



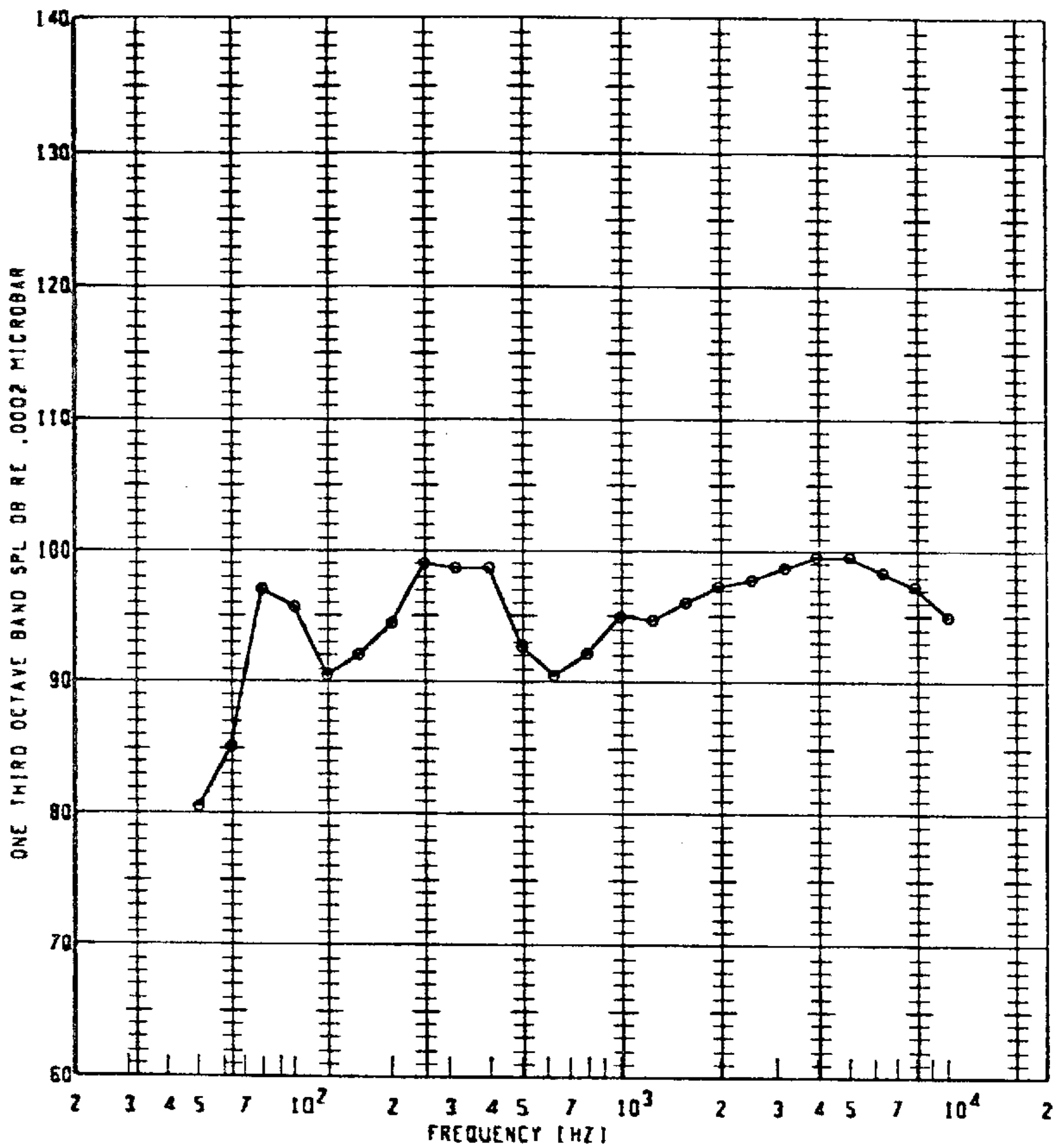
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	95	800	1.400	110	50FP	109.4	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



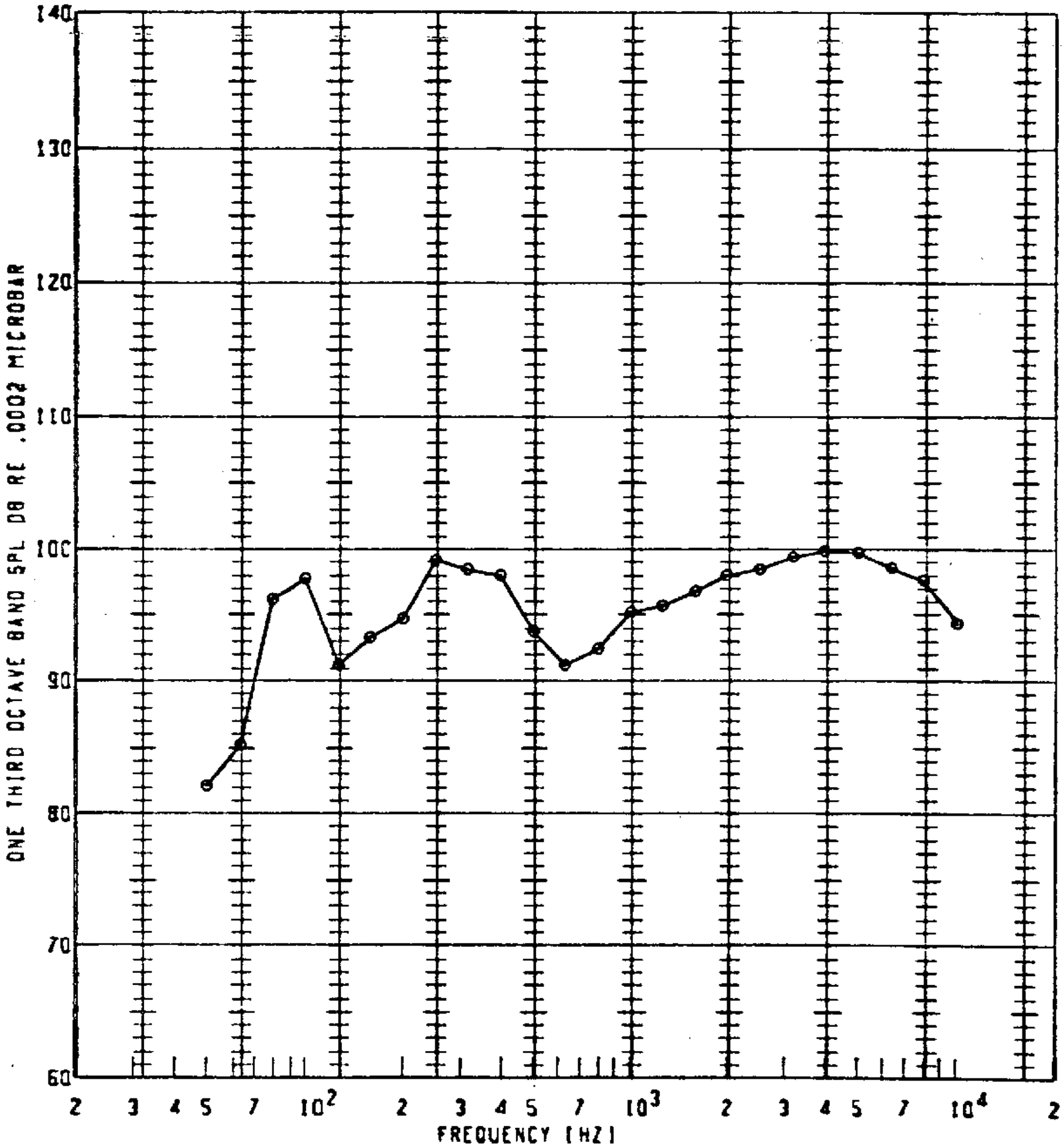
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	96	800	1.400	115	50FP	109.9	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



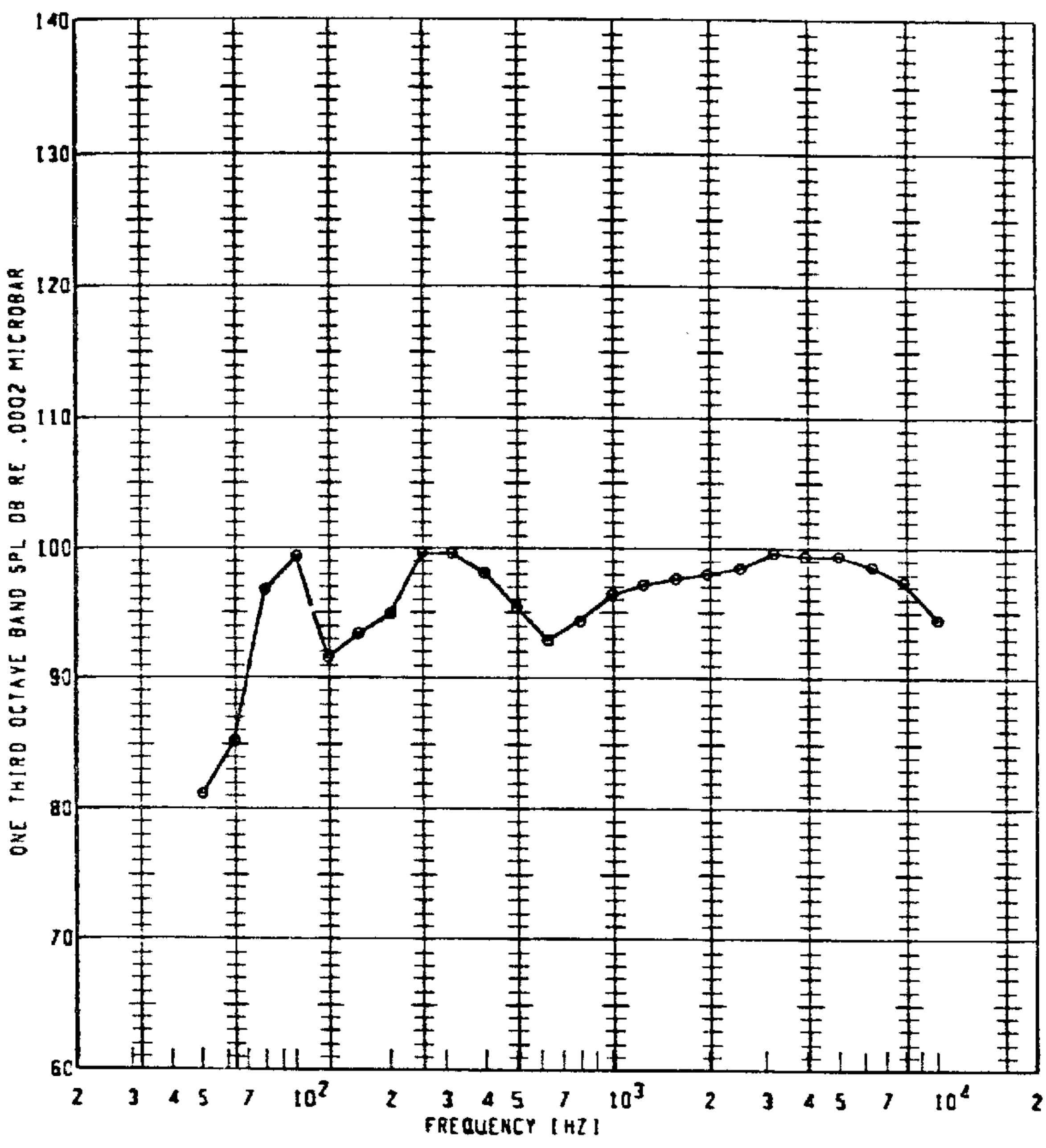
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊕	9G	800	1.400	120	50FP	110.2	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



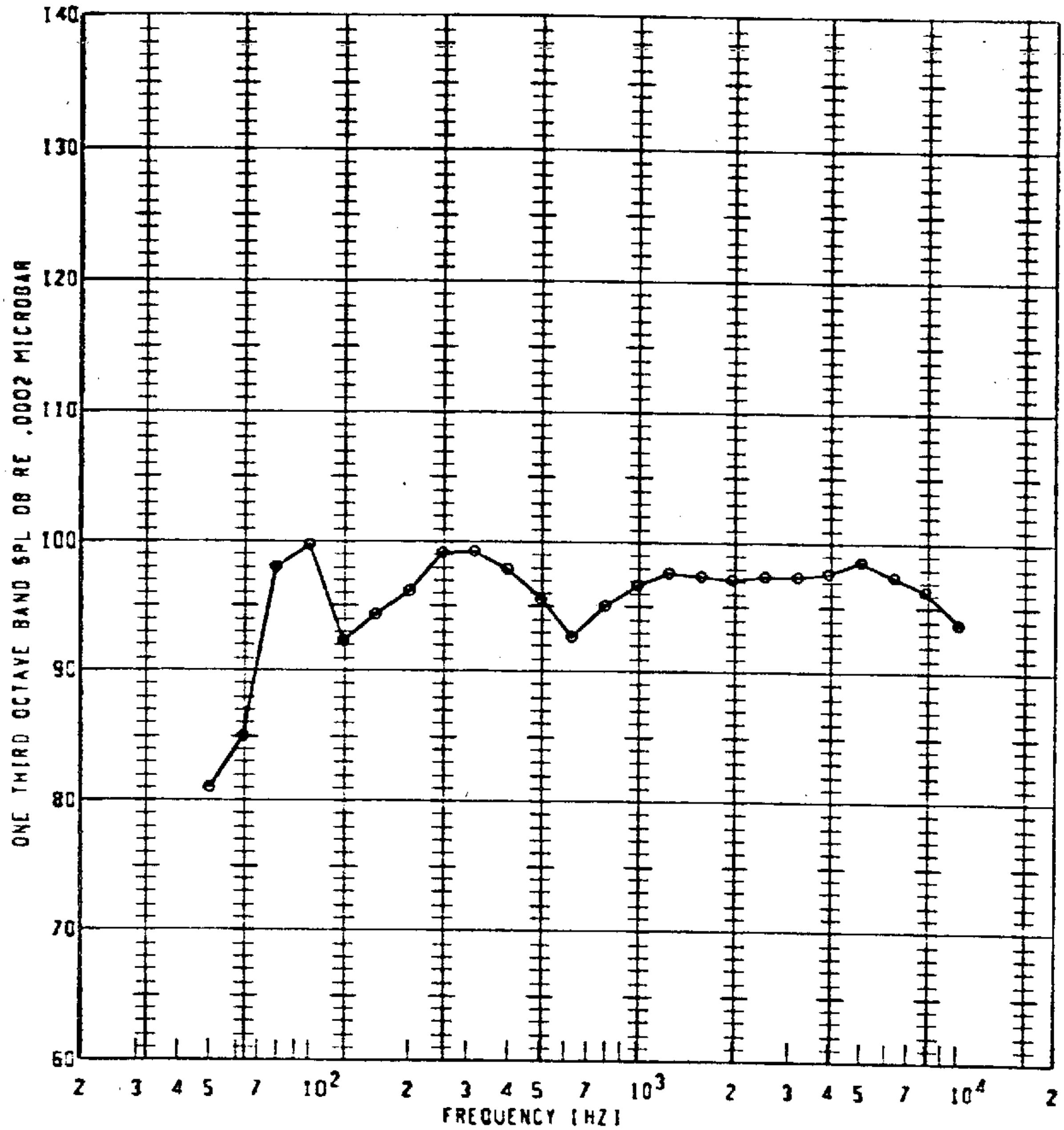
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	96	800	1.400	125	50FP	110.5	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



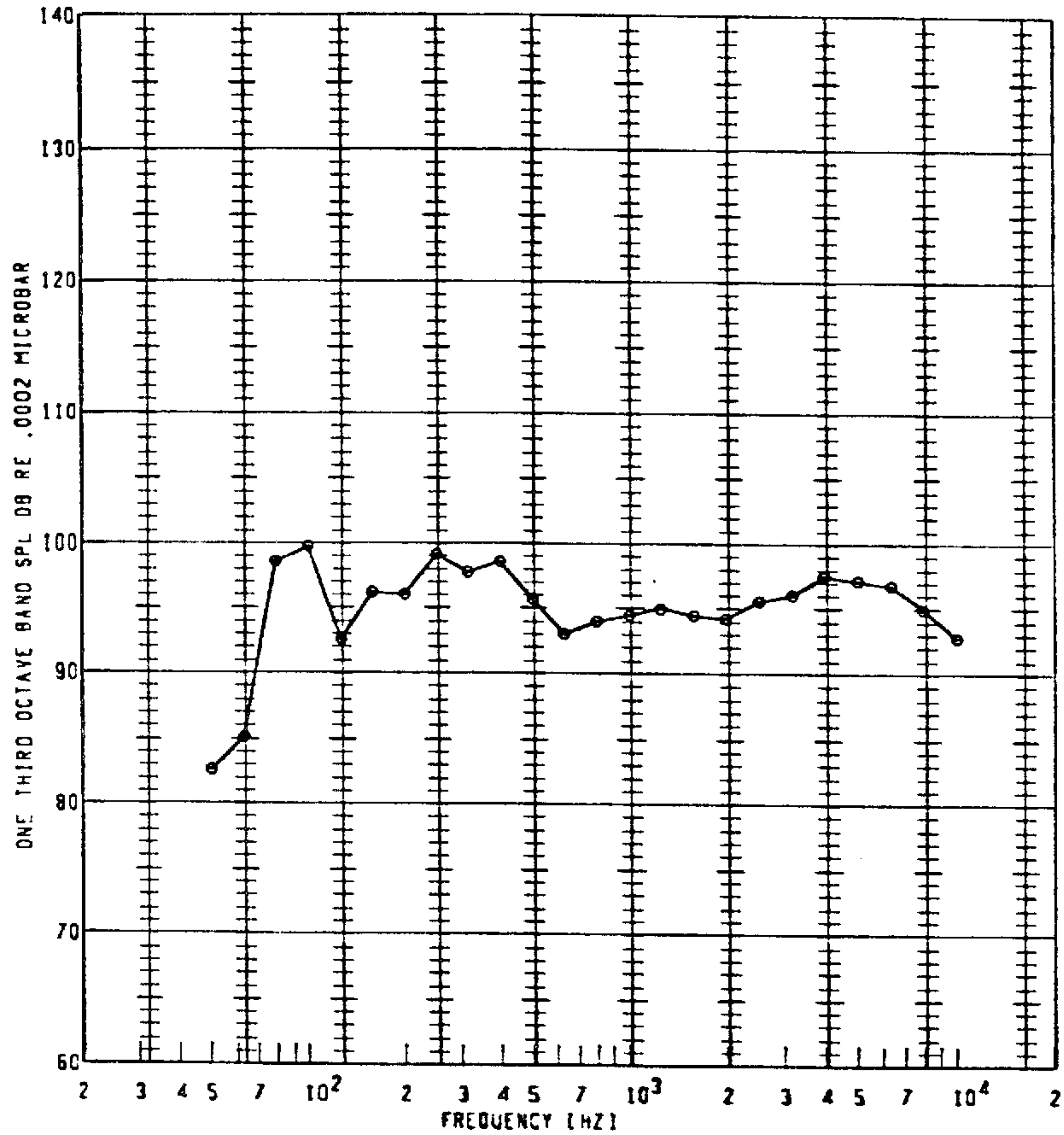
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	96	800	1.400	130	50FP	110.9	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



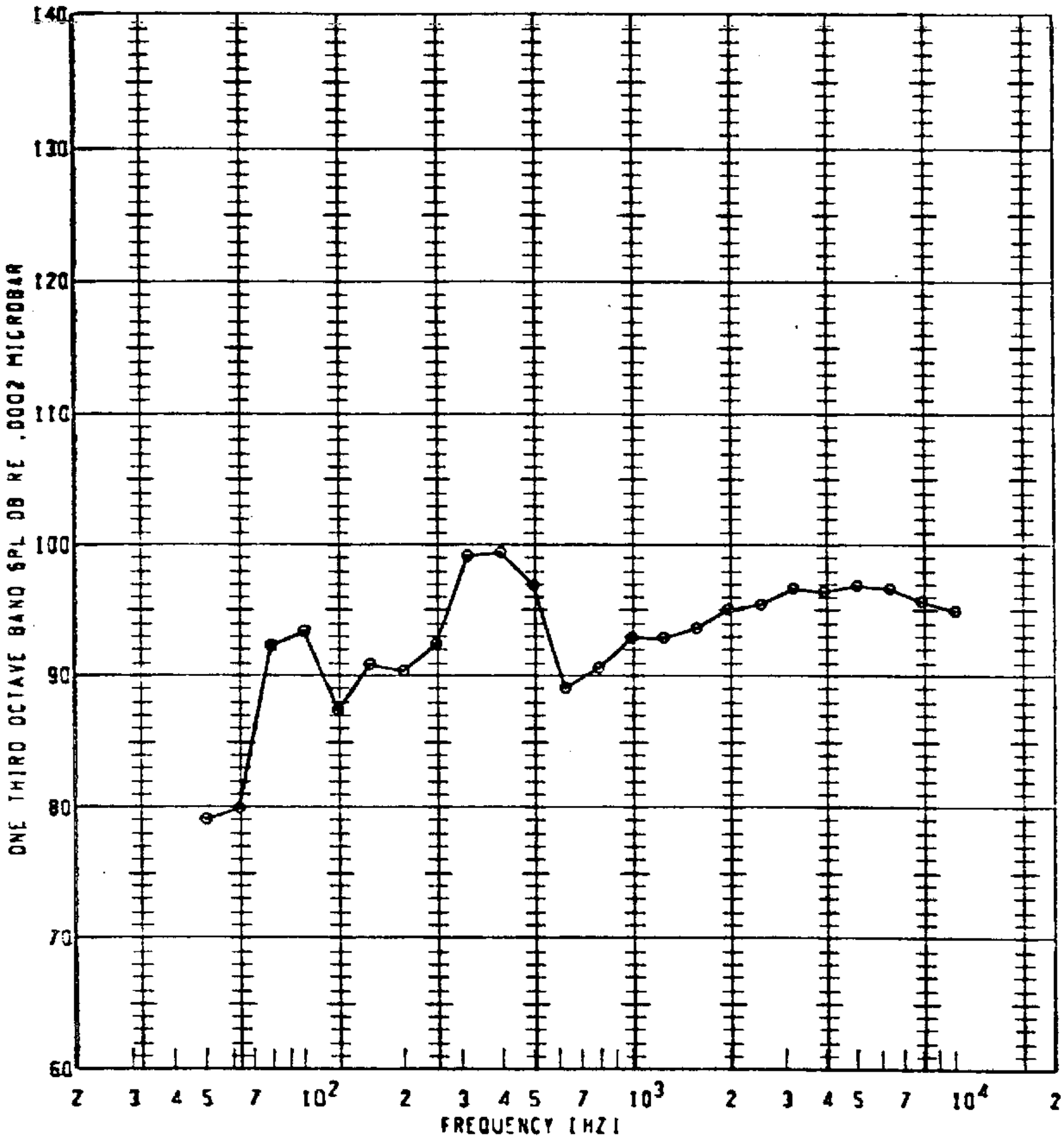
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	90	800	1.400	135	50FP	110.5	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



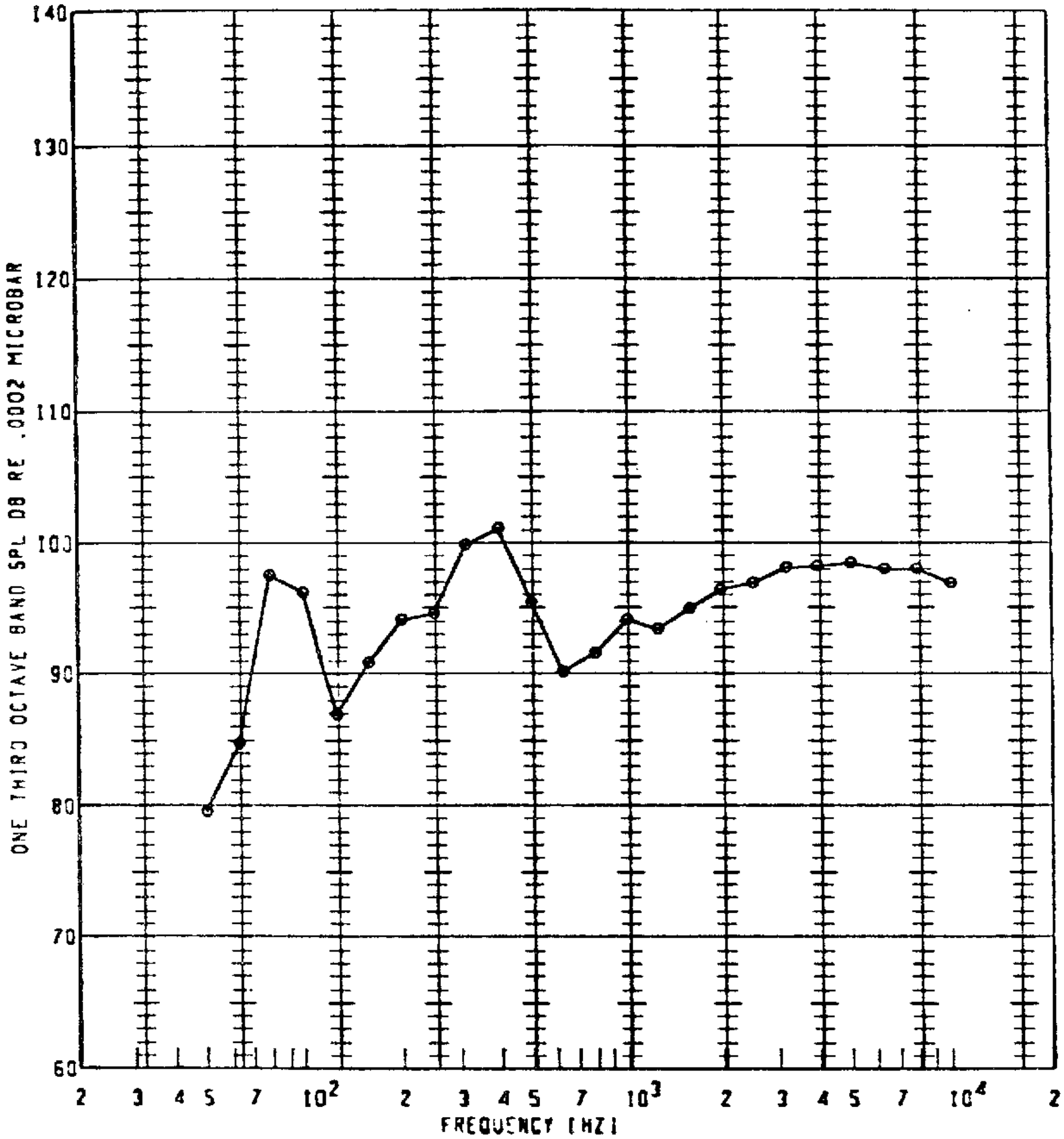
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	96	800	1.400	140	50FP	109.8	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



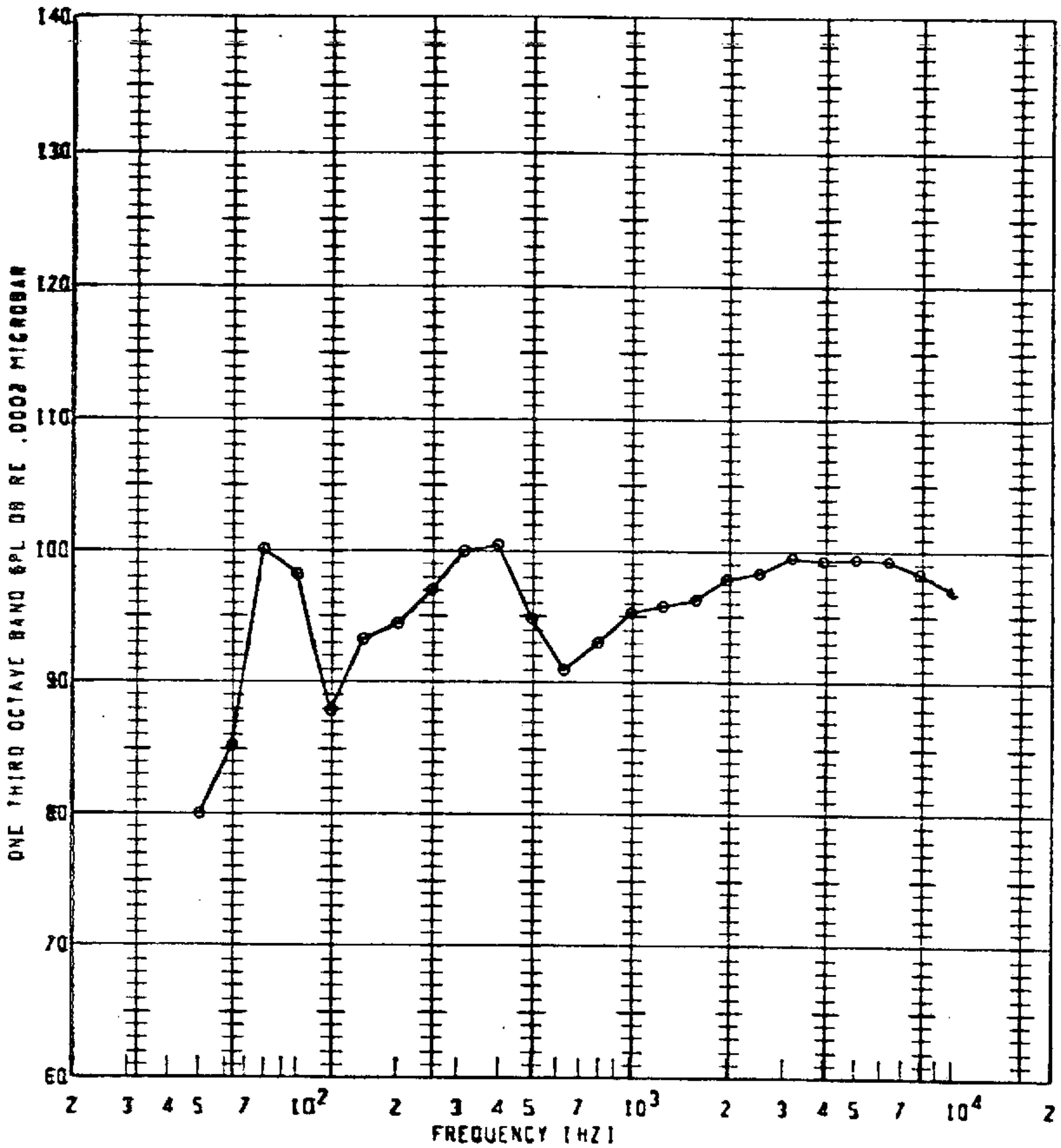
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	96	850	1.500	90	50FP	108.5	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



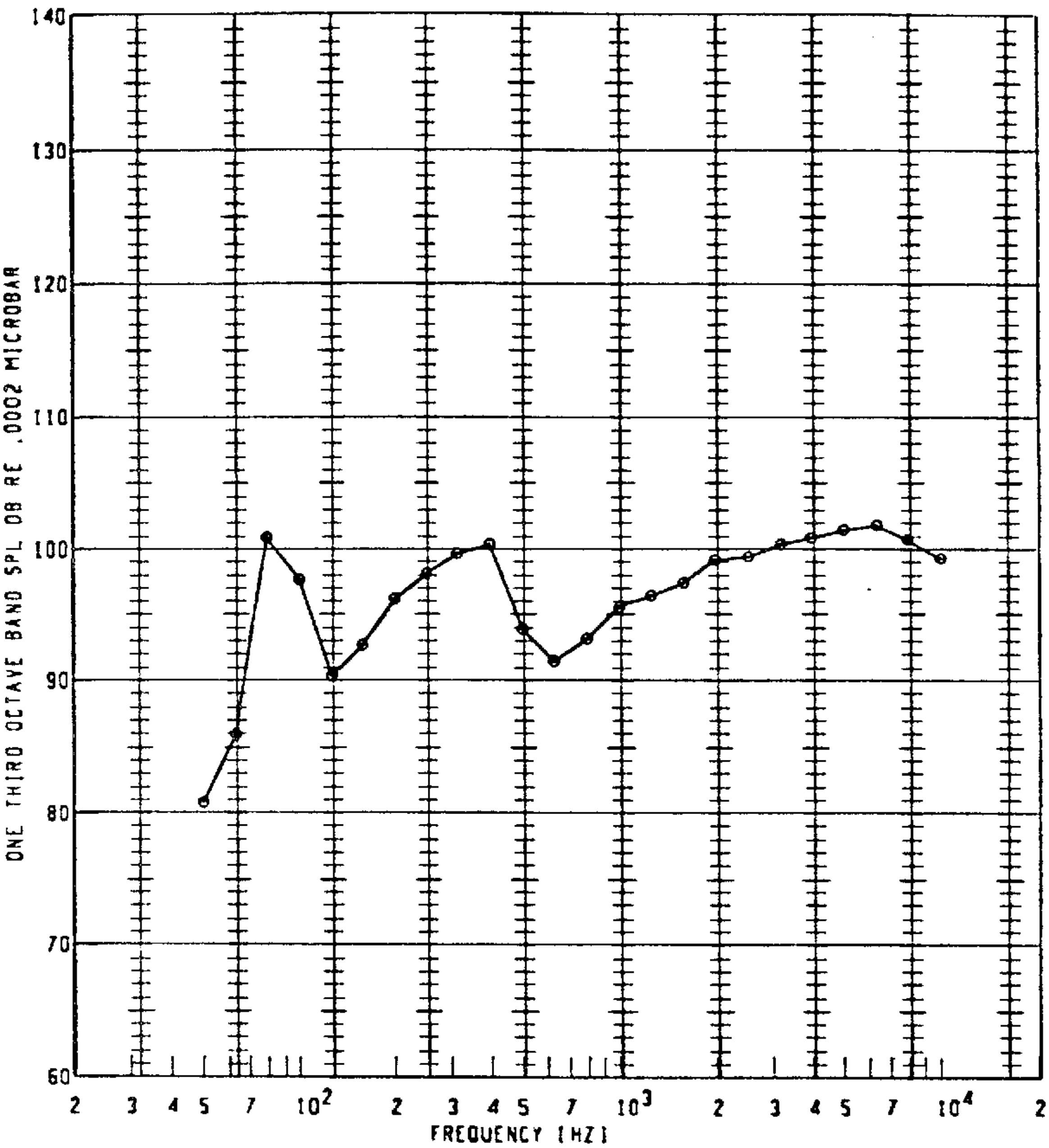
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	96	850	1.500	100	50FP	110.0	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



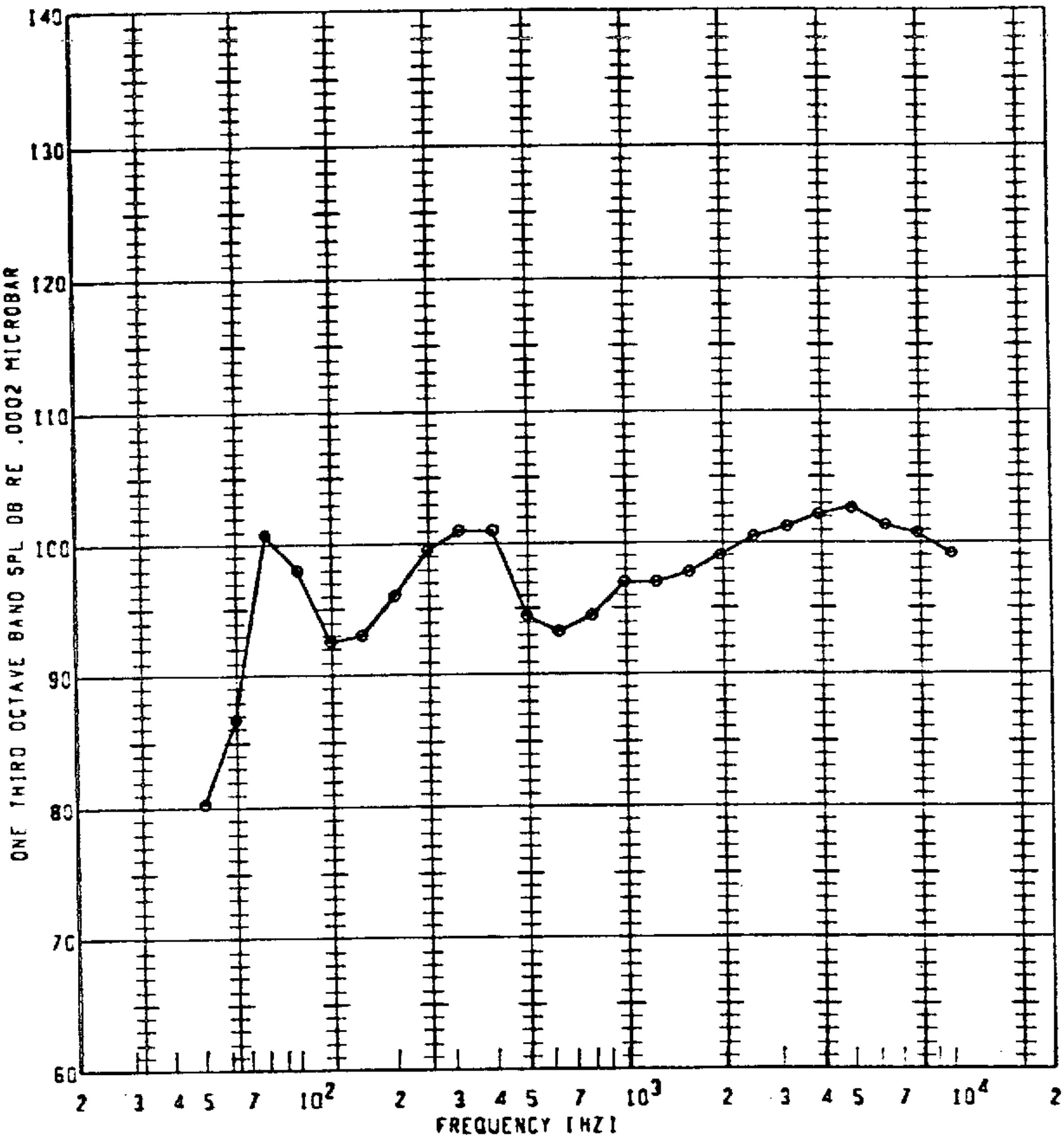
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	9G	850	1.500	110	50FP	111.0	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



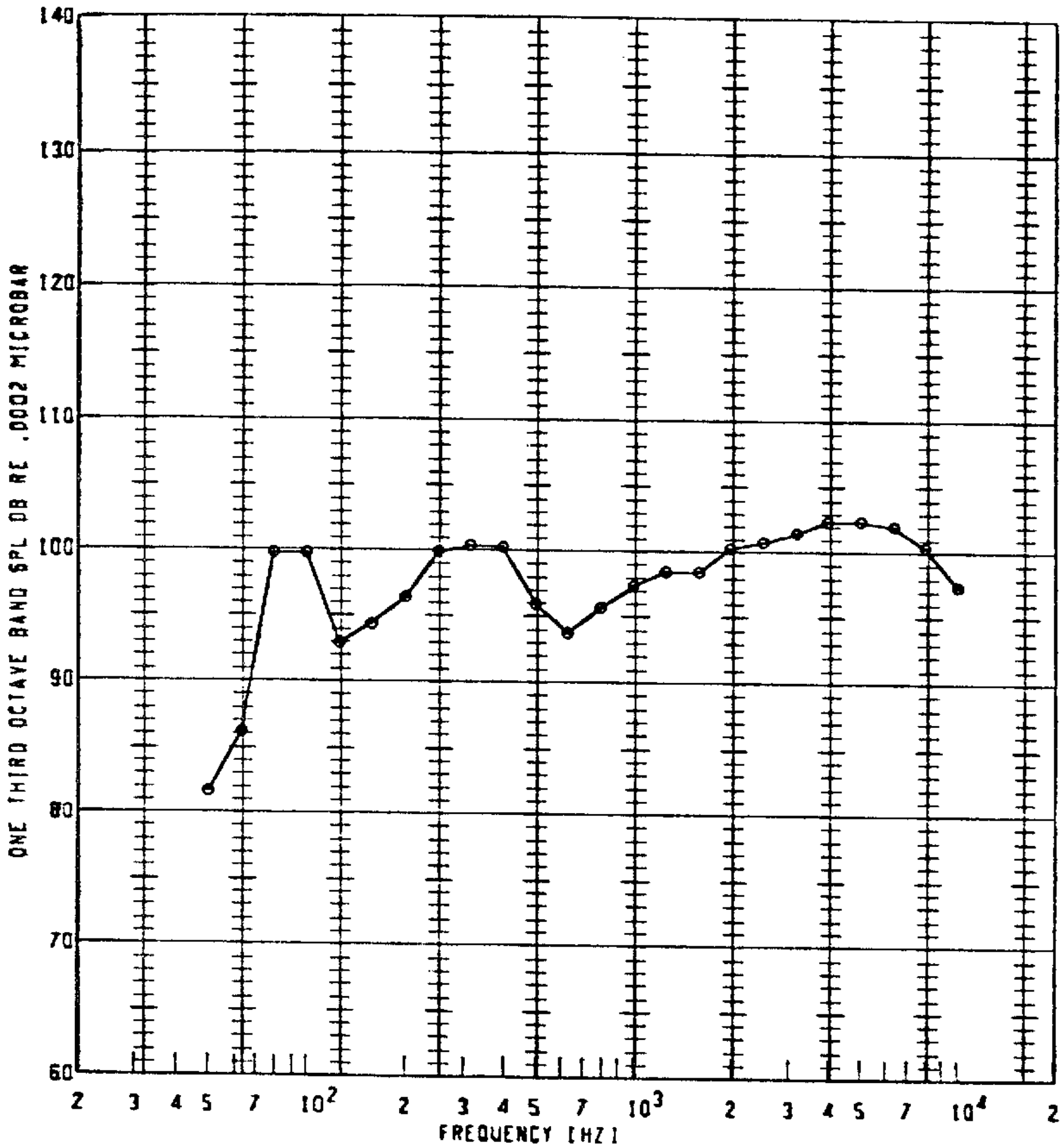
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	90	850	1.500	115	50FP	112.0	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



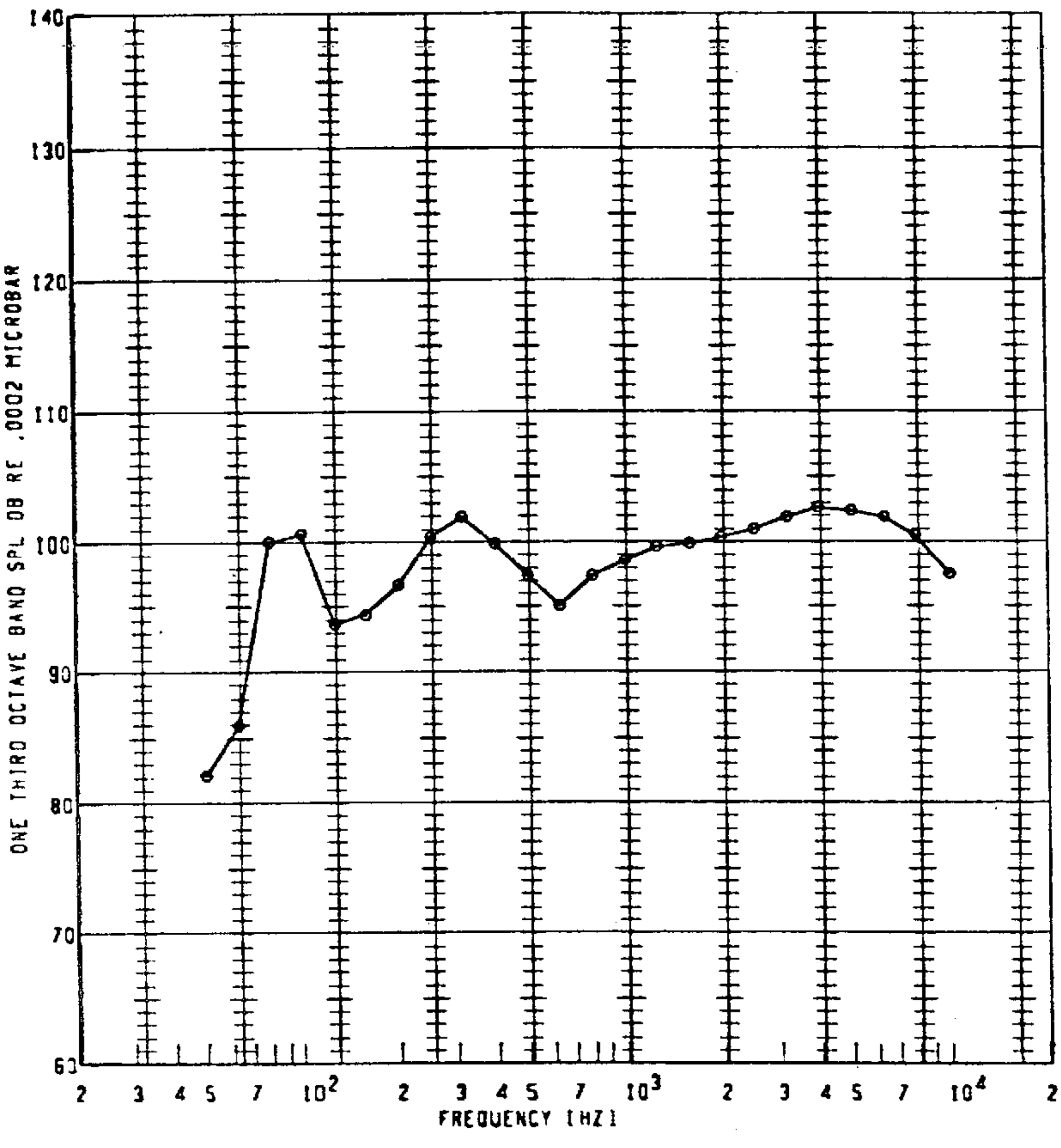
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	96	850	1.500	120	50FP	112.7	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



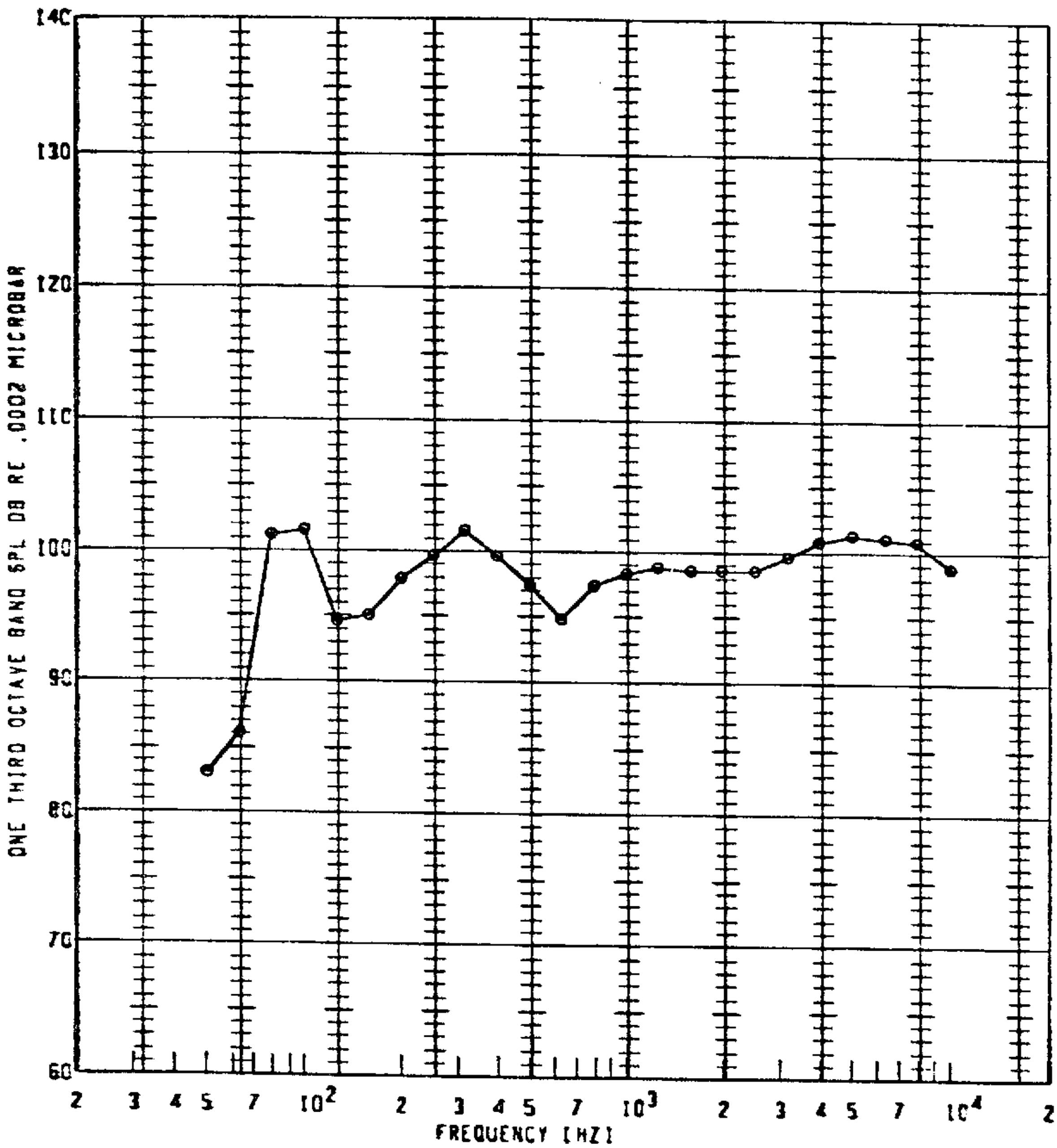
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	96	850	1.500	125	50FP	112.8	ID	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



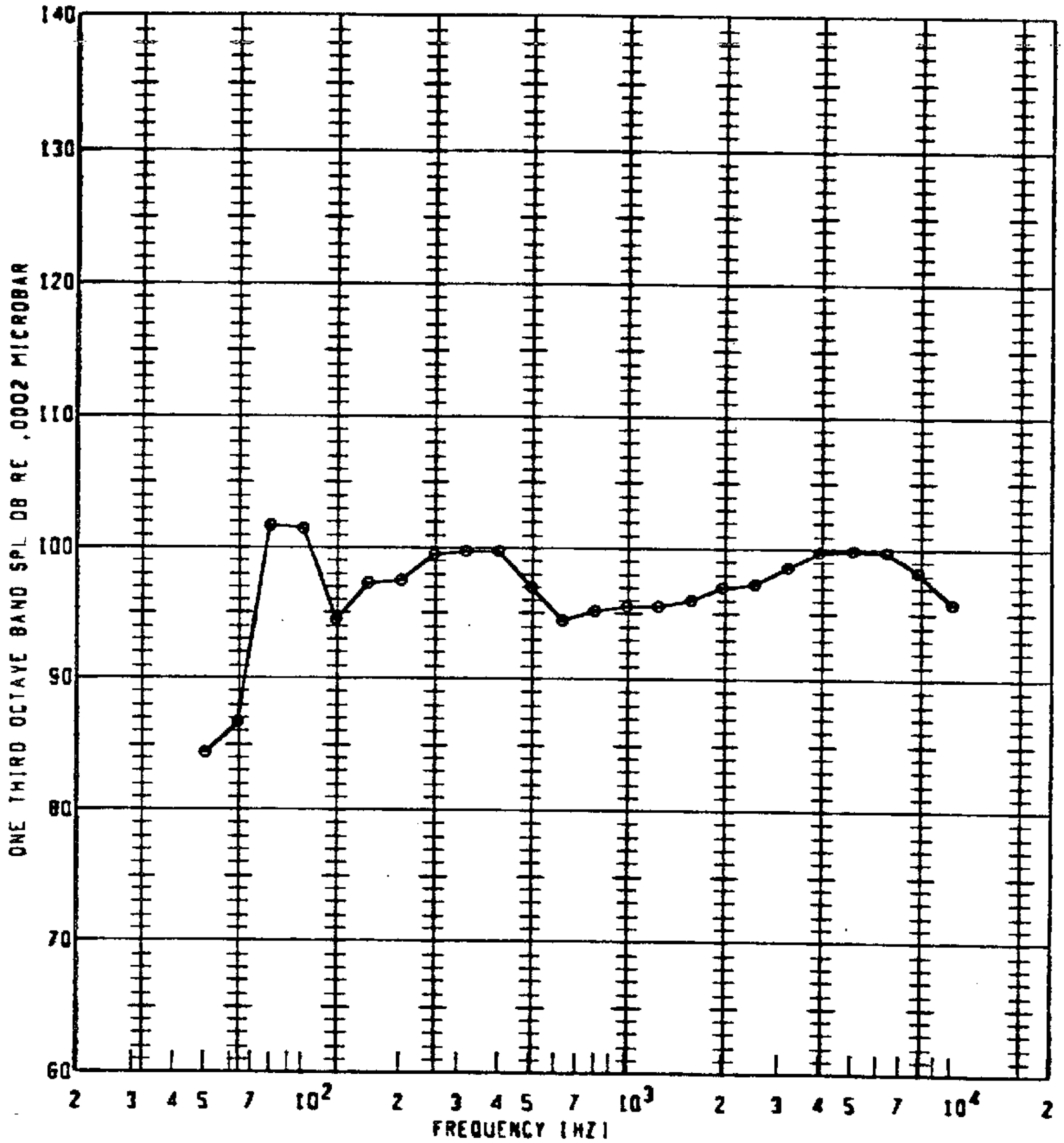
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	95	850	1.500	130	50FP	113.3	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



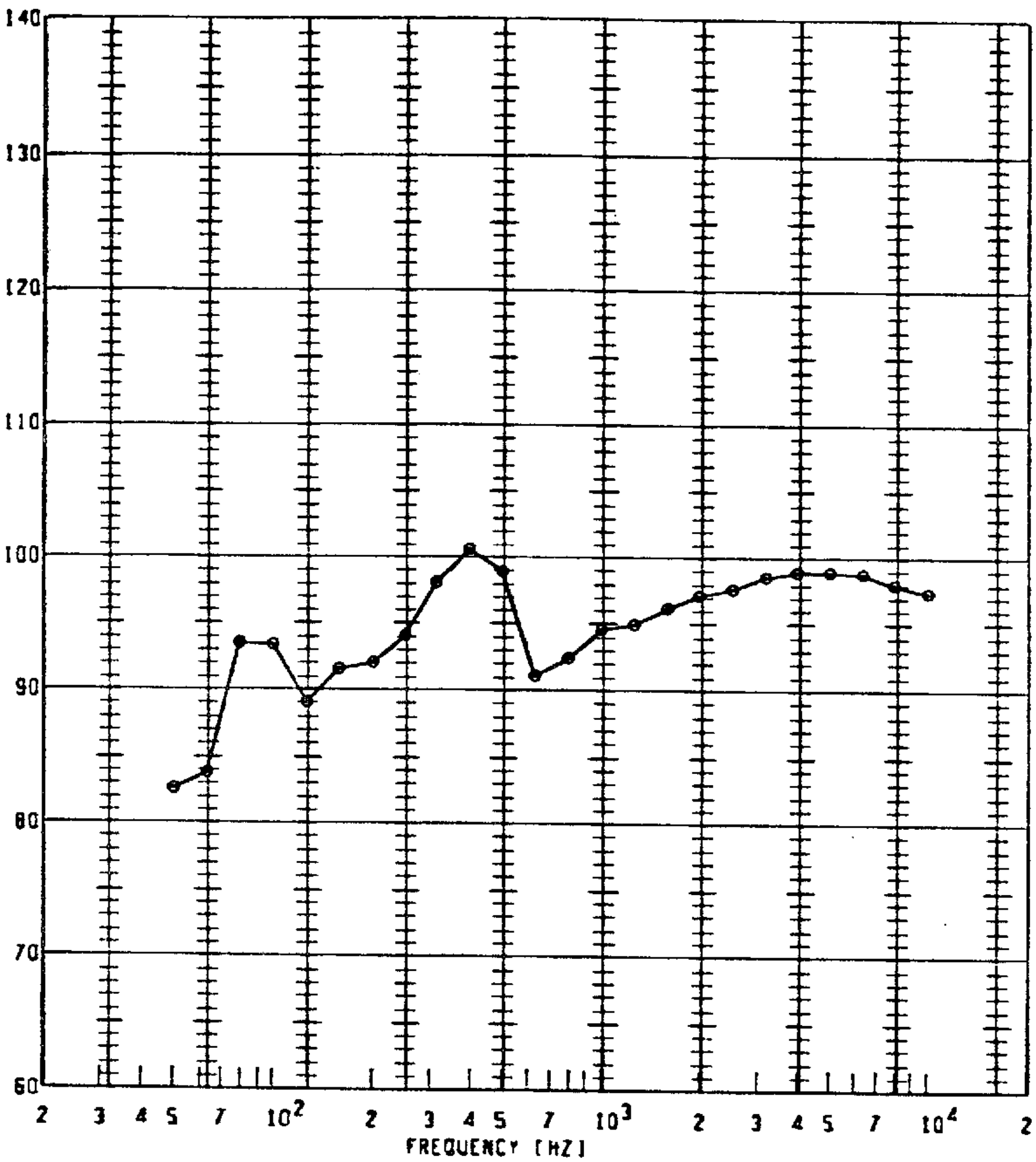
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	96	850	1.500	135	50FP	112.8	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



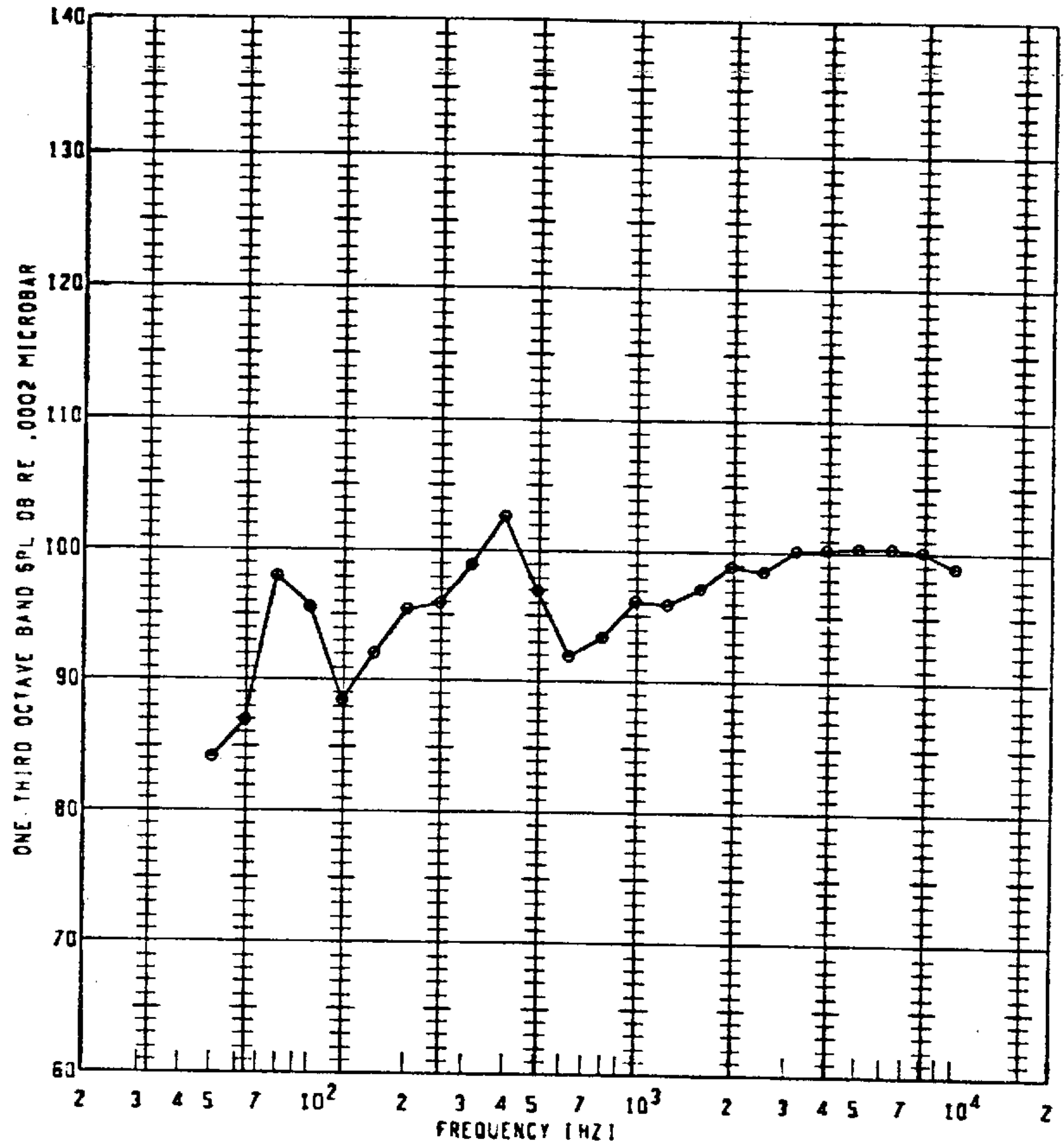
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊕	9G	850	1.500	140	50FP	111.7	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



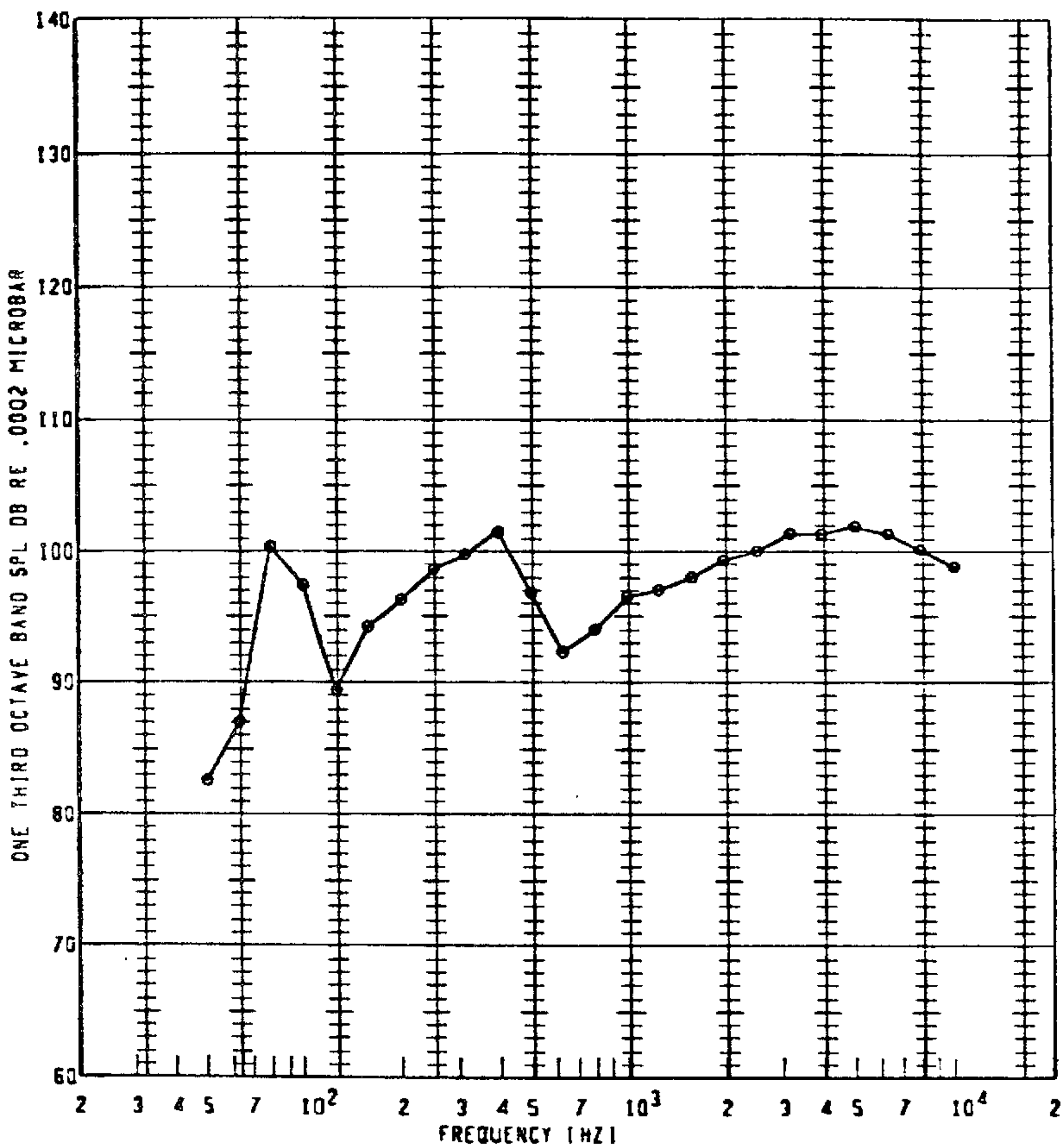
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	96	900	1.600	90	50FP	110.1	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



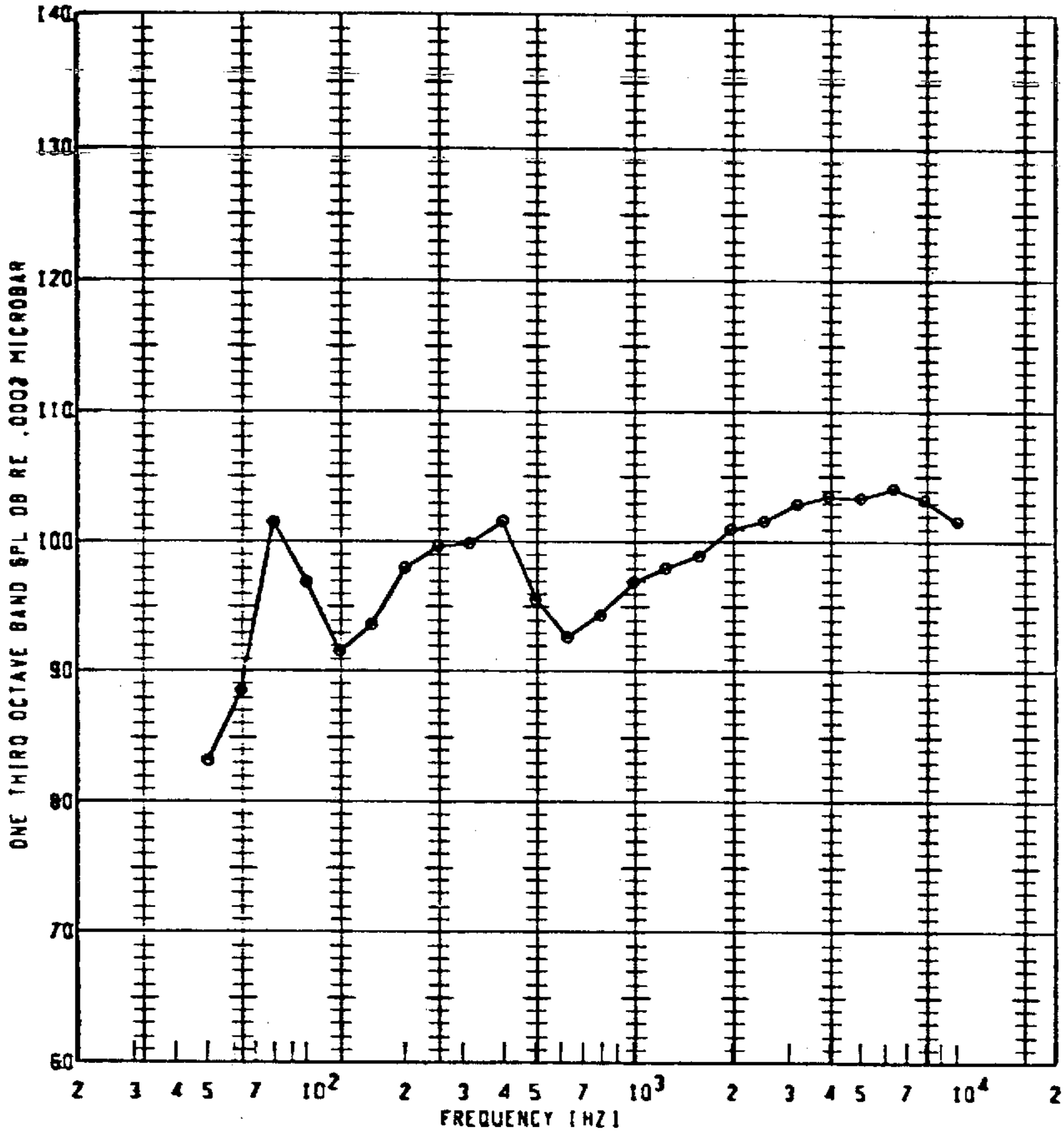
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	9G	900	1.600	100	50FP	111.6	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



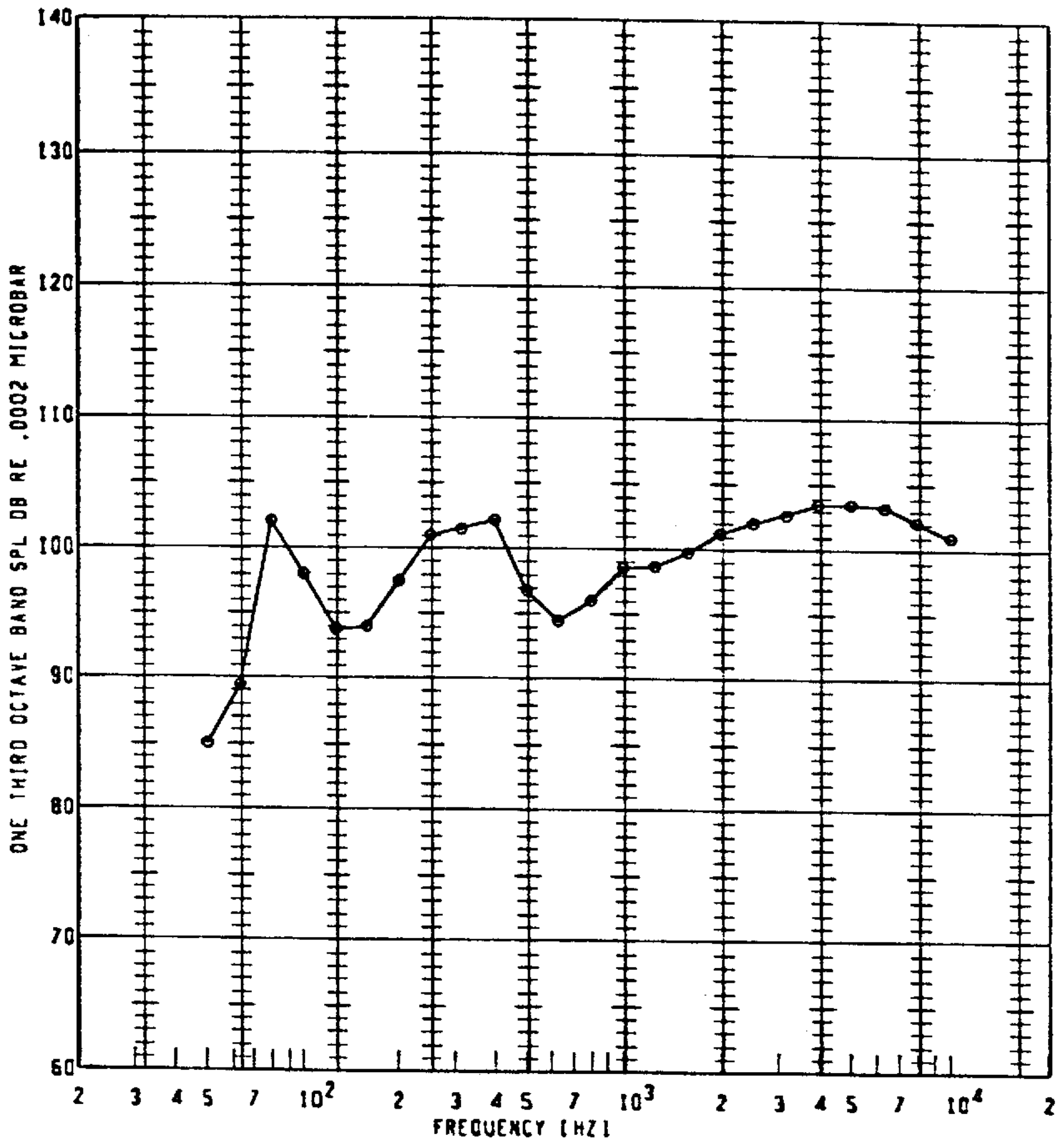
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	9G	900	1.600	110	SCFP	112.4	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



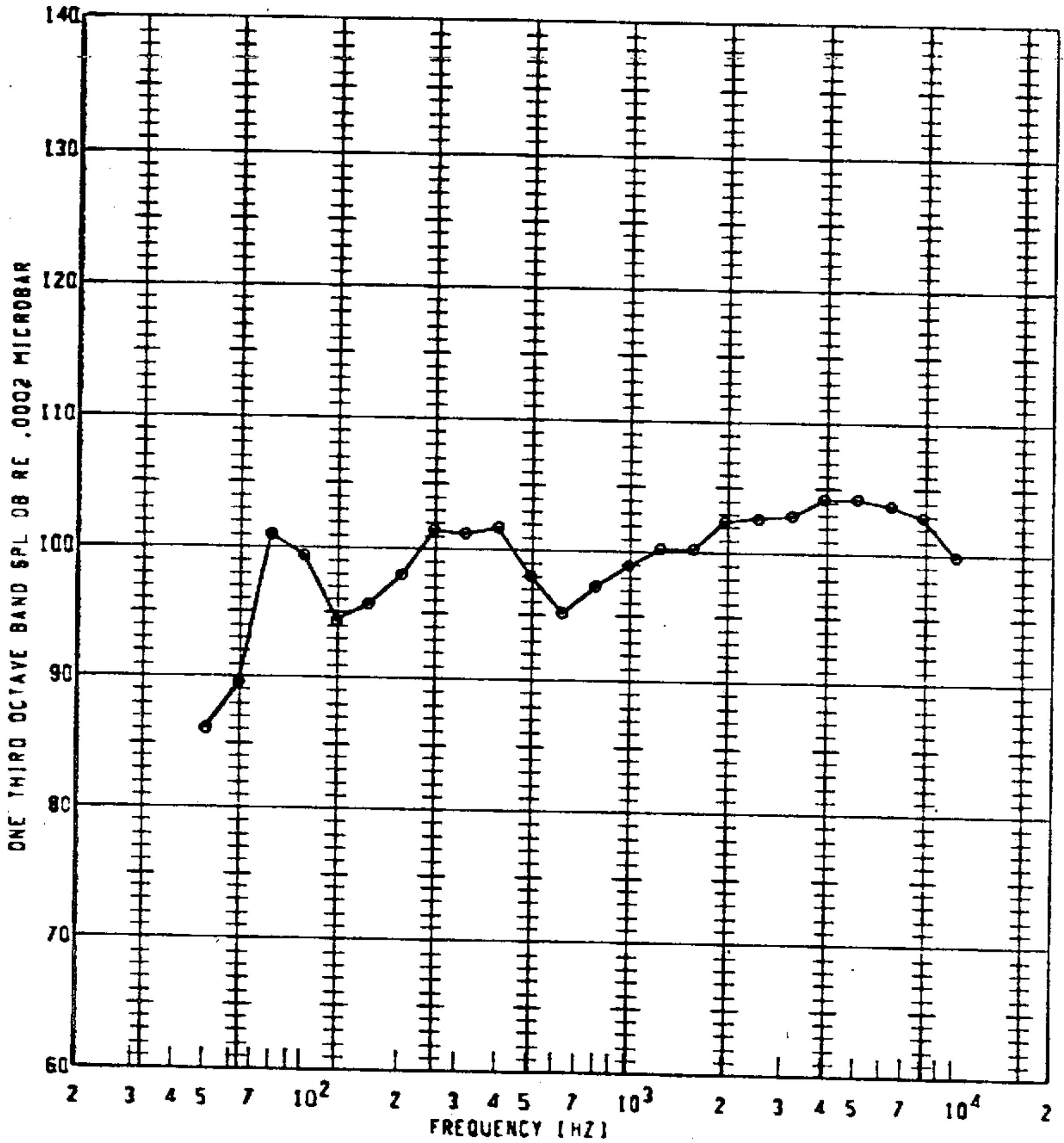
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	SG	900	1.600	115	50FP	113.8	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



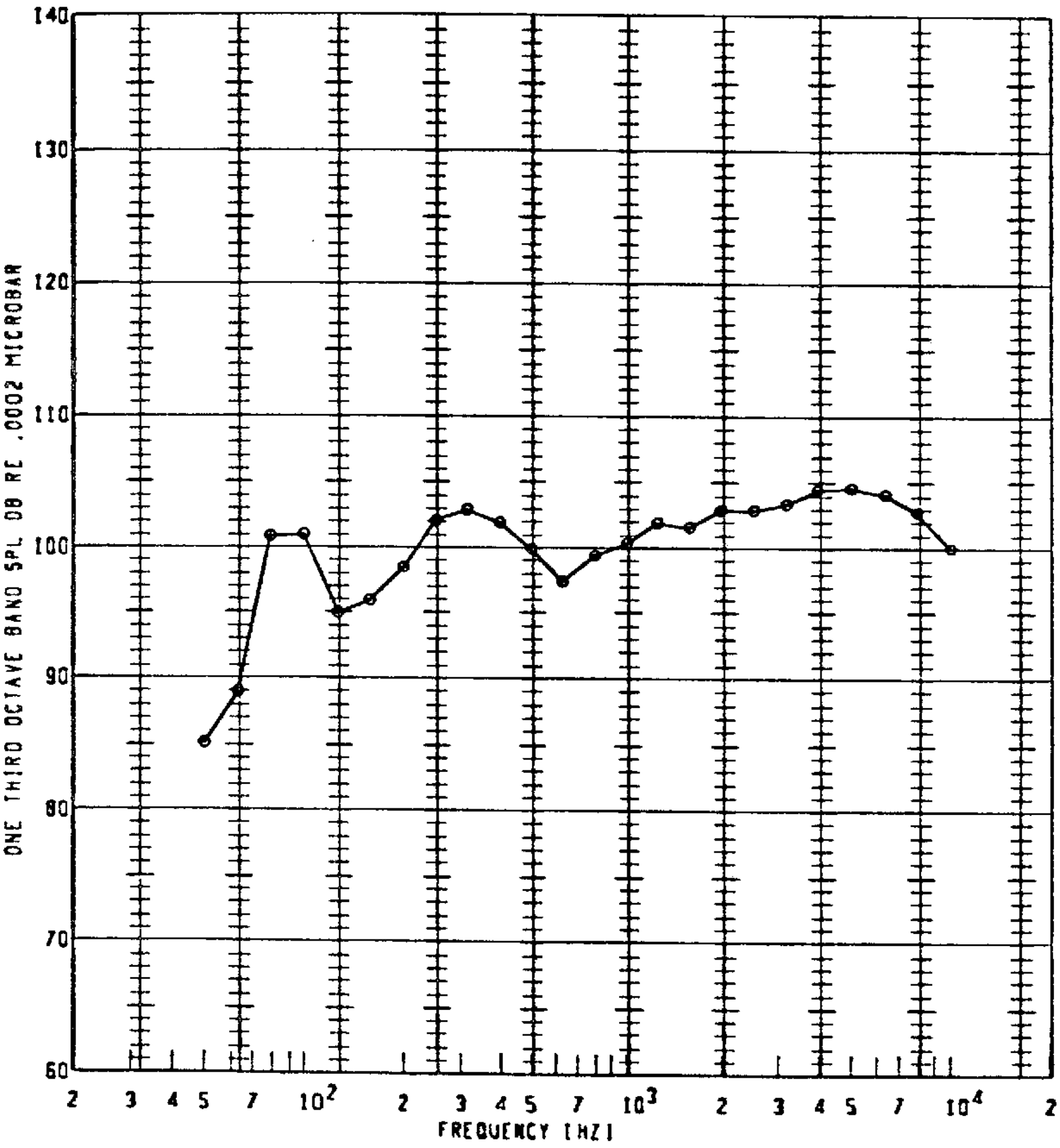
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊗	9G	900	1.600	120	50FP	114.1	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



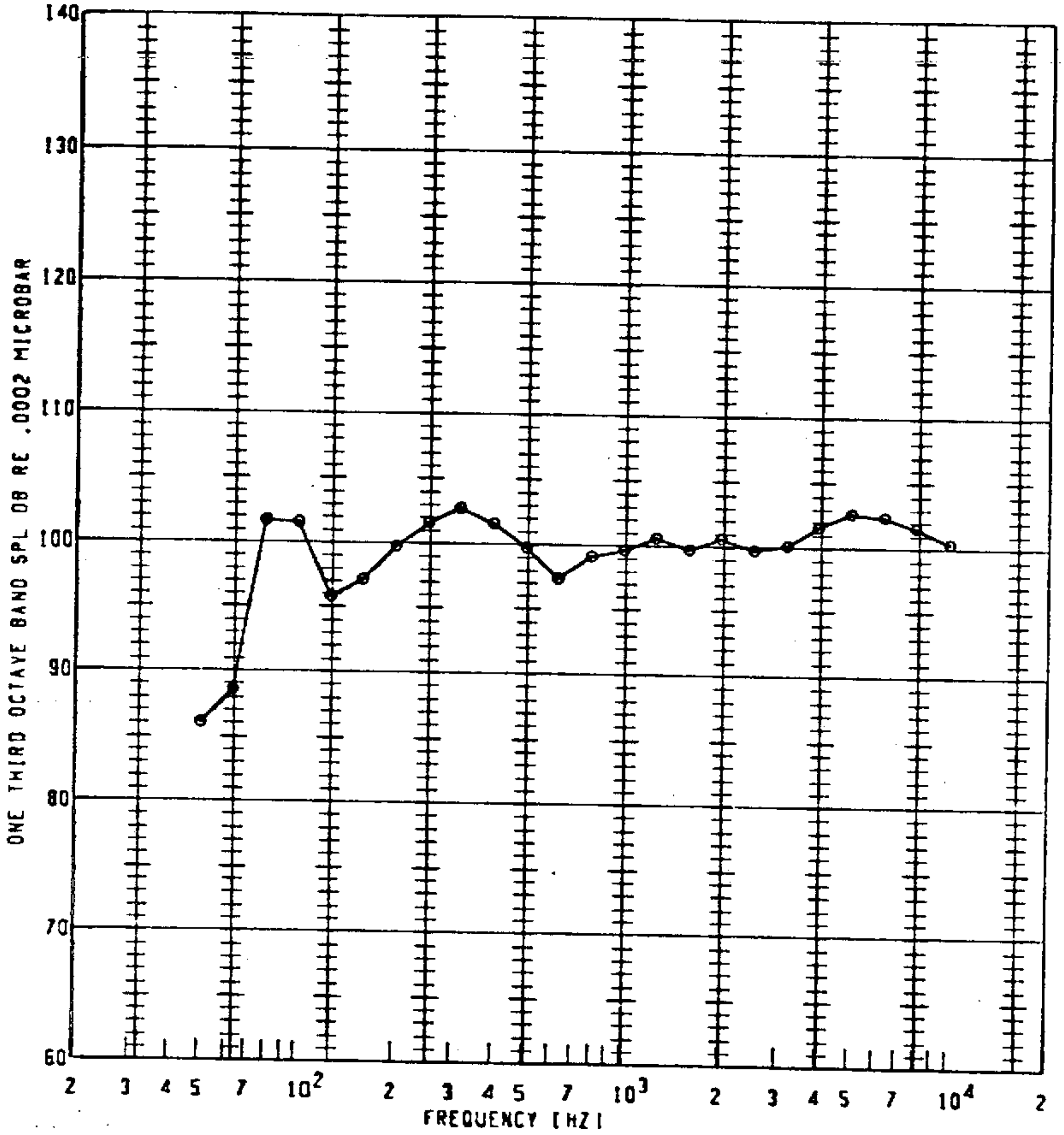
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	96	900	1.600	125	50FP	114.5	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



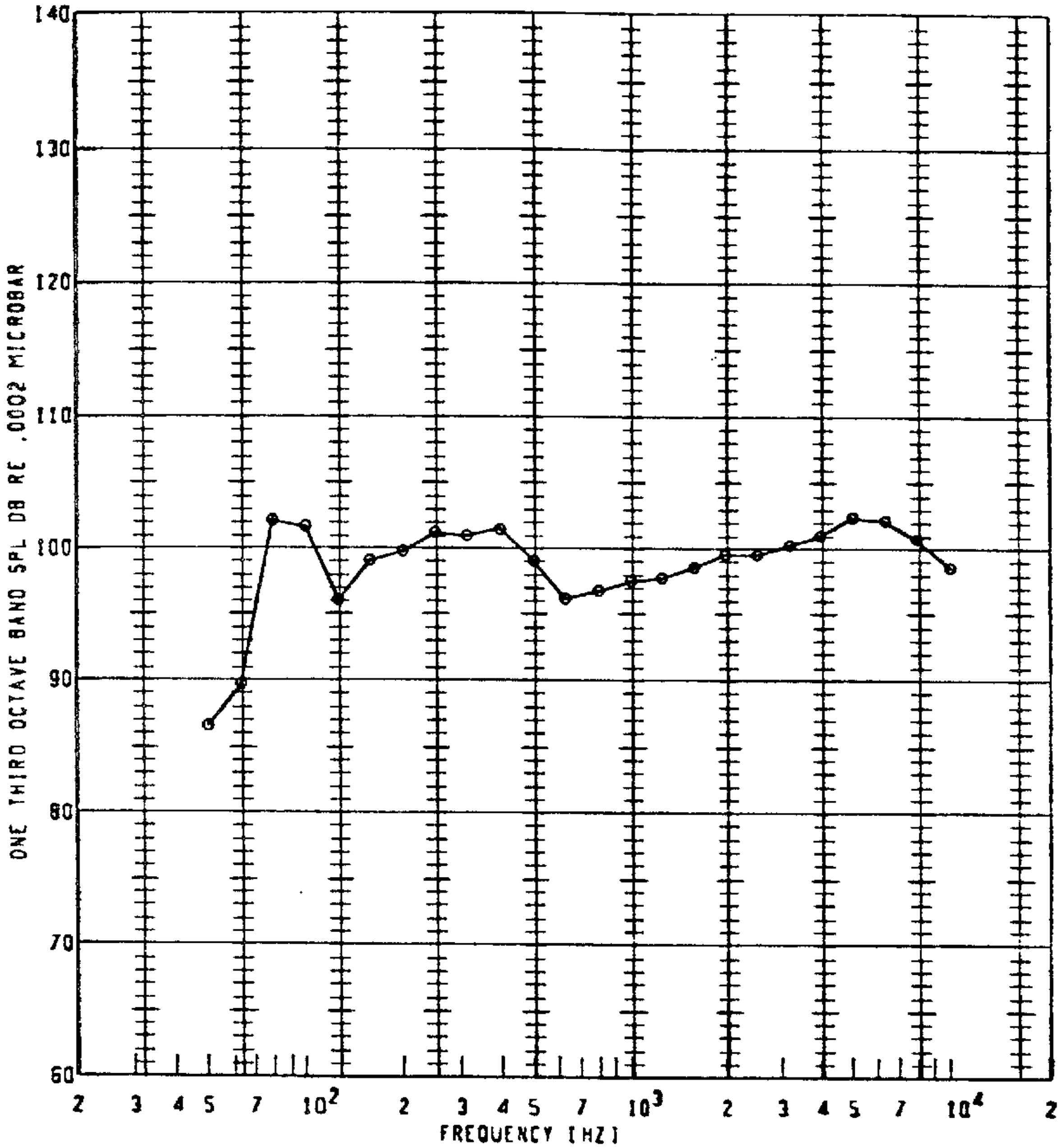
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	96	900	1.600	130	50FP	115.2	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



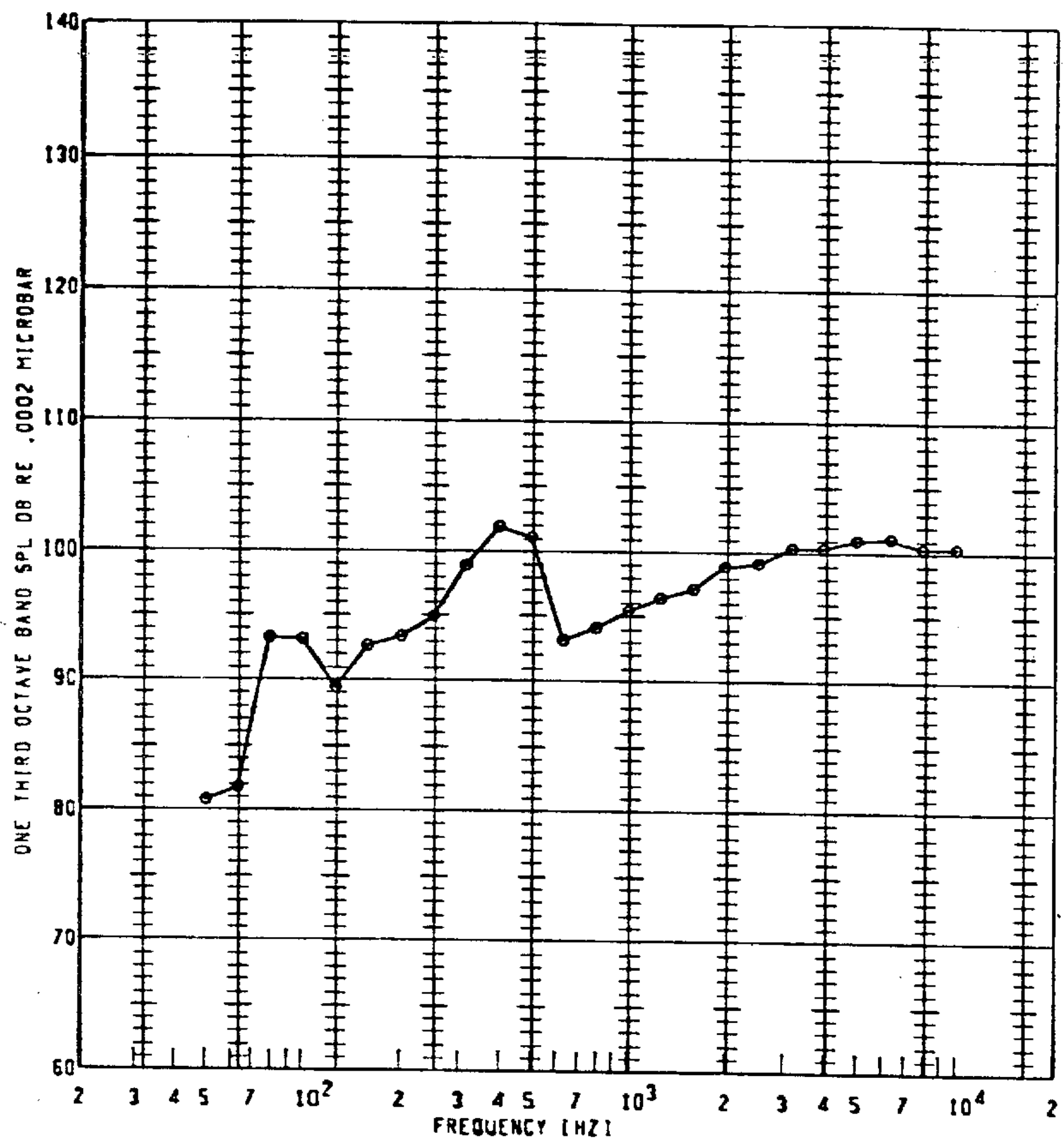
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊕	96	900	1.600	135	50FP	114.1	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



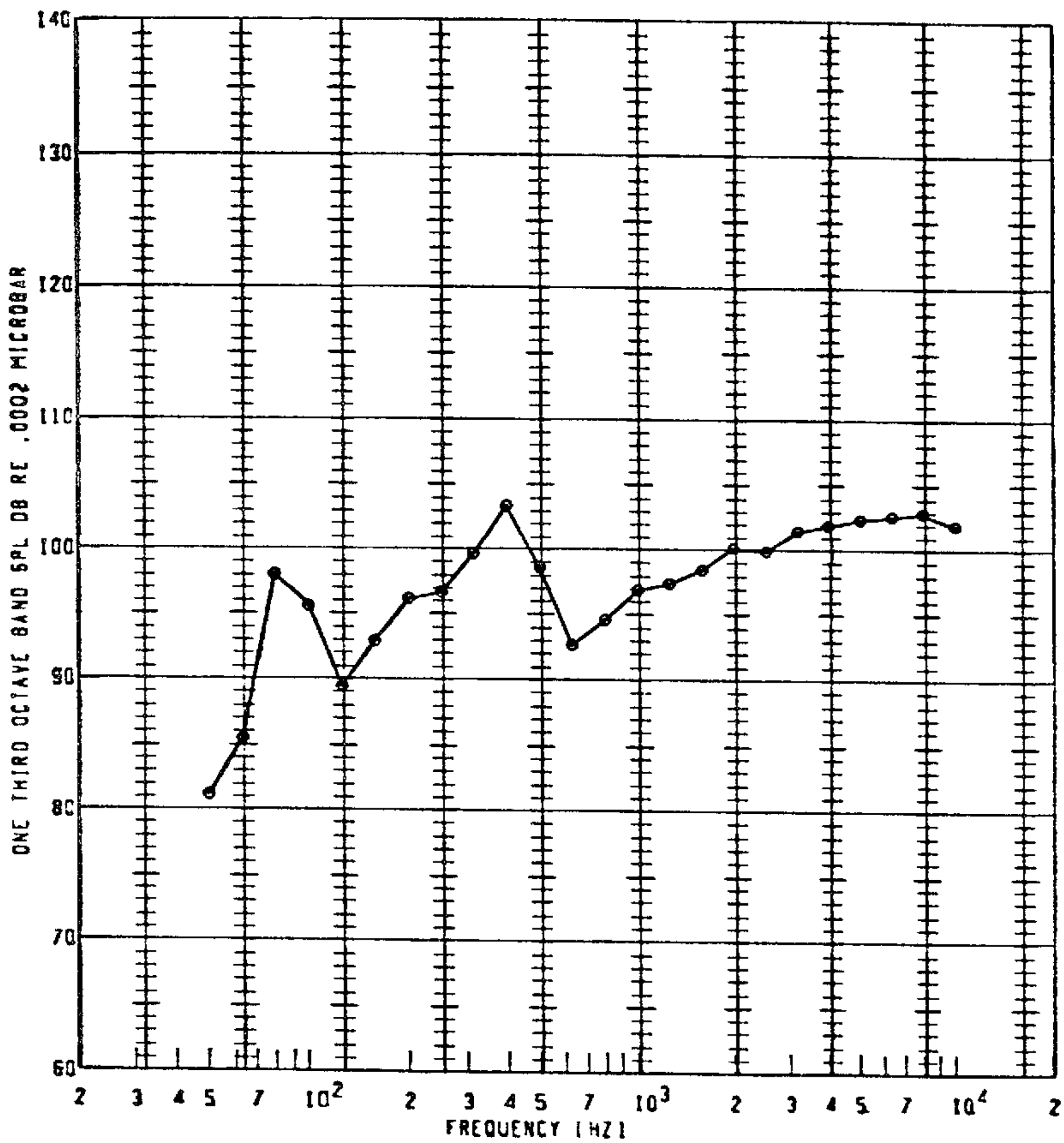
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊕	96	900	1.600	140	50FP	113.5	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



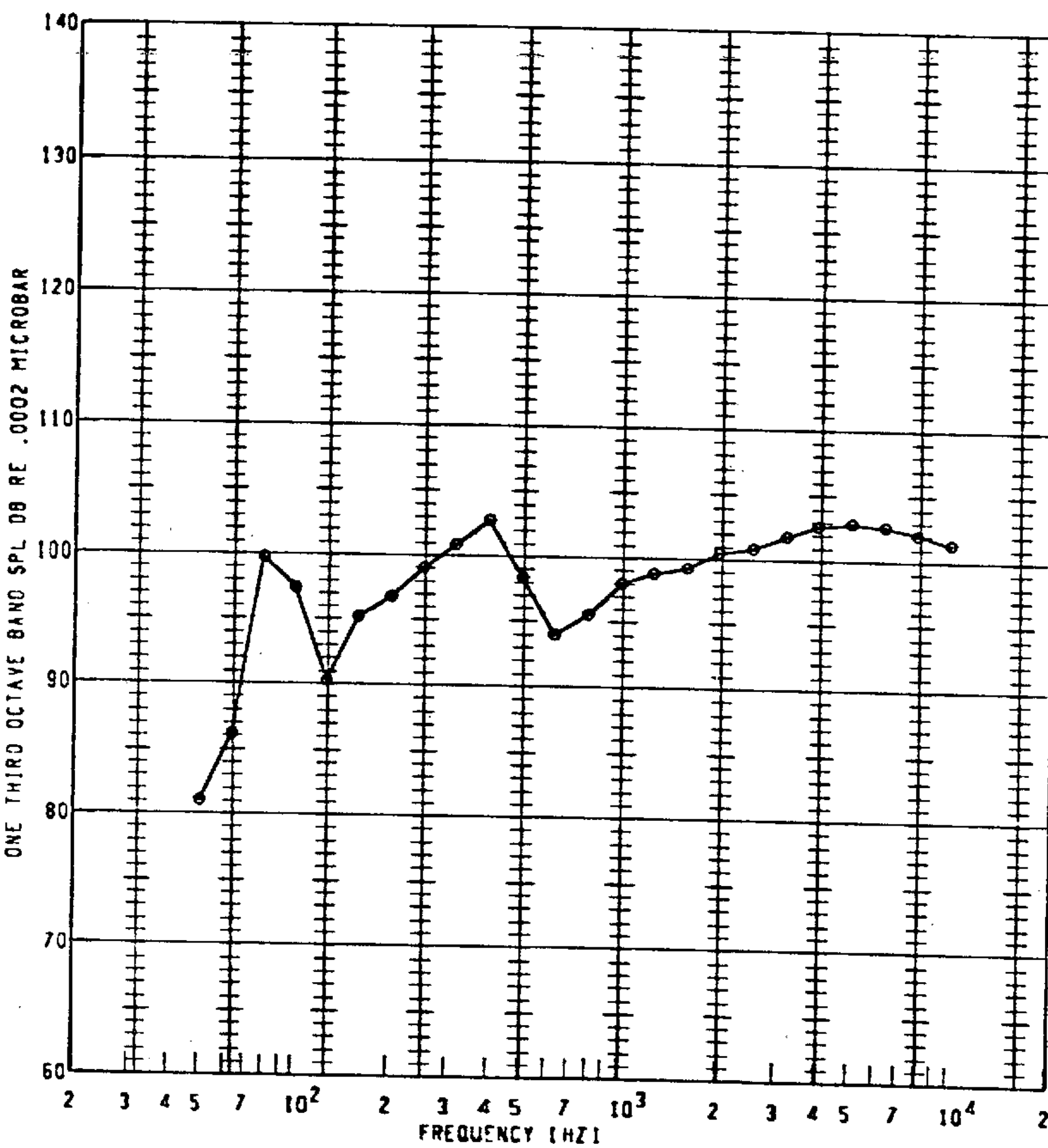
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊖	96	950	1.700	90	50FP	111.8	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



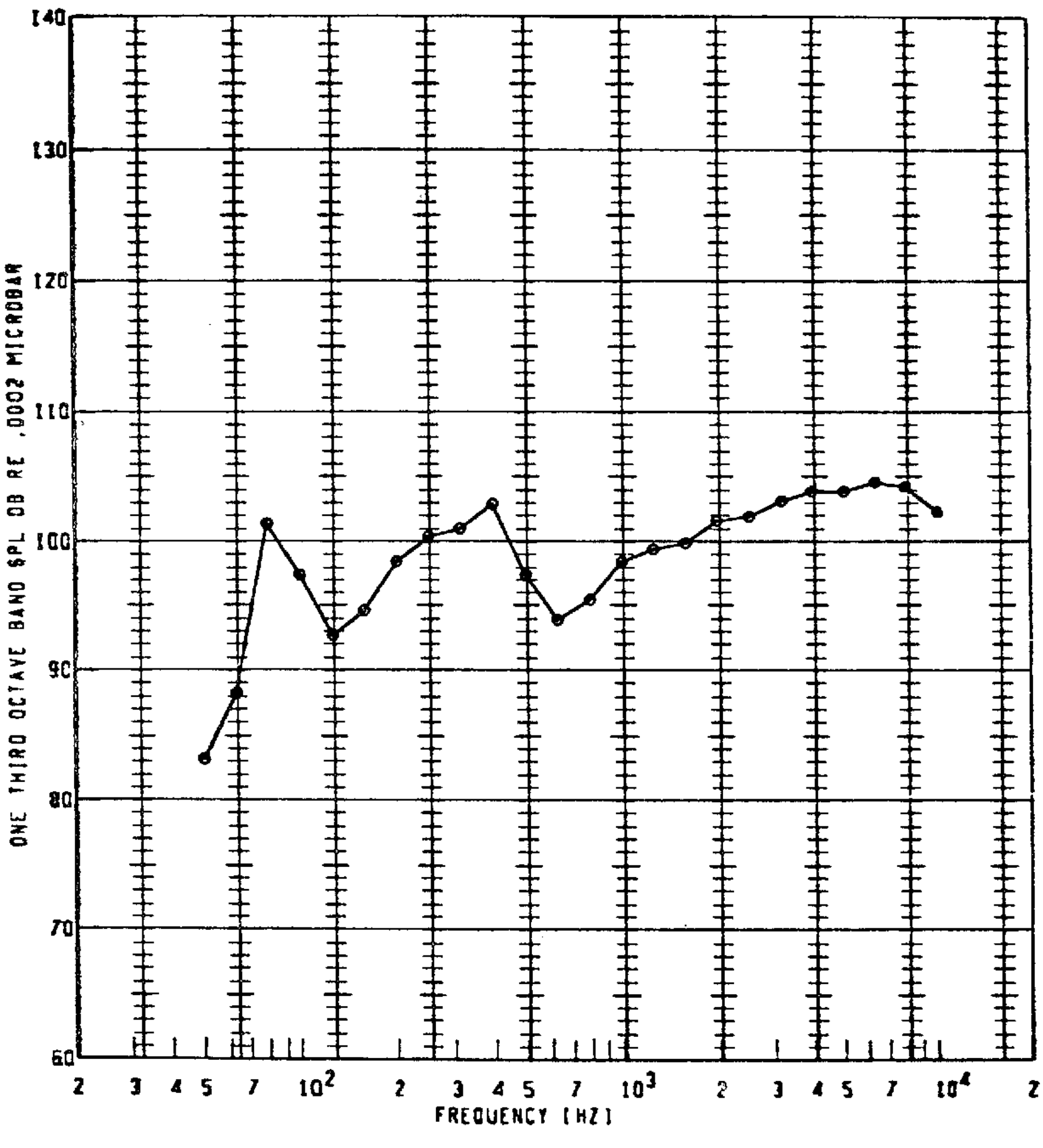
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	9G	950	1.700	100	50FP	113.1	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



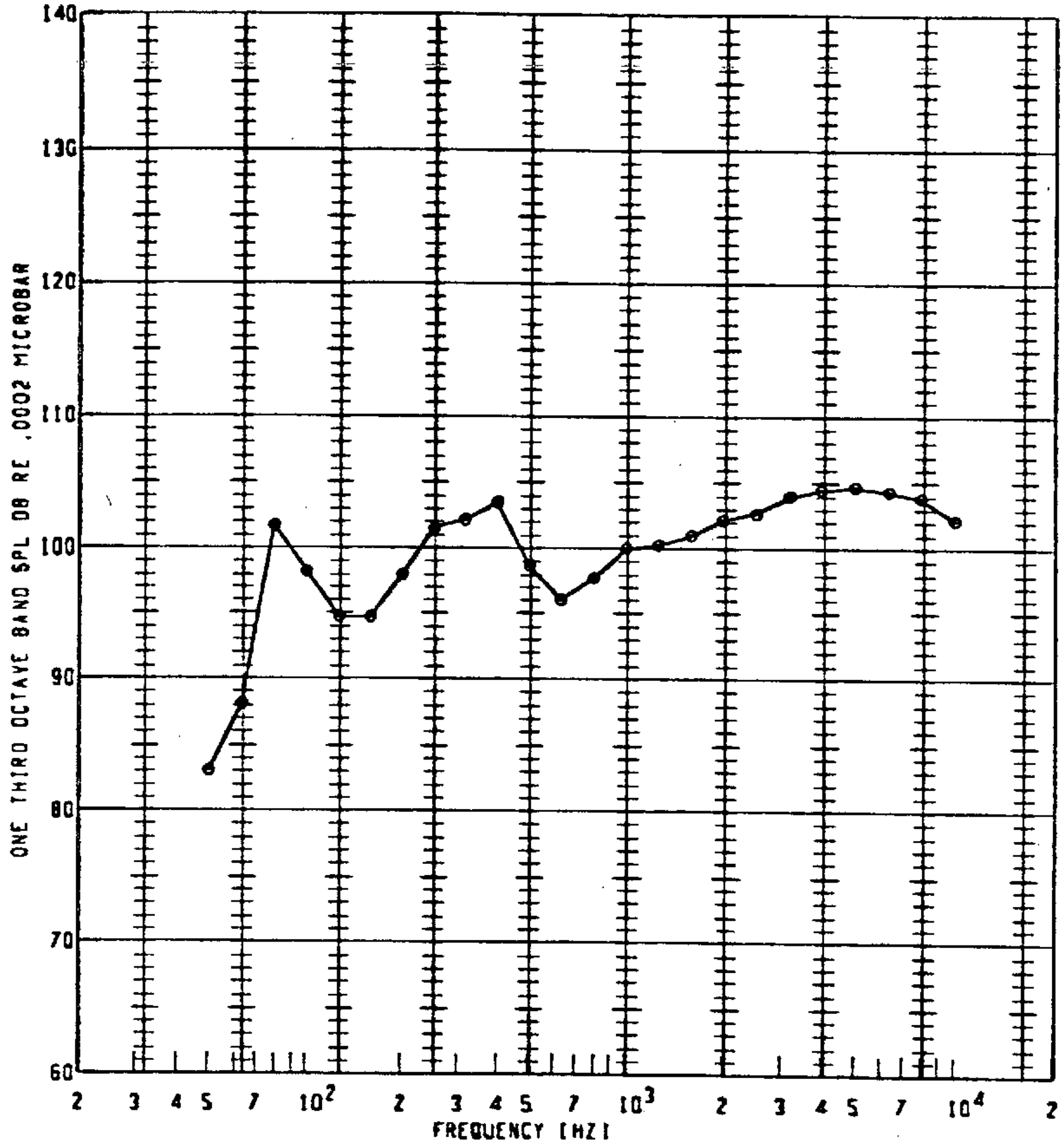
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	96	950	1.700	110	50FP	113.5	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



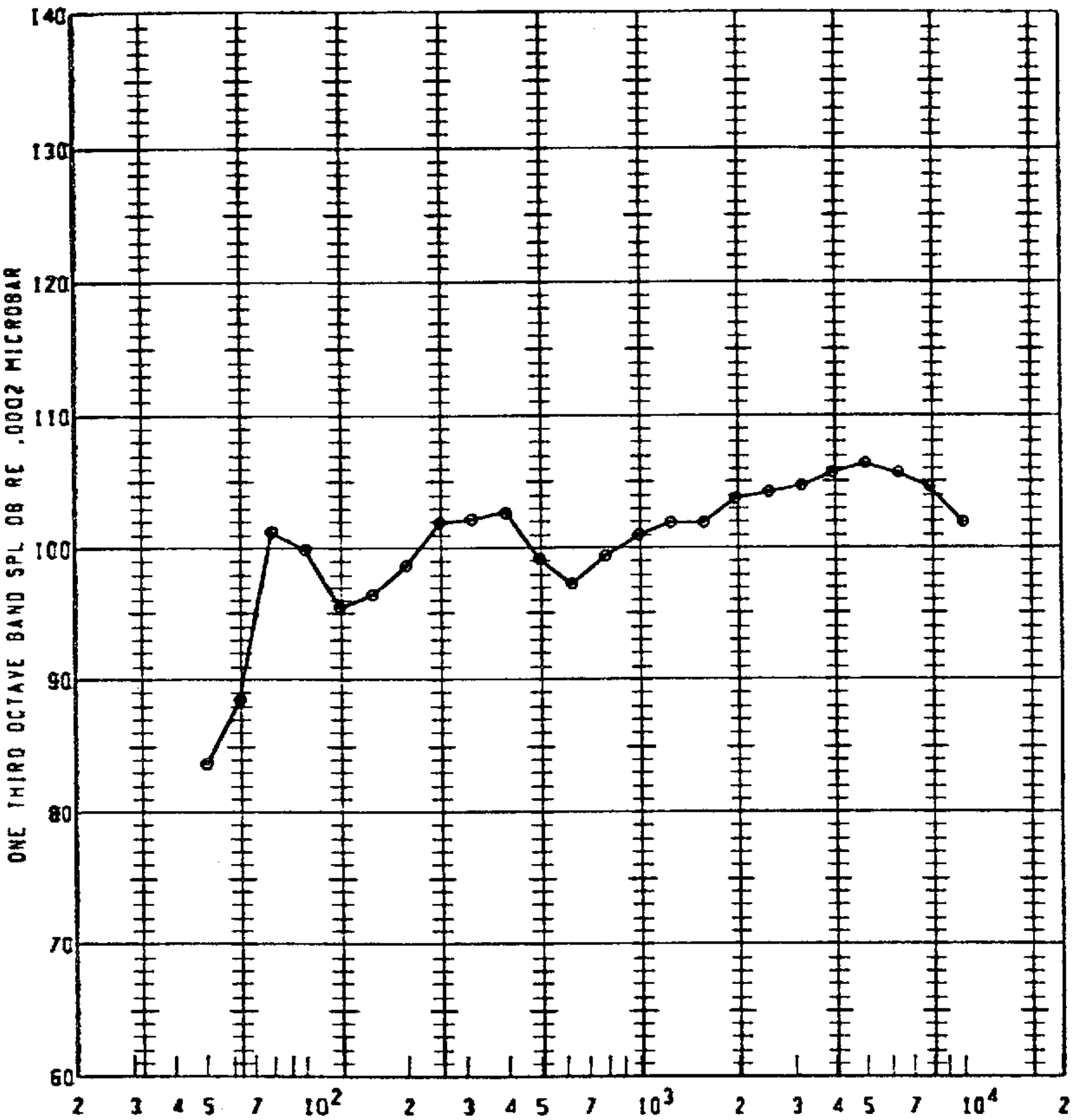
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	9G	950	1.700	115	50FP	114.5	0	

BUFFALO SUPPRESSOR NOZZLE TONE IB TEST - HOT NOZZLE TEST FACILITY



PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊕	96	950	1.700	120	50FP	115.1	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	9G	850	1.700	125	SOFP	116.0	0	

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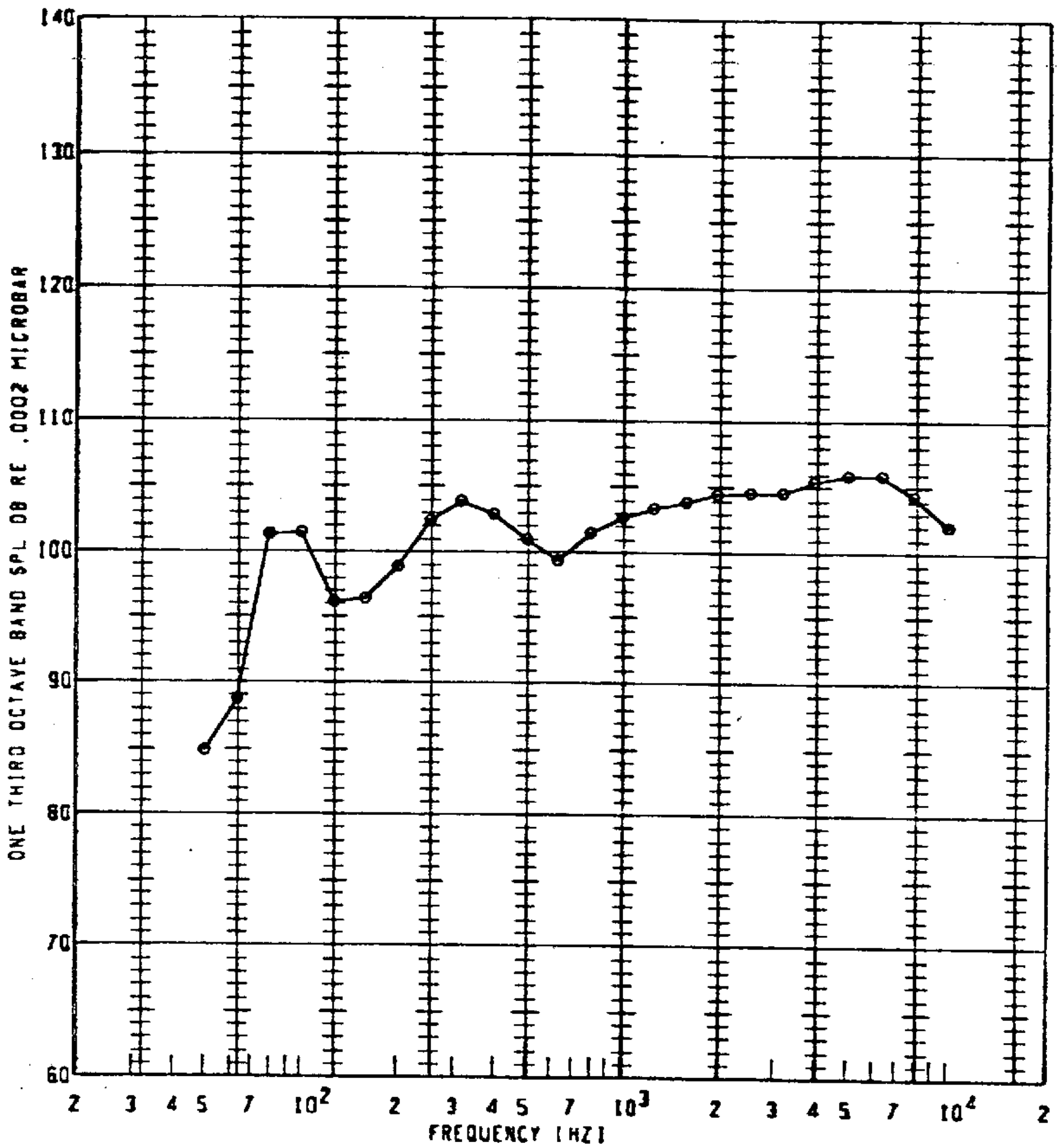
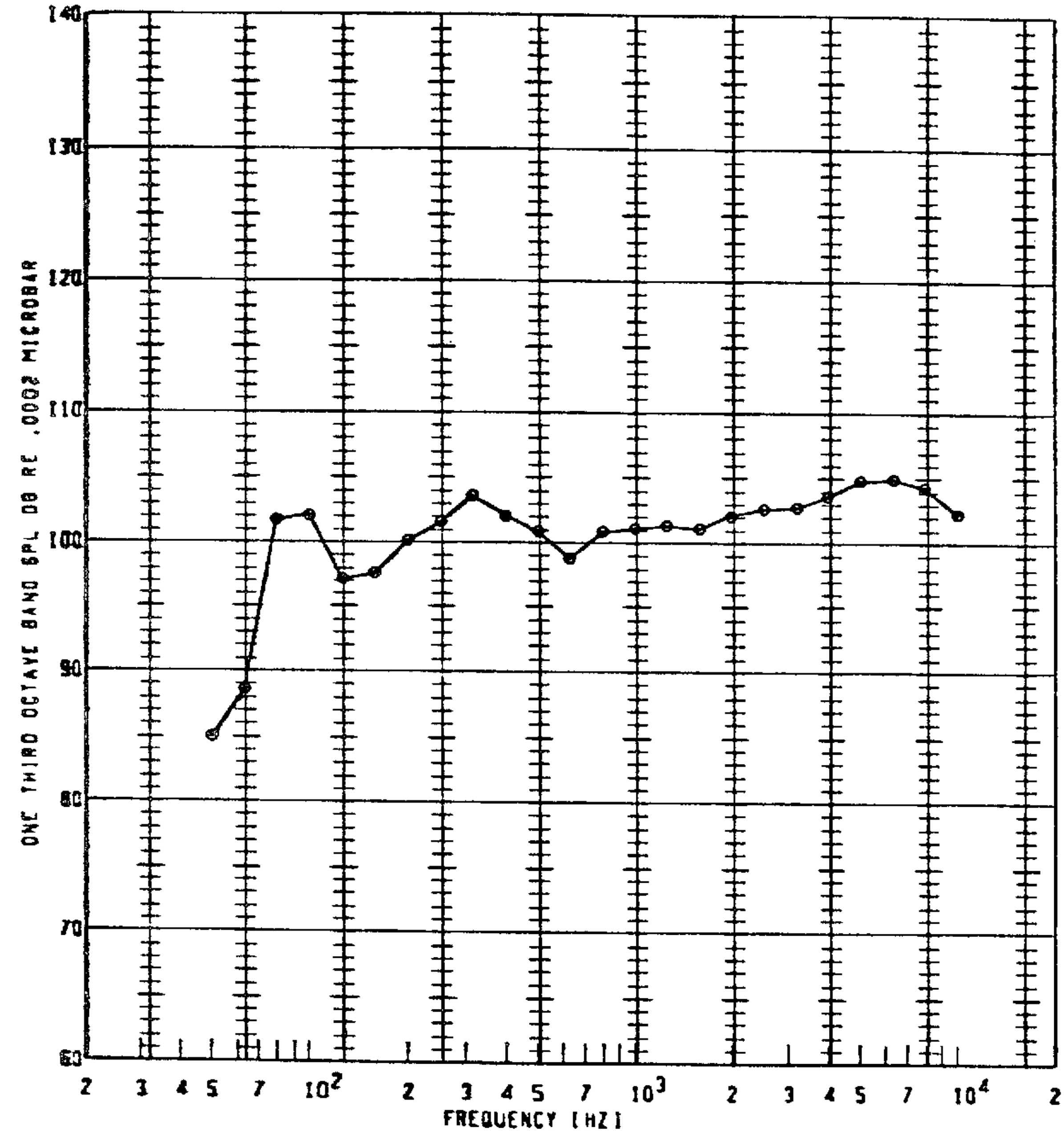
BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	9G	950	1.700	130	50FP	116.5	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	9G	950	1.700	135	50FP	115.6	10	

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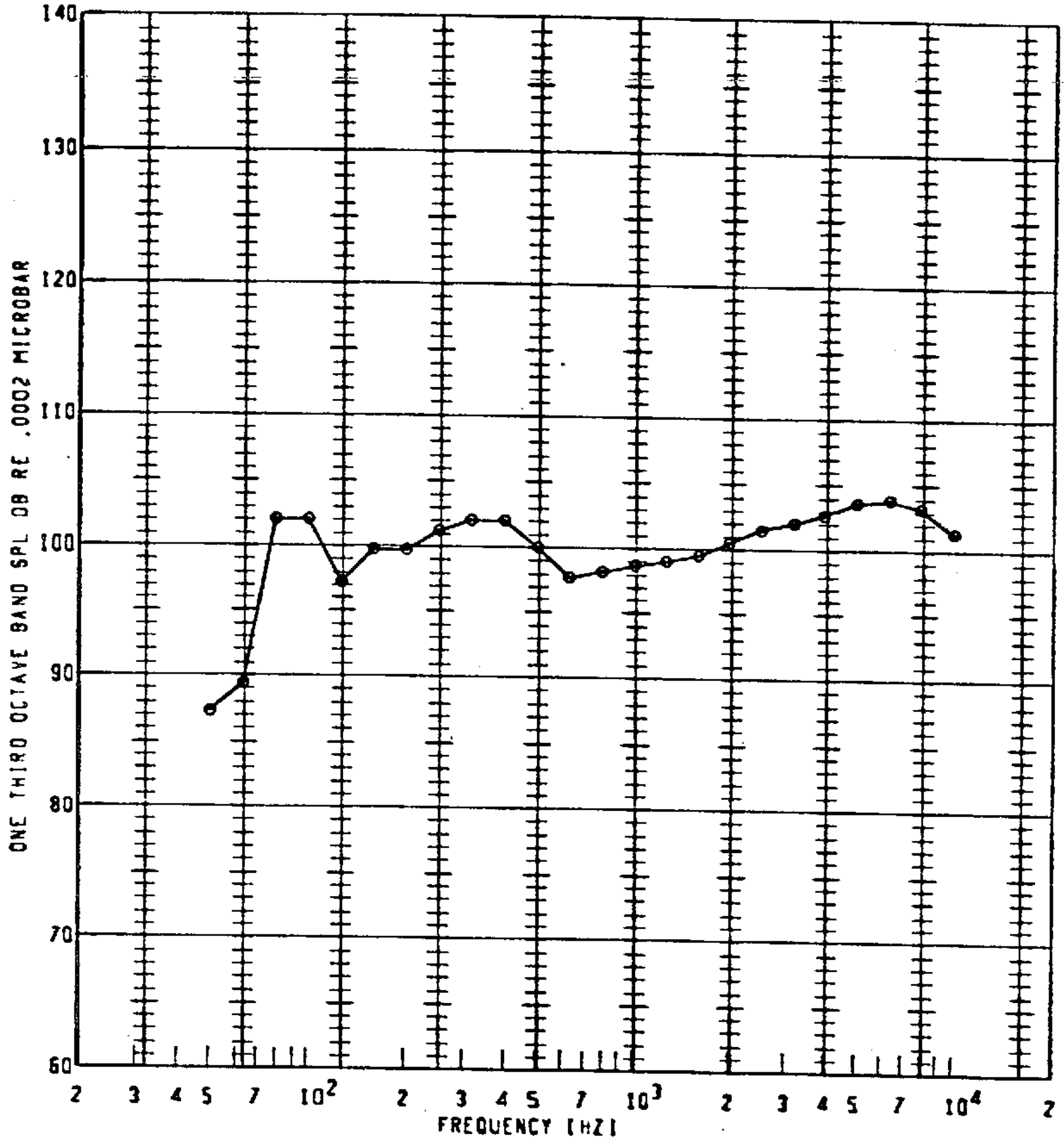
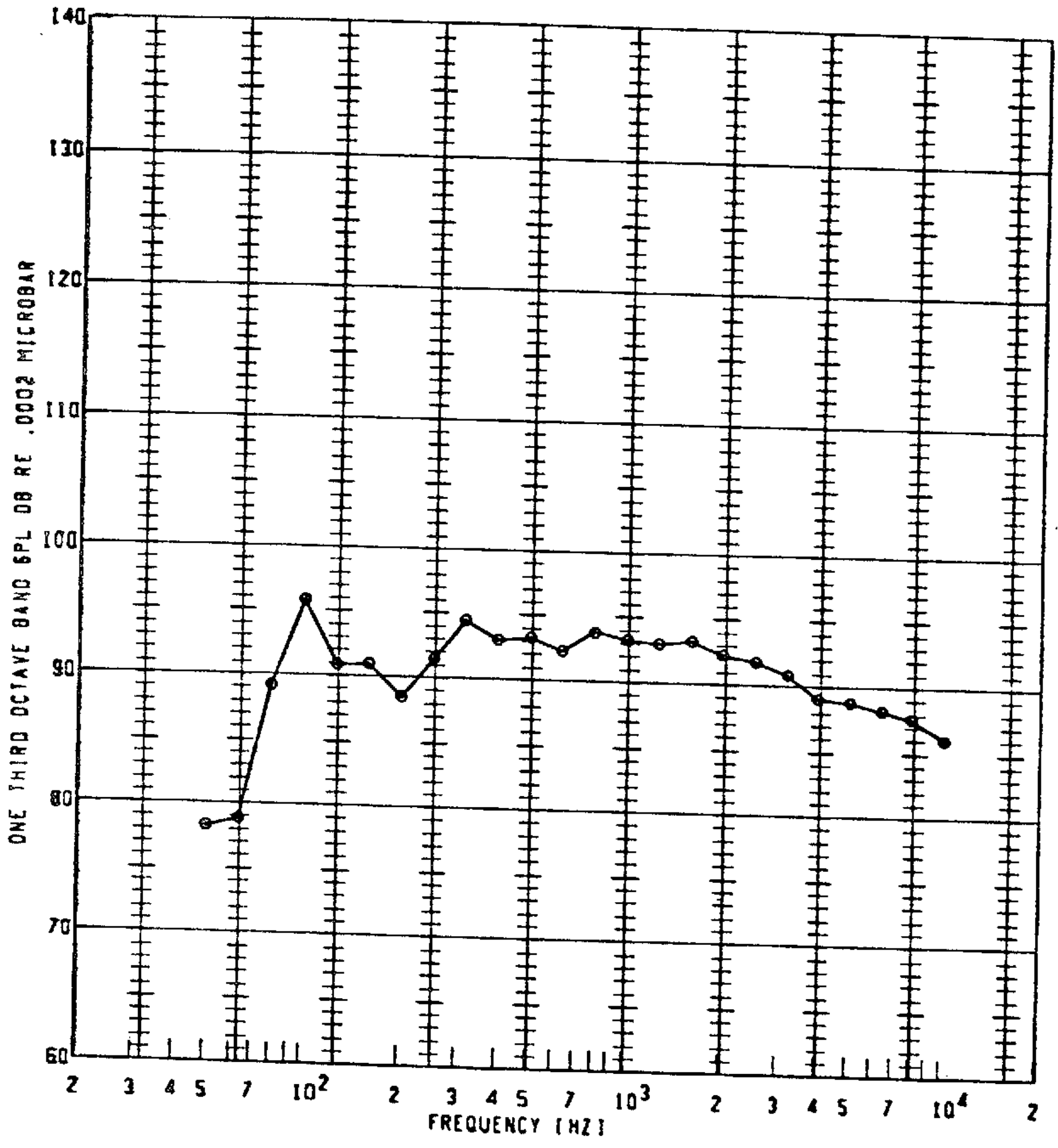


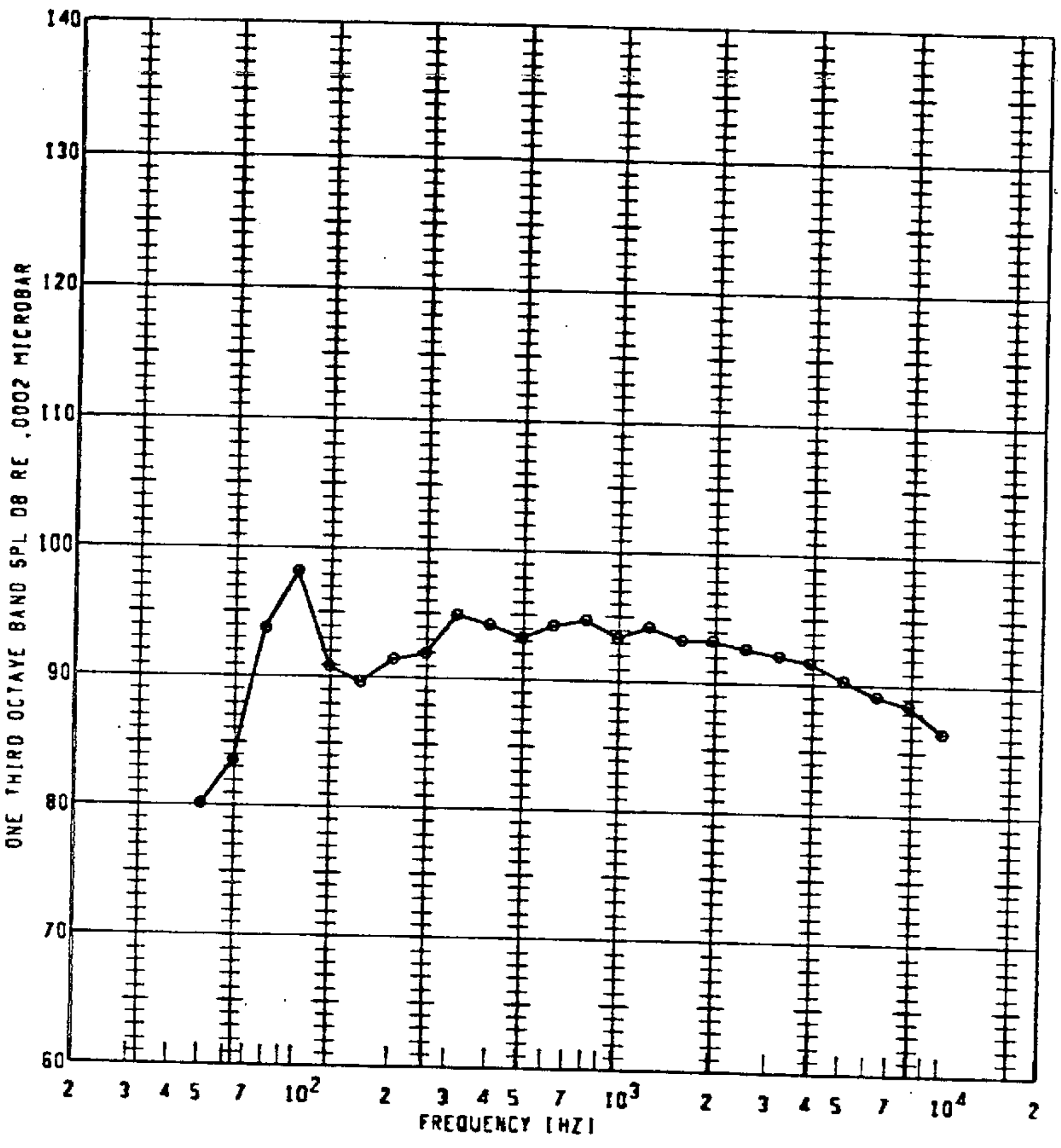
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	96	950	1.700	140	50FP	114.6	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	10G	750	1.300	90	50FP	105.4	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
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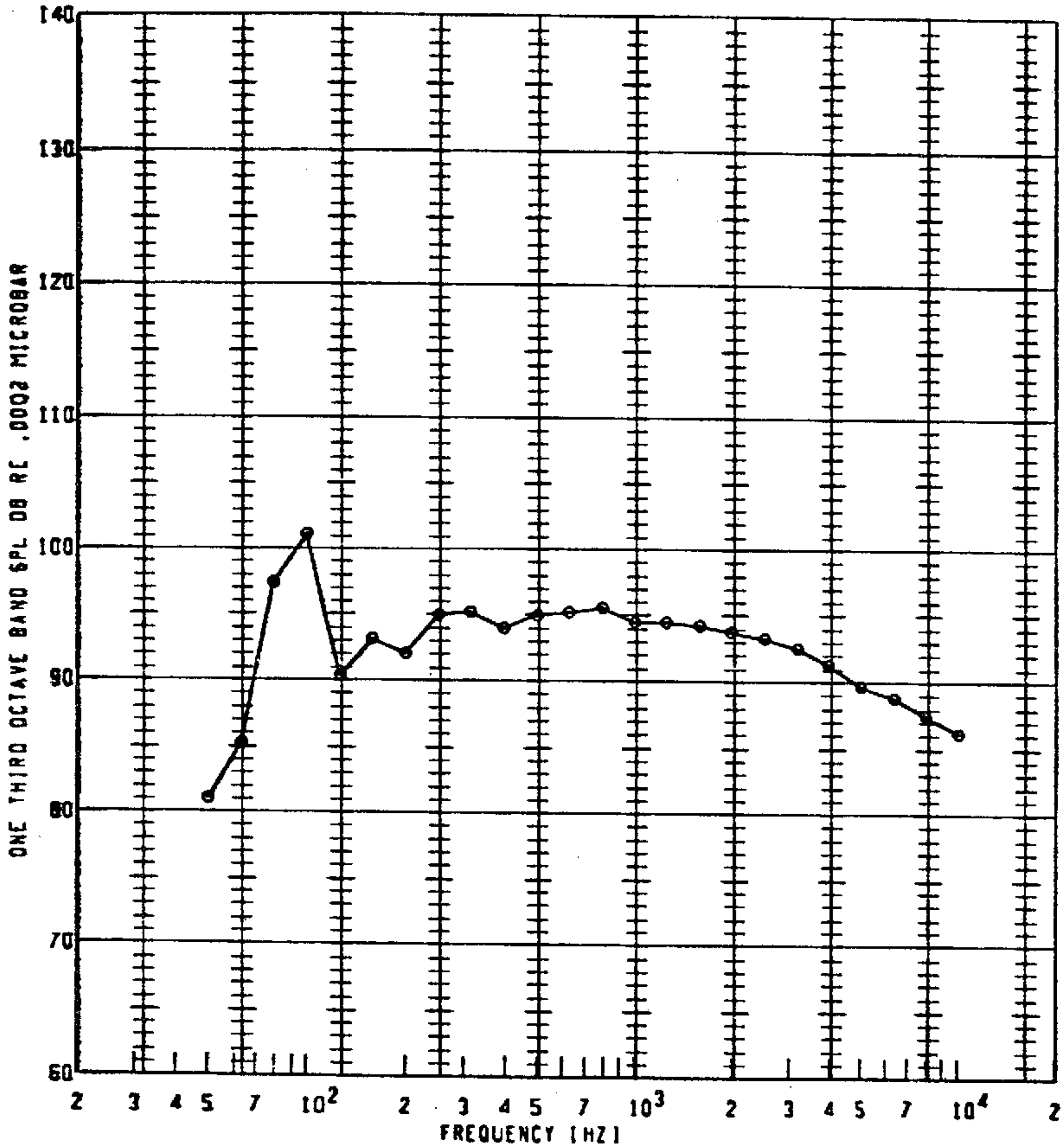
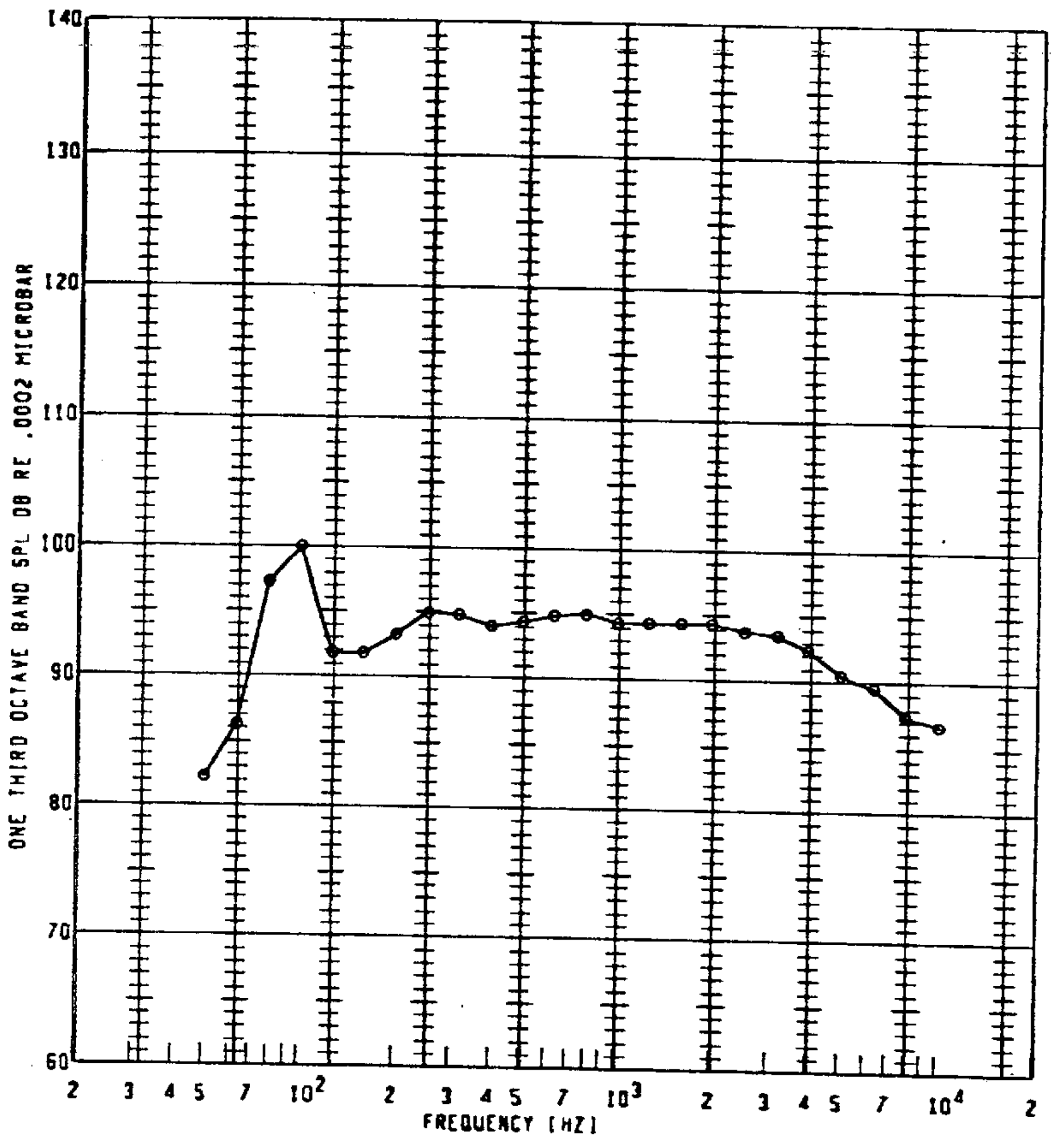
BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



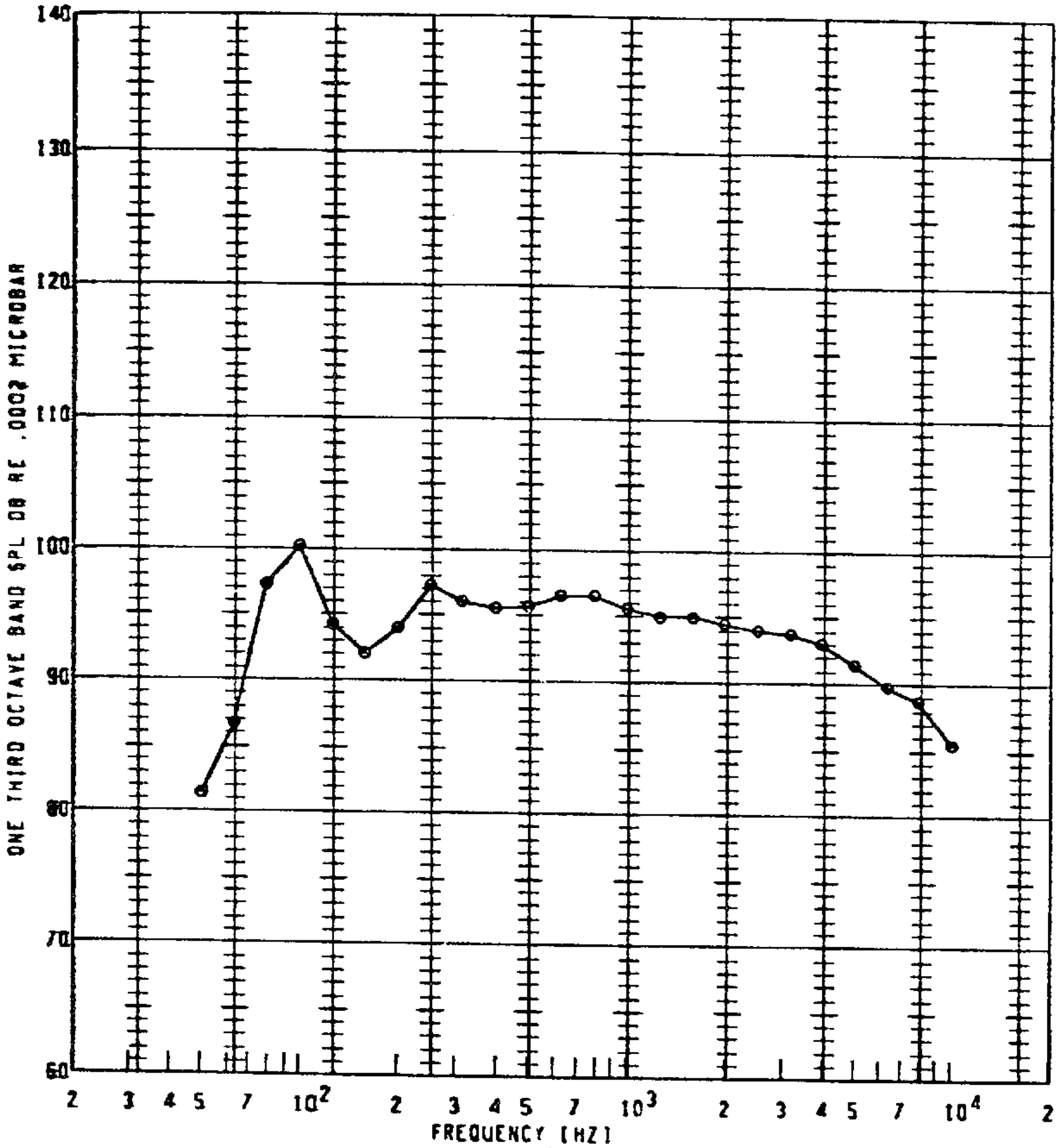
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	10G	750	1.300	110	SOFP	107.8	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



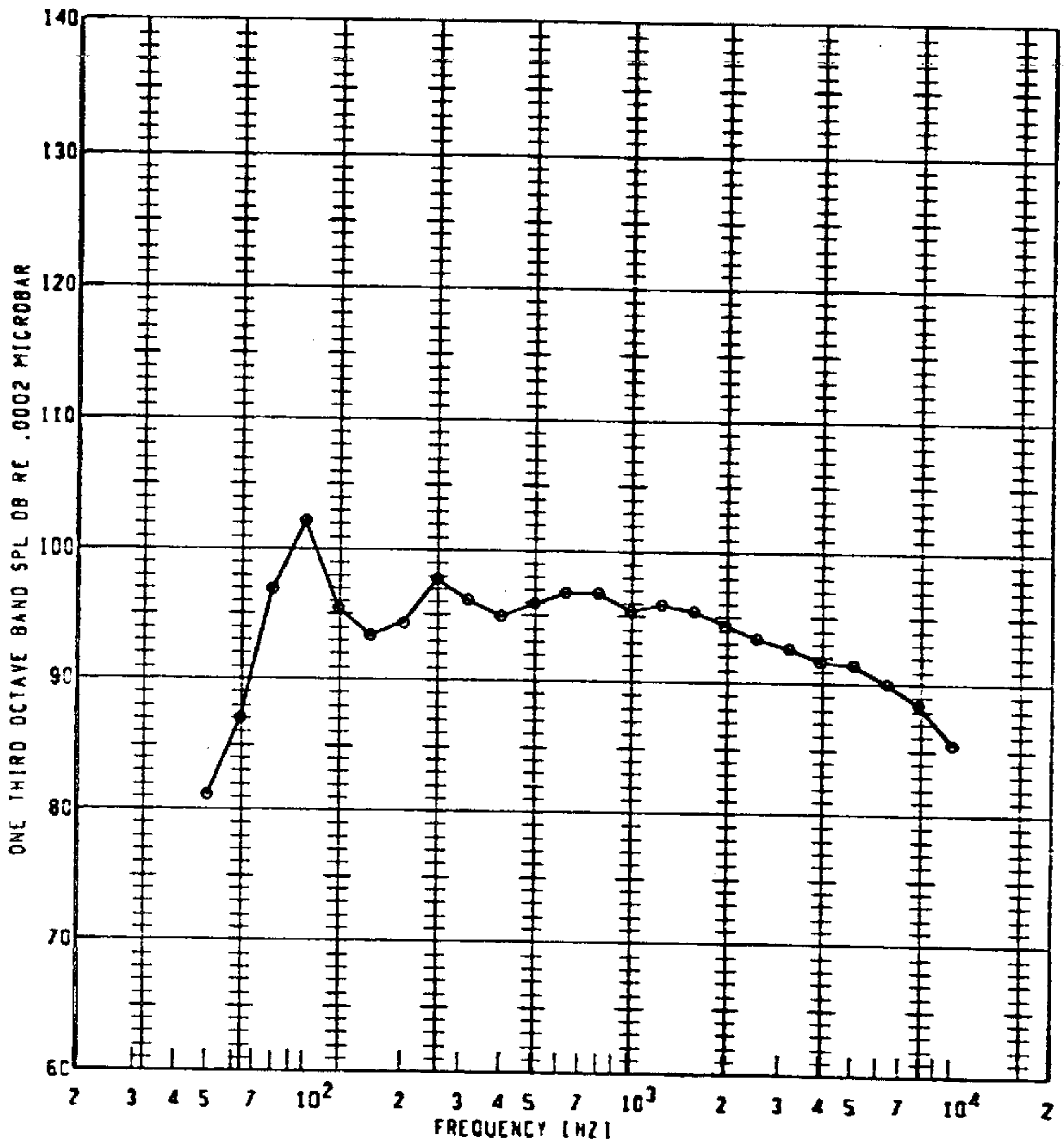
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	10G	750	1.300	115	50FP	107.7	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



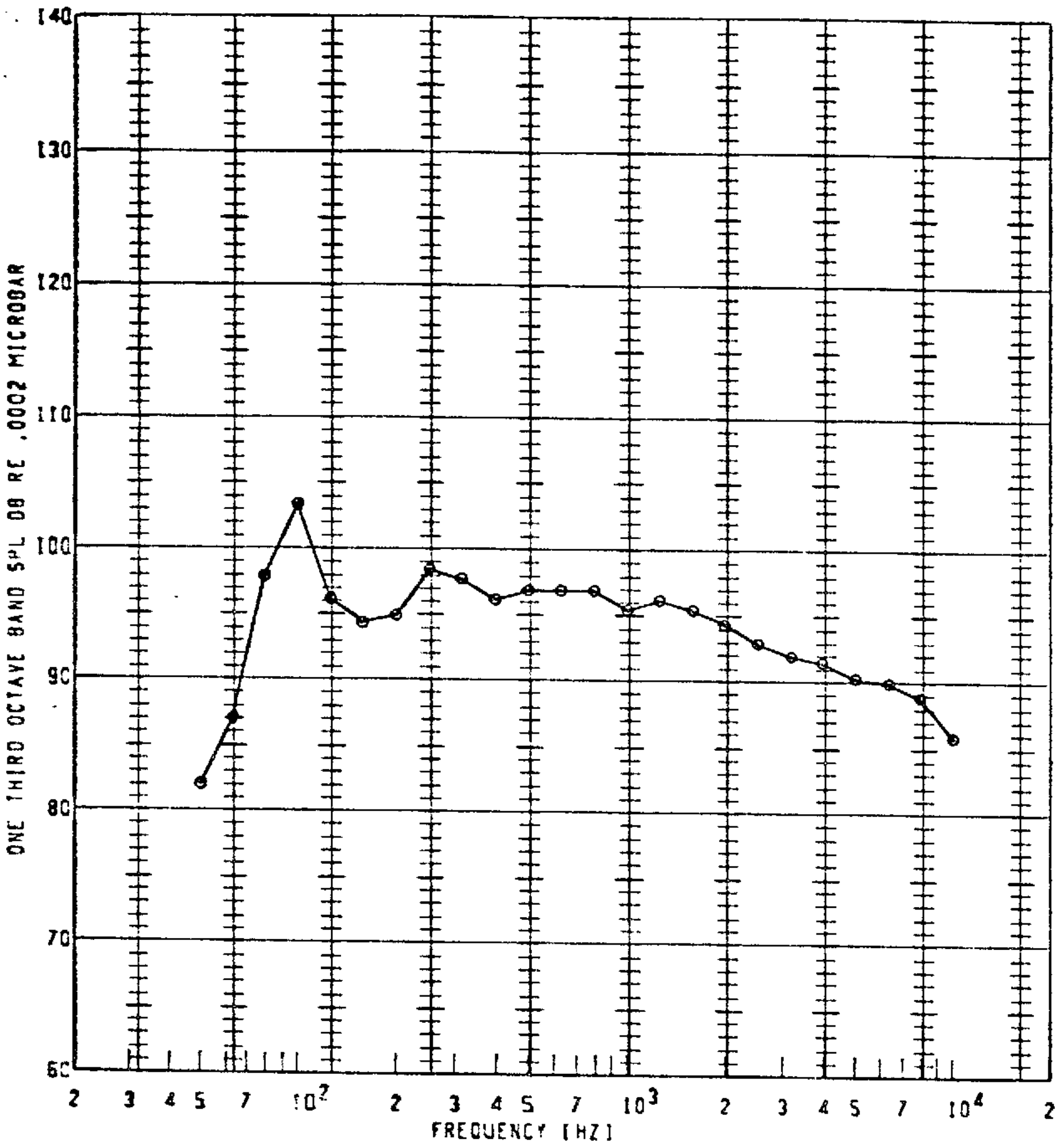
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	10G	750	1.300	120	50FP	108.5	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



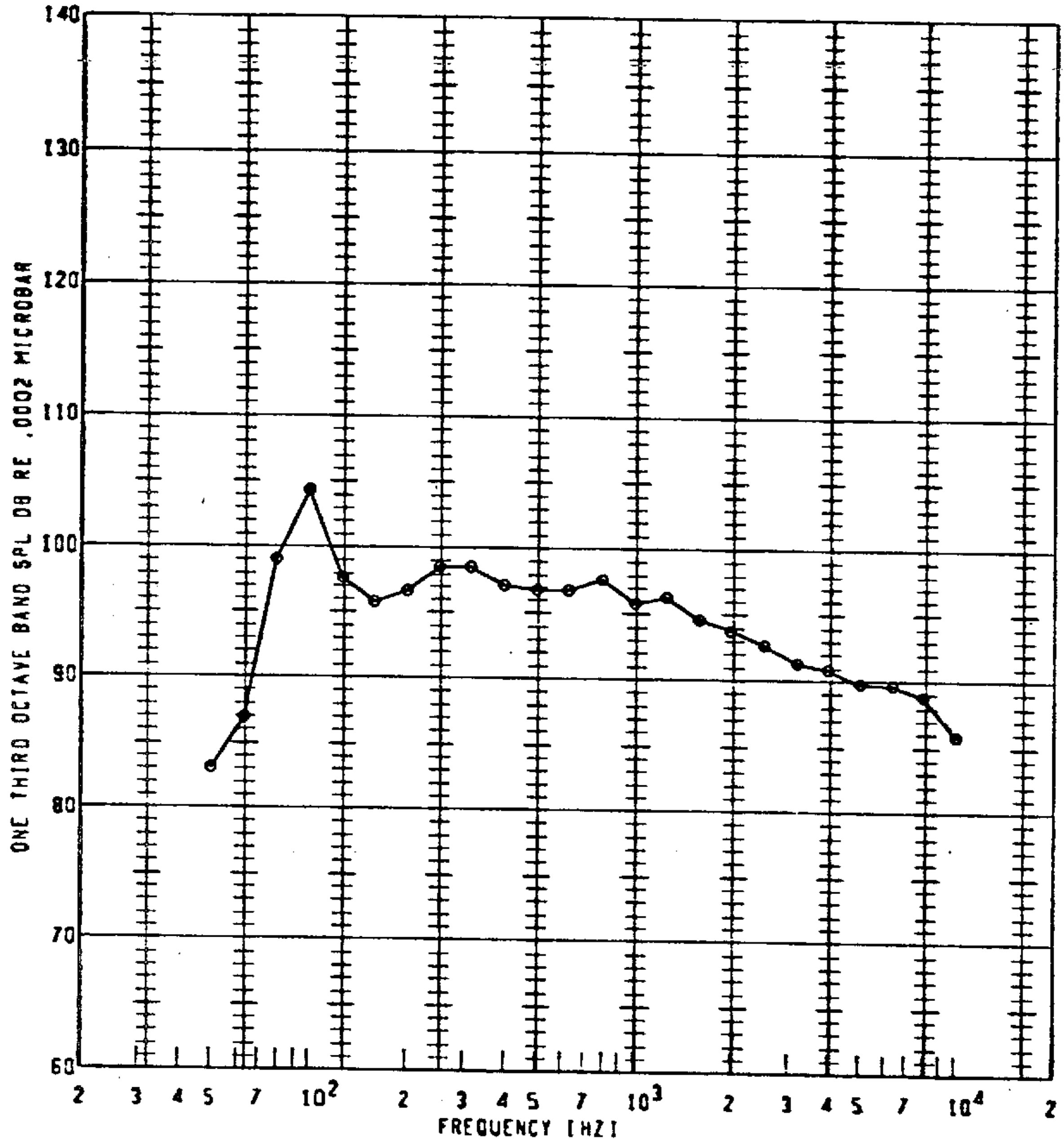
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	10G	750	1.300	125	50FP	109.0	1C	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



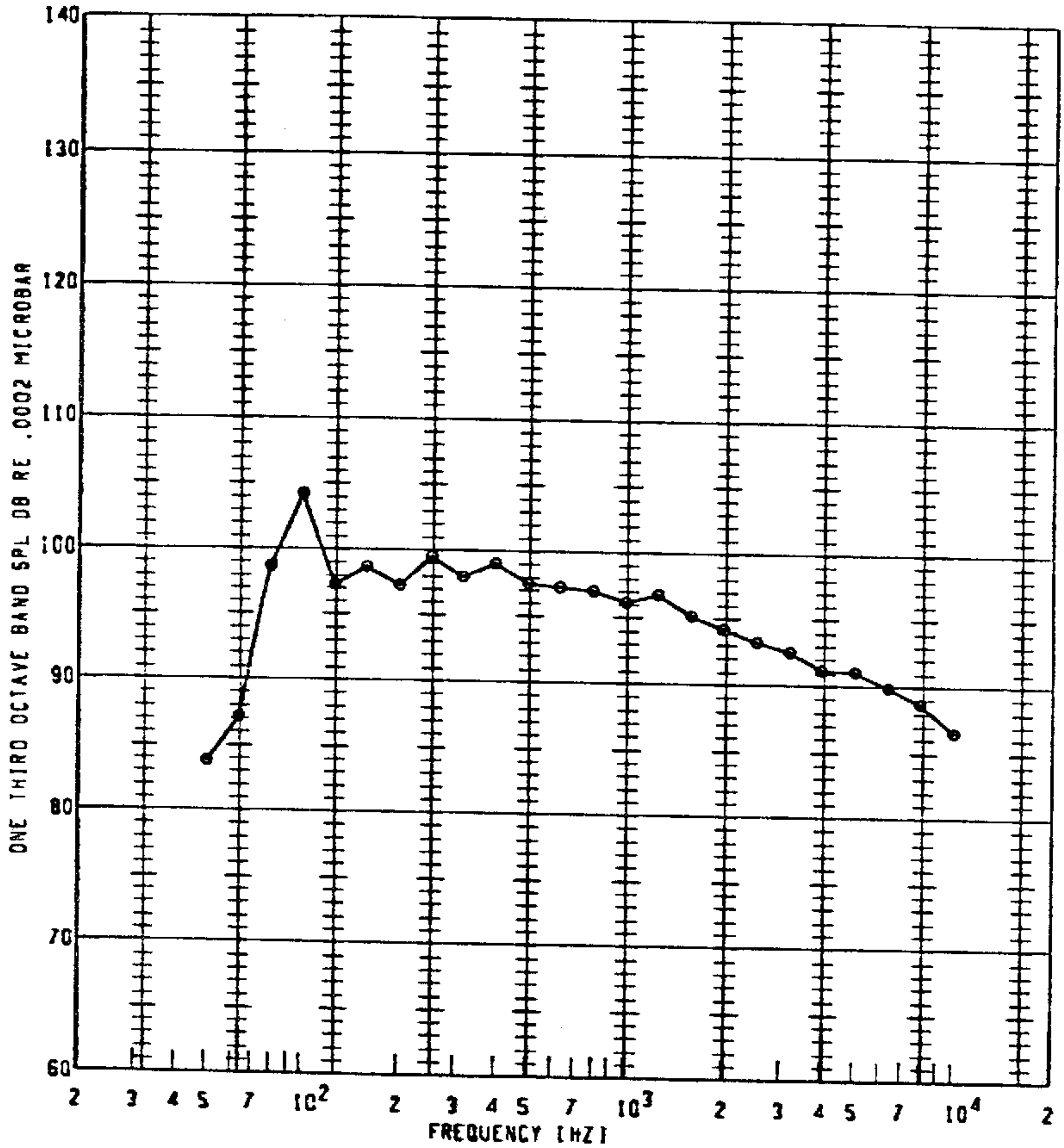
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	106	750	1.300	130	50FP	109.6	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



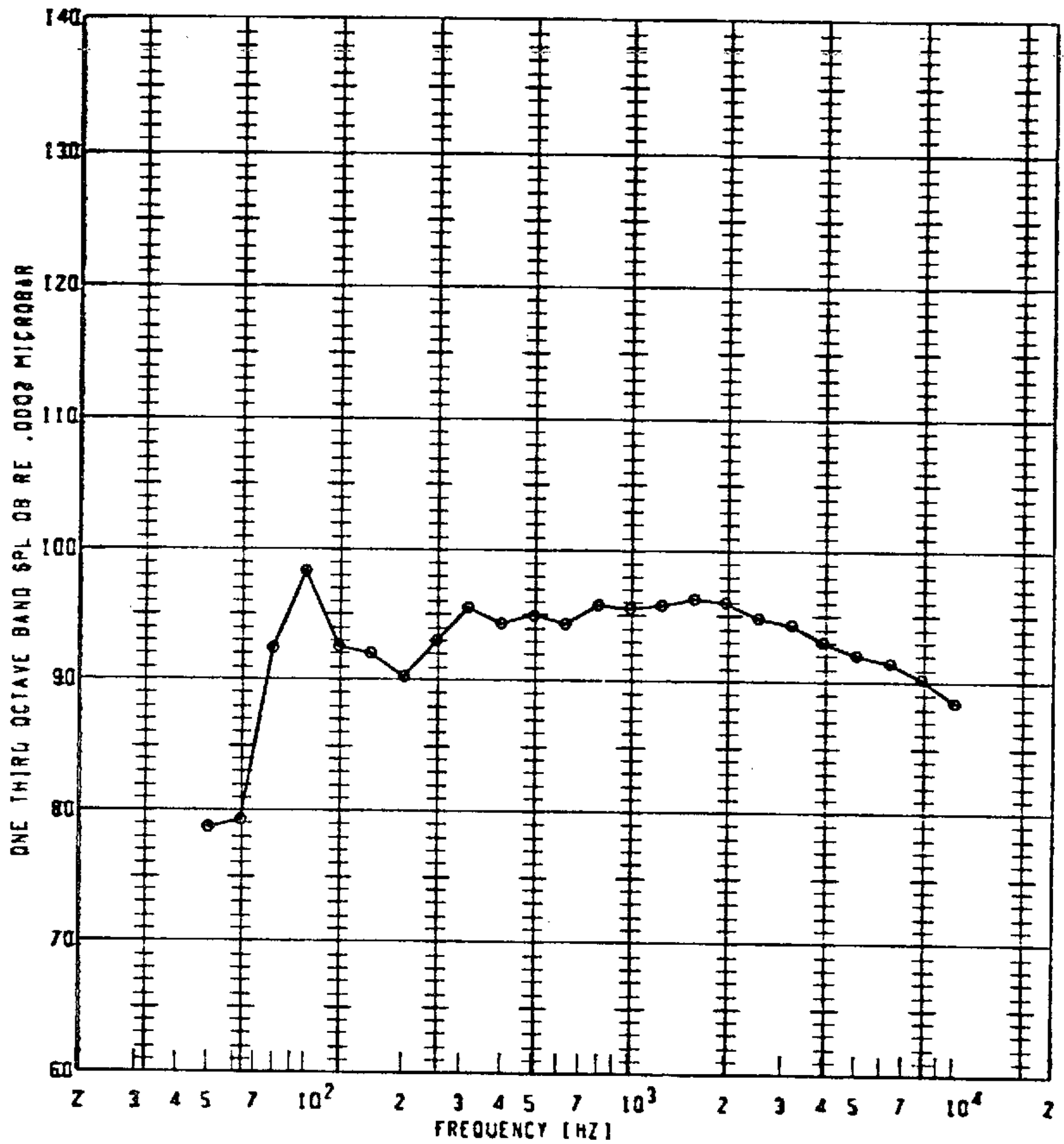
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	106	750	1.300	135	50FP	110.2	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



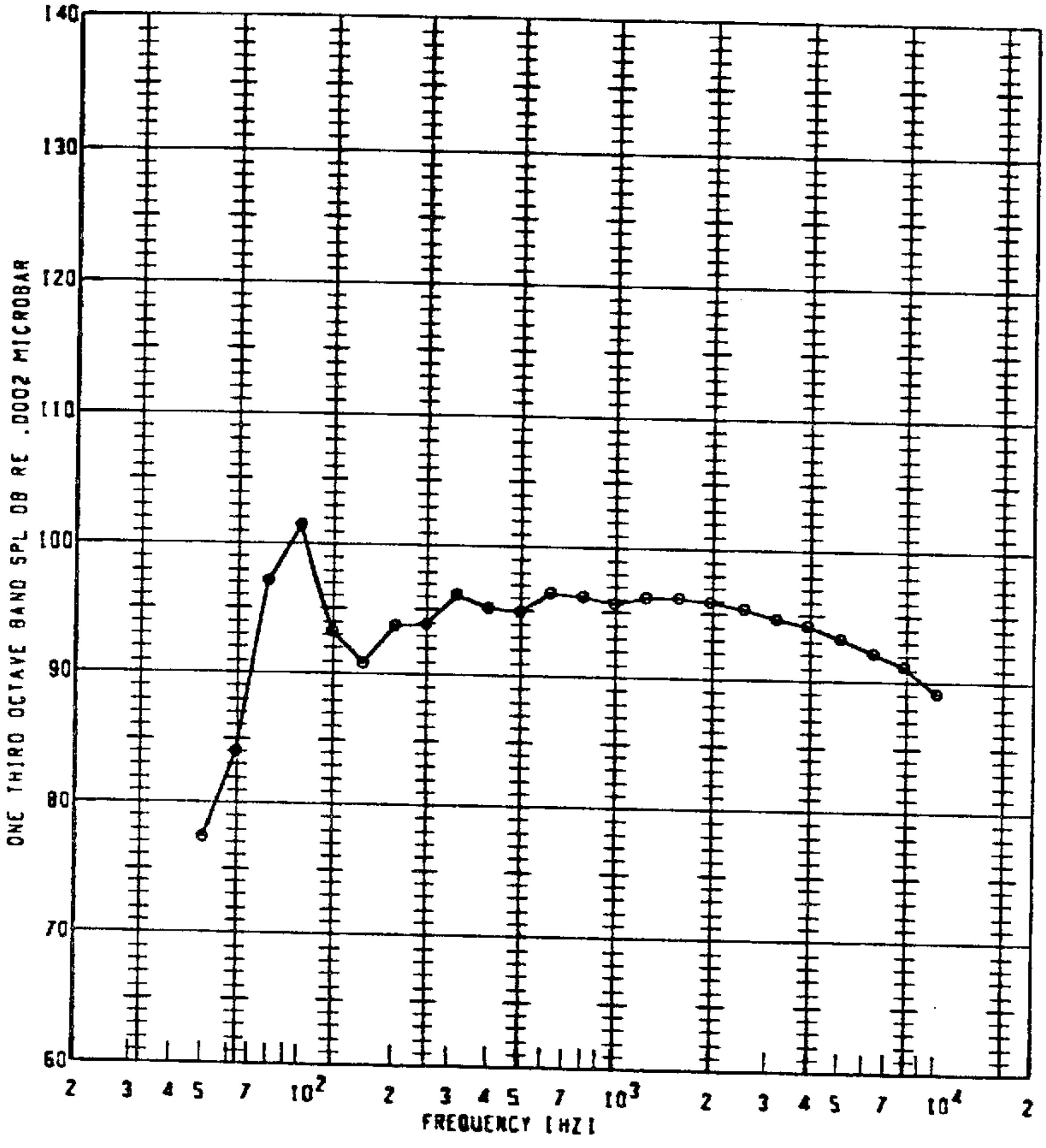
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	106	750	1.300	140	50FP	110.6	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



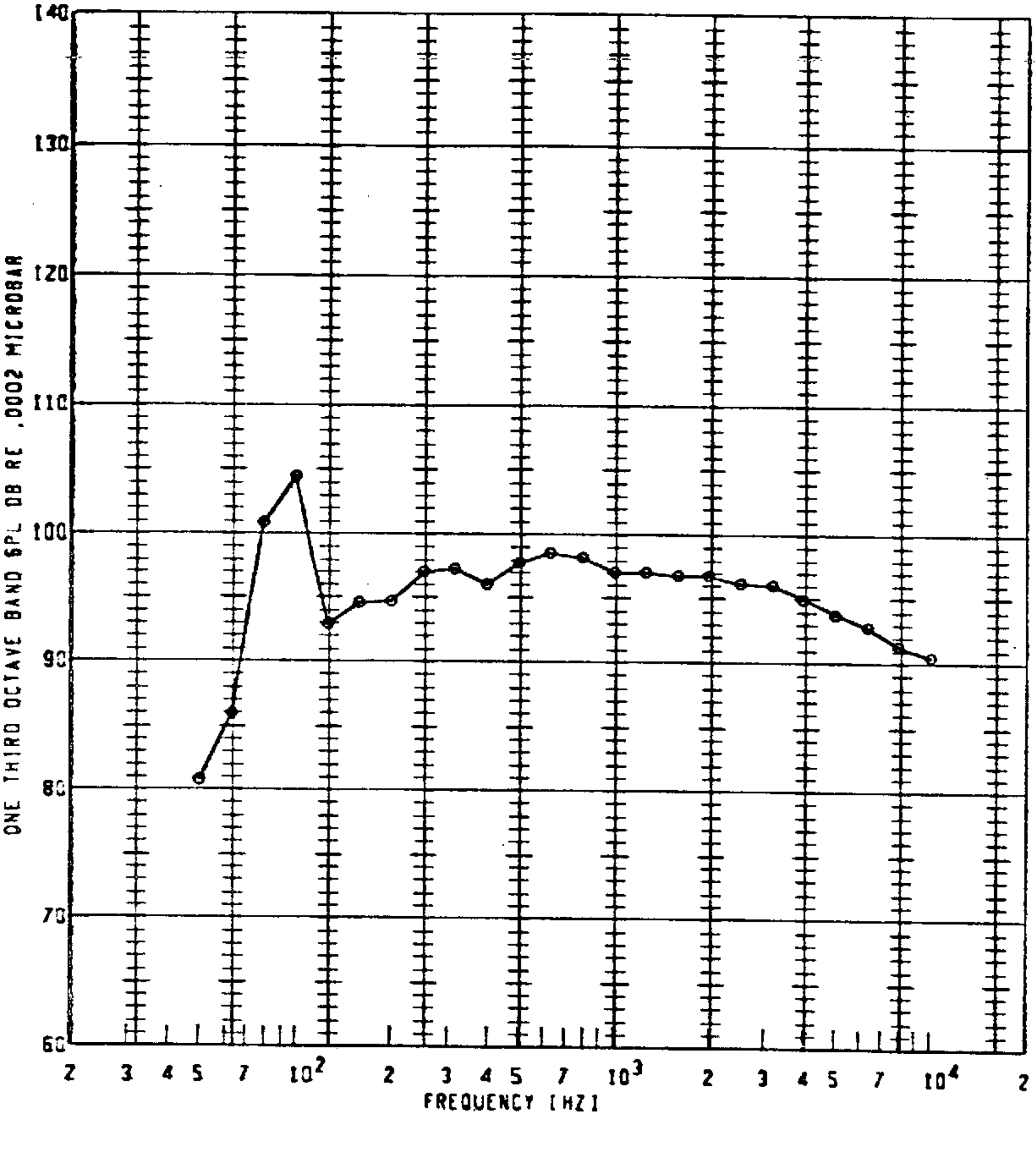
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊖	10G	800	1.400	90	50FP	107.7	1C	

BUFFALO SUPPRESSOR NOZZLE TONE IB TEST - HOT NOZZLE TEST FACILITY



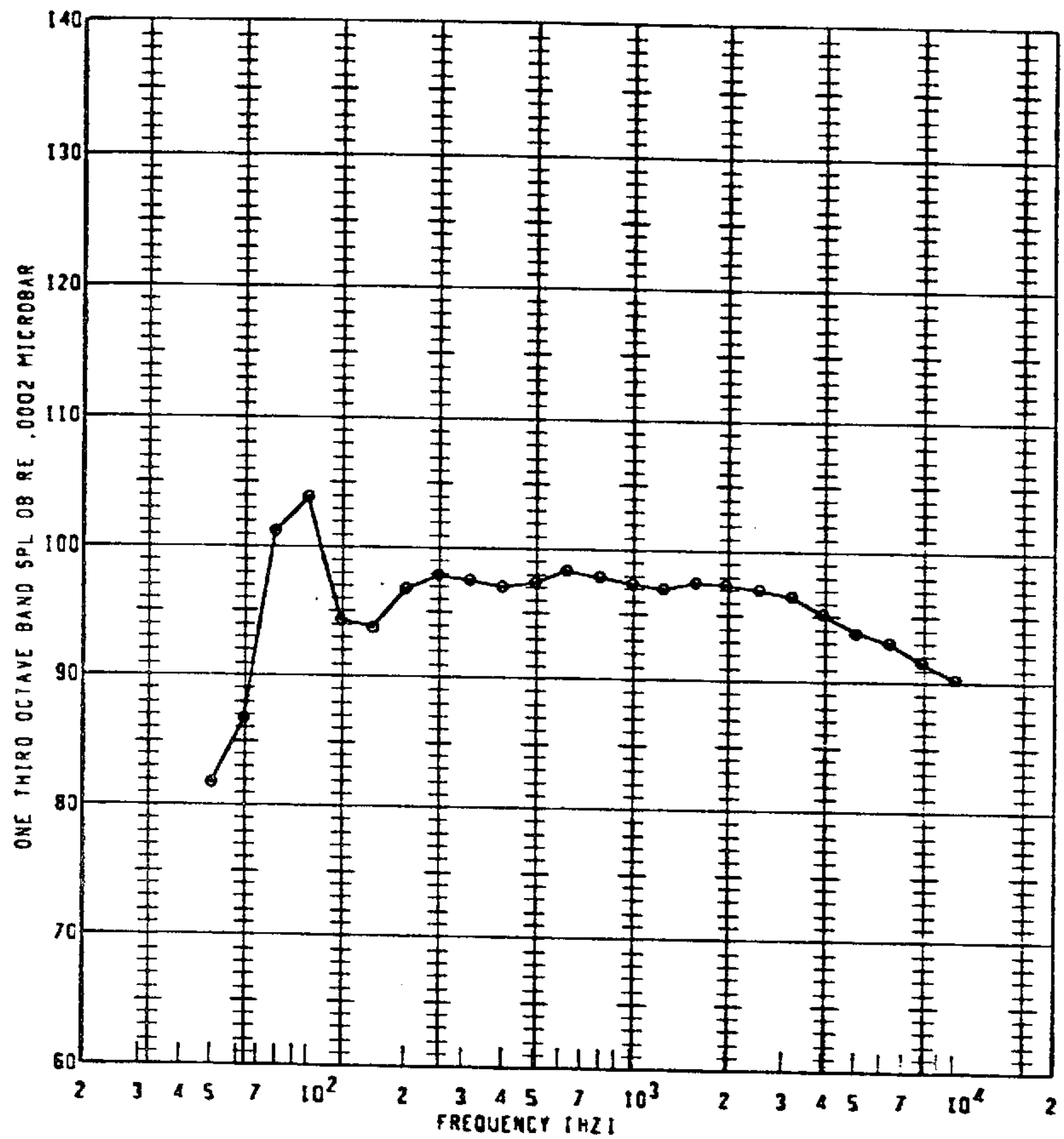
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL 10
⊖	10G	800	1.400	100	50FP	108.9	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



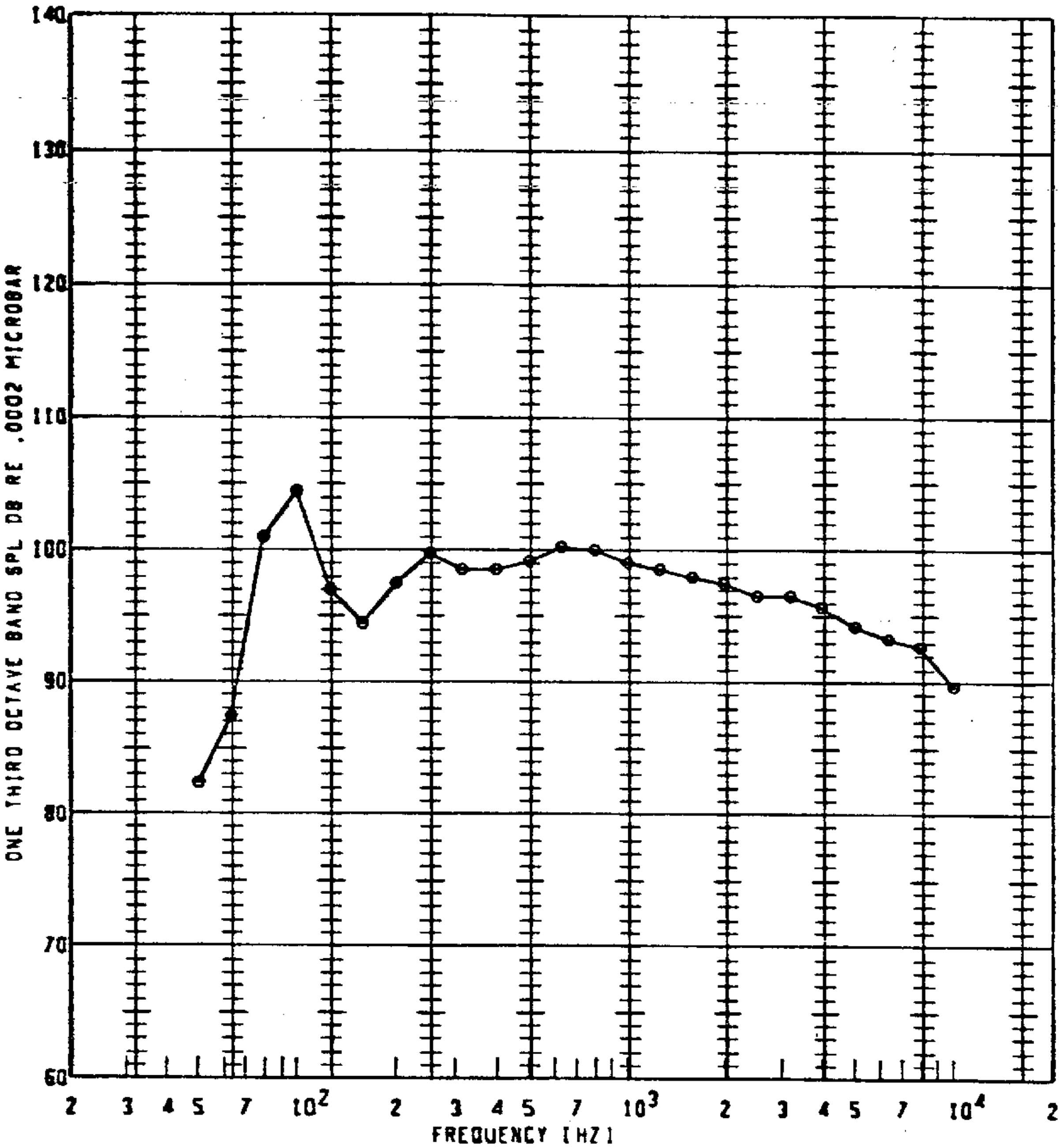
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	10G	800	1.400	110	50FP	110.8	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	106	800	1.400	115	SOFP	110.9	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	10G	800	1.400	120	50FP	111.9	10	

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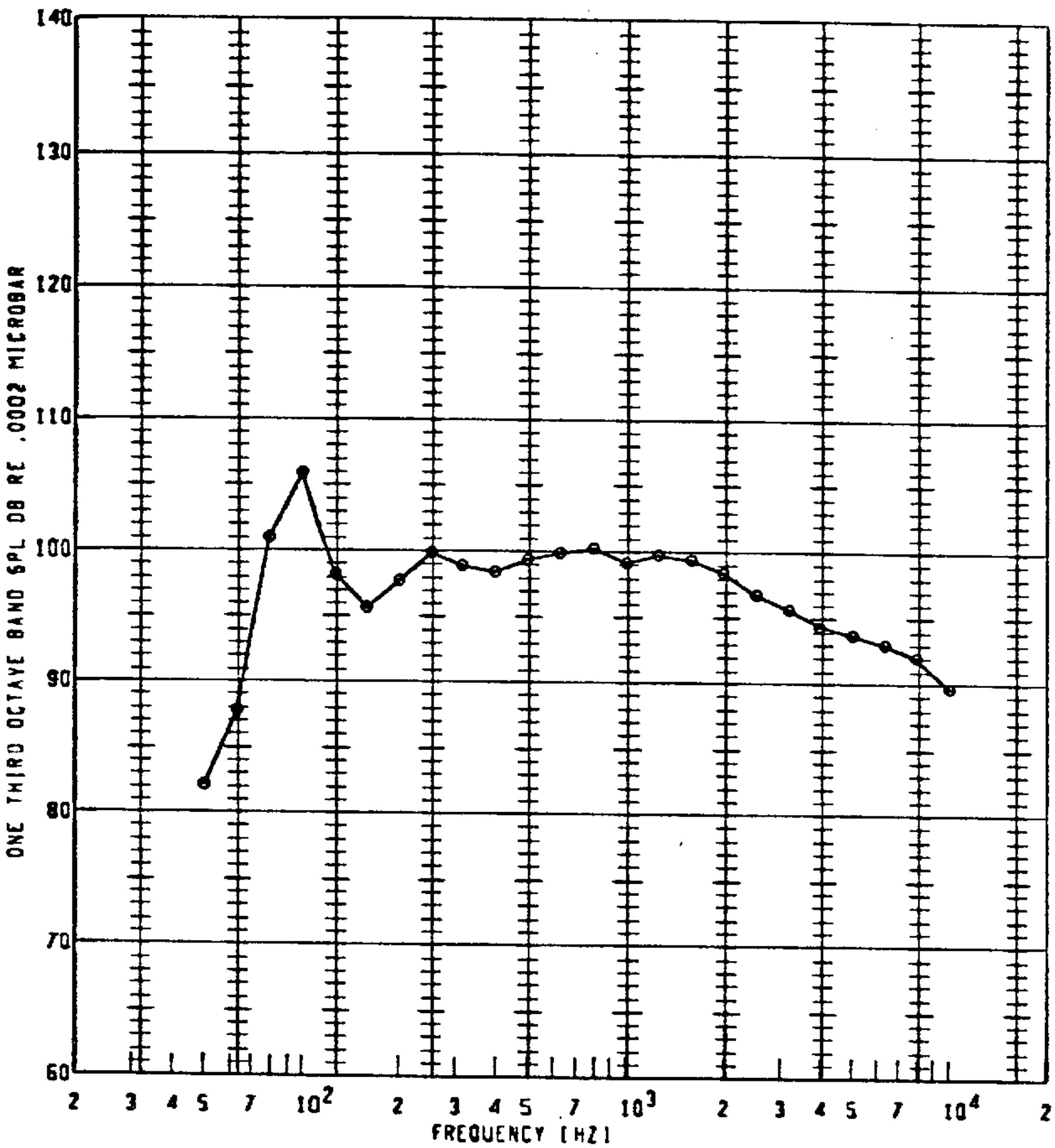

PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	106	800	1.400	125	50FP	112.4	10	

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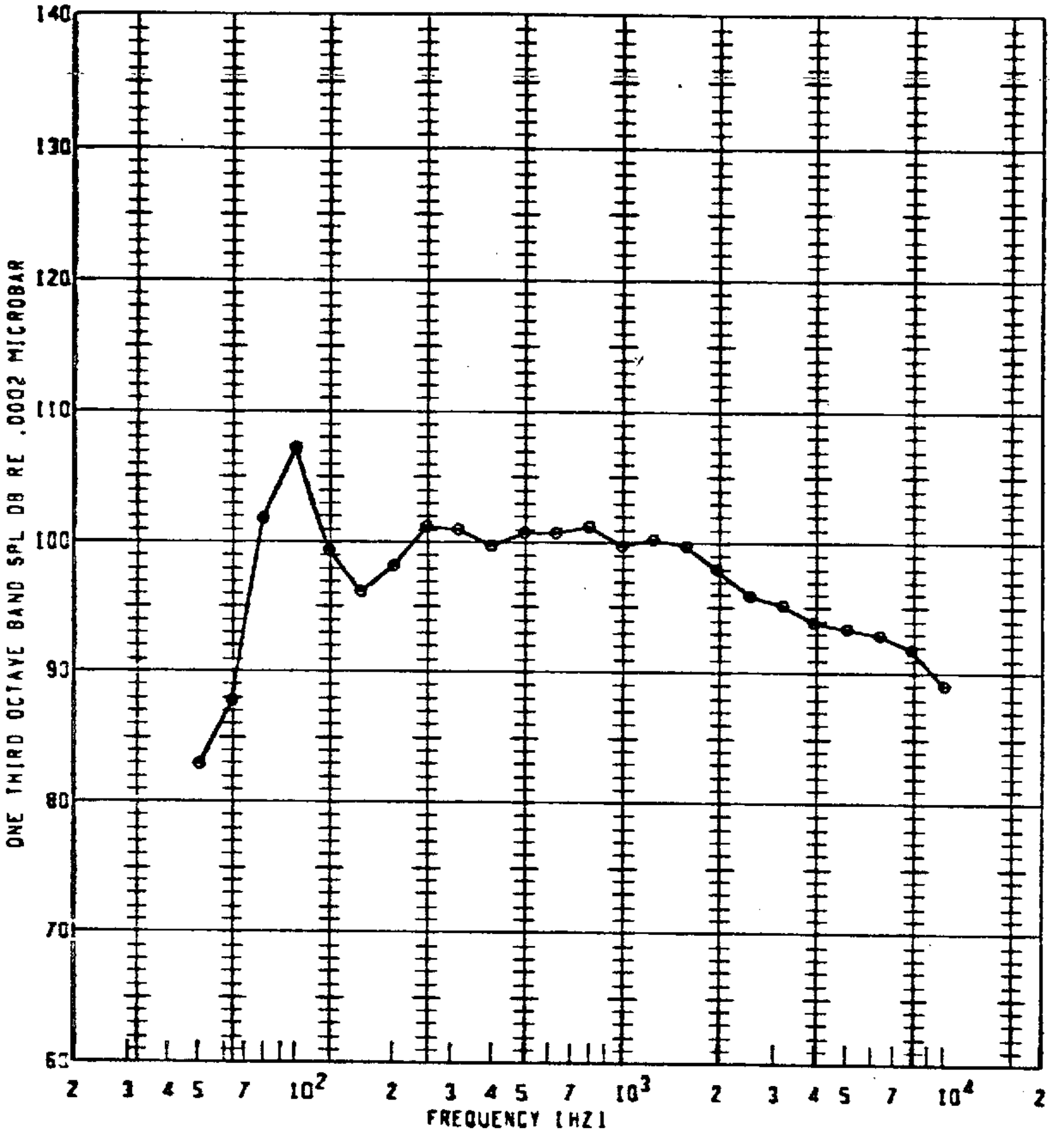

PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	106	800	1.400	130	50FP	113.2	10	

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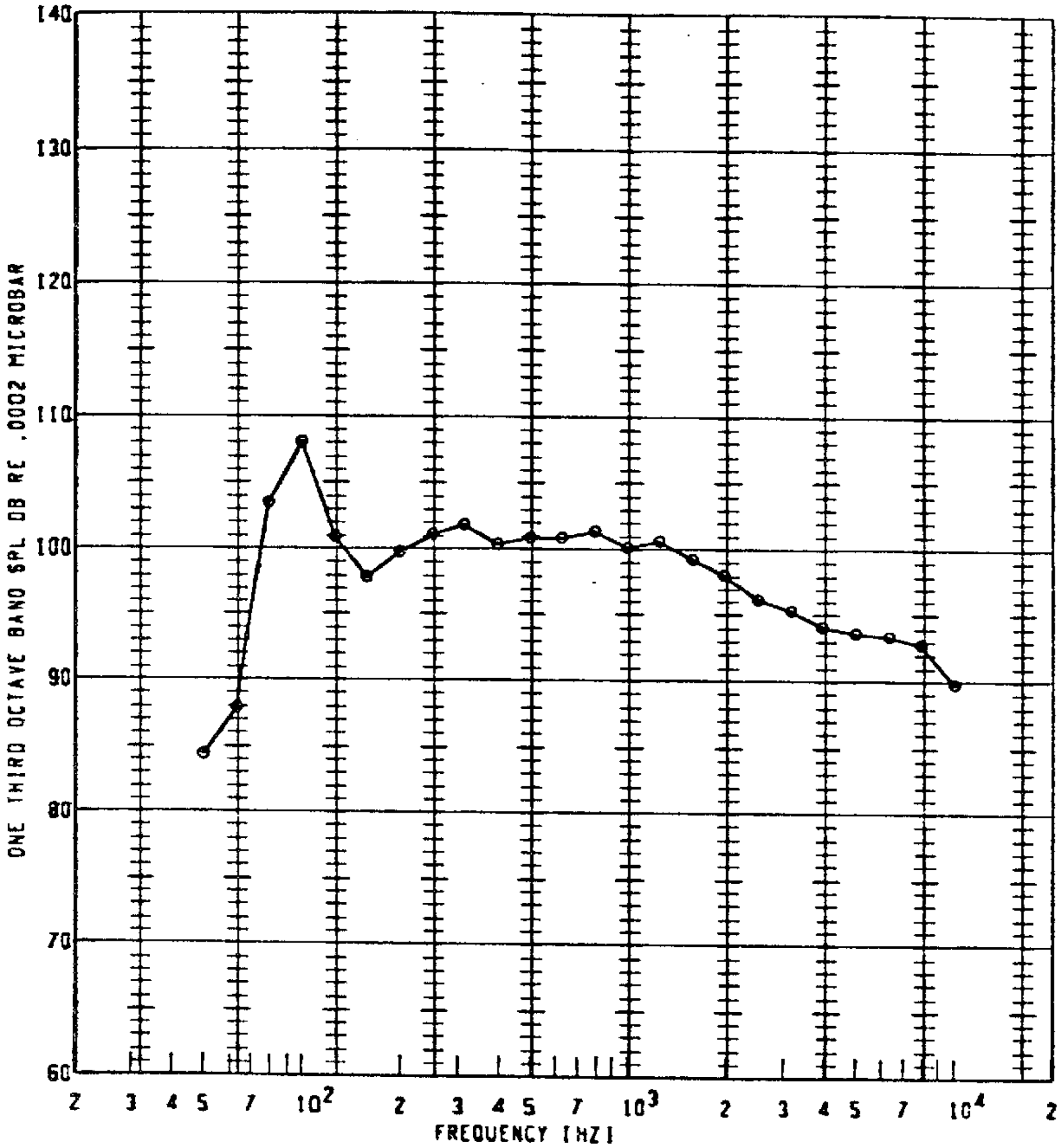

PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	10G	800	1.400	135	50FP	113.9	10	

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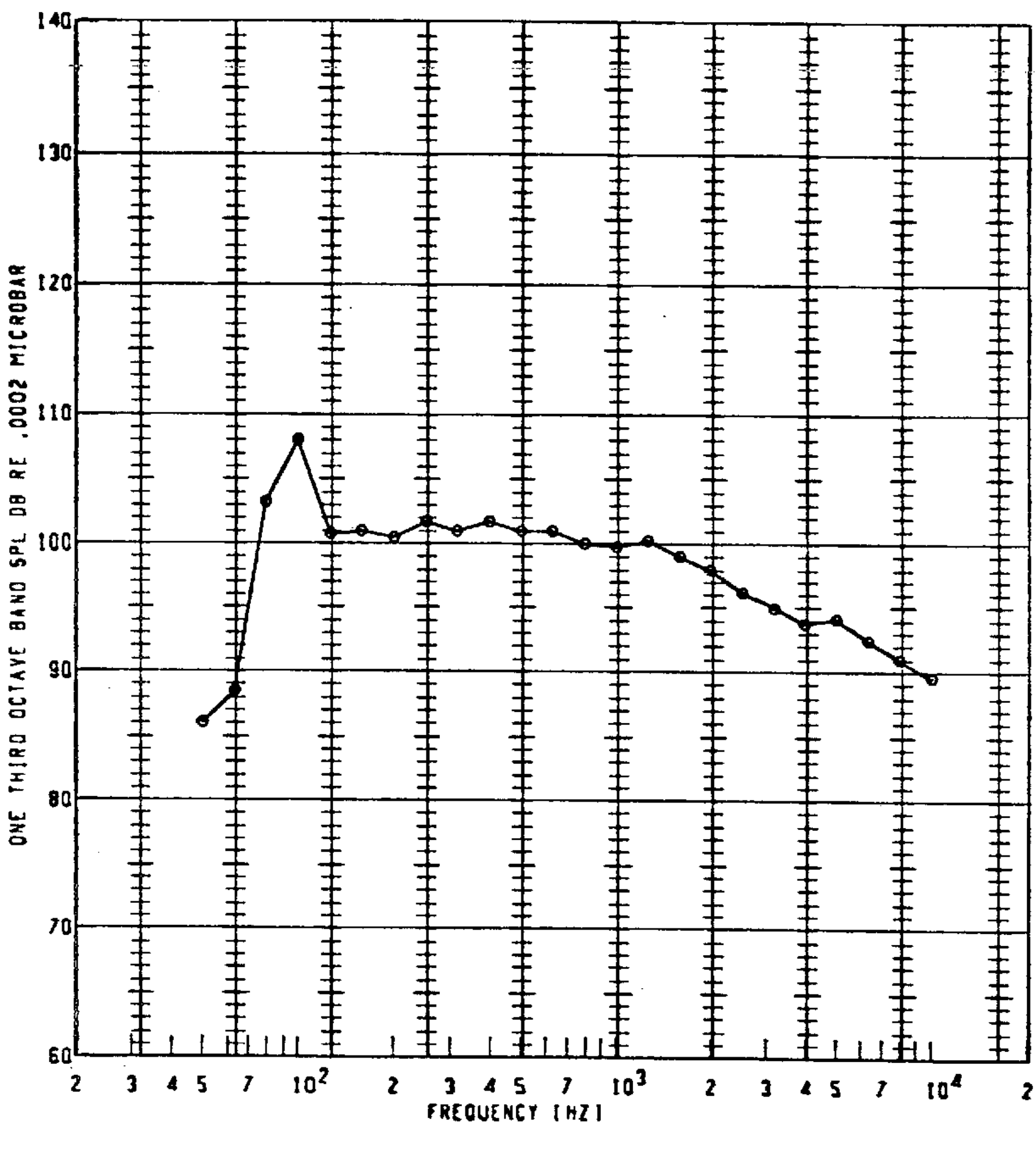

PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊕	10G	800	1.400	140	50FP	113.9	10	

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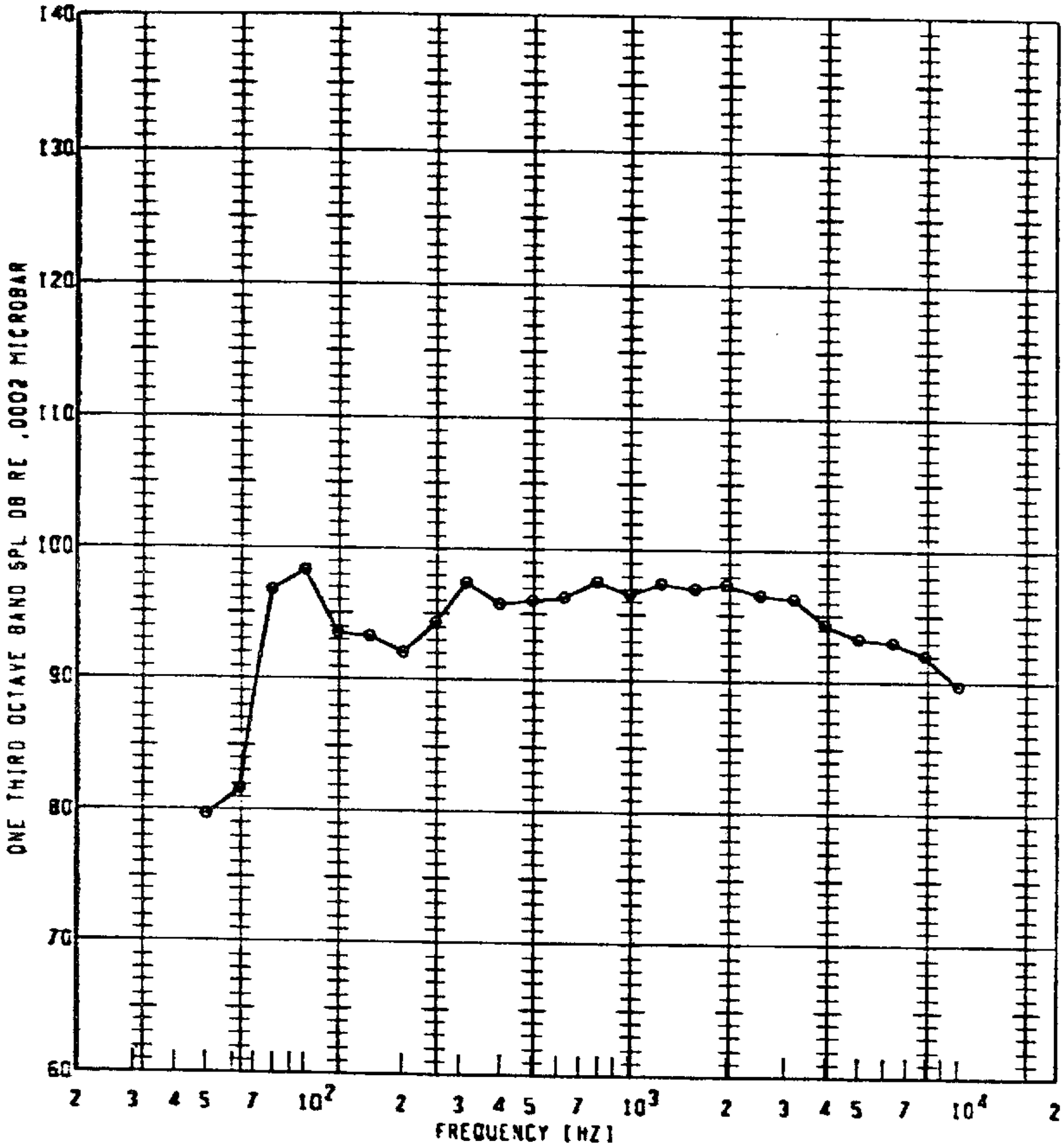
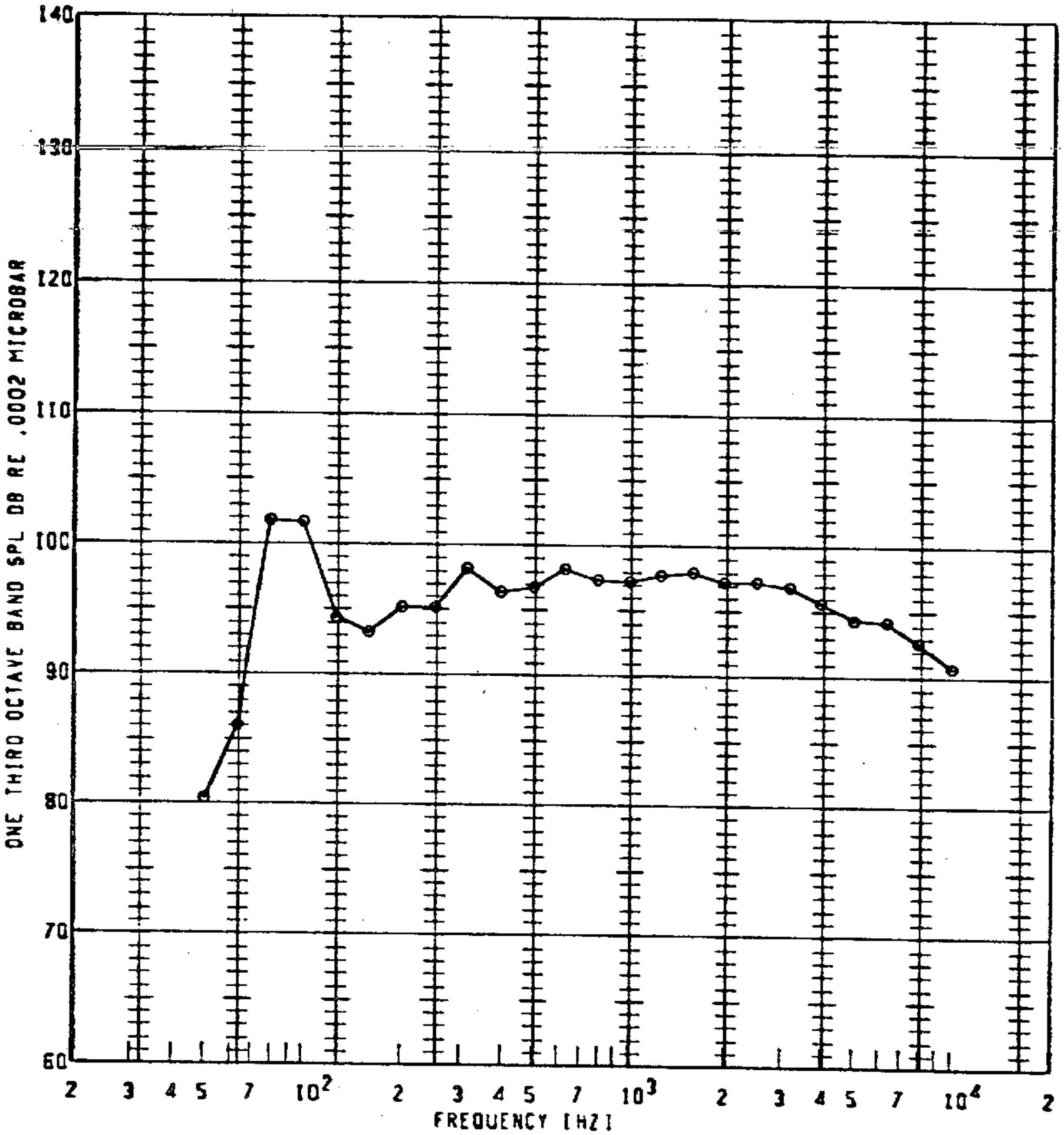


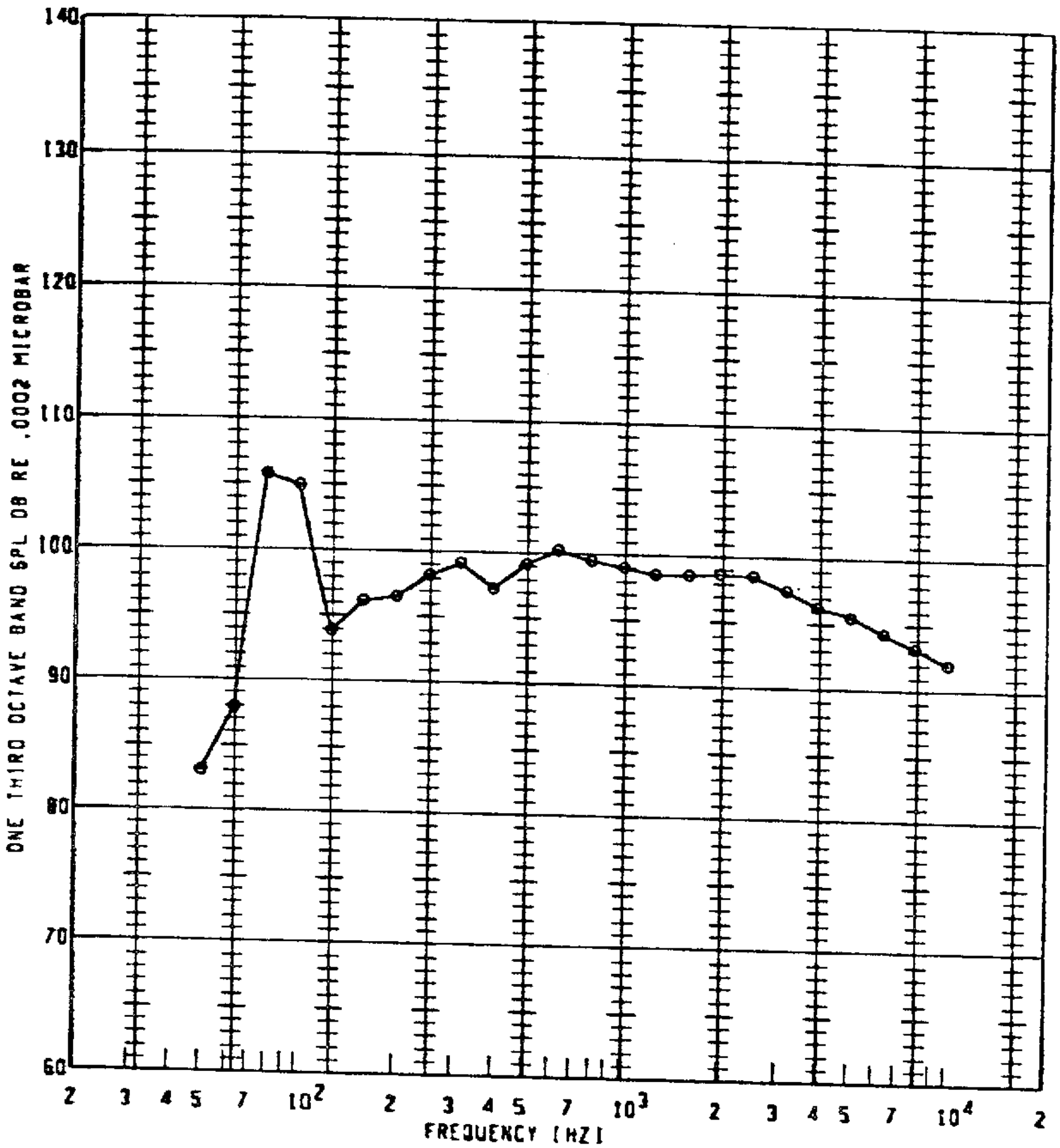
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	10G	850	1.500	90	50FP	109.1	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL
⊖	10G	850	1.500	100	50FP	110.6	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	10G	850	1.500	110	50FP	112.7	10	

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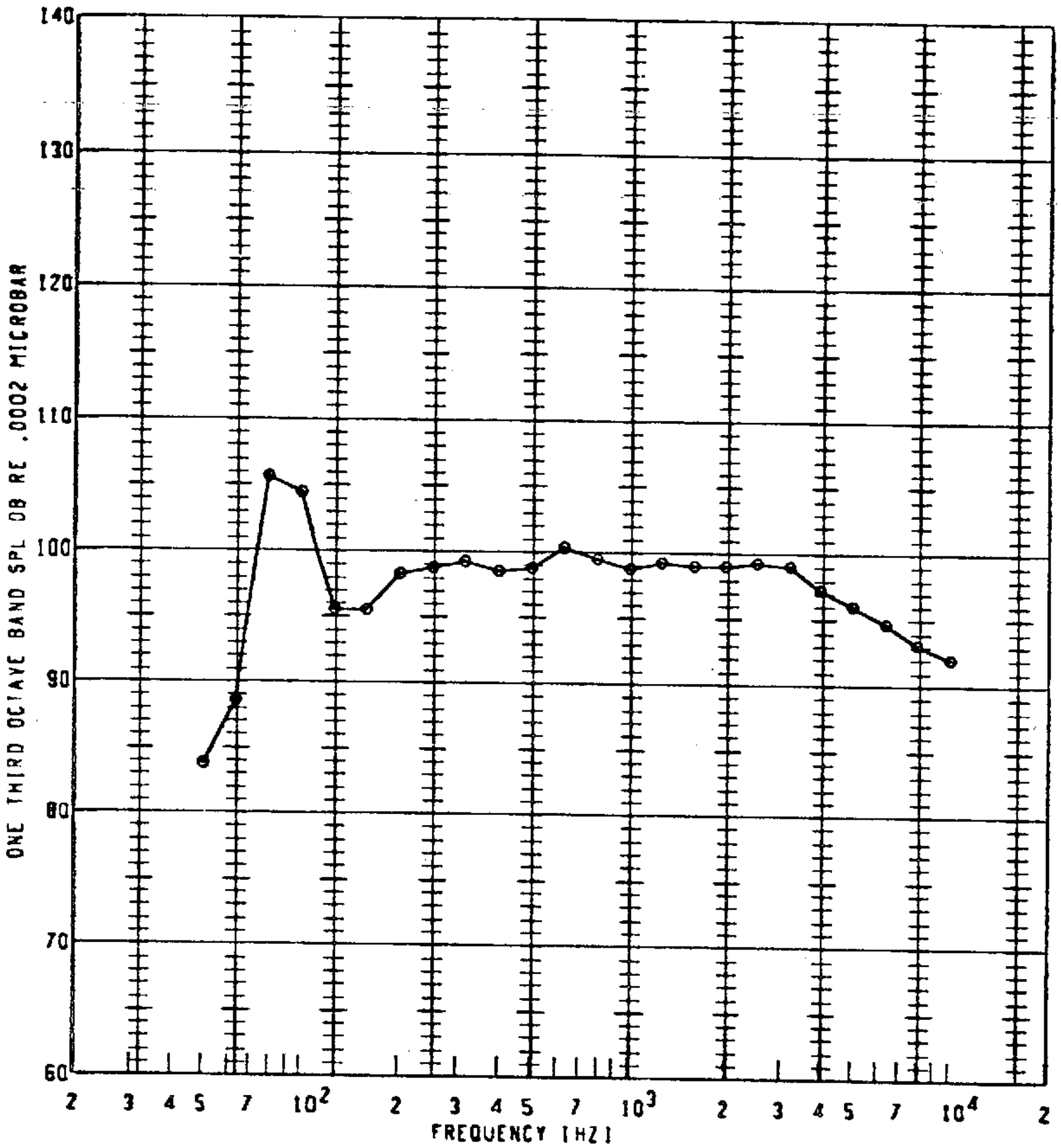

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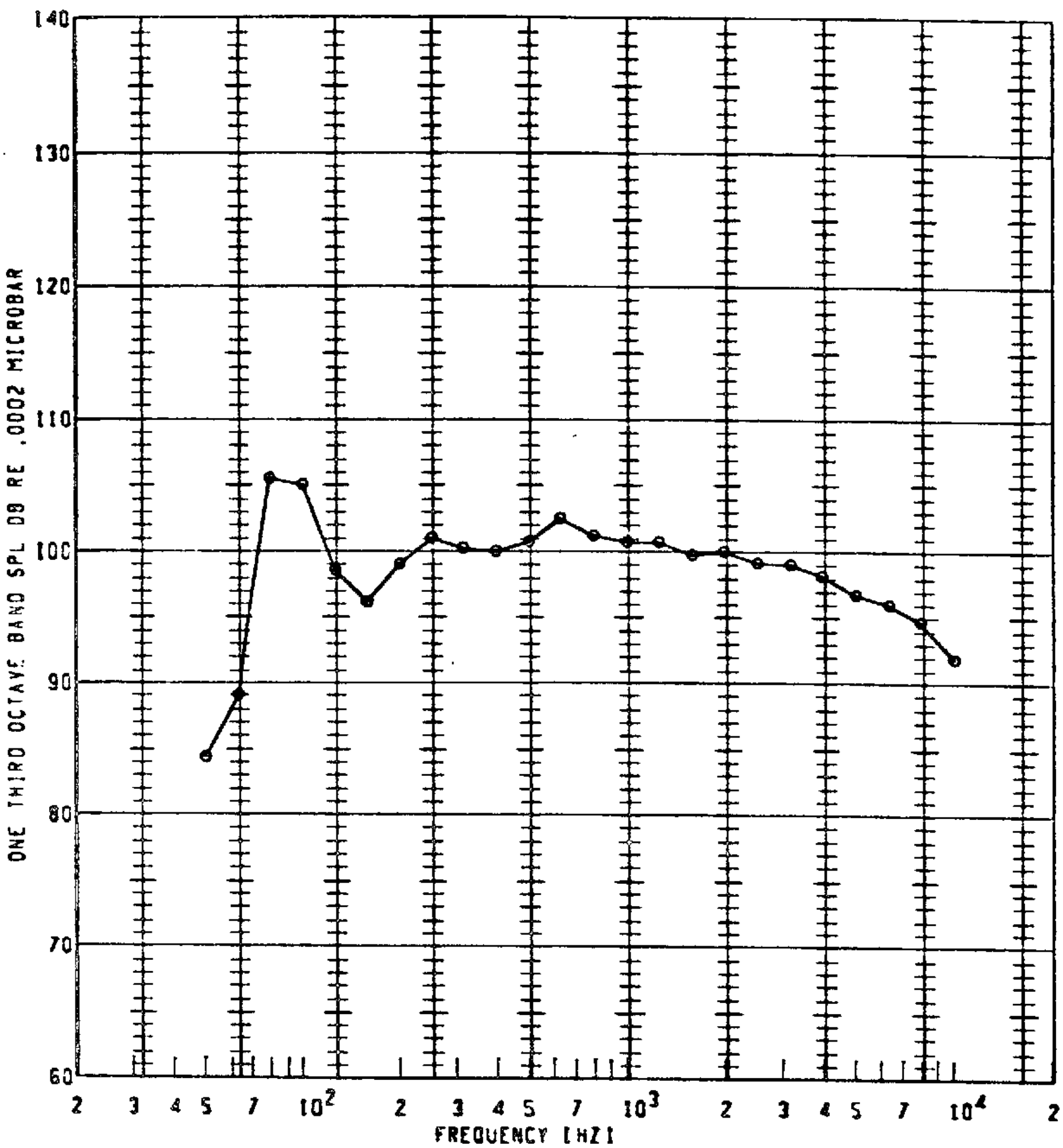

PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	106	850	1.500	120	50FP	113.8	10	

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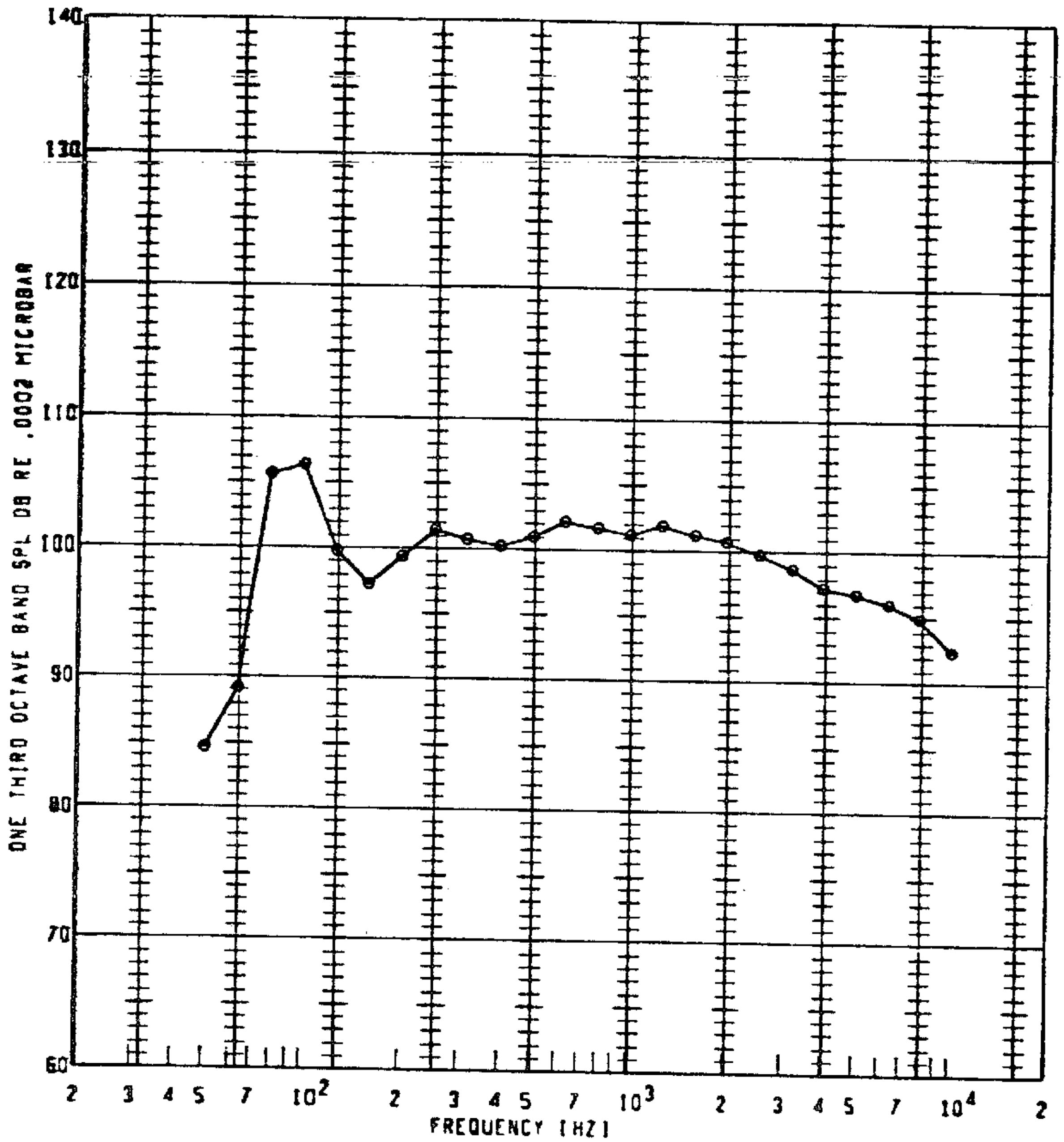

PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
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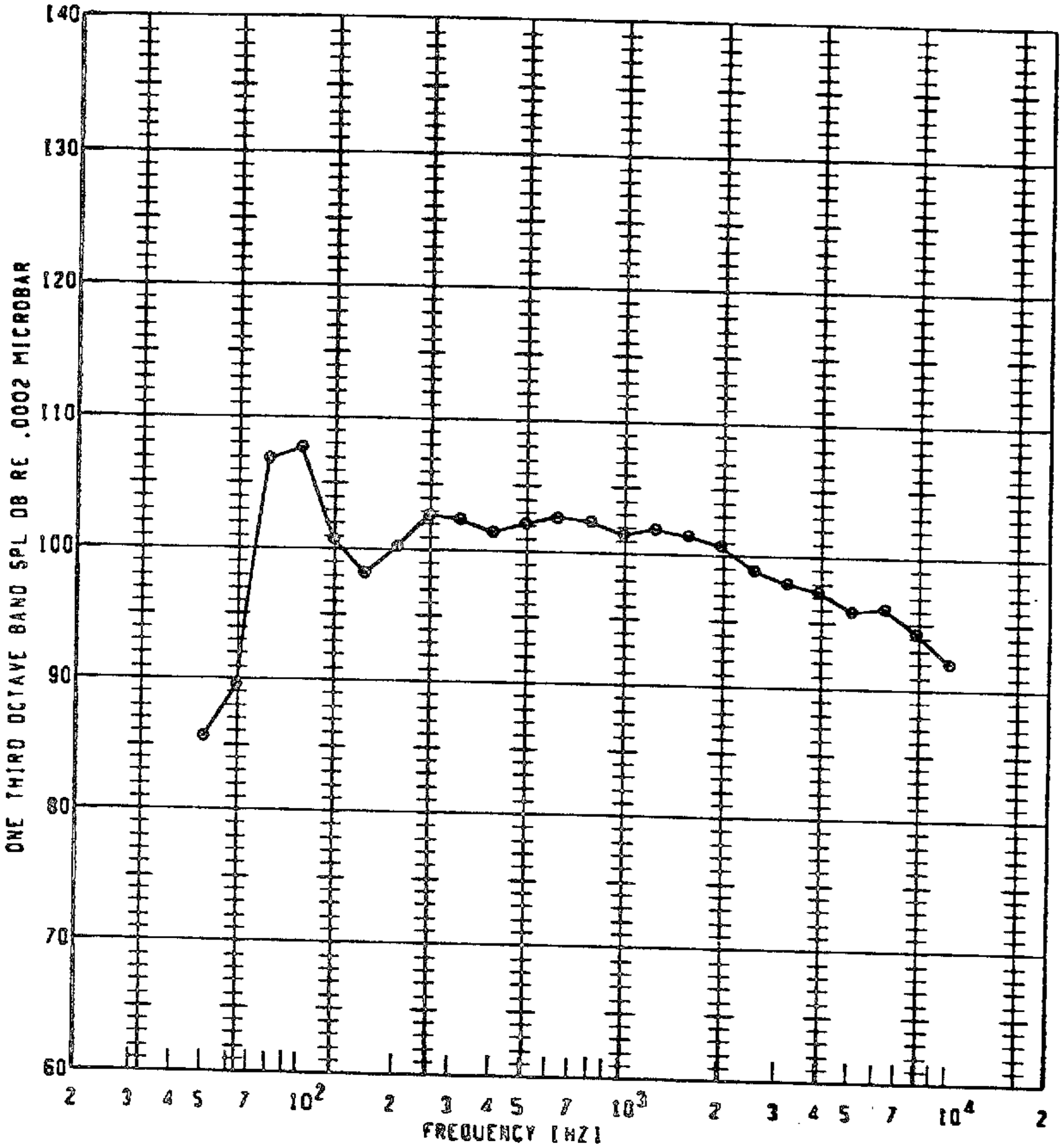

PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
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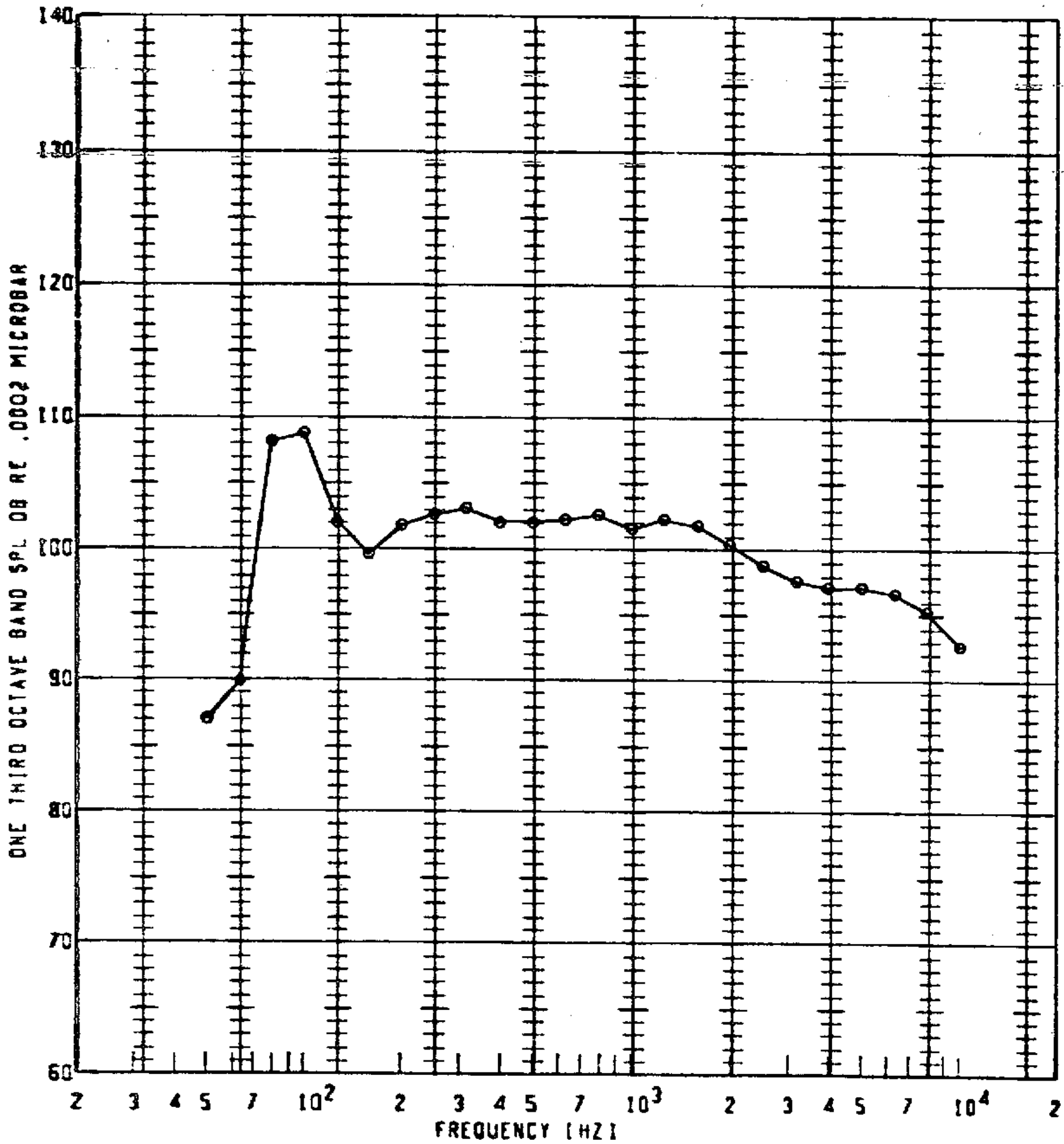

PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
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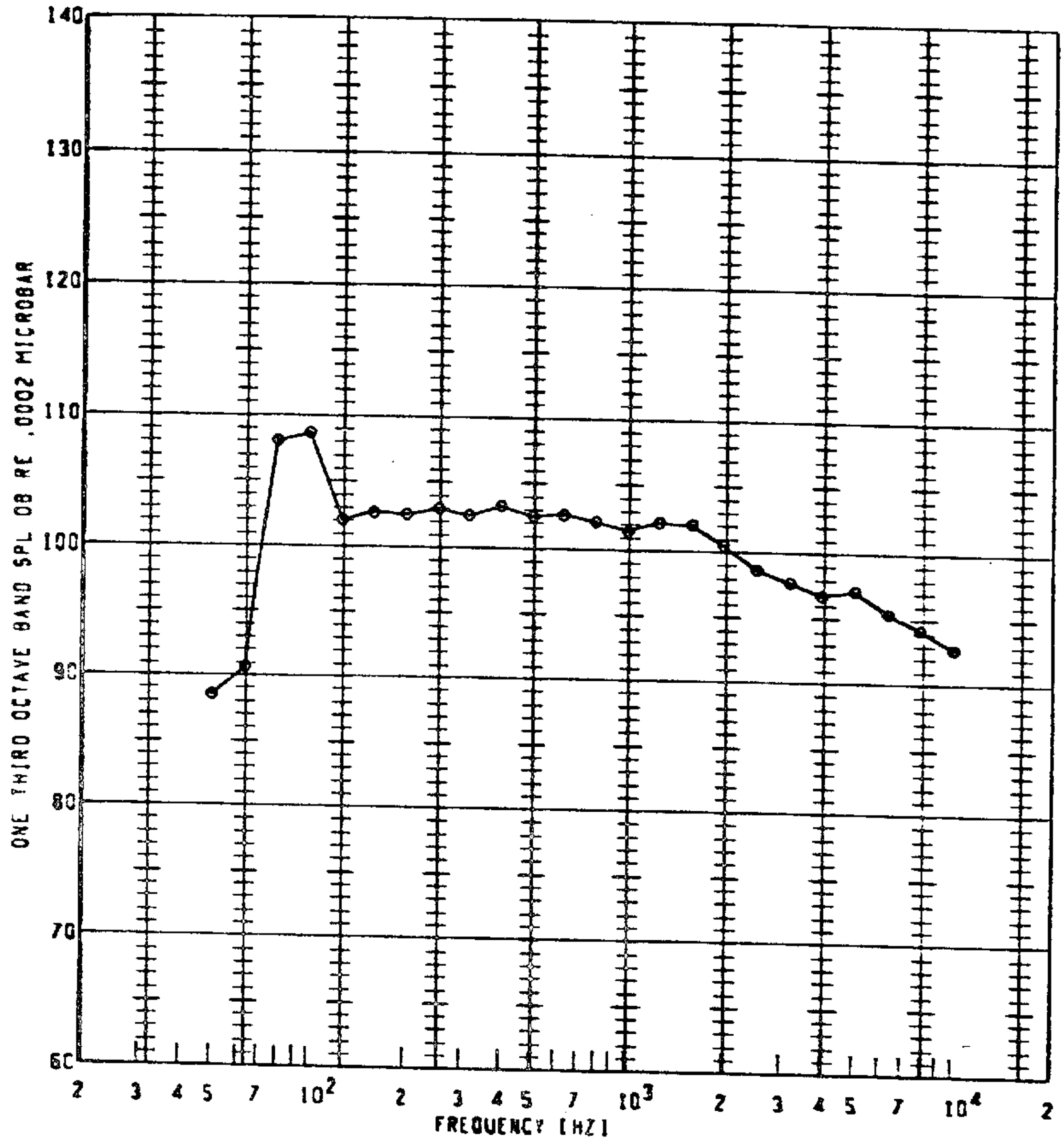

PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
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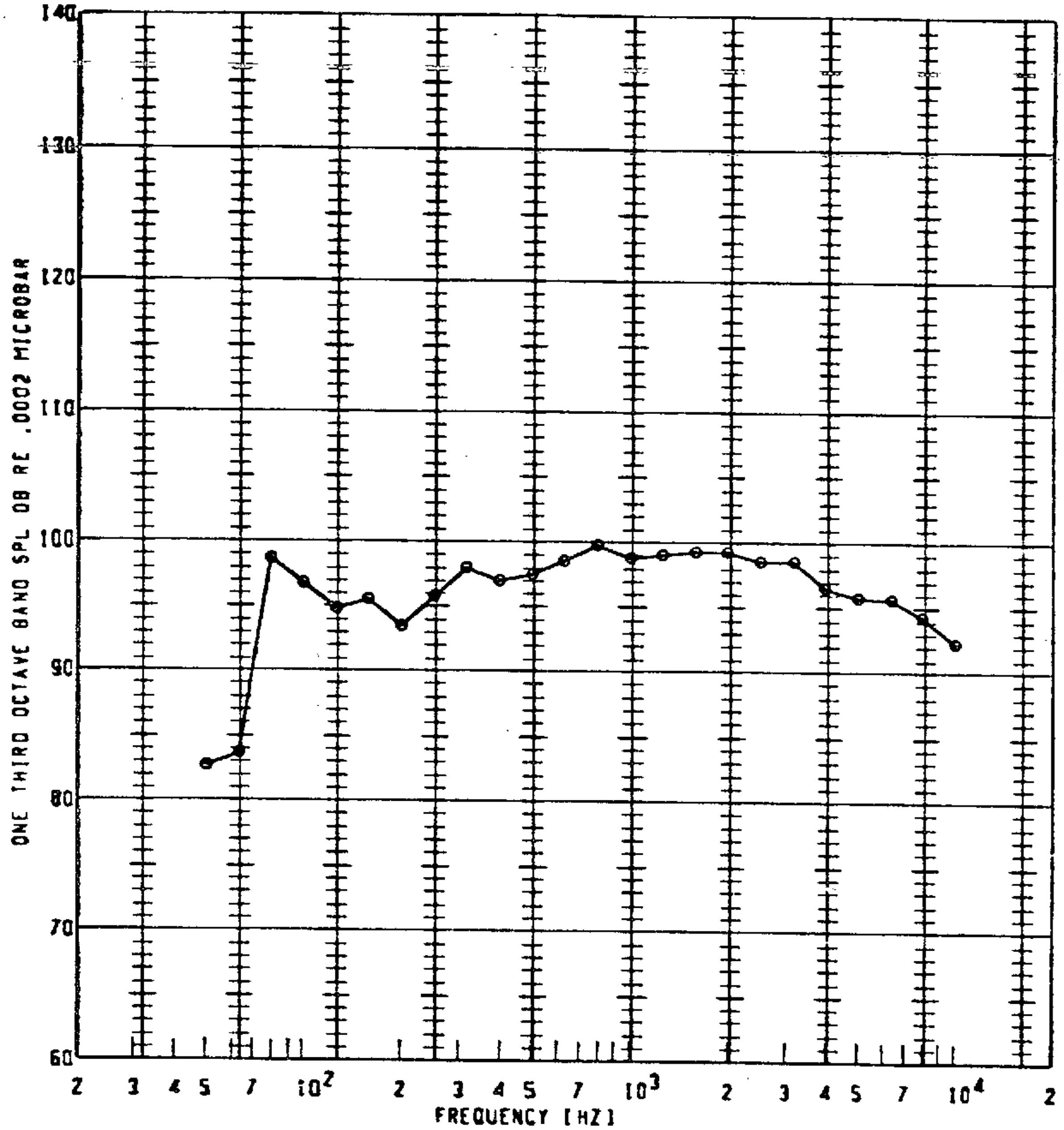

PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
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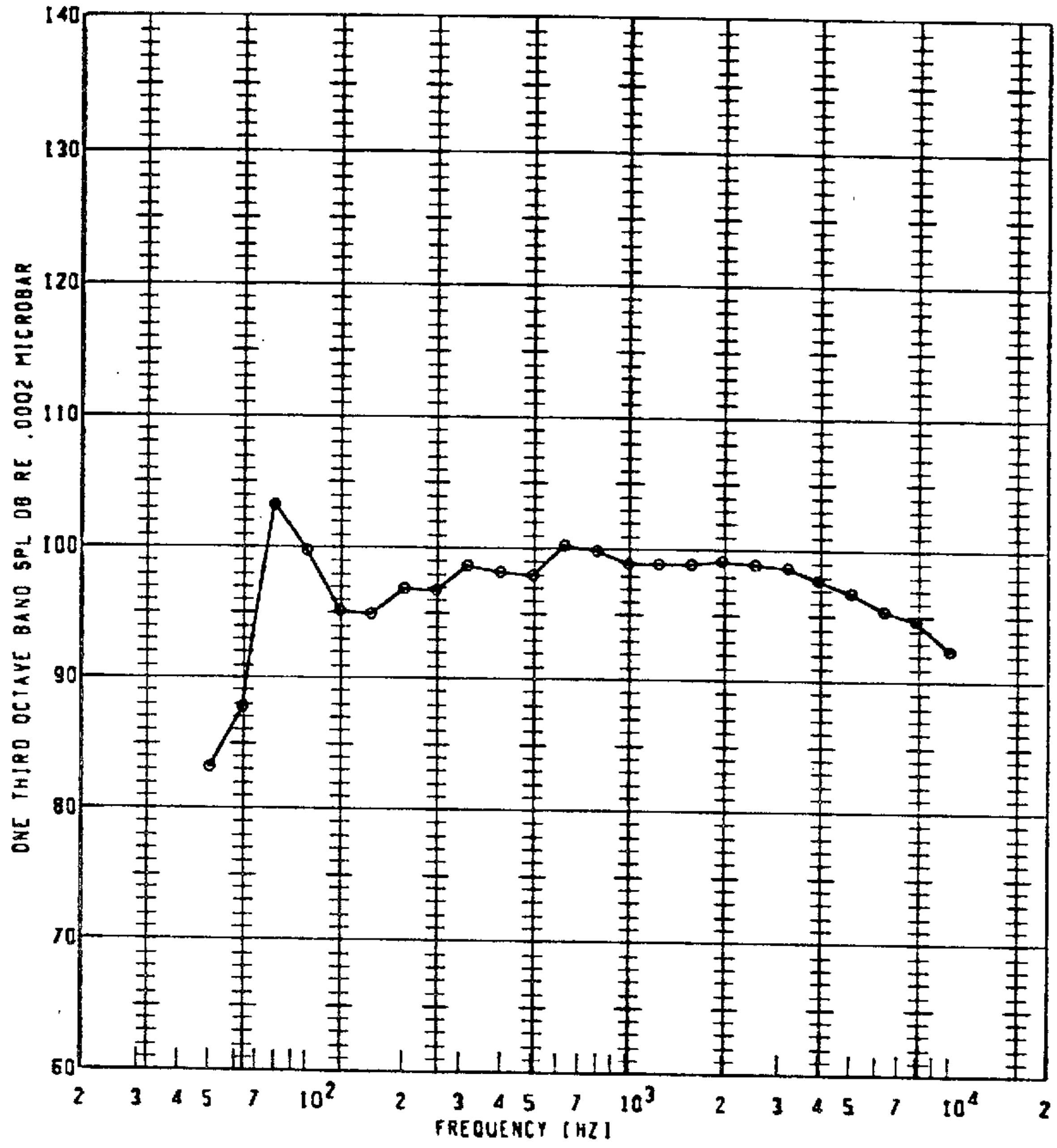
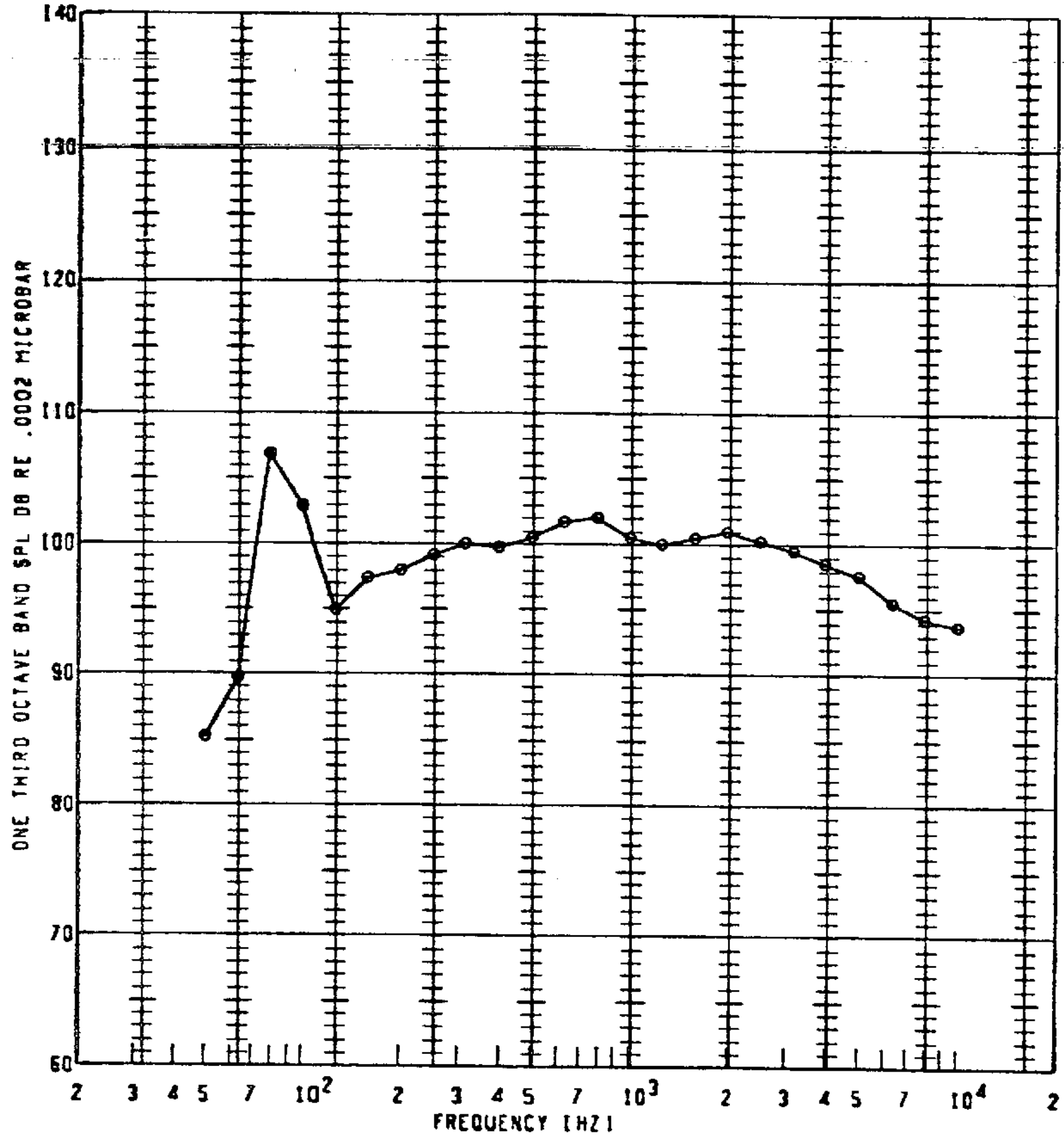


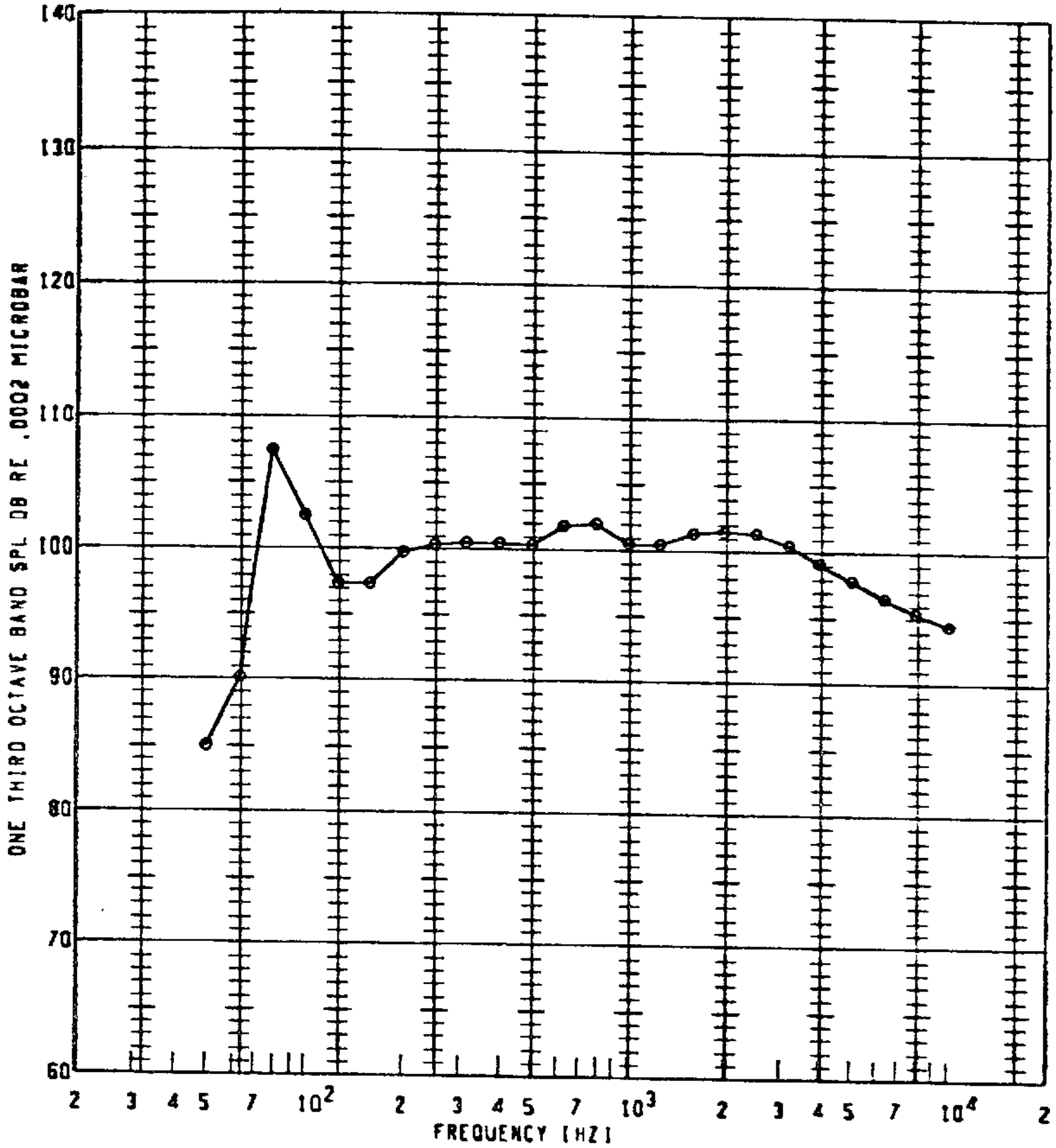
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	10G	900	1.600	100	50FP	111.9	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



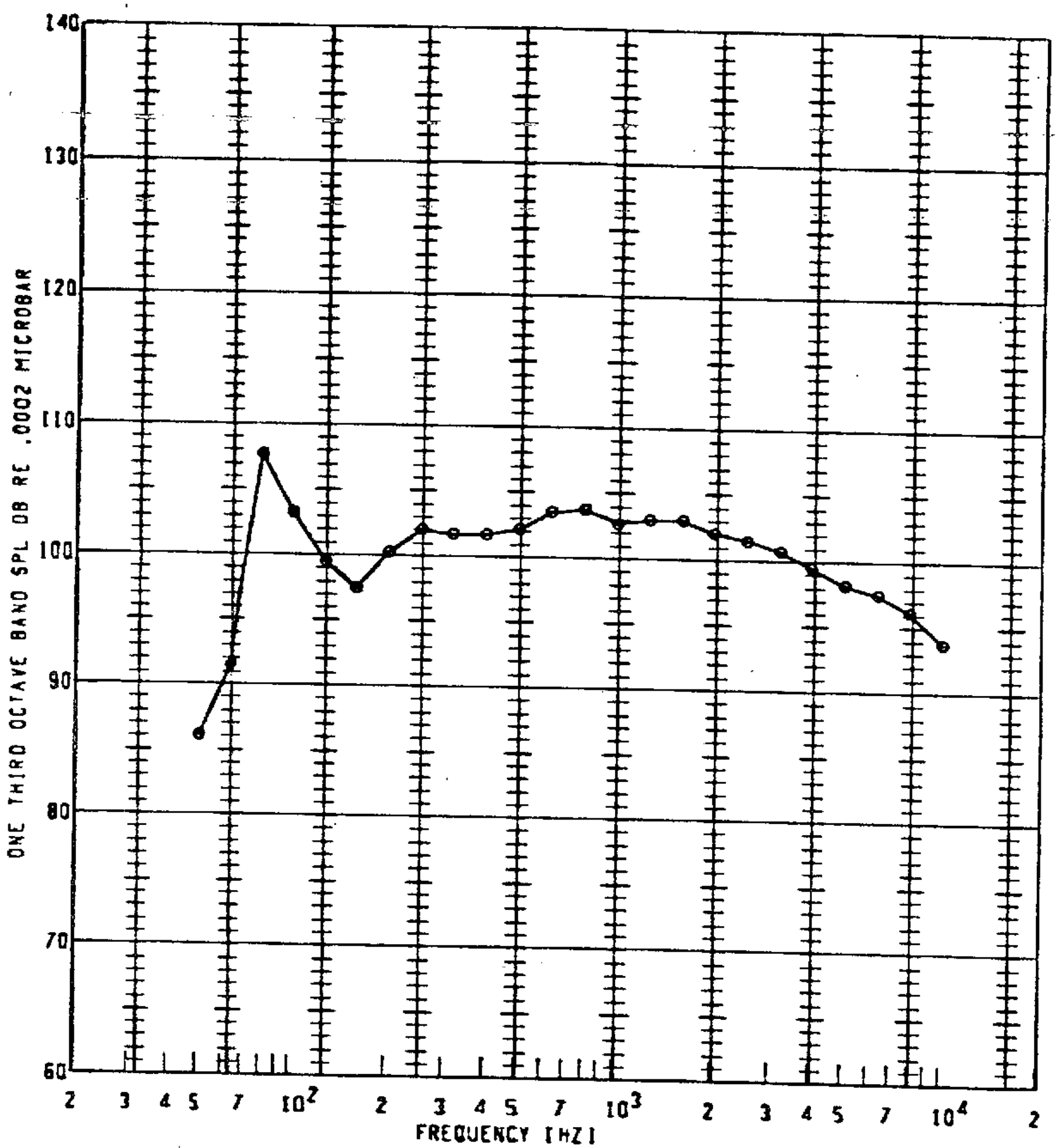
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	10G	900	1.600	110	50FP	113.8	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



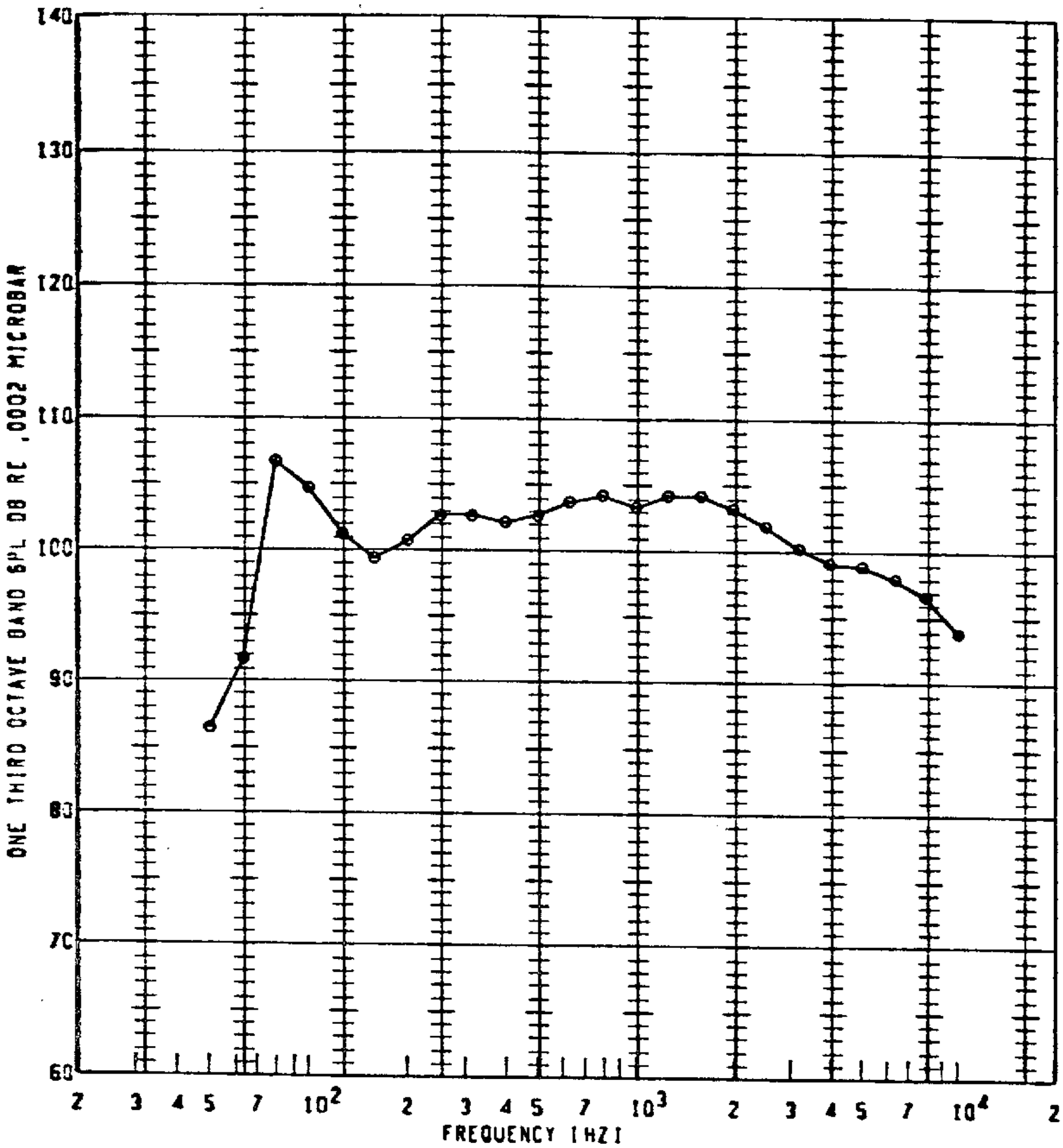
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	106	900	1.600	115	50FP	114.3	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



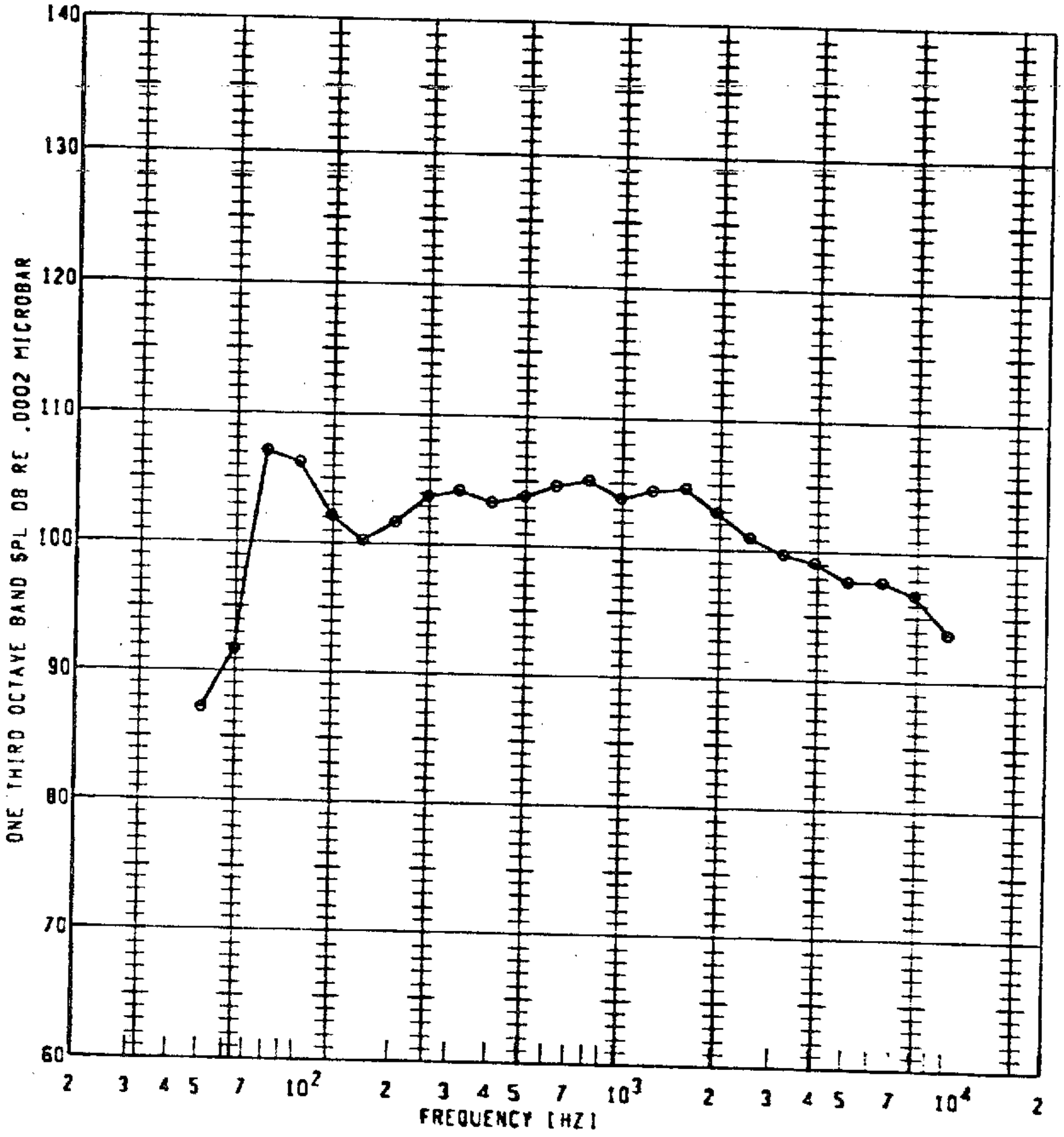
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	106	900	1.600	120	50FP	115.3	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



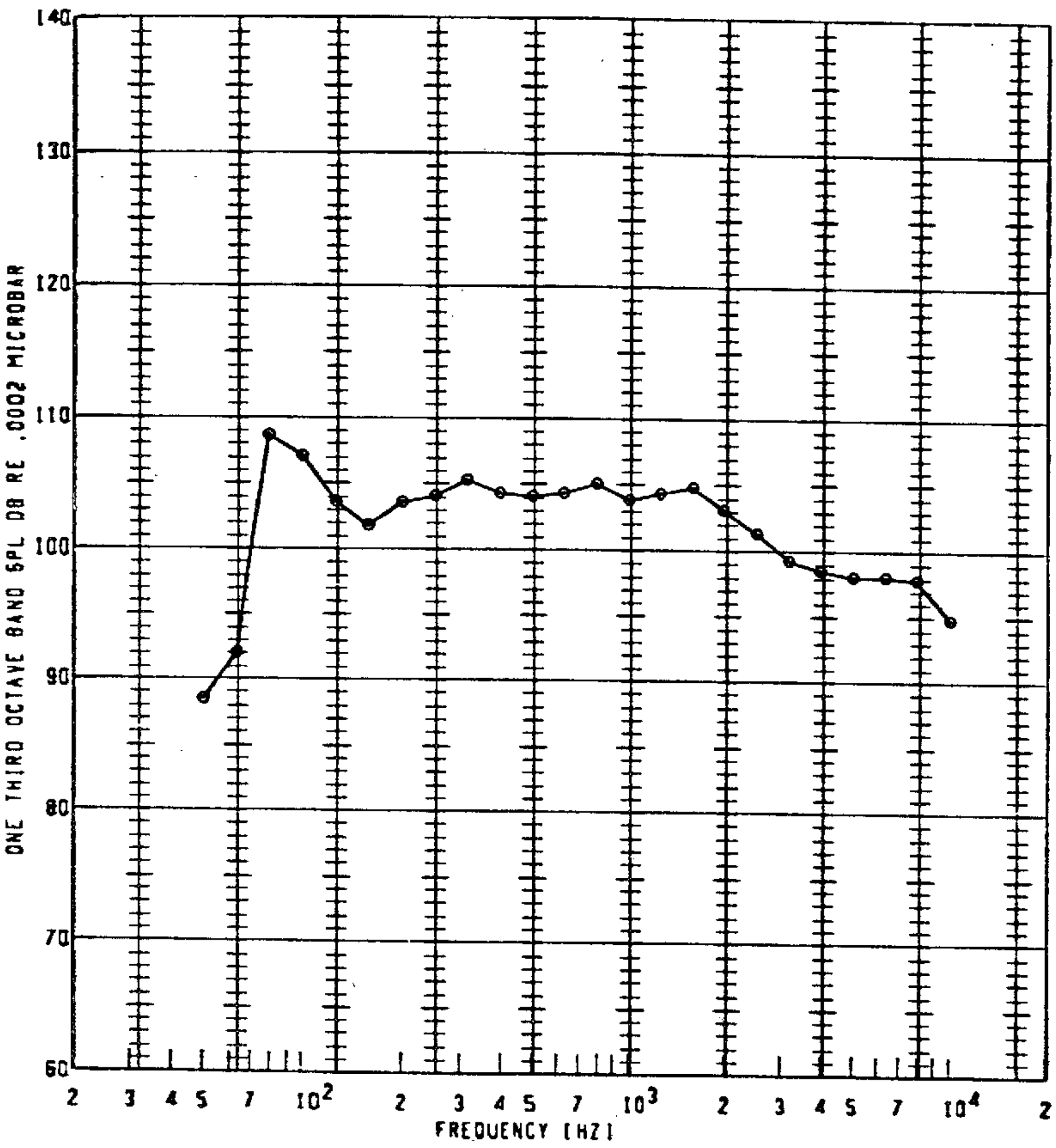
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	105	900	1.600	125	50FP	115.9	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



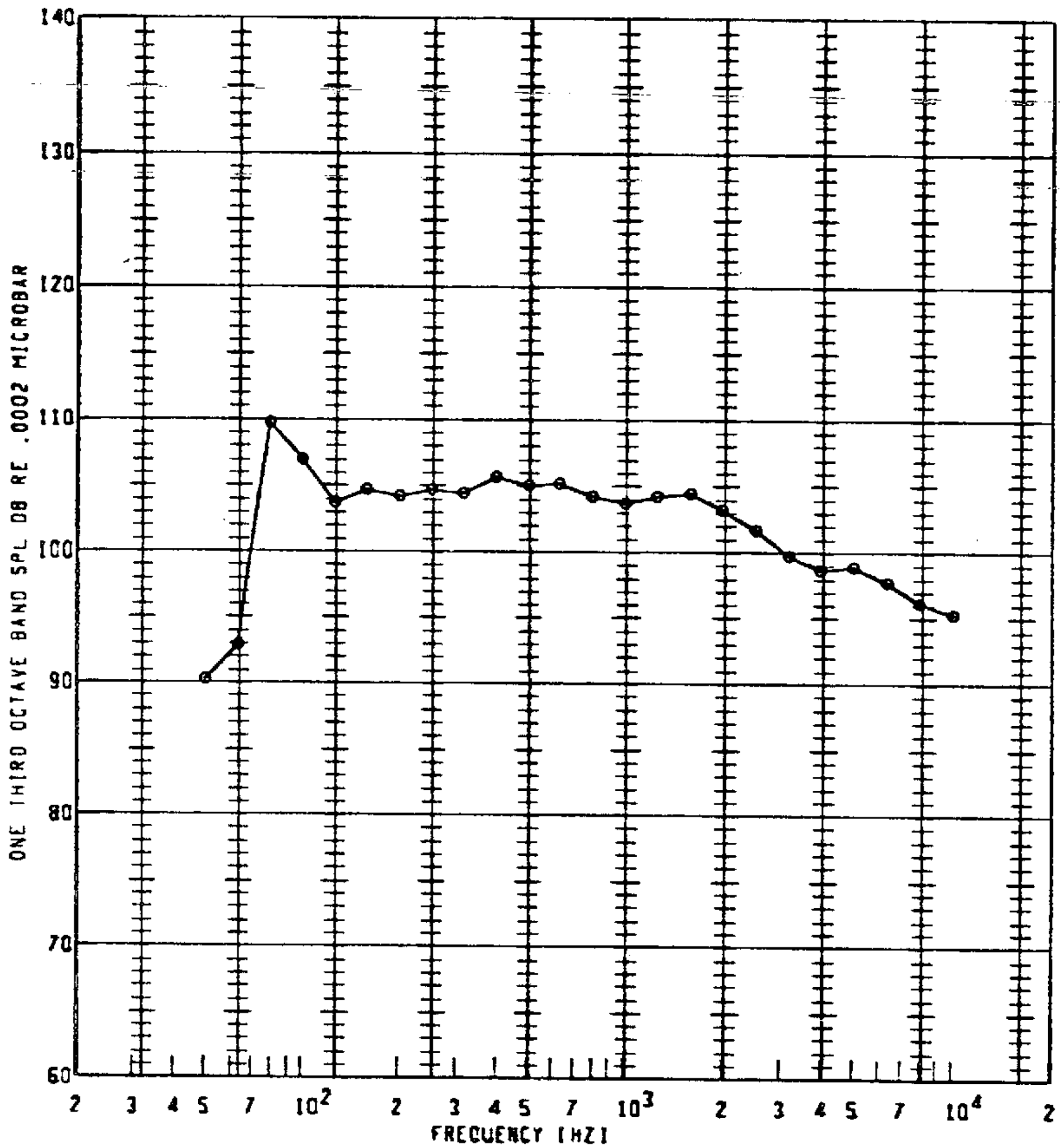
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊖	106	900	1.600	130	50FP	116.5	C	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



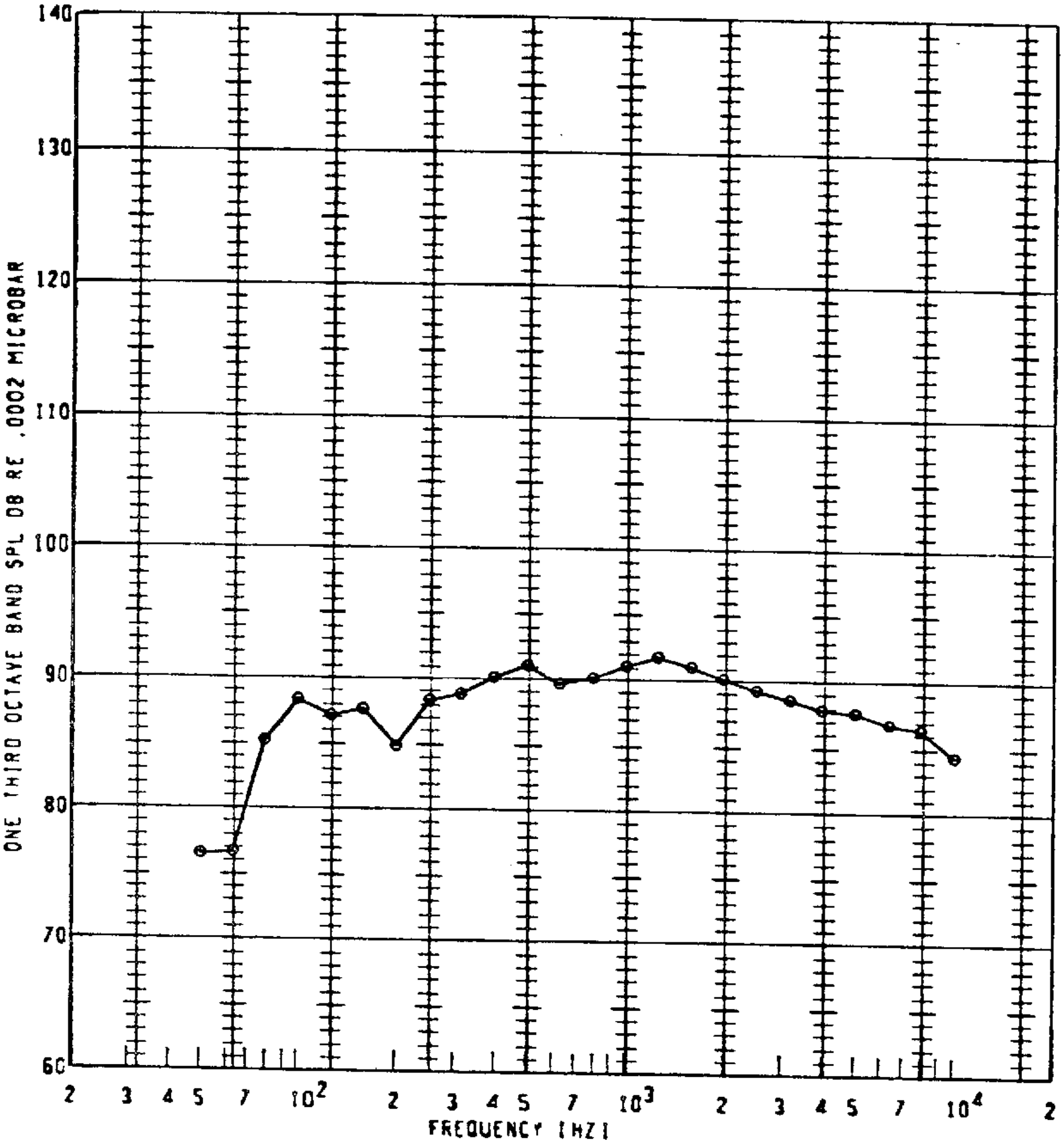
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	10G	900	1.600	135	50FP	117.1	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



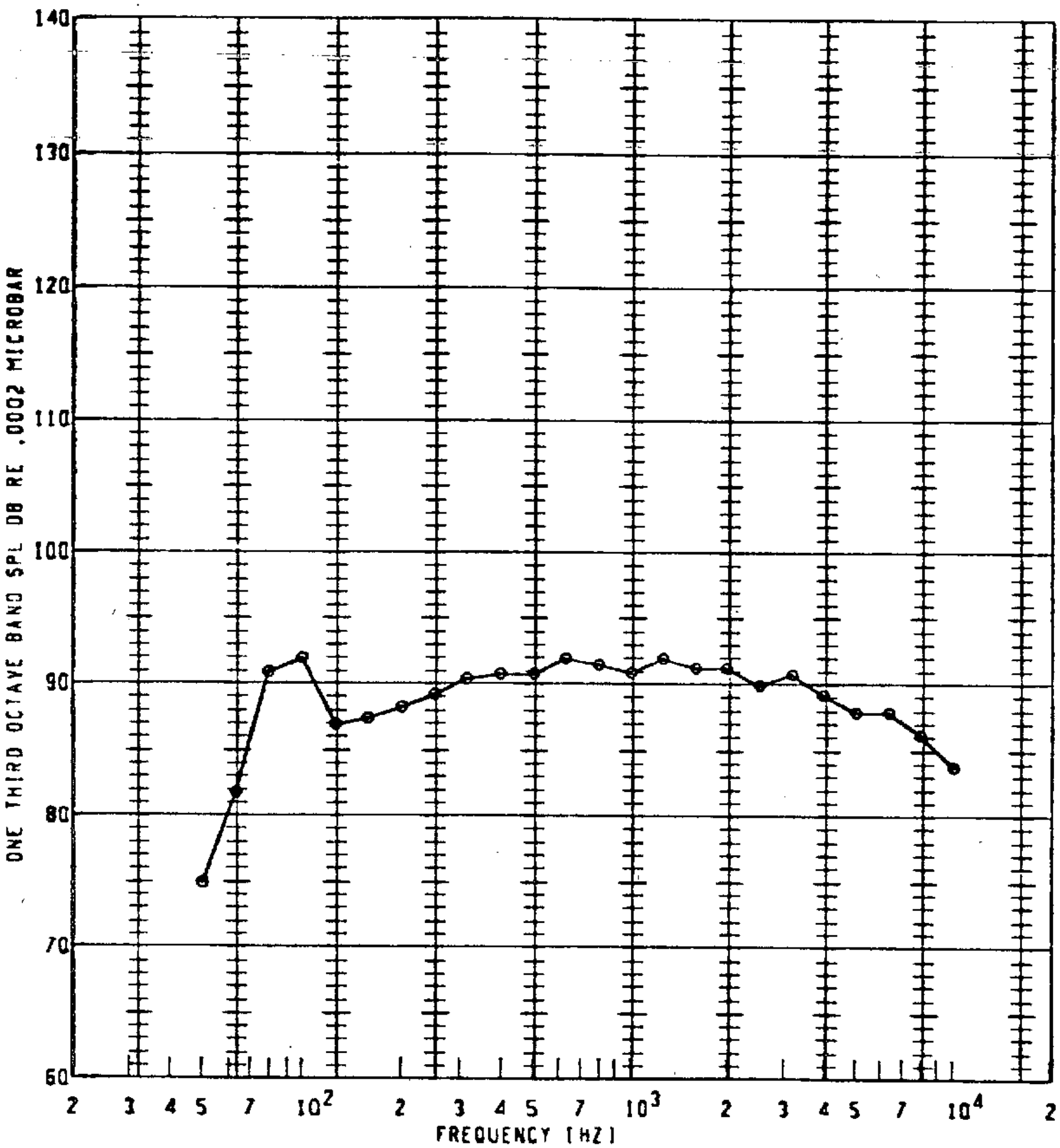
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	10G	900	1.600	140	50FP	117.5	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



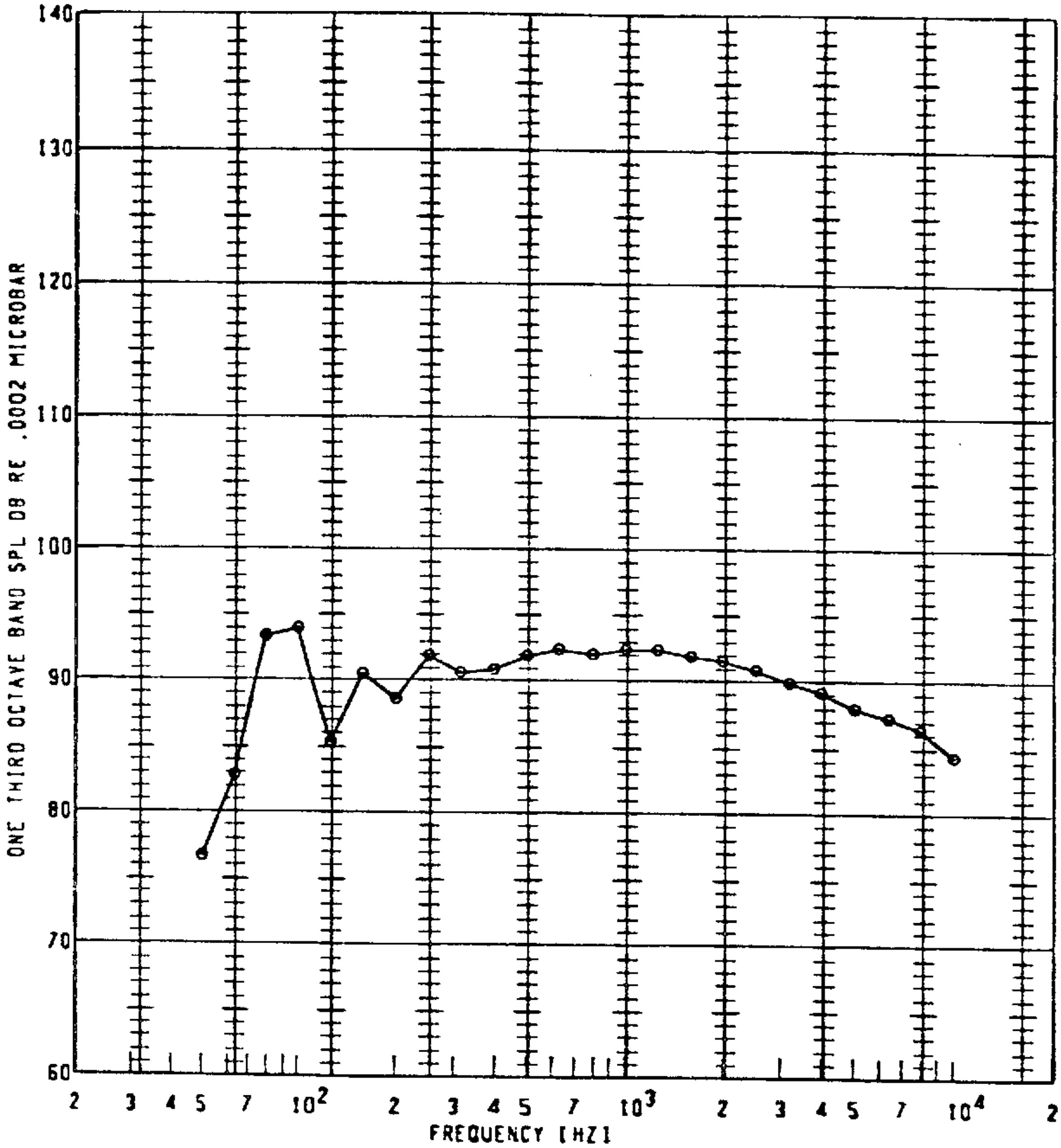
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	11G	750	1.300	90	50FP	102.4	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



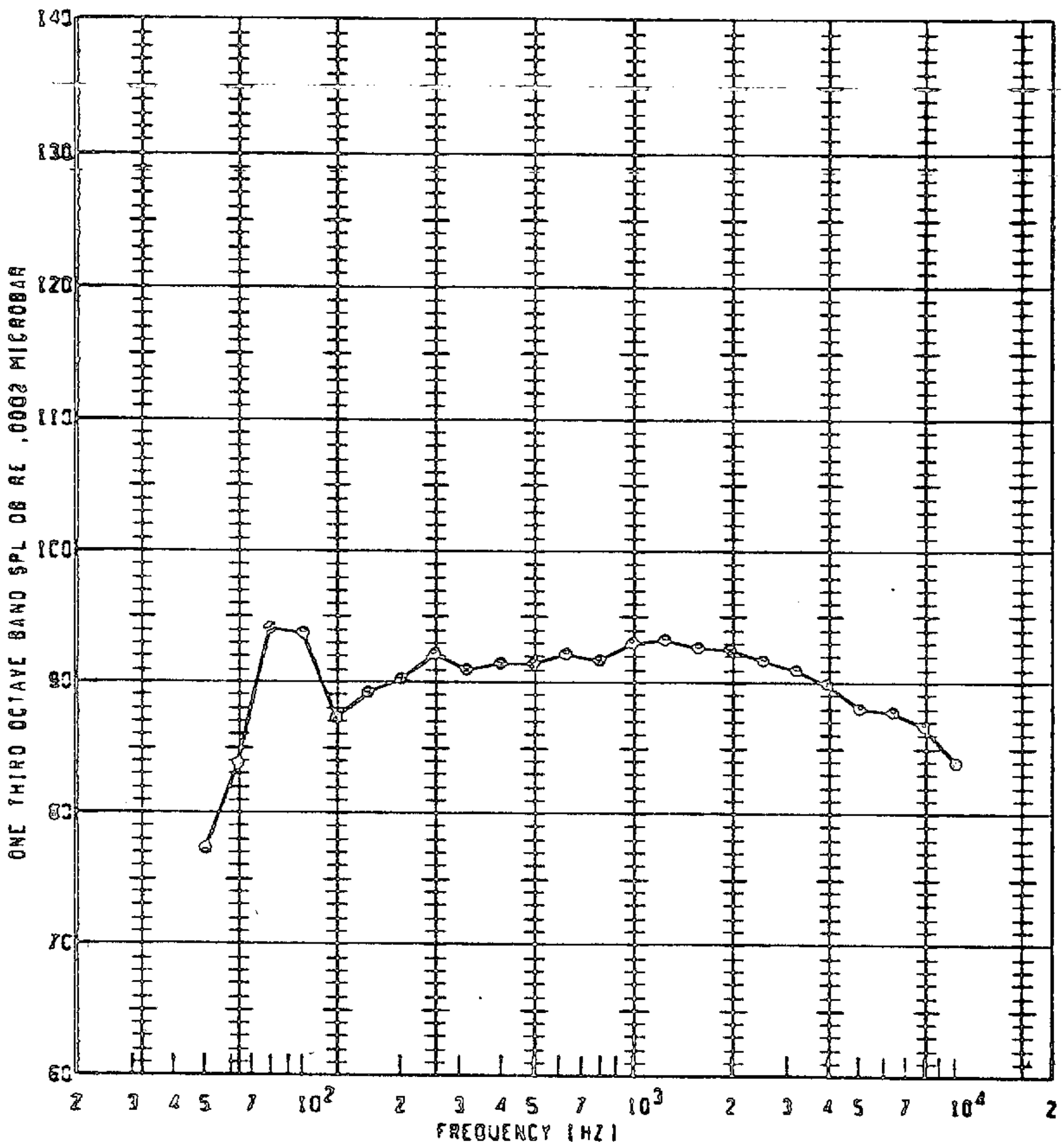
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	116	750	1.300	100	50FP	103.4	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



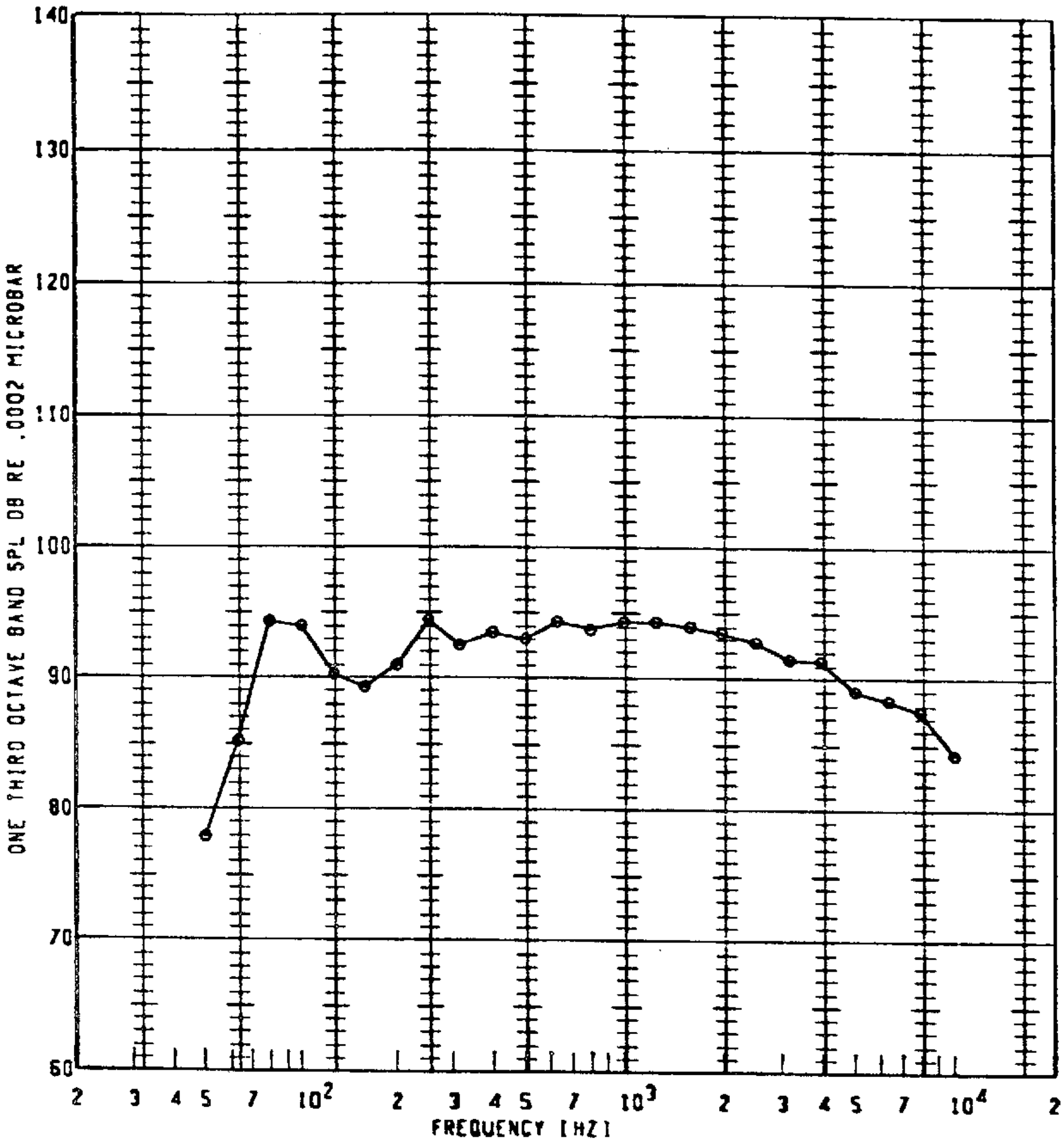
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	11G	750	1.300	110	50FP	104.4	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



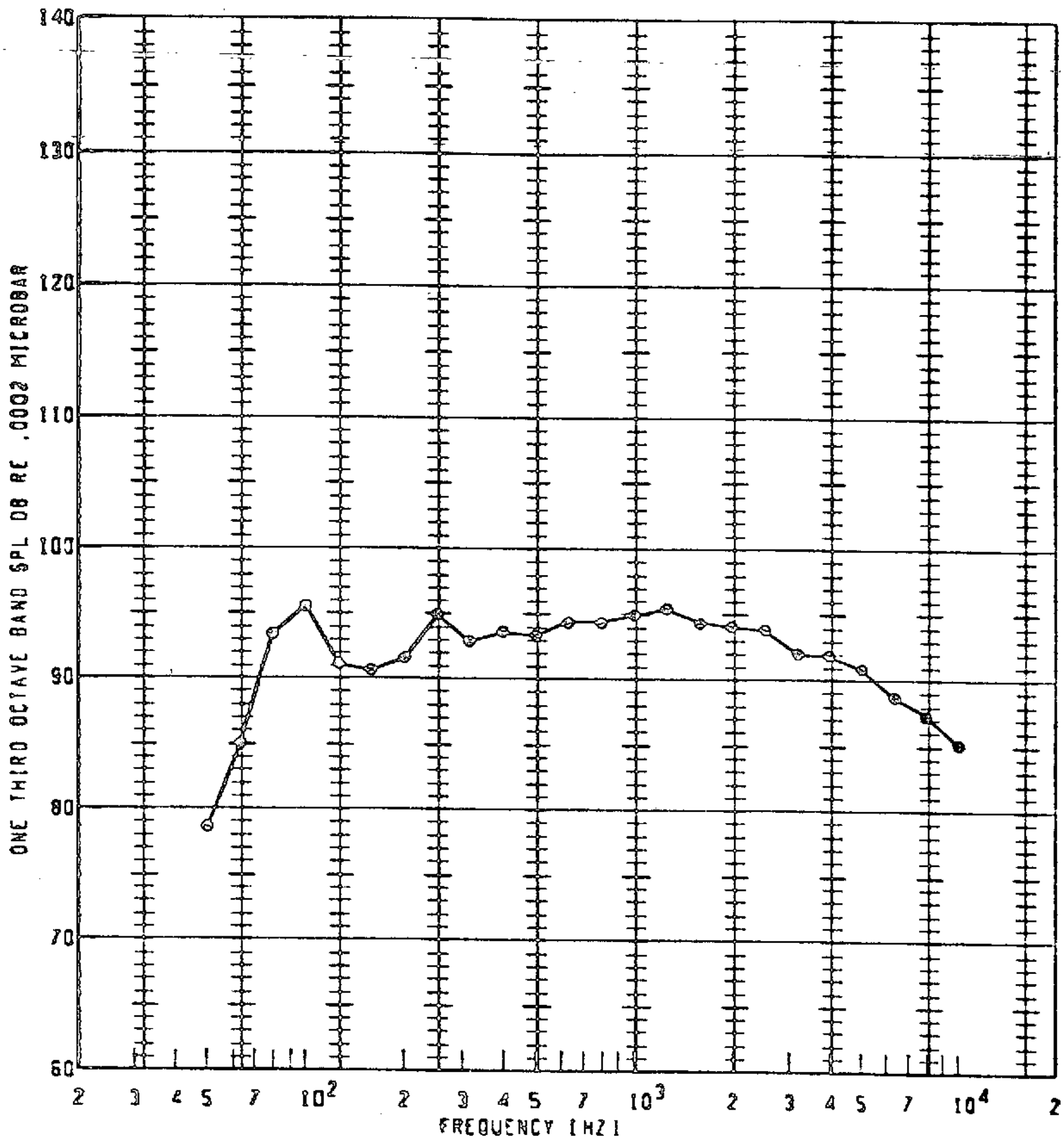
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊕	116	750	1.300	115	50FP	104.8	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



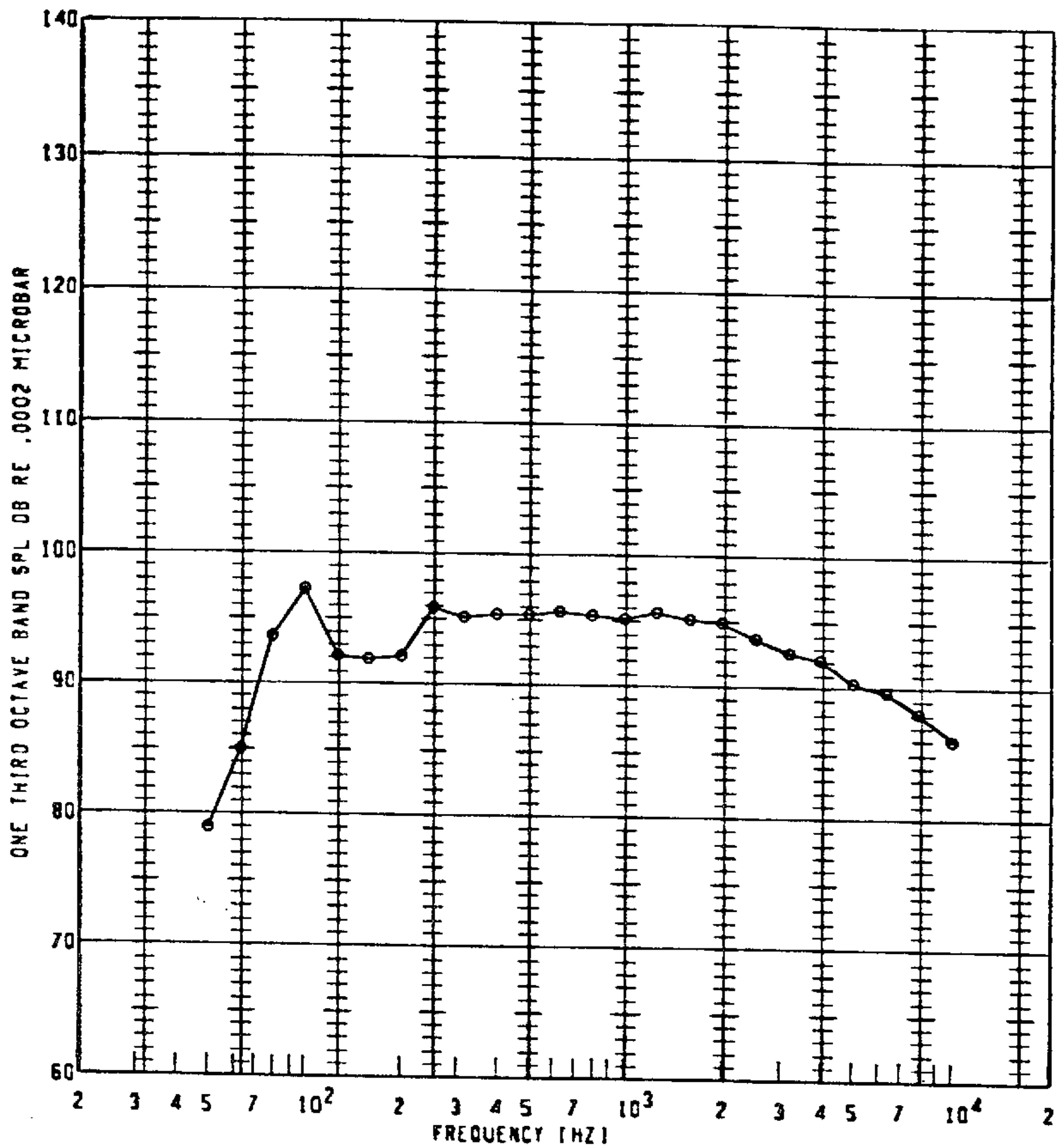
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊖	116	750	1.300	120	50FP	106.0	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



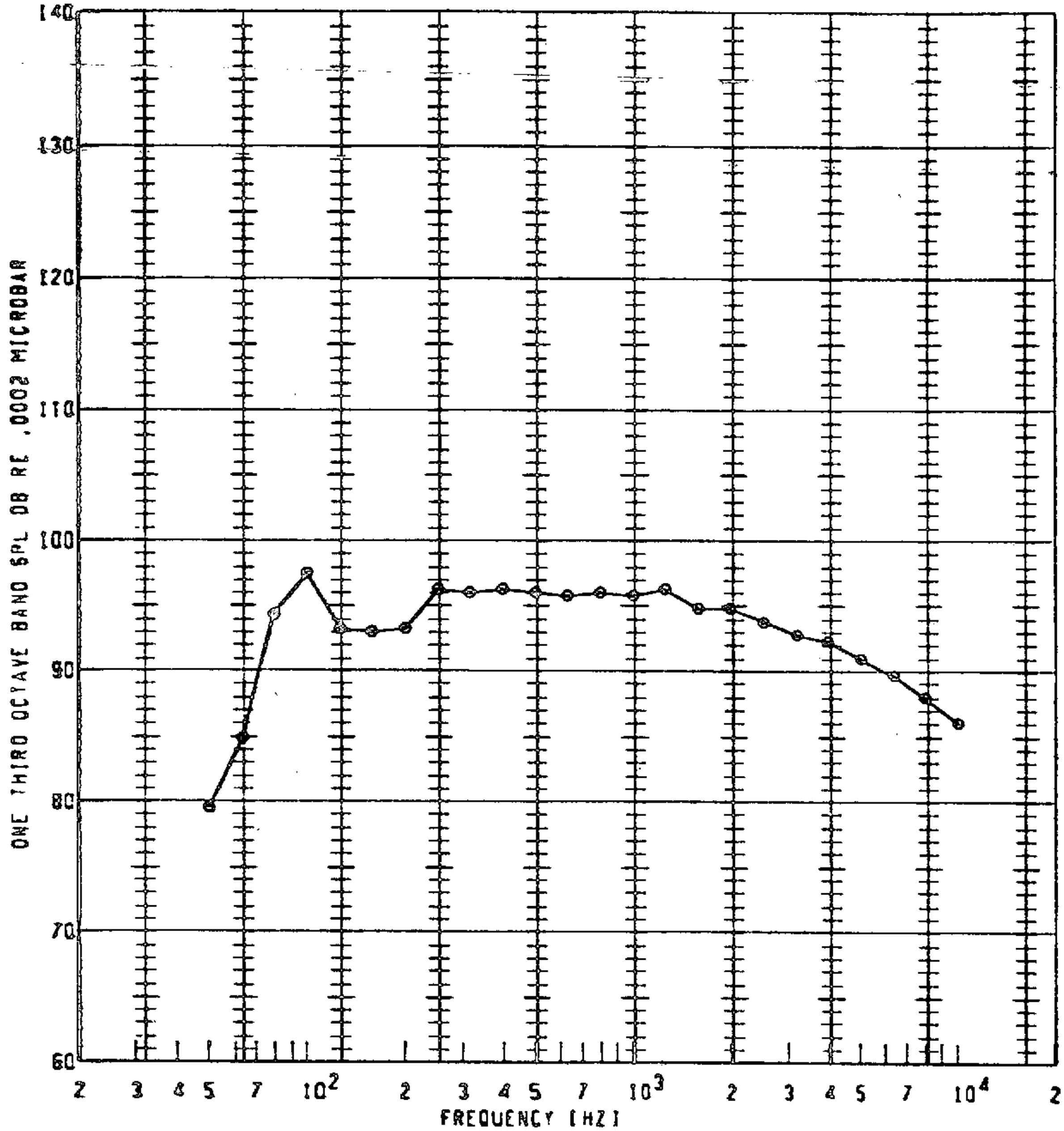
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊗	11G	750	1.300	125	50FP	106.6	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



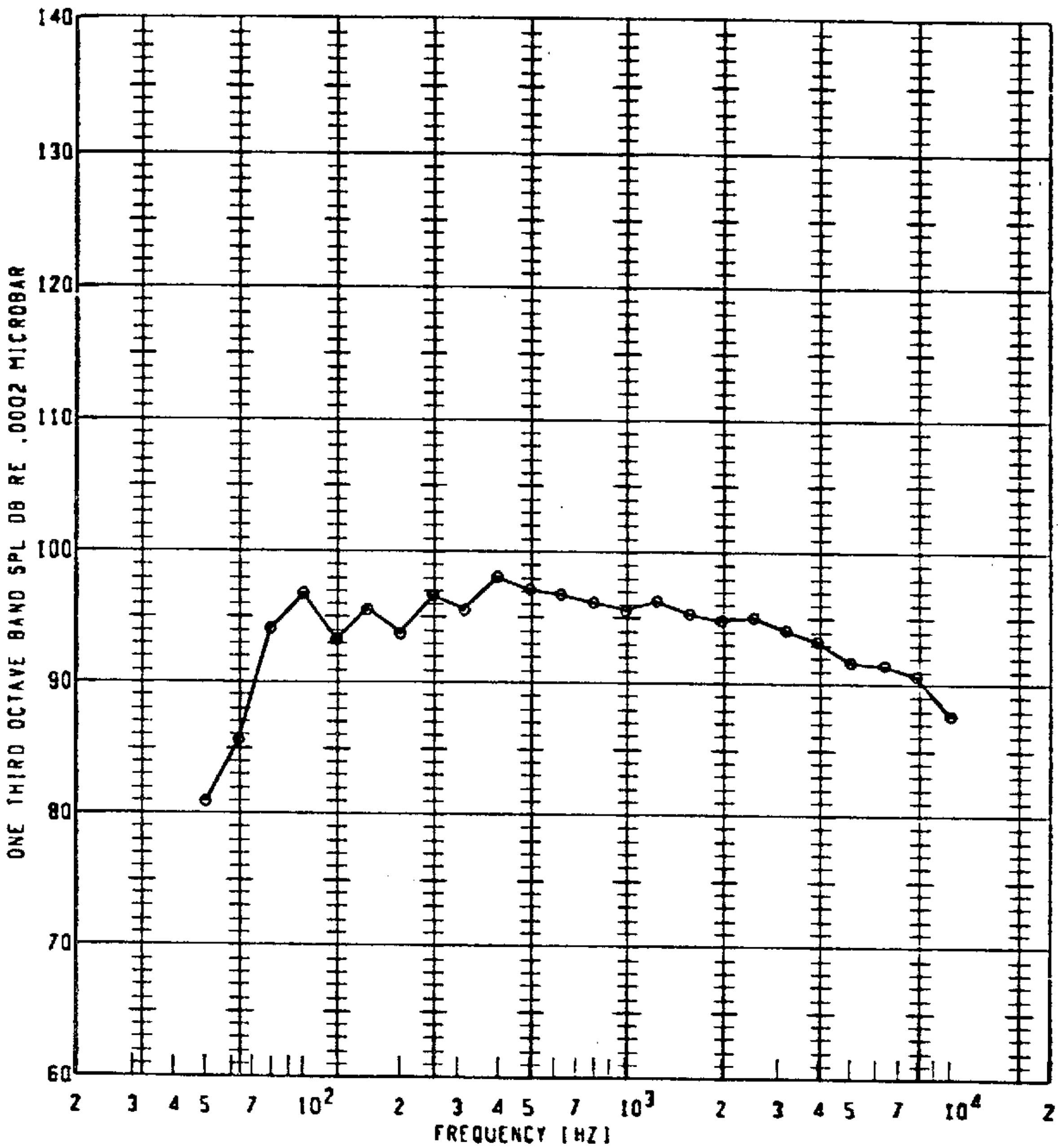
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	11G	750	1.300	130	50FP	107.5	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



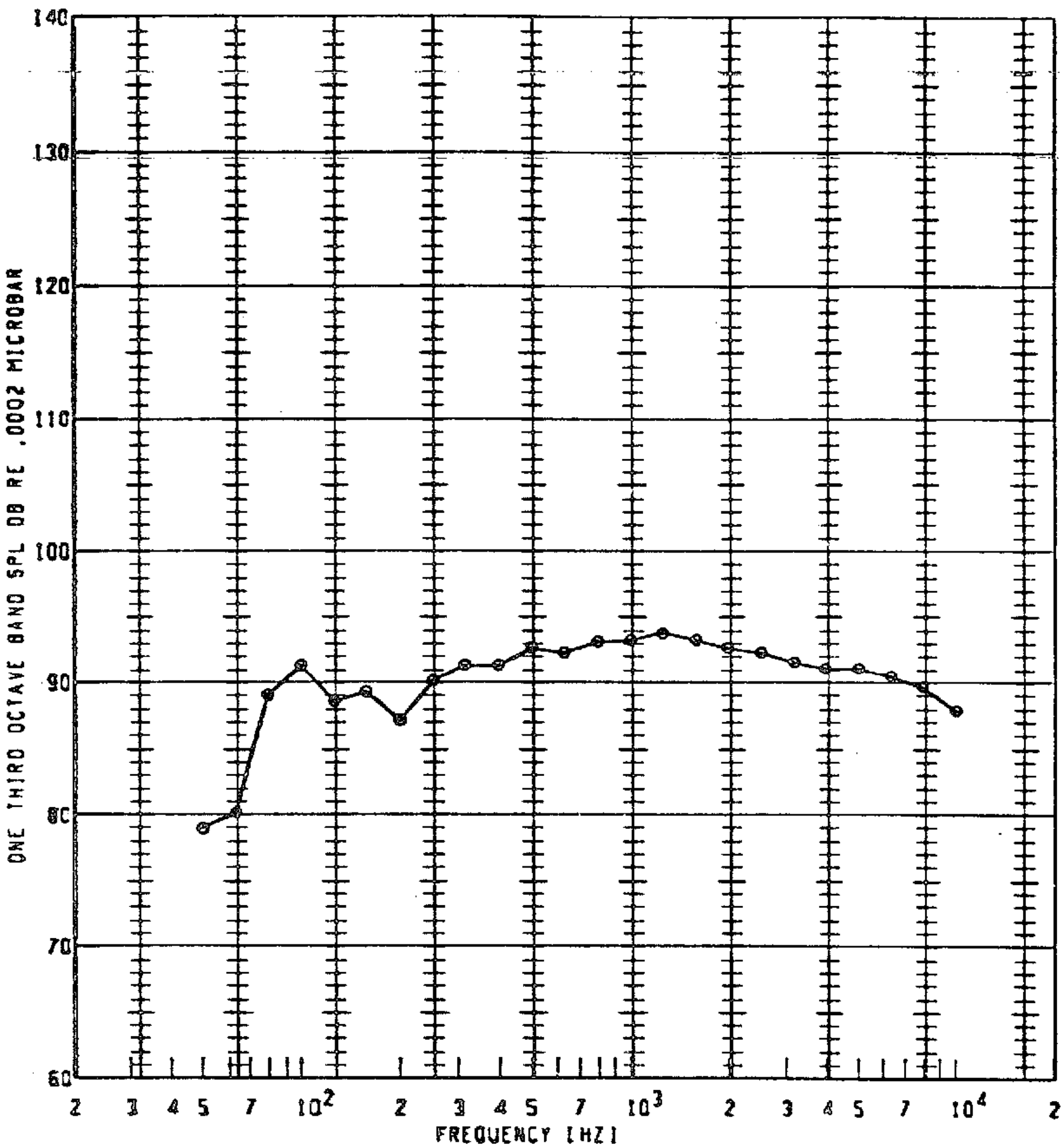
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	CASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	11G	750	1.300	135	50FP	108.0	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



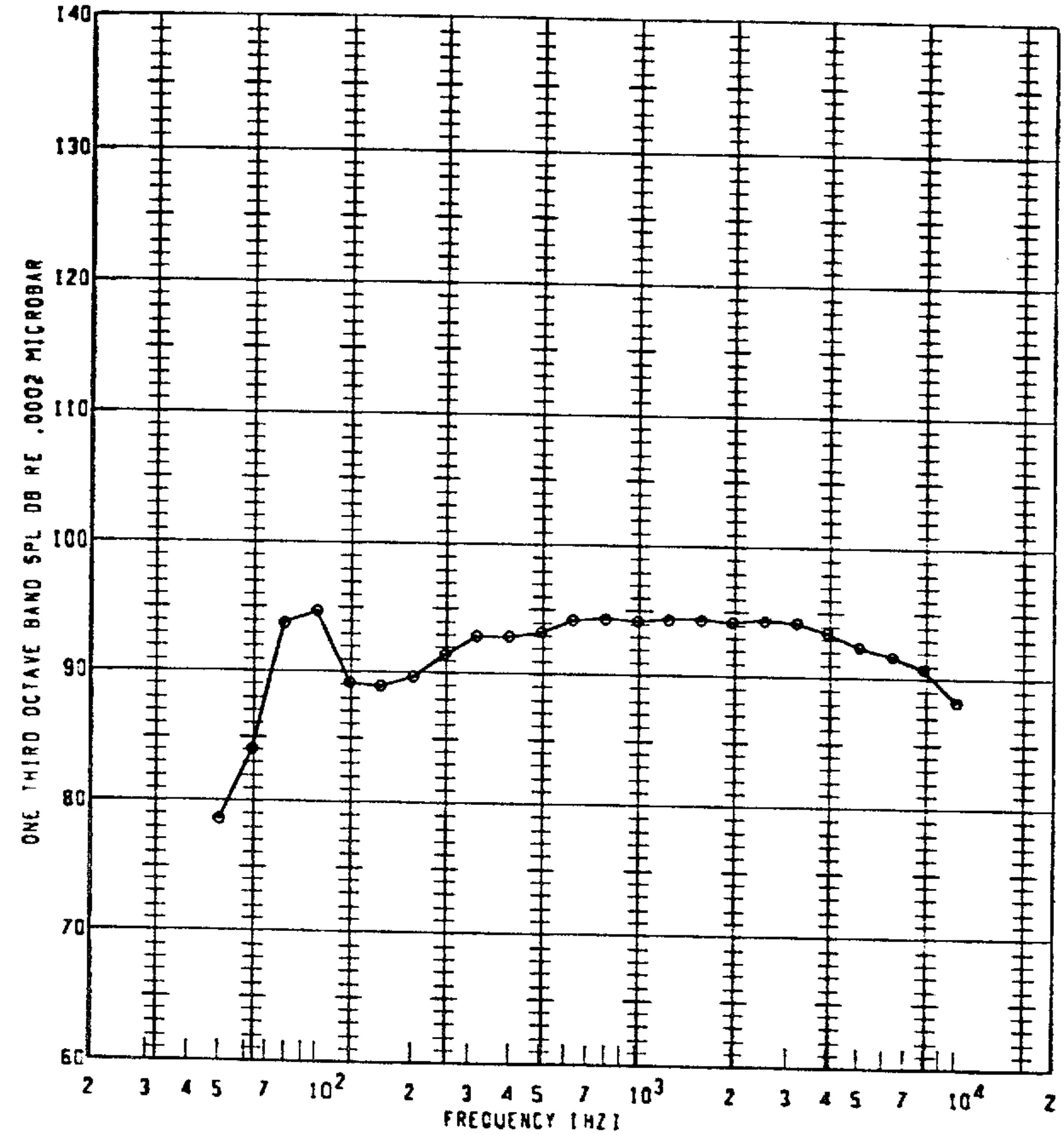
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	CASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	11G	750	1.300	140	SCFP	108.5	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



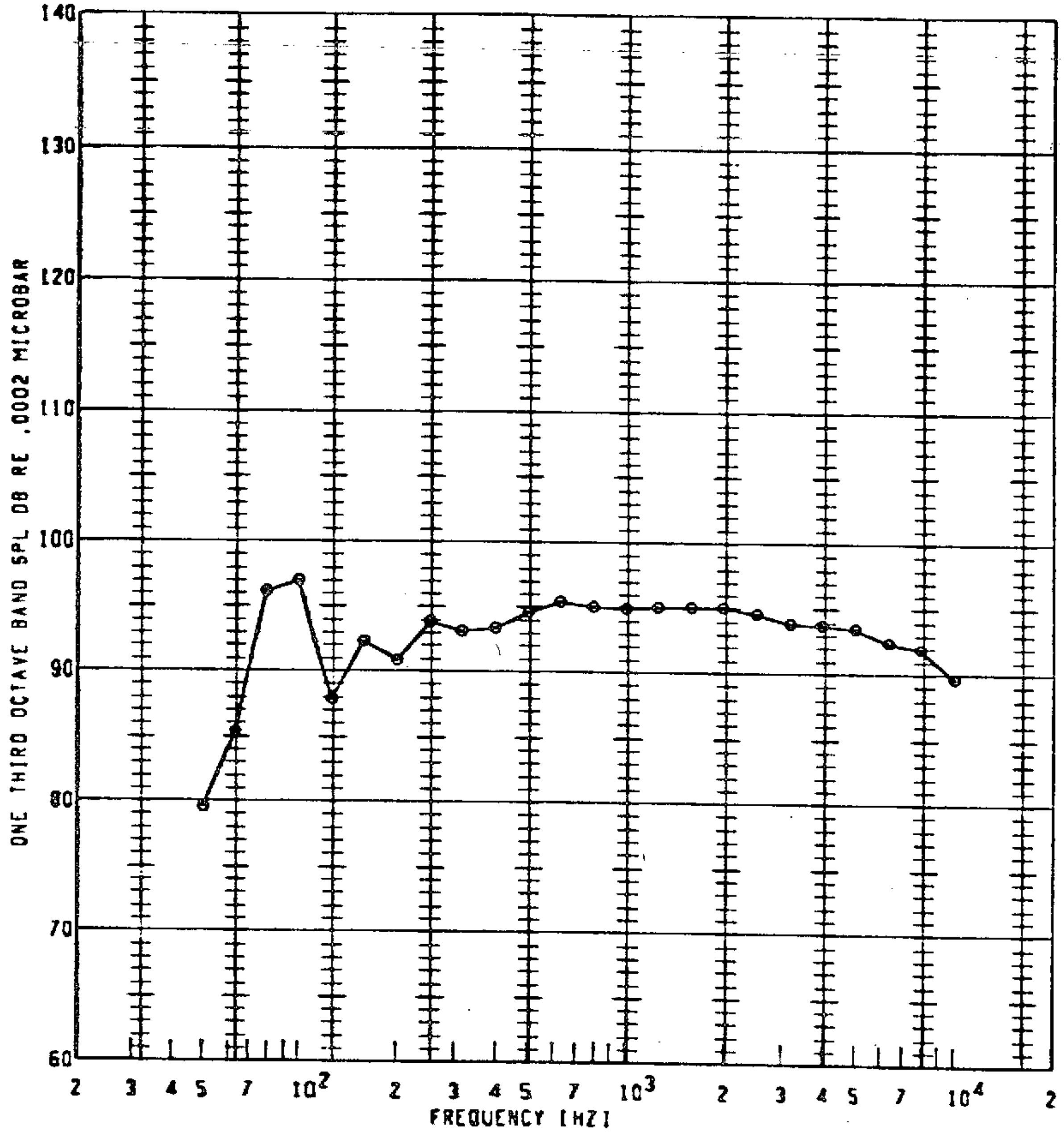
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊕	11G	800	1.400	90	50FP	104.8	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



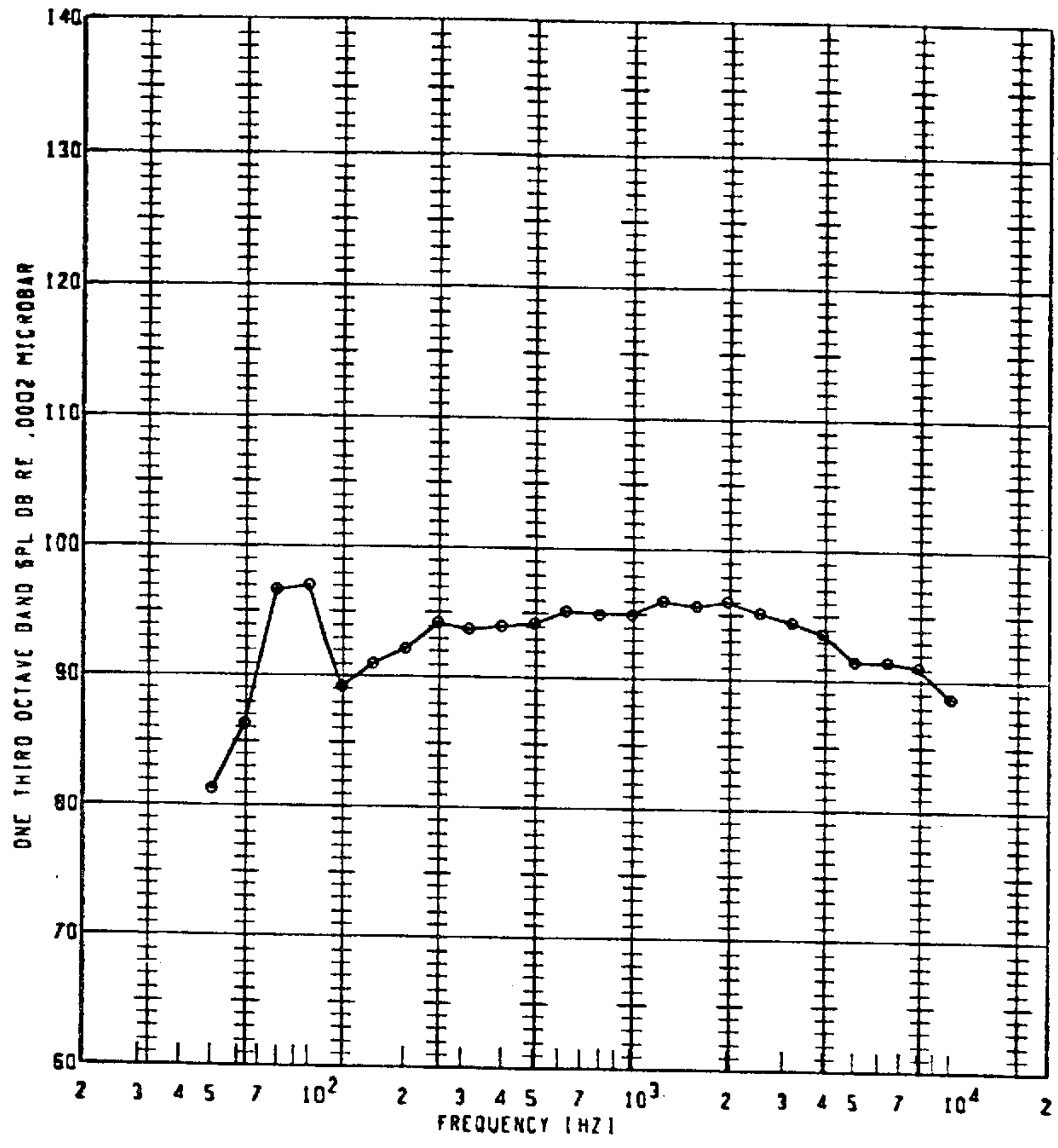
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	CASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	116	800	1.400	100	50FP	106.5	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



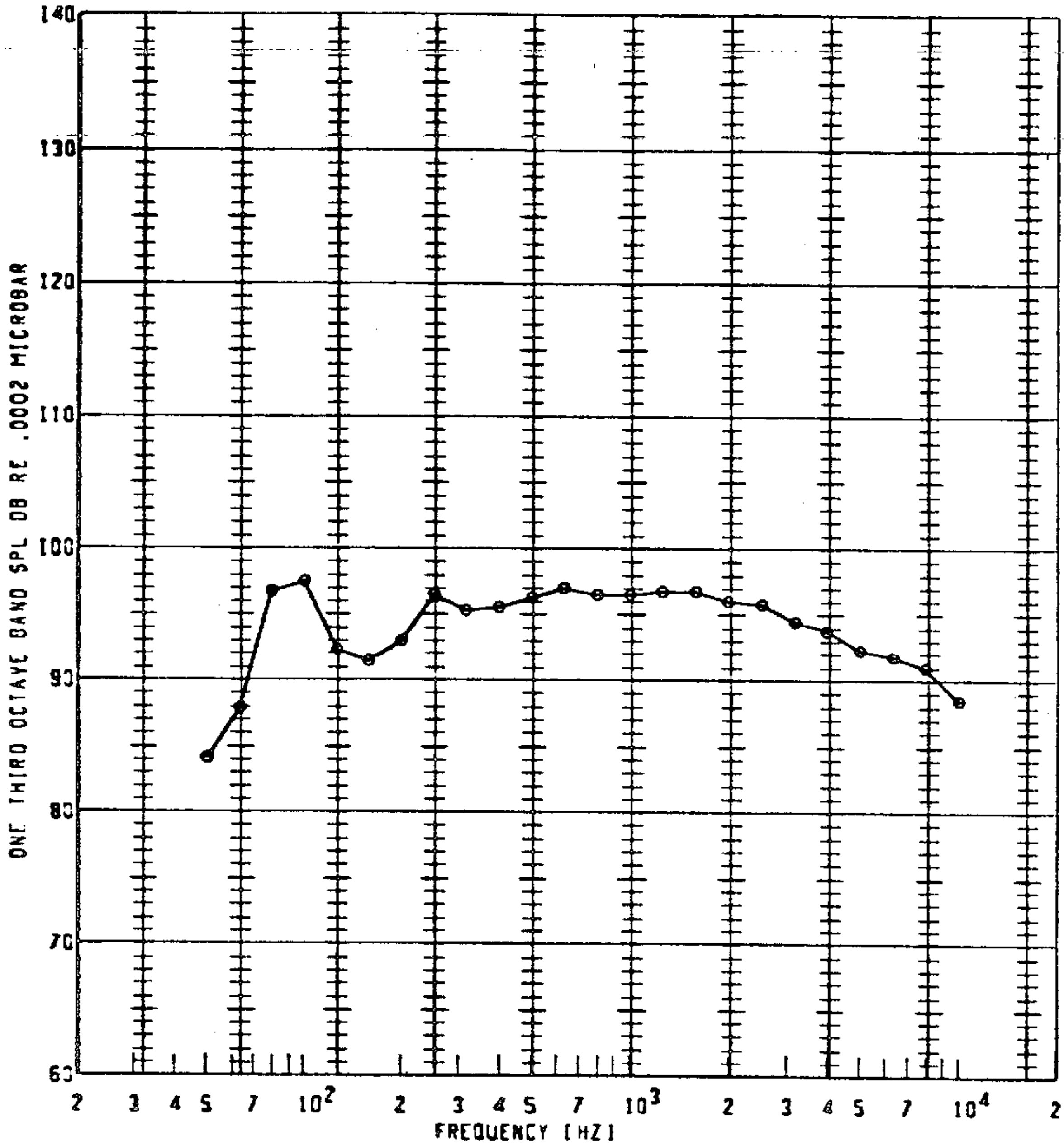
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	11G	800	1.400	110	50FP	107.5	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



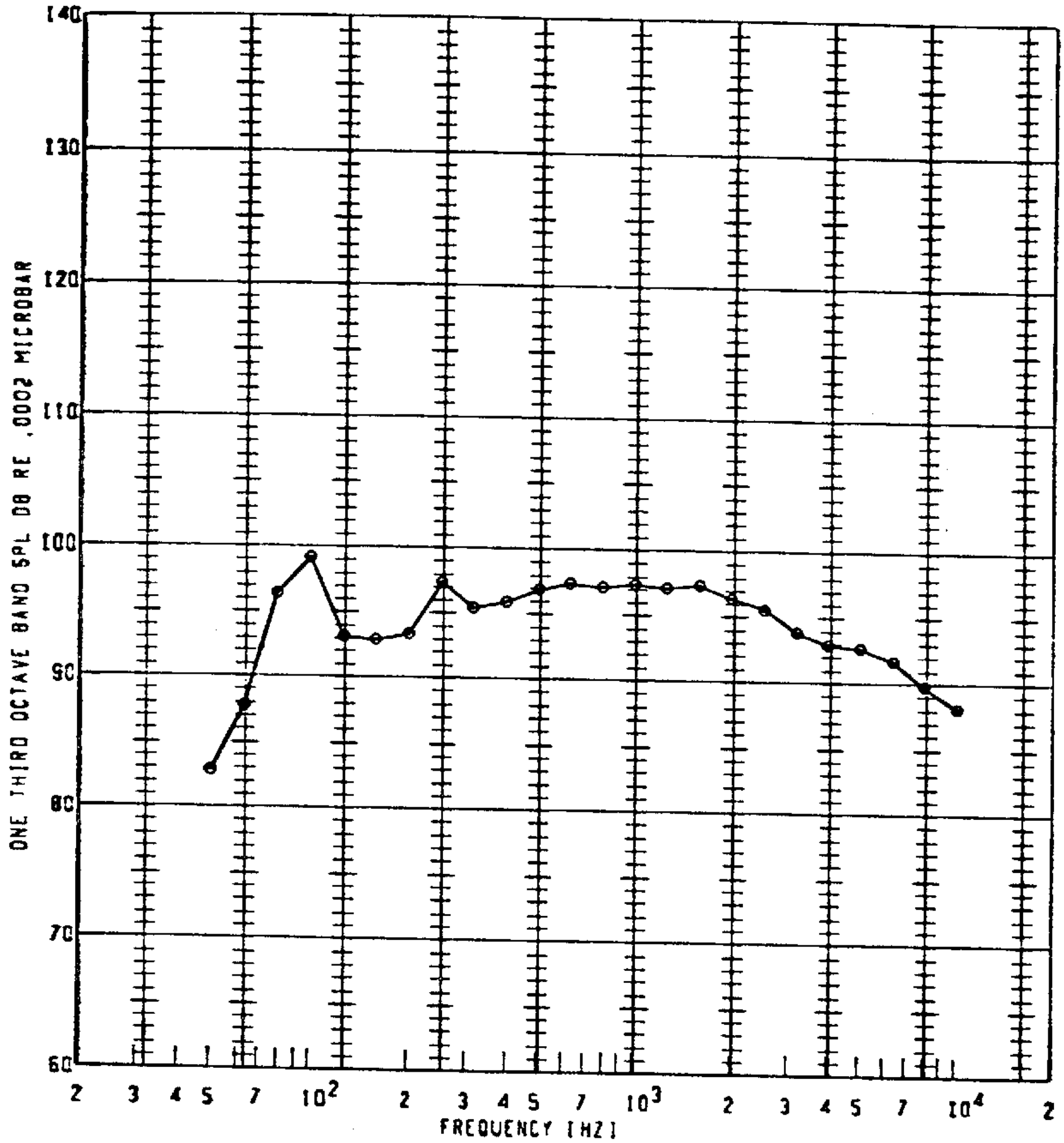
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	116	800	1.400	115	50FP	107.7	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



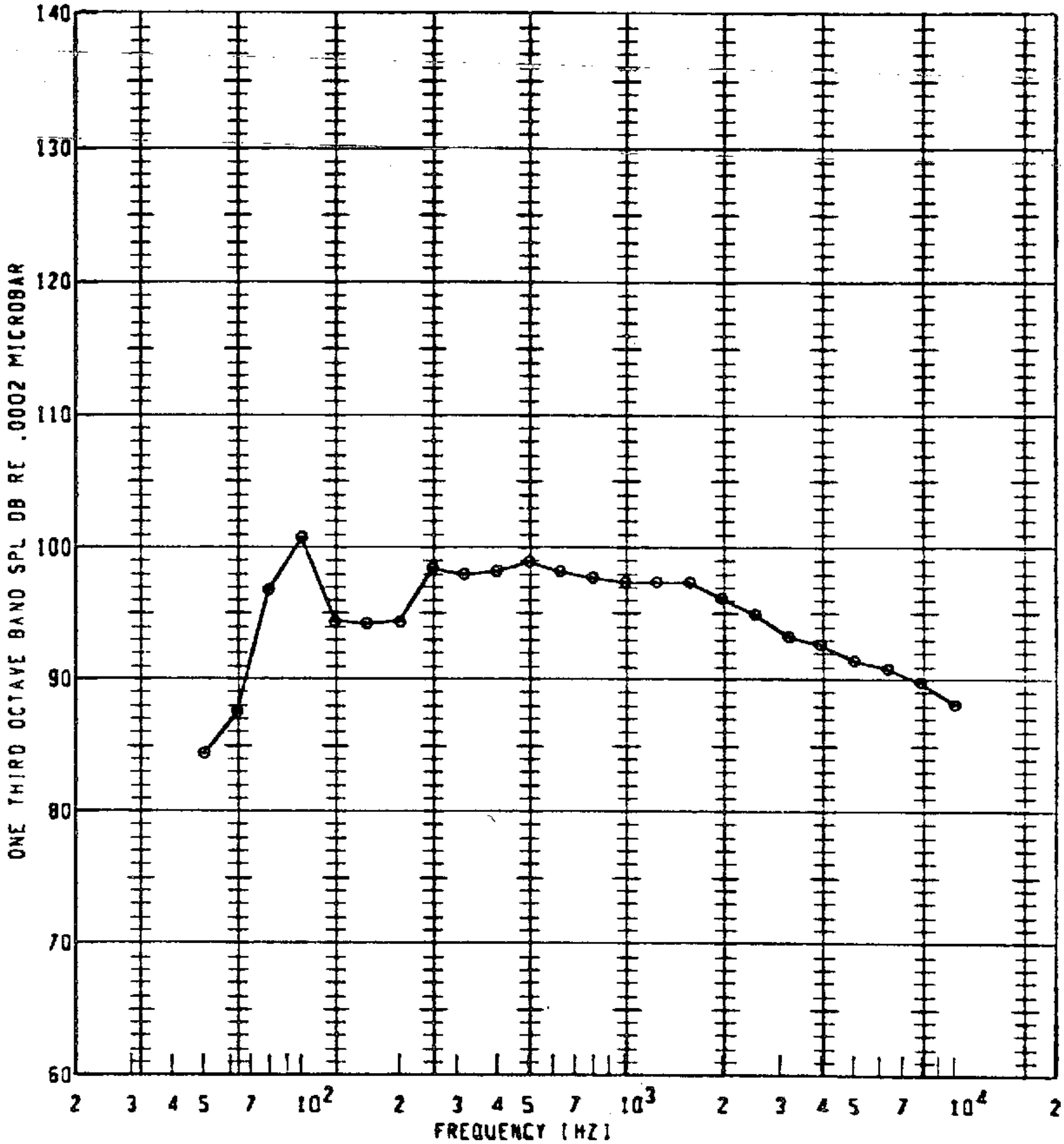
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	11G	800	1.400	120	50FP	108.7	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



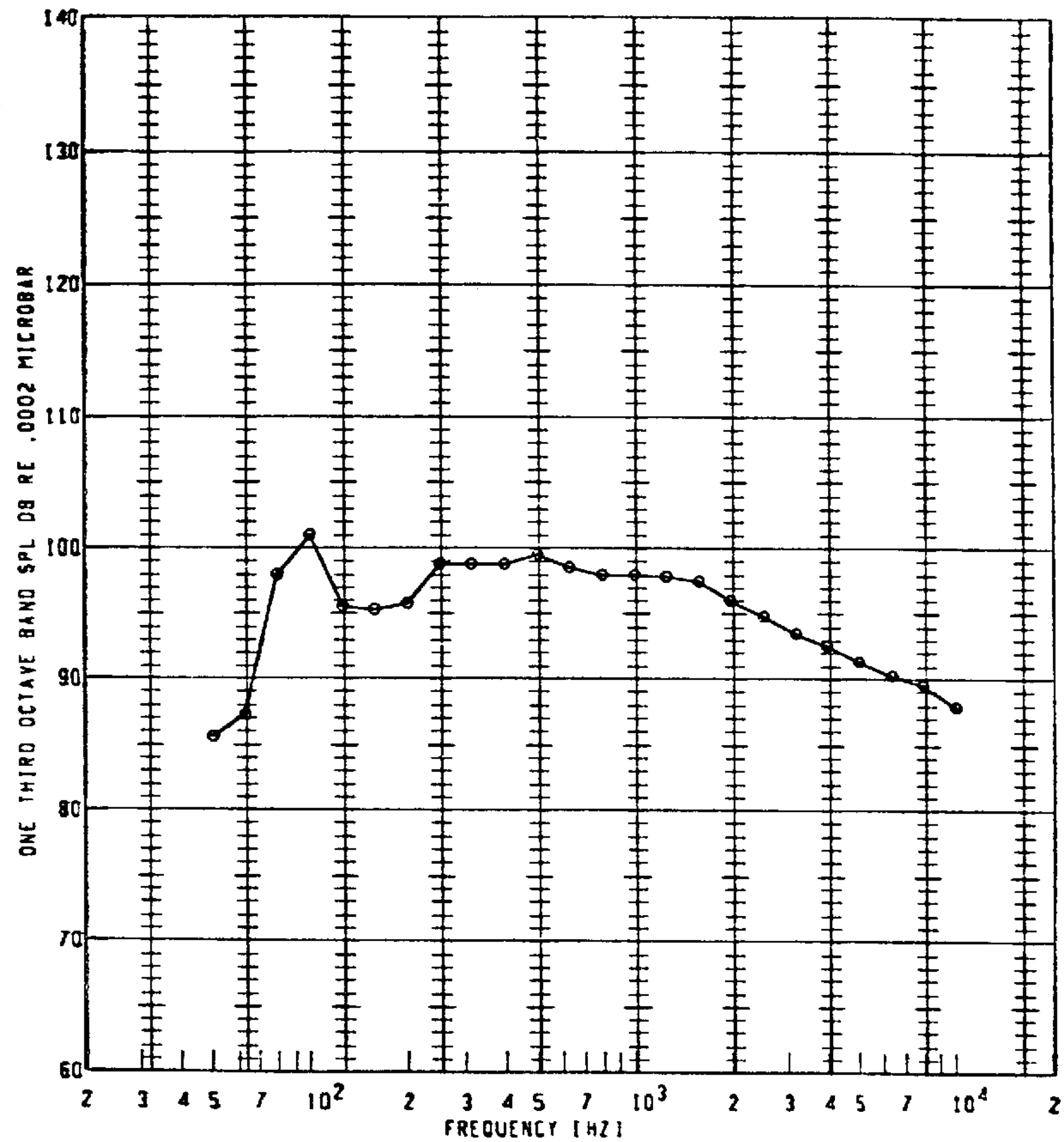
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊖	113	800	1.400	125	50FP	109.1	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



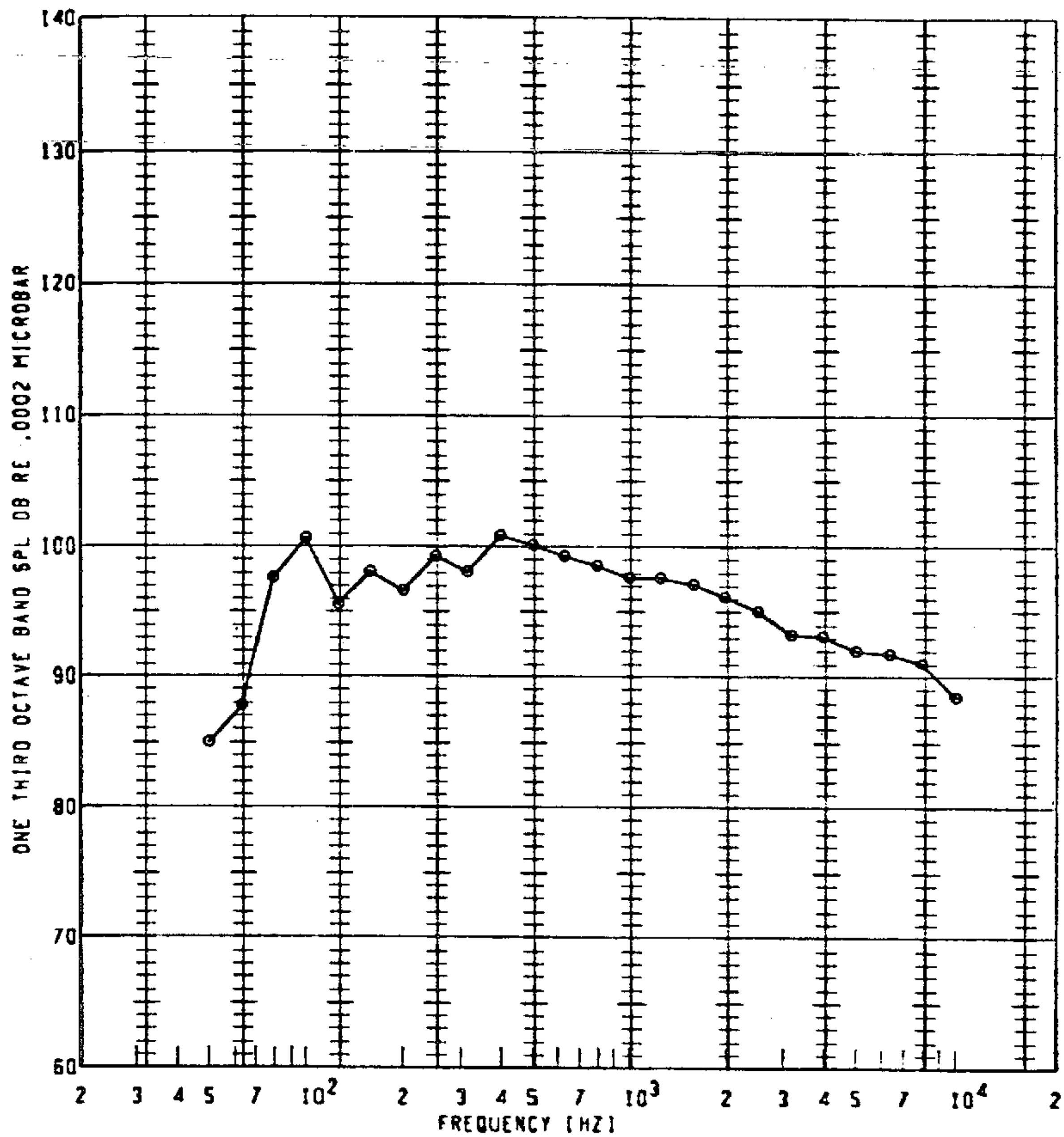
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	CASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	116	800	1.400	130	50FP	109.9	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



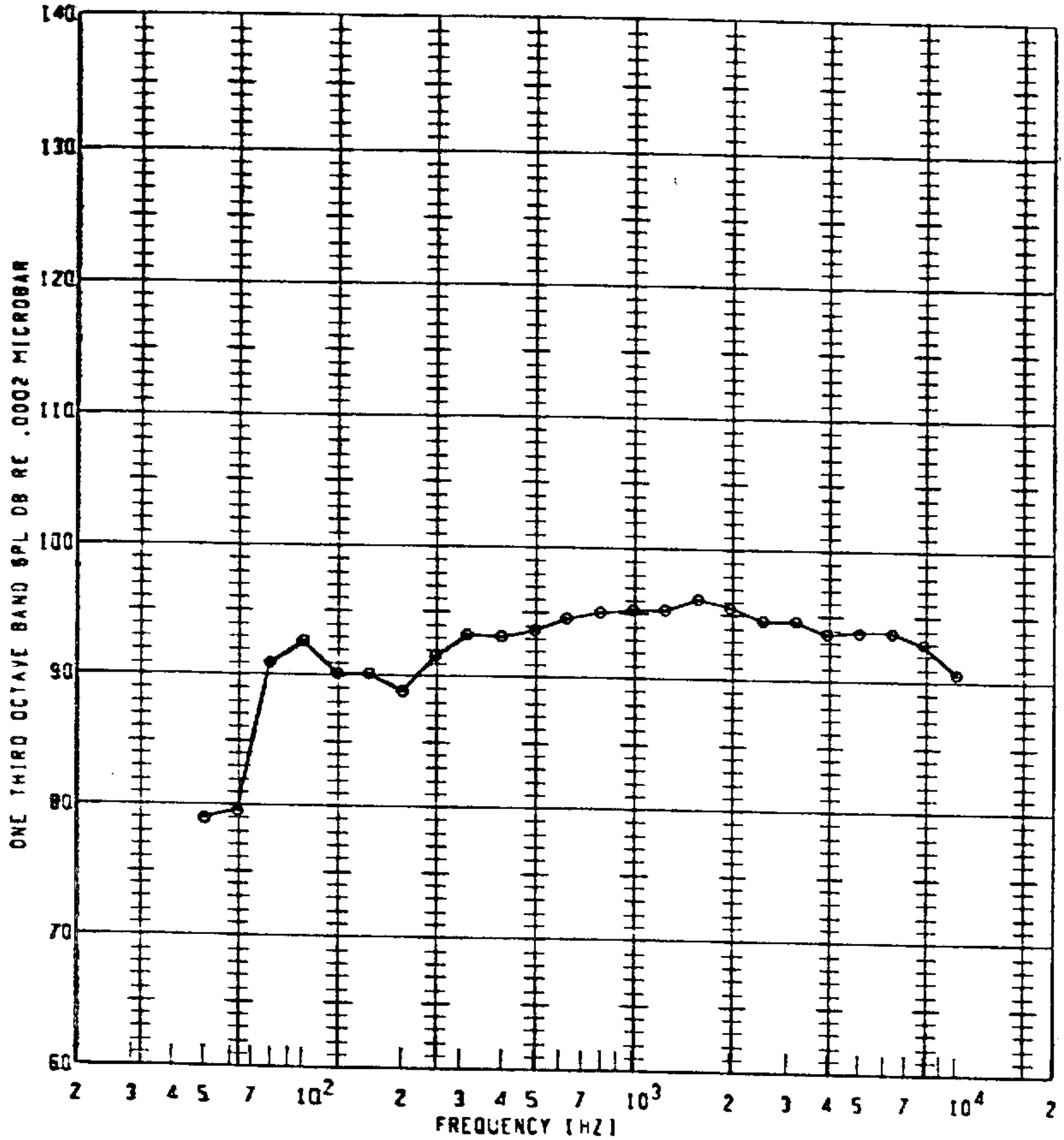
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊕	11G	800	1.400	135	50FP	110.3	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



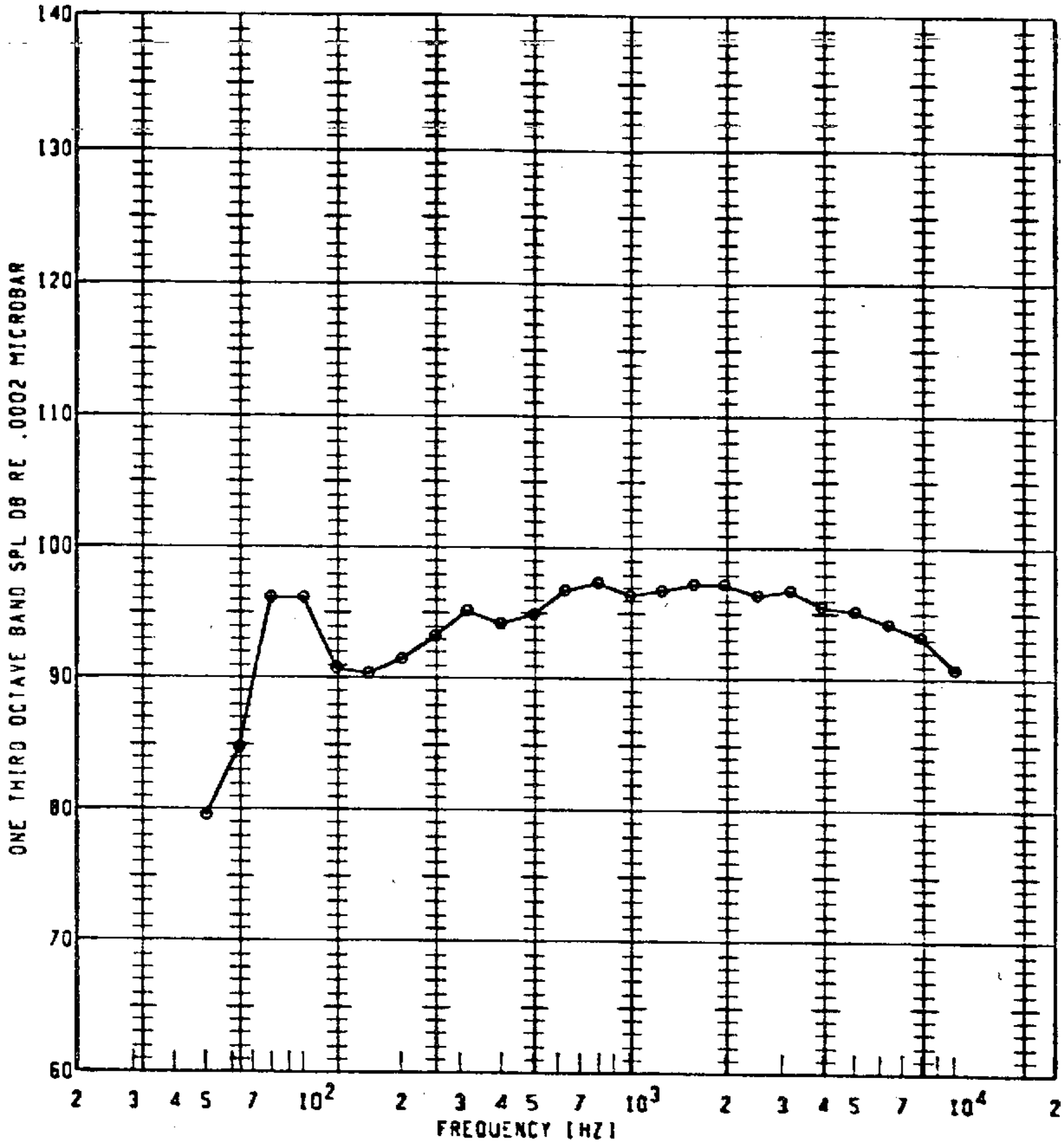
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	11G	800	1.400	140	50FP	110.8	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



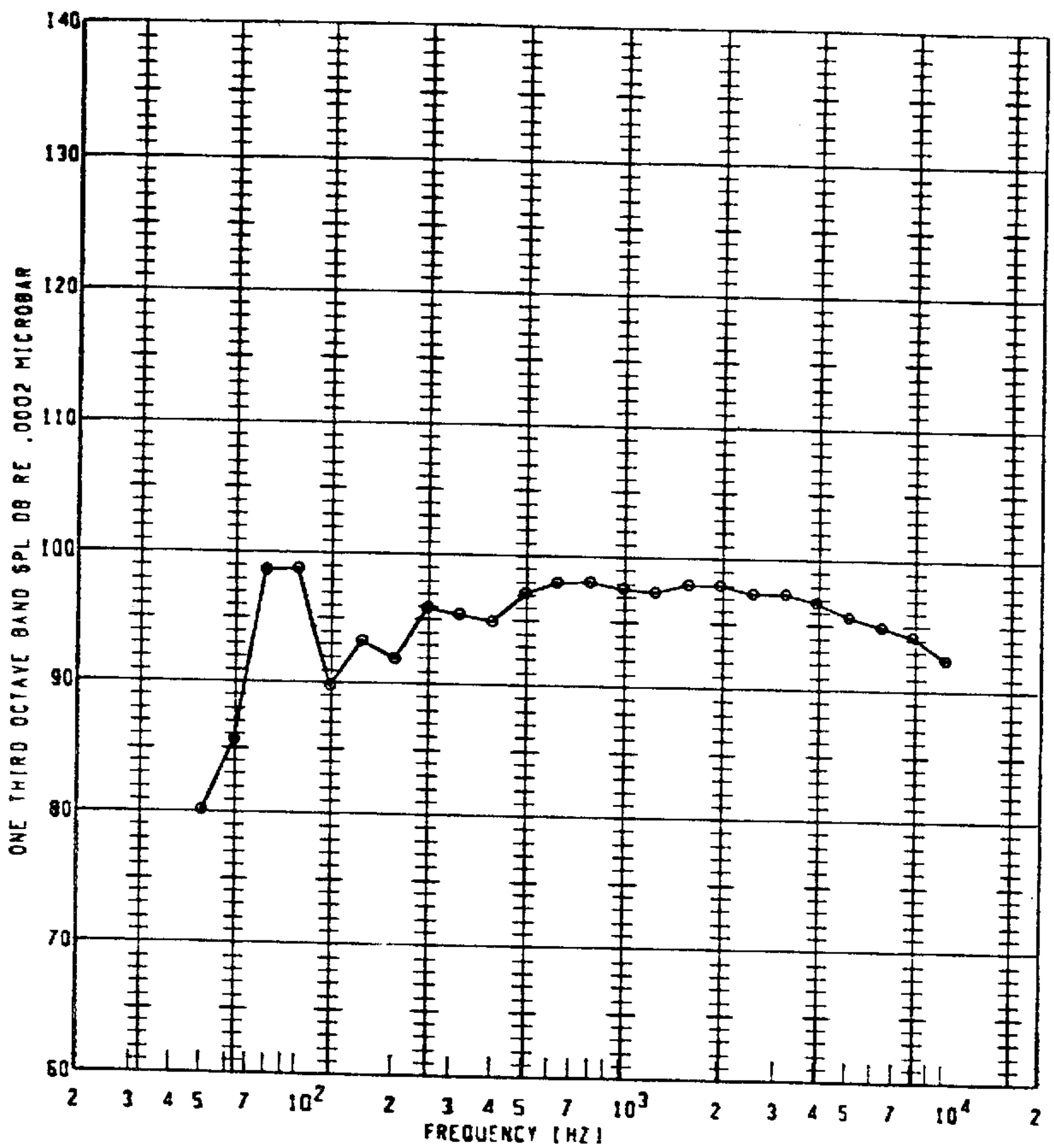
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	11G	850	1.500	90	50FP	107.0	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



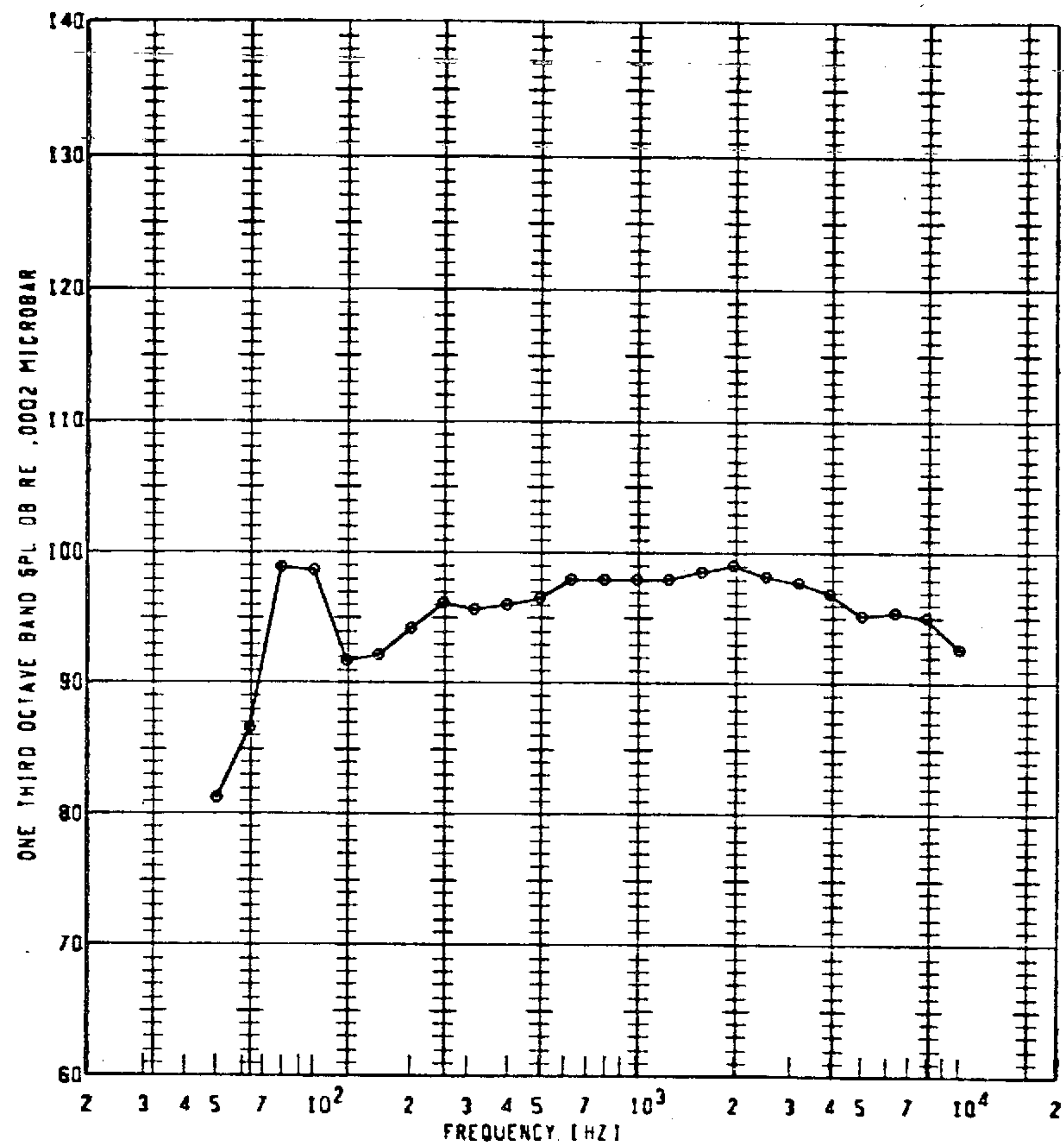
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	116	850	1.500	100	50FP	108.7	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



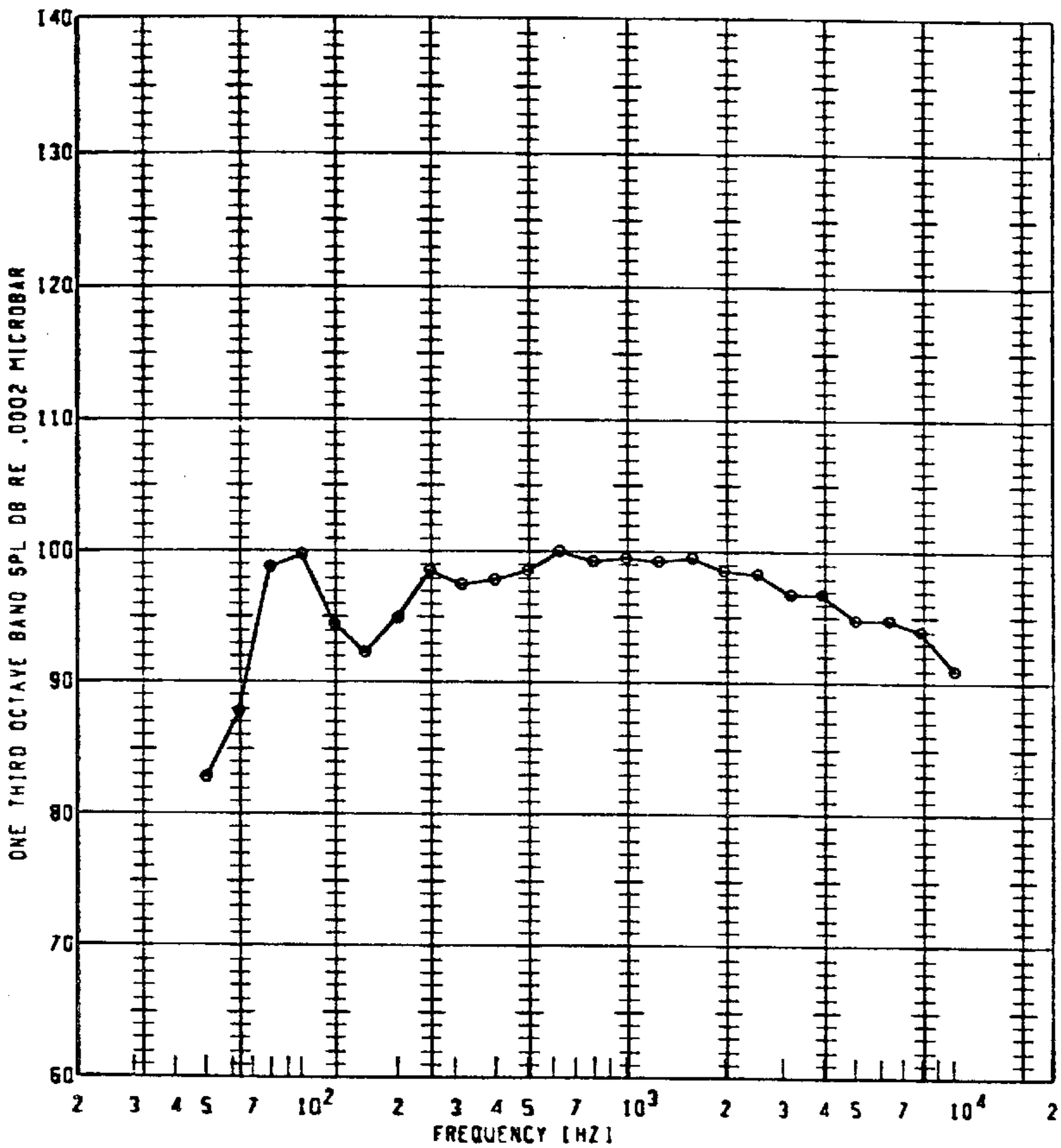
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	11G	850	1.500	110	50FP	109.9	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



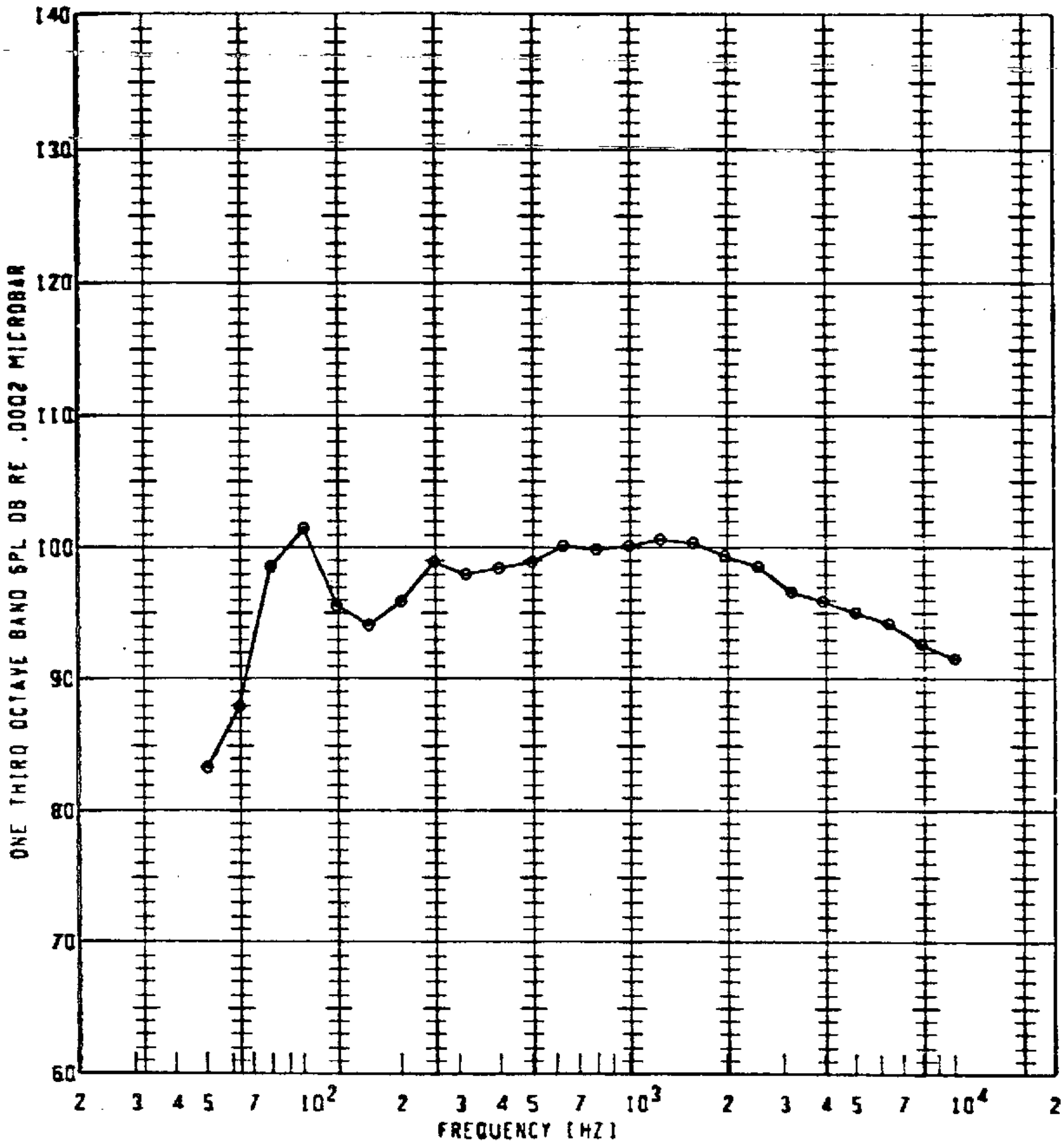
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	11G	850	1.500	115	50FP	110.3	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



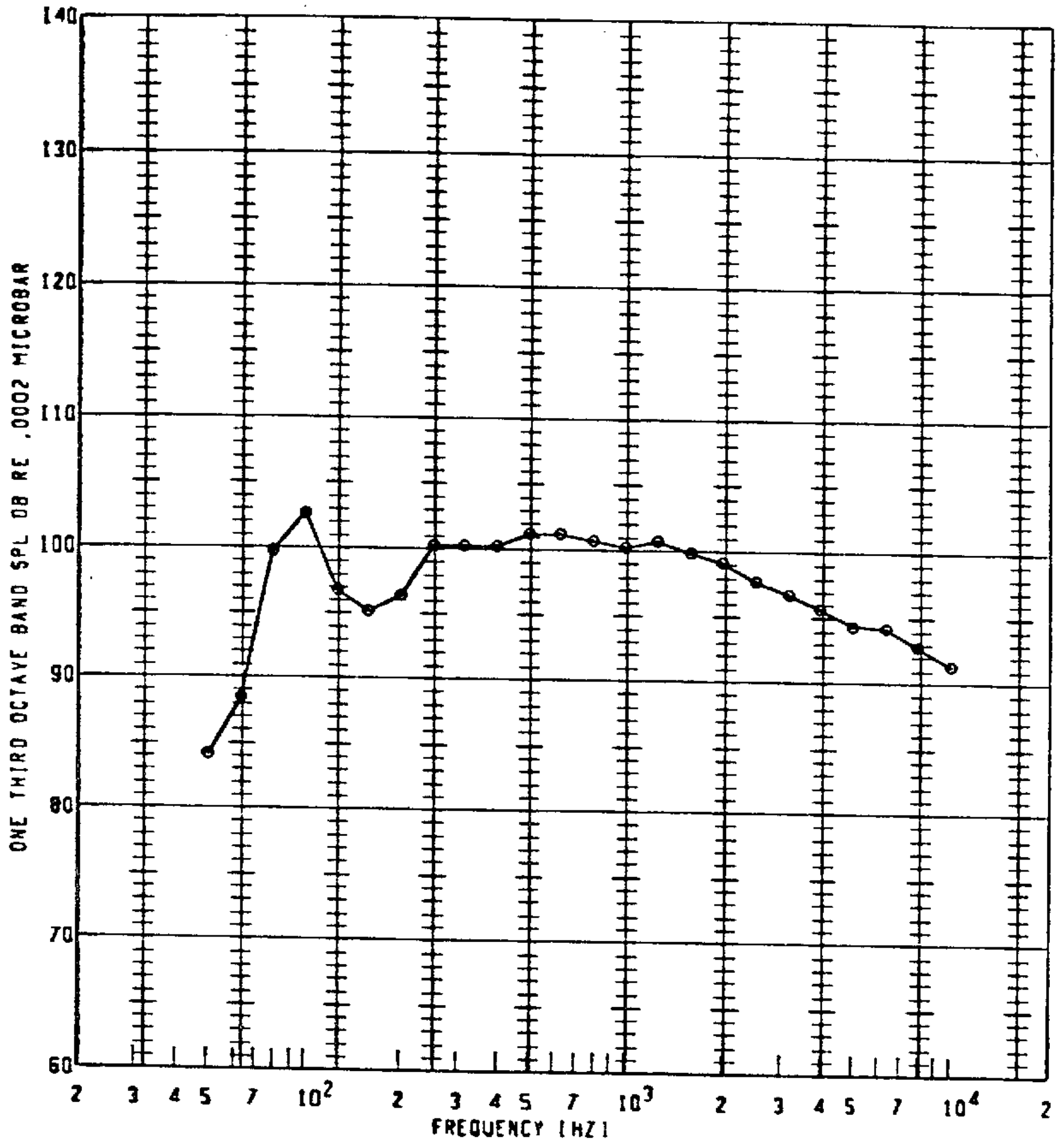
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	11G	850	1.500	120	50FP	111.1	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



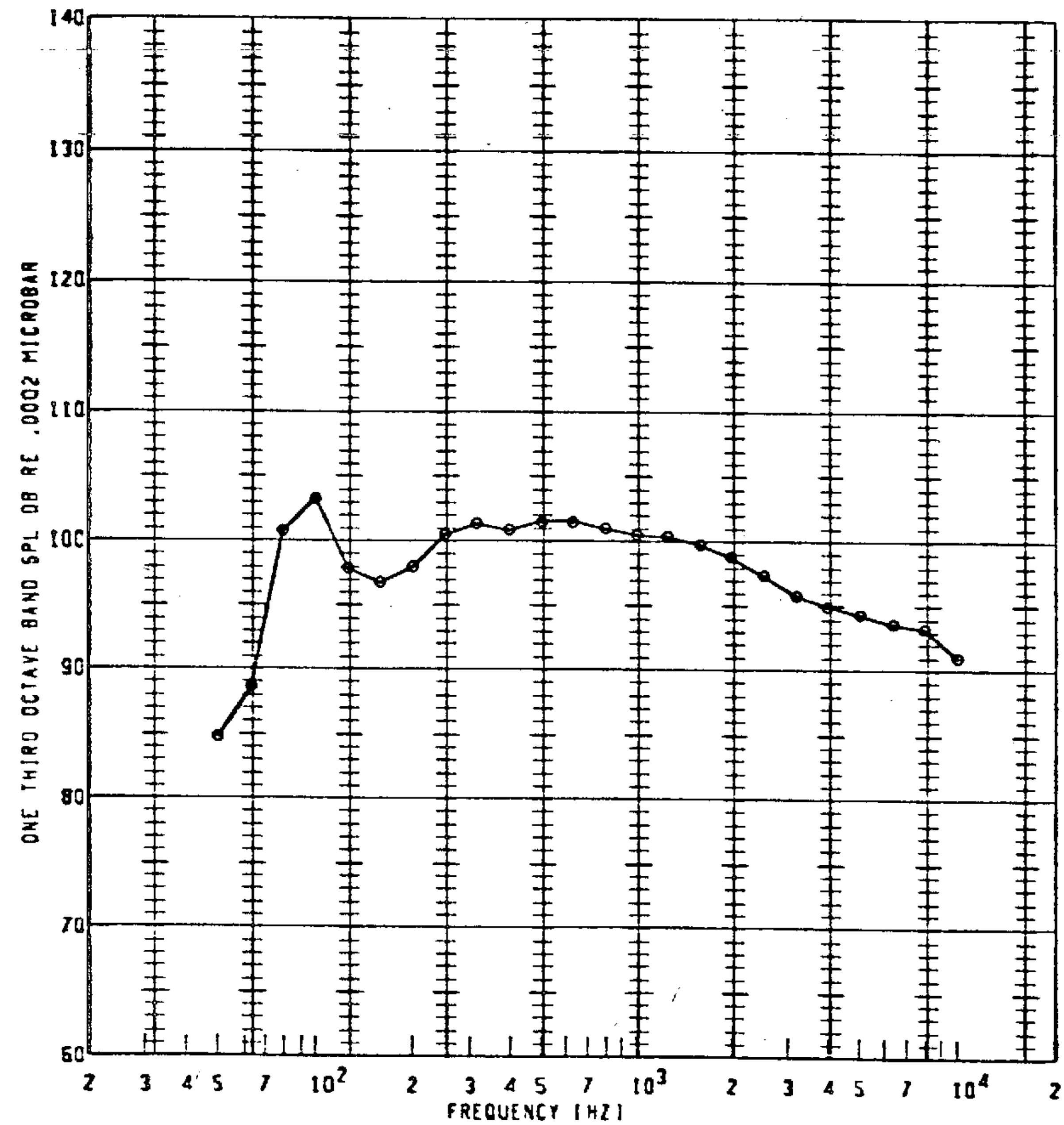
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	116	850	1.500	125	50FP	111.7	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



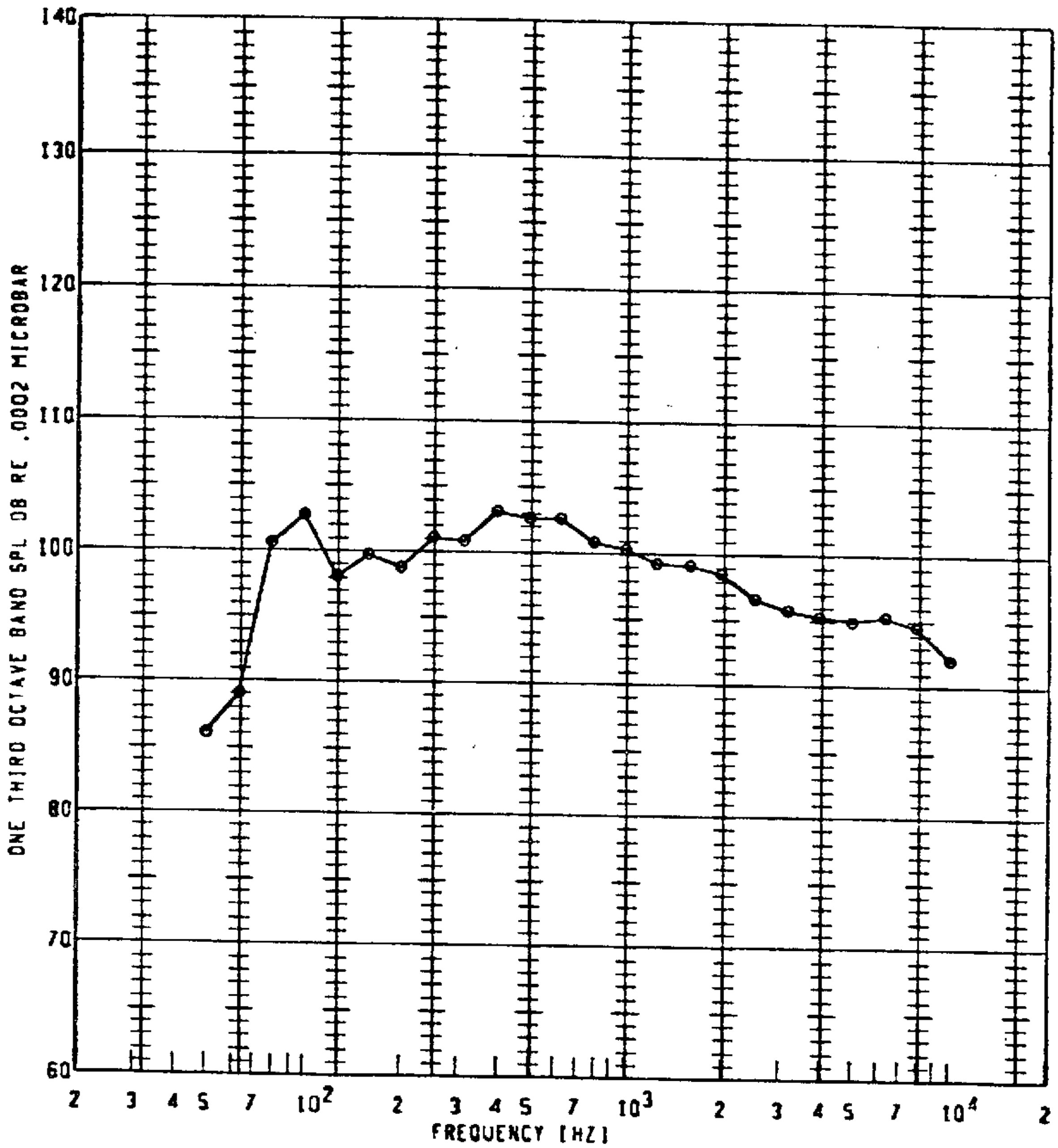
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	116	850	1.500	130	50FP	112.4	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



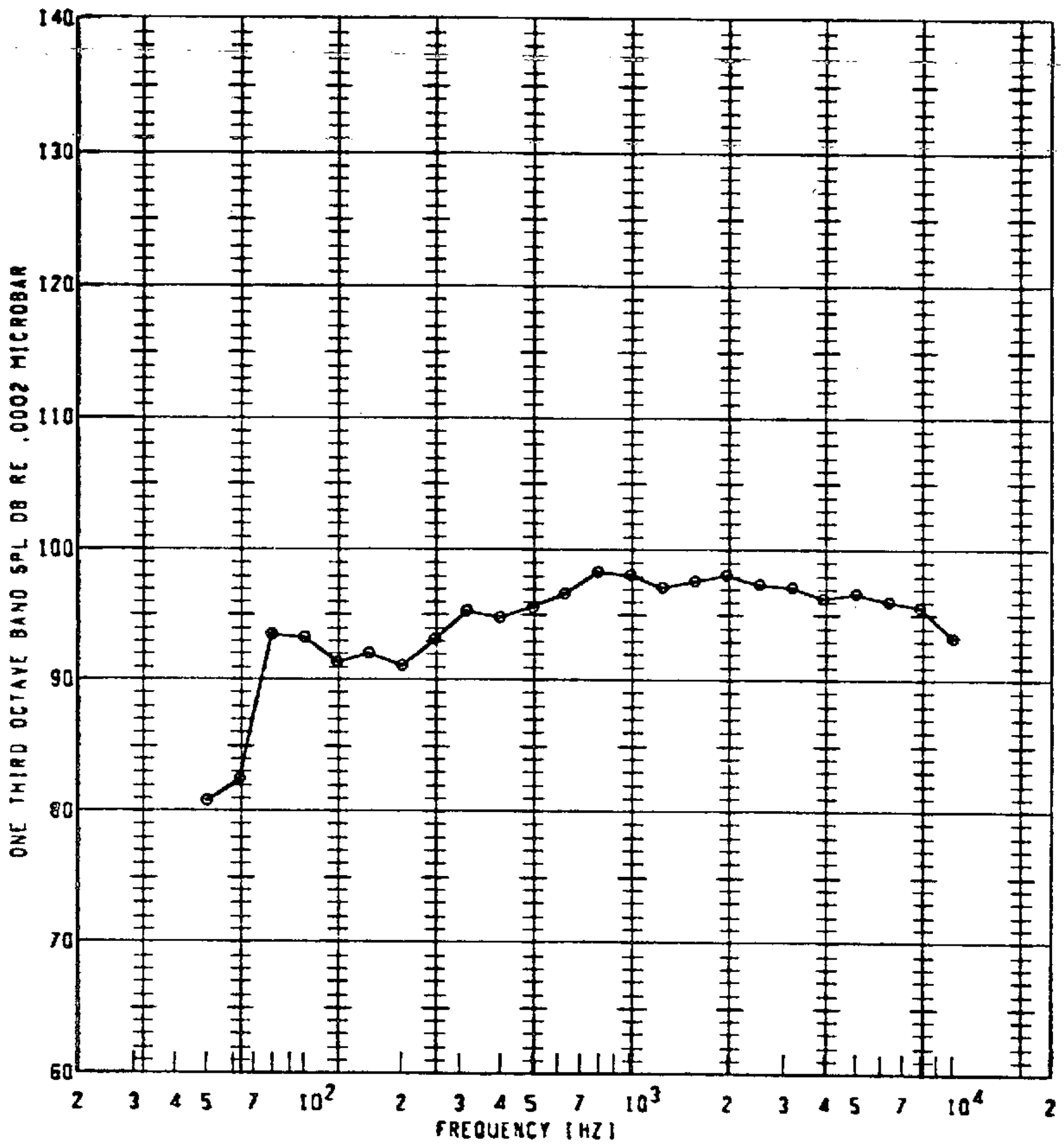
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	116	850	1.500	135	50FP	112.8	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



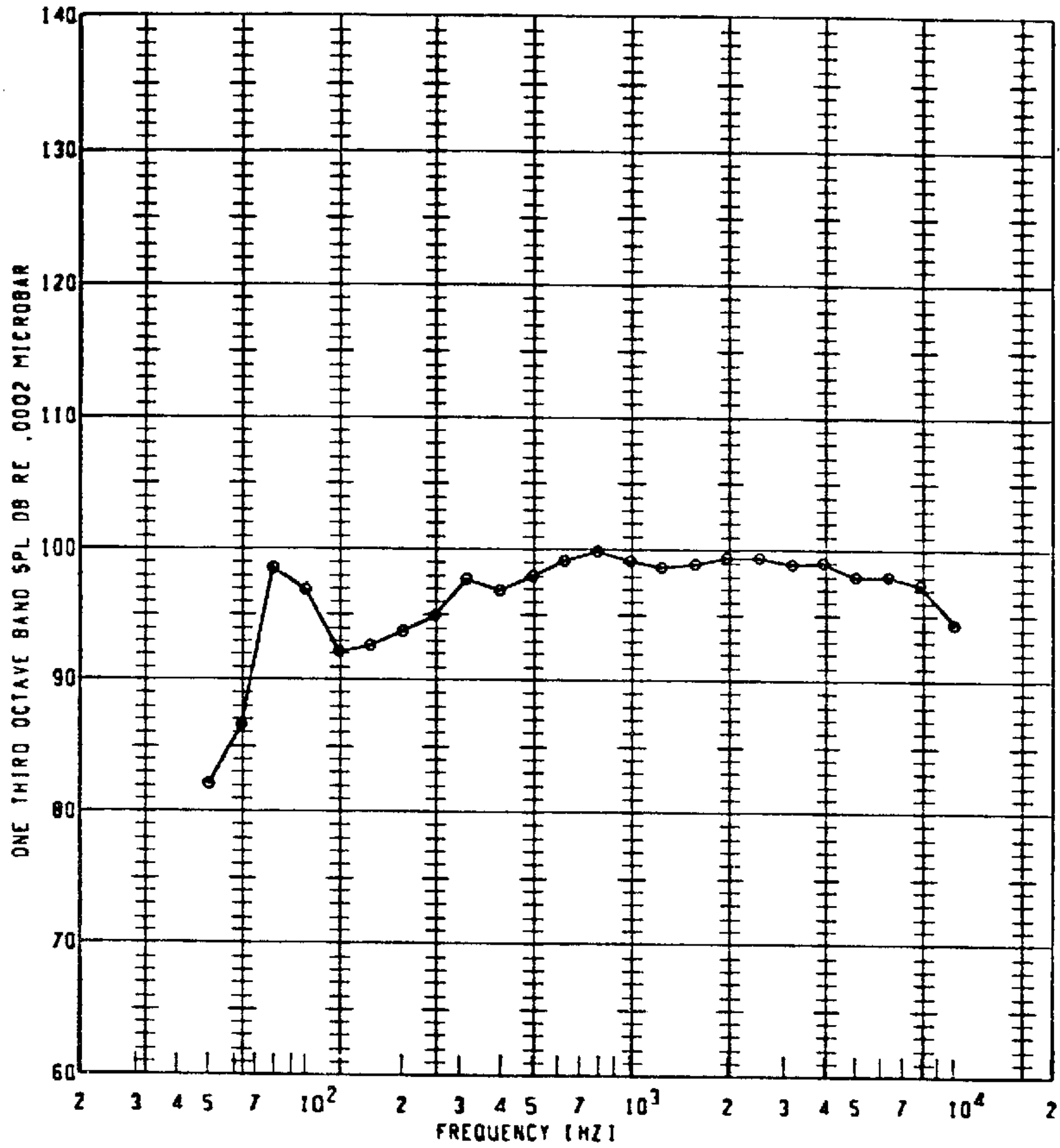
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	11G	850	1.500	140	50FP	113.1	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



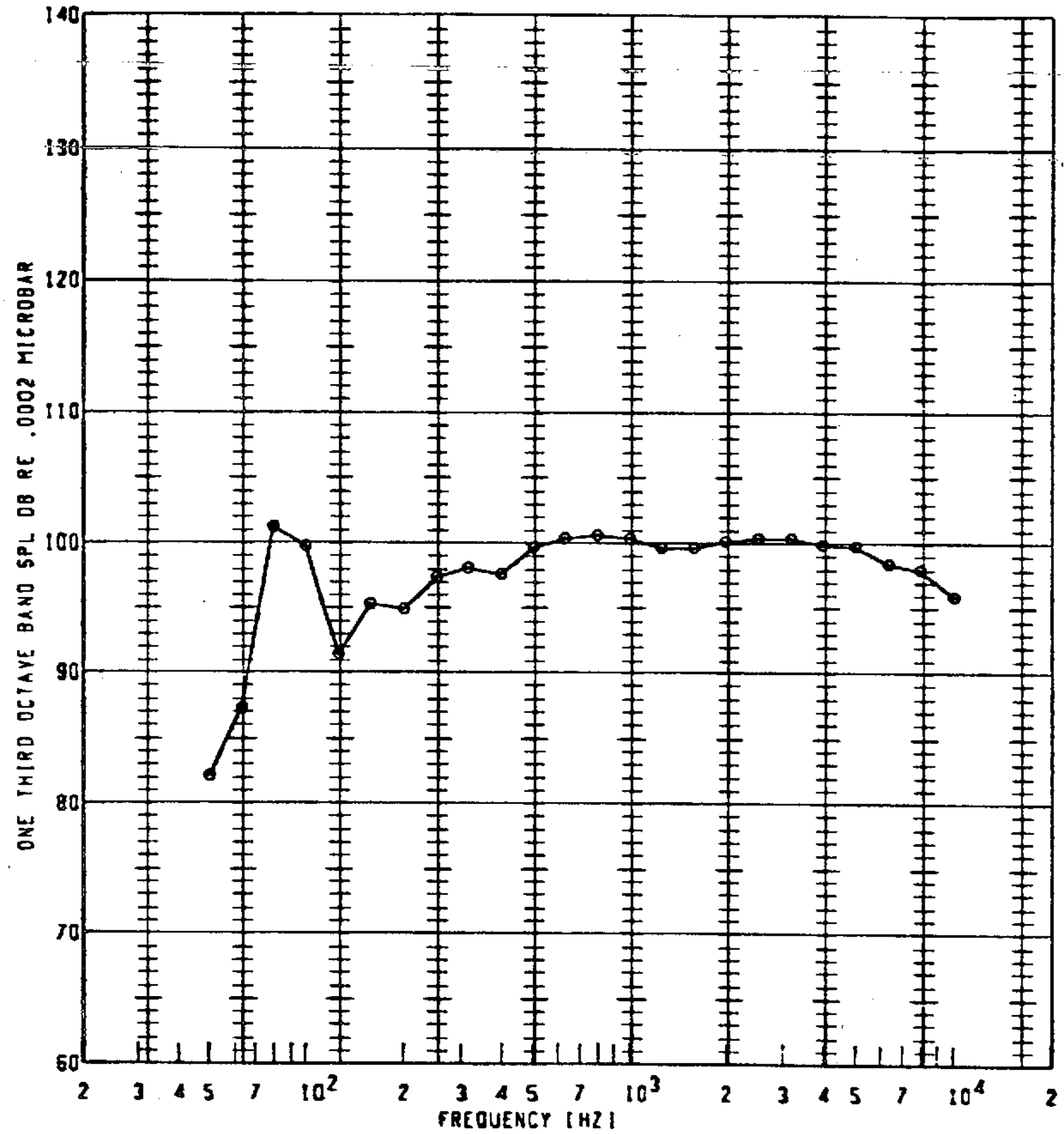
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	11G	900	1.600	90	50FP	109.3	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



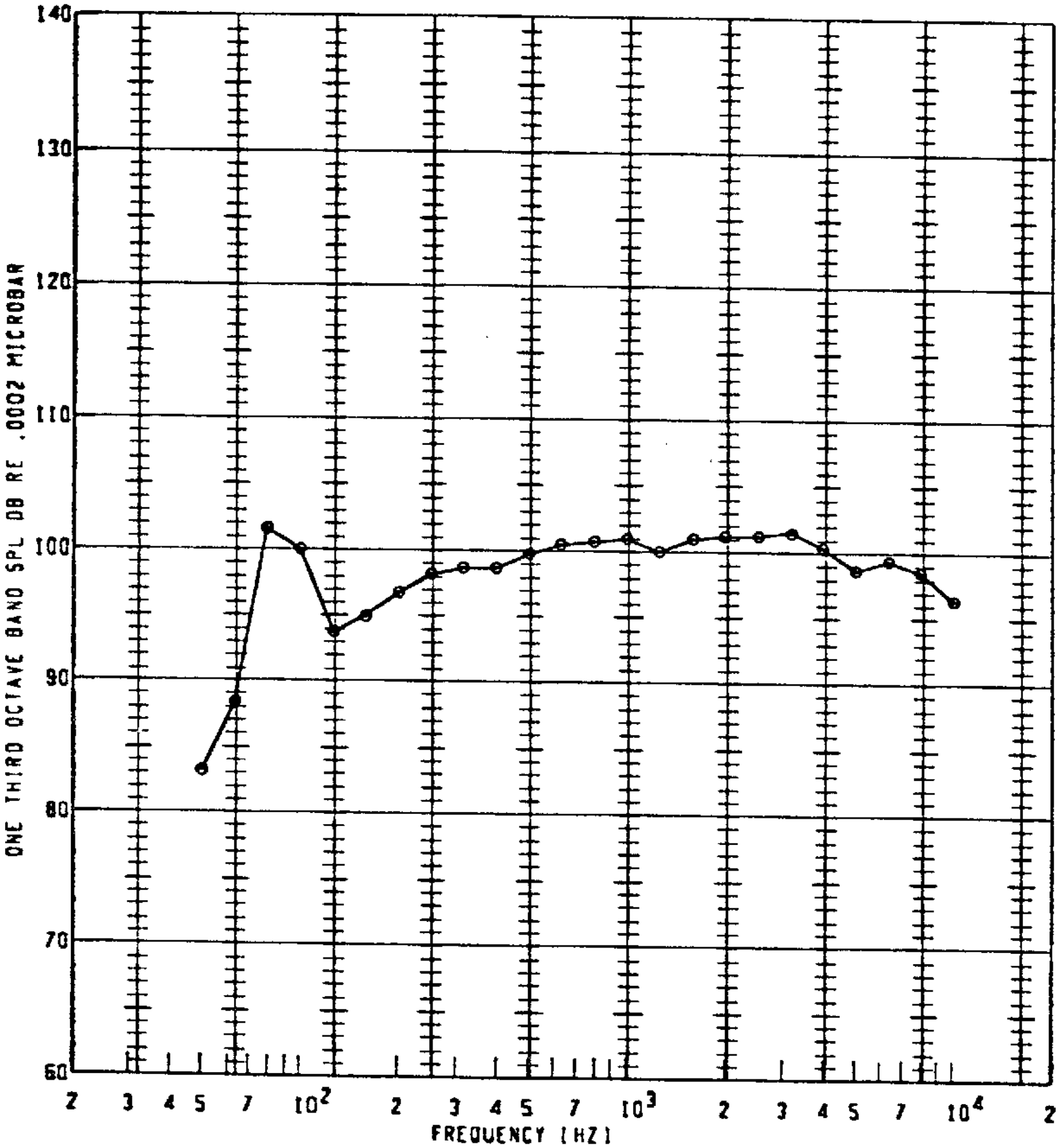
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	11G	900	1.600	100	50FP	111.3	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



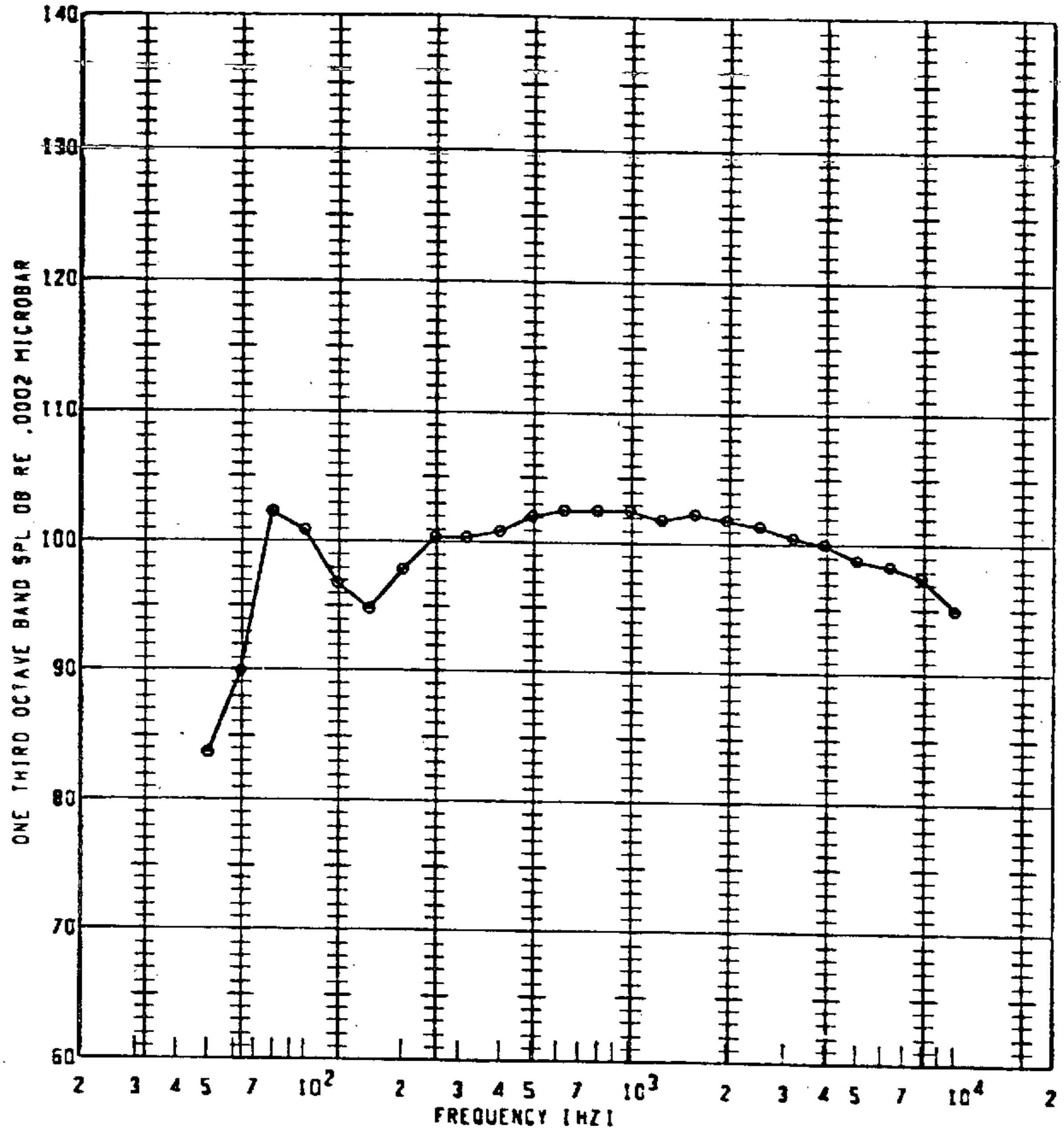
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	11G	900	1.600	110	50FP	112.5	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



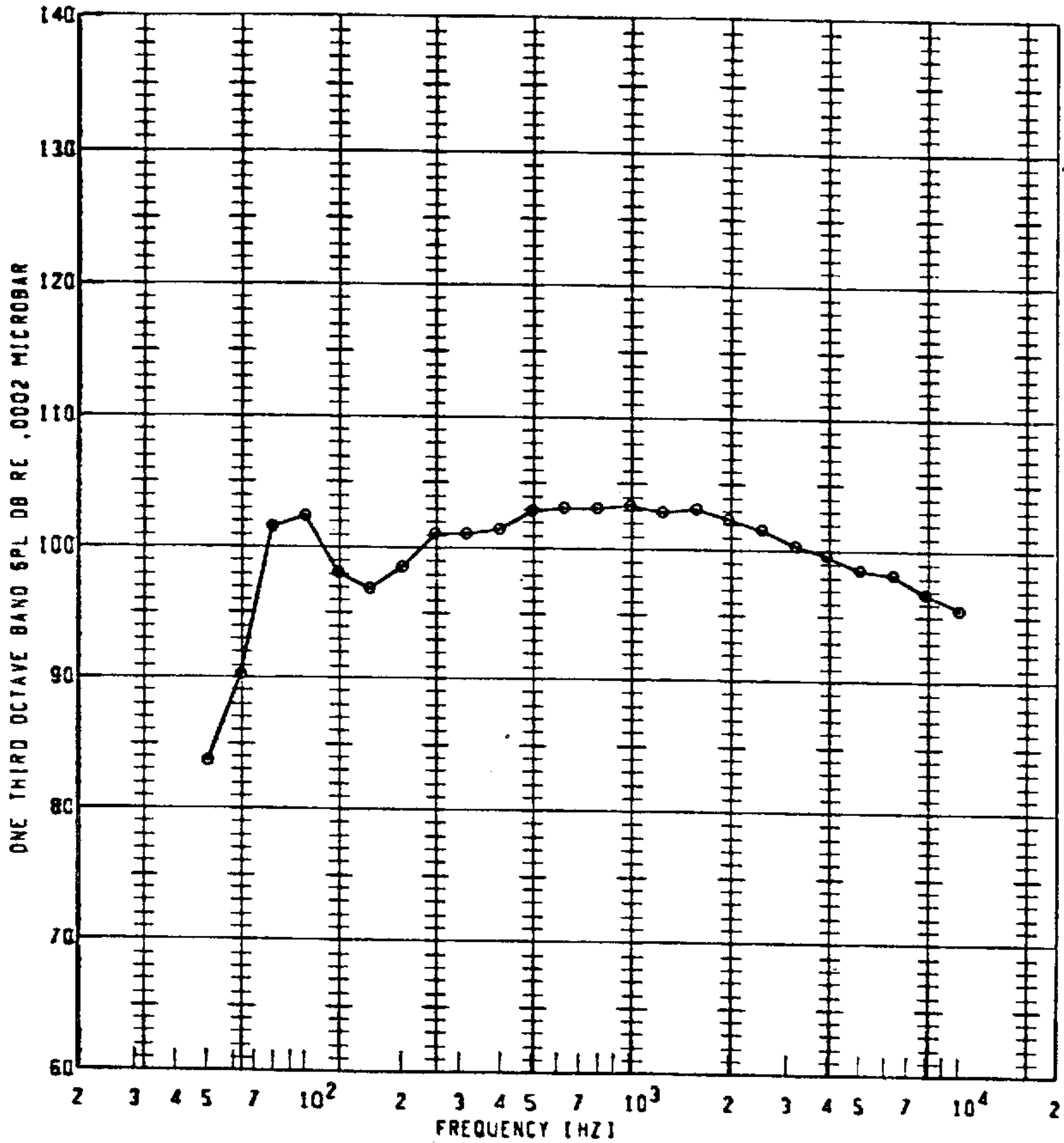
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊕	11G	900	1.600	115	50FP	113.1	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



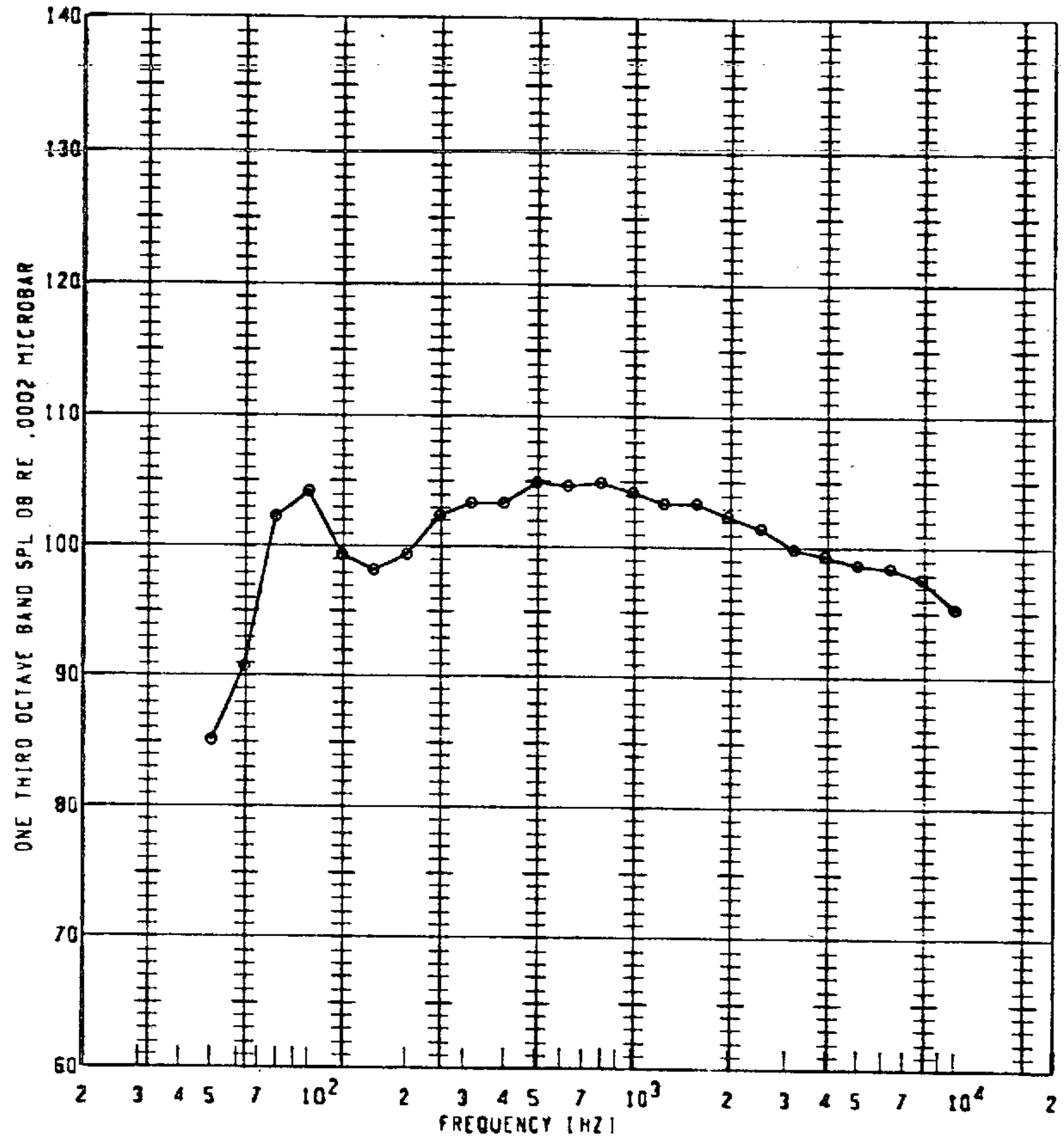
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	11G	900	1.600	120	50FP	114.0	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



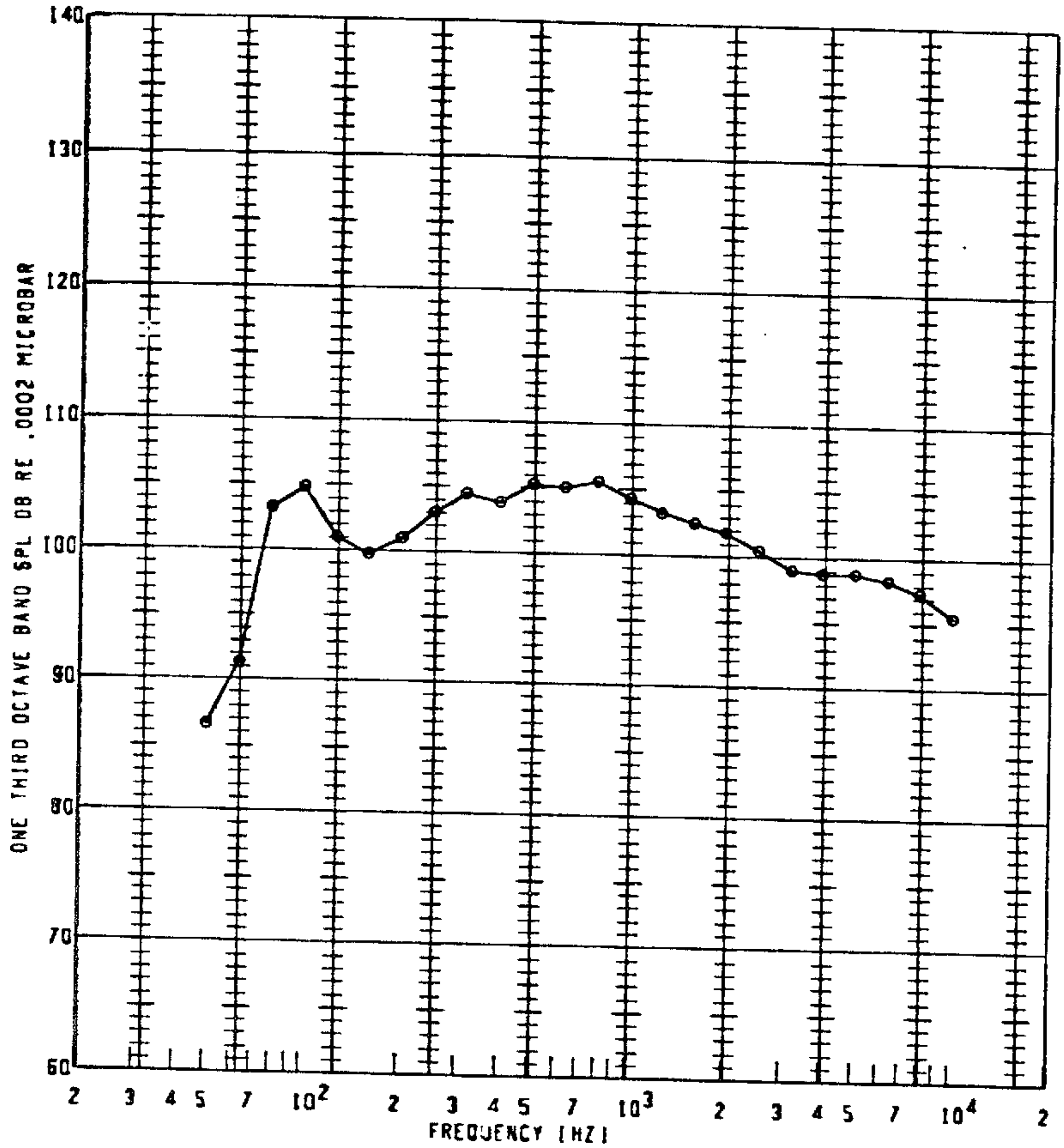
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊕	11G	900	1.600	125	50FP	114.6	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



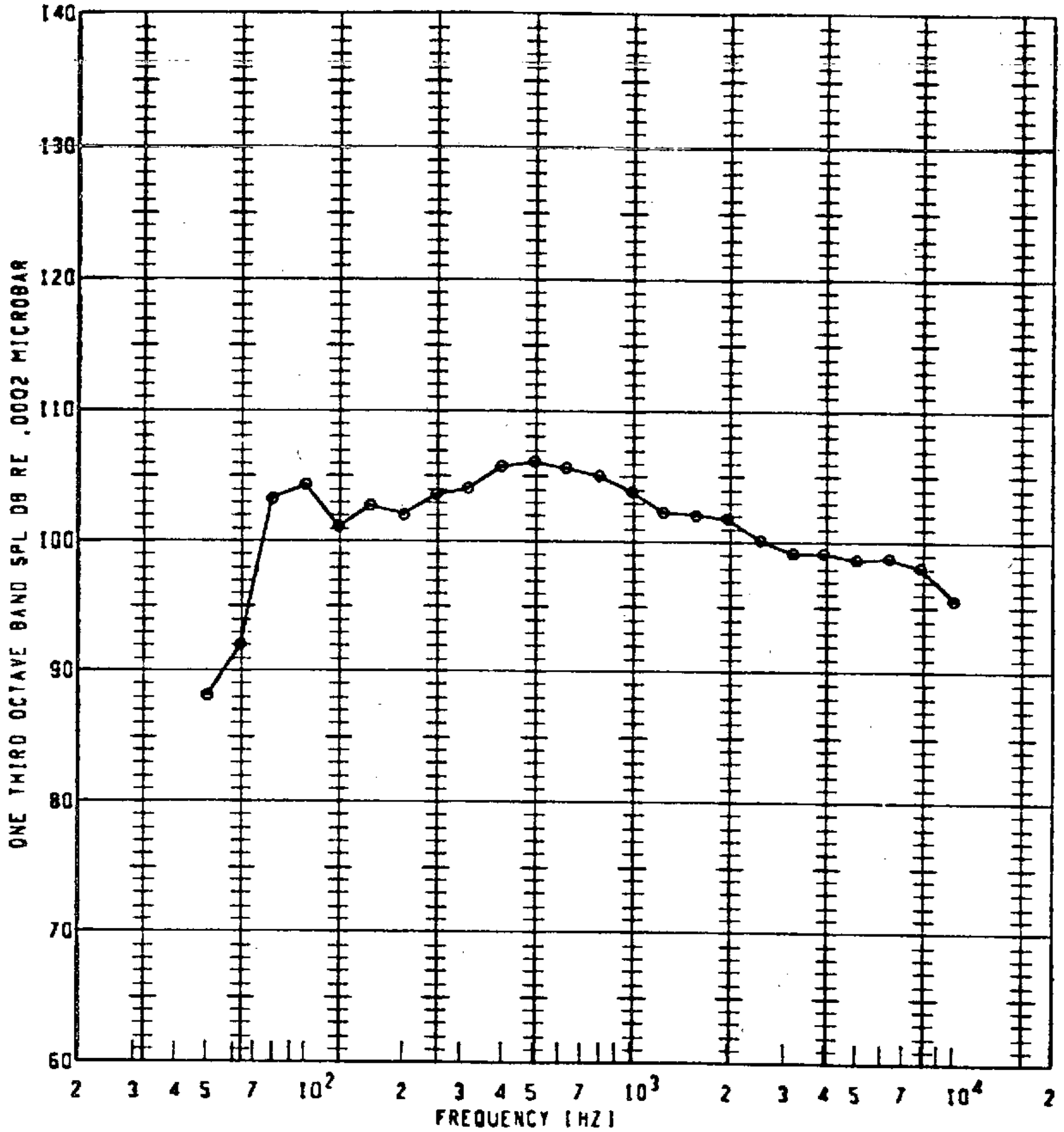
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊖	11G	900	1.600	130	50FP	115.6	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



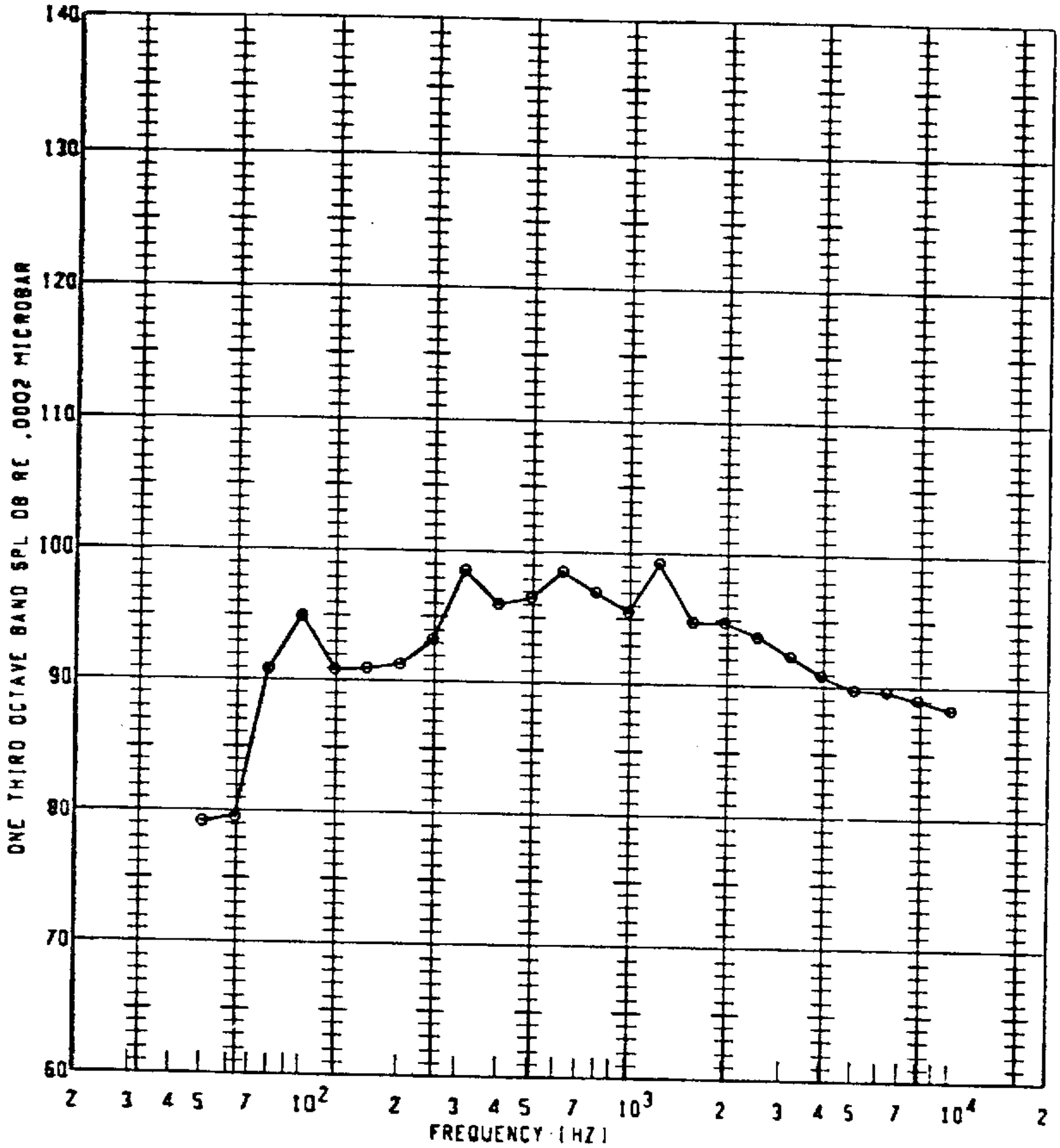
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	116	900	1.600	135	50FP	115.9	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



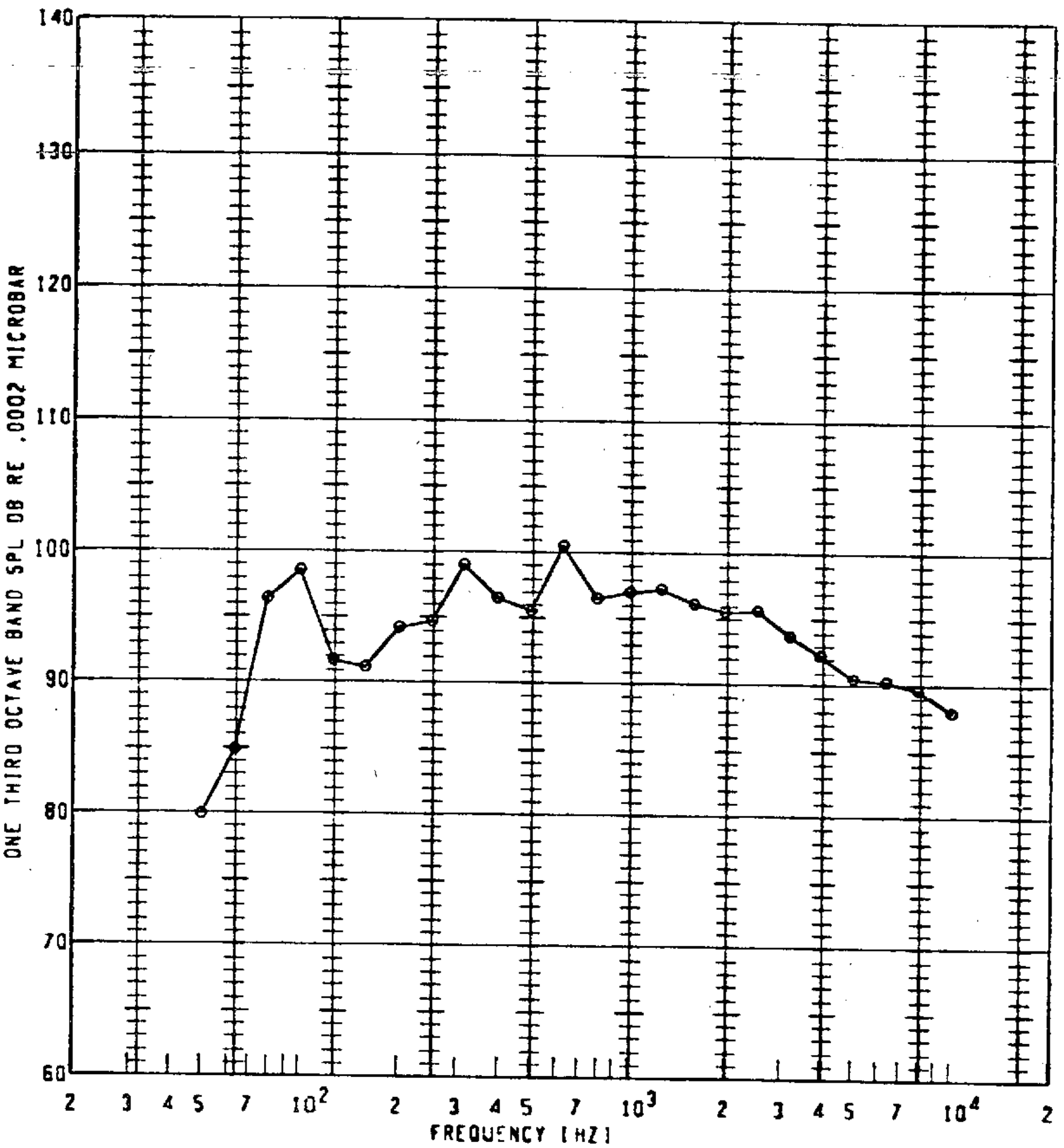
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	11G	900	1.600	140	50FP	116.2	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



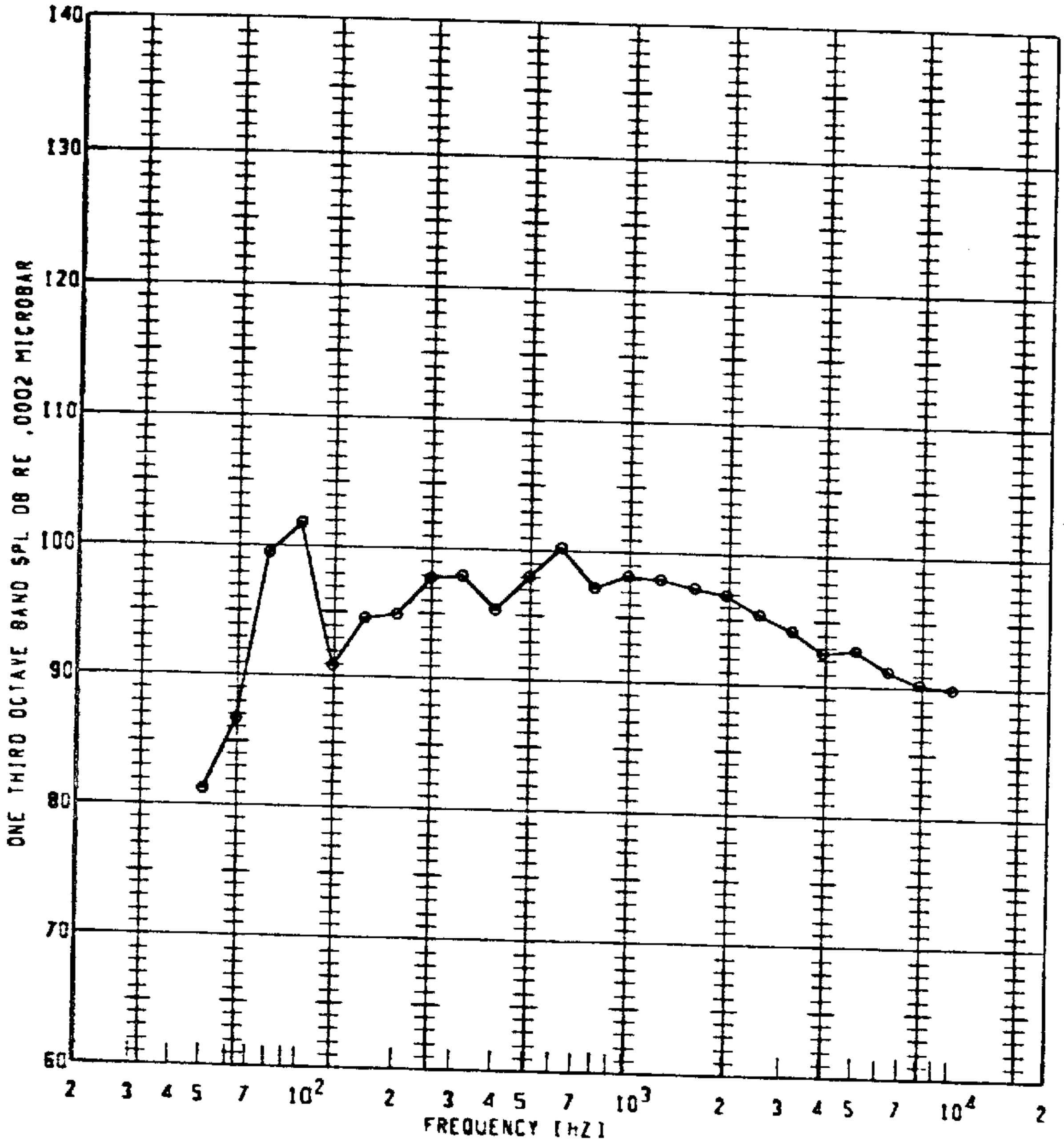
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	126	750	1.300	90	50FP	108.1	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



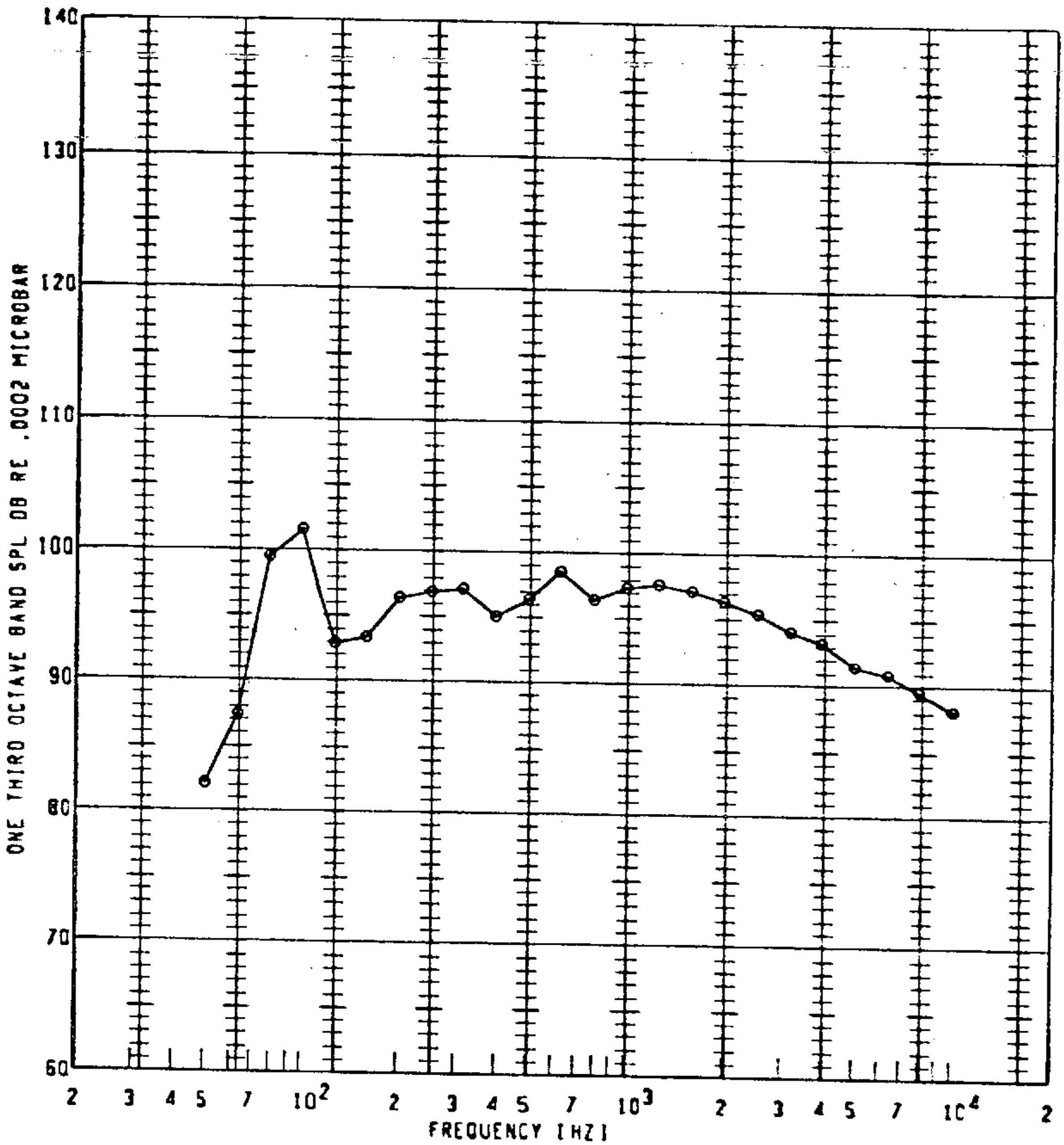
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	120	750	1.300	100	50FP	109.1	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



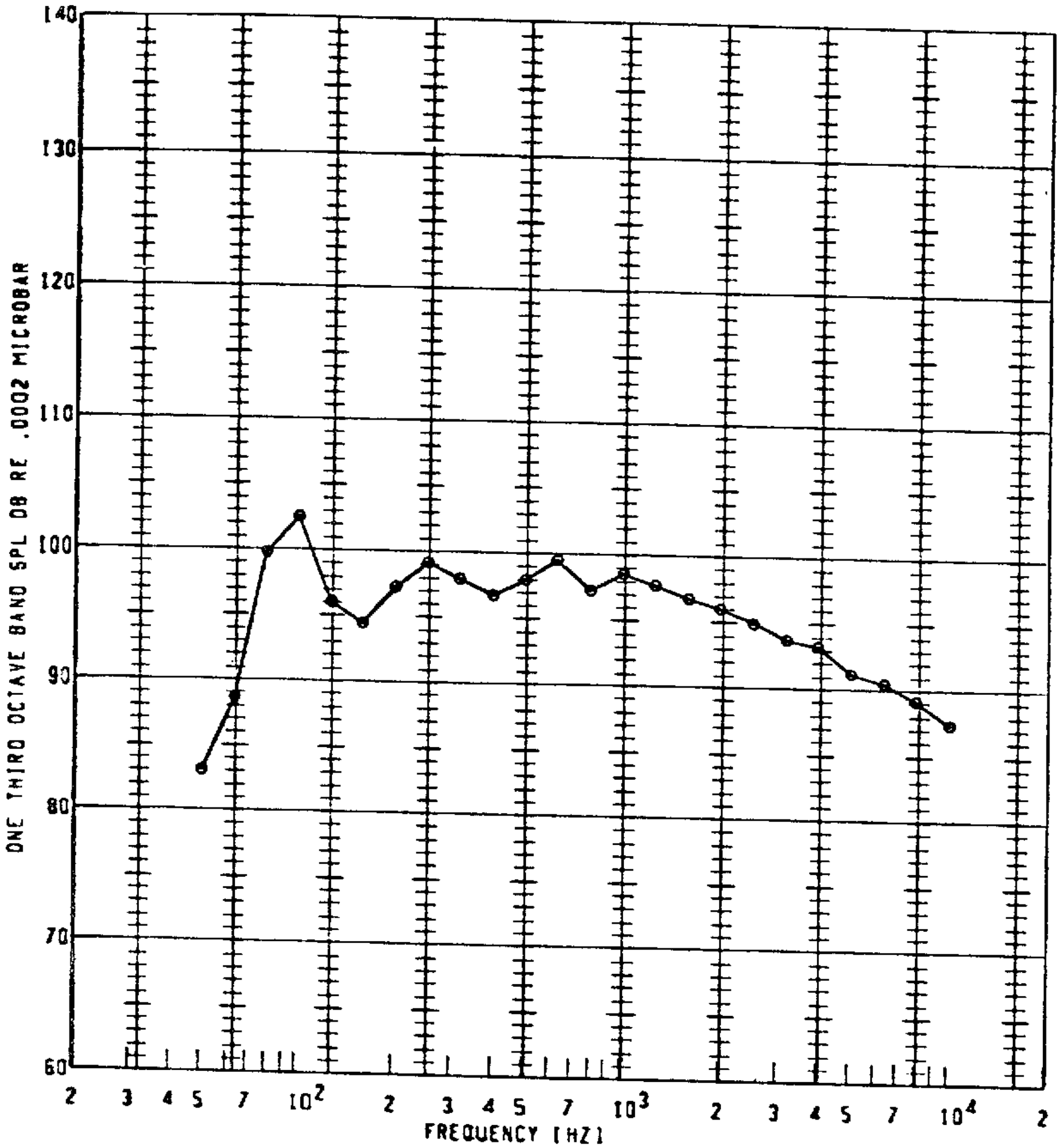
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊖	126	750	1.300	110	50FP	110.2	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



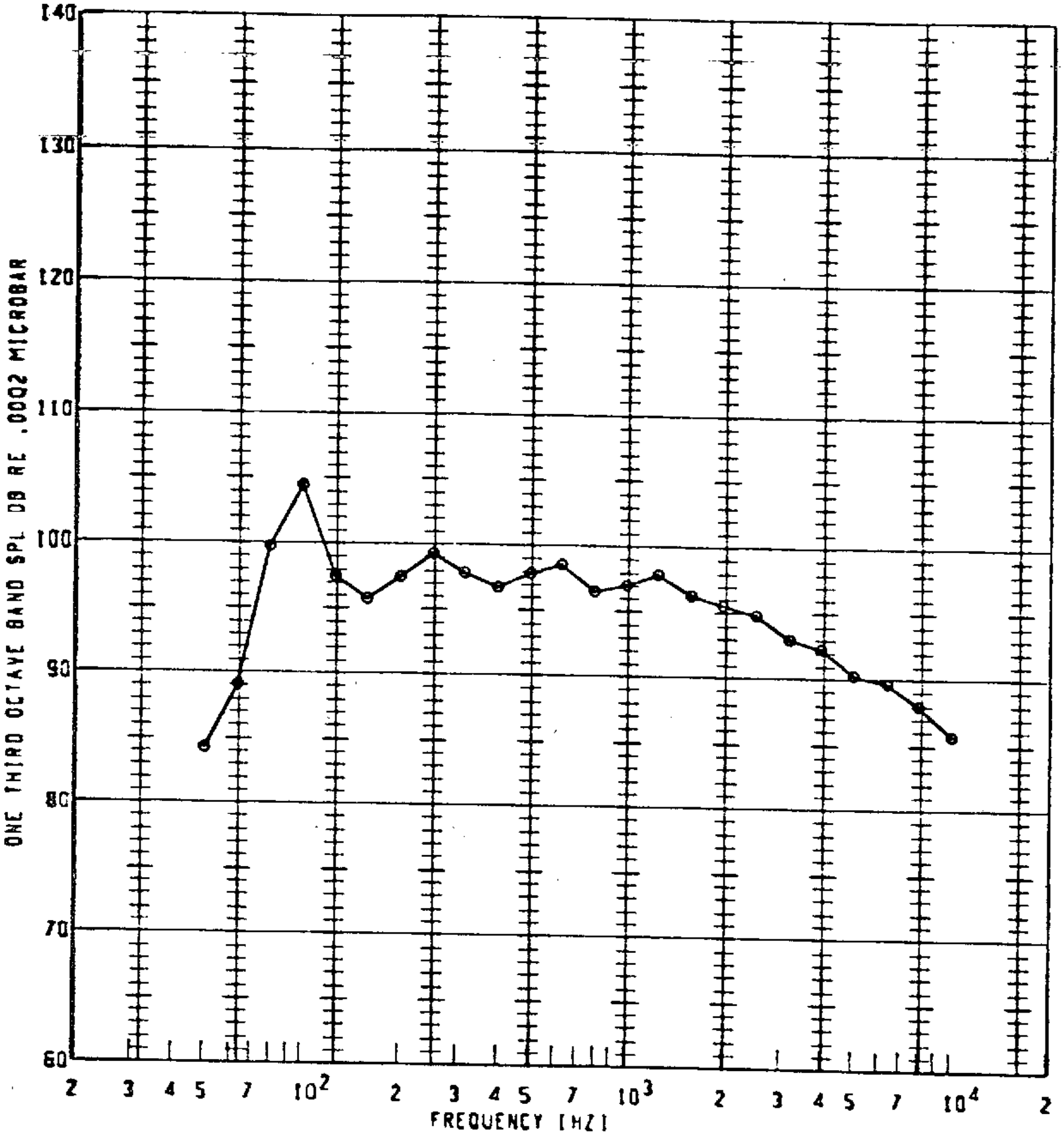
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	126	750	1.300	115	50FP	109.8	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



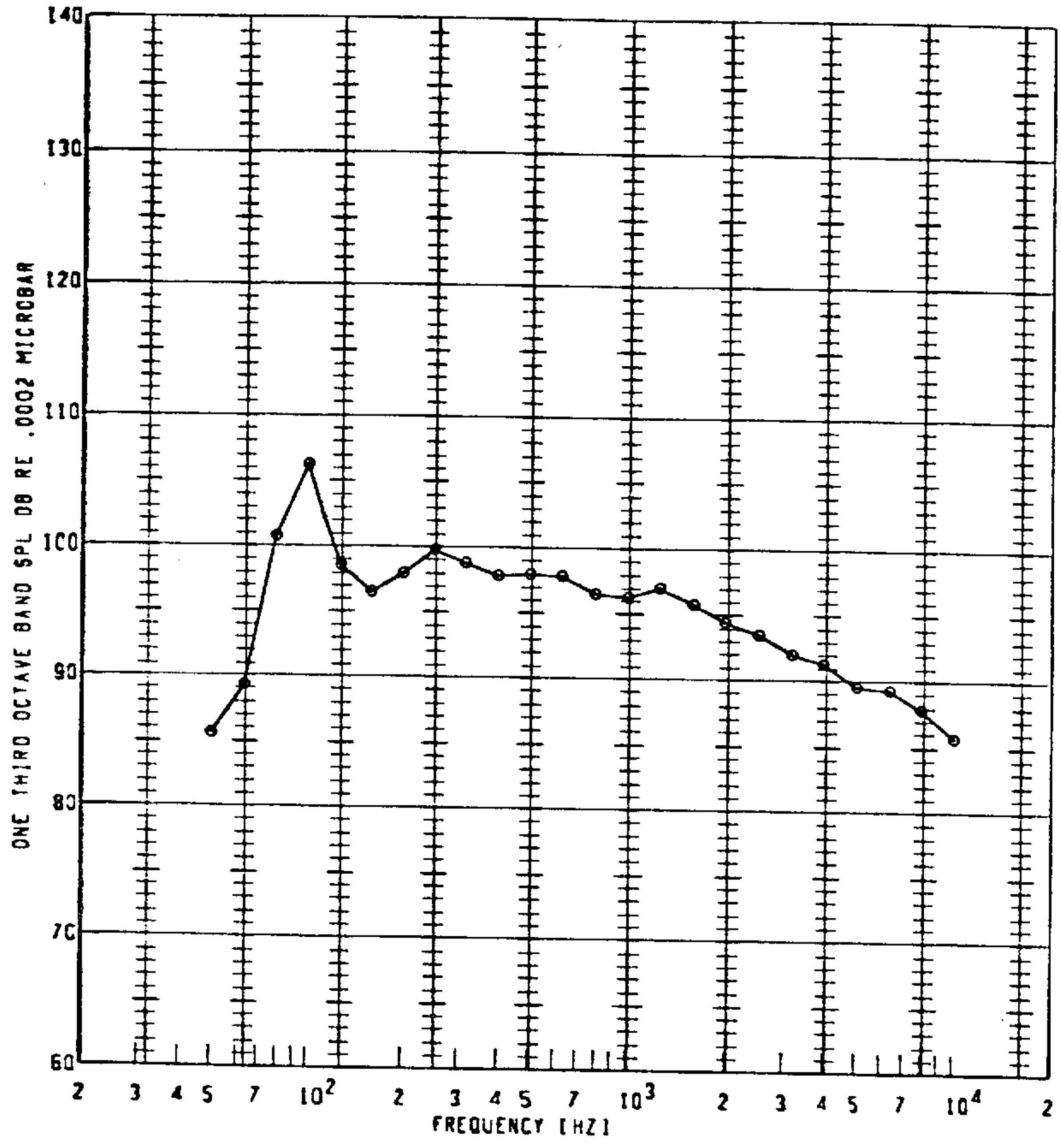
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊖	126	750	1.300	120	50FP	110.5	20	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



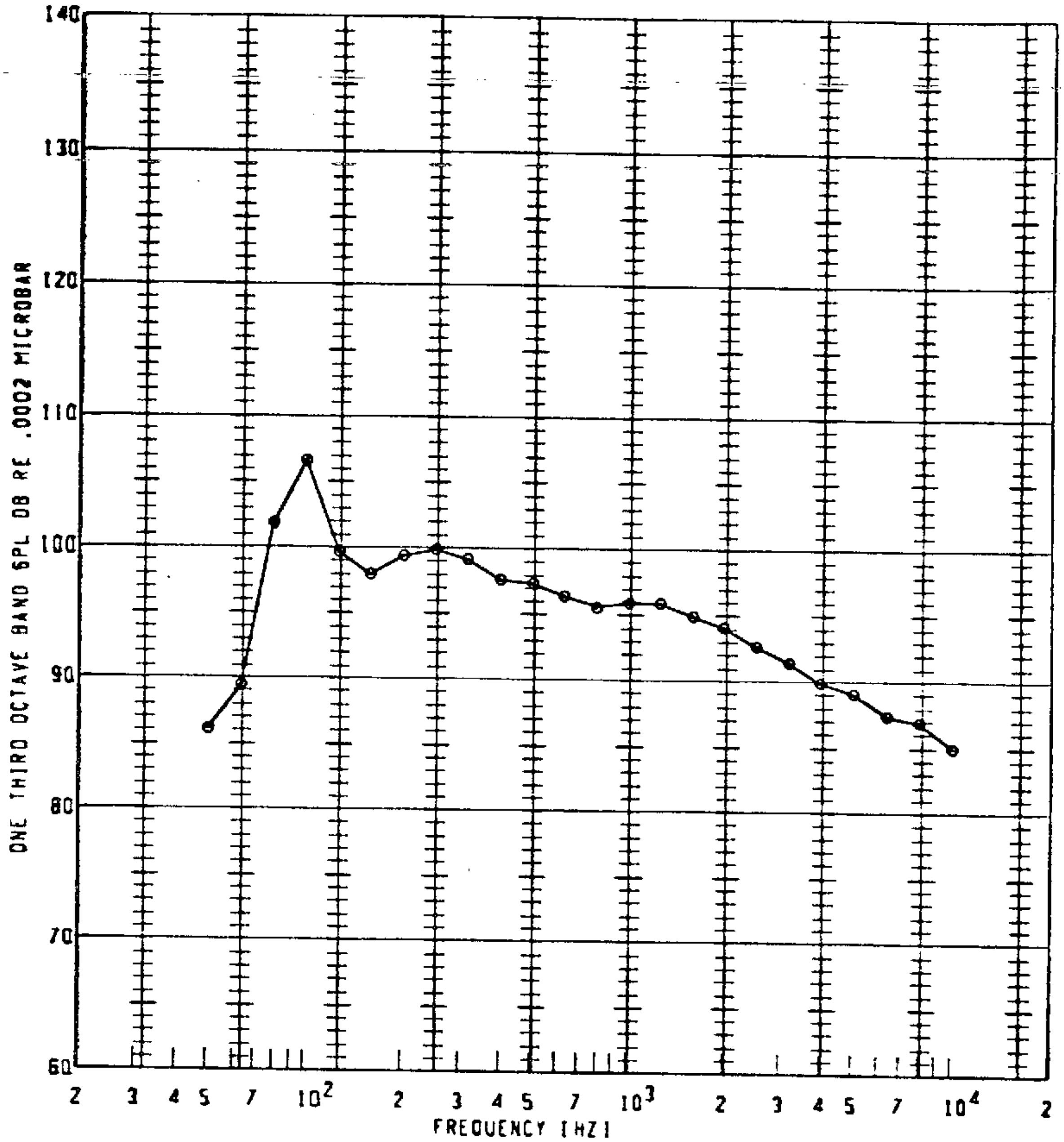
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	126	750	1.300	125	50FP	110.8	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



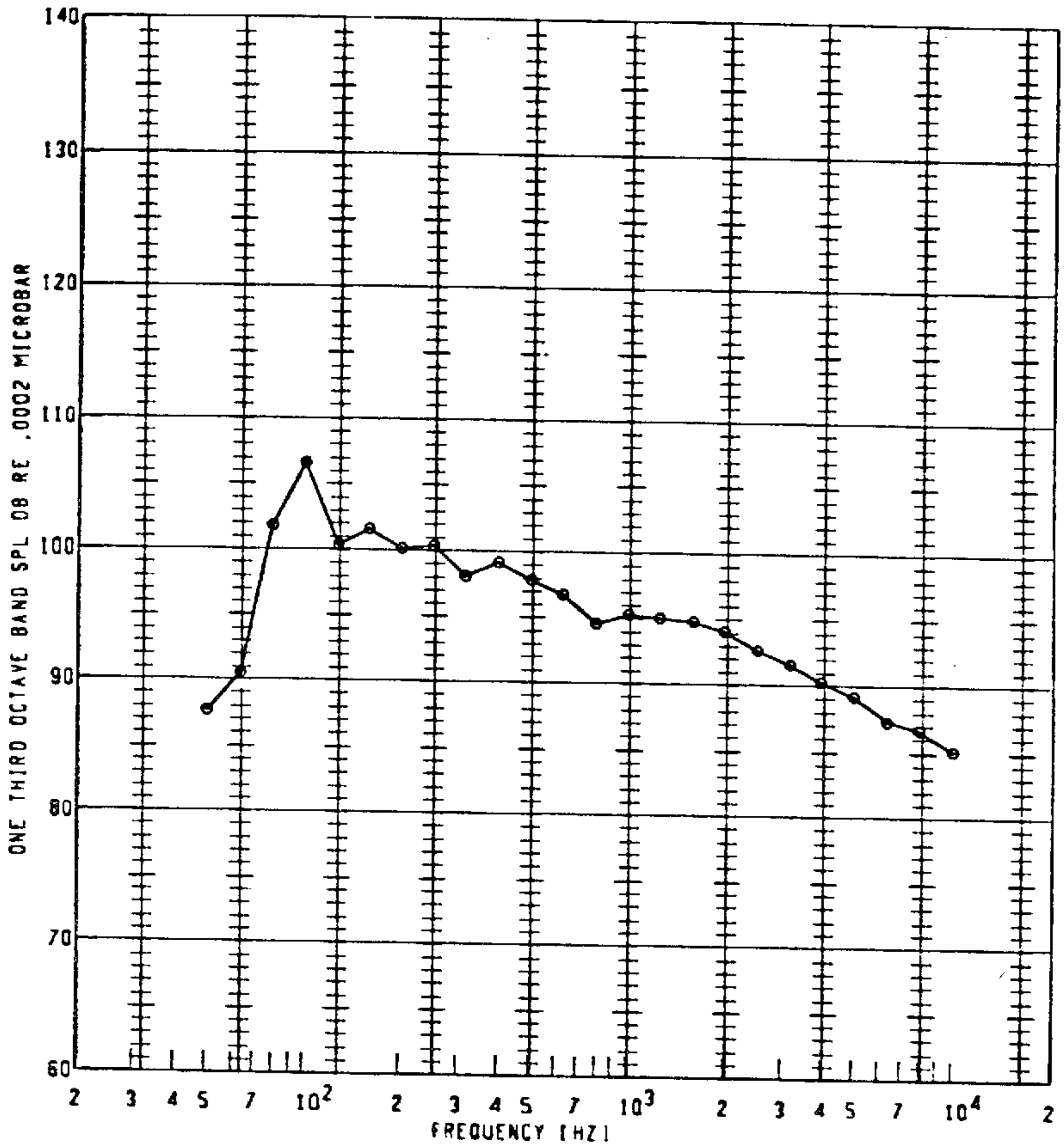
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊖	126	750	1.300	130	50FP	111.4	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



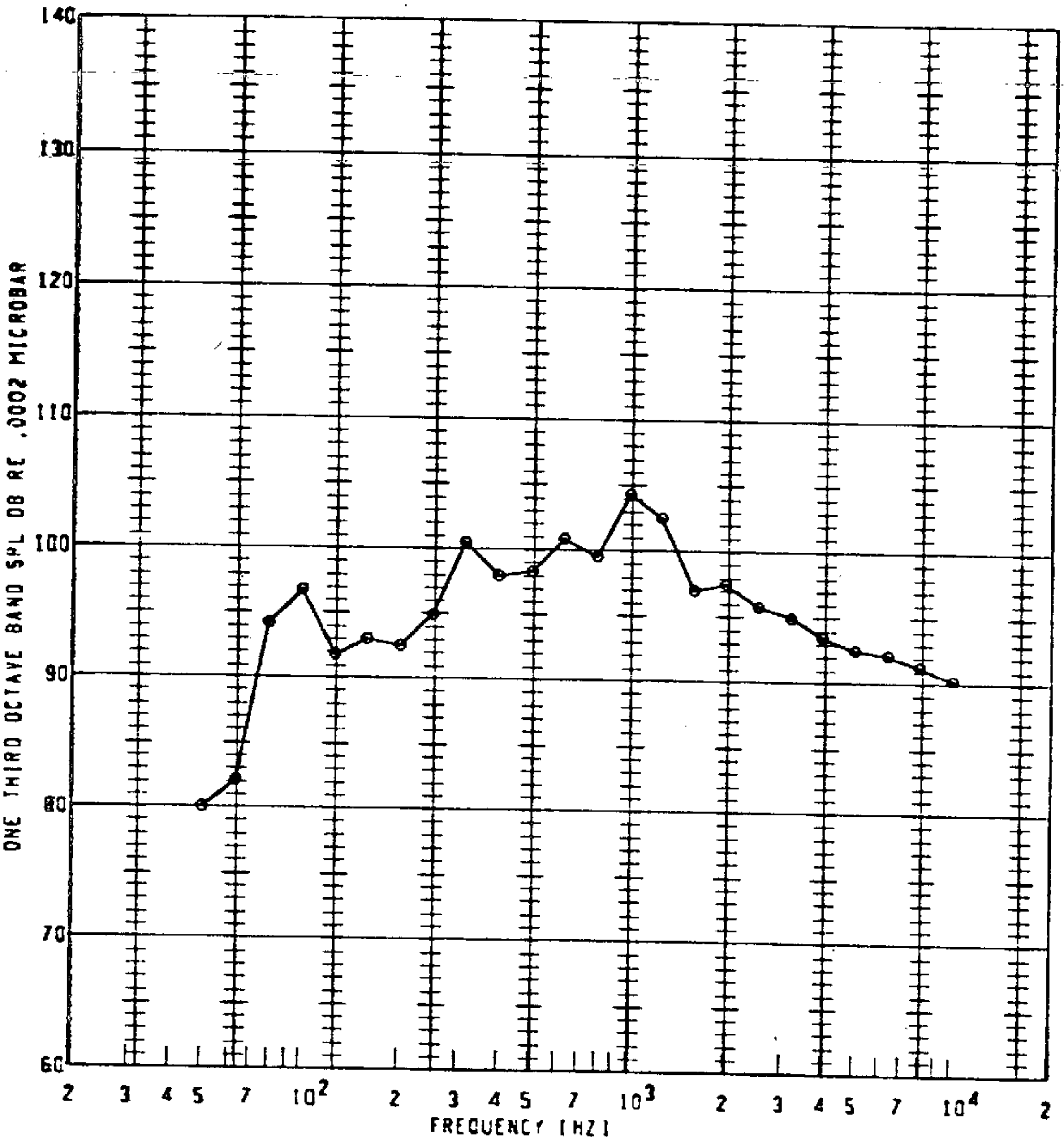
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	12G	750	1.300	135	50FP	111.6	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



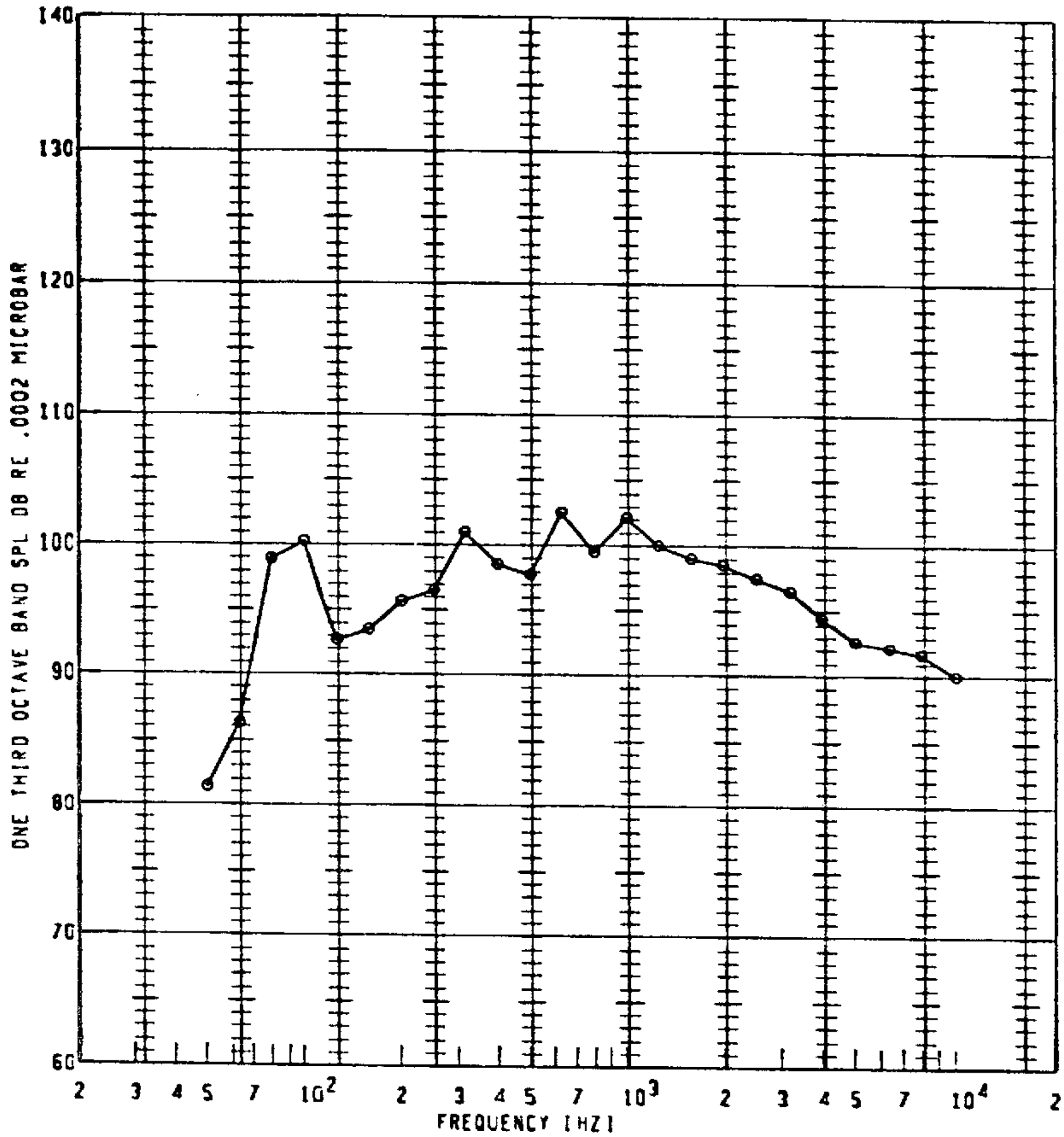
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	12G	750	1.300	140	50FP	111.9	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



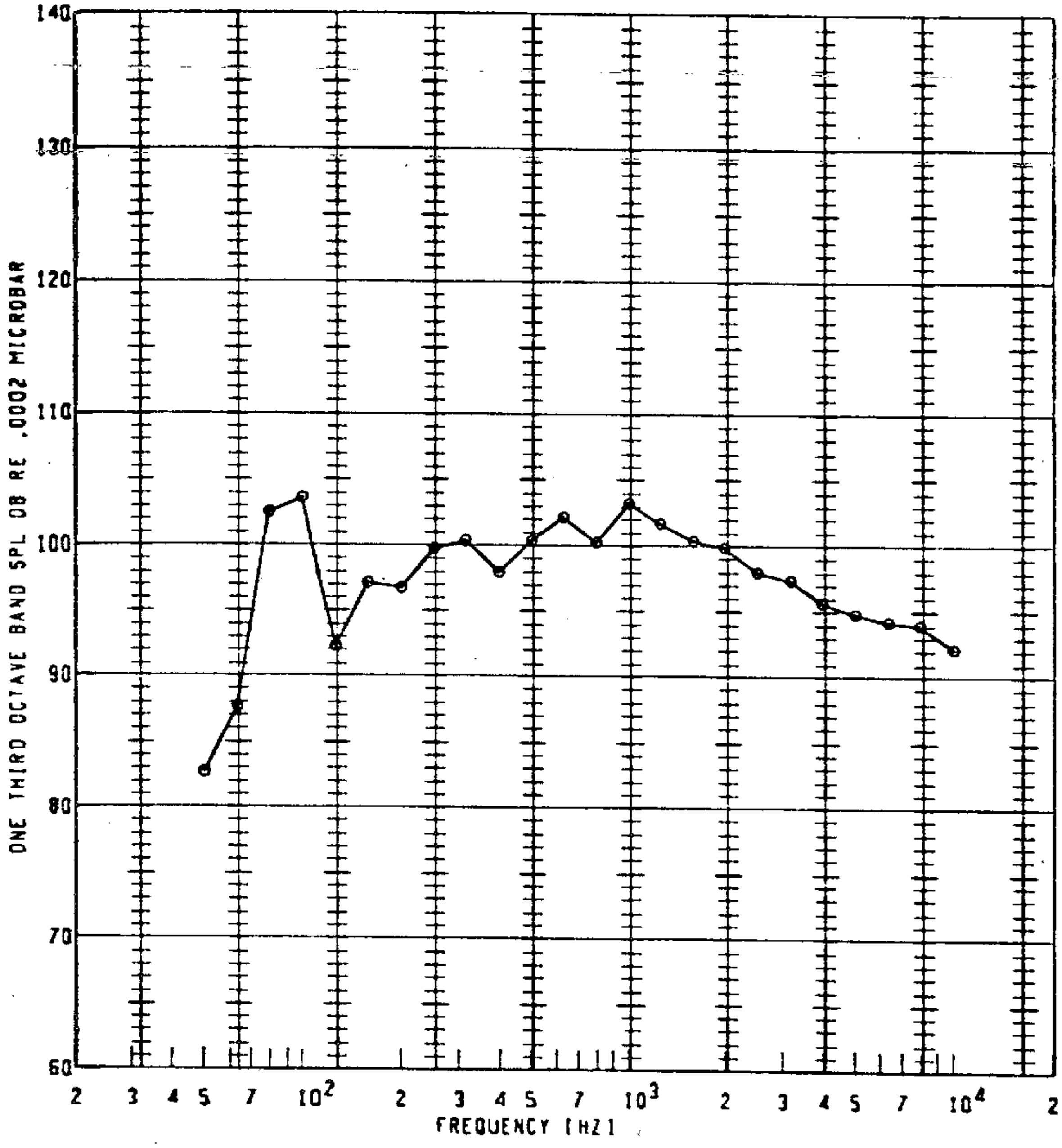
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊖	126	800	1.400	90	50FP	111.2	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



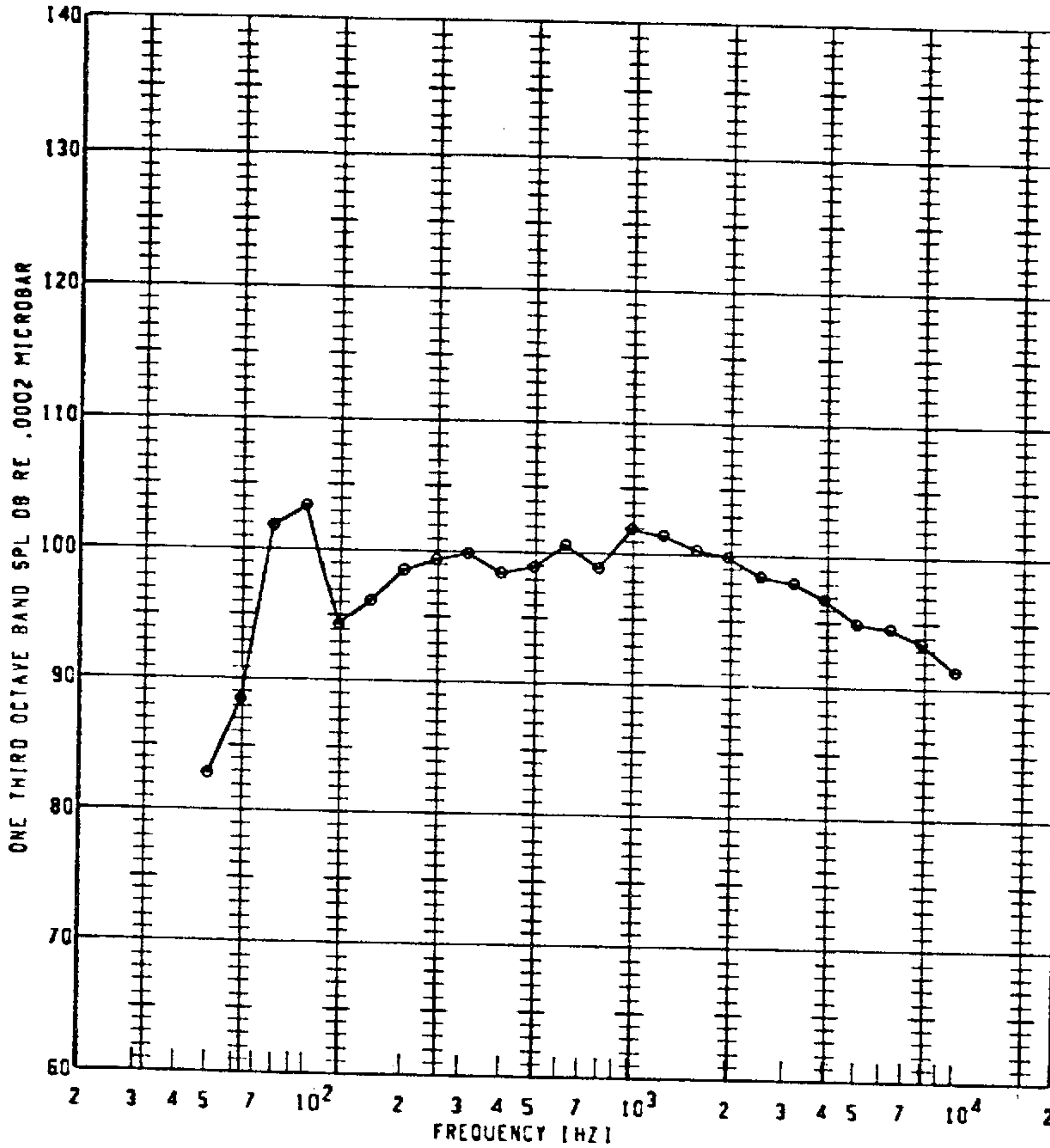
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	126	800	1.400	100	50FP	111.6	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



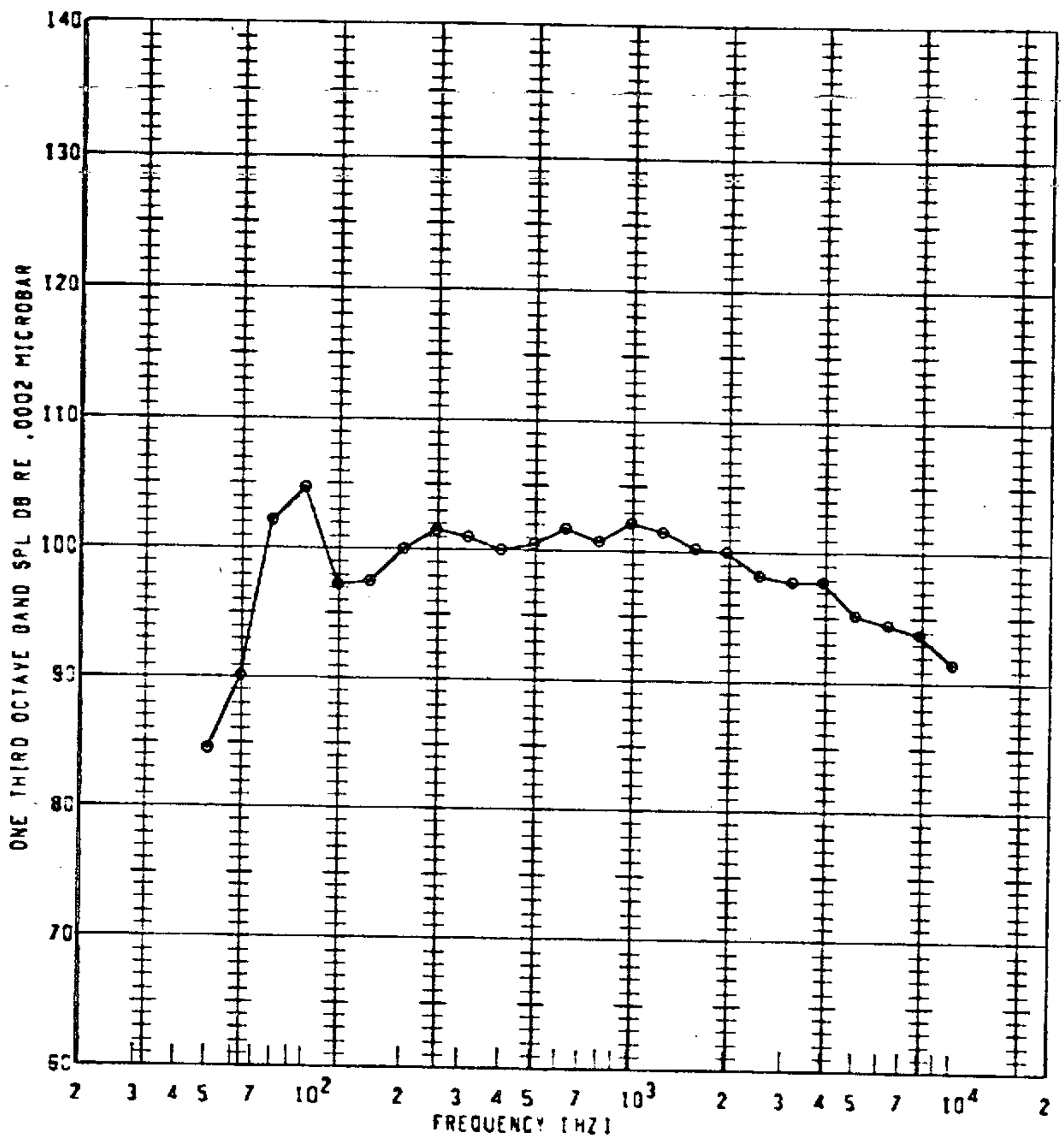
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	126	800	1.400	110	50FP	113.0	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



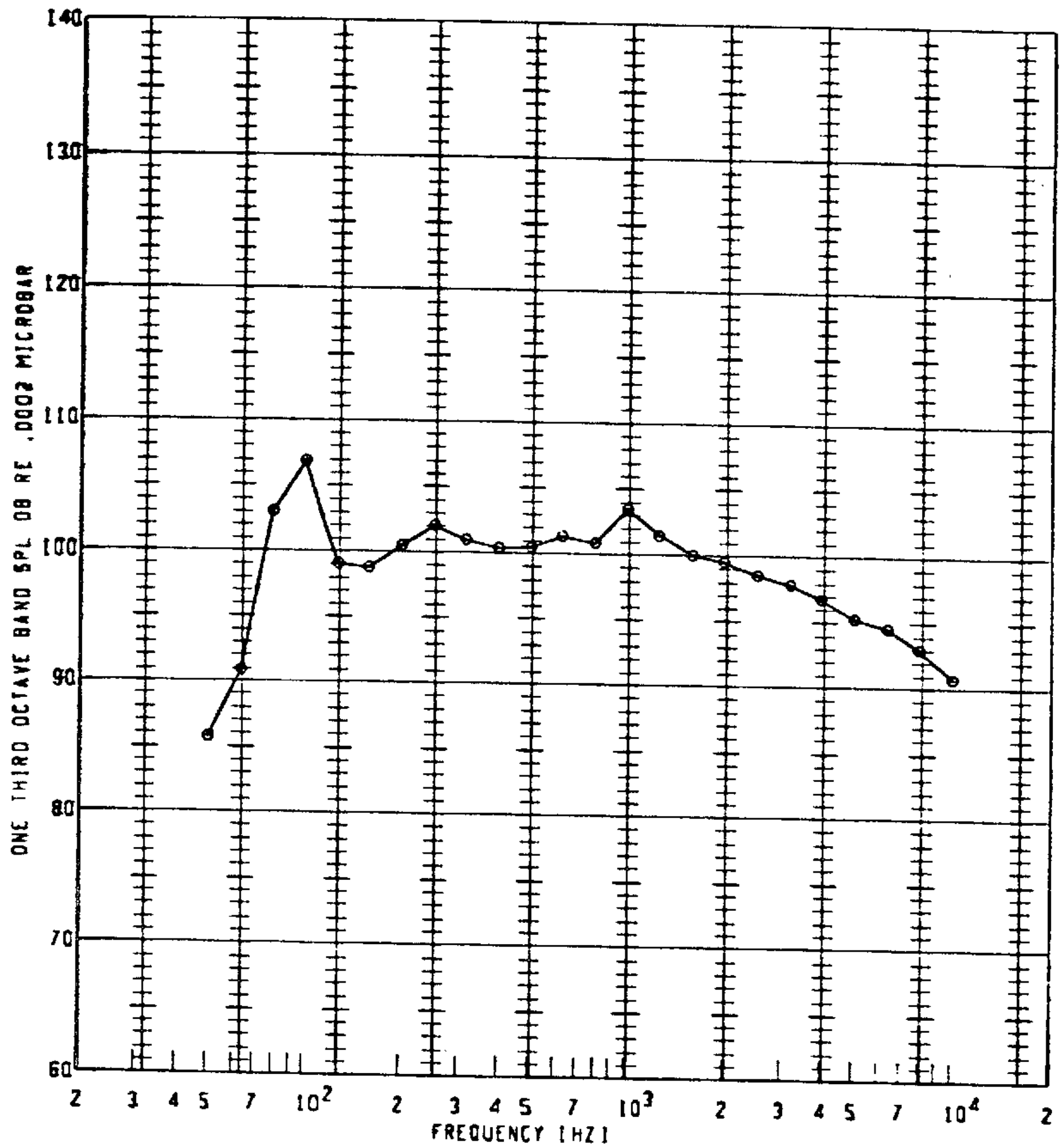
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊖	12G	800	1.400	115	50FP	112.6	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



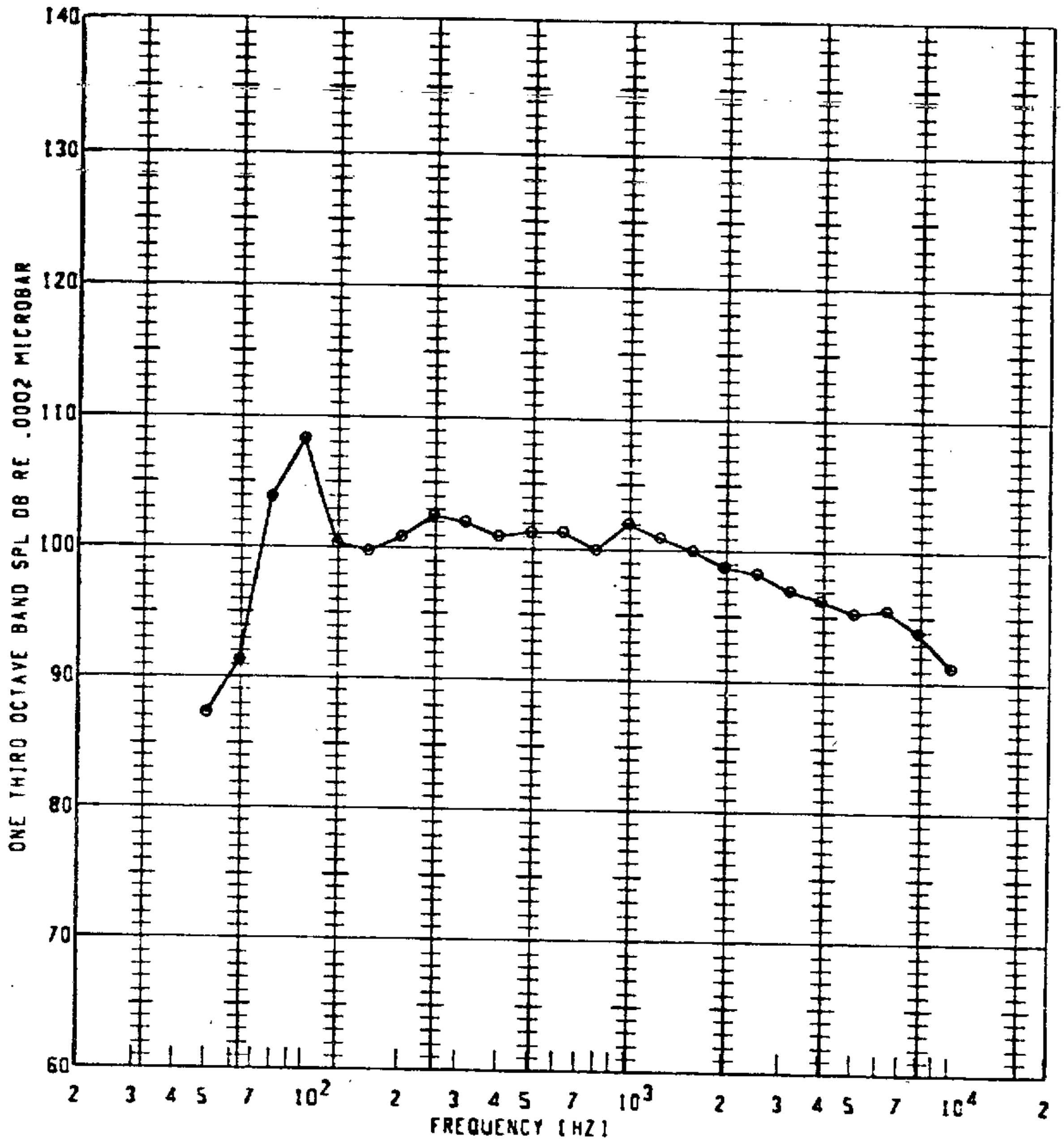
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	126	800	1.400	120	50FP	113.5	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



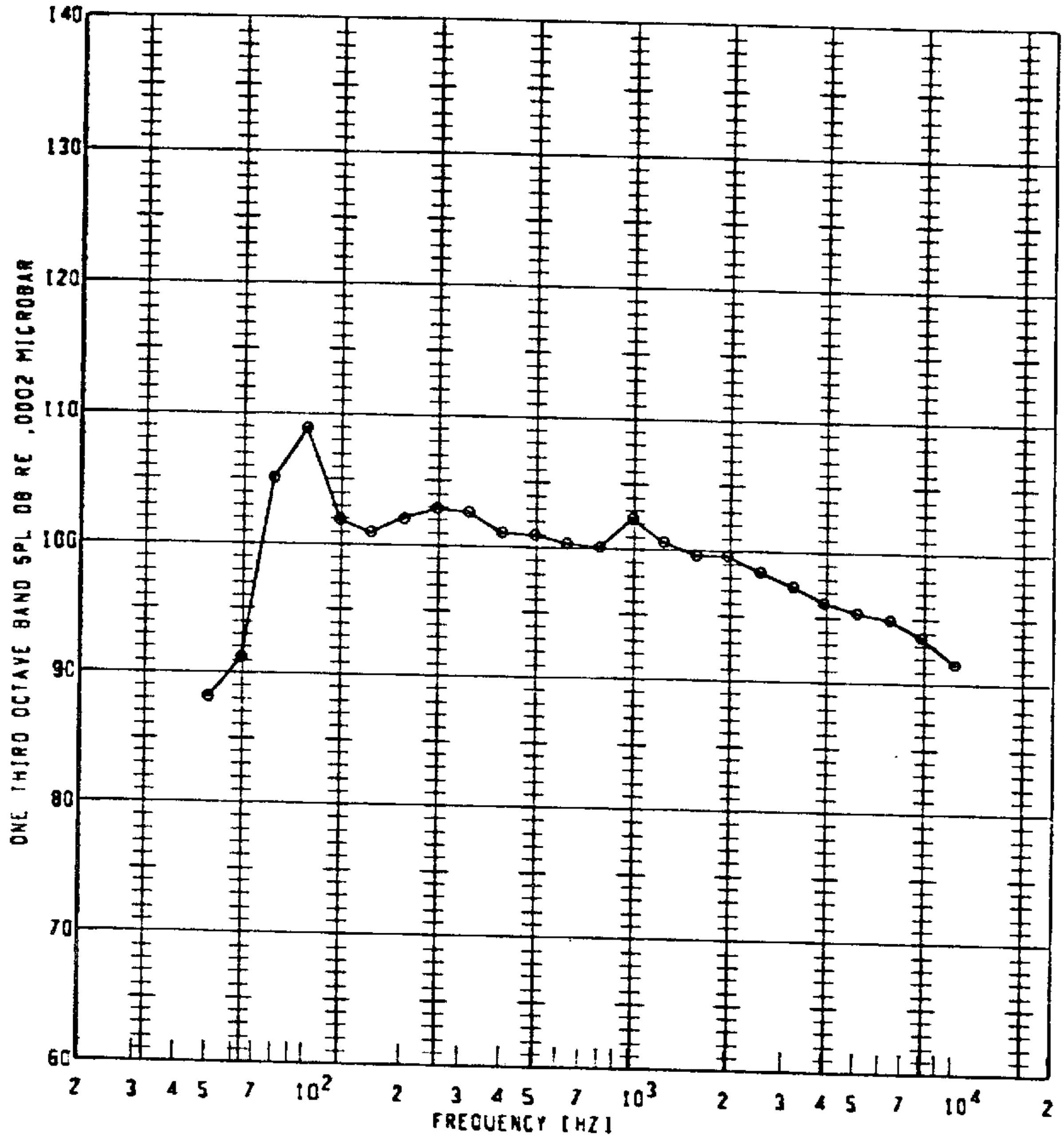
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊖	126	800	1.400	125	50FP	114.1	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



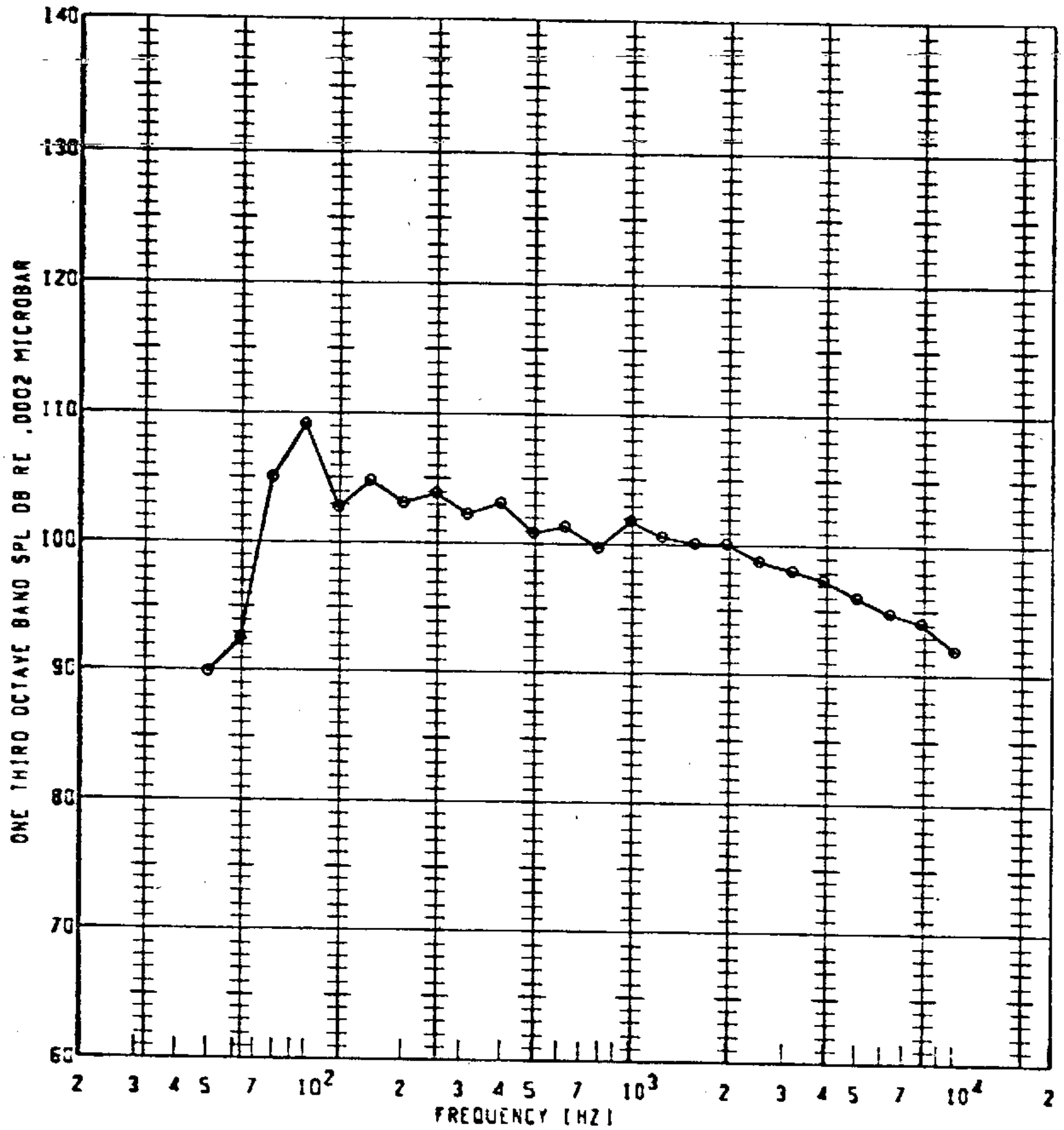
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	12G	800	1.400	130	50FP	114.5	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



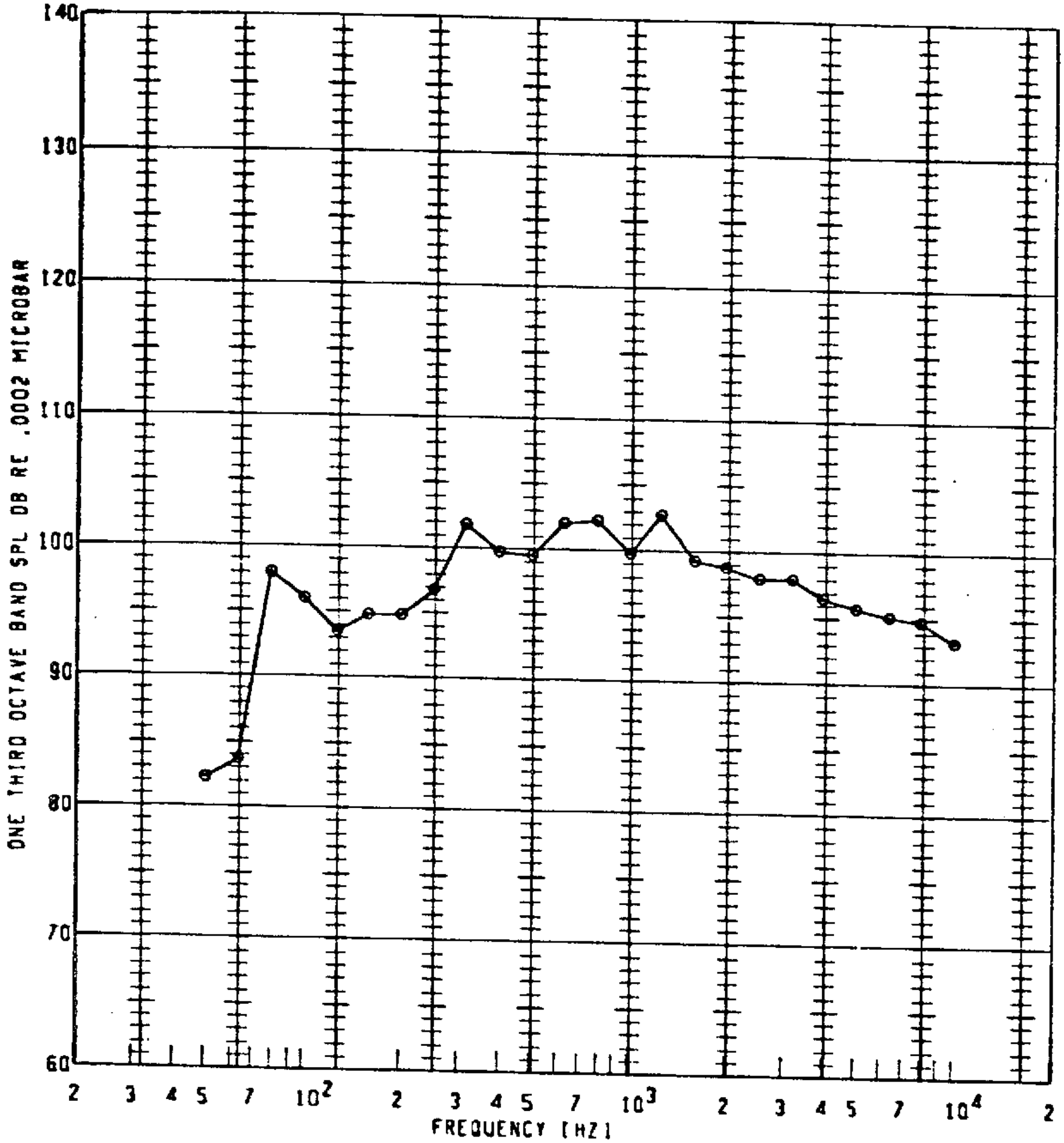
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	126	800	1.400	135	50FP	115.0	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



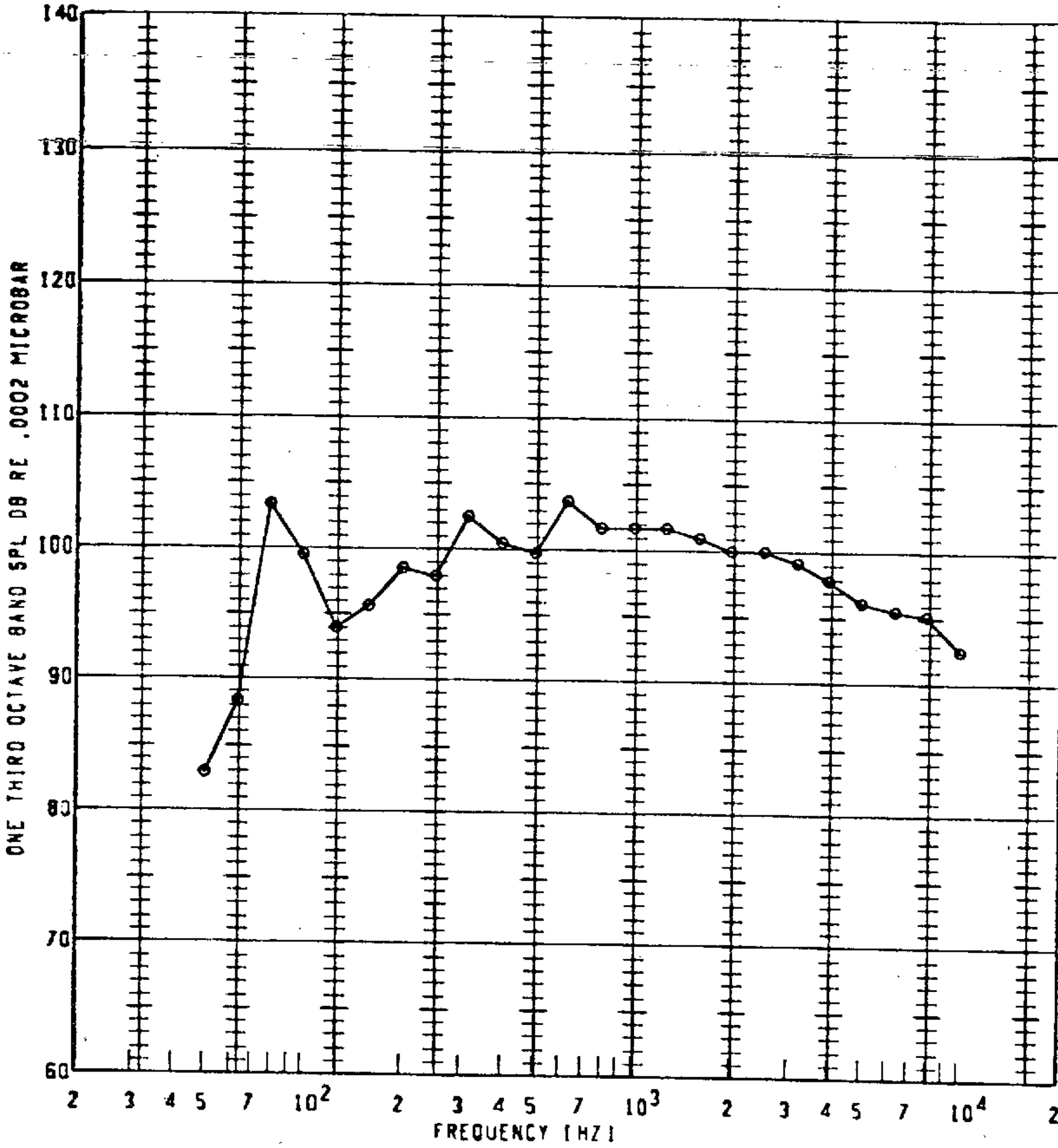
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	126	800	1.400	140	50FP	115.6	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



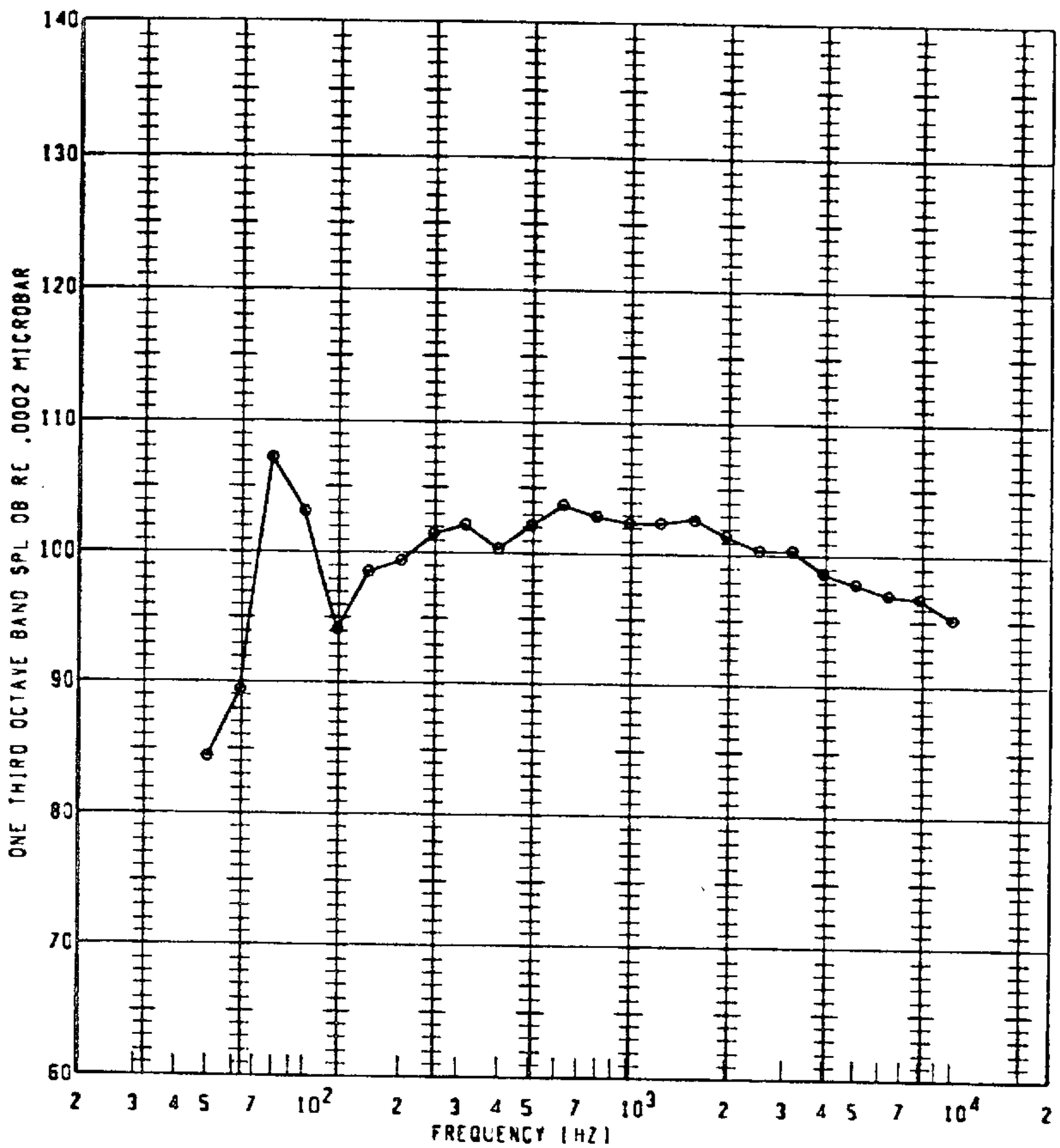
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊕	12G	850	1.500	90	50FP	112.2	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



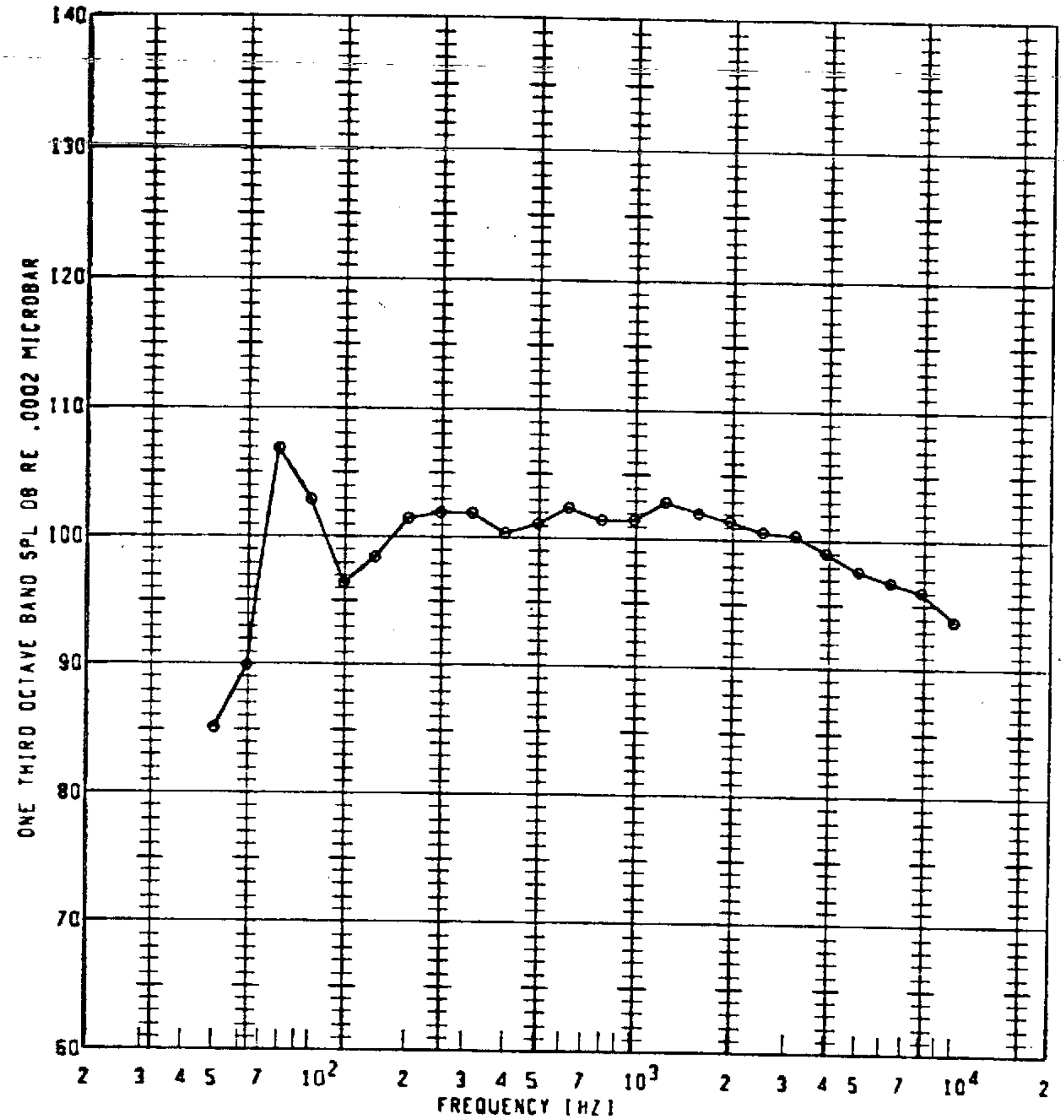
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	12G	850	1.500	100	50FP	113.4	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	126	850	1.500	110	50FP	114.9	10	

BUFFALO SUPPRESSOR NOZZLE TONE IO TEST - HOT NOZZLE TEST FACILITY



PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	126	850	1.500	115	50FP	114.6	10	

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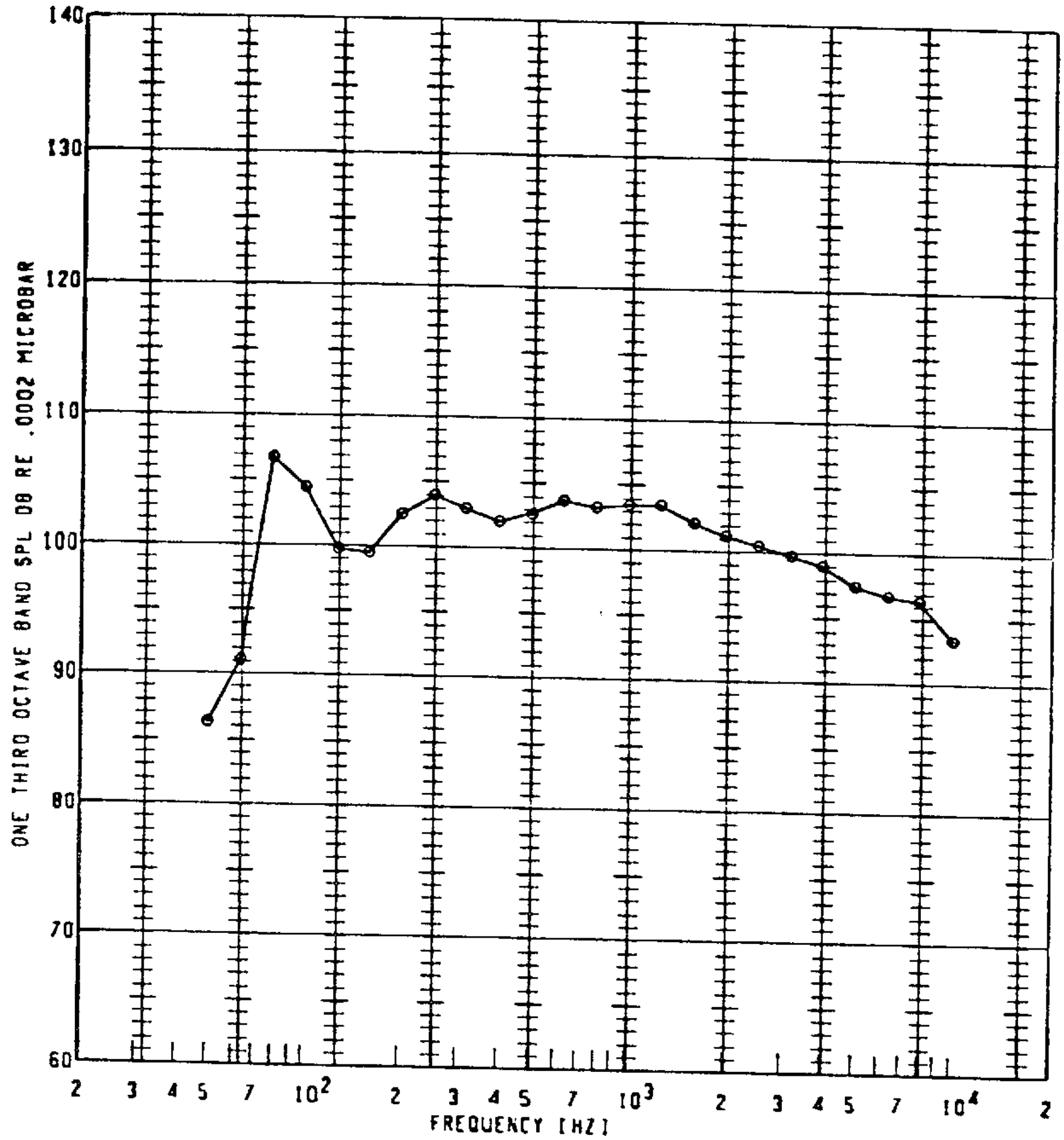
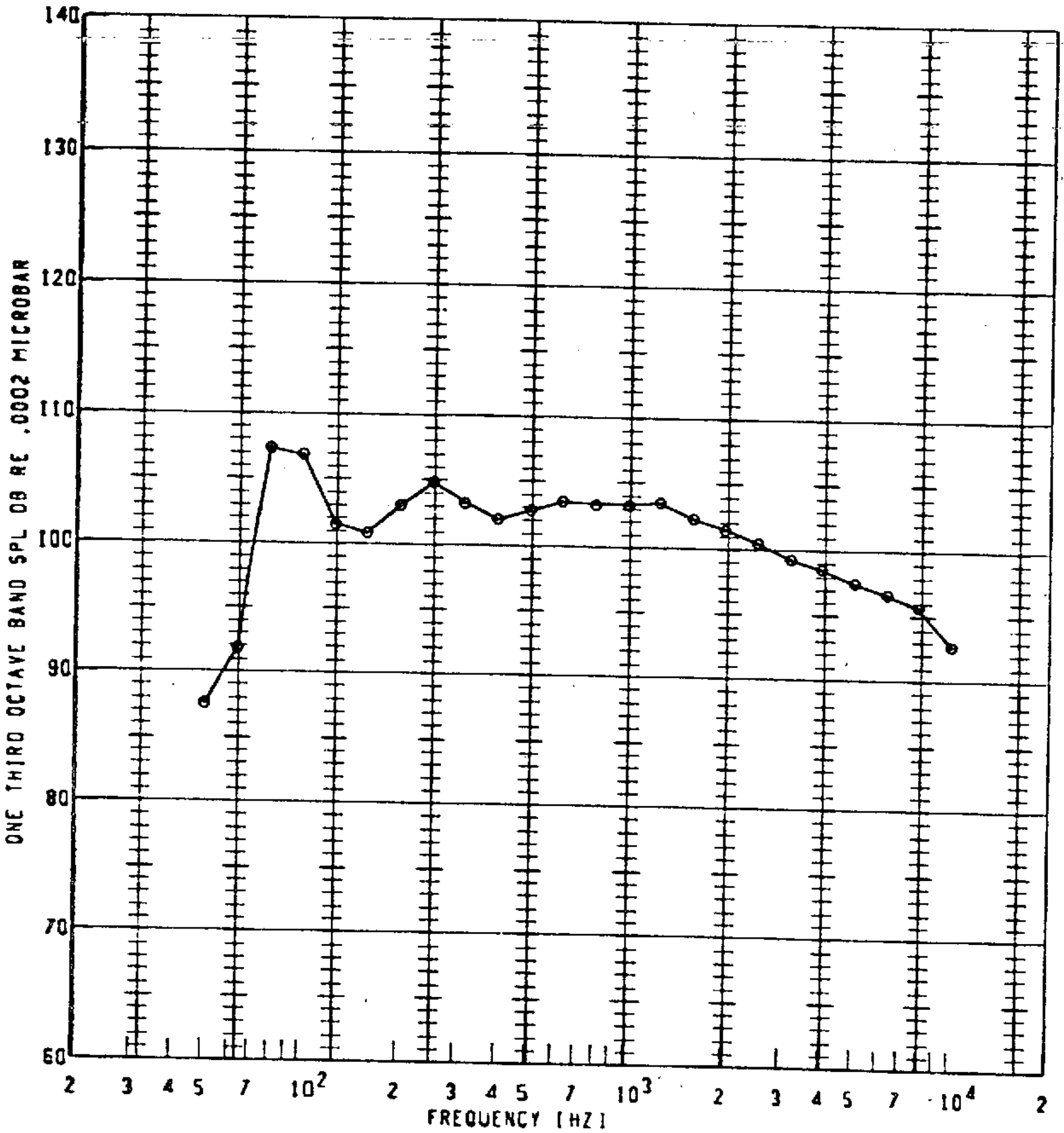
BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



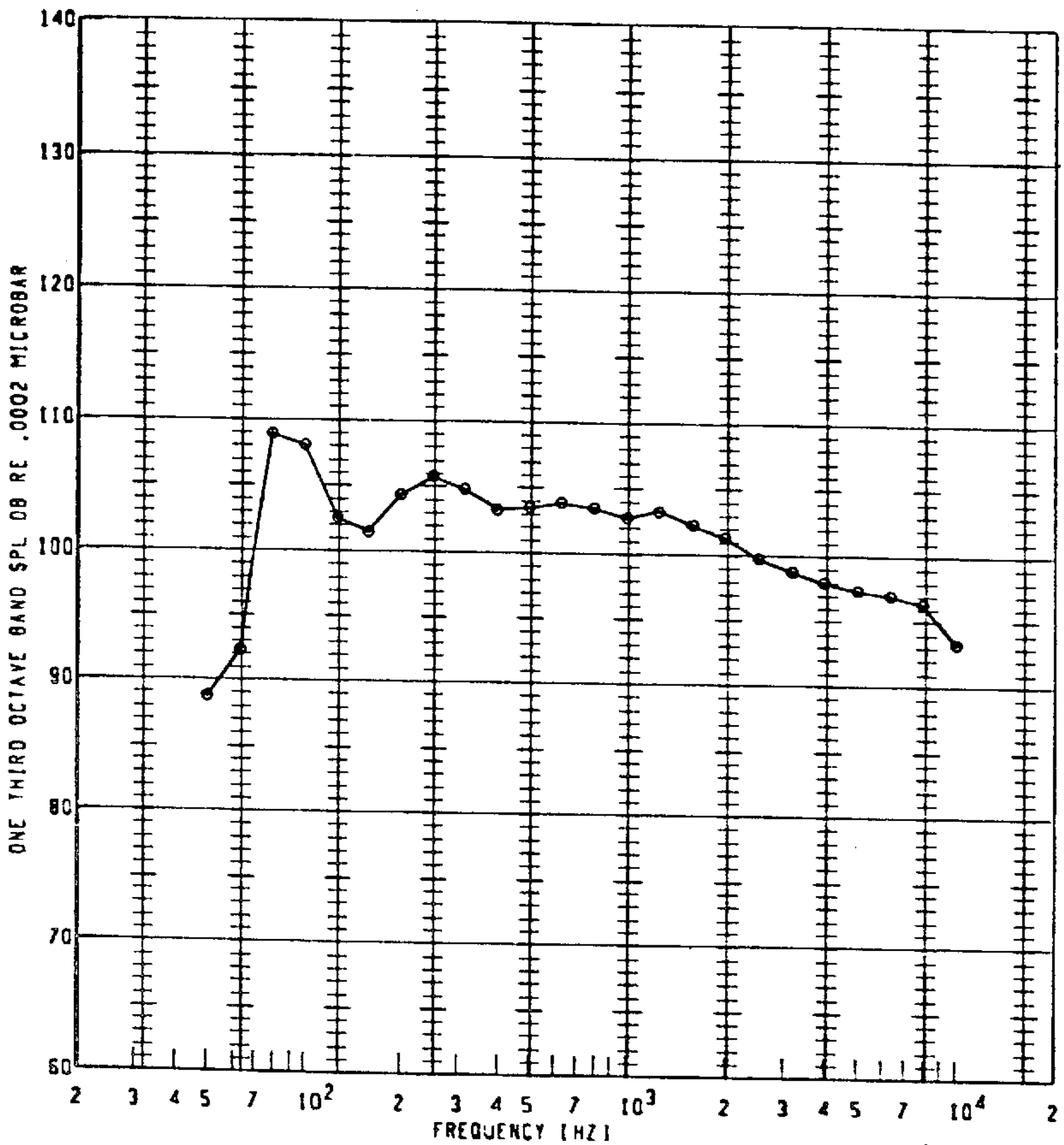
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	126	850	1.500	120	50'FP	115.5	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



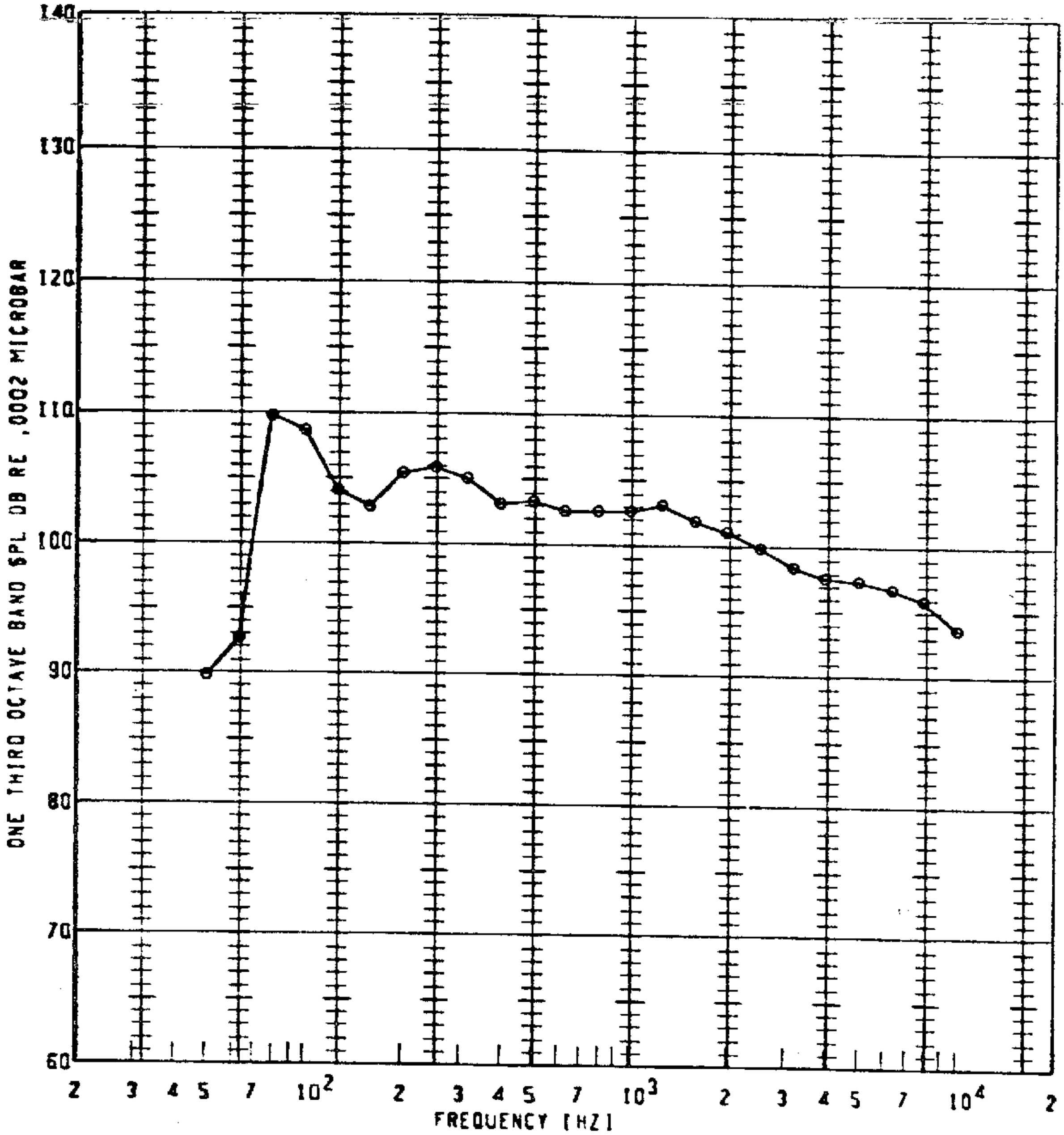
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	126	850	1.500	125	50FP	116.0	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



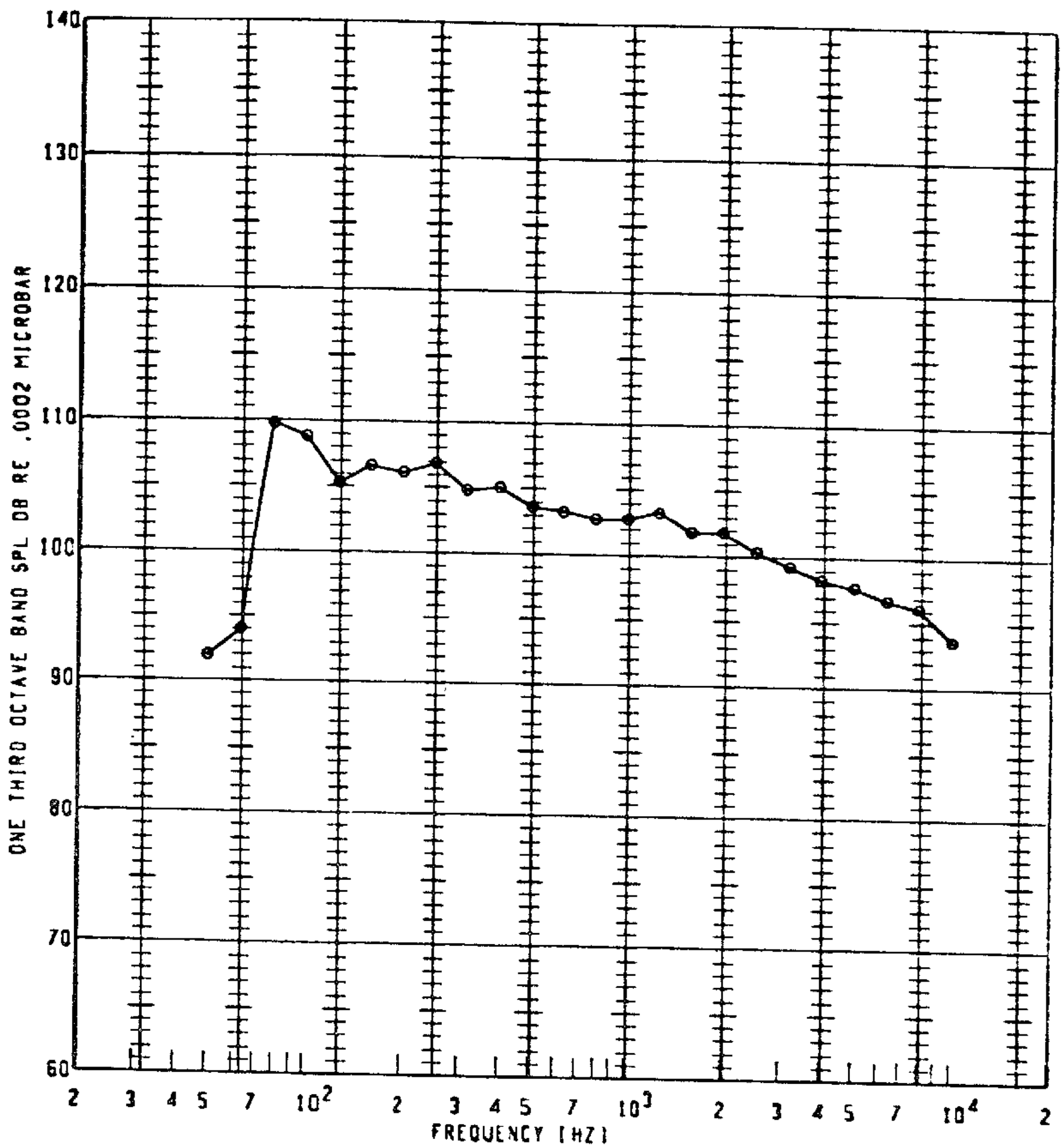
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	12G	850	1.500	130	50FP	116.7	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



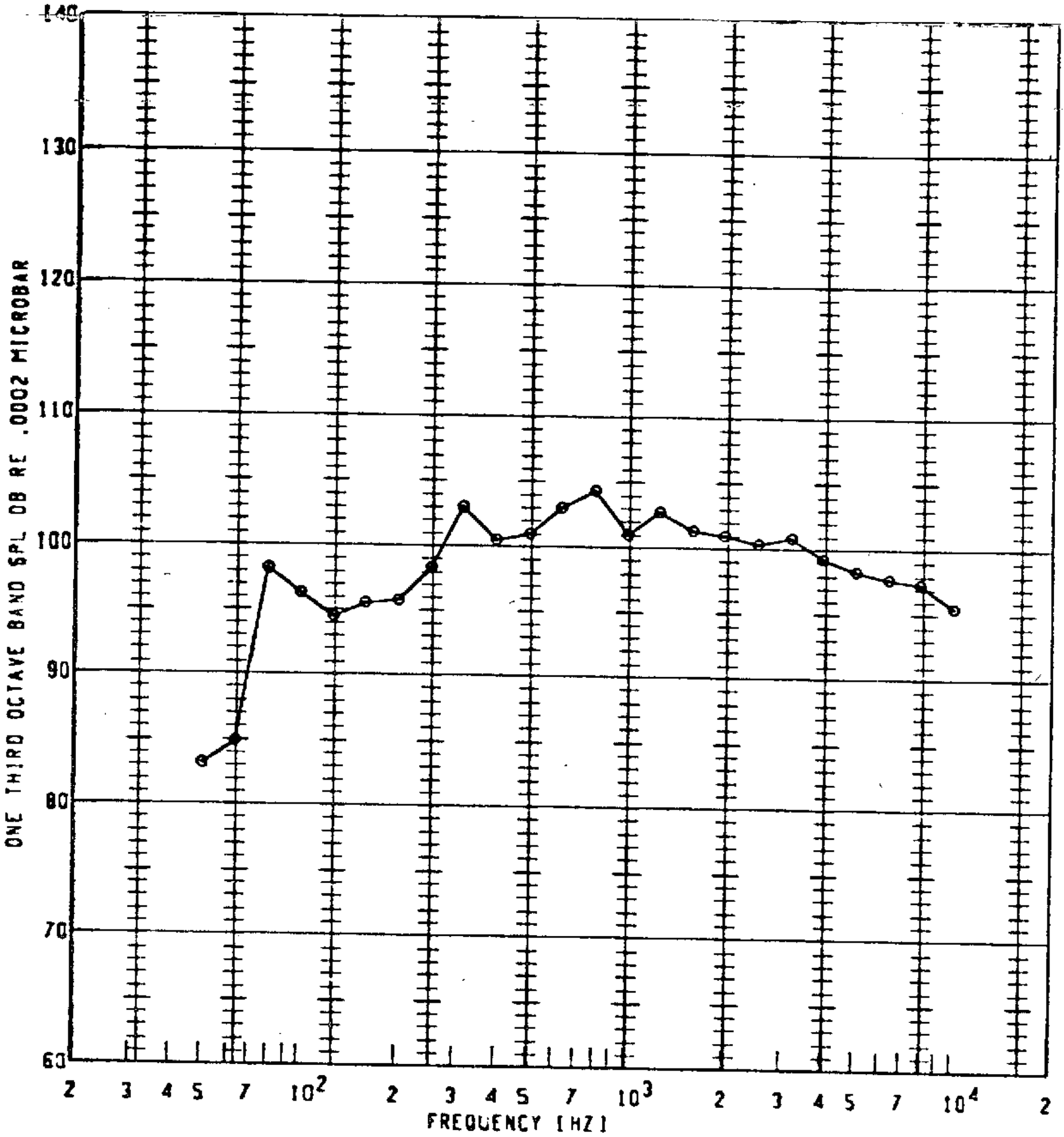
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊖	126	850	1.500	135	50FP	117.0	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



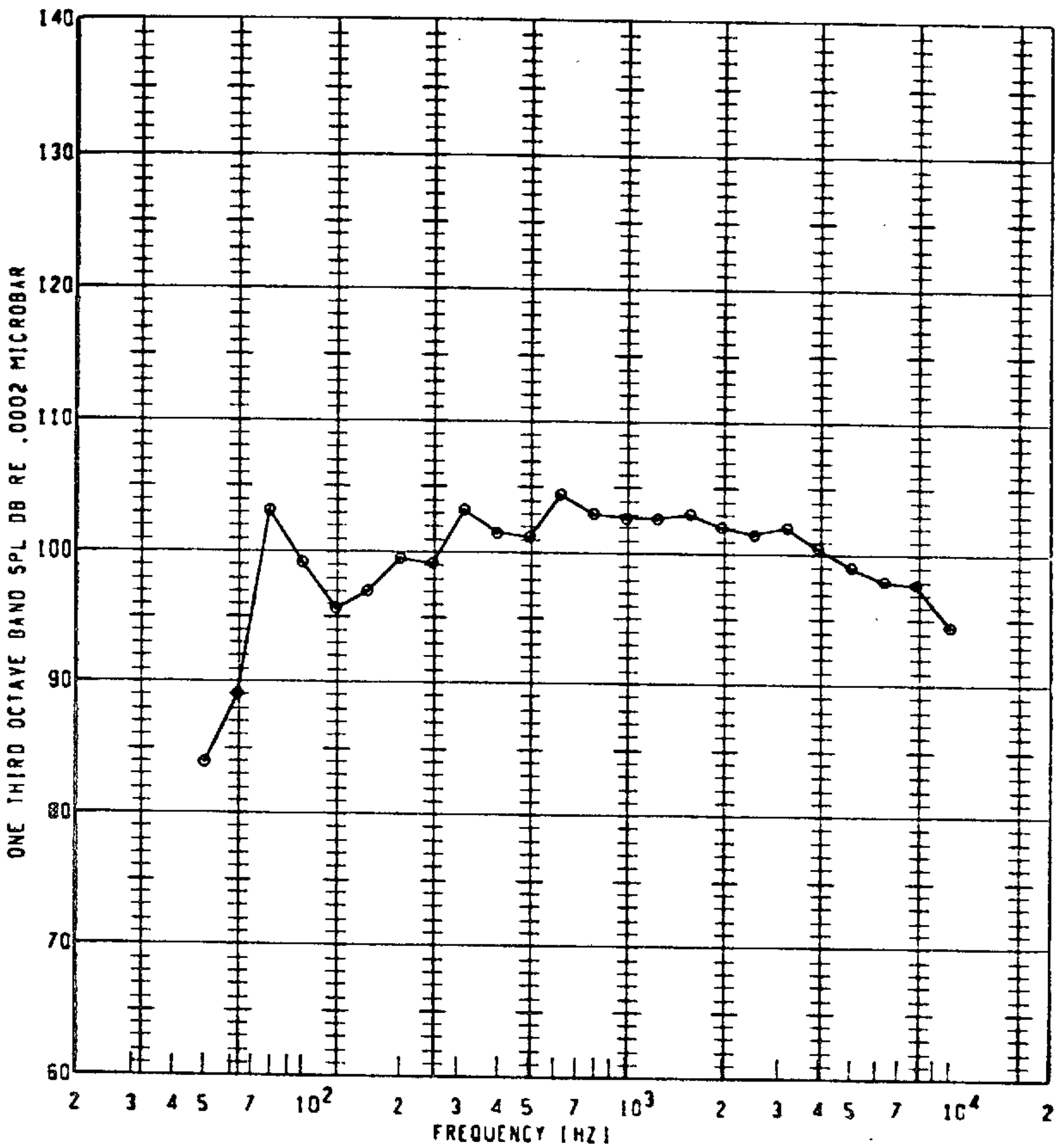
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	126	850	1.500	140	50'P	117.7	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



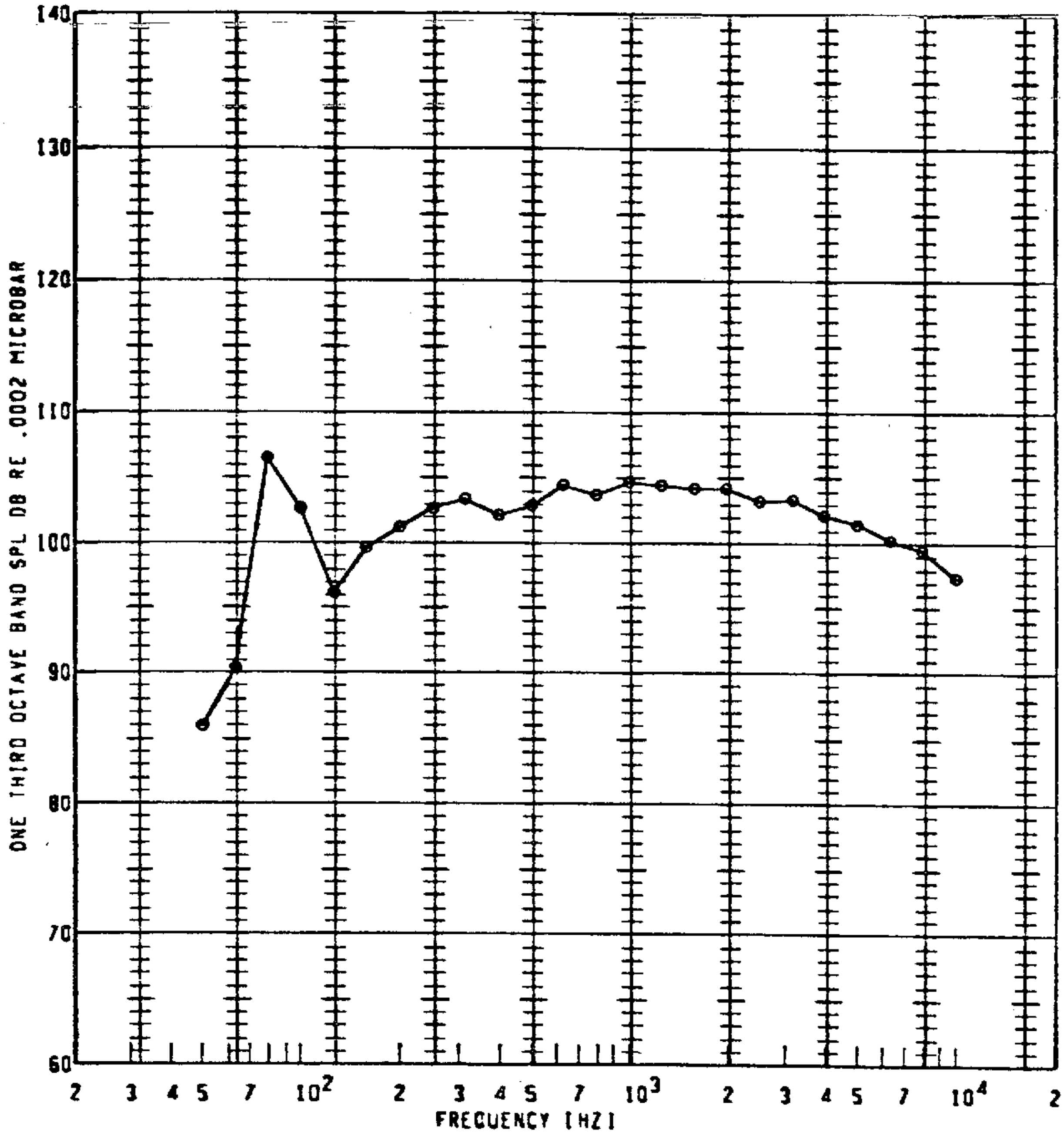
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊖	126	900	1.600	90	50FP	113.6	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



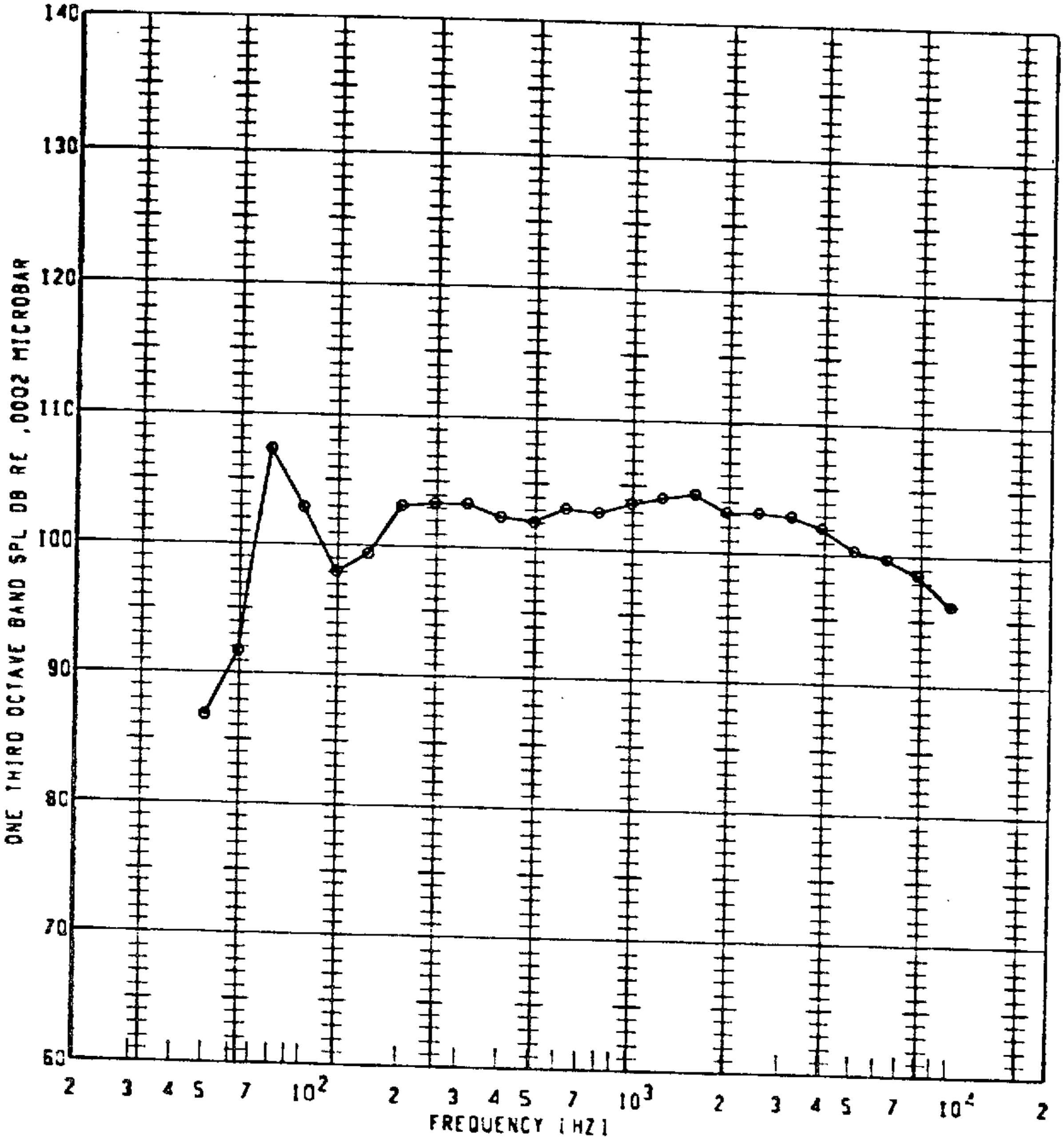
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	126	900	1.600	100	50FP	114.6	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



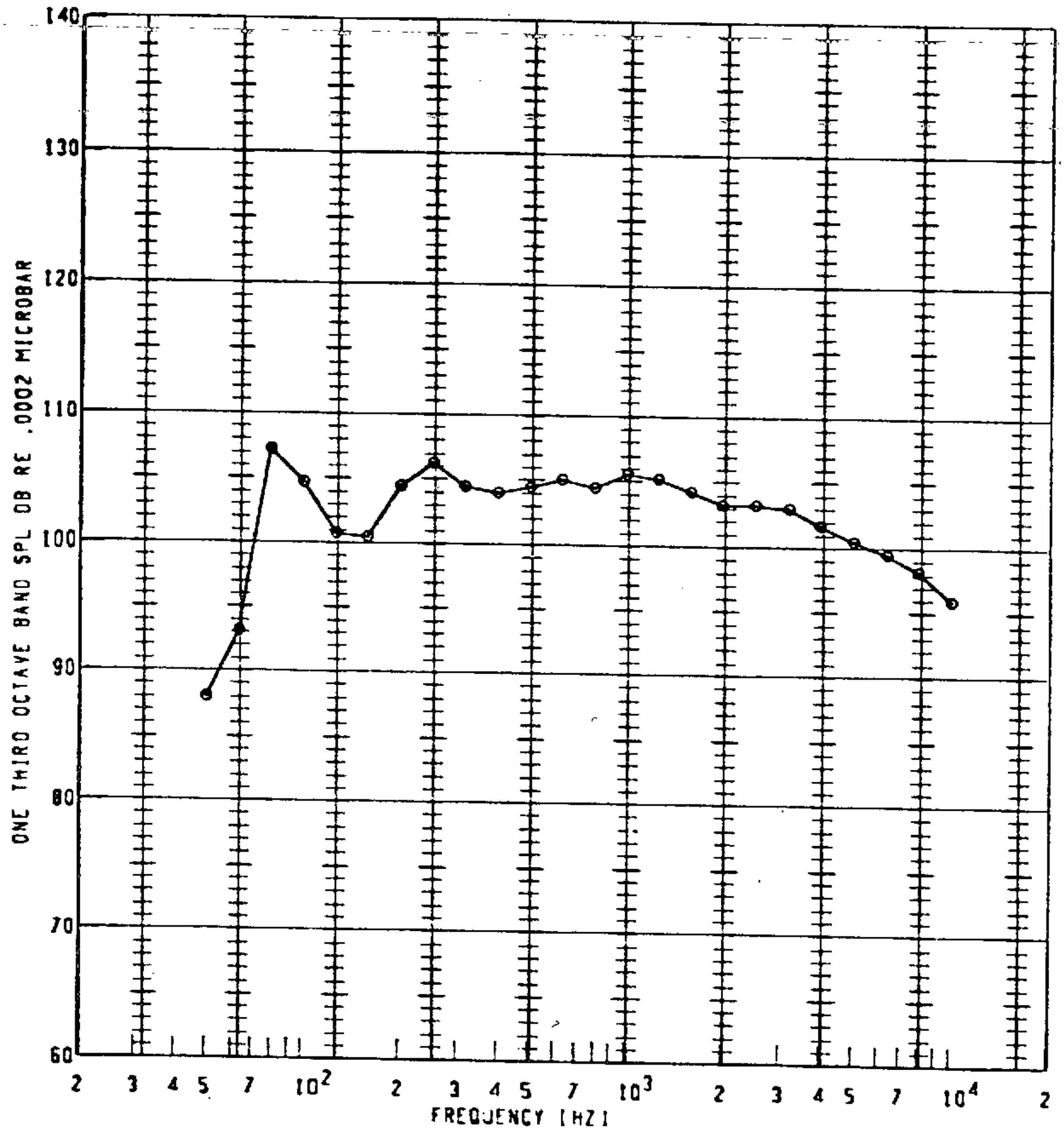
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
●	126	900	1.600	110	50FP	116.3	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



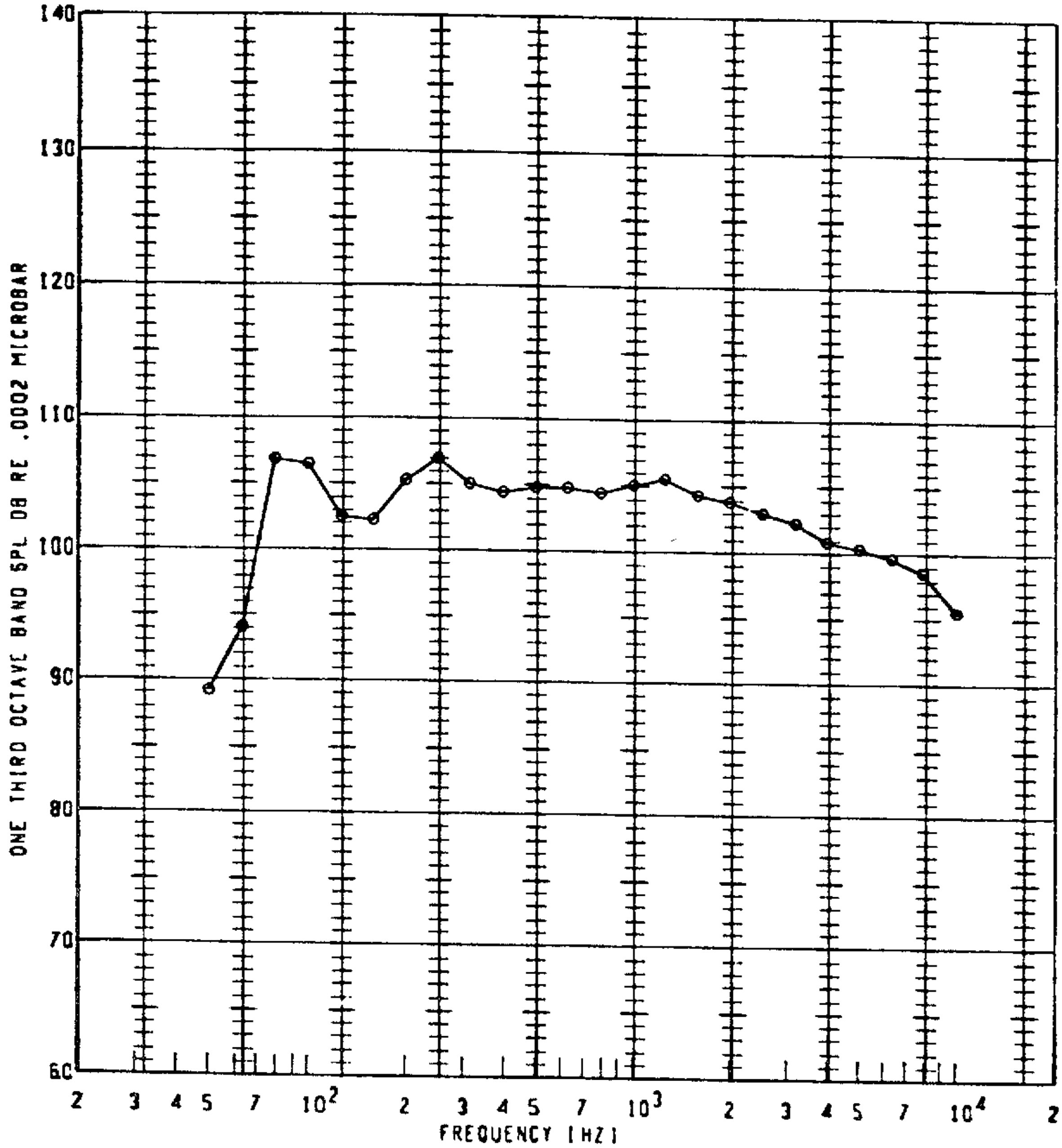
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	120	900	1.600	115	50FP	116.1	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



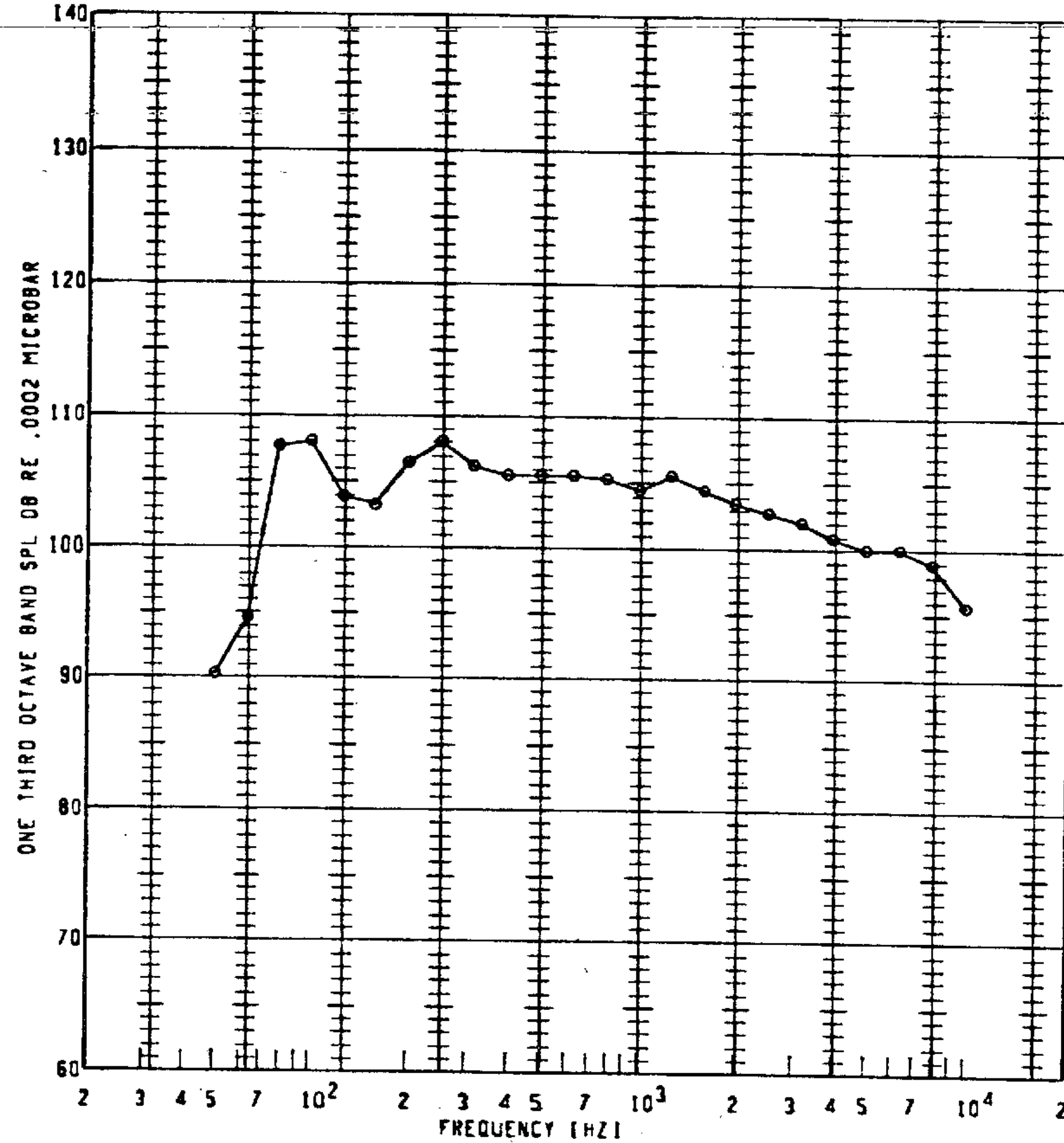
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	12G	900	1.600	120	50FP	117.2	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



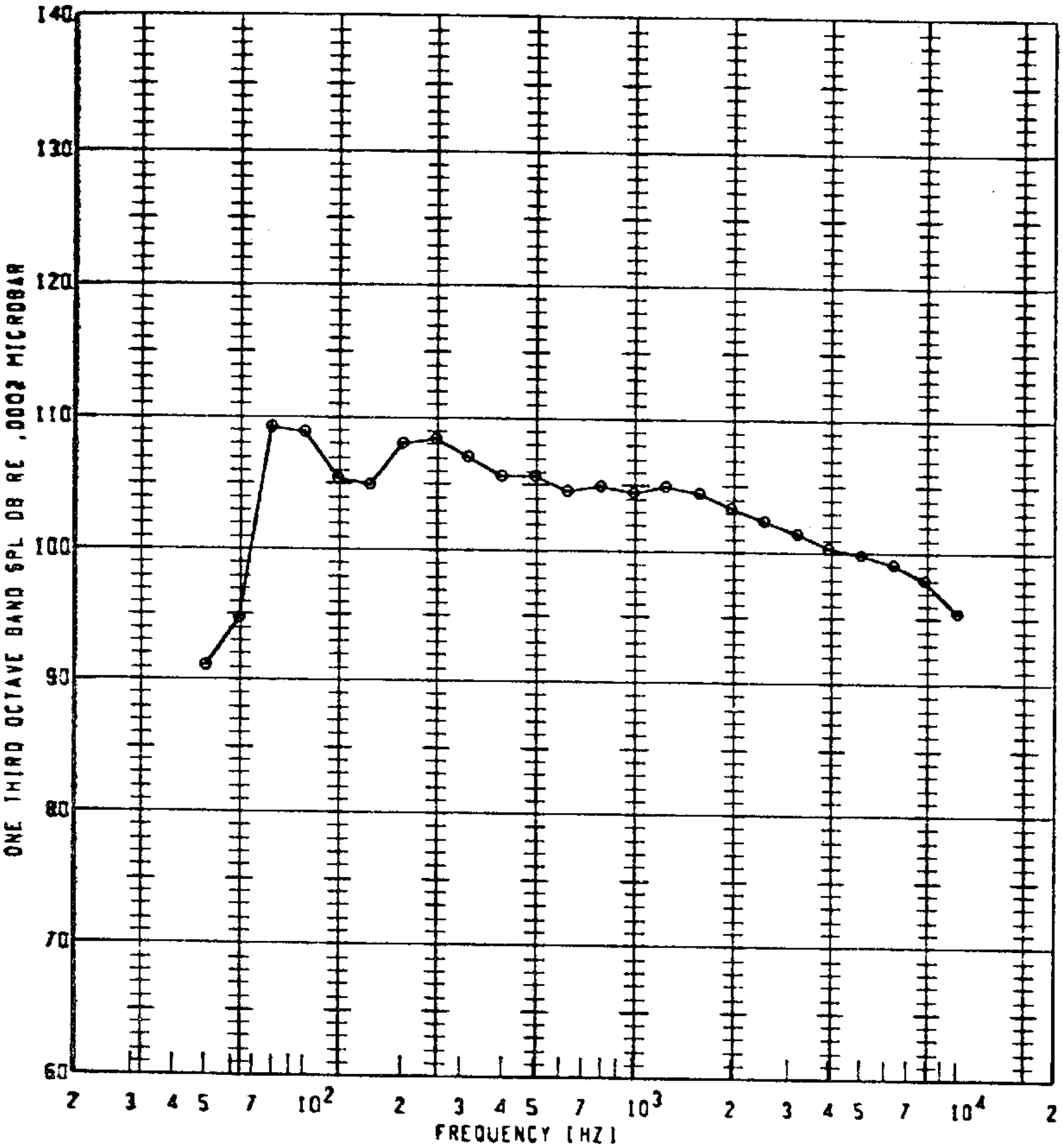
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	126	900	1.600	125	50FP	117.5	C	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



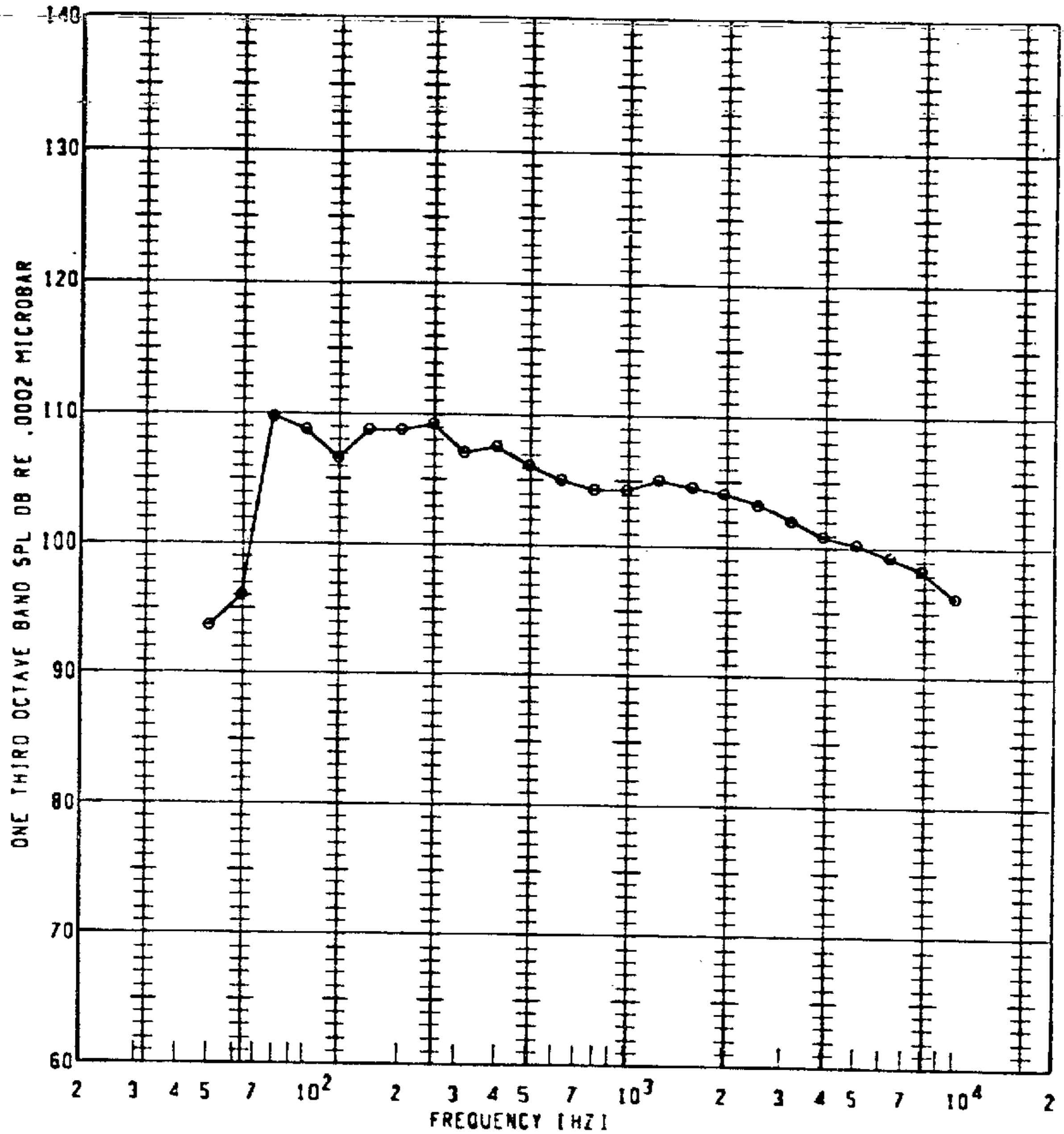
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊖	120	900	1.600	130	50FP	118.2	0	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



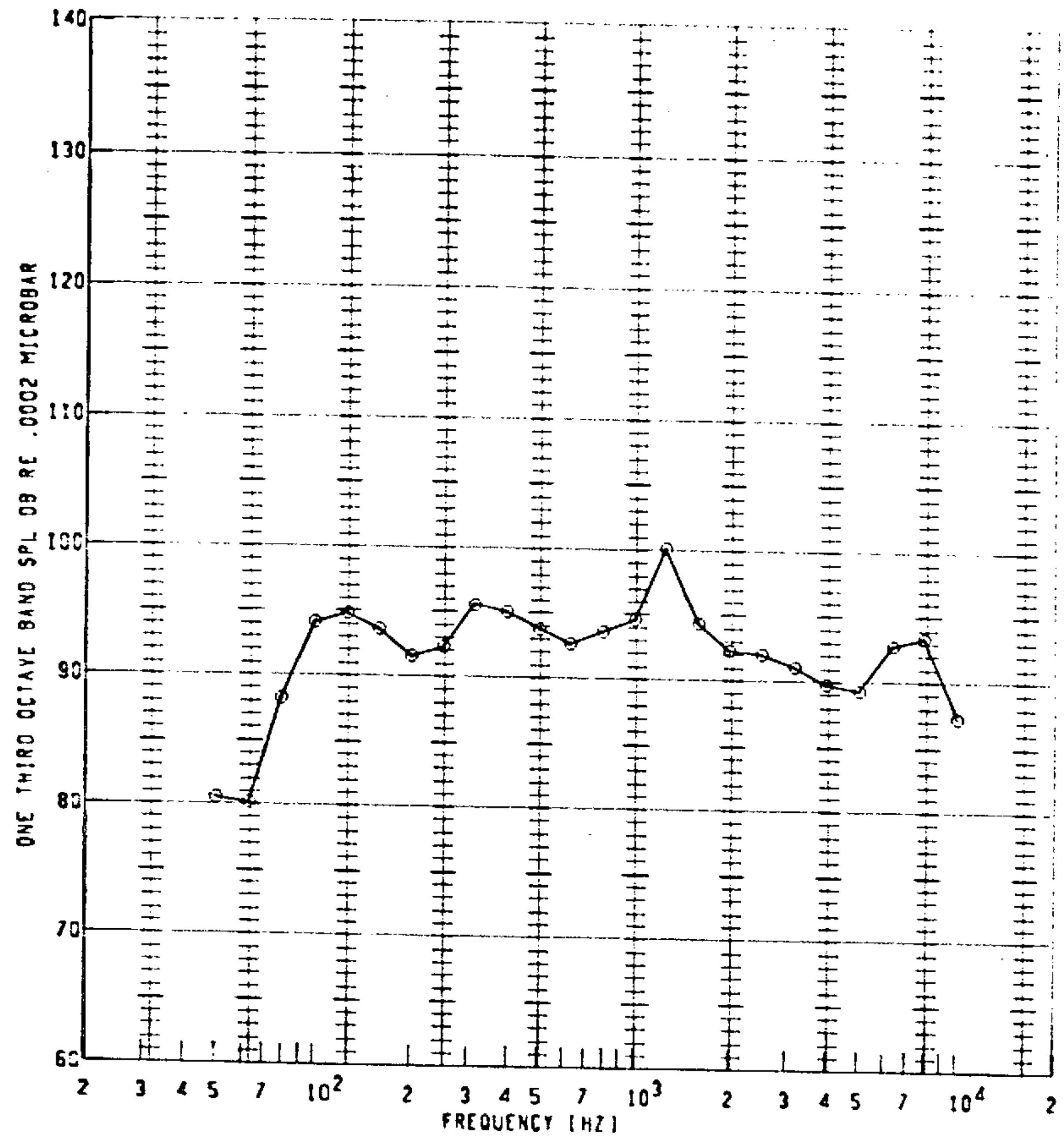
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊕	12G	900	1.600	135	50FP	118.6	10	

BUFFALO SUPPRESSOR NOZZLE TONE ID TEST - HOT NOZZLE TEST FACILITY



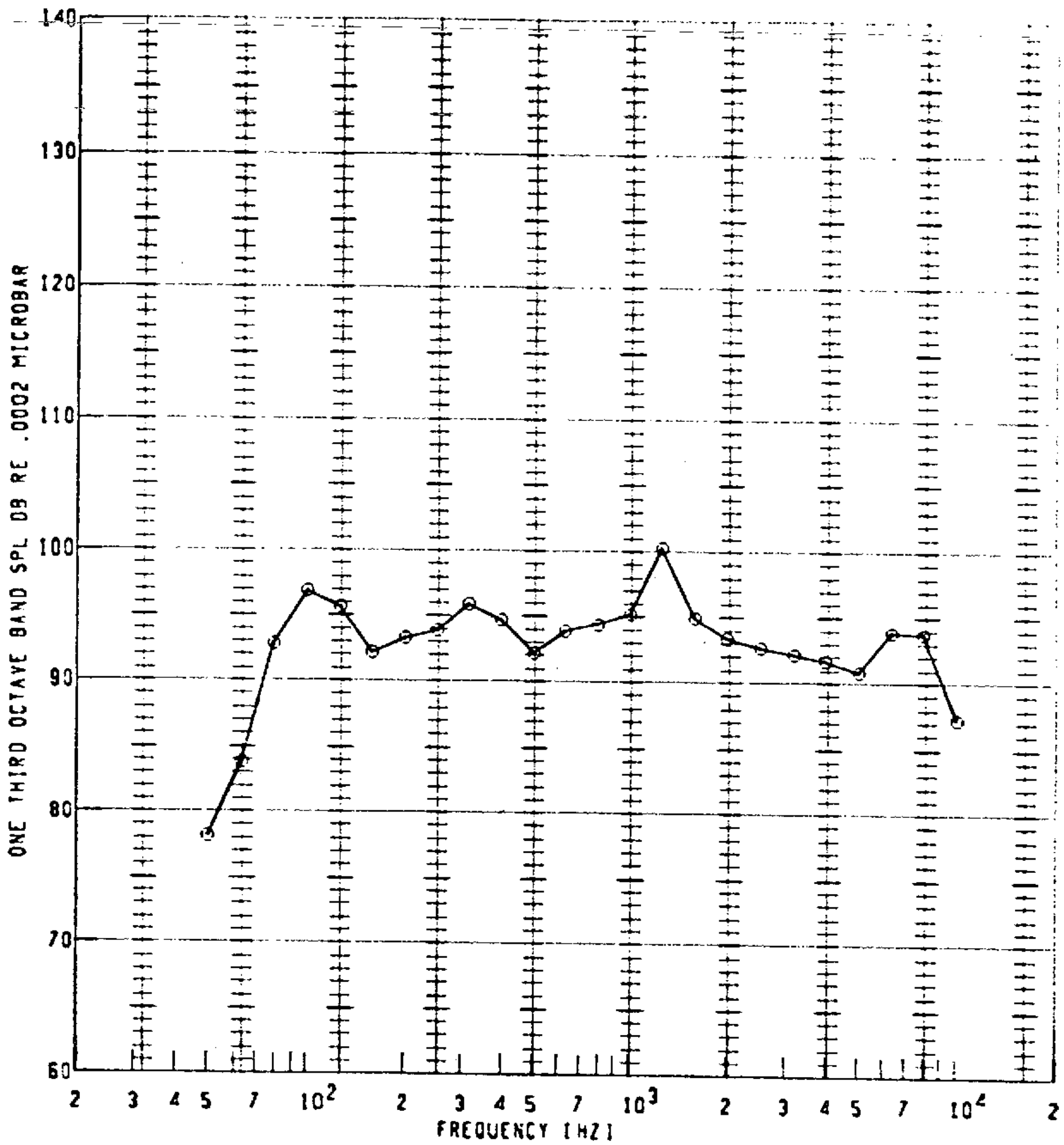
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	126	900	1.600	140	50FP	119.4	0	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



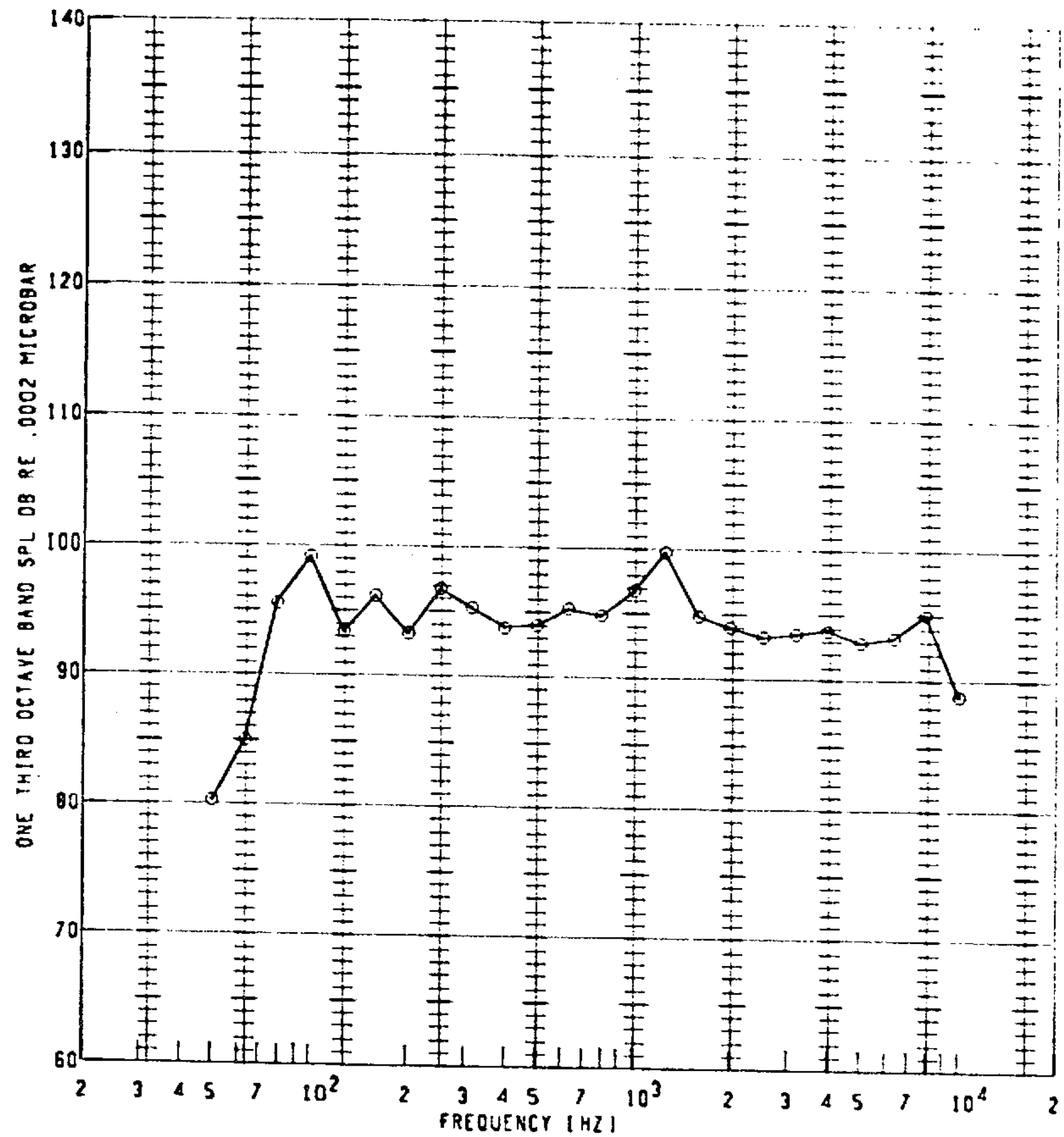
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	700	1.200	90	50FP	107.2	10	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



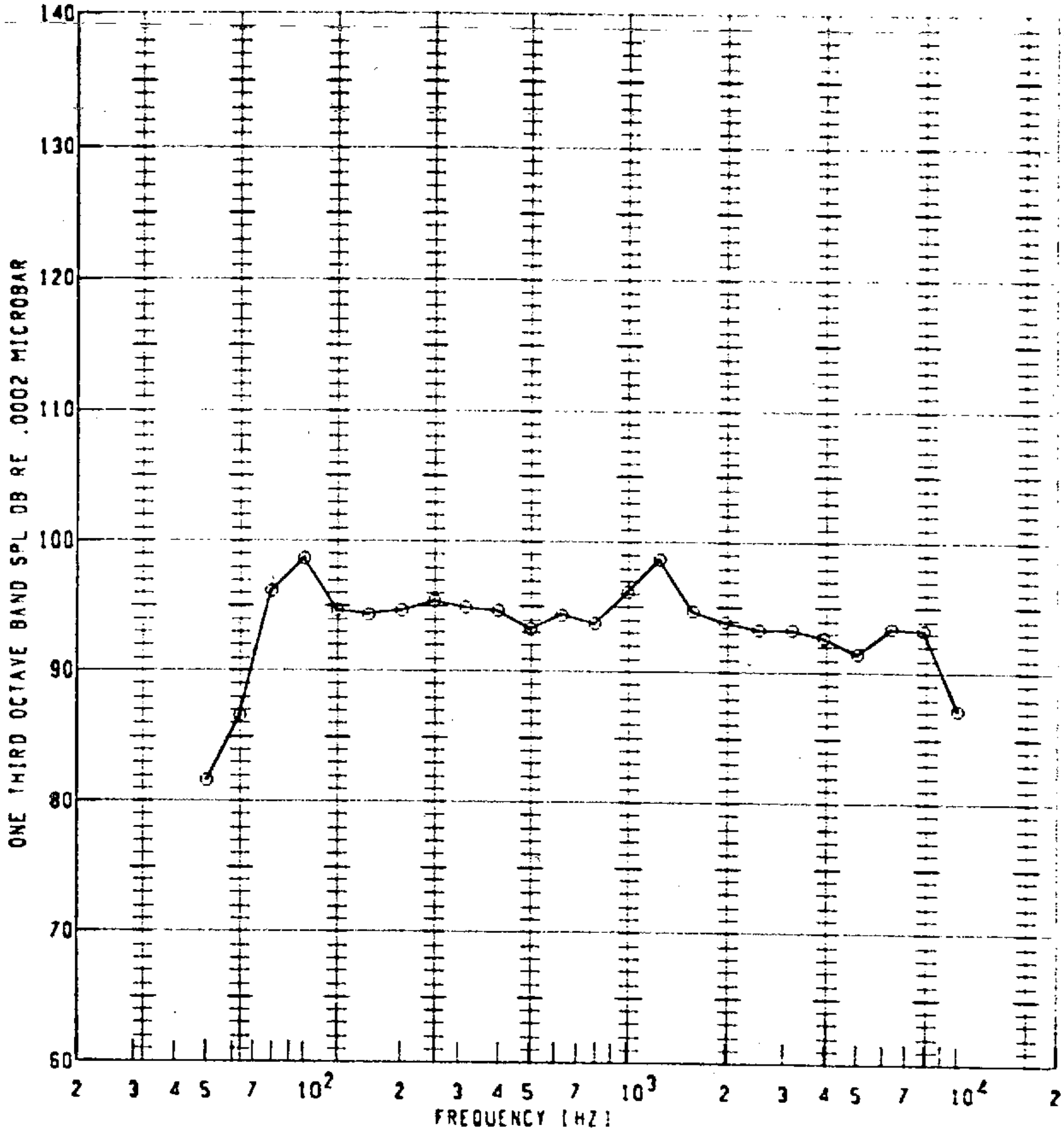
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	700	1.200	100	50FP	107.9	20	-

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



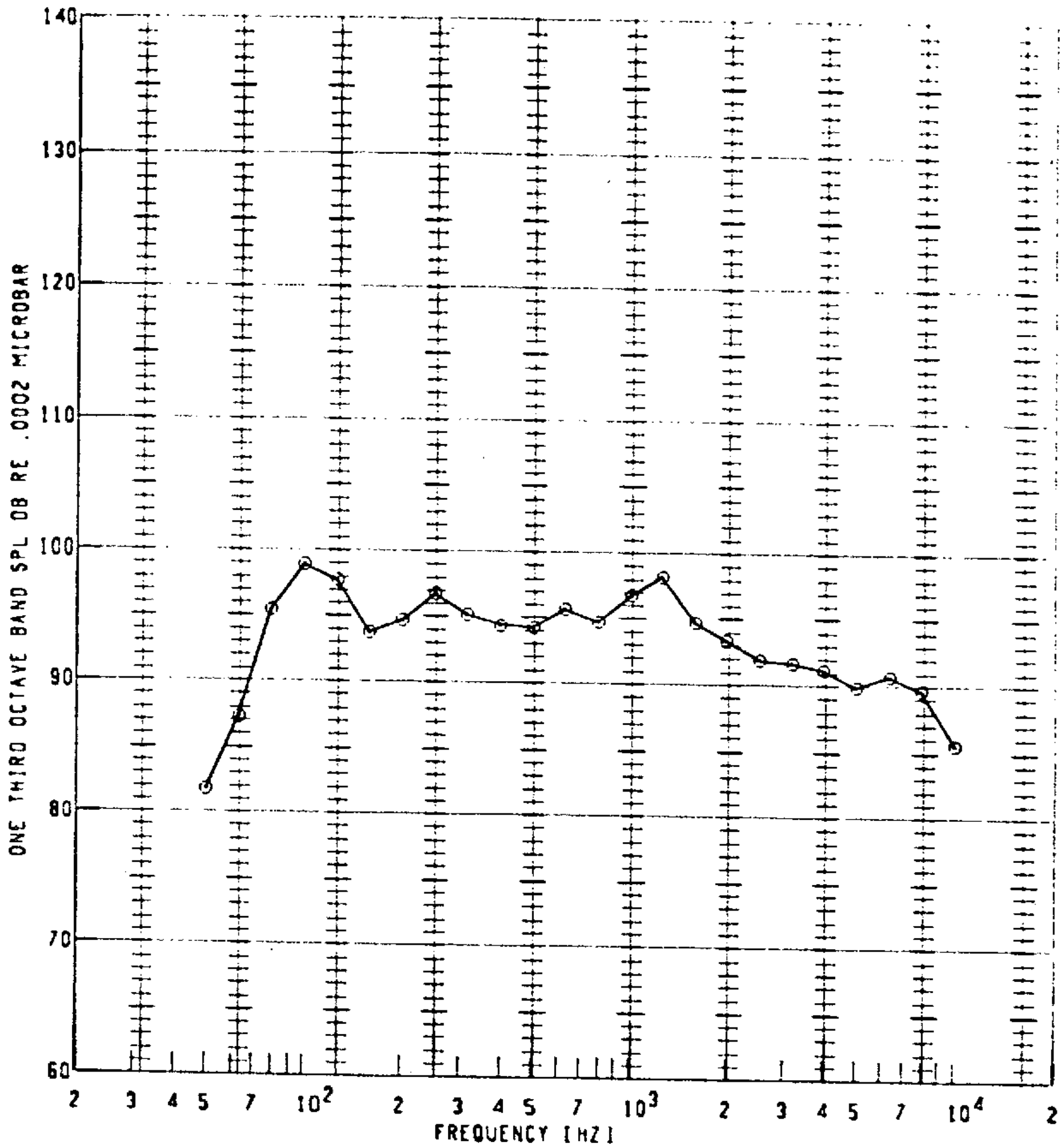
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	700	1.200	110	50FP	108.8	10	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



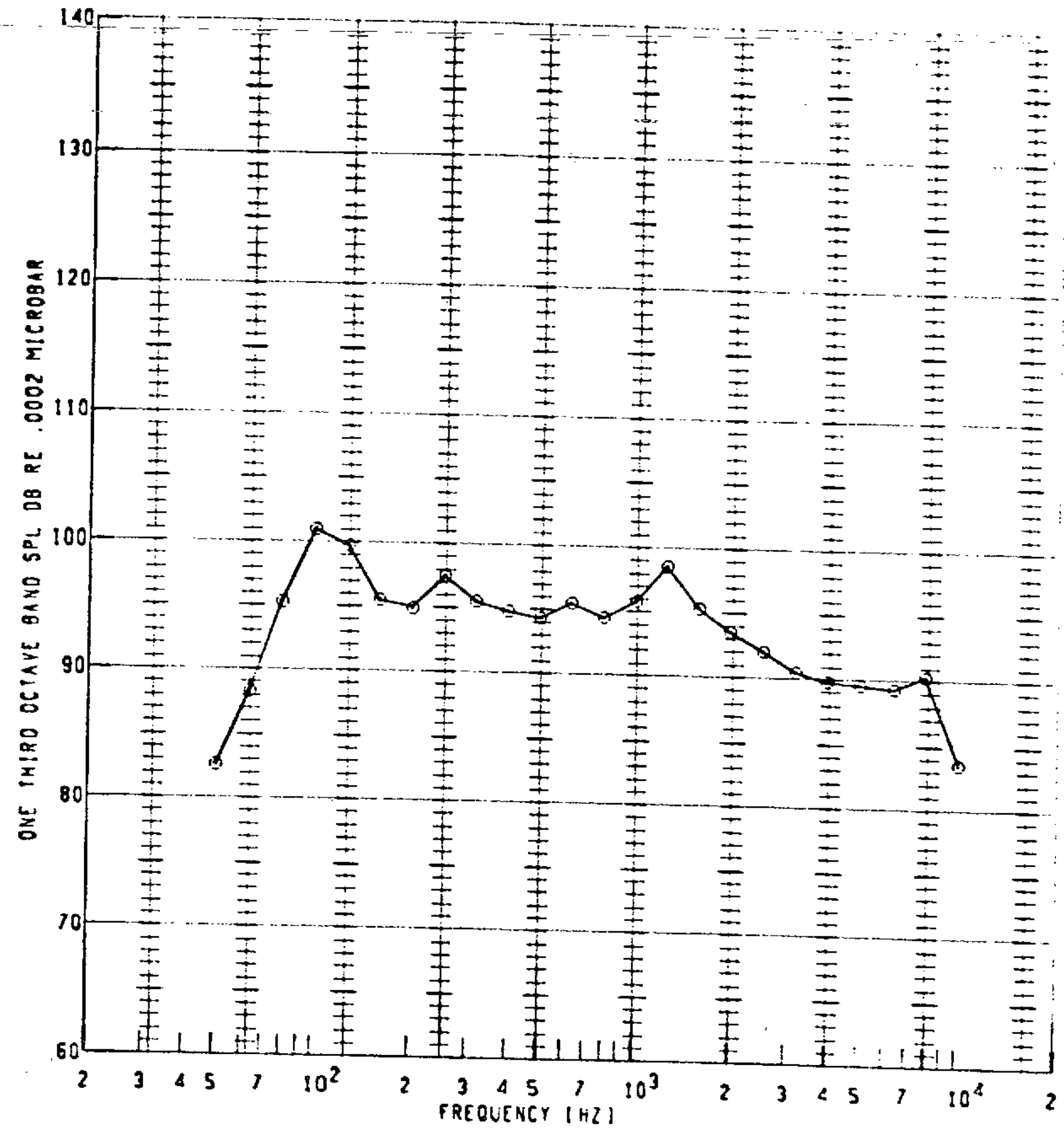
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	200	700	1.200	115	50FP	108.2	10	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



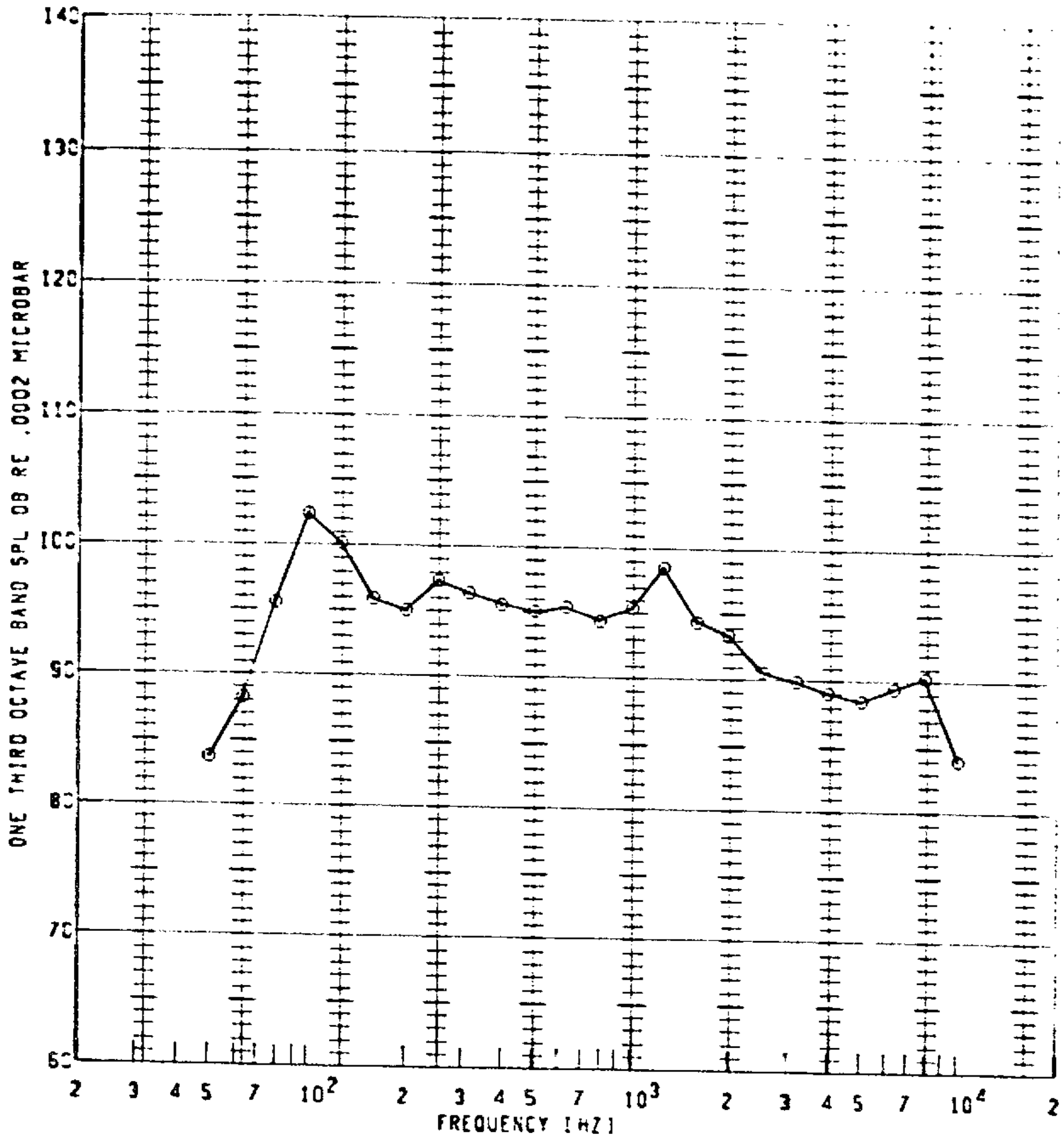
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊙	20G	700	1.200	120	50FP	108.3	20	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



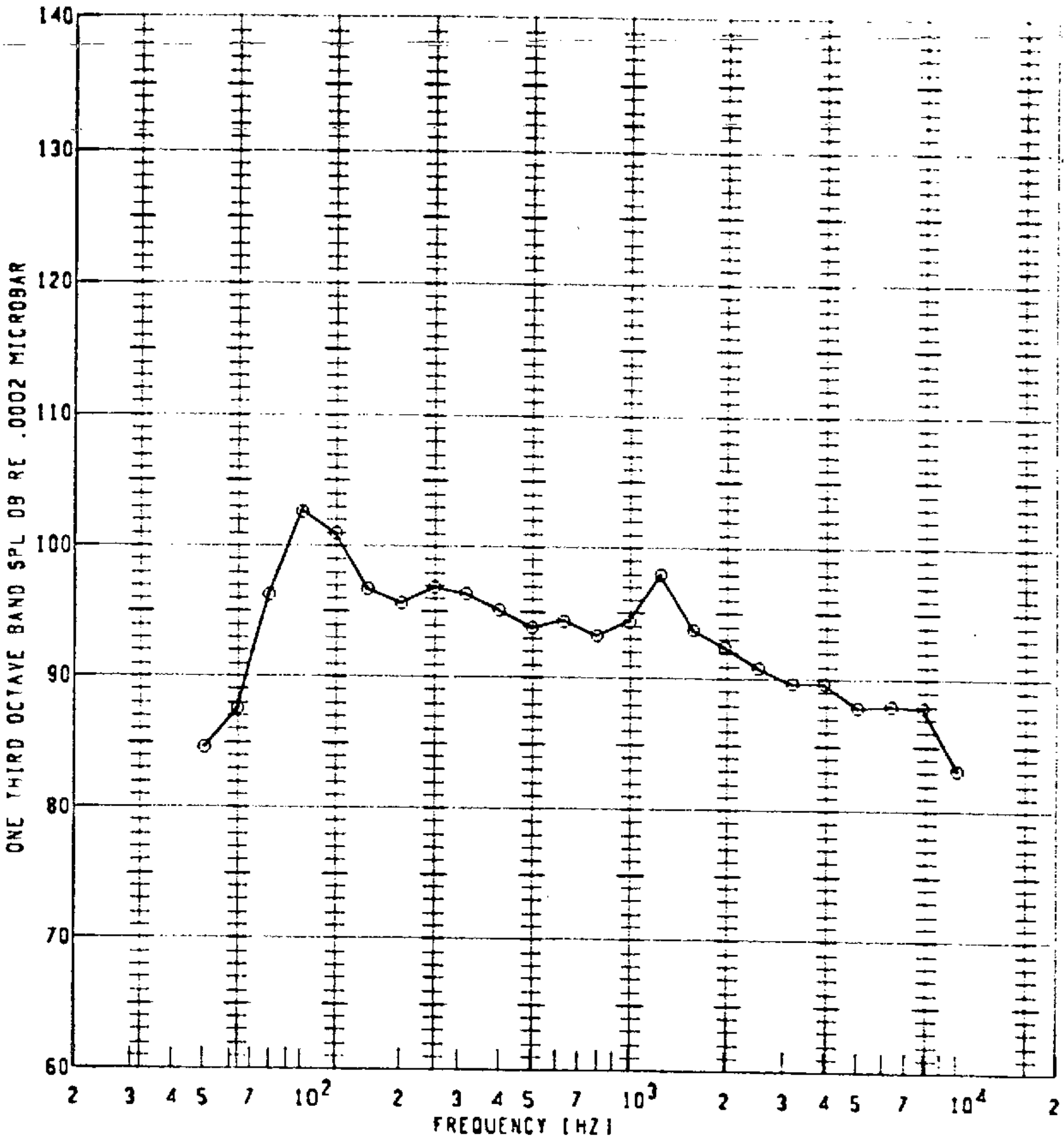
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	700	1.200	125	50FP	108.9	[illegible]	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



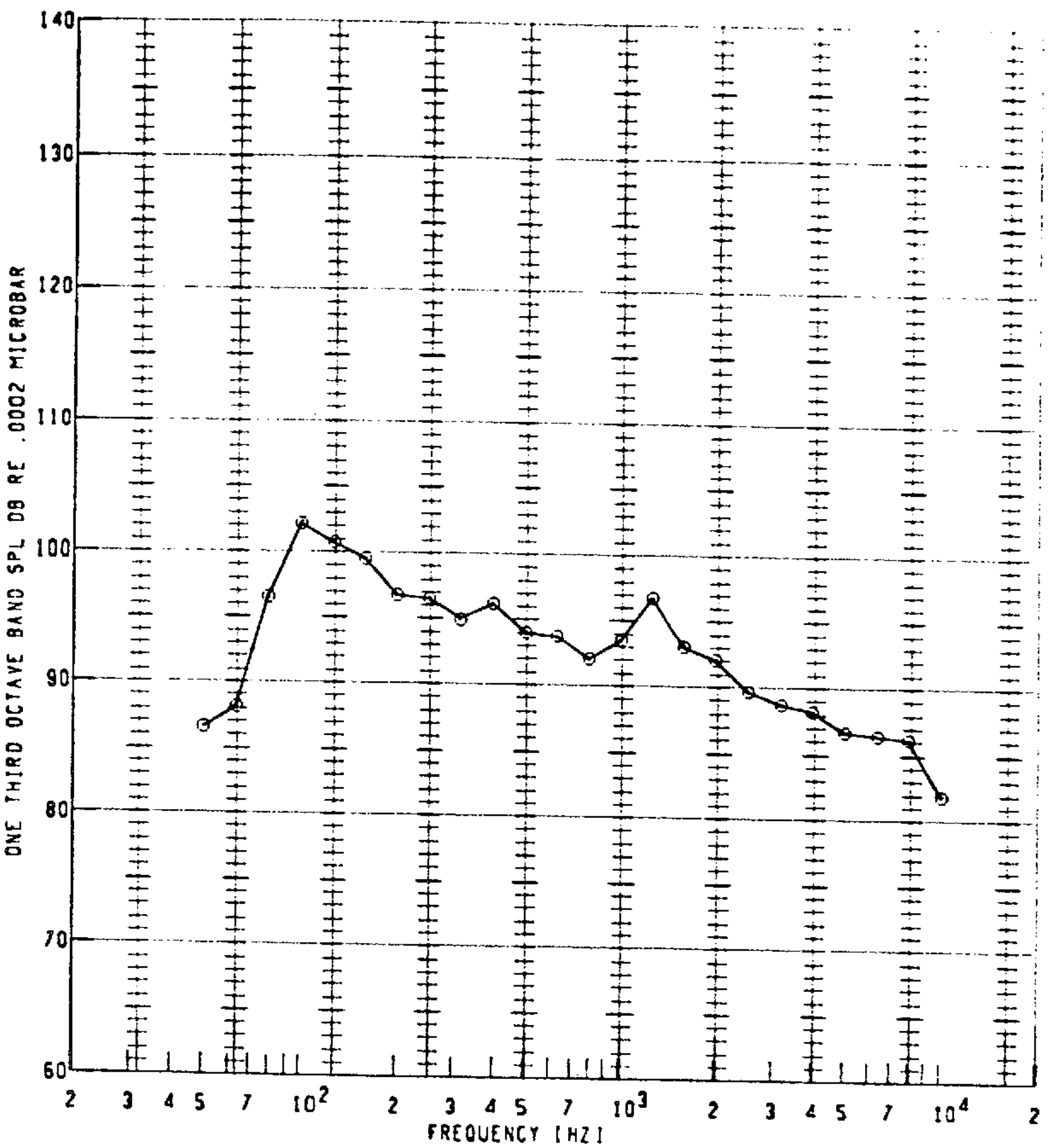
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	700	1.200	130	50FP	109.2	10	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



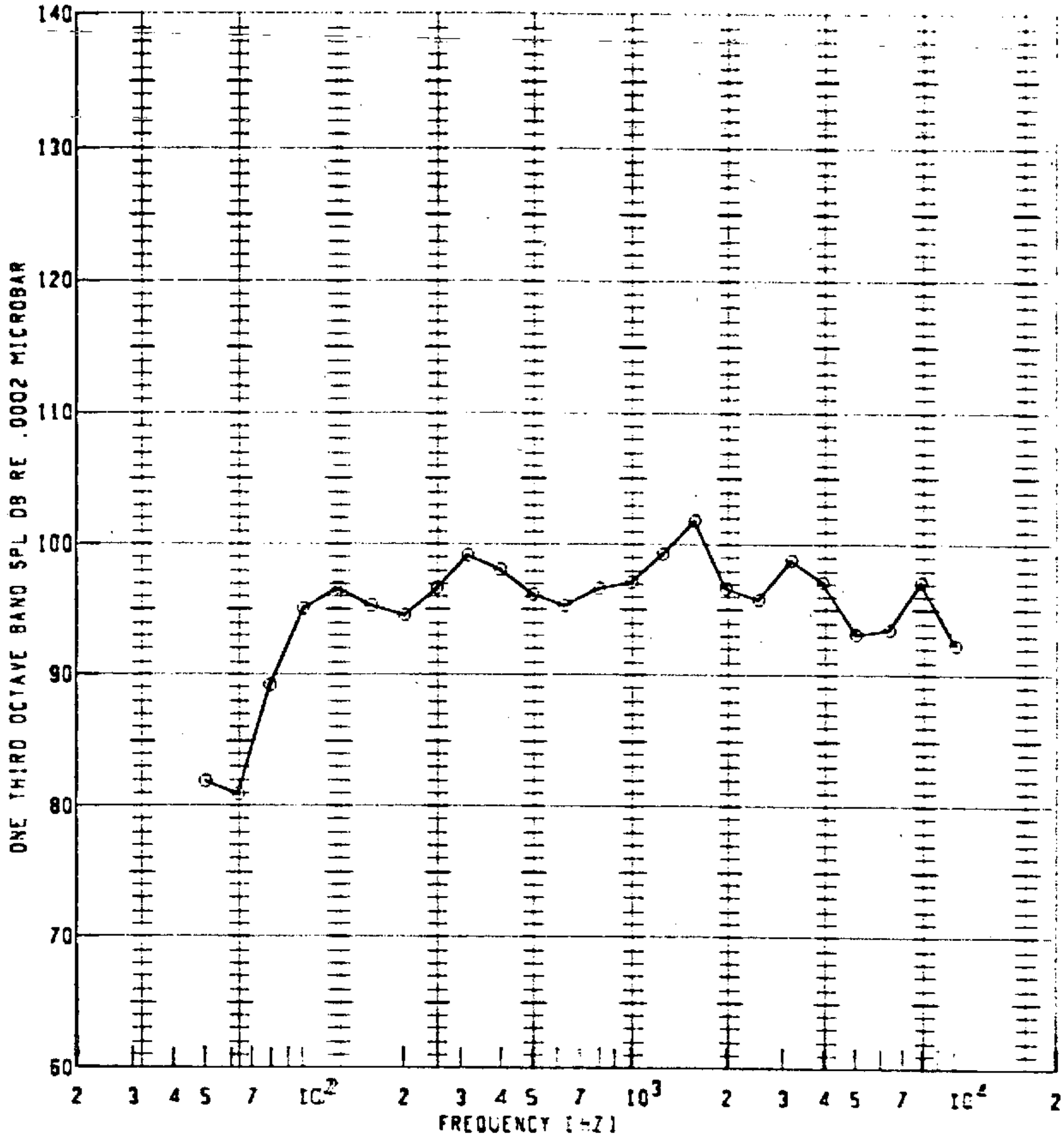
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	700	1.200	135	50FP	109.2	10	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



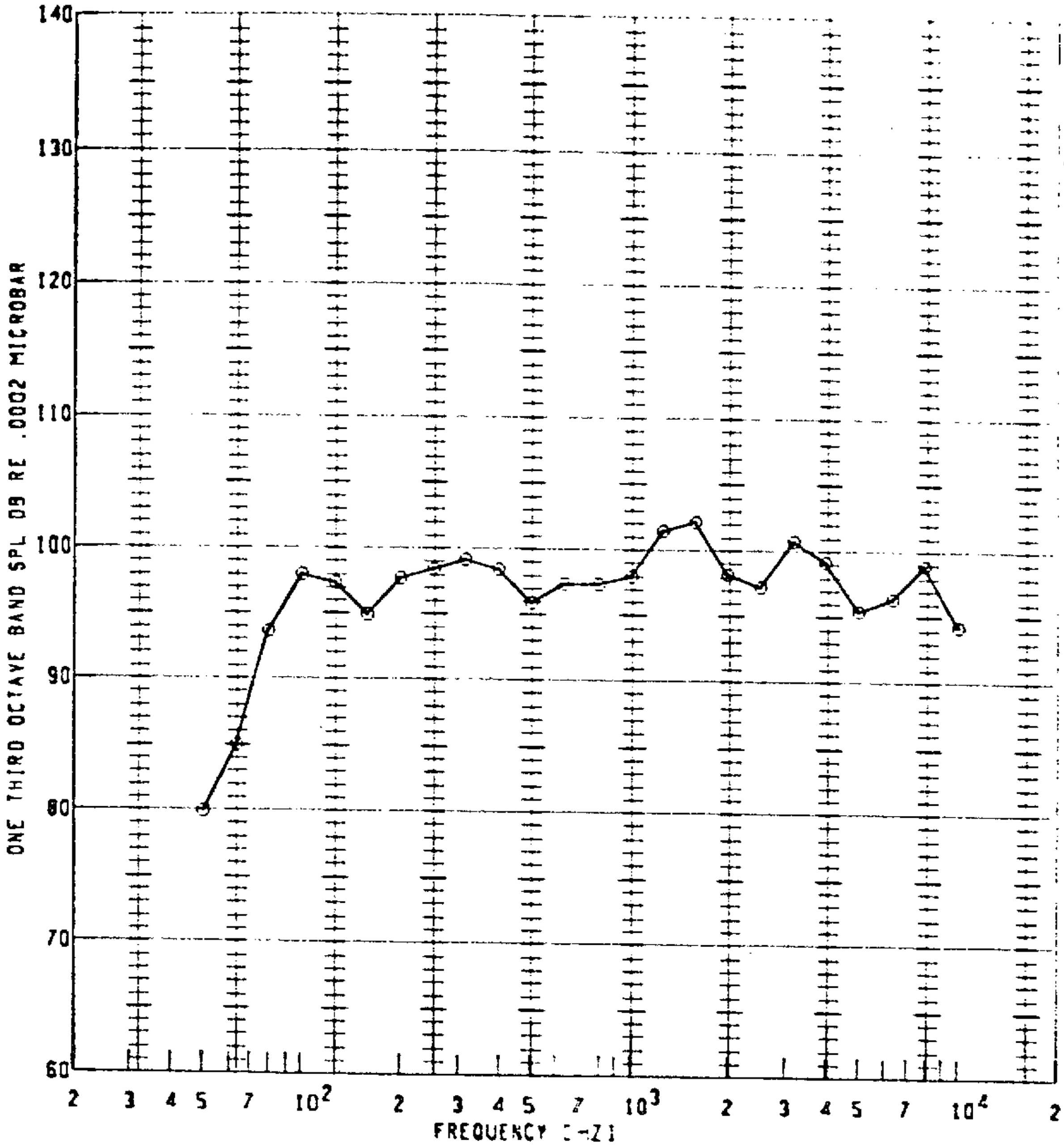
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊙	206	700	1.200	140	50FP	109.0	10	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



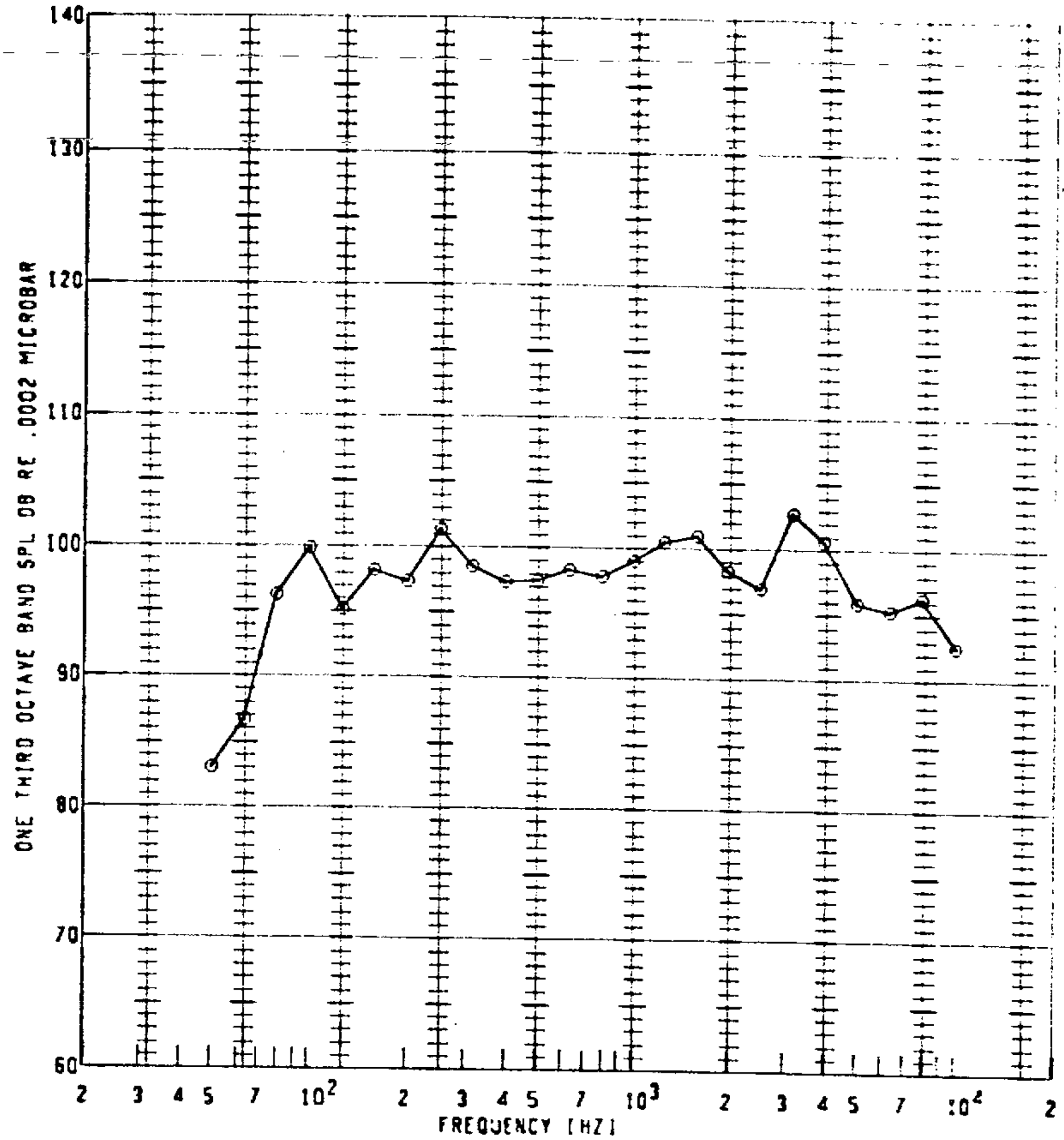
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊖	206	750	1.300	90	50FP	110.3	10	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



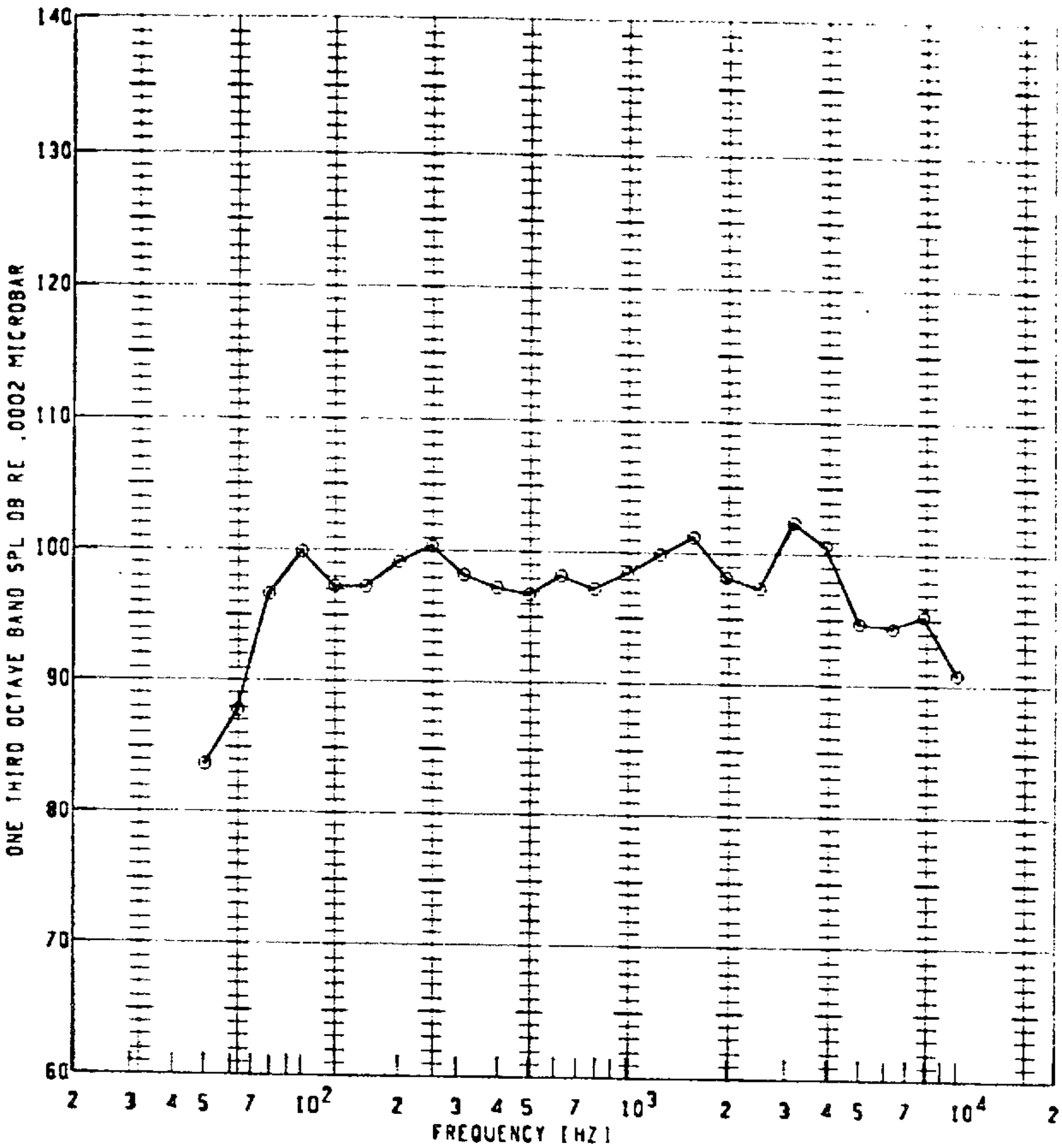
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	750	1.300	100	50FP	111.7	10	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



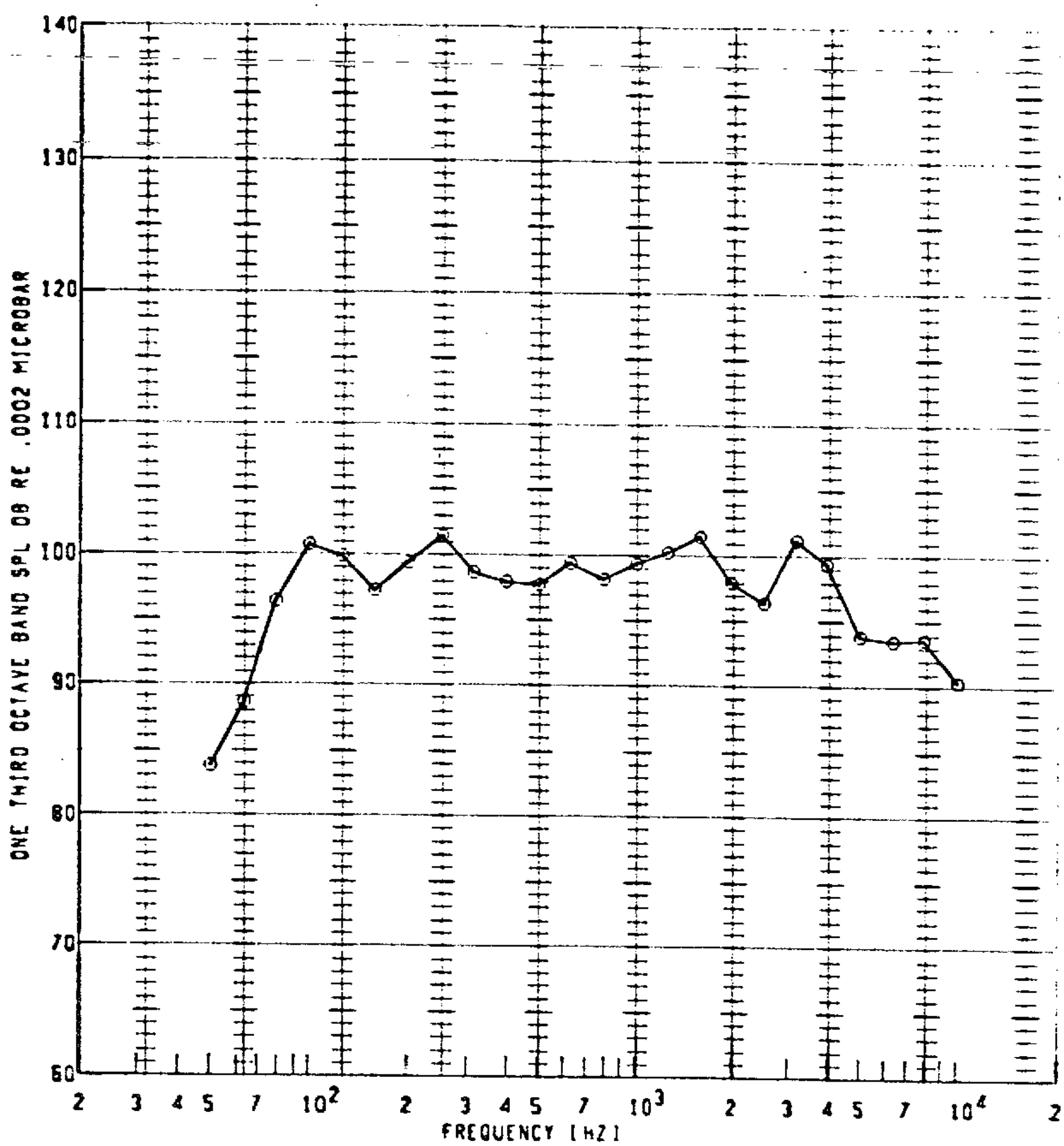
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	750	1.300	110	50FP	112.1	10	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



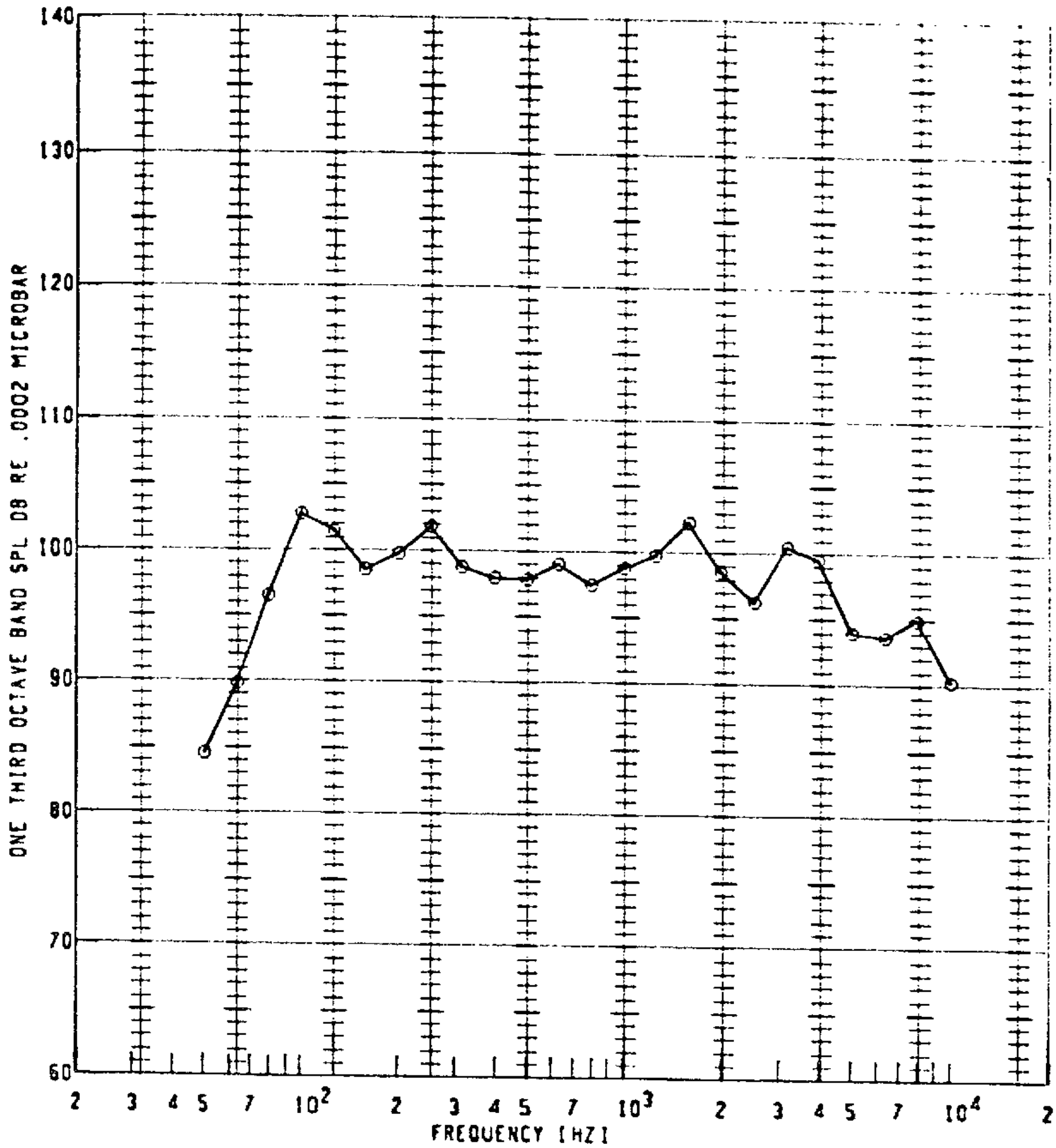
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	CASPL (OB)	GAIN SETTING	SPECIAL
⊙	206	750	1.300	115	50FP	111.9	10	10

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



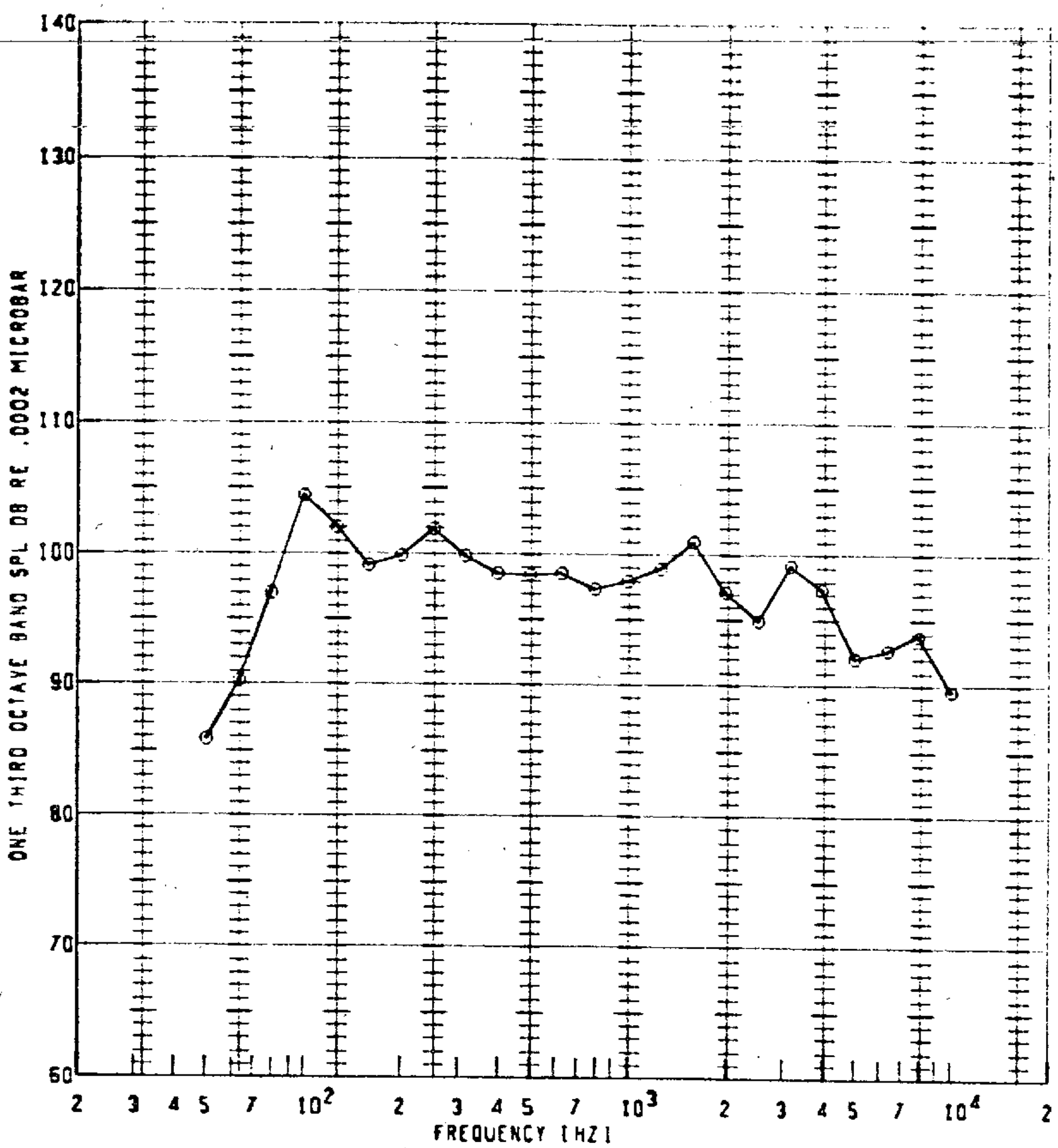
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	750	1.300	120	50FP	112.1	10	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



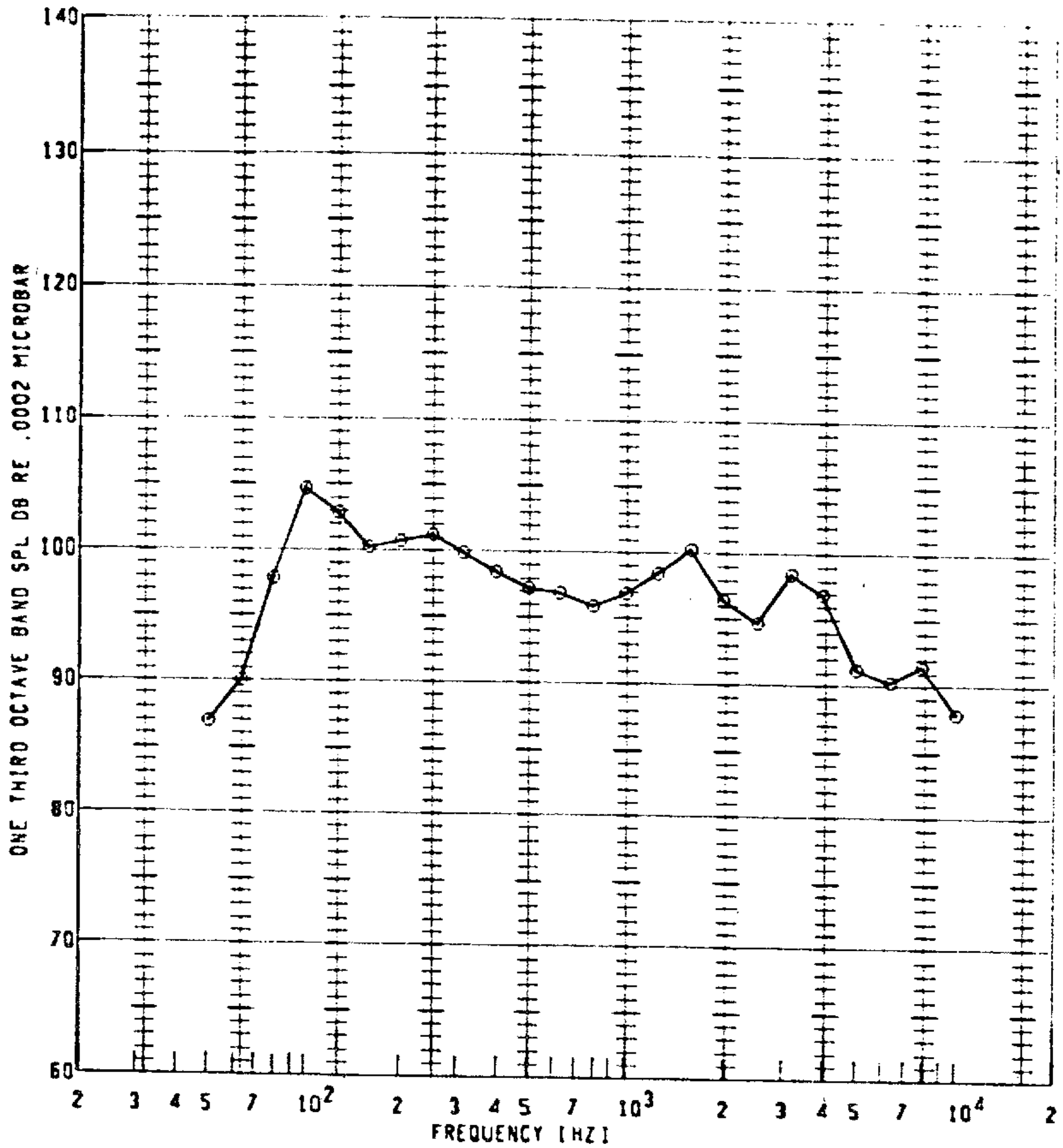
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	750	1.300	125	50FP	112.5	10	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



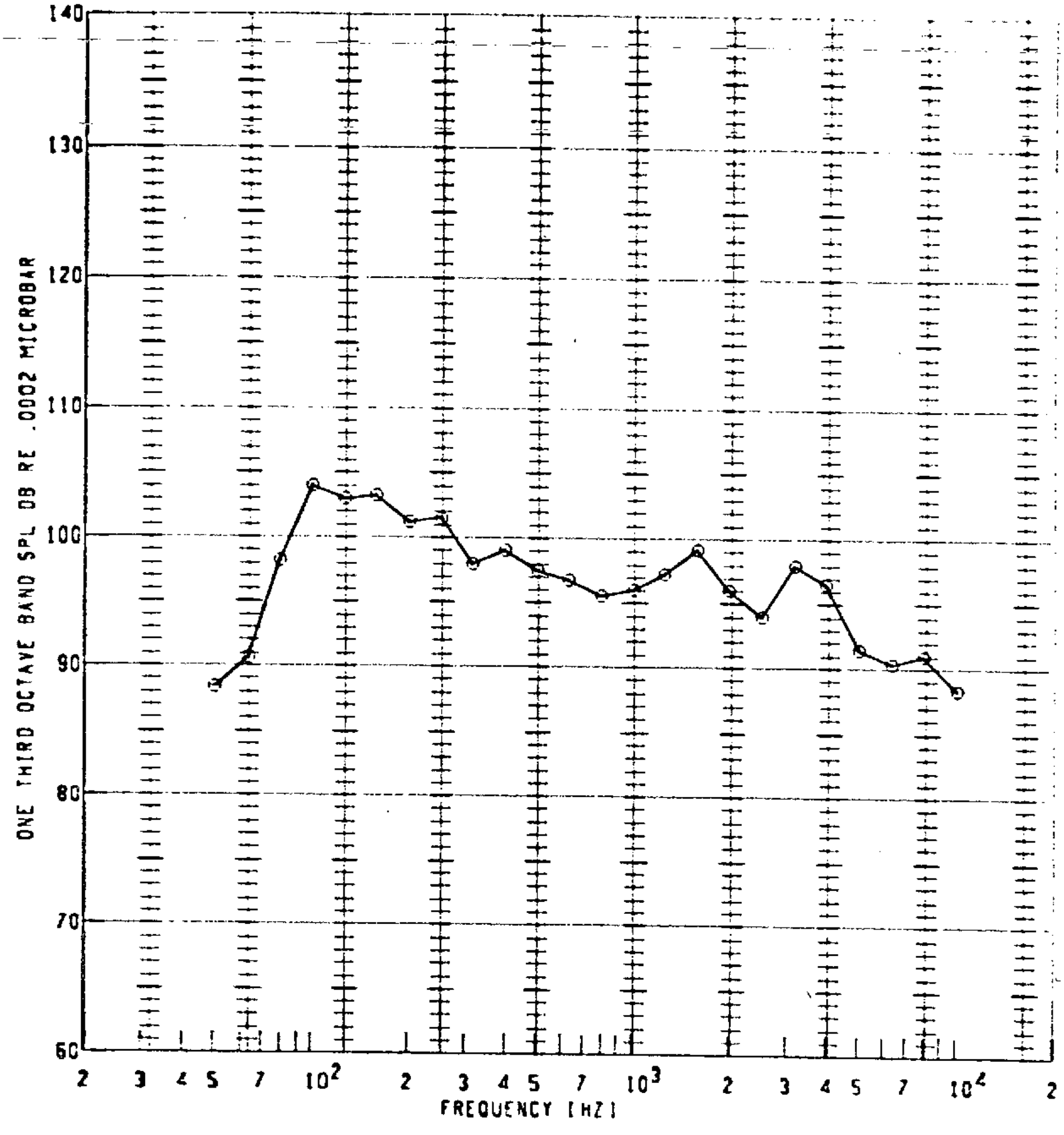
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	206	750	1.300	130	50FP	112.4	10	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY

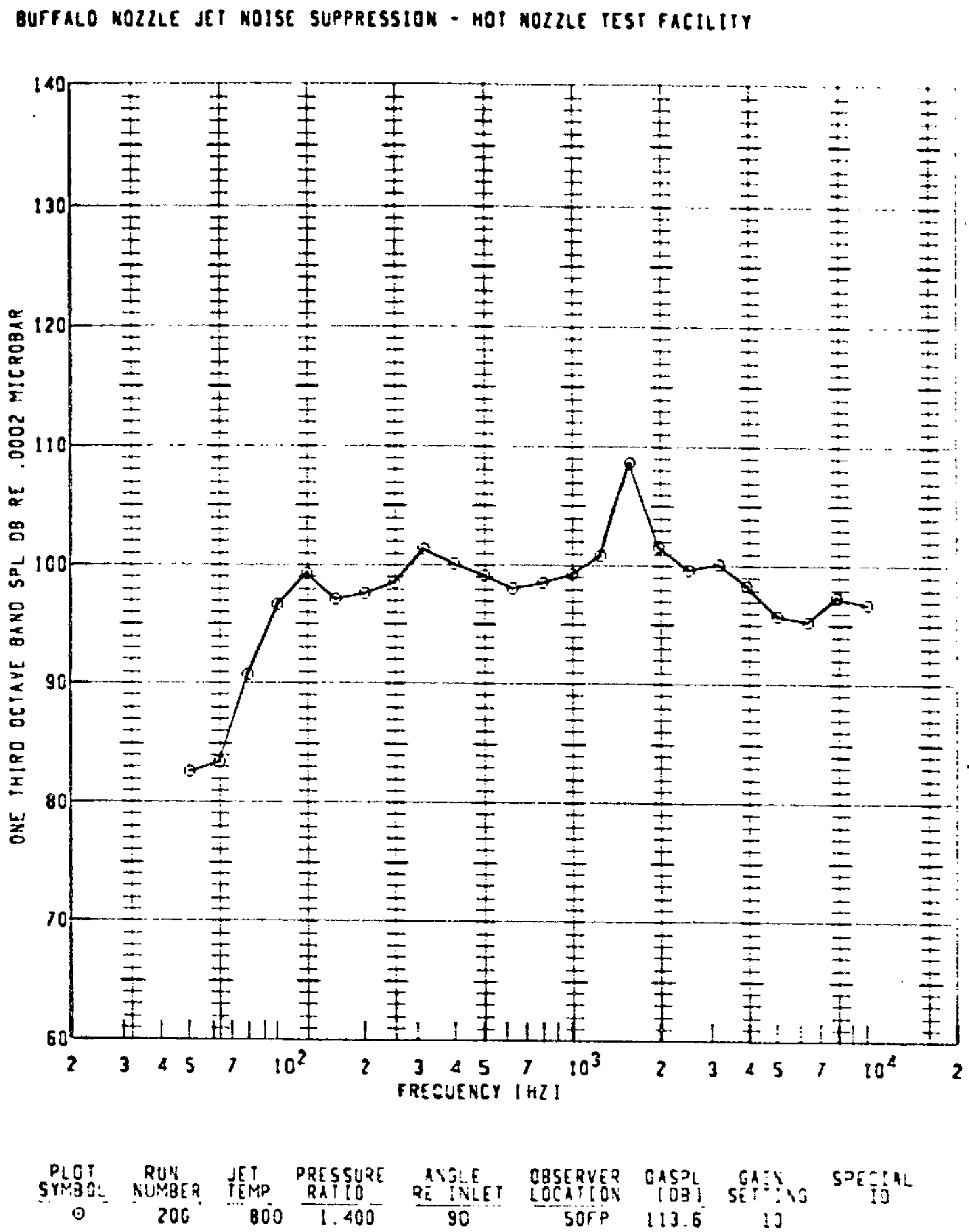


PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	750	1.300	135	50FP	112.3	10	

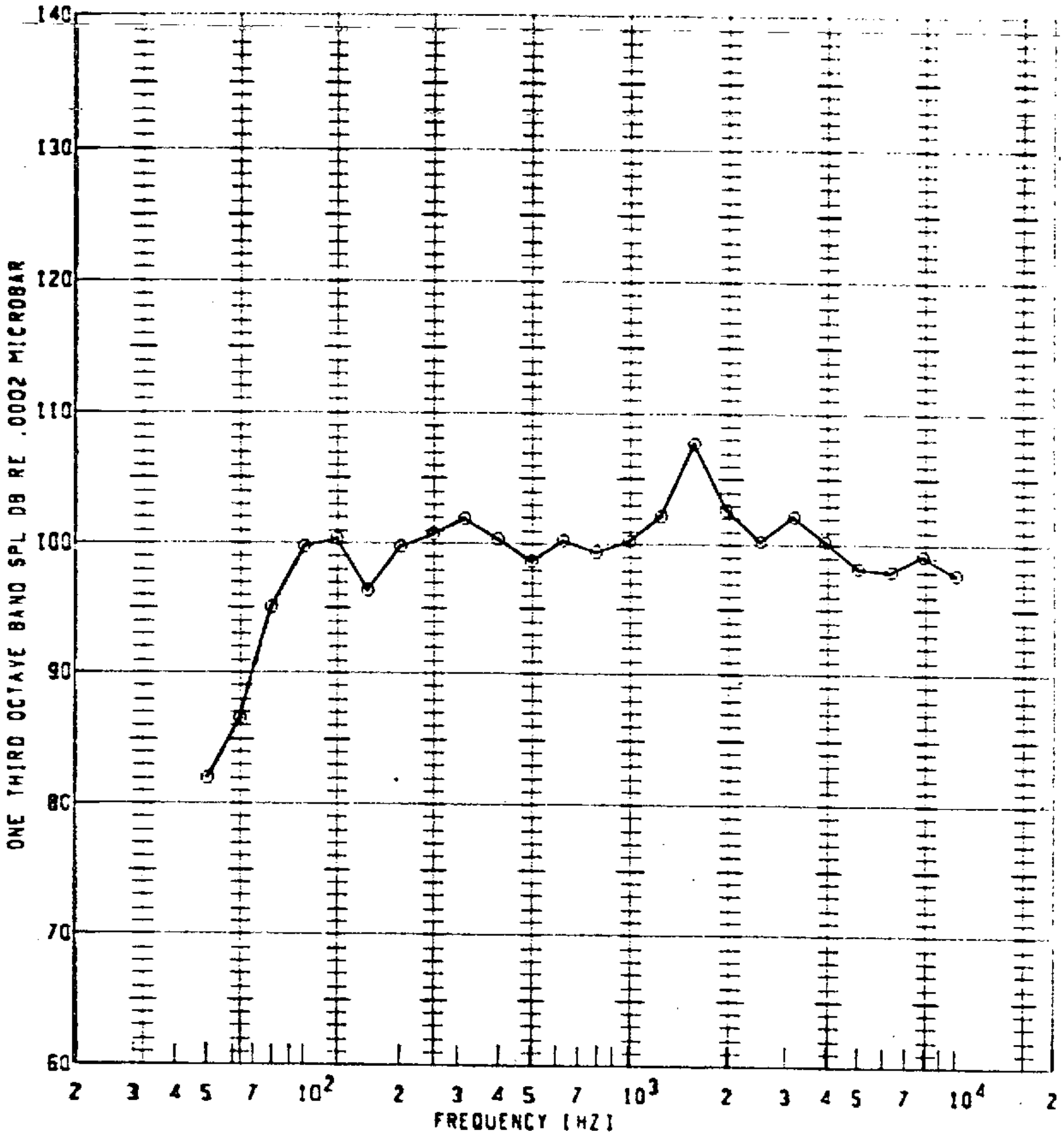
BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	750	1.300	140	50FP	112.3	10	

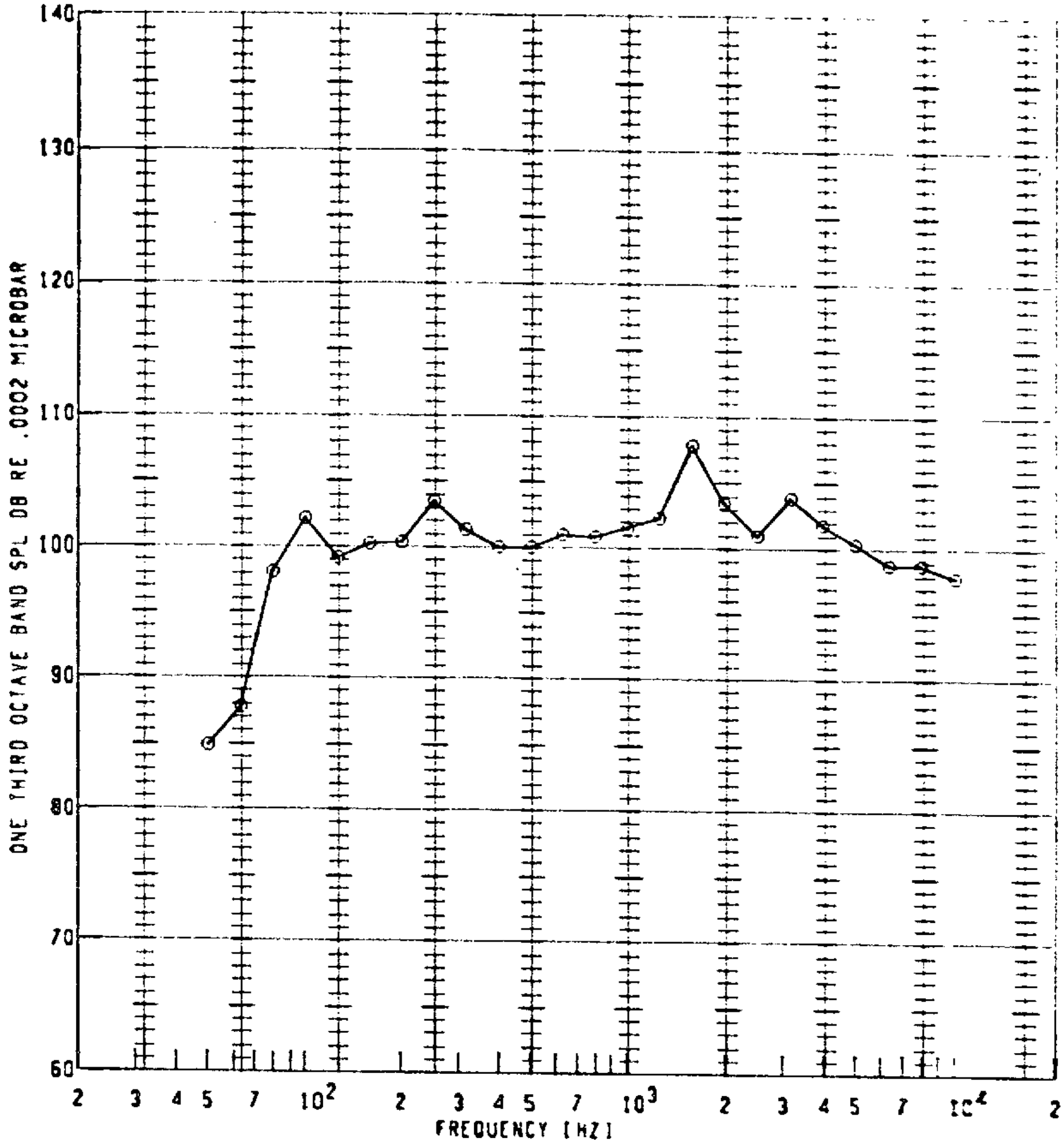

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY
ONE THIRD OCTAVE BAND SPL DB RE .0002 MICROBAR
FREQUENCY (HZ)
PLOT SYMBOL
RUN NUMBER 200
JET TEMP 800
PRESSURE RATIO 1.400
ANGLE RE INLET 90
OBSERVER LOCATION 50FP
OASPL (DB) 113.6
GAIN SETTING 10
SPECIAL ID

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



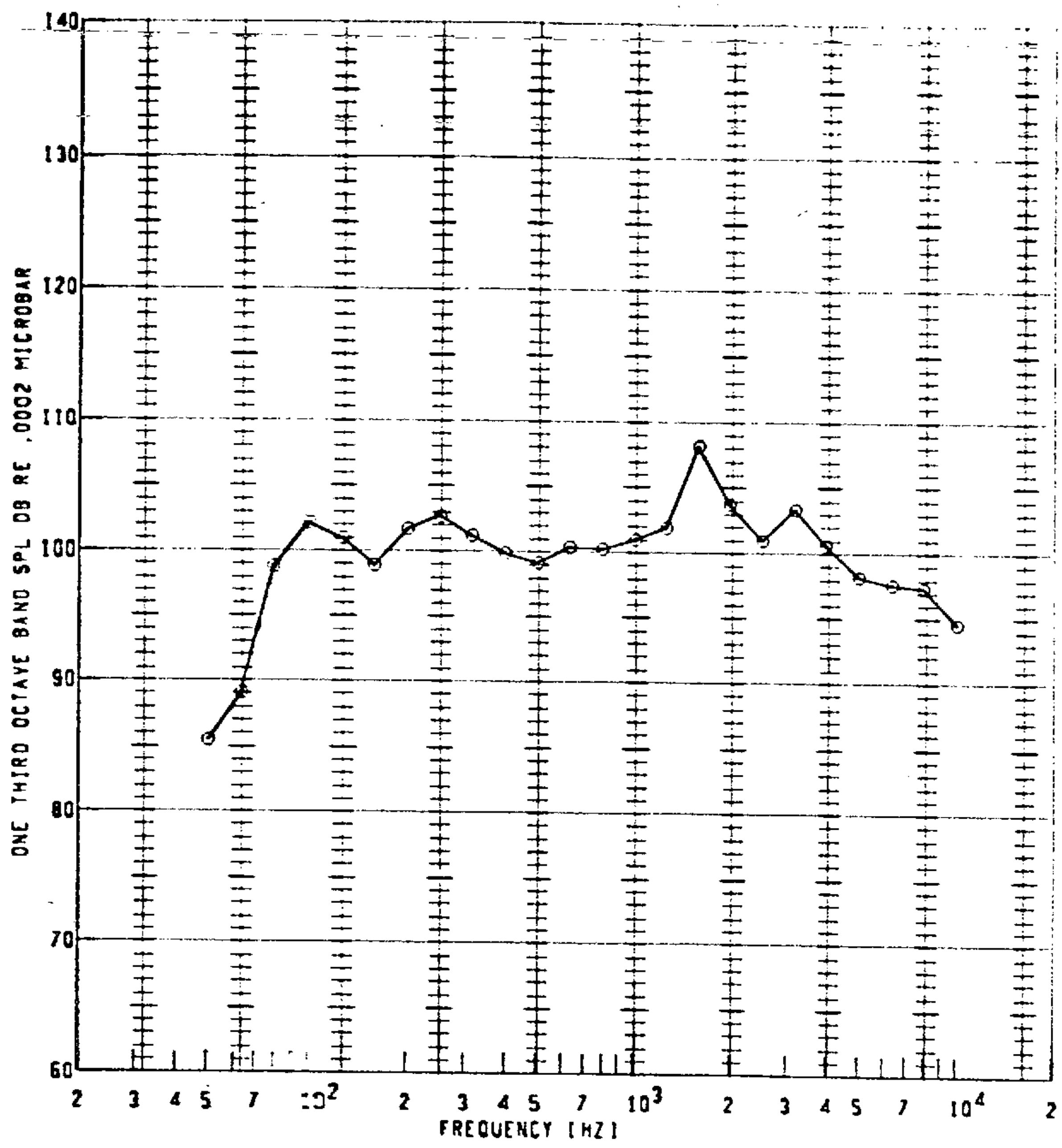
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	800	1.400	100	50FP	114.3	10	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



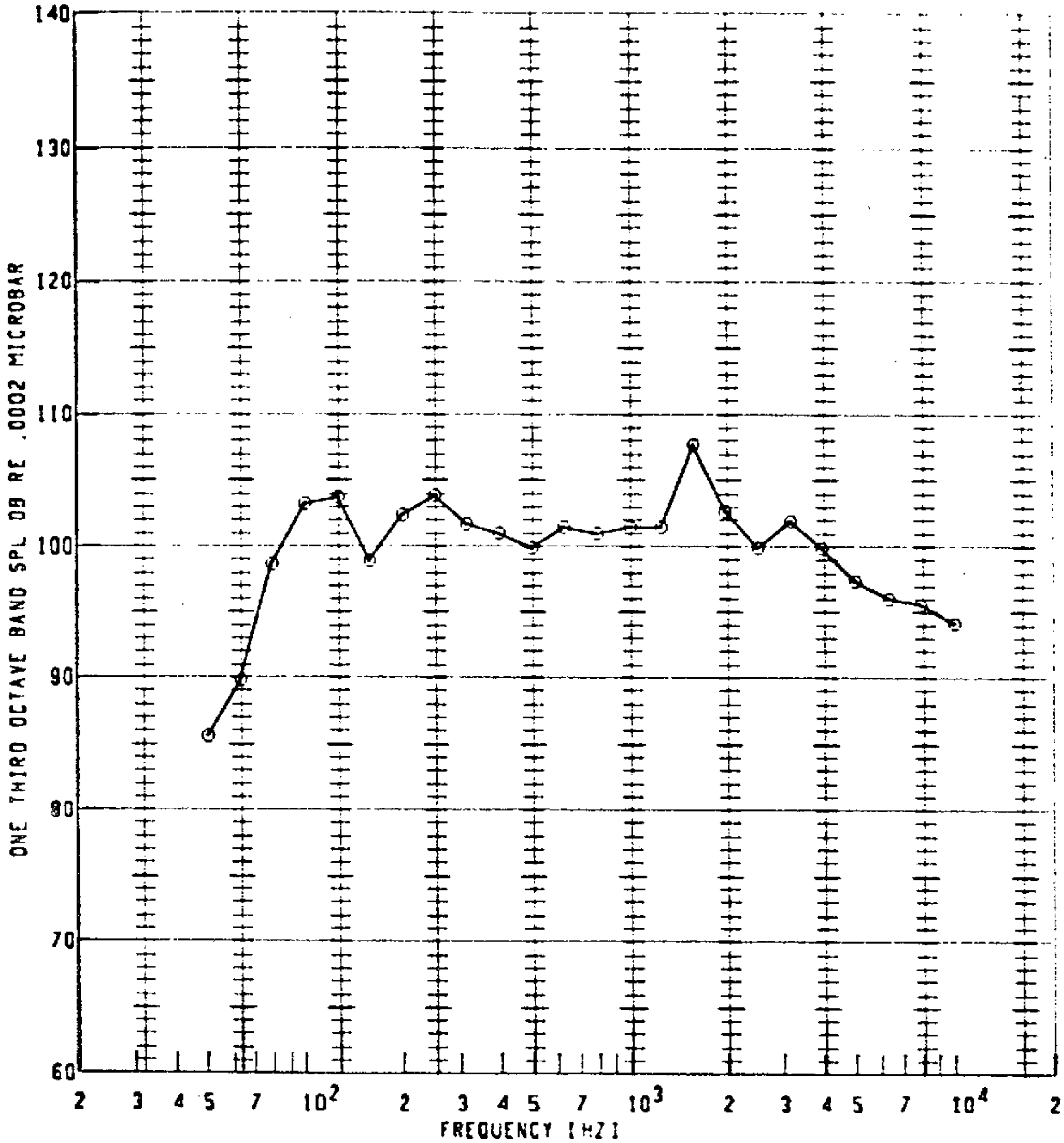
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	800	1.400	110	50FP	115.2	10	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



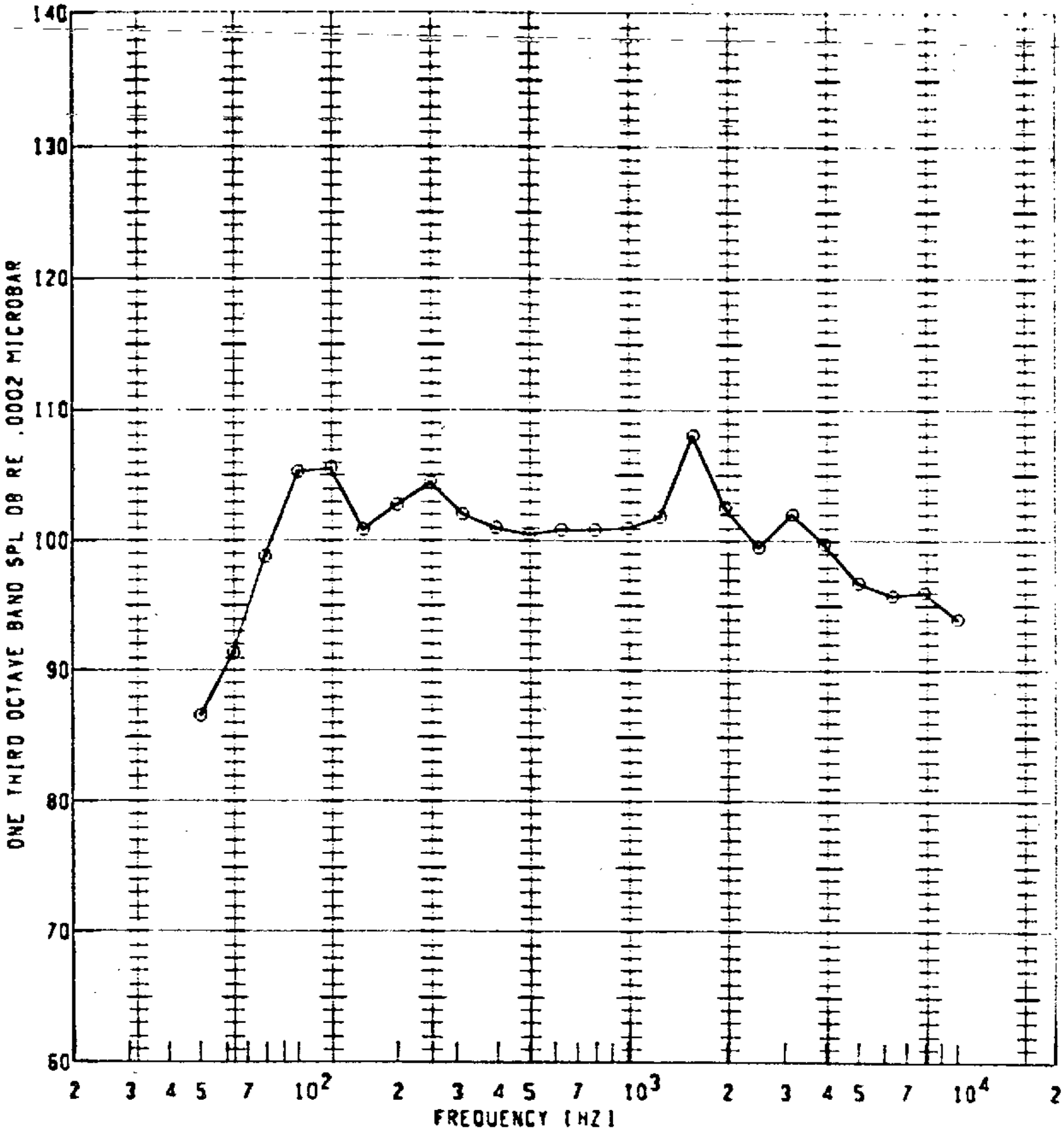
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊙	206	800	1.400	115	50FP	115.0	10	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



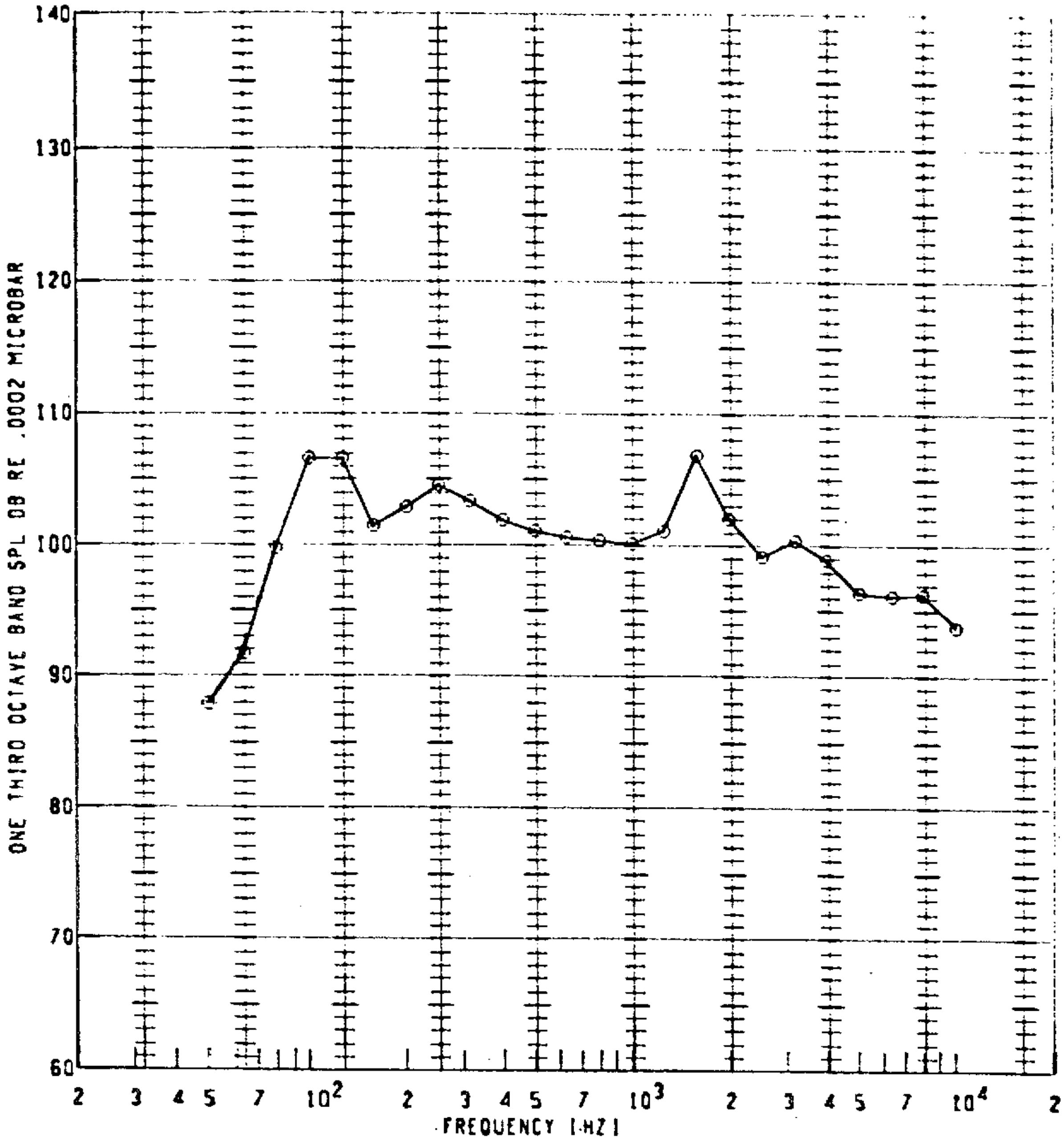
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	800	1.400	120	50FP	115.1	10	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



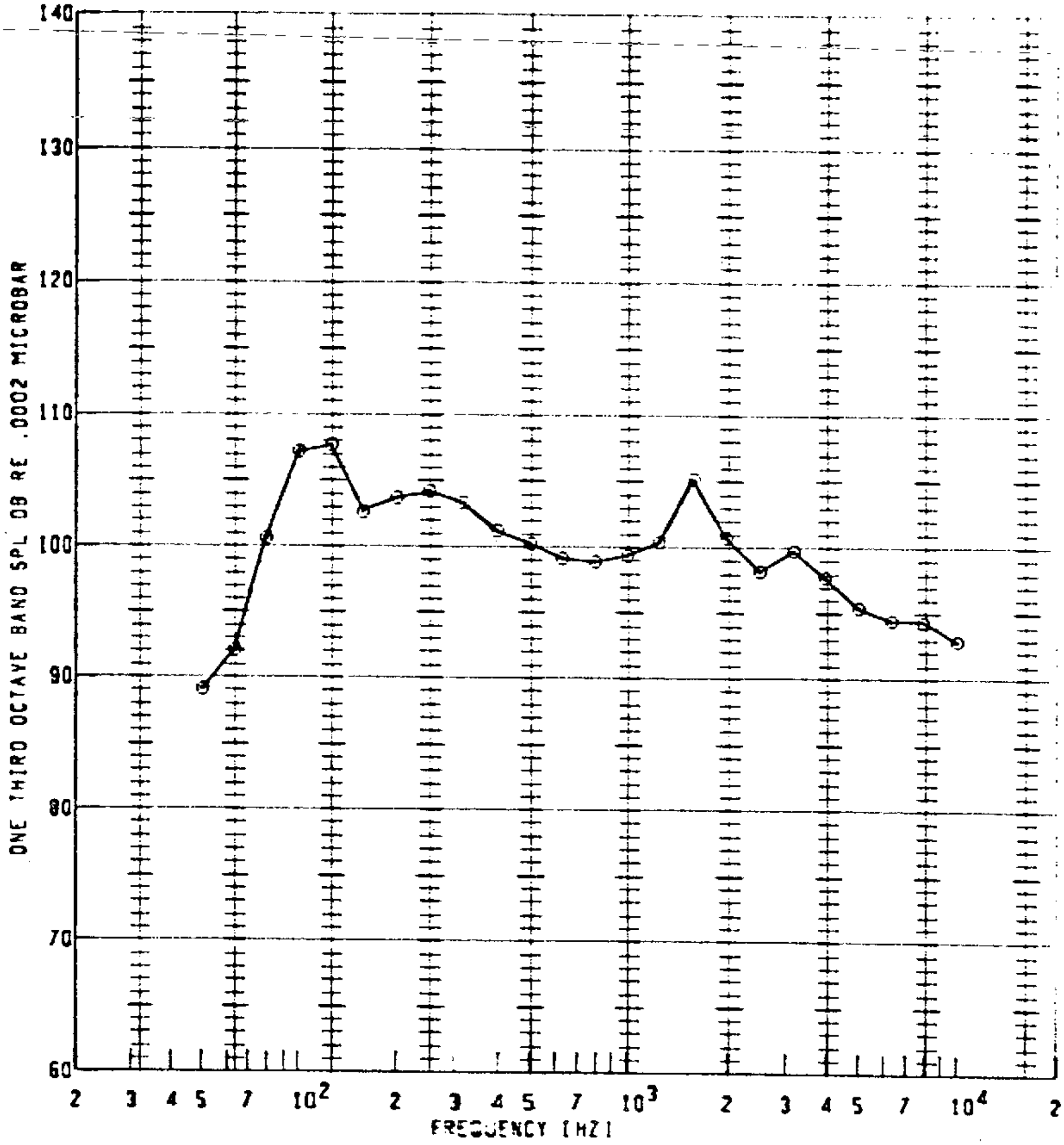
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	800	1.400	125	50FP	115.6	10	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



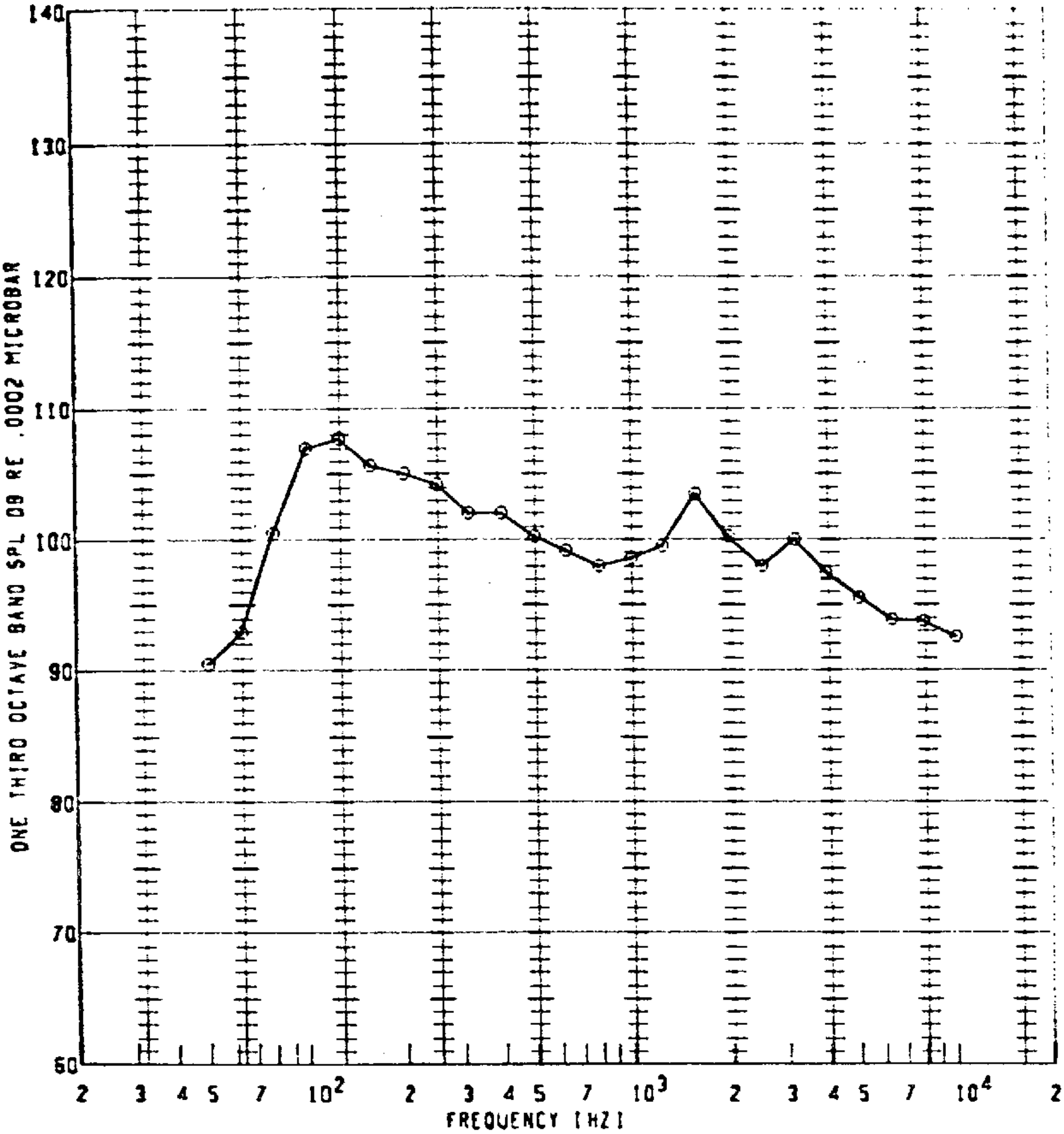
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	205	800	1.400	130	50FP	115.7	10	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



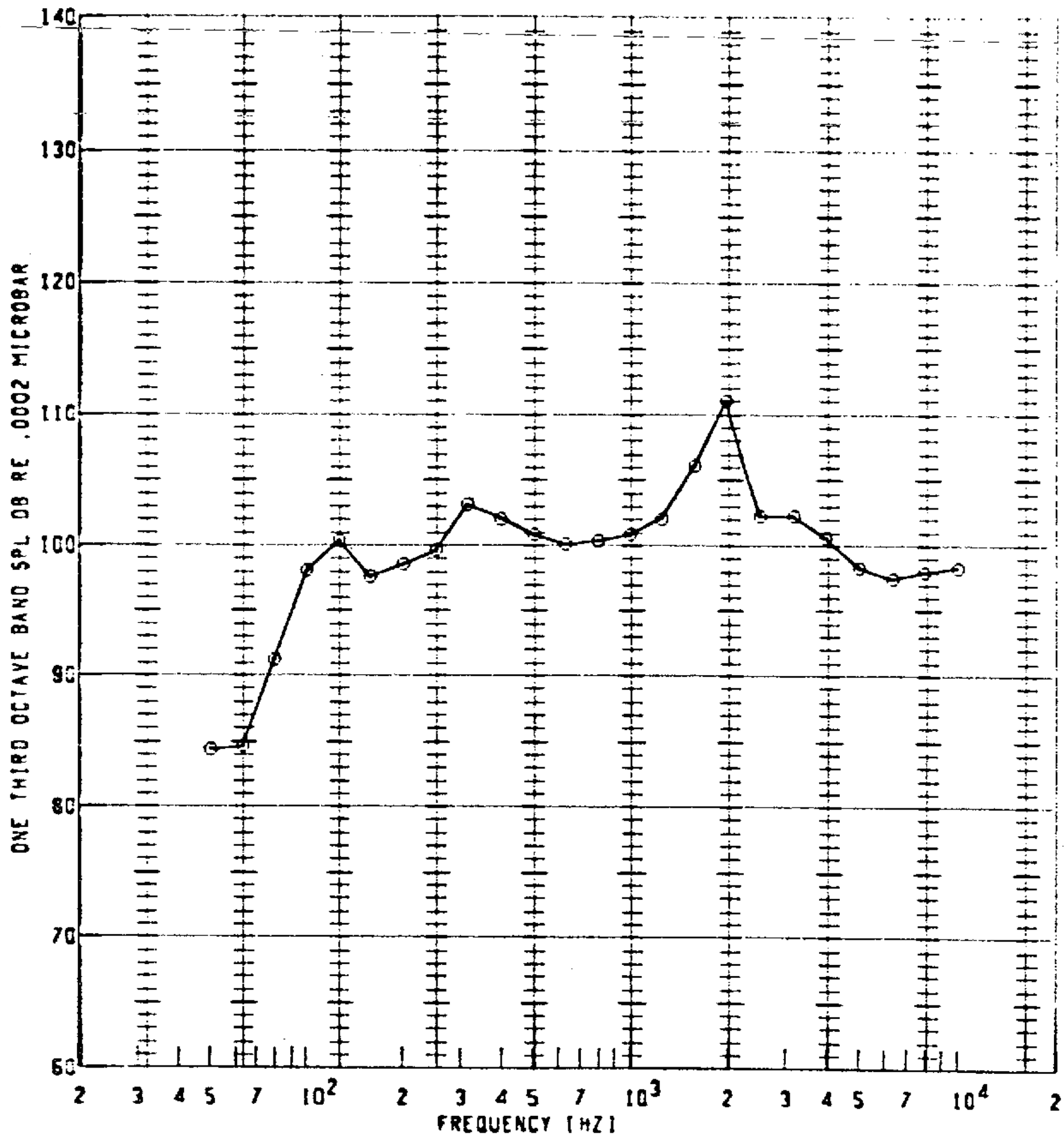
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	800	1.400	135	50FP	115.5	10	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



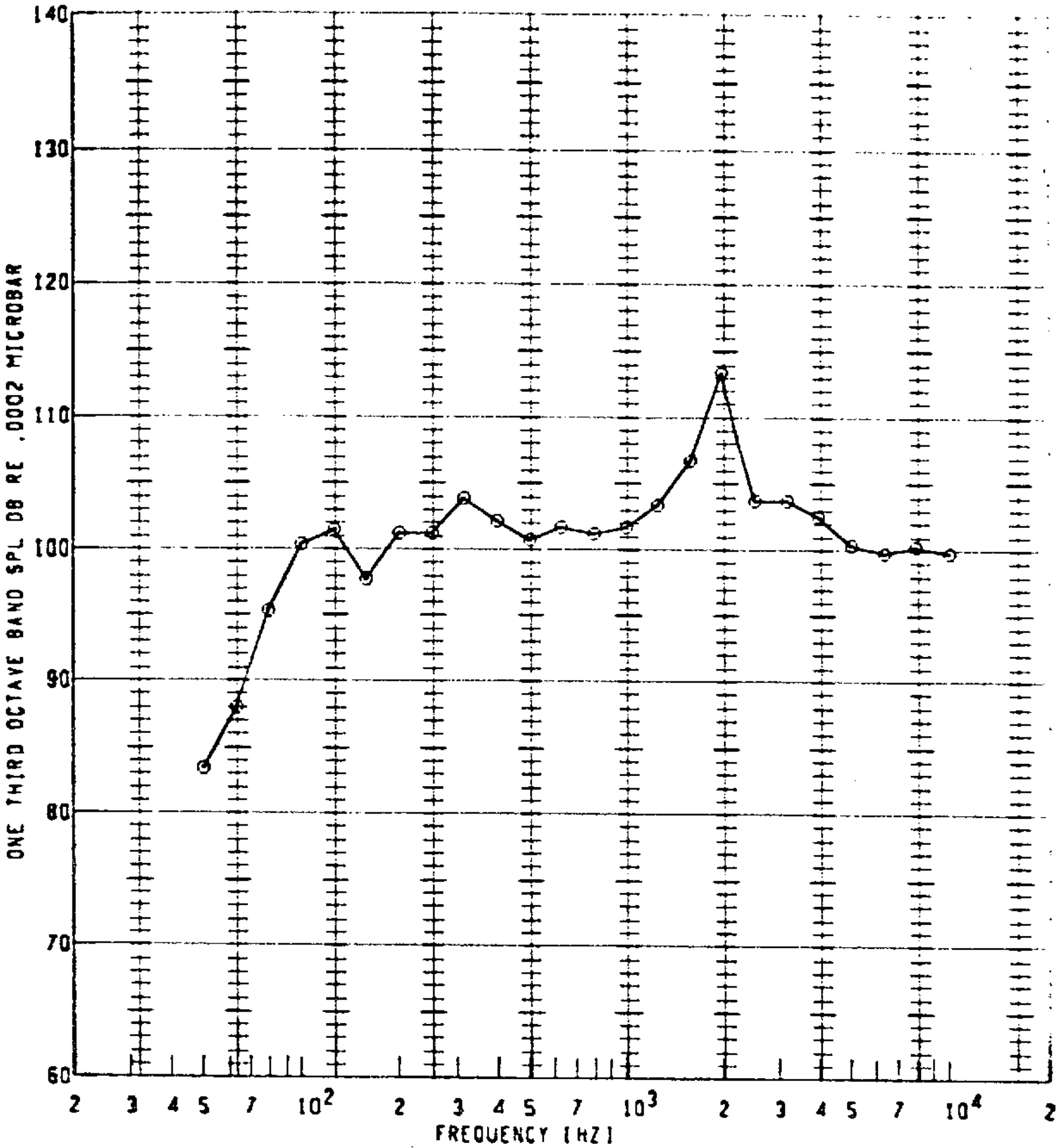
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	206	800	1.400	140	50FP	115.5	10	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



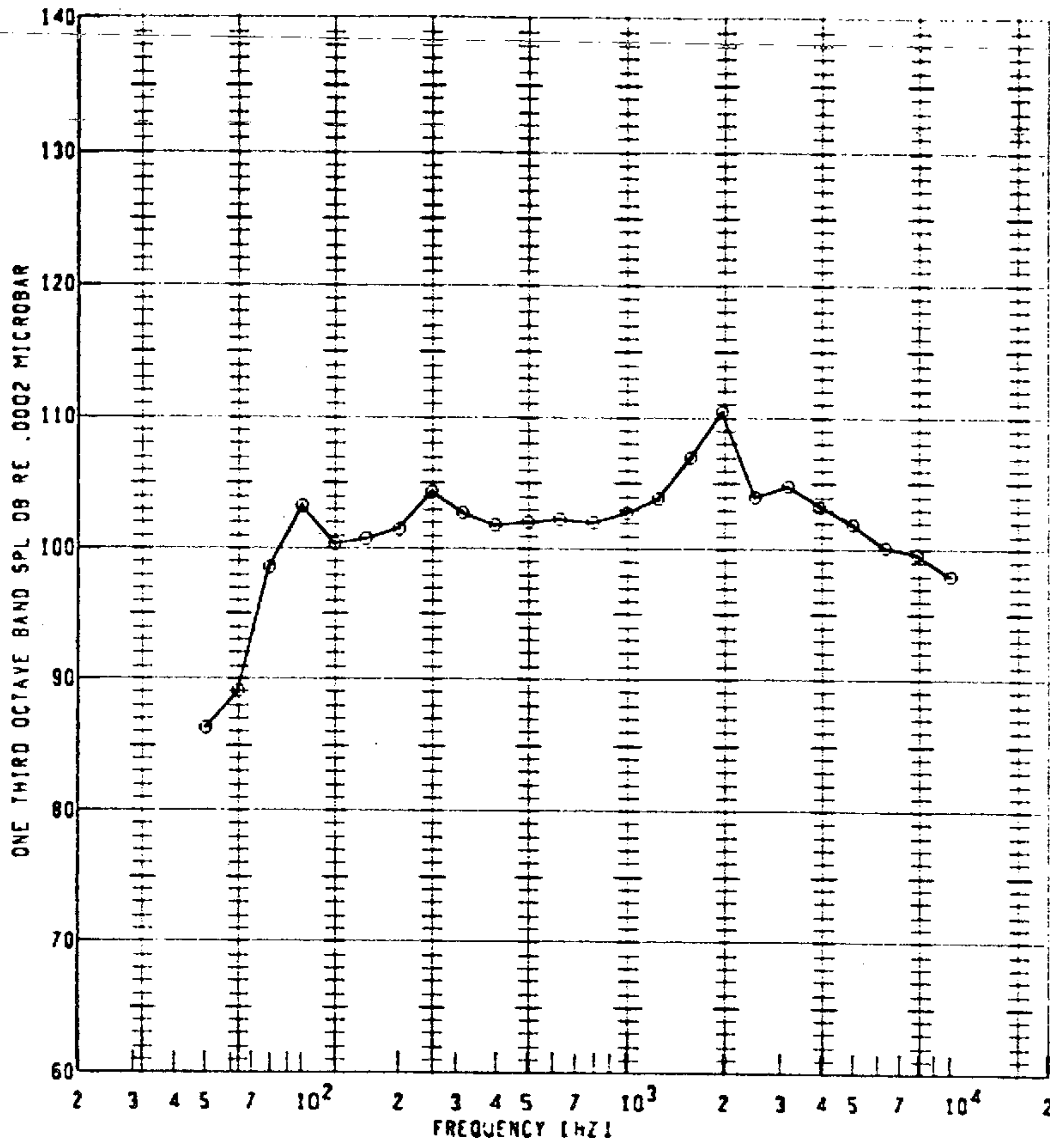
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊖	206	850	1.500	90	50FP	115.8	0	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



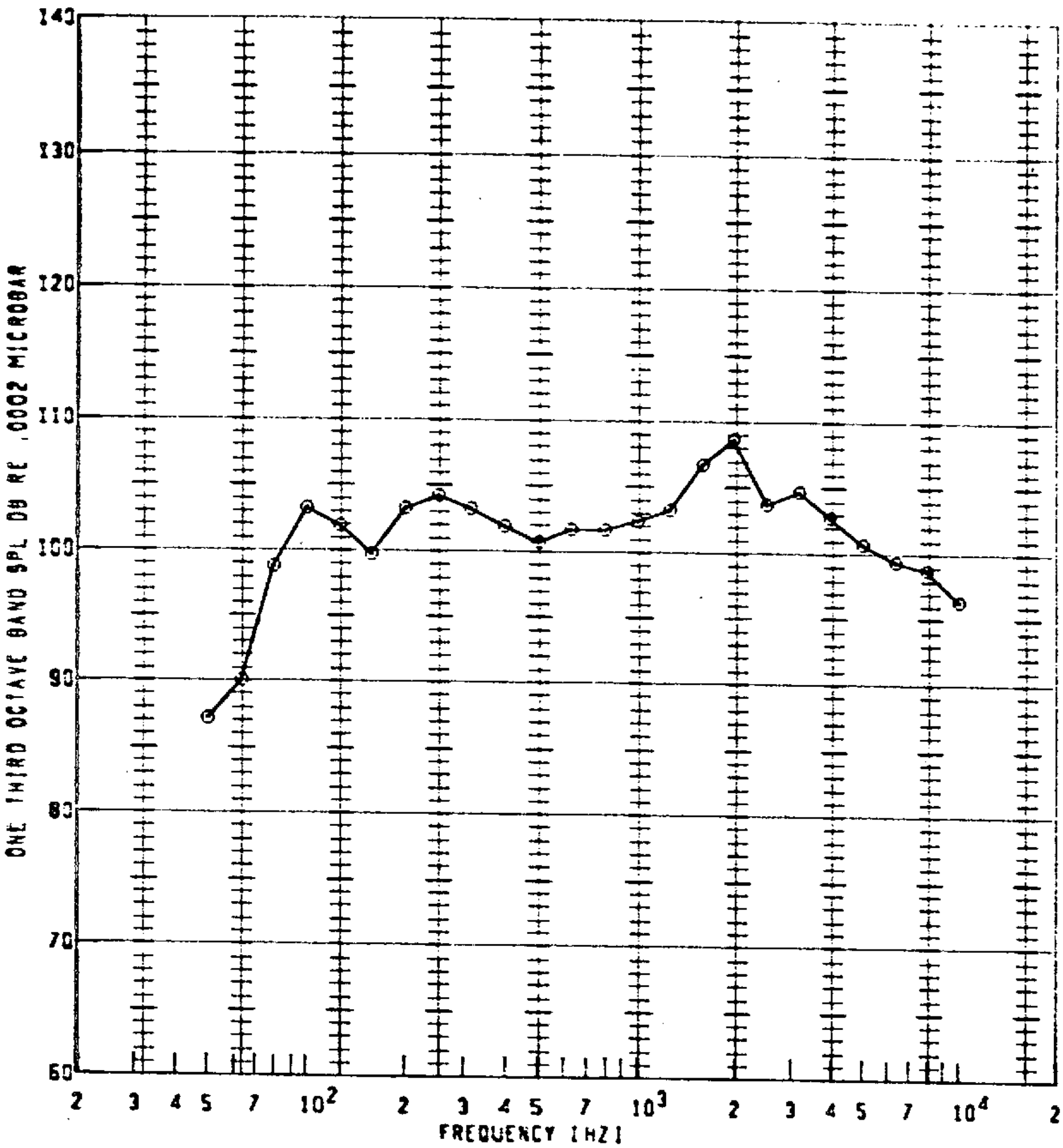
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	850	1.500	100	50FP	117.4	10	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



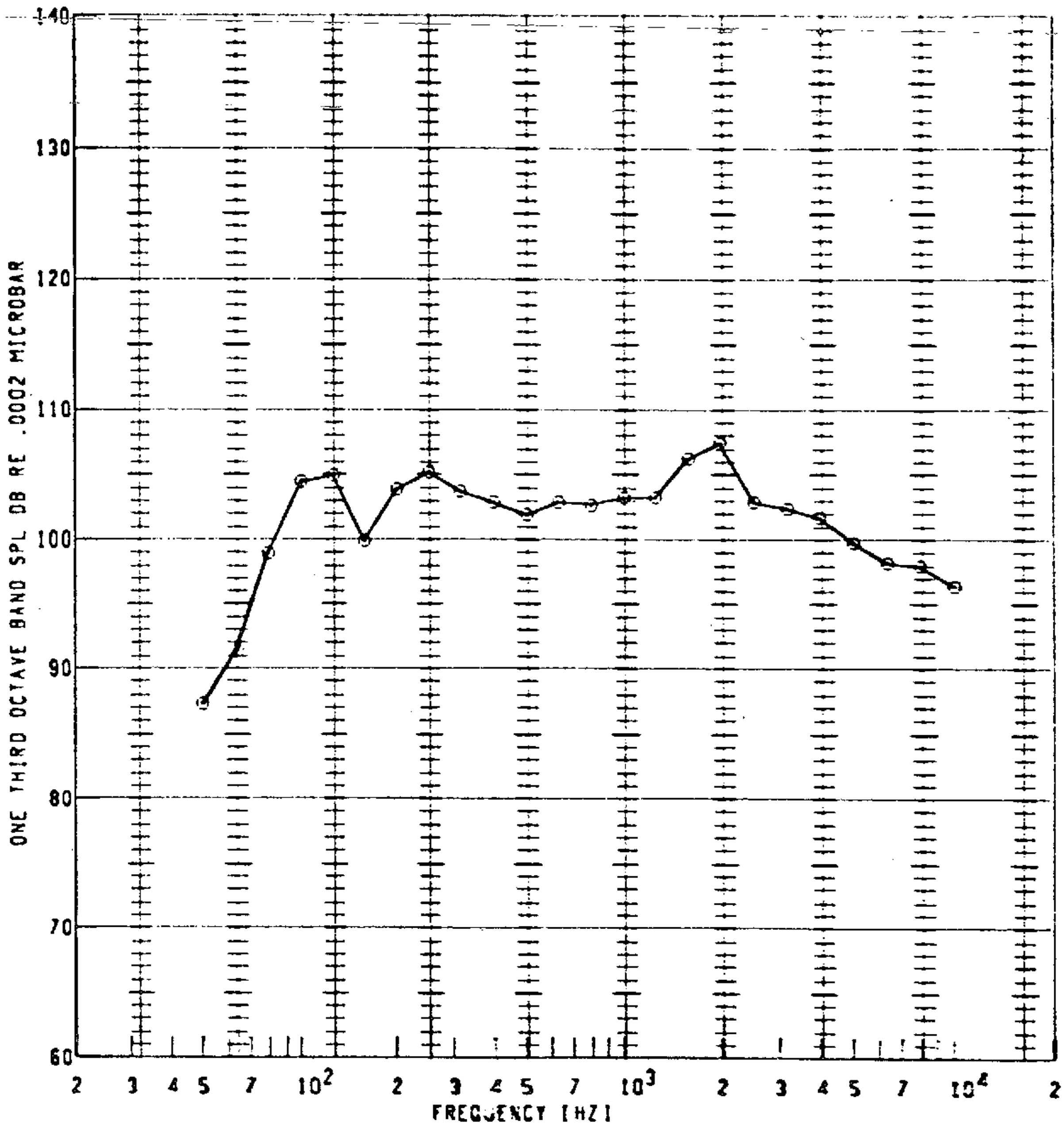
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	850	1.500	110	50FP	117.0	10	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



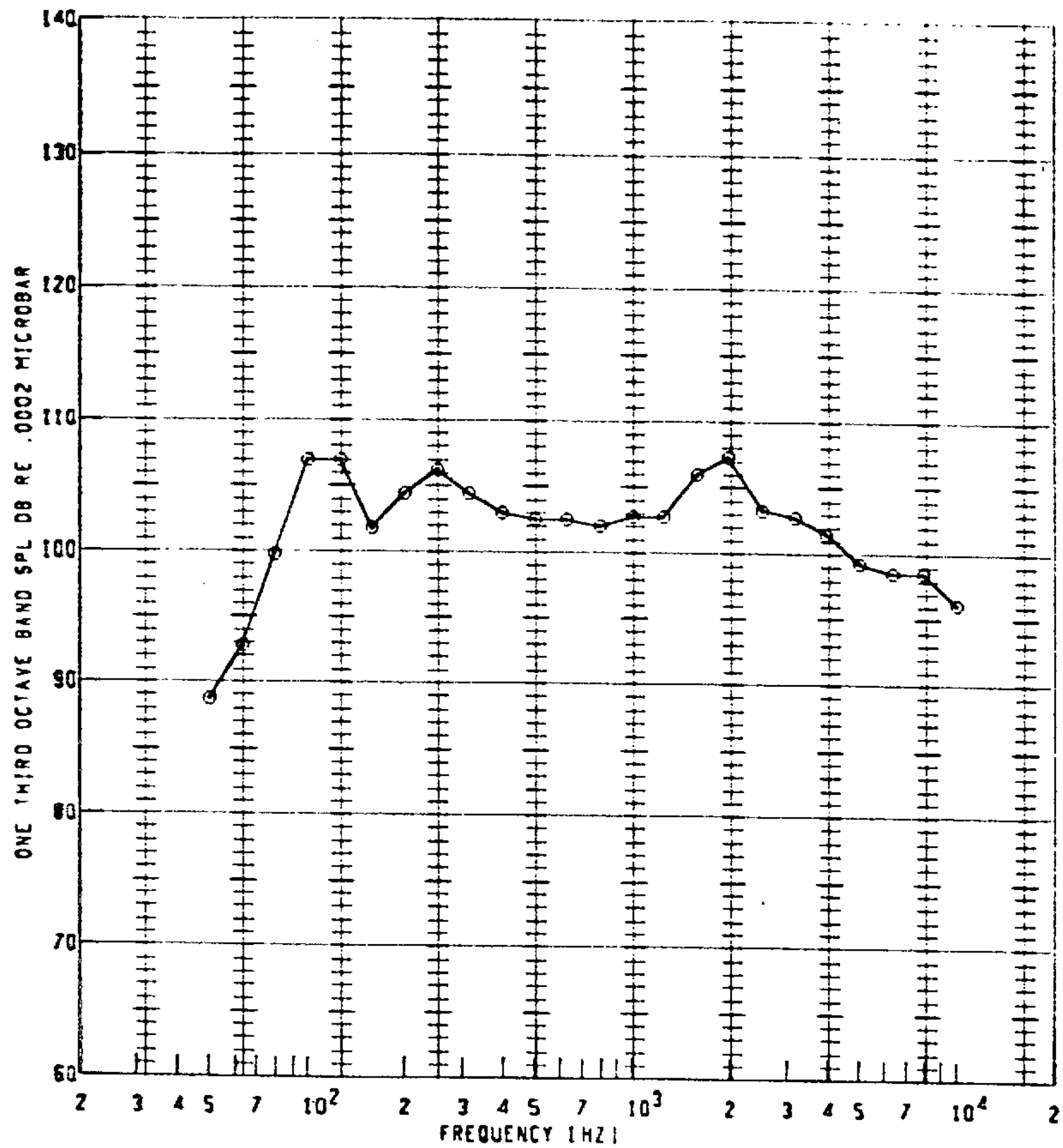
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	850	1.500	115	50FP	116.5	10	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



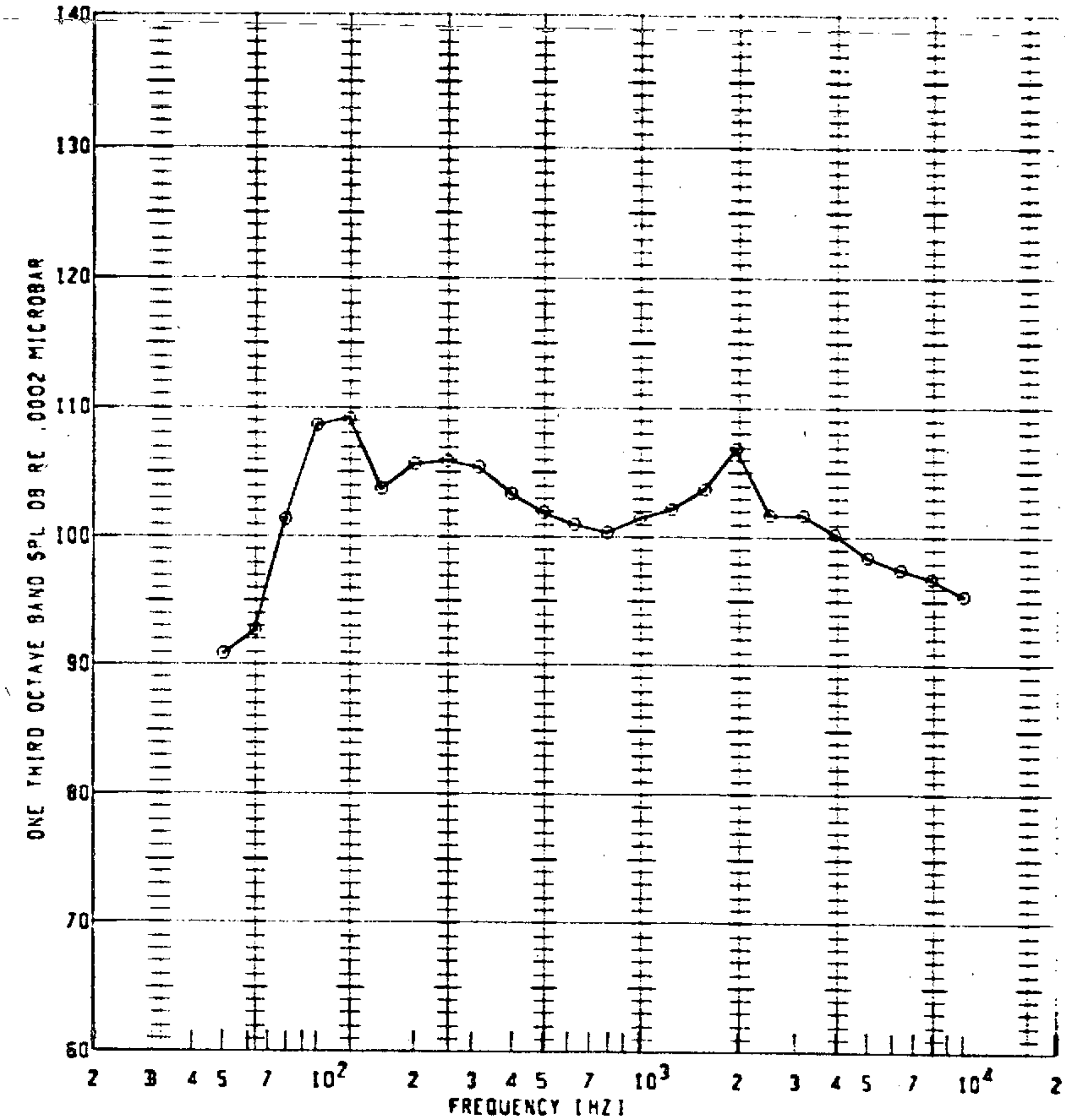
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL [DB]	GAIN SETTING	SPECIAL ID
⊙	206	850	1.500	120	50FP	116.5	10	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



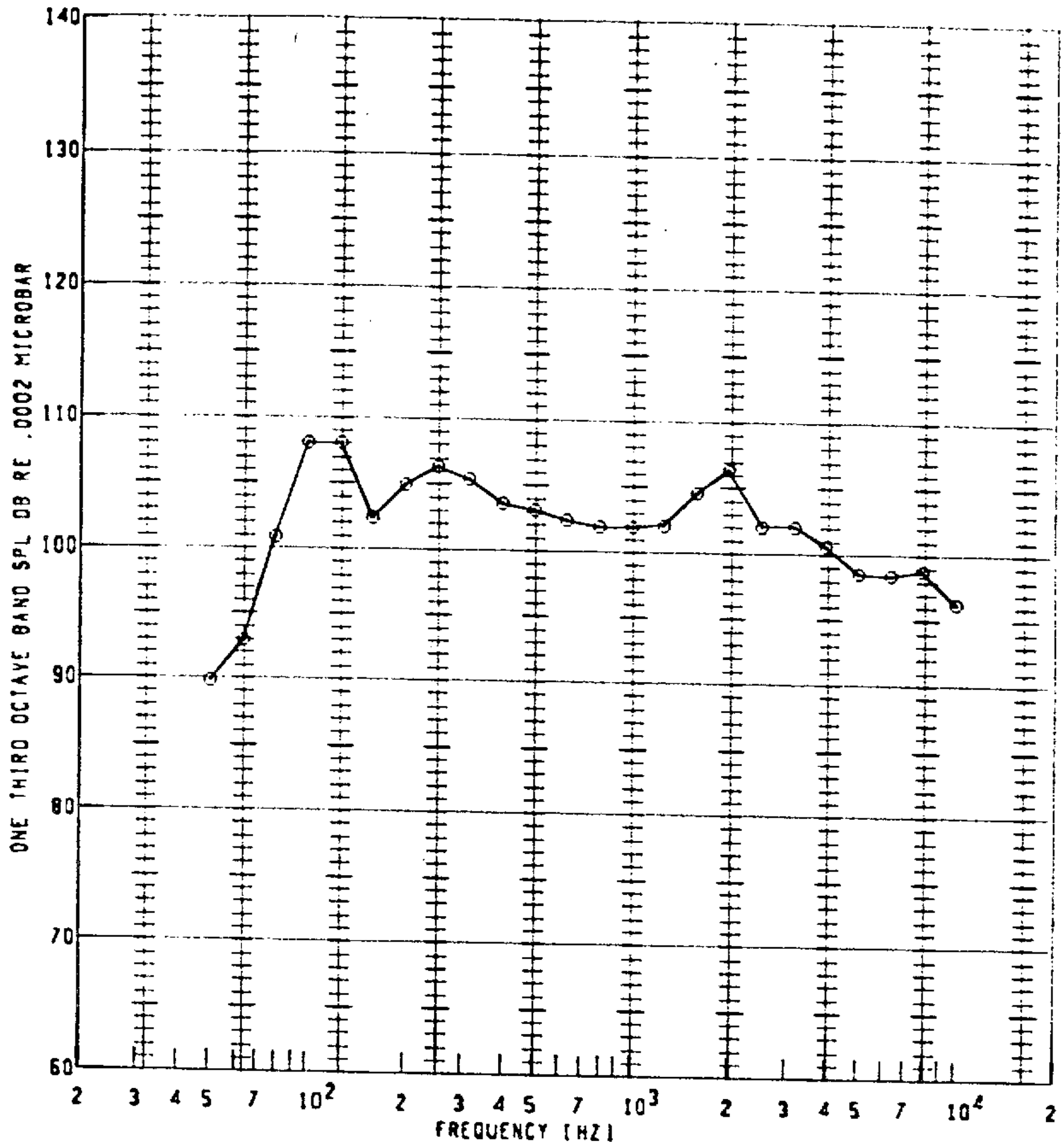
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	850	1.500	125	50FP	117.1	0	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



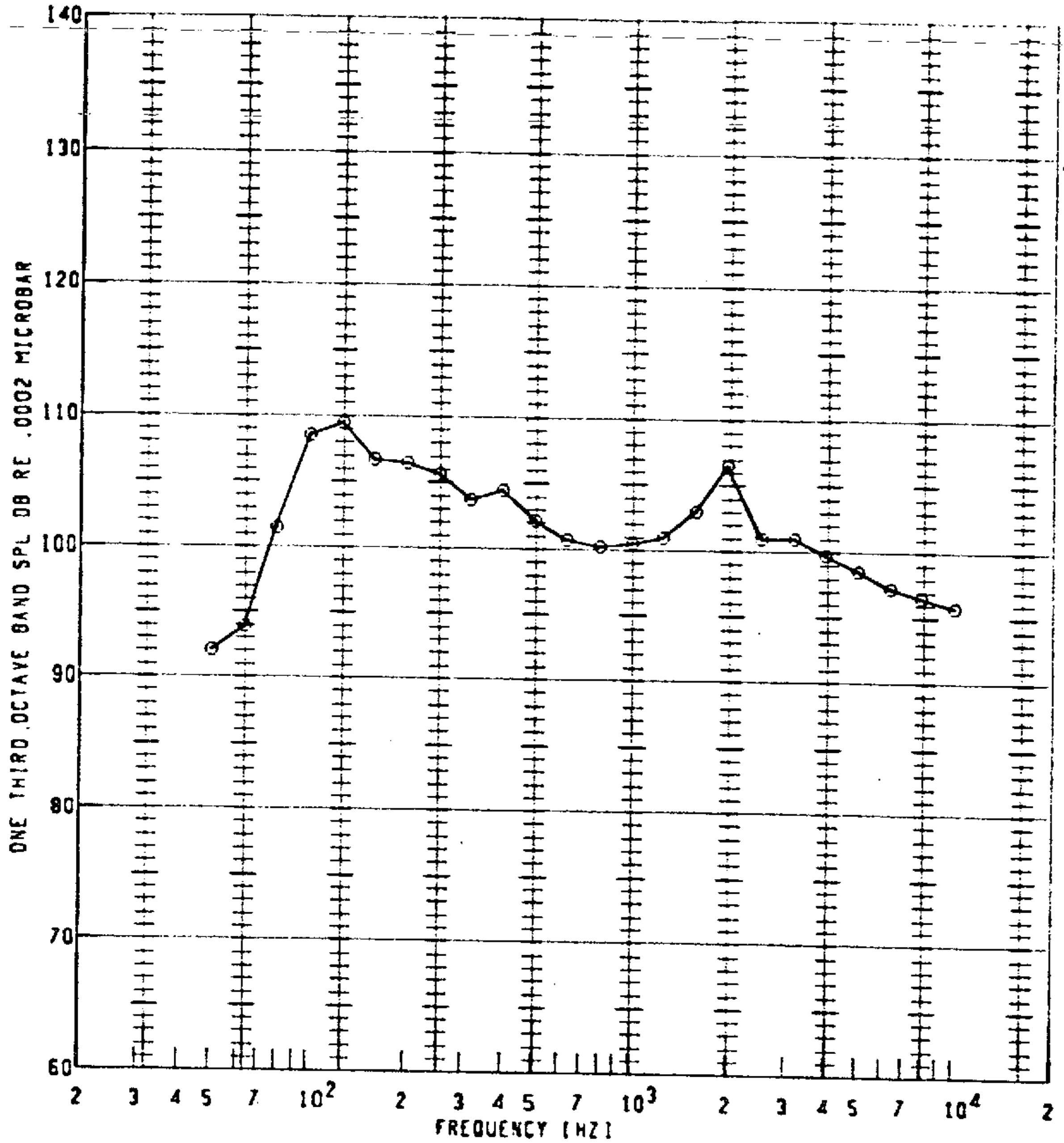
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	850	1.500	135	50FP	117.3	10	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



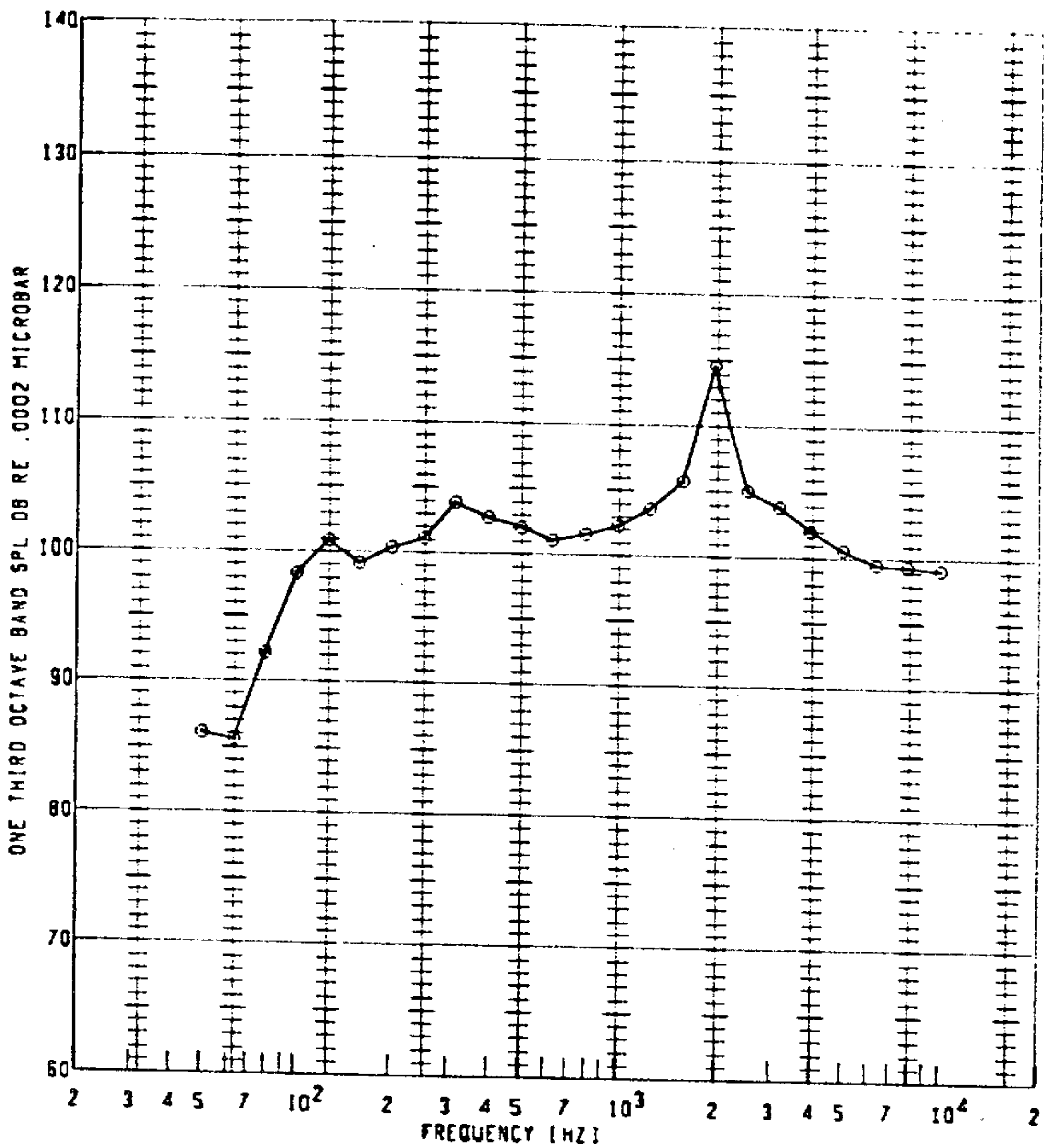
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	850	1.500	130	50FP	117.2	10	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



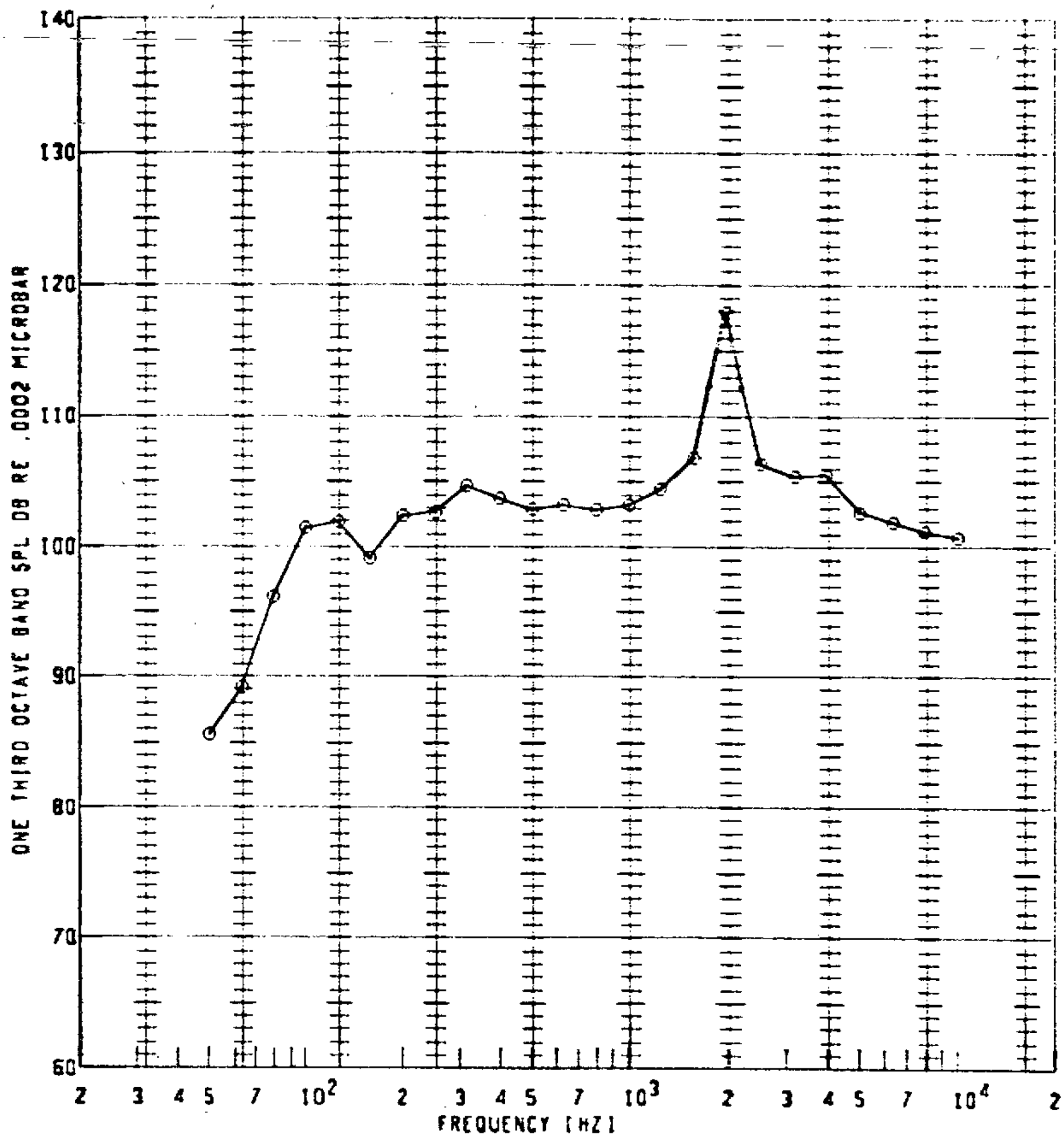
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	850	1.500	140	50FP	117.3	10	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



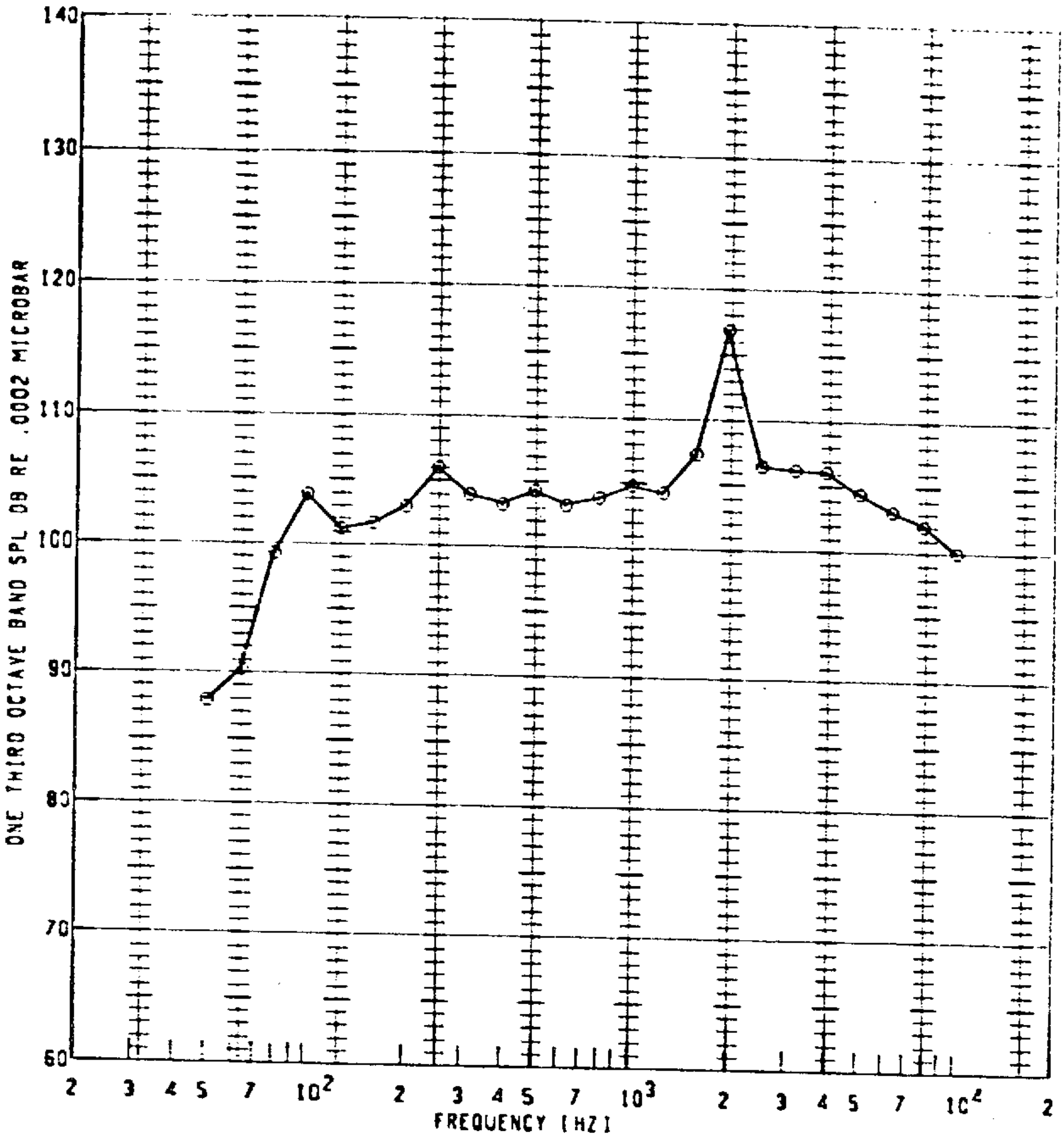
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	900	1.600	90	50FP	117.9	0	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



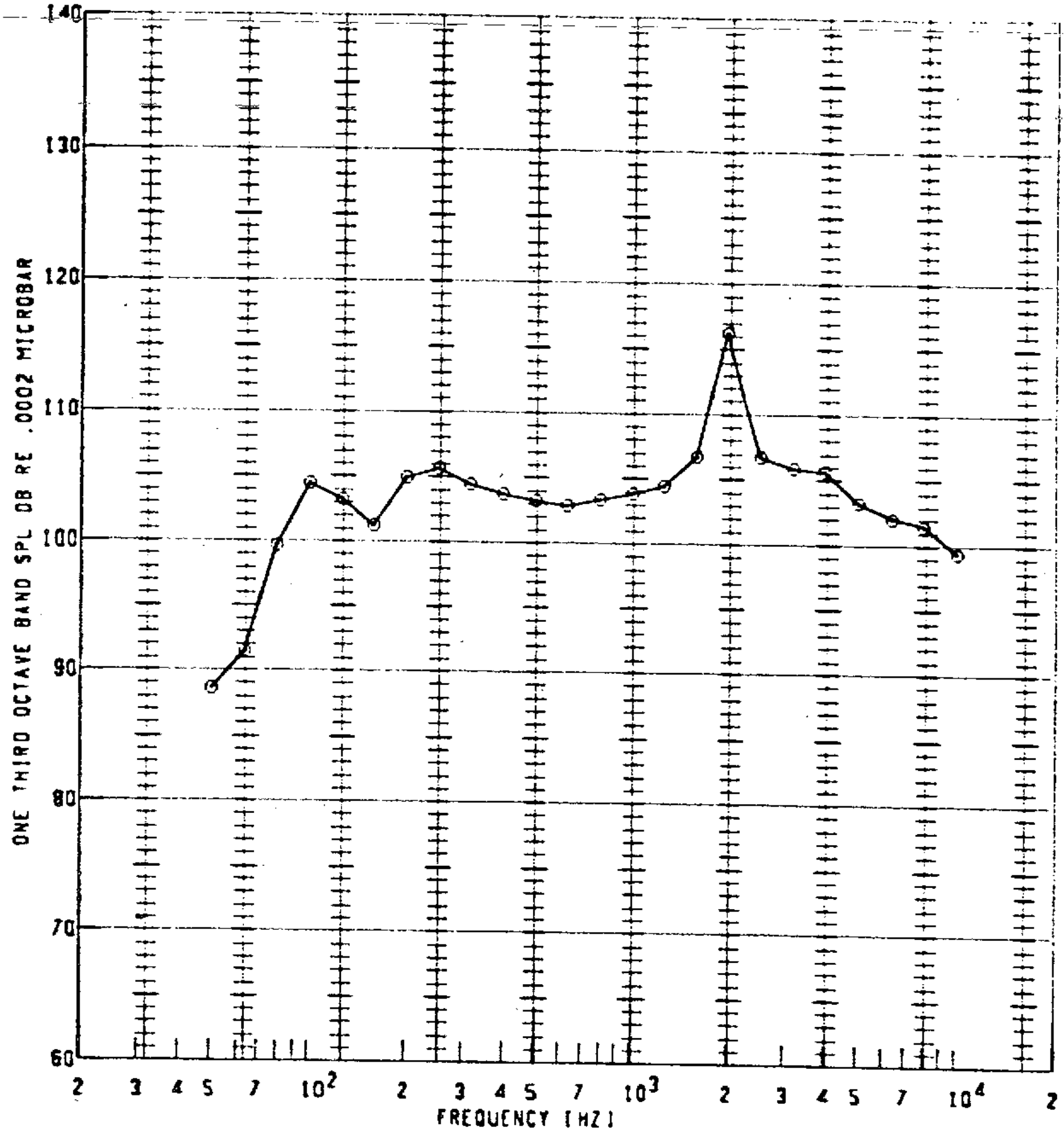
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	206	900	1.600	100	50FP	120.3	0	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



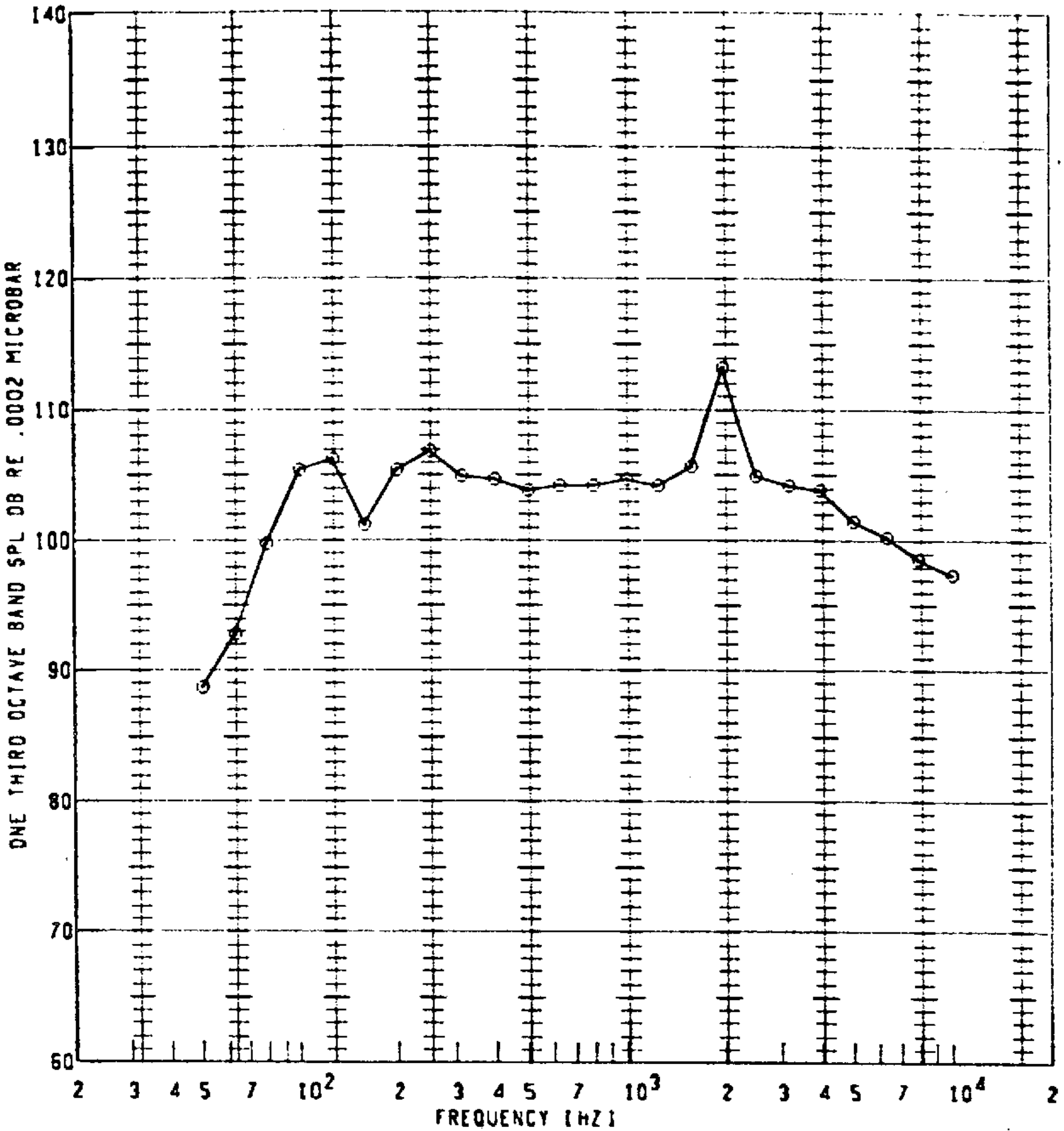
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊖	205	900	1.600	110	50FP	120.1	0	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



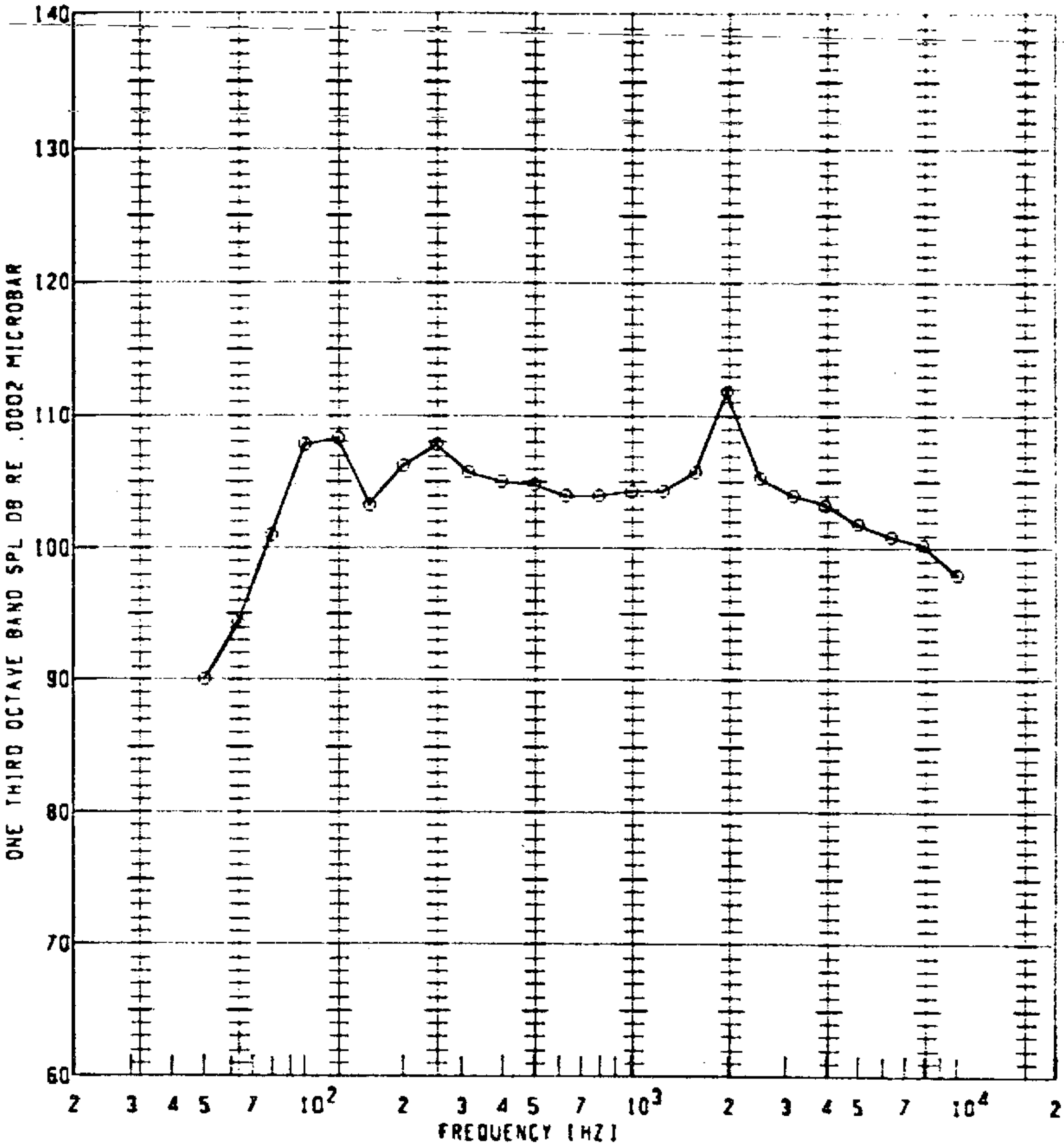
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	900	1.600	115	50FP	119.8	0	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



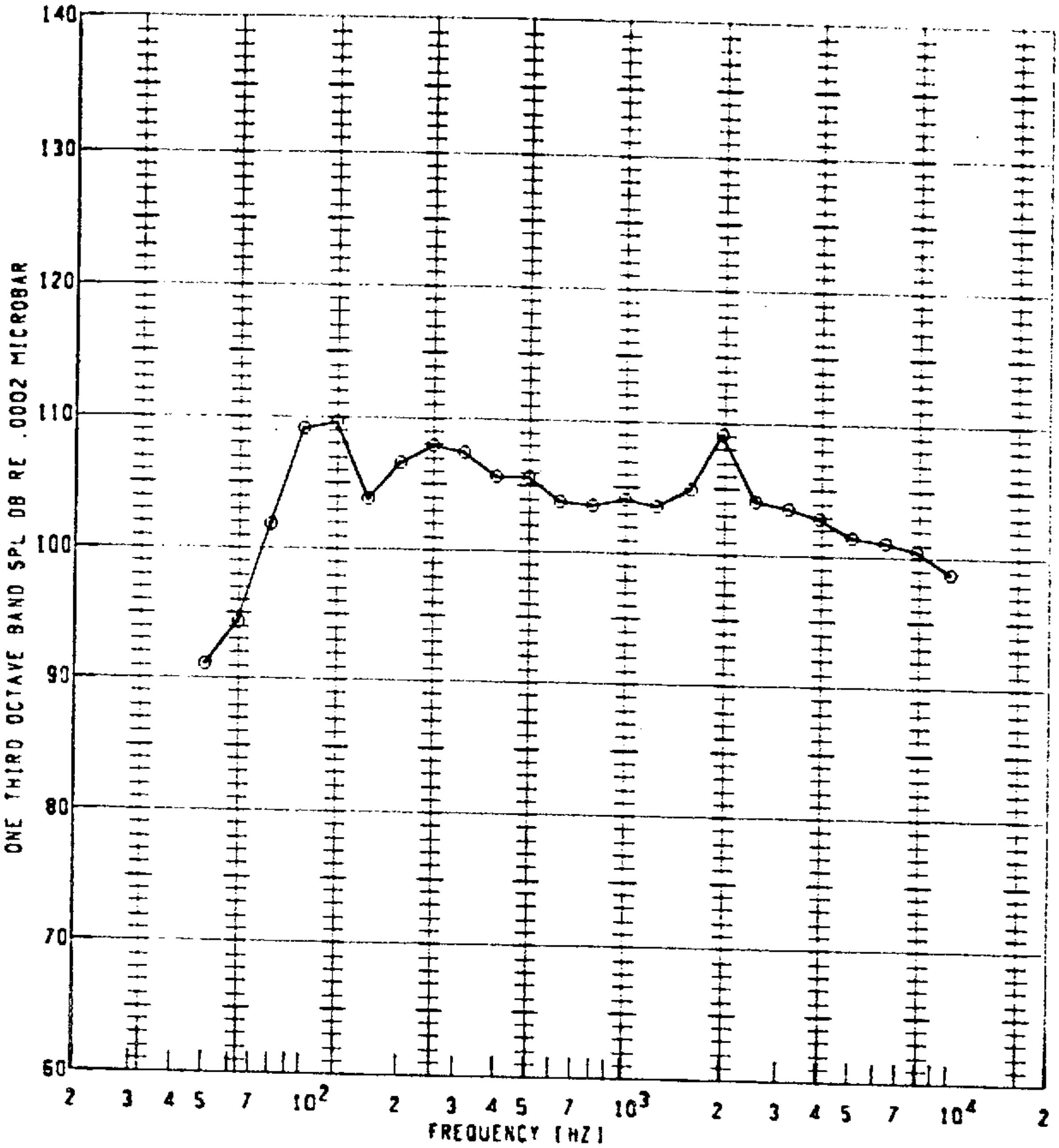
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	900	1.600	120	50FP	118.7	10	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



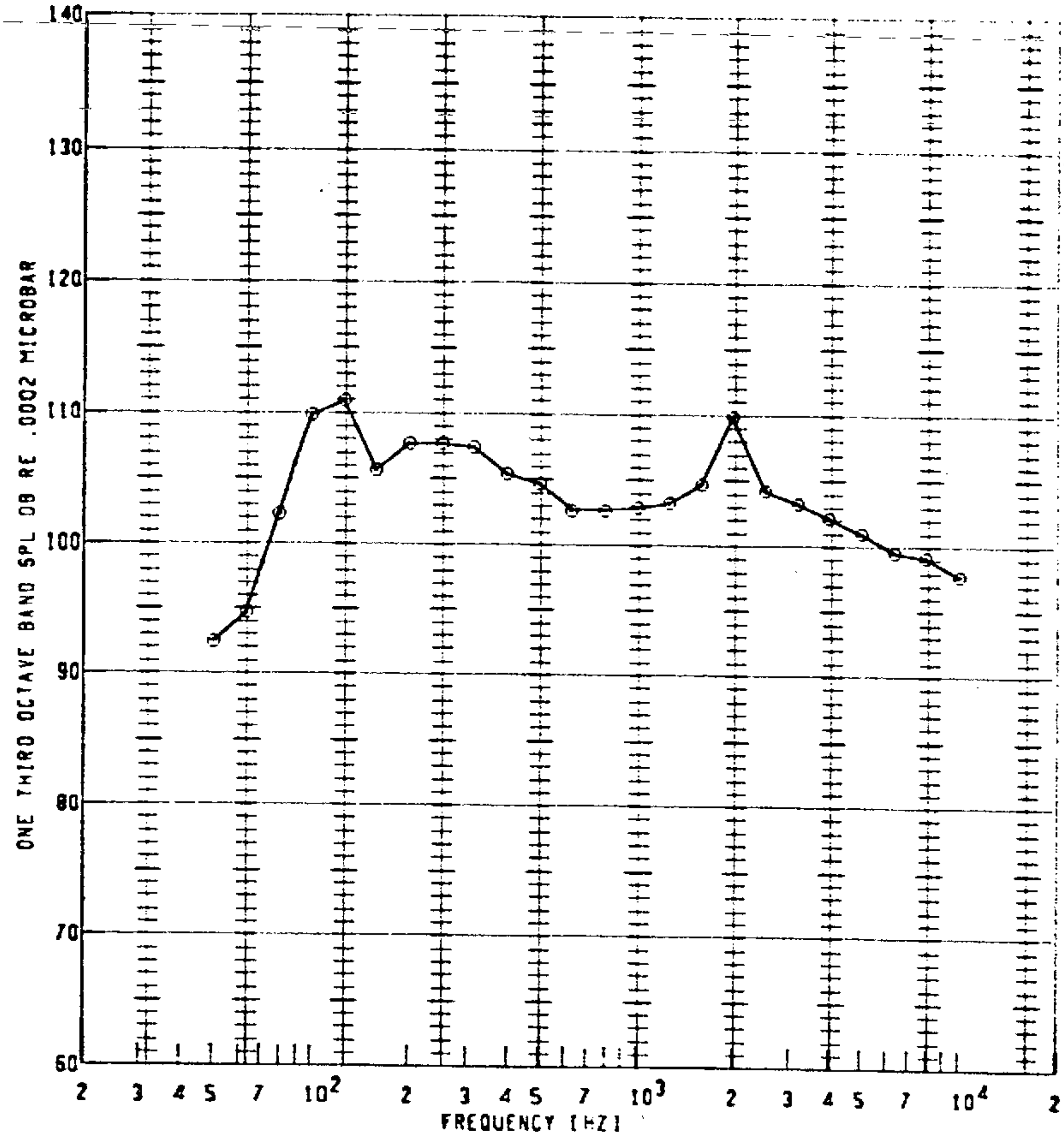
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	900	1.600	125	50FP	119.0	0	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



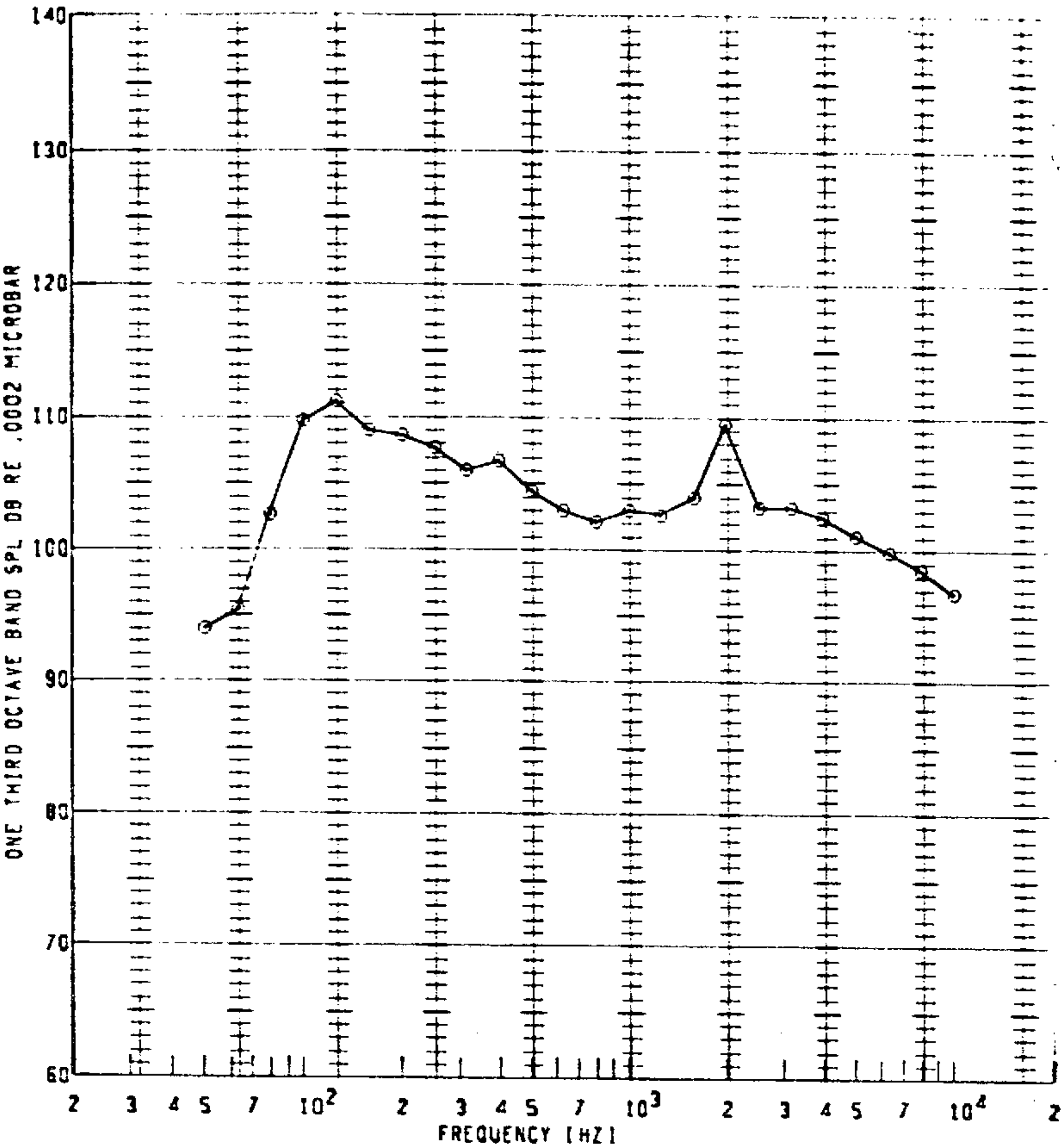
PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	900	1.600	130	50FP	118.9	0	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	900	1.600	135	50FP	119.1	0	

BUFFALO NOZZLE JET NOISE SUPPRESSION - HOT NOZZLE TEST FACILITY



PLOT SYMBOL	RUN NUMBER	JET TEMP	PRESSURE RATIO	ANGLE RE INLET	OBSERVER LOCATION	OASPL (DB)	GAIN SETTING	SPECIAL ID
⊙	206	900	1.600	140	50FP	119.3	0	

APPENDIX D

ACOUSTIC RECORDING AND REDUCTION SYSTEM

SYSTEM CALIBRATIONS

Two types of calibration are performed on the data acquisition system prior to recording test data. The first determines the frequency response of the microphone, preamplifier, cables, and signal conditioning equipment. This is performed before and after each test, using the electrostatic actuator method illustrated in figure D-1. The sweep oscillator frequency is referenced to an electronic counter, certified and calibrated by the Boeing Flight Test Laboratory. The laboratory maintains test standards, references, and equipment with calibration accuracy traceable to the U.S. Bureau of Standards. When the frequency response of the system relative to 250 Hz has been determined, corrections are computed for each one-third octave band and applied to the data during reduction to obtain true SPL in dB.

The second calibration is an end-to-end sensitivity check performed each day before and after a test. An acoustic pistonphone calibrator with a constant, known SPL at 250 Hz is applied to each microphone, and the calibrator signal recorded on magnetic tape. This reference is used during the data reduction process to determine system sensitivity. The device used, a Bruel & Kuaer model 4220 pistonphone, has a certification traceable to the U.S. Bureau of Standards through a secondary standard maintained by the Boeing Metrology Laboratory.

The tape recorder and reproducer is not included in frequency response calibrations performed in the field. The tape machines are tested and certified by the Boeing Flight Test Laboratory for a flat frequency response when operated in the FM mode. Response at 30 in./sec is flat from dc to 10 kHz.

DATA ACQUISITION PROCEDURES

The complete data acquisition system is shown in figure D-2. Microphones are placed in their windscreens in an inverted position over a smooth concrete surface with the diaphragm 1/2 in. above and parallel to the ground plane. The measurement point locations are shown in figure D-3 with respect to the nozzle exit plane.

Each microphone is calibrated to determine its sensitivity and then placed in the physical configuration that is to be used for data acquisition. The noise floor of each channel is then determined and recordings made prior to the engine test runs. The noise floor of the B & K 1/2-in. microphone systems used for this test is on the order of 10 to 15 microvolts electrical output, equivalent to 32 to 37 dB SPL overall. The recorded noise floor, however, contains both electrical noise floor and acoustic ambient background noise. The latter usually dominates the noise floor recordings, particularly at frequencies below 1000 Hz.

Data recordings are made for 16 sec during a stabilized nozzle pressure ratio setting. The tape recorded sample includes voice identification and an IRIG 'B' time code reference on track 14. A written tape log includes:

Run identification
Gain settings used for recording each condition
Time code at the start of the recording
Equivalent SPL of the calibration signal
Date, engineer, and serial numbers of recording equipment and microphones

ACOUSTIC DATA REDUCTION PROCEDURE

Acoustic data recorded on 14-track analog tape was reproduced and analyzed in one-third octave bands at Acoustic Laboratory facilities in Seattle. The basic analysis system, figure D-4, consists of an analog tape reproducer, General Radio model 1921 one-third octave analyzer, time code reader, PDP8-I computer, digital magnetic tape recorder, and associated monitor, control, interface, and peripheral service equipment.

The operator controls the analysis through a teletype keyboard, used for entering calibration, frequency response compensation, and measurement point identification information into the computer. The General Radio analyzer includes a bank of 24 one-third octave band filters, covering the frequency range of 50 to 10 kHz. The filters meet International Standard IEC 225 and USA Standard 51.11-1966 Class III requirements and are calibrated with both sine wave and random noise inputs. The true rms detector section of the analyzer has a dynamic range of 60 dB and a resolution of ±0.25 dB. The square law response of the detector is verified by the "two sine wave" insert method per IEC 179, par. 8.5.

Frequency response compensation and sensitivity calibration information are added to the one-third octave band data in the computer and output on a digital magnetic tape in a format compatible with existing CDC-6600 computer software.

All components of the reduction system are periodically certified to manufacturer's specifications by the Boeing Flight Test Calibration Laboratory.

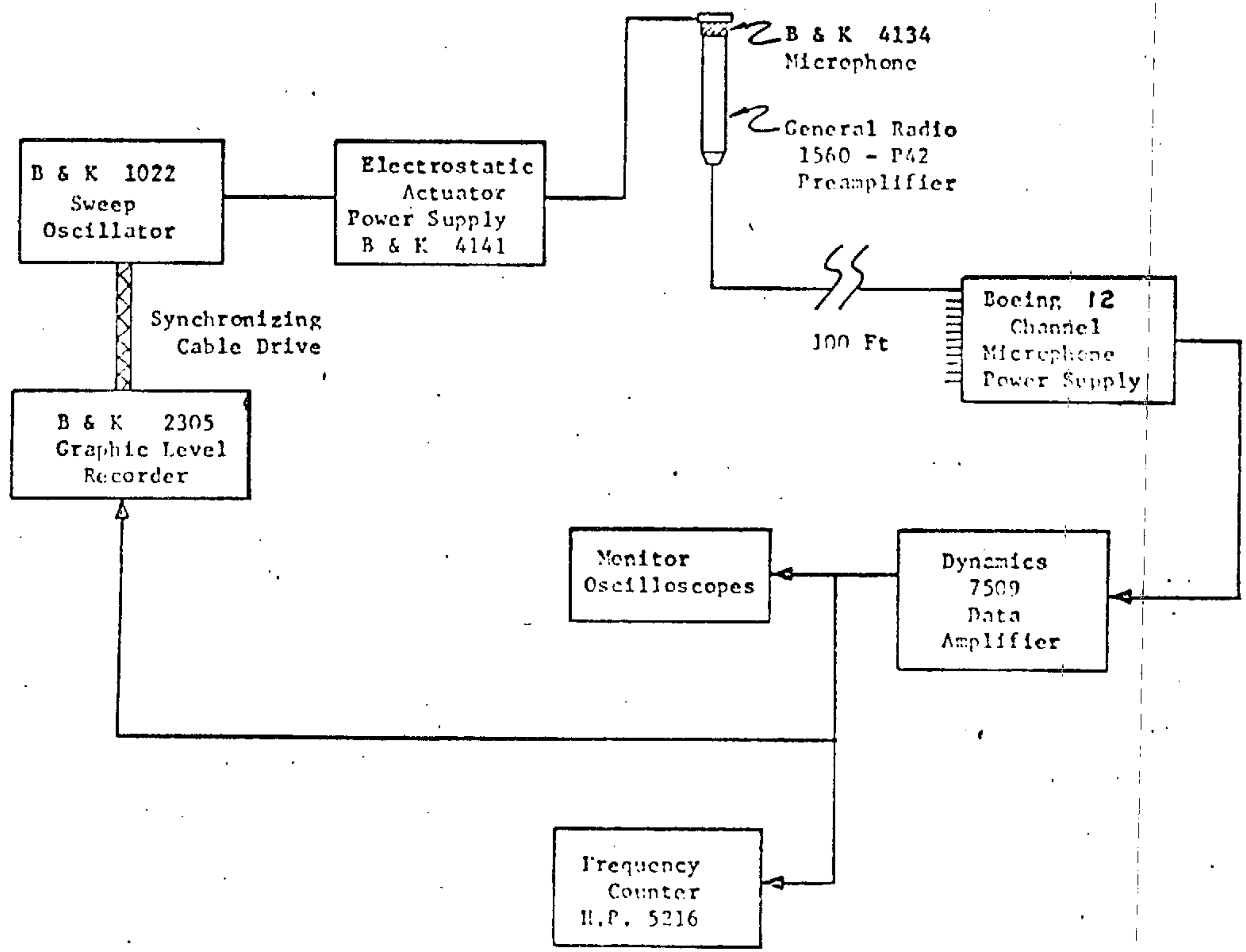


FIGURE D-1.—DATA ACQUISITION SYSTEM CALIBRATION SCHEMATIC

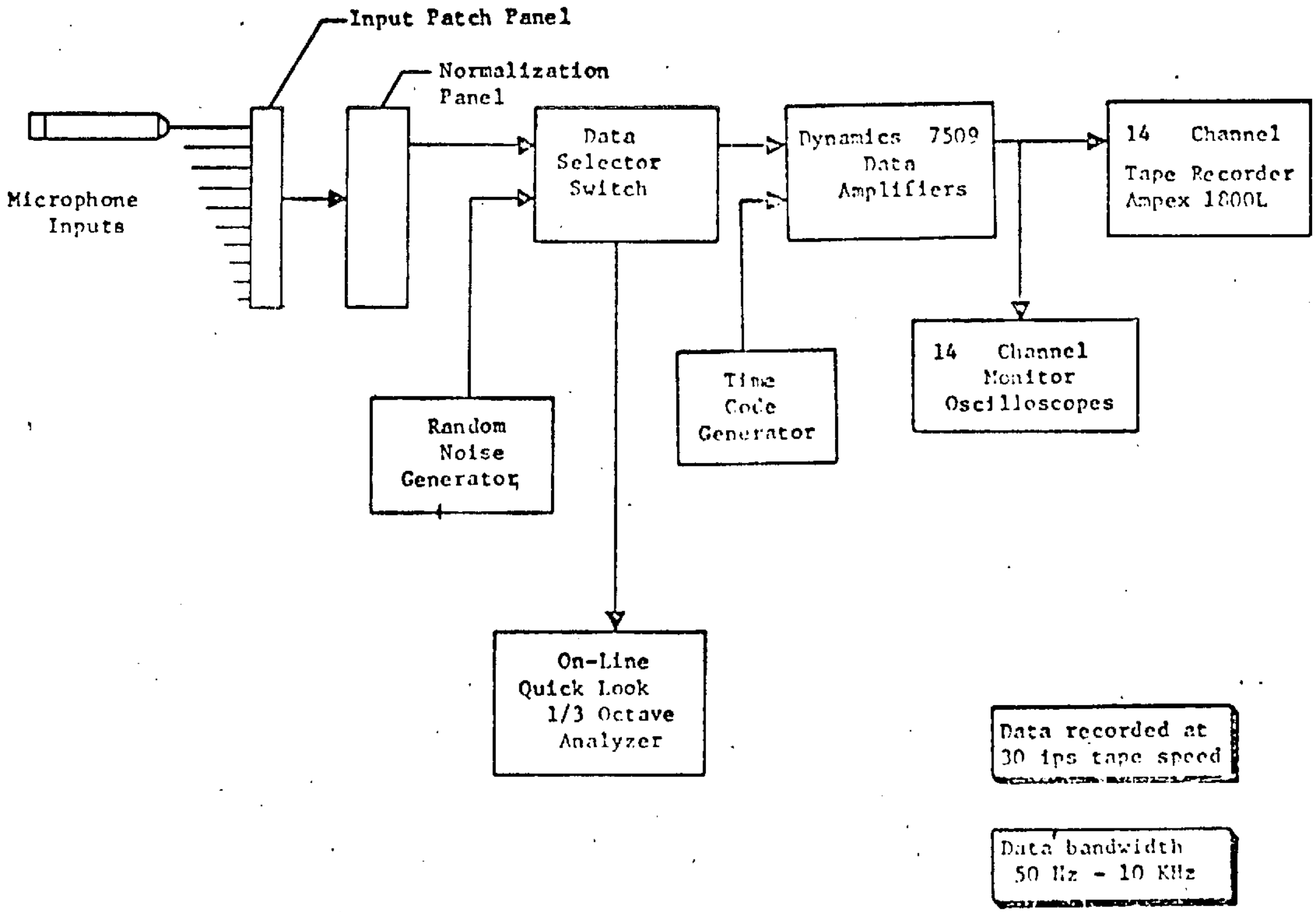
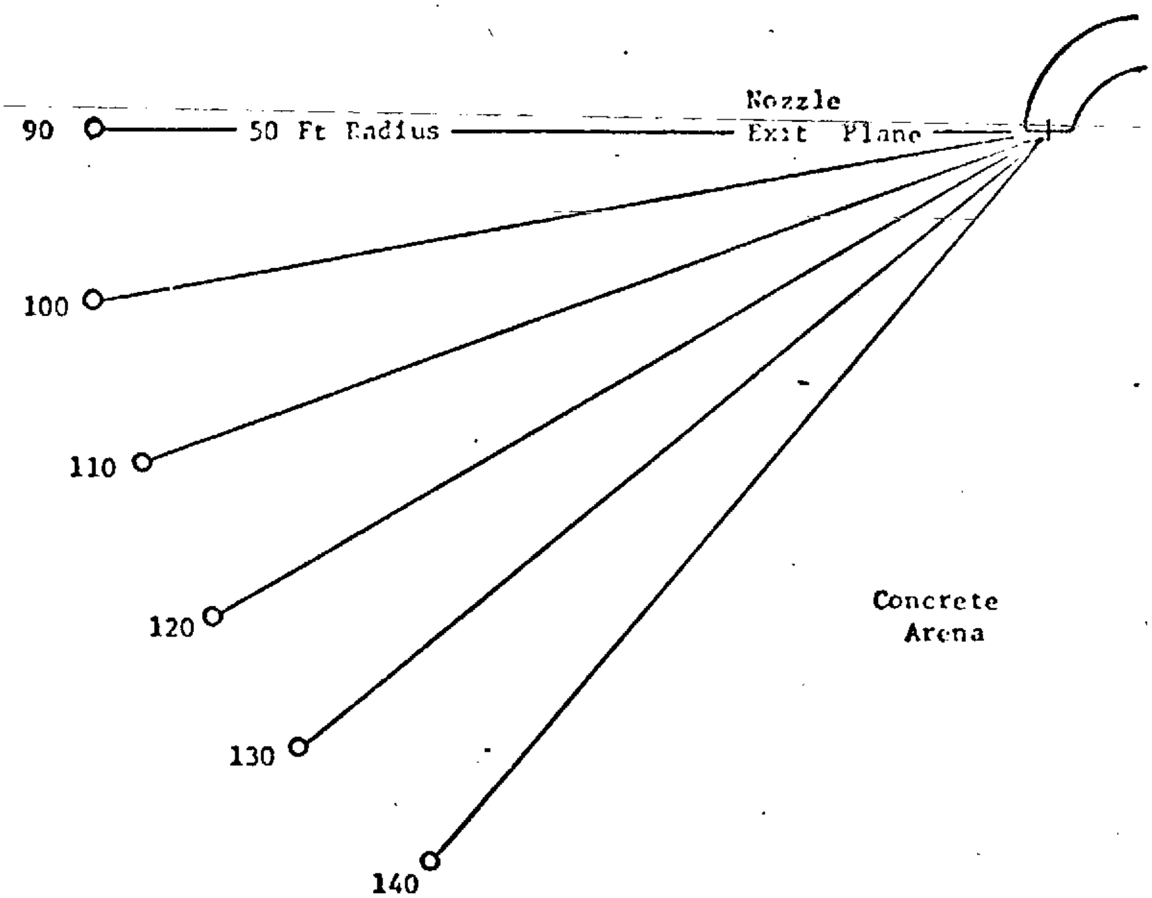


FIGURE D-2.—DATA ACQUISITION SYSTEM



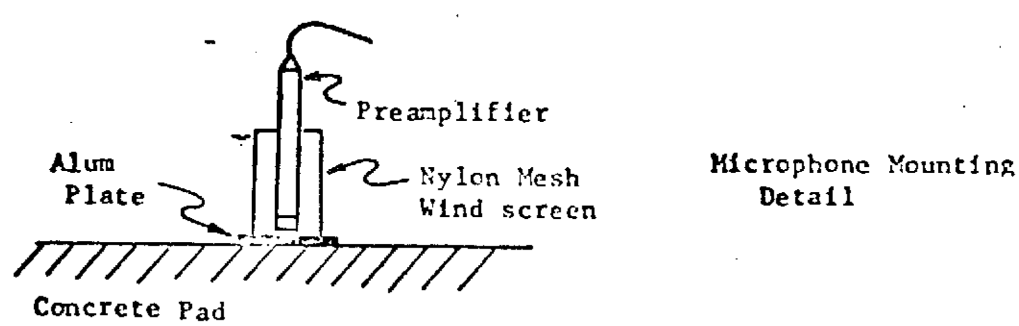


FIGURE D-3.—DATA ACQUISITION MICROPHONE ARRAY

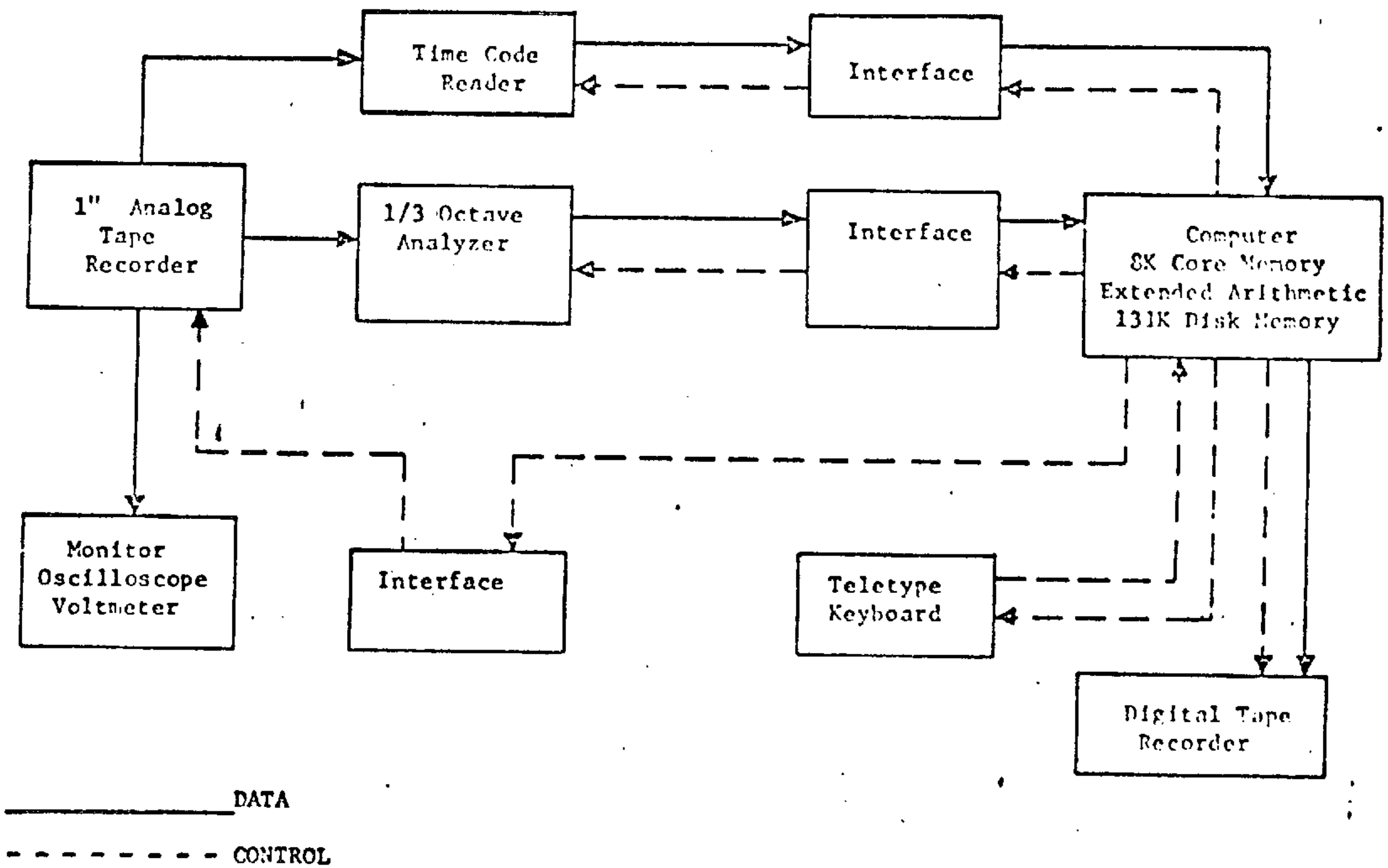


FIGURE D-4.—ACOUSTIC DATA REDUCTION SYSTEM

APPENDIX E

TABULATION OF PROPULSION PERFORMANCE DATA

PERFORMANCE DATA OUTPUT NOMENCLATURE*

APRI	cold geometric nozzle exit area, in.^{2}
AEFF	effective primary area (discharge coefficient X the geometric area), in.^{2}
APRIH	hot geometric area using a factor adjusted for the gas temperature, in.^{2}
APRIH2	hot geometric area (cold geometric area adjusted by 2% for heat), in.^{2}
A*	throat area of the sonic venturi, in.^{2}
P2	sonic venturi throat static pressure, psia
P1	sonic venturi upstream static pressure, psia
TT	total temperature of airflow through venturi, °F
PT	sonic venturi upstream total pressure, psia
Gamma	specific heat ratio of air flowing through venturi
Z	compressibility factor based on venturi conditions
REYN	flow Reynolds number at venturi
CD	sonic venturi discharge coefficient
WA	measured airflow rate, lb_f/sec
W-Fuel	burner fuel flow rate, lb_f/sec
PTARE	rig static tare pressure used for force measurement tare adjustment, psig
FTARE	force measurement tare adjustment due to rig static pressure, lb_f

*Listed in sequence encountered in following computer printout.

FX	measured nozzle thrust, lb_f
FCOR	measured nozzle thrust corrected for ambient pressure, lb_f
FIP	isentropic thrust, lb_f
FIDL	not used
PTN	average split flow plenum entrance total pressure (P_{T1} in test plan), psia
TTN	average split flow plenum entrance total temperature (T_{T1} in test plan), °F
PTE	average nozzle exit total pressure (P_{T2} in test plan), psia
PTN/PAMB	average split flow plenum entrance total pressure ratio
TTN/TAMB	average split flow plenum entrance total temperature ratio
WPRI	measured airflow plus fuel flow, lb_f/sec
WCOR	flow rate corrected to standard temperature and pressure
WSUM	not used
WIP	isentropic flow rate based on cold geometric area (A_{pri}), lb_f/sec
WIPH	isentropic flow rate based on APRIH, lb_f/sec
WIPH2	isentropic flow rate based on APRIH2, lb_f/sec
VIP	isentropic velocity based on P_{TN}/P_{AMB}
GAMMAP	specific heat ratio based on TTN
ZP	compressibility factor based on test nozzle conditions
CDP	nozzle discharge coefficient based on P_{TN}/P_{AMB} and A_{pri}
CDPH	nozzle discharge coefficient based on P_{TN}/P_{AMB} and APRIH

CDPH2	nozzle discharge coefficient based on P_{TN}/P_{AMB} and APRIH2
CVP	nozzle velocity coefficient based on P_{TN}/P_{AMB}
C_V	same as CVP
CGP	nozzle thrust coefficient based on P_{TN}/P_{AMB} and APRI
CGPH	nozzle thrust coefficient based on P_{TN}/P_{AMB} and APRIH
CGPH2	nozzle thrust coefficient based on P_{TN}/P_{AMB} and APRIH2
CDPE	nozzle discharge coefficient based on P_{TNE}/P_{AMB} and APRI
CDPEH2**	nozzle discharge coefficient based on P_{TNE}/P_{AMB} and APRIH2
CVPE**	nozzle velocity coefficient based on P_{TNE}/P_{AMB}
WIPE	isentropic airflow rate based on P_{TNE}/P_{AMB} and APRI
WIPEH	isentropic airflow rate based on P_{TNE}/P_{AMB} and APRIH
VIPE	isentropic jet velocity based on P_{TNE}/P_{AMB}
GAMMAPE	specific heat ratio based on nozzle exit conditions
ZPE	compressibility factor based on nozzle exit conditions
VE1	not used
VE2	not used

**Used in final performance data in figures 9 and 30.

LAB595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TP - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
13.	1.	11074.	2399.	14.802	34.20	92.400	81.858	92.299	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	59.642	124.678	35.980	125.514	1.4194	.9954	12034283.	.9939	25.6599	.0000

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
25.640	.385	363.693	361.066	421.371	421.371	17.539	31.633	17.107

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.185	.995	25.660	20.925	25.660	28.964	28.933	29.544	528.341	1.4028	.9993

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.8859	.8869	.8685	.8631	.8631	.7646	.7655	.7497

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9644	.9455	.9329	26.607	27.139	488.837	1.4027	.9993	.000	.000

PRIMARY NOZZLE TOTAL PRESSURES
1) 17.140 2) 17.599 3) 17.909 4) 17.739 5) 17.060 6) 17.340 7) 17.699 8) 17.809

PRIMARY NOZZLE TOTAL TEMPERATURES
1) 32.100 2) ******* 3) ******* 4) 31.900 5) 31.050 6) 31.950 7) ******* 8) ******* 9) 31.850 10) 30.950

NOZZLE EXIT TOTAL PRESSURES - PTNE
1) 17.360 2) 17.380 3) 17.230 4) 17.090
5) 16.490 6) 16.970 7) 17.130 8) 17.210

NOZZLE STATIC PRESSURES - PSNE
1) ******* 2) *******

LAB595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TP - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
13.	2.	11074.	2399.	14.602	34.20	92.400	82.716	92.276	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	75.032	156.851	37.320	157.903	1.4242	.9944	15135950.	.9940	32.2974	.0000

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
35.700	.535	562.188	558.159	644.416	644.416	19.077	31.317	18.436

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.289	.994	32.297	24.208	32.297	36.079	36.030	36.800	641.955	1.4030	.9993

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.8952	.8964	.8776	.8724	.8724	.7810	.7820	.7657

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9695	.9505	.9355	33.314	33.981	598.637	1.4029	.9993	.000	.000

PRIMARY NOZZLE TOTAL PRESSURES

1) 18.728 2) 19.647 3) 19.857 4) 19.368 5) 18.438 6) 18.508 7) 18.888 8) 19.178

PRIMARY NOZZLE TOTAL TEMPERATURES

1) 32.350 2) ******** 3) ******** 4) 31.250 5) 30.500 6) 32.000 7) ******** 8) ******** 9) 31.150 10) 30.650

NOZZLE EXIT TOTAL PRESSURES - PTNE

1) 18.898 2) 18.818 3) 18.588 4) 18.408
5) 17.589 6) 18.199 7) 18.399 8) 18.588

NOZZLE STATIC PRESSURES - PSNE

1) ******** 2) ********

LAD595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TP - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
13.	3.	11074.	2399.	14.802	34.20	92.400	82.791	92.257	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	86.822	181.275	38.360	182.491	1.4279	.9936	17487728.	.9941	37.3386	.0000

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
43.690	.655	740.779	735.469	842.132	842.132	20.541	31.200	19.707

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.388	.994	37.339	25.988	37.339	41.672	41.608	42.506	725.650	1.4033	.9992

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.8960	.8974	.8764	.8796	.8796	.7882	.7894	.7727

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9674	.9484	.9384	38.598	39.370	680.201	1.4031	.9992	.000	.000

PRIMARY NOZZLE TOTAL PRESSURES
1) 19.877 2) 20.796 3) 21.266 4) 20.766 5) 19.717 6) 20.167 7) 20.826 8) 20.916

PRIMARY NOZZLE TOTAL TEMPERATURES
1) 30.950 2) ******* 3) ******* 4) 31.800 5) 30.300 6) 31.250 7) ******* 8) ******* 9) 32.100 10) 30.800

NOZZLE EXIT TOTAL PRESSURES - PTNE
1) 20.307 2) 20.227 3) 19.897 4) 19.637
5) 18.518 6) 19.487 7) 19.747 8) 19.837

NOZZLE STATIC PRESSURES - PSNE
1) ******* 2) *******

LAD595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TF - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
13.	4.	11074.	2399.	14.802	34.25	92.400	83.264	92.240	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	97.532	203.517	38.860	204.881	1.4312	.9930	19651250.	.9943	41.9506	.0000

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
50.260	.754	917.706	911.128	1035.853	1035.853	22.010	31.083	21.016

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.487	.994	41.951	27.246	41.951	46.554	46.473	47.485	794.448	1.4035	.9991

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.9011	.9027	.8835	.8859	.8859	.7983	.7997	.7827

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9684	.9494	.9394	43.320	44.186	749.203	1.4033	.9992	.000	.000

PRIMARY NOZZLE TOTAL PRESSURES

1) 21.166 2) 22.365 3) 23.114 4) 22.474 5) 20.896 6) 21.396 7) 22.105 8) 22.544

PRIMARY NOZZLE TOTAL TEMPERATURES

1) 31.000 2) ******* 3) ******* 4) 32.000 5) 30.000 6) 32.000 7) ******* 8) ******* 9) 31.500 10) 30.000

NOZZLE EXIT TOTAL PRESSURES - PTNE

1) 21.645 2) 21.665 3) 21.256 4) 20.986
5) 19.667 6) 20.696 7) 20.996 8) 21.216

NOZZLE STATIC PRESSURES - PSNE

1) ******* 2) *******

LAD595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR

NOZZLE NOISE TONE SOURCE IDENTIFICATION

TEST 2399TP - HNTF

RUN	COND	PTN/PAMB	TTN/TAMB	CDP	CDPH	CVP	CV	CGP	CGPH	APRIH
13.	1.	1.185	.995	.8859	.8869	.8631	.8631	.7646	.7655	92.299
13.	2.	1.289	.994	.8952	.8964	.8724	.8724	.7810	.7820	92.276
13.	3.	1.388	.994	.8960	.8974	.8796	.8796	.7882	.7894	92.257
13.	4.	1.487	.994	.9011	.9027	.8859	.8859	.7983	.7997	92.240

CDPH2	CGPH2	CDPE	CDPEH2	CVPE	APRIH2
.8685	.7497	.9644	.9455	.9329	94.248
.8776	.7657	.9695	.9505	.9355	94.248
.8784	.7727	.9674	.9484	.9384	94.248
.8835	.7827	.9684	.9494	.9394	94.248

LAB595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TF - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	AFRI	AEFF	AFRIH	1.02 AFRI AFRIH2
14.	1.	11074.	2399.	14.800	34.25	92.400	82.218	93.594	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	38.110	79.705	34.750	80.239	1.4125	.9970	7681411.	.9937	16.3804	.0167

FTARE	FTARE	FX	FCOR	FIP	FIDL	FTN	TTN	PTE
19.490	.292	360.048	357.515	413.367	413.367	17.474	719.250	17.038

FTN/PAMB	TTN/TAMB	WFRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.181	2.387	16.397	20.791	16.397	18.428	18.666	18.796	811.099	1.3716	1.0010

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.8898	.8785	.8724	.8710	.8710	.7750	.7651	.7598

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9713	.9523	.9443	16.881	17.219	748.148	1.3712	1.0010	.000	.000

PRIMARY NOZZLE TOTAL PRESSURES
1) 16.818 2) 17.457 3) 18.087 4) 17.937 5) 16.798 6) 16.928 7) 17.457 8) 18.307

PRIMARY NOZZLE TOTAL TEMPERATURES
1) 729.400 2) ******* 3) ******* 4) 720.000 5) 707.000 6) 729.800 7) ******* 8) ******* 9) 720.500 10) 708.600

NOZZLE EXIT TOTAL PRESSURES - PTNE
1) 17.328 2) 17.388 3) 17.188 4) 17.008
5) 16.309 6) 16.858 7) 17.068 8) 17.158

NOZZLE STATIC PRESSURES - PSNE
1) ******* 2) *******

LAD595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TP - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
14.	2.	11074.	2399.	14.800	34.30	92.400	81.740	93.635	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	43.550	91.146	35.080	91.758	1.4142	.9966	8787190.	.9937	18.7364	.0197

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
24.640	.370	488.510	485.074	554.085	554.085	18.483	759.283	17.661

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.249	2.468	18.758	22.865	18.758	21.204	21.468	21.629	950.366	1.3704	1.0008

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.8846	.8730	.8673	.8817	.8817	.7799	.7697	.7646

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9686	.9496	.9564	19.367	19.754	876.131	1.3697	1.0008	.000	.000

PRIMARY NOZZLE TOTAL PRESSURES
1) 17.617 2) 18.466 3) 19.615 4) 19.336 5) 17.547 6) 17.657 7) 18.277 8) 19.326

PRIMARY NOZZLE TOTAL TEMPERATURES
1) 769.500 2) ******* 3) ******* 4) 756.500 5) 750.000 6) 770.000 7) ******* 8) ******* 9) 758.500 10) 751.200

NOZZLE EXIT TOTAL PRESSURES - PTNE
1) 18.257 2) 18.337 3) 18.067 4) 17.847
5) 16.868 6) 17.607 7) 17.877 8) 18.007

NOZZLE STATIC PRESSURES - PSNE
1) ******* 2) *******

LAB595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TF - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
14.	3.	11074.	2399.	14.800	34.40	92.400	81.914	93.689	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	49.000	102.534	35.560	103.221	1.4160	.9962	9884290.	.9938	21.0835	.0237

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
30.140	.452	633.968	629.509	716.701	716.701	19.669	809.450	18.879

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.329	2.569	21.107	24.669	21.107	23.809	24.141	24.285	1092.477	1.3686	1.0005

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.8865	.8743	.8691	.8846	.8846	.7842	.7734	.7688

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9664	.9474	.9536	21.841	22.278	1013.411	1.3678	1.0005	.000	.000

PRIMARY NOZZLE TOTAL PRESSURES

1) 18.476 2) 19.425 3) 21.024 4) 20.894 5) 18.456 6) 18.606 7) 19.485 8) 20.984

PRIMARY NOZZLE TOTAL TEMPERATURES

1) 820.500 2) ******* 3) ******* 4) 806.000 5) 800.600 6) 820.500 7) ******* 8) ******* 9) 807.600 10) 801.500

NOZZLE EXIT TOTAL PRESSURES - PTNE

1) 19.346 2) 19.485 3) 19.166 4) 18.856
5) 17.637 6) 18.566 7) 18.886 8) 19.086

NOZZLE STATIC PRESSURES - PSNE

1) ******* 2) *******

LAD595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TF - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
14.	4.	11074.	2399.	14.800	34.40	92.400	82.445	93.753	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	53.390	111.729	36.020	112.478	1.4174	.9959	10767762.	.9938	22.9758	.0276

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
34.740	.521	774.559	769.111	868.681	868.681	20.793	863.366	19.890

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.405	2.678	23.003	25.966	23.003	25.781	26.159	26.297	1214.992	1.3666	1.0002

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.8923	.8794	.8748	.8916	.8916	.7956	.7841	.7800

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9656	.9467	.9534	23.822	24.299	1136.251	1.3658	1.0002	.000	.000

PRIMARY NOZZLE TOTAL PRESSURES
1) 19.306 2) 20.275 3) 22.373 4) 22.422 5) 19.356 6) 19.495 7) 20.524 8) 22.592

PRIMARY NOZZLE TOTAL TEMPERATURES
1) 875.000 2) ******* 3) ******* 4) 859.800 5) 854.000 6) 876.500 7) ******* 8) ******* 9) 859.400 10) 855.500

NOZZLE EXIT TOTAL PRESSURES - PTNE
1) 20.414 2) 20.574 3) 20.225 4) 19.895
5) 18.416 6) 19.555 7) 19.925 8) 20.115

NOZZLE STATIC PRESSURES - PSNE
1) ******* 2) *******

LAD595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TP - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
14.	5.	11074.	2399.	14.800	34.65	92.400	82.947	93.822	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	57.170	119.549	36.400	120.350	1.4185	.9956	11519098.	.9939	24.5857	.0318

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
39.190	.588	910.932	904.525	1017.267	1017.267	21.924	920.667	20.938

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.481	2.792	24.617	26.919	24.617	27.423	27.645	27.971	1329.528	1.3645	1.0000

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.8977	.8841	.8801	.8955	.8955	.8039	.7917	.7881

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9644	.9455	.9501	25.526	26.036	1253.034	1.3635	.9999	.000	.000

PRIMARY NOZZLE TOTAL PRESSURES
1) 20.225 2) 21.274 3) 23.561 4) 23.691 5) 20.295 6) 20.454 7) 21.733 8) 24.161

PRIMARY NOZZLE TOTAL TEMPERATURES
1) 937.800 2) ******* 3) ******* 4) 912.500 5) 910.600 6) 938.600 7) ******* 8) ******* 9) 913.500 10) 911.000

NOZZLE EXIT TOTAL PRESSURES - PTNE
1) 21.563 2) 21.733 3) 21.274 4) 20.904
5) 19.256 6) 20.594 7) 20.974 8) 21.204

NOZZLE STATIC PRESSURES - PSNE
1) ******* 2) *******

LAB595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR

NOZZLE NOISE TONE SOURCE IDENTIFICATION

TEST 2399TP - HNTF

RUN	COND	PTN/PAMB	TTN/TAMB	CDP	CDPH	CVP	CV	CGP	CGPH	AFRIH
14.	1.	1.181	2.387	.8898	.8785	.8710	.8710	.7750	.7651	93.594
14.	2.	1.249	2.468	.8846	.8730	.8817	.8817	.7799	.7697	93.635
14.	3.	1.329	2.569	.8865	.8743	.8846	.8846	.7842	.7734	93.689
14.	4.	1.405	2.678	.8923	.8794	.8916	.8916	.7956	.7841	93.753
14.	5.	1.481	2.792	.8977	.8841	.8955	.8955	.8039	.7917	93.622

CDPH2	CGPH2	CDPE	CDPEH2	CVPE	AFRIH2
.8724	.7598	.9713	.9523	.9443	94.248
.8673	.7646	.9686	.9496	.9564	94.248
.8691	.7688	.9664	.9474	.9536	94.248
.8748	.7800	.9656	.9467	.9534	94.248
.8801	.7681	.9644	.9455	.9501	94.248

LAB595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TP - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
15.	1.	11174.	2399.	14.765	26.30	92.400	80.210	92.285	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	59.995	125.519	30.050	126.361	1.4202	.9951	12321138.	.9939	25.9984	.0000

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
25.900	.389	369.771	368.041	435.819	435.819	17.665	25.517	17.309

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.196	.998	25.998	20.919	25.998	29.950	29.912	30.549	539.341	1.4029	.9993

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.8681	.8692	.8510	.8485	.8485	.7365	.7374	.7221

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9260	.9079	.8998	28.075	28.636	508.551	1.4028	.9993	.000	.000

PRIMARY NOZZLE TOTAL PRESSURES

1) 17.293 2) 17.742 3) 18.002 4) 17.812 5) 17.233 6) 17.492 7) 17.842 8) 17.902

PRIMARY NOZZLE TOTAL TEMPERATURES

1) 26.000 2) ******* 3) ******* 4) 26.000 5) 25.000 6) 26.000 7) ******* 8) ******* 9) 25.500 10) 24.600

NOZZLE EXIT TOTAL PRESSURES - PTNE

1) 17.253 2) 17.472 3) 17.293 4) 17.213
5) 17.173 6) 17.432 7) 17.392 8) 17.243

NOZZLE STATIC PRESSURES - PSNE

1) ******* 2) *******

LAD595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TP - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
15.	2.	11174.	2399.	14.765	26.60	92.400	80.897	92.264	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	73.525	153.612	30.825	154.642	1.4246	.9941	15093684.	.9940	31.8463	.0000

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
34.640	.520	546.280	543.724	633.321	633.321	19.063	24.783	18.531

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.291	.996	31.846	23.727	31.846	36.375	36.321	37.102	639.837	1.4031	.9992

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.8755	.8768	.8583	.8626	.8626	.7552	.7563	.7404

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9342	.9158	.9129	34.091	34.773	604.581	1.4030	.9992	.000	.000

PRIMARY NOZZLE TOTAL PRESSURES
1) 18.711 2) 19.590 3) 19.840 4) 19.361 5) 18.401 6) 18.551 7) 18.921 8) 19.131

PRIMARY NOZZLE TOTAL TEMPERATURES
1) 26.000 2) ******* 3) ******* 4) 24.600 5) 23.800 6) 25.500 7) ******* 8) ******* 9) 25.000 10) 23.800

NOZZLE EXIT TOTAL PRESSURES - PTNE
1) 18.451 2) 18.741 3) 18.481 4) 18.421
5) 18.362 6) 18.681 7) 18.691 8) 18.421

NOZZLE STATIC PRESSURES - PSNE
1) ******* 2) *******

LAD595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TP - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
15.	3.	11174.	2399.	14.765	26.40	92.400	81.777	92.242	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	87.045	181.798	31.075	183.017	1.4291	.9931	17907466.	.9942	37.7453	.0000

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
43.880	.658	751.682	748.164	857.704	857.704	20.707	23.867	20.017

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.402	.995	37.745	25.866	37.745	42.649	42.575	43.501	731.104	1.4034	.9991

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.8850	.8866	.8677	.8764	.8764	.7756	.7770	.7604

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9399	.9214	.9216	40.161	40.964	695.220	1.4033	.9992	.000	.000

PRIMARY NOZZLE TOTAL PRESSURES
1) 20.030 2) 21.059 3) 21.368 4) 20.889 5) 19.860 6) 20.270 7) 20.909 8) 21.269

PRIMARY NOZZLE TOTAL TEMPERATURES
1) 24.200 2) ******** 3) ******** 4) 24.600 5) 23.000 6) 24.200 7) ******** 8) ******** 9) 23.800 10) 23.400

NOZZLE EXIT TOTAL PRESSURES - PTNE
1) 19.990 2) 20.320 3) 19.930 4) 19.850
5) 19.820 6) 20.240 7) 20.130 8) 19.860

NOZZLE STATIC PRESSURES - PSNE
1) ******** 2) ********

LAD595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TP - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
15.	4.	11174.	2399.	14.765	26.50	92.400	82.559	92.223	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	97.745	204.169	30.925	205.538	1.4327	.9923	20170600.	.9943	42.4554	.0000

FTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
50.410	.756	926.084	921.750	1051.862	1051.862	22.175	23.000	21.352

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.502	.993	42.455	27.142	42.455	47.516	47.425	48.466	797.133	1.4037	.9991

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.8935	.8952	.8760	.8804	.8804	.7867	.7882	.7712

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9459	.9274	.9220	44.882	45.779	761.215	1.4035	.9991	.000	.000

PRIMARY NOZZLE TOTAL PRESSURES

1) 21.448 2) 22.687 3) 23.057 4) 22.407 5) 21.169 6) 21.628 7) 22.288 8) 22.717

PRIMARY NOZZLE TOTAL TEMPERATURES

1) 23.400 2) ******* 3) ******* 4) 23.400 5) 22.200 6) 23.000 7) ******* 8) ******* 9) 23.800 10) 22.200

NOZZLE EXIT TOTAL PRESSURES - PTNE

1) 21.269 2) 21.708 3) 21.249 4) 21.169
5) 21.059 6) 21.568 7) 21.558 8) 21.199

NOZZLE STATIC PRESSURES - PSNE

1) ******* 2) *******

LADS95 12/ 6/73 CALCULATION DATE 2/19/74
HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TP - HNTF

RUN	COND	PTN/PAMB	TTN/TAMB	CDP	CDPH	CVP	CV	CGP	CGPH	APRIH
15.	1.	1.196	.998	.8681	.8692	.8485	.8485	.7365	.7374	92.285
15.	2.	1.291	.996	.8755	.8768	.8626	.8626	.7552	.7563	92.264
15.	3.	1.402	.995	.8850	.8866	.8764	.8764	.7756	.7770	92.242
15.	4.	1.502	.993	.8935	.8952	.8804	.8804	.7867	.7882	92.223

CDPH2	CGPH2	CDPE	CDPEH2	CVPE	APRIH2
.8510	.7221	.9260	.9079	.8998	94.248
.8563	.7404	.9342	.9158	.9129	94.248
.8677	.7604	.9399	.9214	.9216	94.248
.8760	.7712	.9459	.9274	.9220	94.248

LAD595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TF - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
16.	1.	11174.	2399.	14.764	26.50	92.400	82.804	93.559	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	38.074	79.639	25.825	80.173	1.4131	.9967	7869766.	.9937	16.5216	.0161

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
19.580	.294	359.266	357.609	412.062	412.062	17.409	700.617	17.068

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.179	2.387	16.538	20.880	16.538	18.454	18.686	18.823	801.665	1.3727	1.0012

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.8962	.8850	.8786	.8719	.8719	.7613	.7717	.7680

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9592	.9404	.9282	17.241	17.586	753.028	1.3724	1.0012	.000	.000

PRIMARY NOZZLE TOTAL PRESSURES

1) 16.792 2) 17.391 3) 18.021 4) 17.821 5) 16.742 6) 16.862 7) 17.401 8) 18.241

PRIMARY NOZZLE TOTAL TEMPERATURES

1) 706.500 2) ******* 3) ******* 4) 703.000 5) 692.000 6) 708.800 7) ******* 8) ******* 9) 701.400 10) 692.000

NOZZLE EXIT TOTAL PRESSURES - PTNE

1) 17.042 2) 17.252 3) 17.032 4) 16.952
5) 16.902 6) 17.172 7) 17.182 8) 17.012

NOZZLE STATIC PRESSURES - PSNE

1) ******* 2) *******

LAD595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TF - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
16.	2.	11174.	2399.	14.764	26.75	92.400	82.375	93.629	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	44.074	92.322	26.400	92.941	1.4151	.9962	9121788.	.9937	19.1567	.0203

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
25.440	.382	504.598	502.271	574.695	574.695	18.564	758.700	18.065

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.257	2.505	19.177	23.267	19.177	21.511	21.797	21.941	964.187	1.3705	1.0008

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.8915	.8798	.8740	.8780	.8780	.7828	.7725	.7674

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9552	.9365	.9338	20.077	20.478	906.617	1.3700	1.0008	.000	.000

PRIMARY NOZZLE TOTAL PRESSURES
1) 17.671 2) 18.530 3) 19.669 4) 19.459 5) 17.631 6) 17.711 7) 18.361 8) 19.479

PRIMARY NOZZLE TOTAL TEMPERATURES
1) 766.800 2) ******* 3) ******* 4) 756.500 5) 751.600 6) 768.000 7) ******* 8) ******* 9) 757.500 10) 752.000

NOZZLE EXIT TOTAL PRESSURES - PTNE
1) 18.031 2) 18.321 3) 17.991 4) 17.901
5) 17.891 6) 18.231 7) 18.201 8) 17.951

NOZZLE STATIC PRESSURES - PSNE
1) ******* 2) *******

LAB595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TF - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
16.	3.	11174.	2399.	14.764	27.00	92.400	82.531	93.694	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	48.634	101.728	27.375	102.410	1.4166	.9959	10034351.	.9938	21.0992	.0238

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
30.030	.450	634.049	631.125	715.717	715.717	19.587	811.617	18.986

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.327	2.612	21.123	24.812	21.123	23.649	23.980	24.122	1090.160	1.3685	1.0005

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.8932	.8809	.8757	.8859	.8859	.7913	.7803	.7758

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9529	.9342	.9372	22.166	22.610	1030.492	1.3679	1.0005	.000	.000

PRIMARY NOZZLE TOTAL PRESSURES
1) 18.390 2) 19.290 3) 20.908 4) 20.828 5) 18.410 6) 18.530 7) 19.379 8) 20.958

PRIMARY NOZZLE TOTAL TEMPERATURES
1) 816.400 2) ******* 3) ******* 4) 805.000 5) 800.200 6) 815.600 7) ******* 8) ******* 9) 805.500 10) 827.000

NOZZLE EXIT TOTAL PRESSURES - PTNE
1) 18.930 2) 19.320 3) 18.920 4) 18.820
5) 18.730 6) 19.160 7) 19.150 8) 18.860

NOZZLE STATIC PRESSURES - PSNE
1) ******* 2) *******

LAB595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TP - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
16.	4.	11174.	2399.	14.764	26.90	92.400	82.543	93.772	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	53.484	111.833	28.575	112.582	1.4181	.9956	11006439.	.9938	23.1802	.0286

PTARE	FTARE	FX	FCOR	FIP	FIDL	FTN	TTN	FTE
35.410	.531	789.189	785.549	892.650	892.650	20.938	877.566	20.190

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.418	2.748	23.209	26.156	23.209	25.980	26.366	26.500	1237.467	1.3660	1.0002

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.8933	.8802	.8758	.8841	.8841	.7898	.7782	.7743

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9509	.9322	.9318	24.408	24.897	1174.106	1.3653	1.0002	.000	.000

PRIMARY NOZZLE TOTAL PRESSURES
1) 19.439 2) 20.468 3) 22.456 4) 22.436 5) 19.449 6) 19.649 7) 20.758 8) 22.846

PRIMARY NOZZLE TOTAL TEMPERATURES
1) 887.600 2) ******* 3) ******* 4) 871.000 5) 869.000 6) 888.800 7) ******* 8) ******* 9) 875.000 10) 874.000

NOZZLE EXIT TOTAL PRESSURES - PTNE
1) 20.139 2) 20.608 3) 20.099 4) 19.979
5) 19.899 6) 20.408 7) 20.349 8) 20.039

NOZZLE STATIC PRESSURES - PSNE
1) ******* 2) *******

LAB595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TF - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	AFRI	AEFF	AFRIH	1.02 AFRI AFRIH2
16.	5.	11174.	2399.	14.764	26.95	92.400	83.141	93.793	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	57.224	119.672	29.450	120.475	1.4193	.9953	11759367.	.9939	24.7942	.0316

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
39.570	.594	921.226	916.977	1022.680	1022.680	21.914	905.533	21.110

PTN/PAMB	TTN/TAMB	WFRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.484	2.805	24.826	27.010	24.826	27.591	28.007	28.142	1325.384	1.3654	1.0000

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.8998	.8864	.8821	.9008	.9008	.8105	.7985	.7946

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9529	.9342	.9444	26.052	26.573	1264.226	1.3646	1.0000	.000	.000

PRIMARY NOZZLE TOTAL PRESSURES
1) 20.229 2) 21.258 3) 23.595 4) 23.725 5) 20.319 6) 20.438 7) 21.647 8) 24.105

PRIMARY NOZZLE TOTAL TEMPERATURES
1) 916.800 2) ******* 3) ******* 4) 899.400 5) 897.500 6) 918.400 7) ******* 8) ******* 9) 902.600 10) 898.500

NOZZLE EXIT TOTAL PRESSURES - PTNE
1) 21.038 2) 21.577 3) 20.998 4) 20.878
5) 20.738 6) 21.358 7) 21.328 8) 20.968

NOZZLE STATIC PRESSURES - PSNE
1) ******* 2) *******

LAB595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TF - HNTF

RUN	COND	PTN/PAMB	TTN/TAMB	CDP	CDPH	CVP	CV	CGP	CGPH	AFRIH
16.	1.	1.179	2.387	.8962	.8850	.8719	.8719	.7813	.7717	93.559
16.	2.	1.257	2.505	.8915	.8798	.8780	.8780	.7828	.7725	93.629
16.	3.	1.327	2.612	.8932	.8809	.8859	.8859	.7913	.7803	93.694
16.	4.	1.418	2.748	.8933	.8802	.8841	.8841	.7898	.7762	93.772
16.	5.	1.484	2.805	.8998	.8864	.9006	.9006	.8105	.7985	93.793

CDPH2	CGPH2	CDPE	CDPEH2	CVPE	AFRIH2
.8786	.7660	.9592	.9404	.9262	94.248
.8740	.7674	.9552	.9365	.9338	94.248
.8757	.7758	.9529	.9342	.9372	94.248
.8758	.7743	.9509	.9322	.9318	94.248
.8821	.7946	.9529	.9342	.9444	94.248

LAD595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR

NOZZLE NOISE TONE SOURCE IDENTIFICATION

TEST 2399TP - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
17.	1.	11174.	2399.	14.741	32.70	92.400	82.582	92.300	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	60.941	127.401	37.320	128.255	1.4197	.9954	12254680.	.9939	26.1873	.0000

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
26.280	.394	377.006	375.852	437.212	437.212	17.562	32.833	17.167

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.191	1.000	26.187	21.354	26.187	29.301	29.269	29.887	537.164	1.4028	.9993

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.8937	.8947	.8762	.8623	.8623	.7707	.7715	.7556

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9628	.9439	.9229	27.199	27.743	501.912	1.4027	.9993	.000	.000

PRIMARY NOZZLE TOTAL PRESSURES

1) 17.169 2) 17.698 3) 17.928 4) 17.708 5) 17.089 6) 17.329 7) 17.728 8) 17.848

PRIMARY NOZZLE TOTAL TEMPERATURES

1) 33.000 2) ******* 3) ******* 4) 32.500 5) 32.500 6) 33.000 7) ******* 8) ******* 9) 32.500 10) 33.500

NOZZLE EXIT TOTAL PRESSURES - PTNE

1) 17.119 2) 17.348 3) 17.149 4) 17.099
5) 17.009 6) 17.279 7) 17.249 8) 17.069

NOZZLE STATIC PRESSURES - PSNE

1) ******* 2) *******

LAB595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TF - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
17.	2.	11174.	2399.	14.741	32.65	92.400	83.537	92.277	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	78.601	164.073	38.860	165.173	1.4251	.9943	15776685.	.9941	33.7430	.0000

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
37.670	.565	613.395	611.518	700.195	700.195	19.374	34.667	18.822

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.314	1.004	33.743	24.988	33.743	37.323	37.274	38.070	667.637	1.4030	.9993

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.9041	.9053	.8863	.8760	.8760	.7920	.7931	.7765

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9621	.9432	.9245	35.074	35.775	632.649	1.4029	.9993	.000	.000

PRIMARY NOZZLE TOTAL PRESSURES
1) 18.947 2) 19.566 3) 19.596 4) 19.227 5) 18.757 6) 19.217 7) 19.766 8) 19.916

PRIMARY NOZZLE TOTAL TEMPERATURES
1) 33.000 2) ******* 3) ******* 4) 33.000 5) 37.000 6) 33.000 7) ******* 8) ******* 9) 32.500 10) 39.500

NOZZLE EXIT TOTAL PRESSURES - PTNE
1) 18.787 2) 19.077 3) 18.767 4) 18.677
5) 18.657 6) 18.997 7) 18.937 8) 18.677

NOZZLE STATIC PRESSURES - PSNE
1) ******* 2) *******

LAD595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR

NOZZLE NOISE TONE SOURCE IDENTIFICATION

TEST 2399TP - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
17.	3.	11174.	2399.	14.741	32.55	92.400	83.467	92.257	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	88.601	185.053	39.700	186.294	1.4282	.9936	17791946.	.9942	38.0700	.0000

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
44.230	.663	768.936	766.584	871.823	871.823	20.656	32.500	19.960

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.401	.998	38.070	26.384	38.070	42.144	42.079	42.987	736.600	1.4032	.9992

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.9033	.9047	.8856	.8820	.8820	.7967	.7980	.7811

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9602	.9414	.9283	39.647	40.440	700.036	1.4031	.9992	.000	.000

PRIMARY NOZZLE TOTAL PRESSURES

1) 20.086 2) 21.035 3) 21.325 4) 20.795 5) 19.786 6) 20.166 7) 20.865 8) 21.175

PRIMARY NOZZLE TOTAL TEMPERATURES

1) 33.000 2) ******* 3) ******* 4) 32.500 5) 31.500 6) 33.000 7) ******* 8) ******* 9) 33.000 10) 32.000

NOZZLE EXIT TOTAL PRESSURES - PTNE

1) 19.946 2) 20.266 3) 19.876 4) 19.816

5) 19.746 6) 20.146 7) 20.076 8) 19.806

NOZZLE STATIC PRESSURES - PSNE

1) ******* 2) *******

LAB595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TP - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
17.	4.	11174.	2399.	14.741	32.55	92.400	83.734	92.243	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	FT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	96.761	202.036	39.650	203.391	1.4308	.9931	19462688.	.9942	41.6071	.0000

FTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
50.030	.750	905.749	902.978	1020.777	1020.777	21.788	31.833	20.962

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.478	.999	41.607	27.319	41.607	45.913	45.835	46.832	789.349	1.4034	.9992

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.9062	.9078	.8884	.8873	.8873	.8041	.8055	.7883

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9627	.9438	.9321	43.220	44.085	751.384	1.4033	.9992	.000	.000

PRIMARY NOZZLE TOTAL PRESSURES

1) 21.065 2) 22.254 3) 22.533 4) 21.954 5) 20.805 6) 21.305 7) 22.034 8) 22.353

PRIMARY NOZZLE TOTAL TEMPERATURES

1) 31.500 2) ******* 3) ******* 4) 32.500 5) 31.500 6) 31.500 7) ******* 8) ******* 9) 33.000 10) 31.000

NOZZLE EXIT TOTAL PRESSURES - PTNE

1) 20.905 2) 21.335 3) 20.835 4) 20.765
5) 20.755 6) 21.215 7) 21.125 8) 20.765

NOZZLE STATIC PRESSURES - PSNE

1) ******* 2) *******

LAD595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR

NOZZLE NOISE TONE SOURCE IDENTIFICATION

TEST 2399TP - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
17.	5.	11174.	2399.	14.741	32.80	92.400	84.376	92.226	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	105.681	220.761	39.225	222.241	1.4338	.9924	21334654.	.9943	45.5335	.0000

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
55.510	.833	1064.547	1061.290	1169.604	1169.604	23.074	30.333	22.135

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.565	.995	45.533	28.188	45.533	49.864	49.770	50.861	840.575	1.4037	.9991

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.9132	.9149	.8953	.8949	.8949	.8172	.8187	.8011

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9674	.9484	.9367	47.067	48.008	803.020	1.4035	.9991	.000	.000

PRIMARY NOZZLE TOTAL PRESSURES

1) 22.034 2) 23.372 3) 24.272 4) 23.672 5) 21.874 6) 22.373 7) 23.203 8) 23.792

PRIMARY NOZZLE TOTAL TEMPERATURES

1) 30.000 2) ******* 3) ******* 4) 31.000 5) 29.500 6) 31.000 7) ******* 8) ******* 9) 31.000 10) 29.500

NOZZLE EXIT TOTAL PRESSURES - PTNE

1) 21.984 2) 22.543 3) 22.054 4) 21.964
5) 21.764 6) 22.363 7) 22.393 8) 22.014

NOZZLE STATIC PRESSURES - PSNE

1) ******* 2) *******

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LAB595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TP - HNTF

RUN	COND	PTN/PAMB	TTN/TAMB	CDP	CDPH	CVP	CV	CGP	CGPH	APRIH
17.	1.	1.191	1.000	.8937	.8947	.8623	.8623	.7707	.7715	92.300
17.	2.	1.314	1.004	.9041	.9053	.8760	.8760	.7920	.7931	92.277
17.	3.	1.401	.998	.9033	.9047	.8820	.8820	.7967	.7980	92.257
17.	4.	1.478	.999	.9062	.9078	.8873	.8873	.8041	.8055	92.243
17.	5.	1.565	.995	.9132	.9149	.8949	.8949	.8172	.8187	92.226

CDPH2	CGPH2	CDPE	CDPEH2	CVPE	APRIH2
.8762	.7556	.9628	.9439	.9229	94.248
.8863	.7765	.9621	.9432	.9245	94.248
.8856	.7811	.9602	.9414	.9283	94.248
.8884	.7883	.9627	.9438	.9321	94.248
.8953	.8011	.9674	.9484	.9367	94.248

LAD595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TF - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
18.	1.	11574.	2399.	14.349	53.28	92.400	83.437	93.592	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	38.769	81.206	46.500	81.750	1.4119	.9973	7579452.	.9937	16.4891	.0165

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
20.830	.312	372.088	381.083	425.356	425.356	17.068	720.683	16.699

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.189	2.301	16.506	21.439	16.506	18.279	18.514	18.644	829.140	1.3717	1.0010

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.9030	.8915	.8853	.8748	.8748	.7899	.7799	.7744

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9701	.9511	.9342	17.014	17.355	776.394	1.3714	1.0010	.000	.000

PRIMARY NOZZLE TOTAL PRESSURES

1) 16.397 2) 16.937 3) 17.676 4) 17.496 5) 16.377 6) 16.497 7) 17.066 8) 18.075

PRIMARY NOZZLE TOTAL TEMPERATURES

1) 727.400 2) ******* 3) ******* 4) 724.500 5) 710.000 6) 727.400 7) ******* 8) ******* 9) 724.000 10) 710.800

NOZZLE EXIT TOTAL PRESSURES - PTNE

1) 16.707 2) 16.907 3) 16.667 4) 16.577
5) 16.517 6) 16.837 7) 16.777 8) 16.607

NOZZLE STATIC PRESSURES - PSNE

1) ******* 2) *******

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HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TF - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
18.	2.	11574.	2399.	14.349	53.36	92.400	83.170	93.606	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	43.559	91.236	47.040	91.848	1.4133	.9970	8511976.	.9937	18.5259	.0188

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
25.040	.376	472.264	483.662	542.011	542.011	17.887	743.267	17.389

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.247	2.345	18.545	23.204	18.545	20.603	20.872	21.015	940.354	1.3713	1.0009

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.9001	.8885	.8825	.8713	.8713	.7843	.7742	.7689

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9696	.9506	.9314	19.126	19.506	879.687	1.3707	1.0009	.000	.000

PRIMARY NOZZLE TOTAL PRESSURES

1) 17.046 2) 17.916 3) 18.895 4) 18.655 5) 16.996 6) 17.076 7) 17.686 8) 18.825

PRIMARY NOZZLE TOTAL TEMPERATURES

1) 751.200 2) ******* 3) ******* 4) 742.800 5) 735.000 6) 751.600 7) ******* 8) ******* 9) 743.200 10) 735.800

NOZZLE EXIT TOTAL PRESSURES - PTNE

1) 17.346 2) 17.636 3) 17.346 4) 17.256
5) 17.156 6) 17.526 7) 17.536 8) 17.306

NOZZLE STATIC PRESSURES - PSNE

1) ******* 2) *******

LAB595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TF - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
18.	3.	11574.	2399.	14.349	53.36	92.400	83.598	93.682	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	48.519	101.613	47.640	102.294	1.4148	.9967	9474764.	.9938	20.6323	.0229

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	FTE
30.410	.456	616.164	631.060	691.437	691.437	18.940	803.083	18.354

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.320	2.461	20.655	25.007	20.655	22.830	23.147	23.287	1077.032	1.3689	1.0006

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.9047	.8924	.8870	.8911	.8911	.8062	.7952	.7904

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9669	.9480	.9443	21.362	21.789	1016.397	1.3683	1.0005	.000	.000

PRIMARY NOZZLE TOTAL PRESSURES
1) 17.736 2) 18.665 3) 20.303 4) 20.243 5) 17.766 6) 17.856 7) 18.635 8) 20.313

PRIMARY NOZZLE TOTAL TEMPERATURES
1) 809.600 2) ******** 3) ******** 4) 802.000 5) 796.600 6) 811.200 7) ******** 8) ******** 9) 802.500 10) 796.600

NOZZLE EXIT TOTAL PRESSURES - PTNE
1) 18.285 2) 18.675 3) 18.295 4) 18.185
5) 18.075 6) 18.545 7) 18.515 8) 18.255

NOZZLE STATIC PRESSURES - PSNE
1) ******** 2) ********

LAD595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TP - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
18.	4.	11574.	2399.	14.349	53.52	92.400	83.621	93.762	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	52.629	110.177	48.175	110.916	1.4160	.9965	10267413.	.9938	22.3696	.0268

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
35.030	.525	744.134	762.124	840.705	840.705	20.056	866.783	19.347

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.398	2.585	22.396	26.244	22.396	24.748	25.112	25.243	1207.730	1.3664	1.0002

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.9050	.8918	.8872	.8851	.8851	.8010	.7894	.7853

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9650	.9461	.9347	23.208	23.672	1143.687	1.3656	1.0002	.000	.000

PRIMARY NOZZLE TOTAL PRESSURES

1) 18.575 2) 19.524 3) 21.722 4) 21.822 5) 18.655 6) 18.725 7) 19.664 8) 21.762

PRIMARY NOZZLE TOTAL TEMPERATURES

1) 873.000 2) ******* 3) ******* 4) 865.400 5) 859.400 6) 874.500 7) ******* 8) ******* 9) 867.000 10) 861.400

NOZZLE EXIT TOTAL PRESSURES - PTNE

1) 19.224 2) 19.744 3) 19.304 4) 19.154
5) 18.994 6) 19.564 7) 19.534 8) 19.254

NOZZLE STATIC PRESSURES - PSNE

1) ******* 2) *******

LAD595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TP - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
18.	5.	11574.	2399.	14.349	53.56	92.400	84.307	93.803	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	56.809	118.958	48.875	119.756	1.4172	.9962	11074550.	.9938	24.1468	.0303

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
39.700	.595	887.344	908.797	988.240	988.240	21.144	908.466	20.392

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.474	2.666	24.177	27.292	24.177	26.498	26.900	27.028	1315.113	1.3651	1.0000

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.9124	.8988	.8945	.8979	.8979	.8193	.8070	.8032

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9654	.9464	.9408	25.044	25.545	1255.210	1.3643	1.0000	.000	.000

PRIMARY NOZZLE TOTAL PRESSURES
1) 19.464 2) 20.373 3) 22.861 4) 23.160 5) 19.674 6) 19.594 7) 20.673 8) 23.350

PRIMARY NOZZLE TOTAL TEMPERATURES
1) 916.400 2) ******* 3) ******* 4) 906.200 5) 902.200 6) 916.000 7) ******* 8) ******* 9) 905.800 10) 904.200

NOZZLE EXIT TOTAL PRESSURES - PTNE
1) 20.293 2) 20.843 3) 20.353 4) 20.183
5) 19.944 6) 20.633 7) 20.593 8) 20.293

NOZZLE STATIC PRESSURES - PSNE
1) ******* 2) *******

LAD595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TP - HNTF

RUN	COND	PTN/PAMB	TTN/TAMB	CDF	CDFH	CVF	CV	CGP	CGPH	AFRIH
18.	1.	1.189	2.301	.9030	.8915	.8748	.8748	.7899	.7799	93.592
18.	2.	1.247	2.345	.9001	.8885	.8713	.8713	.7843	.7742	93.606
18.	3.	1.320	2.461	.9047	.8924	.8911	.8911	.8062	.7952	93.682
18.	4.	1.398	2.565	.9050	.8918	.8851	.8851	.8010	.7894	93.762
18.	5.	1.474	2.666	.9124	.8988	.8979	.8979	.8193	.8070	93.803

CDFH2	CGPH2	CDFE	CDFEH2	CVFE	AFRIH2
.8853	.7744	.9701	.9511	.9342	94.248
.8825	.7689	.9696	.9506	.9314	94.248
.8870	.7904	.9669	.9486	.9443	94.248
.8872	.7853	.9650	.9461	.9347	94.248
.8945	.8032	.9654	.9464	.9408	94.248

LAB595 12/ 6/73 CALCULATION DATE 2/19/74
HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TF - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
19.	1.	11574.	2399.	14.354	54.16	92.400	83.450	93.587	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	38.244	79.990	49.400	80.526	1.4116	.9975	7406977.	.9937	16.1932	.0160

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
20.150	.302	350.138	358.478	409.049	409.049	16.961	715.783	16.519

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.182	2.288	16.209	21.142	16.209	17.948	18.178	18.307	811.929	1.3719	1.0011

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.9031	.8917	.8854	.8560	.8560	.7731	.7633	.7579

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9897	.9703	.9313	16.378	16.706	746.263	1.3714	1.0011	49.581	65.612

PRIMARY NOZZLE TOTAL PRESSURES
1) 16.332 2) 16.842 3) 17.381 4) 17.251 5) 16.312 6) 16.462 7) 17.091 8) 18.020

PRIMARY NOZZLE TOTAL TEMPERATURES
1) 719.200 2) ******* 3) ******* 4) 721.000 5) 706.000 6) 721.000 7) ******* 8) ******* 9) 720.500 10) 707.000

NOZZLE EXIT TOTAL PRESSURES - PTNE
1) 16.812 2) 16.842 3) 16.632 4) 16.462
5) 15.853 6) 16.362 7) 16.552 8) 16.642

NOZZLE STATIC PRESSURES - PSNE
1) 14.334 2) 14.319

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HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TP - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
19.	2.	11574.	2399.	14.354	53.92	92.400	82.693	93.617	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	44.204	92.492	51.150	93.112	1.4132	.9971	8535336.	.9937	18.7038	.0192

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
25.830	.387	496.392	497.978	558.196	558.196	18.029	751.650	17.402

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.256	2.358	18.723	23.323	18.723	20.921	21.196	21.339	959.214	1.3709	1.0009

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.8949	.8833	.8774	.8714	.8714	.7798	.7697	.7645

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9608	.9616	.9458	19.090	19.471	883.722	1.3703	1.0006	62.724	78.418

PRIMARY NOZZLE TOTAL PRESSURES
1) 17.111 2) 17.951 3) 19.049 4) 18.860 5) 17.121 6) 17.181 7) 17.871 8) 19.089

PRIMARY NOZZLE TOTAL TEMPERATURES
1) 762.200 2) ******* 3) ******* 4) 755.500 5) 726.200 6) 761.800 7) ******* 8) ******* 9) 755.000 10) 749.200

NOZZLE EXIT TOTAL PRESSURES - PTNE
1) 17.781 2) 17.861 3) 17.621 4) 17.371
5) 16.452 6) 17.131 7) 17.421 8) 17.561

NOZZLE STATIC PRESSURES - PSNE
1) 14.322 2) 14.304

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HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TP - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
19.	3.	11574.	2399.	14.354	53.96	92.400	83.302	93.689	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	49.234	102.998	52.675	103.689	1.4146	.9969	9476010.	.9938	20.8060	.0227

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
30.730	.461	618.559	633.293	707.805	707.805	19.083	809.700	18.330

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.329	2.471	20.831	25.096	20.831	23.106	23.428	23.568	1093.241	1.3687	1.0005

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.9015	.8891	.8839	.8739	.8739	.7879	.7770	.7724

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9810	.9617	.9406	21.235	21.659	1015.756	1.3679	1.0005	62.727	62.997

PRIMARY NOZZLE TOTAL PRESSURES
1) 17.881 2) 18.900 3) 20.398 4) 20.268 5) 17.970 6) 18.000 7) 18.820 8) 20.428

PRIMARY NOZZLE TOTAL TEMPERATURES
1) 810.800 2) ******* 3) ******* 4) 802.000 5) 880.200 6) 809.600 7) ******* 8) ******* 9) 802.000 10) 773.600

NOZZLE EXIT TOTAL PRESSURES - PTNE
1) 18.800 2) 18.900 3) 18.570 4) 18.300
5) 17.181 6) 18.010 7) 18.340 8) 18.540

NOZZLE STATIC PRESSURES - PSNE
1) 14.322 2) 14.298

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HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TF - HNTF

INPUT DATA

									1.02 APRI
RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	APRIH2
19.	4.	11574.	2399.	14.354	53.88	92.400	83.558	93.758	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	53.124	111.183	53.560	111.928	1.4157	.9967	10212977.	.9938	22.4510	.0265

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
35.460	.532	744.108	761.832	845.824	845.824	20.105	865.466	19.234

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.401	2.560	22.478	26.262	22.478	24.856	25.221	25.353	1210.702	1.3665	1.0002

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.9043	.8912	.8866	.8797	.8797	.7956	.7840	.7800

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9791	.9599	.9411	22.958	23.417	1131.714	1.3656	1.0002	74.381	97.971

PRIMARY NOZZLE TOTAL PRESSURES
1) 18.630 2) 19.629 3) 21.697 4) 21.787 5) 18.790 6) 18.780 7) 19.729 8) 21.797

PRIMARY NOZZLE TOTAL TEMPERATURES
1) 871.800 2) ******* 3) ******* 4) 864.600 5) 859.000 6) 871.800 7) ******* 8) ******* 9) 865.800 10) 859.800

NOZZLE EXIT TOTAL PRESSURES - PTNE
1) 19.729 2) 19.899 3) 19.569 4) 19.239
5) 17.841 6) 18.880 7) 19.249 8) 19.469

NOZZLE STATIC PRESSURES - PSNE
1) 14.309 2) 14.276

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HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TF - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
19.	5.	11574.	2399.	14.354	53.96	92.400	83.783	93.796	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	56.654	118.534	54.300	119.329	1.4167	.9965	10874542.	.9938	23.9268	.0297

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
39.560	.593	867.926	888.600	973.171	973.171	21.077	903.233	20.145

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.468	2.653	23.956	27.076	23.956	26.420	26.820	26.949	1306.986	1.3653	1.0000

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.9067	.8932	.8890	.8919	.8919	.8087	.7966	.7928

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9744	.9553	.9467	24.587	25.078	1231.268	1.3644	1.0000	77.629	99.228

PRIMARY NOZZLE TOTAL PRESSURES
1) 19.439 2) 20.498 3) 22.955 4) 23.115 5) 19.619 6) 19.549 7) 20.508 8) 22.936

PRIMARY NOZZLE TOTAL TEMPERATURES
1) 910.200 2) ******* 3) ******* 4) 901.000 5) 898.500 6) 909.800 7) ******* 8) ******* 9) 901.400 10) 898.500

NOZZLE EXIT TOTAL PRESSURES - PTNE
1) 20.698 2) 20.868 3) 20.528 4) 20.218
5) 18.580 6) 19.789 7) 20.128 8) 20.348

NOZZLE STATIC PRESSURES - PSNE
1) 14.305 2) 14.274

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HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TP - HNTF

RUN	COND	PTN/PAMB	TTN/TAMB	CDP	CDPH	CVP	CV	CGP	CGPH	APRIH
19.	1.	1.182	2.288	.9031	.8917	.8560	.8560	.7731	.7633	93.587
19.	2.	1.256	2.358	.8949	.8833	.8714	.8714	.7798	.7697	93.617
19.	3.	1.329	2.471	.9015	.8891	.8739	.8739	.7879	.7770	93.689
19.	4.	1.401	2.560	.9043	.8912	.8797	.8797	.7956	.7840	93.758
19.	5.	1.468	2.653	.9067	.8932	.8919	.8919	.8087	.7966	93.796

CDPH2	CGPH2	CDPE	CDPEH2	CVPE	APRIH2
.8854	.7579	.9897	.9703	.9313	94.248
.8774	.7645	.9808	.9616	.9458	94.248
.8839	.7724	.9810	.9617	.9406	94.248
.8866	.7800	.9791	.9599	.9411	94.248
.8690	.7928	.9744	.9553	.9467	94.248

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HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TP - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
20.	1.	11774.	2399.	14.814	45.48	92.400	86.764	93.560	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	40.164	84.063	47.020	84.627	1.4123	.9973	7837444.	.9937	17.0630	.0157

PTARE	FTARE	FX	FCOR	FIP	FIDL	FTN	TTN	PTE
21.010	.315	376.665	373.662	418.177	418.177	17.370	699.375	16.923

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.173	2.294	17.079	21.600	17.079	18.188	18.416	18.552	787.792	1.3728	1.0012

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.9390	.9274	.9206	.9007	.9007	.8458	.8353	.8292

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
1.0324	1.0121	.9833	16.543	16.874	721.661	1.3723	1.0012	53.020	67.597

PRIMARY NOZZLE TOTAL PRESSURES
1) 16.742 2) 17.302 3) 17.691 4) 17.731 5) 16.722 6) 16.862 7) 17.441 8) 18.271

PRIMARY NOZZLE TOTAL TEMPERATURES
1) 693.500 2) 703.500 3) ******* 4) ******* 5) ******* 6) 695.000 7) 705.500 8) ******* 9) ******* 10) *******

NOZZLE EXIT TOTAL PRESSURES - PTNE
1) 17.232 2) 17.272 3) 17.052 4) 16.662
5) 16.223 6) 16.732 7) 16.942 8) 17.052

NOZZLE STATIC PRESSURES - PSNE
1) 14.790 2) 14.775

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HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TF - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
20.	2.	11774.	2399.	14.814	45.48	92.400	85.075	93.632	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	45.584	95.404	46.780	96.044	1.4140	.9969	8910953.	.9937	19.3821	.0195

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
26.290	.394	499.526	495.543	568.415	568.415	18.439	757.000	17.780

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.245	2.408	19.402	23.683	19.402	21.072	21.353	21.494	942.614	1.3705	1.0008

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.9207	.9086	.9027	.8788	.8788	.8091	.7985	.7933

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
1.0159	.9960	.9601	19.097	19.479	862.762	1.3698	1.0008	63.102	82.450

PRIMARY NOZZLE TOTAL PRESSURES
1) 17.521 2) 18.301 3) 19.350 4) 19.150 5) 17.521 6) 17.691 7) 18.420 8) 19.559

PRIMARY NOZZLE TOTAL TEMPERATURES
1) 749.200 2) 764.200 3) ******* 4) ******* 5) ******* 6) 750.000 7) 764.600 8) ******* 9) ******* 10) *******

NOZZLE EXIT TOTAL PRESSURES - PTNE
1) 18.171 2) 18.261 3) 17.981 4) 17.751
5) 16.812 6) 17.521 7) 17.801 8) 17.941

NOZZLE STATIC PRESSURES - PSNE
1) 14.780 2) 14.756

LAE595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TF - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
20.	3.	11774.	2399.	14.814	45.64	92.400	85.062	93.711	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	50.334	105.349	46.460	106.056	1.4155	.9966	9858452.	.9938	21.4215	.0234

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
31.350	.470	630.910	625.880	718.468	718.468	19.497	818.000	18.730

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.316	2.528	21.445	25.370	21.445	23.295	23.625	23.761	1077.927	1.3680	1.0005

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.9206	.9077	.9025	.8781	.8781	.8084	.7971	.7925

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
1.0044	.9847	.9477	21.351	21.778	998.775	1.3672	1.0005	68.475	86.636

PRIMARY NOZZLE TOTAL PRESSURES
1) 18.251 2) 19.080 3) 20.568 4) 20.558 5) 18.351 6) 18.470 7) 19.459 8) 21.218

PRIMARY NOZZLE TOTAL TEMPERATURES
1) 809.200 2) 827.400 3) ******* 4) ******* 5) ******* 6) 809.600 7) 825.800 8) ******* 9) ******* 10) *******

NOZZLE EXIT TOTAL PRESSURES - PTNE
1) 19.210 2) 19.330 3) 19.010 4) 18.700
5) 17.521 6) 18.440 7) 18.750 8) 18.880

NOZZLE STATIC PRESSURES - PSNE
1) 14.774 2) 14.750

LAB595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TP - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	PAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
20.	4.	11774.	2399.	14.814	45.80	92.400	85.191	93.777	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	54.754	114.604	46.360	115.372	1.4168	.9963	10737624.	.9938	23.3178	.0273

PTARE	FTARE	FX	FCOR	FIP	FIDL	PTN	TTN	PTE
36.270	.544	778.556	772.349	873.849	873.849	20.628	873.600	19.747

PTN/PAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.392	2.638	23.345	26.665	23.345	25.321	25.698	25.827	1204.333	1.3659	1.0002

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.9220	.9084	.9039	.8909	.8909	.8214	.8094	.8053

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9984	.9788	.9535	23.382	23.850	1125.350	1.3650	1.0002	78.093	99.682

PRIMARY NOZZLE TOTAL PRESSURES
1) 19.120 2) 20.089 3) 22.127 4) 22.257 5) 19.270 6) 19.280 7) 20.339 8) 22.546

PRIMARY NOZZLE TOTAL TEMPERATURES
1) 865.000 2) 884.400 3) ******* 4) ******* 5) ******* 6) 863.400 7) 881.600 8) ******* 9) ******* 10) *******

NOZZLE EXIT TOTAL PRESSURES - PTNE
1) 20.289 2) 20.428 3) 20.059 4) 19.749
5) 18.331 6) 19.429 7) 19.729 8) 19.959

NOZZLE STATIC PRESSURES - PSNE
1) 14.762 2) 14.729

LAD595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TP - HNTF

INPUT DATA

RUN	COND	DATE	TEST NO	FAMB	TAMB	APRI	AEFF	APRIH	1.02 APRI APRIH2
20.	5.	11774.	2399.	14.814	45.92	92.400	85.584	93.842	94.248

PRIMARY FLOW DATA

A*	P2	P1	TT	PT	GAMMA	Z	REYN	CD	WA	W-FUEL
8.5519	58.034	121.458	46.580	122.272	1.4178	.9961	11380991.	.9939	24.7163	.0309

PTARE	FTARE	FX	FCOR	FIP	FIDL	FTN	TTN	PTE
40.390	.606	905.874	898.652	1003.706	1003.706	21.582	925.875	20.657

PTN/FAMB	TTN/TAMB	WPRI	WCOR	WSUM	WIP	WIPH	WIPH2	VIP	GAMMAP	ZP
1.457	2.740	24.747	27.541	24.747	26.718	27.135	27.253	1304.926	1.3639	.9999

CDP	CDPH	CDPH2	CVP	CV	CGP	CGPH	CGPH2
.9262	.9120	.9061	.9025	.9025	.8359	.8231	.8196

CDPE	CDPEH2	CVPE	WIPE	WIPEH	VIPE	GAMMAPE	ZPE	VE1	VE2
.9942	.9747	.9574	24.891	25.389	1230.156	1.3630	.9999	81.776	108.372

PRIMARY NOZZLE TOTAL PRESSURES
1) 19.879 2) 20.908 3) 23.336 4) 23.625 5) 20.079 6) 20.009 7) 21.108 8) 23.715

PRIMARY NOZZLE TOTAL TEMPERATURES
1) 916.800 2) 934.500 3) ******** 4) ******** 5) ******** 6) 917.200 7) 935.000 8) ******** 9) ******** 10) ********

NOZZLE EXIT TOTAL PRESSURES - PTNE
1) 21.198 2) 21.368 3) 21.038 4) 20.718
5) 19.090 6) 20.339 7) 20.648 8) 20.858

NOZZLE STATIC PRESSURES - PSNE
1) 14.757 2) 14.714

LAE595 12/ 6/73 CALCULATION DATE 2/19/74

HOT NOZZLE TEST FACILITY

BUFFALO SUPPRESSOR
NOZZLE NOISE TONE SOURCE IDENTIFICATION
TEST 2399TF - HNTF

RUN	COND	PTN/PAMB	TTN/TAMB	CDP	CDPH	CVP	CV	CGP	CGPH	APRIH
20.	1.	1.173	2.294	.9390	.9274	.9007	.9007	.8458	.8353	93.560
20.	2.	1.245	2.408	.9207	.9086	.8788	.8788	.8091	.7985	93.632
20.	3.	1.316	2.528	.9206	.9077	.8781	.8781	.8084	.7971	93.711
20.	4.	1.392	2.638	.9220	.9084	.8909	.8909	.8214	.8094	93.777
20.	5.	1.457	2.740	.9262	.9120	.9025	.9025	.8359	.8231	93.842

CDPH2	CGPH2	CDPE	CDPEH2	CVPE	APRIH2
.9206	.8292	1.0324	1.0121	.9833	94.248
.9027	.7933	1.0159	.9960	.9601	94.248
.9025	.7925	1.0044	.9847	.9477	94.248
.9039	.8053	.9984	.9788	.9535	94.248
.9081	.8196	.9942	.9747	.9574	94.248