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VIBRATION RESPONSES OF TWO HOUSE STRUCTURES DURING THE EDWARDS AIR FORCE BASE PHASE OF THE NATIONAL SONIC BOOM PROGRAM

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OUTLINE

INTRODUCTION

It is well known that sonic booms can cause buildings to vibrate, and these vibrations may be an important factor in determining subjective reaction. In order to evaluate reaction of people to sonic booms of varying overpressures and time durations, a series of closely controlled and systematic flight test studies were conducted by the USAF in the vicinity of Edwards, California, from June 3 to June 23, 1966. As a part of these studies and in direct support of them, the NASA has measured the dynamic responses of two house structures, representative of contemporary homes in the U.S.A. The purpose of this paper is to present in brief summary form the dynamic response measurements made in a one-story and a two-story house, respectively. The data of this paper are reproduced from Ref. 1 which contains some preliminary results of the test program and from two NASA-Langley working papers which are now out of print.

Included herein are sample acceleration and strain recordings from F-104, B-58, and XB-70 sonic-boom exposures, along with tabulations of the maximum acceleration and strain values measured for each one of about 130 flight tests. These data are compared with similar measurements for engine noise exposures of the building during simulated landing approaches and takeoffs of KC-135 aircraft.

APPARATUS AND METHODS

Test Conditions

Tests described herein were accomplished in an area near the main base complex of Edwards Air Force Base, California, (See fig. 1). The area has an elevation of about 2,300 feet above sea level, has sparse vegetation, and is essentially flat (See the photograph of fig. 2).

Supersonic flights were made generally from the east (See fig. 1) in such a way that the sonic boom waves encountered no other obstructions in the vicinity of the test structures. The sketch of figure 1 shows a planview of the structures and an outdoor microphone array used to measure the sonic boom exposures.

The bulk of the tests were performed in the mornings to take advantage of the generally calm wind and atmospheric conditions prevailing at that time of day.

Test Airplanes

Photographs of the test airplanes are shown in figure 3. Test airplane (a), an F-104, 54.5 ft. long and having a gross weight of about 14000 lbs, was used in 35 flights. Mach number and altitude ranged from about 1.15 to 1.7 and about 14,060 ft. to 35,600 ft. respectively. Airplane (b), a B-58, 96.8 ft. long and having a gross weight of about 120,000 lbs was used in 94 flights. Mach numbers and altitudes ranged from about 1.25 to 1.72 and about 31,000 ft. to 49,820 ft. respectively. Airplane (c) an XB-70, 185 ft. long and having a gross weight of about 470,000 lbs was used in 3 flights. Mach numbers and altitudes ranged from 1.38 to 2.83 and 31,800 ft. to 72,000 ft. respectively. Aircraft (d) a KC-135

having a length of 134.5 ft and a gross weight of 275,000 lbs, was flown subsonically in simulated landing approach and climbout operations. Although most of the aircraft used during these tests were provided, maintained and operated by U. S. Air Force personnel, some aircraft were provided and operated by the NASA Flight Research Center.

Airplane Positioning

The airplanes were positioned over the test area by means of ground control procedures with the aid of the radar tracking facilities at Edwards Air Force Base. For supersonic operations, the pilots were provided course corrections by the ground controller to the steady point indicated in figure 1 which is approximately 25 nautical miles east of the instrument array. Changes were not made beyond this point in order to minimize possible effects of such changes on the sonic boom ground pressure patterns in the test area. Radar plotting board overlays were obtained on all flights to provide information on aircraft position, altitude and speed. Pilot readout of indicated altitude, Mach number, heading and fuel remaining on board were obtained at both the steady point and over the instrument array. Supersonic flights were accomplished along the projected ground track of figure 1 which brought the aircraft essentially over the microphone array. In an effort to change the overpressure values, a few B-58 and XB-70 test flights were made along ground tracks parallel to but about 5 miles from that shown in figure 1.

The KC-135 missions were flown over the test site on approximately a 40° heading with altitude varying from 200 ft to 12,000 ft above ground level.

Weather Observations

Surface weather observations were made routinely at 1-hour intervals at the Edwards Air Force Base Weather Facility located about two miles from the sonic boom measurement array. Observations of temperature; wind speed and direction; cloud cover; and precipitation are tabulated in Table 1 for the times closest to the test flights for which sonic boom data are included.

Rawinsonde observations from the Edwards Air Force Base weather facility were taken at approximately 1200 and 2400 hours local time (2000 and 0800 hours Zulu) each day. Measured values of temperature and pressure; and wind speed and direction; were provided along with calculated speed of sound at 1000 foot intervals to the airplane test altitude.

Test Structures

The types of test structures constructed and instrumented were selected after review of many different house plans. A one-story model and a two-story model that were mass produced by a manufacturer of precut homes were chosen because they seemed to represent contemporary home construction in the U. S. A.

The one-story home had 3 bedrooms, two baths, a living room and a kitchen-dining room-family room combination with a total living area of 1205 square feet (see figure 4(a)). The two-story home had four bedrooms, two-and a-half baths, a living room, a dining room and a kitchen-family room with a total living area of 1905 square feet (see figure 4(b)). Both houses had attached garages on their west sides.

Standard construction methods and materials were involved. Douglas fir studs, floor joists, roof sheathing, and roof trusses, 6-inch ship lap wood siding; 5/8" plywood subflooring; 1/2" gypsum wall board; 3-1/2 inch fiberglass insulation; asphalt shingles; and double strength window and door glass were used throughout. Both houses were finished inside and out and contained appropriate furnishings.

Instrumentation

Test structure No. 1 was instrumented with nine accelerometers and three strain gages to measure vibratory responses, and two full-range microphones to measure inside pressure fluctuations (see fig. 4). Table II is included to describe in more detail the locations of the above transducers and the quantities measured. In addition, a cruciform array of microphones was located outside the test structures to measure the acoustic and shock wave inputs respectively (see fig. 1).

House structure no. 2 had eleven accelerometers and two strain gages to measure vibratory responses; and three full range microphones to measure inside pressure fluctuations (see fig 4(b)). Table III is included to describe in detail the locations of the above transducers and the quantities measured.

The outdoor microphone array was located to the northeast of structure no. 2 as shown schematically in the inset of figure 1. Five microphones were located at ground level in a cruciform array at 100 ft. separation distances. An additional mast microphone was suspended at a distance of 20 ft. directly above the central ground microphone. All data were recorded on multi-channel magnetic tape recorders. An IRIG time signal was recorded on one channel of

each tape recorder for time correlation between the radar plots and all other measurements. This array was located on the projected ground track of the test flights and was employed to provide information about the wave shapes, wave angles, overpressures, durations, and rise times of the sonic boom signatures. Aircraft ground speeds were calculated as were the wave angles in both the horizontal and vertical planes, based on measured arrival times.

Each cruciform array microphone system consisted of a specially modified condenser microphone, tuning unit, dc amplifier, magnetic tape recorder, and a direct-write oscillograph for quick visual checks on the data. The systems had a frequency response which was flat within ± 2 dB from .02 to 15,000 Hz and a maximum sound pressure level rating of 150 dB. All microphones were calibrated each day just before the tests with a 124 dB acoustic signal applied at the microphone.

The accelerometers used were of the servo type and were fastened with wood screws where possible. Molly bolts were used when accelerometers were mounted on gypsum board panels. The signal from each accelerometer was conditioned before being recorded on magnetic tape. The accelerometers measured frequencies up to 500 Hz (± 5 percent) and accelerations up to a level of 2 "g's". They were calibrated by current insertion immediately before the tests each day.

For each strain gage circuit, a semi-conductor strain gage was used followed by a conditioning network, a strain gage control panel, and a magnetic tape recorder. The strain level range of the systems was up to to 400 m in./in. over a frequency range from 0 to 10 K Hz. The systems were calibrated before the tests each day by a voltage balancing method.

Block diagrams of the accelerometer, strain gage and microphone systems are included in figure 5.

RESULTS AND DISCUSSION

Inputs to the Structures

One of the main objectives of the tests was to evaluate the responses of the structures to sonic boom inputs of varying wave lengths. In order to accomplish this, controlled flight tests were performed using F-104, B-58, and XB-70 aircraft. Sample sonic boom wave forms, as measured from these aircraft, are illustrated in figure 6. The main differences in the sonic boom signatures from the above three aircraft were in the time durations of the waves. The F-104 aircraft produced a signature having a time duration generally less than 0.1 second. the B-58 signature had a time duration of about 0.2 seconds, and the XB-70 produced a time duration as long as 0.3 second. The experiments were performed in such a way that the overpressure (Δp) was comparable for the various aircraft. The average Δp_o, Δt, and vertical wave angle values are recorded in Tables IV through XI along with the associated aircraft flight conditions and building response data. More detailed information relative to the cruciform array acoustic measurements is presented in Ref. 2.

In addition to the sonic boom inputs a series of flight tests were conducted with the KC-135 airplane in order to simulate both take-off and landing noise conditions. During these flights similar building response measurements were made for direct comparison with the sonic boom induced responses. The noise levels measured outside of the buildings are listed in

Tables VII and XI along with the KC-135 aircraft flight conditions and the associated building response data.

Building Vibration Responses

For each test flight, strain and acceleration levels were measured at a number of locations in each structure. A qualitative picture of the type of time history records obtained during the sonic boom and noise exposure flights is given by the tracings of sample records in Figures 7 and 8.

Figure 7 includes acceleration time history responses from four transducer locations on house building no. 2 for a B-58 sonic boom exposure (See Mission 80-RB). Each of these transient responses lasts approximately 0.3 to 0.7 second, but they differ widely in their detailed appearance. For instance, the time history illustrated in figure 7a exhibits a nearly single frequency vibration at about 20 cps which is believed to be the first natural frequency of the main floor joists. The traces of figures 7b and 7c represent accelerations of the ceiling joists of the bedroom and of the downstairs wall studs respectively (See fig. 4b). It can be seen that superposed on the main framing frequencies are higher frequencies which are in the audible frequency range. The trace of figure 7d represents the accelerations of the frame of the house as measured on the outside surface at the second story floor line. Here also is a case where a higher frequency signal is superposed on a much lower frequency component. This low frequency component of relatively low amplitude is believed to be the racking frequency of the house.

Included in the data of Tables IV through XI are peak acceleration values for records such as those of figure 7. The positive values of the tables correspond to upward deflections as indicated in figure 7 and represent

movements of the structure toward the accelerometer. Likewise negative values indicate downward deflections and movements of the structure away from the accelerometer. Note that three peak acceleration amplitudes are included in Tables VIII, IX and X. They represent the three largest acceleration peak values (positive or negative) for each sonic boom test.

Figure 8 contains tracings of strain time histories recorded in house no. 2 during the same flight test (Mission 80-RB) as the acceleration traces of figure 7. Figure 8a represents the strain response of a 7 ft. x 12 ft. plate glass window whereas the trace of figure 8b represents the strain time history of a pane of glass with an area of one square foot in one of the upstairs double hung windows. The large plate glass window had a natural period of about .25 second which is somewhat longer than the period of the B-58 sonic boom wave. The response results are very similar to those obtained in calculations (Ref. 1) for the case where the period of the sonic boom signature is less than the period of the structure. The natural frequency of the small pane of glass is very much higher, and its period is only a fraction of that of the B-58 wave. The result is characteristic of that obtained in reference 2 for the response of the single degree of freedom system for the case where the period of the N-wave is several times as long as the period of the structure.

For direct comparison with the sonic boom induced response described above, some special experiments were performed to measure similar response data for the case where the building structure is excited by noise from the engines of an aircraft flying overhead. A sample pair of response records from house no. 2 are shown for purposes of illustration in figure 9. Figure 9a represents the tracing of a B-58 sonic boom induced building response for Mission No. 75A. The tracing of figure 9b on the other hand represents the

same transducer at the same gain setting for the engine noise situation during aircraft flyover. It can be seen in the sonic boom case that high frequency responses are superposed on lower frequency response modes. In the case of the engine noise the low frequency modes are not excited and the high frequencies dominate. It should be noted that the response to the sonic boom is a transient having about 0.5 to 1.0 second time duration whereas the engine noise induced vibrations are detectable for a time interval from 10 to 20 seconds. The dominant noise induced responses occur at about 150 to 200 Hz and are believed to be associated with the vibration of wall panels between the vertical studs. This same frequency is also detectable on the comparable sonic boom induced response records but is of a relatively low amplitude.

This latter result can be illustrated further with the aid of the acceleration response record tracings of figures 10 and 11 respectively for house no. 1 and house no. 2. These time history data are comparable with the record of figure 9a and represent three different test runs as indicated in the figure. The top trace in each case was obtained for an F-104, the middle one for a B-58 mission different than for figure 9a, and the bottom one for the XB-70. Note that all are generally low frequency responses with higher frequencies of relatively lower amplitude superposed. One distinguishing feature of these records is the high amplitude bursts at time intervals corresponding approximately to the rapid compressions of the sonic boom waves of figure 6. In the case of the XB-70 the acceleration response to the bow wave nearly dies out before the tail wave arrives. Two separate responses can also be observed for the B-58 whereas they are not so obvious for the shorter time duration signature of the F-104.

Similar data are shown for house no. 1 from Table IV in figure 12. These traces represent the responses of one portion of the building to sonic booms

from four different missions of the B-58 aircraft. Here again the high frequency bursts occur at the times of passage of the waves. These records which are similar in their gross features but differ markedly in their small details, illustrate the variability in responses that may be observed for different missions but for very similar flight conditions.

The peak acceleration amplitudes as determined from traces such as those illustrated in figure 12 are plotted as a function of sonic boom overpressure in figure 13. The acceleration amplitudes are either positive or negative, whichever is the largest, from acceleration channel 111 of tables IV, V and VI and from acceleration channel 311 of Tables VIII, IX and X. It should be noted that channel 111 relates to an accelerometer mounted on the center stud of the bedroom east wall of house no. 1 and that channel 311 relates to an accelerometer mounted on one of the studs near the center of the dining room east wall of house no. 2. The sonic boom overpressure value in each case is the average of all ground overpressures measured for that particular flight by the microphone array of figure 1 (see ref. 2) and as listed in Tables IV, V, VI, VIII, IX and X.

Data are shown in figure 13 for the F-104, B-58, and the XB-70 airplanes. The largest number of data points are for the B-58 aircraft, and these are noted to scatter widely for given values of sonic boom overpressure. Corresponding data for the F-104 airplane also exhibit scatter but seem to have generally higher acceleration amplitudes than the B-58 for given overpressure values. The limited data for the XB-70 fall generally within the range of the B-58 data. Although there are general trends of increased peaked acceleration amplitudes with an increase in sonic boom overpressure, these trends are not well defined by the data points. A result such as this suggests that the wall acceleration

responses may be a function of parameters other than sonic boom overpressure and these are not properly accounted for in the figure.

Peak strain amplitudes (either positive or negative) as a function of overpressure values are plotted in figure 14 for the three different aircraft of the tests. The peak strain values were measured by channel 312 which represents a strain gage located at the quarter point of the diagonal of the large plate glass window in the front of the garage. The sensitive axis of the strain gage was perpendicular to the diagonal line of the window. It can be seen from the figure that a wide range of strain levels were measured for given sonic boom overpressure values. Although generally higher strain values are associated with higher overpressures, the data points do not define a clear trend nor are there obvious differences according to aircraft size.

Inside Acoustic Measurements

For each of the flights for which vibration response data were recorded for the test structures, acoustic measurements were made in some of the rooms of the structure. Sample data records of the inside pressure fluctuations, as measured by full range microphones, are shown in figure 15. The top trace was obtained for a B-58 sonic boom exposure of the type for which the response measurements of figure 9a were made. It can be seen that the pressure time history has strong low frequency components with high frequencies superposed in a manner similar to the sample wall acceleration traces of figure 10.

At the bottom of the figure is shown a tracing of a microphone record of the noise inside of the same room for a KC-135 flyover for which the structure was exposed to engine noise. It can be seen that this record contains essentially no low frequency fluctuations; the high frequencies being dominant.

In this respect the noise record is very similar in nature to the wall vibration response record of figure 9b. The similarities between the recordings of figures 9 and 15 are not surprising since it is well known that the noise transmitted into a structure is a result of the wall motions of that structure.

CONCLUDING REMARKS

Various acceleration and strain responses of one-story and two-story residence structures were measured for sonic boom exposures from F-104, B-58, and XB-70 airplanes and for engine noises during low altitude flyovers of a KC-135 airplane. The sonic boom induced vibration responses were generally less than one second in duration and contained frequencies associated with both primary and secondary structural components. Wall acceleration amplitudes increased generally as a function of the sonic boom overpressure, and the F-104 seemed to induce the largest amplitudes for a given overpressure. Strains in a large window also increased generally as overpressure increased with no particular trend as a function of airplane size. Considerable variation in peak response amplitudes is noted for the same nominal flight conditions. Engine noise induced vibration responses have durations of 10 to 20 seconds, and the dominant frequencies are those of the secondary structural components. The acoustic pressures inside the rooms of the structure had frequency contents very similar to those of the corresponding wall vibration responses.

REFERENCES

1. Anonymous: Sonic Boom Experiments at Edwards Air Force Base. National Sonic Boom Evaluation Office Report NSBEO-1-67, 28 July 1967.

2. Hubbard, Harvey H., and Maglieri, Domenic J.: Sonic Boom Signature Data from Cruciform Microphone Array Experiments During the 1966-67 EAFB National Sonic Boom Evaluation Program, NASA CR-182027, May 1990.

TABLE I
Surface Weather Observations

Date	Time Zulu	Temp F	Winds deg/knots	Cover	Precip
6-4-66	1756	78	270/12	CLEAR	NONE
6-6-66	1555	73	250/15	BROKN	NONE
	1757	78	230/18	BROKN	NONE
6-7-66	1555	64	250/18	CLEAR	NONE
	1656	68	250/15	CLEAR	NONE
	1755	71	260/11	CLEAR	NONE
6-8-66	1457	61	210/08	OVCST	NONE
	1556	65	230/08	OVCST	NONE
	1634	67	210/08	OVCST	NONE
	1655	68	240/08	OVCST	NONE
	1756	70	240/10	OVCST	NONE
6-9-66	1555	72	300/12	BROKN	NONE
	1657	74	300/09	BROKN	NONE
	1757	77	290/02	BROKN	NONE
6-13-66	1655	82	70/02	CLEAR	NONE
	1757	87	00/00	CLEAR	NONE
6-14-66	1555	78	00/00	CLEAR	NONE
	1756	89	00/00	CLEAR	NONE
6-15-66	1555	84	230/04	BROKN	NONE
	1655	91	030/12	BROKN	NONE
6-16-66	1557	80	230/07	CLEAR	NONE
6-20-66	1555	75	00/00	CLEAR	NONE
	1655	81	00/00	CLEAR	NONE
	1755	85	120/05	CLEAR	NONE
6-21-66	1555	80	250/14	CLEAR	NONE
	1655	84	250/16	CLEAR	NONE
	1755	87	250/16	SCATD	NONE
	1955	93	240/15	SCATD	NONE
6-22-66	1555	70	250/16	CLEAR	NONE
	1655	75	280/20	CLEAR	NONE
	1756	78	290/24	CLEAR	NONE
	1855	79	280/24	CLEAR	NONE
6-23-66	1555	75	250/16	CLEAR	NONE
	1956	85	290/22	CLEAR	NONE

TABLE II

VIBRATION RESPONSE AND PRESSURE TRANSDUCERS IN TEST STRUCTURE NO. 1

Channel No.	Type	Date	Location	Description
101	Accelerometer	6/3-6/23	Center of Living Room Floor	Mounted on Concrete Block Sensitive Axis Vertical
102	Accelerometer	6/3-6/23	Center of Family Room Floor	Mounted on Concrete Block Sensitive Axis Vertical
103	Accelerometer	6/3-6/23	Center of Bedroom No. 1 Floor	Mounted on Concrete Block Sensitive Axis Vertical
105	Accelerometer	6/3-6/25	Outside, E. Wall, N.E. Corner, Roof Line	Mounted on Stud, Sensitive Axis Horizontal
106	Accelerometer	6/3-6/23	Outside, N. Wall, N.E. Corner, Roof Line	Mounted on Stud, Sensitive Axis Horizontal
107	Accelerometer	6/3-6/5 6/6-6/23	Non Operational Outside, on Concrete Patio	Mounted on Concrete Block Sensitive Axis Horizontal
109	Accelerometer	6/3-6/23	Center of Family Room Ceiling	Mounted on Gypsum Board Panel Sensitive Axis Vertical
110	Accelerometer	6/3-6/23	Center of Bedroom No. 1 Ceiling	Mounted on Gypsum Board Panel Sensitive Axis Vertical
111	Accelerometer	6/3-6/23	Bedroom No. 1, Center of E. Wall	Mounted on Stud Sensitive Axis Horizontal
207	Full Range Microphone	6/3-6/7	Center of Family Room	Shock Suspended, Diaphragm 6 Ft. Above Floor Pointing Down
		6/8-6/23	Center of Family Room	Shock Suspended, diaphragm 2 In. Below Ceiling, Pointed Up.
208	Full Range Microphone	6/3-6/7	In Attic Above Center of Family Room	Shock Suspended, Diaphragm 8 In. Above Ceiling Joist, Pointed Up
		6/8-6/23	In Attic Above Center of Family Room	Shock Suspended, Diaphragm 3 In. Above Ceiling Joist, Pointed Up
210	Strain Gage	6/3-6/23	On Stationary Side of Sliding Door in Family Room	Center of Glass, Sensitive Axis Vertical
211	Strain Gage	6/3-6/23	Bedroom No. 1, On Stationary Pane of Window in East Wall	Center of Window, Sensitive Axis Vertical
212	Strain Gage	6/3-6/23	On Large Window in Garage	Center of Window, Sensitive Axis Horizontal

TABLE III

VIBRATION RESPONSE AND PRESSURE TRANSDUCERS IN TEST STRUCTURE NO. 2

Channel No.	Type	Date	Location	Description
301	Accelerometer	6/3-6/23	Center of Dining Room Floor	Mounted on Concrete Block Sensitive Axis Vertical
302	Accelerometer	6/3-6/23	Under Edge of Counter in Kitchen-Dinette Area	Mounted on Concrete Block Sensitive Axis Vertical
303	Accelerometer	6/3-6/14	Center of Bedroom No. 1 Floor	Mounted on Concrete Block Sensitive Axis Vertical
		6/15-6/21	On Mattress of Bed. Bedroom No.1	Mounted on Concrete Block Sensitive Axis Vertical
		6/22-6/23	Center of Bedroom No. 1 Floor	Mounted on Concrete Block Sensitive Axis Vertical
304	Accelerometer	6/3-6/23	Bedroom No. 1, Center of North Wall	Mounted on Stud Sensitive Axis Horizontal
305	Accelerometer	6/3-6/23	Outside, N. Wall, N.E. Corner, 2nd Story Roof Line	Mounted on Stud Sensitive Axis Horizontal
306	Accelerometer	6/3-6/23	Outside, E. Wall, N.E. Corner, 2nd Story Roof Line	Mounted on Stud Sensitive Axis Horizontal
307	Accelerometer	6/3-6/23	Outside, N. Wall, N.E. Corner, 2nd Story Floor Line	Mounted on Stud Sensitive Axis Horizontal
308	Accelerometer	6/3-6/23	Outside, E. Wall, N.E. Corner, 2nd Story Floor Line	Mounted on Stud Sensitive Axis Horizontal
309	Accelerometer	6/3-6/23	Attic Above Center of Bedroom No. 1	Mounted on Ceiling Joist Sensitive Axis Vertical
310	Accelerometer	6/3-6/23	Attic Above Center of Bedroom No. 2	Mounted on Ceiling Joist Sensitive Axis Vertical
311	Accelerometer	6/3-6/23	Dining Room, Center of E. Wall	Mounted on Stud Sensitive Axis Horizontal
312	Strain Gage	6/3-6/23	Quarter Point on Diagonal Inside of Large Garage Window	Sensitive Axis Perpendicular to Diagonal Line
313	Strain Gage	6/3-6/12	Bedroom No. 1, Window in East Wall	Center of Upper Middle Pane in Lower Sash. Sensitive Axis Vertical
		6/13-6/23	Large Garage Window, on 1/8 Point on Diagonal	Sensitive Axis Perpendicular to Diagonal Line
405	Full Range Microphone	6/3-6/23	In Archway Between Living and Dining Rooms	Shock Suspended, Diaphragm 5 In. Below Arch Center
407	Full Range Microphone	6/3-6/7	In Attic Above Center of Bedroom No. 1	Shock Suspended, Diaphragm up, 8 In. Above Ceiling Joist
		6/8-6/23	In Attic Above Center of Bedroom No. 1	Shock Suspended, Diaphragm up, 3 In Above Ceiling Joist
409	Full Range Microphone	6/3-6/7	In Center of Bedroom No. 1	Shock Suspended, Diaphragm 6 Ft. Above Floor, Pointed Down
		6/8-6/23	In Center of Bedroom No. 1	Shock Suspended, Diaphragm 2 In. Below Ceiling, Pointed Up

TABLE IV

Sonic Boom Induced Acceleration and Strain Responses of Test Structure No. 1 for a Range of B-58 Flight Conditions

Date	Mission No.	Altitude msl ft.	Mach No.	Lateral Dist. Naut. mi.	Mag. Hdg. deg.	Boom Time Z	Peak Amplitude: Accelerometer Channels g's									Peak Amplitude: Strain Gage μ, in./in.			Δp_I lb/ft^2		Cruciform Δp_O Avg. lb/ft^2	Cruciform Δt Avg. sec.	Vert. Wave Angle deg.
							101	102	103	105	106	107	109	110	111	210	211	212	207	208			
6-6-66	39	31,400	1.25	4.64 N	244.0	1600.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	No Boom	--	--
	70	43,900	1.60	.55 N	245.0	1608.57	.129	-.096	.106	-.098	.106	.020	-.103	.405	-.270	9.64	8.45	18.77	1.04	1.73	2.00	0.183	48.4
	40	31,400	1.48	.20 N	246.0	1618.40	.191	.147	.146	-.156	.191	.035	-.147	--	-.391	14.88	12.23	-31.42	1.41	2.25	3.44	.156	51.2
	71	44,200	1.59	5.00 N	245.3	1630.0	-.191	.077	-.146	.110	.117	.018	.099	.331	-.359	9.43	9.79	-14.11	.69	1.38	1.71	.177	52.1
	41	31,340	1.45	.17 N	246.7	1634.44	--	.155	.141	-.134	.177	.024	.154	--	-.378	12.79	14.01	25.13	1.16	1.99	2.50	.152	50.4
	72	43,920	1.55	4.85 N	244.5	1643.55	.127	.051	-.088	-.042	.062	.020	-.074	-.206	-.025	8.38	5.45	-12.50	.66	1.30	1.99	.171	60.1
	74	32,440	1.30	72 S	242.5	1701.52	--	-.100	-.168	-.160	.176	.046	-.145	.436	--	13.62	13.34	-23.72	1.25	2.12	3.16	.193	73.0
	44	43,400	1.57	5.00 N	245.0	1711.00	.138	.060	-.097	.068	.074	-.020	.078	.210	-.330	8.38	6.01	-11.54	.58	1.21	1.70	.195	63.1
	75	31,840	1.46	0	248.0	1717.00	--	.145	.165	-.193	.194	.026	-.187	--	--	11.74	13.90	24.83	1.14	2.16	3.18	.156	56.7
	42	43,300	1.53	0	245.0	1724.40	.180	.072	-.128	.084	.065	.007	.072	-.212	.283	8.38	6.01	-12.50	.63	1.25	1.78	.182	--
	73	31,860	1.43	.25 N	247.0	1731.30	--	.138	.170	-.225	.225	.033	.164	--	--	12.37	14.46	26.64	1.19	1.99	3.54	.159	53.2
6-7-66	76 A	31,560	1.48	1.09 S	241.5	1610.40	-.159	-.139	.171	.169	-.253	-.028	-.157	.194	.153						3.27	.163	59.1
	45 B	43,660	1.70	4.95 N	244.5	1623.50	-.216	.098	.182	.122	-.297	-.031	-.189	-.223	-.181						2.01	.171	53.1
	77 B	31,680	1.51	.10 S	244.5	1633.12	.172	-.124	-.158	.163	-.297	.033	.162	-.361	.153						2.91	.156	53.2
	46 B	43,720	1.65	5.42 N	246.5	1640.05	-.186	-.077	.153	.259	--	.028	-.152	-.182	.181						1.63	.171	56.7
	48 A	38,700	1.31	5.23 N	245.5	1711.20	.038	.026	.029	.018	-.032	.017	.025	.029	-.035						No Boom	--	--
	79 A	31,600	1.52	.12 N	244.5	1722.20	-.172	-.103	.137	-.088	-.170	.040	-.140	-.141	.141						2.48	.169	53.0
	49 A	43,340	1.43	4.68 N	252.5	1728.15	-.071	-.041	-.056	-.031	.085	.028	.056	.094	.070						1.44	.211	72.8
	80 A	31,600	1.53	.25 N	244.5	1738.45	.189	-.119	-.161	-.148	-.184	-.038	.130	-.261	-.138						2.72	.156	51.6
	50 A	43,340	1.43	5.00 N	245.5	1747.37	.068	-.044	.051	-.039	-.046	-.019	.051	.059	.093						1.01	.196	72.8
	81 A	31,400	1.49	.06 S	245.0	1756.25	-.087	.054	-.075	.042	.136	.017	.064	-.085	-.091						1.95	.150	53.6
6-8-66	43 A	42,380	1.62	5.24 N	245.0	1600.22	.186	-.072	.148	-.049	-.053	-.014	-.169	-.147	-.267	9.94	5.62	-10.90	.64	1.44	1.70	.175	58.7
	75 A	31,200	1.44	.23 N	244.5	1606.45	-.224	-.171	-.182	-.103	.087	-.072	--	--	.372	12.82	14.31	31.06	1.08	2.02	3.17	.156	50.0
	42 A	43,260	1.67	4.85 N	246.7	1614.50	-.203	-.094	.150	.075	-.085	.018	.220	-.216	-.315	8.95	8.17	-10.90	.62	1.24	2.06	.179	57.9
	73 A	31,200	1.50	.10 N	245.0	1624.20	.186	-.130	-.137	-.089	.074	-.024	.302	-.384	.247	10.90	8.86	27.25	.92	1.82	2.22	.147	53.9
	41 A	43,200	1.60	5.32 N	246.0	1630.10	-.128	-.056	.084	.059	-.081	-.021	-.220	-.342	-.237	8.01	6.81	15.80	.55	1.11	1.92	.166	59.0
	72 A	31,200	1.49	.16 N	245.0	1638.45	.196	-.137	-.159	-.169	.167	-.038	--	--	.385	13.14	14.48	- 3.24	1.01	1.83	2.85	.144	49.0
	57 RB	37,600	1.66	5.90 N	248.5	1705.10	-.103	-.045	.082	-.035	-.031	-.017	-.097	-.096	-.166	8.98	4.09	-10.90	.58	1.24	1.76	.162	52.2
	80 RB	31,300	1.46	.14 N	246.6	1712.30	-.156	-.112	-.137	.148	-.154	.060	-.348	--	.387	10.90	10.05	27.79	1.06	2.09	2.63	.161	60.4
	56 RB	43,040	1.64	5.14 N	244.0	1721.22	-.152	-.072	.105	-.038	-.053	-.0085	.107	-.180	.214	8.98	4.77	-10.90	.64	1.31	2.09	.170	55.3
	87 RB	31,440	1.49	.40 N	245.4	1728.30	-.238	-.189	-.162	-.087	-.127	-.029	--	--	--	13.46	11.07	34.88	1.01	1.96	3.23	.148	48.9
	55 RB	43,200	1.64	5.16 N	244.0	1736.10	-.294	-.137	.246	-.101	-.154	-.020	--	--	--	11.54	11.92	22.59	.58	1.44	2.17	.169	58.4
	86 RB	31,360	1.47	0	221.0	1745.00	-.221	-.187	-.168	.232	.166	-.014	--	--	--	13.78	14.99	37.06	1.06	1.83	2.70	.144	48.9

TABLE IV (Cont.)

Date	Mission No.	Altitude msl ft.	Mach No.	Lateral Dist. haut. mi.	Mag. Hdg. deg.	Boom Time Z	Peak Amplitude: Accelerometer channels g's 101	102	103	105	106	107	109	110	111	Strain Gage μ in./in. 210	211	212	Δp_1 lb/ft² 207	208	Cruciform Δp_0 Avg. lb/ft²	Cruciform Δt Avg. sec.	Vert. Wave Angle deg.
6-9-66	86 SRB	31,000	1.50	.25 N	246.2	1608.30	.250	-.229	-.223	.390	.216	-.032	-.595	--	.722	15.39	18.87	34.68	1.13	1.92	4.00	.153	51.1
	55 SRB	35,720	1.69	5.17 N	244.5	1619.20	-.111	-.049	.077	-.066	-.072	-.014	-.188	-.207	.166	9.62	6.08	14.86	.53	1.22	1.60	.140	55.5
	87 SRB	31,000	1.53	.06 S	244.0	1625.58	.231	-.177	-.187	-.151	-.157	-.025	-.426	--	-.401	4.75	15.30	32.70	1.08	1.86	3.44	.146	49.2
	56 SRB	43,300	1.72	4.70 N	242.6	1634.50	-.205	-.083	.140	.066	.099	-.059	.298	-.398	.302	9.62	10.27	16.33	.54	1.28	2.77	.161	51.0
	80 SRB	31,000	1.53	.06 N	245.2	1641.40	.146	-.120	-.119	-.140	.162	-.020	.478	--	.420	10.90	11.32	29.23	.97	1.73	2.95	.140	48.0
	57 SRB	43,100	1.70	5.23 N	244.0	1649.10	-.156	-.068	.102	.129	-.151	-.014	.282	-.395	-.228	8.98	7.97	15.85	.47	1.15	1.94	.150	54.3
	41 SA	42,920	1.52	4.87 N	240.0	1707.52	-.121	-.052	.077	-.066	.088	.033	.141	.117	-.173	9.30	5.45	11.89	.73	1.28	2.28	.180	60.4
	73 SA	31,720	1.50	.49 S	245.4	1716.15	-.180	-.185	-.176	.077	.106	-.034	-.382	--	-.354	10.90	11.11	29.23	1.11	1.80	3.03	.155	54.4
	42 SA	43,060	1.52	4.69 N	241.2	1723.52	-.232	-.104	.172	.081	-.110	.024	-.308	-.395	.445	10.26	5.45	15.85	.64	1.41	2.25	.176	63.6
	75 SA	31,680	1.55	0	246.5	1731.23	.201	-.161	.168	.121	-.130	-.039	.329	--	-.385	11.22	10.45	28.24	.99	1.67	3.80	.149	48.4
	43 SA	43,000	1.68	4.62 N	243.5	1739.0	-.146	-.052	.098	.092	-.173	-.032	.211	-.270	-.212	9.62	6.71	16.84	.52	1.22	2.84	.157	51.6
	42 SA	43,300	1.70	4.92 N	244.5	1757.00	-.146	-.062	.095	.044	-.058	.020	.164	-.198	-.181	7.37	8.80	12.88	.64	1.22	1.98	.165	57.4
	46 SA	42,900	1.68	4.74 N	246.0	1811.10	-.135	-.065	.077	.063	-.097	.018	.243	-.354	.243	8.98	7.13	14.37	.59	1.09	2.16	.156	57.7
	72 SA	31,320	1.53	.63 N	246.5	1822.10	-.132	-.094	-.090	.052	-.070	.015	.227	-.321	.185	10.58	7.13	30.72	.92	1.67	2.26	.145	50.0
6-15-66	16 A	37,740	1.64	.09 S	231.0	1646.43	-.202	-.109	-.132	.160	-.153	-.072	-.188	--	.191	11.92	15.22	20.65	1.05	1.60	2.82	.160	42.2
	16 B	49,600	1.66	.36 S	234.0	1649.22	-.142	.115	-.107	.049	-.076	-.034	-.125	.390	-.128	8.52	9.87	13.19	.84	1.30	2.07	.196	45.7
	21 A	37,840	1.69	.21 S	230.0	1700.16	-.213	-.146	-.157	.207	.168	-.056	-.225	--	.226	12.26	14.40	22.95	1.05	1.42	2.86	.146	44.0
	21 B	49,160	1.72	.35 S	231.3	1702.48	-.147	.122	-.109	.087	-.101	-.036	-.148	.405	.131	8.17	9.46	14.92	.82	1.30	1.88	.195	42.4
	29 A	49,300	1.67	.03 N	232.8	1806.25	-.152	-.104	-.096	.092	-.145	-.040	.148	.405	.133	7.83	7.81	13.19	.79	1.30	1.87	.195	46.6
	29 B	36,140	1.67	.11 S	232.0	1807.35	-.178	-.106	-.137	.186	.166	-.085	-.175	--	.174	10.90	10.08	22.95	.99	1.42	3.42	.156	45.6
	32 A	49,820	1.64	.53 N	235.0	1820.25	-.161	.090	-.100	.052	.165	-.057	.130	-.360	.131	9.20	6.99	17.21	.75	1.18	1.93	.182	47.3
	32 B	38,000	1.67	0	233.0	1821.10	.196	-.124	-.123	.103	.166	-.055	-.170	--	.153	9.88	9.25	20.08	.90	1.36	2.30	.149	43.4
6-20-66	46 A	41,300	1.55	2.20 N	232.0	1554.50	-.209	-.104	.134	.082	-.152	-.025	.325	-.378	-.338	13.08	12.37	18.69	.89	.90	2.67	.179	51.8
	79 A	32,100	1.45	1.90 S	232.0	1608.00	-.117	-.106	-.123	.080	-.082	-.020	-.305	--	.327	8.28	13.83	26.16	1.21	.83	2.46	.153	54.1
	53 A	42,700	1.59	5.00 N	232.0	1618.52	.131	-.066	-.086	.033	-.046	-.011	.123	-.179	-.189	9.16	6.71	13.08	.71	.60	1.47	.175	53.7
	84 A	31,220	1.43	0	235.6	1627.10	--	.182	-.157	.106	.098	-.051	.522	--	.409	13.08	17.40	28.65	1.30	1.05	2.58	.144	49.4
	54 A	43,000	1.59	4.87 N	230.4	1635.20	-.133	-.071	.082	.038	-.076	-.017	.177	-.208	.176	8.28	6.92	12.46	.62	.68	1.47	.164	55.1
	59 B	43,360	1.41	5.00 N	233.2	1710.0	-.214	-.102	.143	.113	-.144	.016	-.285	-.352	.529	12.43	10.48	11.51	1.09	.94	2.34	.218	68.7
	98 B	31,340	1.50	0	233.0	1715.45	-.231	.153	-.155	.195	.170	-.051	.472	--	.534	13.95	16.14	26.78	1.33	1.13	3.04	.154	50.5
	90 B	31,800	1.55	.17 S	230.5	1732.0	-.186	.142	-.146	.127	-.151	-.034	.463	--	.487	13.08	13.83	28.65	1.24	1.02	2.80	.145	52.2
	85 A	32,320	1.45	4.35 N	231.4	1740.0	--	--	--	--	--	--	--	--	--	13.95	9.85	23.67	.77	.87	2.39	.143	60.1
	93 B	32,140	1.55	.17 S	231.4	1747.52	-.214	-.135	-.162	.094	-.101	-.069	.374	--	-.338	13.52	13.83	30.52	1.24	1.05	2.90	.141	52.2

TABLE IV (CONCL.)

Date	Mission No.	Altitude msl ft.	Mach. No.	Lateral Dist. Naut. mi.	Mag. Hdg. deg.	Boom Time 2	Peak Amplitude: Accelerometer Channels g's 101	102	103	105	106	107	109	110	111	Strain Gage μ, in./in. 210	211	212	Δp_I lb/ft^2 207	208	Cruciform Δp_0 Avg. lb/ft^2	Cruciform Δt Avg. sec.	Vert. Wave Angle deg.
6-21-66	59 C	31,760	1.46	.12 N	232.0	1601.55	--	.142	-.155	.213	.193	.054	.349	--	.300	14.99	10.90	26.64	0.98	2.08	2.81	.151	49.2
	58 B	43,600	1.67	5.12 N	232.6	1611.02	.154	-.086	.111	-.032	-.059	.0095	.148	-.171	-.206	8.17	6.26	-13.32	.51	1.15	1.95	.175	55.3
	99 B	31,700	1.47	.17 N	233.0	1617.05	--	.160	-.175	.191	.169	.049	.423	--	--	16.35	18.17	-26.64	1.01	2.00	3.22	.145	57.0
	66 B	39,860	1.59	5.00 N	233.0	1625.17	.114	-.053	.070	-.028	-.024	-.020	.064	-.123	-.121	7.49	4.44	9.69	.49	.92	1.22	.167	59.0
	100 B	31,760	1.46	.14 S	231.8	1630.23	.191	.093	-.107	.103	-.122	-.021	.290	--	.243	12.60	9.69	-23.01	.88	1.77	3.03	.146	49.2
	68 B	44,080	1.62	4.83 N	232.0	1639.49	.133	.067	.086	.074	-.132	-.020	.157	-.218	.160	6.81	5.85	-9.69	.47	.92	1.51	.167	54.5
	69 B	39,440	1.39	5.00 N	232.8	1729.35	-.157	-.075	.109	.053	.169	-.0095	-.241	-.179	.257	10.56	5.45	-13.93	.64	1.35	1.65	.186	72.0
	48 A	43,140	1.60	5.00 N	231.6	1744.12	.159	-.082	.105	-.037	-.097	-.011	.172	-.282	.223	10.22	5.65	-12.11	.69	1.31	1.51	.177	62.8
	40 A	43,840	1.65	5.40 N	235.0	1756.55	.141	-.069	.100	-.058	-.106	.024	.187	-.276	.227	9.20	6.06	-11.51	.54	1.15	1.88	.171	57.1
	60 B	43,940	1.64	5.16 N	233.2	1808.59	.141	-.058	.091	-.039	-.094	.021	.128	-.123	.160	7.83	4.04	12.11	.49	1.04	1.73	.165	58.9
	61 B	43,260	1.62	4.76 N	232.5	1937.19	.093	-.053	.052	.045	.169	.029	.084	-.085	-.185	9.54	3.83	-14.53	.59	1.35	2.49	.181	59.0
	101 B	31,700	1.50	0	232.8	1951.15	--	.106	.141	.096	.147	-.019	.344	-.388	.267	13.62	9.49	-24.22	.91	1.92	2.67	.148	52.2
	85 A	31,700	1.50	.22 N	233.7	2005.50	--	.140	-.161	-.109	-.153	-.017	-.433	--	.298	14.31	9.49	21.80	.83	1.65	2.84	.146	50.9
6-22-66	28 A	37,000	1.63	.16 N	234.5	1613.27	.187	.126	-.143	-.276	.262	-.024	-.518	1.25	--	14.11	17.82	22.75	1.01	1.76	2.66	.162	50.5
	19 A	37,200	1.64	.24 N	233.5	1628.15	.125	.073	-.093	.068	-.091	-.023	.267	.433	.235	9.94	6.65	18.48	.77	1.53	2.06	.154	47.7
	6 X	43,560	1.60	1.34 S	259.0	1648.24	-.135	-.146	.197	-.106	.126	.010	.326	.621	--	7.69	10.03	25.59	.94	1.42	3.44	.167	50.9
	30 A	37,400	1.65	.20 S	229.8	1743.34	-.132	-.073	-.093	-.064	.102	-.019	-.237	.357	-.234	11.86	5.88	-21.33	.86	1.59	2.04	.163	47.5
	34 B	43,400	1.61	4.00 N	230.0	1757.06	-.104	.053	.061	.038	.063	.018	.163	.235	-.141	6.73	3.81	-9.48	.58	.90	1.48	.169	56.2
	24 A	43,300	1.60	5.06 N	233.0	1810.37	-.128	-.060	.072	.053	-.041	.010	.148	.179	-.164	8.66	4.50	12.32	.58	1.07	1.44	--	--
	35 A	43,400	1.60	.92 S	225.3	1821.21	-.083	-.043	.061	-.026	-.039	-.0055	.104	-.113	-.110	7.05	2.77	9.48	.45	.88	1.15	.165	--
	25 B	43,220	1.59	4.89 N	233.0	1837.59	.156	-.066	.136	-.045	.076	-.017	.222	-.207	-.237	8.01	5.36	10.43	.55	1.08	1.42	.179	56.4
	23 B	37,440	1.63	.50 N	232.5	1852.05	.156	-.096	-.118	.076	-.089	-.017	.281	-.433	.239	11.22	7.96	18.96	.79	1.50	2.31	.157	48.0
6-23-66	17 A	37,600	1.64	.39 N	231.5	1546.08	-.165	-.100	-.111	.121	.219	-.026	-.370	.461	.240	10.90	10.55	27.25	.78	1.62	2.40	.162	46.1
	22 B	43,360	1.67	4.25 N	229.2	1600.40	-.162	-.086	.097	.044	.067	.0082	.420	.273	-.184	8.52	6.86	14.99	.52	1.13	1.63	.168	52.8
	31 A	37,480	1.64	.12 N	231.0	1612.14	-.155	-.093	-.108	-.085	.080	.015	.370	-.517	.239	10.56	10.55	23.84	.74	1.43	1.98	.155	47.3
	33 A	43,200	1.64	5.02 N	231.6	1621.38	-.137	-.070	.086	-.044	-.057	-.0055	.168	-.160	.149	8.86	5.45	14.99	.43	1.02	1.25	.163	59.0
	20 B	37,400	1.65	.10 N	232.6	1954.17	-.229	-.153	-.136	.125	-.189	-.035	.538	-.706	--	11.58	11.95	25.89	.83	1.66	2.09	.159	47.7
	36 B	37,400	1.66	.25 S	231.0	2006.26	-.243	-.136	.176	-.114	-.159	-.077	-.370	-.555	--	13.28	8.26	32.70	.97	1.81	5.50	.160	49.4
	6 X-2	43,520	1.67	9.86 N	258.0	2021.21	-.179	-.086	.122	-.044	-.082	-.025	-.202	-.216	--	8.86	5.27	23.16	.57	1.43	1.79	.165	--

TABLE V

Sonic Boom Induced Acceleration and Strain Responses of Test Structure No. 1 for a Range of F-104 Flight Conditions

Date	Mission No.	Altitude msl ft.	Mach No.	Lateral Dist. Naut. mi.	Mag. Hdg. deg.	Boom Time	Peak Amplitude: Accelerometer Channels g's 101	102	103	104	105	106	107	109	110	111	Strain Gage μ in./in. 210	211	212	ΔP_I lb/ft^2 207	208	Cruciform ΔP_0 Avg. lb/ft^2	Cruciform Δt Avg. sec.	Vert. Wave Angle deg.
6- 4-66	14	35,600	1.7	--	--		-.170	.108	.101		-.066	.057	--	--	--	--	7.63	6.00	6.61	.38	.81	1.19	.087	
6-13-66	26 A	21,200	1.4	.08 N	232.5	1712.35	.192	.124	--		.071	.110	.045	.213	--	.159	9.88	8.23	9.18	.45	.83	1.87	.074	50.8
	26 B	29,660	1.6	.61 S	--	1713.45	--	--	-		--	--	--	--	--	--	--	--	--	--	--	--	--	--
6-14-66	26 A	--	--	--	--	1608.0	-.155	.156	-.120		.093	.094	.018	.152	.397	.306	6.81	10.28	12.11	.54	.97	2.08	.072	--
	26 B	29,920	1.54	.10 S	238.0	1610.50	-.145	.081	-.110		.067	-.087	.013	.193	.621	-.254	9.54	7.61	-13.93	.47	.72	1.56	.079	46.6
	38 A	--	--	--	--	1745.00	-.198	.125	-.120		.094	-.156	.032	.438	.222	-.302	11.58	7.40	11.51	.44	.84	2.02	.074	--
	38 B	29,700	1.52	0	232.6	1745.45	-.118	.076	-.083		-.011	.045	.017	--	--	--	8.86	4.52	10.29	.44	.66	1.52	.079	49.1
	37 A	29,700	1.49	0	231.2	1757.30	-.162	.106	-.093		.055	.079	.033	.264	.225	-.306	9.54	5.76	9.69	.38	.78	1.39	.079	48.7
	37 B	21,080	1.39	.02 S	231.0	1758.10	-.211	.171	.119		--	-.188	.035	.581	.406	-.383	11.58	10.28	11.51	.49	1.21	2.77	.075	53.2
6-15-66	1X A	14,080	1.21	.47 N	236.0	1611.50	-.278	.210	.207	.0271	.183	.171	-.052	-.617	--	-.557	16.17	15.84	15.14	.59	1.26	3.75	.079	62.1
	1X B	28,140	1.50	.13 N	233.0	1616.40	-.108	.079	-.073	.0108	.051	-.089	-.039	-.206	.306	.192	-7.27	5.96	8.48	.40	.53	1.51	.079	48.1
	2X A	29,700	1.32	.66 N	237.0	1621.30	.194	.111	-.123	-.0076	-.078	.071	.0097	-.270	.291	.250	-7.60	6.58	-10.90	.50	.62	1.74	.092	63.5
	2X B	14,080	1.20	.22 N	233.0	1622.10	--	-.216	.264	.0210	.157	-.151	-.043	.505	--	.615	22.15	18.51	18.77	.69	1.56	4.36	.079	62.0
	3X A	29,100	1.58	.17 N	234.0	1638.25	-.092	.065	.059	.0098	-.024	.081	-.012	.206	.259	.192	-5.95	3.91	6.06	.32	.47	1.31	.075	51.5
	3X B	14,200	1.15	.16 N	235.0	1639.55	-.223	.135	.120	.0260	-.054	-.154	-.031	.421	--	.404	13.01	9.67	13.93	.57	1.03	2.25	.077	63.4
	4X A	14,060	1.28	.18 N	235.0	1647.15	-.278	-.159	.159	.0173	.202	.170	.060	.603	--	.557	15.12	13.78	12.72	.55	1.17	3.36	.067	55.0
	4X B	29,880	1.62	.44 S	233.5	1648.20	-.190	-.151	-.132	.0098	-.085	-.080	-.019	-.402	--	-.375	14.42	9.05	14.53	.48	.82	2.58	.077	45.6
6-16-66	27 A	29,300	1.65	.10 S	230.3	1556.25	-.147	.113	.118	-.0154	-.096	-.115	-.024	.356	--	-.134	8.17	8.23	-9.69	.34	.61	1.51	.075	43.1
	27 B	20,540	1.40	.26 S	228.5	1557.50	-.156	.092	.100	-.0154	.105	.113	-.029	.288	-.345	-.134	-7.83	9.46	-10.90	.40	.76	1.73	.073	51.1
	5X	29,700	1.65	.25 E	344.0	1604.25	-.107	.124	-.173	-.0166	-.045	.075	.0055	.591	--	.139	-4.43	5.35	-18.17	.38	.73	1.78	.071	41.8
6-22-66	28 B	20,820	1.35	.16 S	233.0	1613.43	-.233	.166	.158		.197	-.241	-.053	.563	.903	--	11.86	13.15	18.48	.58	1.25	2.60	.078	50.1
	19 B	29,500	1.42	.20 S	233.5	1630.05	.181	.140	.104		-.121	.100	.071	.252	-.433	-.201	10.26	-7.47	18.01	.48	.71	1.87	.088	52.8
	30 B	29,720	1.37	.16 S	232.5	1740.38	.056	.037	-.043		.038	-.043	.0092	.133	.160	-.107	-5.77	3.11	-10.90	.38	.60	.97	.092	62.0
	34 B	29,600*	1.39	--	232.8	1757.06	.149	.080	.082		-.068	-.056	.015	.296	.320	.209	-7.05	-4.83	12.80	.38	.65	1.14	.094	--
	24 B	20,860	1.36	.23 S	231.3	1811.26	.167	.136	-.115		-.159	-.158	-.059	.533	-.696	.242	9.62	10.21	-16.11	.46	.99	2.10	.078	55.0
	35 B	21,060	1.28	.25 N	225.3	1822.47	-.201	.153	.133		-.117	-.145	-.028	.341	-.564	.235	-9.62	6.57	-14.22	.43	.92	2.41	.082	59.5
	25 A	21,900	1.39	.21 N	233.0	1836.39	-.191	.140	-.104		-.163	-.137	.015	.489	-.527	--	9.30	7.44	-11.37	.43	.86	1.47	.075	54.4
	23 A	29,720	1.51	.34 N	237.0	1850.21	.153	.096	-.079		-.045	-.065	-.020	-.193	-.263	-.151	-7.69	4.84	-10.90	.53	.71	1.43	.083	--
6-23-66	17 B	21,600	1.40	.46 S	227.5	1548.00	-.162	.103	.100		-.063	-.059	-.017	.302	-.339	-.232	10.22	7.03	-11.30	.45	.79	1.88	.076	49.3
	22 A	29,260	1.40	0	232.0	1559.59	-.151	.086	.090		-.066	-.087	-.012	.235	-.395	.188	-8.17	-6.98	9.69	.45	.75	1.61	.082	51.4
	31 B	21,260	1.39	0	232.0	1612.21	-.172	.096	.104		-.077	.059	-.014	.336	-.480	-.231	10.90	8.44	-8.88	.43	.79	2.18	.076	49.6
	33 B	29,840	1.49	.10 S	229.8	1622.04	.281	.153	-.122		-.114	-.109	-.035	.554	-1.02	--	13.62	9.84	18.39	.45	.90	1.82	.084	49.7
	20 A	21,520	1.37	.19 N	233.2	1951.20	-.253	.173	.129		-.121	-.165	.016	-.454	.687	--	14.31	7.91	18.39	.48	.98	1.88	.079	55.2
	36 A	20,860	1.39	.37 S	230.2	2005.15	-.232	.179	.125		-.136	-.132	-.024	.538	-.564	--	10.90	7.56	14.99	.45	.98	2.09	.077	53.3
	7X	29,640	1.55	.29 S	257.6	2018.18	-.141	.103	.125		.074	.083	.014	-.252	.339	--	7.57	5.63	32.70	.59	.98	2.03	.081	--

TABLE VI

Sonic Boom Induced Acceleration and Strain Responses of Test Structure No. 1 for a Range of XB-70 Flight Conditions

Date	Mission No.	Altitude msl ft.	Mach No.	Lateral Dist. Naut. mi.	Mag. Hdg. deg.	Boom Time Z	Peak Amplitude												Δp_I lb. ft^{-2}		Δp_O Avg. lb/ft^2	Δt Avg. sec.	Vert. Wave Angle deg.
							Accelerometer Channels g's									Strain Gage μ in./in.							
							101	102	103	105	106	107	109	110	111	210	211	212	207	208			
6-4-66	13	52,920	1.81	2.5 N	243.0	1728.00	-.256	-.119	.200	-.127	.174		--	--	--	15.26	11.58	-9.25	1.33	2.75	2.52	.250	12.8
6-6-66	22	72,000	2.83	4.10 N	262.0	1726.00	-.129	.094	.101	.072	-.088	.013	.137	-.362	-.193	7.97	1.78	15.75	1.05	1.30	1.64	.3175	--
6-8-66	1	31,850	1.38	5.02 S	246.0	1519.00	.159	-.049	-.127	.038	.034	-.014	-.128	-.102	.199	11.54	5.11	-11.71	.39	1.33	2.27	.233	61.9

TABLE VII

ENGINE NOISE INDUCED ACCELERATION AND STRAIN RESPONSES FOR STRUCTURE NO. 1 FOR A RANGE OF KC-135 FLIGHT CONDITIONS

Date	Mission No.	Altitude msl ft.	EPR	Velocity Kts.	Maximum Peak Amplitude												OUT-SIDE SPL, dB
					Accelerometer Channels g's									Strain Gage μ, in./in.			
					101	102	103	105	106	107	109	110	111	210	211	212	205
6-6-66	39 B	10,300	1.6	310	--	--	--	--	--	--	--	--	--	--	--	--	--
	70 B	5,400	1.5	260	.004	.003	.009	.009	.007	.006	.006	.016	.012	.423	.266	0	84.8
	40 B	5,400	1.5	280	.004	.005	.007	.010	.008	.006	.006	.013	.020	.423	.266	0	84.8
	71 B	3,300	1.5	270	.009	.007	.008	.015	.032	.008	.012	.042	.025	.529	.523	0	102.9
	41 B	3,300	1.5	238	.009	.037	.008	.018	.037	.008	.011	.050	.022	.423	.372	0	101.1
	72 B	2,800	1.5	290	.009	.009	.009	.028	.068	.010	.020	.083	.046	.635	.744	0	108.9
	43 B	14,300	2.35	325	--	--	--	--	--	--	--	--	--	--	--	--	--
	74 B	8,300	2.35	328	.007	.005	.006	.008	.007	.007	.007	.011	.018	.423	.319	0	105.7
	44 B	8,300	2.35	330	.011	.009	.009	.051	.085	.018	.030	.165	.087	.529	2.12	.779	111.1
	75 B	3,300	2.35	213	.030	.022	.024	.295	--	.052	.135	--	--	1.06	5.95	1.09	--
	42 B	2,800	2.35	213	.064	.049	.054	--	--	.132	--	--	--	.847	--	1.09	--
	73 B	2,520	2.35	213	.016	.005	.009	.032	.048	.011	.021	.083	.042	.529	1.06	.779	106.9
6-7-66	76 B	4,360	2.35	190	.009	.011	.011	.084	.071	.041	.096	.110	.117				106.9
	45 A	3,000	2.35	195	.026	.028	.024	--	--	--	.233	.311	.171				114.8
	77 A	3,000	2.35	190	.027	.022	.024	.143	.142	.036	.216	.317	.202				115.1
	46 A	2,620	2.35	190	.019	.018	.022	.045	.070	.035	.185	.343	.155				116.2
	48 B	3,000	2.35	205	.035	.031	.029	.100	.117	.028	.156	.270	.322				114.5
	79 B	2,620	2.35	195	.099	.059	.058	.311	.239	.064	.432	.716	.477				--
	49 B	4,300	2.35	195	.009	.010	.069	.062	.051	.024	.070	.111	.091				110.4
	80 B	3,000	2.35	190	.044	.041	.032	.146	.099	.083	.161	.285	.236				115.6
	50 B	8,300	2.35	200	.007	.006	.007	.014	.012	.004	.014	.026	.014				--
	81 B	4,300	2.35	195	.013	.013	.010	.046	.040	.014	.068	.101	.081				106.2
6-8-66	43 B	14,300	2.35	182	--	--	--	--	--	--	--	--	--	--	--	--	--
	75 B	8,300	2.35	168	.0093	.0045	.011	.014	.0095	.0072	.023	.030	.018	.641	.511	1.09	101.0
	42 B	2,800	1.5	160	.014	.011	.011	.033	.033	.011	.079	.120	.063	.962	2.38	1.63	108.5
	73 B	2,552	1.5	175	.021	.027	.020	.068	.081	.011	.212	.357	.166	1.28	5.11	1.63	114.6
	41 B	5,300	1.5	157	.012	.0045	.014	.0070	.0071	.0095	.013	.021	.018	.641	.511	1.09	97.7
	72 B	2,800	1.5	174	.014	.011	.0091	.026	.042	.011	.074	.120	.060	.962	1.70	1.09	107.8
	57 RA	3,300	1.5	166	.012	.011	.023	.014	.018	.0072	.033	.045	.033	.641	1.19	1.63	100.4
	80 RA	2,800	1.5	169	.026	.011	.011	.031	.040	.013	.072	.099	.058	.641	1.53	1.63	106.7
	56 RA	5,300	1.5	155	.0093	.013	.0091	.0070	.0083	.0060	.018	.024	.010	.641	.511	1.09	97.7
	87 RA	3,300	1.5	166	.0093	.034	.011	.016	.024	.0072	.044	.057	.028	.962	1.19	1.63	102.9
	55 RA	10,300	1.5	146	.0070	.0090	.0091	.012	.011	.0084	.028	.045	.025	.962	.341	1.09	92.5
	86 RA	5,300	1.5	176	.0070	.0067	.011	.0070	.0071	.0060	.013	.018	.013	.641	.681	1.63	96.9

TABLE VII (CONCL.)

Date	Mission No.	Altitude msl ft.	EPR	Velocity Kts.	Maximum Peak Amplitude												OUT-SIDE SPL, dB
					Accelerometer Channels g's									Strain Gage μ, in./in.			
					101	102	103	105	106	107	109	110	111	210	211	212	205
6-9-66	86 SA	5,300	1.5	171	0	.0075	0	.022	.045	0	.030	.024	.016	.962	.524	1.56	94.1
	55 SA	10,300	1.5	225	0	.0052	0	.011		0	.023	.012	0	.962	.524	1.56	94.1
	87 SA	3,300	1.5	190	.010	.0078	.011	.0074	.025	0	.023	.060	.016	.801	.838	1.30	92.8
	56 SA	5,300	1.5		.0069	.0052	.015	0	.0090	0	.023	.027	.024	.801	.734	1.30	100.1
	80 SA	1,800	1.5	73	.014	.013	.014	.033	.040	.014	.068	.135	.073	.801	1.26	1.30	98.8
	57 SA	3,300	1.5	0	.010	.0078	.011	.015	.029	0	.030	.042	.024	.801	.838	1.56	96.3
	72 SB	2,800	1.5	172	--	--	--	--	--	--	--	--	--	--	--	--	--
	41 SB	8,300	1.5	152	.0089	.0052	.014	0	.0090	0	.023	.018	.016	.641	.629	1.04	92.8
	73 SB	2,550	1.5		.062	.026	.018	.074	.126	.020	.152	.273	.162	.962	1.15	1.82	103.2
	42 SB	2,800	1.5	188	.014	.013	.011	.044	.126	.013	.083	.156	.065	.962	2.41	1.82	105.2
	75 SB	8,300	2.35	162	.010	.0078	.011	0	.013	0	.030	.027	.024	.641	.524	1.56	96.3
	43 SB	14,300	2.35	135	--	--	--	--	--	--	--	--	--	--	--	--	--
	42 SB	2,800	1.5	162	.014	.013	.011	.040	.085	.011	.083	.135	.065	.801	1.15	1.56	99.5
	46 SB	3,300	2.35	172	.024	.018	.021	.261	.301	.069	.288	--	.349	1.12	8.07	1.82	117.8
	72 SB	2,800	1.5	164	.021	.034	.011	.033	.065	.0054	.068	.099	.049	.641	1.89	1.56	102.8
													ch.112				ch.204
6-20-66	48 B	5,280	1.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	79 B	3,300	1.5	190	.0083	.0089	.0080	.014	.033	.0048	.039	.053	.033	.545	.943	.934	100.9
	53 B	4,300	2.35	200	.014	.019	.011	.056	.084	.026	.096	.148	.099	.545	2.20	1.25	112.2
	54 B	3,000	2.30	195	.033	.069	.022	.174	--	.041	.221	.233	.231	1.090	5.55	1.56	119.1
	54 B	3,000	2.30	195	.024	.043	.022	.163	--	.034	.234	.239	.262	.872	6.08	1.71	119.7
	59 A	12,000	2.35	180	.0070	.0066	.0091	--	.0047	--	.017	.132	.020	0	0	.934	94.3
	98 A	6,000	2.35	200	.012	.086	.017	.016	.024	.0039	.037	.065	.041	0	.943	.934	107.3
	60 A	6,000	2.35	175	.0083	.010	.014	.021	.034	.0090	.044	.075	.048	.545	1.15	1.090	106.9
	90 A	6,000	2.35	175	.019	.010	.061	.042	.047	.0087	.054	.094	.063	.651	2.10	1.090	106.6
	85 B	2,600	2.30	185	.080	.054	.064	--	--	--	--	--	--	1.96	14.36	2.49	--
	93 A	2,600	2.30	195	.068	.049	.052	--	--	--	--	--	--	2.18	13.42	2.49	--
6-21-66	89 A	2,500	1.5	220	.028	.032	.027	.120	.118	.041	.158	.182	.115	.826	2.22	1.51	118.9
	58 A	2,800	1.5	205	.016	.012	.011	.026	.061	.0095	.075	.108	.053	.826	1.61	1.51	108.3
	99 A	4,300	2.35	194	.015	.010	.014	.049	.082	.025	.098	.150	.106	.826	1.41	1.51	113.0
	66 A	2,800	1.5	210	.014	.016	.011	.047	.054	.015	.088	.123	.065	.991	1.61	1.51	110.9
	100 A	3,000	2.35	200	.028	.020	.020	.143	--	.069	.244	--	--	.661	5.15	1.82	119.9
	68 A	8,300	2.35	175	.0047	.0078	.032	.0047	.0089	.0024	.015	.021	.011	.826	.505	1.21	97.1
	69 B	4,300	2.35	195	.0071	.011	.0080	.065	.085	.015	.095	.156	.109	.661	.908	1.21	113.7
	48 B	5,300	1.5	198	.0047	.0078	.0045	.0071	.0078	.0036	.020	.021	.014	.661	.505	1.21	94.0
	40 B	5,300	1.5	197	.0047	.0067	.0045	.0047	.0090	.0024	.015	.020	.013	.661	.404	1.21	95.2
	60 A	8,300	2.35	176	.0011	.0067	.0015	.0071	.016	.0030	.020	.035	.015	.661	.404	1.21	100.7
	61 A	4,300	2.35	200	.046	.013	.0045	.027	.071	.021	.055	.128	.091	.661	1.82	1.21	110.8
	101 A	2,600	2.35	175	.087	.058	--	--	--	--	--	--	--	1.32	11.10	1.82	--
	85 B	2,600	2.35	180	.079	.068	.042	--	--	--	--	--	--	1.32	10.31	1.82	--

TABLE VIII

Sonic Boom Induced Acceleration and Strain Responses of Test Structure No. 2 for a Range of B-58 Flight Conditions

Date	Mission No.	Altitude msl ft.	Mach No.	Lateral Dist. Naut. mi.	Mag. Hdg. deg.	Reading Point	Peak Amplitude													Δp_I lb/ft^2			Δp_o Avg. lb/ft^2	Δt Avg. sec.	Vert. Wave Angle deg.
							Accelerometer Channels g's											Strain Gage μ, in./in.								
							301	302	303	304	305	306	307	308	309	310	311	312	313	405	407	409			
6-6-66	37	31,400	1.25	4.64 N	244.0	1	.020	--	.015		--	--	.011	--	.021	.027	.065	--	--				No Boom	--	--
						2	.020	--	-.015		--	--	.021	--	.025	.036	-.065	--	--						
						3	.025	--	.015		--	--	.025	--	.021	.036	.169	--	--						
	70	43,900	1.60	.55 N	245.0	1	-.076	.015	-.067	.224	-.049		-.051	-.061	-.127	-.205	.407			1.04	1.27	.85	2.00	0.183	48.4
						2	.078	-.085	.076		-.070	-.066	.045	.156	.142	.241	-.434	-26.1	-6.81						
						3	.076	-.	.071	-.182	.065	.055	-.059	-.135	-.144	.165	.456	38.3	--						
	40	31,400	1.48	.20 N	246.0	1	.142	-.130	-.120		-.108	-.176	.091	-.104	-.175	-.286	-.187	-42.2	12.5	1.33	1.76	.79	3.44	.156	51.2
						2	-.124	.130	.120		-.116	.165	-.218	.139	.240	.321	.836	56.5	-9.31						
						3	.137	1.0	-.147	.355	.095	.121	.	-.109	.142	-.250	-.765	-20.1	--						
	71	44,200	1.59	5.00 N	215.0	1	-.111	.085	.092	.474	.119	-.187	-.178	-.156	-.149	-.152	.575	19.2	7.04	1.33	1.08	.66	1.71	.177	52.1
						2	.121	-.115	-.118	-.381	-.206	.176	.212	.152	.106	.165	-.565	-13.3	-5.90						
						3	-.106	.095	.072	-.338	.157	-.193	.187	.156	-.106	.147	-.575	30.3	--						
	41	31,340	1.45	.17 N	246.7	1	-.101	-.120	-.080	.317	-.130	-.193	.089	-.164	-.170	-.321	.608	-37.0	11.1	1.27	1.37	.95	2.50	.152	50.4
						2	.111	.110	.012	-.296	.125	-.149	-.115	-.109	.174	.335	-.619	48.4	-9.08						
						3	-.101	-.100	.088	.376	-.135	.143	.148	-.148	-.132	-.272	.608	-19.9	--						
	72	43,420	1.55	1.85 N	244.5	1	-.081	.070	.071	.372	-.108	-.176	-.136	-.078	-.144	.129	.456	16.1	5.90	.84	1.08	.55	1.99	.171	60.1
						2	.091	-.080	-.076	.250	.135	.187	.115	.139	-.093	-.134	-.380	-15.6	-5.22						
						3	-.096	-.065	-.071	-.305	-.130	-.171	-.127	-.126	.085	.116	.467	23.2	--						
	74	32,140	1.30	.72 S	242.5	1	.121	-.090	-.101	--	.163	-.176	.123	.182	.170	.250	1.55	41.4	25.4	1.48	1.76	1.14	3.16	.193	73.0
						2	-.116	.090	.113	--	-.168	-.154	-.115	-.165	-.182	-.205	1.09	-29.9	-8.63						
						3	.116	-.070	-.113	--	-.157	-.198	-.123	-.165	.208	.250	1.18	38.3	-11.4				--		
	44	43,400	1.57	5.00 N	245.0	1	-.086	.070	.071	.343	-.070	-.066	.144	.113	-.115	-.098	.521	16.1	5.17	.87	.98	.55	1.70	.195	63.1
						2	.086	.090	-.084	-.279	.081	-.066	-.145	.111	.106	.143	-.423	-12.8	-4.54						
						3	-.061	.065	.059	-.182	-.076	-.072	.110	-.122	.102	-.089	.293	27.2	--						
	75	31,840	1.46	0	248.0	1	.162	-.130	-.118	.406	.233	-.198	-.136	-.200	-.246	-.375	.738	-39.3	14.3	1.21	1.57	.69	3.18	.156	56.7
						2	-.162	.130	.122	-.389	.233	.176	-.178	-.209	.306	.420	-.847	49.4	-7.95						
						3	.152	-.160	-.113	.372	.152	-.215	.191	-.209	.191	-.241	.956	-19.9	--						
	42	43,300	1.53	0	245.0	1	.121	.080	.080	.558	-.206	.209	-.272	.248	-.187	-.156	.706	-13.7	6.81	.87	1.08	.55	1.78	.182	--
						2	-.106	-.160	-.105	.558	.265	-.276	.276	-.204	.127	.187	-.586	22.2	-5.45						
						3	-.111	.075	.076	-.372	-.238	-.215	-.204	-.182	.140	.107	-.651	-7.0	--						
	73	31,860	1.43	.25 N	241.0	1	.147	-.135	-.118	.512	.211	-.160	-.170	-.226	-.267	-.384	.815	35.3	9.08	1.15	1.47	.71	3.54	.159	53.2
						2	-.127	.140	.122	-.381	-.309	-.176	.195	.230	-.242	.388	-.586	-39.8	-8.63						
						3	.157	-.120	-.105	.398	.190	-.209	-.182	-.235	.289	-.312	.977	51.5	--						
6-7-66	76 A	31,560	1.48	1.09 S	241.5	1	.098	-.100	-.096	-.38	-.13	-.11	.13	-.15	.22		-.752	-36.3	11.8	1.09	1.62	.78	3.27	.163	59.1
						2	-.088	.160	.12	.31	.12	.11	-.13	.19	.19	-.23	.989	40.9	-7.34						
						3	.103	.091	-.083	.21	-.12	.11	-.13	-.18	.18	.20	-.774	34.5	--						
	45 B	43,660	1.70	1.95 N	244.5	1	.110	-.091	.092	-.31	.081	-.055	-.097	.16	-.088	.22	.419	-14.0	6.23	.80	1.17	.52	2.01	.171	53.1
						2	-.078	.011	-.12	.30	-.065	.066	-.092	-.14	.10	.15	-.130	23.6	-4.00						
						3	.095	.011	.092	.26	-.065	-.044	.088	.14	.093	-.13	.430	16.3	--						

TABLE VIII (CONT.)

Date	Mission No.	Altitude msl ft.	Mach No.	Lateral Dist. Naut. mi.	Mag. Hdg. deg.	Reading Point	Peak Amplitude: Accelerometer Channels g's 301	302	303	304	305	306	307	308	309	310	311	Strain Gage μ, in./in. 312	313	Δp_I lb/ft² 405	407	409	Δp_O Avg. lb/ft²	Δt Avg. sec.	Vert. Wave Angle deg.
6-7-66	77 B	31,680	1.51	0.10 S	244.5	1	-.083	-.080	-.075	.26	.060	.055	-.079		-.22	-.29	.494	36.3	11.3	1.03	1.68	.57	2.91	0.156	53.2
						2	.083	.080	-.092	-.34	-.11	-.055	.088	-.075	.20	.31	-.516	-.363	-7.79						
						3	.054		-.098		.054	-.055	.097	.068	-.14	.16	.559	.454	--						
	46 B	43,720	1.65	5.12 N		1	.11	.070	-.096		.065	.066	-.13	.12	-.097	.16	.441		5.56	.75	1.06	.52	1.63	.171	56.7
						2	.14	-.075	.083	-.34	-.11	-.061	.18	.093	.088	-.12	.318	-.114	-4.00						
						3	-.098	.065	-.075	.29	.081	-.061	-.18	-.13	.088	.13	.484	.163	--						
	48 A	38,700	1.31	5.23 N	245.5	1	.024	-.010	.0083	.084	-.011	.028	.022	.063	.022	.053	.075	.908	3.34	.75	1.06	.49	No Boom		--
						2	-.024	.010	.0083	-.092	.011	-.011	-.022	-.034	.044	.066	.161	-14.5	-2.22						
						3	.024	.010	-.0083	-.092	-.011	.028	.022	.021	.044	.053	.107	13.6	--						
	79 A	31,000	1.52		244.5	1	-.073	-.070	-.063	-.29	.076	.14	.066	.18	-.13	-.18	.537	-41.5	13.3	1.18	1.96	.62	2.48	.169	53.0
						2	11	.075	.088	.19	-.087	-.11	-.053	-.14	.12	.20	.645	58.1	-8.01						
						3	.098	.075	.083	-.25	.059	-.11	.066	-.13	-.14	-.18	-.666	-28.5	--						
	49 A	43,340	1.43	4.65 N	152.5	1	.039			.19	-.065	-.039	.026	.038	-.040	.062	.290	18.2	4.45	.80	1.23	.52	1.44	.211	72.8
						2	-.034	-.025	-.025	-.20	.065	-.050	-.022	-.051	.053	.080	-.290	-17.6	-4.45						
						3	.034	-.045	.025	.17	-.054	.039	.026	.042	-.040	.081	.258	36.3	--						
	80 A	31,600	1.53	.25 N	244.5	1	-.098	-.091	.096	.27	-.11	-.094	-.11	.11	-.11	-.213	.484	32.7	12.2	1.03	1.68	.57	2.72	.156	51.6
						2	.11	.091	.092	-.34	.098	-.077	-.088	-.16	.19	.29	-.537	-37.4	-6.67						
						3	-.098	-.091	-.088	.29	-.076	.077	.097	-.14	.13	.16	.645	36.3	--						
	50 A	43,340	1.43	5.00 N	245.5	1	.039	.035	-.038	.19	.027	.028	-.088	.034	.088	.080	.301	9.99	3.34	.63	.78	.49	1.01	.196	72.8
						2	-.029	-.030	.042	-.19	.027	-.028	.088	.034	.053	.080	-.236	-10.4	3.34						
						3	.049	.040	-.033	.17	.027	.028	.075	.034	.066	.066	.290	14.5	-4.45						
	81 A	31,100	1.49	.06 S	245.0	1	.034	-.025	.029	-.16	-.043	.044	.031	-.042	.062	.102	.215	27.2	6.67	.92	1.56	.52	1.95	.150	53.6
						2	.039	.025	-.021	-.13	.049	-.055	-.035	.042	.079	.102	-.268	-36.3	-5.56						
						3	.054	.030	.021	.10	-.054	-.309	.035	.051	.071	-.089	-.161	36.3	--						
6-8-66	43 A	42,380	1.62	5.24 N	245.0	1	.13	.080	.076	-.30	.17	.16	-.062	-.040	.072	-.089	.325	11.6	6.59	.89	1.33	.60	1.70	.175	58.7
						2	.10	-.110	-.080	.23	-.20	-.20	.040	-.044	-.085	.12	-.347	-16.1	-4.36						
						3	.11	.015	.051	-.24	.098	.14	-.040	.053	.076	.080	.358	21.1	2.04						
	75 A	31,200	1.44	.23 N	244.5	1	.18	-.160	.13	.52	.18	.20	-.19	-.30	-.31	-.38	.824	27.6	13.2	1.21	1.86	.63	3.17	.156	50.0
						2	.15	.150	-.14		-.21	-.23	.17	-.29	.30	.47	1.08	-43.6	-7.63						
						3	.18	.170	-.15	.56	-.14	-.25	-.21	.26	-.27	-.39	.867	32.0	3.86						
	42 A	43,260	1.67	4.85 N	246.7	1	.14	.100	.11	.35	-.098	-.080	.20	.18	-.14	-.21	-.510	10.9	6.36	.82	--	.52	2.06	.179	57.9
						2	-.13	-.135	-.13	-.36	-.098	.075	-.19	-.15	.17	.31	.520	-13.8	-5.23						
						3	.12	.110	.11	-.37	.092	.069	-.18	.16	.10	.18	-.499	16.7	1.82						
	73 A	31,200	1.50	.10 N	245.0	1	-.096	.075	-.084	.27	-.103	-.115	-.115	-.16	-.17	-.22	.520	-37.9	11.1	1.04	--	.50	2.22	.147	53.9
						2	.096	-.095	.076	-.24	-.103	.16	.106	-.18	.17	.26	-.488	26.2	-5.67						
						3	-.076	.070	.076	.26	.087	.115	-.126	-.17	-.17	-.22	.488	-21.8	1.36						
	41 A	43,200	1.60	5.32 N	246.0	1	-.086	.060	.080	.49	.108	-.080	-.26	-.11	-.18	.18	.531	-17.2	6.59	.82	--	.50	1.92	.166	59.0
						2	.086	-.090	.092	.32	.098	.11	.21	.20	.11	-.18	.499	18.9	-3.71						
						3	-.081	.060	-.084	-.39	.108	.092	-.22	-.15	-.11	.17	-.423	-9.2	1.82						

TABLE VIII (CONT.)

Date	Mission No.	Altitude msl ft.	Mach No.	Lateral Dist. Naut. mi.	Mag. Hdg. deg.	Reading Point	Peak Amplitude: Accelerometer Channels g's 301	302	303	304	305	306	307	308	309	310	311	Strain Gage μ, in./in. 312	313	Δp_I lb/ft² 405	407	409	ΔP_O Avg. lb/ft²	Δt Avg. sec.	Vert. Wave Angle deg.
6-8-66	72 A	31,200	1.49		245.0	1	-.106	.085	.11	.49	-.18	.22	-.283	-.32	-.32	.41	.889	-47.0	10.9	1.07	--	.63	2.85	0.144	49.0
						2	.111	-.120	.11	.57	-.22	-.29	.261	-.30	-.27	.40	.781	32.7	-6.32						
						3	.116	.090	.12	.49	-.20	.29	-.261	-.29	-.33	-.36	.716	-25.8	3.18						
	57 R.B	37,600	1.66	5.90 N	248.5	1	-.081	.301	.059	-.86	.033	.034	.053	.088	.051	-.075	.282	11.6	6.81	.75	--	.52	1.76	.162	52.2
						2	.096	-.351	-.063	.21	-.043	.034	.053	-.079	-.051	.062	-.314	13.8	-3.27						
						3	-.076	.301	-.059	-.22	.038	-.046	.053	-.062	-.042	.053	.293	17.4	--						
	80 R.B	31,300	1.46	.14 N	246.6	1	.121	-.100	-.092	.43	.098	-.14	-.199	-.24	-.27	-.35	.759	26.2	12.0	1.14	--	.63	2.63	.161	60.4
						2	-.096	.095	.092	-.36	-.12	-.19	.217	-.32	-.24	.34	-.716	-43.6	-8.72						
						3	.101	.075	.092	.41	.098	-.15	-.212	-.25	.24	-.30	.770	32.7	-2.40						
	56 R.B	43,040	1.64	5.14 N	244.0	1	-.091	.080	.080	.26	.065	-.103	-.165	.14	-.085	-.12	-.390	10.9	6.81	.86	--	.60	2.09	.170	55.3
						2	.111	-.090	-.092	-.28	-.095	.103	.110	.115	.085	.16	-.434	-16.6	-4.36						
						3	.111	.070	.084	-.29	.081	-.092	-.150	.110	.076	.098	.369	18.9	-2.15						
	87 R.B	31,440	1.49	.40 N	245.4	1	.147	-.140	-.12	.30	-.070	-.11	-.124	-.18	-.24	-.32	.683	-48.2	12.7	1.07	--	.58	3.23	.148	48.9
						2	-.121	.110	.14	-.28	.076	.086	-.137	.15	.22	.37	-.694	38.5	-6.54						
						3	.127	-.110	.12	.39	.087	-.11	.115	-.18	-.20	-.33	.748	-29.8	2.72						
	55 R.B	43,200	1.64	5.16 N	244.0	1	.202	.130	-.16	.55	-.087	.080	-.221	.071	-.16	.31	.737	13.8	11.3	.82	--	.63	2.17	.169	58.4
						2	.177	-.170	.16	.47	-.087	-.092	.212	.12	.19	-.26	.737	-11.5	-3.49						
						3	.202	.150	.14	.44	.108	.103	-.212	-.079	.13	.20	.845	20.3	3.63						
	86 R.B	31,360	1.49	0	229.0	1	-.106	.090	-.101	.60	.27	-.21	.270	-.33	.41	-.35	1.12	26.2	10.2	1.07	--	.75	2.70	.144	45.9
						2	.101	-.095	.105	-.40	-.15	.24	.274	.26	-.38	-.35	.716	-49.3	-6.98						
						3	.111	-.090	-.118	.57	-.14	.19	.300	-.34	.11	.50	-.900	31.2	5.90						
6-9-66	86 SRB	31,000	1.50	.25 N	246.2	1	.20	-.152	.14	.54	-.17	.24	-.22	-.27	-.32	.62	.886	-53.3	5.89	1.21	1.06	.84	4.00	.153	51.1
						2	-.16	.127	.15	.64	.15	-.20	-.22	-.25	.36	-.42	-1.02	47.2	-4.31						
						3	.16	-.147	-.17	-.60	-.13	-.22	-.22	-.27	-.34	.41	1.09	-34.4	10.5						
	55 SRB	35,720	1.69	5.17 N	244.5	1	-.13	.054	.076	.17	-.092	.18	.051	.052	-.064	-.082	.256	12.3	1.31	.90	.64	.41	1.60	.140	55.5
						2	.079	-.064	-.061	-.20	.19	-.19	-.061	.083	.076	[illegible]	-.245	-10.1	-1.36						
						3	.064	.044	-.041	.14	-.20	-.14	.068	-.13	-.051	.080	.192	11.8	1.31						
	87 SRB	31,000	1.53	.08 S	244.0	1	-.13	-.127	-.11	-.37	.12	-.12	-.13	-.20	.33	-.30	.640	-32.8	6.95	1.28	1.00	.67	3.44	.146	49.2
						2	.16	.103	.11	.43	-.13	.11	.15	-.22	-.29	.43	-.800	43.6	6.98						
						3	-.13	-.103	-.11	-.36	.12	-.094	-.15	-.16	-.27	.38	.896	-29.8	3.92						
	56 SRB	43,300	1.72	4.70 N	242.6	1	-.11	.083	.11	.27	-.087	.20	-.12	.092	-.13	.30	-.501	13.1	4.14	.93	.66	.44	2.77	.161	51.0
						2	.14	-.122	-.13	-.34	.14	-.19	.15	.096	.12	-.16	.448	-20.6	-2.72						
						3	.12	.098	.084	.27	-.17	-.14	.093	-.11	-.12	.16	.533	-18.9	2.62						
	80 SRB	31,000	1.53	.06 N	245.2	1	-.094	.064	.059	.36	-.11	-.094	-.18	-.29	-.25	-.27	.640	26.9	4.80	1.25	.89	.59	2.95	.140	48.0
						2	.098	-.093	.067	-.29	-.12	-.094	.17	.21	.27	.33	.533	-46.5	5.23						
						3	.11	-.069	-.081	.25	.11	.10	.20	-.24	.28	.33	-.619	27.0	4.36						
	57 SRB	43,160	1.70	5.23 N	244.0	1	-.10	.078	.097	.24	.10	-.17	-.11	.096	-.102	-.13	.363	11.6	3.49	.90	.66	.41	1.94	.150	54.3
						2	.12	-.098	-.10	-.29	-.17	.21	.10	-.11	.102	.23	-.440	-21.2	-1.82						
						3	-.11	.093	-.077	-.24	.18	.14	-.11	-.087	-.085	-.13	.395	21.1	2.62						

TABLE VIII (CONT.)

Date	Mission No.	Altitude msl ft.	Mach No.	Lateral Dist. Naut. mi.	Mag. Hdg. deg.	Reading Point	Peak Amplitude: Accelerometer Channels g's 301	302	303	304	305	306	307	308	309	310	311	Strain Gage μ, in./in. 312	313	Δp_I lb/ft 405	407	409	Δp_O Avg. lb/ft^2	Δt Avg. sec.	Vert. Wave Angle deg.
6-9-66	41 SA	42,920	1.52	4.57 N	240.0	1	-.081	.059	.084	-.37	.15	.19	-.14	.074	-.097	-.13	.405	11.6	1.96	.93	.70	.46	2.28	0.180	60.4
						2	.009	-.069	-.085	.25	-.12	-.18	.12	-.087	.11	.15	-.416	-20.1	-1.59						
						3	-.054	.049	.059	-.25	-.15	-.16	-.11	-.13	-.097	.089	-.331	24.7	2.18						
	73 SA	31,720	1.50	.49 S	243.4	1	.13	-.12	-.11	.32	-.14	-.24	.20	-.26	.31	-.24	.672	-49.9	5.45	1.31	.98	.67	3.03	.155	54.4
						2	-.12	.108	.11	.38	-.19	.21	-.18	-.25	-.25	.38	-.661	40.0	5.07						
						3	.11	-.113	-.14	-.32	.20	-.27	.17	-.28	.25	.23	.779	-26.4	3.71						
	42 SA	43,060	1.52	4.69 N	241.2	1	.17	.088	.12	.57	-.24	-.24	-.24	.35	-.19	-.18	.736	14.5	5.89	.93	.76	.61	2.25	.176	63.6
						2	.16	-.118	-.14	--	-.23	.20	-.18	-.33	-.14	.23	-.875	-18.9	-3.86						
						3	-.18	.088	.088	.48	.23	-.21	-.20	.33	.19	-.17	-.726	21.8	5.45						
	75 SA	31,680	1.55	0	246.5	1	.17	-.132	.14	-.31	-.14	.15	-.17	-.17	.31	-.23	-.811	26.9	5.89	1.25	.89	.67	3.80	.149	48.4
						2	.15	.113	-.14	.44	-.11	-.13	-.13	-.18	.28	.31	.896	-44.2	9.59						
						3	.15	-.142	-.13	-.34	-.10	.14	-.13	-.18	-.28	-.28	-.726	34.9	5.89						
	43 SA	43,000	1.65	4.62 N	243.5	1	.12	.069	.092	.32	.10	-.083	-.18	.27	-.12	-.16	.512	12.3	3.49	.93	.46	.44	2.84	.157	51.6
						2	-.11	-.103	-.11	.30	.11	-.12	.19	.21	.14	.24	-.459	-19.5	-2.27						
						3	.11	.069	-.081	-.35	-.13	.086	-.23	-.21	-.10	-.19	.384	13.8	2.18						
	42 SA	43,300	1.70	4.92 N	244.5	1	.11	-.088	.084	-.29	.057	-.10	.089	-.070	-.060	.14	-.405	10.2	-2.27	.69	.44			.165	
						2	-.11	.059	-.059	.24	-.12	.12	-.092	.074	.089	-.13	-.405	-17.8	2.15						
						3	-.11	-.064	.084	.22	.14	.11	.058	-.061	-.059	.098	.427	16.7	-2.81						
	46 SA	42,900	1.65	4.71 N	246.0	1	-.059	.069	.051	.30	-.065	-.066	.15	.15	.11	.12	.437	19.5							
						2	.059	-.075	-.069	.25	.065	-.072	.14	.15	.10	.17	-.416	23.2	-2.04						
						3	-.074	.059	-.065	-.31	-.087	.075	-.14	.13	-.089	-.11	-.363	-10.3	2.15						
	72 SA	31,320	1.53	.63 N	248.5	1	-.074	.039	-.061	-.18	.11	-.077	.051	-.066	.12	-.13	-.459	-15.9		.18					
						2	.069	-.073	-.057	.18	-.087	.14	-.053	.12	.12	.14	.437	30.5	4.80						
						3	.054	-.069	-.061	-.25	-.057	.10	-.057	-.10	-.11	-.113	-.299	-20.1	7.41						
6-13-66	18 A	37,740	1.64	.09 S	231.0	1	.12	.094	.11	.32	.18	-.14	-.17	-.21	-.20	-.22	.616	19.9	12.8	.99	1.46	2.67	2.82	.160	42.2
						2	-.11	-.11	-.11	-.35	-.16	.15	-.19	.20	.27	.35	-.649	-43.0	-32.0						
						3	-.11	-.094	.11	-.28	.16	.15	.15	.23	-.22	-.26	.649	27.6	19.2						
	18 B	49,600	1.66	.36 S	234.0	1	.093	.084	.084	.25	-.070	.098	-.086	-.10	.21	.28	.418	16.7	-27.9	.85	1.46	2.16	2.07	.196	45.7
						2	-.096	-.089	-.084	-.27	.096	-.082	.077	-.092	-.17	-.19	-.462	-31.4	15.4						
						3	.083	.079	-.080	-.25	.079	-.071	-.086	-.088	.16	.20	.539	24.4	-15.0						
	21 A	37,840	1.69	.21 S	230.0	1	-.10	.11	.12	.39	.141	.17	-.20	-.23	-.23	-.25	.682	19.2	13.5	.93	1.60	2.45	2.86	.146	44.0
						2	.13	-.12	.11	-.39	.164	-.20	.21	-.23	.31	.42	-.704	-44.9	-27.2						
						3	-.12	.094	-.11	-.33	-.130	.15	.24	0.24	-.27	-.30	.649	23.7	16.7						
	21 B	49,160	1.72	.35 S	231.3	1	.088	.070	.084	.25	.073	.086	-.13	-.15	.21	.29	.440	15.4	10.3	.82	1.33	2.03	1.88	.195	42.1
						2	-.091	-.084	-.076	-.28	.073	-.093	-.11	-.15	-.18	-.18	-.462	-29.5	-24.5						
						3	.078	.074	-.080	.25	.096	-.082	.16	.13	.16	.22	.440	23.7	16.0						
	29 A	49,300	1.67	.03 N	232.8	1	.088	.065	.084	.23	.079	.075	-.095	-.11	.15	-.16	.429	14.7	10.3	.99	1.33		1.87	.185	46.6
						2	-.091	-.077	-.097	-.25	-.081	-.082	.120	-.13	-.14	.23	-.385	-25.6	-23.2						
						3	.075	.070	-.084	-.27	.096	.086	-.115	-.12	.13	.19	.429	25.0	16.7						

TABLE VIII (CONT.)

Date	Mission No.	Altitude msl ft.	Mach No.	Lateral Dist. Naut. m.	Mag. Hdg. deg.	Reading Point	Peak Amplitude: Accelerometer Channels g's 301	302	303	304	305	306	307	308	309	310	311	Strain Gage in./in. 312	313	Δp_i lb/ft^2 405	407	409	Δp_o Avg. lb/ft^2	Δt Avg. sec.	Vert. Wave Angle deg.
6-13-60	29 B	36,140	1.67	0.11 S	232.0	1	.13		.114	.28	-.060	.071	-.098	-.13	.24	-.19	.495	19.2	12.8	1.13	1.60	1.78	3.42	.156	45.6
						2	.12		-.114	-.34	-.081	-.088	-.13	-.10	-.19	.28	-.583	-43.0	-28.6						
						3	-.12		-.143	-.27	.068	.075	-.090	-.10	.17	-.23	.627	21.8	16.0						
	32 A	49,820	1.64	.52 N	235.0	1		.070	.081	.22	.085	-.12	-.12	.087	.17	-.16	.451	-14.1	9.62	.78	1.26	1.91	1.95	.182	47.3
						2	-.081	-.071	-.080	-.24	.073	.13	.11	-.10	-.14	.23	.462	27.6	-22.5						
						3	.073	.084	.023	-.22	-.087	.11	.11	.078	.16	.18	.429	-19.2	12.2						
	32 B	38,000	1.67	0	233.0	1	.10	.089	.073	.25	.090	-.11	-.15	-.13	-.18	-.21	.605	16.7	10.9	.85	1.46	2.61	2.30	.149	43.4
						2	-.096	-.099	.101	-.32	-.076		.14	.11	.22		.581	-35.1	-13.8						
						3	.083		-		.079	-.593	-.13	-.16		-.22	-.561	18.0	12.2						
6-20-60	46 A	41,300	1.55	2.20 N	232.0	1	-.131	-.163	.025		.130	-.126	-.191	-.157	-.148	-.204	.531	-25.6	9.54	1.14	1.95	2.15	2.67	.179	51.6
						2	.151	.122	-.024	-.330	-.114	.149	-.178	.179	.153	.257	-.499	20.5	-21.8						
						3	.131	-.153	-.023	-.408	-.119	-.144	-.191	-.192	-.169	-.301	-.542	-14.1	13.6						
	79 A	32,100	1.45	1.90 S	232.0	1	.075	-.081	.017	-.395	-.108	-.264	-.178	-.219	-.186	.332	-.867	-46.1	-35.4	1.00	2.08	2.20	2.46	.153	54.1
						2	-.090	.076	.017	.295	-.103	.126	.178	.153	.292	.257	.802	26.2	19.8						
						3	.090	-.071	-.024	-.295	-.018	-.184	-.157	.214	.195	-.213	-.737	-26.9	-19.1						
	53 A	42,700	1.59	5.00 N	232.0	1	-.080	-.092	.012	-.235	-.038	.046	-.034	-.031	.068	-.089	-.325	-16.7	-14.3	.79	1.47	1.64	1.47	.175	53.7
						2	.085	.066	-.013	.200	-.043	-.040	.030	.039	-.059	.093	.271	15.4	6.81						
						3	-.085	-.066	-.010	-.191	-.043	.057	-.034	-.035	.059	-.089	-.304	-10.3	-9.54						
	84 A	31,220	1.43	0	235.6	1	-.110	.092	.019	.391	-.087	-.287	-.119	-.179	.267	-.245	-.618	-53.9	-35.4	1.07	2.34	2.61	2.58	.144	49.4
						2	.110	-.122	-.523	-.391	-.108	.138	.136	-.166	-.241	.315	.672	25.6	20.4						
						3	.095	.092	.024	.356	-.092	-.132	.093	.162	.263	.315	.596	-32.1	-17.7						
	54 A	43,000	1.57	4.87 N	230.4	1	.095	-.092	.016	.226	-.076	.086	.038	.048	-.080	.151	.282	-15.4	6.13	.78	1.39	1.53	1.47	.164	55.1
						2	-.101	.076	.012	-.322	.054	-.060	-.042	-.066	.102	-.115	-.369	13.5	-12.3						
						3	.101	.076	-.014	.243	-.070	-.669	-.059	.018	-.068	-.111	.314	-8.98	8.86						
	59 B	43,360	1.41	5.00 N	233.2	1	.161	.143	.025	-.482	.108	-.075	.080	-.122	.131	.253	.781	12.8	-21.8	1.21	2.21	2.15	2.34	.218	68.7
						2	-.151	.117	-.023	.578	-.092	.063	-.072	-.144	.148	-.160	.737	-21.8	10.9						
						3	.156	-.143	.019	.491	-.103	-.080	-.076	-.076	-.161	.231	.759	18.6	-9.54						
	98 B	31,340	1.50	0	233.0	1	.131	-.153	-.025	4.18	.108	-2.87	-.165	-.227	-.297	-.408	.943	23.7	42.2	1.25	2.51	2.69	3.04	.154	50.5
						2	-.121	.122	.027	-.400	-.103	.161	.195	-.236	.372	.505	-.889	-53.2	21.8						
						3	.121	-.127	.023	.400	-.152	-.155	-.186	-.201	-.339	.319	.911	32.1	-21.8						
	90 B	31,800	1.55	.17 S	230.5	1	-.111	.097	.020	.405	-.103	-.287	.216	-.219	.330	-.315	.737	-53.9	-34.5	1.07	2.34	2.61	2.80	.145	52.2
						2	.121	-.122	-.023	-.304	-.119	.247	-.178	.188	-.246	.430	-.781	29.5	17.0						
						3	.116	.081	.021	-.404	-.108	-.155	.212	-.214	-.263	.310	.759	-25.6	-21.8						
	85 A	32,320	1.45	4.35 N	231.4	1	--	--	--	--	--	--	--	--	--	--	--	--	--	1.00	2.04	2.25	2.39	.143	60.1
						2	--	--	--	--	--	--	--	--	--	--	--	--	--						
						3	--	--	--	--	--	--	--	--	--	--	--	--	--						
	93 B	32,140	1.55	.17 S	231.4	1	-.141	.102	.026	.400	.173	-.276	-.148	.153	.309	-.248	.813	23.1	-38.2	1.00	2.25	2.56	2.90	.141	52.2
						2	.141	-.143	.026	-.456	.152	.310	-.169	-.175	-.288	.328	-.867	-55.1	16.4						
						3	.136	.122	.024	.426	.168	.247	-.114	.157	.225	.288	.997	26.2	-17.7						

TABLE VIII (CONT.)

Date	Mission No.	Altitude msl ft.	Mach No.	Lateral Dist. Naut. mi.	Mag. Hdg. deg.	Reading Point	Peak Amplitude: Accelerometer Channels g's											Peak Amplitude: Strain Gage μ in./in.		Δp_I lb/ft^2			Δp_O Avg. lb/ft^2	Δt Avg. sec.	Vert. Wave Angle deg.
							301	302	303	304	305	306	307	308	309	310	311	312	313	405	407	409			
6-21-66	89 B	31,760	1.46	.12 N	232.0	1	-.12	.11	.025	.49	-.16	-.26	-.19	.20	-.19	.43	.835	-53.1	-32.7	1.16	1.97	2.71	2.81	.151	49.2
						2	.14	-.15	-.025	-.46	.14	.31	.23	.23	.30	-.28	-.759	27.9	17.7						
						3	.12	-.12	.082	-.43	.13	.23	.20	.20	-.25	.27	.791	-31.3	-17.7						
	58 B	43,600	1.67	5.12 N	232.6	1	.13	.090	.020	.34	.081	-.063	.053	-.12	-.12	-.14	.423	9.54	-12.3	.82	1.15	1.59	1.95	.175	55.3
						2	-.12	-.12	-.017	-.41	.076	.080	-.071	-.078	.14	.22	.390	-16.3	8.86						
						3	-.12	.095	.016	.38	.076	.097	-.057	-.10	-.11	.14	.390	17.7	-7.49						
	99 B	31,700	1.47	.17 N	233.0	1	-.14	.12	.026	.51	.11	-.12	.12	.21	.26	.42	.802	-57.2	16.3	1.25	1.86	2.63	3.22	.148	57.0
						2	.16	-.15	-.026	-.45	.10	-.14	.11	-.15	-.31	-.39	.824	27.2	-35.4						
						3	.13	-.13	-.027	.45	-.096	-.13	.11		-.28	.33	.813	-26.6	-19.8						
	66 B	39,860	1.59	5.00 N	233.0	1	-.071	.055	.014	.17	.038	-.034	-.027	-.052	-.064	.12	.239	-16.3	5.45	.68	1.01	1.43	1.22	.167	59.0
						2	.066	-.060	.010	-.21	-.038	.029	-.035	.11	.081	-.093	-.217	10.2	-10.9						
						3	-.081	.055	.012	-.16	-.038	-.029	.027	-.087	-.059	.084	-.228	-7.49	8.15						
	100 L	31,760	1.46	.14 S	231.8	1	-.10	.085	.021	.27	.065	-.068	-.053	.10	.17	-.25	.520	-51.8	-32.0	1.02	1.64	2.51	3.03	.146	49.2
						2	.096	-.11	.029	-.34	-.065	-.10	.084	-.10	.16	.25	-.531	27.9	15.0						
						3	.081	.080	.025	-.27	-.065	-.080	.057	.10	-.14	.22	.585	-27.9	-20.4						
	68 B	41,080	1.62	4.83 N	232.0	1	.096	.675	.016	.32	-.12	.074	-.071	-.078	-.10	.18	.390	7.49	6.13	.65	.99	1.35	1.51	.167	54.5
						2	-.096	-.095	.013	.29	.11	-.086	.088	.11	.14	-.12	.336	-14.3	-10.2						
						3	.096	.080	-.014	-.30	-.13	-.074	-.084	-.083	.081	.12	.347	12.9	9.54						
	69 B	39,440	1.39	5.00 N	232.8	1	-.096	.065	.020	.25	-.065	-.051	-.049	-.056	.089	-.093	.434	-21.1	6.81	.85	1.42	1.97	1.65	.186	72.0
						2	.11	-.095	-.021	-.43	.087	.057	-.044	.061	-.093	.15	-.347	14.3	-16.3						
						3	-.091	.060	.013	.38	.10	.068	-.044	-.056	-.11	-.10	.347	-12.3	9.54						
	48 A	43,140	1.60	5.00 N	231.6	1	-.081	.070	.017	.24	-.065	-.068	-.053	.052	.072	-.098	.358	-19.8	-14.3	.91	1.29	1.83	1.51	.177	62.8
						2	.11	-.080	-.014	-.39	-.054	.057	-.049	-.074	.089	.11	-.369	12.9	7.49						
						3	.091	.070	.014	.24	.060	-.063	-.049	.074	-.072	-.080	-.336	11.6	-8.18						
	40 A	43,840	1.65	5.40 N	235.0	1	.14	.090	.020	-.43	.054	-.074	.049	.078	.093	-.12	.390	-17.7	6.81	.79	1.21	1.65	1.88	.171	57.1
						2	-.11	-.12	.018	.40	.087	.13	-.049	-.061	-.085	.16	-.390	12.9	-12.9						
						3	.13	.095	-.017	-.34	.087		-.053	-.056	-.085	-.14	.434	-12.3	7.49						
	60 B	43,940	1.64	5.16 N	233.2	1	.12	.075	.018	-.38	.065	.051	.040	-.043	-.072	-.11	-.379	-15.0	5.45	.65	1.04	1.39	1.73	.165	58.9
						2	-.12	-.10	.014	.38	.065	.097	.053	-.039	.089	.14	.358	11.6	-9.54						
						3	.12	.085	.016	-.31	.081	-.051	.040	.043	.076	-.12	-.379	-9.54	8.18						
	61 B	43,260	1.62	4.76 N	232.5	1	-.091	.055	.019	-.32	.12	.15	-.075	.11	.072	-.071	-.401	-21.1	6.81	.91	1.48	2.01	2.49	.181	59.0
						2	.096	-.090	.014	.31	-.098	.086	-.088	-.14	-.064	.11	.293	19.1	-15.7						
						3	.081	.060	-.019	-.32	.15	-.086	-.075	.12	-.081	-.084	-.336	-10.9	12.3						
	101 B	31,700	1.50	0	232.8	1	-.11	.080	--	.30	-.076	.22	-.088	.10	.19	-.20	.520	-50.4	14.3	1.13	1.81	2.63	2.67	.148	52.2
						2	.14	-.11	.030	-.31	.070	-.29	-.10	.087	.18	.23	-.542	25.9	-26.6						
						3	.13	.075	.022	.25	.076	.21	-.093	-.096	-.18	.19	.672	-25.2	-13.6						
	85 A	31,700	1.50	.22 N	233.7	1	-.12	.090	.025	-.30	.065	.063	.084	.083	.19	.35	.520	19.1	13.6	1.08	1.59	1.69	2.84	.146	50.9
						2	.13	-.12	.031	.29	-.076	.091	.088	-.087	.17	.35	-.661	-42.2	-26.6						
						3	.11	.10	.022	.30	.076	-.091	-.097	-.083	-.19	-.27	.661	18.4	-14.3						

TABLE VIII (CONCL.)

Date	Mission No.	Altitude msl ft.	Mach	Lateral Dist. Nautl. mi.	Mag. Hdg. deg.	Reading Point	Peak Amplitude: Accelerometer Channels g's 301	302	303	304	305	306	307	308	309	310	311	Strain Gage μ in./in. 312	313	ΔP_1 lb/ft^2 405	407	409	ΔP_0 Avg lb/ft^2	Δt Avg. sec.	Vert. Wave Angle deg.
6-22-66	28-A	37,000	1.63	.18 N	234.5	1	.13	-.12	-.10	.57	-.12	-.16	.39	-.26	-.20	-.31	.243	-96.7	-38.3	.96	1.78	2.47	2.66	.162	50.5
				—		2	.13	.13	.11	-.38	.14	.15	-.35	.24	.30	.31	-.278	24.0	17.3						
						3	.13	-.12	-.12	.44	-.13	.18	-.37	-.28	-.20	-.28	.278	-61.3	-18.0						
	19 A	37,200	1.44	.13 S	233.5	1	-.011	.075	.092	.22	-.054	.046	.044	-.052	-.093	-.15	.121	-81.7	-25.6	.96	1.48	1.64	2.06	.154	47.7
						2	.071	-.075	.071	-.21	-.043	.050	-.044	.065	.127	.22	-.113	19.6	11.5						
						3	.066	.085	-.075	-.19	.054	-.063	.048	-.048	.093	-.18	.134	-40.9	-12.8						
	6 A	43,560	1.60	1.34 S	259.0	1	.13	.085	-.108	.25	.065	.098	.079	.091	.23	.32	-.325	-91.3	-30.8	.99	1.33	1.25	3.44	.167	50.9
						2	-.14	-.100	.104	.24	.065	-.080	.083	-.10	-.22	-.22	.347	22.9	12.8						
						3	-.13	.085	-.100	.25	.076	.086	.075	-.096	.18	-.23	.247	-57.2	-19.2						
	30 A	37,400	1.65	.20 S	229.8	1	-.081	-.070	.071	.18	-.054	.063	.092	-.087	.089	.13	-.182	-87.2	-28.9	1.10	1.53	1.58	2.04	.163	47.5
						2	.076	.080	.075	-.17	.049	-.075	-.075	-.078	-.127	-.13	.139	19.6	15.4						
						3	.091	-.080	.042	-.25	-.054	.063	.079	.078	.081	-.13	-.191	-54.5	-15.4						
	34 B	43,400	1.61	4.00 S	230.0	1	-.061	.055	.067	.25	-.065	-.052	.066	.065	.085	.15	.117	5.45	5.13	.66	.97	1.36	1.48	.169	56.2
						2	.076	-.070	-.058	.26	.060	.046	-.072	.065	.076	-.11	-.121	-35.4	-11.5						
						3	.071	.055	.054	-.26	-.076	-.057	.061	-.078	.085	.10	-.104	7.63	7.69						
	24 A	45,300	1.60	5.66 S	235.0	1	.066	-.075	.046	-.21	.047	.046	.048	-.052	.068	.089	-.117	7.09	-11.5	.72	1.16	1.60	1.44	--	--
						2	.081	.060	.050	-.22	.043	.057	.053	.052	-.059	-.071	.087	-36.8	6.41						
						3	.066	.060	.050	.21	.043	.040	.048	-.043	-.076	.062	-.087	13.1	-8.34						
	35 A	45,400	1.60	.92 S	225.3	1	.076	.055	.050	-.14	.081	-.075	.026	.035	.055	.098	-.069	5.45	-11.5	.61	.90	1.21	1.18	.165	--
	—					2	-.066	-.060	.042	.11	-.087	.13	-.026	.048	.042	-.075	.069	-32.7	5.77						
						3	.076	.060	.042	-.15	.12	.103	.035	-.043	.051	.098	-.087	9.61	-5.13						
	25 B	45,220	1.59	4.89 S	233.0	1	-.10	.075	.083	.55	.14	.103	-.14	.26	-.18	-.18	.208	7.63	5.13	.77	.99	.97	1.42	.179	56.4
						2	.13	-.100	.083	.39	.13	.103	.27	-.21	.18	.18	-.174	-27.2	-14.1						
						3	.10	.100	.11	-.41	.11	-.103	-.21	-.19	-.13	.22	-.174	15.3	6.41						
	25 B	37,440	1.63	.50 N	232.5	1	-.10	.095	.10	.21	-.043	-.046	.044	-.056	-.17	-.16	-.217	-70.8	-23.1	.93	1.40	1.99	2.37	.157	48.0
						2	.12	-.100	-.083	-.21	.043	-.046	-.044	.048	.17	.23	.226	18.0	12.8						
						3	-.10	.080	-.083	.19	.049	-.057	-.044	-.061	.102	-.23	-.156	-38.1	-14.1						
6-25-66	17 A	37,600	1.64	.39 N	231.5	1	-.093	-.12	.11	.32	-.12	.19	.39	.15	-.14	.34	.499	-163.5	-33.4	1.07	1.47	1.34	2.40	.162	46.1
						2	.098	.11	-.10	-.31	.12	.15	-.25	.27	.17	-.23	.651	24.5	20.5						
						3	-.098	-.11	.097	-.23	-.13	-.16	-.26	-.34	-.19	-.22	.499	-92.6	14.1						
	22 B	43,360	1.67	4.15 S	229.2	1	.13	-.12	.11	.36	-.070	-.055	-.060	.087	-.14	.23	.412	-43.6	6.41	.66	1.04	1.36	1.63	.168	52.8
						2	-.12	.12	-.12	-.36	-.065	.061	.073	-.087	.14	-.19	-.347	12.0	-13.1						
						3	.14	-.10	.10	.29	-.070	-.055	-.077	-.091	-.10	.18	.401	-43.6	8.98						
	31 A	37,480	1.64	.12 N	231.0	1	-.078	.091	.085	.27	.070	.12	.073	-.074	-.15	-.16	.455	14.2	10.9	.85	1.23	1.83	1.98	.155	47.3
						2	.093	-.10	-.085	-.29	-.076	-.10	-.073	.069	.18	.28	-.434	-130.8	-23.2						
						3	-.083	.096	.081	.21	.087	.099	.077	.069	-.16	-.18	.455	-18.0	-14.5						
	33 A	43,200	1.64	5.02 N	231.6	1	.098	.080	.085	.19	.092	.099	-.081		.081	.14	.325	-57.2	-11.6	.66	.89	1.31	1.25	.163	59.0
						2	-.083	-.086	-.077	-.31	.10	.12	.081	.12	.060	-.099	-. 82	10.4	7.05						
						3	.093	.070	.064	-.25	.076	-.083	-.085	.10	.068	-.099	-.314	-43.6	-7.99						
	20 B	37,400	1.65	.10 N	232.6	1	.14	-.11	.11	.44	.087	-.10	.15	-.13	-.20	-.22	.531	15.3	-26.2	.93	1.42	2.01	2.09	.159	47.7
						2	-.14	.11	-.097	-.10	-.10	.099	-.12	.14	.24	.33	-.564	-139.0	12.8						
						3	.12	.11	-.11	-.36	.087	-.10	-.11	-.14	-.18	-.24	.683	18.0	-16.7						
	36 B	37,400	1.66	.25 S	231.0	1	.21	-.16	.17	.55	-.15	.32	.23	-.22	-.25	-.31	-.976	-234.3	15.4	.96	1.70	2.42	5.50	.160	49.4
						2	-.18	.16	.15	-.51	.14	-.37	-.23	.24	.32	.43	1.26	21.8	-34.9						
						3	.19	-.15	-.17	.43	.20	.31	.17	.21	-.27	-.39	.889	-100.9	18.0						
	6X-2	43,520	1.67	1.86 N	158.0	1	-.11	-.080	.085	-.38	-.054	-.033	-.664	.083	-.071	-.11	-.520	-111.7	10.3	.88	1.21	1.17	1.79	.768	--
						2	-.13	.675	-.097	.34	-.070	-.039	.055	-.083	.094	.16	.564	19.6	-20.3						
						3	-.13	.080	.097	-.30	.054	-.038	.060	-.096	-.073	-.14	.499	-57.2	13.5						

TABLE IX

Sonic Boom Induced Acceleration and Strain Responses of Test Structure No. 2 for a Range of F-104 Flight Conditions

Date	Mission No.	Altitude msl ft.	Mach No.	Lateral Dist. Naut. Mi.	Mag. Hdg. deg.	Reading Point	Peak Amplitude: Accelerometer Channels g's											Peak Amplitude: Strain Gage μ, in./in.		ΔP_1 lb/ft^2			ΔP_0 Avg. lb/ft^2	Δt Avg. sec.	Vert. Wave Angle deg.
							301	302	303	304	305	306	307	308	309	310	311	312	313	405	407	409			
6-1-66	14	35,600	1.7	--	--	1	-.071	.050	-.088	.130	.040	.040	-.049	-.039	-.085	.173	.284	10.2	4.77	.47	.62	.31	1.19	.087	--
						2	.097	-.070	.117	.147	-.034	.052	.049	-.044	.110	-.137	.292	-13.6	-4.09						
						3	.066	.055	-.104	.135	-.040	-.040	.049	-.052	.085	.146	.361	- 7.49	--						
6-13-66	26 A	21,200	1.4	.08 N	232.5	1	.073	-.084	-.13	.28	.090	-.13	-.13	.16	.20	.26	-.616	8.98	-9.54	.71	.67	.95	1.87	.074	50.8
						2	-.086	.089	-.13	.28	-.076	-.10	-.15	-.14	-.16	-.21	.704	-13.5	7.69						
						3	.075	-.11	.15	-.29	.079	-.12	.14	.17	.21	-.21	.627	7.69	-8.86						
	26 B	29,660	1.6	.64 S	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6-14-66	26 A	--	--	--	--	1	--	--	.025	.072	.027	.034	.021	.021	.060	.067	--	--	--	.69	.64	1.00	2.08	.072	--
						2	--	--	.025	-.053	.027	-.034	.026	-.017	-.062	-.047	--	--	--						
						3	--	--	.021	.055	-.027	.034	.021	.017	.085	.054	--	--	--						
	26 B	29,920	1.54	.10 S	238.0	1	.079	-.080	-.11	-.18	.055	.045	.051	-.061	.15	.21	-.390	10.3	7.49	2.00	.67	.36	1.56	.079	46.6
						2	.074	.060	.093	-.20	-.065	-.067	.068	.063	-.12	.23	.444	-18.6	-10.3						
						3	.064	-.080	-.085	.22	.055	.045	-.060	-.061	.18	-.19	.433	- 8.98	8.86						
	36 A	--	--	--	--	1	.099	-.10	-.17	.35	.155	-.15	-.18	.23	.22	.32	-.617	8.98	- 9.69	2.07	.67		2.02	.071	--
						2	-.13	.11	.16	-.34	.153	.19	.16	-.24	-.20	-.34	-.661	-16.7	8.17						
						3	.12	-.135	-.15	.41	-.180	.18	.18	.23	.23	.28	.812	- 6.41	-8.48						
	36 B	29,700	1.52	0	232.6	1	-.059	-.060	.080	-.17	.055	.067	.038	-.030	.12	.21	-.379	8.98	-9.69	1.74	.71	-.36	1.52	.079	49.4
						2	.074	.065	-.085	-.18	-.065	.056	-.043	.042	-.087	-.12	.422	-17.3	9.54						
						3	-.074	-.065	.063	.17	.060	-.051	-.043	-.065	.12	.15	.347	- 9.62	-7.87						
	37 A	29,700	1.49	0	231.2	1	-.059	-.075	.088	.22	.095	-.073	.077	.092	.15	.23	.422	8.98	-7.87	1.65	.64	.36	1.39	.079	48.7
						2	.089	.070	-.094	-.21	-.087	.11	-.081	-.096	.17	-.16	.531	-14.7	6.81						
						3	.084	-.090	.109	-.27	.087	-.067	.094	.10	-.13	.19	.487	- 7.05	-8.48						
	37 B	21,080	1.39	.02 S	231.0	1	.089	-.125	-.21	.43	.126	-.24	.24	-.20	-.27	.38	-.823	10.3	-9.08	2.26	.75	.40	2.77	.075	53.2
						2	-.084	.105	.195	.46	.175	.26	.19	.22	.32	-.33	.845	-15.4	8.86						
						3	.094	-.13	-.18	-.39	-.126	-.17	.21	.21	-.32	.38	-.867	- 8.34	-7.87						
6-15-66	1X-A	14,080	1.21	.47 N	236.0	1	-.13	-.15	.037	--	.146	.11	.15	.20	-.22	.42	.832	15.0	9.54	1.26	1.13	1.55	3.75	.079	62.1
						2	.11	.13	.025	--	.134	-.13	-.16	-.17	.21	-.41	-1.13	-27.6	-16.7						
						3	.13	-.14	.029	--	.107	.11	.17	-.18	-.24	.31	1.26	--	12.9						
	1X-B	28,140	1.5	.13 N	233.0	1	-.051	.050	--	.18	.095	-.080	-.089	.083	.11	.25	-.384	8.86	6.13	.50	.65	.95	1.51	.079	48.1
						2	.071	-.067	--	-.20	.095	.068	.081	.10	.12	-.17	.491	-14.1	-7.69						
						3	.071	.060	--	.18	-.054	-.097	.085	.087	.11	.16	.373	--	8.17						
6-15-66	2X A			.66 N	251.0	1	.091	-.072	-	.33	.112	-.091	.081	-.074	.097	.18	-.544	-20.5	-11.5	.70	.87	.87	1.74	.092	63.5
						2	.096	.070	--	.30	-.102	.15	-.11	.078	-.085	-.17	-.533	14.3	8.86						
						3	-.10	.060	--	-.36	.129	.14	-.11	-.091	-.10	.16	.619	-19.2	-12.8						
	2X B	14,080	1.20	.22 N	233.0	1	-.17	-.20	.033	--	.123	-.097	-.16	-.17	.26	.50	--	17.0	10.2	1.26	1.26	1.86	4.36	.079	62.0
						2	.23	.17	--	--	.107	.14	.16	.15	-.30	-.36	--	-30.1	-19.2				--		
						3	-.19	-.13	--	--	-.097	-.11	.16	.17	.28	.34	--	13.6	11.6						
	3X A	29,100	1.58	.17 N	234.0	1	.046	.050	--	.14	.079	.097	.11	.083	.097	.14	.373	8.17	--	.46	.52	.75	1.31	.075	51.5
						2	.046	-.041	--	-.16	.090	-.18	-.13	.083	.11	-.14	.331	-10.3	-6.41						
						3	-.046	.060	--	.16	.101	.12	.14	-.087	.080	.15	-.288	7.49	6.81						

TABLE IX (Cont.)

Date	Mission No.	Altitude msl ft.	Mach No.	Lateral Dist. Naut. Mi.	Mag. Hdg. deg.	Reading Point	Peak Amplitude: Accelerometer Channels g's 301	302	303	304	305	306	307	308	309	310	311	Strain Gage in. in./in. 312	313	ΔP_1 lb/ft^2 405	407	409	ΔP_0 Avg. lb/ft^2	Δt Avg. sec.	Vert. Wave Angle deg.
6-15-66	3X B	14,200	1.15	.18 N	235.0	1	-.096	-.12	--	.36	-.097	-.10	.17	.12	.20	-.23	-.875	14.3	9.54	.91	.95	1.63	2.25	.077	63.5
						2	.11	.099	--	.50	-.081	.097	-.14	.11	-.17	.26	.853	-25.0	-14.7						
						3	.10	-.087	--	.49	-.086	-.091	-.14	-.16	.21	-.27	.747	--	--						
	4X A	14,060	1.26	.16 N	235.0	1	.19	.099	.029	.51	.180	.24	.30	.27	.36	.52	.917	15.0	10.2	.95	1.04	1.59	3.36	.067	55.0
						2	-.14	-.13	-.021	--	.202	-.27	-.26	-.27	-.41	-.43	-1.15	-21.8	-15.4						
						3	.15	-.13	--	--	.208	-.23	.25	.24	.46	.51	.896	--	--						
	4X B	29,880	1.62	.44 S	233.5	1	.14	.099	--	.26	.112	.080	-.085	.13	.25	.40	.704	12.9	8.17	.85	.78	1.03	2.58	.077	45.6
						2	-.091	-.098	--	-.33	.073	-.10	-.10	-.12	-.23	-.30	.811	-21.8	-14.1						
						3	.12	.099	--	.31	-.075	.097	.10	-.16	.22	-.31	.779	--	10.2						
6-16-66	27 A	29,300	1.65	.10 S	230.3	1	.054	-.074	.020	.20	.054	-.093	.11	-.091	-.14	.28	-.416	7.69	-6.06	.62	.55	.81	1.51	.075	43.1
						2	-.098	.079	-.020	-.24	-.054	.14	.12	.17	.18	.22	.512	-12.2	6.81						
						3	.069	-.10	.020	.26	.065	-.087	.11	.18	-.18	-.22	.427	5.13	-5.45						
	27 B	26,540	1.40	.20 S	228.5	1	.064	-.099	.022	.24	-.087	-.12	.13	.13	.18	.30	-.544	7.69	5.45	.65	.72	1.13	1.73	.073	51.1
						2	-.073	.065	-.022	-.21	.092	.13	-.11	.15	-.16	-.24	.704	-13.5	-7.27						
						3	.073	-.11	-.022	.27	.076	-.13	.12	-.13	.16	-.22	.555	-7.69	6.81						
	5X	29,700	1.65	.25 S	344.0	1	.064	-.060	.022	-.18	-.049	.057	-.44	-.10	.26	-.20	-.309	9.62	7.49	.67	.76	.69	1.78	.071	41.8
						2	.069	.060	-.039	.19	.076	.057	.066	-.12	-.28	.20	.437	-20.5	-8.48						
						3	-.064	-.070	.020	-.19	-.054	-.082	-.044	-.11	-.22	.19	-.331	7.69	6.81						
6-22-66	28 B	20,820	1.35	.16 S	233.0	1	.11	-.13	-.18	.64	.16	-.28	.36	.31	.34	.50	.334	12.0	-13.5	.93	.82	1.52	2.60	.078	50.1
						2	-.14	.11	.18	-.56	.15	.33	.31	-.36	-.38	-.39	.351	-49.1	8.98						
						3	.11	-.13	.14	.56	-.16	-.29	.40	.34	.35	.41	.317	-27.2	-10.3						
	19 B	29,500	1.42	.20 S	233.5	1	.086	-.080	.13	.29	.087	.13	.18	.16	.20	.32	.260	8.72	-12.8	.66	.71	1.09	1.87	.088	52.8
						2	.076	.075	-.12	.40	-.10	-.11	.21	.20	-.187	-.35	-.243	-43.6	7.69						
						3	.081	.075	.12	-.41	-.087	.17	-.18	-.17	.271	.44	.256	-25.9	-11.5						
	30 B	29,720	1.39	.16 S	232.5	1	.030	.030	.033	-.13	.033	.040	.035	-.052	.051	-.089	-.069	7.09	-7.70	.52	.54	.62	.99	.092	62.0
						2	-.030	-.030	.038	-.13	-.038	.040	-.035	-.043	.068	.089	.074	-27.2	5.13						
						3	.040	.030	-.033	-.15	-.033	-.040	.035	-.052	.047	-.071	.078	7.63	-7.69						
	34 A	29,600*	1.39		232.8	1	-.051	-.055	.083	-.23	.054	.046	-.044	-.061	-.093	.12	-.113	-35.4	5.13	.49	.56	.92	1.14	.094	--
						2	.056	.050	-.083	.24	-.054	-.075	-.044	.061	.10	-.13	.156	8.72	-11.5						
						3	-.071	.055	.092	-.31	-.054	-.057	-.053	-.065	.102	.13	-.117	8.18	9.62						
	24 B	20,860	1.36	.23 S	231.3	1	.091	-.080	-.096	.49	-.11	.45	.23	.30	-.36	.39	.325	9.81	6.41	.63	.67	1.05	2.10	.078	55.0
						2	-.091	.090	.10	.44	-.13	-.33	-.21	-.28	-.44	-.44	.360	-32.7	-7.69						
						3	.066	-.090	.083	.54	-.14	.44	.26	.28	.34	-.47	.594	10.4	7.69						
	35 B	21,060	1.28	.25 N	225.3	1	.071	-.100	.17	-.42	-.14	-.14	.15	.20	.16	.27	.473	9.27	-8.98	.77	.71	1.09	2.41	.082	59.5
						2	-.071	.105	-.17	.65	.13	.15	-.17	.17	.20	-.24	-.321	-34.1	-8.34						
						3	.071	-.100	.16	-.56	-.17	-.14	.14	-.18	-.16	.30	.325	-19.1	7.69						
	25 A	21,900	1.39	.21 N	233.0	1	-.071	-.090	.092	.25	.065	.069	.070	.069	.15	.34	-.213	8.72	-10.3	.69	.69	.78	1.47	.075	54.4
						2	-.091	.100	-.12	-.26	-.076	-.092	-.061	.069	-.18	-.22	.239	-31.3	6.41						
						3	.076	-.095	.13	.23	-.070	-.080	.061	.074	.17	.28	.191	7.63	-11.5						
	23 A	29,720	1.51	.34 N	237.0	1	.056	.055	-.050	.22	-.035	.057	-.053	-.061	.14	.18	.152	8.72	-11.5	.61	.71	1.05	1.43	.083	--
						2	.061	-.060	.046	-.21	-.049	-.057	-.044	-.056	.17	.22	-.139	-35.4	7.69						
						3	-.051	.070	-.042	.19	.060	.063	.044	.043	.16	-.15	.156	-21.8	-12.8						

TABLE IX (CONT.)

Date	Mission No.	Altitude msl ft.	Mach No.	Lateral Dist. Naut. Mi.	Mag. Hdg. deg.	Reading Point	Peak Amplitude: Accelerometer Channels g's 301	302	303	304	305	306	307	308	309	310	311	Strain Gage μ in./in. 312	313	ΔP_1 lb/ft^2 405	407	409	ΔP_0 Avg. lb/ft^2	Δt Avg. sec.	Vert. Wave Angle deg.
6-15-66	3X B	14,200	1.15	.18 N	235.0	1	-.096	-.12	--	.36	-.097	-.10	.17	.12	.20	-.23	-.875	14.3	9.54	.91	.95	1.63	2.25	.077	63.5
						2	.11	.099	--	.50	-.081	.097	-.14	.11	-.17	.26	.853	-25.0	-14.7						
						3	.10	-.087	--	.49	-.086	-.091	-.14	-.16	.21	-.27	.747	--	--						
	4X A	14,060	1.28	.18 N	235.0	1	.19	.099	.029	.51	.180	.24	.30	.27	.36	.52	.917	15.0	10.2	.95	1.04	1.59	3.36	.067	55.0
						2	-.14	-.13	-.021	--	.202	-.27	-.26	-.27	-.41	-.43	-1.15	-21.8	-15.4						
						3	.15	-.13	--	--	.208	-.23	.25	.24	.46	.51	.896	--	--						
	4X B	29,880	1.62	.44 S	233.5	1	.14	.099	--	.26	.112	.080	-.085	.13	.25	.40	.704	12.9	8.17	.85	.78	1.03	2.58	.077	45.6
						2	-.091	-.098	--	-.33	.073	-.10	-.10	-.12	-.23	-.30	.811	-21.8	-14.1						
						3	.12	.099	--	.31	-.075	.097	.10	-.16	.22	-.31	.779	--	10.2						
6-16-66	27 A	29,300	1.65	.10 S	230.3	1	.054	-.074	.020	.20	.054	-.093	.11	-.091	-.14	.28	-.416	7.69	-6.06	.62	.55	.81	1.51	.075	43.1
						2	-.098	.079	-.020	-.24	-.054	.14	.12	.17	.18	.22	.512	-12.2	6.81						
						3	.069	-.10	.020	.26	.065	-.087	.11	.18	-.18	-.22	.427	5.13	-5.45						
	27 B	20,540	1.40	.26 S	228.5	1	.064	-.099	.022	.24	-.087	-.12	.13	.13	.18	.30	-.544	7.69	5.45	.65	.72	1.13	1.73	.073	51.1
						2	-.073	.065	-.022	-.21	.092	.13	-.11	.15	-.16	-.24	.704	-13.5	-7.27						
						3	.073	-.11	-.022	.27	.076	-.13	.12	-.13	.16	-.22	.555	-7.69	6.81						
	5X	29,700	1.65	.25 S	344.0	1	.064	-.060	.022	-.18	-.049	.057	-.44	-.10	.26	-.20	-.309	9.62	7.49	.67	.76	.69	1.78	.071	41.8
						2	.069	.060	-.039	.19	.076	.057	.066	-.12	-.28	.20	.437	-20.5	-8.48						
						3	-.064	-.070	.020	-.19	-.054	-.082	-.044	-.11	-.22	.19	-.331	7.69	6.81						
6-22-66	28 B	20,820	1.35	.16 S	233.0	1	.11	-.13	-.18	.64	.16	-.28	.36	.31	.34	.50	.334	12.0	-13.5	.93	.82	1.52	2.60	.078	50.1
						2	-.14	.11	.18	-.56	.15	.33	.31	-.36	-.38	-.39	.351	-49.1	8.98						
						3	.11	-.13	.14	.56	-.16	-.29	.40	.34	.35	.41	.317	-27.2	-10.3						
	29 B	29,500	1.42	.20 S	235.5	1	.086	-.080	.13	.29	.087	.13	.18	.16	.20	.32	.260	8.72	-12.8	.66	.71	1.09	1.87	.088	52.8
						2	.076	.075	-.12	.40	-.10	-.11	.21	.20	-.187	-.35	-.243	-43.6	7.69						
						3	.081	.075	.12	-.41	-.087	.17	-.18	-.17	.271	.44	.256	-25.9	-11.5						
	30 B	29,720	1.39	.16 S	232.5	1	.030	.030	.033	-.13	.033	.040	.035	-.052	.051	-.089	-.069	7.09	-7.70	.52	.54	.62	.99	.092	62.0
						2	-.030	-.030	.036	-.13	-.038	.040	-.035	-.043	.068	.089	.074	-27.2	5.13						
						3	.040	.030	-.033	-.15	-.033	-.040	.035	-.052	.047	-.071	.078	7.63	-7.69						
	31 A	29,000*	1.39		232.8	1	-.051	-.055	.083	-.23	.054	.046	-.044	-.061	-.093	.12	-.113	-35.4	5.13	.49	.56	.92	1.14	.094	--
						2	.056	.050	-.083	.24	-.054	-.075	-.044	.061	.10	-.13	.156	8.72	-11.5						
						3	-.071	.055	.092	-.31	-.054	-.057	-.053	-.065	.102	.13	-.117	8.18	9.62						
	24 B	20,860	1.36	.23 S	231.3	1	.091	-.080	-.096	.49	-.11	.45	.23	.30	-.36	.39	.325	9.81	6.41	.63	.67	1.05	2.10	.078	55.0
						2	-.091	.090	.10	.44	-.13	-.33	-.21	-.28	-.44	-.44	.360	-32.7	-7.69						
						3	.066	-.090	.083	.54	-.14	.44	.26	.28	.34	-.47	.594	10.4	7.69						
	35 B	21,060	1.28	.25 N	225.3	1	.071	-.100	.17	-.42	-.14	-.14	.15	.20	.16	.27	.473	9.27	-8.98	.77	.71	1.09	2.41	.082	59.5
						2	-.071	.105	-.17	.65	.13	.15	-.17	.17	.20	-.24	-.321	-34.1	-8.34						
						3	.071	-.100	.16	-.56	-.17	-.14	.14	-.18	-.16	.30	.325	-19.1	7.69						
	25 A	21,900	1.39	.21 N	233.0	1	-.071	-.090	.092	.25	.065	.069	.070	.069	.15	.34	-.213	8.72	-10.3	.69	.69	.78	1.47	.075	54.4
						2	-.091	.100	-.12	-.26	-.076	-.092	-.061	.069	-.18	-.22	.239	-31.3	6.41						
						3	.076	-.095	.13	.23	-.070	-.080	.061	.074	.17	.28	.191	7.63	-11.5						
	23 A	29,720	1.51	.34 N	237.0	1	.056	.055	-.050	.22	-.035	.057	-.053	-.061	.14	.18	.152	8.72	-11.5	.61	.71	1.05	1.43	.083	--
						2	.061	-.060	.046	-.21	-.049	-.057	-.044	-.056	.17	.22	-.139	-35.4	7.69						
						3	-.051	.070	-.042	.19	.060	.063	.044	.043	.16	-.15	.156	-21.8	-12.8						

TABLE IX (Concl.)

Date	Mission No.	Altitude msl ft.	Mach No.	Lateral Dist. Nautical mi.	Mag. Hdg. deg.	Reading Point	Peak Amplitude: Accelerometer Channels g's 301	302	303	304	305	306	307	308	309	310	311	Strain Gage in. in./in. 312	313	Δp_1 lb/ft^2 405	407	409	Δp_o Avg. lb/ft^2	Δt Avg. sec.	Vert. Wave Angle deg.
6-25-60	17 L	21,600	1.40	.46 S	227.5	1	.068	-.091	-.10	-.30	.054	-.088	-.047	.056	.11	.19	.510	8.72	5.77	.71	.61	1.07	1.56	.076	10.
						2	-.083	.080	.10	-.29	-.060	.12	-.047	-.065	-.10	-.10	-.520	-70.8	-12.3						
						3	.073	-.086	.10	.30	-.065	-.088	-.047	-.078	.10	-.10	.542	-46.3	-13.1						
	22 A	29,260	1.40	0	232.0	1	-.068	-.080	-.11	.33	.054	-.11	-.10	-.091	.16	.21	.531	9.27	-11.6	.61	.64	1.03	1.61	.082	51.
						2	.076	.075	.13	-.26	-.054	.083	.12	.087	-.15	-.22	-.466	-70.8	9.62						
						3	-.083	-.070	-.11	.25	-.087	-.083	.098	-.11	.15	.20	.510	8.72	-10.2						
	31 L	21,260	1.39	0	232.0	1	.088	-.10	.12	-.33	-.087	.14	.29	.12	.19	.31	-.585	8.72	-13.1	.71	.59	1.15	2.18	.076	49.6
						2	-.11	.080	-.15	-.40	.076	.13	.27	-.10	-.21	-.25	.607	-70.8	7.69						
						3	.098	-.10	.15	.32	-.081	-.14	-.29	-.13	.18	.25	-.607	-40.9	-12.3						
	35 L	29,840	1.49	.10 S	229.8	1	.11	.091	-.11	.42	.065	.072	-.077	-.074	.20	.33	-.629	9.81	-12.3	.71	.62	1.17	1.82	.084	49.7
						2	-.10	-.11	.16	-.31	-.070	-.10	-.073	.10	-.17	-.29	.629	-79.0	9.62						
						3	.083	.10	-.14	-.27	.070	-.10	-.081	-.096	.26	.41	.651	8.18	10.3						
	20 A	21,520	1.37	.19 S	233.2	1	-.098	-.12	-.16	-.40	.081	.12	-.21	.21	-.25	.33	-.716	9.81	-15.3	.77	.81	1.36	1.86	.079	55.2
						2	.13	.091	.21	-.48	.11	.10	.21	.19	.26	-.32	.856	-76.3	-11.6						
						3	-.11	-.11	-.17	.40	.087	-.12	-.21	-.21	.32	.33	.813	9.81	10.3						
	30 A	20,860	1.39	.37 S	230.2	1	.093	-.11	-.15	.43	-.14	-.15	.18	.16	.27	.41	.781	8.72	7.05	.71	.62	.99	2.09	.079	53.3
						2	-.11	.091	.17	.53	-.12	-.16	-.17	.16	-.23	.32	-.835	-62.7	-10.9						
						3	.14	-.13	-.15	-.44	-.12	-.17	.17	-.16	-.33	-.36	1.15	6.00	-11.6						
	7 A	29,610	1.55	.29 S	257.6	1	-.078	-.060	.073	-.13	-.054	-.061	-.043	.061	.13	.15	-.412	10.4	-18.9	.77	.72	.86	2.03	.081	--
						2	.083	.050	-.081	-.14	.054	.061	-.038	.065	-.090	-.091	.401	-122.6	11.5						
						3	.078	.050	.093	.18	.060	-.055	-.038	-.069	.12	.10	.564	11.4	13.5						

TABLE X

Sonic Boom Induced Acceleration and Strain Responses of Test Structure No. 2 for a Range of XB-70 Flight Conditions

Date	Flight Test No.	Altitude msl ft.	Mach No.	Lateral Dist. Naut. mi	Mag. Hdg. deg.	Reading Point	Peak Amplitude: Accelerometer Channels g's											Strain Gage μ, in./in.		ΔP_1 lb/ft^2			ΔP_0 Avg. lb/ft^2	Δt Avg. sec.	Vert. Wave Angle deg.
							301	302	303	304	305	306	307	308	309	310	311	312	313	405	407	408			
6-4-66	13			2.5 N		1		.115	.146		.104		-.168	.149	.195	.337	.481	23.2	10.2	1.16	1.87	0.86	2.39	.250	42.5
						2		-.156	-.143		-.090		.212	-.197		-.266	--	-31.3	--						
						3		-.143			.102	- 144	-.155	-.140	.161	.199	.537	27.9	--						
6-6-66	22	72,000	2.83	4.10 N		1	- 051	.090	.071	182			-.115	-.091	.123	-.170	.271	12.2	5.22	1.00	1.05	1.11	1.63	.315	--
						2	.096	.095	-.076	-.203				.070	-.144	.228	.304	-16.6	--						
						3	-.071	.085	.076	-.148				-.074	.131	-.183	.271	--	--						
6-8-66	1	21,850	1.38	5.02 S	246.0	1	.142	-.100	.080	.309	-.054	.063	049	.066	.068	-.075	-.542	16.0	9.31	1.25	1.95	.94	2.21	.233	61.8
						2	-.159	090	-.084	.368	.087	-.080	-.053	- 052	-.093	.080	.477	-25.2	6.32						
						3	.152	-.065	-.084	.296	- 098	.080	-.053	.048	-.085	-.089	-.607	29.1	--						

TABLE XI

Engine Noise Induced Acceleration and Strain Responses of Test Structure No. 2 for a Range of KC-135 Flight Conditions

Date	Mission No.	Altitude msl ft.	EPR	Velocity Kts.	Maximum Peak Amplitude: Accelerometer Channels g's											Strain Gage ε, in./in.		OUT-SIDE SPL, dB
					301	302	303	304	305	306	307	308	309	310	311	312	313	205
6-6-66	39B	10,300	1.6	310	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	70B	5,400	1.5	260	--	--	--	.11	--	--	--	.013	--	.013	--	--	--	84.8
	40B	5,400	1.5	280	--	--	--	.013	.016	.011	.019	.013	.013	.016	.027	--	.57	84.8
	71B	3,500	1.5	290	--	--	--	.036	.022	.017	.030	.026	.017	.022	.049	--	.45	102.9
	41B	3,300	1.5	238	--	--	--	.051	.027	.022	.034	.039	.017	.022	.043	--	.80	101.1
	72B	2,800	1.5	290	--	--	--	.085	.041	.044	.059	.054	.032	.042	.11	--	.80	106.9
	43B	14,300	2.35	325	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	74B	8,300	2.35	328	--	--	--	.025	.019	.014	.025	.017	.021	.018	.043	--	.80	105.7
	44B	6,300	2.35	330	--	--	--	.12	.057	.055	.081	.100	.053	.071	.13	--	.90	111.1
	75B	3,300	2.35	213	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	42B	2,800	2.35	213	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	73B	2,520	2.35	213	--	--	--	.070	.046	.030	.530	.054	.030	.060	.076	--	.80	106.9
6-7-66	76B	4,360	2.35	190	.007	--	.008	.20	.054	.10	.092	.16	.075	.012	.16	1.65	1.11	106.9
	45A	3,000	2.35	195	.015	.018	.017	.42	.15	.21	.20	.39	.11	.29	.48	1.65	1.11	114.8
	77A	3,000	2.35	190	.022	.030	.021	.41	.15	.21	.22	.34	.15	.35	.37	1.32	2.00	115.1
	46A	2,620	2.35	190	.015	.030	.021	.50	.19	.14	.29	.22	.13	.20	.22	1.65	1.00	116.2
	48B	3,000	2.35	205	.015	.025	.017	.45	.16	.20	.020	.37	.077	.21	.34	--	1.33	114.8
	79B	2,620	2.35	195	.039	--	.044	--	--	--	--	--	--	--	--	--	3.11	--
	49B	4,300	2.35	195	.024	--	.013	.12	.054	.058	.11	.15	.066	.060	.19	--	1.11	110.4
	80B	3,000	2.35	190	.029	.038	.033	.41	.20	.16	.24	.37	.18	.19	.40	--	1.56	115.6
	50B	6,300	2.35	200	.020	--	.002	.013	.003	.017	.004	.025	.004	.013	.005	--	.67	--
	81B	4,300	2.35	195	.007	--	.008	.12	.049	.066	.12	.11	.042	.11	.097	--	1.00	106.2
6-8-66	43B	14,300	2.35	182	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	75B	6,300	2.35	168	--	--	--	.013	--	--	--	.013	--	.018	--	--	--	101.0
	42B	2,800	1.5	160	--	--	--	.10	.043	.034	.10	.088	.051	.073	.098	--	.67	108.5
	73B	2,552	1.5	175	.020	.023	.019	.19	.10	.11	.19	.25	.14	.16	.26	--	1.33	114.6
	41B	5,300	1.5	157	--	--	--	.015	--	--	--	.013	--	.063	--	--	--	97.7
	72B	2,800	1.5	174	--	--	--	.068	.049	.040	.077	.071	.047	.058	.098	--	.89	107.8
	57RA	3,300	1.5	166	--	--	--	.051	.019	.023	.075	.033	.017	.027	.054	--	.69	100.4
	80RA	2,800	1.5	169	--	--	--	.078	.033	.040	.080	.077	.059	.066	.098	--	.89	106.7
	56RA	5,300	1.5	155	--	--	--	--	--	--	--	--	--	--	--	--	--	97.7
	81RA	3,300	1.5	166	--	--	--	.038	.019	.017	.035	.035	.025	.031	.054	--	.56	102.9
	55RA	10,300	1.5	146	--	--	--	--	--	--	.018	--	.013	--	.033	--	.44	92.5
	86RA	5,300	1.5	176	--	--	--	.013	.014	.023	.018	.040	.013	.009	.027	--	--	96.9

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TABLE XI (Concl.)

Date	Mission No.	Altitude msl ft.	EPR	Velocity Kts.	Maximum Peak Amplitude													OUT-SIDE SPL, dB
					Accelerometer Channels g's											Strain Gage -, in./in.		
					301	302	303	304	305	306	307	308	309	310	311	312	313	205
6-9-66	86A	5,300	1.5	171	--	--	--	.068	.025	.026	.021	.017	.017	.022	--	--	.44	94.1
	55A	10,300	1.5	225	--	--	--	.027	.028	--	.042	.013	.021	.013	.032	--	.65	94.1
	87A	3,300	1.5	190	--	--	--	.040	.028	.023	.030	.039	.030	.031	.053	--	.65	92.8
	56A	5,300	1.5	173	--	--	--	.017	.017	--	.013	.017	.013	.013	.032	--	.87	100.1
	80A	2,800	1.5	173	.001	.010	.013	.085	.028	.040	.047	.083	.038	.076	.085	--	.65	98.8
	57A	3,300	1.5	170	.044	--	.050	.042	.034	.017	.064	.022	.064	.027	.096	--	.87	96.3
	72	2,300	1.5	172	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	41SB	5,300	1.5	152	--	--	--	.021	.017	.017	.013	.017	.013	.013	.032	--	.65	92.8
	73SB	2,550	1.5	178	.015	.024	.017	.18	.073	.092	.14	.14	.076	.13	.21	--	1.31	103.2
	42SB	2,800	1.5	158	.015	.020	.017	.097	.051	.046	.072	.087	.059	.067	.12	--	.76	105.2
	75SB	8,300	2.35	162	--	--	--	.013	.011	--	.013	.013	.013	.013	.021	--	.44	96.3
	43SB	14,300	2.35	135	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	42SB	2,800	1.5	162	.015	--	.029	.085	.045	.032	.055	.044	.047	.045	.12	--	.87	99.5
	46SB	3,300	2.35	172	.020	.034	.025	.49	.25	.22	.29	.48	.19	.28	.53	--	2.18	117.8
	72SB	2,800	1.5	164	--	.015	.017	.085	.051	.046	.068	.066	.038	.051	.096	--	.65	102.8
6-20-66	48B	5,280	1.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	79B	3,300	1.5	190	--	--	--	.035	.033	.017	.047	.017	.025	.018	.054	--	--	122.2
	53B	4,300	2.35	200	--	.015	.002	.14	.070	.029	.11	.11	.068	.075	.14	--	--	131.0
	84B	3,000	2.30	195	.020	.031	.004	.39	.21	.21	.33	.34	.26	.24	.41	--	--	139.2
	54B	3,000	2.30	195	--	.036	.005	.43	.26	.21	.34	.37	.20	.28	.45	1.92	--	137.8
	59A	12,000	2.35	180	--	--	--	.017	.011	.011	.013	.013	.017	.013	--	--	--	115.6
	98A	6,000	2.35	200	--	--	--	.022	.033	.023	.059	.039	.038	.018	.087	--	--	121.0
	60A	6,000	2.35	175	--	--	--	.061	.038	.034	.055	.070	.042	.049	.087	--	--	121.0
	90A	6,000	2.35	175	--	--	--	.035	.038	.029	.047	.044	.051	.035	.043	--	--	129.8
	85B	2,600	2.30	185	.030	.071	.009	--	--	--	--	--	--	--	.71	2.56	2.73	--
	93A	2,600	2.30	195	.040	.056	.010	--	--	--	--	--	--	--	--	2.56	1.36	--
6-21-66	89A	2,500	1.5	220	.010	.023	.031	.17	.15	.18	.25	.59	.15	.18	.32	--	1.36	117.0
	58A	2,800	1.5	205	.010	--	.002	--	.054	.080	.086	.056	.036	.040	.081	7.49	1.02	110.9
	99A	4,300	2.35	194	.008	--	.002	.15	.081	.063	.12	.12	.081	.080	.16	--	1.36	114.6
	66A	2,800	1.5	210	.015	.015	.002	.11	.043	.051	.088	.091	.053	.066	.14	--	1.36	111.5
	100A	3,000	2.35	200	.023	.025	.005	.47	.22	.20	.34	.49	.22	.24	.58	--	1.70	121.0
	68A	8,300	2.35	175	.008	--	.002	--	.008	--	.009	.013	.009	.013	.022	--	1.36	103.0
	69A	4,300	2.35	195	--	.010	--	.12	.054	.046	.071	.10	.030	.075	.049	--	--	112.5
	48B	5,300	1.5	198	--	--	--	.021	.008	.011	.011	.013	.011	.009	.022	--	1.02	99.4
	40B	5,300	1.5	197	--	--	--	--	.011	--	.011	.013	.009	--	.022	--	1.36	103.0
	60A	8,300	2.35	176	--	--	--	.032	.016	.014	.020	.022	.015	.022	.033	--	--	101.4
	61A	4,300	2.35	200	--	--	--	.11	.054	.051	.071	.11	.032	.058	.076	--	--	112.5
	101A	2,600	2.35	175	.043	.055	.010	--	--	--	--	--	--	--	--	2.73	2.38	--
	35B	2,600	2.35	180	.018	.050	.009	--	--	--	--	--	--	--	.87	2.73	1.02	128.5

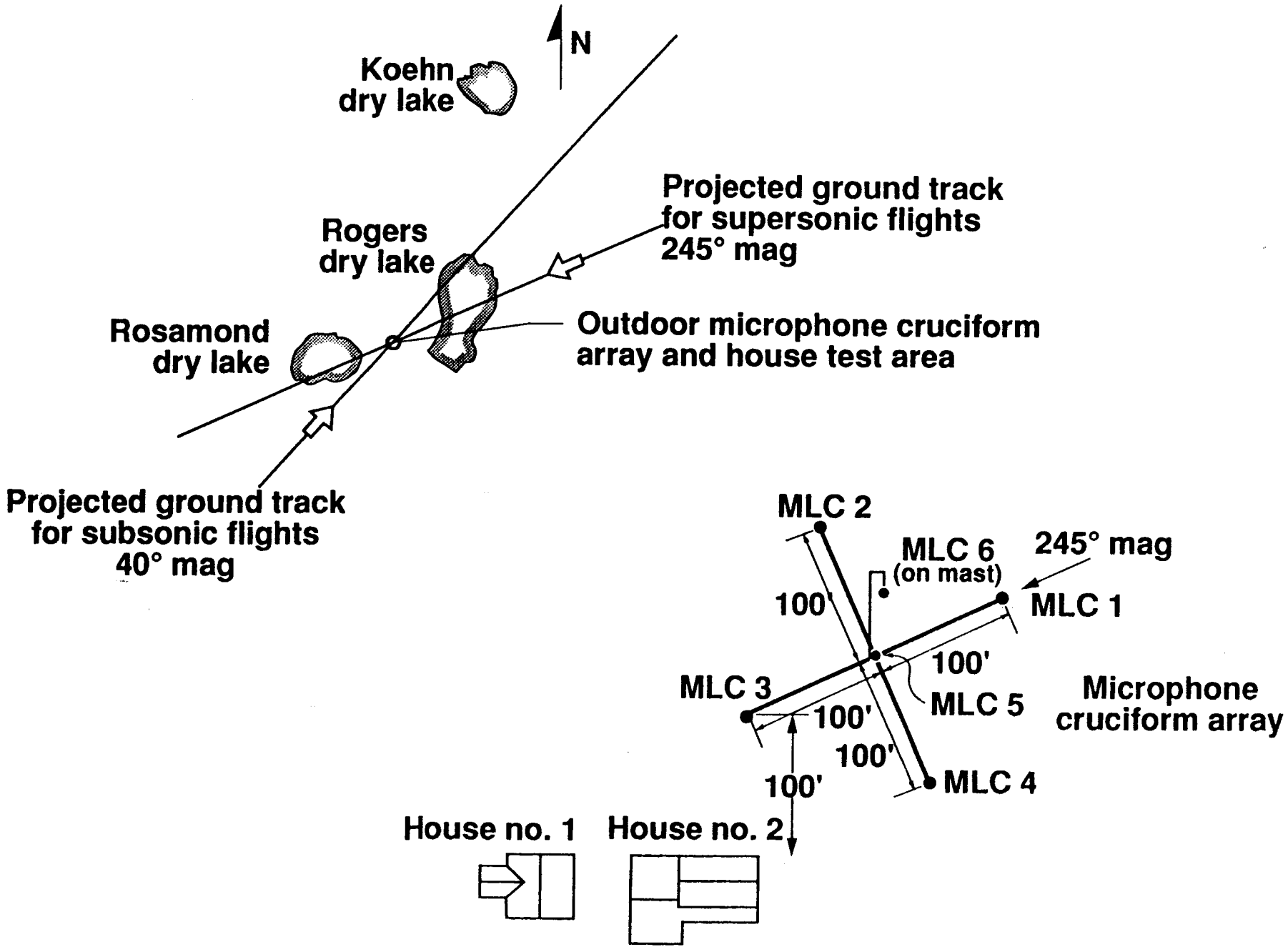


Figure 1. Plan View Sketch of Test Area

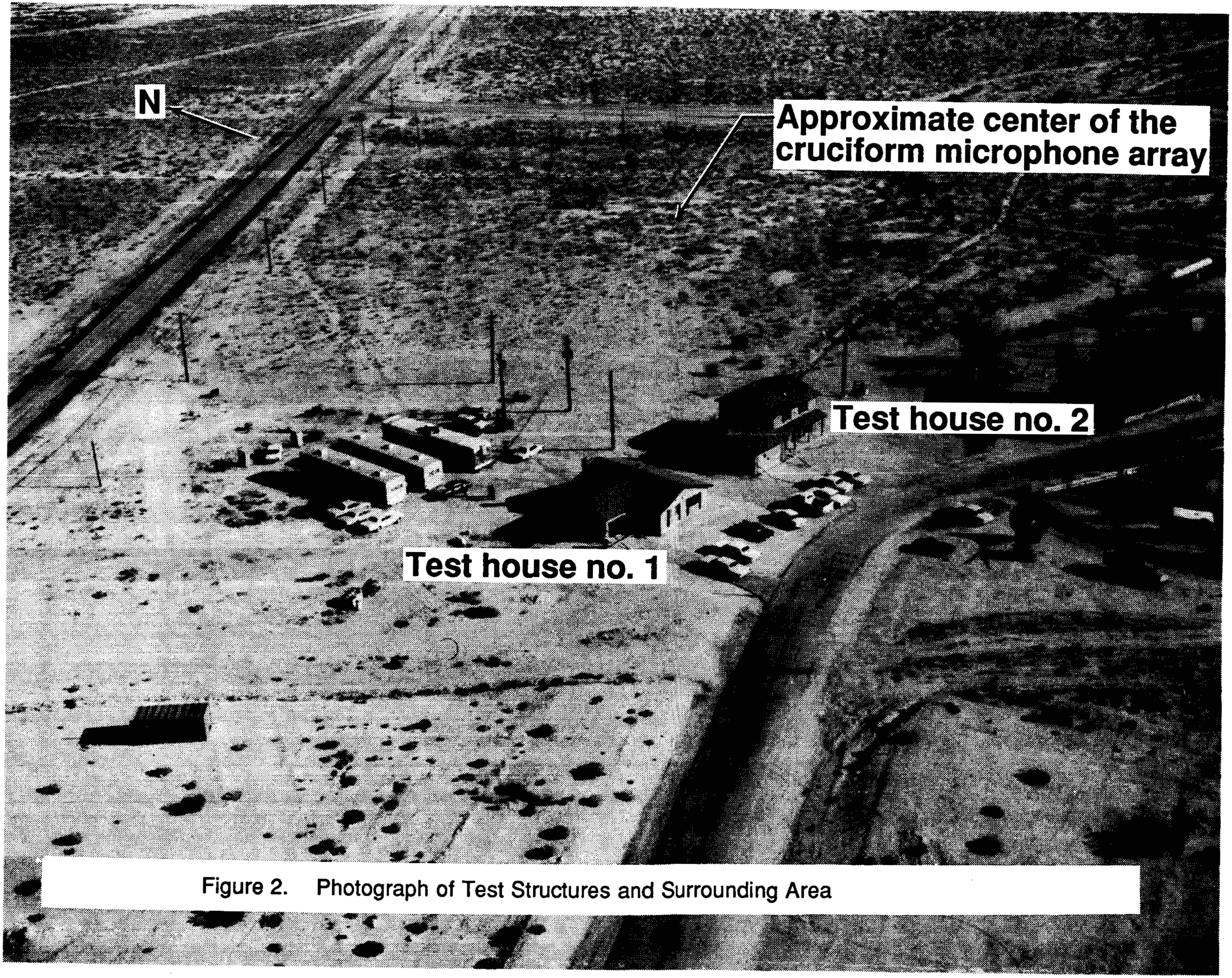
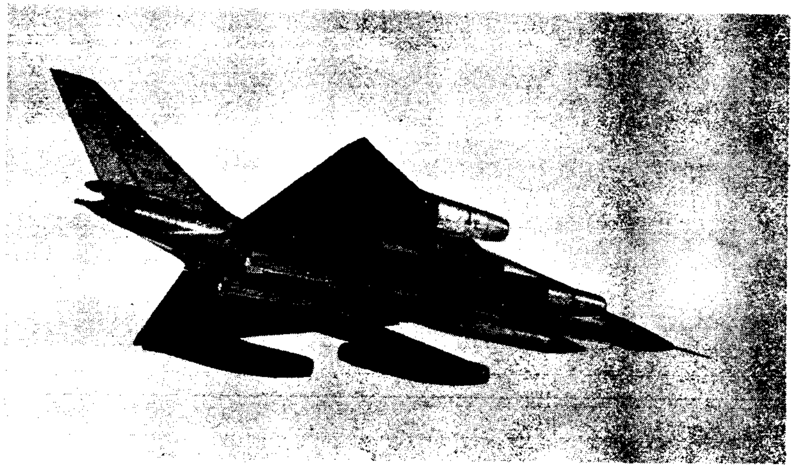


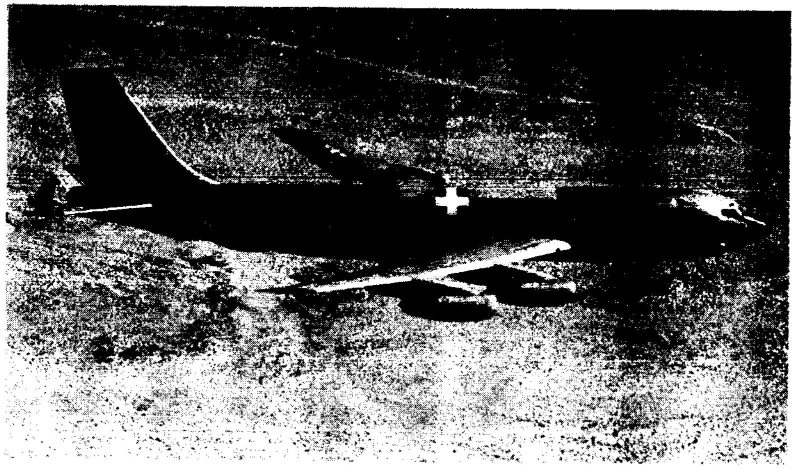
Figure 2. Photograph of Test Structures and Surrounding Area

(a) F-104



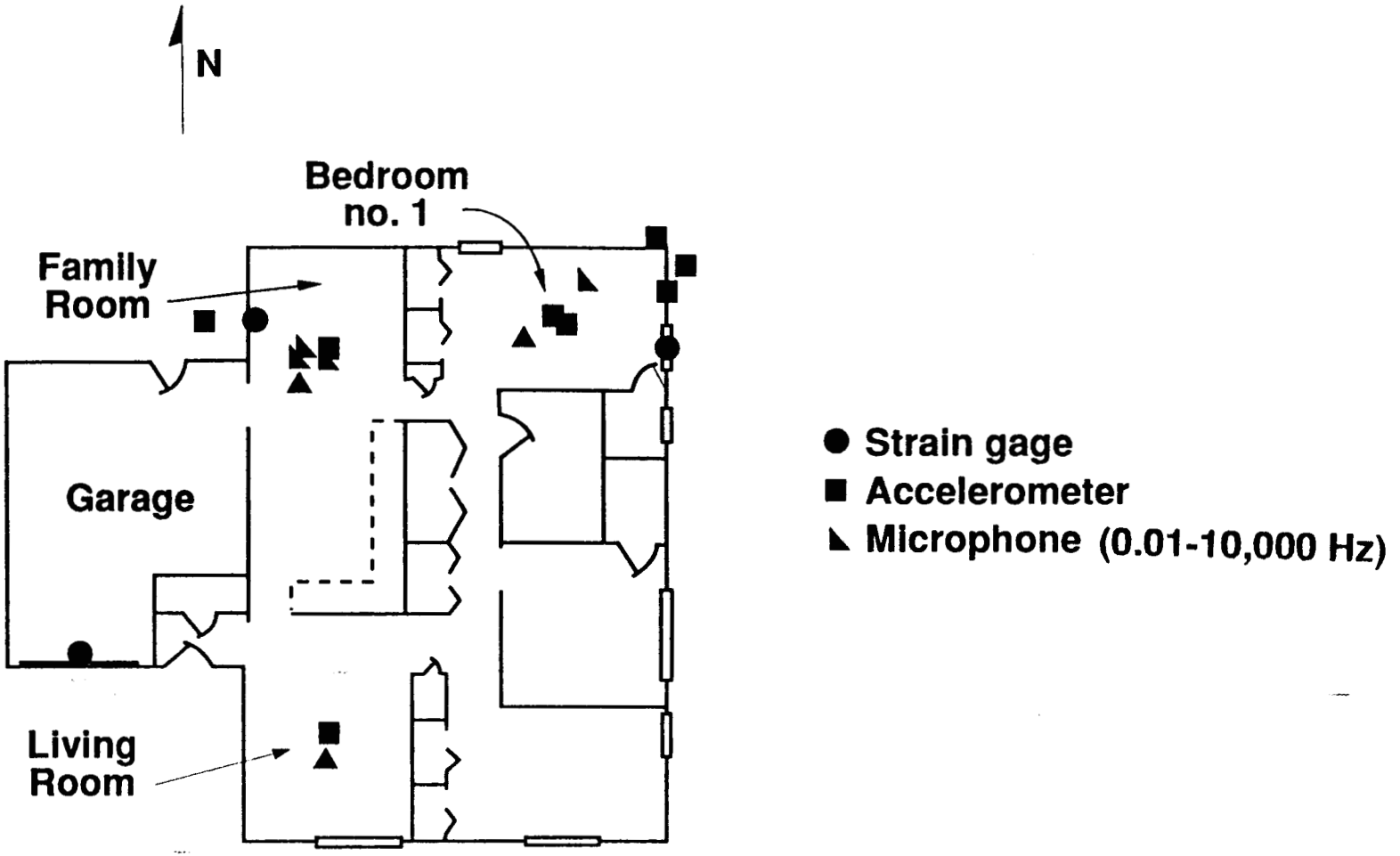
(b) B-58

(c) XB-70



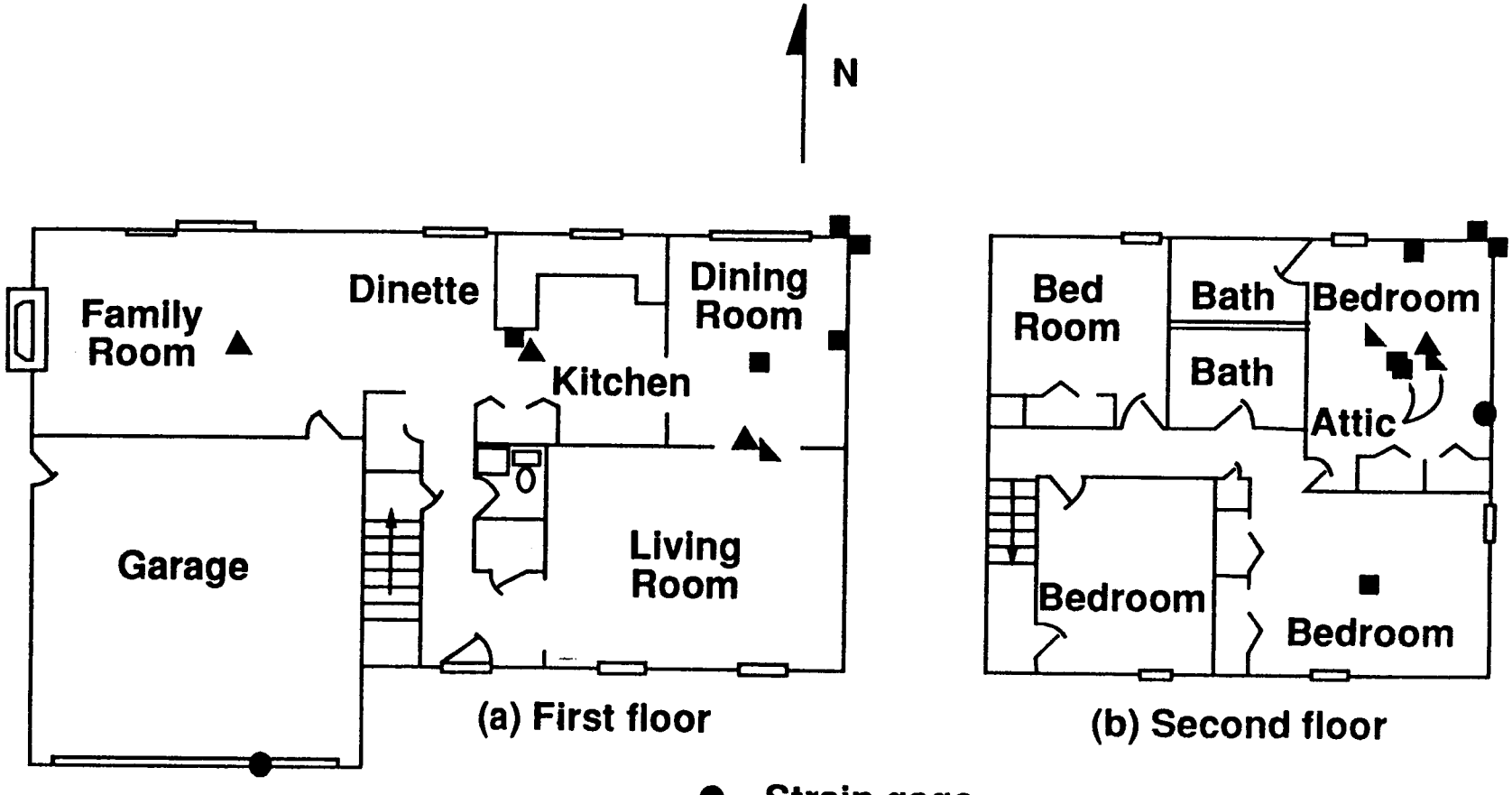
(d) KC-135

Figure 3. Photographs of Test Aircraft



(a) House structure no. 1

Figure 4. Floor Plan sketches of Test Structures Showing Locations of Instrumentation



(b) House structure no. 2

Figure 4. (Concl.)

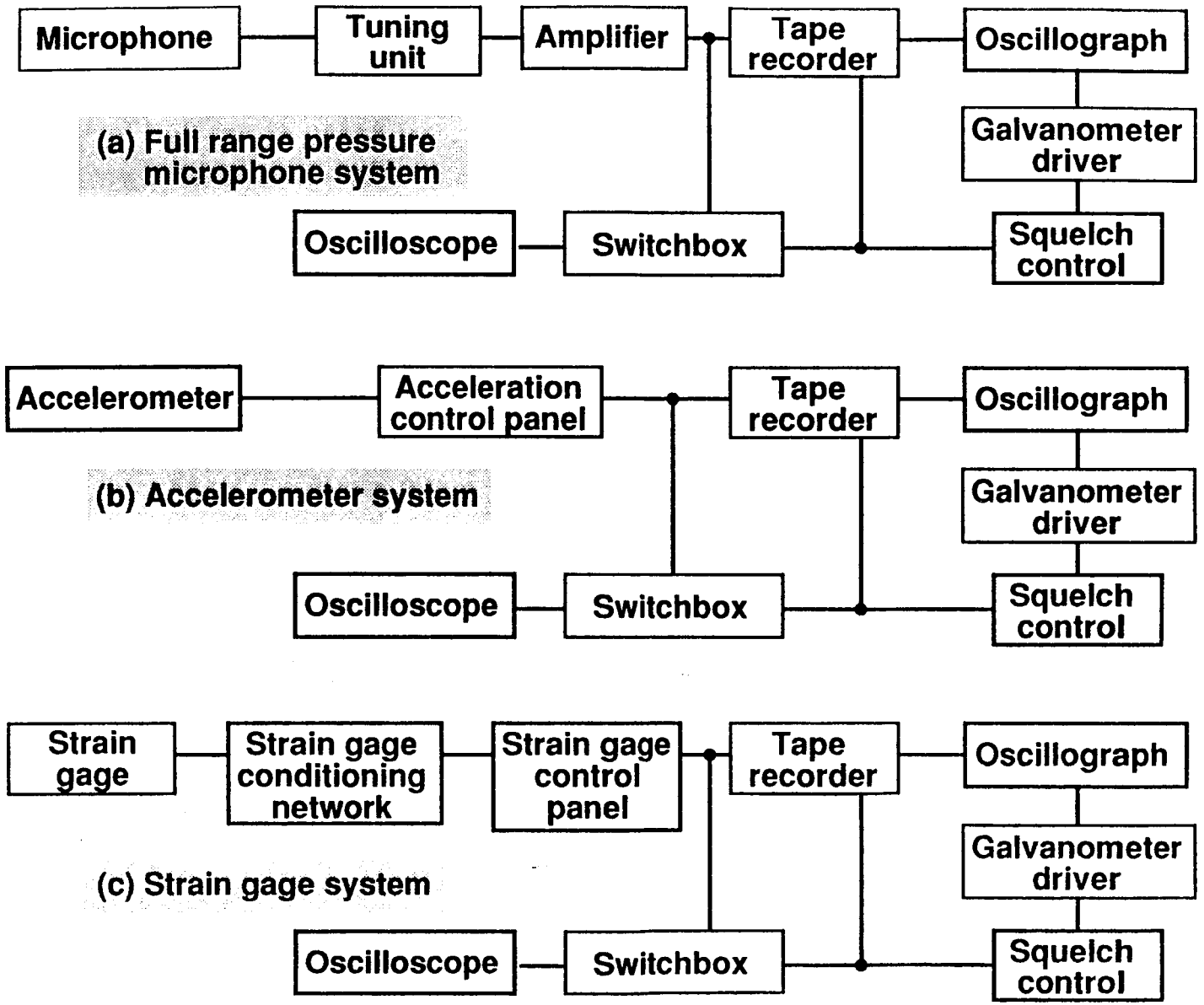


Figure 5. Block Diagrams of Measurement Systems

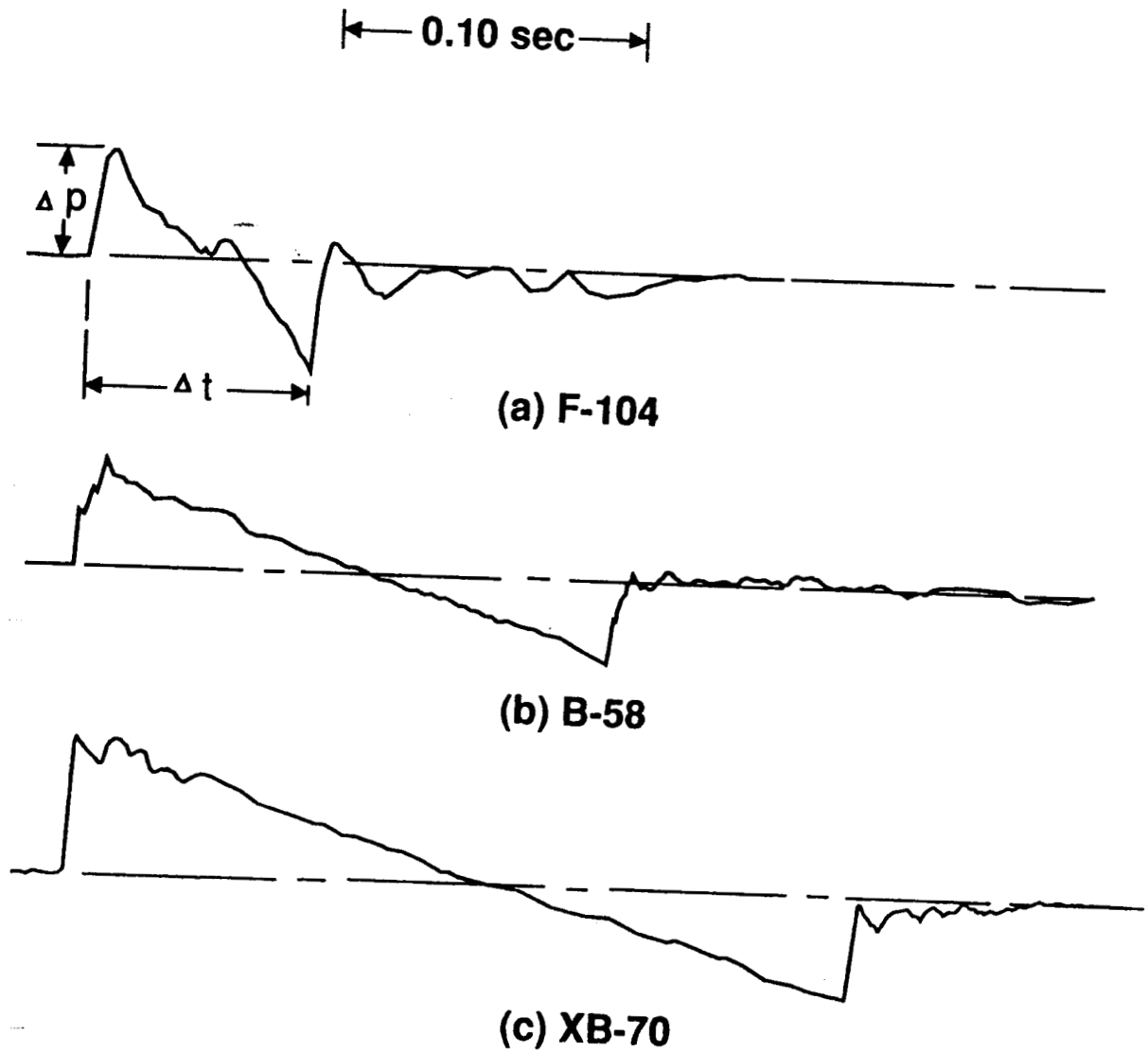


Figure 6. Tracings of sonic boom signatures recorded during supersonic flights of three different aircraft for which structural response data were obtained. Values of Δp and Δt are listed in Tables IV, V, VI, VIII, IX and X for each mission.

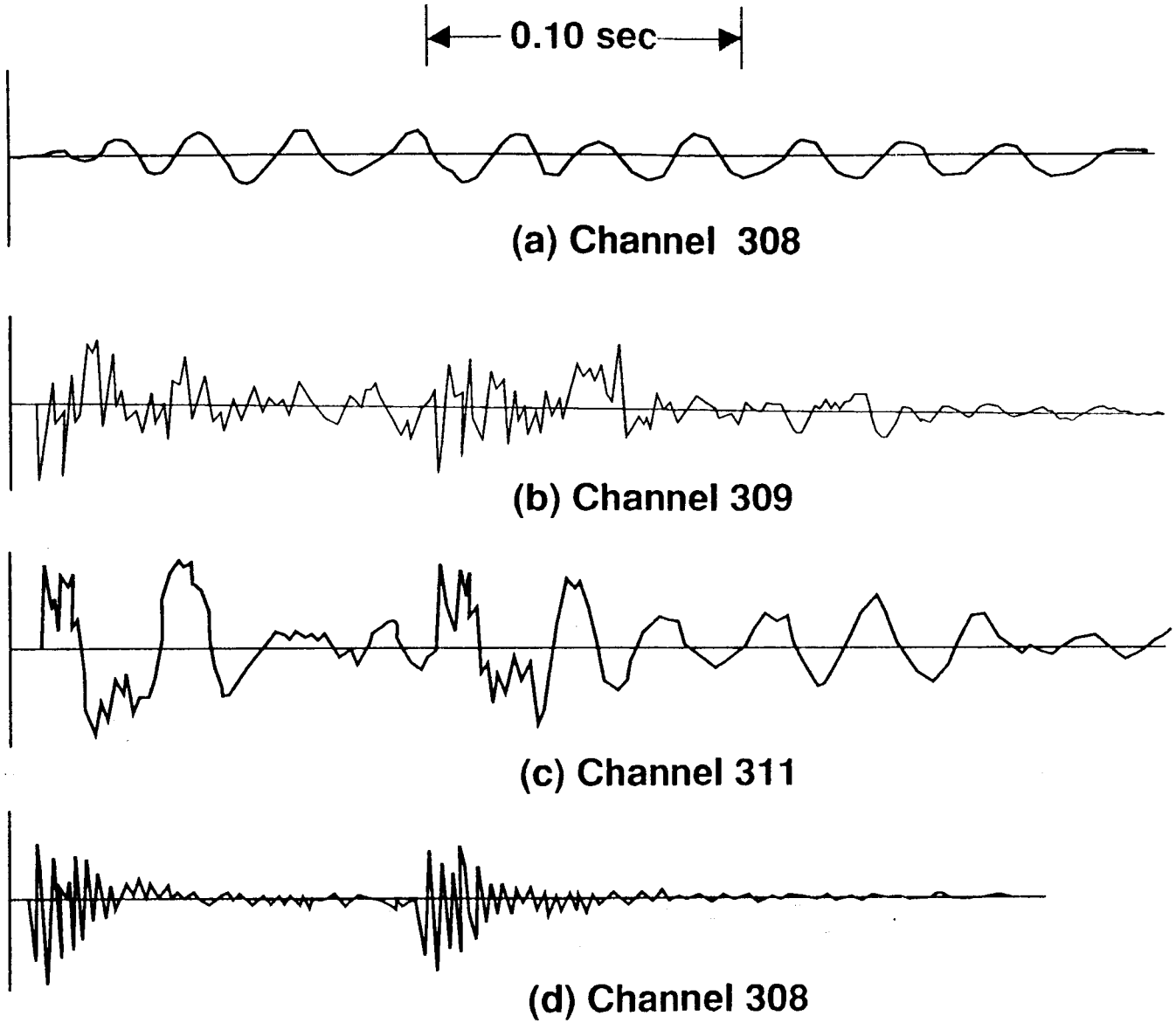


Figure 7. Tracings of Records of Sonic Boom Induced Acceleration Responses for Four Transducer Locations (see Table 2) in House No. 2. Data are for B-58 Mission No. 80-RB.

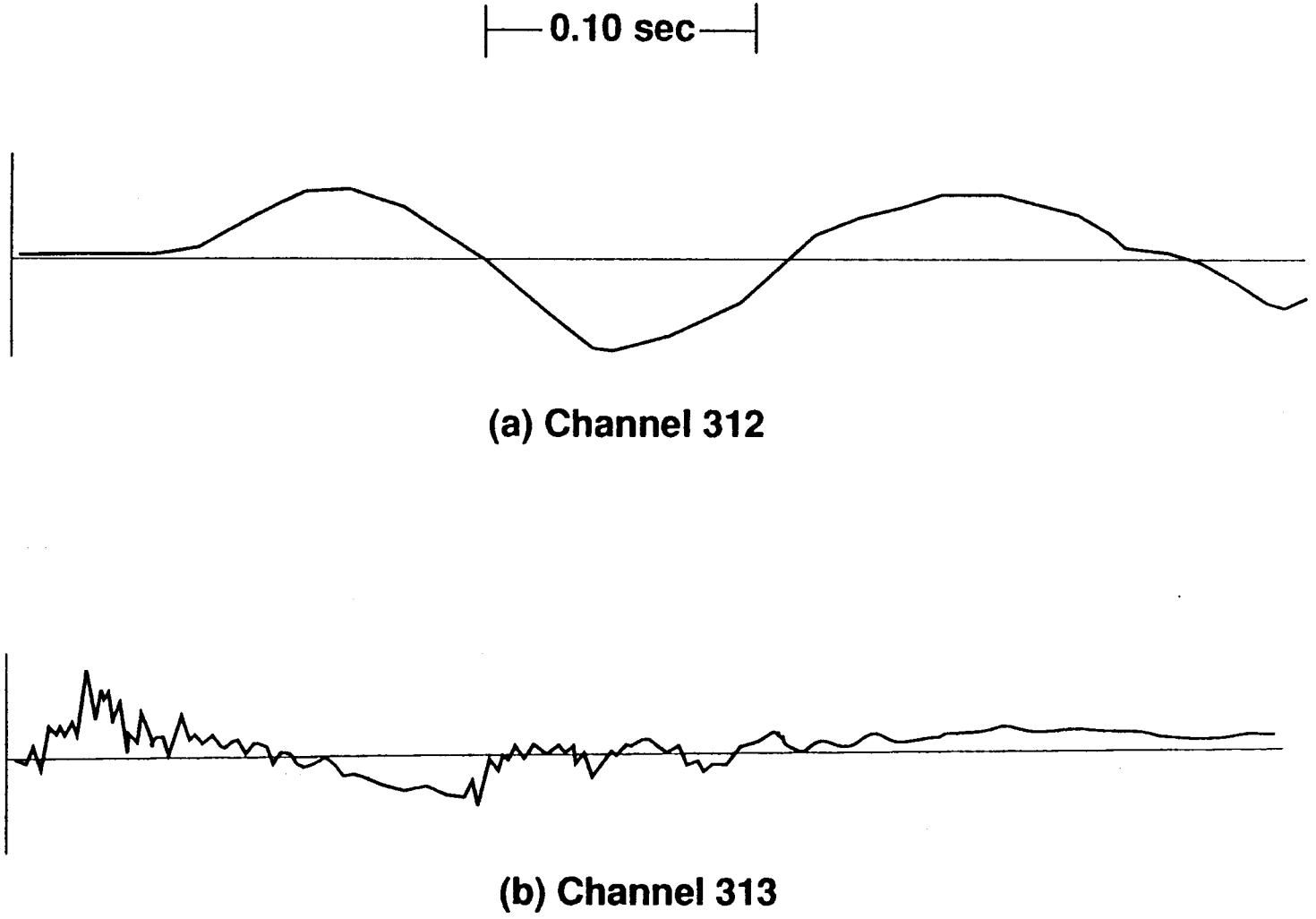


Figure 8. Tracings of Records of Sonic Boom Induced Strain Responses for Two Windows of Different Sizes in House No. 2. Data are for B-58 Mission No. 80-RB.

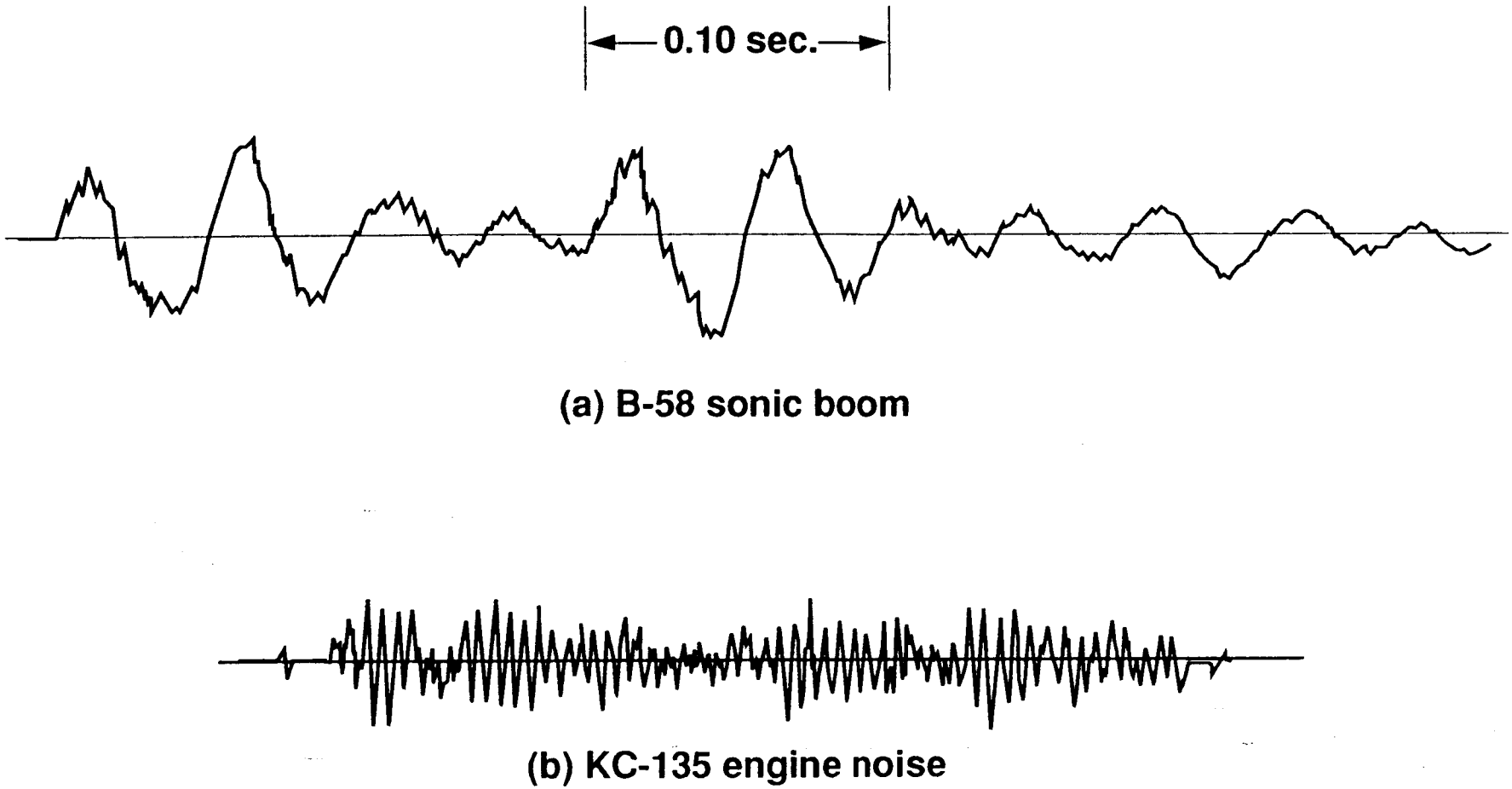


Figure 9. Comparisons of Tracings of Records of Wall Acceleration Responses (Channel 311) Induced by a Sonic Boom and by Engine Noise.

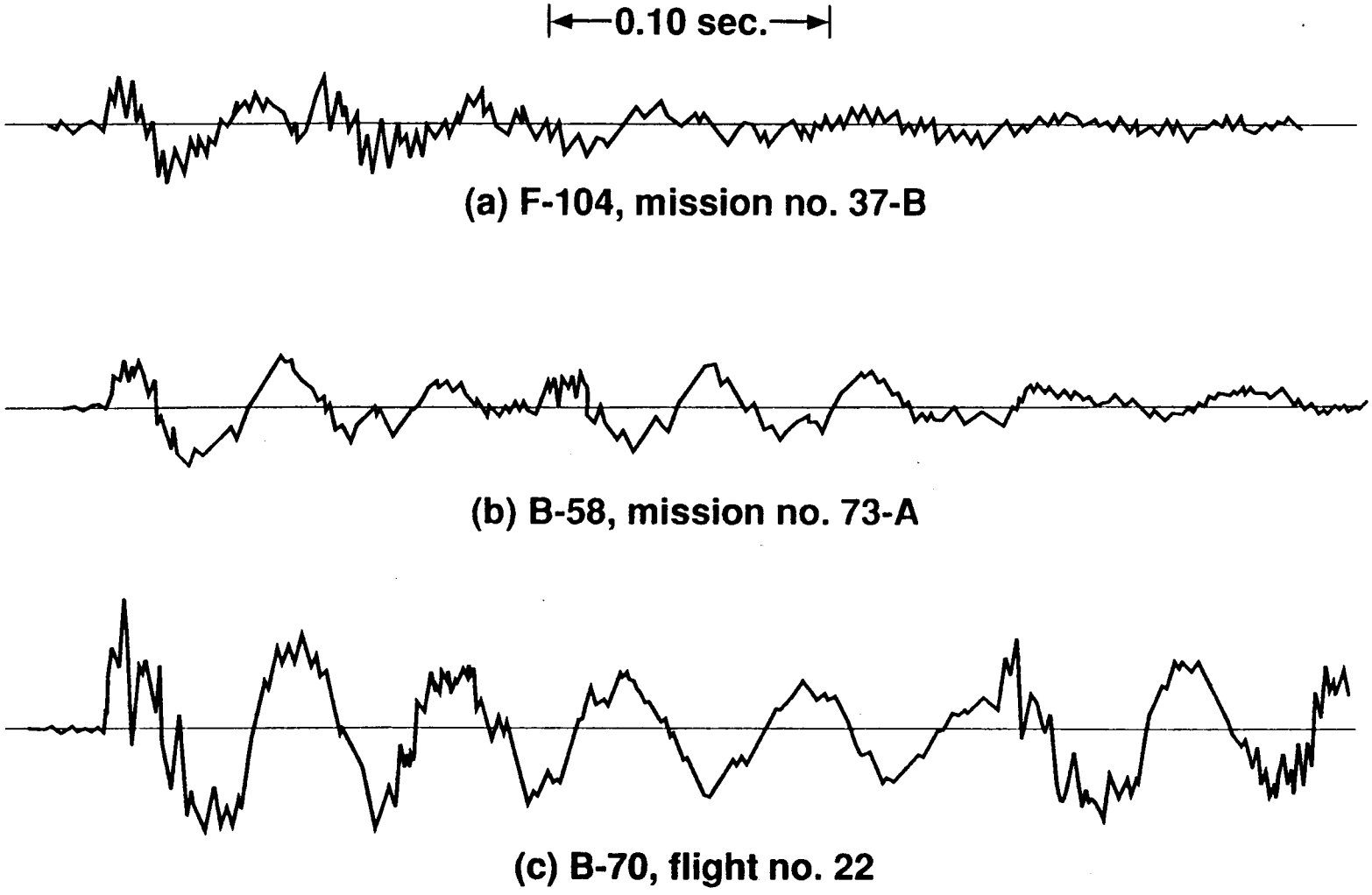


Figure 10. Tracings of Time Histories of Acceleration Responses of the Bedroom East Wall of House No. 1 (Channel 111) Due to Excitation by Sonic Booms from Three Different Aircraft.

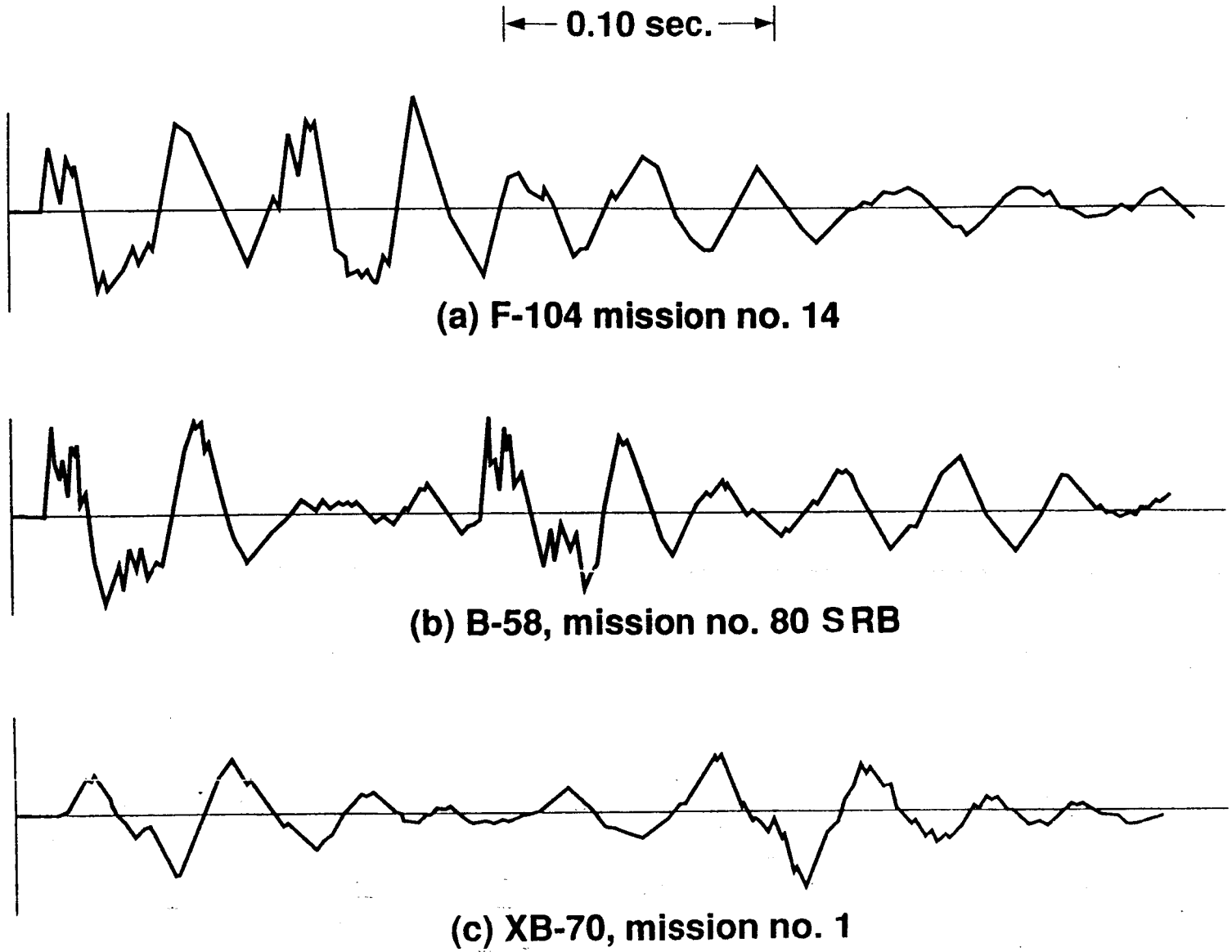


Figure 11. Tracings of Time Histories of Acceleration Responses of the Dining Room East Wall of House No. 2 (Channel 311) Due to excitation by Sonic Booms from three Different Aircraft.

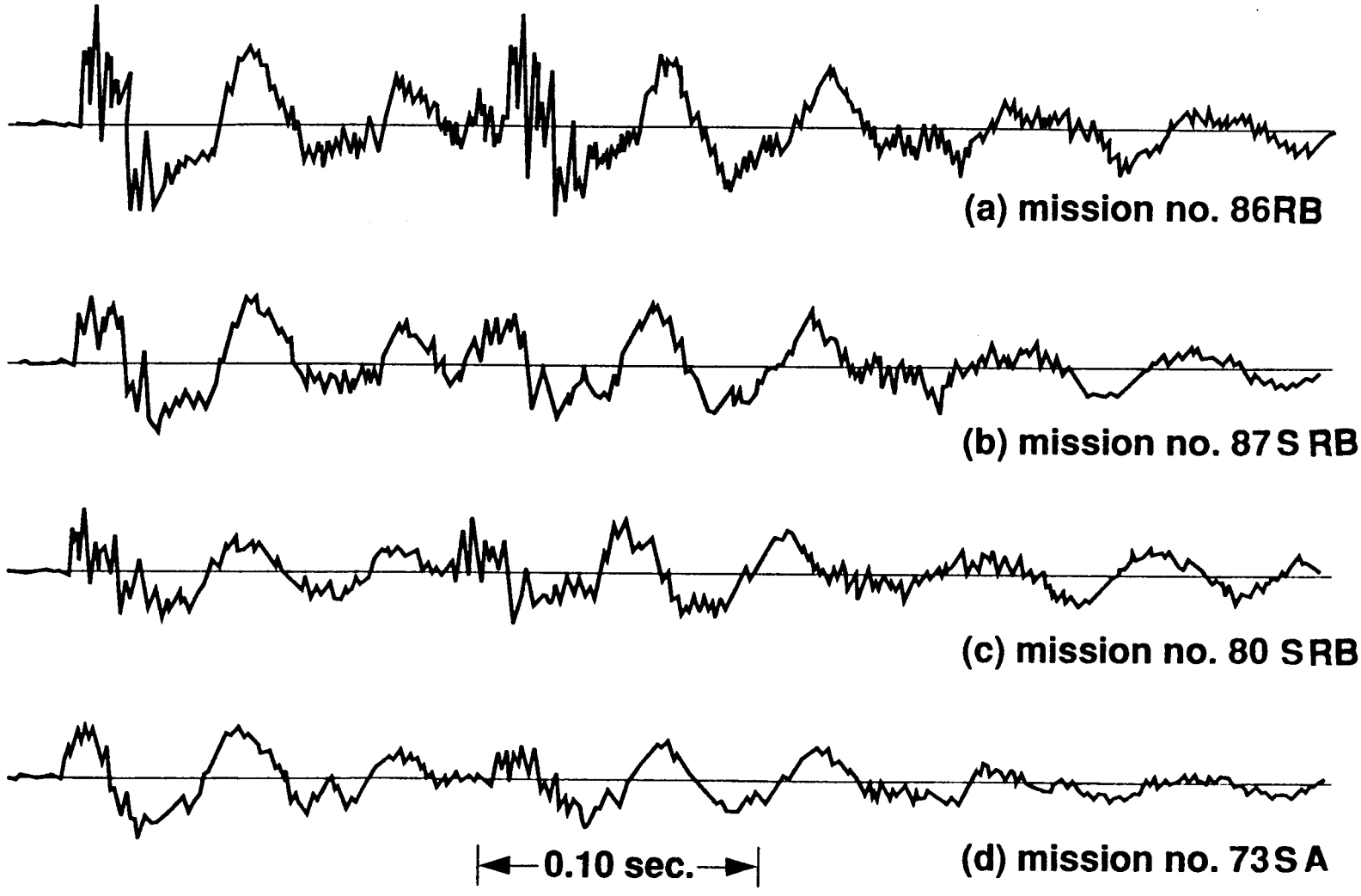


Figure 12. Tracings of Time Histories of Acceleration Responses of the Bedroom East Wall of House No. 1 (Channel 111) Due to Excitation by the Sonic Booms from Four Different B-58 Missions.

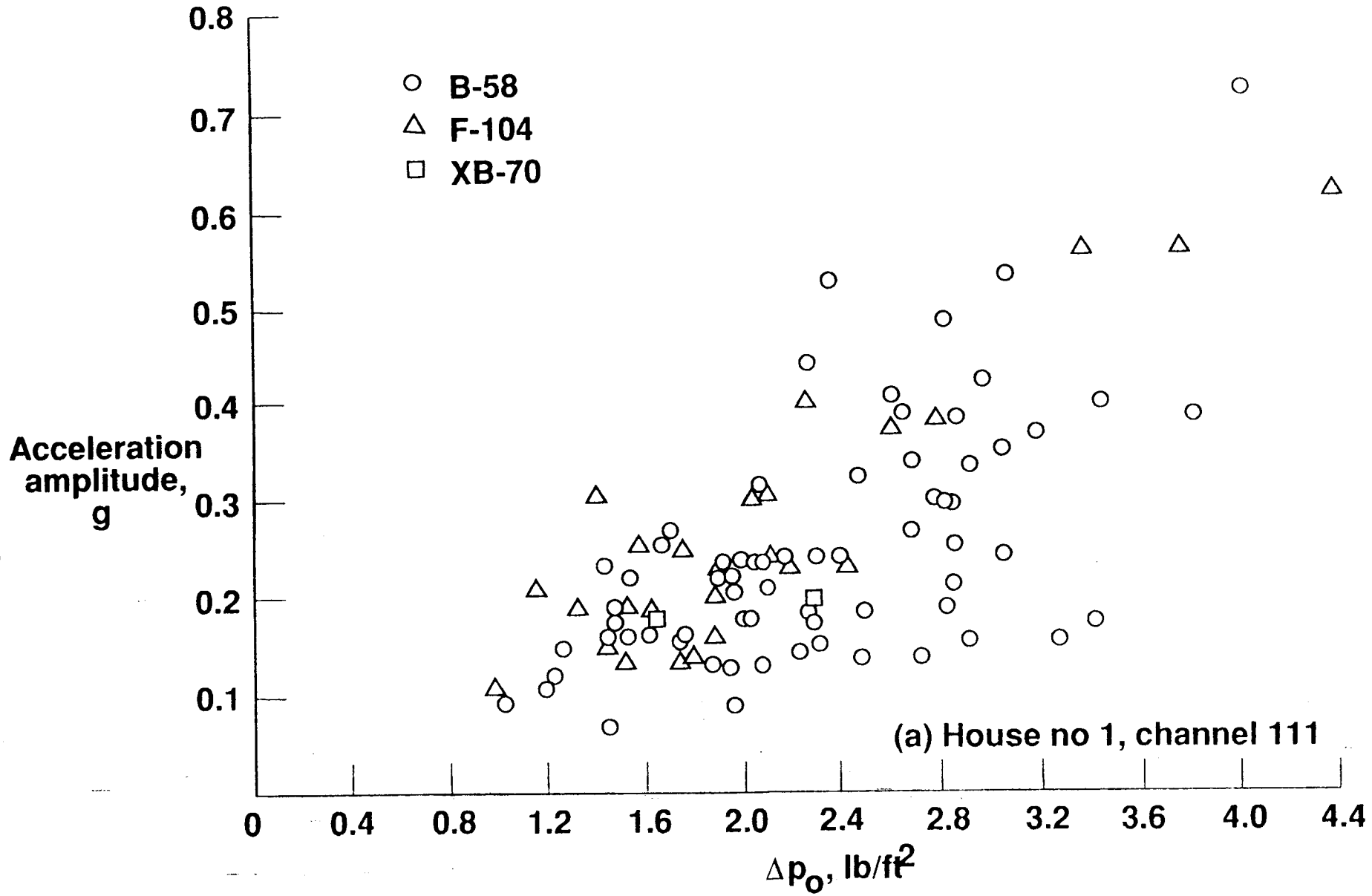


Figure 13. Peak Wall Acceleration Amplitudes as a Function of Sonic Boom Overpressures from Three Different Aircraft.

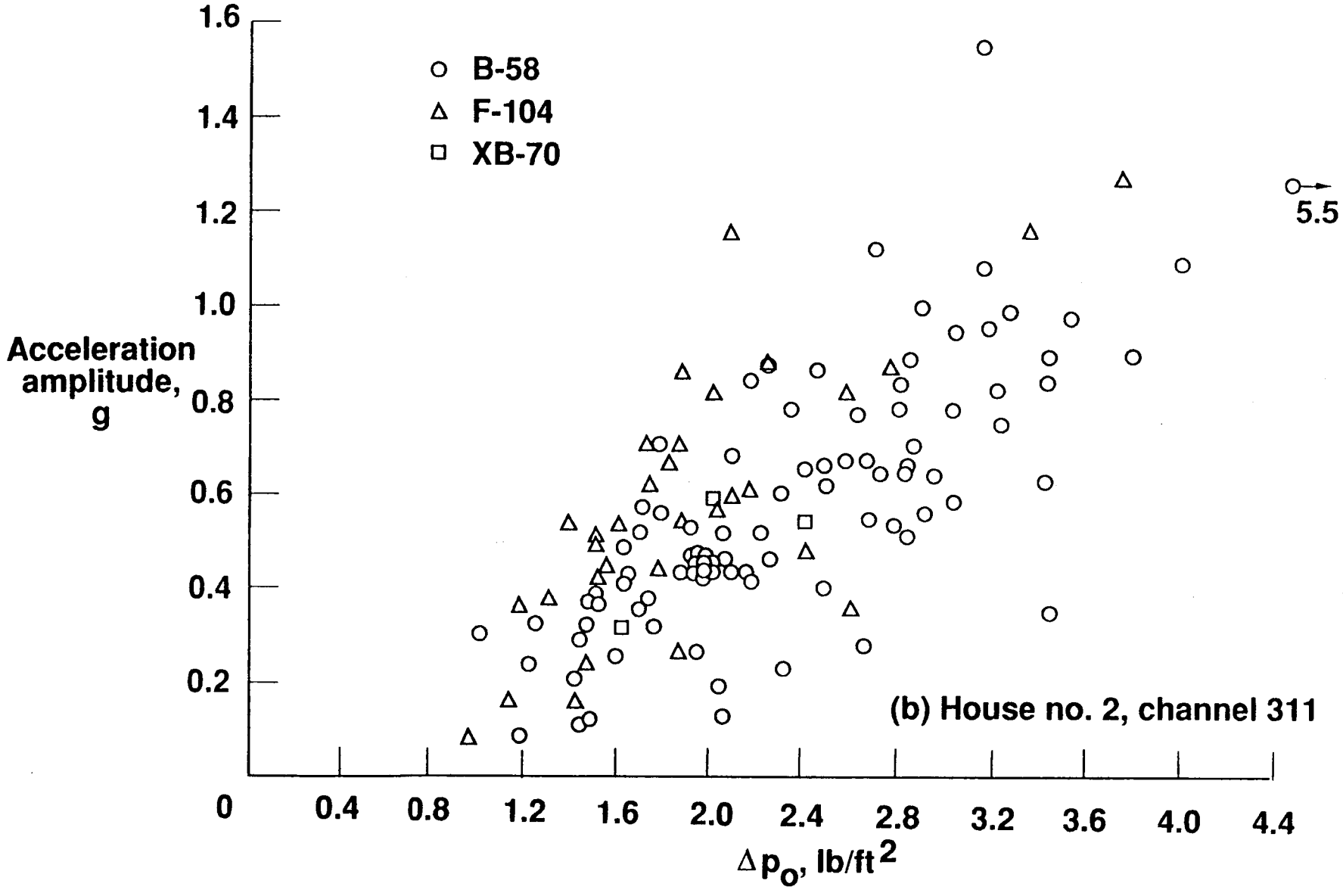


Figure 13. (Concl.)

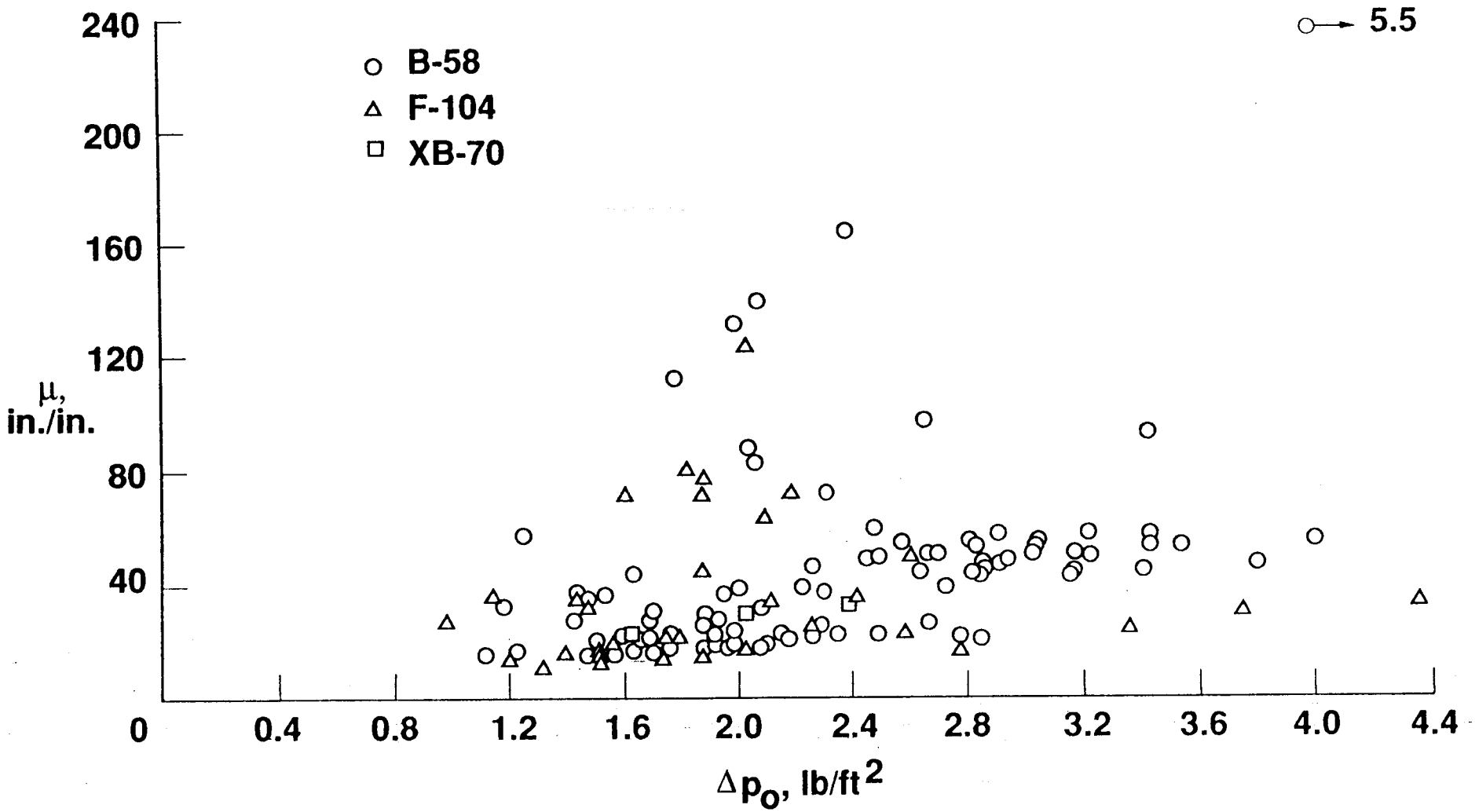


Figure 14. Peak Strain Amplitudes of a Large Plate Glass Window as a Function of Sonic Boom Overpressures from Three Different Aircraft. Data are from Channel 312 in House No. 2.

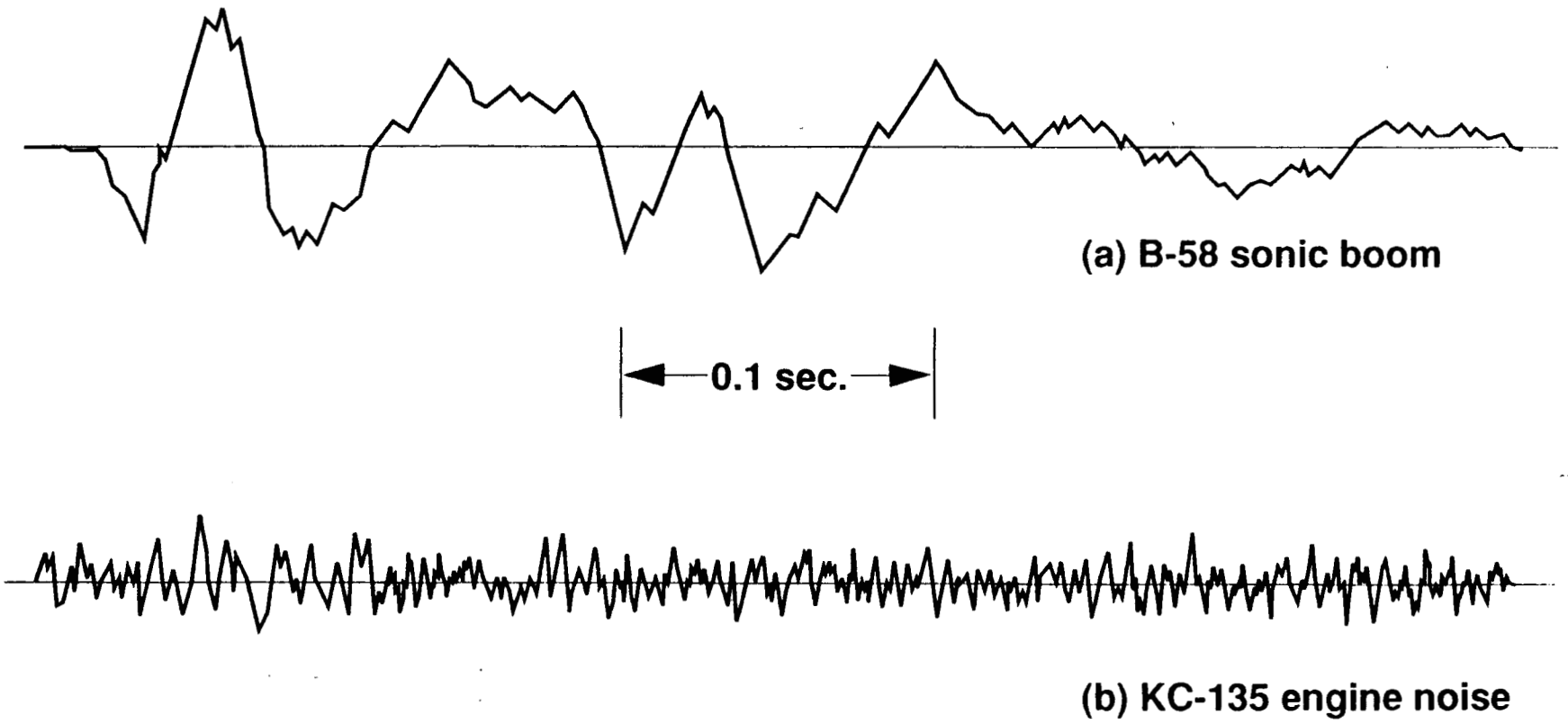


Figure 15. Measured Noise Exposure Time Histories in the Dining Room Area of Test Structure No. 2 for Both Sonic Boom and Engine Noise Exposures.

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16. Abstract

The data of this paper are reproduced from NSBEO-1-67 (Ref. 1), which contains some preliminary results of the test program, and from NASA-Langley working papers 259 and 288 which are now out of print.

Included are sample acceleration and strain recordings from F-104, B-58 and XB-70 sonic boom exposures, along with tabulations of the maximum acceleration and strain values measured for each one of about 130 flight tests. These data are compared with similar measurements for engine noise exposures of the building during simulated landing approaches and takeoffs of KC-135 aircraft.

17. Key Words (Suggested by Author(s))

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