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Whole-body Vibration Assessment of the M9161A1 Truck Trailer

By

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and

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All new tactical vehicles and aircraft are required to be evaluated for potential whole-body vibration (WBV) health hazards to their crewmembers. A health hazard assessment (HHA) was performed on the M916A1 truck tractor by the U.S. Army Aeromedical Research Laboratory, as requested by the U.S. Army Environmental Hygiene Agency. Tests were conducted at Aberdeen Proving Ground, Maryland, over paved surface, cross-country, and Belgian block terrain types. The M916A1 was tested in bobtail (no trailer), unloaded, and loaded configurations for each of the test terrains. The results of these tests show the lowest tolerance levels were experienced on the Belgian block course, with less severe WBV occurring on the cross-country course, followed by the primary terrain course. The results also show the passenger exposure limits were consistently lower than the driver's. Therefore, the HHA recommendation for the M916A1, operating in its intended environment, is that WBV be limited to the following passenger exposure limits for each test condition: WBV is not to exceed 17.1 hours in any

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24-hour period on paved surfaces for all configurations. Exposure limits for the cross-country terrain are 5.5, 5.2, and 6.1 hours in any 24-hour period for the bobtail, unloaded, and loaded configurations, respectively. For the Belgian block terrain, WBV in any 24-hour period should not exceed 1 hour for both bobtail and unloaded conditions and 2 hours for the loaded configuration.

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Introduction

All new tactical vehicles and aircraft are required to be evaluated for potential whole-body vibration (WBV) health hazards to their crew members. This requirement is contained in AR 40-10, "Health Hazard Assessment Program in Support of the Army Material Acquisition Decision Process." In support of this program, the U.S. Army Aeromedical Research Laboratory (USAARL) was requested by the U.S. Army Environmental Hygiene Agency (USAEHA), Aberdeen, Maryland, to perform a health hazard assessment (HHA) on the M916A1 Truck Tractor.

The M916A1 Truck Tractor* (hereafter referred to as "M916A1") is a commercially designed, conventional cab, 6 x 6 truck tractor (Figure 1). The M916A1 is built by Freightliner Corporation, and is designed to replace the M123 Truck Tractor. It is powered by a Cummins* model NTC 400 6-cylinder diesel engine which develops 400 hp at 2100 rpm. The transmission is a Caterpillar semiautomatic gearbox with 16 forward and 2 reverse gears. The M916-series differs from the similar M915-series rear-wheel drive truck tractors by using all-wheel drive with a Oshkosh* F-U29 transfer case. The driver and passenger seats in the M916A1 are gas cylinder, air adjustable suspension buckets. The M916A1 primarily will be used with the M870 40-ton low-bed semitrailer to transport engineer construction equipment on primary, secondary, and off-road conditions.

The methods for measuring and analyzing WBV are found in the International Organization for Standardization's (ISO) guideline entitled "Guide for the Evaluation of Human Exposure to Whole-Body Evaluation (ISO 2631)." ISO 2631 is reflected in MIL-STD-1472D, "Human Engineering Design Criteria for Military Systems, Equipment and Facilities." The relative severity of the processed WBV signatures are interpreted using the risk assessment codes (RAC) found in AR 40-10. These publications, as a set, define the criteria used in evaluating the WBV signatures of the M916A1.

ISO 2631 identifies three criteria for the evaluation of human exposure to WBV which can be described in terms of intensity, frequency, direction, and duration. These criteria are the preservation of comfort, the preservation of working efficiency, and the preservation of health or safety. They are known formally as the reduced comfort boundary (RCB), fatigue-decreased proficiency boundary (FDPB), and the exposure limit (EL), respectively.

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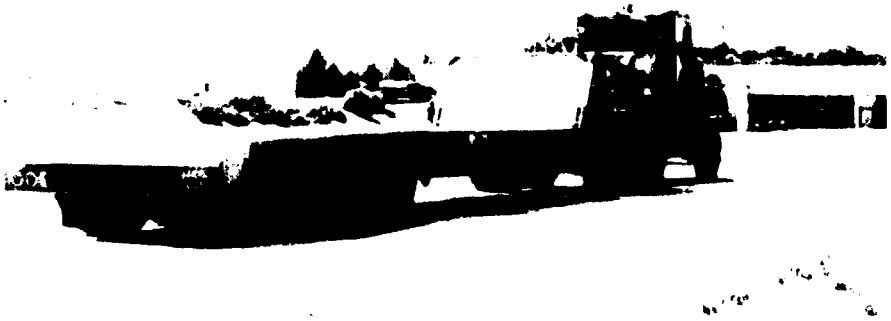
* See list of manufacturers

(a)

(b)



(c)

Figure 1. M916A1 truck tractor configurations: (a) Bobtail, (b) unloaded trailer, (c) loaded trailer.

The RACs, as described in Appendix B of AR 40-10, require the classification of a health hazard according to its severity and probability. Processing vibration signatures using ISO-2631 results in measurements of vibration severity, but does not yield a measure of the probability of occurrence. RACs are obtained by combining vibration severity with the probability that the test condition will occur in a real life scenario. For vibration, RACs would be determined for each vibration amplitude at each direction and frequency.

Methods

Whole-body vibration data for the M916A1 was collected at Aberdeen Proving Ground (APG), Maryland, by the U.S. Army Combat Systems Test Activity (USACSTA) in coordination with the Response and Tolerance Branch, USAARL. A test matrix was developed that represented the planned operating environment of the M916A1 with respect to terrain type, load configuration, and vehicle speed (Table 1).

Table 1.

Test matrix for WBV testing of the M916A1.

	Terrain		
Vehicle speed (m.p.h.)	Paved surface	Cross-country	Belgian block
5			X
6		X	
8		X	
10		X	X
12		X	
15			X
20			X
25	X		
35	X		
45	X		
55	X		

Note: Each configuration shown was tested for the loaded, unloaded, and bobtail load cases.

Experimental conditions

The M916A1 was tested under three terrain conditions: primary, cross-country, and Belgian block. The primary surface was a 3-mile, smooth, level, straight, asphalt test track. The cross-country surface was a rough dirt road with numerous potholes and uneven ruts. It had been use recently for the testing of tracked vehicles. The Belgian block was an oval cobblestone road approximately 1/2-mile long with an irregular pattern of 3-inch crests. These crests were spaced such that there was no correlation between the locations of the crests for the right and left wheel track. All three courses are part of the APG test track facilities. Characterizations of these surfaces are available from APG.

The M916A1 was tested under three load conditions: bobtail, unloaded, and loaded configuration. The bobtail configuration consisted of the tractor without the trailer attached. The unloaded configuration consisted of the tractor with an empty 40-ton M870 low bed semitrailer attached. The loaded configuration consisted of the tractor with the M870 trailer attached and loaded with 80,000 lbs.

Vehicle speeds ranged from 5 to 55 m.p.h. with specific vehicle speed depending on the test terrain, and mirroring likely employment scenarios. On the paved course, the M916A1 was tested at four speeds: 25, 35, 40, and 50 m.p.h. On the cross-country course, it was tested at 6, 8, 10, and 12 m.p.h. And on the Belgian block course it was tested at four speeds: 5, 10, 15, and 20 m.p.h.

The test matrix consisted of combinations of terrain surface, load configuration, and vehicle speed, which resulted in a total of 36 vehicle runs. Seat pad accelerations were collected from the instrumented driver and passenger seat for each of the X- (fore/aft), Y- (left/right), and Z- (up/down) axes. Combinations of vehicle test runs with vibration axes yielded 216 distinct data trials.

The seats in the M916A1 were adjusted so the distance from the floor to the underside of the seat frame was 11 inches. This corresponds to a seat height at approximately one-half the possible seat stroke. The driver was 5'10" tall and weighed 156 lbs. The passenger was 6'3" tall and weighed 192 lbs.

Instrumentation

Seat pad accelerations were obtained in the X-, Y-, and Z-axes for both the driver and passenger seats. Three Endevco* model 2265C-25 accelerometers, in a triaxial arrangement, were

attached to a disk placed between the seat pad and the subject's buttocks. Each of the accelerometers were connected to a signal conditioner which provided excitation, amplification, calibration, and low pass filtering. The accelerometers were low pass filtered at 100 Hz using a six-pole Butterworth* filter. A diagram of the data acquisition system is included as Figure 2.

Filtered acceleration signals from the signal conditioner were connected to an EMR* Model 372-03 pulse code modulation (PCM) encoder. The encoder multiplexed the incoming analog signals which were then sampled at 416.67 Hz per channel. The incoming analog signal was sampled using a sample-and-hold amplifier, digitized using a 10-bit successive approximation analog-to-digital converter, and then converted to a nonreturn-to-zero level (NRZ-L) code for transmission. The encoded PCM data was then input to a Conic* Model CTL 510 transmitter for transmission at 237 MHz to the remote data handling facility. The signal conditioner, encoder, and transmitter were mounted on the back of the M916A1 cab during the entire test.

The transmitted NRZ-L code was received by a Scientific Atlanta* Series 420S receiver and passed into a Loral* Instrumentation ADS-100 system. The input buffer and PCM bit synchronizer modules recovered the serial pulse train from the data link noise and disturbances. The pulse train was recorded on a Honeywell* Model 101 PCM tape recorder along with voice annotation of the

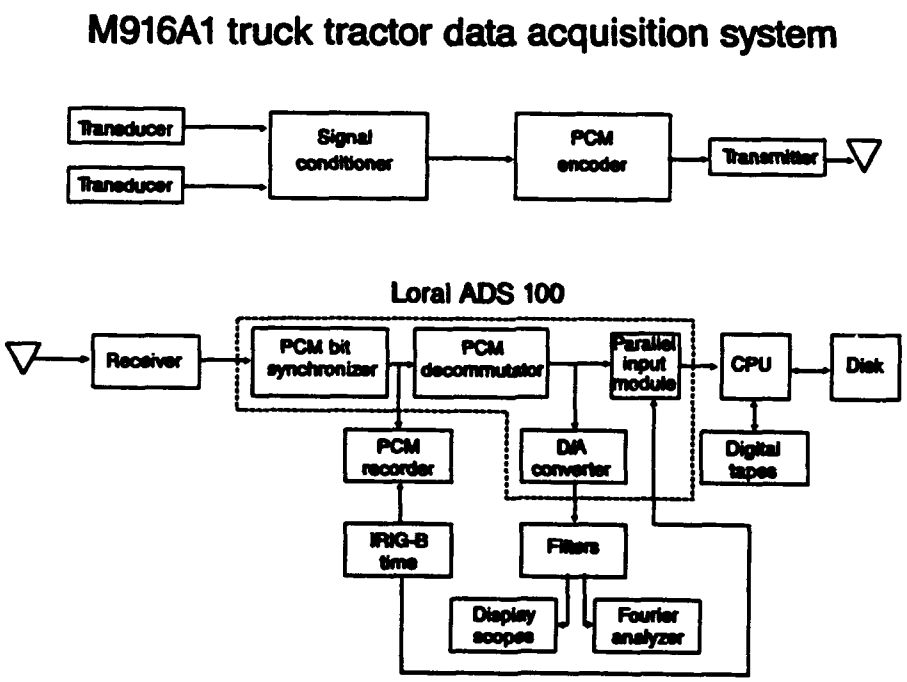


Figure 2. Data acquisition system.

individual test runs and an IRIG-B time code. Simultaneously, the PCM pulse train was passed to a PCM decommutator and demultiplexed into 16-bit words.

From this point, the pulse train was sent to both a digital-to-analog (D/A) converter and a parallel input module. The D/A converter passed the pulse train through a filter, external to the ADS-100 system, for real time display and fourier analysis. The parallel input module was used to input digital IRIG-B time code into the ADS-100. The pulse train passed out of the ADS-100 system from the input module to the host computer, a Hewlett-Packard* model 21MX-E series minicomputer. The data was stored temporarily on the HP system disk and later transferred to digital tape to provide a permanent storage medium. The ADS-100 system was independent of the host control; however, software residing on the minicomputer controlled the hand shaking between the ADS-100 and the HP21MX-E during data acquisition.

Analysis

Triaxial seat pad vibration data were processed using the methods prescribed in ISO 2631 for broadband signals using third-octave analysis with weighting. Digitized acceleration signals from the X-, Y-, and Z-axes, from both the driver and passenger seat pad accelerometers, were read into a Dolche* model 486 portable computer. A USAARL-developed automated analysis program was used to produce tabular and graphic plots of the acceleration data. These plots (Appendix B) were used to identify vibration exposure limits which occurred under projected normal daily operating conditions.

The RACs require classification of the health hazard according to the hazard severity and probability. Since the ISO 2631 standard does not use RACs, the severity of the hazard may be reasonably estimated from the worst-case exposure before the onset of ELs (i.e., for any vibration frequency and direction). An indicator which may be used for the assessment of hazard severity is the duration of safe exposure (DSE). The DSE is defined as the length of time a person can be exposed to WBV before reaching the health and safety exposure limit (HSEL). Thus, a long DSE indicates tolerable WBV, whereas a short DSE indicates severe WBV. In order to translate the DSEs to RACs, Table 2 was used to define the category (I-IV) of exposure.

Table 2.

Hazard severity classification.

Attribute	Category	Duration of safe exposure (DSE) to WBV
Catastrophic	I	Less than 5 minutes
Critical	II	Between 5 and 30 minutes
Marginal	III	Between 30 minutes and 4 hours
Negligible	IV	More than 4 hours

Hazard severity categories of Table 2 are defined as:

Category I - Catastrophic: Hazard may cause death or total loss of a bodily system.

Category II - Critical: Hazard may cause severe bodily injury, severe occupational illness, or major damage to a bodily system.

Category III - Marginal: Hazard may cause minor bodily injury, minor occupational illness, or minor damage to a bodily system.

Category IV - Negligible: Hazard would cause less than minor bodily injury, minor occupational illness, or minor bodily system damage.

The operational environments of the M916A1 determine the likelihood of occurrence, or probability level, of exposure to WBV. These levels, identified as levels A through E in AR 40-10, with their corresponding operating conditions relevant to the WBV signatures in the M916A1, are listed in Table 3.

Table 3.

Hazard probability classification.

Attribute	Level	Road/terrain type, operating speed
Frequent	A	Paved road, 30-50 mph cross-country, 8 mph and under
Probable	B	Cross-country, 9-16 mph paved road, under 30 mph
Occasional	C	Belgian block, under 15 mph Cross-country, above 16 mph
Remote	D	Other conditions not listed above
Improbable	E	Conditions unlikely to occur

Operating the M916A1 over paved surfaces represents approximately 75 percent of the total mission, therefore, the probability of WBV exposure over similar courses is frequent and may be assigned Level A. The operation over cross-country roads is assigned a probability Level B, which represents approximately 20 percent of its mission time. Operating over unimproved secondary roads, represented by the Belgian block, is within the M916A1 mission, but its occurrence should be only occasional, prompting the assignment of Level C to this course.

Risk assessment categories and levels are used to find the RACs for each test condition. Using Table 4, RACs are found at the intersection of a test condition category and level. The overall RAC then is found by averaging the individual RACs and rounding.

Table 4.

RAC determination.

Hazard category	Hazard probability levels				
	A	B	C	D	E
I	1	1	1	2	3
II	1	1	2	3	4
III	2	3	3	4	5
IV	3	5	5	5	5

Results

The duration of exposure necessary to reach the HSEL was calculated for all 72 data sets, each consisting of X-, Y-, and Z-axis signatures. Since the M916A1 mission requires 10 hours of operation over primary, secondary, and cross-country terrain, the exposure times of less than 10 hours were identified for assessment.

The RAC level, RAC category, and overall RAC were developed for the driver and passenger as shown in Tables 5 and 6, respectively. These tables are arranged in order of increasing values of DSE. RAC levels are a measure of the probability of occurrence of a particular test condition, and are a function of the test course, vehicle configuration, and vehicle speed as the relate to the normal mission employment of the M916A1. RAC category is a measure of the severity of the vibration exposure, and is based on the DSE. DSEs were found using the time required to reach the HSEL boundary of ISO 2631 for each exposure condition and each vibration axis (Appendix B). RAC levels and RAC categories then were combined using Table 4 to yield the overall RAC for each test condition where the DSE was less than 10 hours as shown in the last column of Tables 5 and 6.

Exposure limits for the primary, or paved, surface indicate that WBV exposures for any configuration should be limited to 17.1 hours in any 24-hour period (Appendix B, run 028). Exposure times for the cross-country surface indicate that WBV exposures should be limited to no more than 5.5 hours in a bobtail configuration (Appendix B, run 021), 5.2 hours in a no-load configuration (Appendix B, run 017), and 6.1 hours in loaded configuration (Appendix B, run 013). Exposure times for the Belgian block surface indicate WBV exposures should be limited to no more than 0.9 hours in the bobtail configuration (Appendix B, run 004), and no more than 1.4 hours in the unloaded and loaded configurations (Appendix B, runs 008 and 012).

The frequencies at which HSEL was reached consistently was in the range of 1.2 to 2.0 Hz for the driver position, which is below the whole-body resonance ranging from 4 to 8 Hz (Table 3). The passenger position showed similar results with the exception of the three high-speed runs on the Belgian block terrain (Table 4). These three test runs had frequencies of 6.4 and 8.0 Hz, within the range of WBV resonance frequency.

The vibration axes at which HSEL was reached were limited to the Y- and Z-axes. For the driver position, there were nearly equal numbers of occurrences for reaching HSEL limits for both the Y- and Z-axes. For the passenger position, HSEL limits were reached for 20 of the 23 occurrences in the Y-axis with the remainder occurring in the Z-axis.

Hazard severity was determined to be negligible for all the data trials for the driver position, and negligible or marginal for the passenger position. This resulted in a RAC category of 4 for the driver position and 3s and 4s for the passenger position. RAC exposure probability included remote, occasional, and probable for the driver position, with the passenger position results including the frequent probability. Overall RACs were 4s and 5s for the driver position, and 3s, 4s, and 5s for the passenger position. The single RAC for the M916A1 was determined by averaging the individual RACs and rounding to yield an overall RAC of 4.

Discussion

The lowest tolerance levels were experienced on the Belgian block course (0.883 and 1.833 hours for passenger and driver, respectively), with less severe WBV found under the cross-country condition (5.5 and 12.117 hours for passenger and driver, respectively), followed by the primary terrain surface (17.083 and 19.217 for passenger and driver, respectively). The Belgian block course creates repetitive axial and roll responses in the test vehicles. Vehicle roll occurred due to the out-of-phase nature of the right and left wheel track wave lengths. Typically, continuous vehicle roll is not seen in cross-country courses, and is rarely seen in primary courses. Cyclic X-axis vibration was seen in the Belgian block course and was a result of the interaction of the tractor and trailer. X-axis accelerations occurred when either the tractor or trailer was accelerated or decelerated as they rolled up or down the Belgian block wave lengths.

Vehicle configuration played a significant part in measured WBV. The M916A1 suspension system is designed to carry heavy construction equipment. When it is in a bobtail configuration, the natural frequency of the suspension system is quite high and will transmit a great deal of the WBV. A similar condition occurs when the empty trailer is attached to the tractor. Here, there is a slight lowering of the natural frequency of the suspension with most of the WBV still being transmitted into the vehicle frame. Under loaded conditions, the natural frequency of the suspension is lowered with damping seen in the lower ranges of the WBV signatures. This results in better ride quality for the vehicle crewmen. A variable suspension system that would transmit less vibration to the vehicle frame under unloaded conditions would improve vehicle ride quality.

Table 5.

Driver seat HSEL for times of less than 10 hours with respect to vibration axis, vibration frequency, vehicle speed, terrain surface, and vehicle load.

Determination of RAC category					Determination of RAC level					Overall RAC
DSE hours	Axis	Hz	Hazard severity	RAC Cate-gory	Test course	Configu-ration	Speed (mph)	Exposure probability	RAC level	
4.35	Z	1.2	Negligible	4	Cross-country	Bobtail	12	Probable	B	5
4.77	Z	1.6	Negligible	4	Belgian	No load	15	Remote	D	4
4.90	Z	1.6	Negligible	4	Belgian	Bobtail	15	Remote	D	5
5.22	Z	1.6	Negligible	4	Cross-country	Bobtail	12	Probable	B	5
5.35	Y	2.0	Negligible	4	Belgian	Bobtail	20	Remote	D	4
5.58	Z	1.6	Negligible	4	Cross-country	Bobtail	10	Probable	B	5
5.93	Y	1.2	Negligible	4	Belgian	Bobtail	10	Occasional	C	5
6.08	Y	1.6	Negligible	4	Belgian	Bobtail	15	Remote	D	5
6.32	Z	1.6	Negligible	4	Belgian	Loaded	20	Remote	D	5
6.35	Z	2.5	Negligible	4	Belgian	Bobtail	20	Remote	D	5
6.52	Y	2.0	Negligible	4	Belgian	No load	20	Remote	D	5
6.75	Y	1.2	Negligible	4	Belgian	No load	10	Occasional	C	5
6.95	Y	1.6	Negligible	4	Belgian	No load	15	Remote	D	5

Table 5 (Continued).

Determination of RAC category					Determination of RAC level					Overall RAC
DSE hours	Axis	Hz	Hazard severity	RAC Cate-gory	Test course	Configu-ration	Speed (mph)	Exposure probability	RAC level	
7.25	Z	1.6	Negligible	4	Belgian	Loaded	15	Remote	D	5
7.63	Z	1.6	Negligible	4	Belgian	No load	10	Occasional	C	5
7.81	Y	2.5	Negligible	4	Belgian	Loaded	20	Remote	D	5
8.52	Z	1.6	Negligible	4	Belgian	No load	20	Remote	D	5
8.80	Y	1.2	Negligible	4	Belgian	Loaded	10	Occasional	C	5
9.72	D	1.6	Negligible	4	Belgian	Bobtail	20	Remote	D	5

Table 6.

Passenger seat HSEL for times of less than 10 hours with respect to vibration axis, vibration frequency, vehicle speed, terrain surface, and vehicle load.

Determination of RAC category					Determination of RAC level					Overall RAC
DSE hours	Axis	Hz	Hazard severity	RAC cate-gory	Test course	Configu -ration	Speed (mph)	Exposure probability	RAC level	
1.25	Y	2.0	Marginal	3	Belgian	Bobtail	20	Remote	D	4
1.68	Y	1.6	Marginal	3	Belgian	Bobtail	15	Remote	D	4
1.80	Y	2.0	Marginal	3	Belgian	No load	20	Remote	D	4
1.85	Y	1.6	Marginal	3	Belgian	No load	15	Remote	D	4
2.12	Y	1.2	Marginal	3	Belgian	Bobtail	10	Occasional	C	3
2.27	Y	1.2	Marginal	3	Belgian	No load	10	Occasional	C	3
2.68	Y	2.5	Marginal	3	Belgian	Loaded	20	Remote	D	4
3.00	Y	1.6	Marginal	3	Belgian	Loaded	15	Remote	D	4
3.22	Y	1.2	Marginal	3	Belgian	Loaded	10	Occasional	C	3
4.21	Y	1.2	Negligible	4	Belgian	Bobtail	5	Occasional	C	5
4.40	Y	1.2	Negligible	4	Belgian	No load	5	Occasional	C	5
5.02	Y	1.6	Negligible	4	Belgian	Loaded	5	Occasional	C	5
6.25	Y	1.2	Negligible	4	Cross-country	Bobtail	12	Probable	B	5
6.58	Y	1.2	Negligible	4	Cross-country	Bobtail	12	Probable	B	5
7.68	Z	8.0	Negligible	4	Belgian	Bobtail	20	Remote	D	5

Table 6 (Continued).

Determination of RAC category					Determination of RAC level					Overall RAC
DSE hours	Axis	Hz	Hazard severity	RAC cate-gory	Test course	Configu -ration	Speed (mph)	Exposure probability	RAC level	
7.68	Z	6.4	Negligible	4	Belgian	Loaded	20	Remote	D	5
8.02	Y	1.6	Negligible	4	Cross-country	No load	6	Frequent	A	3
8.80	Y	1.2	Negligible	4	Cross-country	Bobtail	10	Probable	B	5
8.80	Y	1.2	Negligible	4	Cross-country	No load	10	Probable	B	5
9.10	Y	1.6	Negligible	4	Cross-country	Bobtail	6	Frequent	A	3
9.10	Y	1.6	Negligible	4	Cross-country	Bobtail	8	Frequent	A	3
9.40	Z	8.0	Negligible	4	Belgian	Bobtail	15	Remote	D	5
9.72	Y	1.6	Negligible	4	Cross-country	No load	8	Frequent	A	3

The WBV experienced by the vehicle crewmen differed for seating position. The passenger position data typically showed a lower EL as compared to the driver position for most of the data trails. This situation is most apparent under the Belgian block surface where vehicle roll occurred. A likely reason for this result is that the passenger does not have hand holds which can be used to dampen WBV. By grabbing the steering wheel, the driver can reduce the amount of upper body sway. This, in turn, lowers the amount of induced seat motion resulting in a lower apparent WBV measurement at that seating position. The addition of both right and left hand holds for the passenger would reduce the amount of vibration measured at that position and likely would improve the perceived ride quality.

Conclusions

While operating the M916A1 in its intended operational environment, both driver and passenger were exposed to an overall RAC of 4. This consisted of an overall assignment of hazard severity category III and hazard probability level C. It is recommended that exposure to WBV be restricted to:

a. Paved surface: All vehicle configurations, not more than 17.1 continuous hours in any 24-hour period.

b. Cross-country terrain: Bobtail configuration, not more than 5.5 continuous hours in any 24-hour period.

c. Cross-country terrain: Unloaded trailer, not more than 5.2 continuous hours in any 24-hour period.

d. Cross-country terrain: Loaded trailer, not more than 6.1 continuous hours in any 24-hour period.

e. Belgian block: Bobtail and unloaded configuration, not more than 0.9 continuous hours in any 24-hour period.

f. Belgian block: Loaded configuration, not more than 1.4 continuous hours in any 24-hour period.

References

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Department of the Army. 1991. Health hazard assessment program in support of the Army material acquisition decision process. Washington, DC: Department of the Army. AR 40-10.

Department of Defense. 1989. Human engineering design criteria for Military systems, equipment and facilities. Washington, DC: Department of Defense. MIL-STS-1472D.

International Organization for Standardization. 1985. Evaluation of human exposure to whole-body vibration, Part 1: General requirements. ISO-2631. 2nd edition. 1985-05-15.

Appendix A.

Manufacturer's list.

Conic/Loral Data Systems
9020 Balboa Avenue
San Diego, CA 92123

EMR/Fairchild Weston Systems
P.O. Box 3041
Sarasota, FL 33578

Freightliner Corporation
P.O. Box 3849
Portland, OR 97208

Honeywell
Honeywell Plaza
Minneaplois, MN 55408

Hewlett-Packard Company
4700 Bayou Boulevard
Pensacola, FL 32502

Larson-Davis Laboratories
280 South Main
Pleasant Grove, UT 84062

Loral Instrumentation
8401-T Aero Dr.
San Diego, CA 92123

Scientific Atlanta
1-T Technology Parkway
P.O. Box 105600
Atlanta, GA 30348

TEAC Corporation of America
7733 Telegraph Road
Montebello, CA 90640

Appendix B.

ISO 2631 graphs

USAARL summary of analysis
per ISO-2631* guideline on
whole-body vibration (WBV)

RUN-01 Passenger

19-AUG-93 8:21:57

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Belgian block
4:	Position:.....	Passenger
5:	Speed:.....	5 mph
6:	Note:.....	Bobtail

Third-octave bands with greatest weighted RMS accelerations (m/s^2)

Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.5200	0.5200	0.217	2.350	6.583
4.07	1.0300	0.5059	0.233	2.450	6.833
2.56	0.5300	0.4142	0.367	3.350	8.967
1.52	0.3800	0.3800	0.517	3.817	10.067
5.12	0.8600	0.3360	0.617	4.583	11.833

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.04	0.9900	0.9900	0.017	0.717	2.533
1.24	0.8000	0.8000	0.017	1.133	3.517
1.52	0.6200	0.6200	0.183	1.767	5.133
1.98	0.5200	0.5200	0.217	2.350	6.583
7.95	1.5000	0.3772	0.517	3.867	10.150

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.4400	0.3099	1.433	8.233	20.000
4.07	0.2900	0.2900	1.617	9.000	21.683
7.95	0.2800	0.2800	1.700	9.433	22.617
2.56	0.3500	0.2800	1.700	9.433	22.617
5.12	0.2700	0.2700	1.817	9.900	23.617

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-01	Driver

19-AUG-93 8:21:57

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Belgian block
4:	Position:.....	Driver
5:	Speed:.....	5 mph
6:	Note:.....	Bobtail

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
4.07	0.8000	0.3929	0.450	3.633	9.617
1.98	0.2500	0.2500	1.167	6.967	17.217
2.56	0.3100	0.2423	1.233	7.283	17.867
5.12	0.5800	0.2266	1.383	7.967	19.433
1.52	0.1700	0.1700	2.233	11.683	27.433

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.04	0.5200	0.5200	0.217	2.350	6.583
1.24	0.4300	0.4300	0.333	3.167	8.533
1.52	0.3800	0.3800	0.517	3.817	10.067
1.98	0.3500	0.3500	0.567	4.317	11.217
7.95	0.7900	0.1987	1.733	9.517	22.800

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
4.07	0.4000	0.4000	0.867	5.783	14.550
1.98	0.4700	0.3311	1.283	7.517	18.433
5.12	0.3100	0.3100	1.433	8.217	20.000
2.56	0.3700	0.2960	1.550	8.750	21.117
1.52	0.3600	0.2218	2.500	12.800	29.800

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-02 Passenger

19-AUG-93 8:21:58

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Belgian block
4:	Position:.....	Passenger
5:	Speed:.....	10 mph
6:	Note:.....	Bobtail

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.5200	0.5200	0.217	2.350	6.583
1.52	0.3900	0.3900	0.467	3.667	9.717
2.56	0.4600	0.3595	0.533	4.150	10.833
4.07	0.6600	0.3242	0.667	4.833	12.383
1.24	0.3100	0.3100	0.717	5.150	13.117

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.24	1.5300	1.5300	0.017	0.250	1.217
1.04	1.5100	1.5100	0.017	0.267	1.250
1.52	1.2400	1.2400	0.017	0.467	1.750
1.98	0.5400	0.5400	0.200	2.217	6.250
7.95	2.0700	0.5205	0.217	2.350	6.567

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.4700	0.3311	1.283	7.517	18.433
7.95	0.3300	0.3300	1.283	7.550	18.500
2.56	0.3700	0.2960	1.550	8.750	21.117
1.52	0.4500	0.2772	1.733	9.550	22.867
6.35	0.2500	0.2500	2.067	10.967	25.867

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-02 Driver

19-AUG-93 8:21:58

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Belgian block
4:	Position:.....	Driver
5:	Speed:.....	10 mph
6:	Note:.....	Bobtail

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.3000	0.3000	0.783	5.400	13.683
2.56	0.3200	0.2501	1.167	6.967	17.183
3.22	0.3400	0.2113	1.550	8.750	21.150
4.07	0.4300	0.2112	1.550	8.767	21.183
1.52	0.2000	0.2000	1.700	9.433	22.617

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.24	0.8300	0.8300	0.017	1.067	3.333
1.04	0.7900	0.7900	0.017	1.167	3.583
1.52	0.7400	0.7400	0.017	1.300	3.967
1.98	0.3600	0.3600	0.533	4.133	10.800
7.95	1.1700	0.2942	0.817	5.550	14.017

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.5100	0.3592	1.100	6.717	16.650
1.52	0.5100	0.3142	1.400	8.083	19.650
2.56	0.3900	0.3119	1.417	8.150	19.833
4.07	0.2700	0.2700	1.817	9.900	23.617
7.95	0.2600	0.2600	1.933	10.400	24.683

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-03 Passenger

19-AUG-93 8:21:58

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Belgian block
4:	Position:.....	Passenger
5:	Speed:.....	15 mph
6:	Note:.....	Bobtail

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
4.07	1.7000	0.8350	0.017	1.050	3.300
1.98	0.8200	0.8200	0.017	1.083	3.400
1.52	0.8000	0.8000	0.017	1.133	3.517
3.22	1.0600	0.6589	0.017	1.600	4.700
7.95	2.3500	0.5909	0.183	1.917	5.500

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	1.8600	1.8600	0.017	0.183	0.800
1.98	1.3600	1.3600	0.017	0.333	1.500
1.24	1.1400	1.1400	0.017	0.533	2.017
1.04	0.7500	0.7500	0.017	1.267	3.883
7.95	2.9400	0.7393	0.017	1.300	3.967

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	1.0800	0.6654	0.267	2.717	7.450
1.98	0.9400	0.6621	0.267	2.733	7.500
4.07	0.5900	0.5900	0.350	3.267	8.767
7.95	0.5300	0.5300	0.517	3.833	10.117
3.22	0.4900	0.4395	0.700	5.050	12.900

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-03 Driver

19-AUG-93 8:21:58

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Belgian block
4:	Position:.....	Driver
5:	Speed:.....	15 mph
6:	Note:.....	Bobtail

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
4.07	1.0500	0.5157	0.217	2.383	6.650
1.98	0.4700	0.4700	0.267	2.767	7.567
3.22	0.7500	0.4662	0.267	2.800	7.650
1.52	0.3800	0.3800	0.517	3.817	10.067
7.95	1.1700	0.2942	0.817	5.550	14.017

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	1.1600	1.1600	0.017	0.517	1.967
1.98	0.9400	0.9400	0.017	0.783	2.750
1.24	0.6500	0.6500	0.017	1.633	4.800
7.95	1.7600	0.4426	0.317	3.033	8.217
1.04	0.4100	0.4100	0.383	3.400	9.100

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
4.07	0.7200	0.7200	0.217	2.400	6.683
1.98	0.7900	0.5565	0.433	3.567	9.483
1.52	0.8500	0.5237	0.517	3.917	10.267
3.22	0.5600	0.5023	0.533	4.167	10.867
7.95	0.3700	0.3700	1.050	6.450	16.050

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-04 Passenger

19-AUG-93 8:21:59

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Belgian block
4:	Position:.....	Passenger
5:	Speed:.....	20 mph
6:	Note:.....	Bobtail

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — **Durations of WBV exposure before reaching ISO limits***

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.8800	0.8800	0.017	0.917	3.050
4.07	1.6800	0.8252	0.017	1.067	3.367
1.52	0.7300	0.7300	0.017	1.333	4.050
3.22	1.0200	0.6340	0.017	1.700	4.967
7.95	2.0600	0.5180	0.217	2.367	6.617

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	1.7800	1.7800	0.017	0.183	0.883
1.52	1.5600	1.5600	0.017	0.250	1.183
2.56	1.4200	1.1097	0.017	0.567	2.117
1.24	0.8000	0.8000	0.017	1.133	3.517
7.95	3.0700	0.7720	0.017	1.217	3.717

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.9600	0.6762	0.250	2.650	7.283
7.95	0.5100	0.5100	0.517	4.067	10.650
4.07	0.5100	0.5100	0.517	4.067	10.650
2.56	0.6100	0.4879	0.567	4.350	11.267
1.52	0.7400	0.4559	0.650	4.800	12.300

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-04 Driver

19-AUG-93 8:21:59

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Belgian block
4:	Position:.....	Driver
5:	Speed:.....	20 mph
6:	Note:.....	Bobtail

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.5000	0.5000	0.233	2.500	6.950
4.07	0.9900	0.4863	0.250	2.617	7.217
3.22	0.7200	0.4475	0.300	2.983	8.083
1.52	0.3600	0.3600	0.533	4.133	10.800
2.56	0.3200	0.2501	1.167	6.967	17.183

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	1.2100	1.2100	0.017	0.517	1.833
1.52	1.0000	1.0000	0.017	0.700	2.500
2.56	0.9000	0.7034	0.017	1.417	4.267
1.24	0.4900	0.4900	0.250	2.583	7.150
7.95	1.8600	0.4677	0.267	2.783	7.617

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	1.0300	0.7255	0.217	2.367	6.617
4.07	0.6100	0.6100	0.317	3.100	8.383
1.52	0.7900	0.4867	0.567	4.367	11.300
3.22	0.4800	0.4305	0.733	5.200	13.250
2.56	0.5200	0.4159	0.800	5.467	13.833

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-05 Passenger

19-AUG-93 8:22:00

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Belgian block
4:	Position:.....	Passenger
5:	Speed:.....	5 mph
6:	Note:.....	Unloaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
4.07	0.8200	0.4028	0.417	3.500	9.317
1.98	0.3300	0.3300	0.633	4.700	12.117
3.22	0.4900	0.3046	0.750	5.283	13.400
2.56	0.3600	0.2813	0.883	5.917	14.833
5.12	0.6000	0.2345	1.300	7.617	18.617

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	0.8200	0.8200	0.017	1.083	3.400
1.04	0.7700	0.7700	0.017	1.217	3.733
1.24	0.6500	0.6500	0.017	1.633	4.800
1.98	0.5600	0.5600	0.200	2.083	5.933
4.07	0.5600	0.2751	0.933	6.100	15.250

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.4100	0.2888	1.617	9.050	21.800
7.95	0.2800	0.2800	1.700	9.433	22.617
2.56	0.3400	0.2720	1.800	9.800	23.433
4.07	0.2500	0.2500	2.067	10.967	25.867
5.12	0.1900	0.1900	3.183	15.583	35.683

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-05 Driver

19-AUG-93 8:22:00

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Belgian block
4:	Position:.....	Driver
5:	Speed:.....	5 mph
6:	Note:.....	Unloaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
4.07	0.5200	0.2554	1.117	6.767	16.750
3.22	0.3400	0.2113	1.550	8.750	21.150
2.56	0.2100	0.1641	2.367	12.217	28.617
1.98	0.1600	0.1600	2.450	12.617	29.500
5.12	0.3300	0.1289	3.433	16.617	37.867

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	0.5100	0.5100	0.233	2.433	6.750
1.04	0.4600	0.4600	0.283	2.850	7.783
1.24	0.3900	0.3900	0.467	3.667	9.717
1.98	0.3500	0.3500	0.567	4.317	11.217
2.56	0.1800	0.1407	3.000	14.867	34.250

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.4000	0.2818	1.683	9.350	22.433
4.07	0.2600	0.2600	1.933	10.400	24.683
2.56	0.3100	0.2480	2.083	11.083	26.117
1.52	0.3200	0.1971	3.000	14.867	34.183
3.22	0.2100	0.1883	3.217	15.750	36.050

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-06 Passenger

19-AUG-93 8:22:00

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Belgian block
4:	Position:.....	Passenger
5:	Speed:.....	10 mph
6:	Note:.....	Unloaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	0.7200	0.4475	0.300	2.983	8.083
1.98	0.4000	0.4000	0.417	3.533	9.400
2.56	0.4800	0.3751	0.517	3.900	10.250
4.07	0.6000	0.2947	0.800	5.533	14.000
1.52	0.2700	0.2700	0.967	6.267	15.617

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.04	1.0600	1.0600	0.017	0.617	2.267
1.24	0.9500	0.9500	0.017	0.767	2.700
1.52	0.8100	0.8100	0.017	1.117	3.450
1.98	0.6200	0.6200	0.183	1.767	5.133
3.22	0.6500	0.4040	0.417	3.483	9.267

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.5000	0.3522	1.150	6.900	17.083
2.56	0.4100	0.3279	1.300	7.617	18.650
7.95	0.3200	0.3200	1.367	7.883	19.217
3.22	0.3000	0.2691	1.817	9.933	23.717
1.52	0.4300	0.2649	1.867	10.150	24.183

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-06 Driver

19-AUG-93 8:22:00

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Belgian block
4:	Position:.....	Driver
5:	Speed:.....	10 mph
6:	Note:.....	Unloaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	0.4800	0.2984	0.783	5.433	13.767
2.56	0.3100	0.2423	1.233	7.283	17.867
1.98	0.2300	0.2300	1.350	7.817	19.050
4.07	0.3800	0.1866	1.917	10.333	24.550
7.95	0.5300	0.1333	3.267	15.933	36.433

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.04	0.6300	0.6300	0.183	1.717	5.017
1.24	0.5700	0.5700	0.183	2.033	5.783
1.52	0.5000	0.5000	0.233	2.500	6.950
1.98	0.3800	0.3800	0.517	3.817	10.067
7.95	0.7800	0.1961	1.767	9.683	23.150

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.5400	0.3804	0.950	6.200	15.500
1.52	0.4900	0.3019	1.500	8.517	20.617
2.56	0.3600	0.2880	1.633	9.083	21.867
3.22	0.2700	0.2422	2.167	11.417	26.867
4.07	0.2100	0.2100	2.717	13.717	31.750

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-07 Passenger

19-AUG-93 8:22:01

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Belgian block
4:	Position:.....	Passenger
5:	Speed:.....	15 mph
6:	Note:.....	Unloaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	1.0000	0.6216	0.183	1.750	5.117
4.07	1.1200	0.5501	0.200	2.150	6.083
1.98	0.5100	0.5100	0.233	2.433	6.750
2.56	0.5700	0.4455	0.300	3.000	8.133
1.52	0.4000	0.4000	0.417	3.533	9.400

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	1.2000	1.2000	0.017	0.517	1.850
1.98	1.1600	1.1600	0.017	0.517	1.967
1.24	0.8600	0.8600	0.017	0.950	3.150
1.04	0.6800	0.6800	0.017	1.517	4.483
7.95	2.2400	0.5633	0.183	2.067	5.883

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	0.8700	0.5360	0.517	3.783	9.967
1.98	0.7400	0.5212	0.517	3.933	10.333
7.95	0.4600	0.4600	0.633	4.733	12.183
3.22	0.4000	0.3588	1.117	6.733	16.683
4.07	0.3400	0.3400	1.217	7.250	17.833

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis
per ISO-2631* guideline on
whole-body vibration (WBV)

RUN-07 Driver

19-AUG-93 8:22:01

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Belgian block
4:	Position:.....	Driver
5:	Speed:.....	15 mph
6:	Note:.....	Unloaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2)

Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	0.5900	0.3667	0.517	4.033	10.550
1.98	0.2900	0.2900	0.833	5.667	14.267
4.07	0.5900	0.2898	0.833	5.667	14.300
2.56	0.3100	0.2423	1.233	7.283	17.867
7.95	0.8400	0.2112	1.550	8.767	21.183

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.7200	0.7200	0.017	1.367	4.133
1.52	0.7200	0.7200	0.017	1.367	4.133
1.24	0.5200	0.5200	0.217	2.350	6.583
1.04	0.4100	0.4100	0.383	3.400	9.100
7.95	1.3500	0.3395	0.600	4.517	11.667

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.7100	0.5001	0.533	4.183	10.917
1.52	0.7600	0.4682	0.617	4.617	11.900
4.07	0.3700	0.3700	1.050	6.450	16.050
3.22	0.4000	0.3588	1.117	6.733	16.683
7.95	0.2700	0.2700	1.817	9.900	23.617

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-08 Passenger

19-AUG-93 8:22:01

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Belgian block
4:	Position:.....	Passenger
5:	Speed:.....	20 mph
6:	Note:.....	Unloaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
4.07	1.1900	0.5845	0.183	1.950	5.583
3.22	0.9200	0.5718	0.183	2.017	5.750
1.98	0.5700	0.5700	0.183	2.033	5.783
2.56	0.6000	0.4689	0.267	2.767	7.583
7.95	1.8600	0.4677	0.267	2.783	7.617

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	1.4100	1.4100	0.017	0.300	1.417
1.52	1.2700	1.2700	0.017	0.417	1.683
2.56	1.2900	1.0081	0.017	0.683	2.467
1.24	0.7200	0.7200	0.017	1.367	4.133
3.22	1.0200	0.6340	0.017	1.700	4.967

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.8400	0.5917	0.350	3.250	8.733
1.52	0.7700	0.4744	0.600	4.533	11.683
7.95	0.4400	0.4400	0.700	5.050	12.900
2.56	0.5400	0.4319	0.733	5.183	13.183
3.22	0.4300	0.3857	0.933	6.083	15.250

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-08 Driver

19-AUG-93 8:22:01

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Belgian block
4:	Position:.....	Driver
5:	Speed:.....	20 mph
6:	Note:.....	Unloaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	0.5500	0.3419	0.583	4.467	11.550
1.98	0.3300	0.3300	0.633	4.700	12.117
4.07	0.5900	0.2898	0.833	5.667	14.300
6.35	0.8300	0.2612	1.067	6.550	16.300
2.56	0.3300	0.2579	1.100	6.683	16.550

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.9000	0.9000	0.017	0.867	2.950
1.52	0.7900	0.7900	0.017	1.167	3.583
2.56	0.7600	0.5939	0.183	1.900	5.450
1.24	0.4400	0.4400	0.317	3.050	8.267
6.35	1.1000	0.3462	0.567	4.383	11.367

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.8000	0.5635	0.417	3.500	9.333
1.52	0.6700	0.4128	0.800	5.533	14.000
3.22	0.4400	0.3946	0.883	5.900	14.800
4.07	0.3700	0.3700	1.050	6.450	16.050
2.56	0.4600	0.3679	1.067	6.500	16.183

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-09 Passenger

19-AUG-93 8:22:02

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Belgian block
4:	Position:.....	Passenger
5:	Speed:.....	5 mph
6:	Note:.....	Loaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.3600	0.3600	0.533	4.133	10.800
2.56	0.3400	0.2657	1.000	6.400	15.933
3.22	0.4100	0.2548	1.117	6.783	16.800
1.52	0.2000	0.2000	1.700	9.433	22.617
6.35	0.5100	0.1605	2.450	12.583	29.367

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	0.8100	0.8100	0.017	1.117	3.450
1.98	0.6400	0.6400	0.017	1.667	4.900
1.24	0.6100	0.6100	0.183	1.817	5.250
1.04	0.5500	0.5500	0.200	2.150	6.083
2.56	0.2500	0.1954	1.767	9.733	23.250

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.4800	0.3381	1.233	7.300	17.967
2.56	0.3300	0.2640	1.883	10.200	24.250
3.22	0.2600	0.2332	2.300	12.000	28.117
1.52	0.3400	0.2095	2.733	13.750	31.867
7.95	0.1900	0.1900	3.183	15.583	35.683

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-09 Driver

19-AUG-93 8:22:02

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Belgian block
4:	Position:.....	Driver
5:	Speed:.....	5 mph
6:	Note:.....	Loaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.2000	0.2000	1.700	9.433	22.617
2.56	0.2000	0.1563	2.550	13.000	30.300
3.22	0.2400	0.1492	2.750	13.800	32.000
1.52	0.1100	0.1100	4.350	20.183	45.250
7.95	0.3200	0.0805	6.800	29.367	64.000

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	0.4900	0.4900	0.250	2.583	7.150
1.98	0.4000	0.4000	0.417	3.533	9.400
1.24	0.3500	0.3500	0.567	4.317	11.217
1.04	0.3100	0.3100	0.717	5.150	13.117
2.56	0.1600	0.1250	3.600	17.250	39.183

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.4700	0.3311	1.283	7.517	18.433
1.52	0.3900	0.2403	2.200	11.550	27.117
2.56	0.2700	0.2160	2.600	13.250	30.750
3.22	0.2100	0.1883	3.217	15.750	36.050
6.35	0.1400	0.1400	5.000	22.683	50.367

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-10 Passenger

19-AUG-93 8:22:02

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Belgian block
4:	Position:.....	Passenger
5:	Speed:.....	10 mph
6:	Note:.....	Loaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.5900	0.4611	0.283	2.850	7.767
3.22	0.6600	0.4102	0.383	3.400	9.083
1.98	0.3500	0.3500	0.567	4.317	11.217
1.52	0.2700	0.2700	0.967	6.267	15.617
6.35	0.8100	0.2549	1.117	6.783	16.800

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.24	0.7900	0.7900	0.017	1.167	3.583
1.52	0.7700	0.7700	0.017	1.217	3.733
1.04	0.7500	0.7500	0.017	1.267	3.883
1.98	0.7300	0.7300	0.017	1.333	4.050
2.56	0.3300	0.2579	1.100	6.683	16.550

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.4900	0.3451	1.183	7.100	17.500
2.56	0.4100	0.3279	1.300	7.617	18.650
5.12	0.3200	0.3200	1.367	7.883	19.217
6.35	0.3000	0.3000	1.517	8.600	20.800
3.22	0.2900	0.2601	1.933	10.400	24.683

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-10 Driver

19-AUG-93 8:22:02

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Belgian block
4:	Position:.....	Driver
5:	Speed:.....	10 mph
6:	Note:.....	Loaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.3600	0.2813	0.883	5.917	14.833
3.22	0.4000	0.2486	1.167	7.017	17.333
1.98	0.1700	0.1700	2.233	11.683	27.433
6.35	0.4200	0.1322	3.300	16.083	36.750
7.95	0.4600	0.1157	4.050	19.000	42.800

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	0.4800	0.4800	0.250	2.667	7.350
1.98	0.4700	0.4700	0.267	2.767	7.567
1.24	0.4700	0.4700	0.267	2.767	7.567
1.04	0.4500	0.4500	0.300	2.950	8.017
2.56	0.1800	0.1407	3.000	14.867	34.250

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.5200	0.3663	1.067	6.550	16.250
1.52	0.4500	0.2772	1.733	9.550	22.867
2.56	0.3200	0.2560	1.983	10.617	25.183
5.12	0.2100	0.2100	2.717	13.717	31.750
3.22	0.2200	0.1973	3.000	14.833	34.183

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis
per ISO-2631* guideline on
whole-body vibration (WBV)

RUN-11	Passenger

19-AUG-93 8:22:03

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Belgian block
4:	Position:.....	Passenger
5:	Speed:.....	15 mph
6:	Note:.....	Loaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2)

Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.3700	0.3700	0.517	3.967	10.433
2.56	0.4700	0.3673	0.517	4.017	10.517
7.95	1.4300	0.3596	0.533	4.150	10.833
3.22	0.5100	0.3170	0.683	4.983	12.750
6.35	0.9700	0.3053	0.750	5.267	13.367

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	1.2400	1.2400	0.017	0.467	1.750
1.98	1.0700	1.0700	0.017	0.600	2.233
1.24	0.6900	0.6900	0.017	1.467	4.400
1.04	0.5200	0.5200	0.217	2.350	6.583
3.22	0.7200	0.4475	0.300	2.983	8.083

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	0.8200	0.5052	0.533	4.133	10.767
1.98	0.6300	0.4438	0.700	4.983	12.750
7.95	0.3400	0.3400	1.217	7.250	17.833
5.12	0.3400	0.3400	1.217	7.250	17.833
4.07	0.2800	0.2800	1.700	9.433	22.617

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-11 Driver

19-AUG-93 8:22:03

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Belgian block
4:	Position:.....	Driver
5:	Speed:.....	15 mph
6:	Note:.....	Loaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.3000	0.2345	1.300	7.617	18.617
1.98	0.2000	0.2000	1.700	9.433	22.617
3.22	0.3000	0.1865	1.917	10.350	24.617
7.95	0.6200	0.1559	2.567	13.050	30.367
1.52	0.1400	0.1400	3.033	14.967	34.433

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	0.7600	0.7600	0.017	1.250	3.800
1.98	0.6800	0.6800	0.017	1.517	4.483
1.24	0.4100	0.4100	0.383	3.400	9.100
1.04	0.2900	0.2900	0.833	5.667	14.267
2.56	0.3200	0.2501	1.167	6.967	17.183

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	0.8100	0.4990	0.533	4.200	10.950
1.98	0.6600	0.4649	0.633	4.667	12.000
5.12	0.2900	0.2900	1.617	9.000	21.683
2.56	0.3300	0.2640	1.883	10.200	24.250
4.07	0.2400	0.2400	2.200	11.550	27.183

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-12 Passenger

19-AUG-93 8:22:03

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Belgian block
4:	Position:.....	Passenger
5:	Speed:.....	20 mph
6:	Note:.....	Loaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
5.12	1.1600	0.4533	0.300	2.917	7.950
7.95	1.6900	0.4250	0.350	3.233	8.667
2.56	0.5100	0.3986	0.433	3.550	9.450
1.98	0.3900	0.3900	0.467	3.667	9.717
3.22	0.5800	0.3605	0.533	4.133	10.800

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	1.3800	1.3800	0.017	0.317	1.467
1.52	0.9900	0.9900	0.017	0.717	2.533
1.24	0.7400	0.7400	0.017	1.300	3.967
2.56	0.8500	0.6643	0.017	1.567	4.650
1.04	0.5600	0.5600	0.200	2.083	5.933

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.9000	0.6339	0.300	2.933	7.967
5.12	0.4600	0.4600	0.633	4.733	12.183
1.52	0.7400	0.4559	0.650	4.800	12.300
2.56	0.4800	0.3839	0.933	6.133	15.333
7.95	0.3300	0.3300	1.283	7.550	18.500

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-12 Driver

19-AUG-93 8:22:03

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Belgian block
4:	Position:.....	Driver
5:	Speed:.....	20 mph
6:	Note:.....	Loaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.3600	0.2813	0.883	5.917	14.833
1.98	0.2500	0.2500	1.167	6.967	17.217
3.22	0.3500	0.2176	1.483	8.433	20.433
7.95	0.8400	0.2112	1.550	8.767	21.183
5.12	0.4900	0.1915	1.833	10.000	23.800

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.9000	0.9000	0.017	0.867	2.950
1.52	0.5800	0.5800	0.183	1.967	5.650
1.24	0.4300	0.4300	0.333	3.167	8.533
2.56	0.5400	0.4220	0.350	3.267	8.750
1.04	0.3300	0.3300	0.633	4.700	12.117

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.8300	0.5846	0.367	3.317	8.867
1.52	0.7400	0.4559	0.650	4.800	12.300
5.12	0.4500	0.4500	0.667	4.883	12.517
6.35	0.3000	0.3000	1.517	8.600	20.800
7.95	0.2600	0.2600	1.933	10.400	24.683

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-13 Passenger

19-AUG-93 8:22:04

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Cross country #2
4:	Position:.....	Passenger
5:	Speed:.....	12 mph
6:	Note:.....	Loaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2)

Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	0.6100	0.3792	0.517	3.833	10.083
2.56	0.3800	0.2970	0.800	5.467	13.867
1.98	0.2500	0.2500	1.167	6.967	17.217
6.35	0.6100	0.1920	1.833	9.967	23.750
7.95	0.7200	0.1811	2.017	10.750	25.500

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	0.5500	0.5500	0.200	2.150	6.083
1.98	0.5400	0.5400	0.200	2.217	6.250
1.24	0.4900	0.4900	0.250	2.583	7.150
1.04	0.4500	0.4500	0.300	2.950	8.017
2.56	0.3700	0.2892	0.833	5.683	14.333

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.4300	0.3029	1.500	8.500	20.550
1.52	0.4300	0.2649	1.867	10.150	24.183
2.56	0.3100	0.2480	2.083	11.083	26.117
6.35	0.2300	0.2300	2.350	12.217	28.550
3.22	0.2500	0.2242	2.450	12.617	29.433

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-13 Driver

19-AUG-93 8:22:04

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Cross country #2
4:	Position:.....	Driver
5:	Speed:.....	12 mph
6:	Note:.....	Loaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	0.3900	0.2424	1.233	7.267	17.867
2.56	0.2500	0.1954	1.767	9.733	23.250
1.98	0.1300	0.1300	3.400	16.433	37.500
1.52	0.1000	0.1000	5.000	22.683	50.367
7.95	0.3700	0.0930	5.550	24.750	54.500

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	0.3100	0.3100	0.717	5.150	13.117
1.98	0.3000	0.3000	0.783	5.400	13.683
1.24	0.2700	0.2700	0.967	6.267	15.617
1.04	0.2400	0.2400	1.250	7.367	18.117
2.56	0.2000	0.1563	2.550	13.000	30.300

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.4300	0.3029	1.500	8.500	20.550
1.52	0.4500	0.2772	1.733	9.550	22.867
2.56	0.2800	0.2240	2.450	12.633	29.500
1.24	0.3700	0.2057	2.817	14.083	32.550
3.22	0.2000	0.1794	3.467	16.750	38.117

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-14 Passenger

19-AUG-93 8:22:04

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Cross country #2
4:	Position:.....	Passenger
5:	Speed:.....	10 mph
6:	Note:.....	Loaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — **Durations of WBV exposure before reaching ISO limits***

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.4600	0.3595	0.533	4.150	10.833
3.22	0.5700	0.3543	0.550	4.233	11.033
1.98	0.2400	0.2400	1.250	7.367	18.117
6.35	0.7400	0.2329	1.317	7.683	18.800
7.95	0.8000	0.2012	1.683	9.367	22.433

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	0.4500	0.4500	0.300	2.950	8.017
1.98	0.4400	0.4400	0.317	3.050	8.267
1.24	0.3800	0.3800	0.517	3.817	10.067
1.04	0.3600	0.3600	0.533	4.133	10.800
2.56	0.3100	0.2423	1.233	7.283	17.867

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.3900	0.2747	1.767	9.683	23.117
2.56	0.3100	0.2480	2.083	11.083	26.117
3.22	0.2500	0.2242	2.450	12.617	29.433
1.52	0.3400	0.2095	2.733	13.750	31.867
7.95	0.2000	0.2000	2.933	14.583	33.617

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-14 Driver

19-AUG-93 8:22:04

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Cross country #2
4:	Position:.....	Driver
5:	Speed:.....	10 mph
6:	Note:.....	Loaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.2900	0.2266	1.383	7.967	19.433
3.22	0.3600	0.2238	1.417	8.117	19.717
1.98	0.1400	0.1400	3.033	14.967	34.433
6.35	0.3500	0.1102	4.350	20.183	45.250
7.95	0.4000	0.1006	4.967	22.500	50.000

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	0.2600	0.2600	1.083	6.600	16.367
1.98	0.2500	0.2500	1.167	6.967	17.217
1.24	0.2300	0.2300	1.350	7.817	19.050
1.04	0.2100	0.2100	1.567	8.833	21.300
2.56	0.1500	0.1172	3.967	18.683	42.117

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.3800	0.2677	1.833	10.000	23.867
1.52	0.3600	0.2218	2.500	12.800	29.800
2.56	0.2600	0.2080	2.767	13.900	32.117
3.22	0.2000	0.1794	3.467	16.750	38.117
5.12	0.1700	0.1700	3.767	17.867	40.500

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-15 Passenger

19-AUG-93 8:22:05

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Cross country #2
4:	Position:.....	Passenger
5:	Speed:.....	8 mph
6:	Note:.....	Loaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.5000	0.3908	0.467	3.667	9.700
3.22	0.5300	0.3294	0.633	4.717	12.117
1.98	0.2800	0.2800	0.900	5.950	14.933
1.52	0.1600	0.1600	2.450	12.617	29.500
7.95	0.5000	0.1257	3.567	17.117	38.933

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	0.4800	0.4800	0.250	2.667	7.350
1.98	0.4600	0.4600	0.283	2.850	7.783
1.24	0.3400	0.3400	0.600	4.500	11.650
1.04	0.3400	0.3400	0.600	4.500	11.650
2.56	0.2800	0.2188	1.467	8.367	20.250

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.4000	0.2818	1.683	9.350	22.433
2.56	0.3500	0.2800	1.700	9.433	22.617
3.22	0.2600	0.2332	2.300	12.000	28.117
5.12	0.2200	0.2200	2.533	12.933	30.117
7.95	0.1900	0.1900	3.183	15.583	35.683

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-15 Driver

19-AUG-93 8:22:05

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Cross country #2
4:	Position:.....	Driver
5:	Speed:.....	8 mph
6:	Note:.....	Loaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.2800	0.2188	1.467	8.367	20.250
3.22	0.2900	0.1803	2.033	10.833	25.617
1.98	0.1800	0.1800	2.033	10.833	25.650
1.52	0.0900	0.0900	5.817	25.750	56.617
5.12	0.2100	0.0821	6.617	28.683	62.617

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.3100	0.3100	0.717	5.150	13.117
1.52	0.2800	0.2800	0.900	5.950	14.933
1.24	0.1900	0.1900	1.867	10.083	24.050
1.04	0.1800	0.1800	2.033	10.833	25.650
2.56	0.1600	0.1250	3.600	17.250	39.183

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.3500	0.2465	2.100	11.150	26.300
2.56	0.3000	0.2400	2.200	11.550	27.183
3.22	0.2200	0.1973	3.000	14.833	34.183
5.12	0.1900	0.1900	3.183	15.583	35.683
1.52	0.2700	0.1663	3.883	18.367	41.500

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-16 Passenger

19-AUG-93 8:22:05

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Cross country #2
4:	Position:.....	Passenger
5:	Speed:.....	6 mph
6:	Note:.....	Loaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.3600	0.3600	0.533	4.133	10.800
1.52	0.2400	0.2400	1.250	7.367	18.117
2.56	0.3000	0.2345	1.300	7.617	18.617
3.22	0.3400	0.2113	1.550	8.750	21.150
4.07	0.2200	0.1081	4.467	20.617	46.250

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	0.5800	0.5800	0.183	1.967	5.650
1.98	0.4900	0.4900	0.250	2.583	7.150
1.24	0.3500	0.3500	0.567	4.317	11.217
1.04	0.2600	0.2600	1.083	6.600	16.367
2.56	0.2100	0.1641	2.367	12.217	28.617

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.4000	0.2818	1.683	9.350	22.433
2.56	0.3000	0.2400	2.200	11.550	27.183
3.22	0.2300	0.2063	2.800	14.050	32.433
1.52	0.2800	0.1725	3.683	17.550	39.867
7.95	0.1700	0.1700	3.767	17.867	40.500

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-16 Driver

19-AUG-93 8:22:05

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Cross country #2
4:	Position:.....	Driver
5:	Speed:.....	6 mph
6:	Note:.....	Loaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.2200	0.2200	1.450	8.300	20.117
2.56	0.1800	0.1407	3.000	14.867	34.250
3.22	0.2100	0.1305	3.367	16.367	37.300
1.52	0.1300	0.1300	3.400	16.433	37.500
4.07	0.1500	0.0737	7.683	32.500	70.250

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	0.3500	0.3500	0.567	4.317	11.217
1.98	0.3000	0.3000	0.783	5.400	13.683
1.24	0.2100	0.2100	1.567	8.833	21.300
1.04	0.1600	0.1600	2.450	12.617	29.500
2.56	0.1200	0.0938	5.483	24.500	54.117

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.4100	0.2888	1.617	9.050	21.800
2.56	0.2600	0.2080	2.767	13.900	32.117
1.52	0.3000	0.1848	3.317	16.117	36.867
3.22	0.1900	0.1704	3.750	17.833	40.367
7.95	0.1100	0.1100	7.033	30.183	65.617

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-17 Passenger

19-AUG-93 8:22:06

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Cross country #2
4:	Position:.....	Passenger
5:	Speed:.....	12 mph
6:	Note:.....	Unloaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	0.9900	0.6154	0.133	1.783	5.183
4.07	0.7900	0.3880	0.483	3.700	9.800
1.98	0.3700	0.3700	0.517	3.967	10.433
2.56	0.4600	0.3595	0.533	4.150	10.833
1.52	0.3400	0.3400	0.600	4.500	11.650

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.04	0.5700	0.5700	0.183	2.033	5.783
1.24	0.4800	0.4800	0.250	2.667	7.350
1.52	0.4700	0.4700	0.267	2.767	7.567
1.98	0.4600	0.4600	0.283	2.850	7.783
2.56	0.4300	0.3360	0.617	4.583	11.833

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.5100	0.3592	1.100	6.717	16.650
3.22	0.3900	0.3498	1.167	6.967	17.217
1.52	0.5500	0.3388	1.233	7.283	17.900
7.95	0.2900	0.2900	1.617	9.000	21.683
2.56	0.3500	0.2800	1.700	9.433	22.617

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-17 Driver

19-AUG-93 8:22:06

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Cross country #2
4:	Position:.....	Driver
5:	Speed:.....	12 mph
6:	Note:.....	Unloaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	0.5800	0.3605	0.533	4.133	10.800
2.56	0.2900	0.2266	1.383	7.967	19.433
1.98	0.2200	0.2200	1.450	8.300	20.117
4.07	0.4300	0.2112	1.550	8.767	21.183
1.52	0.1600	0.1600	2.450	12.617	29.500

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.04	0.3200	0.3200	0.683	4.917	12.583
1.52	0.2700	0.2700	0.967	6.267	15.617
1.24	0.2700	0.2700	0.967	6.267	15.617
1.98	0.2600	0.2600	1.083	6.600	16.367
7.95	0.7300	0.1836	1.967	10.567	25.050

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.5300	0.3733	1.000	6.367	15.867
1.52	0.5800	0.3573	1.117	6.767	16.750
3.22	0.3700	0.3318	1.267	7.500	18.367
4.07	0.2700	0.2700	1.817	9.900	23.617
2.56	0.3100	0.2480	2.083	11.083	26.117

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-18 Passenger

19-AUG-93 8:22:06

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Cross country #2
4:	Position:.....	Passenger
5:	Speed:.....	10 mph
6:	Note:.....	Unloaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	0.6500	0.4040	0.417	3.483	9.267
1.98	0.3400	0.3400	0.600	4.500	11.650
2.56	0.4200	0.3282	0.650	4.733	12.183
1.52	0.2400	0.2400	1.250	7.367	18.117
4.07	0.4700	0.2309	1.333	7.767	19.000

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	0.4900	0.4900	0.250	2.583	7.150
1.98	0.4700	0.4700	0.267	2.767	7.567
1.04	0.4700	0.4700	0.267	2.767	7.567
1.24	0.4100	0.4100	0.383	3.400	9.100
2.56	0.3700	0.2892	0.833	5.683	14.333

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.3600	0.2880	1.633	9.083	21.867
7.95	0.2800	0.2800	1.700	9.433	22.617
1.98	0.3900	0.2747	1.767	9.683	23.117
3.22	0.2700	0.2422	2.167	11.417	26.867
1.52	0.3500	0.2156	2.617	13.250	30.800

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-18 Driver

19-AUG-93 8:22:06

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Cross country #2
4:	Position:.....	Driver
5:	Speed:.....	10 mph
6:	Note:.....	Unloaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	0.3600	0.2238	1.417	8.117	19.717
2.56	0.2500	0.1954	1.767	9.733	23.250
1.98	0.1900	0.1900	1.867	10.083	24.050
4.07	0.2300	0.1130	4.183	19.550	44.000
1.52	0.1100	0.1100	4.350	20.183	45.250

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	0.2900	0.2900	0.833	5.667	14.267
1.04	0.2900	0.2900	0.833	5.667	14.267
1.24	0.2600	0.2600	1.083	6.600	16.367
1.98	0.2400	0.2400	1.250	7.367	18.117
7.95	0.6300	0.1584	2.500	12.800	29.800

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.3300	0.2640	1.883	10.200	24.250
1.98	0.3700	0.2606	1.917	10.367	24.617
3.22	0.2700	0.2422	2.167	11.417	26.867
1.52	0.3700	0.2279	2.383	12.350	28.867
4.07	0.1800	0.1800	3.450	16.650	38.000

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-19 Passenger

19-AUG-93 8:22:07

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Cross country #2
4:	Position:.....	Passenger
5:	Speed:.....	8 mph
6:	Note:.....	Unloaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.3200	0.3200	0.683	4.917	12.583
2.56	0.3900	0.3048	0.750	5.267	13.400
3.22	0.3500	0.2176	1.483	8.433	20.433
1.52	0.2100	0.2100	1.567	8.833	21.300
4.07	0.2900	0.1424	2.950	14.650	33.750

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.4800	0.4800	0.250	2.667	7.350
1.52	0.4800	0.4800	0.250	2.667	7.350
1.04	0.3800	0.3800	0.517	3.817	10.067
1.24	0.3400	0.3400	0.600	4.500	11.650
2.56	0.2900	0.2266	1.383	7.967	19.433

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.3600	0.2880	1.633	9.083	21.867
1.98	0.4000	0.2818	1.683	9.350	22.433
7.95	0.2400	0.2400	2.200	11.550	27.183
3.22	0.2500	0.2242	2.450	12.617	29.433
4.07	0.1800	0.1800	3.450	16.650	38.000

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-19 Driver

19-AUG-93 8:22:07

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Cross country #2
4:	Position:.....	Driver
5:	Speed:.....	8 mph
6:	Note:.....	Unloaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.2400	0.1876	1.900	10.267	24.433
1.98	0.1600	0.1600	2.450	12.617	29.500
3.22	0.2400	0.1492	2.750	13.800	32.000
4.07	0.2100	0.1031	4.783	21.833	48.617
1.52	0.0900	0.0900	5.817	25.750	56.617

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	0.2900	0.2900	0.833	5.667	14.267
1.98	0.2700	0.2700	0.967	6.267	15.617
1.04	0.2300	0.2300	1.350	7.817	19.050
1.24	0.2100	0.2100	1.567	8.833	21.300
7.95	0.5100	0.1282	3.467	16.717	38.050

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.3500	0.2465	2.100	11.150	26.300
2.56	0.3000	0.2400	2.200	11.550	27.183
3.22	0.1900	0.1704	3.750	17.833	40.367
1.52	0.2600	0.1602	4.117	19.250	43.367
4.07	0.1500	0.1500	4.533	20.867	46.617

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-20 Passenger

19-AUG-93 8:22:07

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Cross country #2
4:	Position:.....	Passenger
5:	Speed:.....	6 mph
6:	Note:.....	Unloaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.3100	0.3100	0.717	5.150	13.117
3.22	0.3700	0.2300	1.350	7.817	19.083
4.07	0.4600	0.2259	1.383	8.000	19.500
2.56	0.2800	0.2188	1.467	8.367	20.250
1.52	0.1600	0.1600	2.450	12.617	29.500

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	0.5000	0.5000	0.233	2.500	6.950
1.98	0.4000	0.4000	0.417	3.533	9.400
1.24	0.3500	0.3500	0.567	4.317	11.217
1.04	0.2800	0.2800	0.900	5.950	14.933
4.07	0.5300	0.2603	1.083	6.583	16.367

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.3500	0.2800	1.700	9.433	22.617
1.98	0.3700	0.2606	1.917	10.367	24.617
3.22	0.2600	0.2332	2.300	12.000	28.117
7.95	0.2100	0.2100	2.717	13.717	31.750
4.07	0.1900	0.1900	3.183	15.583	35.683

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-20 Driver

19-AUG-93 8:22:07

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Cross country #2
4:	Position:.....	Driver
5:	Speed:.....	6 mph
6:	Note:.....	Unloaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.1500	0.1500	2.717	13.717	31.750
3.22	0.2400	0.1492	2.750	13.800	32.000
4.07	0.2700	0.1326	3.283	16.017	36.617
2.56	0.1500	0.1172	3.967	18.683	42.117
1.52	0.0800	0.0800	6.850	29.550	64.367

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	0.3000	0.3000	0.783	5.400	13.683
1.24	0.2200	0.2200	1.450	8.300	20.117
1.98	0.2100	0.2100	1.567	8.833	21.300
1.04	0.1700	0.1700	2.233	11.683	27.433
4.07	0.2100	0.1031	4.783	21.833	48.617

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.3200	0.2254	2.433	12.517	29.250
2.56	0.2800	0.2240	2.450	12.633	29.500
3.22	0.1800	0.1614	4.067	19.050	43.000
4.07	0.1600	0.1600	4.117	19.267	43.367
1.52	0.2500	0.1540	4.350	20.183	45.250

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-21 Passenger

19-AUG-93 8:22:08

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Cross country #2
4:	Position:.....	Passenger
5:	Speed:.....	12 mph
6:	Note:.....	Bobtail

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — **Durations of WBV exposure before reaching ISO limits***

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.4900	0.4900	0.250	2.583	7.150
2.56	0.5900	0.4611	0.283	2.850	7.767
3.22	0.6900	0.4289	0.333	3.183	8.567
4.07	0.8000	0.3929	0.450	3.633	9.617
1.52	0.3400	0.3400	0.600	4.500	11.650

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.24	0.5900	0.5900	0.183	1.917	5.500
1.04	0.5700	0.5700	0.183	2.033	5.783
1.52	0.5400	0.5400	0.200	2.217	6.250
1.98	0.4200	0.4200	0.367	3.283	8.800
3.22	0.6600	0.4102	0.383	3.400	9.083

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.4800	0.3381	1.233	7.300	17.967
2.56	0.4000	0.3199	1.367	7.883	19.217
3.22	0.3200	0.2870	1.633	9.117	21.933
7.95	0.2800	0.2800	1.700	9.433	22.617
4.07	0.2700	0.2700	1.817	9.900	23.617

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-21 Driver

19-AUG-93 8:22:08

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Cross country #2
4:	Position:.....	Driver
5:	Speed:.....	12 mph
6:	Note:.....	Bobtail

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	0.4200	0.2611	1.067	6.567	16.300
1.98	0.2600	0.2600	1.083	6.600	16.367
2.56	0.3200	0.2501	1.167	6.967	17.183
4.07	0.4400	0.2161	1.500	8.500	20.583
1.52	0.1600	0.1600	2.450	12.617	29.500

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.24	0.3300	0.3300	0.633	4.700	12.117
1.04	0.3200	0.3200	0.683	4.917	12.583
1.52	0.3100	0.3100	0.717	5.150	13.117
1.98	0.2400	0.2400	1.250	7.367	18.117
7.95	0.8100	0.2037	1.650	9.217	22.117

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.4600	0.3240	1.333	7.750	18.933
1.52	0.4500	0.2772	1.733	9.550	22.867
4.07	0.2700	0.2700	1.817	9.900	23.617
2.56	0.3200	0.2560	1.983	10.617	25.183
3.22	0.2800	0.2511	2.050	10.900	25.750

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-22 Passenger

19-AUG-93 8:22:08

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Cross country #2
4:	Position:.....	Passenger
5:	Speed:.....	10 mph
6:	Note:.....	Bobtail

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.4000	0.4000	0.417	3.533	9.400
2.56	0.5100	0.3986	0.433	3.550	9.450
3.22	0.4900	0.3046	0.750	5.283	13.400
4.07	0.6000	0.2947	0.800	5.533	14.000
1.52	0.2800	0.2800	0.900	5.950	14.933

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	0.4800	0.4800	0.250	2.667	7.350
1.04	0.4800	0.4800	0.250	2.667	7.350
1.24	0.4700	0.4700	0.267	2.767	7.567
1.98	0.4400	0.4400	0.317	3.050	8.267
2.56	0.4100	0.3204	0.683	4.917	12.583

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.4100	0.3279	1.300	7.617	18.650
1.98	0.4000	0.2818	1.683	9.350	22.433
3.22	0.3000	0.2631	1.817	9.933	23.717
7.95	0.2600	0.2600	1.933	10.400	24.683
4.07	0.2300	0.2300	2.350	12.217	28.550

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis
per ISO-2631* guideline on
whole-body vibration (WBV)

RUN-22 Driver

19-AUG-93 8:22:08

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Cross country #2
4:	Position:.....	Driver
5:	Speed:.....	10 mph
6:	Note:.....	Bobtail

Third-octave bands with greatest weighted RMS accelerations (m/s^2)

Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.2400	0.2400	1.250	7.367	18.117
2.56	0.3000	0.2345	1.300	7.617	18.617
3.22	0.3300	0.2051	1.633	9.117	21.933
4.07	0.3500	0.1719	2.183	11.500	27.117
1.52	0.1400	0.1400	3.033	14.967	34.433

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	0.2900	0.2900	0.833	5.667	14.267
1.24	0.2800	0.2800	0.900	5.950	14.933
1.04	0.2800	0.2800	0.900	5.950	14.933
1.98	0.2400	0.2400	1.250	7.367	18.117
7.95	0.7300	0.1836	1.967	10.567	25.050

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.3900	0.2747	1.767	9.683	23.117
2.56	0.3400	0.2720	1.800	9.800	23.433
1.52	0.3600	0.2218	2.500	12.800	29.800
4.07	0.2200	0.2200	2.533	12.933	30.117
3.22	0.2400	0.2153	2.617	13.300	30.867

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-23 Passenger

19-AUG-93 8:22:09

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Cross country #2
4:	Position:.....	Passenger
5:	Speed:.....	8 mph
6:	Note:.....	Bobtail

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.3900	0.3900	0.467	3.667	9.717
2.56	0.4100	0.3204	0.683	4.917	12.583
4.07	0.5700	0.2800	0.900	5.950	14.933
1.52	0.2400	0.2400	1.250	7.367	18.117
5.12	0.5500	0.2149	1.517	8.567	20.717

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	0.4400	0.4400	0.317	3.050	8.267
1.98	0.4300	0.4300	0.333	3.167	8.533
1.04	0.4100	0.4100	0.383	3.400	9.100
1.24	0.4000	0.4000	0.417	3.533	9.400
7.95	1.2300	0.3093	0.733	5.167	13.150

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.4000	0.2818	1.683	9.350	22.433
2.56	0.3500	0.2800	1.700	9.433	22.617
7.95	0.2600	0.2600	1.933	10.400	24.683
3.22	0.2600	0.2332	2.300	12.000	28.117
5.12	0.2000	0.2000	2.933	14.583	33.617

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-23 Driver

19-AUG-93 8:22:09

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Cross country #2
4:	Position:.....	Driver
5:	Speed:.....	8 mph
6:	Note:.....	Bobtail

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.2100	0.2100	1.567	8.833	21.300
2.56	0.2400	0.1876	1.900	10.267	24.433
4.07	0.3100	0.1523	2.650	13.467	31.250
3.22	0.2400	0.1492	2.750	13.800	32.000
1.52	0.1300	0.1300	3.400	16.433	37.500

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	0.2700	0.2700	0.967	6.267	15.617
1.98	0.2500	0.2500	1.167	6.967	17.217
1.24	0.2400	0.2400	1.250	7.367	18.117
1.04	0.2400	0.2400	1.250	7.367	18.117
7.95	0.7400	0.1861	1.917	10.367	24.650

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.3900	0.2747	1.767	9.683	23.117
2.56	0.3100	0.2480	2.083	11.083	26.117
1.52	0.3100	0.1910	3.150	15.467	35.500
4.07	0.1900	0.1900	3.183	15.583	35.683
3.22	0.2000	0.1794	3.467	16.750	38.117

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-24 Passenger

19-AUG-93 8:22:09

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Cross country #2
4:	Position:.....	Passenger
5:	Speed:.....	6 mph
6:	Note:.....	Bobtail

Third-octave bands with greatest weighted RMS accelerations (m/s^2)

Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.4100	0.4100	0.383	3.400	9.100
4.07	0.7200	0.3537	0.550	4.250	11.050
2.56	0.4100	0.3204	0.683	4.917	12.583
1.52	0.2400	0.2400	1.250	7.367	18.117
3.22	0.3800	0.2362	1.283	7.533	18.467

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.5100	0.5100	0.233	2.433	6.750
1.52	0.4900	0.4900	0.250	2.583	7.150
1.24	0.3300	0.3300	0.633	4.700	12.117
1.04	0.3000	0.3000	0.783	5.400	13.683
4.07	0.5400	0.2652	1.050	6.417	16.000

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.4200	0.2958	1.550	8.767	21.150
2.56	0.3500	0.2800	1.700	9.433	22.617
4.07	0.2300	0.2300	2.350	12.217	28.550
3.22	0.2400	0.2153	2.617	13.300	30.867
7.95	0.2000	0.2000	2.933	14.583	33.617

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-24 Driver

19-AUG-93 8:22:09

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Cross country #2
4:	Position:.....	Driver
5:	Speed:.....	6 mph
6:	Note:.....	Bobtail

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.2300	0.2300	1.350	7.817	19.050
4.07	0.3700	0.1817	2.000	10.717	25.367
2.56	0.2300	0.1797	2.033	10.867	25.683
1.52	0.1400	0.1400	3.033	14.967	34.433
3.22	0.2100	0.1305	3.367	16.367	37.300

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.52	0.3000	0.3000	0.783	5.400	13.683
1.98	0.2700	0.2700	0.967	6.267	15.617
1.24	0.2200	0.2200	1.450	8.300	20.117
1.04	0.2000	0.2000	1.700	9.433	22.617
7.95	0.5400	0.1358	3.167	15.550	35.683

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.3600	0.2536	2.017	10.750	25.433
4.07	0.2400	0.2400	2.200	11.550	27.183
2.56	0.2900	0.2320	2.317	12.083	28.300
3.22	0.1900	0.1704	3.750	17.833	40.367
1.52	0.2300	0.1417	4.917	22.367	49.750

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-25 Passenger

19-AUG-93 8:22:10

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Paved
4:	Position:.....	Passenger
5:	Speed:.....	25 mph
6:	Note:.....	Bobtail

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
5.12	0.3900	0.1524	2.650	13.433	31.183
2.56	0.1500	0.1172	3.967	18.683	42.117
3.22	0.1500	0.0932	5.533	24.683	54.433
1.98	0.0500	0.0500	12.833	50.500	105.750
4.07	0.0800	0.0393	17.367	65.750	135.250

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
10.04	0.4100	0.0817	6.667	28.867	62.867
3.22	0.1100	0.0684	8.500	35.500	76.250
7.95	0.2500	0.0629	9.500	39.050	83.250
2.56	0.0700	0.0547	11.417	45.683	96.367
1.98	0.0500	0.0500	12.833	50.500	105.750

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	0.2700	0.2422	2.167	11.417	26.867
2.56	0.2600	0.2080	2.767	13.900	32.117
5.12	0.1500	0.1500	4.533	20.867	46.617
10.04	0.1400	0.1116	6.900	29.683	64.617
7.95	0.1100	0.1100	7.033	30.183	65.617

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-25 Driver

19-AUG-93 8:22:10

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Paved
4:	Position:.....	Driver
5:	Speed:.....	25 mph
6:	Note:.....	Bobtail

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
5.12	0.2200	0.0860	6.200	27.183	59.500
3.22	0.0800	0.0497	12.900	50.867	106.500
2.56	0.0600	0.0469	13.933	54.250	113.000
4.07	0.0500	0.0246	30.617	108.000	215.500
6.35	0.0700	0.0220	34.750	120.750	239.500

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
10.04	0.2300	0.0458	14.333	55.617	115.750
3.22	0.0700	0.0435	15.300	58.867	122.000
7.95	0.1400	0.0352	19.900	74.000	151.250
2.56	0.0400	0.0313	23.000	84.000	170.000
1.98	0.0300	0.0300	24.150	87.750	177.250

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	0.2600	0.2332	2.300	12.000	28.117
2.56	0.2400	0.1920	3.133	15.367	35.250
5.12	0.1400	0.1400	5.000	22.683	50.367
7.95	0.0900	0.0900	9.217	38.050	81.250
10.04	0.1000	0.0797	10.833	43.683	92.500

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-26 Passenger

19-AUG-93 8:22:10

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Paved
4:	Position:.....	Passenger
5:	Speed:.....	35 mph
6:	Note:.....	Bobtail

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — **Durations of WBV exposure before reaching ISO limits***

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.2300	0.1797	2.033	10.867	25.683
3.22	0.2200	0.1367	3.133	15.433	35.367
4.07	0.2700	0.1326	3.283	16.017	36.617
1.98	0.0900	0.0900	5.817	25.750	56.617
7.95	0.2500	0.0629	9.500	39.050	83.250

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
4.07	0.2900	0.1424	2.950	14.650	33.750
10.04	0.6100	0.1215	3.750	17.867	40.500
7.95	0.4800	0.1207	3.800	18.000	40.750
20.17	0.7900	0.0783	7.067	30.300	65.867
3.22	0.1200	0.0746	7.550	32.050	69.367

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.3500	0.2800	1.700	9.433	22.617
3.22	0.3000	0.2691	1.817	9.933	23.717
7.95	0.1900	0.1900	3.183	15.583	35.683
4.07	0.1400	0.1400	5.000	22.683	50.367
10.04	0.1600	0.1275	5.717	25.367	55.867

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-26 Driver

19-AUG-93 8:22:10

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Paved
4:	Position:.....	Driver
5:	Speed:.....	35 mph
6:	Note:.....	Bobtail

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.1100	0.0860	6.200	27.183	59.500
3.22	0.1000	0.0622	9.650	39.550	84.250
4.07	0.1200	0.0589	10.367	42.000	89.117
1.98	0.0500	0.0500	12.833	50.500	105.750
7.95	0.1200	0.0302	24.000	87.250	176.250

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
4.07	0.1500	0.0737	7.683	32.500	70.250
10.04	0.3500	0.0697	8.267	34.683	74.617
7.95	0.2600	0.0654	9.017	37.367	79.867
3.22	0.0700	0.0435	15.300	58.867	122.000
2.56	0.0500	0.0391	17.500	66.117	136.000

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.3200	0.2560	1.983	10.617	25.183
3.22	0.2800	0.2511	2.050	10.900	25.750
7.95	0.1500	0.1500	4.533	20.867	46.617
4.07	0.1300	0.1300	5.567	24.800	54.617
10.04	0.1000	0.0797	10.833	43.683	92.500

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-27 Passenger

19-AUG-93 8:22:10

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Paved
4:	Position:.....	Passenger
5:	Speed:.....	45 mph
6:	Note:.....	Bobtail

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.2300	0.1797	2.033	10.867	25.683
3.22	0.2100	0.1305	3.367	16.367	37.300
5.12	0.2800	0.1094	4.383	20.333	45.617
1.98	0.1000	0.1000	5.000	22.683	50.367
4.07	0.1500	0.0737	7.683	32.500	70.250

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
25.40	1.2300	0.0969	5.233	23.550	52.250
4.07	0.1900	0.0933	5.517	24.617	54.367
5.12	0.2300	0.0899	5.833	25.750	56.617
10.04	0.4300	0.0857	6.233	27.250	59.750
7.95	0.3300	0.0830	6.517	28.300	61.867

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	0.2900	0.2601	1.933	10.400	24.683
2.56	0.3100	0.2480	2.083	11.083	26.117
7.95	0.1600	0.1600	4.117	19.267	43.367
5.12	0.1500	0.1500	4.533	20.867	46.617
10.04	0.1300	0.1036	7.633	32.367	70.000

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-27 Driver

19-AUG-93 8:22:10

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Paved
4:	Position:.....	Driver
5:	Speed:.....	45 mph
6:	Note:.....	Bobtail

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
5.12	0.1900	0.0742	7.600	32.250	69.750
2.56	0.0900	0.0703	8.183	34.367	73.867
3.22	0.0900	0.0559	11.083	44.550	94.117
4.07	0.0900	0.0442	15.000	57.867	120.000
1.98	0.0400	0.0400	17.000	64.500	133.000

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
4.07	0.1000	0.0491	13.117	51.500	107.750
10.04	0.2400	0.0478	13.583	53.117	110.750
5.12	0.1200	0.0469	13.933	54.250	113.000
7.95	0.1800	0.0453	14.550	56.367	117.250
3.22	0.0700	0.0435	15.300	58.867	122.000

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.3200	0.2560	1.983	10.617	25.183
3.22	0.2700	0.2422	2.167	11.417	26.867
7.95	0.1600	0.1600	4.117	19.267	43.367
5.12	0.1300	0.1300	5.567	24.800	54.617
10.04	0.1100	0.0877	9.550	39.250	83.617

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-28 Passenger

19-AUG-93 8:22:11

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Paved
4:	Position:.....	Passenger
5:	Speed:.....	55 mph
6:	Note:.....	Bobtail

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.3000	0.2345	1.300	7.617	18.617
5.12	0.4000	0.1563	2.550	13.000	30.300
1.98	0.1500	0.1500	2.717	13.717	31.750
3.22	0.2100	0.1305	3.367	16.367	37.300
4.07	0.2100	0.1031	4.783	21.833	48.617

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
4.07	0.2300	0.1130	4.183	19.550	44.000
6.35	0.3100	0.0976	5.183	23.367	51.750
3.22	0.1200	0.0746	7.550	32.050	69.367
1.04	0.0600	0.0600	10.117	41.183	87.500
5.12	0.1500	0.0586	10.433	42.250	89.617

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.4400	0.3519	1.150	6.917	17.083
3.22	0.3400	0.3049	1.483	8.417	20.367
7.95	0.1800	0.1800	3.450	16.650	38.000
5.12	0.1700	0.1700	3.767	17.867	40.500
6.35	0.1600	0.1600	4.117	19.267	43.367

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-28 Driver

19-AUG-93 8:22:11

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Paved
4:	Position:.....	Driver
5:	Speed:.....	55 mph
6:	Note:.....	Bobtail

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	eighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.1600	0.1250	3.600	17.250	39.183
5.12	0.3000	0.1172	3.967	18.683	42.117
1.98	0.0900	0.0900	5.817	25.750	56.617
3.22	0.1200	0.0746	7.550	32.050	69.367
4.07	0.1500	0.0737	7.683	32.500	70.250

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
4.07	0.1100	0.0540	11.617	46.367	97.617
6.35	0.1600	0.0504	12.717	50.117	105.000
3.22	0.0700	0.0435	15.300	58.867	122.000
2.56	0.0500	0.0391	17.500	66.117	136.000
10.04	0.1700	0.0339	20.867	77.117	157.000

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.4000	0.3199	1.367	7.883	19.217
3.22	0.2900	0.2601	1.933	10.400	24.683
5.12	0.1700	0.1700	3.767	17.867	40.500
7.95	0.1400	0.1400	5.000	22.683	50.367
1.98	0.1700	0.1197	6.250	27.300	59.867

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-29 Passenger

19-AUG-93 8:22:11

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Paved
4:	Position:.....	Passenger
5:	Speed:.....	25 mph
6:	Note:.....	Unloaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.1500	0.1172	3.967	18.683	42.117
3.22	0.1800	0.1119	4.250	19.800	44.433
1.98	0.0500	0.0500	12.833	50.500	105.750
4.07	0.1000	0.0491	13.117	51.500	107.750
40.26	0.9800	0.0487	13.267	52.000	108.750

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
7.95	0.3400	0.0855	6.250	27.367	59.867
3.22	0.1100	0.0684	8.500	35.500	76.250
10.04	0.3300	0.0657	8.967	37.117	79.500
1.98	0.0600	0.0600	10.117	41.183	87.500
4.07	0.1000	0.0491	13.117	51.500	107.750

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	0.3700	0.3318	1.267	7.500	18.367
2.56	0.3300	0.2640	1.883	10.200	24.250
7.95	0.1500	0.1500	4.533	20.867	46.617
4.07	0.1000	0.1000	8.000	33.750	72.750
10.04	0.1200	0.0956	8.500	35.500	76.250

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-29 Driver

19-AUG-93 8:22:11

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Paved
4:	Position:.....	Driver
5:	Speed:.....	25 mph
6:	Note:.....	Unloaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	0.0900	0.0559	11.083	44.550	94.117
2.56	0.0700	0.0547	11.417	45.683	96.367
4.07	0.0500	0.0246	30.617	108.000	215.500
7.95	0.0900	0.0226	33.617	117.500	233.250
20.17	0.2100	0.0208	37.050	128.000	252.500

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
7.95	0.1900	0.0478	13.583	53.117	110.867
1.98	0.0400	0.0400	17.000	64.500	133.000
10.04	0.2000	0.0398	17.083	64.750	133.500
2.56	0.0400	0.0313	23.000	84.000	170.000
3.22	0.0500	0.0311	23.150	84.500	171.000

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	0.3000	0.2691	1.817	9.933	23.717
2.56	0.2700	0.2160	2.600	13.250	30.750
7.95	0.1000	0.1000	8.000	33.750	72.750
1.98	0.1100	0.0775	11.250	45.117	95.250
10.04	0.0800	0.0637	14.433	56.000	116.500

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-30 Passenger

19-AUG-93 8:22:11

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Paved
4:	Position:.....	Passenger
5:	Speed:.....	35 mph
6:	Note:.....	Unloaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
5.12	0.3800	0.1485	2.767	13.900	32.183
4.07	0.3000	0.1474	2.800	14.050	32.433
2.56	0.1300	0.1016	4.883	22.250	49.500
3.22	0.1500	0.0932	5.533	24.683	54.433
1.98	0.0500	0.0500	12.833	50.500	105.750

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
4.07	0.3000	0.1474	2.800	14.050	32.433
5.12	0.2900	0.1133	4.167	19.500	43.800
7.95	0.3400	0.0855	6.250	27.367	59.867
20.17	0.8200	0.0813	6.700	29.000	63.250
10.04	0.3400	0.0677	8.617	35.867	77.000

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	0.2500	0.2242	2.450	12.617	29.433
2.56	0.2600	0.2080	2.767	13.900	32.117
4.07	0.2000	0.2000	2.933	14.583	33.617
7.95	0.1500	0.1500	4.533	20.867	46.617
5.12	0.1300	0.1300	5.567	24.800	54.617

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-30 Driver

19-AUG-93 8:22:11

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Paved
4:	Position:.....	Driver
5:	Speed:.....	35 mph
6:	Note:.....	Unloaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
5.12	0.2200	0.0860	6.200	27.183	59.500
4.07	0.1700	0.0835	6.467	28.117	61.367
2.56	0.0600	0.0469	13.933	54.250	113.000
3.22	0.0700	0.0435	15.300	58.867	122.000
1.98	0.0300	0.0300	24.150	87.750	177.250

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
4.07	0.1300	0.0639	9.300	38.367	82.000
7.95	0.2000	0.0503	12.717	50.183	105.250
20.17	0.4400	0.0436	15.250	58.750	121.750
10.04	0.2000	0.0398	17.083	64.750	133.500
5.12	0.0900	0.0352	19.933	74.117	151.250

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	0.2100	0.1883	3.217	15.750	36.050
2.56	0.2200	0.1760	3.567	17.117	38.933
5.12	0.1400	0.1400	5.000	22.683	50.367
4.07	0.1100	0.1100	7.033	30.183	65.617
7.95	0.0900	0.0900	9.217	38.050	81.250

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-31 Passenger

19-AUG-93 8:22:12

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Paved
4:	Position:.....	Passenger
5:	Speed:.....	45 mph
6:	Note:.....	Unloaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.1900	0.1485	2.767	13.900	32.183
4.07	0.3000	0.1474	2.800	14.050	32.433
3.22	0.1800	0.1119	4.250	19.800	44.433
1.98	0.0900	0.0900	5.817	25.750	56.617
7.95	0.2400	0.0604	10.033	40.867	87.000

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
4.07	0.2100	0.1031	4.783	21.833	48.617
3.22	0.1300	0.0808	6.767	29.183	63.617
5.12	0.1900	0.0742	7.600	32.250	69.750
25.40	0.8800	0.0693	8.350	34.933	75.117
7.95	0.2700	0.0679	8.583	35.750	76.750

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.3700	0.2960	1.550	8.750	21.117
3.22	0.3000	0.2691	1.817	9.933	23.717
4.07	0.1800	0.1800	3.450	16.650	38.000
10.04	0.1700	0.1355	5.250	23.617	52.250
7.95	0.1200	0.1200	6.233	27.250	59.750

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis
per ISO-2631* guideline on
whole-body vibration (WBV)

RUN-31 Driver

19-AUG-93 8:22:12

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Paved
4:	Position:.....	Driver
5:	Speed:.....	45 mph
6:	Note:.....	Unloaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2)

Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
4.07	0.1600	0.0786	7.033	30.183	65.617
2.56	0.1000	0.0782	7.083	30.367	66.000
3.22	0.1000	0.0622	9.650	39.550	84.250
1.98	0.0600	0.0600	10.117	41.183	87.500
5.12	0.0800	0.0313	23.000	84.000	170.000

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
4.07	0.0900	0.0442	15.000	57.867	120.000
7.95	0.1700	0.0427	15.650	60.000	124.250
2.56	0.0500	0.0391	17.500	66.117	136.000
3.22	0.0600	0.0373	18.550	69.500	142.750
25.40	0.4200	0.0331	21.500	79.117	161.000

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.3000	0.2400	2.200	11.550	27.183
3.22	0.2300	0.2063	2.800	14.050	32.433
4.07	0.1100	0.1100	7.033	30.183	65.617
7.95	0.0900	0.0900	9.217	38.050	81.250
1.98	0.1100	0.0775	11.250	45.117	95.250

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-32 Passenger

19-AUG-93 8:22:12

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25 , 1992
3:	Course:.....	Paved
4:	Position:.....	Passenger
5:	Speed:.....	55 mph
6:	Note:.....	Unloaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.1800	0.1407	3.000	14.867	34.250
4.07	0.2700	0.1326	3.283	16.017	36.617
3.22	0.1500	0.0932	5.533	24.683	54.433
1.98	0.0900	0.0900	5.817	25.750	56.617
7.95	0.3100	0.0780	7.100	30.500	66.117

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
7.95	0.4400	0.1106	4.317	20.050	45.000
4.07	0.2200	0.1081	4.467	20.617	46.250
6.35	0.2900	0.0913	5.700	25.300	55.750
3.22	0.1400	0.0870	6.100	26.750	58.750
2.56	0.0900	0.0703	8.183	34.367	73.867

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.3400	0.2720	1.800	9.800	23.433
3.22	0.2800	0.2511	2.050	10.900	25.750
7.95	0.2200	0.2200	2.533	12.933	30.117
4.07	0.1600	0.1600	4.117	19.267	43.367
6.35	0.1500	0.1500	4.533	20.867	46.617

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis
per ISO-2631* guideline on
whole-body vibration (WBV)

RUN-32 Driver

19-AUG-93 8:22:12

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25 , 1992
3:	Course:.....	Paved
4:	Position:.....	Driver
5:	Speed:.....	55 mph
6:	Note:.....	Unloaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2)

Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.1000	0.0782	7.083	30.367	66.000
4.07	0.1300	0.0639	9.300	38.367	82.000
3.22	0.0900	0.0559	11.083	44.550	94.117
1.98	0.0500	0.0500	12.833	50.500	105.750
31.92	0.7100	0.0445	14.867	57.500	119.250

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
7.95	0.2700	0.0679	8.583	35.750	76.750
4.07	0.1000	0.0491	13.117	51.500	107.750
6.35	0.1500	0.0472	13.800	53.867	112.250
3.22	0.0600	0.0373	18.550	69.500	142.750
2.56	0.0400	0.0313	23.000	84.000	170.000

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.2700	0.2160	2.600	13.250	30.750
3.22	0.2000	0.1794	3.467	16.750	38.117
7.95	0.1200	0.1200	6.233	27.250	59.750
4.07	0.0900	0.0900	9.217	38.050	81.250
1.98	0.1100	0.0775	11.250	45.117	95.250

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-33 Passenger

19-AUG-93 8:22:13

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Paved
4:	Position:.....	Passenger
5:	Speed:.....	25 mph
6:	Note:.....	Loaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	0.3200	0.1989	1.717	9.500	22.750
2.56	0.1500	0.1172	3.967	18.683	42.117
7.95	0.4100	0.1031	4.783	21.867	48.683
6.35	0.2200	0.0692	8.350	34.933	75.117
1.98	0.0600	0.0600	10.117	41.183	87.500

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	0.1100	0.0684	8.500	35.500	76.250
1.98	0.0600	0.0600	10.117	41.183	87.500
7.95	0.2300	0.0578	10.617	42.933	91.000
6.35	0.1800	0.0567	10.900	43.933	93.000
10.04	0.2700	0.0538	11.683	46.617	98.000

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	0.3500	0.3139	1.400	8.083	19.683
7.95	0.1700	0.1700	3.767	17.867	40.500
2.56	0.2100	0.1680	3.833	18.150	41.050
6.35	0.1300	0.1300	5.567	24.800	54.617
10.04	0.1400	0.1116	6.900	29.683	64.617

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis
per ISO-2631* guideline on
whole-body vibration (WBV)

RUN-33 Driver

19-AUG-93 8:22:13

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Paved
4:	Position:.....	Driver
5:	Speed:.....	25 mph
6:	Note:.....	Loaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2)

Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	0.1700	0.1057	4.617	21.217	47.367
2.56	0.0900	0.0703	8.183	34.367	73.867
7.95	0.2000	0.0503	12.717	50.183	105.250
1.98	0.0500	0.0500	12.833	50.500	105.750
6.35	0.1100	0.0346	20.300	75.367	153.750

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	0.0500	0.0311	23.150	84.500	171.000
1.98	0.0300	0.0300	24.150	87.750	177.250
1.52	0.0300	0.0300	24.150	87.750	177.250
10.04	0.1500	0.0299	24.250	88.000	178.000
6.35	0.0800	0.0252	29.750	105.250	210.500

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	0.2600	0.2332	2.300	12.000	28.117
2.56	0.1700	0.1360	5.217	23.500	52.000
7.95	0.1300	0.1300	5.567	24.800	54.617
6.35	0.1100	0.1100	7.033	30.183	65.617
10.04	0.0900	0.0717	12.433	49.117	103.250

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-34 Passenger

19-AUG-93 8:22:13

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Paved
4:	Position:.....	Passenger
5:	Speed:.....	35 mph
6:	Note:.....	Loaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	0.2200	0.1367	3.133	15.433	35.367
2.56	0.1300	0.1016	4.883	22.250	49.500
1.98	0.0800	0.0800	6.850	29.550	64.367
7.95	0.2600	0.0654	9.017	37.367	79.867
1.52	0.0500	0.0500	12.833	50.500	105.750

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
4.07	0.3000	0.1474	2.800	14.050	32.433
20.17	0.7800	0.0773	7.183	30.750	66.750
10.04	0.3400	0.0677	8.617	35.867	77.000
5.12	0.1700	0.0664	8.833	36.683	78.500
7.95	0.2400	0.0604	10.033	40.867	87.000

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	0.2500	0.2242	2.450	12.617	29.433
4.07	0.1800	0.1800	3.450	16.650	38.000
2.56	0.2200	0.1760	3.567	17.117	38.933
7.95	0.1300	0.1300	5.567	24.800	54.617
5.12	0.1000	0.1000	8.000	33.750	72.750

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-34 Driver

19-AUG-93 8:22:13

1:	Vehicle:.....	**M916 ride quality**
2:	Date:.....	**August 25, 1992**
3:	Course:.....	**Paved**
4:	Position:.....	**Driver**
5:	Speed:.....	**35 mph**
6:	Note:.....	**Loaded trailer**

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	**0.1300**	**0.0808**	**6.767**	**29.183**	**63.617**
2.56	0.0900	0.0703	8.183	34.367	73.867
1.98	0.0600	0.0600	10.117	41.183	87.500
7.95	0.1300	0.0327	21.800	80.117	162.750
1.52	0.0300	0.0300	24.150	87.750	177.250

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
4.07	**0.1400**	**0.0688**	**8.433**	**35.250**	**75.750**
10.04	0.2100	0.0418	16.083	61.500	127.000
20.17	0.3600	0.0357	19.550	73.000	149.000
7.95	0.1400	0.0352	19.900	74.000	151.250
5.12	0.0800	0.0313	23.000	84.000	170.000

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
3.22	**0.2000**	**0.1794**	**3.467**	**16.750**	**38.117**
2.56	0.1900	0.1520	4.433	20.550	46.000
4.07	0.1200	0.1200	6.233	27.250	59.750
7.95	0.0900	0.0900	9.217	38.050	81.250
10.04	0.1000	0.0797	10.833	43.683	92.500

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-35 Passenger

19-AUG-93 8:22:13

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Paved
4:	Position:.....	Passenger
5:	Speed:.....	45 mph
6:	Note:.....	Loaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.1500	0.1500	2.717	13.717	31.750
2.56	0.1200	0.0938	5.483	24.500	54.117
3.22	0.1400	0.0870	6.100	26.750	58.750
5.12	0.2000	0.0782	7.083	30.367	66.000
6.35	0.2400	0.0755	7.417	31.617	68.500

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
5.12	0.2600	0.1016	4.883	22.250	49.500
25.40	1.1000	0.0866	6.133	26.933	59.000
4.07	0.1400	0.0688	8.433	35.250	75.750
6.35	0.2100	0.0661	8.900	36.867	79.000
10.04	0.3100	0.0618	9.733	39.867	84.867

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
5.12	0.1800	0.1800	3.450	16.650	38.000
3.22	0.2000	0.1794	3.467	16.750	38.117
2.56	0.2200	0.1760	3.567	17.117	38.933
6.35	0.1400	0.1400	5.000	22.683	50.367
10.04	0.1400	0.1116	6.900	29.683	64.617

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-35 Driver

19-AUG-93 8:22:13

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Paved
4:	Position:.....	Driver
5:	Speed:.....	45 mph
6:	Note:.....	Loaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.1100	0.1100	4.350	20.183	45.250
2.56	0.0900	0.0703	8.183	34.367	73.867
3.22	0.0900	0.0559	11.083	44.550	94.117
1.52	0.0500	0.0500	12.833	50.500	105.750
5.12	0.1200	0.0469	13.933	54.250	113.000

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
25.40	0.5000	0.0394	17.333	65.617	135.000
10.04	0.1900	0.0378	18.217	68.500	140.500
5.12	0.0900	0.0352	19.933	74.117	151.250
12.68	0.1900	0.0300	24.183	87.750	177.500
4.07	0.0600	0.0295	24.683	89.367	180.500

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.1900	0.1520	4.433	20.550	46.000
3.22	0.1500	0.1345	5.300	23.800	52.617
5.12	0.1300	0.1300	5.567	24.800	54.617
6.35	0.1200	0.1200	6.233	27.250	59.750
1.98	0.1600	0.1127	6.800	29.367	63.867

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-36 Passenger

19-AUG-93 8:22:14

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Paved
4:	Position:.....	Passenger
5:	Speed:.....	55 mph
6:	Note:.....	Loaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.2100	0.2100	1.567	8.833	21.300
3.22	0.3000	0.1865	1.917	10.350	24.617
7.95	0.6600	0.1660	2.317	12.050	28.250
2.56	0.1700	0.1329	3.283	16.000	36.550
1.52	0.1000	0.1000	5.000	22.683	50.367

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
4.07	0.2200	0.1081	4.467	20.617	46.250
6.35	0.3400	0.1070	4.533	20.867	46.750
3.22	0.1500	0.0932	5.533	24.683	54.433
2.56	0.1000	0.0782	7.083	30.367	66.000
5.12	0.1700	0.0664	8.833	36.683	78.500

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.3400	0.2720	1.800	9.800	23.433
7.95	0.2200	0.2200	2.533	12.933	30.117
3.22	0.2400	0.2153	2.617	13.300	30.867
6.35	0.1800	0.1800	3.450	16.650	38.000
1.98	0.2300	0.1620	4.033	19.000	42.750

* International Standards Organization ISO 2631:

Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

USAARL summary of analysis per ISO-2631* guideline on whole-body vibration (WBV)

RUN-36 Driver

19-AUG-93 8:22:14

1:	Vehicle:.....	M916 ride quality
2:	Date:.....	August 25, 1992
3:	Course:.....	Paved
4:	Position:.....	Driver
5:	Speed:.....	55 mph
6:	Note:.....	Loaded trailer

Third-octave bands with greatest weighted RMS accelerations (m/s^2) — Durations of WBV exposure before reaching ISO limits*

X: Longitudinal

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
1.98	0.1400	0.1400	3.033	14.967	34.433
3.22	0.1800	0.1119	4.250	19.800	44.433
2.56	0.1300	0.1016	4.883	22.250	49.500
7.95	0.3000	0.0754	7.433	31.683	68.500
1.52	0.0700	0.0700	8.233	34.500	74.250

Y: Transverse

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
6.35	0.1700	0.0535	11.750	46.867	98.617
4.07	0.0900	0.0442	15.000	57.867	120.000
3.22	0.0600	0.0373	18.550	69.500	142.750
2.56	0.0400	0.0313	23.000	84.000	170.000
1.98	0.0300	0.0300	24.150	87.750	177.250

Z: Vertical

(Hz)	actual	weighted	Comfort (hours)	Fatigue (hours)	Health (hours)
2.56	0.2900	0.2320	2.317	12.083	28.300
3.22	0.1900	0.1704	3.750	17.833	40.367
1.98	0.2200	0.1550	4.317	20.050	45.000
7.95	0.1300	0.1300	5.567	24.800	54.617
6.35	0.1100	0.1100	7.033	30.183	65.617

* International Standards Organization ISO 2631:
Comfort ... Reduced comfort boundary
Fatigue ... Fatigue-decreased proficiency boundary
Health ... Health and safety exposure limit

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. combination (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

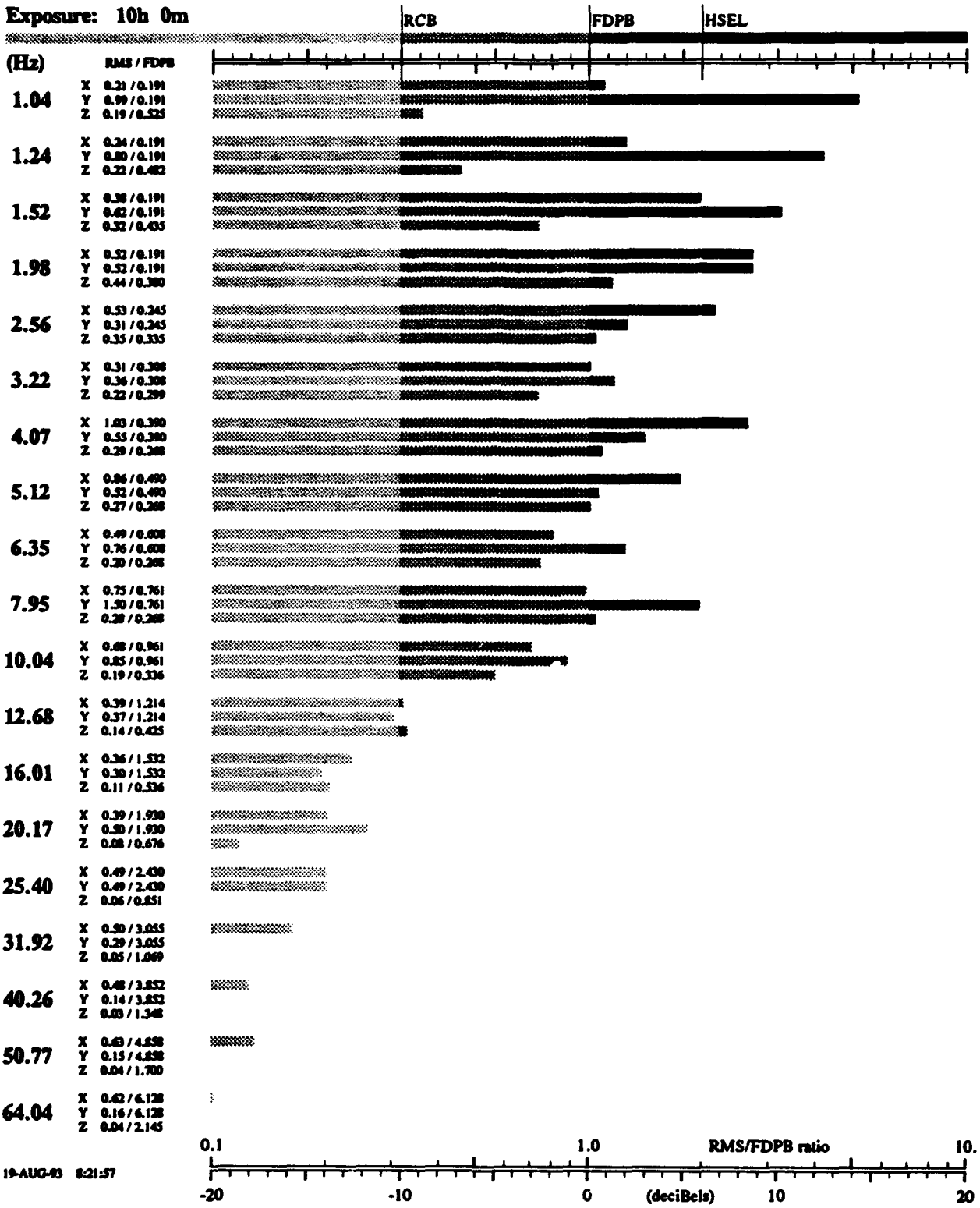
RUN-01

August 25, 1992

Passenger seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:21:57

Course: Belgian block
Speed: 5 mph
Note: Bobtail

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

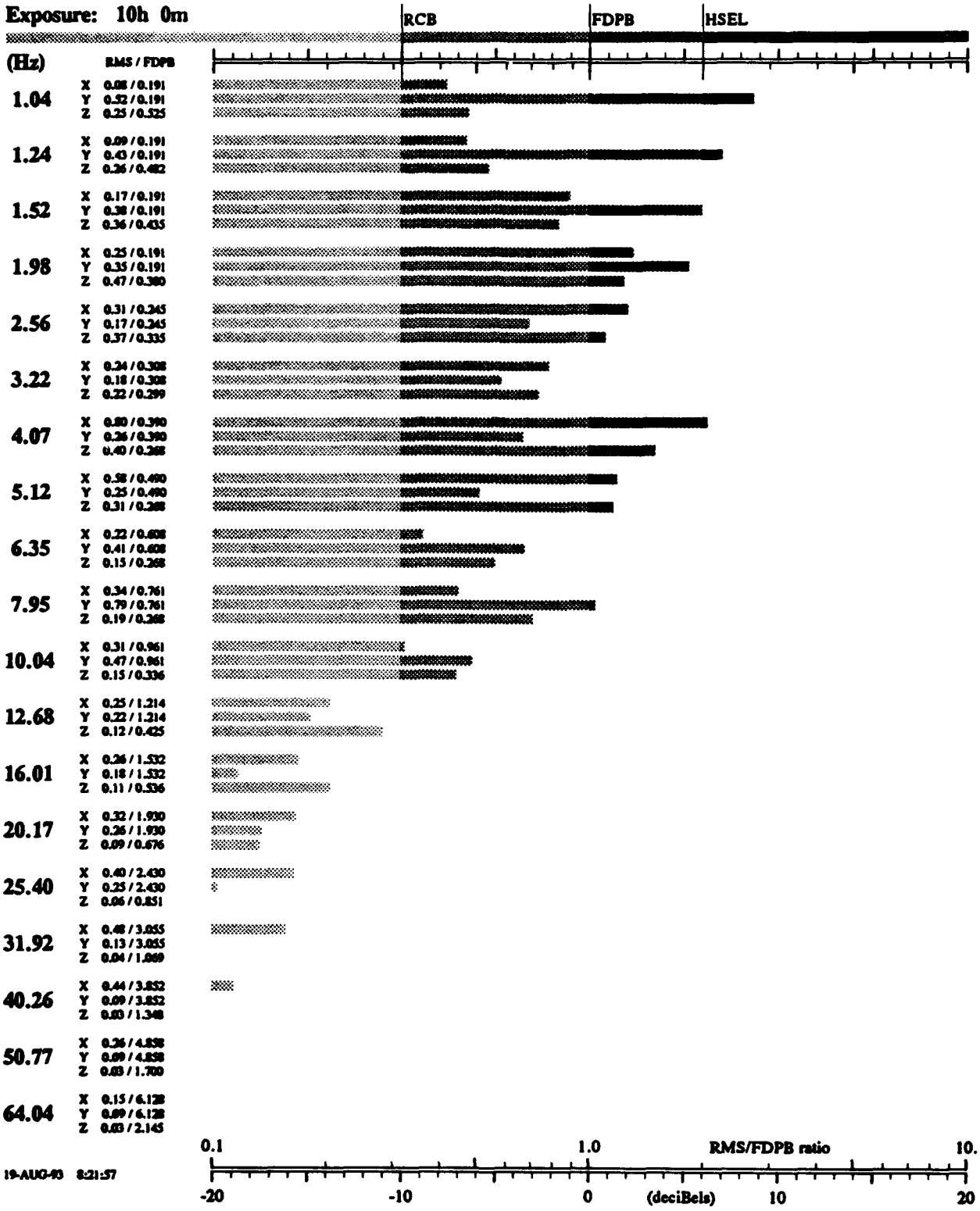
RUN-01

August 25, 1992

Driver seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:21:57

Course: Belgian block
Speed: 5 mph
Note: Bobtail

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

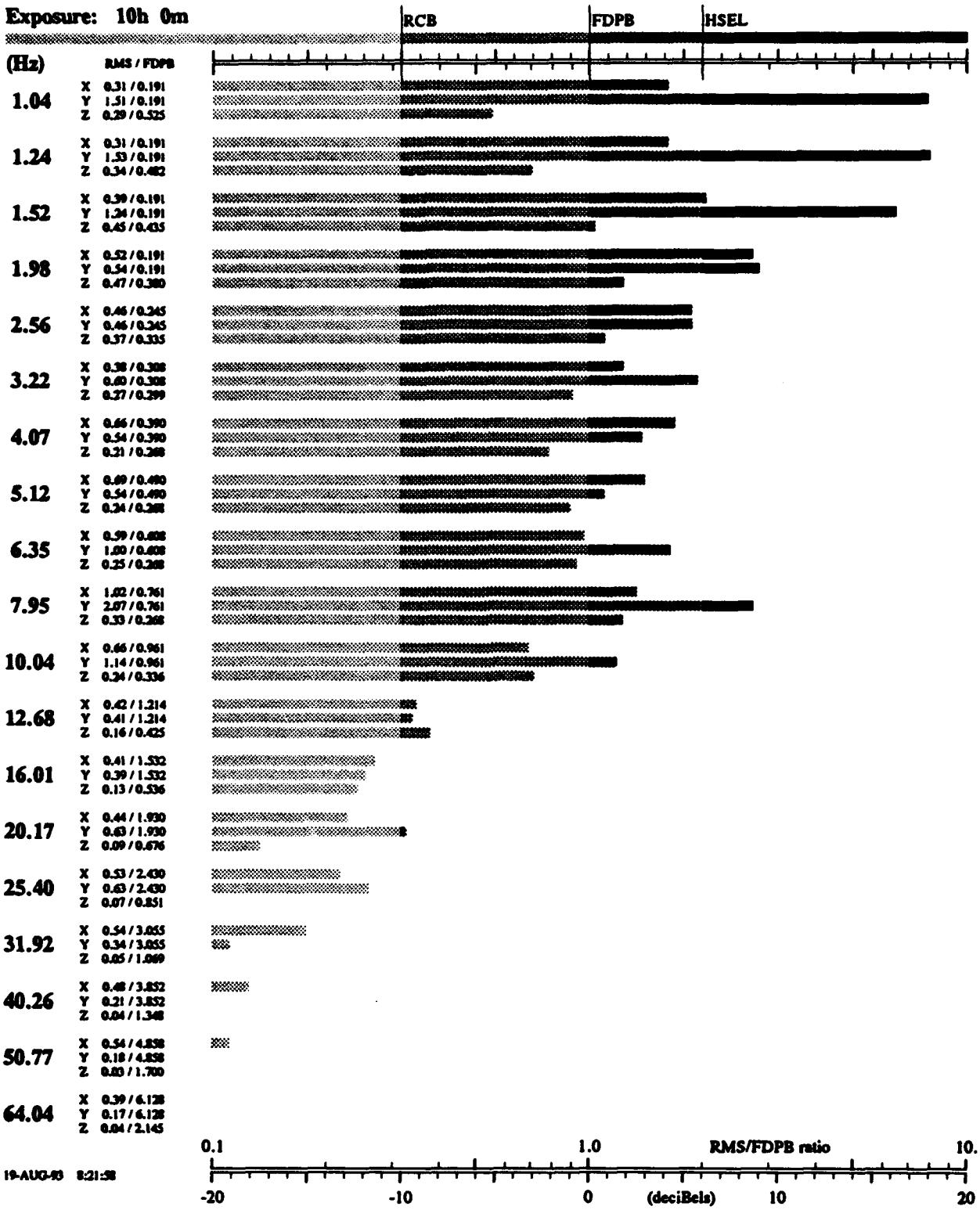
RUN-02

August 25, 1992

Passenger seat

M916 ride quality

Exposure: 10h 0m



Course: Belgian block
Speed: 10 mph
Note: Bobtail

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

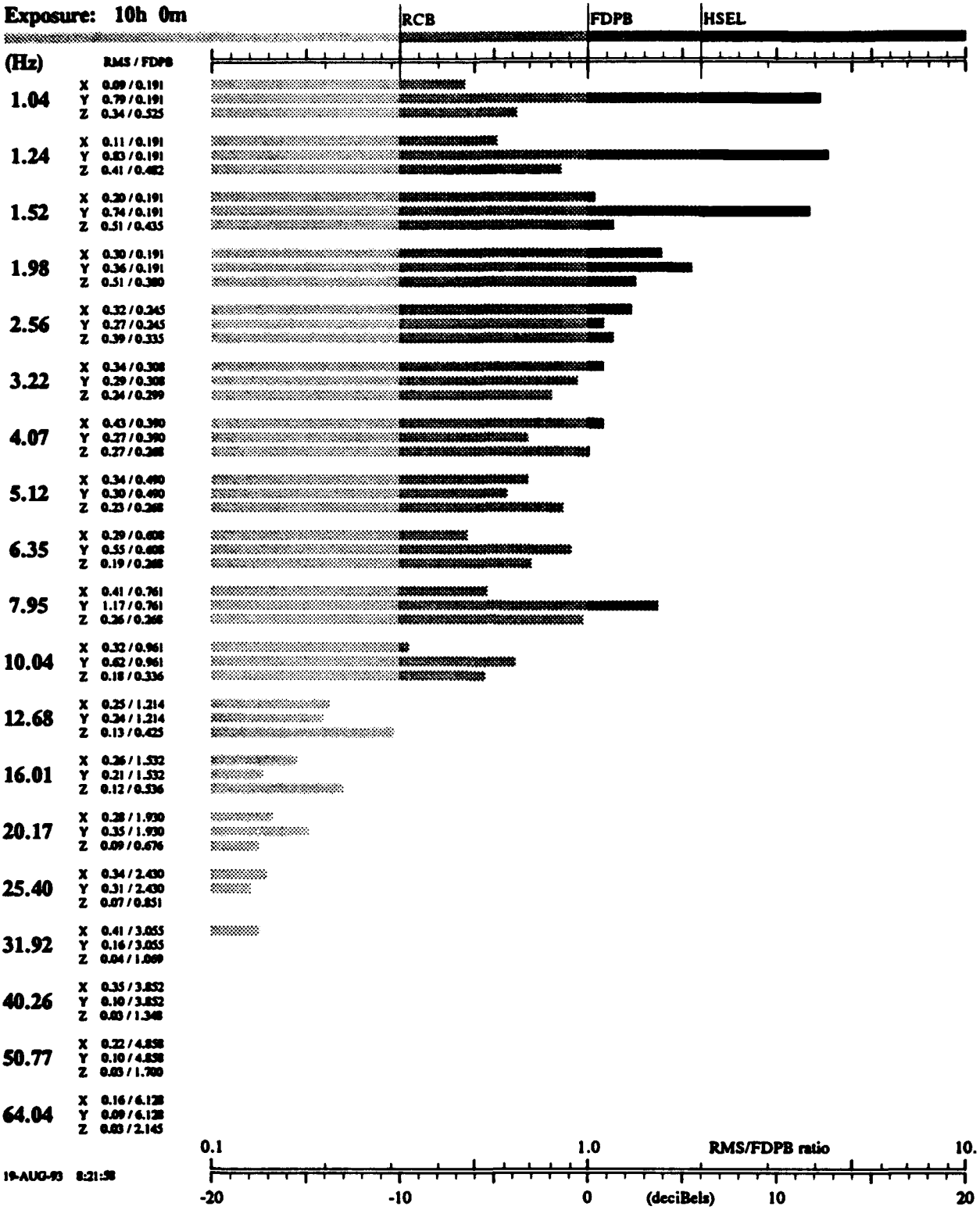
RUN-02

August 25, 1992

Driver seat

M916 ride quality

Exposure: 10h 0m



Course: Belgian block
Speed: 10 mph
Note: Bobtail

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

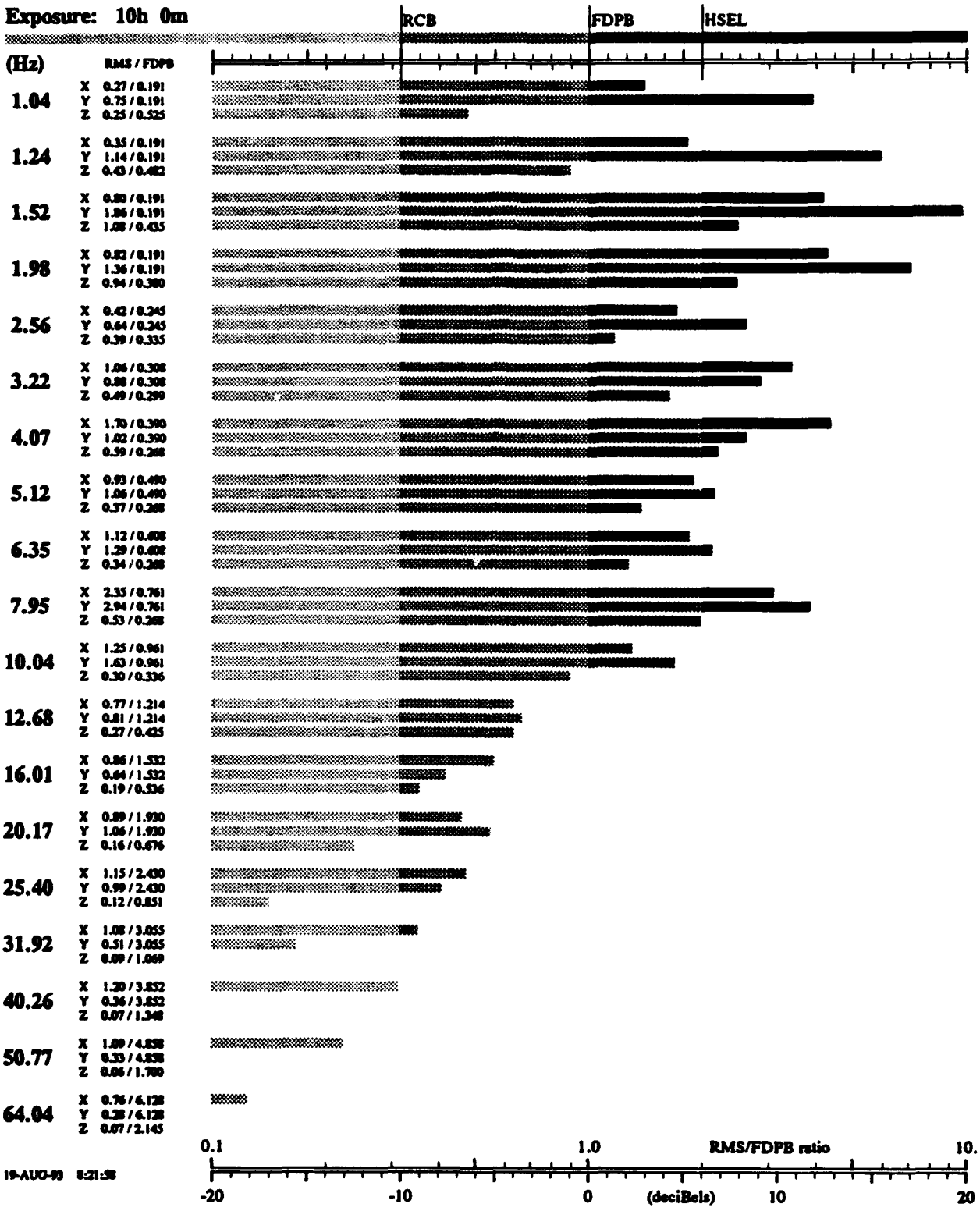
RUN-03

August 25, 1992

Passenger seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:21:58

Course: Belgian block
Speed: 15 mph
Note: Bobtail

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. combination (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

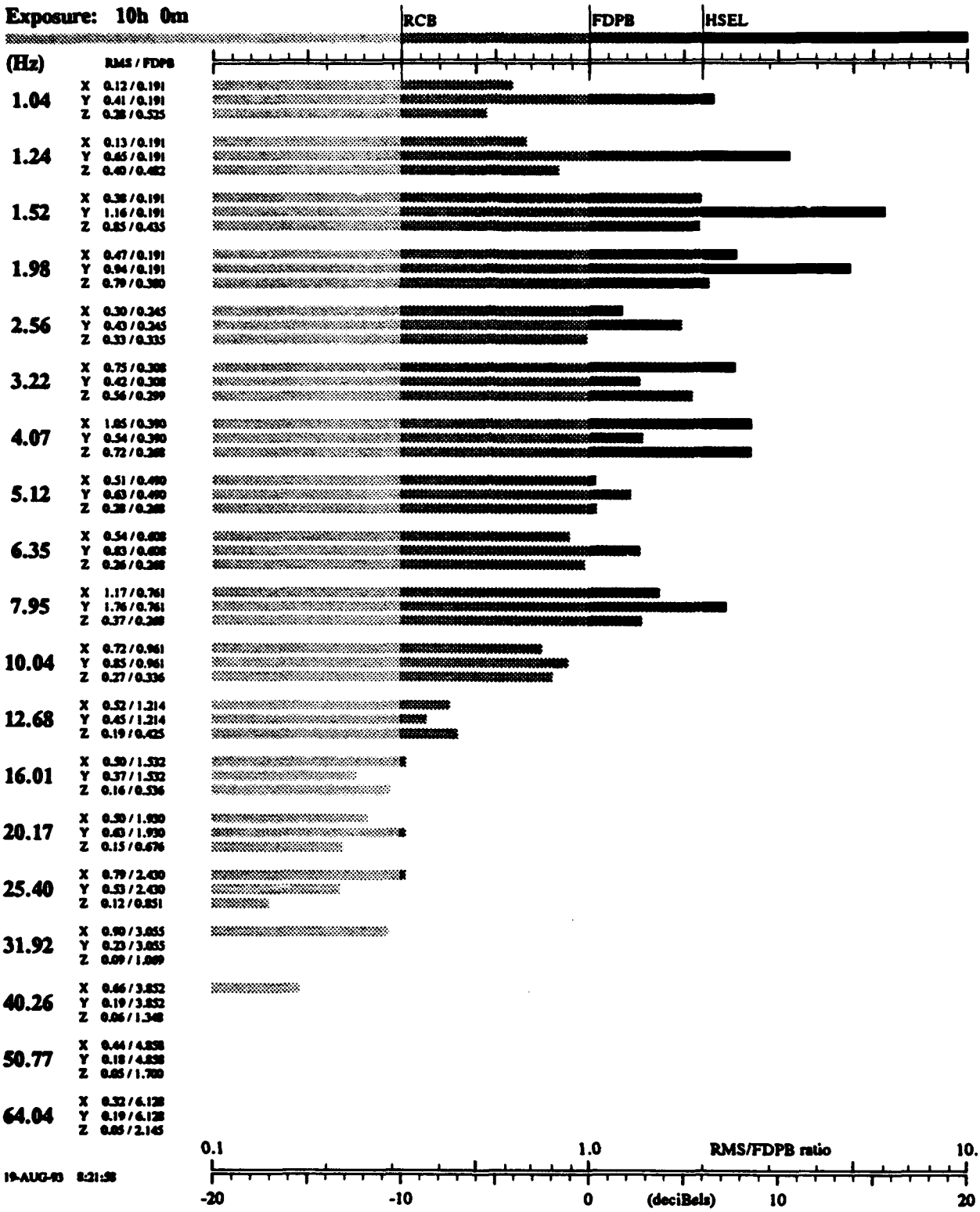
RUN-03

August 25, 1992

Driver seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:21:58

Course: Belgian block
Speed: 15 mph
Note: Bobtail

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

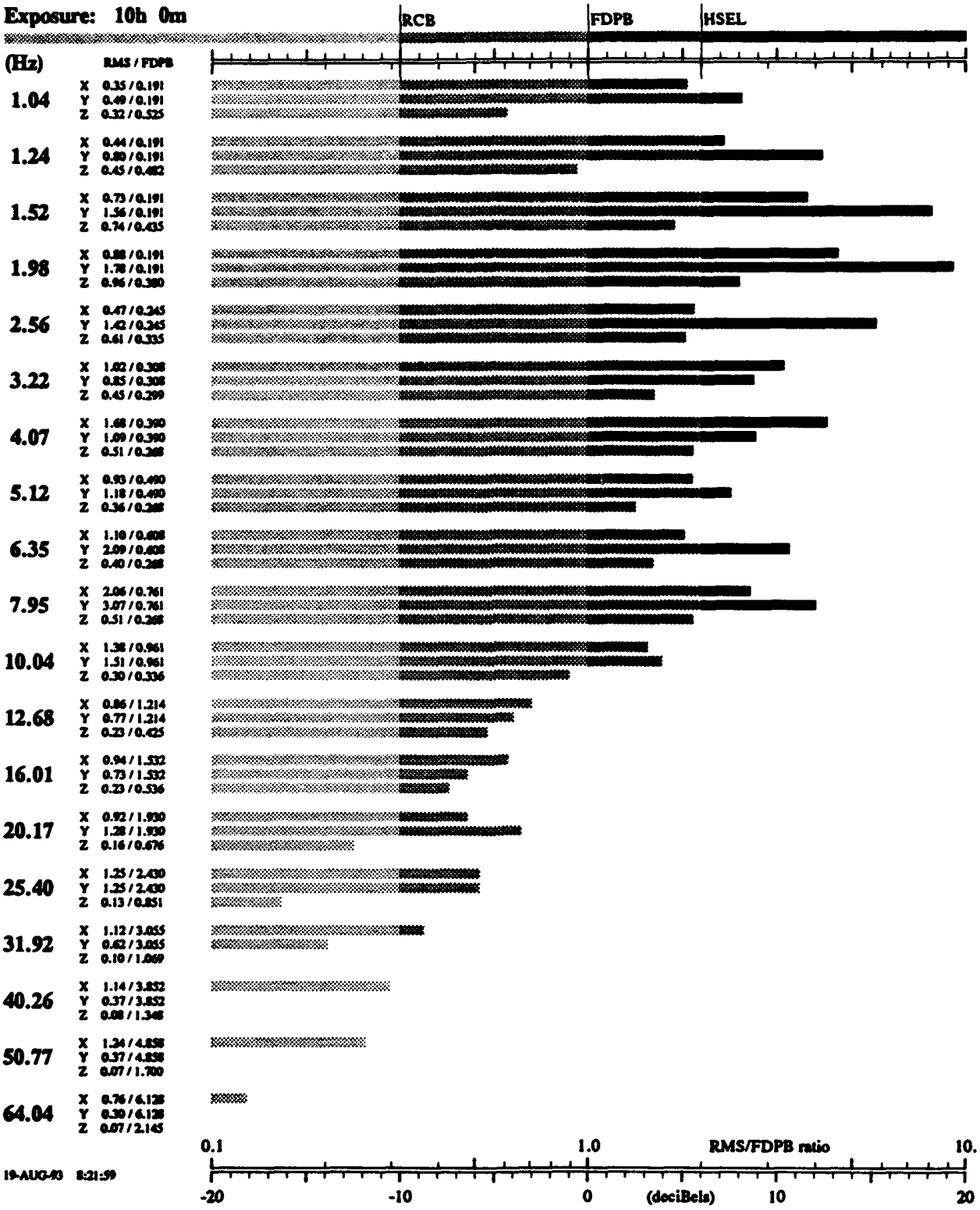
RUN-04

August 25, 1992

Passenger seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:21:59

Course: Belgian block
Speed: 20 mph
Note: Bobtail

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

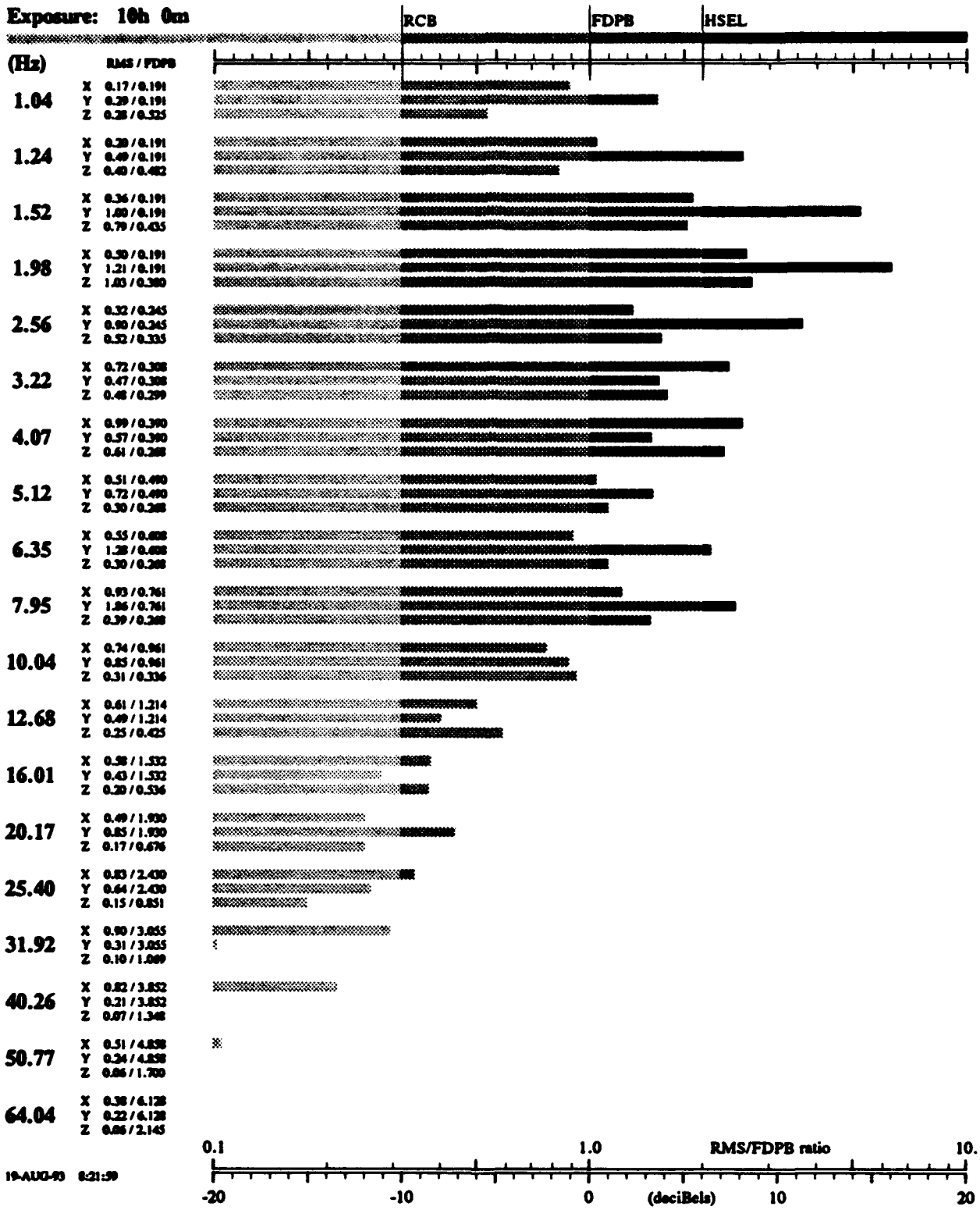
RUN-04

August 25, 1992

Driver seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:21:59

Course: Belgian block
Speed: 20 mph
Note: Bobtail

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

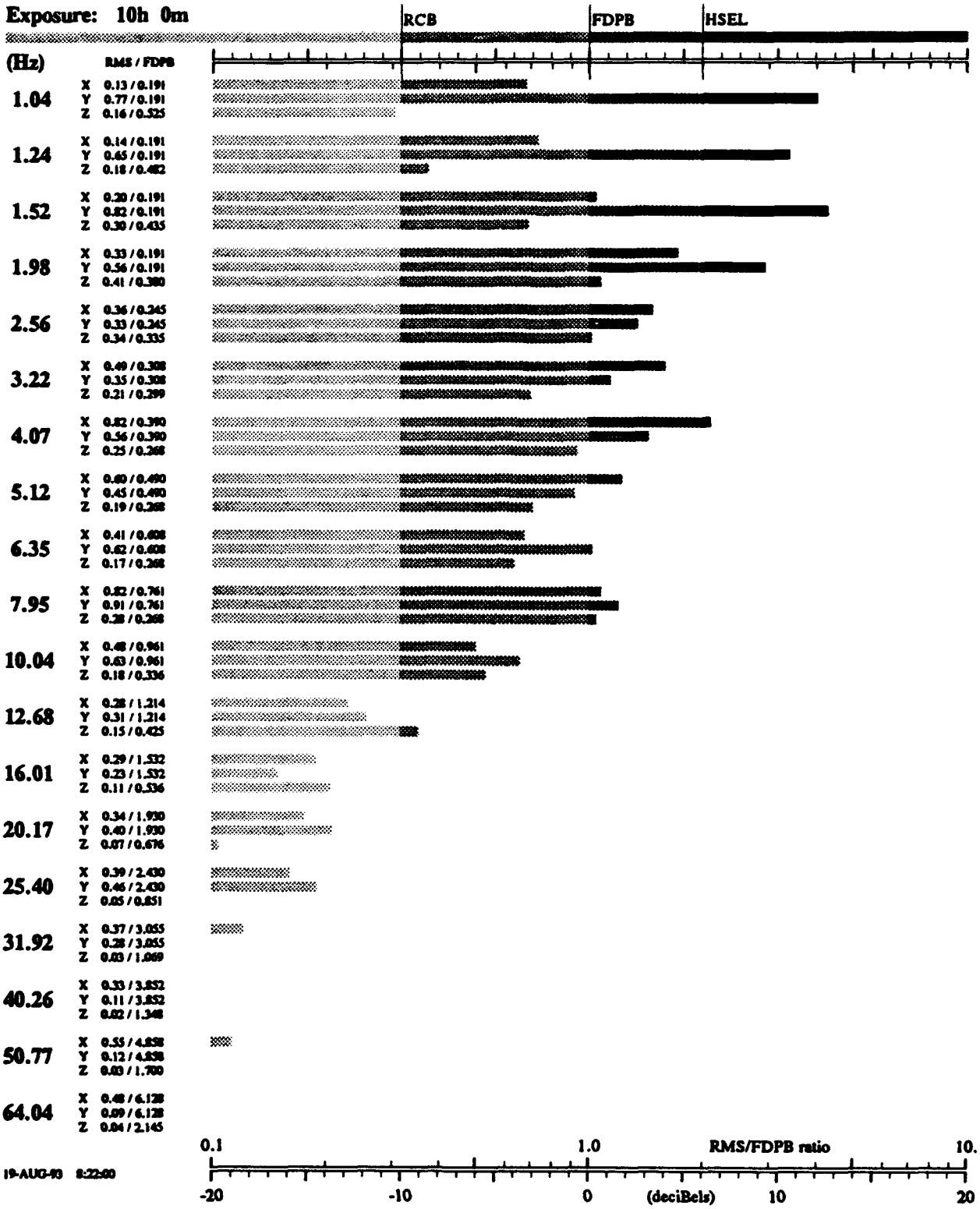
RUN-05

August 25, 1992

Passenger seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:00

Course: Belgian block
Speed: 5 mph
Note: Unloaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

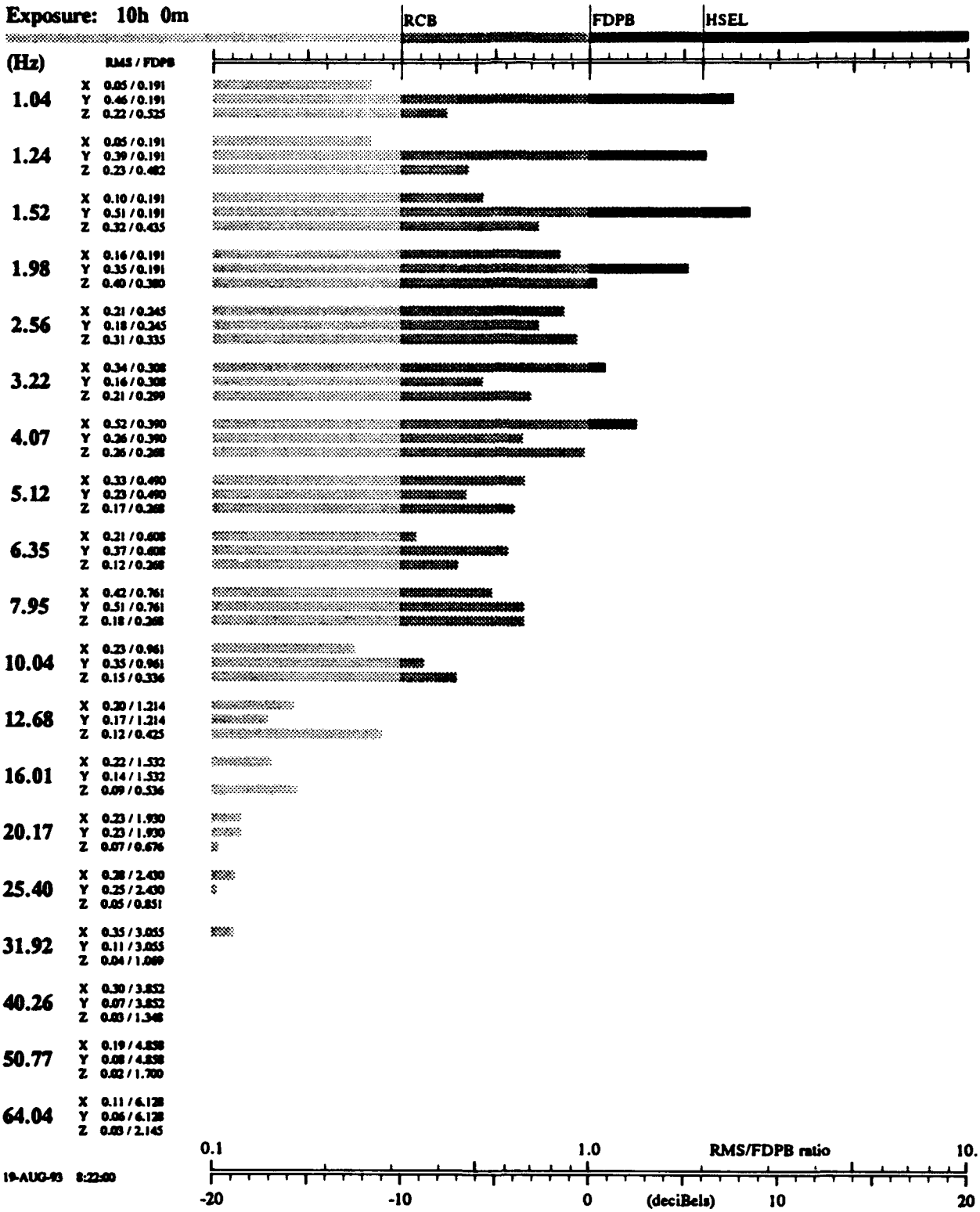
RUN-05

August 25, 1992

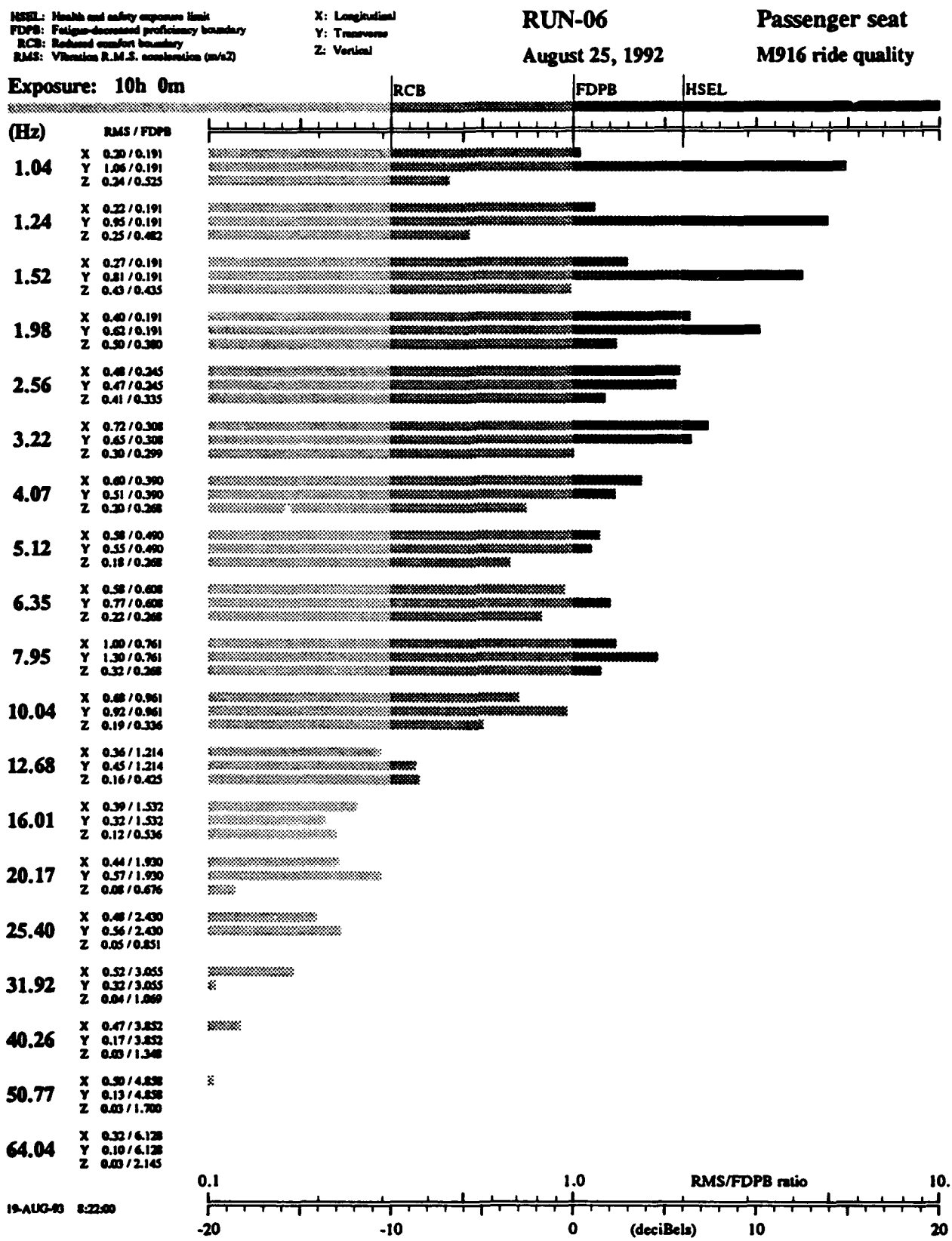
Driver seat

M916 ride quality

Exposure: 10h 0m



Course: Belgian block
Speed: 5 mph
Note: Unloaded trailer



Course: Belgian block
Speed: 10 mph
Note: Unloaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

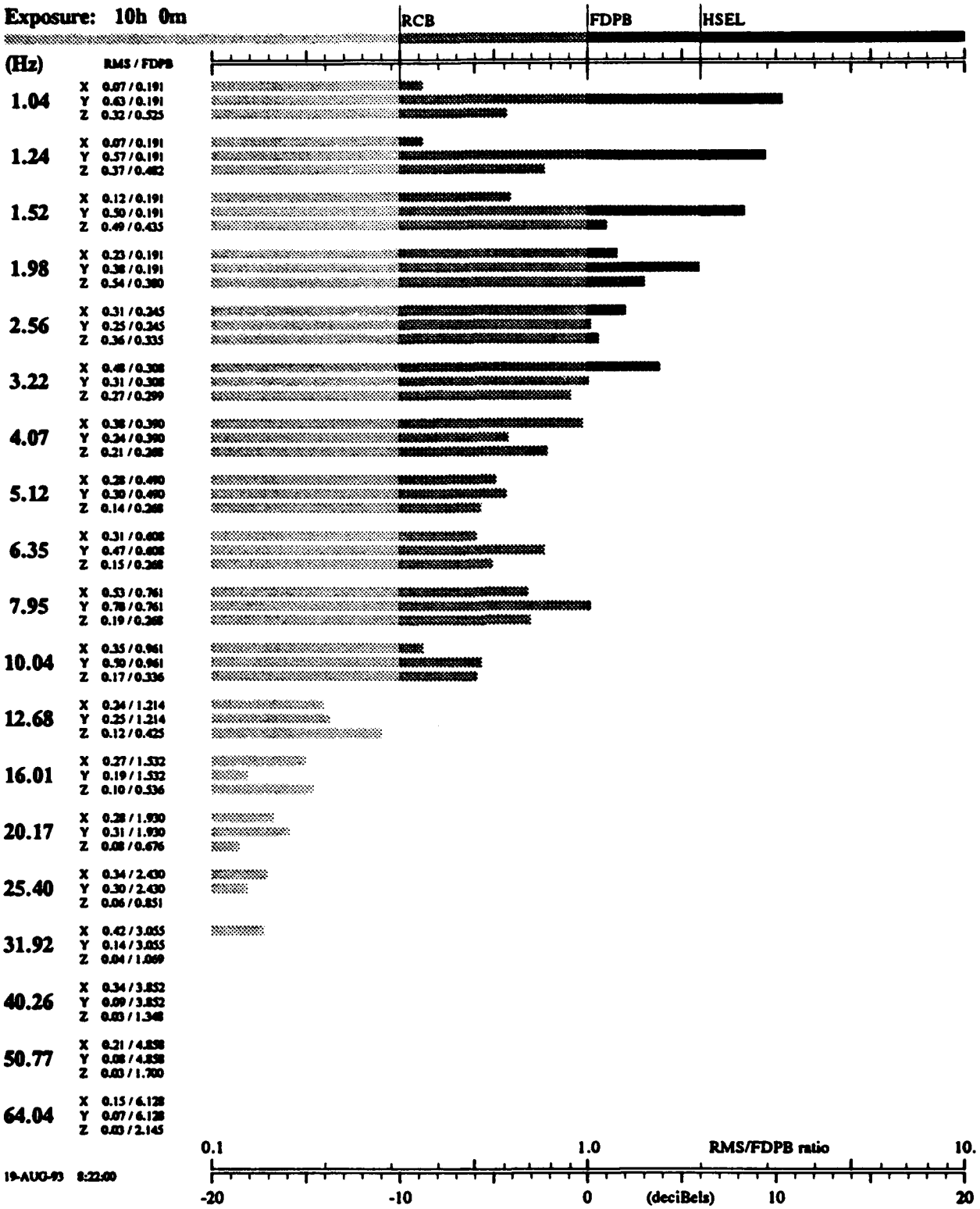
RUN-06

August 25, 1992

Driver seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:00

Course: Belgian block
Speed: 10 mph
Note: Unloaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

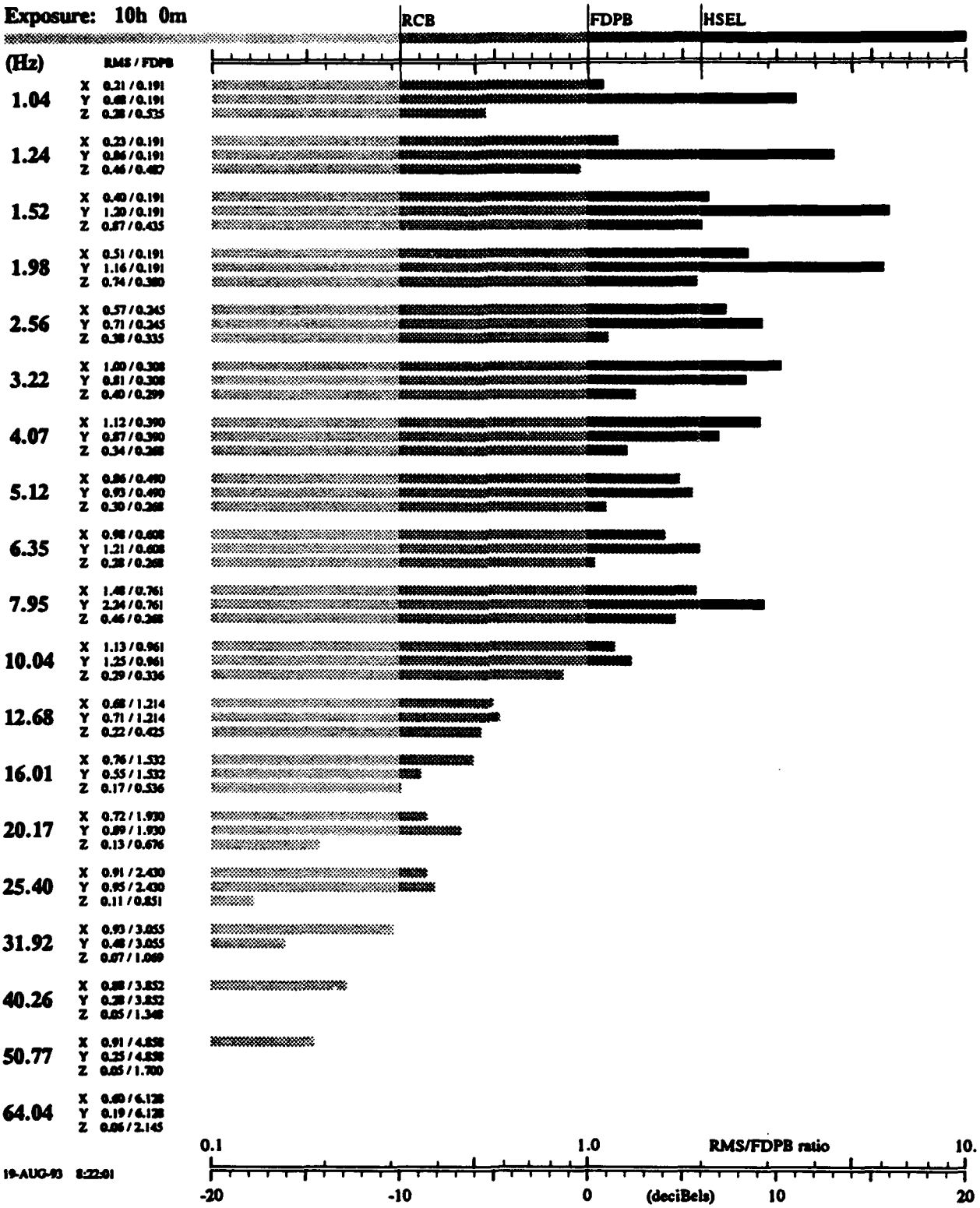
RUN-07

August 25, 1992

Passenger seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:01

Course: Belgian block
Speed: 15 mph
Note: Unloaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

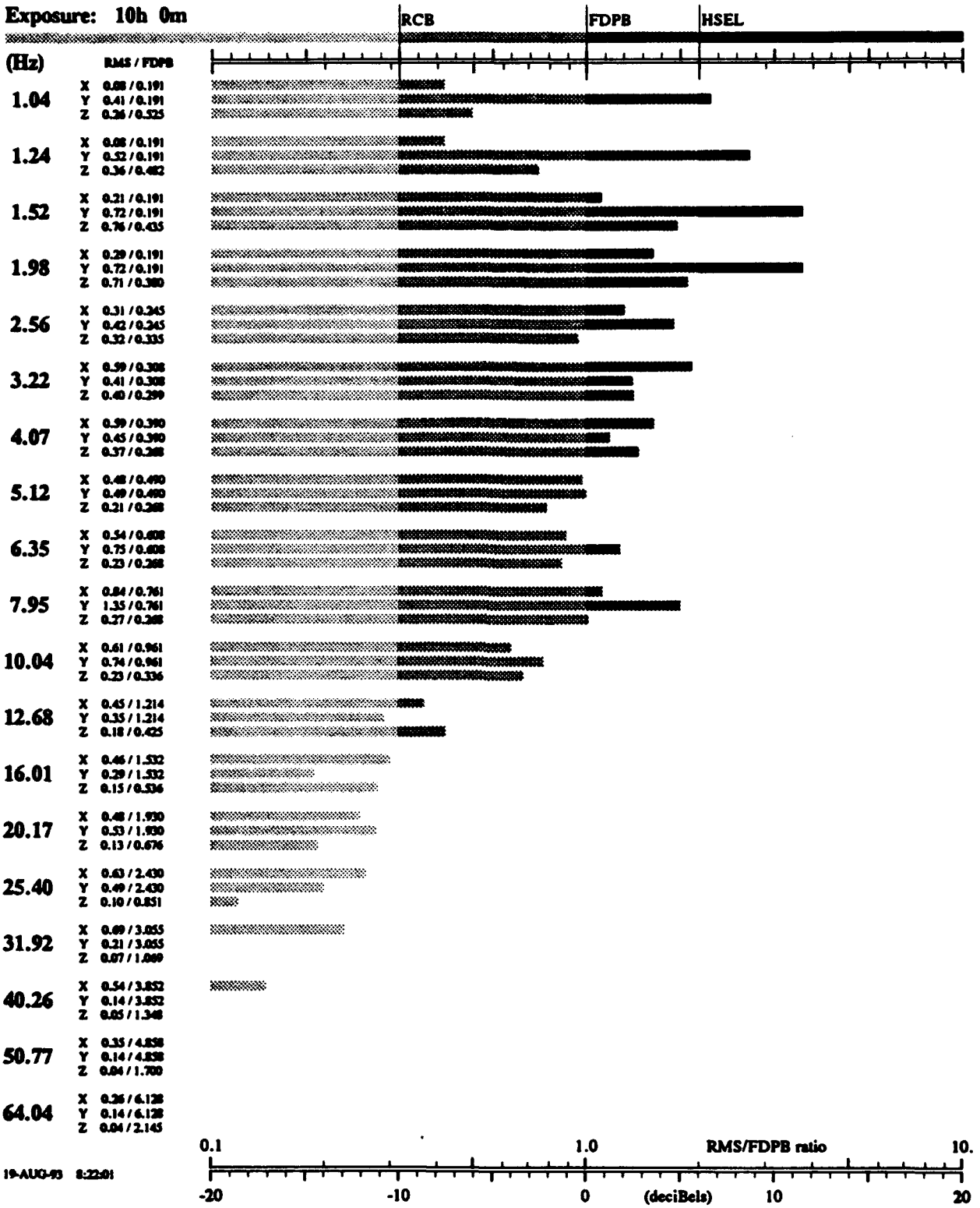
RUN-07

August 25, 1992

Driver seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:01

Course: Belgian block
Speed: 15 mph
Note: Unloaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

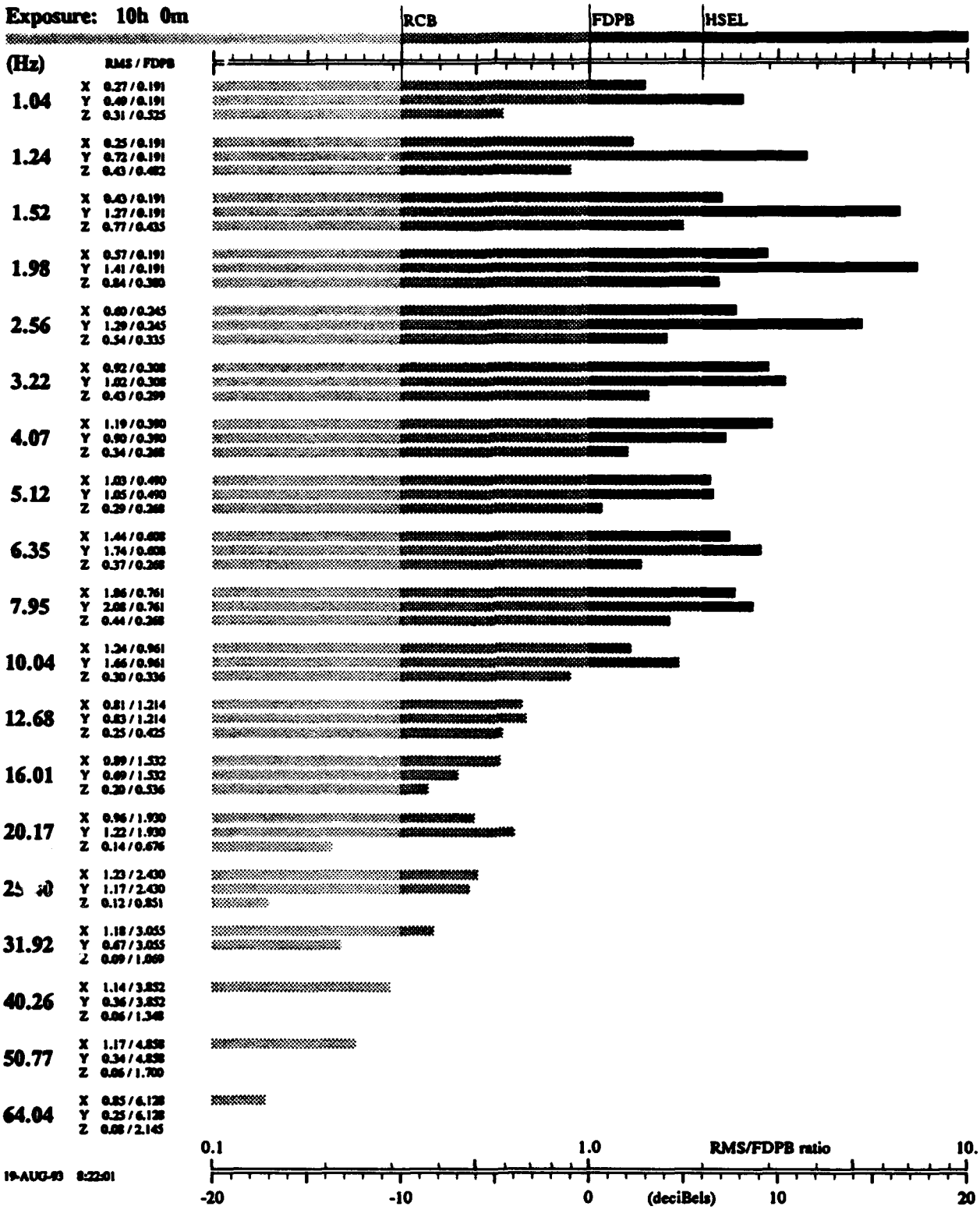
RUN-08

August 25, 1992

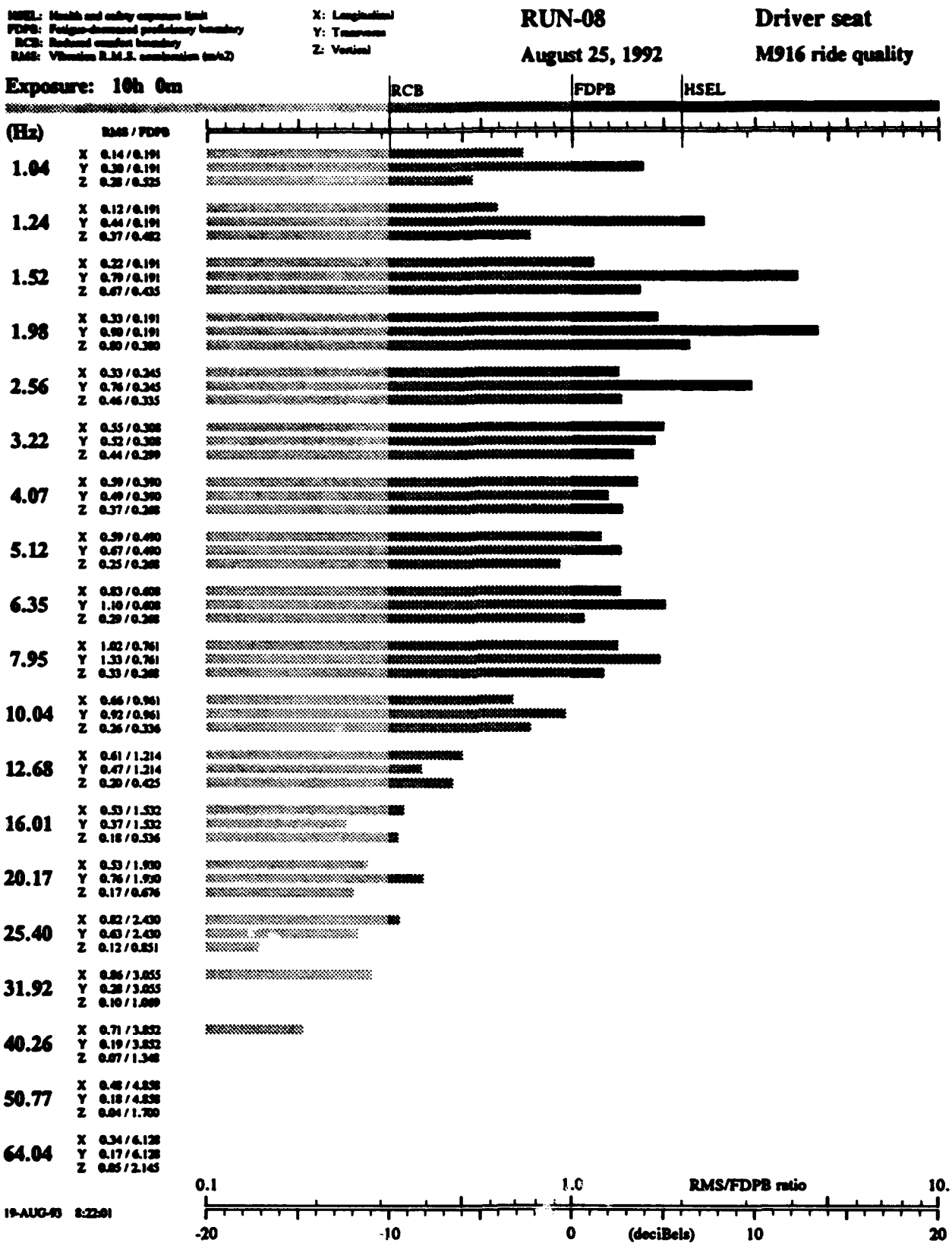
Passenger seat

M916 ride quality

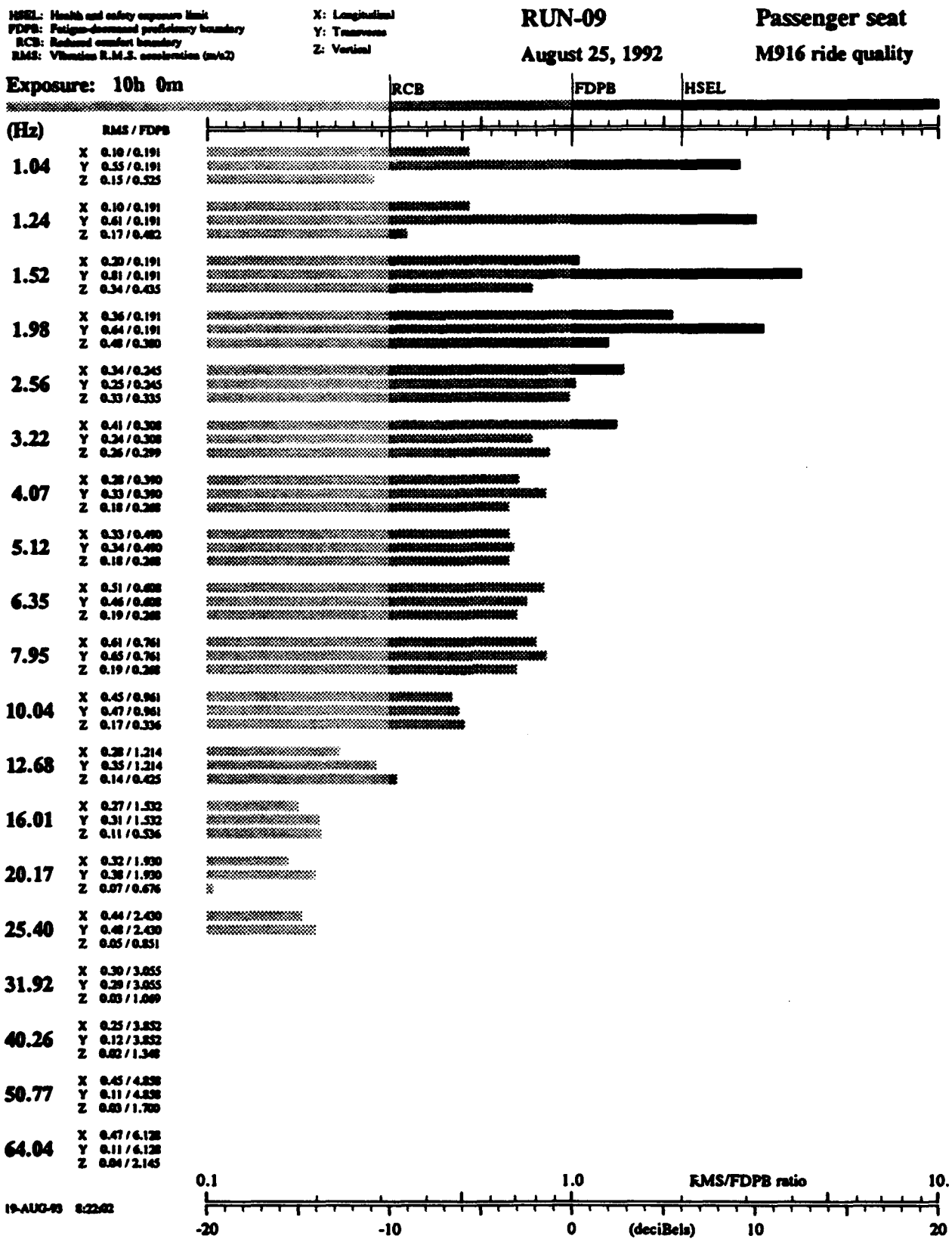
Exposure: 10h 0m



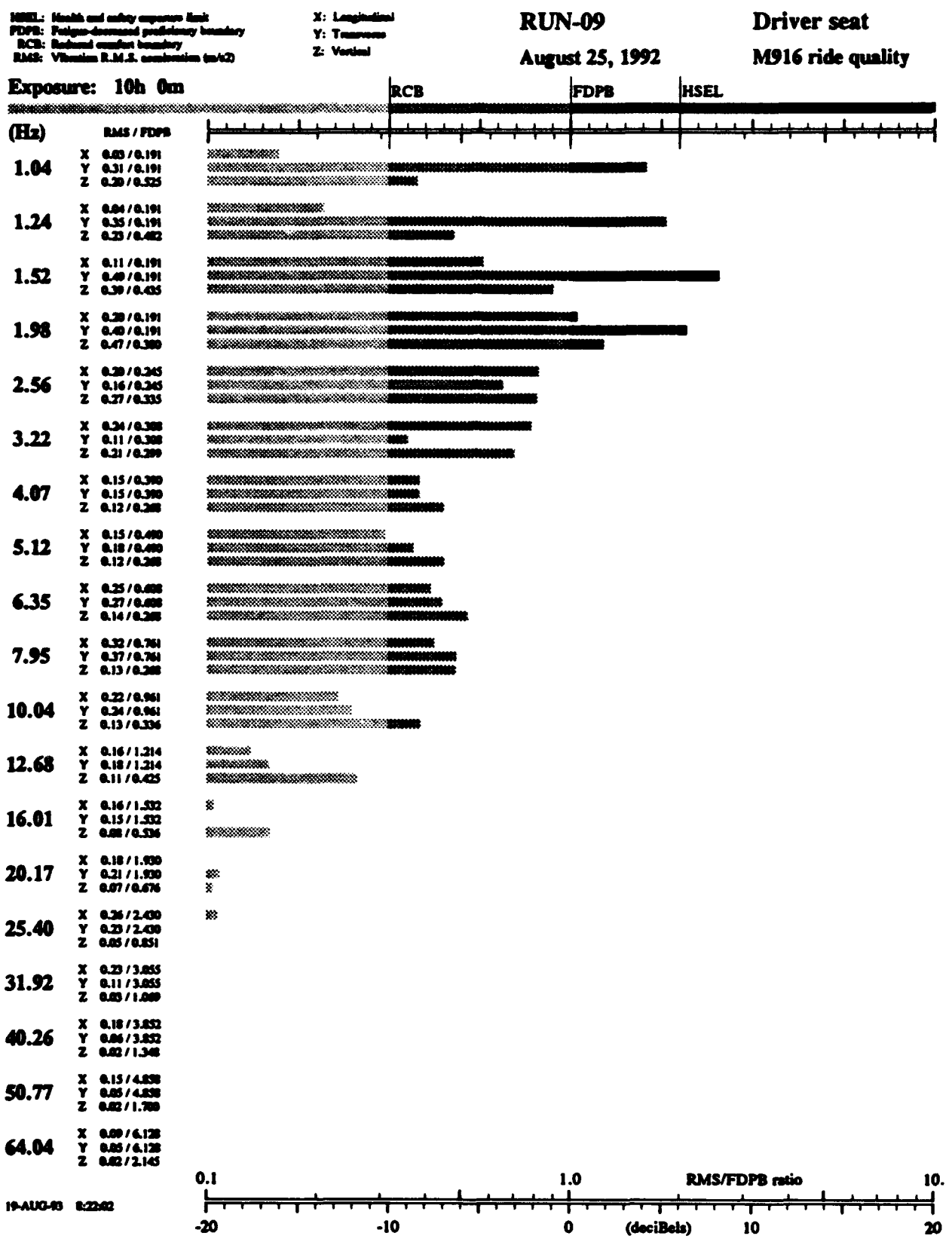
Course: Belgian block
Speed: 20 mph
Note: Unloaded trailer



Course: Belgian block
Speed: 20 mph
Note: Unloaded trailer



Course: Belgian block
Speed: 5 mph
Note: Loaded trailer



Course: Belgian block
Speed: 5 mph
Note: Loaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

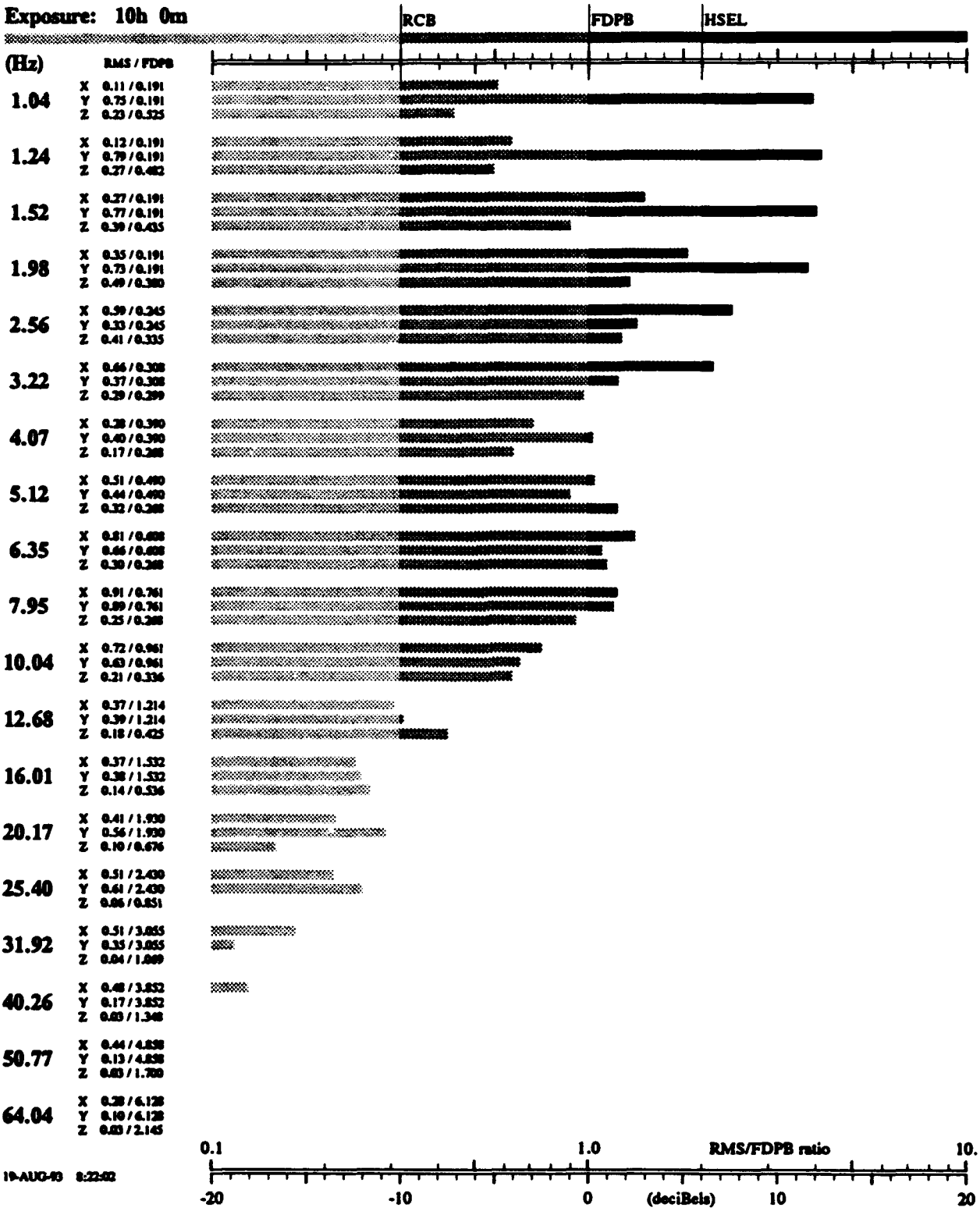
RUN-10

August 25, 1992

Passenger seat

M916 ride quality

Exposure: 10h 0m



Course: Belgian block
Speed: 10 mph
Note: Loaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

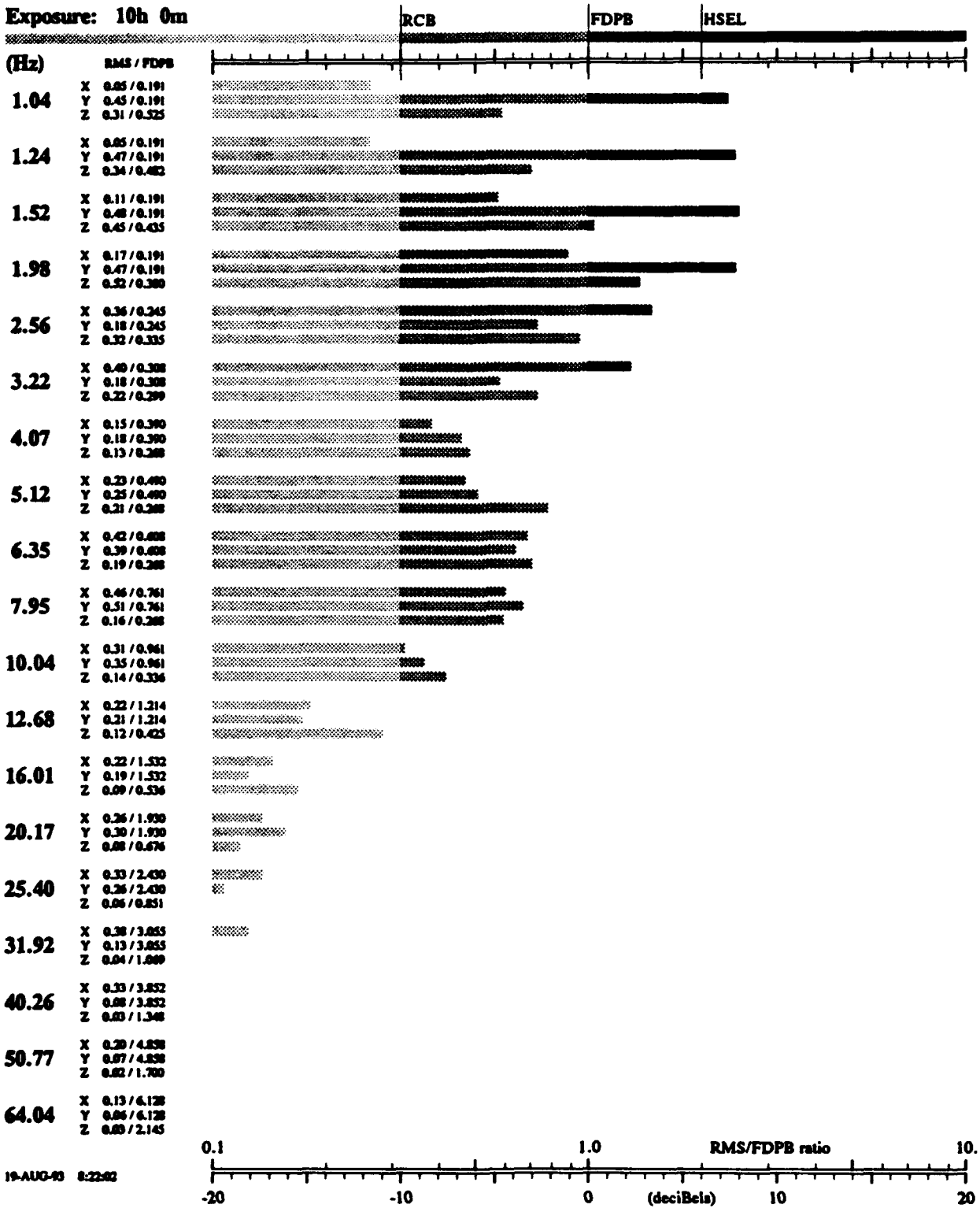
RUN-10

August 25, 1992

Driver seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:02

Course: Belgian block
Speed: 10 mph
Note: Loaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

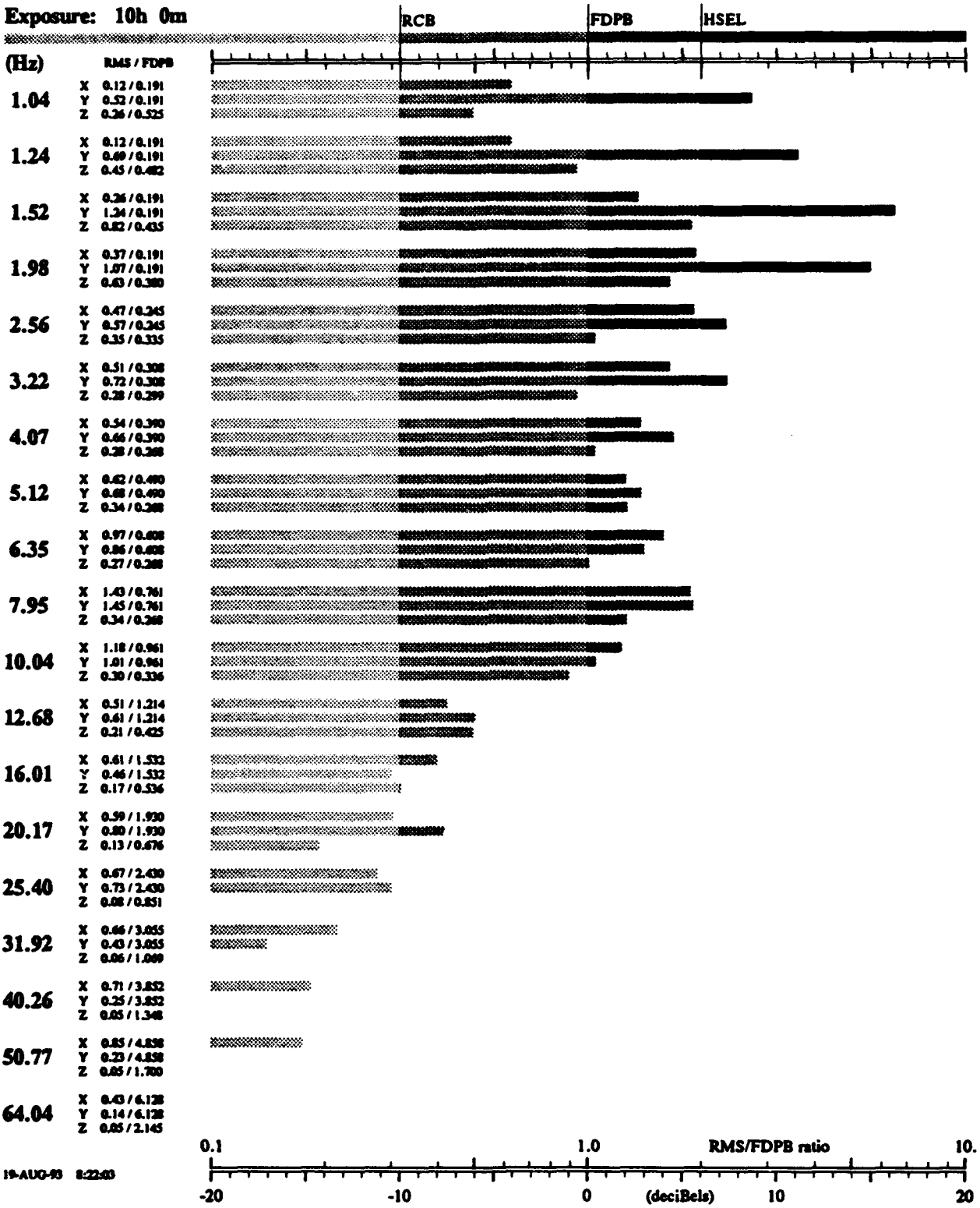
RUN-11

August 25, 1992

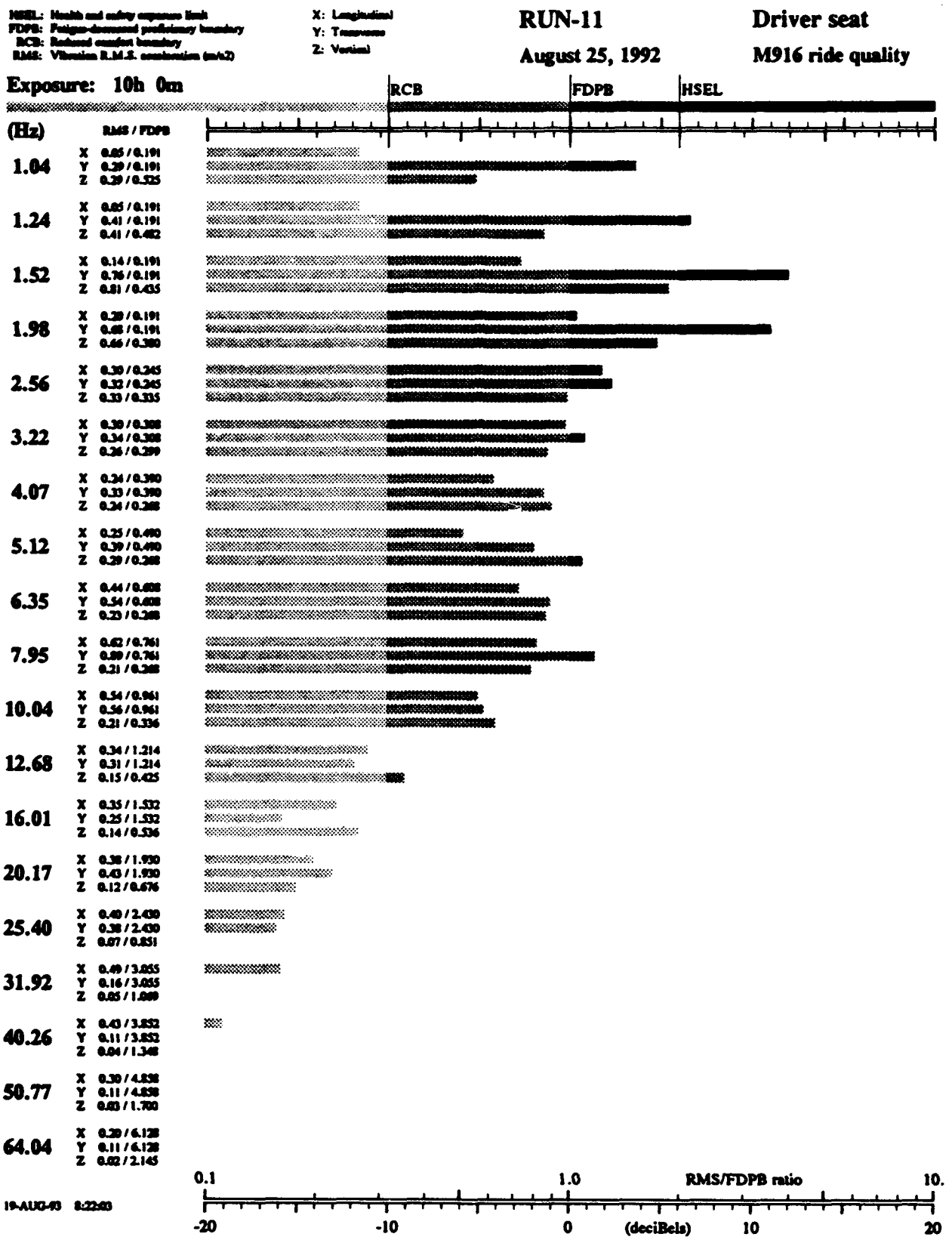
Passenger seat

M916 ride quality

Exposure: 10h 0m



Course: Belgian block
Speed: 15 mph
Note: Loaded trailer



Course: Belgian block
Speed: 15 mph
Note: Loaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

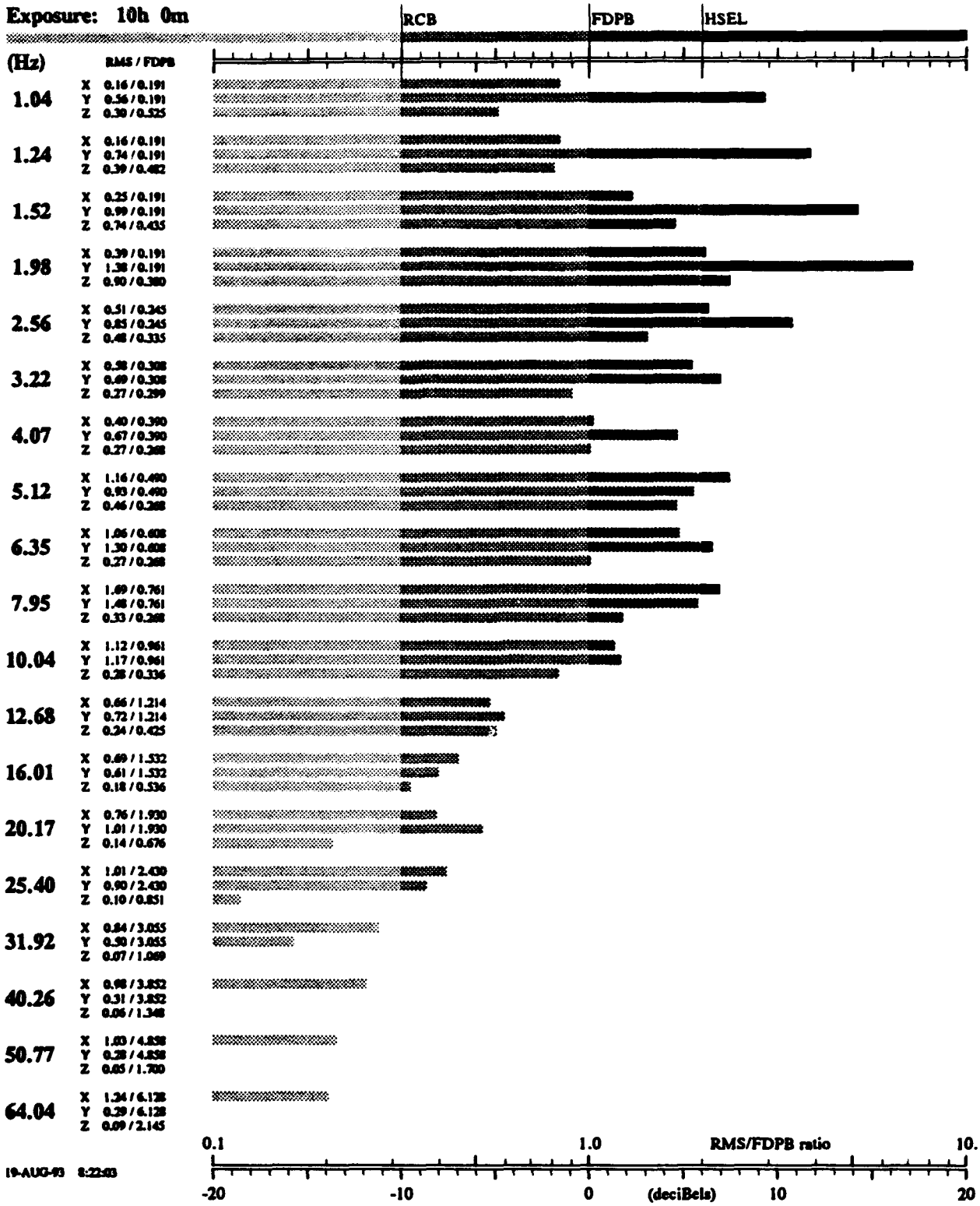
RUN-12

August 25, 1992

Passenger seat

M916 ride quality

Exposure: 10h 0m



Course: Belgian block
Speed: 20 mph
Note: Loaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

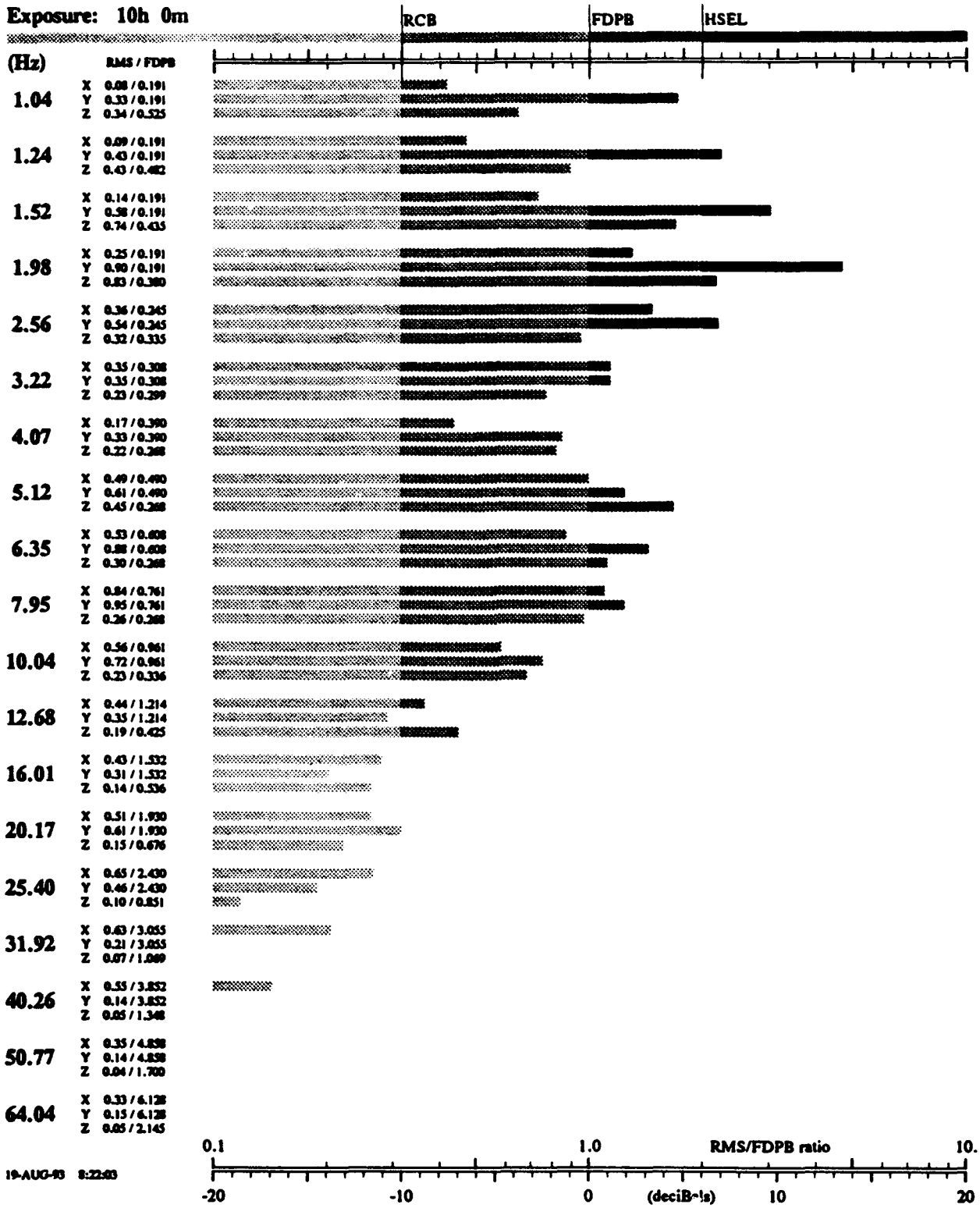
RUN-12

August 25, 1992

Driver seat

M916 ride quality

Exposure: 10h 0m



Course: Belgian block
Speed: 20 mph
Note: Loaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

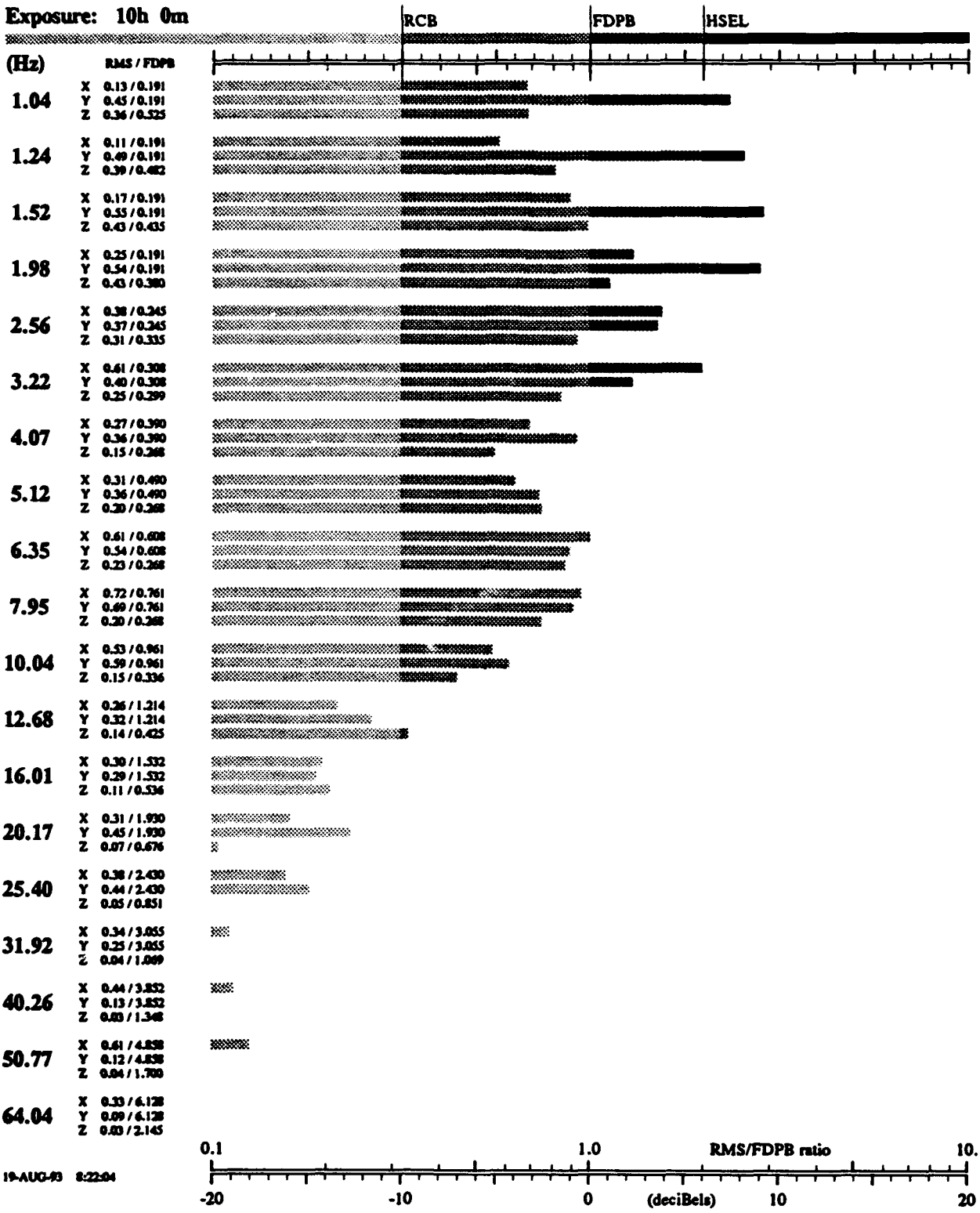
RUN-13

August 25, 1992

Passenger seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:04

Course: Cross country #2
Speed: 12 mph
Note: Loaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

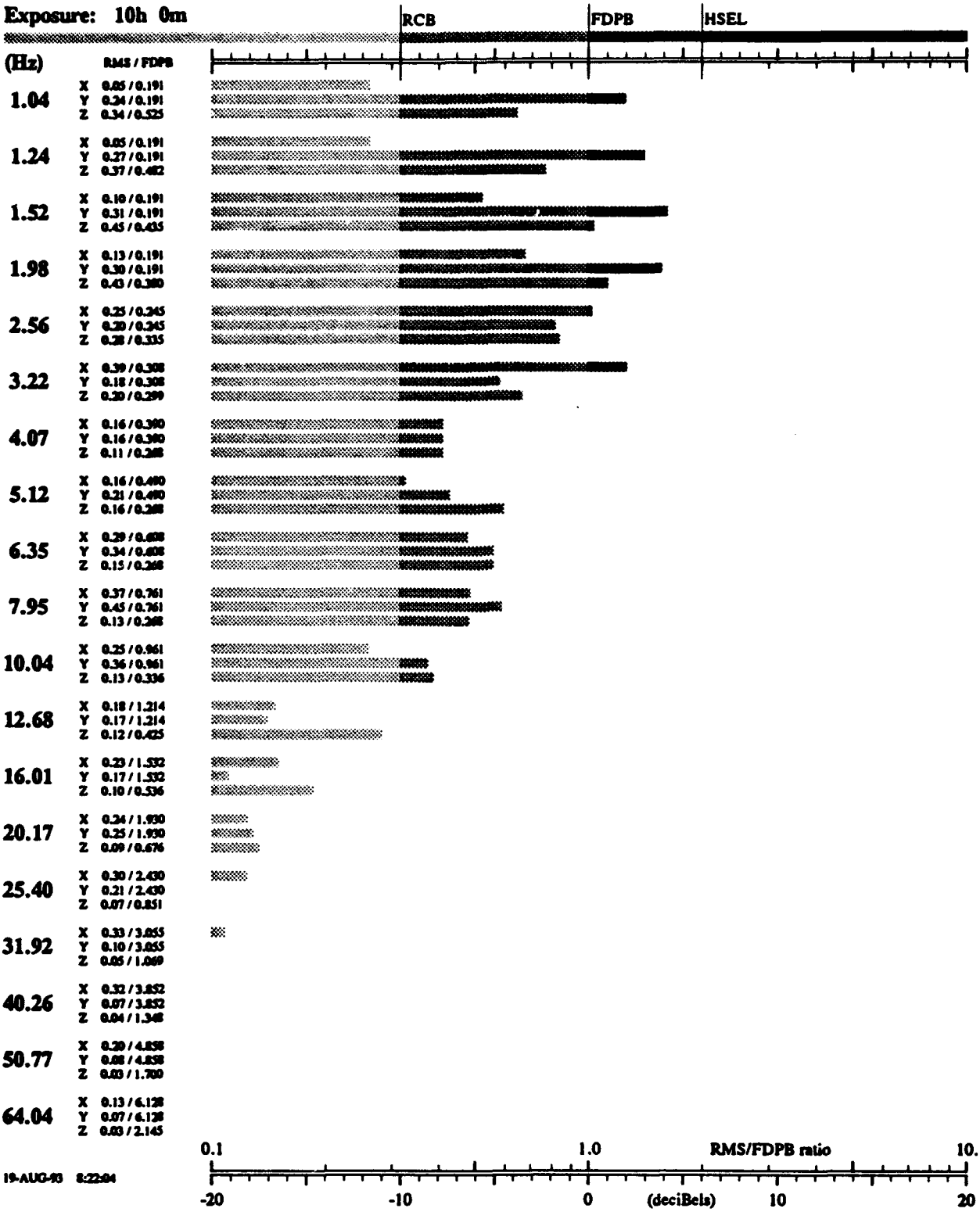
RUN-13

August 25, 1992

Driver seat

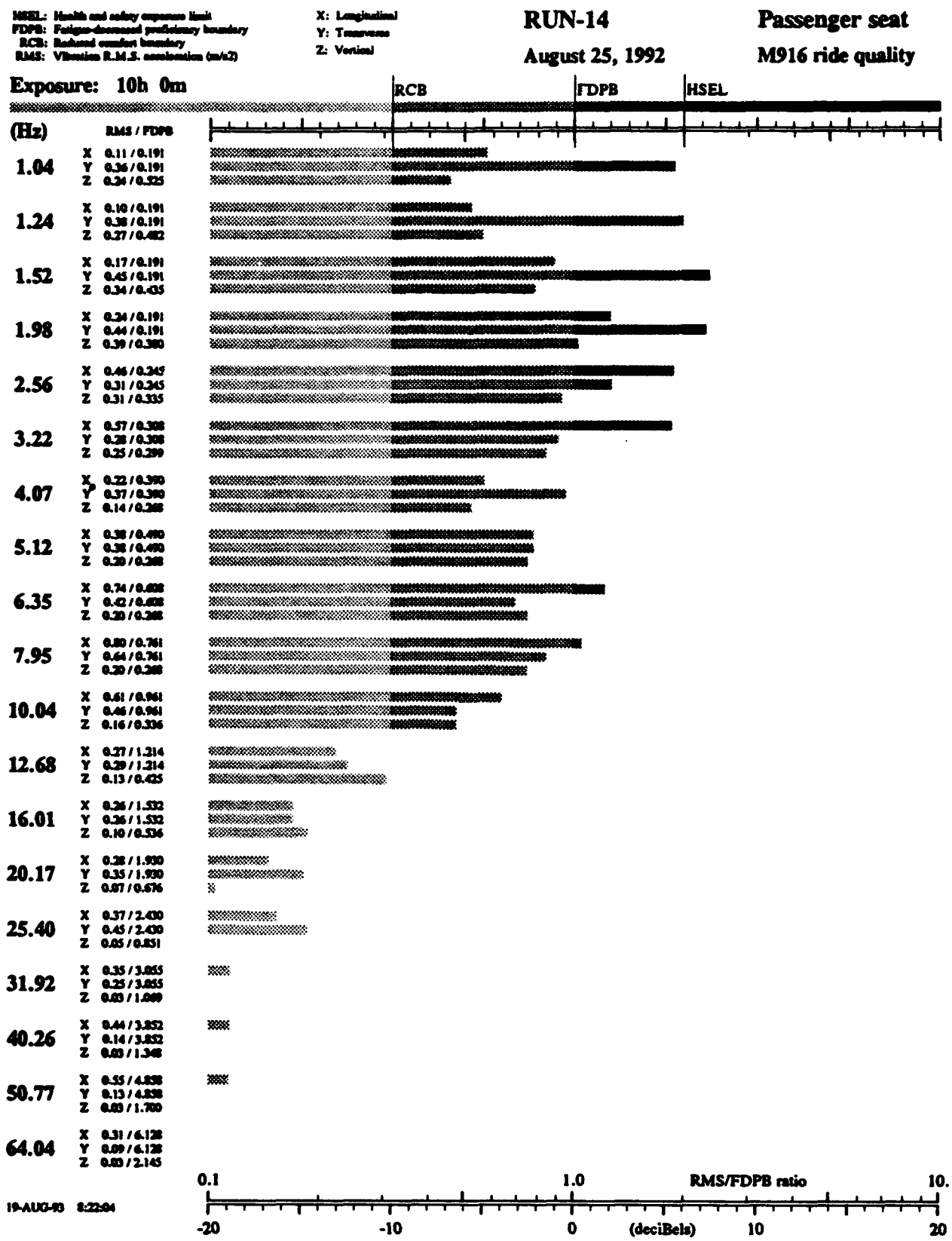
M916 ride quality

Exposure: 10h 0m

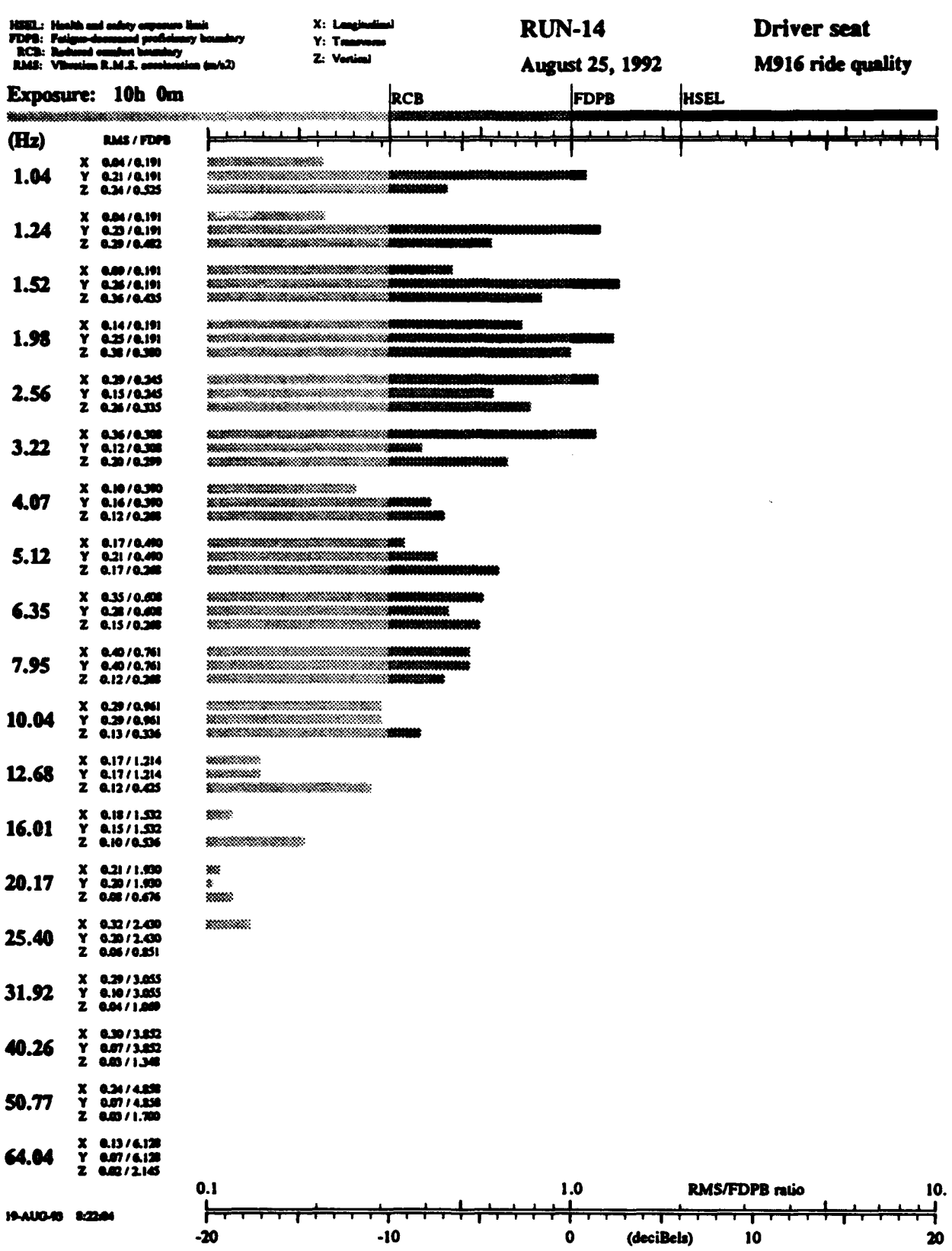


19-AUG-93 8:22:04

Course: Cross country #2
Speed: 12 mph
Note: Loaded trailer



Course: Cross country #2
Speed: 10 mph
Note: Loaded trailer



Course: Cross country #2
Speed: 10 mph
Note: Loaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

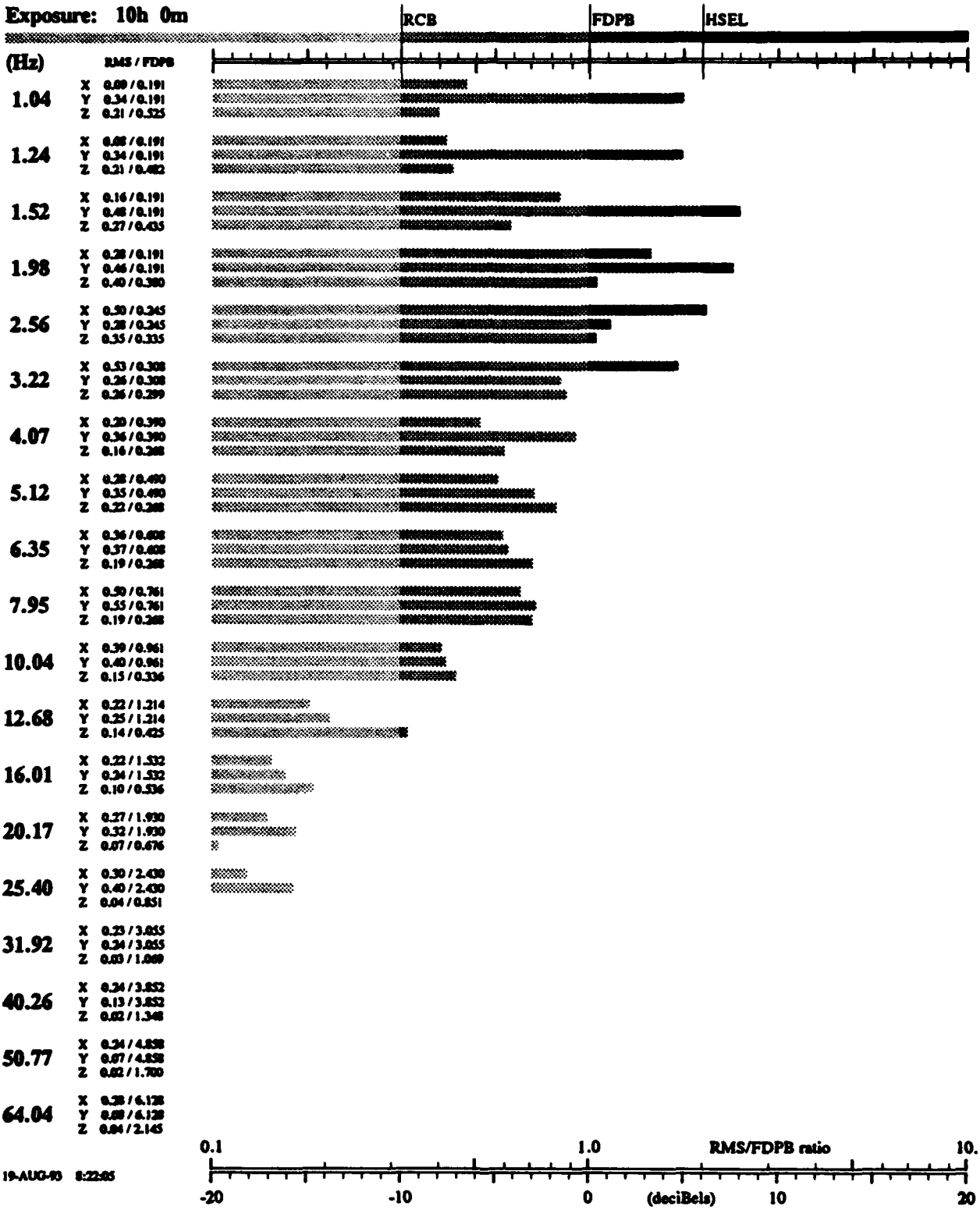
RUN-15

August 25, 1992

Passenger seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:05

Course: Cross country #2
Speed: 8 mph
Note: Loaded trailer

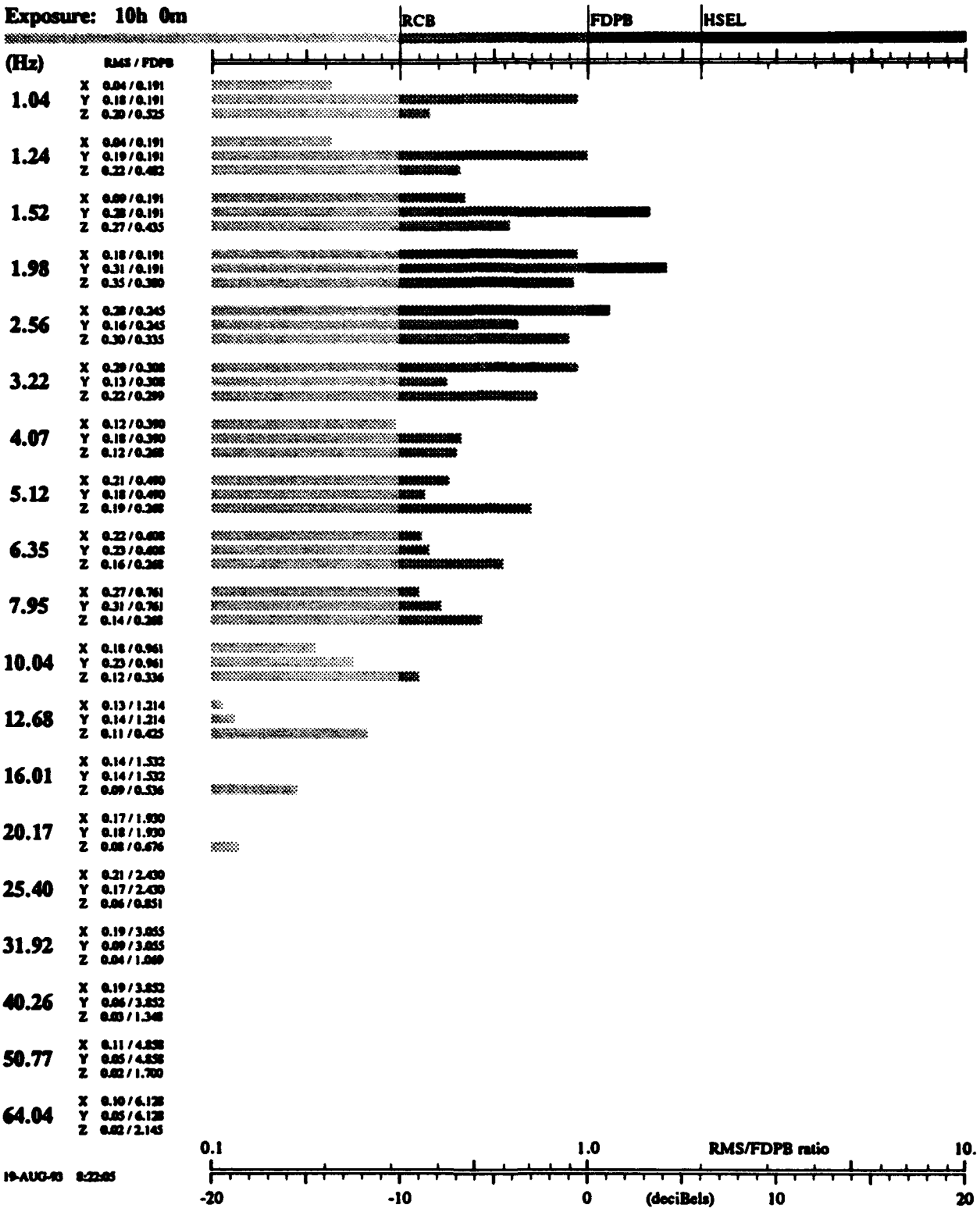
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

RUN-15 **Driver seat**

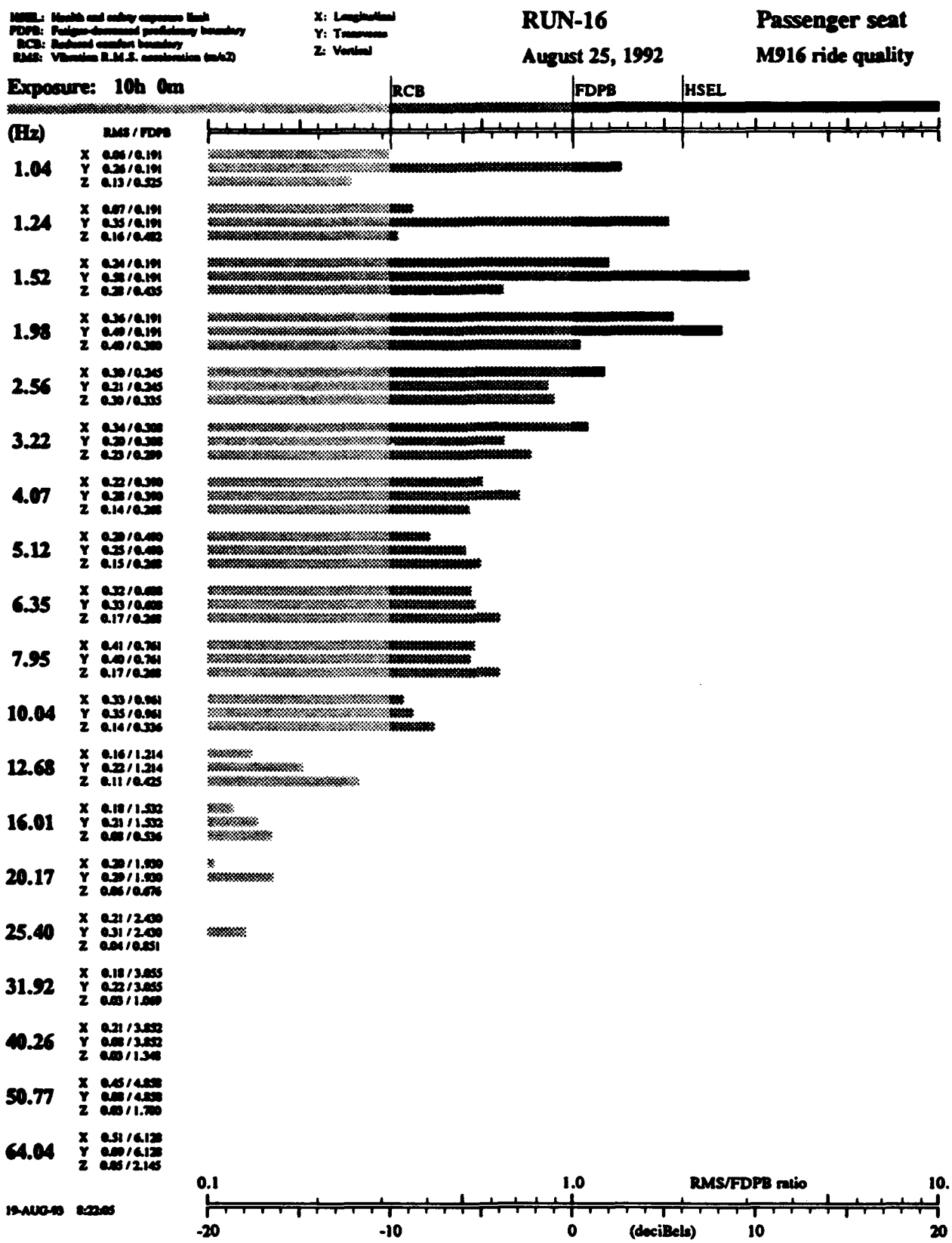
August 25, 1992 **M916 ride quality**

Exposure: 10h 0m



19-AUG-93 8:22:05

Course: Cross country #2
Speed: 8 mph
Note: Loaded trailer



Course: Cross country #2
Speed: 6 mph
Note: Loaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

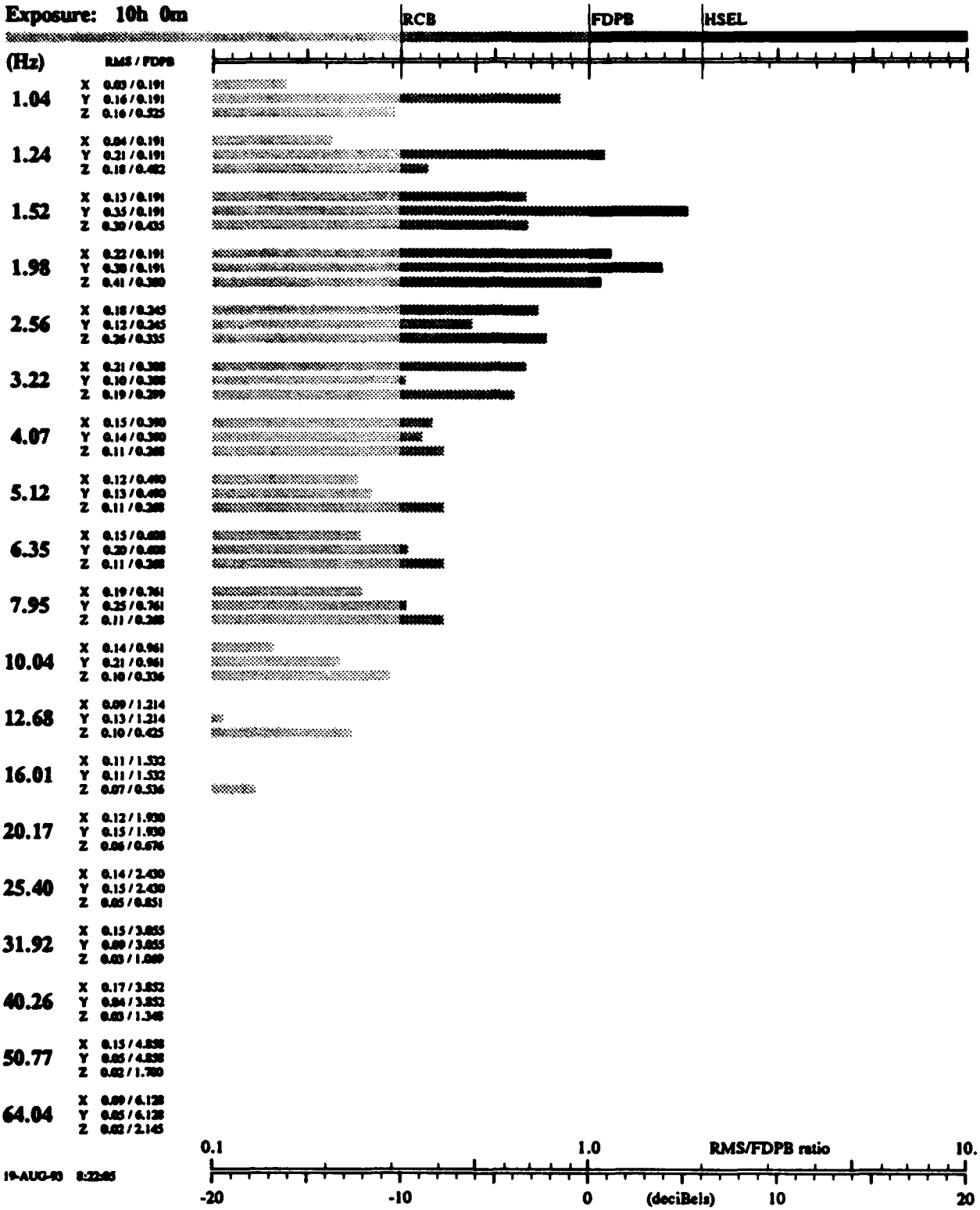
RUN-16

August 25, 1992

Driver seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:05

Course: Cross country #2
Speed: 6 mph
Note: Loaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

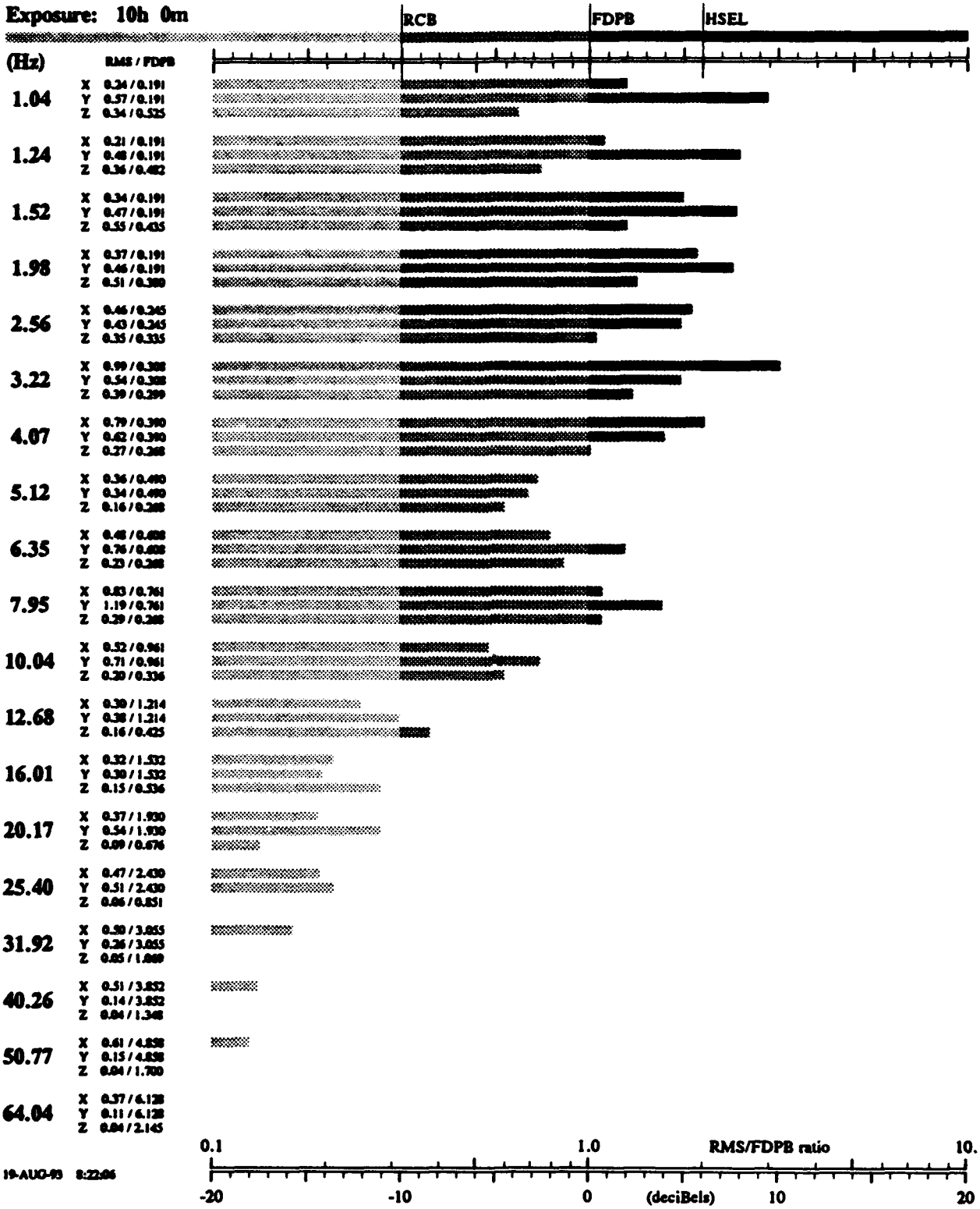
RUN-17

August 25, 1992

Passenger seat

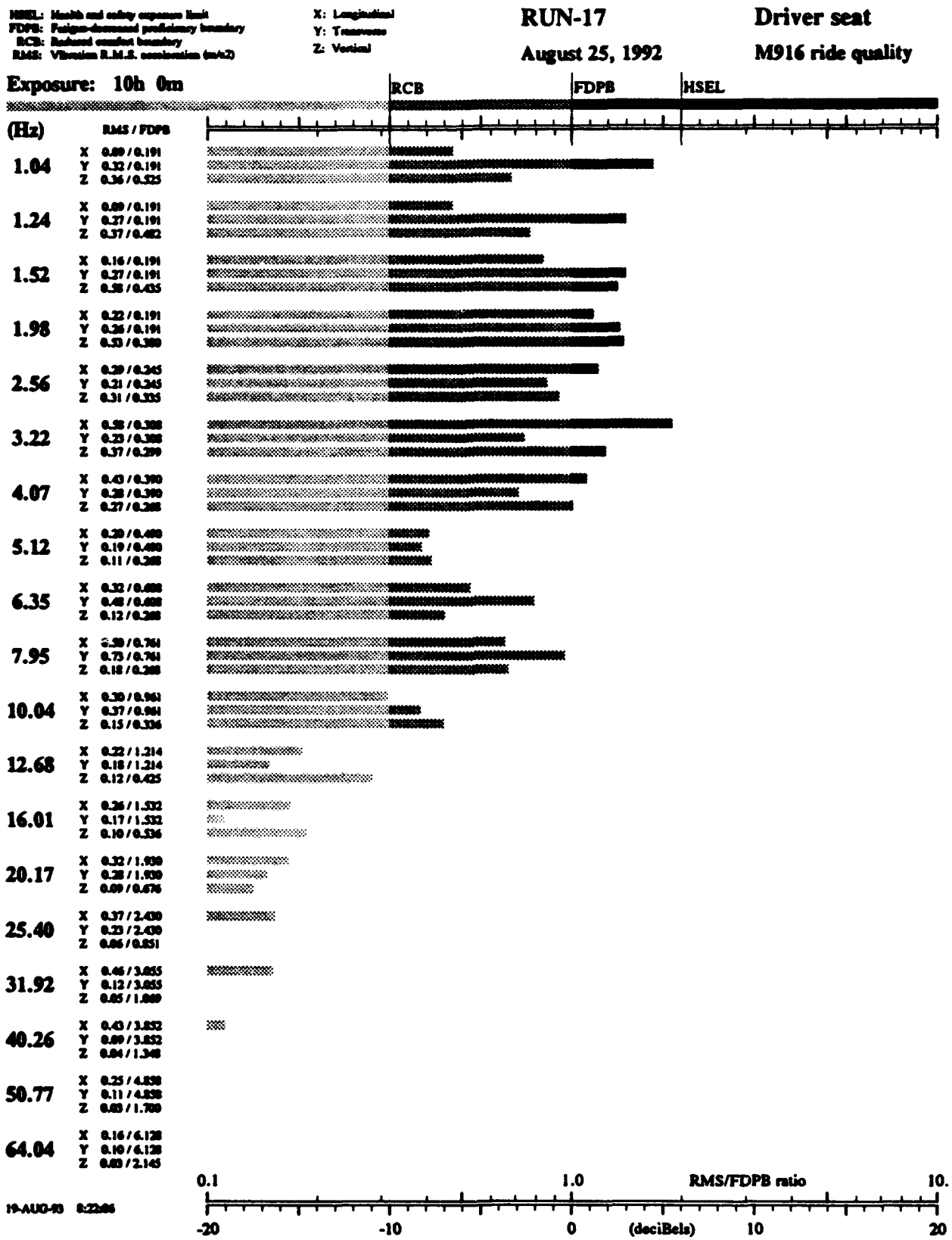
M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:06

Course: Cross country #2
Speed: 12 mph
Note: Unloaded trailer



Course: Cross country #2
Speed: 12 mph
Note: Unloaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. combination (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

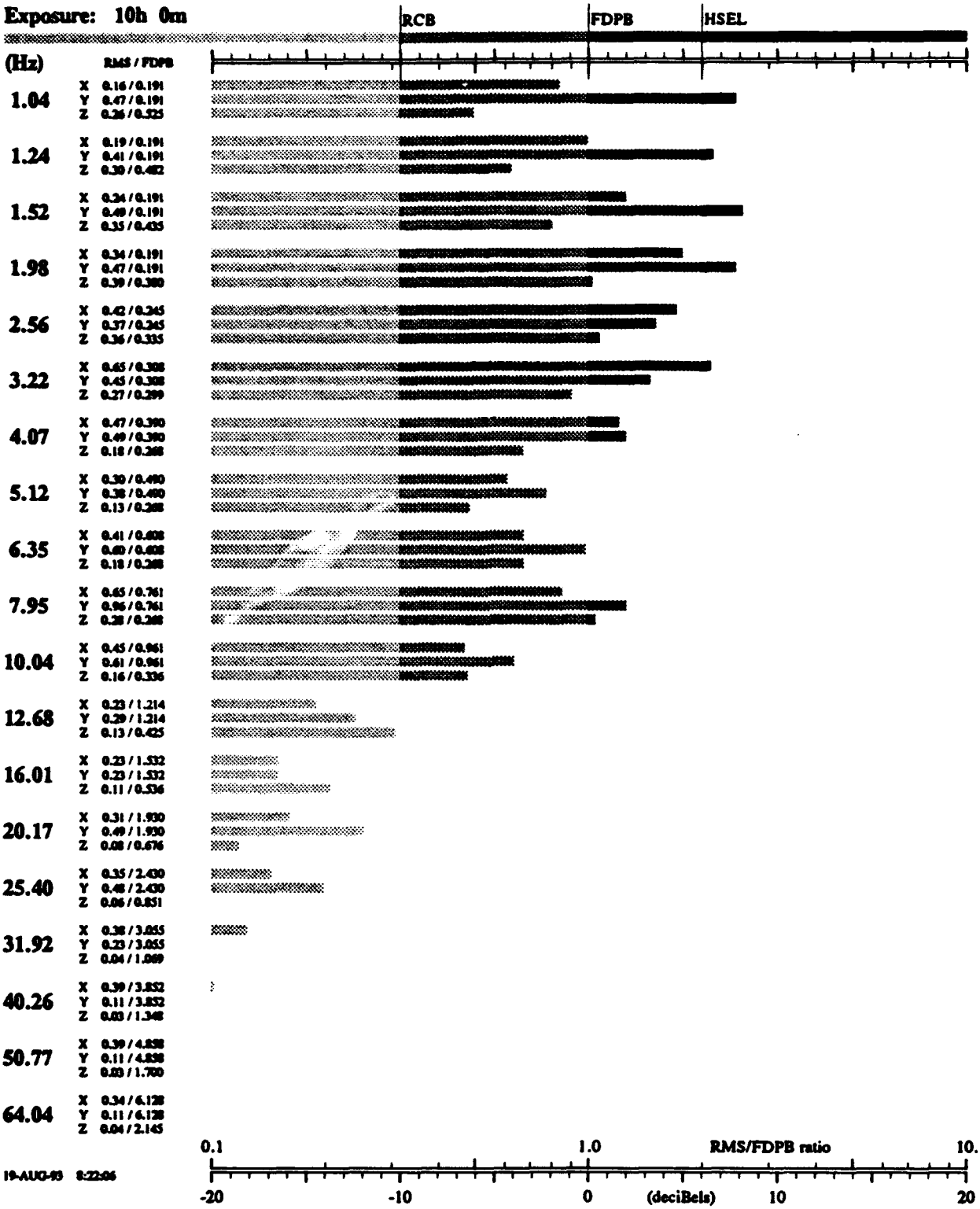
RUN-18

August 25, 1992

Passenger seat

M916 ride quality

Exposure: 10h 0m



Course: Cross country #2
Speed: 10 mph
Note: Unloaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. combination (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

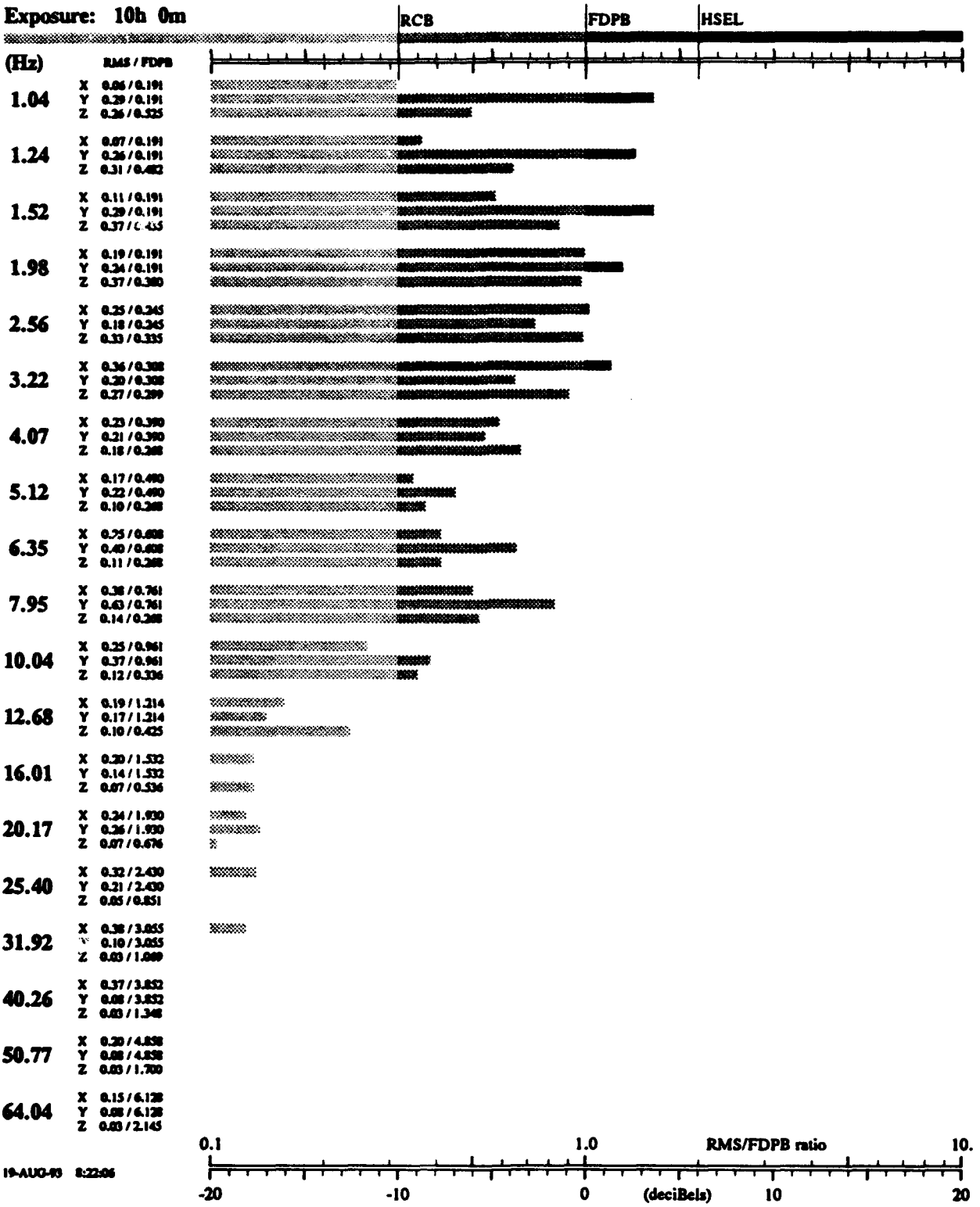
RUN-18

August 25, 1992

Driver seat

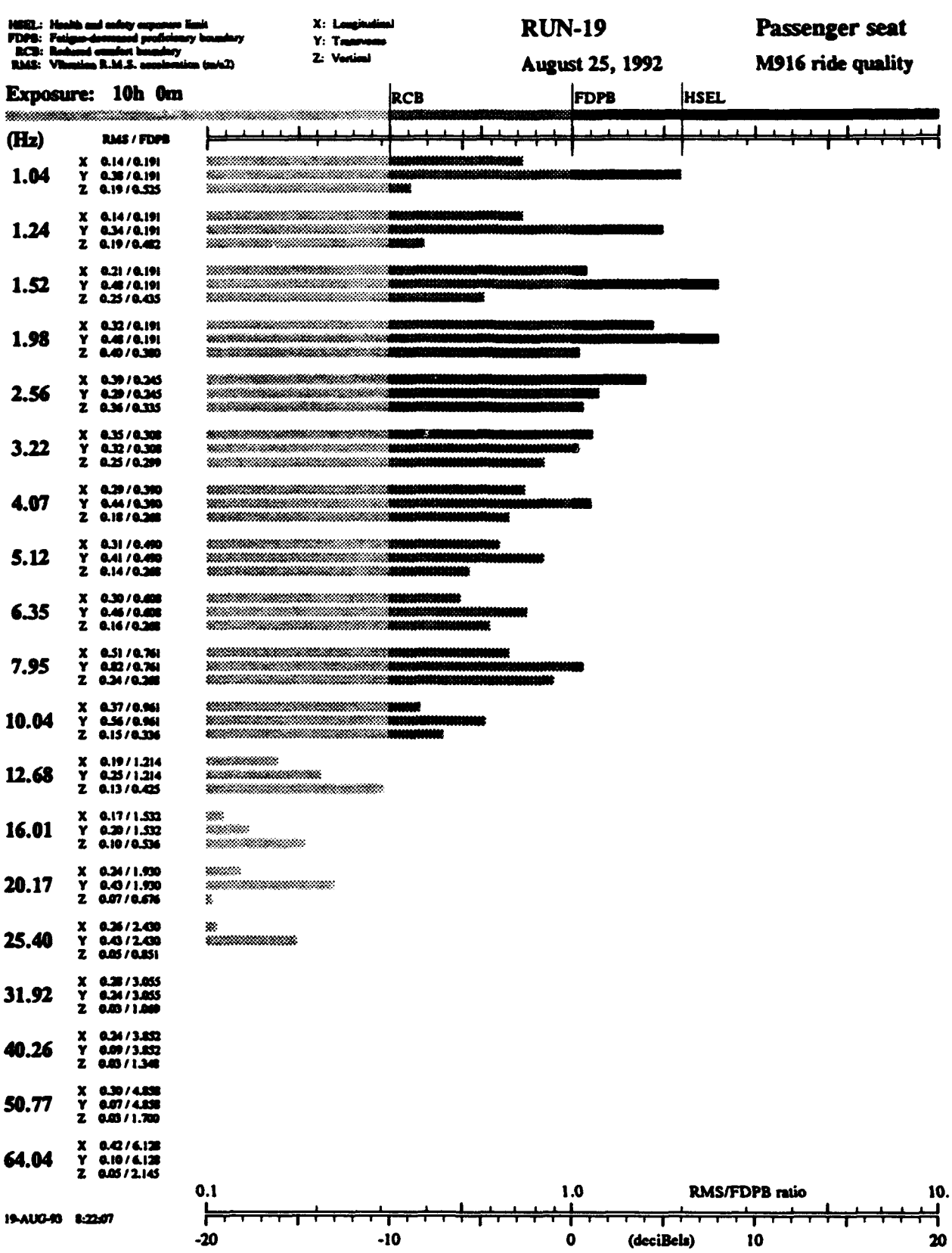
M916 ride quality

Exposure: 10h 0m

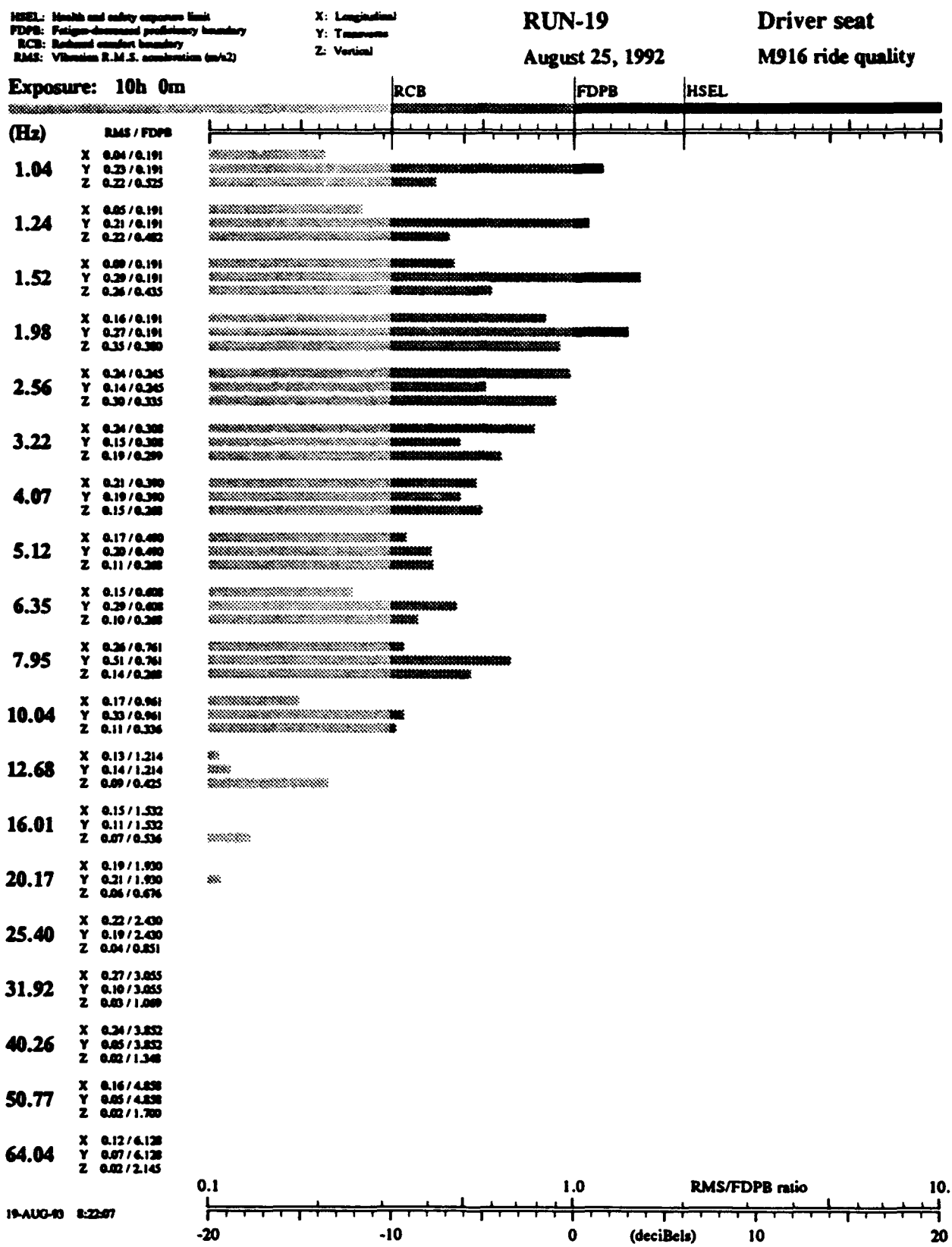


19-AUG-93 8:22:06

Course: Cross country #2
Speed: 10 mph
Note: Unloaded trailer



Course: Cross country #2
Speed: 8 mph
Note: Unloaded trailer



Course: Cross country #2
Speed: 8 mph
Note: Unloaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

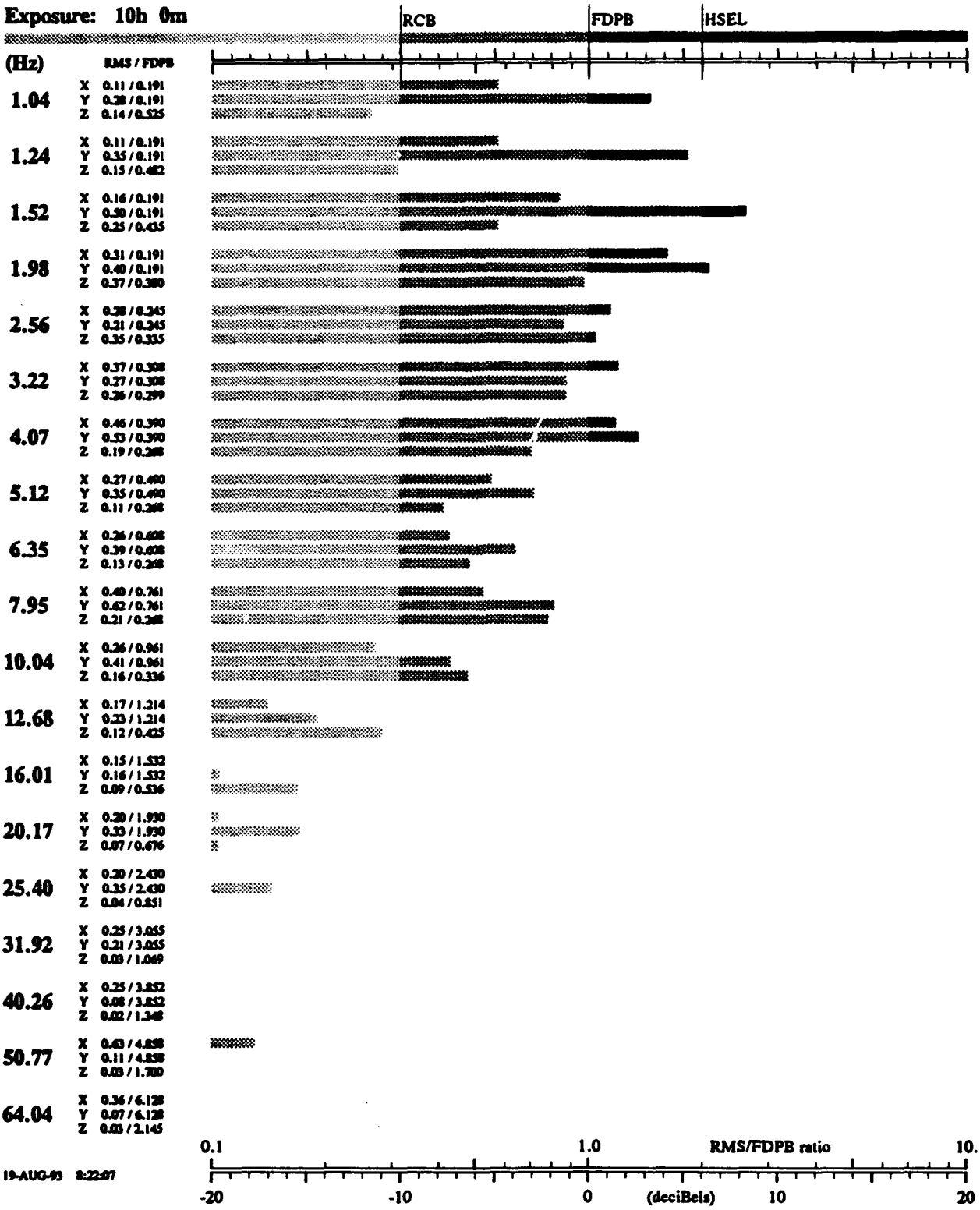
RUN-20

August 25, 1992

Passenger seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:07

Course: Cross country #2
Speed: 6 mph
Note: Unloaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

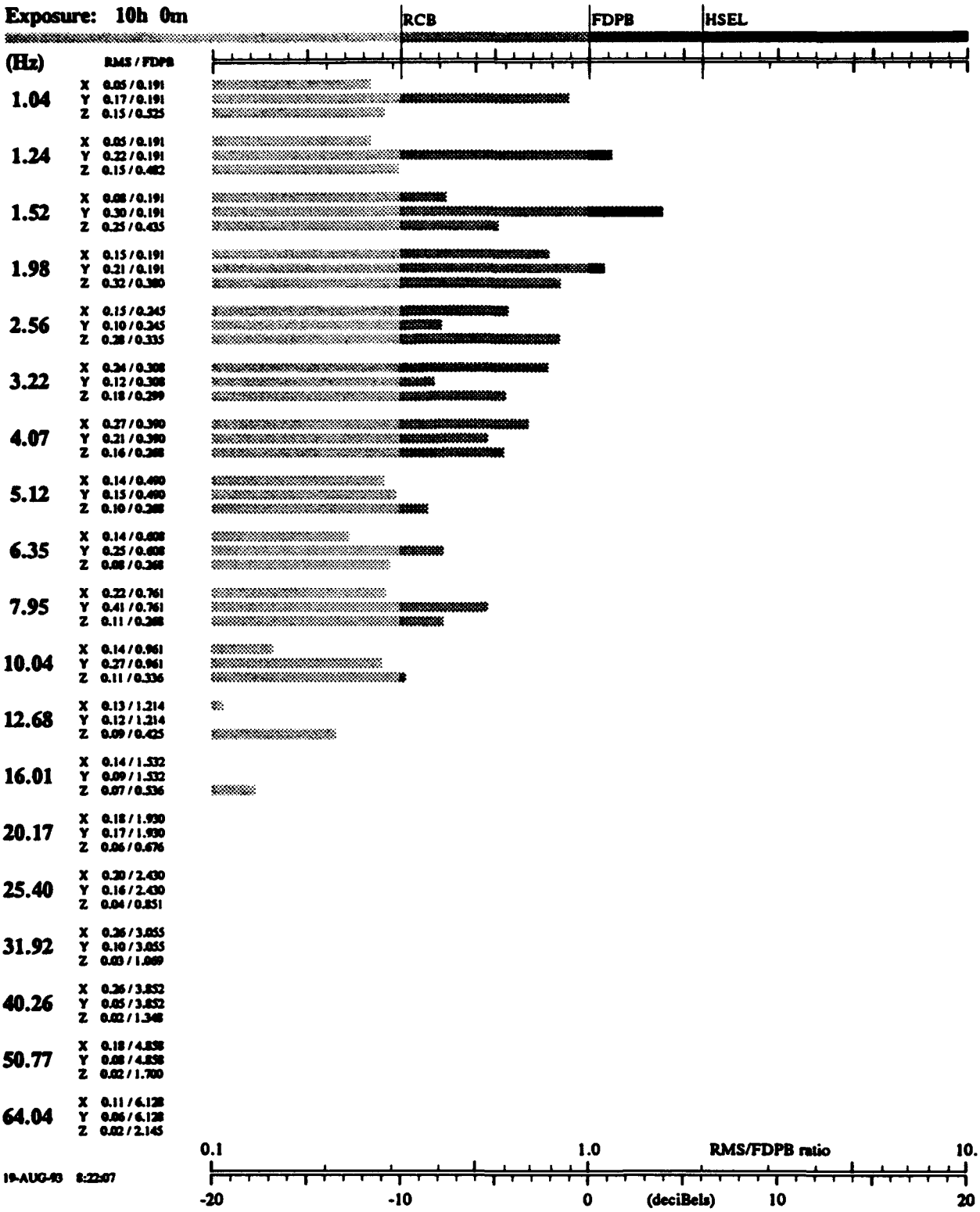
RUN-20

August 25, 1992

Driver seat

M916 ride quality

Exposure: 10h 0m



Course: Cross country #2
Speed: 6 mph
Note: Unloaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

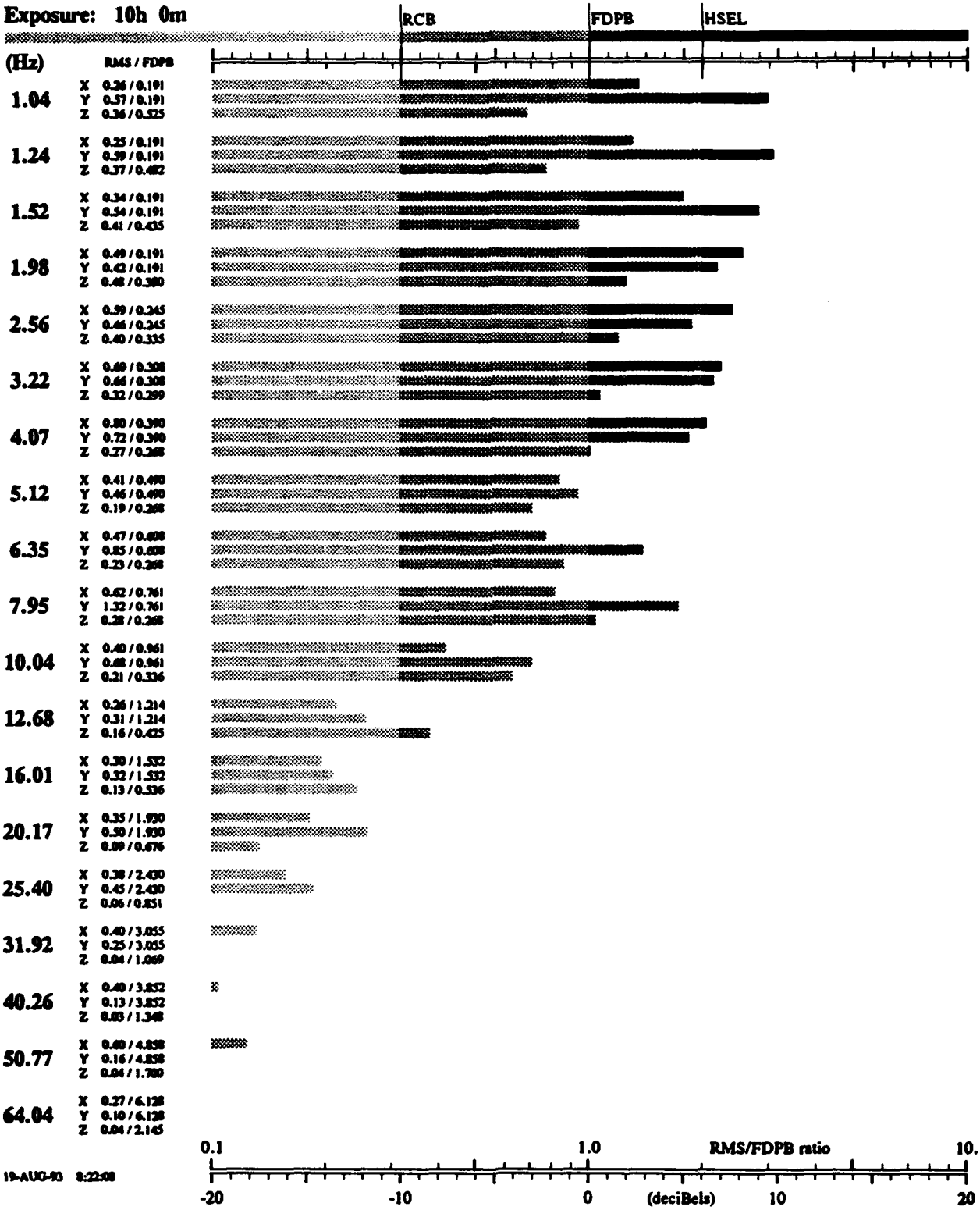
RUN-21

August 25, 1992

Passenger seat

M916 ride quality

Exposure: 10h 0m



Course: Cross country #2
Speed: 12 mph
Note: Bobtail

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

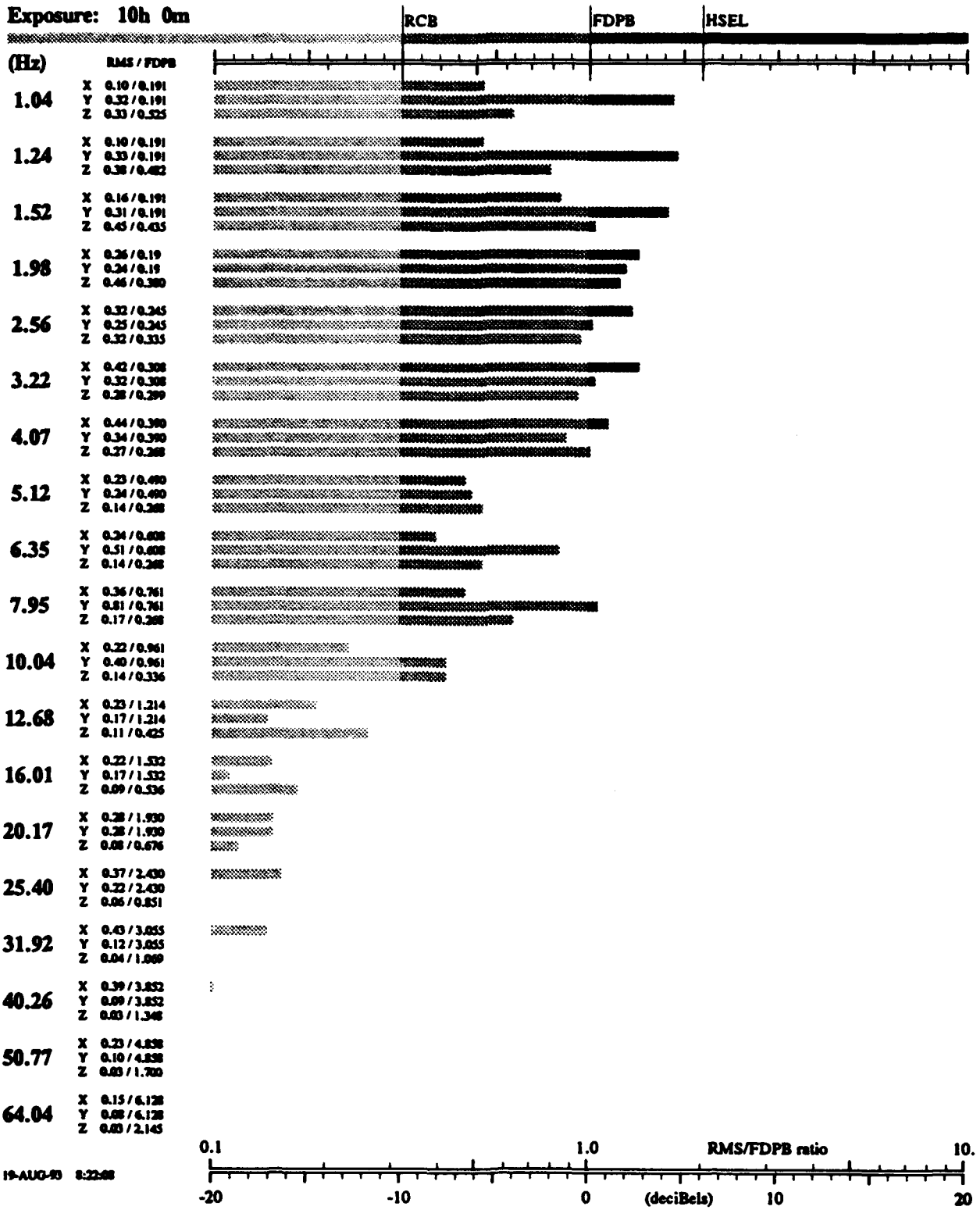
RUN-21

August 25, 1992

Driver seat

M916 ride quality

Exposure: 10h 0m



Course: Cross country #2
Speed: 12 mph
Note: Bobtail

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

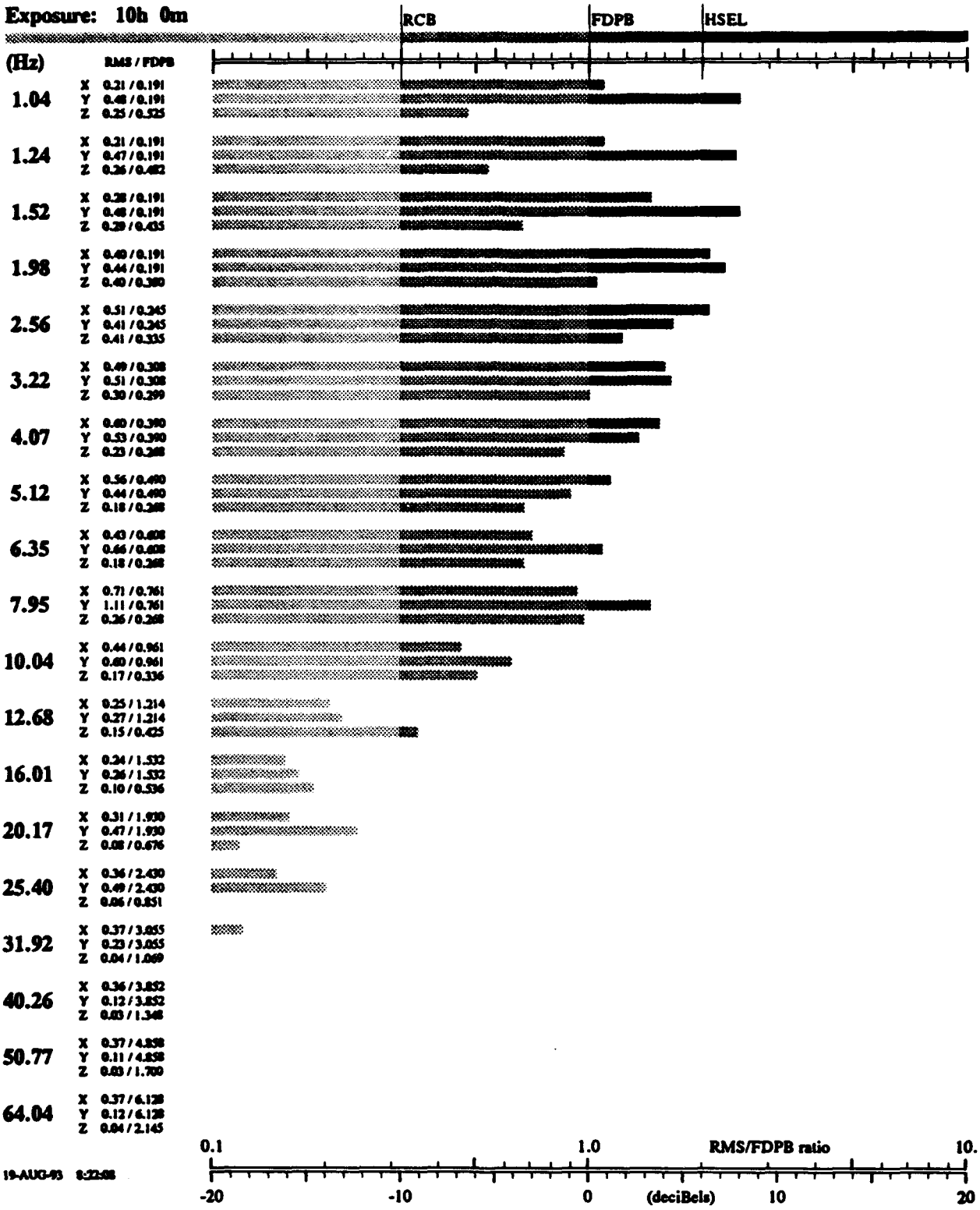
RUN-22

August 25, 1992

Passenger seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:08

Course: Cross country #2
Speed: 10 mph
Note: Bobtail

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

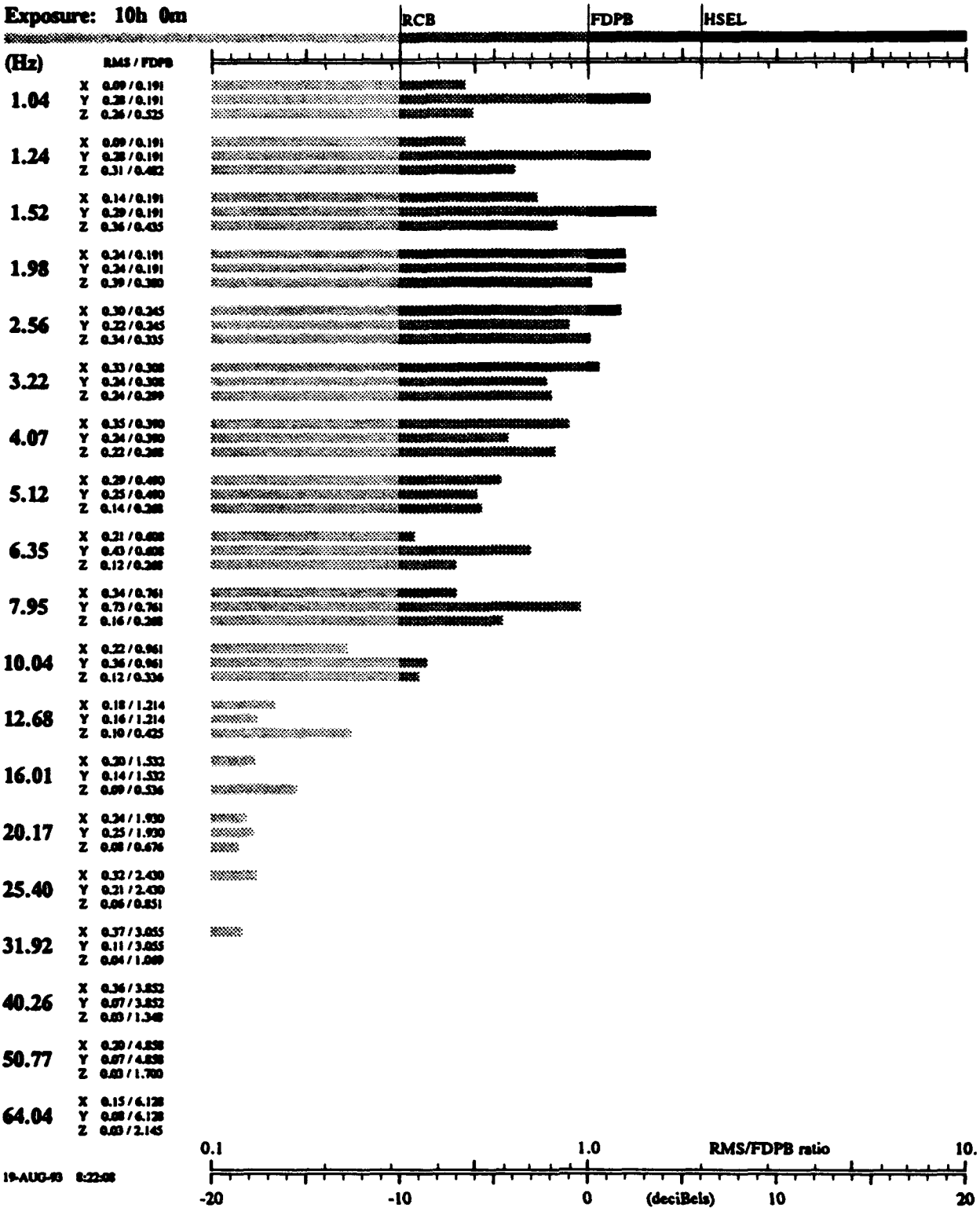
RUN-22

August 25, 1992

Driver seat

M916 ride quality

Exposure: 10h 0m



Course: Cross country #2
Speed: 10 mph
Note: Bobtail

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

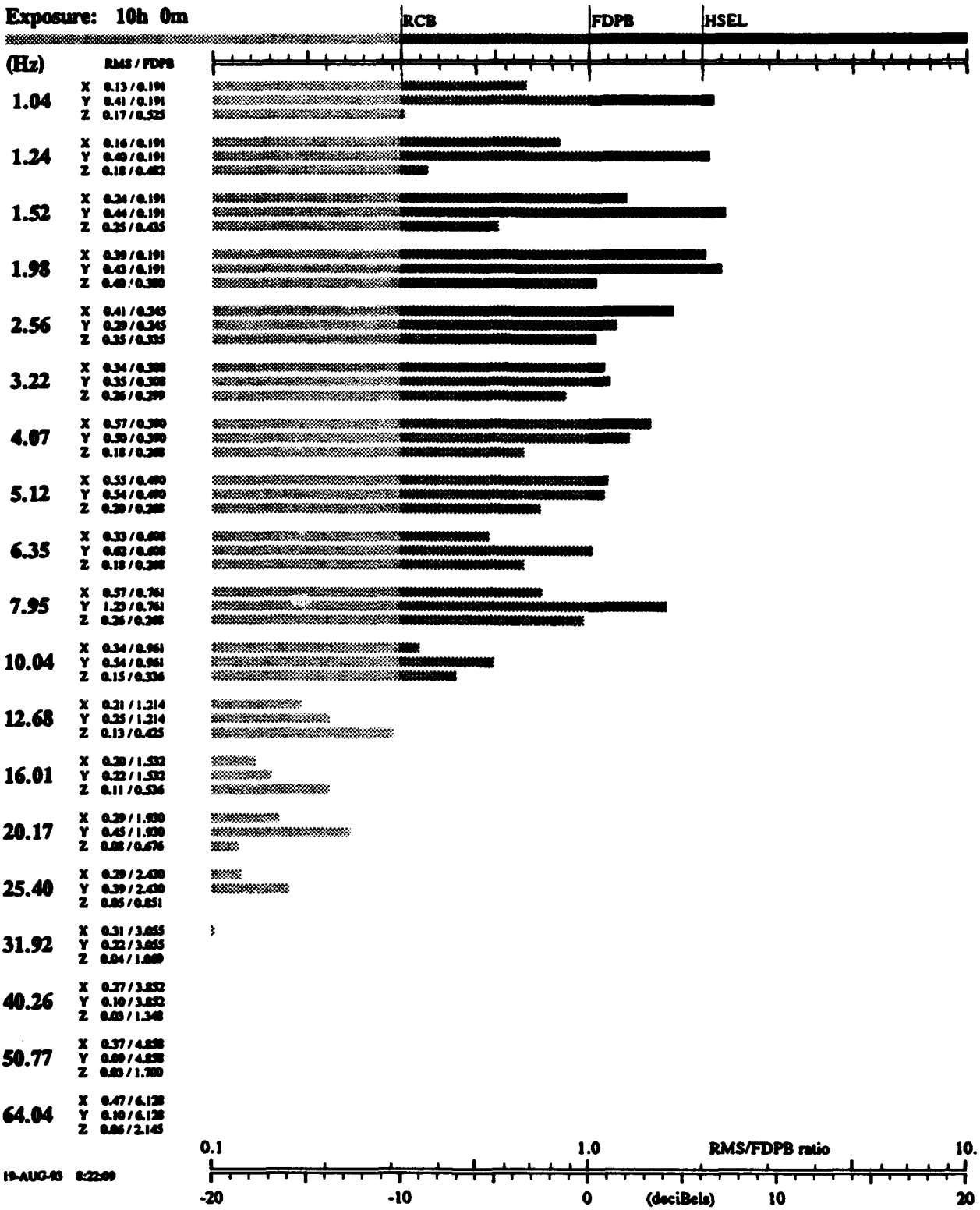
RUN-23

August 25, 1992

Passenger seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:09

Course: Cross country #2
Speed: 8 mph
Note: Bobtail

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

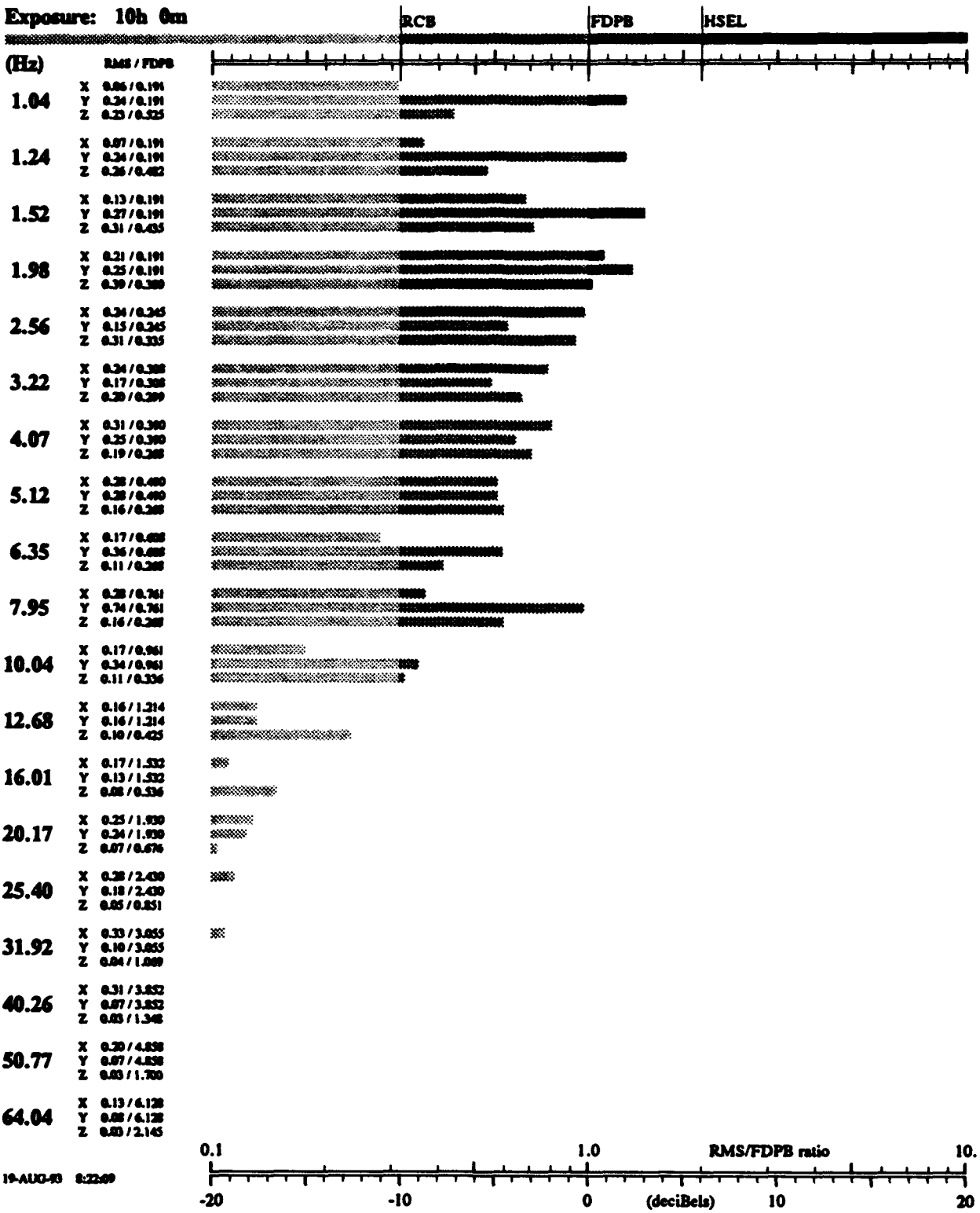
RUN-23

August 25, 1992

Driver seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:09

Course: Cross country #2
Speed: 8 mph
Note: Bobtail

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. combination (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

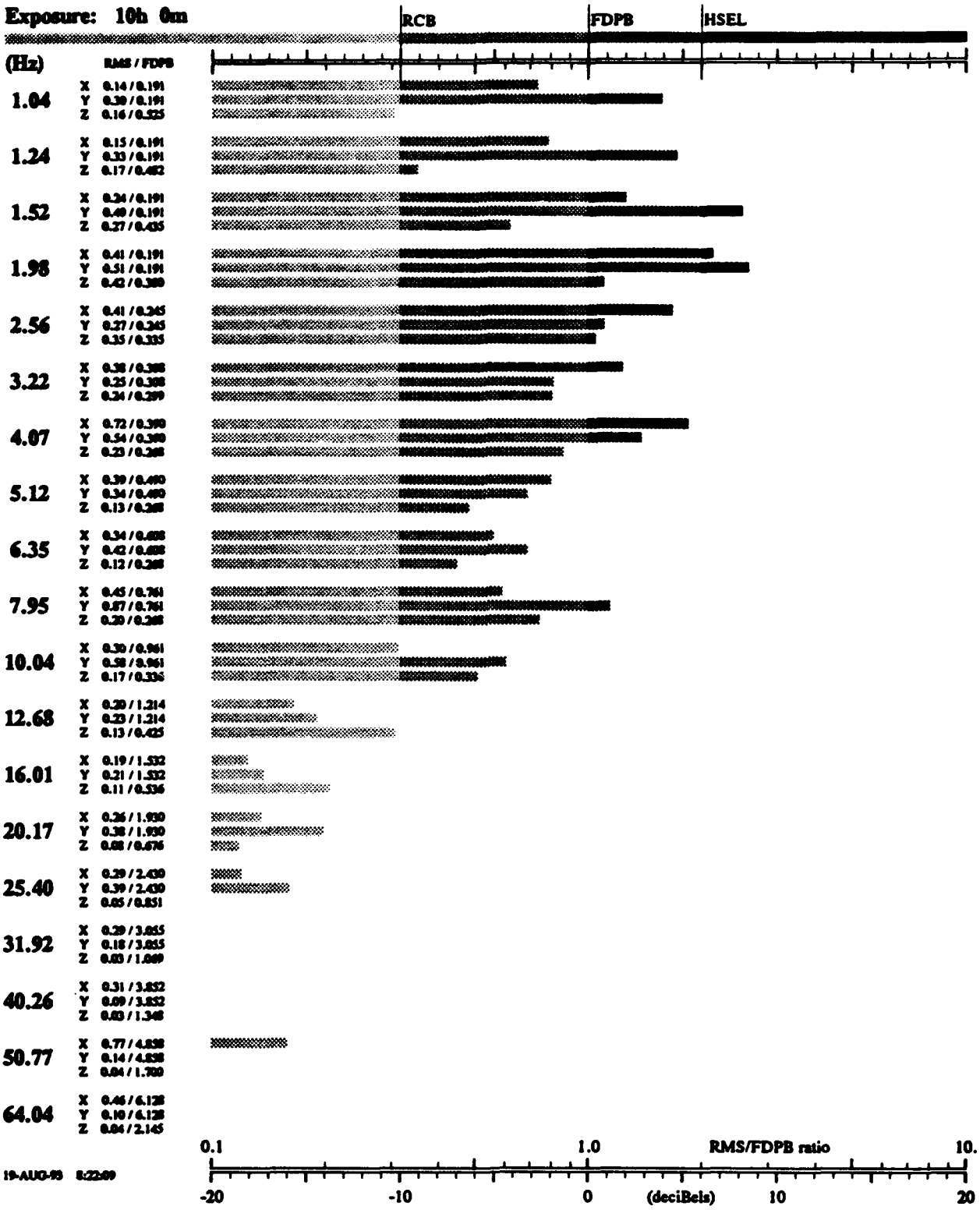
RUN-24

August 25, 1992

Passenger seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:09

Course: Cross country #2
Speed: 6 mph
Note: Bobtail

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

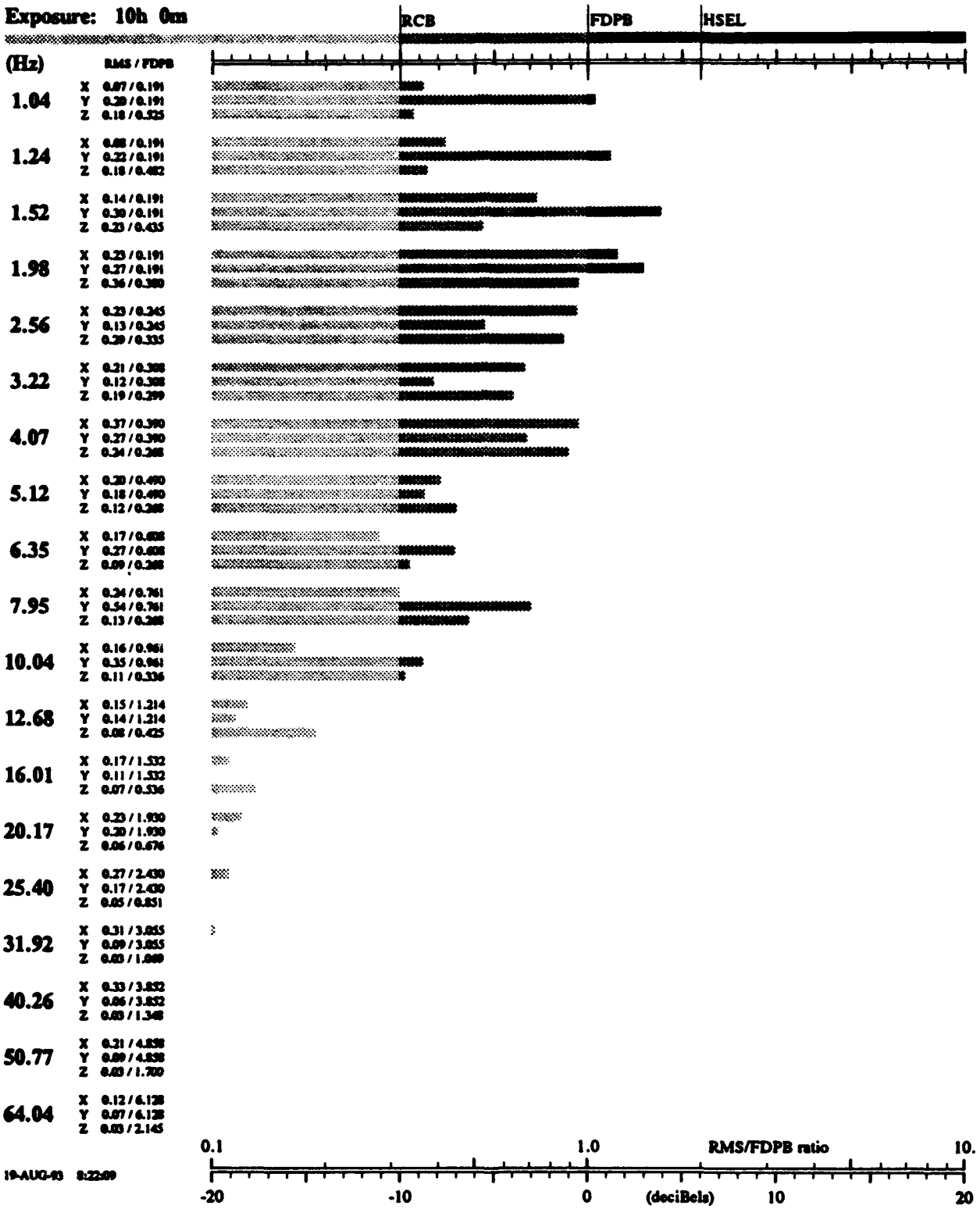
RUN-24

August 25, 1992

Driver seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:09

Course: Cross country #2
Speed: 6 mph
Note: Bobtail

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

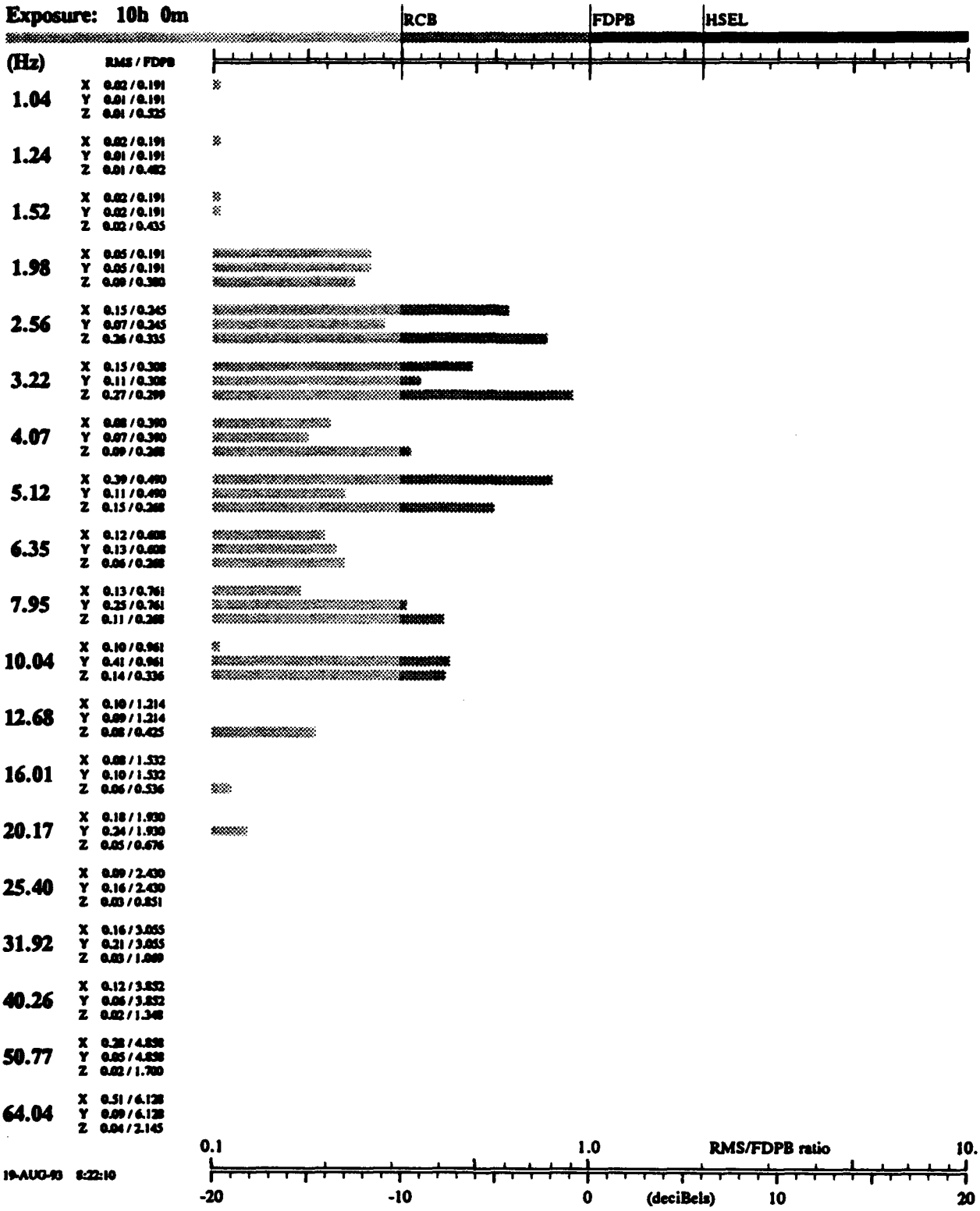
RUN-25

August 25, 1992

Passenger seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:10

Course: Paved
Speed: 25 mph
Note: Bobtail

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

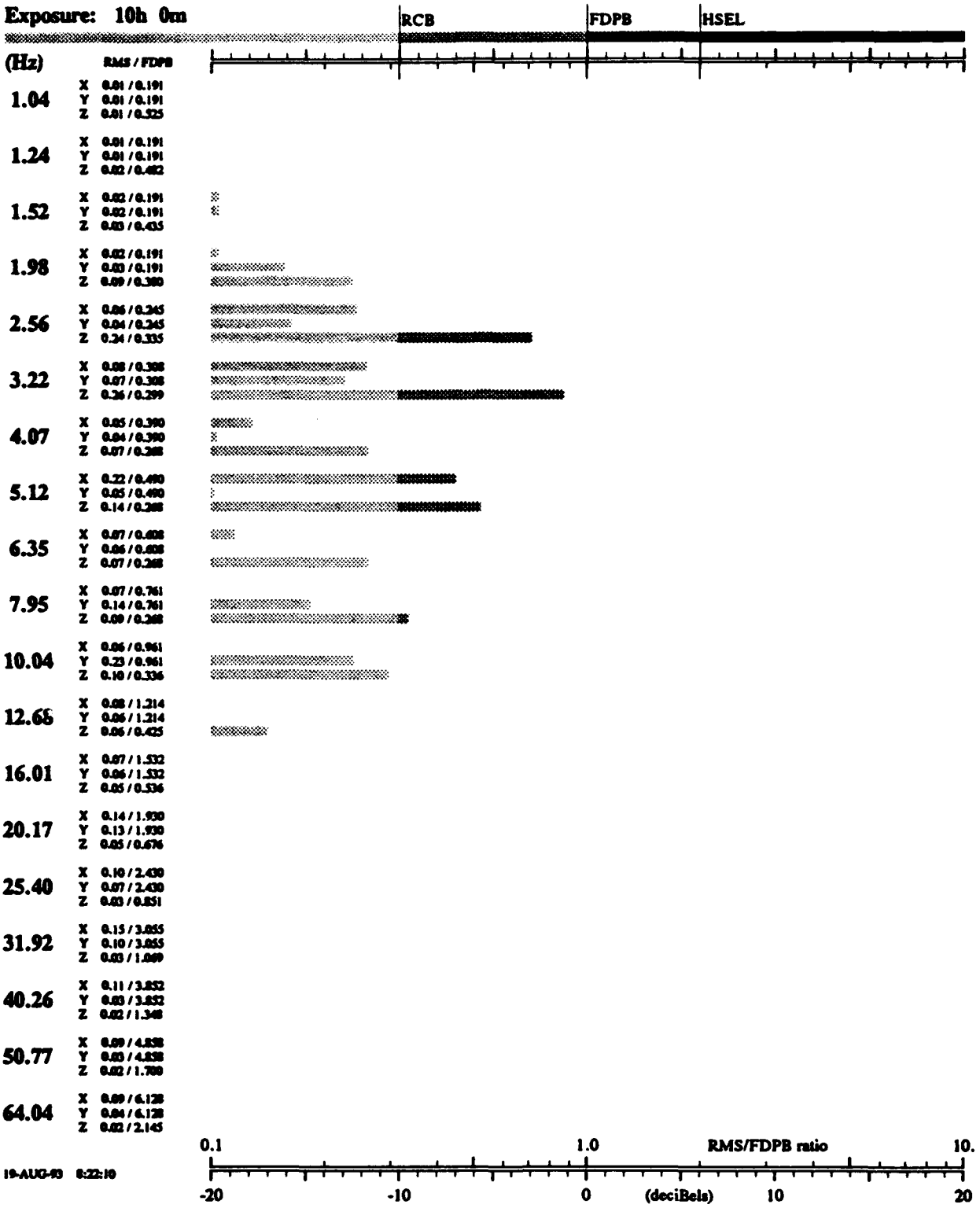
RUN-25

August 25, 1992

Driver seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:10

Course: Paved
Speed: 25 mph
Note: Bobtail

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

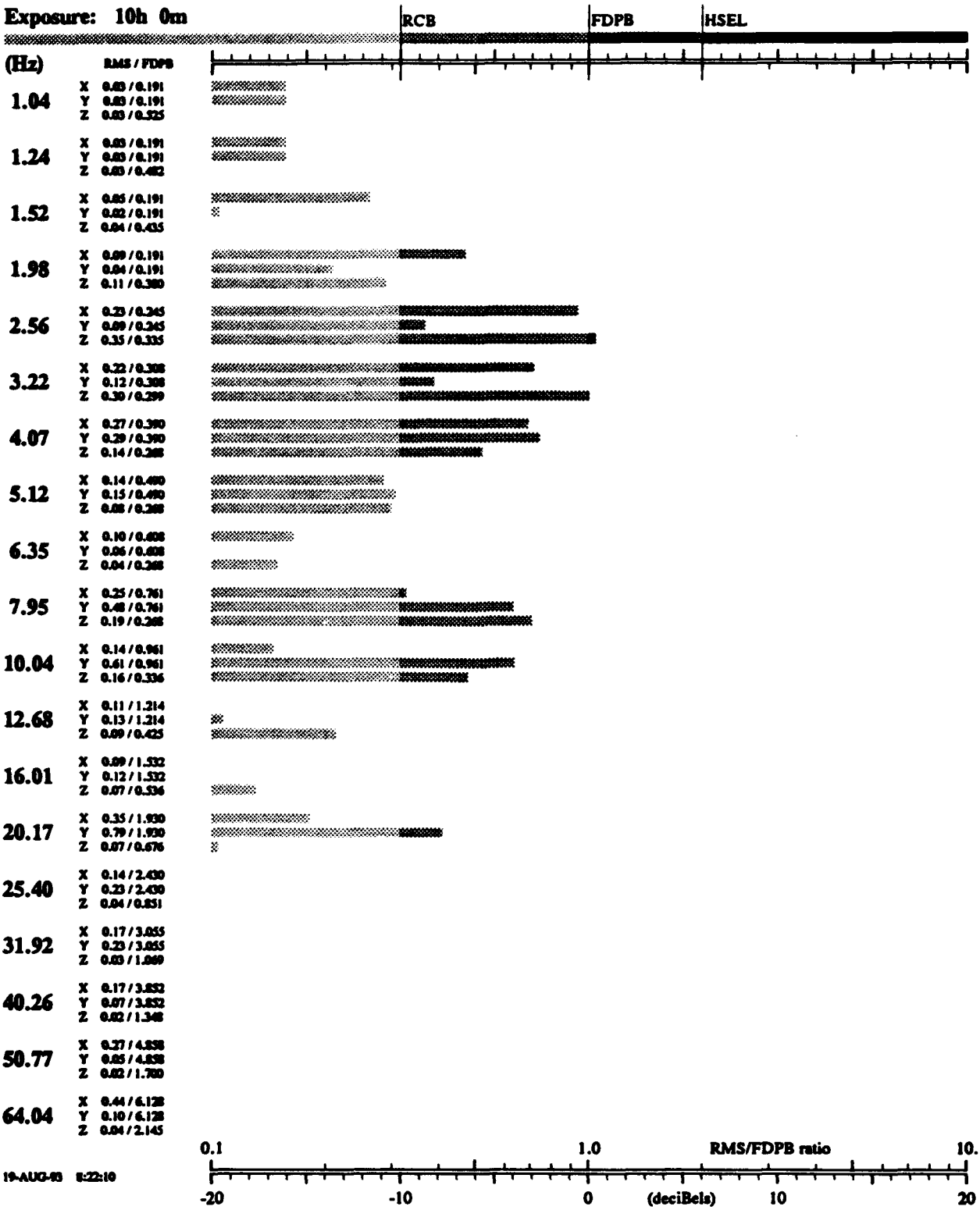
RUN-26

August 25, 1992

Passenger seat

M916 ride quality

Exposure: 10h 0m



Course: Paved
Speed: 35 mph
Note: Bobtail

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

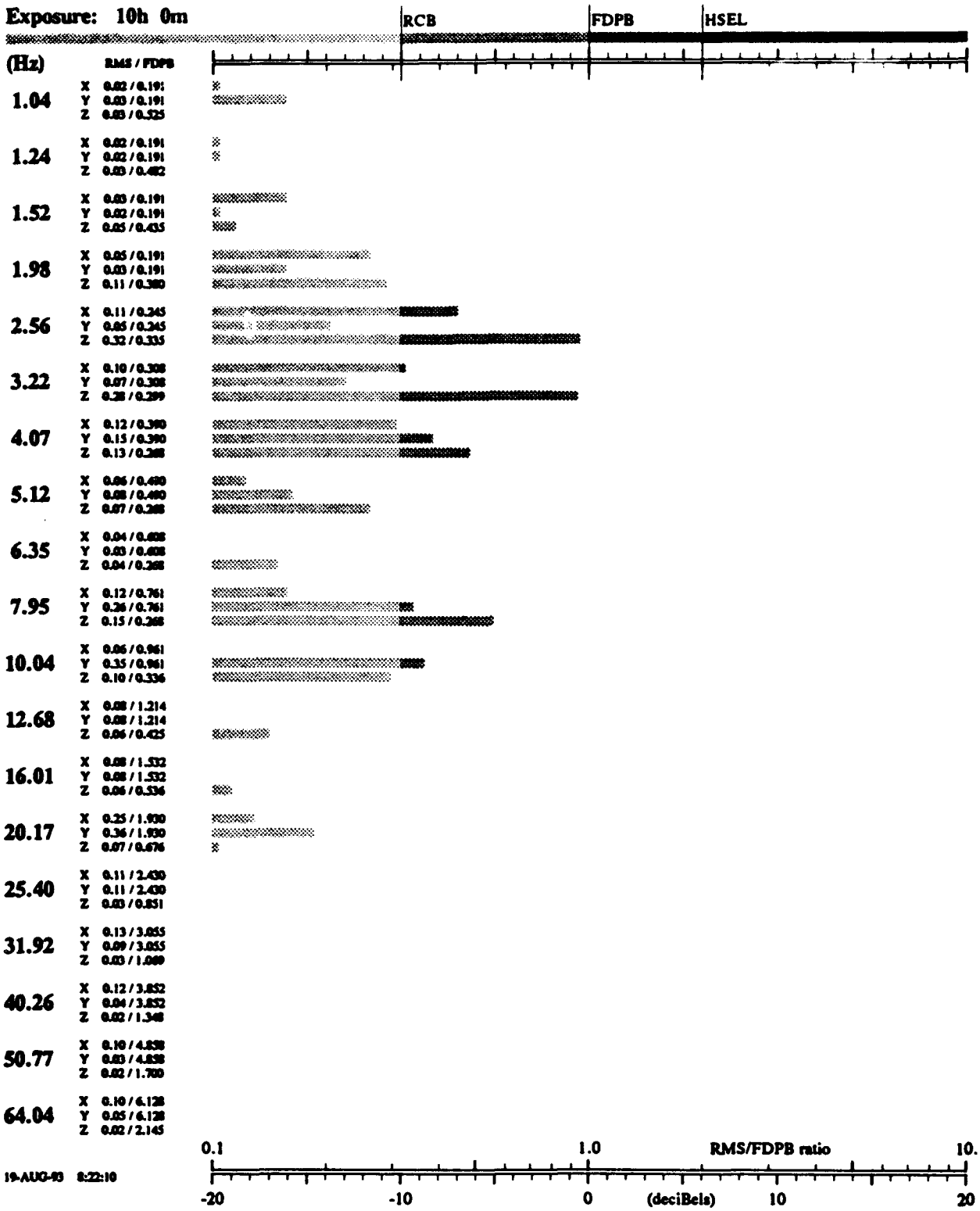
RUN-26

August 25, 1992

Driver seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:10

Course: Paved
Speed: 35 mph
Note: Bobtail

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

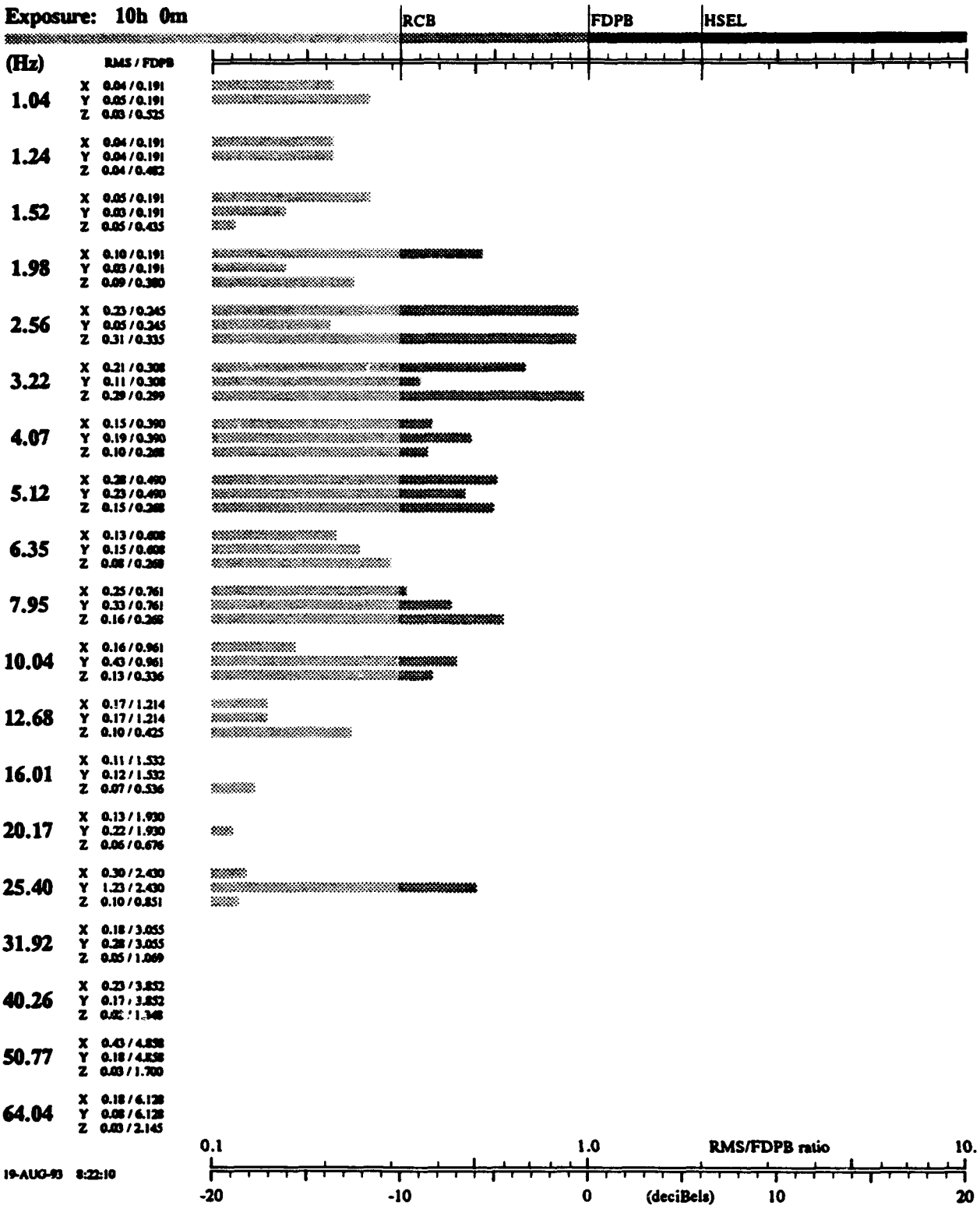
RUN-27

August 25, 1992

Passenger seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:10

Course: Paved
Speed: 45 mph
Note: Bobtail

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

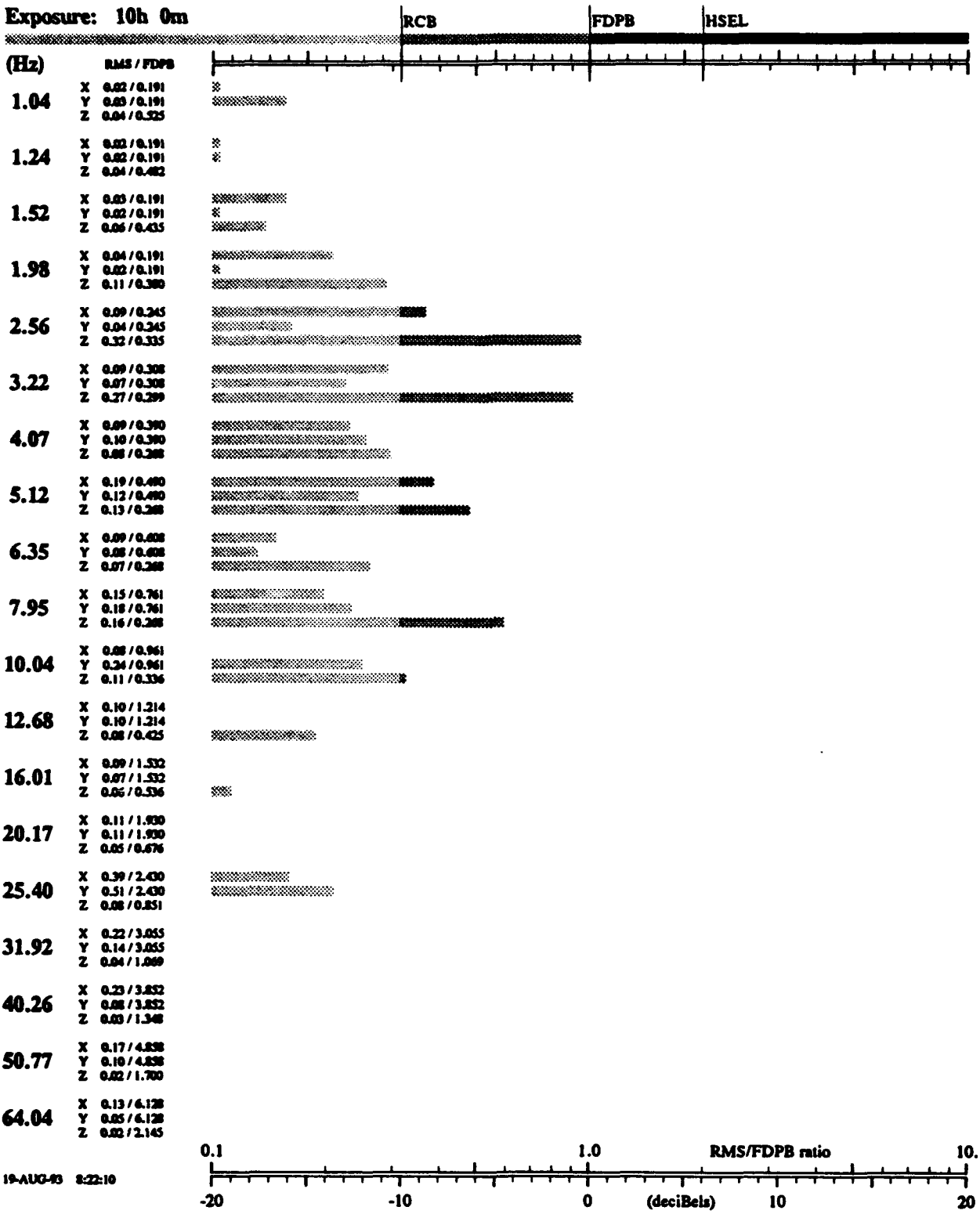
RUN-27

August 25, 1992

Driver seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:10

Course: Paved
Speed: 45 mph
Note: Bobtail

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. combination (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

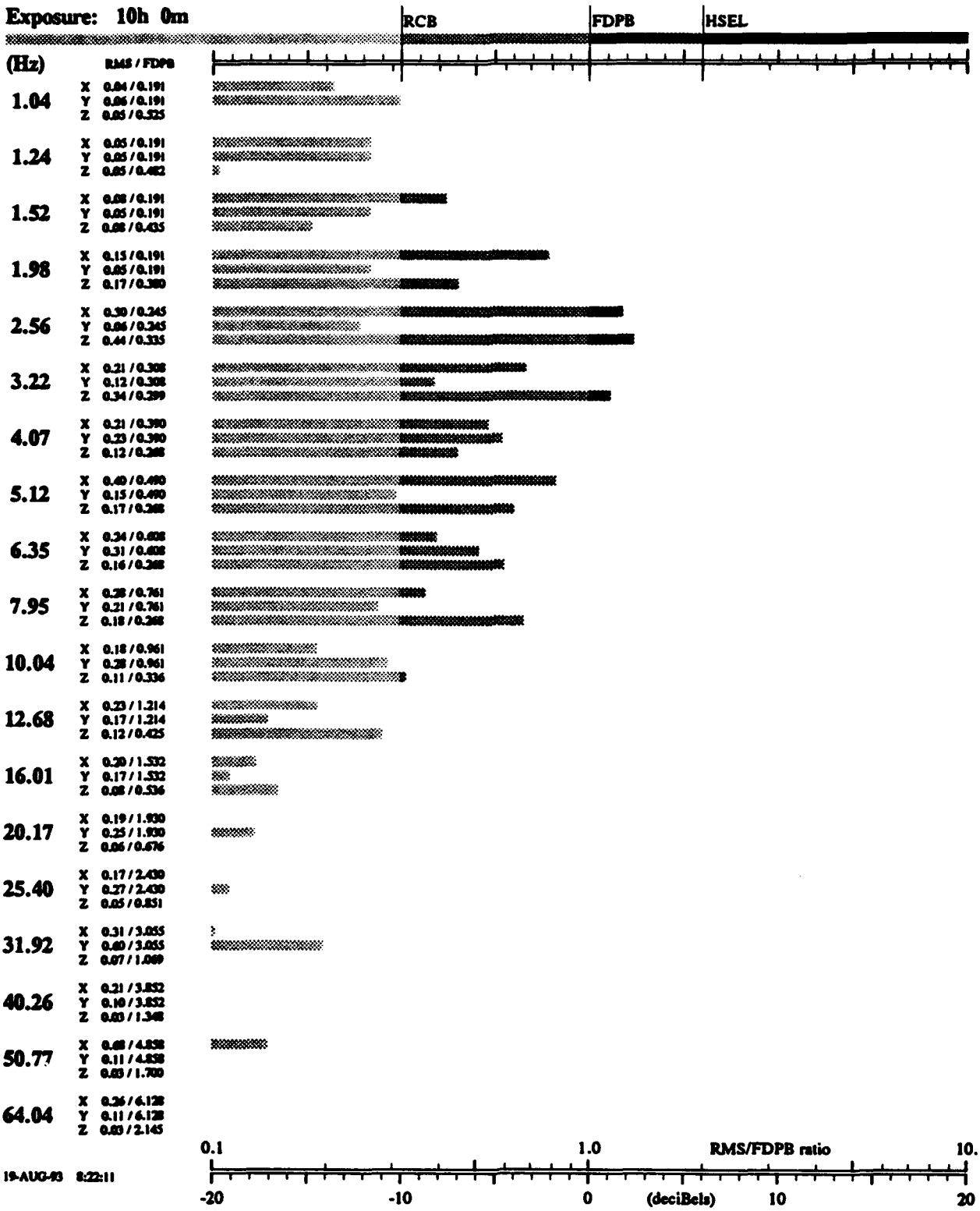
RUN-28

August 25, 1992

Passenger seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:11

Course: Paved
Speed: 55 mph
Note: Bobtail

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

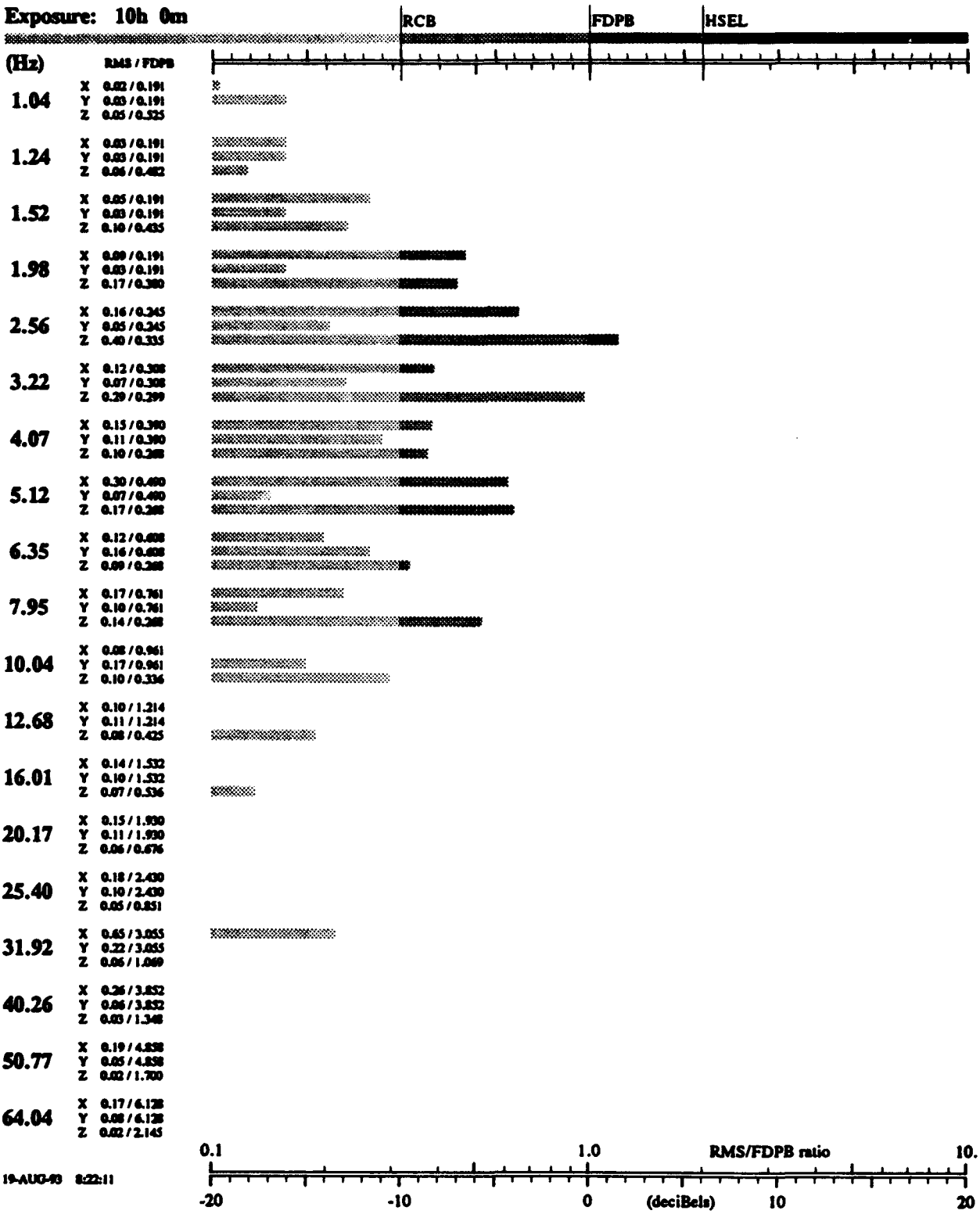
RUN-28

August 25, 1992

Driver seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:11

Course: Paved
Speed: 55 mph
Note: Bobtail

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

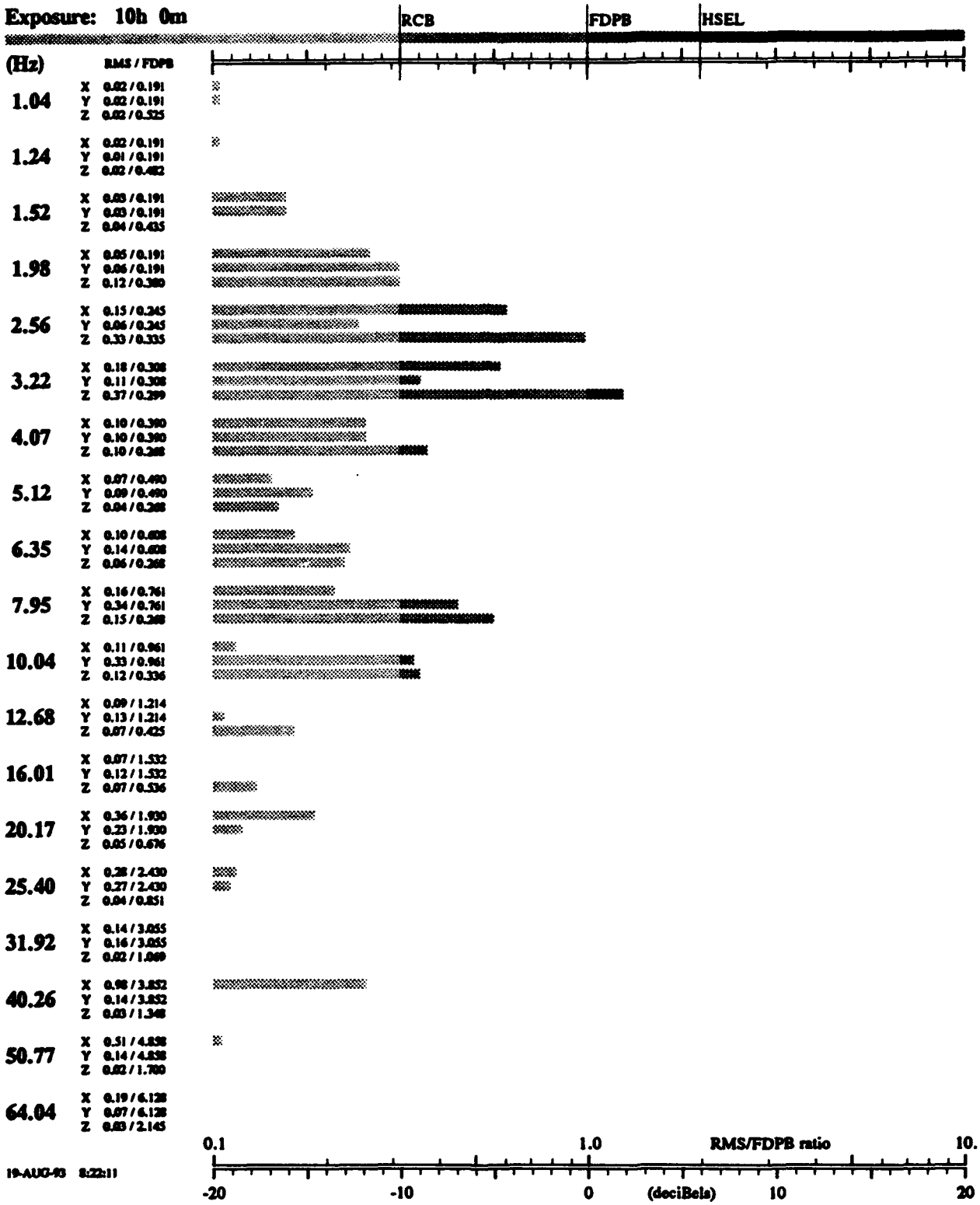
RUN-29

August 25, 1992

Passenger seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:11

Course: Paved
Speed: 25 mph
Note: Unloaded trailer

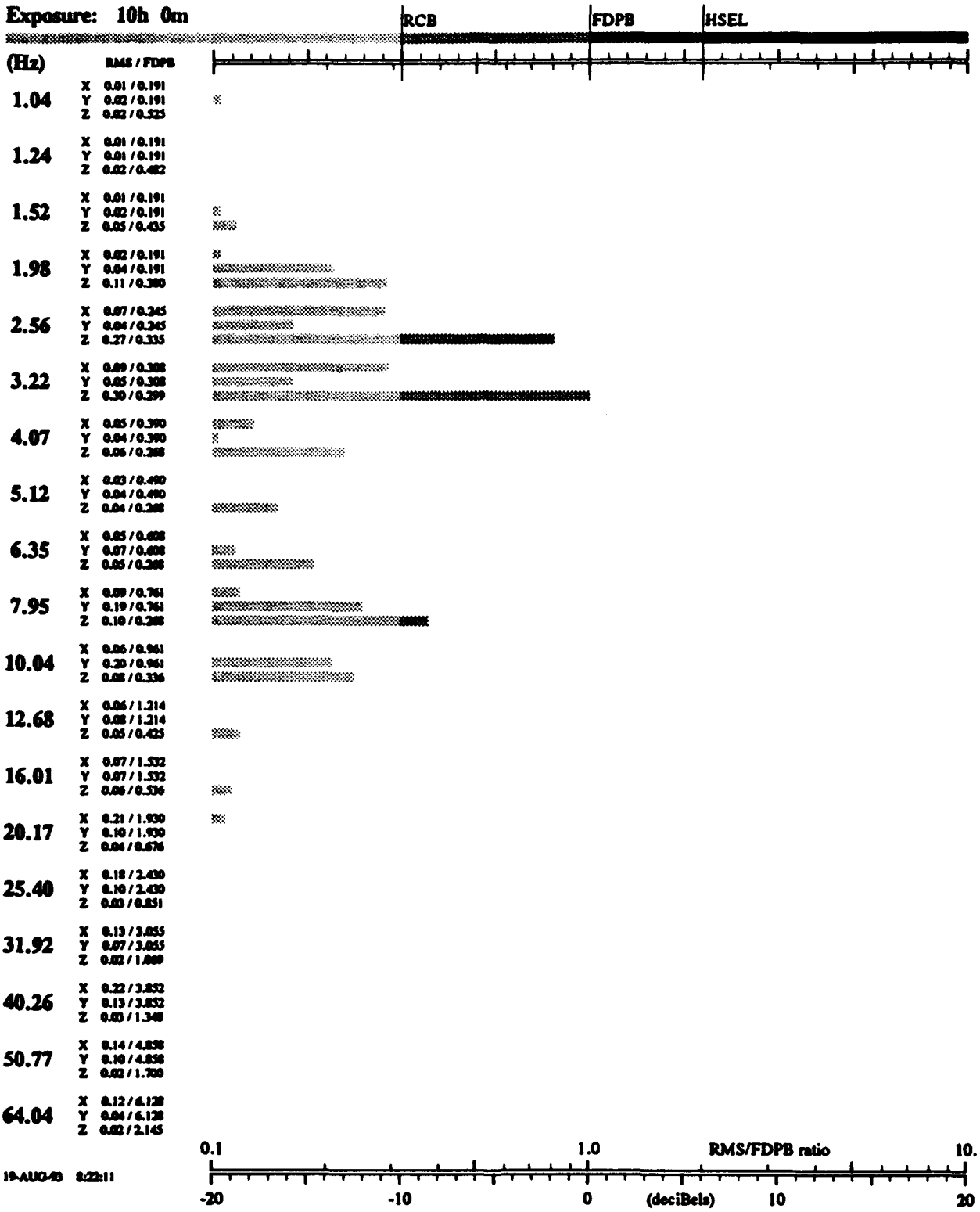
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. combination (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

RUN-29 — **Driver seat**

August 25, 1992 — **M916 ride quality**

Exposure: 10h 0m



19-AUG-93 8:22:11

Course: Paved
Speed: 25 mph
Note: Unloaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

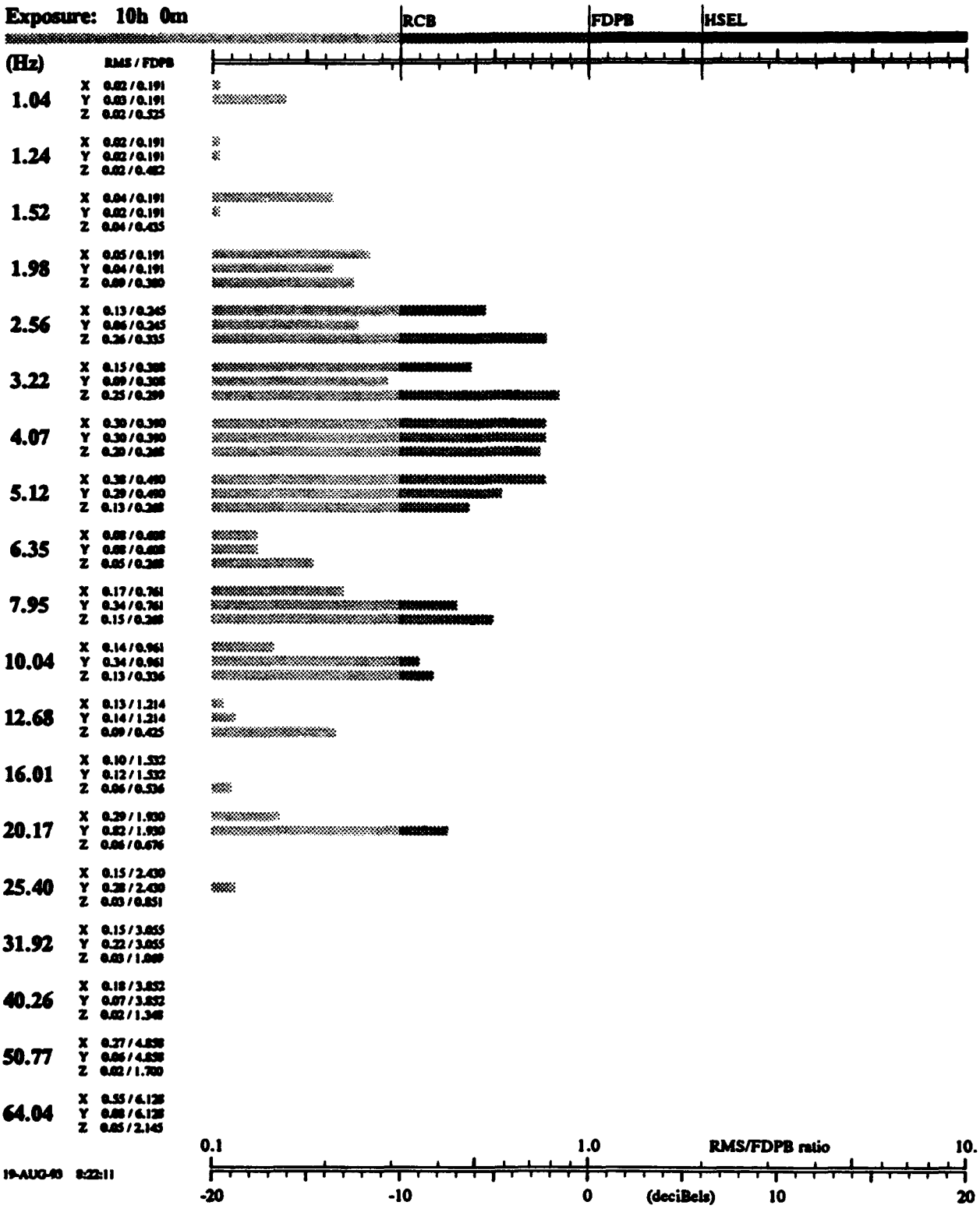
RUN-30

August 25, 1992

Passenger seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:11

Course: Paved
Speed: 35 mph
Note: Unloaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. combination (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

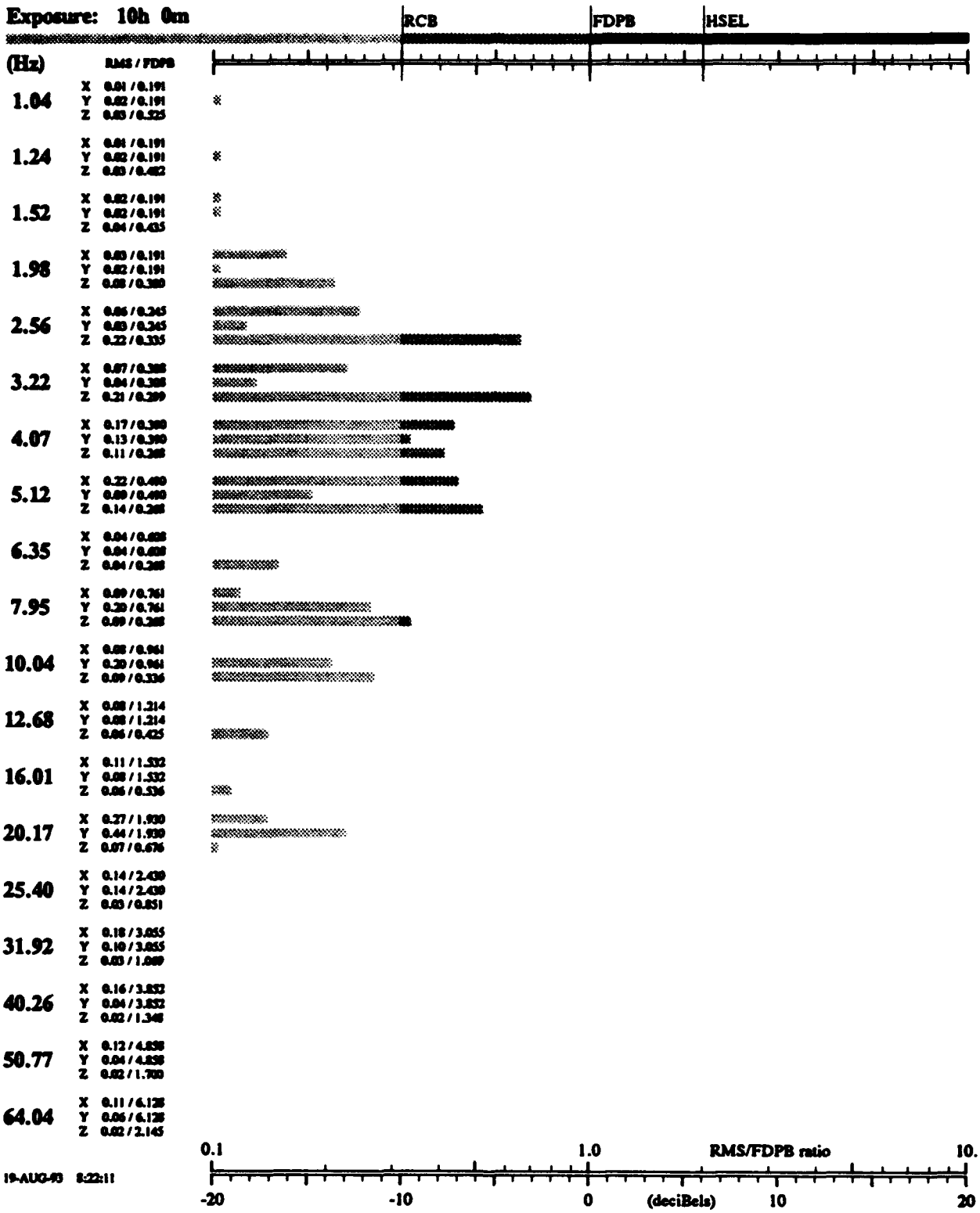
RUN-30

August 25, 1992

Driver seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:11

Course: Paved
Speed: 35 mph
Note: Unloaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. combination (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

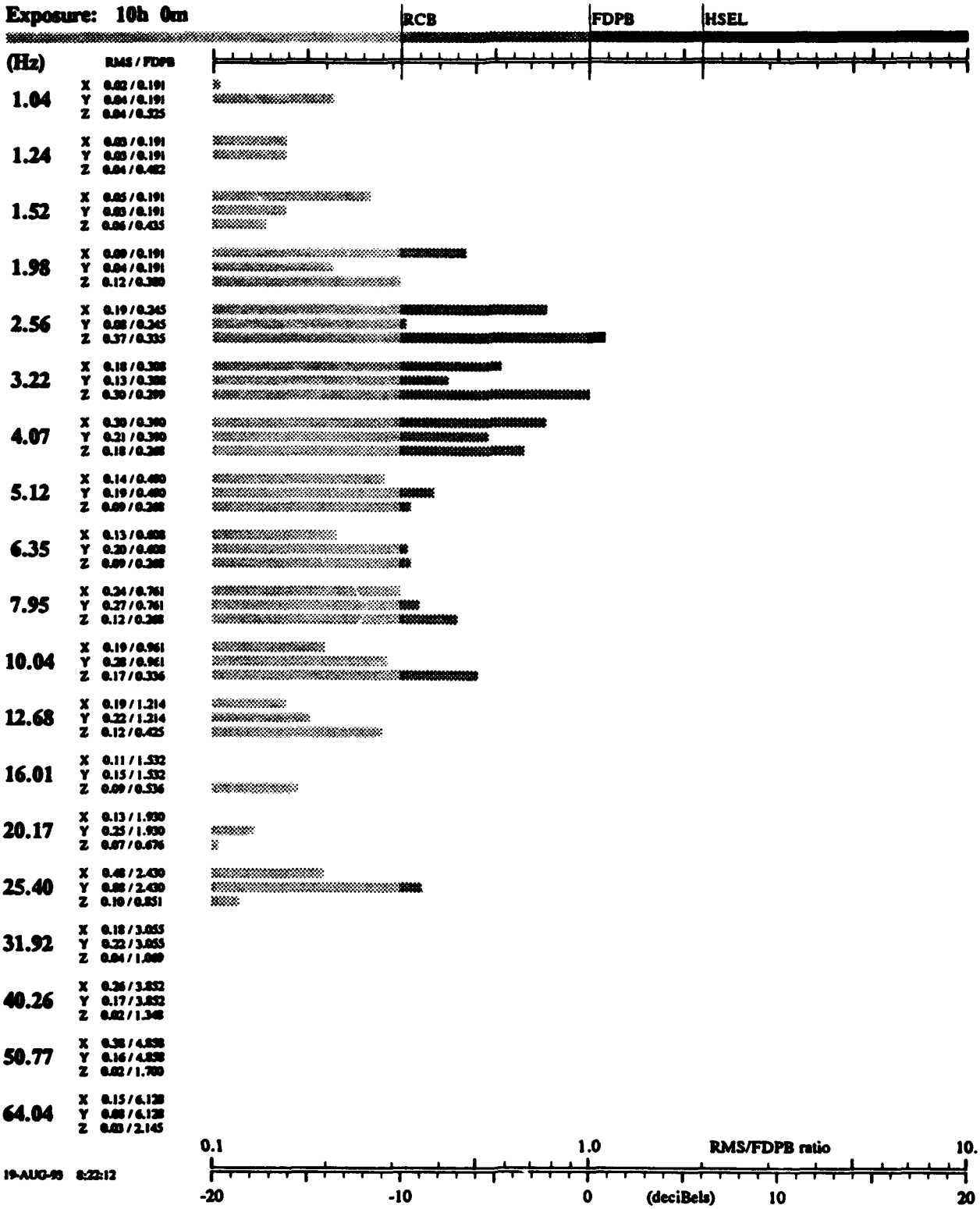
RUN-31

August 25, 1992

Passenger seat

M916 ride quality

Exposure: 10h 0m



19-AUG-99 8:22:12

Course: Paved
Speed: 45 mph
Note: Unloaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

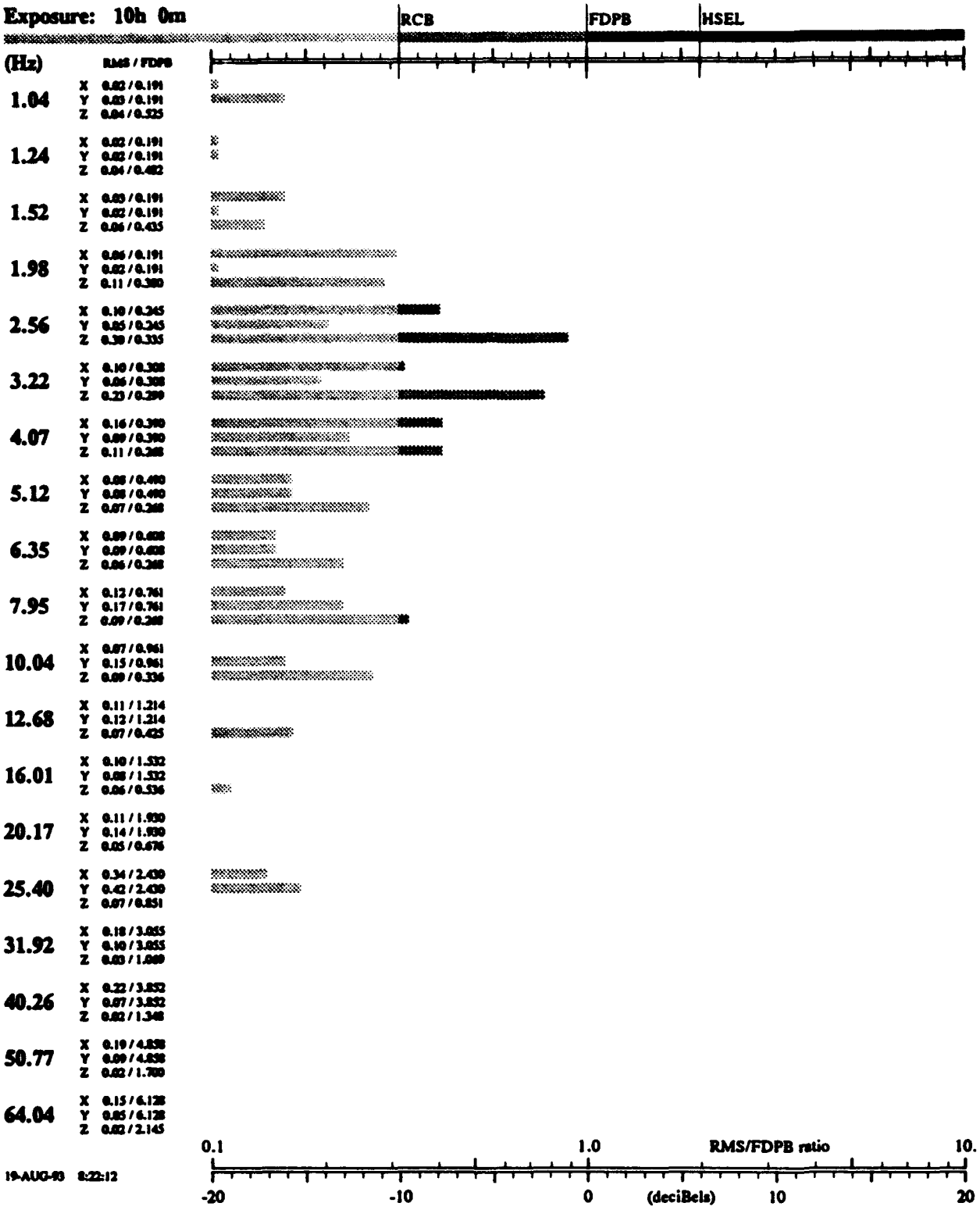
RUN-31

August 25, 1992

Driver seat

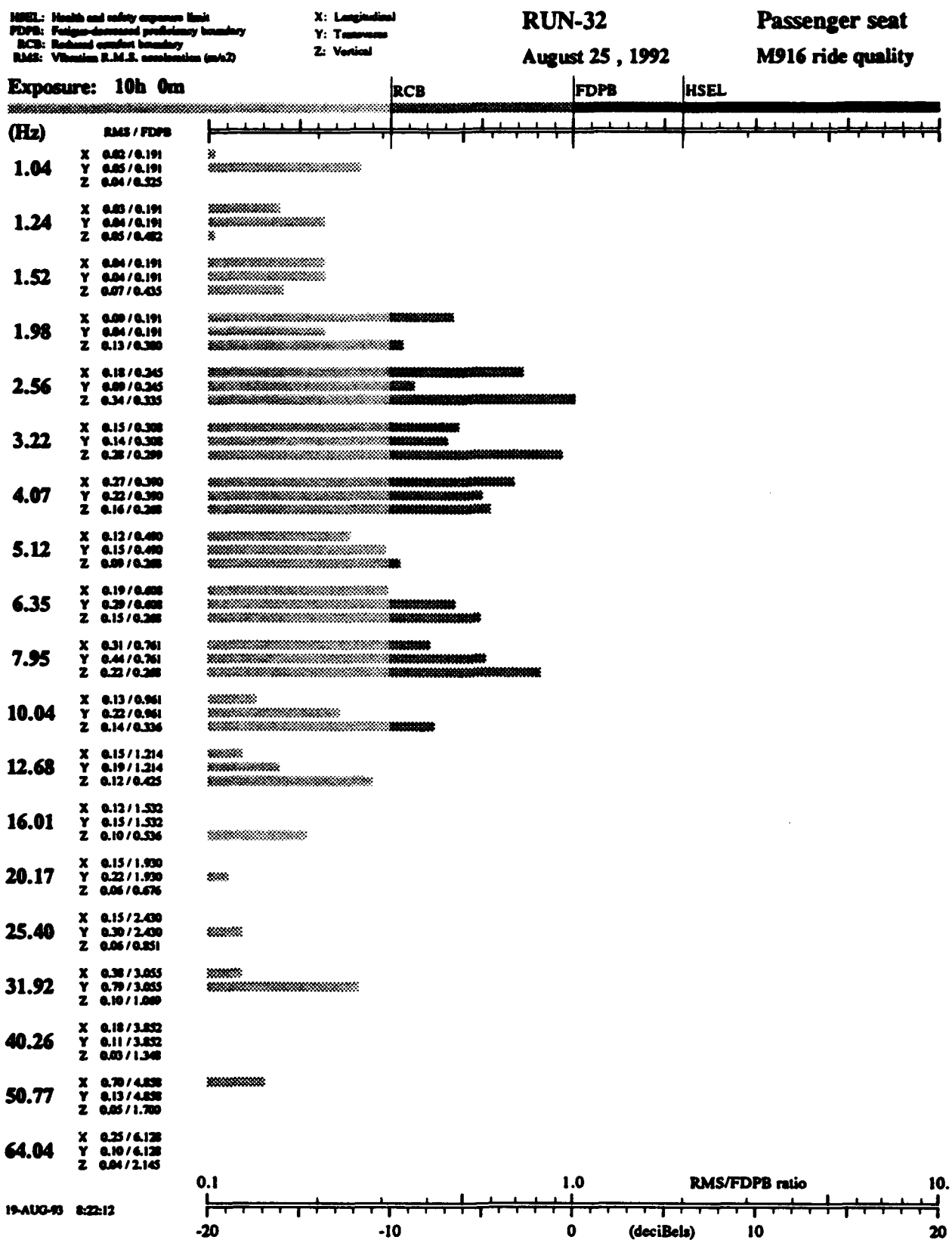
M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:12

Course: Paved
Speed: 45 mph
Note: Unloaded trailer



Course: Paved
Speed: 55 mph
Note: Unloaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

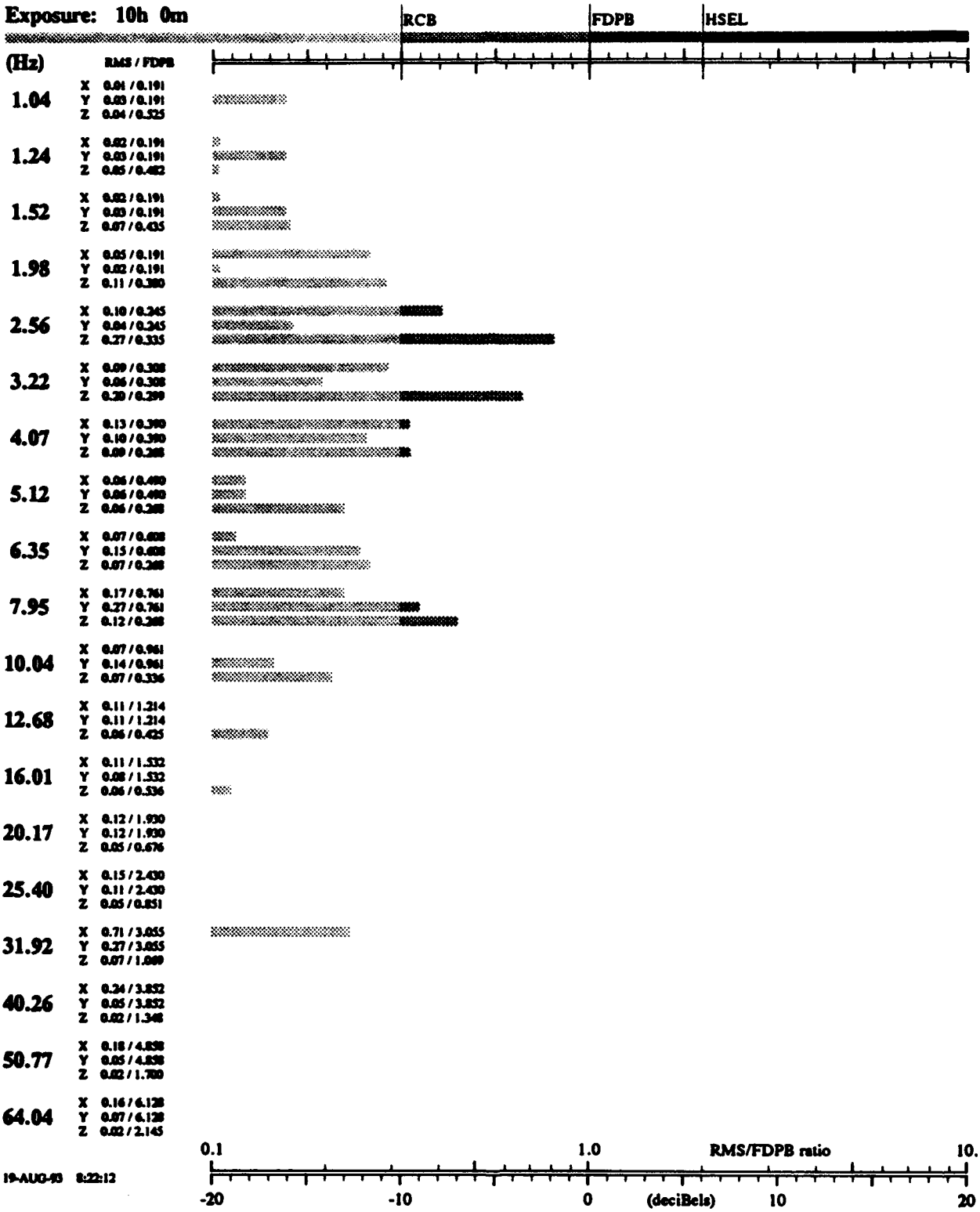
RUN-32

August 25 , 1992

Driver seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:12

Course: Paved
Speed: 55 mph
Note: Unloaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

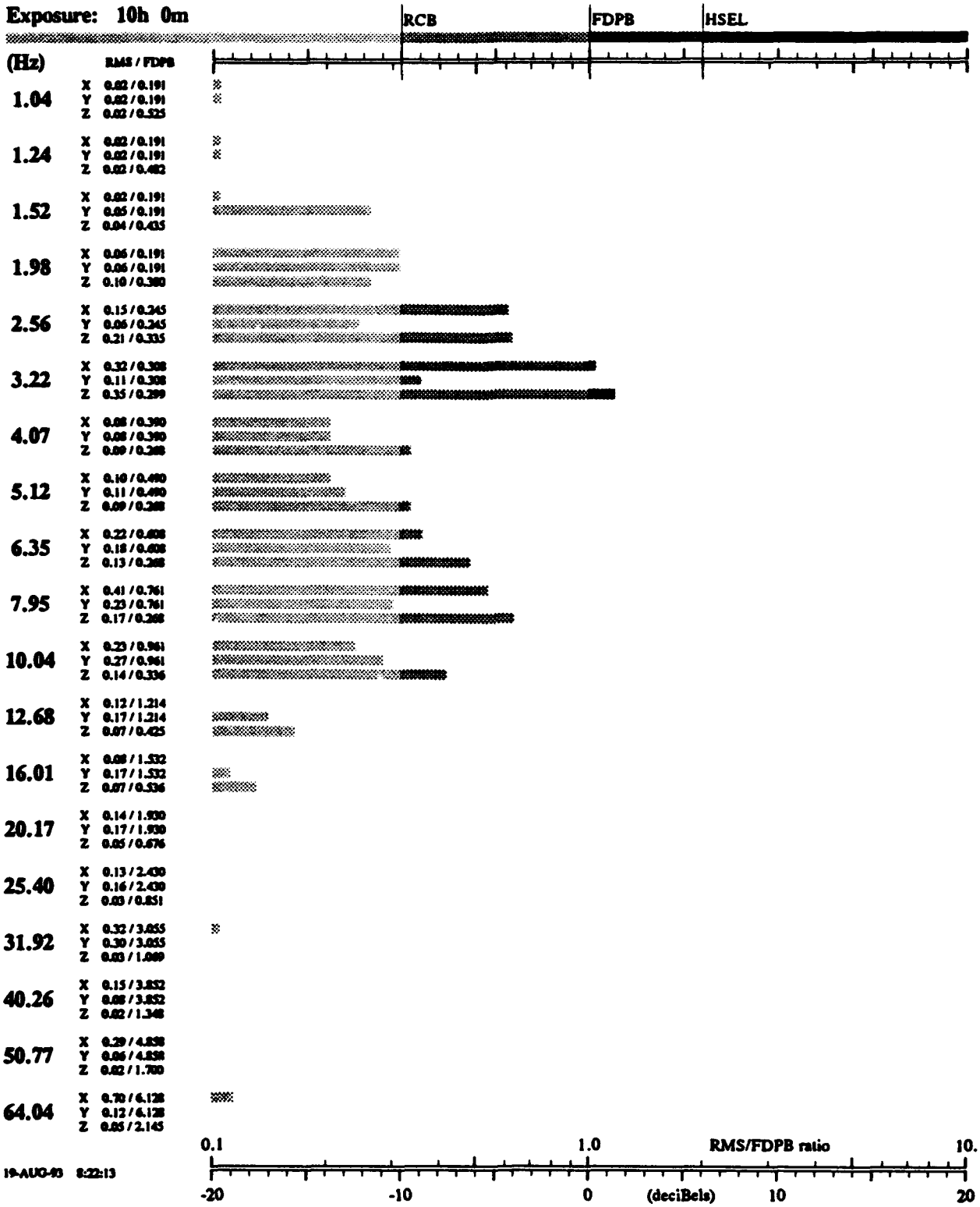
RUN-33

August 25, 1992

Passenger seat

M916 ride quality

Exposure: 10h 0m



Course: Paved
Speed: 25 mph
Note: Loaded trailer

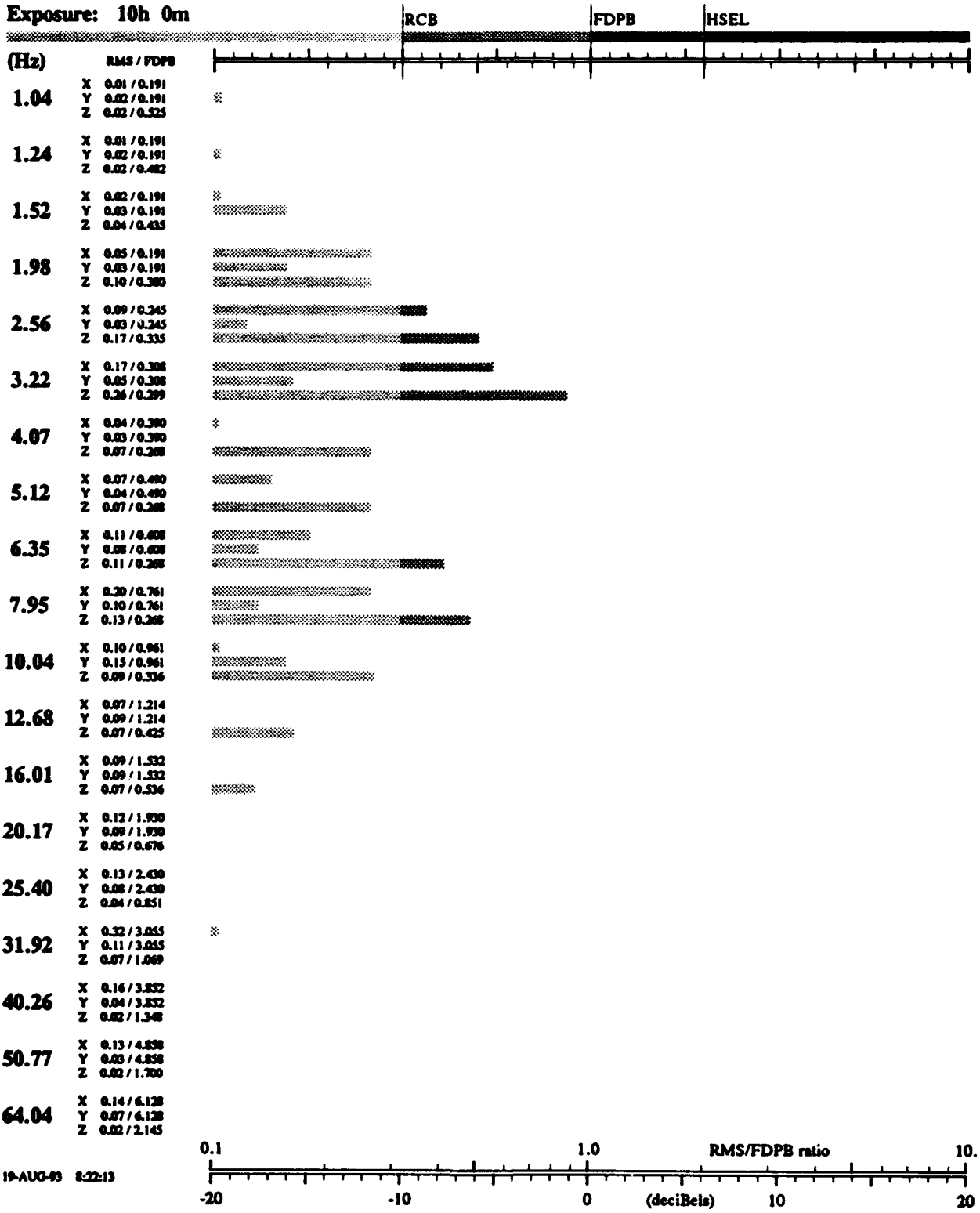
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

RUN-33 **Driver seat**

August 25, 1992 **M916 ride quality**

Exposure: 10h 0m



Course: Paved
Speed: 25 mph
Note: Loaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

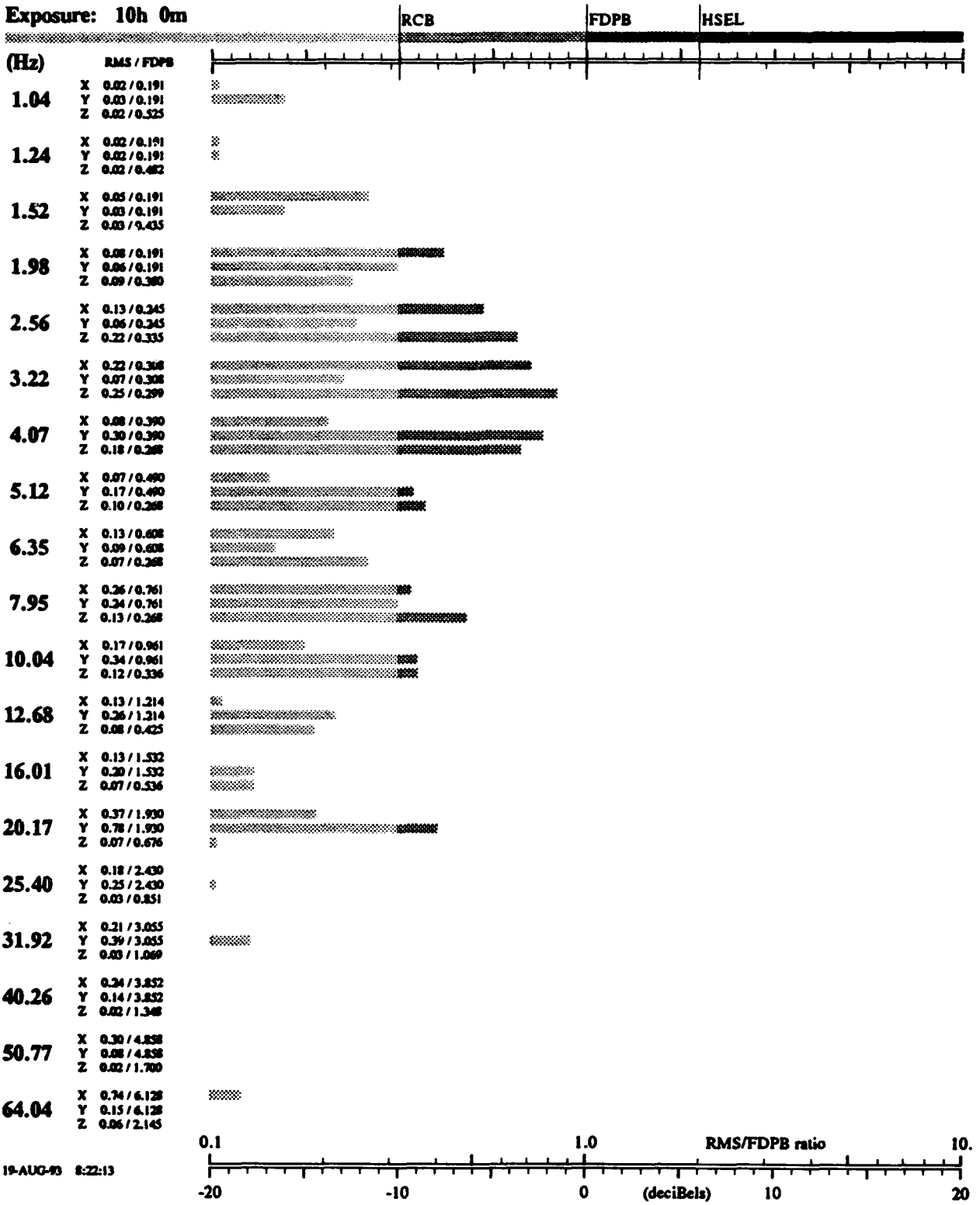
RUN-34

August 25, 1992

Passenger seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:13

Course: Paved
Speed: 35 mph
Note: Loaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

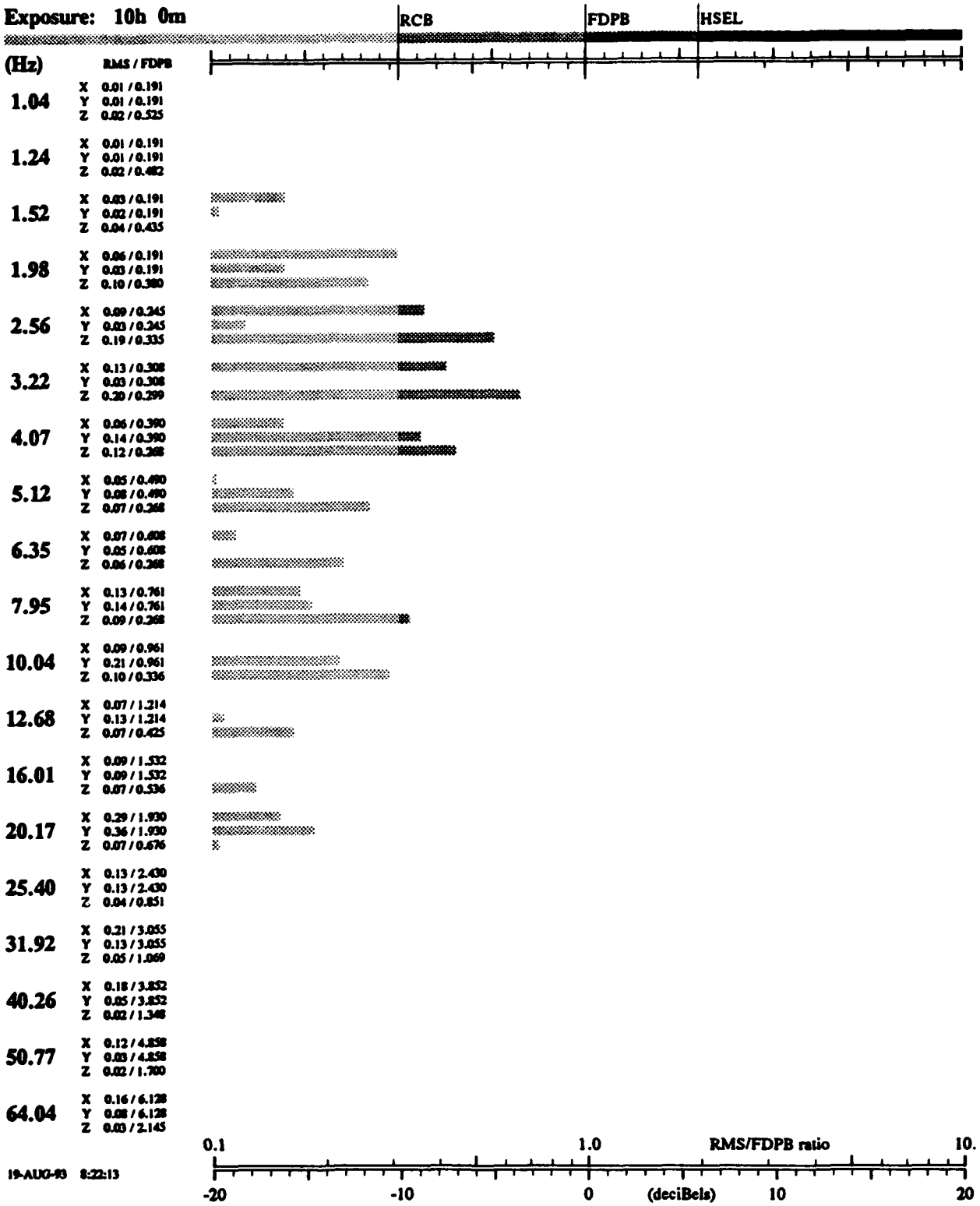
RUN-34

August 25, 1992

Driver seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:13

Course: Paved
Speed: 35 mph
Note: Loaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

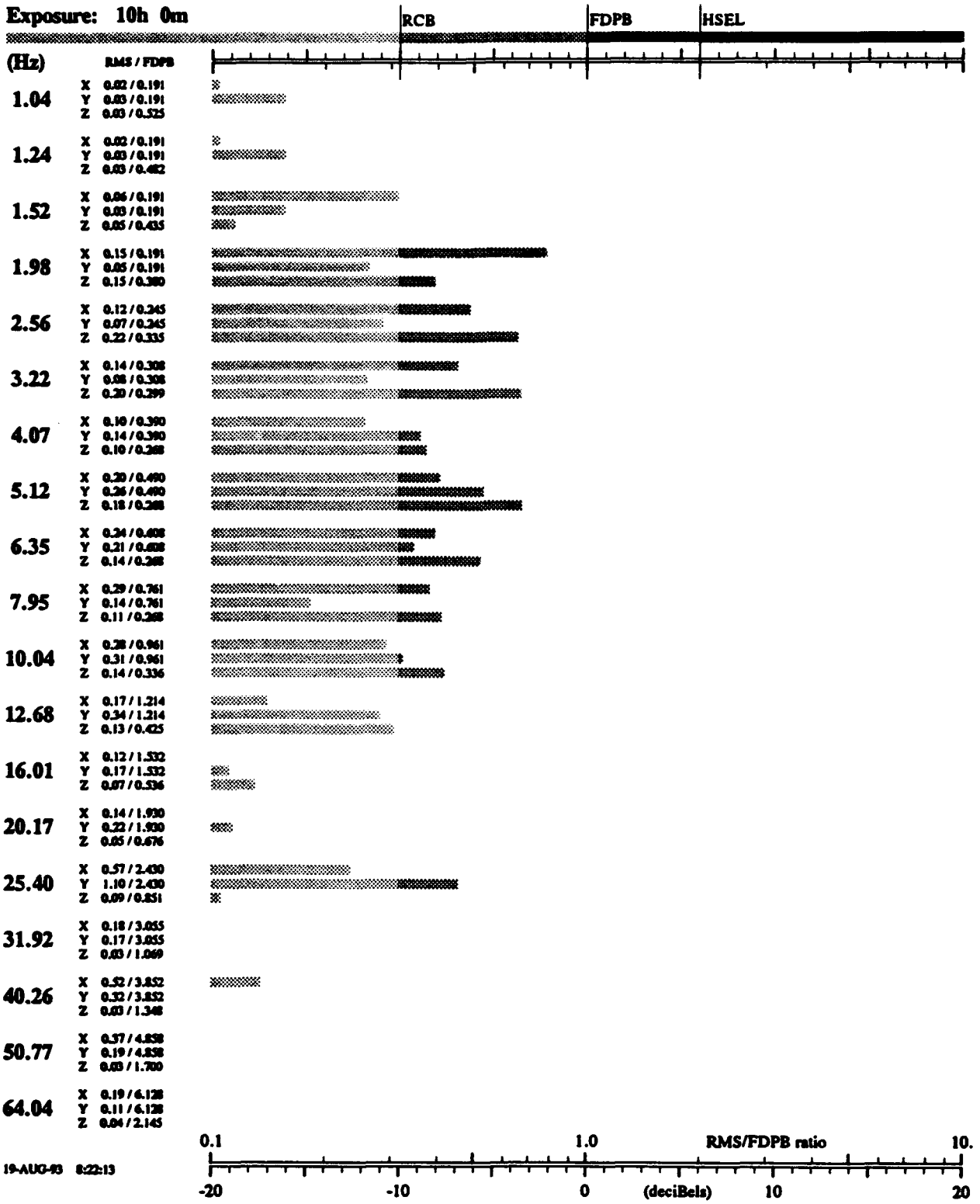
RUN-35

August 25, 1992

Passenger seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:13

Course: Paved
Speed: 45 mph
Note: Loaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

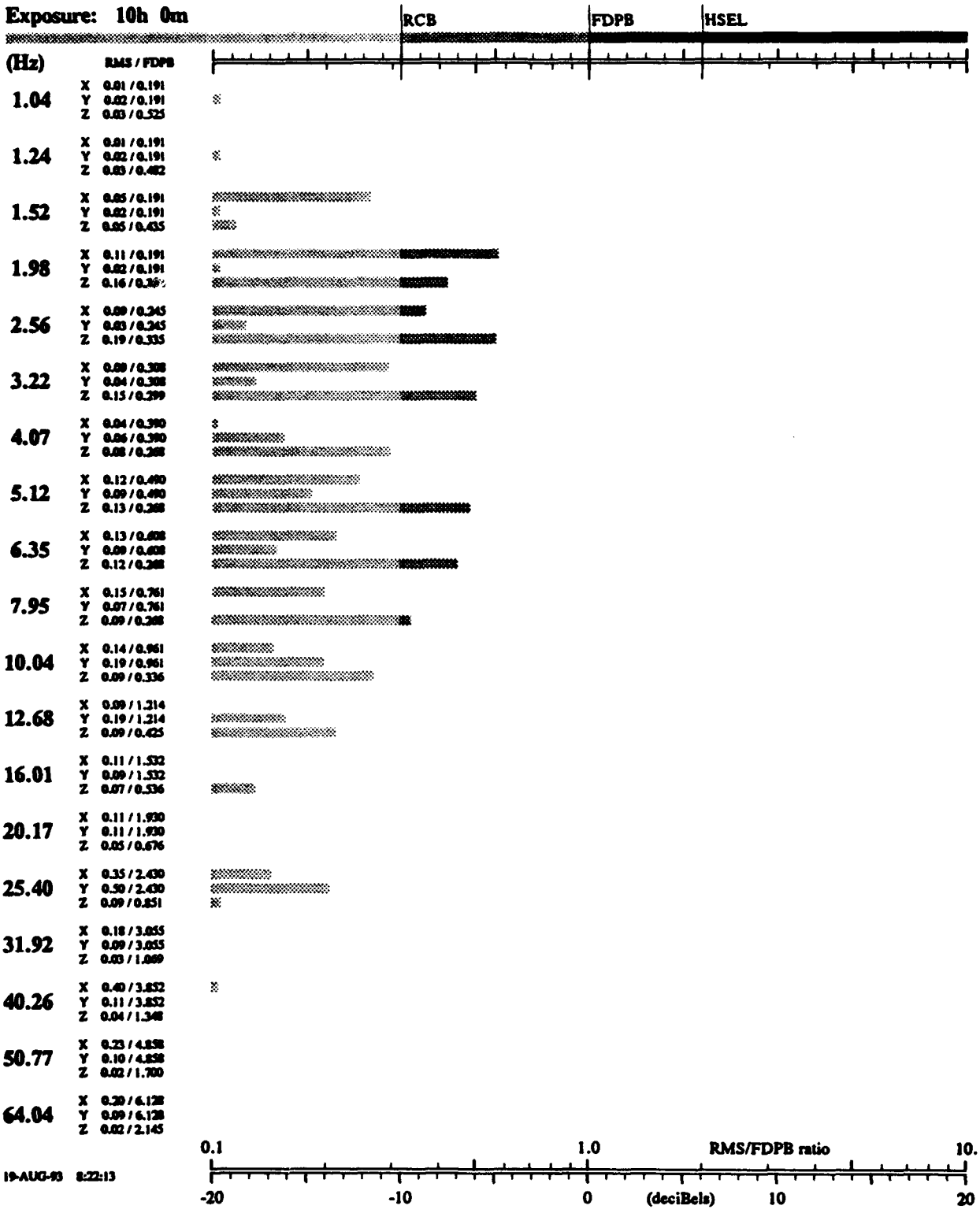
RUN-35

August 25, 1992

Driver seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:13

Course: Paved
Speed: 45 mph
Note: Loaded trailer

HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

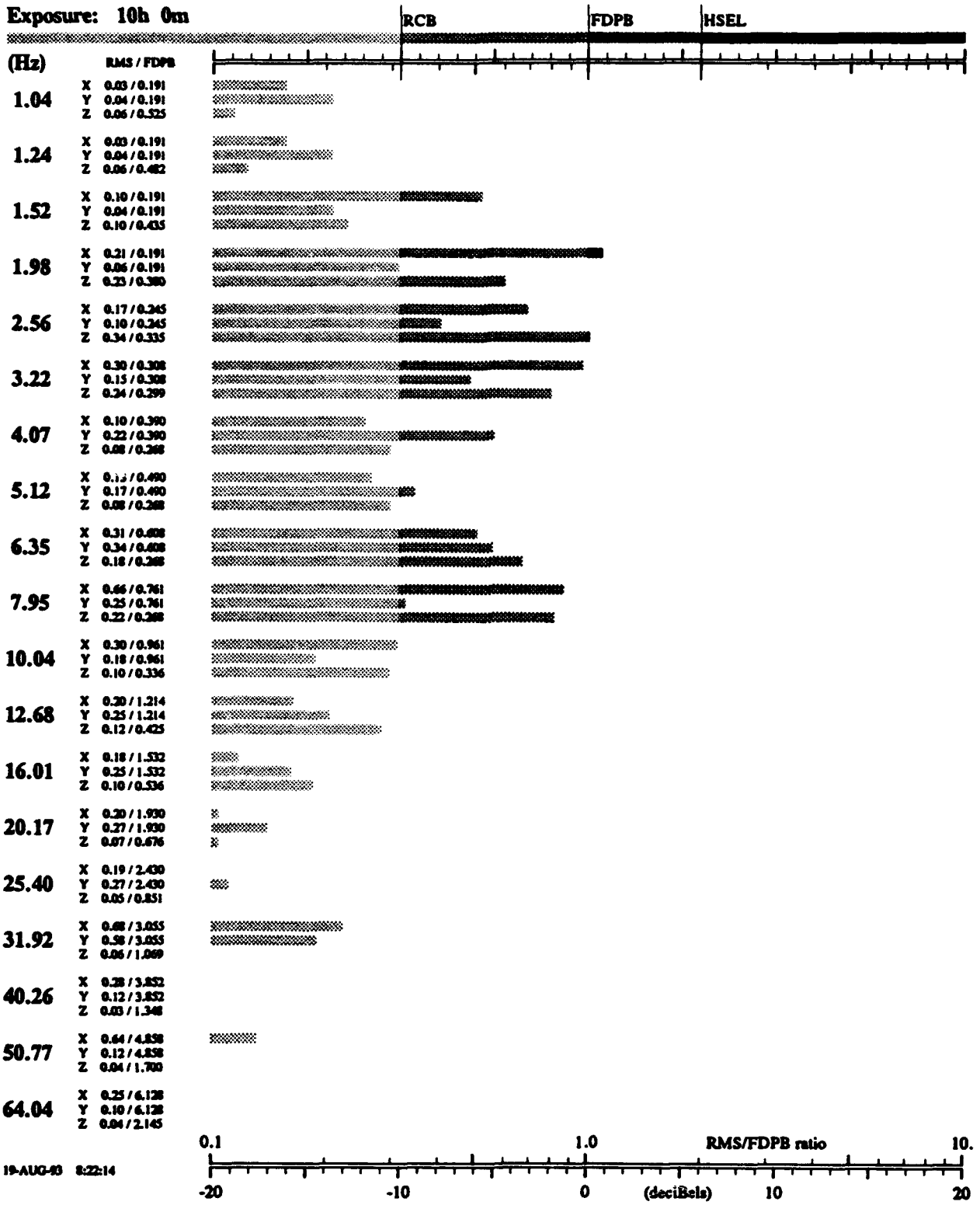
RUN-36

August 25, 1992

Passenger seat

M916 ride quality

Exposure: 10h 0m



19-AUG-93 8:22:14

Course: Paved
Speed: 55 mph
Note: Loaded trailer

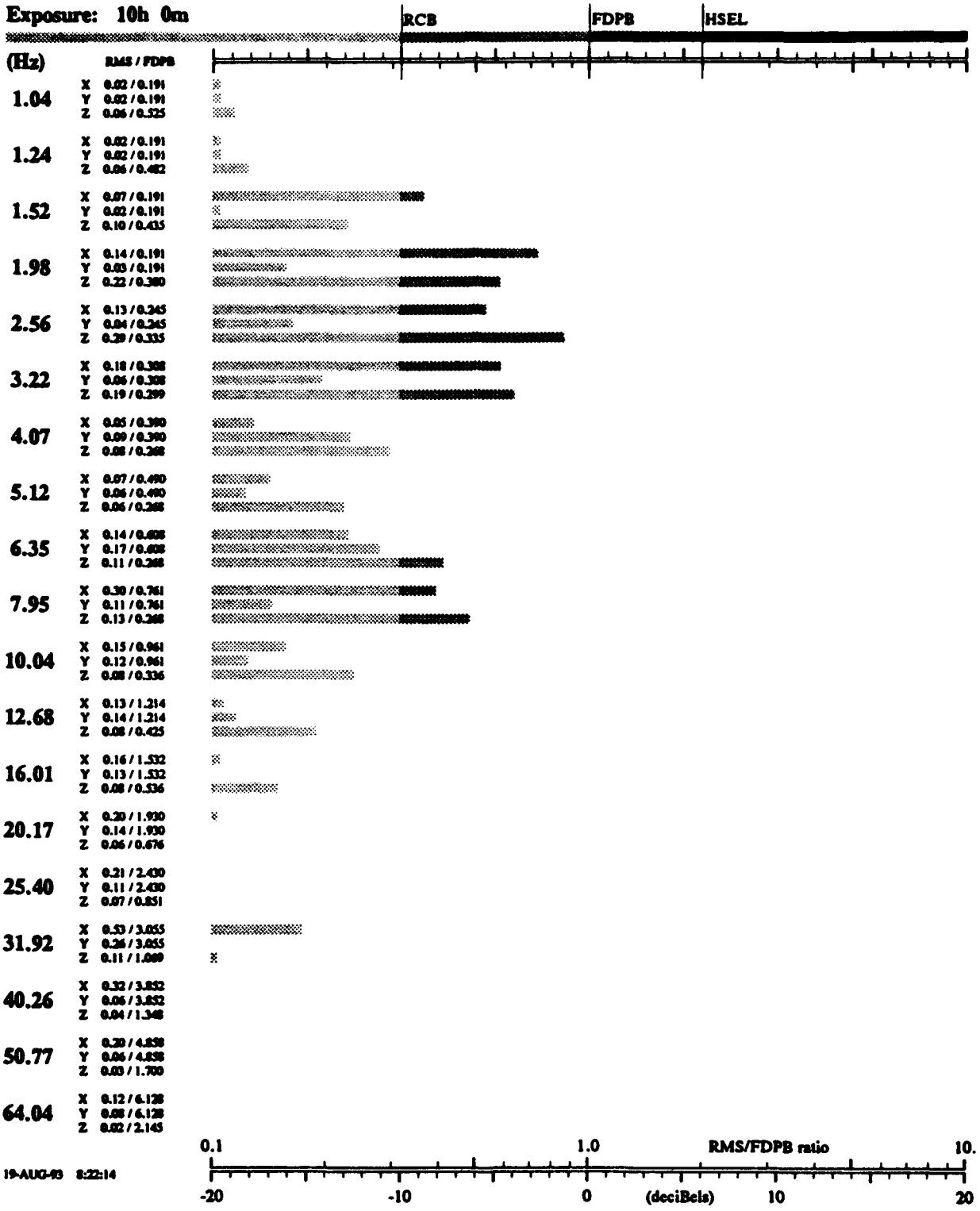
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

RUN-36 **Driver seat**

August 25, 1992 **M916 ride quality**

Exposure: 10h 0m



19-AUG-93 8:22:14

Course: Paved
Speed: 55 mph
Note: Loaded trailer

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