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Whole-body Vibration Assessment of the M1070 Heavy Equipment Transporter

Volume 2

By

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19. ABSTRACT (Continue on reverse if necessary and identify by block number)

An evaluation of all new tactical vehicles and aircraft is required to assess potential whole-body vibration (WBV) health hazards to crewmembers. As requested by the U.S. Army Environmental Hygiene Agency (USAEHA), a health hazard assessment (HHA) was performed by the U.S. Army Aeromedical Research Laboratory (USAARL) on the M1070 Heavy Equipment Transporter System (HETS). The HETS was tested on three cross-country courses at Aberdeen Proving Ground (APG), MD, by the U.S. Army Combat Systems Test Activity (USACSTA), in coordination with the Response and Tolerance Branch of USAARL. The M1070 HETS was tested with a M1000 trailer in a loaded and unloaded configuration. The loaded configuration was obtained by placing an M1 tank on the bed of the M1000 trailer. The unloaded configuration consisted of a M1070 tractor with an empty M1000 trailer. While operating the HETS in its intended operational environment, the front passenger was exposed to an overall risk assessment code of 5. This consisted of an overall assignment of hazard severity category IV and hazard probability level D.

Volume 1 describes the tests and discusses the results. Volume 2 contains Appendix B, the data plots and graphs.

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Appendix B.

ISO 2631 data plots and graphs.

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

RUN-01 Driver

8-OCT-93 16:14:14

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Driver**
5: **25 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.0800**	**0.0633**	**9:25**	**38:45**	**82:37**
6.37	0.1700	0.0534	11:48	47:00	98:52
3.14	0.0700	0.0446	14:49	57:21	119:00
5.05	0.0900	0.0356	19:37	73:07	149:30
7.98	0.1100	0.0276	26:45	95:45	192:30

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.1100**	**0.0871**	**6:05**	**26:45**	**58:36**
3.14	0.1000	0.0637	9:19	38:30	82:07
7.98	0.1700	0.0426	15:42	60:15	124:45
1.61	0.0300	0.0300	24:08	87:45	177:15
2.02	0.0300	0.0296	24:30	88:45	179:30

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.4500**	**0.3576**	**1:07**	**6:46**	**16:45**
3.14	0.3200	0.2835	1:39	9:15	22:15
2.02	0.1700	0.1209	6:09	27:00	59:06
7.98	0.0900	0.0900	9:12	38:02	81:15
6.37	0.0700	0.0700	12:49	50:30	105:45

* 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 Front

8-OCT-93 16:14:14

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Front**
5: **25 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.0900**	**0.0712**	**8:02**	**33:51**	**72:52**
6.37	0.1800	0.0565	10:56	44:02	93:15
3.14	0.0800	0.0510	12:30	49:30	103:45
5.05	0.0900	0.0356	19:37	73:07	149:30
7.98	0.1200	0.0301	24:07	87:30	177:00

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.0700**	**0.0554**	**11:12**	**45:00**	**95:00**
7.98	0.1600	0.0401	16:58	64:22	132:45
3.14	0.0600	0.0382	18:00	67:45	139:15
6.37	0.0700	0.0220	34:47	121:00	240:00
1.61	0.0200	0.0200	38:45	133:15	262:30

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.5800**	**0.4610**	**0:37**	**4:43**	**12:08**
3.14	0.4700	0.4164	0:47	5:28	13:49
2.02	0.1700	0.1209	6:09	27:00	59:06
7.98	0.0900	0.0900	9:12	38:02	81:15
5.05	0.0700	0.0700	12:49	50:30	105:45

* 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 Roadside

8-OCT-93 16:14:14

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Roadside**
5: **25 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.2800**	**0.0879**	**6:01**	**26:25**	**58:06**
5.05	0.1400	0.0554	11:12	45:00	95:00
7.98	0.1700	0.0426	15:42	60:15	124:45
2.53	0.0500	0.0396	17:15	65:15	134:15
2.02	0.0300	0.0296	24:30	88:45	179:30

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.0900**	**0.0712**	**8:02**	**33:51**	**72:52**
3.14	0.0800	0.0510	12:30	49:30	103:45
7.98	0.1600	0.0401	16:58	64:22	132:45
6.37	0.0900	0.0283	25:55	93:22	188:00
5.05	0.0700	0.0277	26:32	95:15	191:30

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.3500**	**0.2782**	**1:44**	**9:30**	**22:47**
3.14	0.2600	0.2304	2:20	12:11	28:30
6.37	0.2000	0.2000	2:56	14:34	33:36
7.98	0.1300	0.1300	5:33	24:47	54:36
5.05	0.1100	0.1100	7:01	30:10	65:37

* 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 Curbside

8-OCT-93 16:14:14

1: HET Ride Quality
2: Oct 4, 1993
3: Paved
4: Curbside
5: 25 mph
6: Loaded

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.2600**	**0.0816**	**6:39**	**28:52**	**63:00**
5.05	0.1400	0.0554	11:12	45:00	95:00
2.53	0.0500	0.0396	17:15	65:15	134:15
7.98	0.1500	0.0376	18:22	69:00	141:30
2.02	0.0300	0.0296	24:30	88:45	179:30

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.0700**	**0.0554**	**11:12**	**45:00**	**95:00**
3.14	0.0600	0.0382	18:00	67:45	139:15
7.98	0.1500	0.0376	18:22	69:00	141:30
6.37	0.1000	0.0314	22:52	83:37	169:30
5.05	0.0700	0.0277	26:32	95:15	191:30

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.4700**	**0.3735**	**1:00**	**6:22**	**15:52**
3.14	0.3800	0.3367	1:15	7:20	18:02
6.37	0.2100	0.2100	2:43	13:42	31:45
5.05	0.1300	0.1300	5:33	24:47	54:36
2.02	0.1400	0.0996	8:03	33:51	73:00

* 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

8-OCT-93 16:14:15

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Driver**
5: **30 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.14	**0.0900**	**0.0573**	**10:45**	**43:21**	**91:45**
6.37	0.1800	0.0565	10:56	44:02	93:15
1.61	0.0500	0.0500	12:49	50:30	105:45
3.94	0.0800	0.0406	16:40	63:21	130:45
2.02	0.0400	0.0395	17:15	65:22	134:30

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.14	**0.1000**	**0.0637**	**9:19**	**38:30**	**82:07**
6.37	0.1400	0.0440	15:07	58:15	120:45
3.94	0.0800	0.0406	16:40	63:21	130:45
1.61	0.0400	0.0400	17:00	64:30	133:00
2.02	0.0400	0.0395	17:15	65:22	134:30

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.14	**0.3000**	**0.2658**	**1:52**	**10:07**	**24:02**
3.94	0.2400	0.2381	2:14	11:41	27:25
2.53	0.2500	0.1987	2:58	14:42	33:51
2.02	0.1700	0.1209	6:09	27:00	59:06
6.37	0.1000	0.1000	8:00	33:45	72:45

* 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 Front

8-OCT-93 16:14:15

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Front**
5: **30 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.1900**	**0.0596**	**10:11**	**41:26**	**88:00**
1.61	0.0500	0.0500	12:49	50:30	105:45
3.14	0.0600	0.0382	18:00	67:45	139:15
3.94	0.0700	0.0356	19:40	73:15	149:45
7.98	0.1400	0.0351	20:00	74:15	151:45

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.14	**0.0800**	**0.0510**	**12:30**	**49:30**	**103:45**
6.37	0.1300	0.0408	16:35	63:06	130:15
1.61	0.0400	0.0400	17:00	64:30	133:00
7.98	0.1500	0.0376	18:22	69:00	141:30
3.94	0.0700	0.0356	19:40	73:15	149:45

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.14	**0.4800**	**0.4253**	**0:45**	**5:18**	**13:27**
3.94	0.4000	0.3968	0:52	5:50	14:41
2.53	0.2500	0.1987	2:58	14:42	33:51
2.02	0.1600	0.1138	6:41	29:00	63:15
6.37	0.1000	0.1000	8:00	33:45	72:45

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Health ... Health and safety exposure limit

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

RUN-02 Roadside

8-OCT-93 16:14:15

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Roadside**
5: **30 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.3100**	**0.0973**	**5:11**	**23:25**	**51:51**
5.05	0.1500	0.0594	10:15	41:41	88:30
7.98	0.1900	0.0476	13:38	53:21	111:15
1.61	0.0400	0.0400	17:00	64:30	133:00
3.94	0.0700	0.0356	19:40	73:15	149:45

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.14	**0.0900**	**0.0573**	**10:45**	**43:21**	**91:45**
6.37	0.1700	0.0534	11:48	47:00	98:52
7.98	0.1800	0.0451	14:37	56:36	117:45
3.94	0.0800	0.0406	16:40	63:21	130:45
1.61	0.0300	0.0300	24:08	87:45	177:15

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.14	**0.3000**	**0.2658**	**1:52**	**10:07**	**24:02**
6.37	0.2500	0.2500	2:03	10:57	25:52
3.94	0.2500	0.2480	2:04	11:03	26:07
2.53	0.1900	0.1510	4:28	20:40	46:15
7.98	0.1500	0.1500	4:31	20:52	46:36

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Health ... Health and safety exposure limit

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

RUN-02 Curbside

8-OCT-93 16:14:15

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Curbside**
5: **30 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.2600**	**0.0816**	**6:39**	**28:52**	**63:00**
5.05	0.1300	0.0515	12:22	48:56	102:45
7.98	0.1800	0.0451	14:37	56:36	117:45
3.94	0.0800	0.0406	16:40	63:21	130:45
1.61	0.0400	0.0400	17:00	64:30	133:00

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.1900**	**0.0596**	**10:11**	**41:26**	**88:00**
7.98	0.1800	0.0451	14:37	56:36	117:45
3.14	0.0700	0.0446	14:49	57:21	119:00
3.94	0.0700	0.0356	19:40	73:15	149:45
1.61	0.0300	0.0300	24:08	87:45	177:15

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.14	**0.4100**	**0.3633**	**1:05**	**6:37**	**16:25**
3.94	0.3500	0.3472	1:10	7:03	17:22
6.37	0.1700	0.1700	3:45	17:52	40:30
2.53	0.2000	0.1590	4:09	19:25	43:45
5.05	0.1000	0.1000	8:00	33:45	72:45

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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

8-OCT-93 16:14:15

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Driver**
5: **35 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.1100**	**0.0559**	**11:07**	**44:36**	**94:15**
1.61	0.0500	0.0500	12:49	50:30	105:45
6.37	0.1500	0.0471	13:49	54:00	112:30
2.02	0.0400	0.0395	17:15	65:22	134:30
7.98	0.1400	0.0351	20:00	74:15	151:45

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.1400**	**0.0711**	**8:03**	**33:51**	**73:00**
7.98	0.2100	0.0526	12:00	47:45	100:22
1.61	0.0400	0.0400	17:00	64:30	133:00
2.02	0.0400	0.0395	17:15	65:22	134:30
1.20	0.0300	0.0300	24:08	87:45	177:15

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.2700**	**0.2679**	**1:50**	**10:00**	**23:52**
2.53	0.1900	0.1510	4:28	20:40	46:15
2.02	0.1900	0.1352	5:16	23:38	52:21
7.98	0.1300	0.1300	5:33	24:47	54:36
3.14	0.1300	0.1152	6:35	28:37	62:21

* 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 Front

8-OCT-93 16:14:15

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Front**
5: **35 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.1100**	**0.0559**	**11:07**	**44:36**	**94:15**
1.61	0.0500	0.0500	12:49	50:30	105:45
6.37	0.1500	0.0471	13:49	54:00	112:30
7.98	0.1600	0.0401	16:58	64:22	132:45
2.02	0.0400	0.0395	17:15	65:22	134:30

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.1700**	**0.0864**	**6:09**	**27:00**	**59:15**
7.98	0.2600	0.0651	9:03	37:30	80:15
1.61	0.0300	0.0300	24:08	87:45	177:15
1.20	0.0300	0.0300	24:08	87:45	177:15
2.02	0.0300	0.0296	24:30	88:45	179:30

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.4500**	**0.4464**	**0:41**	**4:56**	**12:38**
2.53	0.1900	0.1510	4:28	20:40	46:15
7.98	0.1400	0.1400	5:00	22:40	50:21
2.02	0.1800	0.1281	5:41	25:15	55:36
3.14	0.1400	0.1240	5:56	26:10	57:36

* 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 Roadside

8-OCT-93 16:14:15

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Roadside**
5: **35 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.1500**	**0.0762**	**7:20**	**31:17**	**67:45**
6.37	0.2400	0.0753	7:26	31:40	68:37
7.98	0.1800	0.0451	14:37	56:36	117:45
1.61	0.0400	0.0400	17:00	64:30	133:00
5.05	0.0800	0.0317	22:37	82:52	168:00

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.1300**	**0.0660**	**8:53**	**36:56**	**79:00**
7.98	0.2500	0.0626	9:33	39:15	83:37
2.02	0.0300	0.0296	24:30	88:45	179:30
10.10	0.1400	0.0277	26:30	95:15	191:30
6.37	0.0700	0.0220	34:47	121:00	240:00

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.3400**	**0.3373**	**1:14**	**7:20**	**18:00**
6.37	0.1700	0.1700	3:45	17:52	40:30
7.98	0.1400	0.1400	5:00	22:40	50:21
2.53	0.1500	0.1192	6:16	27:25	60:06
2.02	0.1500	0.1067	7:20	31:15	67:45

* 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 . Curbside

8-OCT-93 16:14:15

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Curbside**
5: **35 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.1500**	**0.0762**	**7:20**	**31:17**	**67:45**
6.37	0.2300	0.0722	7:54	33:17	71:52
1.61	0.0500	0.0500	12:49	50:30	105:45
7.98	0.1800	0.0451	14:37	56:36	117:45
5.05	0.0800	0.0317	22:37	82:52	168:00

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
7.98	**0.2400**	**0.0601**	**10:04**	**41:06**	**87:15**
3.94	0.1100	0.0559	11:07	44:36	94:15
1.61	0.0300	0.0300	24:08	87:45	177:15
6.37	0.0900	0.0283	25:55	93:22	188:00
10.10	0.1400	0.0277	26:30	95:15	191:30

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.3800**	**0.3770**	**0:57**	**6:16**	**15:41**
6.37	0.1500	0.1500	4:31	20:52	46:36
7.98	0.1300	0.1300	5:33	24:47	54:36
2.53	0.1600	0.1272	5:43	25:25	56:00
2.02	0.1500	0.1067	7:20	31:15	67:45

* 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

8-OCT-93 16:14:16

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Driver**
5: **40 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.1400**	**0.0711**	**8:03**	**33:51**	**73:00**
1.61	0.0700	0.0700	8:14	34:30	74:15
5.05	0.1600	0.0633	9:25	38:45	82:37
2.02	0.0500	0.0494	13:00	51:15	107:15
1.20	0.0400	0.0400	17:00	64:30	133:00

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.1700**	**0.0864**	**6:09**	**27:00**	**59:15**
5.05	0.1900	0.0752	7:28	31:45	68:45
1.61	0.0500	0.0500	12:49	50:30	105:45
2.02	0.0500	0.0494	13:00	51:15	107:15
10.10	0.1900	0.0376	18:20	68:52	141:15

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.2300**	**0.2300**	**2:20**	**12:12**	**28:32**
3.94	0.2300	0.2282	2:23	12:19	28:52
2.53	0.2800	0.2225	2:29	12:45	29:40
2.02	0.2500	0.1779	3:30	16:53	38:30
7.98	0.1000	0.1000	8:00	33:45	72:45

* 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 Front

8-OCT-93 16:14:16

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Front**
5: **40 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.0900**	**0.0900**	**5:48**	**25:45**	**56:36**
2.02	0.0700	0.0691	8:22	35:00	75:15
3.94	0.1100	0.0559	11:07	44:36	94:15
7.98	0.2100	0.0526	12:00	47:45	100:22
5.05	0.1300	0.0515	12:22	48:56	102:45

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.1800**	**0.0914**	**5:41**	**25:15**	**55:36**
5.05	0.2000	0.0792	6:58	29:55	65:07
10.10	0.2100	0.0416	16:10	61:51	127:45
7.98	0.1600	0.0401	16:58	64:22	132:45
1.61	0.0400	0.0400	17:00	64:30	133:00

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.3700**	**0.3700**	**1:02**	**6:26**	**16:02**
3.94	0.3500	0.3472	1:10	7:03	17:22
2.53	0.2800	0.2225	2:29	12:45	29:40
2.02	0.2300	0.1636	3:59	18:45	42:17
7.98	0.1200	0.1200	6:13	27:15	59:45

* 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 Roadside

8-OCT-93 16:14:16

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Roadside**
5: **40 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.2100**	**0.1067**	**4:33**	**20:58**	**46:51**
5.05	0.2400	0.0950	5:22	24:07	53:21
1.61	0.0600	0.0600	10:07	41:11	87:30
7.98	0.2000	0.0501	12:48	50:21	105:30
2.02	0.0500	0.0494	13:00	51:15	107:15

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.1300**	**0.0660**	**8:53**	**36:56**	**79:00**
5.05	0.1500	0.0594	10:15	41:41	88:30
10.10	0.2900	0.0574	10:42	43:15	91:30
7.98	0.2100	0.0526	12:00	47:45	100:22
1.61	0.0300	0.0300	24:08	87:45	177:15

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.3600**	**0.3600**	**1:06**	**6:41**	**16:37**
3.94	0.3300	0.3274	1:17	7:37	18:40
2.53	0.2100	0.1669	3:51	18:17	41:21
7.98	0.1400	0.1400	5:00	22:40	50:21
2.02	0.1900	0.1352	5:16	23:38	52:21

* 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 Curbside

8-OCT-93 16:14:16

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Curbside**
5: **40 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.1900**	**0.0965**	**5:16**	**23:40**	**52:21**
5.05	0.2300	0.0910	5:43	25:22	55:51
1.61	0.0700	0.0700	8:14	34:30	74:15
2.02	0.0600	0.0593	10:15	41:45	88:37
7.98	0.2100	0.0526	12:00	47:45	100:22

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.1200**	**0.0610**	**9:53**	**40:26**	**86:00**
10.10	0.2900	0.0574	10:42	43:15	91:30
5.05	0.1400	0.0554	11:12	45:00	95:00
7.98	0.2200	0.0551	11:18	45:17	95:37
1.61	0.0400	0.0400	17:00	64:30	133:00

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.3500**	**0.3500**	**1:09**	**6:58**	**17:13**
3.94	0.3300	0.3274	1:17	7:37	18:40
2.53	0.2300	0.1828	3:21	16:20	37:17
2.02	0.1900	0.1352	5:16	23:38	52:21
7.98	0.1100	0.1100	7:01	30:10	65:37

* 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

8-OCT-93 16:14:17

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Cross Country #2**
4: **Driver**
5: **5 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.0600**	**0.0600**	**10:07**	**41:11**	**87:30**
1.61	0.0500	0.0500	12:49	50:30	105:45
3.94	0.0r800	0.0406	16:40	63:21	130:45
2.02	0.0400	0.0395	17:15	65:22	134:30
20.10	0.3300	0.0328	21:40	79:45	162:00

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.2100**	**0.2100**	**1:34**	**8:49**	**21:17**
1.61	0.1900	0.1900	1:52	10:04	24:02
2.02	0.0900	0.0889	5:54	26:07	57:21
2.53	0.0600	0.0475	13:41	53:30	111:30
20.10	0.3400	0.0338	20:53	77:15	157:15

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.2300**	**0.1636**	**3:59**	**18:45**	**42:17**
2.53	0.1800	0.1431	4:50	22:05	49:11
1.61	0.2000	0.1270	5:45	25:30	56:06
1.20	0.1700	0.0932	8:48	36:32	78:15
6.37	0.0800	0.0800	10:47	43:30	92:00

* 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 Front

8-OCT-93 16:14:17

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Cross Country #2**
4: **Front**
5: **5 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.0900**	**0.0900**	**5:48**	**25:45**	**56:36**
1.61	0.0800	0.0800	6:50	29:32	64:22
2.02	0.0400	0.0395	17:15	65:22	134:30
2.53	0.0400	0.0317	22:37	82:52	168:00
3.94	0.0600	0.0305	23:40	86:15	174:30

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.1900**	**0.1900**	**1:52**	**10:04**	**24:02**
1.61	0.1500	0.1500	2:43	13:42	31:45
2.02	0.0700	0.0691	8:22	35:00	75:15
2.53	0.0400	0.0317	22:37	82:52	168:00
6.37	0.1000	0.0314	22:52	83:37	169:30

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.2300**	**0.1636**	**3:59**	**18:45**	**42:17**
2.53	0.1900	0.1510	4:28	20:40	46:15
1.61	0.1700	0.1079	7:13	30:52	67:00
3.14	0.1100	0.0975	8:18	34:45	74:45
3.94	0.0900	0.0893	9:19	38:26	82:00

* 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 Roadside

8-OCT-93 16:14:17

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Cross Country #2**
4: **Roadside**
5: **5 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.0600**	**0.0600**	**10:07**	**41:11**	**87:30**
1.20	0.0600	0.0600	10:07	41:11	87:30
3.94	0.1000	0.0508	12:33	49:36	104:00
6.37	0.1300	0.0408	16:35	63:06	130:15
5.05	0.1000	0.0396	17:15	65:15	134:15

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.1600**	**0.1600**	**2:27**	**12:37**	**29:30**
1.61	0.1300	0.1300	3:24	16:25	37:30
2.02	0.0600	0.0593	10:15	41:45	88:37
6.37	0.1300	0.0408	16:35	63:06	130:15
2.53	0.0500	0.0396	17:15	65:15	134:15

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.1800**	**0.1281**	**5:41**	**25:15**	**55:36**
20.10	0.3000	0.1194	6:16	27:25	60:00
2.53	0.1400	0.1113	6:54	29:47	64:45
1.61	0.1700	0.1079	7:13	30:52	67:00
12.74	0.1700	0.1068	7:18	31:15	67:45

* 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 Curbside

8-OCT-93 16:14:17

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Cross Country #2**
4: **Curbside**
5: **5 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.0900**	**0.0900**	**5:48**	**25:45**	**56:36**
1.61	0.0800	0.0800	6:50	29:32	64:22
2.02	0.0500	0.0494	13:00	51:15	107:15
3.94	0.0900	0.0457	14:22	55:45	116:00
2.53	0.0500	0.0396	17:15	65:15	134:15

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.1300**	**0.1300**	**3:24**	**16:25**	**37:30**
1.61	0.1000	0.1000	5:00	22:40	50:21
2.02	0.0500	0.0494	13:00	51:15	107:15
6.37	0.1200	0.0377	18:17	68:45	141:15
7.98	0.1400	0.0351	20:00	74:15	151:4[illegible]

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.2000**	**0.1423**	**4:52**	**22:15**	**49:30**
2.53	0.1600	0.1272	5:43	25:25	56:00
1.61	0.1600	0.1016	7:50	33:06	71:30
12.74	0.1400	0.0879	9:30	39:06	83:22
6.37	0.0800	0.0800	10:47	43:30	92:00

* 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

8-OCT-93 16:14:18

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Cross Country #2**
4: **Driver**
5: **10 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.1100**	**0.1087**	**4:26**	**20:30**	**45:56**
1.61	0.0900	0.0900	5:48	25:45	56:36
2.53	0.1100	0.0871	6:05	26:45	58:36
5.05	0.2100	0.0831	6:30	28:15	61:45
1.20	0.0800	0.0800	6:50	29:32	64:22

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.2500**	**0.2500**	**1:09**	**6:58**	**17:13**
1.61	0.1800	0.1800	2:01	10:49	25:38
2.02	0.1700	0.1679	2:15	11:52	27:52
2.53	0.1700	0.1346	3:13	15:45	36:00
3.14	0.1300	0.0828	6:31	28:22	62:00

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.4600**	**0.3273**	**1:17**	**7:39**	**18:40**
2.53	0.4100	0.3259	1:19	7:41	18:47
1.61	0.4000	0.2539	2:00	10:44	25:25
1.20	0.3700	0.2030	2:51	14:19	33:02
3.14	0.2200	0.1949	3:02	15:04	34:36

* 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 . Front

8-OCT-93 16:14:18

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Cross Country #2**
4: **Front**
5: **10 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.0800**	**0.0800**	**6:50**	**29:32**	**64:22**
1.20	0.0800	0.0800	6:50	29:32	64:22
2.02	0.0800	0.0790	6:58	30:00	65:15
5.05	0.1600	0.0633	9:25	38:45	82:37
2.53	0.0800	0.0633	9:25	38:45	82:37

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.2300**	**0.2300**	**1:21**	**7:48**	**19:02**
1.61	0.1300	0.1300	3:24	16:25	37:30
2.02	0.1100	0.1087	4:26	20:30	45:56
2.53	0.1300	0.1029	4:48	21:53	48:45
3.14	0.1200	0.0764	7:18	31:10	67:37

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.4000**	**0.3179**	**1:22**	**7:56**	**19:22**
2.02	0.4300	0.3059	1:28	8:22	20:17
1.61	0.3900	0.2476	2:05	11:04	26:10
3.14	0.2200	0.1949	3:02	15:04	34:36
1.20	0.3200	0.1755	3:34	17:10	39:02

* 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 Roadside

8-OCT-93 16:14:18

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Cross Country #2**
4: **Roadside**
5: **10 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.3100**	**0.1227**	**3:42**	**17:38**	**40:00**
2.02	0.1100	0.1087	4:26	20:30	45:56
1.61	0.1000	0.1000	5:00	22:40	50:21
2.53	0.1200	0.0950	5:22	24:07	53:21
3.14	0.1300	0.0828	6:31	28:22	62:00

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.1900**	**0.1900**	**1:52**	**10:04**	**24:02**
1.61	0.1300	0.1300	3:24	16:25	37:30
2.02	0.1100	0.1087	4:26	20:30	45:56
2.53	0.1100	0.0871	6:05	26:45	58:36
6.37	0.2300	0.0722	7:54	33:17	71:52

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.3700**	**0.2632**	**1:52**	**10:14**	**24:22**
2.53	0.3300	0.2623	1:53	10:17	24:25
3.14	0.2300	0.2038	2:50	14:15	32:56
1.61	0.3200	0.2031	2:51	14:18	33:00
3.94	0.1800	0.1786	3:30	16:50	38:17

* 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 Curbside

8-OCT-93 16:14:18

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Cross Country #2**
4: **Curbside**
5: **10 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.3000**	**0.1187**	**3:53**	**18:23**	**41:32**
2.02	0.1100	0.1087	4:26	20:30	45:56
1.61	0.1000	0.1000	5:00	22:40	50:21
2.53	0.1200	0.0950	5:22	24:07	53:21
1.20	0.0900	0.0900	5:48	25:45	56:36

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.1700**	**0.1700**	**2:14**	**11:41**	**27:25**
1.61	0.1100	0.1100	4:20	20:10	45:15
2.02	0.1000	0.0988	5:05	23:00	51:06
2.53	0.1000	0.0792	6:58	29:55	65:07
6.37	0.2300	0.0722	7:54	33:17	71:52

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.3300**	**0.2623**	**1:53**	**10:17**	**24:25**
2.02	0.3600	0.2561	1:59	10:37	25:10
1.61	0.3200	0.2031	2:51	14:18	33:00
3.14	0.2100	0.1861	3:16	16:00	36:32
3.94	0.1800	0.1786	3:30	16:50	38:17

* 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

8-OCT-93 16:14:19

1: HET Ride Quality
2: Oct 4, 1993
3: Cross Country #2
4: Driver
5: 15 mph
6: Loaded

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.14	**0.1900**	**0.1210**	**3:46**	**17:58**	**40:41**
3.94	0.2300	0.1168	3:59	18:45	42:21
1.61	0.1100	0.1100	4:20	20:10	45:15
2.02	0.0900	0.0889	5:54	26:07	57:21
1.20	0.0800	0.0800	6:50	29:32	64:22

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.2000**	**0.2000**	**1:42**	**9:26**	**22:37**
1.20	0.1800	0.1800	2:01	10:49	25:38
2.02	0.1500	0.1482	2:45	13:56	32:15
3.94	0.1700	0.0864	6:09	27:00	59:15
2.53	0.1000	0.0792	6:58	29:55	65:07

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.5400**	**0.3842**	**0:56**	**6:07**	**15:18**
1.61	0.5600	0.3555	1:07	6:48	16:52
2.53	0.3500	0.2782	1:44	9:30	22:47
3.14	0.2200	0.1949	3:02	15:04	34:36
3.94	0.1900	0.1885	3:13	15:42	36:00

* 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 Front

8-OCT-93 16:14:19

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Cross Country #2**
4: **Front**
5: **15 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.1200**	**0.1200**	**3:49**	**18:08**	**41:02**
1.20	0.1000	0.1000	5:00	22:40	50:21
3.94	0.1600	0.0813	6:41	29:00	63:15
2.02	0.0700	0.0691	8:22	35:00	75:15
3.14	0.1000	0.0637	9:19	38:30	82:07

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.1700**	**0.1700**	**2:14**	**11:41**	**27:25**
1.61	0.1600	0.1600	2:27	12:37	29:30
2.02	0.1000	0.0988	5:05	23:00	51:06
3.14	0.1000	0.0637	9:19	38:30	82:07
2.53	0.0700	0.0554	11:12	45:00	95:00

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.5100**	**0.3628**	**1:05**	**6:37**	**16:25**
1.61	0.5100	0.3238	1:20	7:45	18:55
2.53	0.3400	0.2702	1:49	9:53	23:37
3.94	0.2100	0.2083	2:45	13:52	32:02
3.14	0.2200	0.1949	3:02	15:04	34:36

* 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 Roadside

8-OCT-93 16:14:19

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Cross Country #2**
4: **Roadside**
5: **15 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.3100**	**0.1575**	**2:30**	**12:53**	**30:00**
3.14	0.2000	0.1274	3:30	16:52	38:21
5.05	0.2800	0.1108	4:18	20:00	44:56
1.61	0.0900	0.0900	5:48	25:45	56:36
6.37	0.2600	0.0816	6:39	28:52	63:00

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.1500**	**0.1500**	**2:43**	**13:42**	**31:45**
1.61	0.1400	0.1400	3:01	14:57	34:26
2.02	0.1100	0.1087	4:26	20:30	45:56
3.94	0.1500	0.0762	7:20	31:17	67:45
5.05	0.1800	0.0712	8:02	33:51	72:52

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.4400**	**0.3130**	**1:24**	**8:07**	**19:45**
1.61	0.4600	0.2920	1:35	8:55	21:30
3.94	0.2900	0.2877	1:37	9:06	21:52
2.53	0.3000	0.2384	2:13	11:38	27:22
3.14	0.2400	0.2126	2:40	13:30	31:17

* 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 Curbside

8-OCT-93 16:14:19

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Cross Country #2**
4: **Curbside**
5: **15 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.3200**	**0.1626**	**2:24**	**12:22**	**28:55**
3.14	0.2000	0.1274	3:30	16:52	38:21
1.61	0.1100	0.1100	4:20	20:10	45:15
5.05	0.2500	0.0989	5:05	22:58	51:00
1.20	0.0900	0.0900	5:48	25:45	56:36

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.1200**	**0.1200**	**3:49**	**18:08**	**41:02**
1.20	0.1200	0.1200	3:49	18:08	41:02
3.94	0.1800	0.0914	5:41	25:15	55:36
2.02	0.0900	0.0889	5:54	26:07	57:21
5.05	0.1900	0.0752	7:28	31:45	68:45

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.4300**	**0.3059**	**1:28**	**8:22**	**20:17**
1.61	0.4300	0.2730	1:46	9:45	23:17
3.94	0.2700	0.2679	1:50	10:00	23:52
2.53	0.3000	0.2384	2:13	11:38	27:22
3.14	0.2400	0.2126	2:40	13:30	31:17

* 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

8-OCT-93 16:14:19

1: HET Ride Quality
2: Oct 4, 1993
3: Secondary A
4: Driver
5: 10 mph
6: Loaded

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.14	**0.1200**	**0.0764**	**7:18**	**31:10**	**67:37**
3.94	0.1400	0.0711	8:03	33:51	73:00
5.05	0.1600	0.0633	9:25	38:45	82:37
2.53	0.0800	0.0633	9:25	38:45	82:37
6.37	0.1900	0.0596	10:11	41:26	88:00

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.1600**	**0.1600**	**2:27**	**12:37**	**29:30**
1.61	0.1300	0.1300	3:24	16:25	37:30
2.02	0.1200	0.1185	3:54	18:25	41:36
2.53	0.1300	0.1029	4:48	21:53	48:45
3.14	0.1100	0.0701	8:12	34:30	74:15

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.3800**	**0.3020**	**1:30**	**8:30**	**20:37**
2.02	0.3600	0.2561	1:59	10:37	25:10
3.94	0.1800	0.1786	3:30	16:50	38:17
3.14	0.2000	0.1772	3:31	17:00	38:36
1.61	0.2400	0.1524	4:24	20:28	45:51

* 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 Front

8-OCT-93 16:14:19

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Secondary A**
4: **Front**
5: **10 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.0800**	**0.0800**	**6:50**	**29:32**	**64:22**
1.61	0.0700	0.0700	8:14	34:30	74:15
5.05	0.1500	0.0594	10:15	41:41	88:30
2.53	0.0700	0.0554	11:12	45:00	95:00
2.02	0.0500	0.0494	13:00	51:15	107:15

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.1600**	**0.1600**	**2:27**	**12:37**	**29:30**
1.61	0.1100	0.1100	4:20	20:10	45:15
2.02	0.0900	0.0889	5:54	26:07	57:21
2.53	0.0900	0.0712	8:02	33:51	72:52
15.97	0.5200	0.0651	9:03	37:30	80:15

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.4200**	**0.3338**	**1:15**	**7:26**	**18:15**
2.02	0.3200	0.2277	2:24	12:22	28:55
3.14	0.2400	0.2126	2:40	13:30	31:17
3.94	0.1900	0.1885	3:13	15:42	36:00
1.61	0.2200	0.1397	5:01	22:45	50:30

* 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 Roadside

8-OCT-93 16:14:19

1: HET Ride Quality
2: Oct 4, 1993
3: Secondary A
4: Roadside
5: 10 mph
6: Loaded

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.2500**	**0.0989**	**5:05**	**22:58**	**51:00**
3.94	0.1800	0.0914	5:41	25:15	55:36
3.14	0.1400	0.0892	5:54	26:00	57:06
6.37	0.2700	0.0848	6:20	27:37	60:21
2.02	0.0600	0.0593	10:15	41:45	88:37

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.1200**	**0.1200**	**3:49**	**18:08**	**41:02**
1.61	0.0900	0.0900	5:48	25:45	56:36
2.02	0.0800	0.0790	6:58	30:00	65:15
2.53	0.0900	0.0712	8:02	33:51	72:52
6.37	0.2100	0.0659	8:56	37:00	79:15

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.3100**	**0.2464**	**2:06**	**11:08**	**26:22**
2.02	0.2800	0.1992	2:57	14:41	33:45
3.94	0.2000	0.1984	2:58	14:45	33:56
3.14	0.2100	0.1861	3:16	16:00	36:32
6.37	0.1800	0.1800	3:27	16:38	38:00

* 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 Curbside

8-OCT-93 16:14:19

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Secondary A**
4: **Curbside**
5: **10 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.2400**	**0.0950**	**5:22**	**24:07**	**53:21**
3.94	0.1600	0.0813	6:41	29:00	63:15
3.14	0.1100	0.0701	8:12	34:30	74:15
1.61	0.0700	0.0700	8:14	34:30	74:15
1.20	0.0700	0.0700	8:14	34:30	74:15

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.1100**	**0.1100**	**4:20**	**20:10**	**45:15**
1.61	0.0800	0.0800	6:50	29:32	64:22
2.02	0.0700	0.0691	8:22	35:00	75:15
6.37	0.2200	0.0691	8:22	35:02	75:22
5.05	0.1400	0.0554	11:12	45:00	95:00

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.3600**	**0.2861**	**1:38**	**9:10**	**22:00**
2.02	0.2800	0.1992	2:57	14:41	33:45
3.14	0.2200	0.1949	3:02	15:04	34:36
5.05	0.1800	0.1800	3:27	16:38	38:00
3.94	0.1800	0.1786	3:30	16:50	38:17

* 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

8-OCT-93 16:14:20

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Secondary A**
4: **Driver**
5: **15 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.1800**	**0.0914**	**5:41**	**25:15**	**55:36**
6.37	0.2300	0.0722	7:54	33:17	71:52
5.05	0.1700	0.0673	8:41	36:06	77:30
3.14	0.1000	0.0637	9:19	38:30	82:07
7.98	0.2400	0.0601	10:04	41:06	87:15

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.1500**	**0.1500**	**2:43**	**13:42**	**31:45**
1.20	0.1100	0.1100	4:20	20:10	45:15
2.02	0.1100	0.1087	4:26	20:30	45:56
7.98	0.2500	0.0626	9:33	39:15	83:37
3.94	0.1100	0.0559	11:07	44:36	94:15

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.3600**	**0.2561**	**1:59**	**10:37**	**25:10**
2.53	0.3200	0.2543	2:00	10:42	25:22
3.94	0.2300	0.2282	2:23	12:19	28:52
3.14	0.2200	0.1949	3:02	15:04	34:36
1.61	0.3000	0.1904	3:10	15:30	35:36

* 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 Front

8-OCT-93 16:14:20

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Secondary A**
4: **Front**
5: **15 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.0800**	**0.0800**	**6:50**	**29:32**	**64:22**
3.94	0.1300	0.0660	8:53	36:56	79:00
2.02	0.0600	0.0593	10:15	41:45	88:37
7.98	0.2000	0.0501	12:48	50:21	105:30
1.20	0.0500	0.0500	12:49	50:30	105:45

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.1200**	**0.1200**	**3:49**	**18:08**	**41:02**
1.20	0.1000	0.1000	5:00	22:40	50:21
2.02	0.0900	0.0889	5:54	26:07	57:21
7.98	0.2100	0.0526	12:00	47:45	100:22
2.53	0.0600	0.0475	13:41	53:30	111:30

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.3500**	**0.2490**	**2:03**	**11:00**	**26:00**
2.53	0.3100	0.2464	2:06	11:08	26:22
3.94	0.2400	0.2381	2:14	11:41	27:25
3.14	0.2300	0.2038	2:50	14:15	32:56
1.61	0.3000	0.1904	3:10	15:30	35:36

* 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 Roadside

8-OCT-93 16:14:20

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Secondary A**
4: **Roadside**
5: **15 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.2400**	**0.1219**	**3:44**	**17:47**	**40:21**
6.37	0.3300	0.1036	4:45	21:45	48:26
5.05	0.2400	0.0950	5:22	24:07	53:21
7.98	0.3200	0.0802	6:50	29:30	64:15
1.61	0.0700	0.0700	8:14	34:30	74:15

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.1100**	**0.1100**	**4:20**	**20:10**	**45:15**
7.98	0.3500	0.0877	6:01	26:30	58:15
1.20	0.0800	0.0800	6:50	29:32	64:22
2.02	0.0800	0.0790	6:58	30:00	65:15
5.05	0.1400	0.0554	11:12	45:00	95:00

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.2500**	**0.2480**	**2:04**	**11:03**	**26:07**
2.53	0.2600	0.2066	2:46	14:00	32:21
2.02	0.2900	0.2063	2:47	14:00	32:26
3.14	0.2000	0.1772	3:31	17:00	38:36
7.98	0.1600	0.1600	4:07	19:15	43:21

* 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 Curbside

8-OCT-93 16:14:20

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Secondary A**
4: **Curbside**
5: **15 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.2200**	**0.1118**	**4:15**	**19:47**	**44:30**
6.37	0.2600	0.0816	6:39	28:52	63:00
1.61	0.0800	0.0800	6:50	29:32	64:22
5.05	0.1900	0.0752	7:28	31:45	68:45
7.98	0.3000	0.0752	7:28	31:47	68:52

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
7.98	**0.3500**	**0.0877**	**6:01**	**26:30**	**58:15**
1.61	0.0800	0.0800	6:50	29:32	64:22
1.20	0.0700	0.0700	8:14	34:30	74:15
3.94	0.1200	0.0610	9:53	40:26	86:00
2.02	0.0600	0.0593	10:15	41:45	88:37

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.2500**	**0.2480**	**2:04**	**11:03**	**26:07**
2.53	0.2800	0.2225	2:29	12:45	29:40
2.02	0.3100	0.2205	2:30	12:53	30:00
3.14	0.2100	0.1861	3:16	16:00	36:32
6.37	0.1800	0.1800	3:27	16:38	38:00

* 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

8-OCT-93 16:14:21

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Secondary A**
4: **Driver**
5: **20 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.2200**	**0.1118**	**4:15**	**19:47**	**44:30**
2.02	0.1100	0.1087	4:26	20:30	45:56
5.05	0.2700	0.1069	4:33	20:55	46:45
6.37	0.3100	0.0973	5:11	23:25	51:51
1.61	0.0900	0.0900	5:48	25:45	56:36

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.1900**	**0.1900**	**1:52**	**10:04**	**24:02**
2.02	0.1800	0.1778	2:03	11:00	26:00
1.20	0.1400	0.1400	3:01	14:57	34:26
2.53	0.1300	0.1029	4:48	21:53	48:45
7.98	0.3900	0.0977	5:09	23:17	51:41

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.5800**	**0.4126**	**0:48**	**5:31**	**14:00**
2.53	0.5000	0.3974	0:52	5:50	14:41
1.61	0.3900	0.2476	2:05	11:04	26:10
3.94	0.2200	0.2183	2:33	13:03	30:22
6.37	0.1900	0.1900	3:11	15:34	35:41

* 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 Front

8-OCT-93 16:14:21

1: HET Ride Quality
2: Oct 4, 1993
3: Secondary A
4: Front
5: 20 mph
6: Loaded

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.1800**	**0.0914**	**5:41**	**25:15**	**55:36**
1.61	0.0900	0.0900	5:48	25:45	56:36
1.20	0.0900	0.0900	5:48	25:45	56:36
5.05	0.2200	0.0871	6:05	26:45	58:36
2.02	0.0800	0.0790	6:58	30:00	65:15

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.1400**	**0.1400**	**3:01**	**14:57**	**34:26**
2.02	0.1400	0.1383	3:04	15:12	34:56
1.20	0.1300	0.1300	3:24	16:25	37:30
2.53	0.1100	0.0871	6:05	26:45	58:36
7.98	0.3200	0.0802	6:50	29:30	64:15

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.4700**	**0.3735**	**1:00**	**6:22**	**15:52**
2.02	0.5200	0.3700	1:02	6:26	16:02
1.61	0.3700	0.2349	2:16	11:52	27:52
3.94	0.2200	0.2183	2:33	13:03	30:22
3.14	0.2200	0.1949	3:02	15:04	34:36

* 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 Roadside

8-OCT-93 16:14:21

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Secondary A**
4: **Roadside**
5: **20 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.4000**	**0.1583**	**2:30**	**12:48**	**29:52**
3.94	0.3000	0.1524	2:39	13:26	31:10
6.37	0.4400	0.1381	3:05	15:12	35:00
7.98	0.4600	0.1152	4:03	19:05	43:00
10.10	0.4500	0.0891	5:54	26:00	57:11

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.1300**	**0.1300**	**3:24**	**16:25**	**37:30**
2.02	0.1200	0.1185	3:54	18:25	41:36
1.20	0.1100	0.1100	4:20	20:10	45:15
7.98	0.4200	0.1052	4:39	21:17	47:36
6.37	0.2700	0.0848	6:20	27:37	60:21

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.4400**	**0.3497**	**1:09**	**6:58**	**17:13**
2.02	0.4800	0.3415	1:13	7:13	17:45
3.94	0.2900	0.2877	1:37	9:06	21:52
5.05	0.2800	0.2800	1:42	9:26	22:37
6.37	0.2600	0.2600	1:55	10:23	24:40

* 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 . Curbside

8-OCT-93 16:14:21

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Secondary A**
4: **Curbside**
5: **20 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.3100**	**0.1575**	**2:30**	**12:53**	**30:00**
5.05	0.3700	0.1464	2:48	14:08	32:41
6.37	0.3800	0.1193	3:51	18:17	41:21
7.98	0.3900	0.0977	5:09	23:17	51:41
1.61	0.0800	0.0800	6:50	29:32	64:22

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
7.98	**0.4300**	**0.1077**	**4:28**	**20:43**	**46:21**
1.61	0.1000	0.1000	5:00	22:40	50:21
2.02	0.1000	0.0988	5:05	23:00	51:06
5.05	0.2400	0.0950	5:22	24:07	53:21
1.20	0.0900	0.0900	5:48	25:45	56:36

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.4500**	**0.3576**	**1:07**	**6:46**	**16:45**
2.02	0.4600	0.3273	1:17	7:39	18:40
5.05	0.2800	0.2800	1:42	9:26	22:37
3.94	0.2600	0.2579	1:57	10:30	24:55
6.37	0.2400	0.2400	2:12	11:33	27:10

* 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

8-OCT-93 16:14:22

1: HET Ride Quality
2: Oct 4, 1993
3: Secondary A
4: Driver
5: 25 mph
6: Loaded

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.3900**	**0.1224**	**3:43**	**17:40**	**40:06**
5.05	0.2300	0.0910	5:43	25:22	55:51
7.98	0.3400	0.0852	6:16	27:25	60:06
1.61	0.0800	0.0800	6:50	29:32	64:22
1.20	0.0800	0.0800	6:50	29:32	64:22

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.1100**	**0.1100**	**4:20**	**20:10**	**45:15**
1.61	0.1000	0.1000	5:00	22:40	50:21
2.02	0.1000	0.0988	5:05	23:00	51:06
2.53	0.1200	0.0950	5:22	24:07	53:21
7.98	0.3500	0.0877	6:01	26:30	58:15

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.4000**	**0.3179**	**1:22**	**7:56**	**19:22**
2.02	0.3700	0.2632	1:52	10:14	24:22
3.14	0.2400	0.2126	2:40	13:30	31:17
7.98	0.1800	0.1800	3:27	16:38	38:00
6.37	0.1800	0.1800	3:27	16:38	38:00

* 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 Front

8-OCT-93 16:14:22

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Secondary A**
4: **Front**
5: **25 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.0900**	**0.0900**	**5:48**	**25:45**	**56:36**
1.20	0.0900	0.0900	5:48	25:45	56:36
6.37	0.2800	0.0879	6:01	26:25	58:06
5.05	0.1900	0.0752	7:28	31:45	68:45
7.98	0.3000	0.0752	7:28	31:47	68:52

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.1000**	**0.1000**	**5:00**	**22:40**	**50:21**
1.61	0.0800	0.0800	6:50	29:32	64:22
7.98	0.2900	0.0727	7:50	33:02	71:22
6.37	0.2300	0.0722	7:54	33:17	71:52
2.02	0.0600	0.0593	10:15	41:45	88:37

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.4500**	**0.3576**	**1:07**	**6:46**	**16:45**
2.02	0.3800	0.2704	1:49	9:52	23:35
3.14	0.2800	0.2481	2:04	11:03	26:07
6.37	0.2000	0.2000	2:56	14:34	33:36
3.94	0.1900	0.1885	3:13	15:42	36:00

* 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 Roadside

8-OCT-93 16:14:22

1: HET Ride Quality
2: Oct 4, 1993
3: Secondary A
4: Roadside
5: 25 mph
6: Loaded

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.5400**	**0.1695**	**2:14**	**11:42**	**27:32**
5.05	0.3500	0.1385	3:04	15:11	34:51
7.98	0.4500	0.1127	4:11	19:37	44:02
10.10	0.4900	0.0971	5:13	23:30	52:06
3.94	0.1900	0.0965	5:16	23:40	52:21

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
7.98	**0.3700**	**0.0927**	**5:35**	**24:50**	**54:45**
6.37	0.2900	0.0910	5:43	25:22	55:51
1.20	0.0900	0.0900	5:48	25:45	56:36
1.61	0.0800	0.0800	6:50	29:32	64:22
10.10	0.3700	0.0733	7:43	32:45	70:45

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.3500**	**0.3500**	**1:09**	**6:58**	**17:13**
2.53	0.3400	0.2702	1:49	9:53	23:37
7.98	0.2300	0.2300	2:20	12:12	28:32
3.94	0.2300	0.2282	2:23	12:19	28:52
5.05	0.2200	0.2200	2:31	12:56	30:07

* 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 Curbside

8-OCT-93 16:14:22

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Secondary A**
4: **Curbside**
5: **25 mph**
6: **Loaded**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.5000**	**0.1570**	**2:31**	**12:56**	**30:07**
5.05	0.3500	0.1385	3:04	15:11	34:51
7.98	0.4600	0.1152	4:03	19:05	43:00
3.94	0.1900	0.0965	5:16	23:40	52:21
10.10	0.4200	0.0832	6:30	28:15	61:36

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.3200**	**0.1005**	**4:58**	**22:32**	**50:06**
7.98	0.3800	0.0952	5:22	24:02	53:15
1.20	0.0800	0.0800	6:50	29:32	64:22
10.10	0.3900	0.0773	7:11	30:47	66:45
5.05	0.1900	0.0752	7:28	31:45	68:45

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.3400**	**0.3400**	**1:13**	**7:15**	**17:50**
2.53	0.4000	0.3179	1:22	7:56	19:22
2.02	0.3300	0.2348	2:16	11:53	27:52
3.14	0.2600	0.2304	2:20	12:11	28:30
3.94	0.2100	0.2083	2:45	13:52	32:02

* 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

8-OCT-93 16:14:23

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Cross Country #2**
4: **Driver**
5: **5 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.0400**	**0.0395**	**17:15**	**65:22**	**134:30**
2.53	0.0400	0.0317	22:37	82:52	168:00
1.61	0.0300	0.0300	24:08	87:45	177:15
6.37	0.0800	0.0251	29:47	105:30	211:00
5.05	0.0600	0.0237	31:47	111:45	222:30

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.1000**	**0.1000**	**5:00**	**22:40**	**50:21**
1.20	0.0900	0.0900	5:48	25:45	56:36
2.02	0.0600	0.0593	10:15	41:45	88:37
2.53	0.0400	0.0317	22:37	82:52	168:00
3.14	0.0400	0.0255	29:17	104:00	208:00

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.2200**	**0.1565**	**4:15**	**19:47**	**44:30**
2.53	0.1400	0.1113	6:54	29:47	64:45
1.61	0.1700	0.1079	7:13	30:52	67:00
3.14	0.0800	0.0709	12:37	49:47	104:30
7.98	0.0600	0.0600	15:37	59:51	124:00

* 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 Front

8-OCT-93 16:14:23

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Cross Country #2**
4: **Front**
5: **5 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.0600**	**0.0600**	**10:07**	**41:11**	**87:30**
1.20	0.0400	0.0400	17:00	64:30	133:00
2.02	0.0400	0.0395	17:15	65:22	134:30
12.74	0.2300	0.0361	19:17	72:00	147:15
15.97	0.2200	0.0276	26:45	95:45	192:30

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.1000**	**0.1000**	**5:00**	**22:40**	**50:21**
1.20	0.1000	0.1000	5:00	22:40	50:21
2.02	0.0500	0.0494	13:00	51:15	107:15
7.98	0.1200	0.0301	24:07	87:30	177:00
3.94	0.0400	0.0203	38:06	131:00	258:30

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.2200**	**0.1565**	**4:15**	**19:47**	**44:30**
2.53	0.1600	0.1272	5:43	25:25	56:00
1.61	0.1600	0.1016	7:50	33:06	71:30
3.94	0.0900	0.0893	9:19	38:26	82:00
3.14	0.0900	0.0797	10:49	43:36	92:22

* 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 Roadside

8-OCT-93 16:14:23

1: HET Ride Quality
2: Oct 4, 1993
3: Cross Country #2
4: Roadside
5: 5 mph
6: No Load

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.1300**	**0.0408**	**16:35**	**63:06**	**130:15**
1.61	0.0400	0.0400	17:00	64:30	133:00
2.02	0.0400	0.0395	17:15	65:22	134:30
2.53	0.0400	0.0317	22:37	82:52	168:00
7.98	0.1200	0.0301	24:07	87:30	177:00

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.0700**	**0.0700**	**8:14**	**34:30**	**74:15**
1.61	0.0600	0.0600	10:07	41:11	87:30
2.02	0.0400	0.0395	17:15	65:22	134:30
7.98	0.1100	0.0276	26:45	95:45	192:30
5.05	0.0600	0.0237	31:47	111:45	222:30

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.1900**	**0.1352**	**5:16**	**23:38**	**52:21**
1.61	0.1500	0.0952	8:33	35:41	76:37
7.98	0.0900	0.0900	9:12	38:02	81:15
2.53	0.1100	0.0874	9:34	39:21	83:52
6.37	0.0800	0.0800	10:47	43:30	92:00

* 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 Curbside

8-OCT-93 16:14:23

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Cross Country #2**
4: **Curbside**
5: **5 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.0500**	**0.0500**	**12:49**	**50:30**	**105:45**
1.20	0.0400	0.0400	17:00	64:30	133:00
2.02	0.0400	0.0395	17:15	65:22	134:30
6.37	0.1200	0.0377	18:17	68:45	141:15
2.53	0.0400	0.0317	22:37	82:52	168:00

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.0600**	**0.0600**	**10:07**	**41:11**	**87:30**
1.61	0.0500	0.0500	12:49	50:30	105:45
2.02	0.0300	0.0296	24:30	88:45	179:30
7.98	0.1100	0.0276	26:45	95:45	192:30
12.74	0.1600	0.0251	29:47	105:30	210:45

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.1900**	**0.1352**	**5:16**	**23:38**	**52:21**
2.53	0.1300	0.1033	7:39	32:30	70:15
1.61	0.1400	0.0889	9:22	38:36	82:30
6.37	0.0800	0.0800	10:47	43:30	92:00
3.94	0.0700	0.0694	12:57	51:00	106:45

* 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

8-OCT-93 16:14:23

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Cross Country #2**
4: **Driver**
5: **10 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.1100**	**0.1087**	**4:26**	**20:30**	**45:56**
1.61	0.1000	0.1000	5:00	22:40	50:21
2.53	0.1200	0.0950	5:22	24:07	53:21
5.05	0.2300	0.0910	5:43	25:22	55:51
6.37	0.2500	0.0785	7:01	30:15	65:45

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.2600**	**0.2600**	**1:05**	**6:35**	**16:22**
1.61	0.1600	0.1600	2:27	12:37	29:30
2.02	0.1200	0.1185	3:54	18:25	41:36
2.53	0.1300	0.1029	4:48	21:53	48:45
3.14	0.1200	0.0764	7:18	31:10	67:37

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.4000**	**0.3179**	**1:22**	**7:56**	**19:22**
1.61	0.5000	0.3174	1:22	7:58	19:25
2.02	0.4100	0.2917	1:36	8:56	21:30
3.14	0.2500	0.2215	2:30	12:48	29:52
1.20	0.3600	0.1975	3:00	14:49	34:06

* 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 . Front

8-OCT-93 16:14:23

1: HET Ride Quality
2: Oct 4, 1993
3: Cross Country #2
4: Front
5: 10 mph
6: No Load

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.1000**	**0.0988**	**5:05**	**23:00**	**51:06**
2.53	0.1200	0.0950	5:22	24:07	53:21
1.61	0.0900	0.0900	5:48	25:45	56:36
1.20	0.0900	0.0900	5:48	25:45	56:36
5.05	0.1800	0.0712	8:02	33:51	72:52

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.2600**	**0.2600**	**1:05**	**6:35**	**16:22**
1.61	0.1600	0.1600	2:27	12:37	29:30
2.02	0.1000	0.0988	5:05	23:00	51:06
2.53	0.1100	0.0871	6:05	26:45	58:36
6.37	0.2600	0.0816	6:39	28:52	63:00

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.4500**	**0.3202**	**1:21**	**7:52**	**19:10**
2.53	0.4000	0.3179	1:22	7:56	19:22
1.61	0.5000	0.3174	1:22	7:58	19:25
3.14	0.3000	0.2658	1:52	10:07	24:02
3.94	0.2500	0.2480	2:04	11:03	26:07

* 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 Roadside

8-OCT-93 16:14:23

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Cross Country #2**
4: **Roadside**
5: **10 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.3400**	**0.1346**	**3:13**	**15:45**	**36:00**
6.37	0.3500	0.1099	4:22	20:13	45:21
2.02	0.1000	0.0988	5:05	23:00	51:06
2.53	0.1200	0.0950	5:22	24:07	53:21
1.61	0.0900	0.0900	5:48	25:45	56:36

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.2000**	**0.2000**	**1:42**	**9:26**	**22:37**
1.61	0.1100	0.1100	4:20	20:10	45:15
6.37	0.2800	0.0879	6:01	26:25	58:06
2.02	0.0800	0.0790	6:58	30:00	65:15
2.53	0.0900	0.0712	8:02	33:51	72:52

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.4300**	**0.2730**	**1:46**	**9:45**	**23:17**
5.05	0.2400	0.2400	2:12	11:33	27:10
2.53	0.3000	0.2384	2:13	11:38	27:22
2.02	0.3300	0.2348	2:16	11:53	27:52
3.94	0.2300	0.2282	2:23	12:19	28:52

* 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 Curbside

8-OCT-93 16:14:23

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Cross Country #2**
4: **Curbside**
5: **10 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.1600**	**0.1266**	**3:31**	**16:58**	**38:36**
5.05	0.3000	0.1187	3:53	18:23	41:32
2.02	0.1100	0.1087	4:26	20:30	45:56
1.61	0.1000	0.1000	5:00	22:40	50:21
1.20	0.0900	0.0900	5:48	25:45	56:36

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.1800**	**0.1800**	**2:01**	**10:49**	**25:38**
1.61	0.1000	0.1000	5:00	22:40	50:21
6.37	0.2800	0.0879	6:01	26:25	58:06
5.05	0.1900	0.0752	7:28	31:45	68:45
7.98	0.2800	0.0702	8:12	34:26	74:07

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.2900**	**0.2900**	**1:37**	**9:00**	**21:40**
1.61	0.4300	0.2730	1:46	9:45	23:17
2.02	0.3600	0.2561	1:59	10:37	25:10
2.53	0.3200	0.2543	2:00	10:42	25:22
3.94	0.2300	0.2282	2:23	12:19	28:52

* 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

8-OCT-93 16:14:24

1: HET Ride Quality
2: Oct 4, 1993
3: Cross Country #2
4: Driver
5: 15 mph
6: No Load

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.1900**	**0.1900**	**1:52**	**10:04**	**24:02**
2.02	0.1800	0.1778	2:03	11:00	26:00
1.20	0.1200	0.1200	3:49	18:08	41:02
3.94	0.2300	0.1168	3:59	18:45	42:21
2.53	0.1400	0.1108	4:18	20:00	44:56

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.2700**	**0.2700**	**0:57**	**6:16**	**15:37**
1.20	0.2600	0.2600	1:05	6:35	16:22
2.02	0.2500	0.2470	1:10	7:05	17:28
3.14	0.2000	0.1274	3:30	16:52	38:21
3.94	0.2500	0.1270	3:30	16:55	38:30

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.8200**	**0.5206**	**0:30**	**3:57**	**10:22**
2.02	0.7000	0.4980	0:33	4:13	10:57
2.53	0.4300	0.3418	1:13	7:11	17:43
1.20	0.5500	0.3017	1:30	8:32	20:38
3.94	0.2600	0.2579	1:57	10:30	24:55

* 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 Front

8-OCT-93 16:14:24

1: HET Ride Quality
2: Oct 4, 1993
3: Cross Country #2
4: Front
5: 15 mph
6: No Load

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.1900**	**0.1900**	**1:52**	**10:04**	**24:02**
2.02	0.1700	0.1679	2:15	11:52	27:52
1.20	0.1200	0.1200	3:49	18:08	41:02
6.37	0.3300	0.1036	4:45	21:45	48:26
2.53	0.1300	0.1029	4:48	21:53	48:45

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.2700**	**0.2700**	**0:57**	**6:16**	**15:37**
1.61	0.2200	0.2200	1:27	8:18	20:07
2.02	0.1900	0.1877	1:53	10:15	24:23
3.14	0.2100	0.1337	3:15	15:52	36:15
3.94	0.2400	0.1219	3:44	17:47	40:21

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.8800**	**0.6261**	**0:18**	**2:59**	**8:04**
1.61	0.9200	0.5840	0:22	3:18	8:53
2.53	0.4900	0.3894	0:55	6:00	15:03
1.20	0.5800	0.3181	1:22	7:56	19:22
3.94	0.3100	0.3076	1:27	8:18	20:10

* 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 Roadside

8-OCT-93 16:14:24

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Cross Country #2**
4: **Roadside**
5: **15 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.3000**	**0.1524**	**2:39**	**13:26**	**31:10**
1.61	0.1400	0.1400	3:01	14:57	34:26
5.05	0.3500	0.1385	3:04	15:11	34:51
2.02	0.1400	0.1383	3:04	15:12	34:56
6.37	0.4300	0.1350	3:12	15:41	35:51

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.2200**	**0.2200**	**1:27**	**8:18**	**20:07**
1.61	0.1900	0.1900	1:52	10:04	24:02
5.05	0.4100	0.1623	2:24	12:23	29:00
2.02	0.1600	0.1581	2:30	12:49	29:55
3.94	0.2200	0.1118	4:15	19:47	44:30

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.7100**	**0.4507**	**0:40**	**4:52**	**12:30**
2.02	0.5900	0.4198	0:47	5:24	13:41
3.94	0.4200	0.4167	0:47	5:26	13:48
5.05	0.3200	0.3200	1:22	7:52	19:13
2.53	0.3800	0.3020	1:30	8:30	20:37

* 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 Curbside

8-OCT-93 16:14:24

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Cross Country #2**
4: **Curbside**
5: **15 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.3100**	**0.1575**	**2:30**	**12:53**	**30:00**
1.61	0.1300	0.1300	3:24	16:25	37:30
1.20	0.1200	0.1200	3:49	18:08	41:02
6.37	0.3800	0.1193	3:51	18:17	41:21
2.02	0.1200	0.1185	3:54	18:25	41:36

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.1700**	**0.1700**	**2:14**	**11:41**	**27:25**
5.05	0.4200	0.1662	2:18	12:00	28:10
1.61	0.1400	0.1400	3:01	14:57	34:26
2.02	0.1200	0.1185	3:54	18:25	41:36
6.37	0.3700	0.1162	4:01	18:53	42:36

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.7400**	**0.5265**	**0:30**	**3:53**	**10:12**
1.61	0.7900	0.5015	0:32	4:09	10:52
3.94	0.3700	0.3671	1:04	6:31	16:13
2.53	0.4100	0.3259	1:19	7:41	18:47
5.05	0.3100	0.3100	1:25	8:12	20:00

* 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

8-OCT-93 16:14:25

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Secondary A**
4: **Driver**
5: **15 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.0800**	**0.0790**	**6:58**	**30:00**	**65:15**
6.37	0.2400	0.0753	7:26	31:40	68:37
7.98	0.2800	0.0702	8:12	34:26	74:07
2.53	0.0700	0.0554	11:12	45:00	95:00
1.61	0.0500	0.0500	12:49	50:30	105:45

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.1100**	**0.1100**	**4:20**	**20:10**	**45:15**
2.02	0.1100	0.1087	4:26	20:30	45:56
7.98	0.3200	0.0802	6:50	29:30	64:15
1.20	0.0700	0.0700	8:14	34:30	74:15
3.14	0.0800	0.0510	12:30	49:30	103:45

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.3700**	**0.2632**	**1:52**	**10:14**	**24:22**
2.53	0.2700	0.2146	2:38	13:19	31:00
1.61	0.3000	0.1904	3:10	15:30	35:36
7.98	0.1700	0.1700	3:45	17:52	40:30
3.94	0.1700	0.1687	3:47	18:02	40:51

* 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 Front

8-OCT-93 16:14:25

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Secondary A**
4: **Front**
5: **15 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
7.98	**0.2400**	**0.0601**	**10:04**	**41:06**	**87:15**
1.61	0.0600	0.0600	10:07	41:11	87:30
6.37	0.1900	0.0596	10:11	41:26	88:00
2.02	0.0600	0.0593	10:15	41:45	88:37
10.10	0.2200	0.0436	15:15	58:45	121:45

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.1000**	**0.1000**	**5:00**	**22:40**	**50:21**
2.02	0.0900	0.0889	5:54	26:07	57:21
1.20	0.0800	0.0800	6:50	29:32	64:22
7.98	0.3100	0.0777	7:09	30:37	66:30
3.94	0.1000	0.0508	12:33	49:36	104:00

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.4000**	**0.2846**	**1:39**	**9:14**	**22:10**
3.94	0.2400	0.2381	2:14	11:41	27:25
2.53	0.2900	0.2305	2:20	12:11	28:30
1.61	0.3100	0.1968	3:00	14:53	34:15
3.14	0.2100	0.1861	3:16	16:00	36:32

* 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 Roadside

8-OCT-93 16:14:25

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Secondary A**
4: **Roadside**
5: **15 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.3600**	**0.1130**	**4:11**	**19:32**	**43:56**
7.98	0.3500	0.0877	6:01	26:30	58:15
5.05	0.1[illegible]0	0.0633	9:25	38:45	82:37
2.02	0.0600	0.0593	10:15	41:45	88:37
3.94	0.1000	0.0508	12:33	49:36	104:00

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
7.98	**0.4300**	**0.1077**	**4:28**	**20:43**	**46:21**
1.61	0.0700	0.0700	8:14	34:30	74:15
2.02	0.0700	0.0691	8:22	35:00	75:15
5.05	0.1700	0.0673	8:41	36:06	77:30
1.20	0.0600	0.0600	10:07	41:11	87:30

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.3200**	**0.2277**	**2:24**	**12:22**	**28:55**
5.05	0.2100	0.2100	2:43	13:42	31:45
6.37	0.2000	0.2000	2:56	14:34	33:36
3.94	0.2000	0.1984	2:58	14:45	33:56
7.98	0.1800	0.1800	3:27	16:38	38:00

* 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 Curbside

8-OCT-93 16:14:25

1: HET Ride Quality
2: Oct 4, 1993
3: Secondary A
4: Curbside
5: 15 mph
6: No Load

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.3300**	**0.1036**	**4:45**	**21:45**	**48:26**
7.98	0.3000	0.0752	7:28	31:47	68:52
2.02	0.0700	0.0691	8:22	35:00	75:15
5.05	0.1700	0.0673	8:41	36:06	77:30
3.94	0.1200	0.0610	9:53	40:26	86:00

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
7.98	**0.4300**	**0.1077**	**4:28**	**20:43**	**46:21**
5.05	0.1800	0.0712	8:02	33:51	72:52
1.61	0.0600	0.0600	10:07	41:11	87:30
2.02	0.0600	0.0593	10:15	41:45	88:37
6.37	0.1800	0.0565	10:56	44:02	93:15

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.3500**	**0.2490**	**2:03**	**11:00**	**26:00**
3.94	0.2000	0.1984	2:58	14:45	33:56
1.61	0.2800	0.1778	3:30	16:55	38:30
2.53	0.2200	0.1749	3:35	17:15	39:15
6.37	0.1500	0.1500	4:31	20:52	46:36

* 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

8-OCT-93 16:14:26

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Secondary A**
4: **Driver**
5: **20 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.1200**	**0.1185**	**3:54**	**18:25**	**41:36**
5.05	0.2900	0.1148	4:05	19:10	43:11
2.53	0.1200	0.0950	5:22	24:07	53:21
6.37	0.3000	0.0942	5:26	24:22	53:51
1.61	0.0900	0.0900	5:48	25:45	56:36

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.1600**	**0.1600**	**2:27**	**12:37**	**29:30**
1.61	0.1400	0.1400	3:01	14:57	34:26
2.53	0.1600	0.1266	3:31	16:58	38:36
2.02	0.1200	0.1185	3:54	18:25	41:36
7.98	0.4000	0.1002	4:58	22:37	50:15

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.5400**	**0.4292**	**0:45**	**5:13**	**13:18**
2.02	0.4300	0.3059	1:28	8:22	20:17
1.61	0.4000	0.2539	2:00	10:44	25:25
3.14	0.2500	0.2215	2:30	12:48	29:52
3.94	0.1900	0.1885	3:13	15:42	36:00

* 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 Front

8-OCT-93 16:14:26

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Secondary A**
4: **Front**
5: **20 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.2500**	**0.0989**	**5:05**	**22:58**	**51:00**
2.02	0.0900	0.0889	5:54	26:07	57:21
7.98	0.3500	0.0877	6:01	26:30	58:15
6.37	0.2600	0.0816	6:39	28:52	63:00
1.20	0.0800	0.0800	6:50	29:32	64:22

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.1500**	**0.1500**	**2:43**	**13:42**	**31:45**
1.61	0.1400	0.1400	3:01	14:57	34:26
2.53	0.1400	0.1108	4:18	20:00	44:56
2.02	0.1100	0.1087	4:26	20:30	45:56
7.98	0.3600	0.0902	5:48	25:40	56:30

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.5900**	**0.4689**	**0:37**	**4:35**	**11:52**
2.02	0.4900	0.3486	1:09	7:00	17:17
1.61	0.4200	0.2666	1:51	10:03	24:00
3.14	0.2900	0.2569	1:58	10:33	25:02
3.94	0.2300	0.2282	2:23	12:19	28:52

* 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 Roadside

8-OCT-93 16:14:26

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Secondary A**
4: **Roadside**
5: **20 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.4600**	**0.1821**	**2:00**	**10:41**	**25:17**
6.37	0.4300	0.1350	3:12	15:41	35:51
7.98	0.4200	0.1052	4:39	21:17	47:36
2.02	0.1000	0.0988	5:05	23:00	51:06
2.53	0.1200	0.0950	5:22	24:07	53:21

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.1300**	**0.1300**	**3:24**	**16:25**	**37:30**
1.61	0.1200	0.1200	3:49	18:08	41:02
7.98	0.4700	0.1178	3:56	18:35	41:56
6.37	0.3100	0.0973	5:11	23:25	51:51
2.02	0.0900	0.0889	5:54	26:07	57:21

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.3600**	**0.3600**	**1:06**	**6:41**	**16:37**
2.53	0.4100	0.3259	1:19	7:41	18:47
6.37	0.2800	0.2800	1:42	9:26	22:37
2.02	0.3600	0.2561	1:59	10:37	25:10
3.94	0.2500	0.2480	2:04	11:03	26:07

* 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 Curbside

8-OCT-93 16:14:26

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Secondary A**
4: **Curbside**
5: **20 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.4300**	**0.1702**	**2:14**	**11:38**	**27:25**
6.37	0.3700	0.1162	4:01	18:53	42:36
2.02	0.1100	0.1087	4:26	20:30	45:56
2.53	0.1300	0.1029	4:48	21:53	48:45
7.98	0.3900	0.0977	5:09	23:17	51:41

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
7.98	**0.4800**	**0.1203**	**3:48**	**18:07**	**41:00**
6.37	0.3300	0.1036	4:45	21:45	48:26
5.05	0.2600	0.1029	4:48	21:53	48:45
1.61	0.1000	0.1000	5:00	22:40	50:21
1.20	0.1000	0.1000	5:00	22:40	50:21

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.4500**	**0.3576**	**1:07**	**6:46**	**16:45**
5.05	0.3200	0.3200	1:22	7:52	19:13
2.02	0.3800	0.2704	1:49	9:52	23:35
1.61	0.3700	0.2349	2:16	11:52	27:52
6.37	0.2300	0.2300	2:20	12:12	28:32

* 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

8-OCT-93 16:14:27

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Secondary A**
4: **Driver**
5: **25 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.3200**	**0.1005**	**4:58**	**22:32**	**50:06**
2.02	0.0900	0.0889	5:54	26:07	57:21
2.53	0.1100	0.0871	6:05	26:45	58:36
5.05	0.2100	0.0831	6:30	28:15	61:45
7.98	0.2800	0.0702	8:12	34:26	74:07

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.1400**	**0.1400**	**3:01**	**14:57**	**34:26**
1.20	0.1400	0.1400	3:01	14:57	34:26
3.14	0.1500	0.0955	5:20	23:55	53:00
2.53	0.1200	0.0950	5:22	24:07	53:21
2.02	0.0800	0.0790	6:58	30:00	65:15

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.4100**	**0.3259**	**1:19**	**7:41**	**18:47**
3.14	0.3600	0.3190	1:22	7:54	19:17
2.02	0.3700	0.2632	1:52	10:14	24:22
1.61	0.3700	0.2349	2:16	11:52	27:52
7.98	0.1700	0.1700	3:45	17:52	40:30

* 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 Front

8-OCT-93 16:14:27

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Secondary A**
4: **Front**
5: **25 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.1200**	**0.0950**	**5:22**	**24:07**	**53:21**
6.37	0.3000	0.0942	5:26	24:22	53:51
7.98	0.3400	0.0852	6:16	27:25	60:06
10.10	0.3900	0.0773	7:11	30:47	66:45
5.05	0.1900	0.0752	7:28	31:45	68:45

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.1400**	**0.1400**	**3:01**	**14:57**	**34:26**
1.61	0.1300	0.1300	3:24	16:25	37:30
2.53	0.1000	0.0792	6:58	29:55	65:07
2.02	0.0800	0.0790	6:58	30:00	65:15
3.14	0.1200	0.0764	7:18	31:10	67:37

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.4200**	**0.3338**	**1:15**	**7:26**	**18:15**
3.14	0.3600	0.3190	1:22	7:54	19:17
2.02	0.4400	0.3130	1:24	8:07	19:45
1.61	0.4100	0.2603	1:55	10:23	24:40
3.94	0.1900	0.1885	3:13	15:42	36:00

* 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 Roadside

8-OCT-93 16:14:27

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Secondary A**
4: **Roadside**
5: **25 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.4700**	**0.1476**	**2:47**	**14:00**	**32:21**
5.05	0.3400	0.1346	3:13	15:45	36:00
7.98	0.3600	0.0902	5:48	25:40	56:30
10.10	0.3900	0.0773	7:11	30:47	66:45
12.74	0.4800	0.0754	7:26	31:40	68:37

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	**0.1200**	**0.1200**	**3:49**	**18:08**	**41:02**
1.61	0.1100	0.1100	4:20	20:10	45:15
6.37	0.2900	0.0910	5:43	25:22	55:51
7.98	0.2900	0.0727	7:50	33:02	71:22
2.02	0.0700	0.0691	8:22	35:00	75:15

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.3000**	**0.3000**	**1:30**	**8:36**	**20:47**
3.14	0.3000	0.2658	1:52	10:07	24:02
2.53	0.3100	0.2464	2:06	11:08	26:22
2.02	0.3300	0.2348	2:16	11:53	27:52
5.05	0.2300	0.2300	2:20	12:12	28:32

* 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 . Curbside

8-OCT-93 16:14:27

1: HET Ride Quality
2: Oct 4, 1993
3: Secondary A
4: Curbside
5: 25 mph
6: No Load

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	0.4300	0.1350	3:12	15:41	35:51
5.05	0.3100	0.1227	3:42	17:38	40:00
2.53	0.1200	0.0950	5:22	24:07	53:21
7.98	0.3600	0.0902	5:48	25:40	56:30
10.10	0.3700	0.0733	7:43	32:45	70:45

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.20	0.1000	0.1000	5:00	22:40	50:21
6.37	0.2900	0.0910	5:43	25:22	55:51
1.61	0.0900	0.0900	5:48	25:45	56:36
7.98	0.3000	0.0752	7:28	31:47	68:52
5.05	0.1800	0.0712	8:02	33:51	72:52

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	0.2700	0.2700	1:49	9:53	23:37
3.14	0.3000	0.2658	1:52	10:07	24:02
2.02	0.3700	0.2632	1:52	10:14	24:22
2.53	0.3200	0.2543	2:00	10:42	25:22
1.61	0.3600	0.2285	2:2.	12:18	28:47

* 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

8-OCT-93 16:14:27

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Secondary A**
4: **Driver**
5: **30 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.3300**	**0.1036**	**4:45**	**21:45**	**48:26**
2.02	0.0800	0.0790	6:58	30:00	65:15
7.98	0.3100	0.0777	7:09	30:37	66:30
10.10	0.3700	0.0733	7:43	32:45	70:45
1.61	0.0700	0.0700	8:14	34:30	74:15

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.1700**	**0.1700**	**2:14**	**11:41**	**27:25**
1.20	0.1500	0.1500	2:43	13:42	31:45
7.98	0.5000	0.1253	3:34	17:13	39:06
2.02	0.1200	0.1185	3:54	18:25	41:36
3.14	0.1600	0.1019	4:52	22:10	49:21

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.4500**	**0.3202**	**1:21**	**7:52**	**19:10**
2.53	0.3600	0.2861	1:38	9:10	22:00
3.14	0.3200	0.2835	1:39	9:15	22:15
3.94	0.2700	0.2679	1:50	10:00	23:52
1.61	0.3900	0.2476	2:05	11:04	26:10

* 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 Front

8-OCT-93 16:14:27

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Secondary A**
4: **Front**
5: **30 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.3200**	**0.1005**	**4:58**	**22:32**	**50:06**
7.98	0.3900	0.0977	5:09	23:17	51:41
10.10	0.4700	0.0931	5:33	24:40	54:30
1.61	0.0800	0.0800	6:50	29:32	64:22
1.20	0.0800	0.0800	6:50	29:32	64:22

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
1.61	**0.1500**	**0.1500**	**2:43**	**13:42**	**31:45**
1.20	0.1500	0.1500	2:43	13:42	31:45
7.98	0.4600	0.1152	4:03	19:05	43:00
3.94	0.2100	0.1067	4:33	20:58	46:51
3.14	0.1600	0.1019	4:52	22:10	49:21

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.5000**	**0.4961**	**0:33**	**4:13**	**11:02**
2.02	0.5300	0.3771	0:57	6:16	15:41
3.14	0.3500	0.3101	1:25	8:12	19:58
2.53	0.3900	0.3100	1:25	8:14	20:00
1.61	0.4400	0.2793	1:43	9:27	22:40

* 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 Roadside

8-OCT-93 16:14:27

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Secondary A**
4: **Roadside**
5: **30 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.4700**	**0.1476**	**2:47**	**14:00**	**32:21**
7.98	0.4100	0.1027	4:48	21:55	48:51
5.05	0.2400	0.0950	5:22	24:07	53:21
10.10	0.4500	0.0891	5:54	26:00	57:11
1.61	0.0800	0.0800	6:50	29:32	64:22

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
7.98	**0.5600**	**0.1403**	**3:00**	**14:56**	**34:21**
1.20	0.1300	0.1300	3:24	16:25	37:30
1.61	0.1100	0.1100	4:20	20:10	45:15
6.37	0.3100	0.0973	5:11	23:25	51:51
5.05	0.2000	0.0792	6:58	29:55	65:07

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.3100**	**0.3076**	**1:27**	**8:18**	**20:10**
6.37	0.2800	0.2800	1:42	9:26	22:37
2.02	0.3700	0.2632	1:52	10:14	24:22
7.98	0.2500	0.2500	2:03	10:57	25:52
3.14	0.2800	0.2481	2:04	11:03	26:07

* 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 Curbside

8-OCT-93 16:14:27

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Secondary A**
4: **Curbside**
5: **30 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.4300**	**0.1350**	**3:12**	**15:41**	**35:51**
7.98	0.4300	0.1077	4:28	20:43	46:21
5.05	0.2200	0.0871	6:05	26:45	58:36
10.10	0.4100	0.0812	6:43	29:02	63:15
1.61	0.0800	0.0800	6:50	29:32	64:22

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
7.98	**0.5600**	**0.1403**	**3:00**	**14:56**	**34:21**
6.37	0.3400	0.1067	4:33	20:55	46:51
1.20	0.1000	0.1000	5:00	22:40	50:21
5.05	0.2100	0.0831	6:30	28:15	61:45
1.61	0.0800	0.0800	6:50	29:32	64:22

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.4300**	**0.4266**	**0:45**	**5:16**	**13:23**
2.02	0.4200	0.2988	1:31	8:38	20:53
3.14	0.2800	0.2481	2:04	11:03	26:07
2.53	0.3100	0.2464	2:06	11:08	26:22
1.61	0.3500	0.2222	2:29	12:45	29:45

* 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

8-OCT-93 16:14:28

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Driver**
5: **25 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.14	**0.1200**	**0.0764**	**7:18**	**31:10**	**67:37**
2.53	0.0800	0.0633	9:25	38:45	82:37
6.37	0.1800	0.0565	10:56	44:02	93:15
5.05	0.1300	0.0515	12:22	48:56	102:45
2.02	0.0400	0.0395	17:15	65:22	134:30

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.14	**0.1000**	**0.0637**	**9:19**	**38:30**	**82:07**
2.53	0.0600	0.0475	13:41	53:30	111:30
6.37	0.1000	0.0314	22:52	83:37	169:30
1.61	0.0300	0.0300	24:08	87:45	177:15
2.02	0.0300	0.0296	24:30	88:45	179:30

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.14	**0.4400**	**0.3899**	**0:53**	**6:00**	**15:03**
2.53	0.3000	0.2384	2:13	11:38	27:22
2.02	0.2100	0.1494	4:33	20:55	46:51
1.61	0.1300	0.0825	10:21	42:00	89:07
7.98	0.0800	0.0800	10:47	43:30	92:00

* 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 Front

8-OCT-93 16:14:28

1: HET Ride Quality
2: Oct 4, 1993
3: Paved
4: Front
5: 25 mph
6: No Load

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.1500**	**0.0471**	**13:49**	**54:00**	**112:30**
5.05	0.1000	0.0396	17:15	65:15	134:15
2.53	0.0500	0.0396	17:15	65:15	134:15
3.14	0.0600	0.0382	18:00	67:45	139:15
7.98	0.1100	0.0276	26:45	95:45	192:30

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.14	**0.1300**	**0.0828**	**6:31**	**28:22**	**62:00**
2.53	0.0700	0.0554	11:12	45:00	95:00
6.37	0.1100	0.0345	20:22	75:30	154:00
7.98	0.1200	0.0301	24:07	87:30	177:00
1.61	0.0300	0.0300	24:08	87:45	177:15

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.14	**0.4300**	**0.3810**	**0:56**	**6:11**	**15:27**
2.53	0.2800	0.2225	2:29	12:45	29:40
2.02	0.2200	0.1565	4:15	19:47	44:30
6.37	0.1300	0.1300	5:33	24:47	54:36
3.94	0.0900	0.0893	9:19	38:26	82:00

* 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 Roadside

8-OCT-93 16:14:28

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Roadside**
5: **25 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.2800**	**0.0879**	**6:01**	**26:25**	**58:06**
5.05	0.1900	0.0752	7:28	31:45	68:45
3.14	0.0900	0.0573	10:45	43:21	91:45
2.53	0.0700	0.0554	11:12	45:00	95:00
7.98	0.1500	0.0376	18:22	69:00	141:30

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.0800**	**0.0790**	**6:58**	**30:00**	**65:15**
6.37	0.1500	0.0471	13:49	54:00	112:30
3.14	0.0500	0.0318	22:30	82:22	167:00
7.98	0.1200	0.0301	24:07	87:30	177:00
5.05	0.0600	0.0237	31:47	111:45	222:30

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.14	**0.3100**	**0.2747**	**1:45**	**9:41**	**23:07**
6.37	0.2000	0.2000	2:56	14:34	33:36
5.05	0.1700	0.1700	3:45	17:52	40:30
2.53	0.2100	0.1669	3:51	18:17	41:21
2.02	0.1900	0.1352	5:16	23:38	52:21

* 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 Curbside

8-OCT-93 16:14:28

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Curbside**
5: **25 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.3000**	**0.0942**	**5:26**	**24:22**	**53:51**
5.05	0.2100	0.0831	6:30	28:15	61:45
2.53	0.0800	0.0633	9:25	38:45	82:37
3.14	0.0900	0.0573	10:45	43:21	91:45
7.98	0.1500	0.0376	18:22	69:00	141:30

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.1600**	**0.0502**	**12:45**	**50:15**	**105:15**
5.05	0.0900	0.0356	19:37	73:07	149:30
7.98	0.1100	0.0276	26:45	95:45	192:30
3.14	0.0400	0.0255	29:17	104:00	208:00
2.53	0.0300	0.0237	31:47	111:45	222:30

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.14	**0.3000**	**0.2658**	**1:52**	**10:07**	**24:02**
6.37	0.1700	0.1700	3:45	17:52	40:30
2.53	0.2100	0.1669	3:51	18:17	41:21
2.02	0.2000	0.1423	4:52	22:15	49:30
5.05	0.1200	0.1200	6:13	27:15	59:45

* 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

8-OCT-93 16:14:29

1: **NET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Driver**
5: **30 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.2000**	**0.0628**	**9:30**	**39:06**	**83:22**
3.94	0.0900	0.0457	14:22	55:45	116:00
3.14	0.0600	0.0382	18:00	67:45	139:15
7.98	0.1500	0.0376	18:22	69:00	141:30
2.02	0.0300	0.0296	24:30	88:45	179:30

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.1900**	**0.0965**	**5:16**	**23:40**	**52:21**
7.98	0.2300	0.0576	10:40	43:06	91:15
3.14	0.0900	0.0573	10:45	43:21	91:45
6.37	0.1100	0.0345	20:22	75:30	154:00
1.61	0.0300	0.0300	24:08	87:45	177:15

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.2900**	**0.2877**	**1:37**	**9:06**	**21:52**
3.14	0.2000	0.1772	3:31	17:00	38:36
7.98	0.1400	0.1400	5:00	22:40	50:21
2.02	0.1800	0.1281	5:41	25:15	55:36
2.53	0.1500	0.1192	6:16	27:25	60:06

* 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 . Front

8-OCT-93 16:14:29

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Front**
5: **30 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.1800**	**0.0565**	**10:56**	**44:02**	**93:15**
3.94	0.0800	0.0406	16:40	63:21	130:45
7.98	0.1500	0.0376	18:22	69:00	141:30
3.14	0.0500	0.0318	22:30	82:22	167:00
10.10	0.1600	0.0317	22:37	82:45	167:45

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.1900**	**0.0965**	**5:16**	**23:40**	**52:21**
7.98	0.2700	0.0676	8:37	35:56	77:00
3.14	0.0800	0.0510	12:30	49:30	103:45
6.37	0.1100	0.0345	20:22	75:30	154:00
1.61	0.0300	0.0300	24:08	87:45	177:15

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.5900**	**0.5853**	**0:22**	**3:17**	**8:52**
3.14	0.2800	0.2481	2:04	11:03	26:07
7.98	0.1300	0.1300	5:33	24:47	54:36
2.02	0.1800	0.1281	5:41	25:15	55:36
2.53	0.1600	0.1272	5:43	25:25	56:00

* 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 Roadside

8-OCT-93 16:14:29

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Roadside**
5: **30 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.3200**	**0.1005**	**4:58**	**22:32**	**50:06**
3.94	0.1200	0.0610	9:53	40:26	86:00
3.14	0.0700	0.0446	14:49	57:21	119:00
7.98	0.1700	0.0426	15:42	60:15	124:45
10.10	0.1400	0.0277	26:30	95:15	191:30

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
7.98	**0.3600**	**0.0902**	**5:48**	**25:40**	**56:30**
3.94	0.1200	0.0610	9:53	40:26	86:00
6.37	0.1600	0.0502	12:45	50:15	105:15
3.14	0.0500	0.0318	22:30	82:22	167:00
1.61	0.0200	0.0200	38:45	133:15	262:30

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.2500**	**0.2480**	**2:04**	**11:03**	**26:07**
6.37	0.1800	0.1800	3:27	16:38	38:00
7.98	0.1500	0.1500	4:31	20:52	46:36
3.14	0.1300	0.1152	6:35	28:37	62:21
2.02	0.1500	0.1067	7:20	31:15	67:45

* 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 Curbside

8-OCT-93 16:14:29

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Curbside**
5: **30 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
6.37	**0.3200**	**0.1005**	**4:58**	**22:32**	**50:06**
7.98	0.1600	0.0401	16:58	64:22	132:45
3.14	0.0600	0.0382	18:00	67:45	139:15
3.94	0.0700	0.0356	19:40	73:15	149:45
10.10	0.1400	0.0277	26:30	95:15	191:30

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
7.98	**0.3500**	**0.0877**	**6:01**	**26:30**	**58:15**
6.37	0.1800	0.0565	10:56	44:02	93:15
3.94	0.0800	0.0406	16:40	63:21	130:45
3.14	0.0400	0.0255	29:17	104:00	208:00
1.61	0.0200	0.0200	38:45	133:15	262:30

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.3800**	**0.3770**	**0:57**	**6:16**	**15:41**
3.14	0.1800	0.1595	4:07	19:22	43:30
6.37	0.1500	0.1500	4:31	20:52	46:36
2.02	0.1600	0.1138	6:41	29:00	63:15
7.98	0.1100	0.1100	7:01	30:10	65:37

* 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

8-OCT-93 16:14:30

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Driver**
5: **35 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
7.98	**0.2100**	**0.0526**	**12:00**	**47:45**	**100:22**
3.94	0.0800	0.0406	16:40	63:21	130:45
2.53	0.0400	0.0317	22:37	82:52	168:00
1.61	0.0300	0.0300	24:08	87:45	177:15
2.02	0.0300	0.0296	24:30	88:45	179:30

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
7.98	**0.3000**	**0.0752**	**7:28**	**31:47**	**68:52**
3.94	0.1400	0.0711	8:03	33:51	73:00
2.02	0.0500	0.0494	13:00	51:15	107:15
1.61	0.0400	0.0400	17:00	64:30	133:00
5.05	0.0800	0.0317	22:37	82:52	168:00

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.3100**	**0.3076**	**1:27**	**8:18**	**20:10**
2.53	0.2900	0.2305	2:20	12:11	28:30
5.05	0.1700	0.1700	3:45	17:52	40:30
2.02	0.2300	0.1636	3:59	18:45	42:17
3.14	0.1500	0.1329	5:22	24:07	53:21

* 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 Front

8-OCT-93 16:14:30

1: HET Ride Quality
2: Oct 4, 1993
3: Paved
4: Front
5: 35 mph
6: No Load

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.1200**	**0.0610**	**9:53**	**40:26**	**86:00**
7.98	0.1900	0.0476	13:38	53:21	111:15
12.74	0.2400	0.0377	18:17	68:45	141:15
1.61	0.0300	0.0300	24:08	87:45	177:15
1.20	0.0300	0.0300	24:08	87:45	177:15

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.1300**	**0.0660**	**8:53**	**36:56**	**79:00**
7.98	0.2500	0.0626	9:33	39:15	83:37
2.02	0.0400	0.0395	17:15	65:22	134:30
5.05	0.0800	0.0317	22:37	82:52	168:00
1.61	0.0300	0.0300	24:08	87:45	177:15

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.4700**	**0.4663**	**0:37**	**4:37**	**11:57**
2.53	0.3200	0.2543	2:00	10:42	25:22
5.05	0.2500	0.2500	2:03	10:57	25:52
2.02	0.2500	0.1779	3:30	16:53	38:30
3.14	0.1700	0.1506	4:30	20:45	46:26

* 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 Roadside

8-OCT-93 16:14:30

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Roadside**
5: **35 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
7.98	**0.2800**	**0.0702**	**8:12**	**34:26**	**74:07**
3.94	0.0900	0.0457	14:22	55:45	116:00
6.37	0.1300	0.0408	16:35	63:06	130:15
2.02	0.0400	0.0395	17:15	65:22	134:30
12.74	0.2100	0.0330	21:32	79:22	161:15

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
7.98	**0.3100**	**0.0777**	**7:09**	**30:37**	**66:30**
3.94	0.1000	0.0508	12:33	49:36	104:00
1.20	0.0300	0.0300	24:08	87:45	177:15
2.02	0.0300	0.0296	24:30	88:45	179:30
5.05	0.0700	0.0277	26:32	95:15	191:30

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.3000**	**0.2976**	**1:31**	**8:41**	**21:00**
5.05	0.1900	0.1900	3:11	15:34	35:41
2.53	0.2100	0.1669	3:51	18:17	41:21
7.98	0.1500	0.1500	4:31	20:52	46:36
2.02	0.1700	0.1209	6:09	27:00	59:06

* 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 Curbside

8-OCT-93 16:14:30

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Curbside**
5: **35 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
7.98	**0.2600**	**0.0651**	**9:03**	**37:30**	**80:15**
3.94	0.1100	0.0559	11:07	44:36	94:15
6.37	0.1500	0.0471	13:49	54:00	112:30
5.05	0.0800	0.0317	22:37	82:52	168:00
2.53	0.0400	0.0317	22:37	82:52	168:00

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
7.98	**0.2900**	**0.0727**	**7:50**	**33:02**	**71:22**
3.94	0.0700	0.0356	19:40	73:15	149:45
6.37	0.0900	0.0283	25:55	93:22	188:00
10.10	0.1200	0.0238	31:47	111:45	222:30
5.05	0.0600	0.0237	31:47	111:45	222:30

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
3.94	**0.3800**	**0.3770**	**0:57**	**6:16**	**15:41**
5.05	0.2200	0.2200	2:31	12:56	30:07
2.53	0.2300	0.1828	3:21	16:20	37:17
2.02	0.1900	0.1352	5:16	23:38	52:21
3.14	0.1200	0.1063	7:22	31:25	68:00

* 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

8-OCT-93 16:14:30

1: HET Ride Quality
2: Oct 4, 1993
3: Paved
4: Driver
5: 40 mph
6: No Load

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.0500**	**0.0494**	**13:00**	**51:15**	**107:15**
5.05	0.1000	0.0396	17:15	65:15	134:15
7.98	0.1300	0.0326	21:52	80:22	163:30
2.53	0.0400	0.0317	22:37	82:52	168:00
1.61	0.0300	0.0300	24:08	87:45	177:15

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.2300**	**0.0910**	**5:43**	**25:22**	**55:51**
2.02	0.0400	0.0395	17:15	65:22	134:30
2.53	0.0400	0.0317	22:37	82:52	168:00
1.61	0.0300	0.0300	24:08	87:45	177:15
1.20	0.0300	0.0300	24:08	87:45	177:15

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.2500**	**0.2500**	**2:03**	**10:57**	**25:52**
2.53	0.2100	0.1669	3:51	18:17	41:21
2.02	0.1700	0.1209	6:09	27:00	59:06
3.94	0.1000	0.0992	8:06	34:00	73:15
3.14	0.1100	0.0975	8:18	34:45	74:45

* 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 Front

8-OCT-93 16:14:30

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Front**
5: **40 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.1000**	**0.0396**	**17:15**	**65:15**	**134:15**
10.10	0.1800	0.0357	19:37	73:00	149:15
7.98	0.1300	0.0326	21:52	80:22	163:30
2.02	0.0300	0.0296	24:30	88:45	179:30
12.74	0.1700	0.0267	27:45	99:00	198:45

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.2100**	**0.0831**	**6:30**	**28:15**	**61:45**
1.20	0.0300	0.0300	24:08	87:45	177:15
2.02	0.0300	0.0296	24:30	88:45	179:30
7.98	0.1000	0.0251	29:52	105:45	211:30
10.10	0.1200	0.0238	31:47	111:45	222:30

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.4000**	**0.4000**	**0:52**	**5:46**	**14:33**
2.53	0.2200	0.1749	3:35	17:15	39:15
3.94	0.1400	0.1389	5:03	22:52	50:51
2.02	0.1800	0.1281	5:41	25:15	55:36
10.10	0.1400	0.1109	6:56	29:52	65:00

* 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 Roadside

8-OCT-93 16:14:30

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Roadside**
5: **40 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
7.98	**0.1900**	**0.0476**	**13:38**	**53:21**	**111:15**
5.05	0.1100	0.0435	15:18	58:51	122:00
2.53	0.0500	0.0396	17:15	65:15	134:15
2.02	0.0400	0.0395	17:15	65:22	134:30
6.37	0.1100	0.0345	20:22	75:30	154:00

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.1900**	**0.0752**	**7:28**	**31:45**	**68:45**
10.10	0.2100	0.0416	16:10	61:51	127:45
7.98	0.1300	0.0326	21:52	80:22	163:30
1.20	0.0300	0.0300	24:08	87:45	177:15
6.37	0.0700	0.0220	34:47	121:00	240:00

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.3400**	**0.3400**	**1:13**	**7:15**	**17:50**
7.98	0.1500	0.1500	4:31	20:52	46:36
2.53	0.1300	0.1033	7:39	32:30	70:15
2.02	0.1400	0.0996	8:03	33:51	73:00
3.94	0.0900	0.0893	9:19	38:26	82:00

* 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 Curbside

8-OCT-93 16:14:30

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Curbside**
5: **40 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.1800**	**0.0712**	**8:02**	**33:51**	**72:52**
7.98	0.1600	0.0401	16:58	64:22	132:45
2.53	0.0500	0.0396	17:15	65:15	134:15
2.02	0.0400	0.0395	17:15	65:22	134:30
6.37	0.1100	0.0345	20:22	75:30	154:00

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.1500**	**0.0594**	**10:15**	**41:41**	**88:30**
10.10	0.2100	0.0416	16:10	61:51	127:45
7.98	0.1400	0.0351	20:00	74:15	151:45
1.20	0.0300	0.0300	24:08	87:45	177:15
2.02	0.0300	0.0296	24:30	88:45	179:30

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.4100**	**0.4100**	**0:48**	**5:35**	**14:07**
2.53	0.1500	0.1192	6:16	27:25	60:06
10.10	0.1500	0.1189	6:18	27:32	60:21
2.02	0.1400	0.0996	8:03	33:51	73:00
3.94	0.0900	0.0893	9:19	38:26	82:00

* 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

8-OCT-93 16:37:52

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Driver**
5: **99 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.02	**0.0700**	**0.0691**	**8:22**	**35:00**	**75:15**
5.05	0.1600	0.0633	9:25	38:45	82:37
2.53	0.0800	0.0633	9:25	38:45	82:37
1.61	0.0400	0.0400	17:00	64:30	133:00
10.10	0.2000	0.0396	17:13	65:15	134:15

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.1800**	**0.0712**	**8:02**	**33:51**	**72:52**
2.02	0.0700	0.0691	8:22	35:00	75:15
2.53	0.0600	0.0475	13:41	53:30	111:30
1.61	0.0400	0.0400	17:00	64:30	133:00
3.94	0.0600	0.0305	23:40	86:15	174:30

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
2.53	**0.3700**	**0.2941**	**1:34**	**8:49**	**21:17**
2.02	0.2700	0.1921	3:06	15:22	35:15
5.05	0.1900	0.1900	3:11	15:34	35:41
3.14	0.2000	0.1772	3:31	17:00	38:36
1.61	0.2100	0.1333	5:22	24:02	53:11

* 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 Front

8-OCT-93 16:37:52

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Front**
5: **99 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.1600**	**0.0633**	**9:25**	**38:45**	**82:37**
10.10	0.2100	0.0416	16:10	61:51	127:45
2.53	0.0500	0.0396	17:15	65:15	134:15
2.02	0.0400	0.0395	17:15	65:22	134:30
7.98	0.1300	0.0326	21:52	80:22	163:30

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.2200**	**0.0871**	**6:05**	**26:45**	**58:36**
1.20	0.0400	0.0400	17:00	64:30	133:00
7.98	0.1300	0.0326	21:52	80:22	163:30
2.53	0.0400	0.0317	22:37	82:52	168:00
3.94	0.0600	0.0305	23:40	86:15	174:30

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.3700**	**0.3700**	**1:02**	**6:26**	**16:02**
2.53	0.3800	0.3020	1:30	8:30	20:37
2.02	0.3000	0.2134	2:39	13:26	31:10
3.14	0.1900	0.1683	3:48	18:07	41:00
3.94	0.1500	0.1488	4:35	21:02	47:02

* 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 Roadside

8-OCT-93 16:37:52

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Roadside**
5: **99 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.2000**	**0.0792**	**6:58**	**29:55**	**65:07**
2.53	0.0900	0.0712	8:02	33:51	72:52
2.02	0.0700	0.0691	8:22	35:00	75:15
6.37	0.1700	0.0534	11:48	47:00	98:52
7.98	0.2000	0.0501	12:48	50:21	105:30

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.2400**	**0.0950**	**5:22**	**24:07**	**53:21**
7.98	0.1700	0.0426	15:42	60:15	124:45
1.20	0.0400	0.0400	17:00	64:30	133:00
10.10	0.1900	0.0376	18:20	68:52	141:15
2.02	0.0300	0.0296	24:30	88:45	179:30

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.3300**	**0.3300**	**1:16**	**7:33**	**18:30**
2.53	0.2200	0.1749	3:35	17:15	39:15
3.94	0.1600	0.1587	4:09	19:28	43:45
2.02	0.2100	0.1494	4:33	20:55	46:51
7.98	0.1400	0.1400	5:00	22:40	50:21

* 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 Curbside

8-OCT-93 16:37:52

1: **HET Ride Quality**
2: **Oct 4, 1993**
3: **Paved**
4: **Curbside**
5: **99 mph**
6: **No Load**

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

Durations of WBV exposure before reaching ISO limits* (given in hours:minutes)

X: Longitudinal

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.2500**	**0.0989**	**5:05**	**22:58**	**51:00**
2.53	0.0900	0.0712	8:02	33:51	72:52
2.02	0.0600	0.0593	10:15	41:45	88:37
6.37	0.1500	0.0471	13:49	54:00	112:30
10.10	0.2200	0.0436	15:15	58:45	121:45

Y: Transverse

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.2200**	**0.0871**	**6:05**	**26:45**	**58:36**
7.98	0.1700	0.0426	15:42	60:15	124:45
10.10	0.2000	0.0396	17:13	65:15	134:15
2.02	0.0400	0.0395	17:15	65:22	134:30
1.61	0.0300	0.0300	24:08	87:45	177:15

Z: Vertical

(Hz)	actual	weighted	COMFORT	FATIGUE	HEALTH
5.05	**0.3400**	**0.3400**	**1:13**	**7:15**	**17:50**
2.53	0.2600	0.2066	2:46	14:00	32:21
2.02	0.2300	0.1636	3:59	18:45	42:17
10.10	0.1700	0.1347	5:16	23:45	52:36
3.14	0.1400	0.1240	5:56	26:10	57:36

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

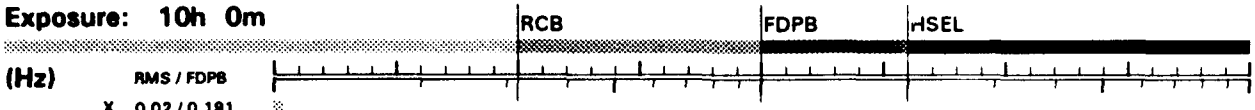
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

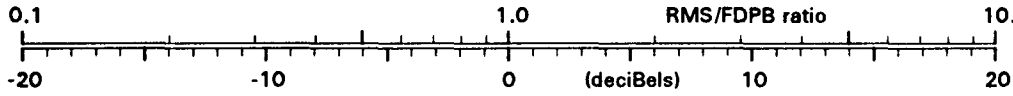
RUN-01
Oct 4, 1993

Driver Seat
HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.02 / 0.191
	Y	0.02 / 0.191
	Z	0.04 / 0.488
1.61	X	0.02 / 0.191
	Y	0.03 / 0.191
	Z	0.09 / 0.422
2.02	X	0.02 / 0.194
	Y	0.03 / 0.194
	Z	0.17 / 0.377
2.53	X	0.08 / 0.242
	Y	0.11 / 0.242
	Z	0.45 / 0.337
3.14	X	0.07 / 0.300
	Y	0.10 / 0.300
	Z	0.32 / 0.302
3.94	X	0.04 / 0.377
	Y	0.02 / 0.377
	Z	0.05 / 0.270
5.05	X	0.09 / 0.484
	Y	0.06 / 0.484
	Z	0.07 / 0.268
6.37	X	0.17 / 0.610
	Y	0.09 / 0.610
	Z	0.07 / 0.268
7.98	X	0.11 / 0.764
	Y	0.17 / 0.764
	Z	0.09 / 0.268
10.10	X	0.10 / 0.966
	Y	0.06 / 0.966
	Z	0.05 / 0.338
12.74	X	0.12 / 1.219
	Y	0.05 / 1.219
	Z	0.05 / 0.427
15.97	X	0.08 / 1.528
	Y	0.05 / 1.528
	Z	0.04 / 0.535
20.10	X	0.10 / 1.924
	Y	0.09 / 1.924
	Z	0.05 / 0.673
25.36	X	0.06 / 2.427
	Y	0.08 / 2.427
	Z	0.03 / 0.849
32.02	X	0.03 / 3.064
	Y	0.02 / 3.064
	Z	0.02 / 1.073
40.33	X	0.03 / 3.859
	Y	0.04 / 3.859
	Z	0.01 / 1.351
50.73	X	0.11 / 4.854
	Y	0.02 / 4.854
	Z	0.04 / 1.699
63.97	X	0.04 / 6.121
	Y	0.02 / 6.121
	Z	0.00 / 2.142
80.64	X	0.02 / 7.716
	Y	0.03 / 7.716
	Z	0.01 / 2.701



8-OCT-93 16:14:14

Course: Paved
Speed: 25 mph
Note: Loaded

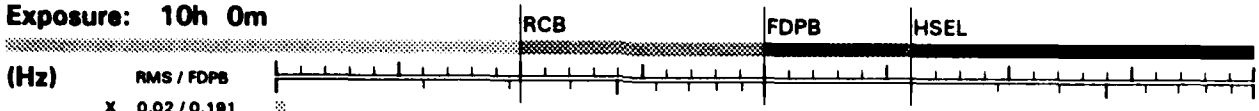
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

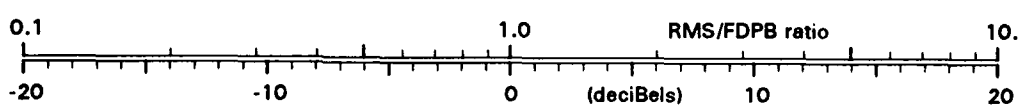
RUN-01
Oct 4, 1993

Front Seat
HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.02 / 0.191
	Y	0.02 / 0.191
	Z	0.04 / 0.488
1.61	X	0.02 / 0.191
	Y	0.02 / 0.191
	Z	0.08 / 0.422
2.02	X	0.02 / 0.194
	Y	0.02 / 0.194
	Z	0.17 / 0.377
2.53	X	0.09 / 0.242
	Y	0.07 / 0.242
	Z	0.58 / 0.337
3.14	X	0.08 / 0.300
	Y	0.06 / 0.300
	Z	0.47 / 0.302
3.94	X	0.03 / 0.377
	Y	0.02 / 0.377
	Z	0.07 / 0.270
5.05	X	0.09 / 0.484
	Y	0.05 / 0.484
	Z	0.07 / 0.268
6.37	X	0.18 / 0.610
	Y	0.07 / 0.610
	Z	0.06 / 0.268
7.98	X	0.12 / 0.764
	Y	0.16 / 0.764
	Z	0.09 / 0.268
10.10	X	0.09 / 0.966
	Y	0.06 / 0.966
	Z	0.05 / 0.338
12.74	X	0.15 / 1.219
	Y	0.04 / 1.219
	Z	0.05 / 0.427
15.97	X	0.08 / 1.528
	Y	0.09 / 1.528
	Z	0.05 / 0.535
20.10	X	0.06 / 1.924
	Y	0.13 / 1.924
	Z	0.05 / 0.673
25.36	X	0.08 / 2.427
	Y	0.03 / 2.427
	Z	0.03 / 0.849
32.02	X	0.03 / 3.064
	Y	0.01 / 3.064
	Z	0.02 / 1.073
40.33	X	0.09 / 3.859
	Y	0.02 / 3.859
	Z	0.03 / 1.351
50.73	X	0.11 / 4.854
	Y	0.02 / 4.854
	Z	0.03 / 1.699
63.97	X	0.03 / 6.121
	Y	0.02 / 6.121
	Z	0.00 / 2.142
80.64	X	0.03 / 7.716
	Y	0.03 / 7.716
	Z	0.00 / 2.701



8-OCT-93 16:14:14

Course: Paved
Speed: 25 mph
Note: Loaded

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

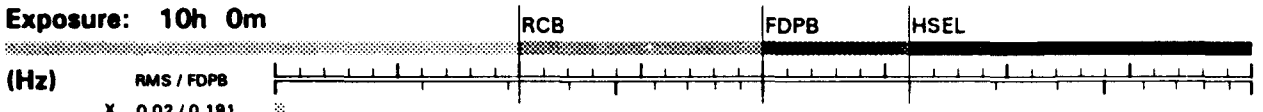
RUN-01

Oct 4, 1993

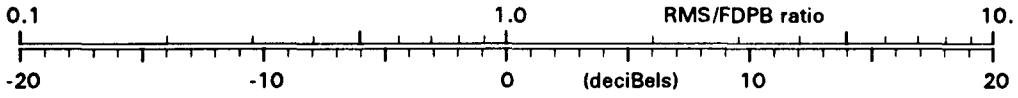
Roadside Seat

HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.02 / 0.191
	Y	0.02 / 0.191
	Z	0.04 / 0.488
1.61	X	0.02 / 0.191
	Y	0.02 / 0.191
	Z	0.08 / 0.422
2.02	X	0.03 / 0.194
	Y	0.02 / 0.194
	Z	0.13 / 0.377
2.53	X	0.05 / 0.242
	Y	0.09 / 0.242
	Z	0.36 / 0.337
3.14	X	0.03 / 0.300
	Y	0.08 / 0.300
	Z	0.26 / 0.302
3.94	X	0.04 / 0.377
	Y	0.02 / 0.377
	Z	0.07 / 0.270
5.05	X	0.14 / 0.484
	Y	0.07 / 0.484
	Z	0.11 / 0.268
6.37	X	0.28 / 0.610
	Y	0.09 / 0.610
	Z	0.20 / 0.268
7.98	X	0.17 / 0.764
	Y	0.16 / 0.764
	Z	0.13 / 0.268
10.10	X	0.13 / 0.966
	Y	0.09 / 0.963
	Z	0.05 / 0.308
12.74	X	0.15 / 1.219
	Y	0.08 / 1.219
	Z	0.07 / 0.427
15.97	X	0.08 / 1.528
	Y	0.06 / 1.528
	Z	0.06 / 0.535
20.10	X	0.07 / 1.924
	Y	0.10 / 1.924
	Z	0.07 / 0.673
25.36	X	0.05 / 2.427
	Y	0.06 / 2.427
	Z	0.04 / 0.849
32.02	X	0.03 / 3.064
	Y	0.03 / 3.064
	Z	0.02 / 1.073
40.33	X	0.04 / 3.859
	Y	0.09 / 3.859
	Z	0.01 / 1.351
50.73	X	0.03 / 4.854
	Y	0.02 / 4.854
	Z	0.01 / 1.699
63.97	X	0.02 / 6.121
	Y	0.02 / 6.121
	Z	0.01 / 2.142
80.64	X	0.05 / 7.716
	Y	0.05 / 7.716
	Z	0.02 / 2.701



8-OCT-93 16:14:14

Course: Paved
Speed: 25 mph
Note: Loaded

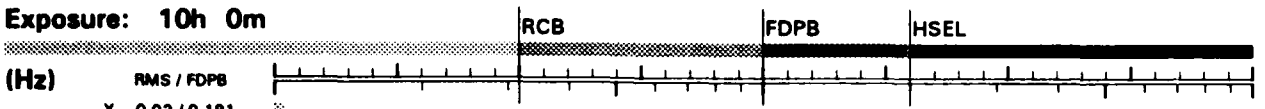
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

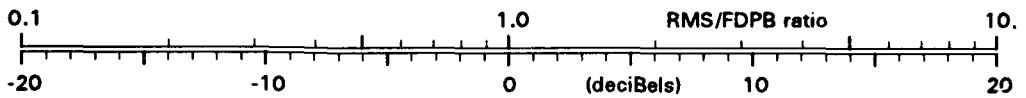
RUN-01
Oct 4, 1993

Curbside Seat
HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.02 / 0.191
	Y	0.02 / 0.191
	Z	0.03 / 0.488
1.61	X	0.02 / 0.191
	Y	0.02 / 0.191
	Z	0.07 / 0.422
2.02	X	0.03 / 0.194
	Y	0.02 / 0.194
	Z	0.14 / 0.377
2.53	X	0.06 / 0.242
	Y	0.07 / 0.242
	Z	0.47 / 0.337
3.14	X	0.03 / 0.300
	Y	0.06 / 0.300
	Z	0.38 / 0.302
3.94	X	0.05 / 0.377
	Y	0.02 / 0.377
	Z	0.08 / 0.270
5.05	X	0.14 / 0.484
	Y	0.07 / 0.484
	Z	0.13 / 0.268
6.37	X	0.26 / 0.610
	Y	0.10 / 0.610
	Z	0.21 / 0.268
7.98	X	0.15 / 0.764
	Y	0.15 / 0.764
	Z	0.08 / 0.268
10.10	X	0.11 / 0.966
	Y	0.09 / 0.966
	Z	0.06 / 0.338
12.74	X	0.14 / 1.219
	Y	0.09 / 1.219
	Z	0.07 / 0.427
15.97	X	0.07 / 1.528
	Y	0.06 / 1.528
	Z	0.05 / 0.536
20.10	X	0.04 / 1.924
	Y	0.09 / 1.924
	Z	0.07 / 0.673
25.36	X	0.05 / 2.427
	Y	0.05 / 2.427
	Z	0.05 / 0.849
32.02	X	0.03 / 3.064
	Y	0.02 / 3.064
	Z	0.04 / 1.073
40.33	X	0.05 / 3.859
	Y	0.09 / 3.859
	Z	0.01 / 1.351
50.73	X	0.05 / 4.854
	Y	0.02 / 4.854
	Z	0.01 / 1.699
63.97	X	0.03 / 6.121
	Y	0.03 / 6.121
	Z	0.01 / 2.142
80.64	X	0.04 / 7.716
	Y	0.09 / 7.716
	Z	0.01 / 2.701



9-OCT-93 16:14:14

Course: Paved
Speed: 25 mph
Note: Loaded

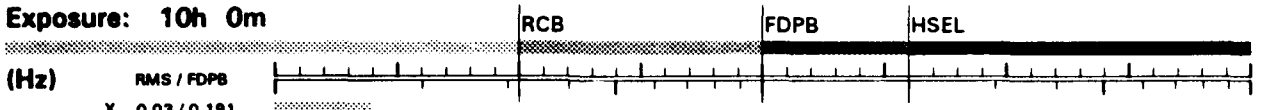
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

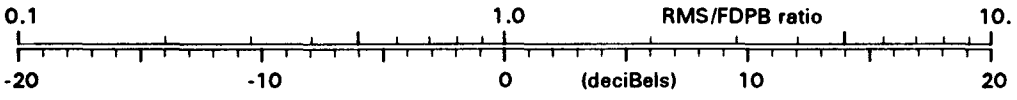
RUN-02
Oct 4, 1993

Driver Seat
HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.03 / 0.191
	Y	0.03 / 0.191
	Z	0.07 / 0.488
1.61	X	0.05 / 0.191
	Y	0.04 / 0.191
	Z	0.11 / 0.422
2.02	X	0.04 / 0.194
	Y	0.04 / 0.194
	Z	0.17 / 0.377
2.53	X	0.04 / 0.242
	Y	0.04 / 0.242
	Z	0.25 / 0.337
3.14	X	0.09 / 0.300
	Y	0.10 / 0.300
	Z	0.30 / 0.302
3.94	X	0.08 / 0.377
	Y	0.08 / 0.377
	Z	0.24 / 0.270
5.05	X	0.08 / 0.484
	Y	0.05 / 0.484
	Z	0.06 / 0.268
6.37	X	0.18 / 0.610
	Y	0.14 / 0.610
	Z	0.10 / 0.268
7.98	X	0.13 / 0.764
	Y	0.15 / 0.764
	Z	0.07 / 0.268
10.10	X	0.11 / 0.966
	Y	0.07 / 0.966
	Z	0.07 / 0.338
12.74	X	0.13 / 1.219
	Y	0.05 / 1.219
	Z	0.06 / 0.427
15.97	X	0.07 / 1.528
	Y	0.05 / 1.528
	Z	0.05 / 0.535
20.10	X	0.06 / 1.924
	Y	0.06 / 1.924
	Z	0.03 / 0.673
25.36	X	0.15 / 2.427
	Y	0.22 / 2.427
	Z	0.08 / 0.849
32.02	X	0.04 / 3.064
	Y	0.03 / 3.064
	Z	0.02 / 1.073
40.33	X	0.02 / 3.859
	Y	0.01 / 3.859
	Z	0.01 / 1.351
50.73	X	0.08 / 4.854
	Y	0.04 / 4.854
	Z	0.03 / 1.699
63.97	X	0.04 / 8.121
	Y	0.02 / 8.121
	Z	0.01 / 2.142
80.64	X	0.02 / 7.716
	Y	0.02 / 7.716
	Z	0.00 / 2.701



8-OCT-93 16:14:15

Course: Paved
Speed: 30 mph
Note: Loaded

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

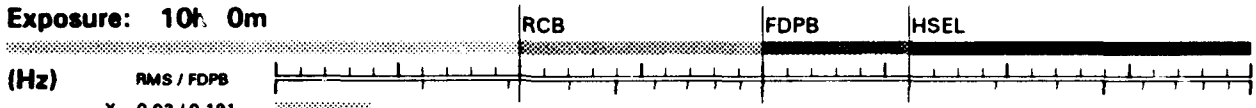
RUN-02

Oct 4, 1993

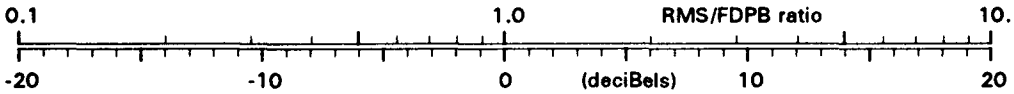
Front Seat

HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.03 / 0.191
	Y	0.02 / 0.191
	Z	0.06 / 0.488
1.61	X	0.05 / 0.191
	Y	0.04 / 0.191
	Z	0.10 / 0.422
2.02	X	0.03 / 0.194
	Y	0.03 / 0.194
	Z	0.16 / 0.377
2.53	X	0.03 / 0.242
	Y	0.03 / 0.242
	Z	0.25 / 0.337
3.14	X	0.06 / 0.300
	Y	0.08 / 0.300
	Z	0.48 / 0.302
3.94	X	0.07 / 0.377
	Y	0.07 / 0.377
	Z	0.40 / 0.270
5.05	X	0.08 / 0.484
	Y	0.03 / 0.484
	Z	0.06 / 0.268
6.37	X	0.19 / 0.610
	Y	0.13 / 0.610
	Z	0.10 / 0.268
7.98	X	0.14 / 0.764
	Y	0.15 / 0.764
	Z	0.07 / 0.268
10.10	X	0.15 / 0.966
	Y	0.07 / 0.966
	Z	0.07 / 0.338
12.74	X	0.19 / 1.219
	Y	0.04 / 1.219
	Z	0.07 / 0.427
15.97	X	0.07 / 1.528
	Y	0.11 / 1.528
	Z	0.05 / 0.535
20.10	X	0.04 / 1.924
	Y	0.10 / 1.924
	Z	0.04 / 0.673
25.36	X	0.11 / 2.427
	Y	0.08 / 2.427
	Z	0.05 / 0.849
32.02	X	0.04 / 3.064
	Y	0.01 / 3.064
	Z	0.02 / 1.073
40.33	X	0.04 / 3.859
	Y	0.01 / 3.859
	Z	0.00 / 1.351
50.73	X	0.24 / 4.854
	Y	0.04 / 4.854
	Z	0.06 / 1.699
63.97	X	0.06 / 6.121
	Y	0.04 / 6.121
	Z	0.01 / 2.142
80.64	X	0.03 / 7.716
	Y	0.03 / 7.716
	Z	0.00 / 2.701



8-OCT-93 16:14:15

Course: Paved
Speed: 30 mph
Note: Loaded

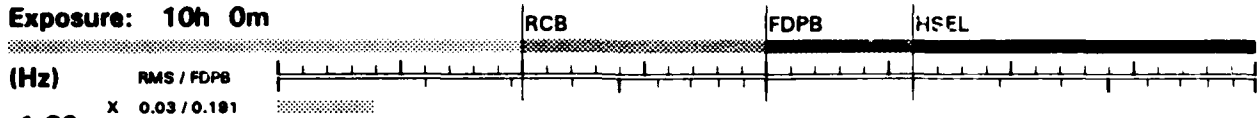
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

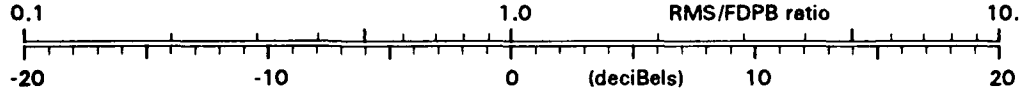
RUN-02 — **Roadside Seat**

Oct 4, 1993 — **HET Ride Quality**

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.03 / 0.191
	Y	0.02 / 0.191
	Z	0.06 / 0.488
1.61	X	0.04 / 0.191
	Y	0.03 / 0.191
	Z	0.10 / 0.422
2.02	X	0.03 / 0.194
	Y	0.03 / 0.194
	Z	0.14 / 0.377
2.53	X	0.03 / 0.242
	Y	0.03 / 0.242
	Z	0.19 / 0.337
3.14	X	0.05 / 0.300
	Y	0.09 / 0.300
	Z	0.30 / 0.302
3.94	X	0.07 / 0.377
	Y	0.08 / 0.377
	Z	0.25 / 0.270
5.05	X	0.15 / 0.484
	Y	0.04 / 0.484
	Z	0.11 / 0.268
6.37	X	0.31 / 0.610
	Y	0.17 / 0.610
	Z	0.25 / 0.269
7.98	X	0.19 / 0.764
	Y	0.18 / 0.764
	Z	0.15 / 0.268
10.10	X	0.15 / 0.966
	Y	0.12 / 0.966
	Z	0.08 / 0.338
12.74	X	0.17 / 1.219
	Y	0.07 / 1.219
	Z	0.09 / 0.427
15.97	X	0.07 / 1.528
	Y	0.06 / 1.528
	Z	0.06 / 0.535
20.10	X	0.04 / 1.924
	Y	0.05 / 1.924
	Z	0.04 / 0.673
25.36	X	0.09 / 2.427
	Y	0.12 / 2.427
	Z	0.10 / 0.849
32.02	X	0.03 / 3.064
	Y	0.03 / 3.064
	Z	0.02 / 1.073
40.33	X	0.02 / 3.859
	Y	0.01 / 3.859
	Z	0.01 / 1.351
50.73	X	0.05 / 4.854
	Y	0.12 / 4.854
	Z	0.02 / 1.699
63.97	X	0.02 / 6.121
	Y	0.03 / 6.121
	Z	0.00 / 2.142
80.64	X	0.03 / 7.716
	Y	0.03 / 7.716
	Z	0.01 / 2.701



8-OCT-93 16:14:15

Course: Paved
Speed: 30 mph
Note: Loaded

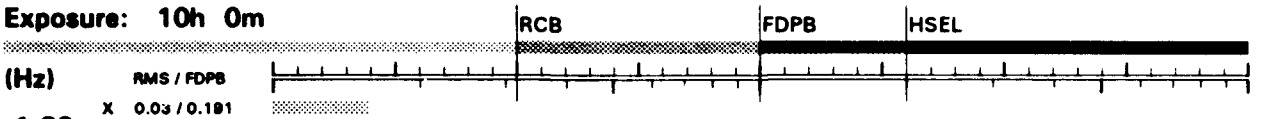
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

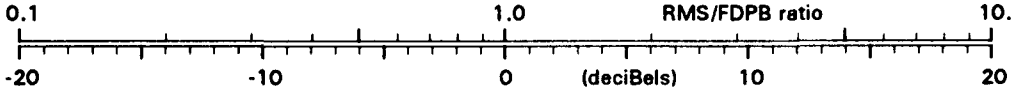
RUN-02
Oct 4, 1993

Curbside Seat
HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.03 / 0.191
	Y	0.02 / 0.191
	Z	0.06 / 0.488
1.61	X	0.04 / 0.191
	Y	0.03 / 0.191
	Z	0.10 / 0.422
2.02	X	0.03 / 0.194
	Y	0.03 / 0.194
	Z	0.14 / 0.377
2.53	X	0.03 / 0.242
	Y	0.02 / 0.242
	Z	0.20 / 0.337
3.14	X	0.06 / 0.300
	Y	0.07 / 0.300
	Z	0.41 / 0.302
3.94	X	0.08 / 0.377
	Y	0.07 / 0.377
	Z	0.36 / 0.270
5.05	X	0.13 / 0.484
	Y	0.05 / 0.484
	Z	0.10 / 0.268
6.37	X	0.26 / 0.610
	Y	0.19 / 0.610
	Z	0.17 / 0.268
7.98	X	0.18 / 0.764
	Y	0.18 / 0.764
	Z	0.08 / 0.268
10.10	X	0.15 / 0.966
	Y	0.13 / 0.966
	Z	0.06 / 0.338
12.74	X	0.17 / 1.219
	Y	0.09 / 1.219
	Z	0.07 / 0.427
15.97	X	0.06 / 1.528
	Y	0.06 / 1.528
	Z	0.05 / 0.535
20.10	X	0.03 / 1.924
	Y	0.05 / 1.924
	Z	0.05 / 0.673
25.36	X	0.08 / 2.427
	Y	0.10 / 2.427
	Z	0.07 / 0.849
32.02	X	0.03 / 3.064
	Y	0.02 / 3.064
	Z	0.04 / 1.073
40.33	X	0.02 / 3.859
	Y	0.02 / 3.859
	Z	0.01 / 1.351
50.73	X	0.09 / 4.854
	Y	0.10 / 4.854
	Z	0.02 / 1.699
63.97	X	0.03 / 6.121
	Y	0.03 / 6.121
	Z	0.01 / 2.142
80.64	X	0.04 / 7.716
	Y	0.04 / 7.716
	Z	0.01 / 2.701



8-OCT-93 16:14:15

Course: Paved
Speed: 30 mph
Note: Loaded

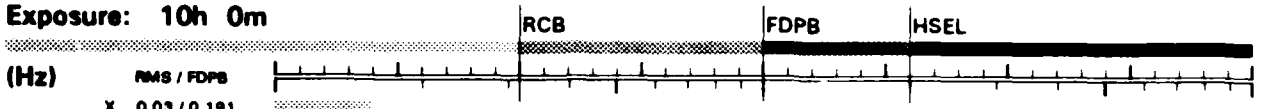
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

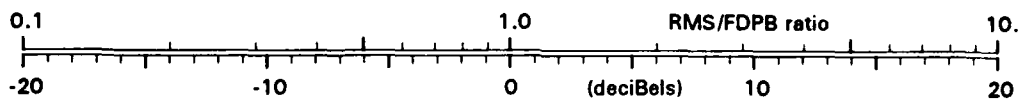
RUN-03
Oct 4, 1993

Driver Seat
HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.03 / 0.191
	Y	0.03 / 0.191
	Z	0.07 / 0.488
1.61	X	0.05 / 0.191
	Y	0.04 / 0.191
	Z	0.12 / 0.422
2.02	X	0.04 / 0.194
	Y	0.04 / 0.194
	Z	0.19 / 0.377
2.53	X	0.04 / 0.242
	Y	0.03 / 0.242
	Z	0.19 / 0.337
3.14	X	0.05 / 0.300
	Y	0.02 / 0.300
	Z	0.13 / 0.302
3.94	X	0.11 / 0.377
	Y	0.14 / 0.377
	Z	0.27 / 0.270
5.05	X	0.05 / 0.484
	Y	0.03 / 0.484
	Z	0.05 / 0.268
6.37	X	0.15 / 0.810
	Y	0.07 / 0.810
	Z	0.06 / 0.268
7.98	X	0.14 / 0.764
	Y	0.21 / 0.764
	Z	0.13 / 0.268
10.10	X	0.12 / 0.966
	Y	0.09 / 0.966
	Z	0.06 / 0.338
12.74	X	0.12 / 1.219
	Y	0.06 / 1.219
	Z	0.06 / 0.427
15.97	X	0.08 / 1.528
	Y	0.05 / 1.528
	Z	0.04 / 0.535
20.10	X	0.07 / 1.924
	Y	0.07 / 1.924
	Z	0.03 / 0.673
25.36	X	0.08 / 2.427
	Y	0.08 / 2.427
	Z	0.04 / 0.849
32.02	X	0.07 / 3.064
	Y	0.06 / 3.064
	Z	0.03 / 1.073
40.33	X	0.03 / 3.859
	Y	0.02 / 3.859
	Z	0.02 / 1.351
50.73	X	0.21 / 4.854
	Y	0.04 / 4.854
	Z	0.07 / 1.699
63.97	X	0.11 / 6.121
	Y	0.04 / 6.121
	Z	0.03 / 2.142
80.64	X	0.02 / 7.716
	Y	0.04 / 7.716
	Z	0.01 / 2.701



8-OCT-93 16:14:15

Course: Paved
Speed: 35 mph
Note: Loaded

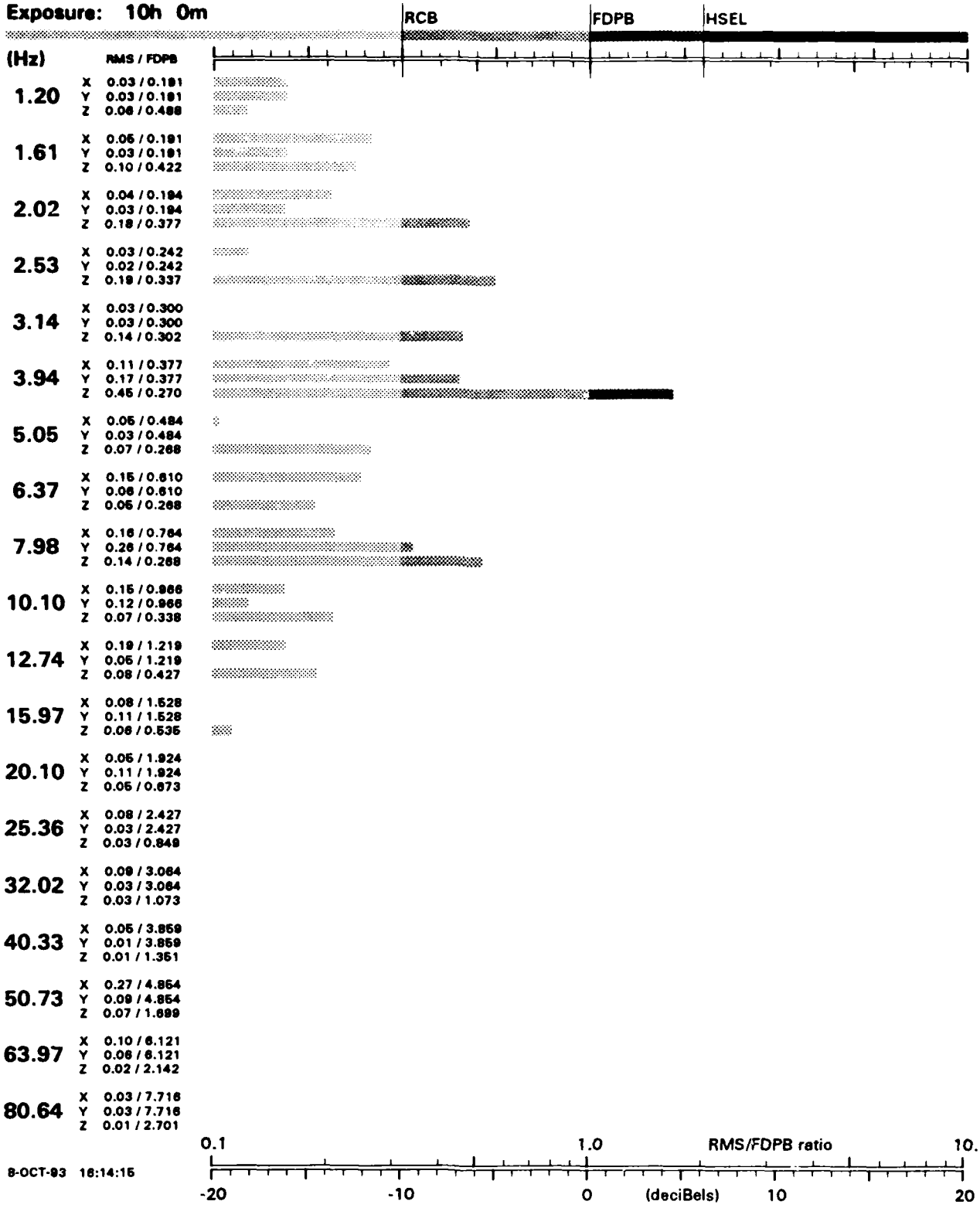
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

RUN-03 — **Front Seat**

Oct 4, 1993 — **HET Ride Quality**

Exposure: 10h 0m



8-OCT-93 16:14:15

Course: Paved
Speed: 35 mph
Note: Loaded

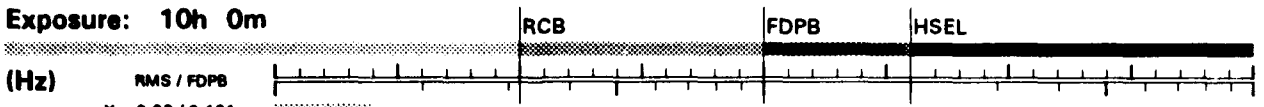
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

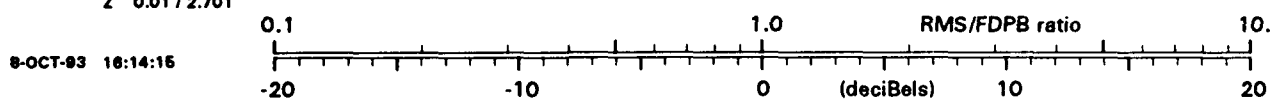
RUN-03
Oct 4, 1993

Roadside Seat
HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.03 / 0.191
	Y	0.02 / 0.191
	Z	0.06 / 0.488
1.61	X	0.04 / 0.191
	Y	0.02 / 0.191
	Z	0.10 / 0.422
2.02	X	0.03 / 0.194
	Y	0.03 / 0.194
	Z	0.15 / 0.377
2.53	X	0.02 / 0.242
	Y	0.02 / 0.242
	Z	0.16 / 0.337
3.14	X	0.03 / 0.300
	Y	0.02 / 0.300
	Z	0.12 / 0.302
3.94	X	0.15 / 0.377
	Y	0.13 / 0.377
	Z	0.34 / 0.270
5.05	X	0.08 / 0.484
	Y	0.03 / 0.484
	Z	0.09 / 0.268
6.37	X	0.24 / 0.610
	Y	0.07 / 0.610
	Z	0.17 / 0.268
7.98	X	0.18 / 0.764
	Y	0.25 / 0.764
	Z	0.14 / 0.268
10.10	X	0.15 / 0.966
	Y	0.14 / 0.966
	Z	0.07 / 0.336
12.74	X	0.15 / 1.219
	Y	0.08 / 1.219
	Z	0.06 / 0.427
15.97	X	0.03 / 1.528
	Y	0.08 / 1.528
	Z	0.05 / 0.535
20.10	X	0.05 / 1.924
	Y	0.05 / 1.924
	Z	0.04 / 0.673
25.36	X	0.07 / 2.427
	Y	0.07 / 2.427
	Z	0.04 / 0.849
32.02	X	0.08 / 3.064
	Y	0.08 / 3.064
	Z	0.04 / 1.073
40.33	X	0.03 / 3.859
	Y	0.02 / 3.859
	Z	0.01 / 1.351
50.73	X	0.04 / 4.854
	Y	0.08 / 4.854
	Z	0.02 / 1.999
63.97	X	0.05 / 6.121
	Y	0.09 / 6.121
	Z	0.02 / 2.142
80.64	X	0.05 / 7.716
	Y	0.05 / 7.716
	Z	0.01 / 2.701



8-OCT-93 16:14:15

Course: Paved
Speed: 35 mph
Note: Loaded

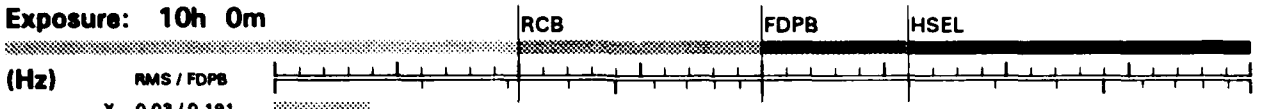
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

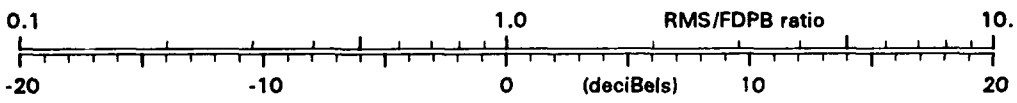
RUN-03
Oct 4, 1993

Curbside Seat
HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.03 / 0.191
	Y	0.02 / 0.191
	Z	0.06 / 0.488
1.61	X	0.05 / 0.191
	Y	0.03 / 0.191
	Z	0.09 / 0.422
2.02	X	0.03 / 0.194
	Y	0.02 / 0.194
	Z	0.15 / 0.377
2.53	X	0.02 / 0.242
	Y	0.02 / 0.242
	Z	0.16 / 0.337
3.14	X	0.03 / 0.300
	Y	0.02 / 0.300
	Z	0.12 / 0.302
3.94	X	0.15 / 0.377
	Y	0.11 / 0.377
	Z	0.38 / 0.270
5.05	X	0.08 / 0.484
	Y	0.04 / 0.484
	Z	0.09 / 0.268
6.37	X	0.23 / 0.610
	Y	0.09 / 0.610
	Z	0.15 / 0.268
7.98	X	0.18 / 0.764
	Y	0.24 / 0.764
	Z	0.13 / 0.268
10.10	X	0.14 / 0.966
	Y	0.14 / 0.966
	Z	0.07 / 0.338
12.74	X	0.16 / 1.219
	Y	0.09 / 1.219
	Z	0.08 / 0.427
15.97	X	0.06 / 1.528
	Y	0.08 / 1.528
	Z	0.05 / 0.535
20.10	X	0.04 / 1.924
	Y	0.05 / 1.924
	Z	0.04 / 0.673
25.36	X	0.06 / 2.427
	Y	0.07 / 2.427
	Z	0.04 / 0.849
32.02	X	0.06 / 3.064
	Y	0.07 / 3.064
	Z	0.04 / 1.073
40.33	X	0.03 / 3.859
	Y	0.02 / 3.859
	Z	0.01 / 1.351
50.73	X	0.08 / 4.854
	Y	0.08 / 4.854
	Z	0.02 / 1.699
63.97	X	0.06 / 6.121
	Y	0.09 / 6.121
	Z	0.02 / 2.142
80.64	X	0.04 / 7.716
	Y	0.08 / 7.716
	Z	0.01 / 2.701



8-OCT-93 16:14:15

Course: Paved
Speed: 35 mph
Note: Loaded

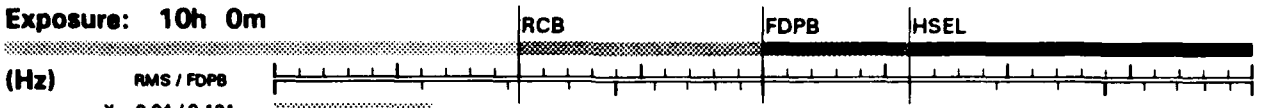
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

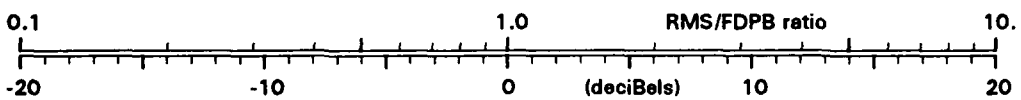
RUN-04
Oct 4, 1993

Driver Seat
HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.04 / 0.191
	Y	0.03 / 0.191
	Z	0.09 / 0.488
1.61	X	0.07 / 0.191
	Y	0.05 / 0.191
	Z	0.13 / 0.422
2.02	X	0.05 / 0.194
	Y	0.05 / 0.194
	Z	0.25 / 0.377
2.53	X	0.04 / 0.242
	Y	0.04 / 0.242
	Z	0.28 / 0.337
3.14	X	0.04 / 0.300
	Y	0.02 / 0.300
	Z	0.11 / 0.302
3.94	X	0.14 / 0.377
	Y	0.17 / 0.377
	Z	0.23 / 0.270
5.05	X	0.16 / 0.484
	Y	0.19 / 0.484
	Z	0.23 / 0.268
6.37	X	0.09 / 0.610
	Y	0.06 / 0.610
	Z	0.06 / 0.268
7.98	X	0.15 / 0.764
	Y	0.15 / 0.764
	Z	0.10 / 0.268
10.10	X	0.16 / 0.966
	Y	0.19 / 0.966
	Z	0.12 / 0.338
12.74	X	0.16 / 1.219
	Y	0.07 / 1.219
	Z	0.06 / 0.427
15.97	X	0.07 / 1.528
	Y	0.04 / 1.528
	Z	0.04 / 0.535
20.10	X	0.07 / 1.924
	Y	0.07 / 1.924
	Z	0.04 / 0.673
25.36	X	0.05 / 2.427
	Y	0.06 / 2.427
	Z	0.03 / 0.849
32.02	X	0.08 / 3.064
	Y	0.08 / 3.064
	Z	0.03 / 1.073
40.33	X	0.03 / 3.859
	Y	0.02 / 3.859
	Z	0.02 / 1.351
50.73	X	0.03 / 4.854
	Y	0.02 / 4.854
	Z	0.02 / 1.699
63.97	X	0.14 / 6.121
	Y	0.07 / 6.121
	Z	0.03 / 2.142
80.64	X	0.03 / 7.716
	Y	0.02 / 7.716
	Z	0.01 / 2.701



8-OCT-93 16:14:16

Course: Paved
Speed: 40 mph
Note: Loaded

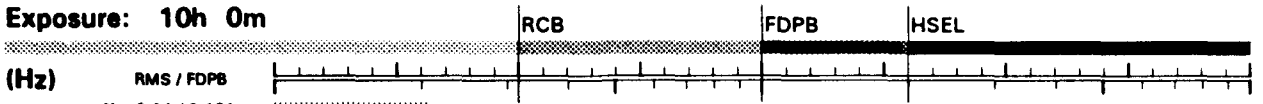
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

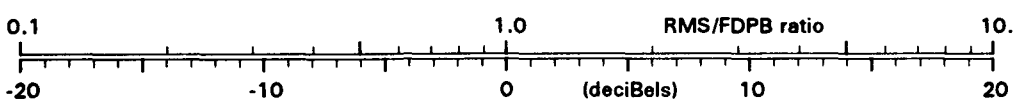
RUN-04
Oct 4, 1993

Front Seat
HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.04 / 0.191
	Y	0.03 / 0.191
	Z	0.08 / 0.488
1.61	X	0.09 / 0.191
	Y	0.04 / 0.191
	Z	0.12 / 0.422
2.02	X	0.07 / 0.194
	Y	0.03 / 0.194
	Z	0.23 / 0.377
2.53	X	0.04 / 0.242
	Y	0.02 / 0.242
	Z	0.28 / 0.337
3.14	X	0.02 / 0.300
	Y	0.02 / 0.300
	Z	0.12 / 0.302
3.94	X	0.11 / 0.377
	Y	0.18 / 0.377
	Z	0.35 / 0.270
5.05	X	0.13 / 0.484
	Y	0.20 / 0.484
	Z	0.37 / 0.268
6.37	X	0.09 / 0.610
	Y	0.06 / 0.610
	Z	0.06 / 0.268
7.98	X	0.21 / 0.764
	Y	0.16 / 0.764
	Z	0.12 / 0.268
10.10	X	0.25 / 0.966
	Y	0.21 / 0.966
	Z	0.14 / 0.338
12.74	X	0.25 / 1.219
	Y	0.04 / 1.219
	Z	0.08 / 0.427
15.97	X	0.06 / 1.528
	Y	0.10 / 1.528
	Z	0.06 / 0.535
20.10	X	0.04 / 1.924
	Y	0.09 / 1.924
	Z	0.05 / 0.673
25.36	X	0.04 / 2.427
	Y	0.03 / 2.427
	Z	0.02 / 0.849
32.02	X	0.07 / 3.064
	Y	0.03 / 3.064
	Z	0.03 / 1.073
40.33	X	0.06 / 3.859
	Y	0.02 / 3.859
	Z	0.01 / 1.351
50.73	X	0.07 / 4.864
	Y	0.02 / 4.864
	Z	0.02 / 1.699
63.97	X	0.13 / 6.121
	Y	0.08 / 6.121
	Z	0.02 / 2.142
80.64	X	0.02 / 7.716
	Y	0.02 / 7.716
	Z	0.00 / 2.701



8-OCT-93 16:14:16

Course: Paved
Speed: 40 mph
Note: Loaded

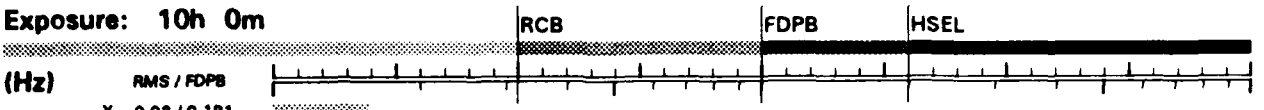
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

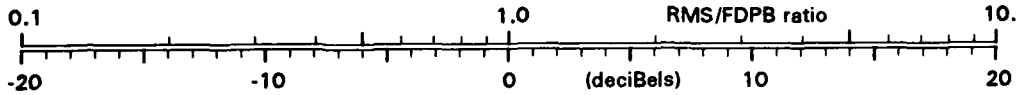
RUN-04 — **Roadside Seat**

Oct 4, 1993 — **HET Ride Quality**

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.03 / 0.191
	Y	0.03 / 0.191
	Z	0.08 / 0.488
1.61	X	0.06 / 0.191
	Y	0.03 / 0.191
	Z	0.12 / 0.422
2.02	X	0.05 / 0.194
	Y	0.03 / 0.194
	Z	0.19 / 0.377
2.53	X	0.02 / 0.242
	Y	0.03 / 0.242
	Z	0.21 / 0.337
3.14	X	0.02 / 0.300
	Y	0.02 / 0.300
	Z	0.10 / 0.302
3.94	X	0.21 / 0.377
	Y	0.13 / 0.377
	Z	0.33 / 0.270
5.05	X	0.24 / 0.484
	Y	0.15 / 0.484
	Z	0.36 / 0.268
6.37	X	0.15 / 0.610
	Y	0.08 / 0.610
	Z	0.12 / 0.268
7.98	X	0.20 / 0.764
	Y	0.21 / 0.764
	Z	0.14 / 0.268
10.10	X	0.20 / 0.966
	Y	0.29 / 0.966
	Z	0.12 / 0.338
12.74	X	0.20 / 1.219
	Y	0.10 / 1.219
	Z	0.08 / 0.427
15.97	X	0.08 / 1.528
	Y	0.05 / 1.528
	Z	0.05 / 0.535
20.10	X	0.05 / 1.924
	Y	0.08 / 1.924
	Z	0.08 / 0.673
25.36	X	0.04 / 2.427
	Y	0.05 / 2.427
	Z	0.04 / 0.849
32.02	X	0.08 / 3.064
	Y	0.08 / 3.064
	Z	0.05 / 1.073
40.33	X	0.03 / 3.859
	Y	0.02 / 3.859
	Z	0.01 / 1.351
50.73	X	0.03 / 4.854
	Y	0.02 / 4.854
	Z	0.01 / 1.699
63.97	X	0.05 / 6.121
	Y	0.04 / 6.121
	Z	0.04 / 2.142
80.64	X	0.02 / 7.716
	Y	0.02 / 7.716
	Z	0.01 / 2.701



8-OCT-93 16:14:16

Course: Paved
Speed: 40 mph
Note: Loaded

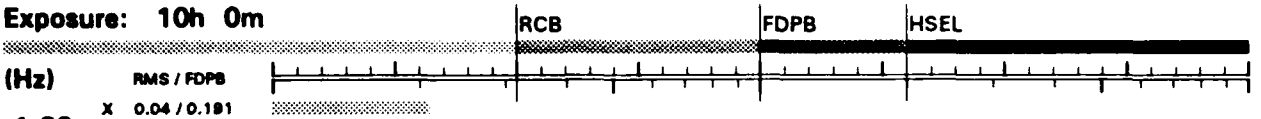
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

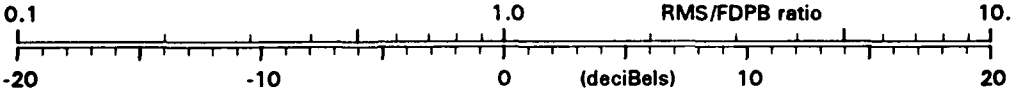
RUN-04
Oct 4, 1993

Curbside Seat
HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.04 / 0.191
	Y	0.03 / 0.191
	Z	0.08 / 0.488
1.61	X	0.07 / 0.191
	Y	0.04 / 0.191
	Z	0.11 / 0.422
2.02	X	0.06 / 0.194
	Y	0.03 / 0.194
	Z	0.19 / 0.377
2.53	X	0.02 / 0.242
	Y	0.02 / 0.242
	Z	0.23 / 0.337
3.14	X	0.02 / 0.300
	Y	0.02 / 0.300
	Z	0.10 / 0.302
3.94	X	0.19 / 0.377
	Y	0.12 / 0.377
	Z	0.33 / 0.270
5.05	X	0.23 / 0.484
	Y	0.14 / 0.484
	Z	0.35 / 0.268
6.37	X	0.15 / 0.610
	Y	0.08 / 0.610
	Z	0.11 / 0.268
7.98	X	0.21 / 0.764
	Y	0.22 / 0.764
	Z	0.11 / 0.268
10.10	X	0.21 / 0.966
	Y	0.29 / 0.966
	Z	0.10 / 0.338
12.74	X	0.20 / 1.219
	Y	0.12 / 1.219
	Z	0.08 / 0.427
15.97	X	0.05 / 1.528
	Y	0.06 / 1.528
	Z	0.05 / 0.535
20.10	X	0.05 / 1.924
	Y	0.06 / 1.924
	Z	0.05 / 0.673
25.36	X	0.05 / 2.427
	Y	0.04 / 2.427
	Z	0.03 / 0.849
32.02	X	0.09 / 3.064
	Y	0.09 / 3.064
	Z	0.03 / 1.073
40.33	X	0.03 / 3.859
	Y	0.02 / 3.859
	Z	0.01 / 1.351
50.73	X	0.03 / 4.854
	Y	0.02 / 4.854
	Z	0.00 / 1.699
63.97	X	0.07 / 6.121
	Y	0.05 / 6.121
	Z	0.02 / 2.142
80.64	X	0.03 / 7.716
	Y	0.03 / 7.716
	Z	0.00 / 2.701



8-OCT-93 16:14:16

Course: Paved
Speed: 40 mph
Note: Loaded

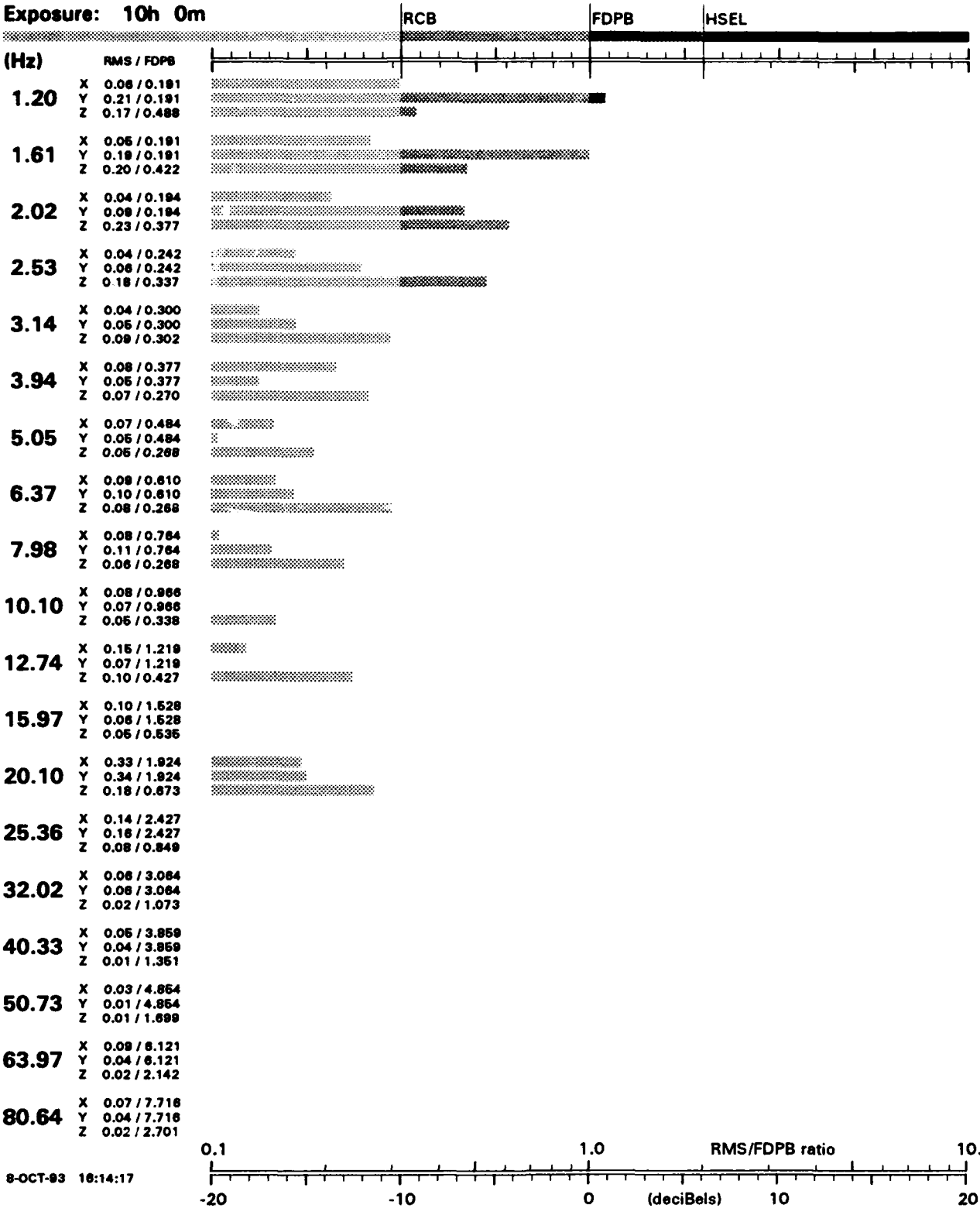
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

RUN-05 — **Driver Seat**

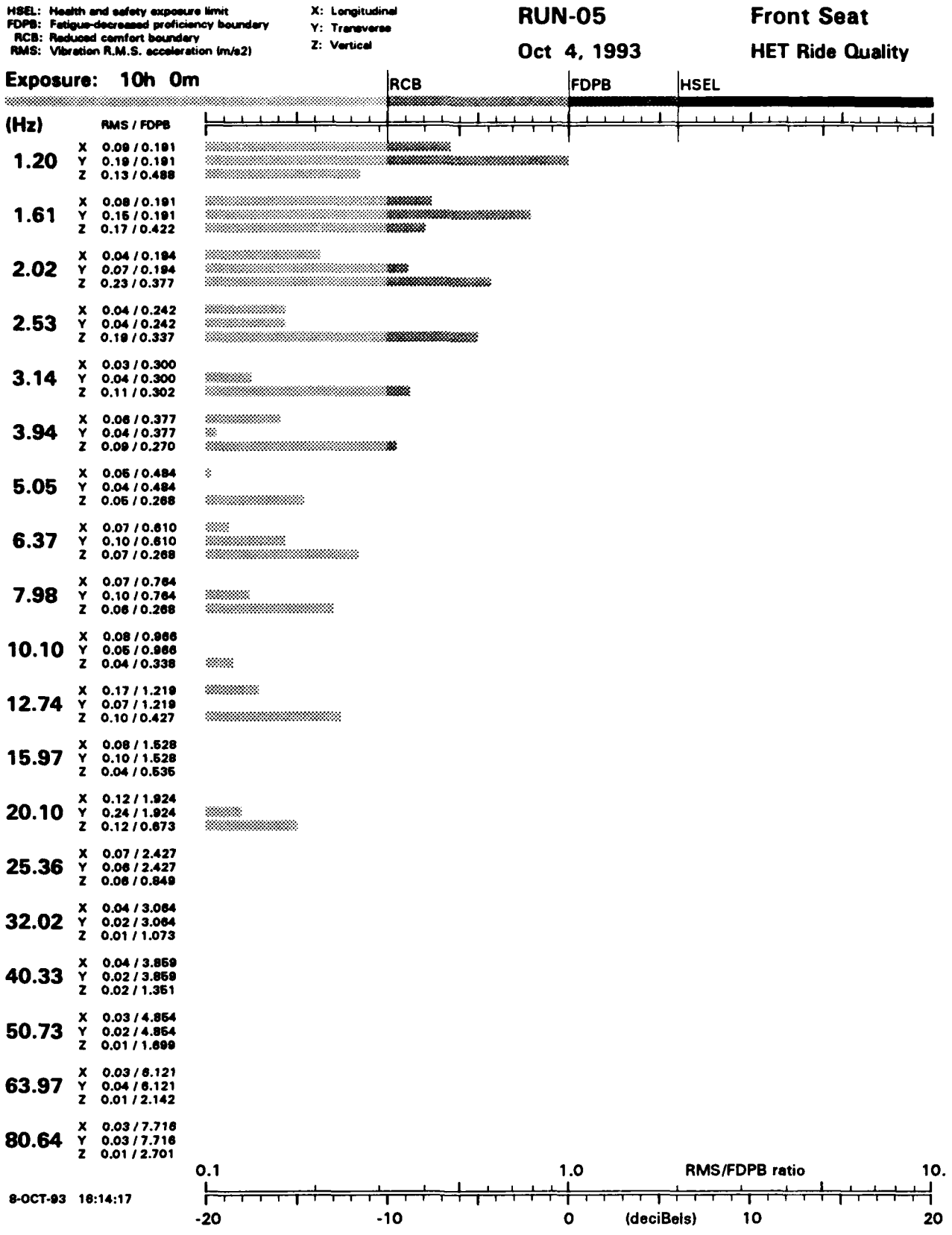
Oct 4, 1993 — **HET Ride Quality**

Exposure: 10h 0m

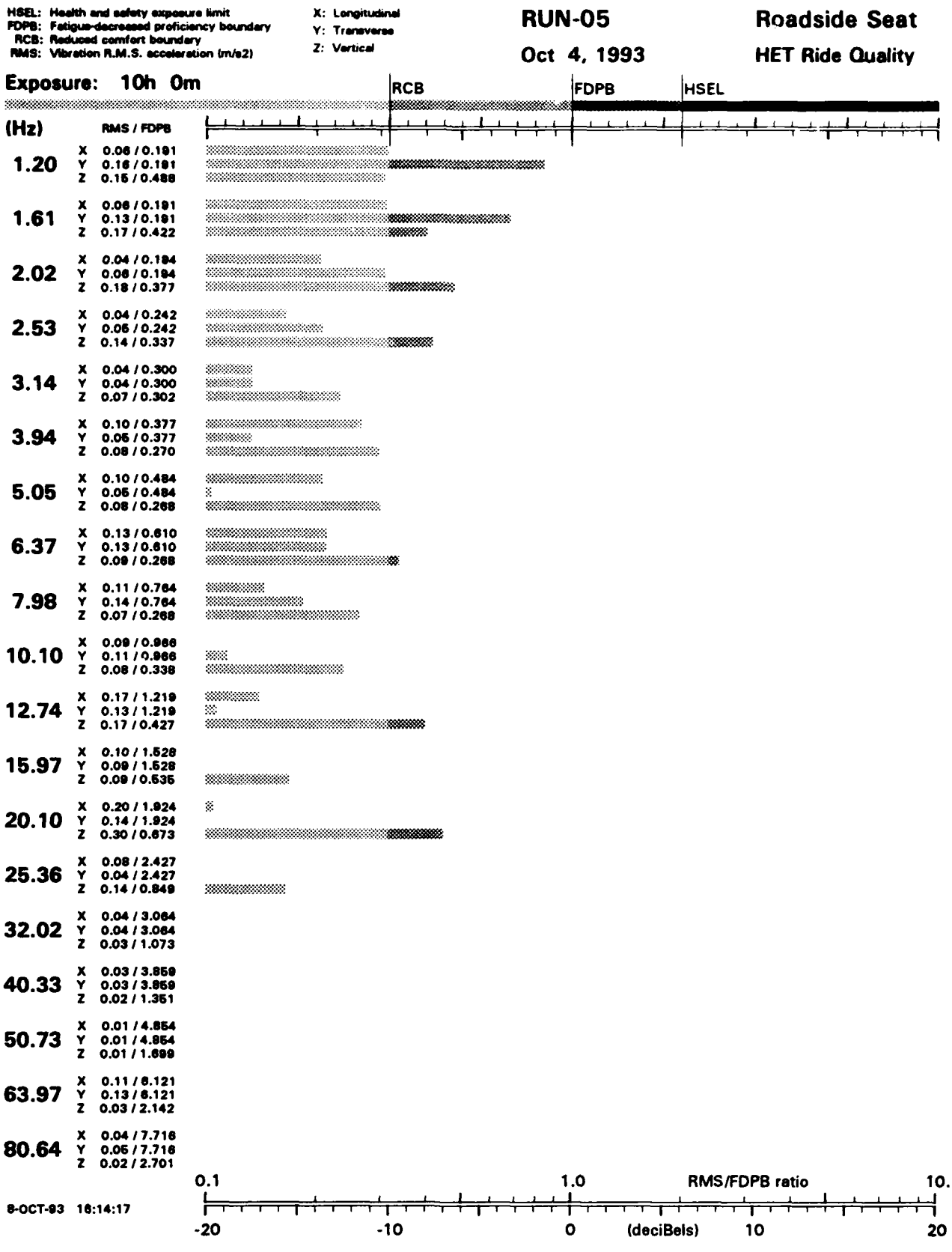


8-OCT-93 16:14:17

Course: Cross Country #2
Speed: 5 mph
Note: Loaded



Course: Cross Country #2
Speed: 5 mph
Note: Loaded



Course: Cross Country #2
Speed: 5 mph
Note: Loaded

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

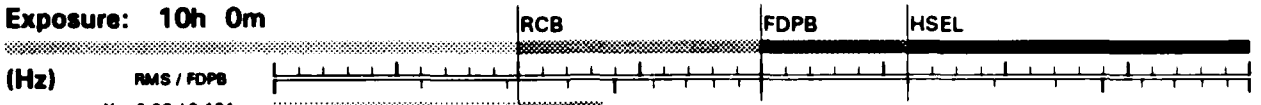
RUN-05

Oct 4, 1993

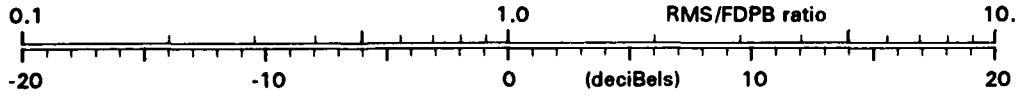
Curbside Seat

HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.09 / 0.191
	Y	0.13 / 0.191
	Z	0.14 / 0.488
1.61	X	0.08 / 0.191
	Y	0.10 / 0.191
	Z	0.16 / 0.422
2.02	X	0.05 / 0.194
	Y	0.05 / 0.194
	Z	0.20 / 0.377
2.53	X	0.05 / 0.242
	Y	0.04 / 0.242
	Z	0.16 / 0.337
3.14	X	0.05 / 0.300
	Y	0.03 / 0.300
	Z	0.08 / 0.302
3.94	X	0.09 / 0.377
	Y	0.05 / 0.377
	Z	0.08 / 0.270
5.05	X	0.09 / 0.484
	Y	0.06 / 0.484
	Z	0.05 / 0.268
6.37	X	0.12 / 0.610
	Y	0.12 / 0.610
	Z	0.08 / 0.268
7.98	X	0.09 / 0.764
	Y	0.14 / 0.764
	Z	0.05 / 0.268
10.10	X	0.07 / 0.966
	Y	0.11 / 0.966
	Z	0.06 / 0.338
12.74	X	0.17 / 1.219
	Y	0.15 / 1.219
	Z	0.14 / 0.427
15.97	X	0.08 / 1.528
	Y	0.09 / 1.528
	Z	0.05 / 0.535
20.10	X	0.11 / 1.924
	Y	0.14 / 1.924
	Z	0.18 / 0.673
25.36	X	0.06 / 2.427
	Y	0.04 / 2.427
	Z	0.08 / 0.849
32.02	X	0.02 / 3.064
	Y	0.03 / 3.064
	Z	0.02 / 1.073
40.33	X	0.02 / 3.859
	Y	0.03 / 3.859
	Z	0.01 / 1.351
50.73	X	0.02 / 4.854
	Y	0.01 / 4.854
	Z	0.01 / 1.699
63.97	X	0.03 / 8.121
	Y	0.13 / 8.121
	Z	0.02 / 2.142
80.64	X	0.03 / 7.716
	Y	0.06 / 7.716
	Z	0.01 / 2.701



8-OCT-93 16:14:17

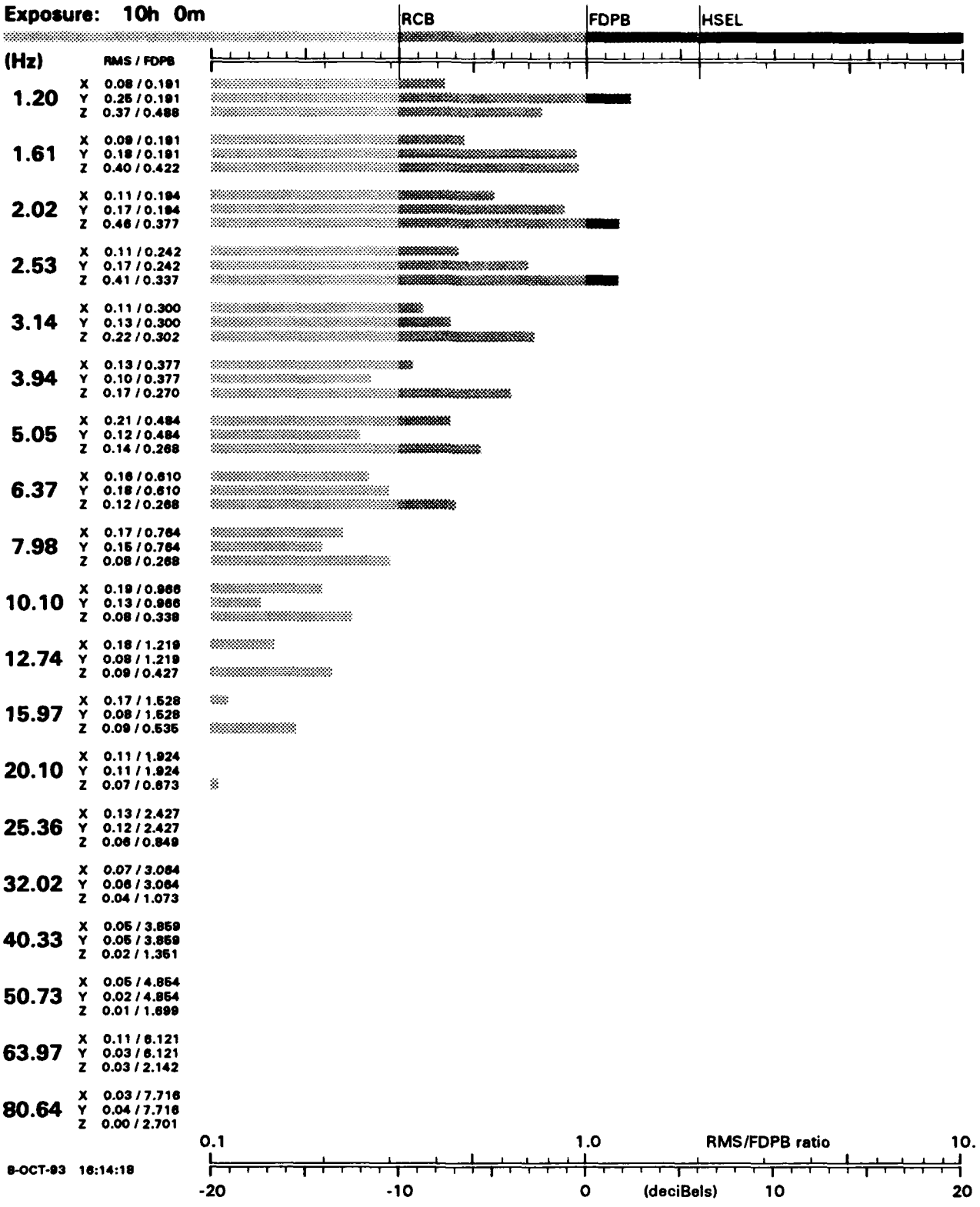
Course: Cross Country #2
Speed: 5 mph
Note: Loaded

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

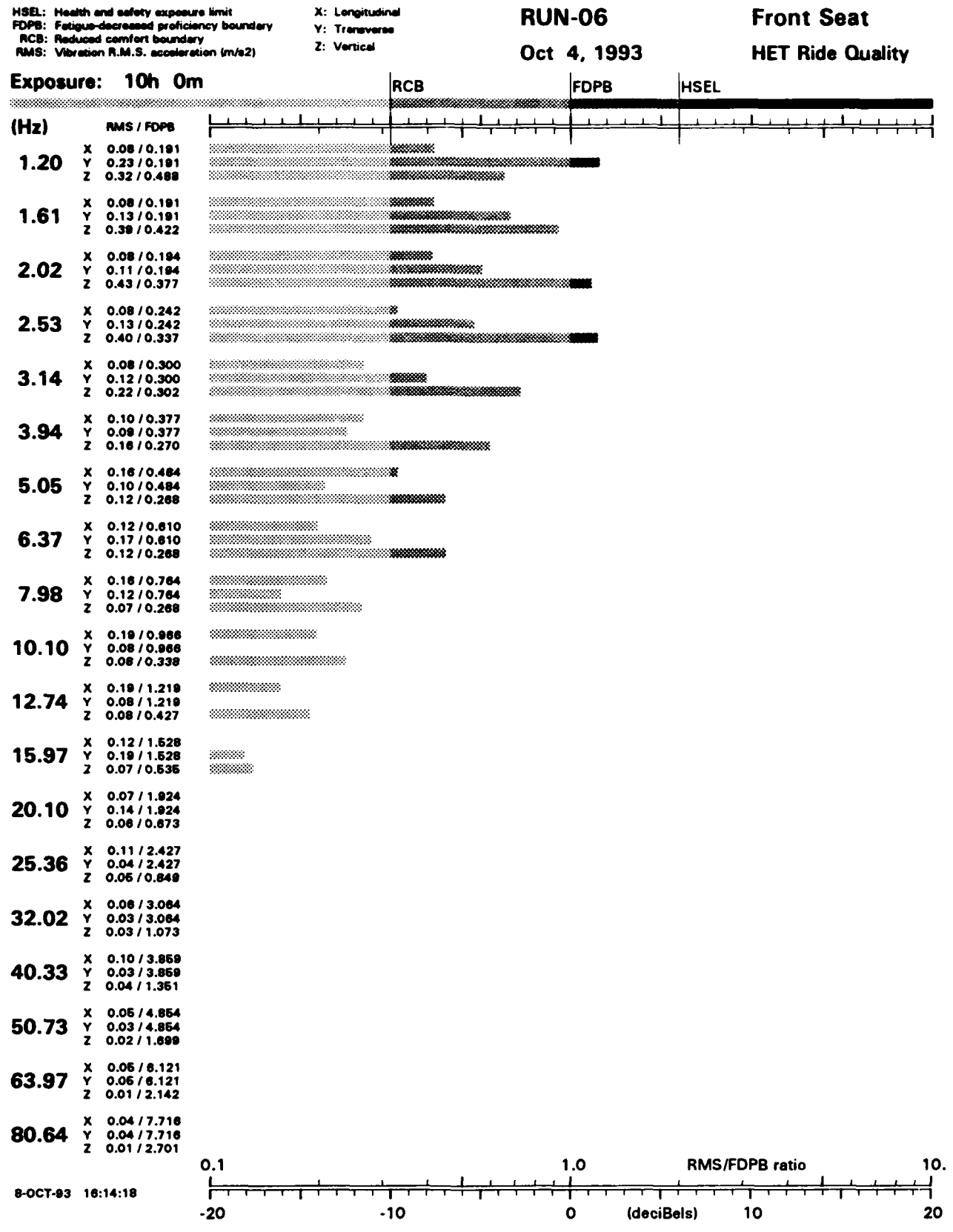
X: Longitudinal
Y: Transverse
Z: Vertical

RUN-06 **Driver Seat**

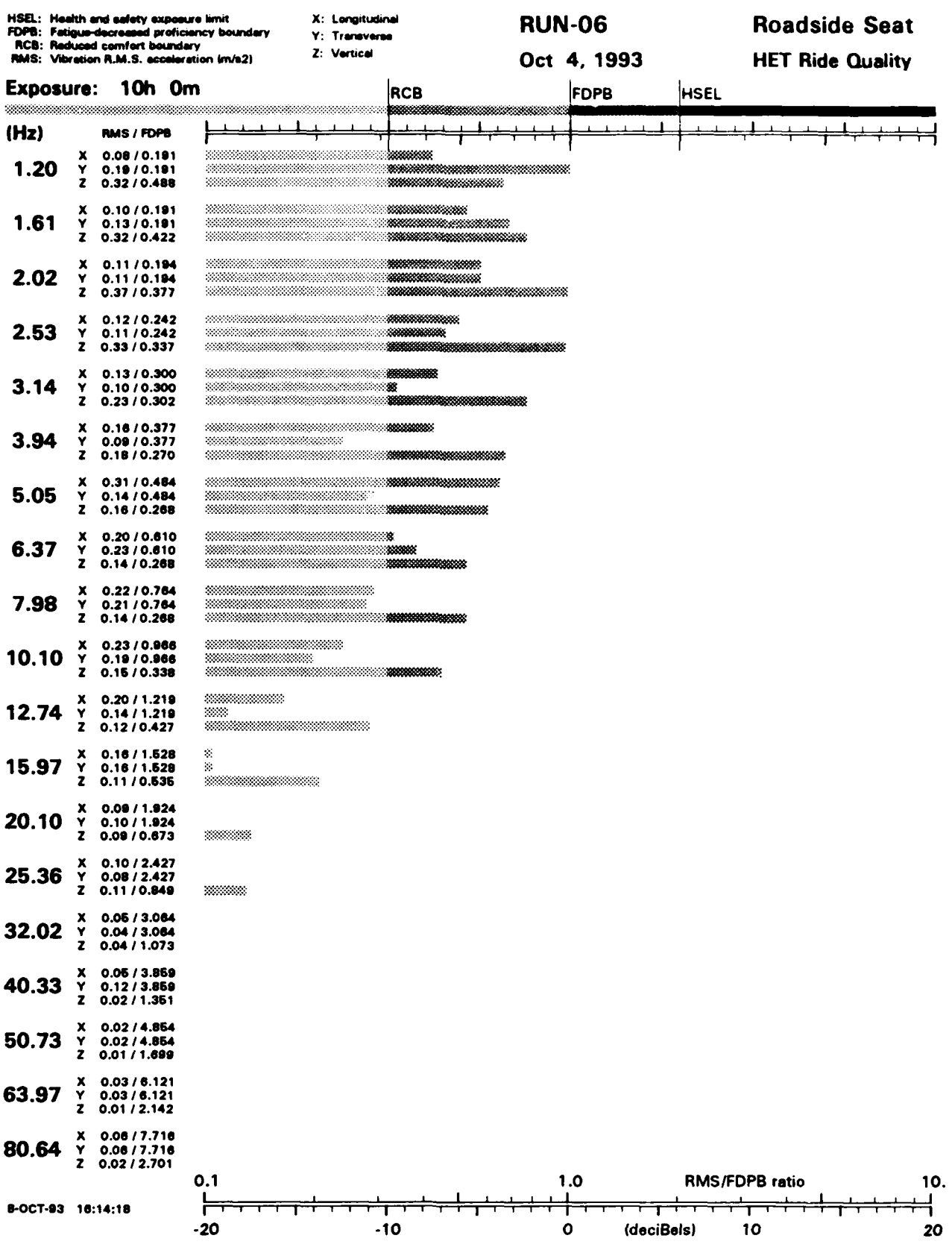
Oct 4, 1993 **HET Ride Quality**



Course: Cross Country #2
Speed: 10 mph
Note: Loaded



Course: Cross Country #2
Speed: 10 mph
Note: Loaded



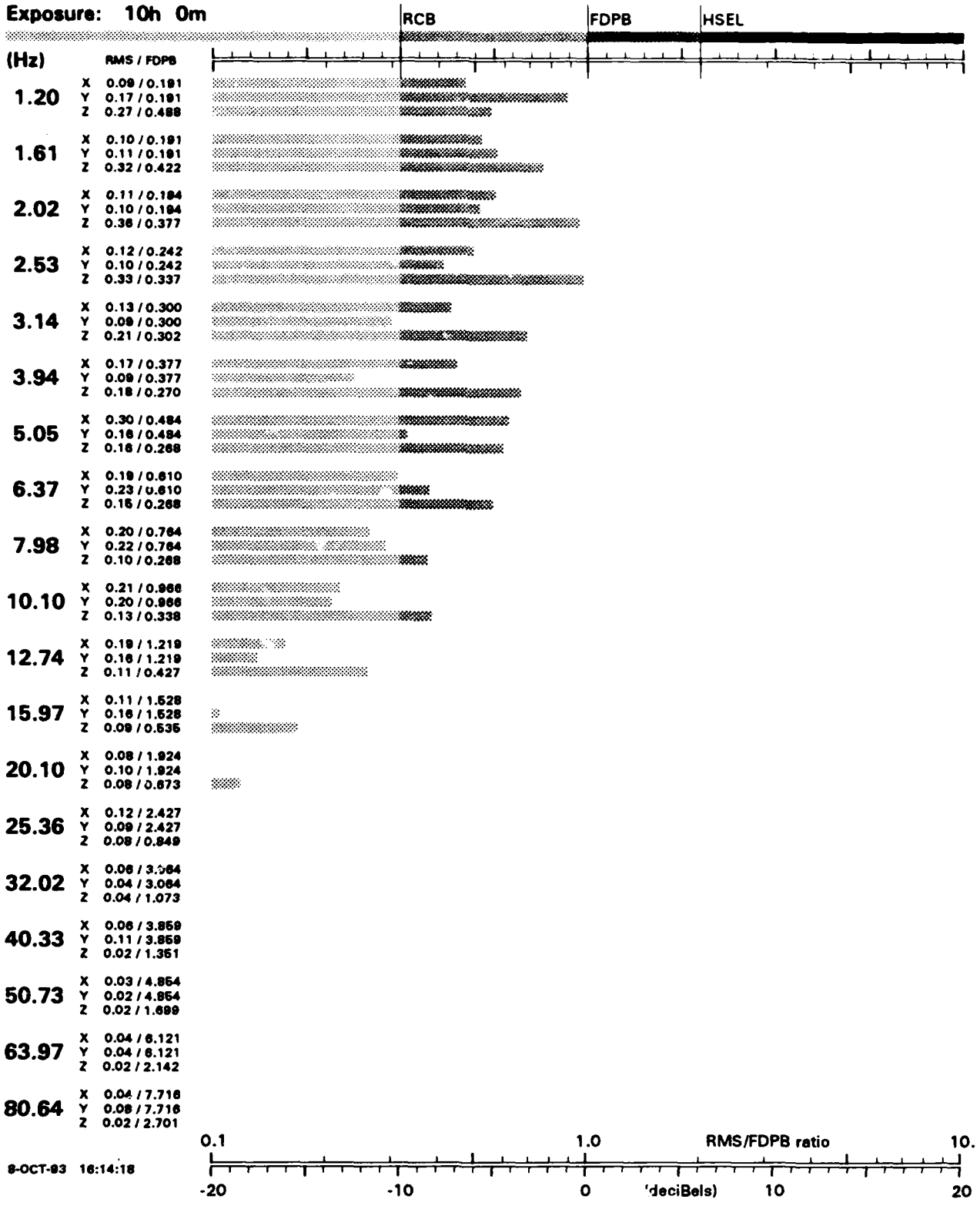
Course: Cross Country #2
Speed: 10 mph
Note: Loaded

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

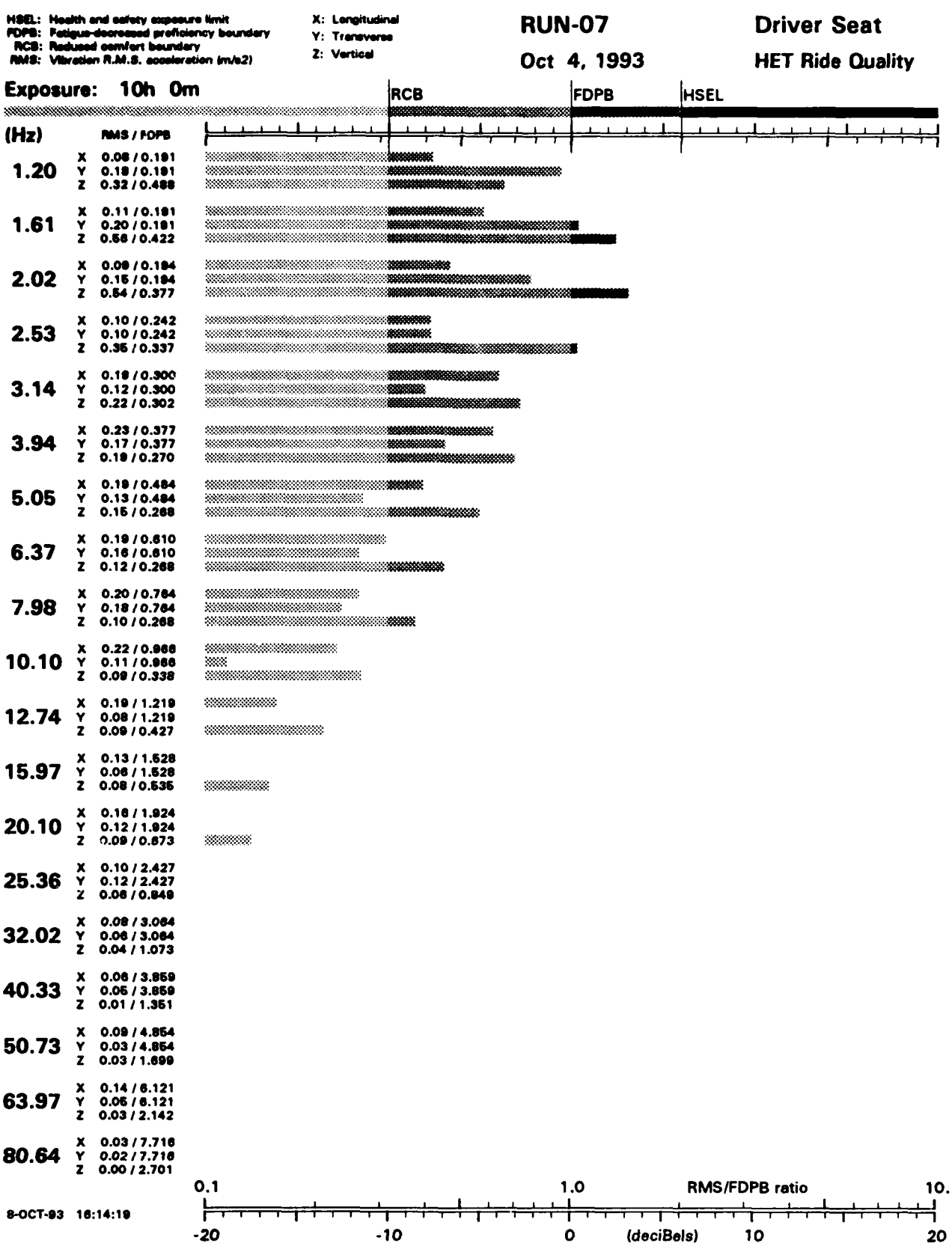
X: Longitudinal
Y: Transverse
Z: Vertical

RUN-06
Oct 4, 1993

Curbside Seat
HET Ride Quality



Course: Cross Country #2
Speed: 10 mph
Note: Loaded



Course: Cross Country #2
Speed: 15 mph
Note: Loaded

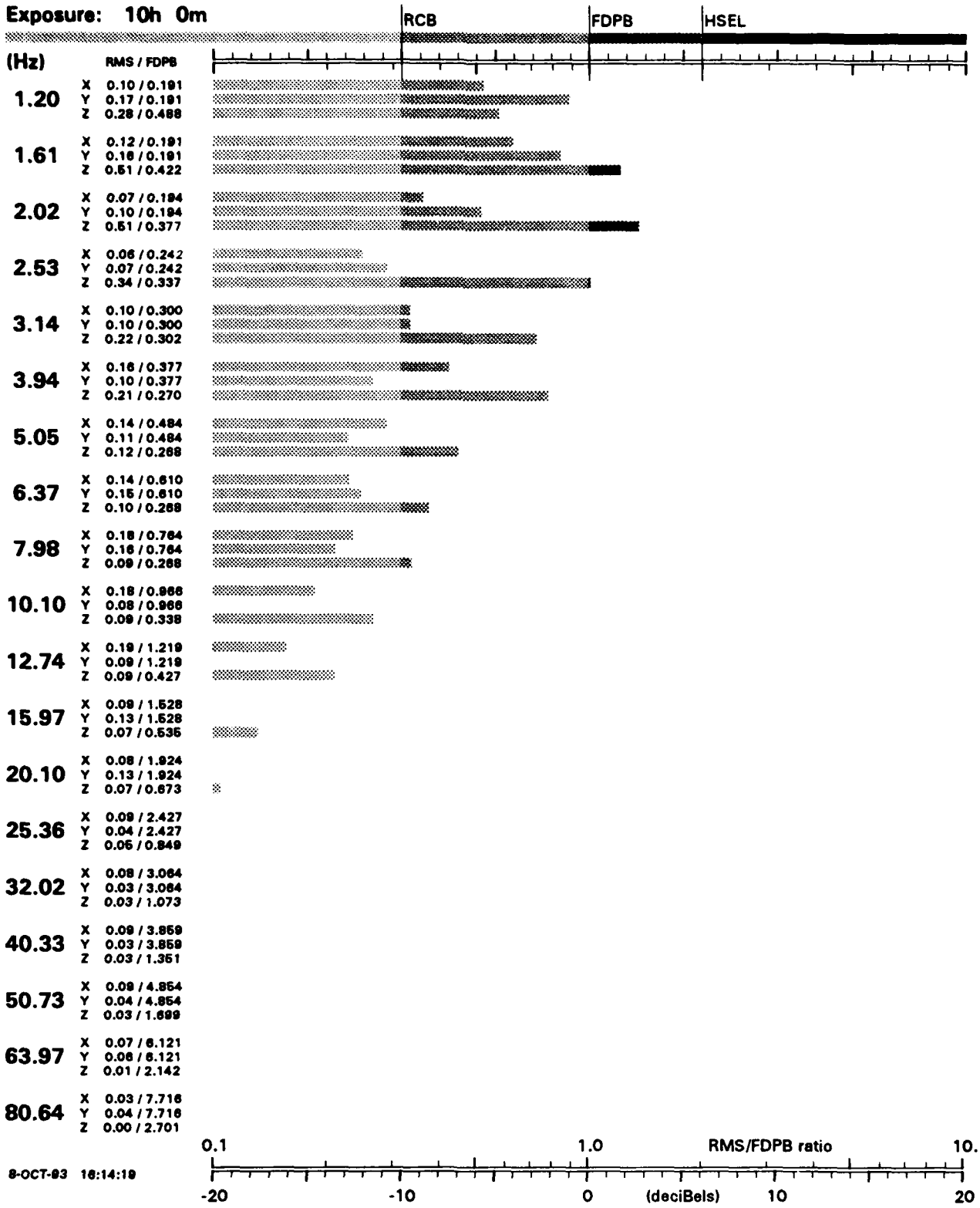
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

RUN-07
Oct 4, 1993

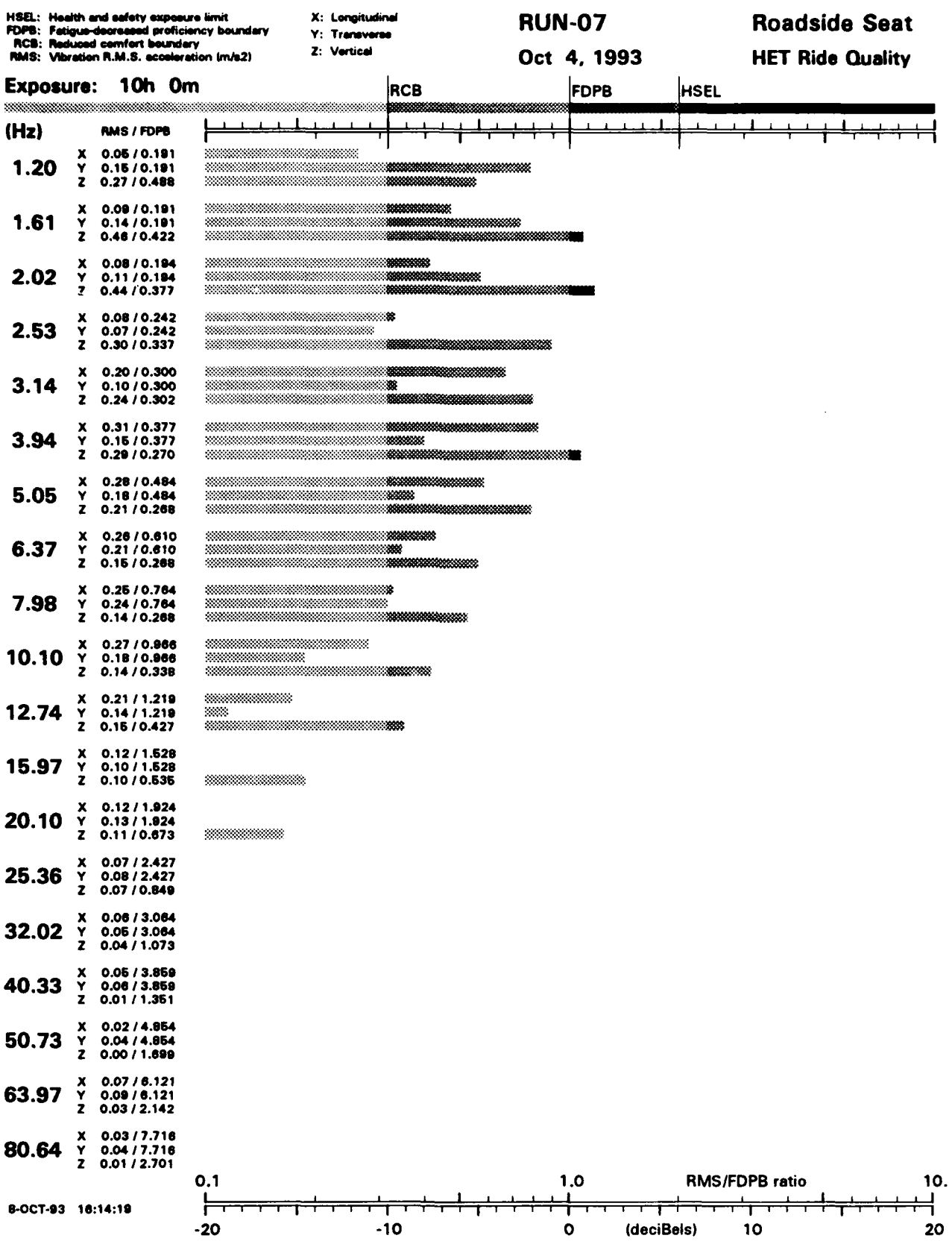
Front Seat
HET Ride Quality

Exposure: 10h 0m

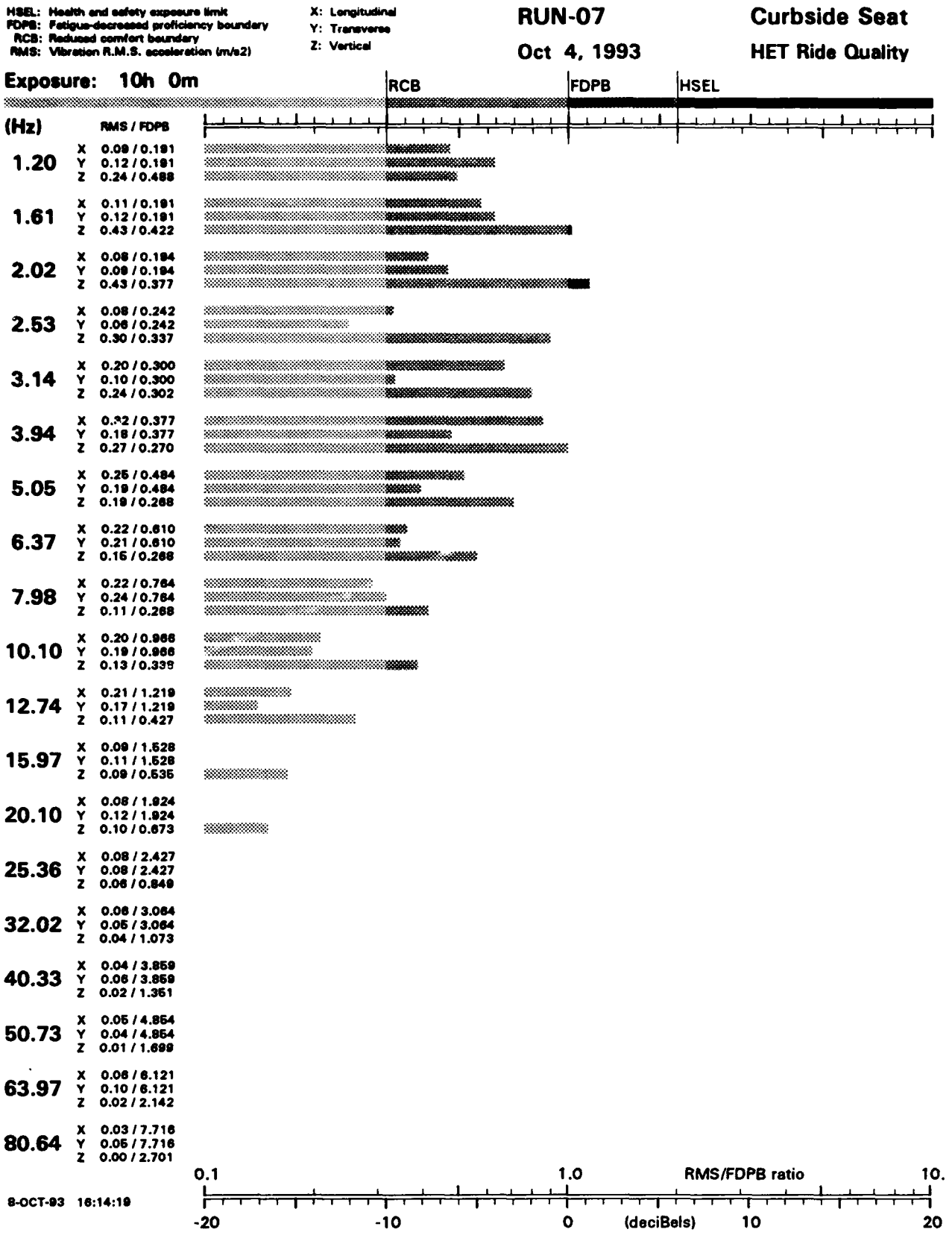


8-OCT-93 16:14:19

Course: Cross Country #2
Speed: 15 mph
Note: Loaded



Course: Cross Country #2
Speed: 15 mph
Note: Loaded



Course: Cross Country #2
Speed: 15 mph
Note: Loaded

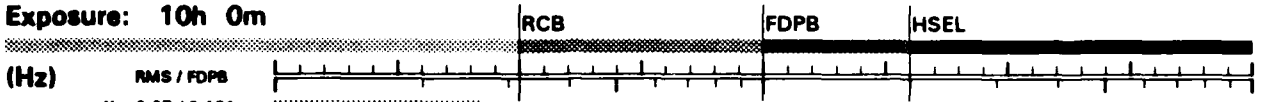
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

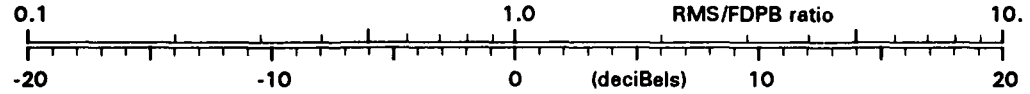
RUN-08 — **Driver Seat**

Oct 4, 1993 — **HET Ride Quality**

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.05 / 0.191
	Y	0.16 / 0.191
	Z	0.18 / 0.488
1.61	X	0.05 / 0.191
	Y	0.13 / 0.191
	Z	0.24 / 0.422
2.02	X	0.06 / 0.194
	Y	0.12 / 0.194
	Z	0.36 / 0.377
2.53	X	0.08 / 0.242
	Y	0.13 / 0.242
	Z	0.38 / 0.337
3.14	X	0.12 / 0.300
	Y	0.11 / 0.300
	Z	0.20 / 0.302
3.94	X	0.14 / 0.377
	Y	0.10 / 0.377
	Z	0.18 / 0.270
5.05	X	0.16 / 0.484
	Y	0.10 / 0.484
	Z	0.11 / 0.268
6.37	X	0.19 / 0.610
	Y	0.18 / 0.610
	Z	0.12 / 0.268
7.98	X	0.15 / 0.764
	Y	0.16 / 0.764
	Z	0.08 / 0.268
10.10	X	0.16 / 0.966
	Y	0.10 / 0.966
	Z	0.08 / 0.338
12.74	X	0.17 / 1.219
	Y	0.07 / 1.219
	Z	0.08 / 0.427
15.97	X	0.23 / 1.528
	Y	0.21 / 1.528
	Z	0.12 / 0.535
20.10	X	0.12 / 1.924
	Y	0.08 / 1.924
	Z	0.07 / 0.673
25.36	X	0.12 / 2.427
	Y	0.11 / 2.427
	Z	0.05 / 0.849
32.02	X	0.05 / 3.064
	Y	0.04 / 3.064
	Z	0.03 / 1.073
40.33	X	0.05 / 3.859
	Y	0.04 / 3.859
	Z	0.02 / 1.351
50.73	X	0.08 / 4.854
	Y	0.02 / 4.854
	Z	0.02 / 1.699
63.97	X	0.05 / 6.121
	Y	0.02 / 6.121
	Z	0.01 / 2.142
80.64	X	0.03 / 7.716
	Y	0.03 / 7.716
	Z	0.00 / 2.701



8-OCT-93 16:14:19

Course: Secondary A
Speed: 10 mph
Note: Loaded

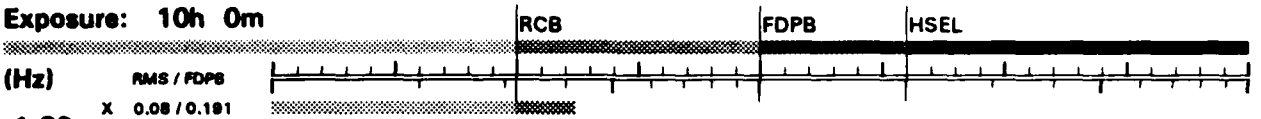
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

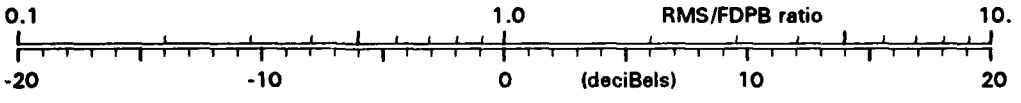
RUN-08
Oct 4, 1993

Front Seat
HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.08 / 0.191
	Y	0.16 / 0.191
	Z	0.15 / 0.488
1.61	X	0.07 / 0.191
	Y	0.11 / 0.191
	Z	0.22 / 0.422
2.02	X	0.06 / 0.194
	Y	0.09 / 0.194
	Z	0.32 / 0.377
2.53	X	0.07 / 0.242
	Y	0.09 / 0.242
	Z	0.42 / 0.337
3.14	X	0.06 / 0.300
	Y	0.08 / 0.300
	Z	0.24 / 0.302
3.94	X	0.08 / 0.377
	Y	0.07 / 0.377
	Z	0.19 / 0.270
5.05	X	0.15 / 0.484
	Y	0.08 / 0.484
	Z	0.11 / 0.268
6.37	X	0.14 / 0.610
	Y	0.16 / 0.610
	Z	0.11 / 0.268
7.98	X	0.14 / 0.764
	Y	0.14 / 0.764
	Z	0.07 / 0.268
10.10	X	0.17 / 0.966
	Y	0.07 / 0.966
	Z	0.08 / 0.338
12.74	X	0.19 / 1.219
	Y	0.06 / 1.219
	Z	0.10 / 0.427
15.97	X	0.22 / 1.528
	Y	0.52 / 1.528
	Z	0.16 / 0.535
20.10	X	0.07 / 1.924
	Y	0.13 / 1.924
	Z	0.07 / 0.673
25.36	X	0.10 / 2.427
	Y	0.04 / 2.427
	Z	0.05 / 0.849
32.02	X	0.05 / 3.064
	Y	0.02 / 3.064
	Z	0.02 / 1.073
40.33	X	0.08 / 3.859
	Y	0.02 / 3.859
	Z	0.02 / 1.351
50.73	X	0.07 / 4.854
	Y	0.03 / 4.854
	Z	0.03 / 1.699
63.97	X	0.03 / 6.121
	Y	0.03 / 6.121
	Z	0.01 / 2.142
80.64	X	0.03 / 7.716
	Y	0.03 / 7.716
	Z	0.01 / 2.701



8-OCT-93 16:14:19

Course: Secondary A
Speed: 10 mph
Note: Loaded

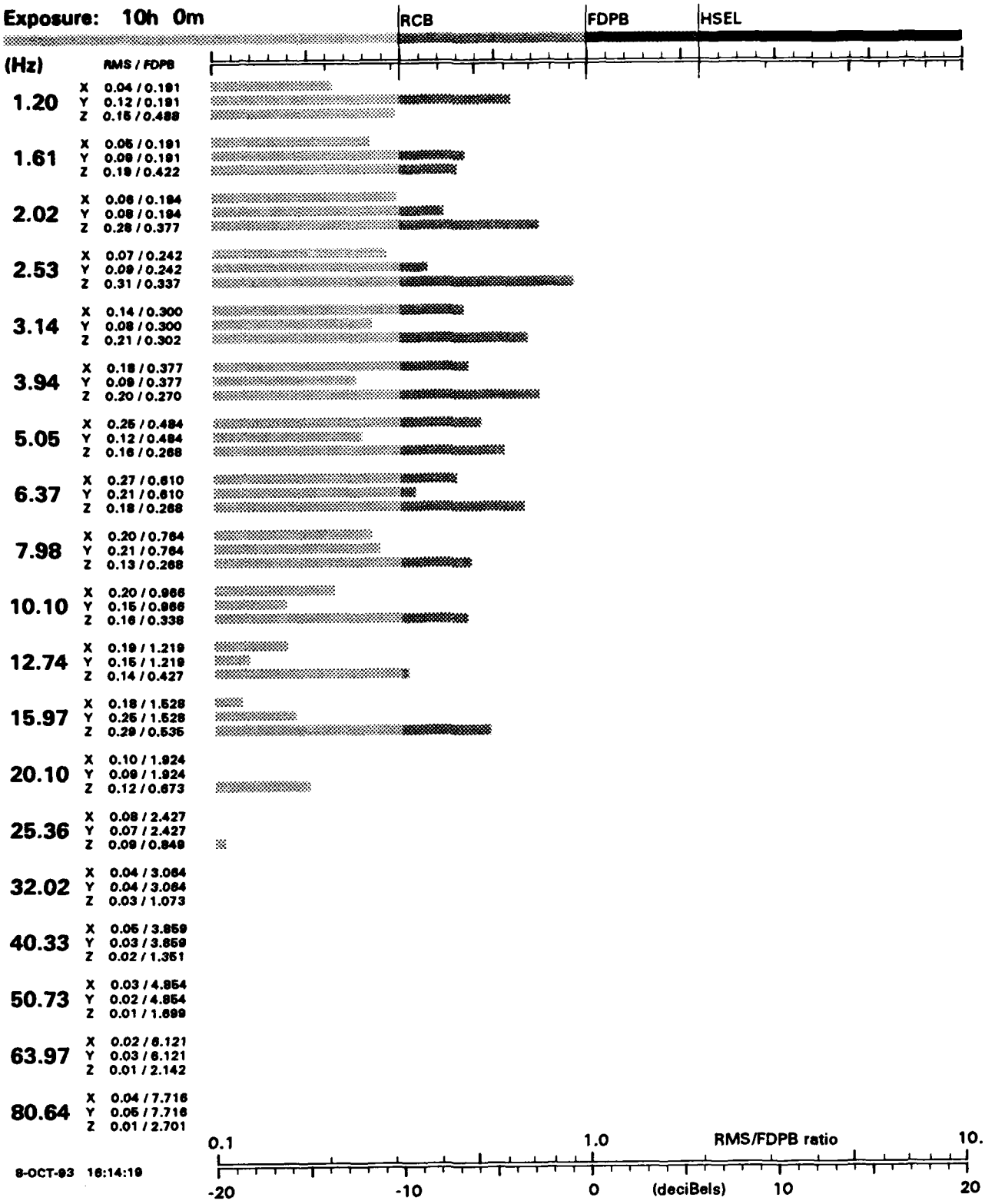
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

RUN-08
Oct 4, 1993

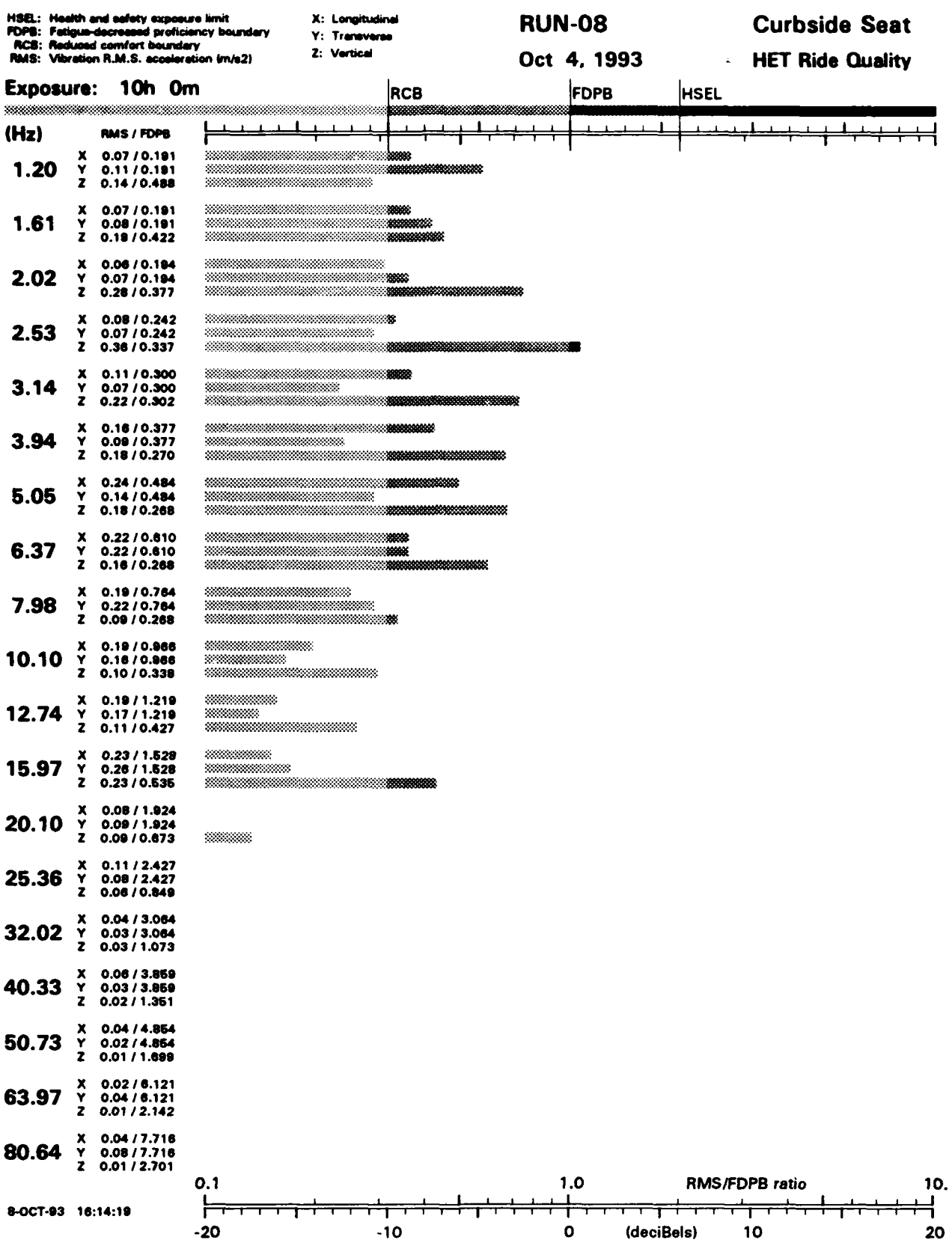
Roadside Seat
HET Ride Quality

Exposure: 10h 0m



8-OCT-93 16:14:19

Course: Secondary A
Speed: 10 mph
Note: Loaded



Course: Secondary A
Speed: 10 mph
Note: Loaded

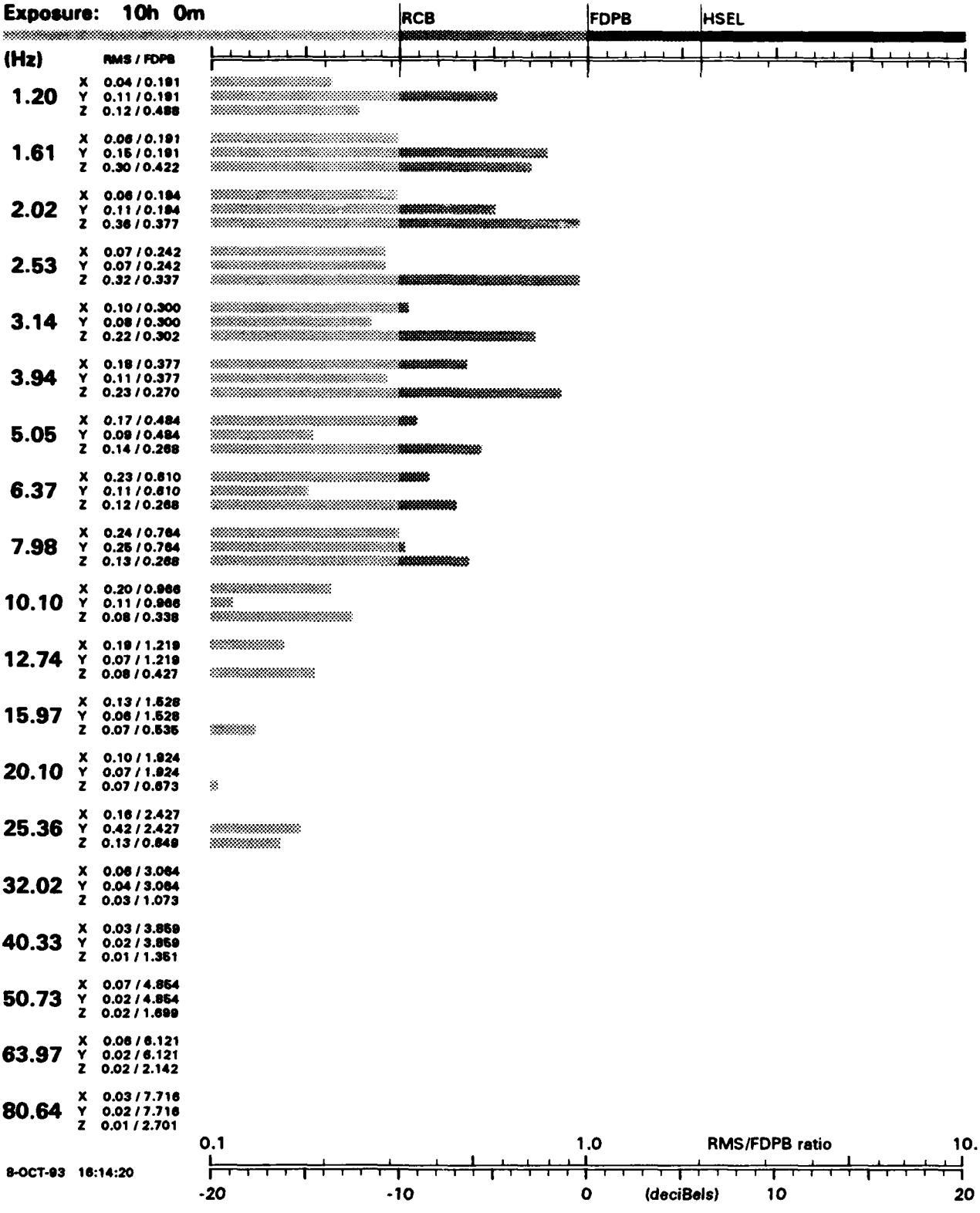
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

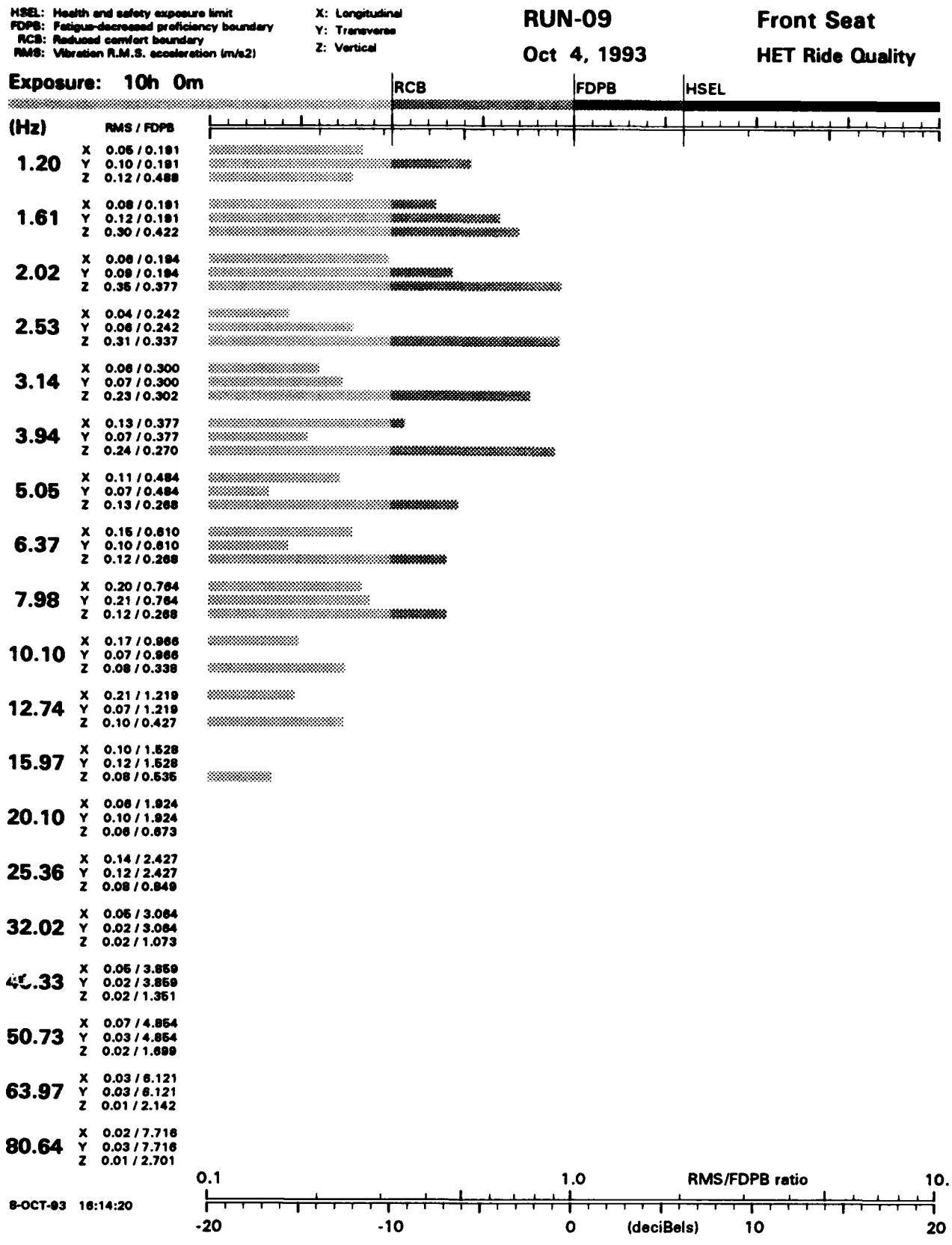
RUN-09
Oct 4, 1993

Driver Seat
HET Ride Quality

Exposure: 10h 0m



Course: Secondary A
Speed: 15 mph
Note: Loaded



Course: Secondary A
Speed: 15 mph
Note: Loaded

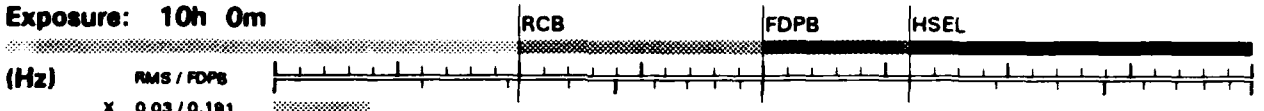
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

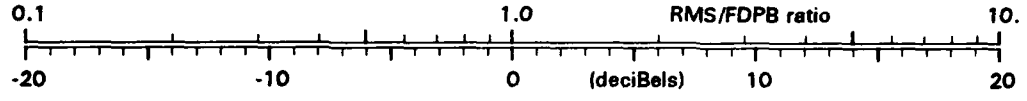
RUN-09
Oct 4, 1993

Roadside Seat
HET Ride Quality

Exposure: 10h 0m

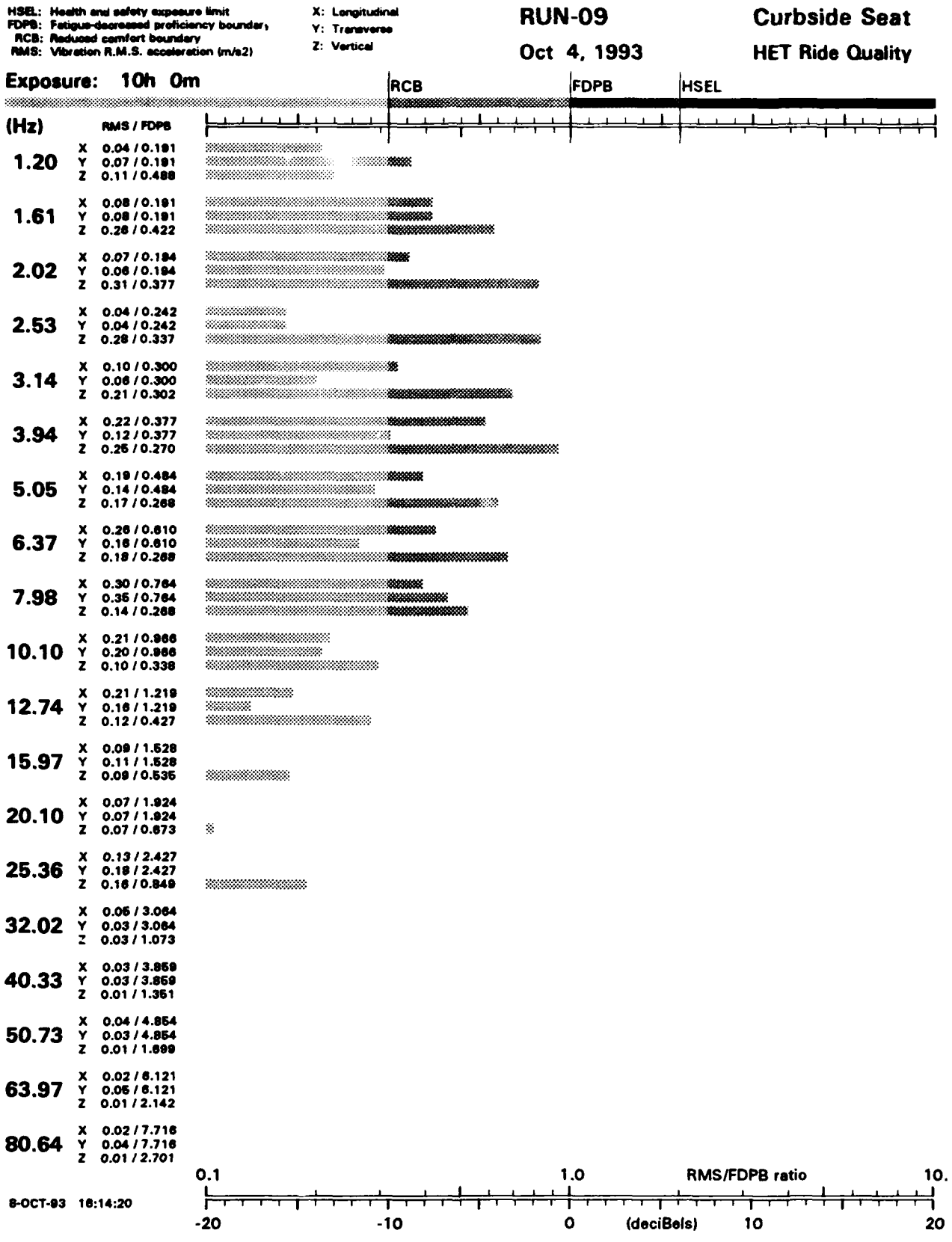


(Hz)		RMS / FDPB
1.20	X	0.03 / 0.191
	Y	0.08 / 0.191
	Z	0.10 / 0.488
1.61	X	0.07 / 0.191
	Y	0.11 / 0.191
	Z	0.24 / 0.422
2.02	X	0.05 / 0.194
	Y	0.08 / 0.194
	Z	0.29 / 0.377
2.53	X	0.04 / 0.242
	Y	0.05 / 0.242
	Z	0.26 / 0.337
3.14	X	0.10 / 0.300
	Y	0.06 / 0.300
	Z	0.20 / 0.302
3.94	X	0.24 / 0.377
	Y	0.10 / 0.377
	Z	0.25 / 0.270
5.05	X	0.24 / 0.484
	Y	0.14 / 0.484
	Z	0.15 / 0.268
6.37	X	0.33 / 0.610
	Y	0.17 / 0.610
	Z	0.15 / 0.268
7.98	X	0.32 / 0.764
	Y	0.35 / 0.764
	Z	0.16 / 0.268
10.10	X	0.24 / 0.966
	Y	0.18 / 0.966
	Z	0.12 / 0.338
12.74	X	0.22 / 1.219
	Y	0.14 / 1.219
	Z	0.14 / 0.427
15.97	X	0.11 / 1.528
	Y	0.10 / 1.528
	Z	0.10 / 0.535
20.10	X	0.08 / 1.924
	Y	0.07 / 1.924
	Z	0.08 / 0.673
25.36	X	0.14 / 2.427
	Y	0.17 / 2.427
	Z	0.27 / 0.849
32.02	X	0.04 / 3.064
	Y	0.04 / 3.064
	Z	0.03 / 1.073
40.33	X	0.02 / 3.859
	Y	0.03 / 3.859
	Z	0.01 / 1.351
50.73	X	0.03 / 4.854
	Y	0.03 / 4.854
	Z	0.01 / 1.699
63.97	X	0.03 / 6.121
	Y	0.04 / 6.121
	Z	0.01 / 2.142
80.64	X	0.03 / 7.716
	Y	0.03 / 7.716
	Z	0.01 / 2.701



8-OCT-93 16:14:20

Course: Secondary A
Speed: 15 mph
Note: Loaded



Course: Secondary A
Speed: 15 mph
Note: Loaded

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

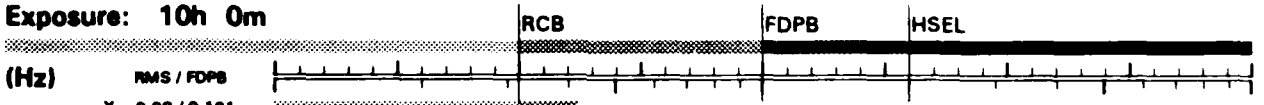
RUN-10

Oct 4, 1993

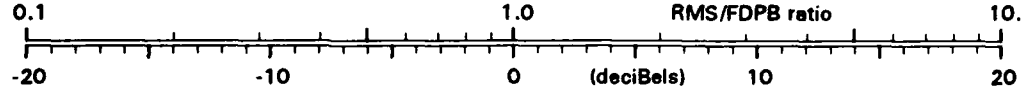
Driver Seat

HET Ride Quality

Exposure: 10h 0m

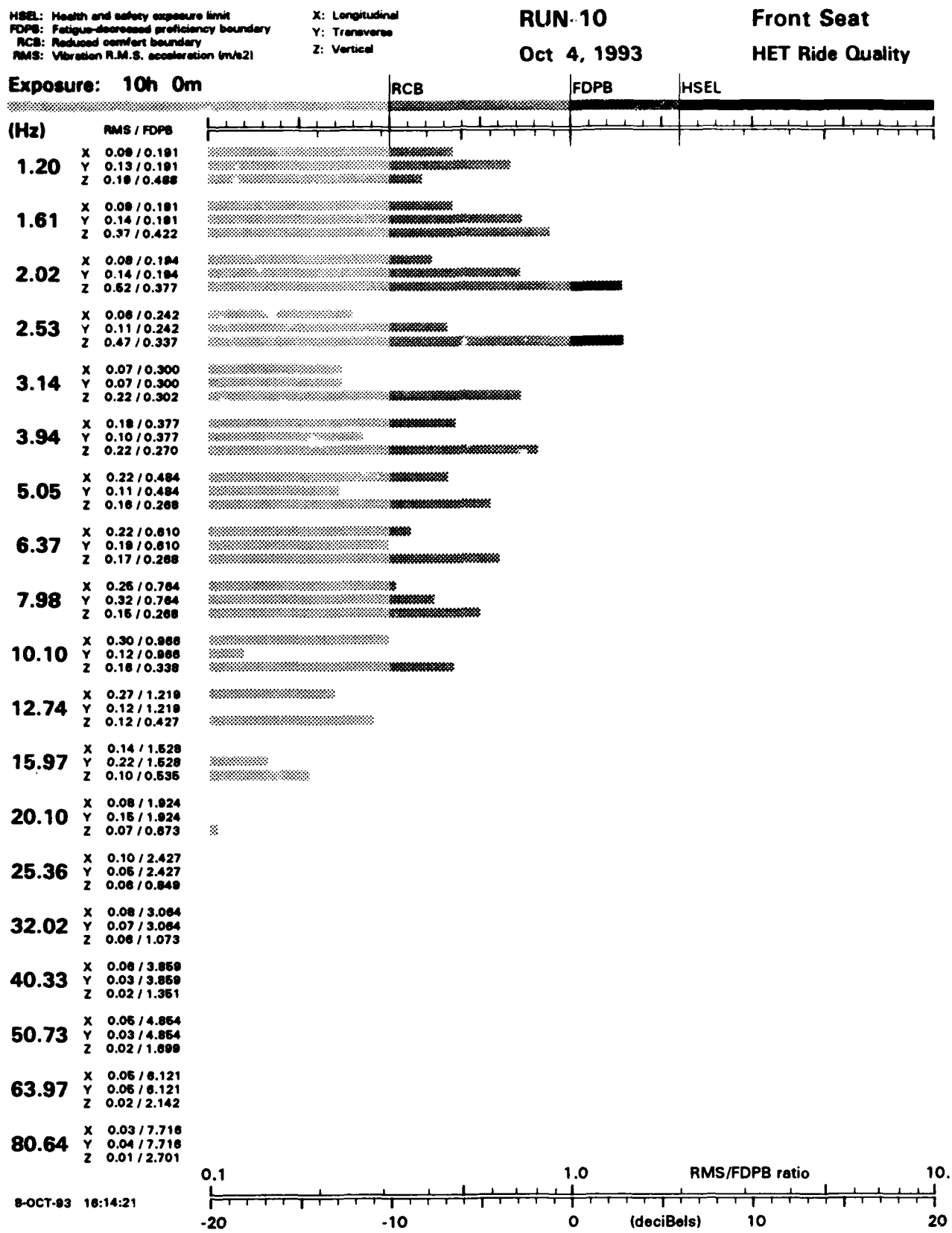


(Hz)		RMS / FDPB
1.20	X	0.08 / 0.191
	Y	0.14 / 0.191
	Z	0.26 / 0.488
1.61	X	0.09 / 0.191
	Y	0.13 / 0.191
	Z	0.39 / 0.422
2.02	X	0.11 / 0.194
	Y	0.18 / 0.194
	Z	0.58 / 0.377
2.53	X	0.10 / 0.242
	Y	0.13 / 0.242
	Z	0.50 / 0.337
3.14	X	0.10 / 0.300
	Y	0.09 / 0.300
	Z	0.21 / 0.302
3.94	X	0.22 / 0.377
	Y	0.15 / 0.377
	Z	0.22 / 0.270
5.05	X	0.27 / 0.484
	Y	0.16 / 0.484
	Z	0.17 / 0.268
6.37	X	0.31 / 0.610
	Y	0.23 / 0.610
	Z	0.19 / 0.268
7.98	X	0.34 / 0.764
	Y	0.39 / 0.764
	Z	0.17 / 0.268
10.10	X	0.38 / 0.966
	Y	0.19 / 0.966
	Z	0.13 / 0.338
12.74	X	0.33 / 1.219
	Y	0.12 / 1.219
	Z	0.12 / 0.427
15.97	X	0.20 / 1.528
	Y	0.11 / 1.528
	Z	0.11 / 0.536
20.10	X	0.11 / 1.924
	Y	0.11 / 1.924
	Z	0.07 / 0.673
25.36	X	0.12 / 2.427
	Y	0.12 / 2.427
	Z	0.06 / 0.849
32.02	X	0.15 / 3.064
	Y	0.15 / 3.064
	Z	0.11 / 1.073
40.33	X	0.04 / 3.859
	Y	0.03 / 3.859
	Z	0.01 / 1.351
50.73	X	0.04 / 4.854
	Y	0.02 / 4.854
	Z	0.01 / 1.699
63.97	X	0.09 / 6.121
	Y	0.04 / 6.121
	Z	0.02 / 2.142
80.64	X	0.04 / 7.716
	Y	0.05 / 7.716
	Z	0.01 / 2.701

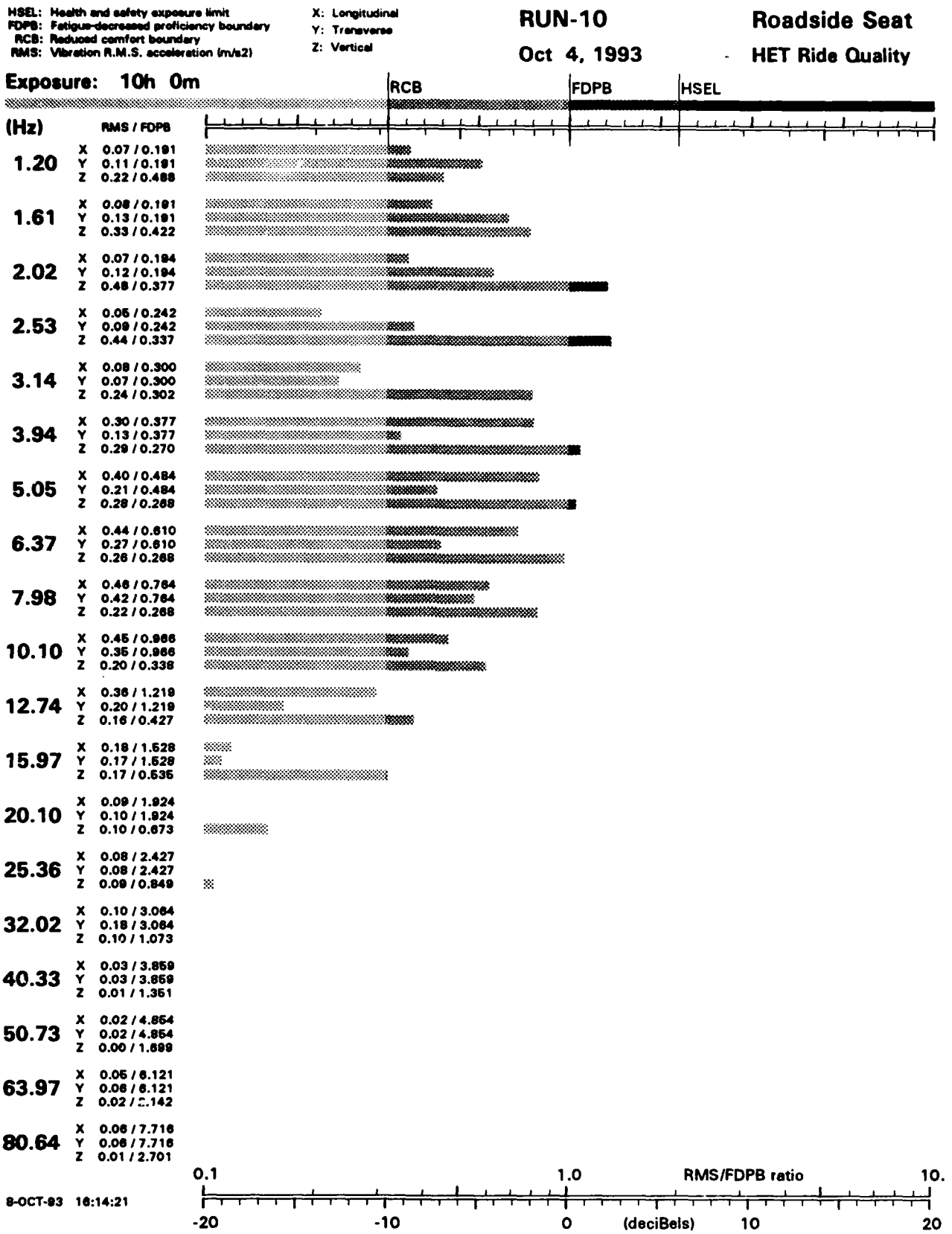


8-OCT-93 16:14:21

Course: Secondary A
Speed: 20 mph
Note: Loaded



Course: Secondary A
Speed: 20 mph
Note: Loaded



Course: Secondary A
Speed: 20 mph
Note: Loaded

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

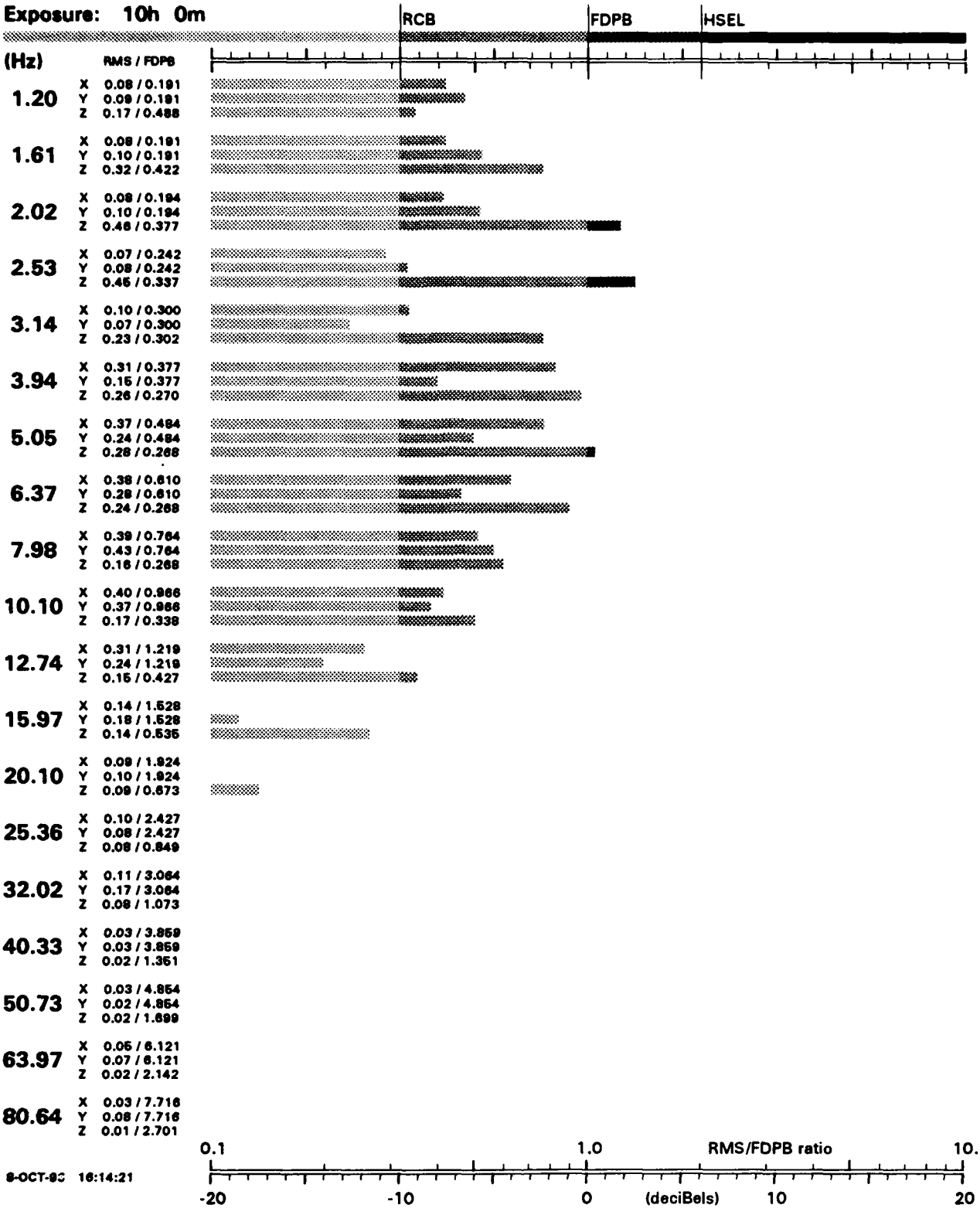
RUN-10

Oct 4, 1993

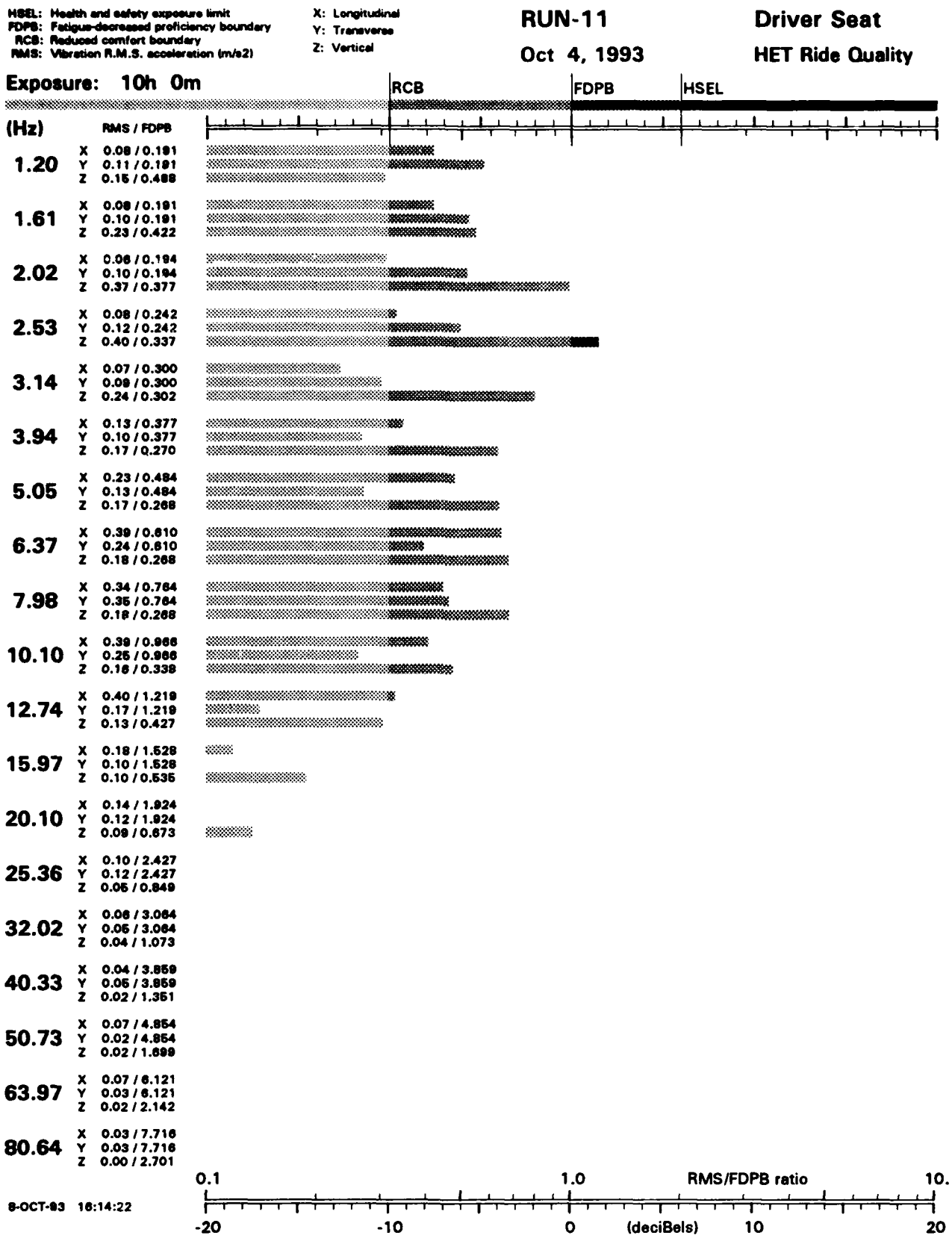
Curbside Seat

HET Ride Quality

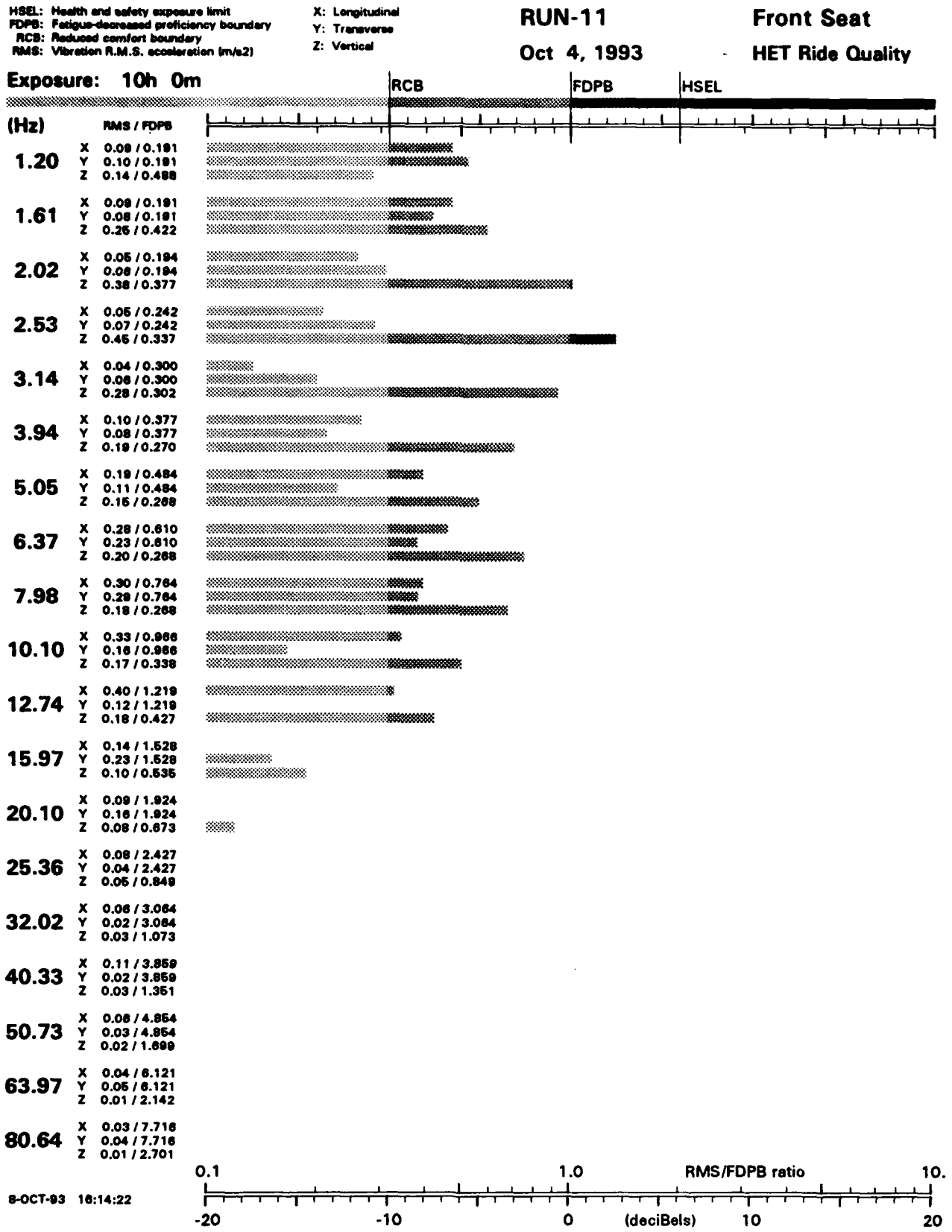
Exposure: 10h 0m



Course: Secondary A
Speed: 20 mph
Note: Loaded



Course: Secondary A
Speed: 25 mph
Note: Loaded



Course: Secondary A
Speed: 25 mph
Note: Loaded

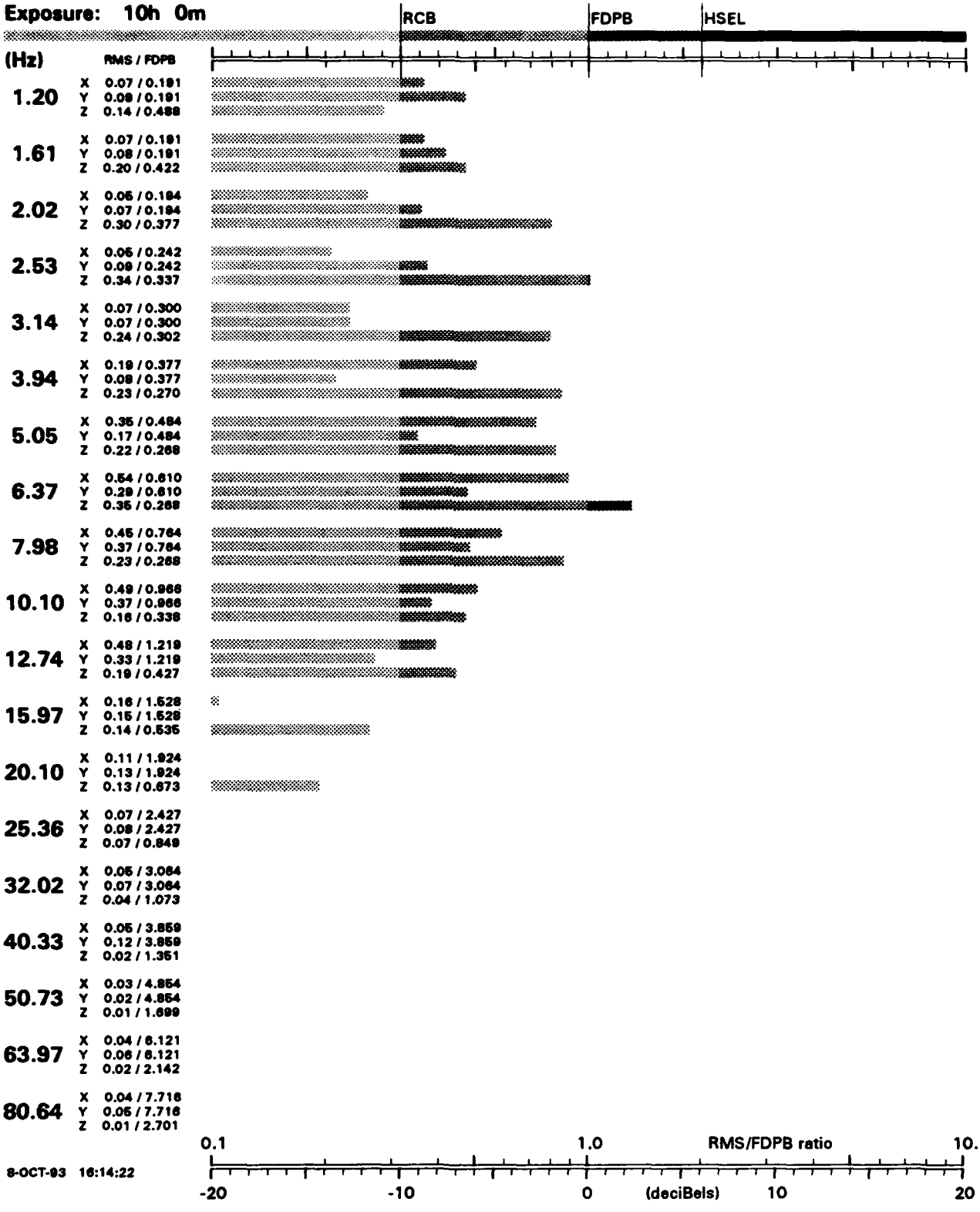
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

RUN-11
Oct 4, 1993

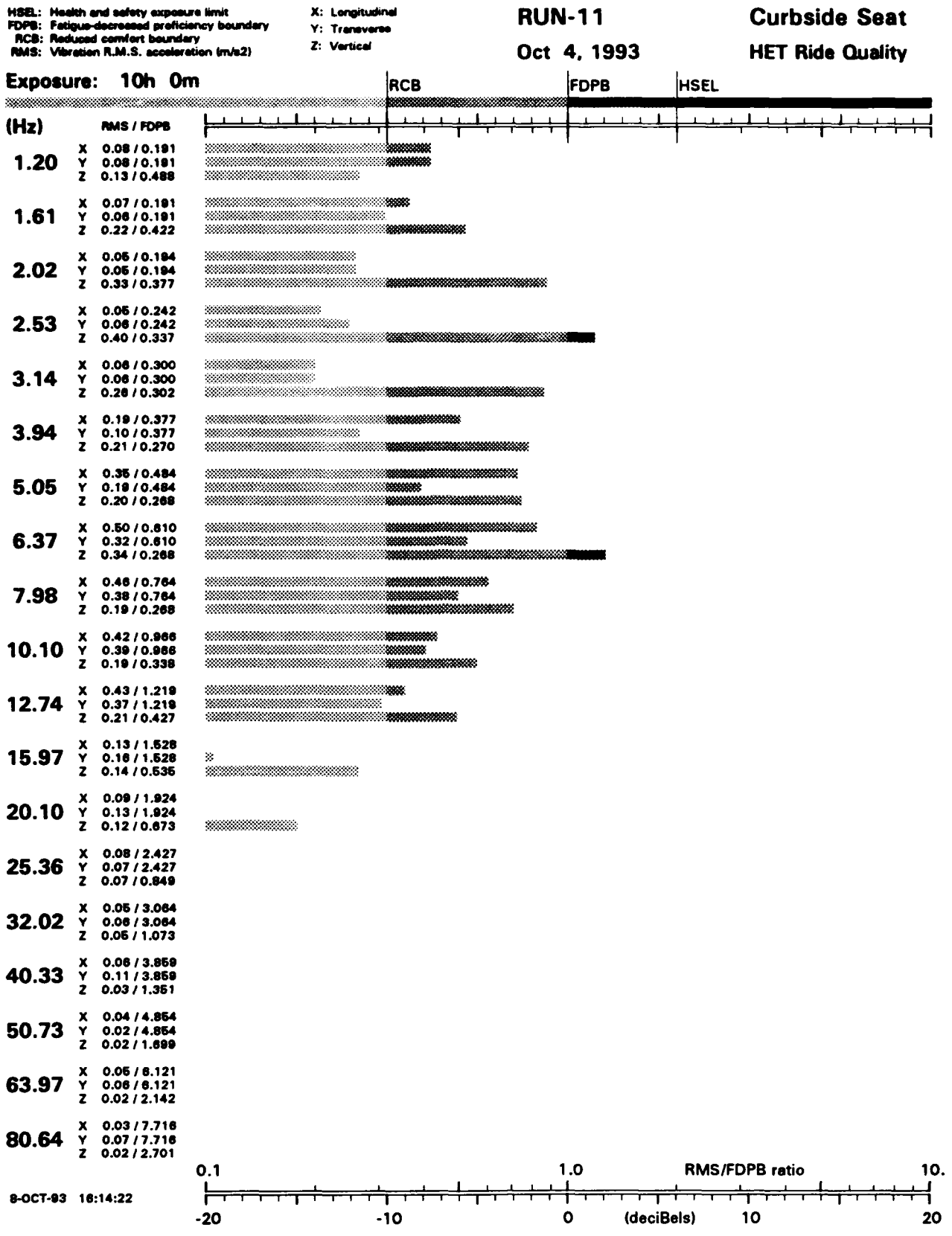
Roadside Seat
HET Ride Quality

Exposure: 10h 0m

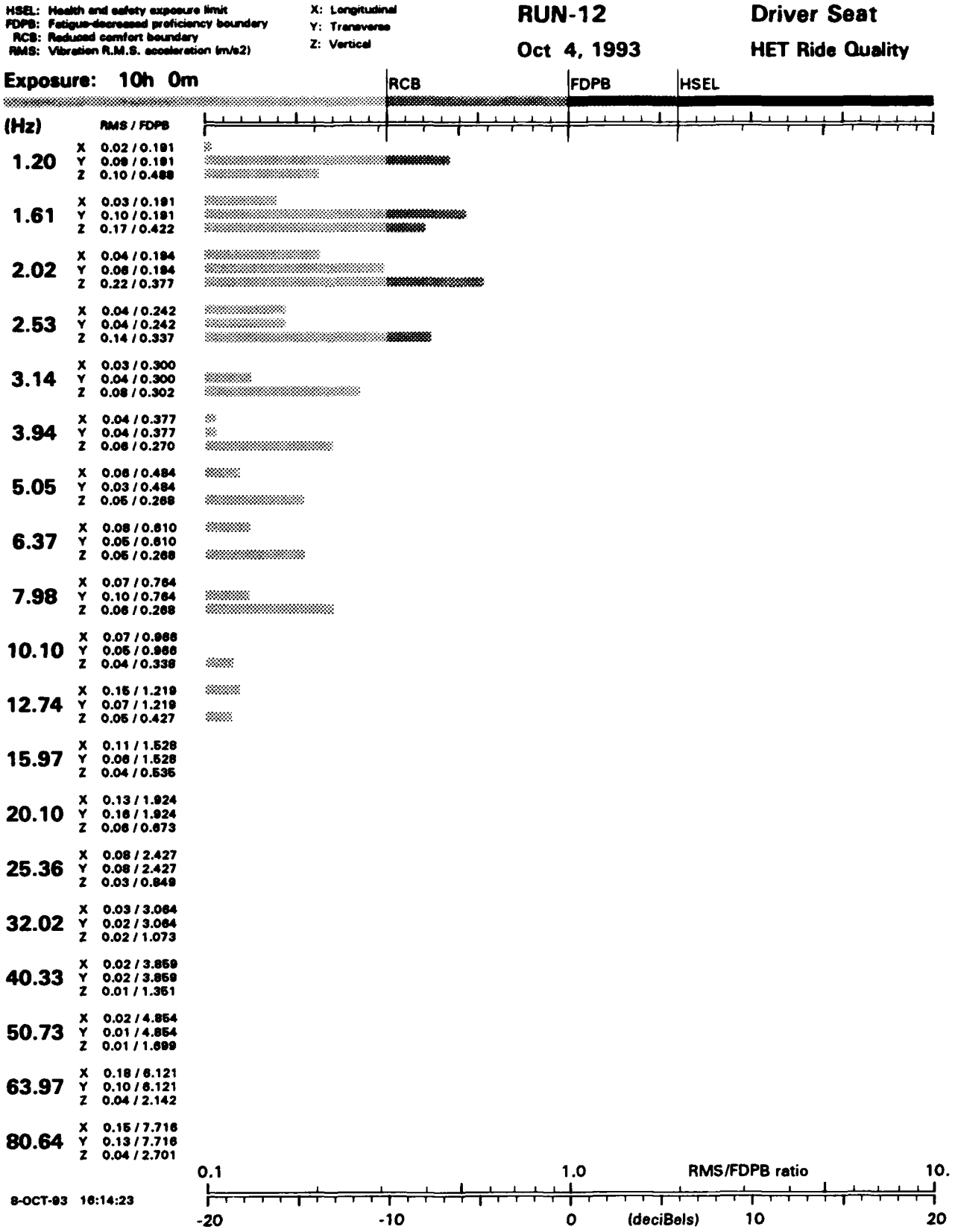


8-OCT-93 16:14:22

Course: Secondary A
Speed: 25 mph
Note: Loaded



Course: Secondary A
Speed: 25 mph
Note: Loaded



Course: Cross Country #2
Speed: 5 mph
Note: No Load

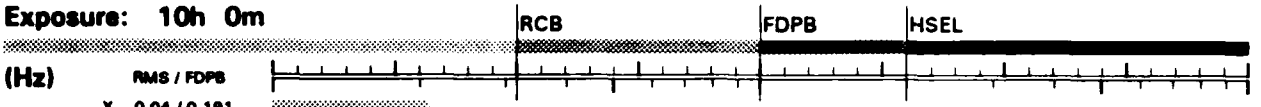
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

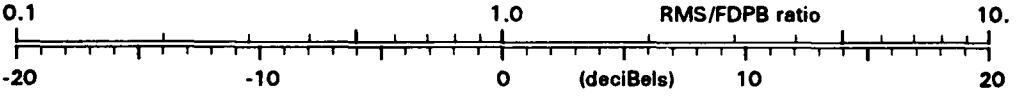
RUN-12
Oct 4, 1993

Front Seat
HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.04 / 0.191
	Y	0.10 / 0.191
	Z	0.08 / 0.488
1.61	X	0.06 / 0.191
	Y	0.10 / 0.191
	Z	0.16 / 0.422
2.02	X	0.04 / 0.194
	Y	0.05 / 0.194
	Z	0.22 / 0.377
2.53	X	0.03 / 0.242
	Y	0.02 / 0.242
	Z	0.16 / 0.337
3.14	X	0.02 / 0.300
	Y	0.03 / 0.300
	Z	0.09 / 0.302
3.94	X	0.03 / 0.377
	Y	0.04 / 0.377
	Z	0.09 / 0.270
5.05	X	0.04 / 0.484
	Y	0.04 / 0.484
	Z	0.05 / 0.268
6.37	X	0.07 / 0.610
	Y	0.06 / 0.610
	Z	0.06 / 0.268
7.98	X	0.09 / 0.764
	Y	0.12 / 0.764
	Z	0.06 / 0.268
10.10	X	0.08 / 0.966
	Y	0.05 / 0.966
	Z	0.04 / 0.338
12.74	X	0.23 / 1.219
	Y	0.09 / 1.219
	Z	0.09 / 0.427
15.97	X	0.22 / 1.528
	Y	0.13 / 1.528
	Z	0.08 / 0.536
20.10	X	0.08 / 1.924
	Y	0.20 / 1.924
	Z	0.09 / 0.673
25.36	X	0.06 / 2.427
	Y	0.04 / 2.427
	Z	0.03 / 0.849
32.02	X	0.03 / 3.064
	Y	0.01 / 3.064
	Z	0.01 / 1.073
40.33	X	0.04 / 3.859
	Y	0.01 / 3.859
	Z	0.01 / 1.351
50.73	X	0.04 / 4.854
	Y	0.02 / 4.854
	Z	0.01 / 1.699
63.97	X	0.05 / 6.121
	Y	0.07 / 6.121
	Z	0.01 / 2.142
80.64	X	0.05 / 7.716
	Y	0.08 / 7.716
	Z	0.01 / 2.701



8-OCT-93 16:14:23

Course: Cross Country #2
Speed: 5 mph
Note: No Load

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

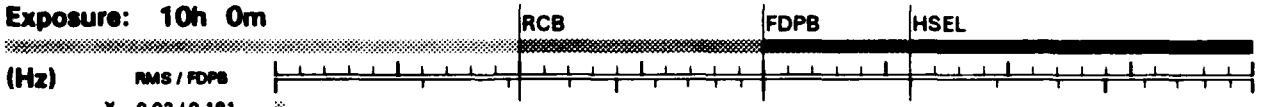
RUN-12

Oct 4, 1993

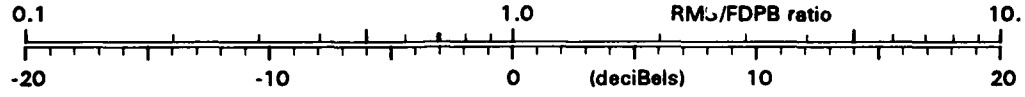
Roadside Seat

HET Ride Quality

Exposure: 10h 0m

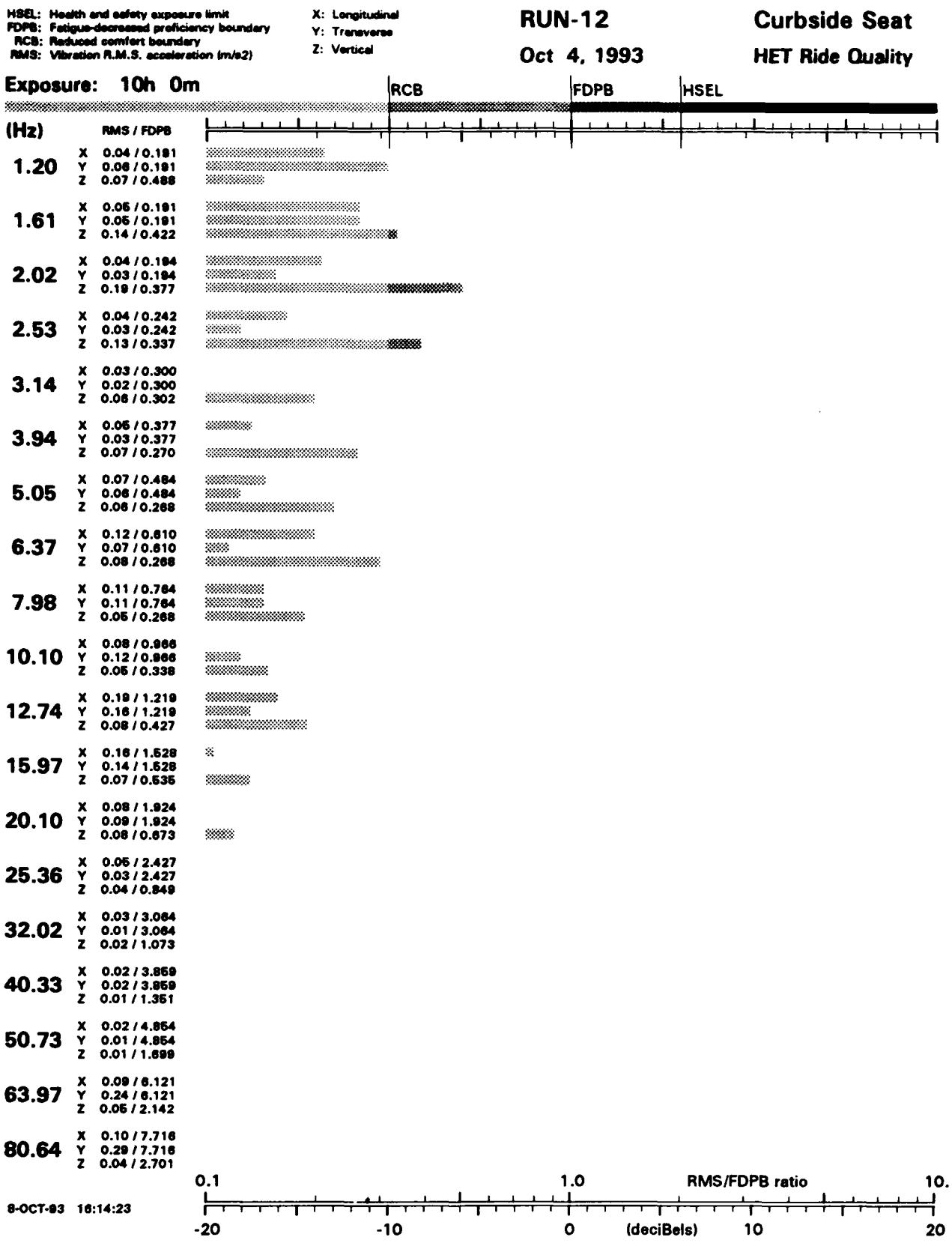


(Hz)		RMS / FDPB
1.20	X	0.02 / 0.181
	Y	0.07 / 0.181
	Z	0.08 / 0.488
1.61	X	0.04 / 0.181
	Y	0.06 / 0.181
	Z	0.15 / 0.422
2.02	X	0.04 / 0.184
	Y	0.04 / 0.184
	Z	0.18 / 0.377
2.53	X	0.04 / 0.242
	Y	0.03 / 0.242
	Z	0.11 / 0.337
3.14	X	0.03 / 0.300
	Y	0.02 / 0.300
	Z	0.05 / 0.302
3.94	X	0.06 / 0.377
	Y	0.03 / 0.377
	Z	0.07 / 0.270
5.05	X	0.07 / 0.484
	Y	0.06 / 0.484
	Z	0.09 / 0.268
6.37	X	0.13 / 0.610
	Y	0.06 / 0.610
	Z	0.08 / 0.268
7.98	X	0.12 / 0.764
	Y	0.11 / 0.764
	Z	0.09 / 0.268
10.10	X	0.10 / 0.966
	Y	0.11 / 0.966
	Z	0.09 / 0.338
12.74	X	0.19 / 1.219
	Y	0.13 / 1.219
	Z	0.10 / 0.427
15.97	X	0.12 / 1.528
	Y	0.12 / 1.528
	Z	0.07 / 0.535
20.10	X	0.08 / 1.924
	Y	0.10 / 1.924
	Z	0.12 / 0.673
25.36	X	0.04 / 2.427
	Y	0.04 / 2.427
	Z	0.07 / 0.849
32.02	X	0.02 / 3.064
	Y	0.02 / 3.064
	Z	0.02 / 1.073
40.33	X	0.03 / 3.859
	Y	0.02 / 3.859
	Z	0.01 / 1.351
50.73	X	0.01 / 4.854
	Y	0.02 / 4.854
	Z	0.01 / 1.699
63.97	X	0.17 / 6.121
	Y	0.21 / 6.121
	Z	0.06 / 2.142
80.64	X	0.11 / 7.716
	Y	0.18 / 7.716
	Z	0.07 / 2.701

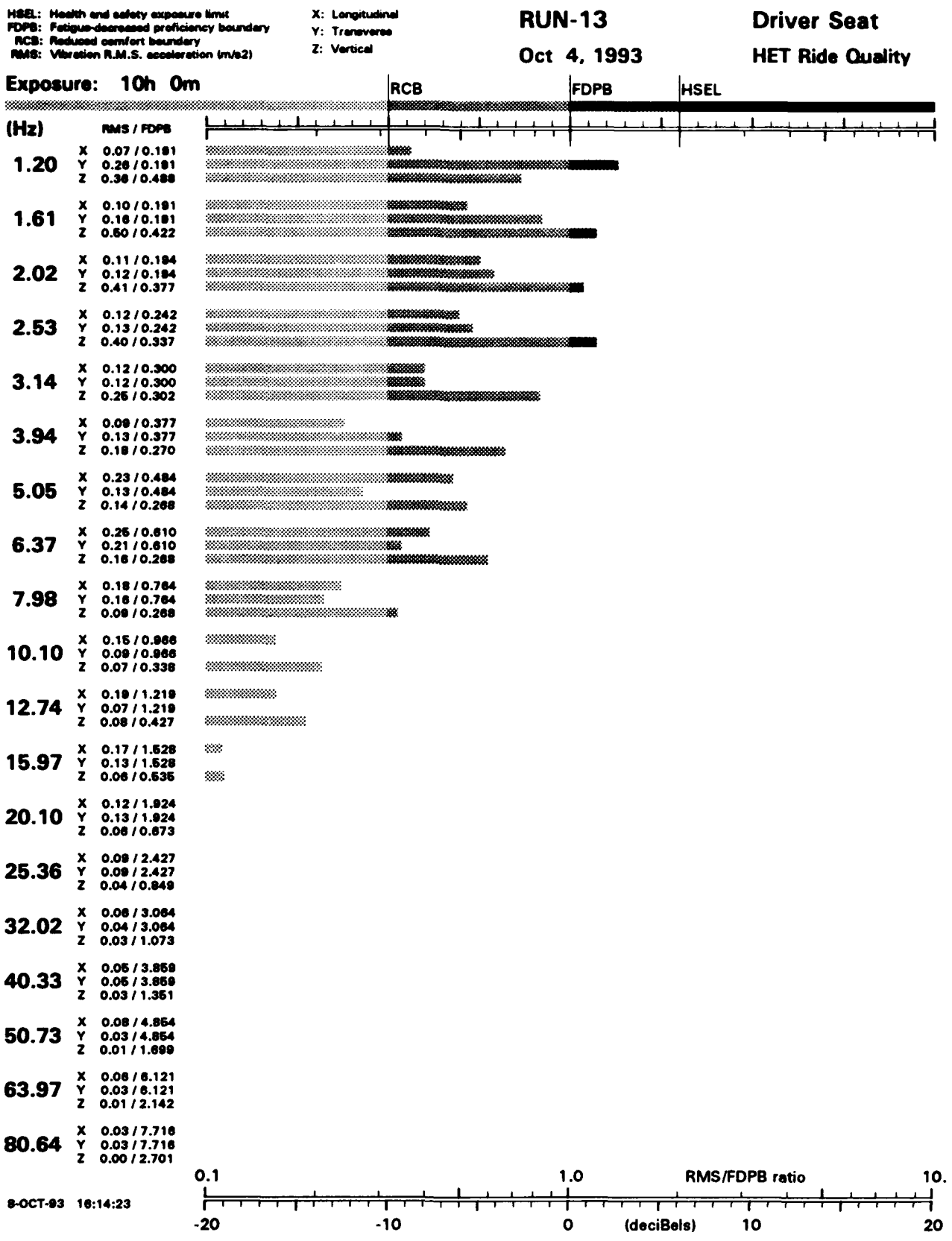


8-OCT-93 16:14:23

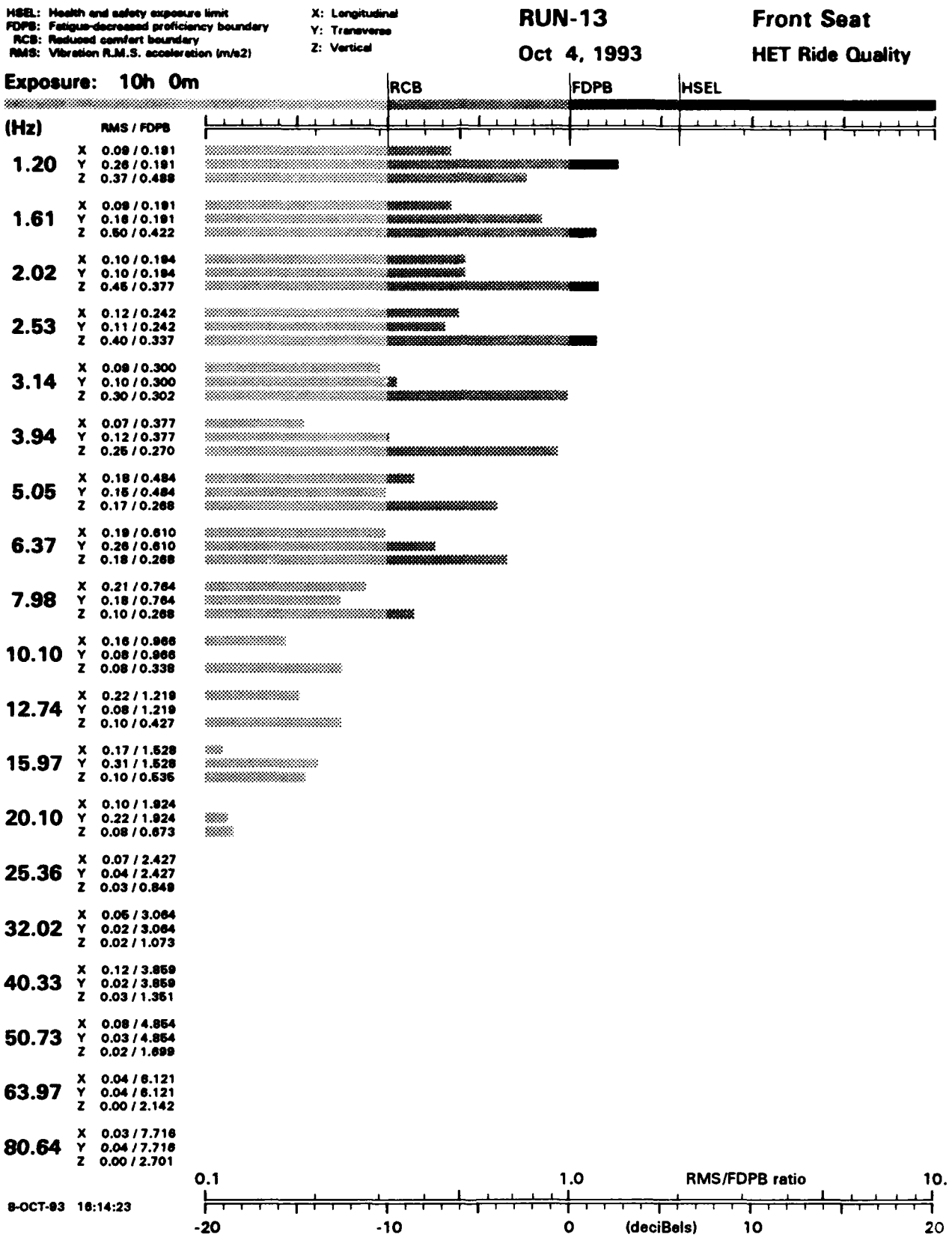
Course: Cross Country #2
Speed: 5 mph
Note: No Load



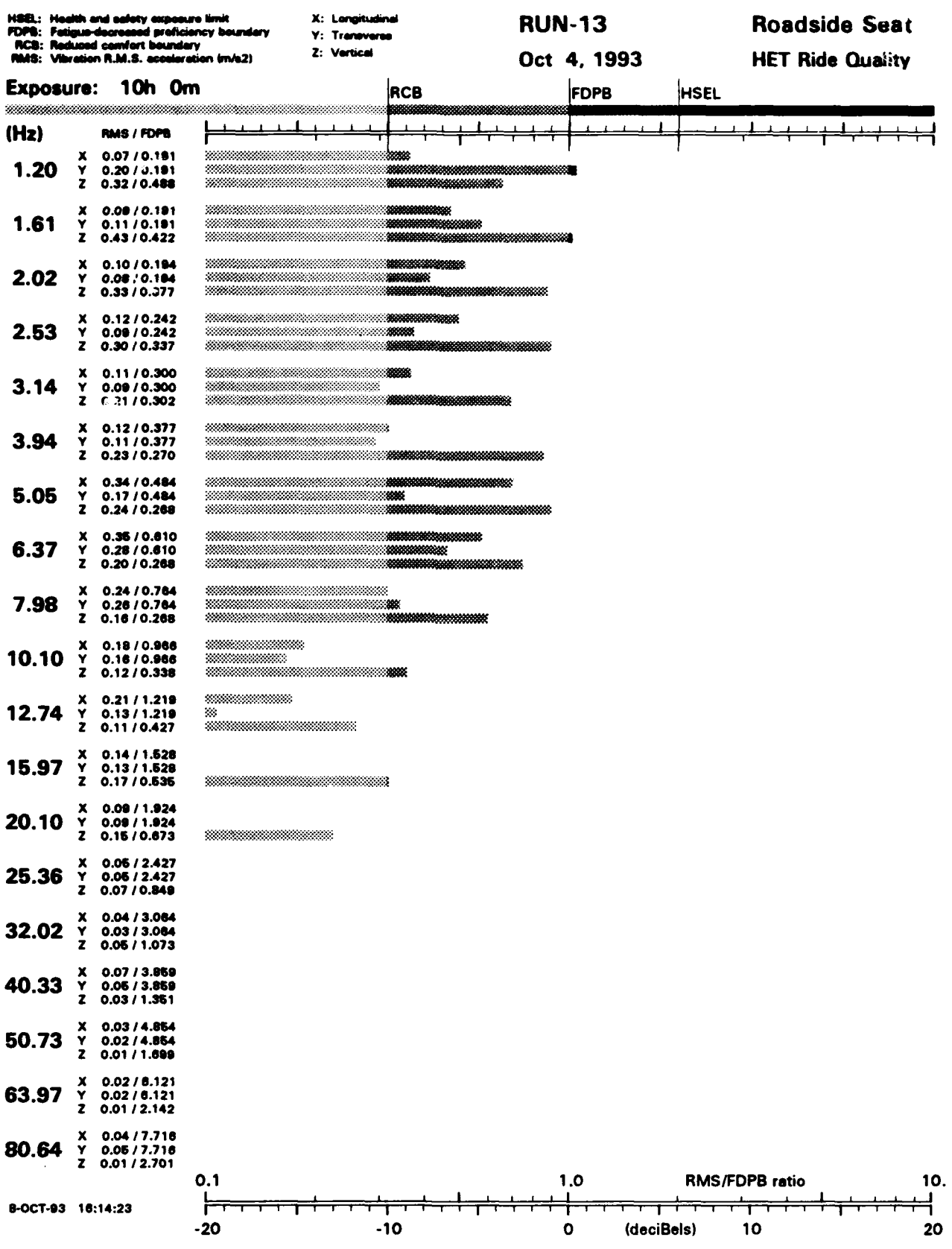
Course: Cross Country #2
Speed: 5 mph
Note: No Load



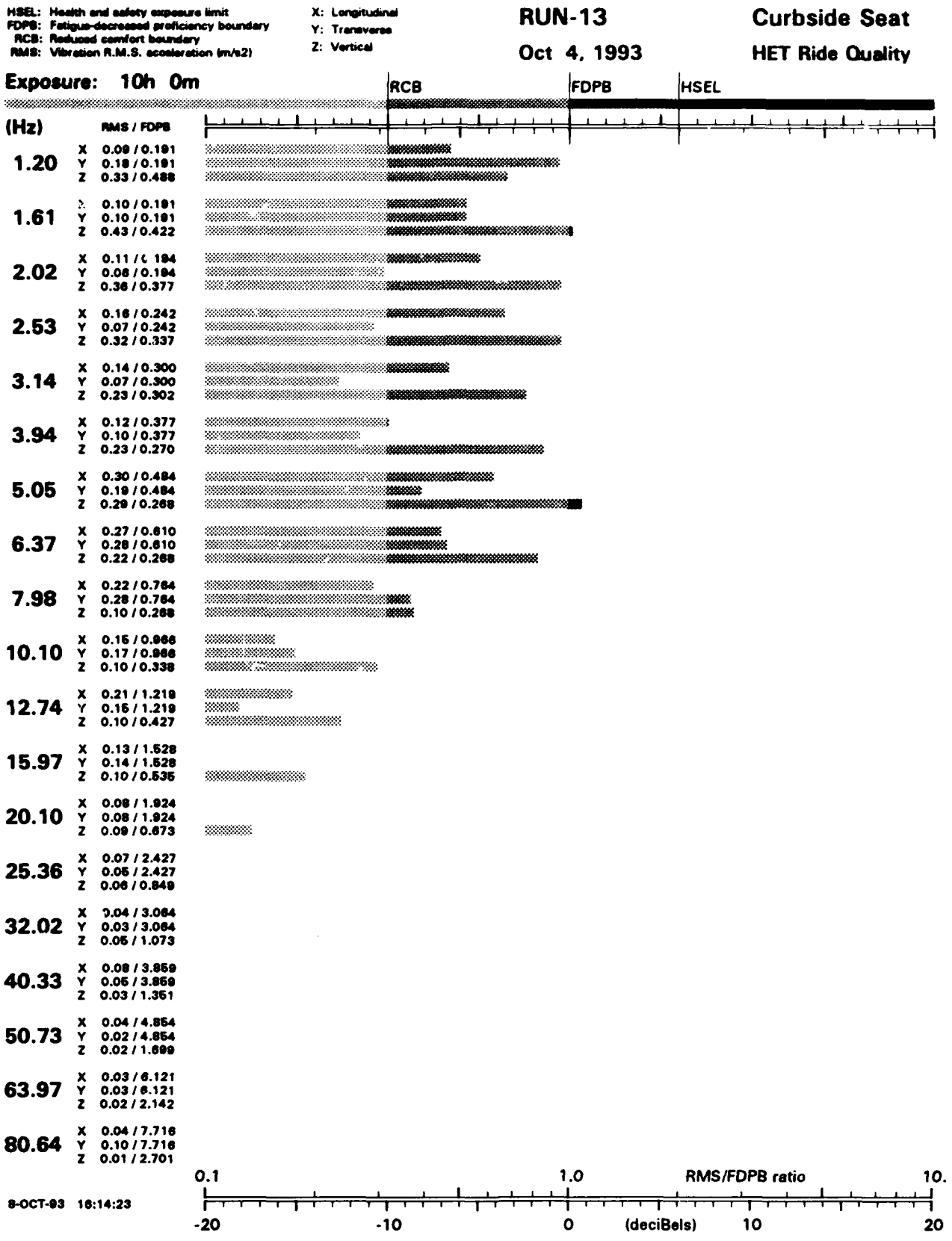
Course: Cross Country #2
Speed: 10 mph
Note: No Load



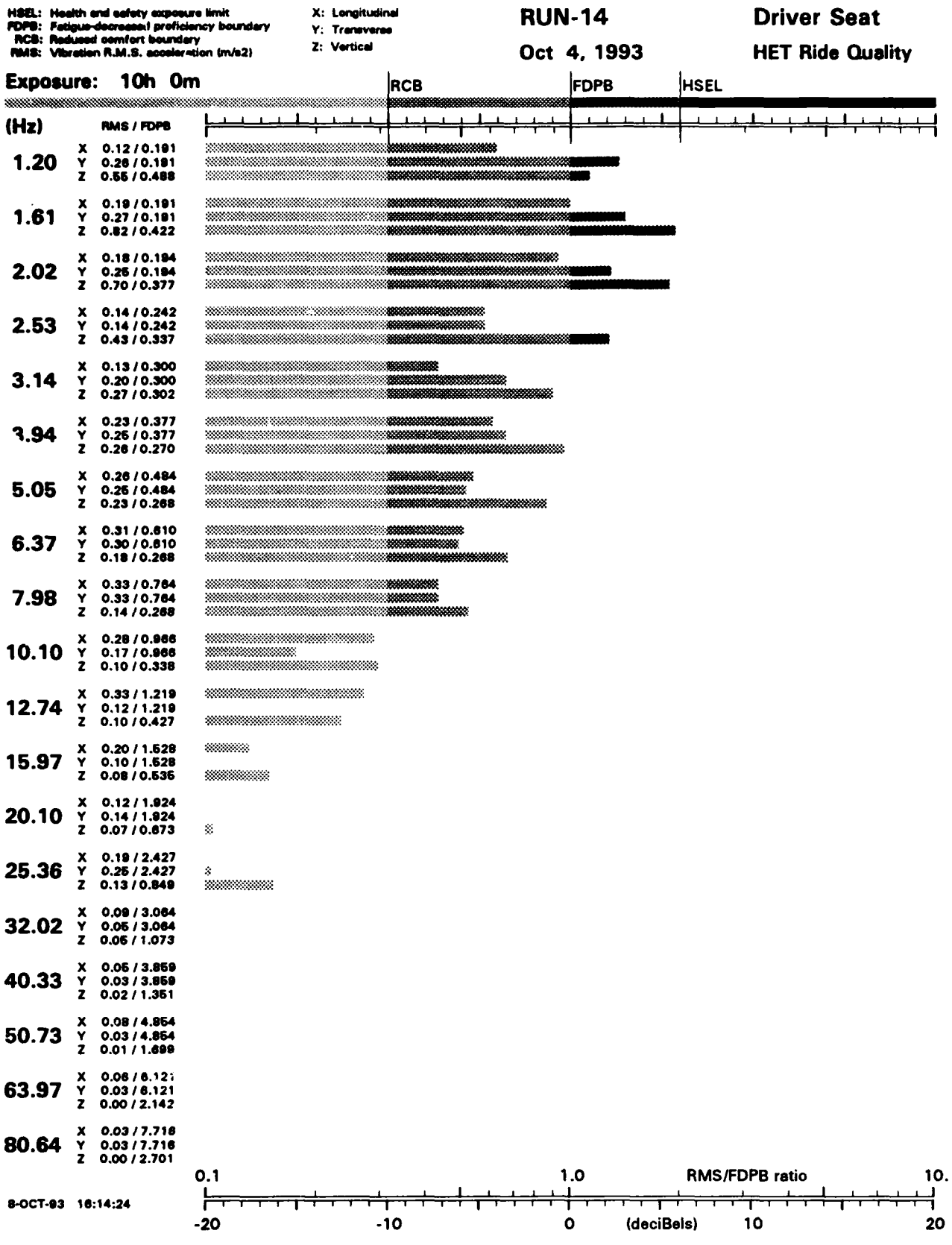
Course: Cross Country #2
Speed: 10 mph
Note: No Load



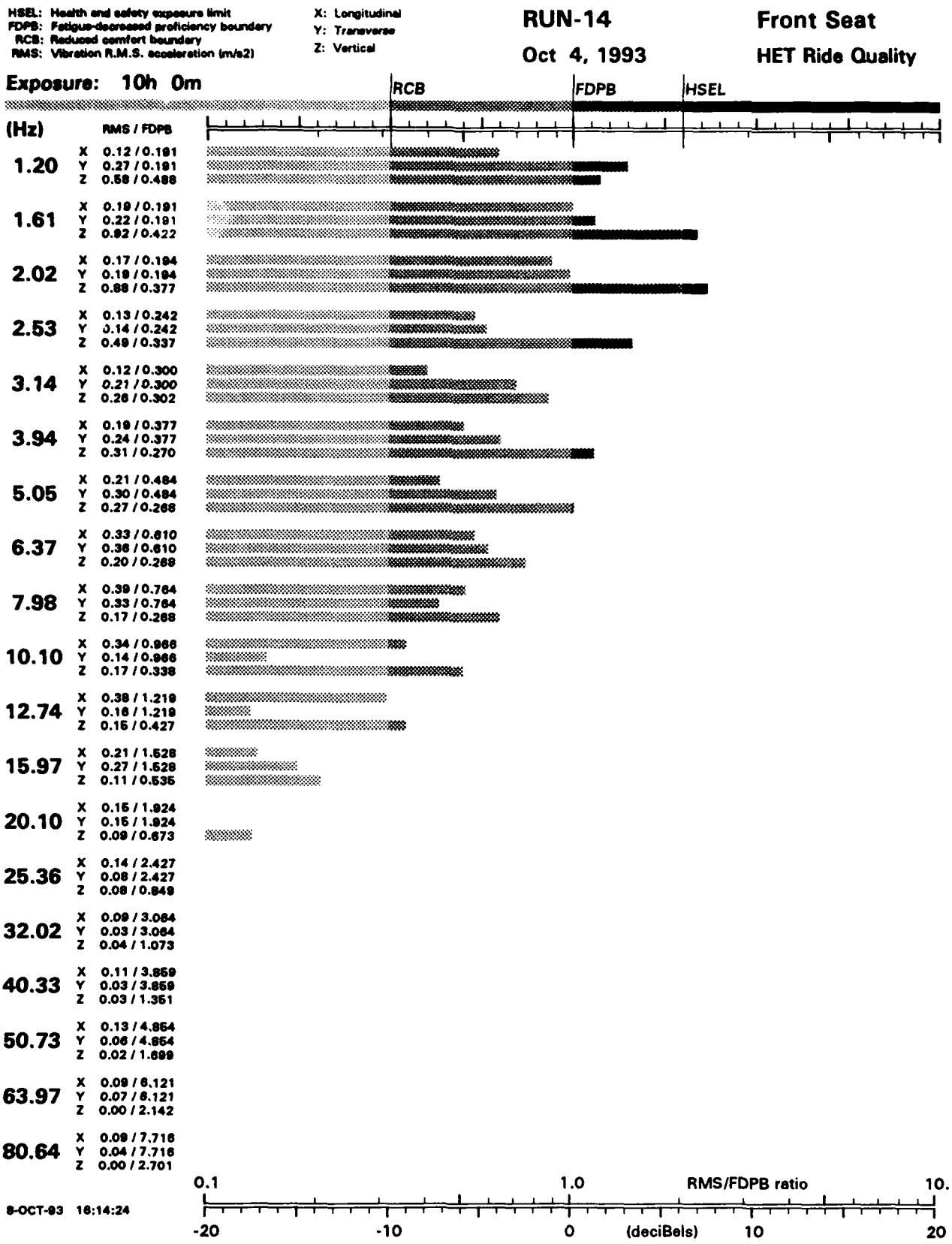
Course: Cross Country #2
Speed: 10 mph
Note: No Load



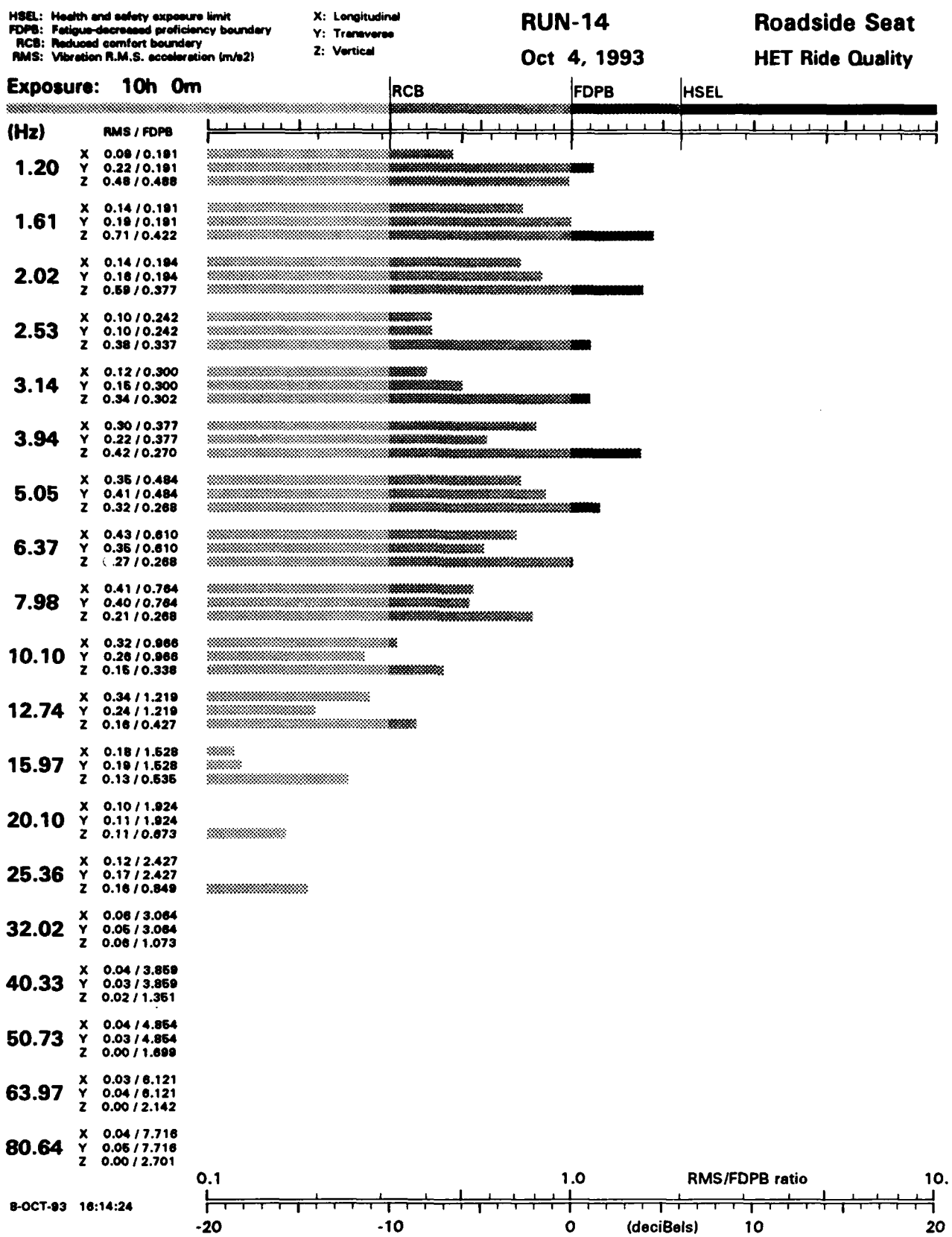
Course: Cross Country #2
Speed: 10 mph
Note: No Load



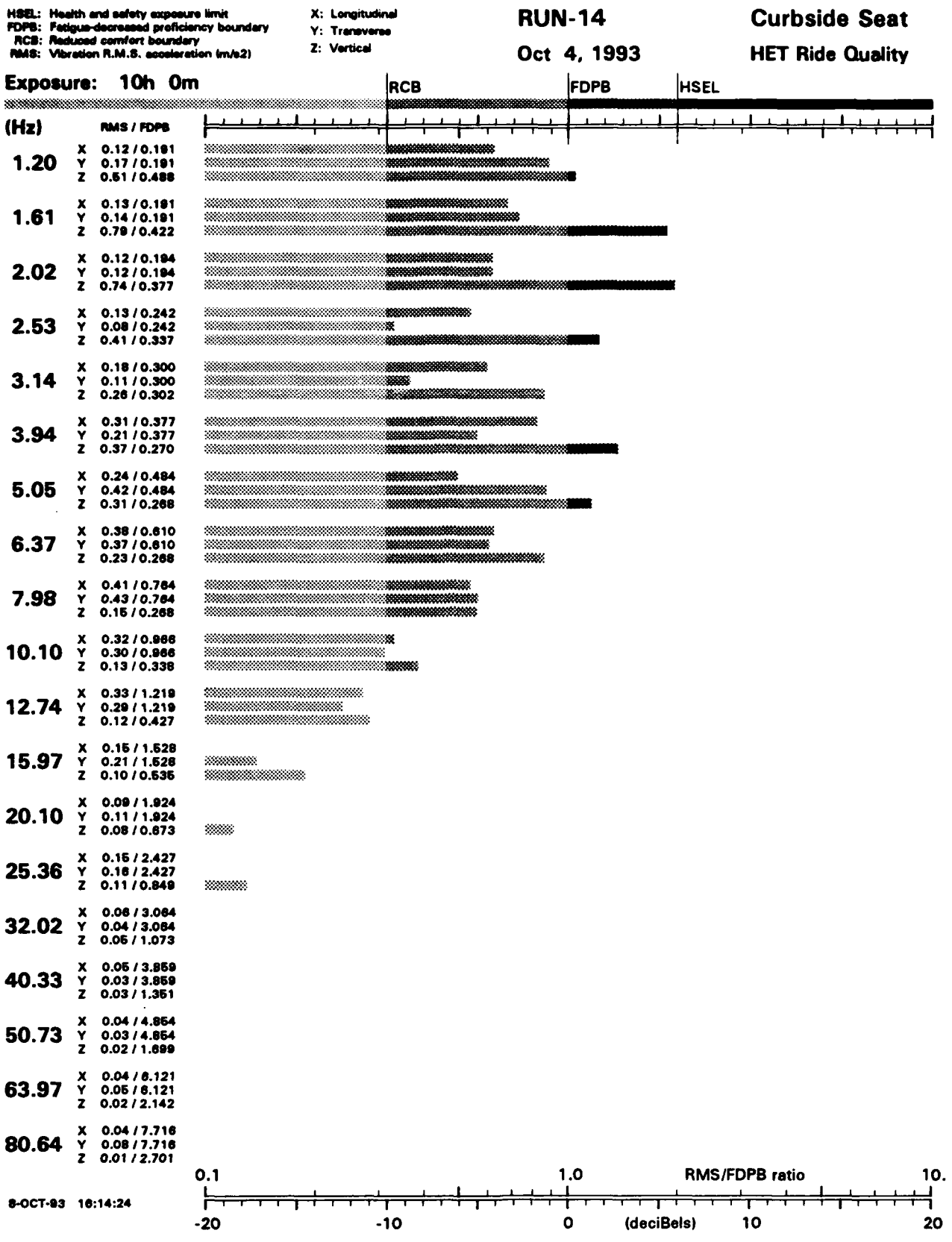
Course: Cross Country #2
Speed: 15 mph
Note: No Load



Course: Cross Country #2
Speed: 15 mph
Note: No Load



Course: Cross Country #2
Speed: 15 mph
Note: No Load



Course: Cross Country #2
Speed: 15 mph
Note: No Load

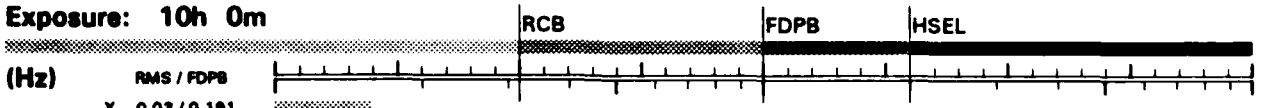
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

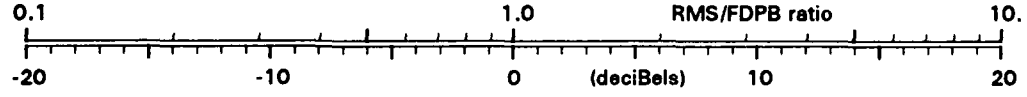
RUN-15 — **Driver Seat**

Oct 4, 1993 - **HET Ride Quality**

Exposure: 10h 0m

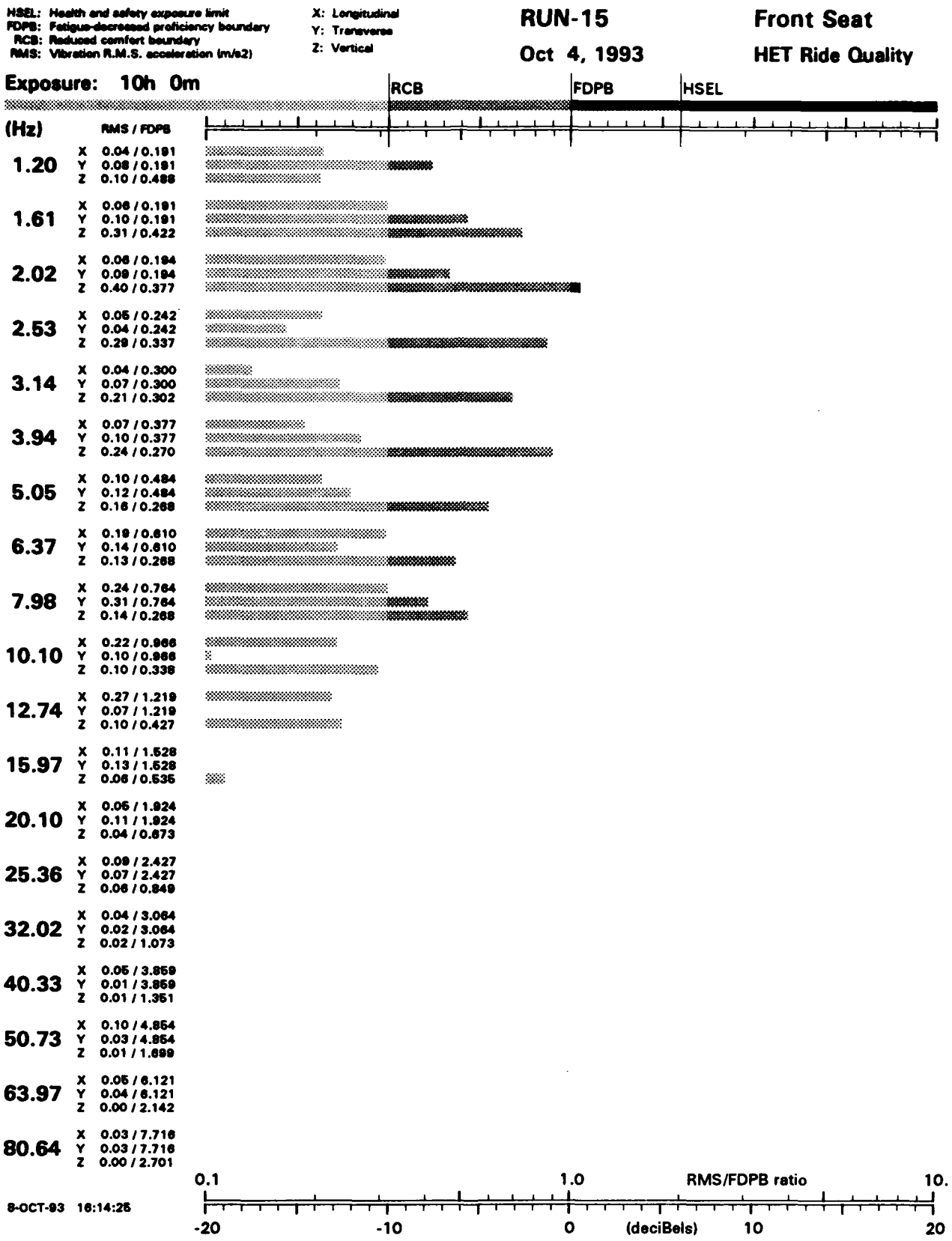


(Hz)		RMS / FDPB
1.20	X	0.03 / 0.191
	Y	0.07 / 0.191
	Z	0.10 / 0.488
1.61	X	0.05 / 0.191
	Y	0.11 / 0.191
	Z	0.30 / 0.422
2.02	X	0.09 / 0.194
	Y	0.11 / 0.194
	Z	0.37 / 0.377
2.53	X	0.07 / 0.242
	Y	0.08 / 0.242
	Z	0.27 / 0.337
3.14	X	0.06 / 0.300
	Y	0.08 / 0.300
	Z	0.19 / 0.302
3.94	X	0.09 / 0.377
	Y	0.10 / 0.377
	Z	0.17 / 0.270
5.05	X	0.12 / 0.484
	Y	0.10 / 0.484
	Z	0.16 / 0.268
6.37	X	0.24 / 0.610
	Y	0.13 / 0.610
	Z	0.13 / 0.268
7.98	X	0.28 / 0.764
	Y	0.32 / 0.764
	Z	0.17 / 0.268
10.10	X	0.19 / 0.966
	Y	0.13 / 0.966
	Z	0.06 / 0.338
12.74	X	0.22 / 1.219
	Y	0.08 / 1.219
	Z	0.07 / 0.427
15.97	X	0.14 / 1.528
	Y	0.07 / 1.528
	Z	0.05 / 0.535
20.10	X	0.08 / 1.924
	Y	0.08 / 1.924
	Z	0.05 / 0.673
25.36	X	0.13 / 2.427
	Y	0.21 / 2.427
	Z	0.10 / 0.849
32.02	X	0.06 / 3.064
	Y	0.04 / 3.064
	Z	0.03 / 1.073
40.33	X	0.03 / 3.859
	Y	0.03 / 3.859
	Z	0.01 / 1.351
50.73	X	0.05 / 4.854
	Y	0.02 / 4.854
	Z	0.01 / 1.699
63.97	X	0.06 / 6.121
	Y	0.02 / 6.121
	Z	0.01 / 2.142
80.64	X	0.02 / 7.716
	Y	0.02 / 7.716
	Z	0.00 / 2.701



8-OCT-93 16:14:25

Course: Secondary A
Speed: 15 mph
Note: No Load



Course: Secondary A
Speed: 15 mph
Note: No Load

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

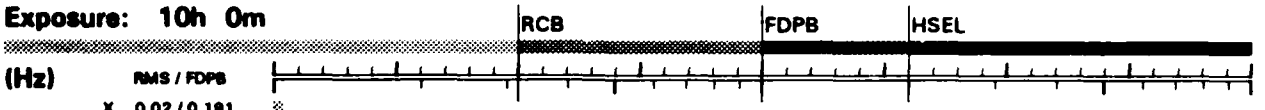
RUN-15

Oct 4, 1993

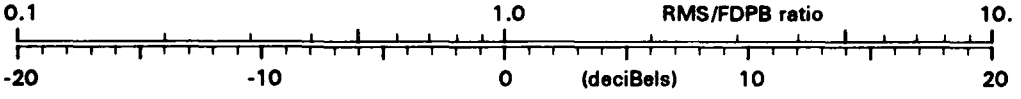
Roadside Seat

HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.02 / 0.181
	Y	0.06 / 0.181
	Z	0.08 / 0.488
1.61	X	0.04 / 0.181
	Y	0.07 / 0.181
	Z	0.26 / 0.422
2.02	X	0.06 / 0.184
	Y	0.07 / 0.184
	Z	0.32 / 0.377
2.53	X	0.06 / 0.242
	Y	0.04 / 0.242
	Z	0.20 / 0.337
3.14	X	0.06 / 0.300
	Y	0.05 / 0.300
	Z	0.14 / 0.302
3.94	X	0.10 / 0.377
	Y	0.08 / 0.377
	Z	0.20 / 0.270
5.05	X	0.16 / 0.484
	Y	0.17 / 0.484
	Z	0.21 / 0.268
6.37	X	0.36 / 0.610
	Y	0.16 / 0.610
	Z	0.20 / 0.268
7.98	X	0.35 / 0.764
	Y	0.43 / 0.764
	Z	0.18 / 0.268
10.10	X	0.24 / 0.966
	Y	0.24 / 0.966
	Z	0.12 / 0.338
12.74	X	0.24 / 1.219
	Y	0.16 / 1.219
	Z	0.12 / 0.427
15.97	X	0.12 / 1.528
	Y	0.11 / 1.528
	Z	0.09 / 0.536
20.10	X	0.06 / 1.924
	Y	0.07 / 1.924
	Z	0.07 / 0.673
25.36	X	0.10 / 2.427
	Y	0.13 / 2.427
	Z	0.10 / 0.949
32.02	X	0.04 / 3.064
	Y	0.04 / 3.064
	Z	0.03 / 1.073
40.33	X	0.03 / 3.859
	Y	0.02 / 3.859
	Z	0.01 / 1.361
50.73	X	0.03 / 4.854
	Y	0.02 / 4.854
	Z	0.01 / 1.699
63.97	X	0.02 / 6.121
	Y	0.03 / 6.121
	Z	0.00 / 2.142
80.64	X	0.02 / 7.716
	Y	0.05 / 7.716
	Z	0.00 / 2.701



8-OCT-93 16:14:25

Course: Secondary A
Speed: 15 mph
Note: No Load

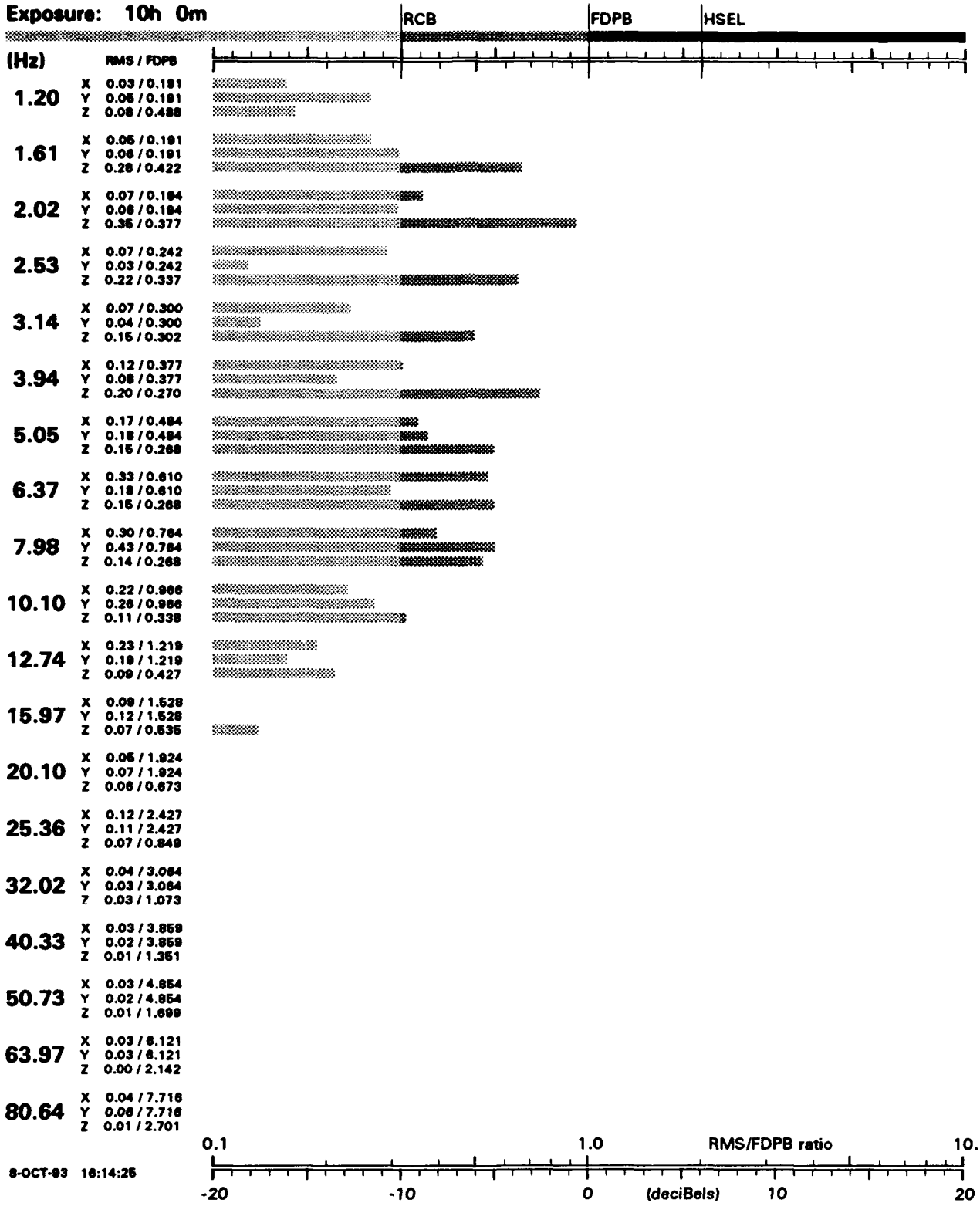
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

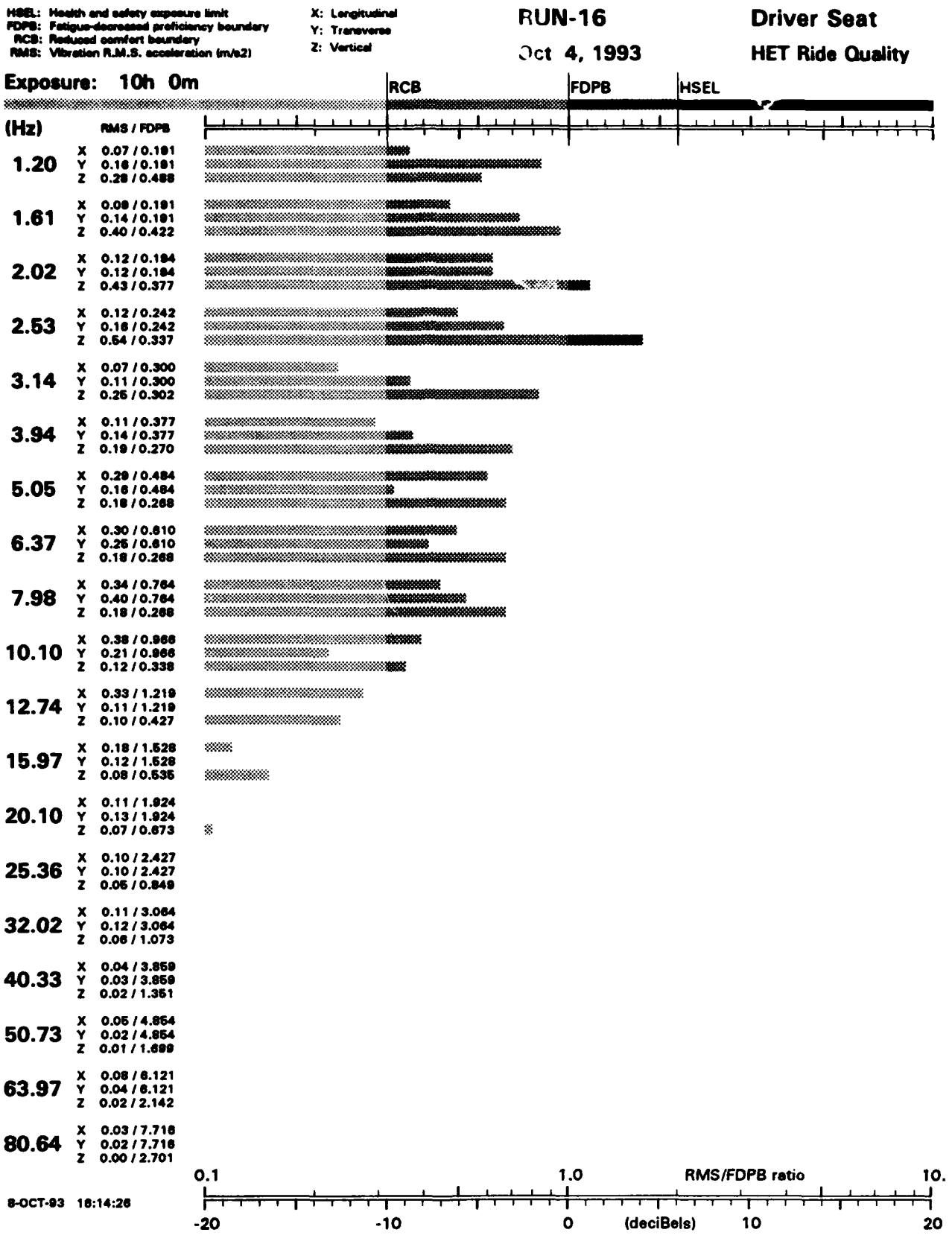
RUN-15 — **Curbside Seat**

Oct 4, 1993 — **HET Ride Quality**

Exposure: 10h 0m



Course: Secondary A
Speed: 15 mph
Note: No Load



Course: Secondary A
Speed: 20 mph
Note: No Load

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

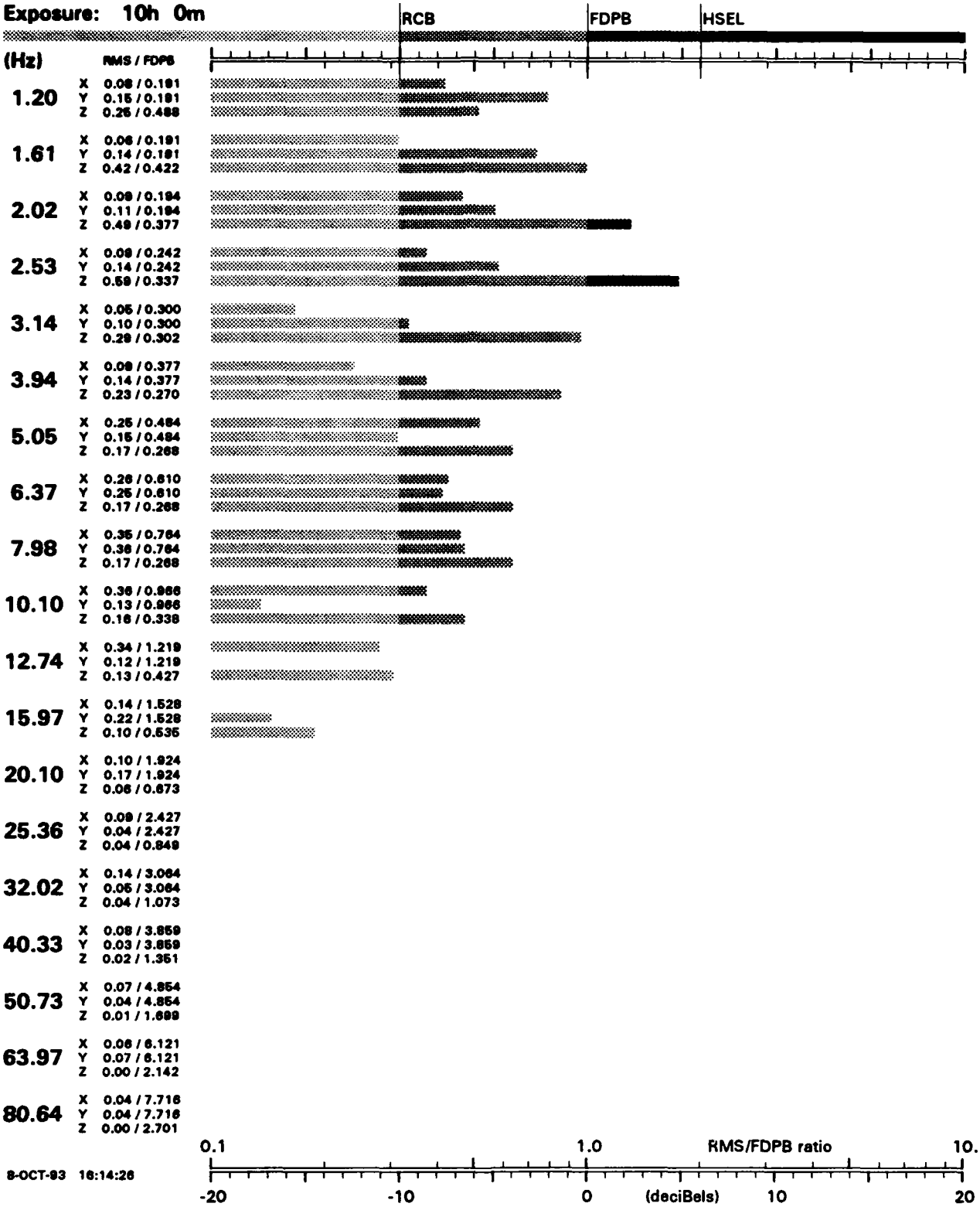
RUN-16

Oct 4, 1993

Front Seat

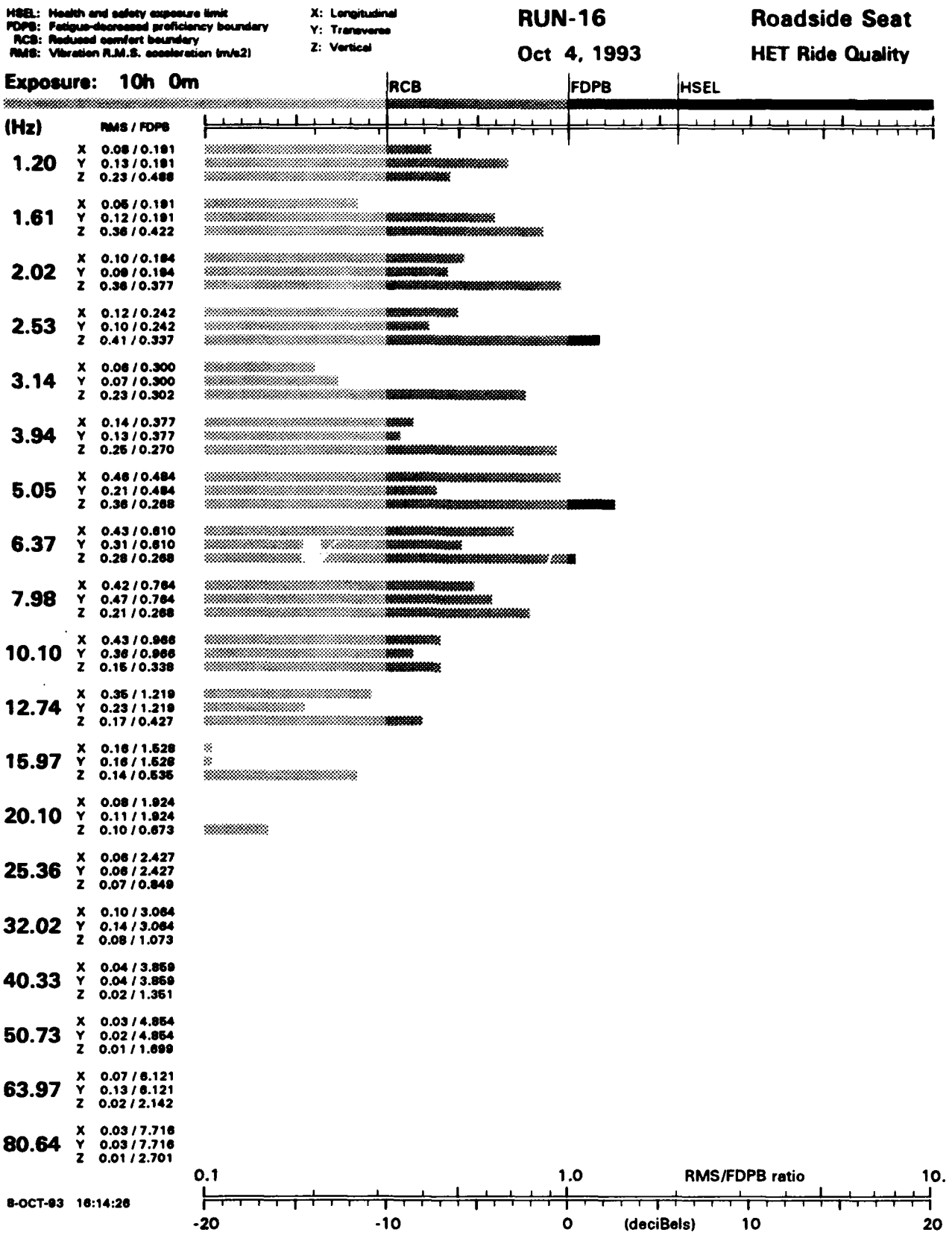
HET Ride Quality

Exposure: 10h 0m

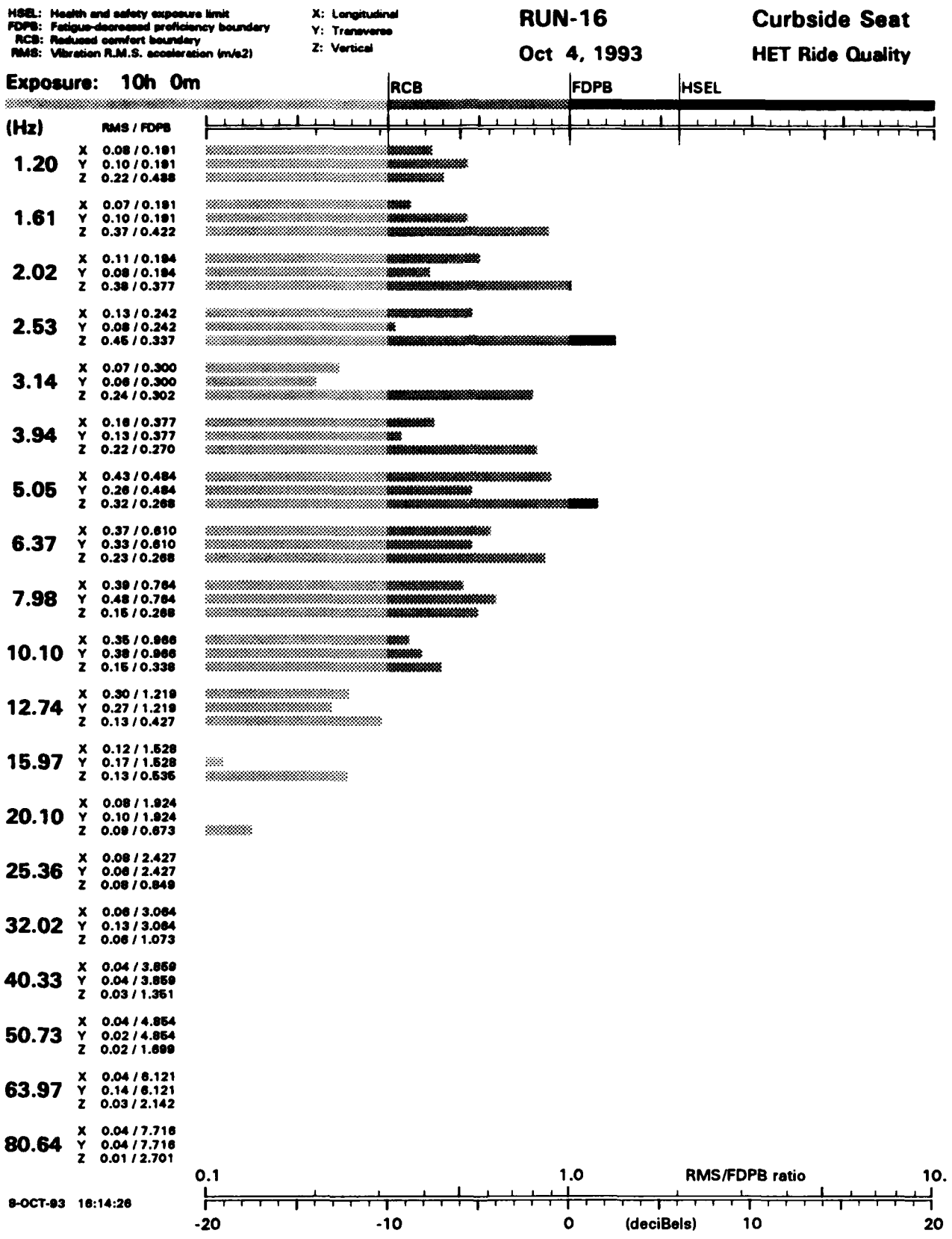


8-OCT-93 16:14:26

Course: Secondary A
Speed: 20 mph
Note: No Load



Course: Secondary A
Speed: 20 mph
Note: No Load



Course: Secondary A
Speed: 20 mph
Note: No Load

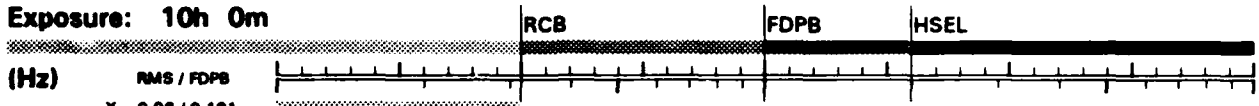
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

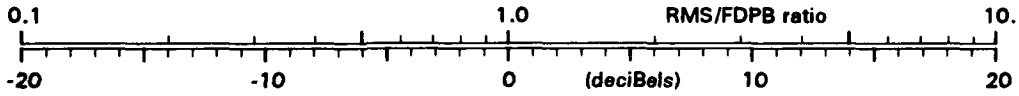
RUN-17
Oct 4, 1993

Driver Seat
HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.06 / 0.191
	Y	0.14 / 0.191
	Z	0.23 / 0.488
1.61	X	0.06 / 0.191
	Y	0.14 / 0.191
	Z	0.37 / 0.422
2.02	X	0.09 / 0.194
	Y	0.08 / 0.194
	Z	0.37 / 0.377
2.53	X	0.11 / 0.242
	Y	0.12 / 0.242
	Z	0.41 / 0.337
3.14	X	0.09 / 0.300
	Y	0.15 / 0.300
	Z	0.36 / 0.302
3.94	X	0.05 / 0.377
	Y	0.09 / 0.377
	Z	0.17 / 0.270
5.05	X	0.21 / 0.484
	Y	0.11 / 0.484
	Z	0.13 / 0.268
6.37	X	0.32 / 0.610
	Y	0.22 / 0.610
	Z	0.17 / 0.268
7.98	X	0.28 / 0.764
	Y	0.28 / 0.764
	Z	0.17 / 0.268
10.10	X	0.30 / 0.966
	Y	0.18 / 0.966
	Z	0.11 / 0.338
12.74	X	0.42 / 1.219
	Y	0.15 / 1.219
	Z	0.14 / 0.427
15.97	X	0.23 / 1.528
	Y	0.14 / 1.528
	Z	0.09 / 0.535
20.10	X	0.12 / 1.924
	Y	0.16 / 1.924
	Z	0.07 / 0.673
25.36	X	0.09 / 2.427
	Y	0.10 / 2.427
	Z	0.04 / 0.849
32.02	X	0.07 / 3.064
	Y	0.05 / 3.064
	Z	0.03 / 1.073
40.33	X	0.04 / 3.859
	Y	0.04 / 3.859
	Z	0.02 / 1.351
50.73	X	0.04 / 4.854
	Y	0.02 / 4.854
	Z	0.02 / 1.699
63.97	X	0.09 / 6.121
	Y	0.03 / 6.121
	Z	0.02 / 2.142
80.64	X	0.04 / 7.716
	Y	0.05 / 7.716
	Z	0.01 / 2.701



8-OCT-93 16:14:27

Course: Secondary A
Speed: 25 mph
Note: No Load

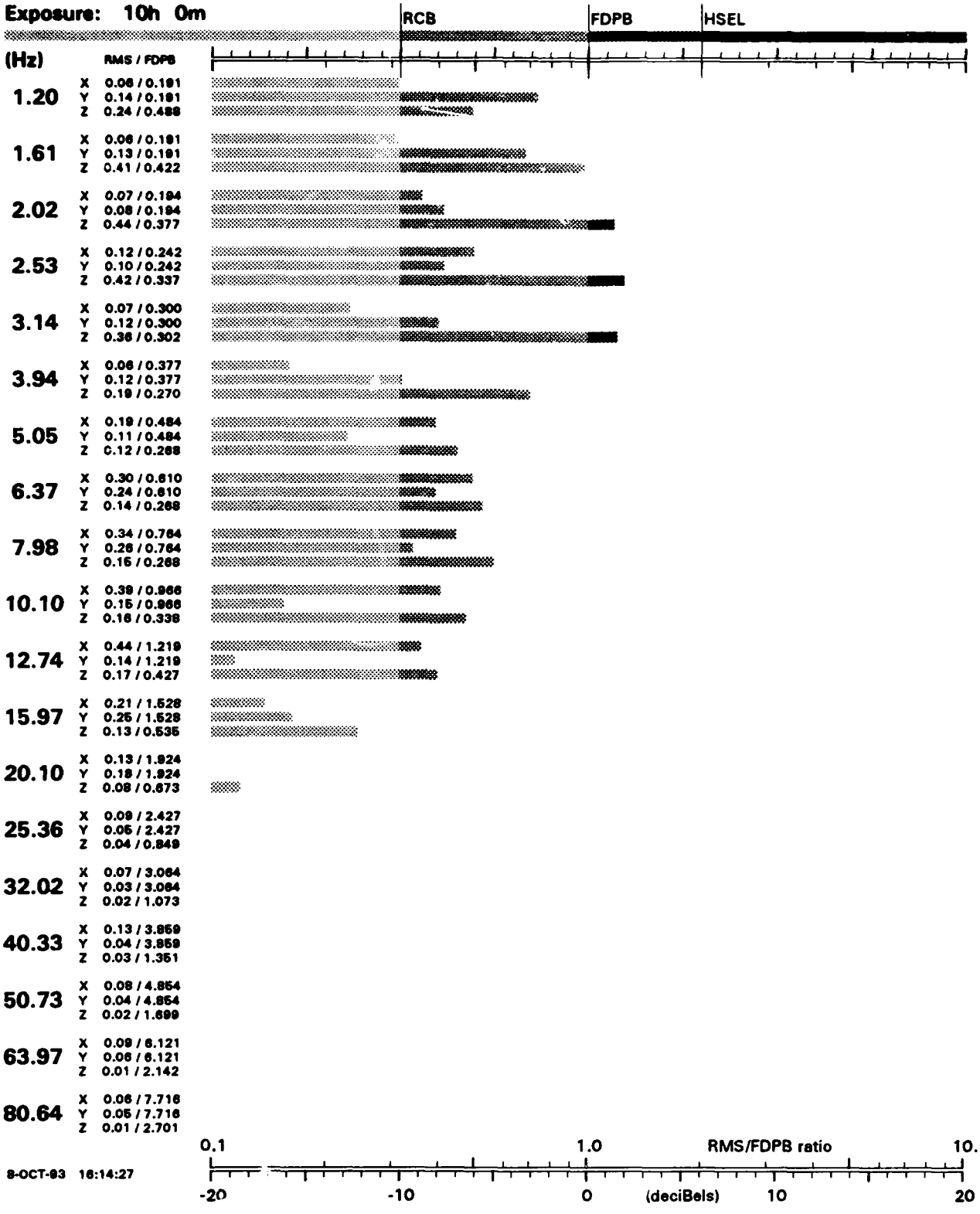
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

RUN-17 — **Front Seat**

Oct 4, 1993 — **HET Ride Quality**

Exposure: 10h 0m



8-OCT-93 16:14:27

Course: Secondary A
Speed: 25 mph
Note: No Load

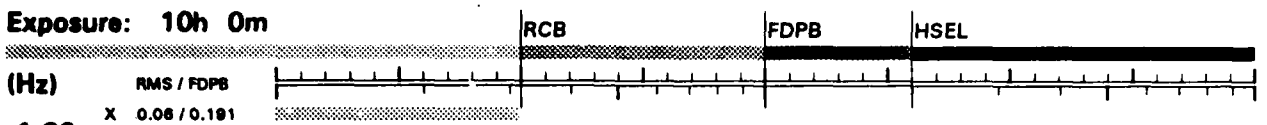
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

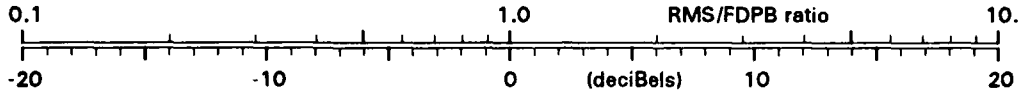
RUN-17
Oct 4, 1993

Roadside Seat
HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.06 / 0.191
	Y	0.12 / 0.191
	Z	0.18 / 0.488
1.61	X	0.05 / 0.191
	Y	0.11 / 0.191
	Z	0.34 / 0.422
2.02	X	0.06 / 0.194
	Y	0.07 / 0.194
	Z	0.33 / 0.377
2.53	X	0.09 / 0.242
	Y	0.07 / 0.242
	Z	0.31 / 0.337
3.14	X	0.08 / 0.300
	Y	0.09 / 0.300
	Z	0.30 / 0.302
3.94	X	0.07 / 0.377
	Y	0.07 / 0.377
	Z	0.20 / 0.270
5.05	X	0.34 / 0.484
	Y	0.16 / 0.484
	Z	0.23 / 0.268
6.37	X	0.47 / 0.610
	Y	0.29 / 0.610
	Z	0.30 / 0.268
7.98	X	0.36 / 0.764
	Y	0.29 / 0.764
	Z	0.16 / 0.268
10.10	X	0.39 / 0.966
	Y	0.26 / 0.966
	Z	0.14 / 0.338
12.74	X	0.48 / 1.219
	Y	0.28 / 1.219
	Z	0.19 / 0.427
15.97	X	0.21 / 1.528
	Y	0.20 / 1.528
	Z	0.15 / 0.535
20.10	X	0.09 / 1.924
	Y	0.13 / 1.924
	Z	0.12 / 0.673
25.36	X	0.06 / 2.427
	Y	0.07 / 2.427
	Z	0.07 / 0.849
32.02	X	0.05 / 3.064
	Y	0.05 / 3.064
	Z	0.04 / 1.073
40.33	X	0.04 / 3.859
	Y	0.13 / 3.859
	Z	0.02 / 1.351
50.73	X	0.03 / 4.854
	Y	0.03 / 4.854
	Z	0.01 / 1.699
63.97	X	0.04 / 8.121
	Y	0.05 / 8.121
	Z	0.01 / 2.142
80.64	X	0.06 / 7.716
	Y	0.07 / 7.716
	Z	0.02 / 2.701



8-OCT-93 16:14:27

Course: Secondary A
Speed: 25 mph
Note: No Load

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

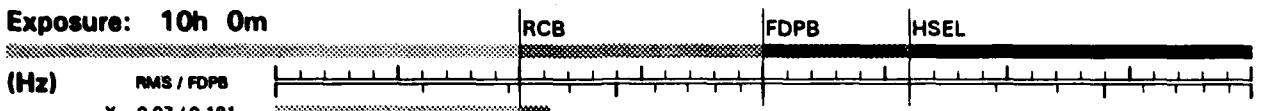
RUN-17

Oct 4, 1993

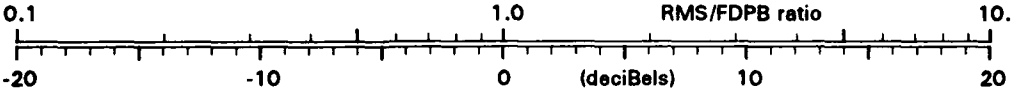
Curbside Seat

HET Ride Quality

Exposure: 10h 0m

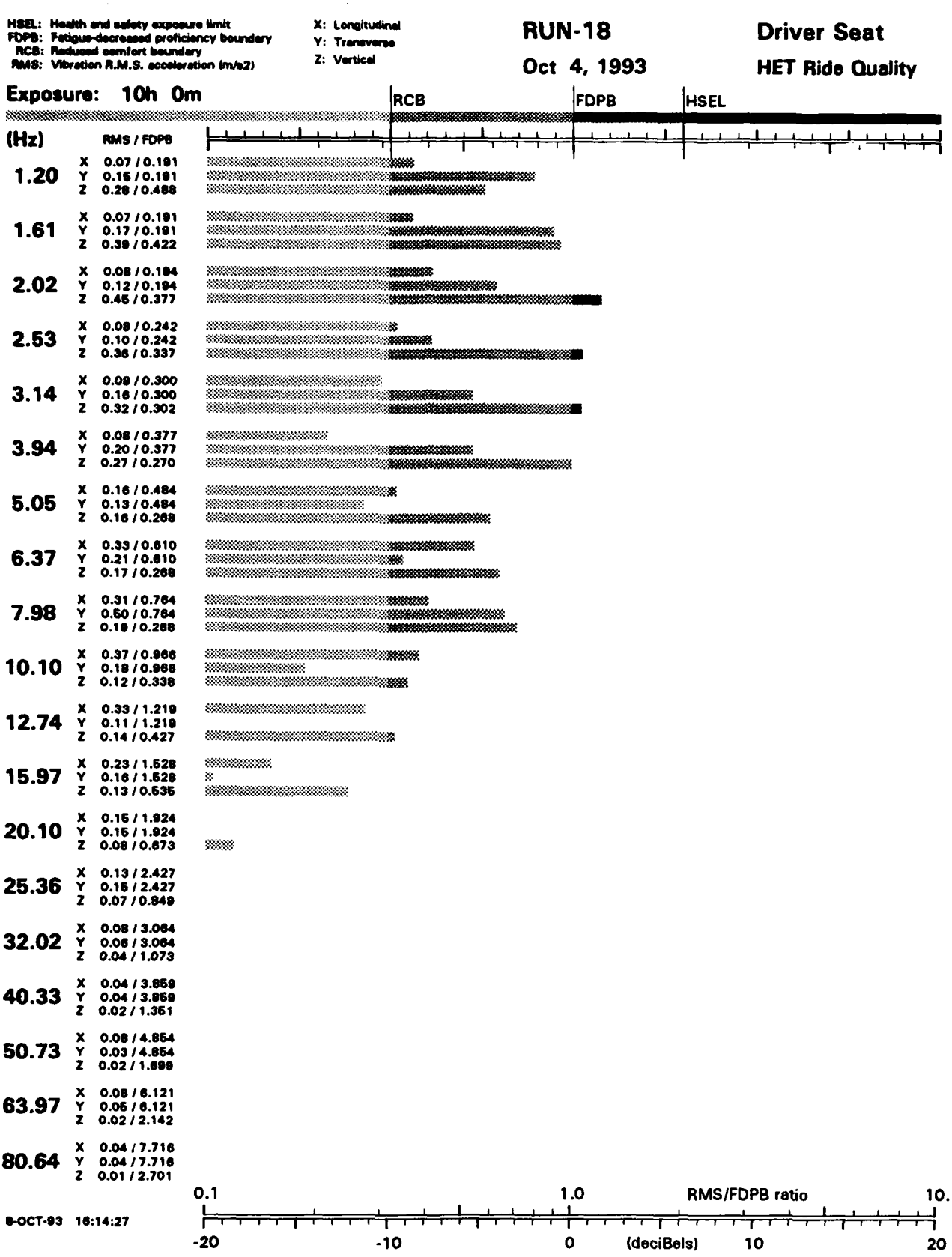


(Hz)		RMS / FDPB
1.20	X	0.07 / 0.191
	Y	0.10 / 0.191
	Z	0.19 / 0.488
1.61	X	0.06 / 0.191
	Y	0.09 / 0.191
	Z	0.36 / 0.422
2.02	X	0.06 / 0.194
	Y	0.06 / 0.194
	Z	0.37 / 0.377
2.53	X	0.12 / 0.242
	Y	0.06 / 0.242
	Z	0.32 / 0.337
3.14	X	0.08 / 0.300
	Y	0.07 / 0.300
	Z	0.30 / 0.302
3.94	X	0.08 / 0.377
	Y	0.07 / 0.377
	Z	0.17 / 0.270
5.05	X	0.31 / 0.484
	Y	0.19 / 0.484
	Z	0.21 / 0.268
6.37	X	0.43 / 0.610
	Y	0.29 / 0.610
	Z	0.27 / 0.268
7.98	X	0.36 / 0.764
	Y	0.30 / 0.764
	Z	0.15 / 0.268
10.10	X	0.37 / 0.966
	Y	0.30 / 0.966
	Z	0.15 / 0.338
12.74	X	0.38 / 1.219
	Y	0.32 / 1.219
	Z	0.19 / 0.427
15.97	X	0.15 / 1.528
	Y	0.21 / 1.528
	Z	0.18 / 0.535
20.10	X	0.08 / 1.924
	Y	0.12 / 1.924
	Z	0.11 / 0.673
25.36	X	0.07 / 2.427
	Y	0.07 / 2.427
	Z	0.08 / 0.849
32.02	X	0.05 / 3.064
	Y	0.04 / 3.064
	Z	0.07 / 1.073
40.33	X	0.06 / 3.859
	Y	0.12 / 3.859
	Z	0.04 / 1.351
50.73	X	0.03 / 4.854
	Y	0.03 / 4.854
	Z	0.02 / 1.699
63.97	X	0.04 / 6.121
	Y	0.06 / 6.121
	Z	0.02 / 2.142
80.64	X	0.03 / 7.716
	Y	0.10 / 7.716
	Z	0.03 / 2.701

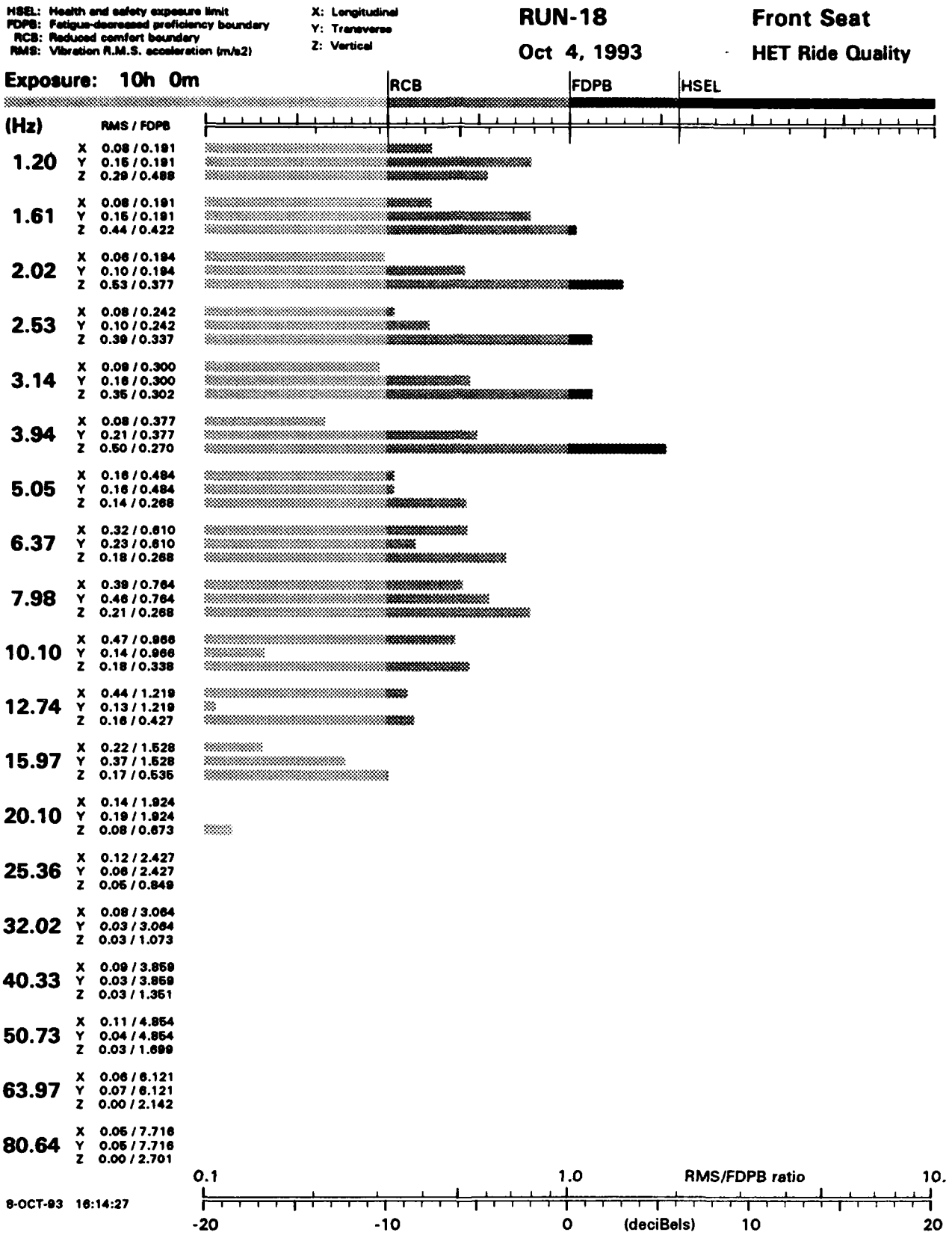


8-OCT-93 16:14:27

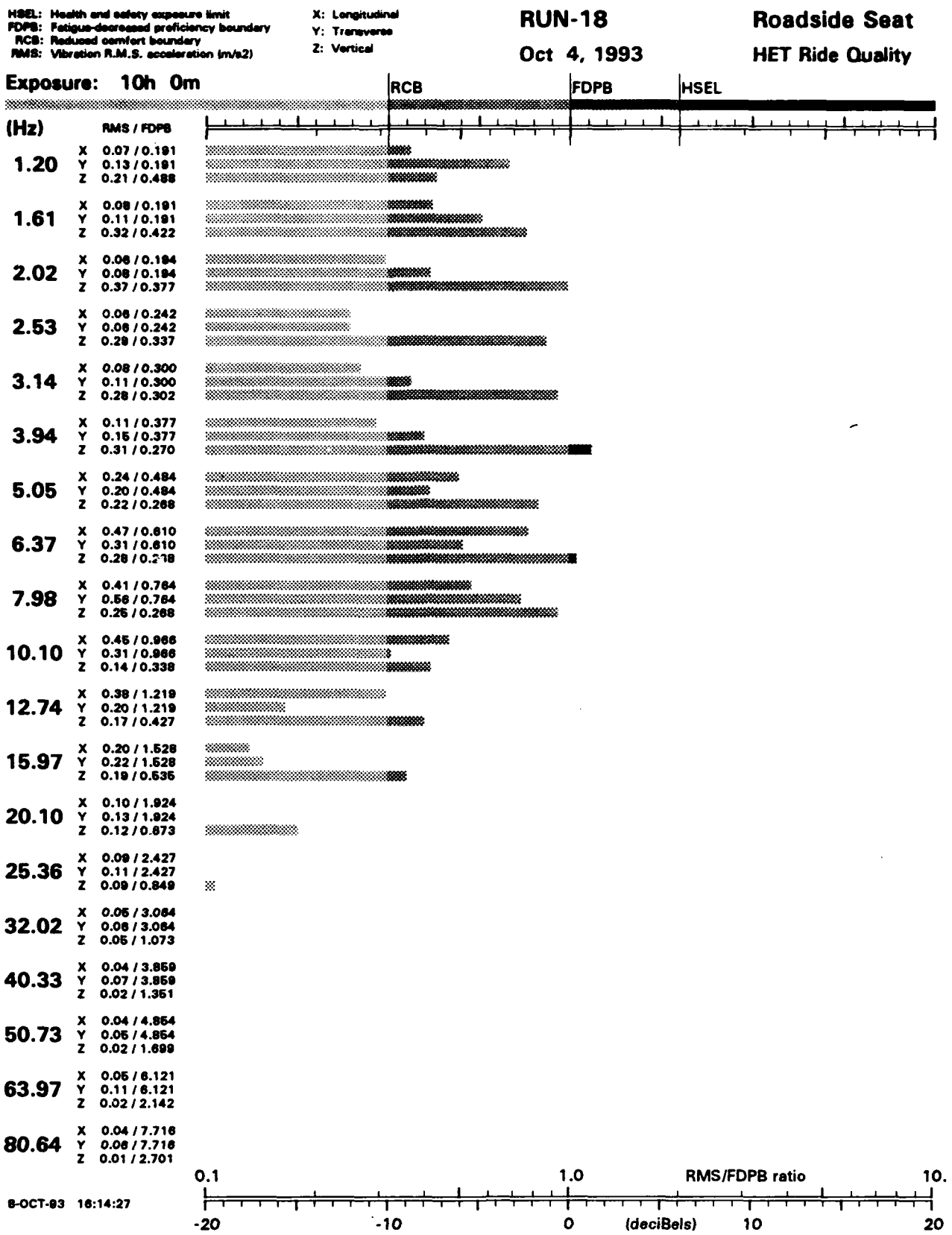
Course: Secondary A
Speed: 25 mph
Note: No Load



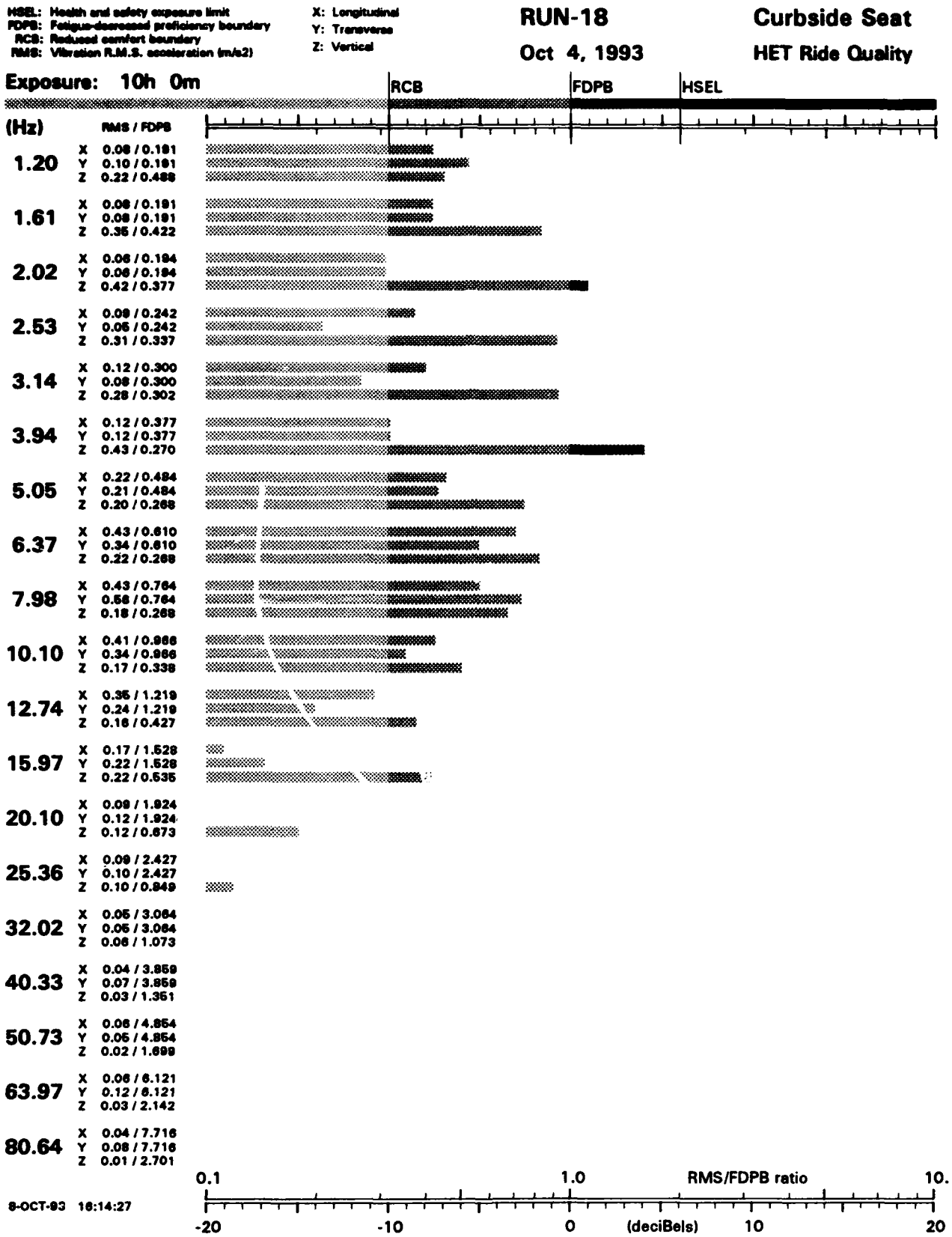
Course: Secondary A
Speed: 30 mph
Note: No Load



Course: Secondary A
Speed: 30 mph
Note: No Load



Course: Secondary A
Speed: 30 mph
Note: No Load



Course: Secondary A
Speed: 30 mph
Note: No Load

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

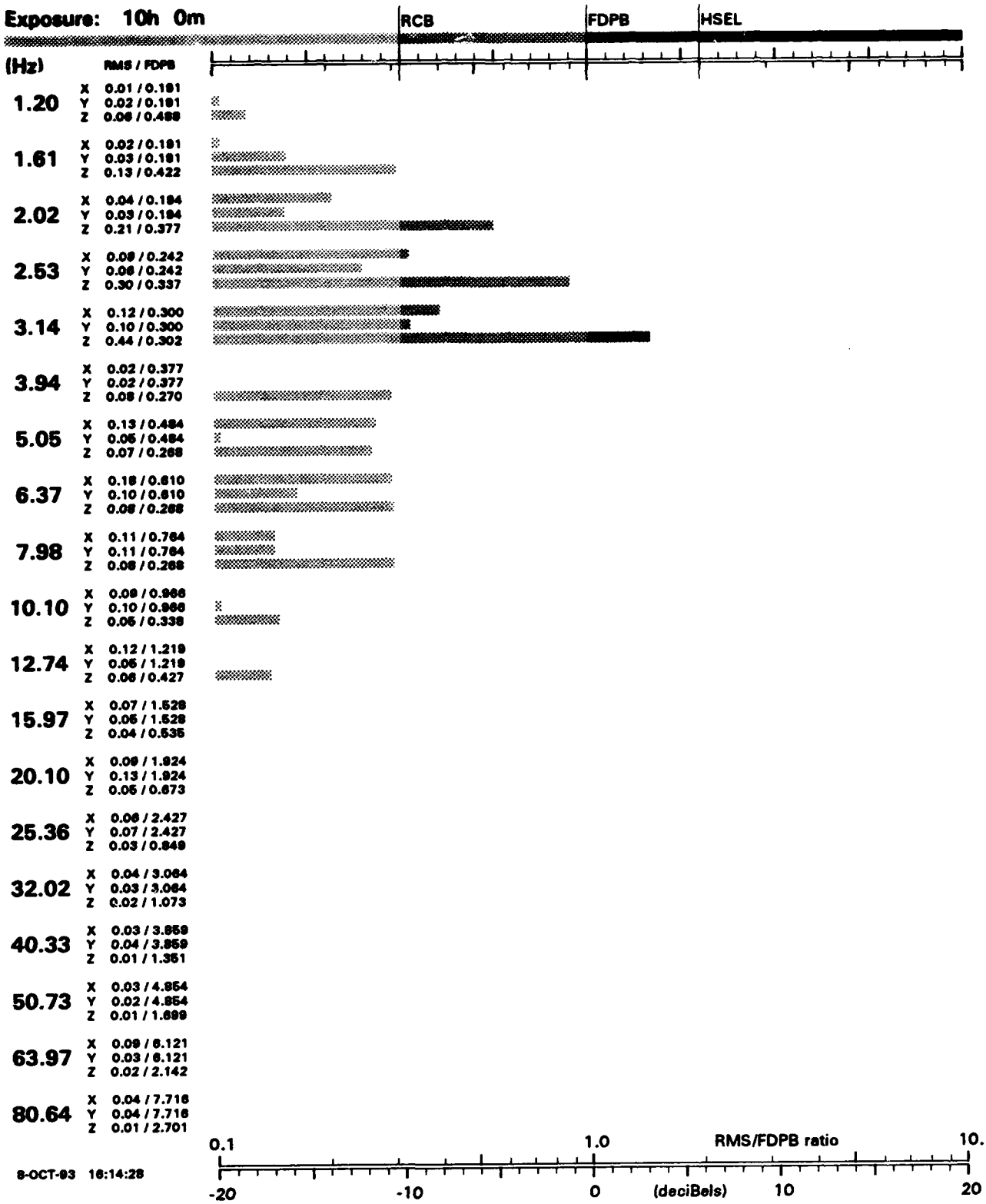
X: Longitudinal
Y: Transverse
Z: Vertical

RUN-19

Oct 4, 1993

Driver Seat

HET Ride Quality



Course: Paved
Speed: 25 mph
Note: No Load

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

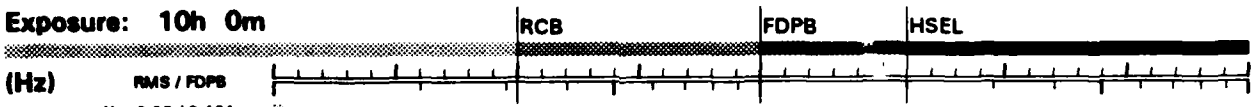
RUN-19

Oct 4, 1993

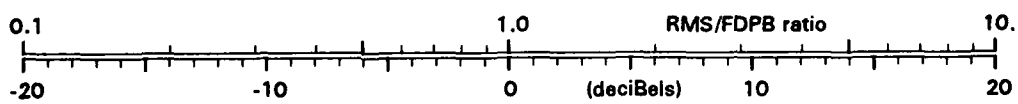
Front Seat

HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.02 / 0.181
	Y	0.03 / 0.181
	Z	0.06 / 0.488
1.61	X	0.02 / 0.181
	Y	0.03 / 0.181
	Z	0.13 / 0.422
2.02	X	0.02 / 0.184
	Y	0.03 / 0.184
	Z	0.22 / 0.377
2.53	X	0.05 / 0.242
	Y	0.07 / 0.242
	Z	0.28 / 0.337
3.14	X	0.08 / 0.300
	Y	0.13 / 0.300
	Z	0.43 / 0.302
3.94	X	0.02 / 0.377
	Y	0.04 / 0.377
	Z	0.09 / 0.270
5.05	X	0.10 / 0.484
	Y	0.05 / 0.484
	Z	0.07 / 0.268
6.37	X	0.15 / 0.610
	Y	0.11 / 0.610
	Z	0.13 / 0.268
7.98	X	0.11 / 0.764
	Y	0.12 / 0.764
	Z	0.08 / 0.268
10.10	X	0.12 / 0.966
	Y	0.08 / 0.966
	Z	0.08 / 0.338
12.74	X	0.17 / 1.219
	Y	0.05 / 1.219
	Z	0.07 / 0.427
15.97	X	0.08 / 1.528
	Y	0.10 / 1.528
	Z	0.04 / 0.535
20.10	X	0.06 / 1.924
	Y	0.13 / 1.924
	Z	0.05 / 0.673
25.36	X	0.04 / 2.427
	Y	0.04 / 2.427
	Z	0.03 / 0.849
32.02	X	0.03 / 3.064
	Y	0.02 / 3.064
	Z	0.02 / 1.073
40.33	X	0.11 / 3.859
	Y	0.02 / 3.859
	Z	0.01 / 1.351
50.73	X	0.05 / 4.854
	Y	0.01 / 4.854
	Z	0.00 / 1.699
63.97	X	0.07 / 6.121
	Y	0.04 / 6.121
	Z	0.02 / 2.142
80.64	X	0.04 / 7.716
	Y	0.04 / 7.716
	Z	0.01 / 2.701



8-OCT-93 16:14:28

Course: Paved
Speed: 25 mph
Note: No Load

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

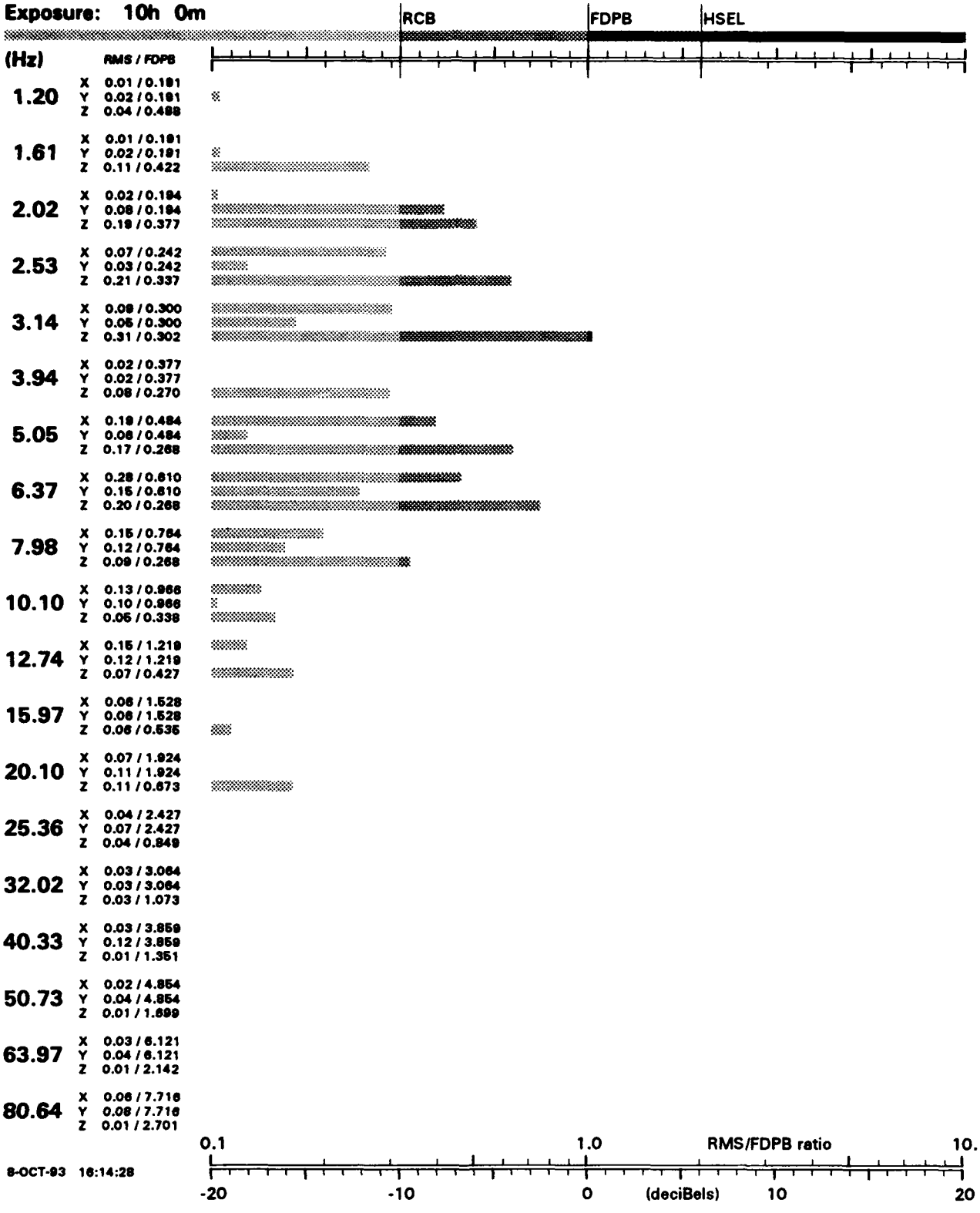
RUN-19

Oct 4, 1993

Roadside Seat

HET Ride Quality

Exposure: 10h 0m



8-OCT-93 16:14:28

Course: Paved
Speed: 25 mph
Note: No Load

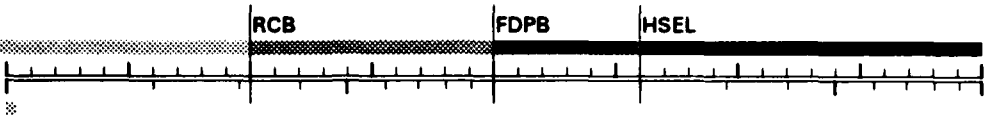
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

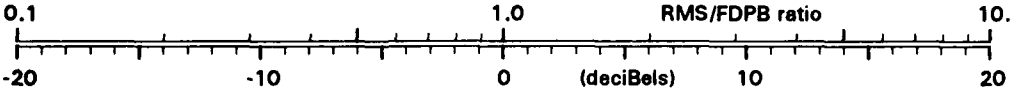
RUN-19
Oct 4, 1993

Curbside Seat
HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.02 / 0.191
	Y	0.02 / 0.191
	Z	0.04 / 0.488
1.61	X	0.02 / 0.191
	Y	0.02 / 0.191
	Z	0.12 / 0.422
2.02	X	0.02 / 0.194
	Y	0.02 / 0.194
	Z	0.20 / 0.377
2.53	X	0.08 / 0.242
	Y	0.03 / 0.242
	Z	0.21 / 0.337
3.14	X	0.09 / 0.300
	Y	0.04 / 0.300
	Z	0.30 / 0.302
3.94	X	0.02 / 0.377
	Y	0.02 / 0.377
	Z	0.08 / 0.270
5.05	X	0.21 / 0.484
	Y	0.09 / 0.484
	Z	0.12 / 0.268
6.37	X	0.30 / 0.610
	Y	0.16 / 0.610
	Z	0.17 / 0.268
7.98	X	0.15 / 0.764
	Y	0.11 / 0.764
	Z	0.07 / 0.268
10.10	X	0.12 / 0.966
	Y	0.10 / 0.966
	Z	0.06 / 0.338
12.74	X	0.14 / 1.219
	Y	0.14 / 1.219
	Z	0.07 / 0.427
15.97	X	0.05 / 1.528
	Y	0.06 / 1.528
	Z	0.05 / 0.535
20.10	X	0.05 / 1.924
	Y	0.11 / 1.924
	Z	0.06 / 0.673
25.36	X	0.04 / 2.427
	Y	0.06 / 2.427
	Z	0.05 / 0.849
32.02	X	0.04 / 3.064
	Y	0.03 / 3.064
	Z	0.04 / 1.073
40.33	X	0.04 / 3.859
	Y	0.10 / 3.859
	Z	0.02 / 1.351
50.73	X	0.03 / 4.854
	Y	0.03 / 4.854
	Z	0.02 / 1.699
63.97	X	0.04 / 6.121
	Y	0.04 / 6.121
	Z	0.02 / 2.142
80.64	X	0.04 / 7.716
	Y	0.10 / 7.716
	Z	0.03 / 2.701



8-OCT-93 16:14:28

Course: Paved
Speed: 25 mph
Note: No Load

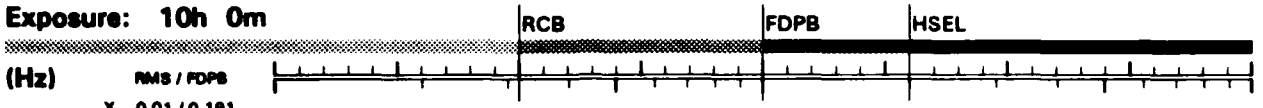
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

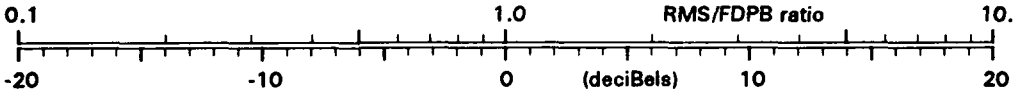
RUN-20
Oct 4, 1993

Driver Seat
HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.01 / 0.191
	Y	0.02 / 0.191
	Z	0.06 / 0.488
1.61	X	0.02 / 0.191
	Y	0.03 / 0.191
	Z	0.10 / 0.422
2.02	X	0.03 / 0.194
	Y	0.03 / 0.194
	Z	0.18 / 0.377
2.53	X	0.03 / 0.242
	Y	0.02 / 0.242
	Z	0.15 / 0.337
3.14	X	0.06 / 0.300
	Y	0.09 / 0.300
	Z	0.20 / 0.302
3.94	X	0.09 / 0.377
	Y	0.19 / 0.377
	Z	0.29 / 0.270
5.05	X	0.03 / 0.484
	Y	0.03 / 0.484
	Z	0.05 / 0.268
6.37	X	0.20 / 0.610
	Y	0.11 / 0.610
	Z	0.10 / 0.268
7.98	X	0.15 / 0.764
	Y	0.23 / 0.764
	Z	0.14 / 0.268
10.10	X	0.12 / 0.966
	Y	0.07 / 0.966
	Z	0.04 / 0.338
12.74	X	0.11 / 1.219
	Y	0.03 / 1.219
	Z	0.04 / 0.427
15.97	X	0.07 / 1.528
	Y	0.04 / 1.528
	Z	0.04 / 0.535
20.10	X	0.07 / 1.924
	Y	0.06 / 1.924
	Z	0.03 / 0.673
25.36	X	0.12 / 2.427
	Y	0.13 / 2.427
	Z	0.06 / 0.849
32.02	X	0.04 / 3.064
	Y	0.04 / 3.064
	Z	0.02 / 1.073
40.33	X	0.03 / 3.859
	Y	0.03 / 3.859
	Z	0.01 / 1.351
50.73	X	0.07 / 4.854
	Y	0.02 / 4.854
	Z	0.02 / 1.699
63.97	X	0.07 / 6.121
	Y	0.05 / 6.121
	Z	0.02 / 2.142
80.64	X	0.05 / 7.716
	Y	0.04 / 7.716
	Z	0.01 / 2.701



8-OCT-93 16:14:29

Course: Paved
Speed: 30 mph
Note: No Load

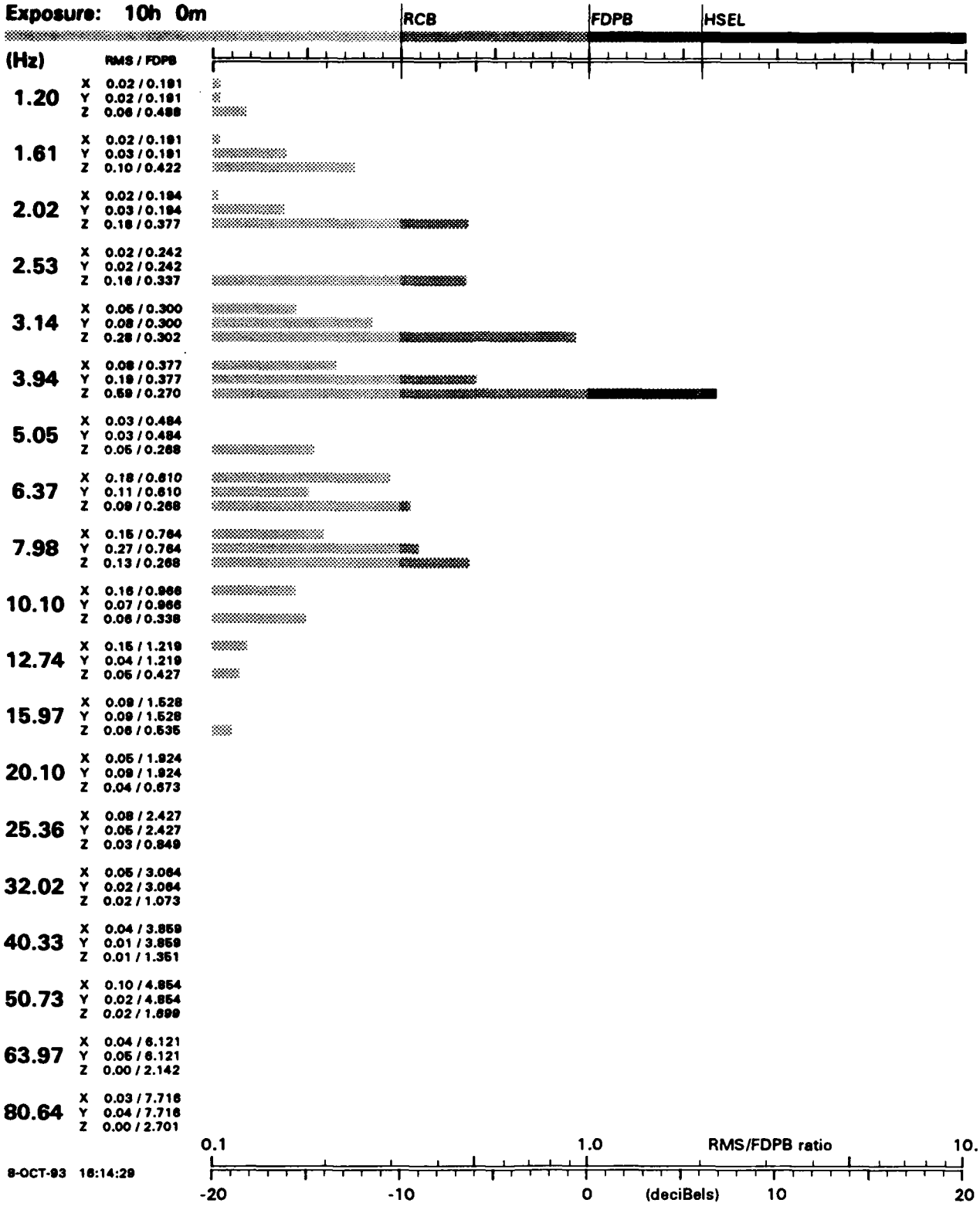
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

RUN-20 — **Front Seat**

Oct 4, 1993 — **HET Ride Quality**

Exposure: 10h 0m



8-OCT-93 16:14:29

Course: Paved
Speed: 30 mph
Note: No Load

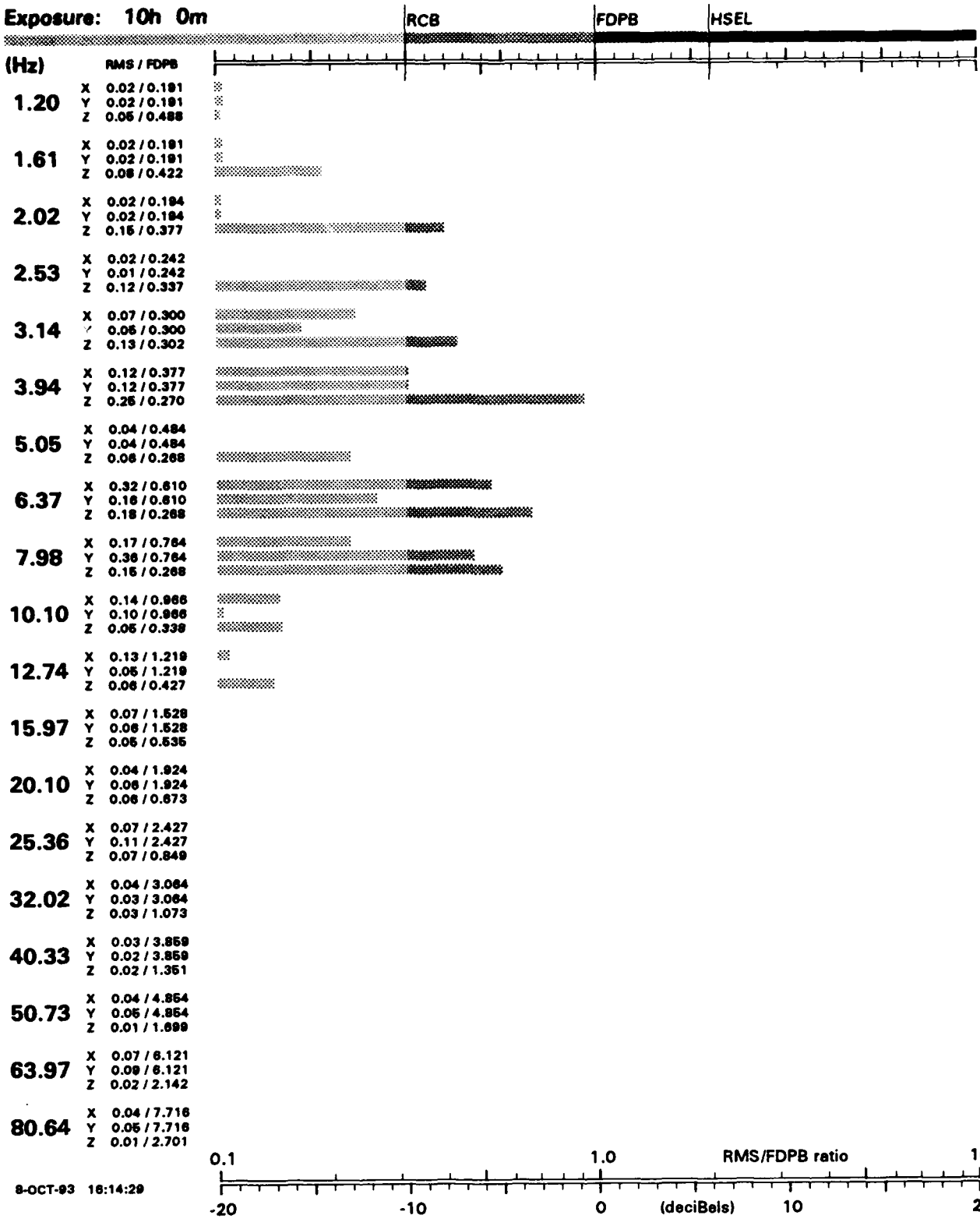
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

RUN-20
Oct 4, 1993

Roadside Seat
HET Ride Quality

Exposure: 10h 0m



8-OCT-93 16:14:29

Course: Paved
Speed: 30 mph
Note: No Load

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

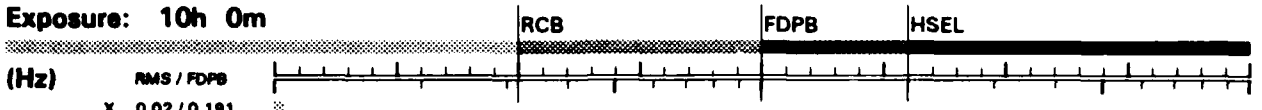
RUN-20

Oct 4, 1993

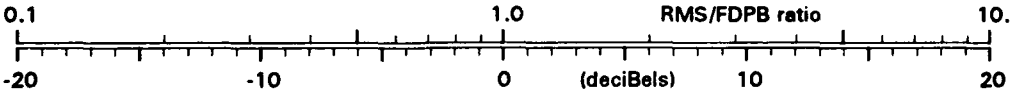
Curbside Seat

HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.02 / 0.191
	Y	0.02 / 0.191
	Z	0.05 / 0.488
1.61	X	0.02 / 0.191
	Y	0.02 / 0.191
	Z	0.08 / 0.422
2.02	X	0.02 / 0.194
	Y	0.02 / 0.194
	Z	0.16 / 0.377
2.53	X	0.03 / 0.242
	Y	0.02 / 0.242
	Z	0.13 / 0.337
3.14	X	0.06 / 0.300
	Y	0.04 / 0.300
	Z	0.18 / 0.302
3.94	X	0.07 / 0.377
	Y	0.08 / 0.377
	Z	0.38 / 0.270
5.05	X	0.05 / 0.484
	Y	0.04 / 0.484
	Z	0.05 / 0.268
6.37	X	0.32 / 0.810
	Y	0.18 / 0.810
	Z	0.15 / 0.268
7.98	X	0.16 / 0.764
	Y	0.36 / 0.764
	Z	0.11 / 0.268
10.10	X	0.14 / 0.966
	Y	0.10 / 0.966
	Z	0.07 / 0.338
12.74	X	0.12 / 1.219
	Y	0.06 / 1.219
	Z	0.07 / 0.427
15.97	X	0.06 / 1.528
	Y	0.06 / 1.528
	Z	0.06 / 0.535
20.10	X	0.03 / 1.924
	Y	0.05 / 1.924
	Z	0.05 / 0.673
25.36	X	0.08 / 2.427
	Y	0.09 / 2.427
	Z	0.08 / 0.849
32.02	X	0.03 / 3.064
	Y	0.03 / 3.064
	Z	0.05 / 1.073
40.33	X	0.02 / 3.859
	Y	0.02 / 3.859
	Z	0.02 / 1.351
50.73	X	0.05 / 4.854
	Y	0.04 / 4.854
	Z	0.02 / 1.699
63.97	X	0.04 / 6.121
	Y	0.10 / 6.121
	Z	0.02 / 2.142
80.64	X	0.03 / 7.716
	Y	0.07 / 7.716
	Z	0.01 / 2.701



8-OCT-93 16:14:29

Course: Paved
Speed: 30 mph
Note: No Load

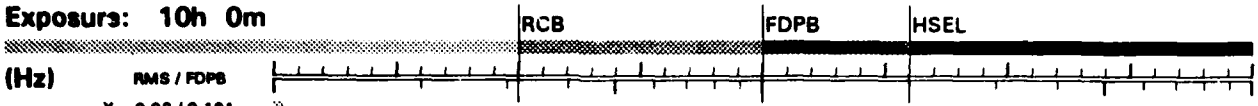
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

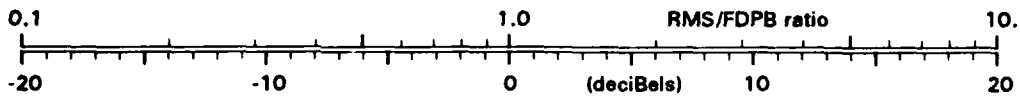
RUN-21
Oct 4, 1993

Driver Seat
HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.02 / 0.191
	Y	0.03 / 0.191
	Z	0.08 / 0.466
1.61	X	0.03 / 0.191
	Y	0.04 / 0.191
	Z	0.14 / 0.422
2.02	X	0.03 / 0.194
	Y	0.05 / 0.194
	Z	0.23 / 0.377
2.53	X	0.04 / 0.242
	Y	0.04 / 0.242
	Z	0.29 / 0.337
3.14	X	0.04 / 0.300
	Y	0.04 / 0.300
	Z	0.15 / 0.302
3.94	X	0.08 / 0.377
	Y	0.14 / 0.377
	Z	0.31 / 0.270
5.05	X	0.06 / 0.484
	Y	0.08 / 0.484
	Z	0.17 / 0.268
6.37	X	0.08 / 0.610
	Y	0.05 / 0.610
	Z	0.07 / 0.268
7.98	X	0.21 / 0.764
	Y	0.30 / 0.764
	Z	0.13 / 0.268
10.10	X	0.11 / 0.966
	Y	0.10 / 0.966
	Z	0.06 / 0.338
12.74	X	0.17 / 1.219
	Y	0.05 / 1.219
	Z	0.07 / 0.427
15.97	X	0.07 / 1.528
	Y	0.04 / 1.528
	Z	0.04 / 0.535
20.10	X	0.06 / 1.924
	Y	0.06 / 1.924
	Z	0.03 / 0.673
25.36	X	0.05 / 2.427
	Y	0.04 / 2.427
	Z	0.02 / 0.849
32.02	X	0.08 / 3.064
	Y	0.08 / 3.064
	Z	0.04 / 1.073
40.33	X	0.04 / 3.859
	Y	0.02 / 3.859
	Z	0.02 / 1.351
50.73	X	0.02 / 4.854
	Y	0.01 / 4.854
	Z	0.01 / 1.699
63.97	X	0.12 / 6.121
	Y	0.04 / 6.121
	Z	0.02 / 2.142
80.64	X	0.02 / 7.716
	Y	0.02 / 7.716
	Z	0.00 / 2.701



8-OCT-93 16:14:30

Course: Paved
Speed: 35 mph
Note: No Load

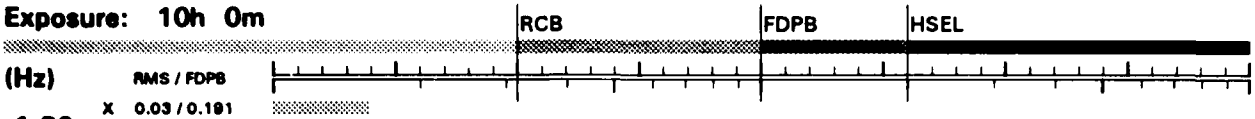
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

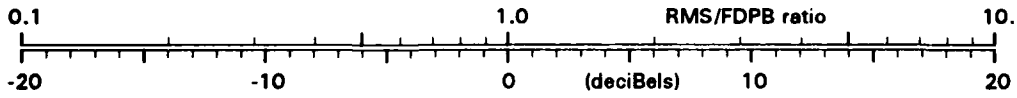
RUN-21
Oct 4, 1993

Front Seat
HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.03 / 0.191
	Y	0.03 / 0.191
	Z	0.08 / 0.488
1.61	X	0.03 / 0.191
	Y	0.03 / 0.191
	Z	0.14 / 0.422
2.02	X	0.03 / 0.194
	Y	0.04 / 0.194
	Z	0.25 / 0.377
2.53	X	0.02 / 0.242
	Y	0.03 / 0.242
	Z	0.32 / 0.337
3.14	X	0.02 / 0.300
	Y	0.03 / 0.300
	Z	0.17 / 0.302
3.94	X	0.12 / 0.377
	Y	0.13 / 0.377
	Z	0.47 / 0.270
5.05	X	0.07 / 0.484
	Y	0.08 / 0.484
	Z	0.25 / 0.268
6.37	X	0.08 / 0.610
	Y	0.05 / 0.610
	Z	0.05 / 0.268
7.98	X	0.19 / 0.764
	Y	0.25 / 0.764
	Z	0.11 / 0.268
10.10	X	0.13 / 0.966
	Y	0.08 / 0.966
	Z	0.06 / 0.338
12.74	X	0.24 / 1.219
	Y	0.05 / 1.219
	Z	0.06 / 0.427
15.97	X	0.06 / 1.528
	Y	0.08 / 1.528
	Z	0.05 / 0.535
20.10	X	0.04 / 1.924
	Y	0.07 / 1.924
	Z	0.03 / 0.673
25.36	X	0.05 / 2.427
	Y	0.02 / 2.427
	Z	0.02 / 0.849
32.02	X	0.06 / 3.064
	Y	0.02 / 3.064
	Z	0.02 / 1.073
40.33	X	0.06 / 3.859
	Y	0.02 / 3.859
	Z	0.01 / 1.351
50.73	X	0.06 / 4.854
	Y	0.03 / 4.854
	Z	0.01 / 1.699
63.97	X	0.21 / 6.121
	Y	0.12 / 6.121
	Z	0.05 / 2.142
80.64	X	0.03 / 7.716
	Y	0.03 / 7.716
	Z	0.00 / 2.701



8-OCT-93 16:14:30

Course: Paved
Speed: 35 mph
Note: No Load

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

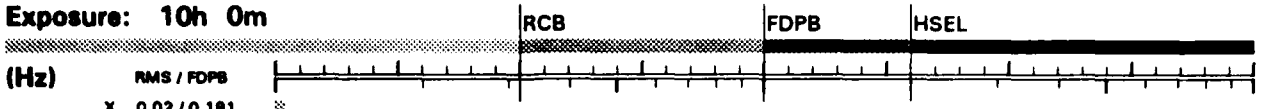
RUN-21

Oct 4, 1993

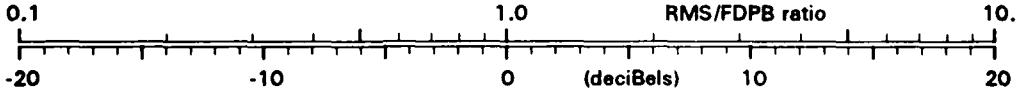
Roadside Seat

HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.02 / 0.181
	Y	0.03 / 0.191
	Z	0.06 / 0.489
1.61	X	0.03 / 0.191
	Y	0.02 / 0.191
	Z	0.11 / 0.422
2.02	X	0.04 / 0.194
	Y	0.03 / 0.194
	Z	0.17 / 0.377
2.53	X	0.04 / 0.242
	Y	0.02 / 0.242
	Z	0.21 / 0.337
3.14	X	0.04 / 0.300
	Y	0.03 / 0.300
	Z	0.12 / 0.302
3.94	X	0.09 / 0.377
	Y	0.10 / 0.377
	Z	0.30 / 0.270
5.05	X	0.08 / 0.484
	Y	0.07 / 0.484
	Z	0.19 / 0.268
6.37	X	0.13 / 0.610
	Y	0.08 / 0.610
	Z	0.09 / 0.268
7.98	X	0.28 / 0.764
	Y	0.31 / 0.764
	Z	0.16 / 0.268
10.10	X	0.15 / 0.966
	Y	0.12 / 0.966
	Z	0.06 / 0.338
12.74	X	0.21 / 1.219
	Y	0.10 / 1.219
	Z	0.10 / 0.427
15.97	X	0.06 / 1.528
	Y	0.07 / 1.528
	Z	0.06 / 0.535
20.10	X	0.04 / 1.924
	Y	0.06 / 1.924
	Z	0.05 / 0.673
25.36	X	0.03 / 2.427
	Y	0.03 / 2.427
	Z	0.03 / 0.849
32.02	X	0.08 / 3.064
	Y	0.08 / 3.064
	Z	0.05 / 1.073
40.33	X	0.03 / 3.859
	Y	0.03 / 3.859
	Z	0.01 / 1.351
50.73	X	0.02 / 4.854
	Y	0.02 / 4.854
	Z	0.01 / 1.699
63.97	X	0.06 / 8.121
	Y	0.06 / 8.121
	Z	0.02 / 2.142
80.64	X	0.02 / 7.716
	Y	0.03 / 7.716
	Z	0.00 / 2.701



8-OCT-93 16:14:30

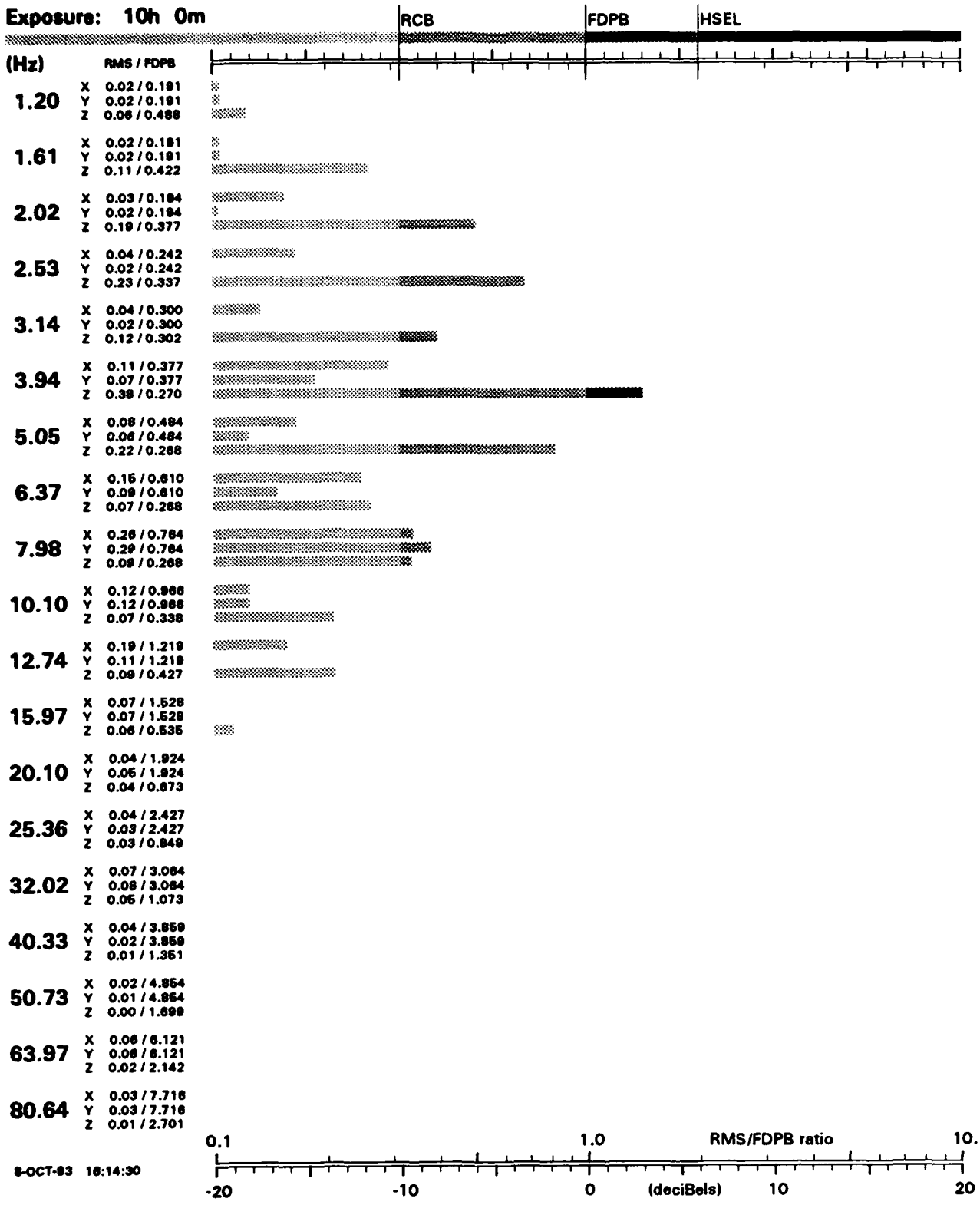
Course: Paved
Speed: 35 mph
Note: No Load

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
Oct 4, 1993

Curbside Seat
HET Ride Quality



Course: Paved
Speed: 35 mph
Note: No Load

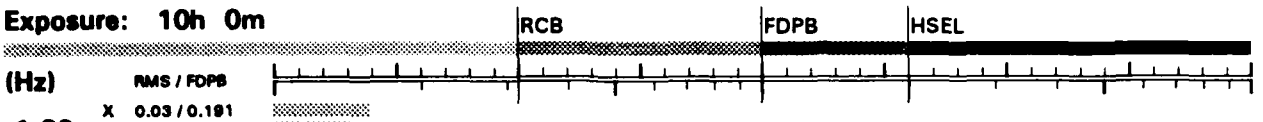
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

RUN-22 — **Driver Seat**

Oct 4, 1993 — **HET Ride Quality**

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.03 / 0.191
	Y	0.03 / 0.191
	Z	0.06 / 0.488
1.61	X	0.03 / 0.191
	Y	0.03 / 0.191
	Z	0.13 / 0.422
2.02	X	0.06 / 0.194
	Y	0.04 / 0.194
	Z	0.17 / 0.377
2.53	X	0.04 / 0.242
	Y	0.04 / 0.242
	Z	0.21 / 0.337
3.14	X	0.02 / 0.300
	Y	0.02 / 0.300
	Z	0.11 / 0.302
3.94	X	0.05 / 0.377
	Y	0.05 / 0.377
	Z	0.10 / 0.270
5.05	X	0.10 / 0.484
	Y	0.23 / 0.484
	Z	0.26 / 0.268
6.37	X	0.07 / 0.610
	Y	0.04 / 0.610
	Z	0.05 / 0.268
7.98	X	0.13 / 0.764
	Y	0.09 / 0.764
	Z	0.07 / 0.268
10.10	X	0.13 / 0.966
	Y	0.12 / 0.966
	Z	0.08 / 0.338
12.74	X	0.12 / 1.219
	Y	0.04 / 1.219
	Z	0.05 / 0.427
15.97	X	0.08 / 1.528
	Y	0.04 / 1.528
	Z	0.05 / 0.535
20.10	X	0.07 / 1.924
	Y	0.07 / 1.924
	Z	0.03 / 0.673
25.36	X	0.07 / 2.427
	Y	0.06 / 2.427
	Z	0.03 / 0.849
32.02	X	0.10 / 3.064
	Y	0.09 / 3.064
	Z	0.03 / 1.073
40.33	X	0.05 / 3.859
	Y	0.05 / 3.859
	Z	0.02 / 1.351
50.73	X	0.04 / 4.854
	Y	0.02 / 4.854
	Z	0.01 / 1.699
63.97	X	0.08 / 6.121
	Y	0.07 / 6.121
	Z	0.02 / 2.142
80.64	X	0.03 / 7.716
	Y	0.03 / 7.716
	Z	0.01 / 2.701

8-OCT-93 16:14:30

Course: Paved
Speed: 40 mph
Note: No Load

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

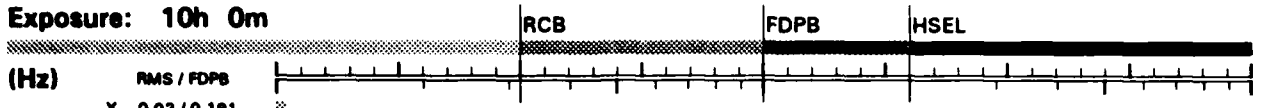
RUN-22

Oct 4, 1993

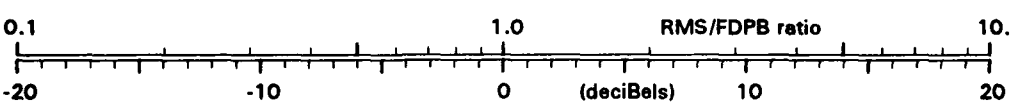
Front Seat

HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.02 / 0.191
	Y	0.03 / 0.191
	Z	0.06 / 0.488
1.61	X	0.02 / 0.191
	Y	0.02 / 0.191
	Z	0.12 / 0.422
2.02	X	0.03 / 0.194
	Y	0.03 / 0.194
	Z	0.18 / 0.377
2.53	X	0.03 / 0.242
	Y	0.03 / 0.242
	Z	0.22 / 0.337
3.14	X	0.02 / 0.300
	Y	0.02 / 0.300
	Z	0.11 / 0.302
3.94	X	0.03 / 0.377
	Y	0.04 / 0.377
	Z	0.14 / 0.270
5.05	X	0.10 / 0.484
	Y	0.21 / 0.484
	Z	0.40 / 0.268
6.37	X	0.06 / 0.610
	Y	0.05 / 0.610
	Z	0.06 / 0.268
7.98	X	0.13 / 0.764
	Y	0.10 / 0.764
	Z	0.06 / 0.268
10.10	X	0.18 / 0.966
	Y	0.12 / 0.966
	Z	0.14 / 0.338
12.74	X	0.17 / 1.219
	Y	0.04 / 1.219
	Z	0.06 / 0.427
15.97	X	0.07 / 1.528
	Y	0.09 / 1.528
	Z	0.06 / 0.535
20.10	X	0.04 / 1.924
	Y	0.09 / 1.924
	Z	0.04 / 0.673
25.36	X	0.05 / 2.427
	Y	0.02 / 2.427
	Z	0.02 / 0.849
32.02	X	0.11 / 3.064
	Y	0.02 / 3.064
	Z	0.03 / 1.073
40.33	X	0.09 / 3.859
	Y	0.01 / 3.859
	Z	0.02 / 1.351
50.73	X	0.06 / 4.854
	Y	0.02 / 4.854
	Z	0.01 / 1.699
63.97	X	0.09 / 6.121
	Y	0.06 / 6.121
	Z	0.01 / 2.142
80.64	X	0.04 / 7.716
	Y	0.03 / 7.716
	Z	0.00 / 2.701



8-OCT-93 16:14:30

Course: Paved
Speed: 40 mph
Note: No Load

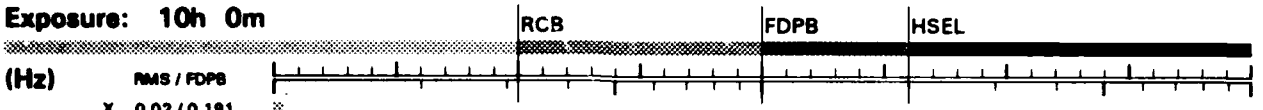
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

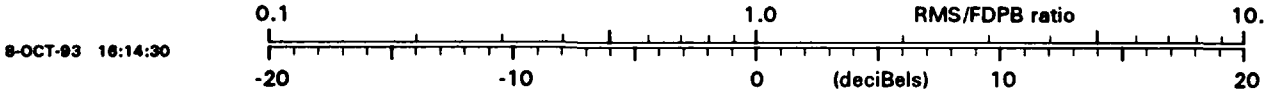
RUN-22 — **Roadside Seat**

Oct 4, 1993 — **HET Ride Quality**

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.02 / 0.181
	Y	0.03 / 0.181
	Z	0.04 / 0.488
1.61	X	0.02 / 0.191
	Y	0.02 / 0.191
	Z	0.11 / 0.422
2.02	X	0.04 / 0.184
	Y	0.02 / 0.184
	Z	0.14 / 0.377
2.53	X	0.05 / 0.242
	Y	0.02 / 0.242
	Z	0.13 / 0.337
3.14	X	0.02 / 0.300
	Y	0.02 / 0.300
	Z	0.08 / 0.302
3.94	X	0.06 / 0.377
	Y	0.03 / 0.377
	Z	0.09 / 0.270
5.05	X	0.11 / 0.484
	Y	0.19 / 0.484
	Z	0.34 / 0.268
6.37	X	0.11 / 0.610
	Y	0.07 / 0.610
	Z	0.06 / 0.268
7.98	X	0.19 / 0.764
	Y	0.13 / 0.764
	Z	0.15 / 0.268
10.10	X	0.17 / 0.966
	Y	0.21 / 0.966
	Z	0.08 / 0.338
12.74	X	0.16 / 1.219
	Y	0.05 / 1.219
	Z	0.08 / 0.427
15.97	X	0.08 / 1.528
	Y	0.06 / 1.528
	Z	0.07 / 0.535
20.10	X	0.05 / 1.924
	Y	0.05 / 1.924
	Z	0.05 / 0.673
25.36	X	0.04 / 2.427
	Y	0.04 / 2.427
	Z	0.04 / 0.849
32.02	X	0.10 / 3.064
	Y	0.07 / 3.064
	Z	0.04 / 1.073
40.33	X	0.05 / 3.859
	Y	0.07 / 3.859
	Z	0.02 / 1.351
50.73	X	0.03 / 4.854
	Y	0.02 / 4.854
	Z	0.01 / 1.699
63.97	X	0.08 / 6.121
	Y	0.28 / 6.121
	Z	0.02 / 2.142
80.64	X	0.03 / 7.716
	Y	0.01 / 7.716
	Z	0.04 / 2.701



8-OCT-93 16:14:30

Course: Paved
Speed: 40 mph
Note: No Load

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

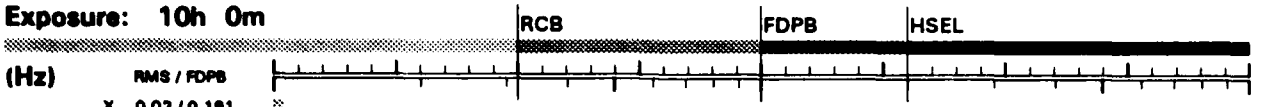
RUN-22

Oct 4, 1993

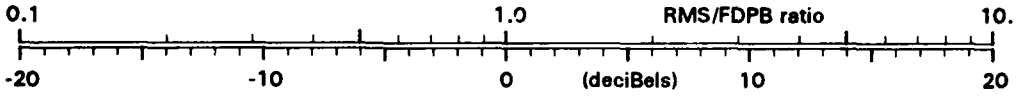
Curbside Seat

HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.02 / 0.191
	Y	0.03 / 0.191
	Z	0.06 / 0.488
1.61	X	0.02 / 0.191
	Y	0.02 / 0.191
	Z	0.10 / 0.422
2.02	X	0.04 / 0.194
	Y	0.03 / 0.194
	Z	0.14 / 0.377
2.53	X	0.05 / 0.242
	Y	0.02 / 0.242
	Z	0.15 / 0.337
3.14	X	0.02 / 0.300
	Y	0.02 / 0.300
	Z	0.08 / 0.302
3.94	X	0.05 / 0.377
	Y	0.03 / 0.377
	Z	0.09 / 0.270
5.05	X	0.18 / 0.484
	Y	0.15 / 0.484
	Z	0.41 / 0.268
6.37	X	0.11 / 0.610
	Y	0.06 / 0.610
	Z	0.06 / 0.268
7.98	X	0.16 / 0.764
	Y	0.14 / 0.764
	Z	0.07 / 0.268
10.10	X	0.17 / 0.966
	Y	0.21 / 0.966
	Z	0.15 / 0.338
12.74	X	0.14 / 1.219
	Y	0.06 / 1.219
	Z	0.07 / 0.427
15.97	X	0.05 / 1.528
	Y	0.06 / 1.528
	Z	0.06 / 0.535
20.10	X	0.04 / 1.924
	Y	0.05 / 1.924
	Z	0.04 / 0.673
25.36	X	0.04 / 2.427
	Y	0.04 / 2.427
	Z	0.03 / 0.849
32.02	X	0.05 / 3.064
	Y	0.06 / 3.064
	Z	0.03 / 1.073
40.33	X	0.05 / 3.859
	Y	0.07 / 3.859
	Z	0.01 / 1.351
50.73	X	0.03 / 4.854
	Y	0.02 / 4.854
	Z	0.00 / 1.699
63.97	X	0.05 / 8.121
	Y	0.29 / 8.121
	Z	0.02 / 2.142
80.64	X	0.06 / 7.716
	Y	0.06 / 7.716
	Z	0.01 / 2.701



8-OCT-93 16:14:30

Course: Paved
Speed: 40 mph
Note: No Load

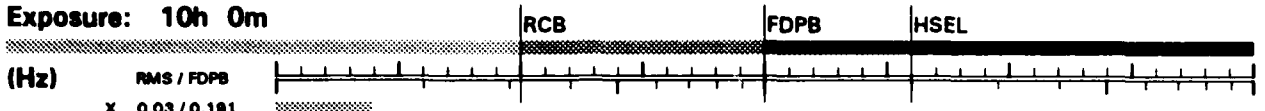
HSEL: Health and safety exposure limit
FDPB: Fatigue-decreased proficiency boundary
RCB: Reduced comfort boundary
RMS: Vibration R.M.S. acceleration (m/s2)

X: Longitudinal
Y: Transverse
Z: Vertical

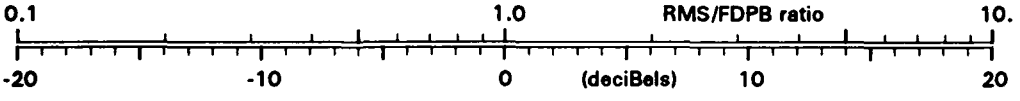
RUN-23
Oct 4, 1993

Driver Seat
HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.03 / 0.191
	Y	0.03 / 0.191
	Z	0.09 / 0.488
1.61	X	0.04 / 0.191
	Y	0.04 / 0.191
	Z	0.21 / 0.422
2.02	X	0.07 / 0.194
	Y	0.07 / 0.194
	Z	0.27 / 0.377
2.53	X	0.08 / 0.242
	Y	0.06 / 0.242
	Z	0.37 / 0.337
3.14	X	0.04 / 0.300
	Y	0.03 / 0.300
	Z	0.20 / 0.302
3.94	X	0.06 / 0.377
	Y	0.06 / 0.377
	Z	0.12 / 0.270
5.05	X	0.16 / 0.484
	Y	0.18 / 0.484
	Z	0.19 / 0.268
6.37	X	0.10 / 0.610
	Y	0.05 / 0.610
	Z	0.06 / 0.268
7.98	X	0.15 / 0.764
	Y	0.12 / 0.764
	Z	0.08 / 0.268
10.10	X	0.20 / 0.966
	Y	0.12 / 0.966
	Z	0.09 / 0.338
12.74	X	0.13 / 1.219
	Y	0.04 / 1.219
	Z	0.06 / 0.427
15.97	X	0.08 / 1.528
	Y	0.05 / 1.528
	Z	0.05 / 0.535
20.10	X	0.07 / 1.924
	Y	0.10 / 1.924
	Z	0.05 / 0.673
25.36	X	0.08 / 2.427
	Y	0.07 / 2.427
	Z	0.04 / 0.849
32.02	X	0.04 / 3.064
	Y	0.03 / 3.064
	Z	0.02 / 1.073
40.33	X	0.07 / 3.859
	Y	0.06 / 3.859
	Z	0.03 / 1.351
50.73	X	0.03 / 4.854
	Y	0.02 / 4.854
	Z	0.01 / 1.699
63.97	X	0.04 / 6.121
	Y	0.02 / 6.121
	Z	0.01 / 2.142
80.64	X	0.05 / 7.716
	Y	0.03 / 7.716
	Z	0.01 / 2.701



8-OCT-93 16:37:52

Course: Paved
Speed: 99 mph
Note: No Load

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

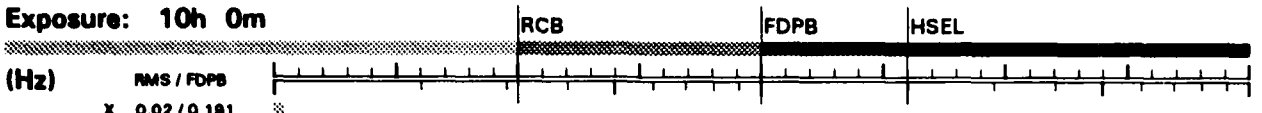
RUN-23

Oct 4, 1993

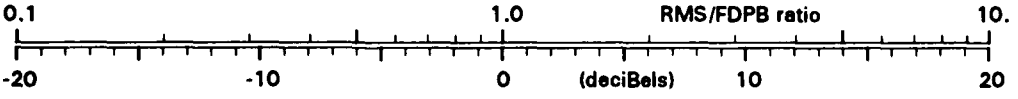
Front Seat

HET Ride Quality

Exposure: 10h 0m



(Hz)		RMS / FDPB
1.20	X	0.02 / 0.191
	Y	0.04 / 0.191
	Z	0.09 / 0.468
1.61	X	0.02 / 0.191
	Y	0.03 / 0.191
	Z	0.19 / 0.422
2.02	X	0.04 / 0.194
	Y	0.03 / 0.194
	Z	0.30 / 0.377
2.53	X	0.05 / 0.242
	Y	0.04 / 0.242
	Z	0.38 / 0.337
3.14	X	0.03 / 0.300
	Y	0.03 / 0.300
	Z	0.19 / 0.302
3.94	X	0.03 / 0.377
	Y	0.06 / 0.377
	Z	0.15 / 0.270
5.05	X	0.16 / 0.484
	Y	0.22 / 0.484
	Z	0.37 / 0.268
6.37	X	0.08 / 0.610
	Y	0.06 / 0.610
	Z	0.07 / 0.268
7.98	X	0.13 / 0.764
	Y	0.13 / 0.764
	Z	0.07 / 0.268
10.10	X	0.21 / 0.966
	Y	0.10 / 0.966
	Z	0.14 / 0.338
12.74	X	0.18 / 1.219
	Y	0.04 / 1.219
	Z	0.06 / 0.427
15.97	X	0.10 / 1.528
	Y	0.09 / 1.528
	Z	0.07 / 0.535
20.10	X	0.04 / 1.924
	Y	0.09 / 1.924
	Z	0.04 / 0.673
25.36	X	0.05 / 2.427
	Y	0.03 / 2.427
	Z	0.03 / 0.849
32.02	X	0.04 / 3.064
	Y	0.01 / 3.064
	Z	0.02 / 1.073
40.33	X	0.08 / 3.859
	Y	0.02 / 3.859
	Z	0.02 / 1.351
50.73	X	0.05 / 4.854
	Y	0.01 / 4.854
	Z	0.01 / 1.699
63.97	X	0.04 / 6.121
	Y	0.03 / 6.121
	Z	0.00 / 2.142
80.64	X	0.05 / 7.716
	Y	0.03 / 7.716
	Z	0.00 / 2.701



8-OCT-93 16:37:52

Course: Paved
Speed: 99 mph
Note: No Load

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

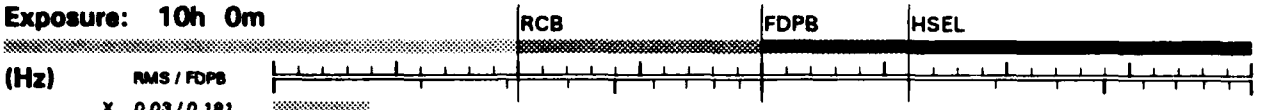
RUN-23

Oct 4, 1993

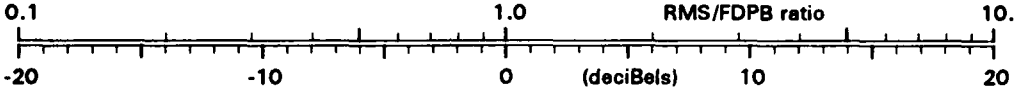
Roadside Seat

HET Ride Quality

Exposure: 10h 0m

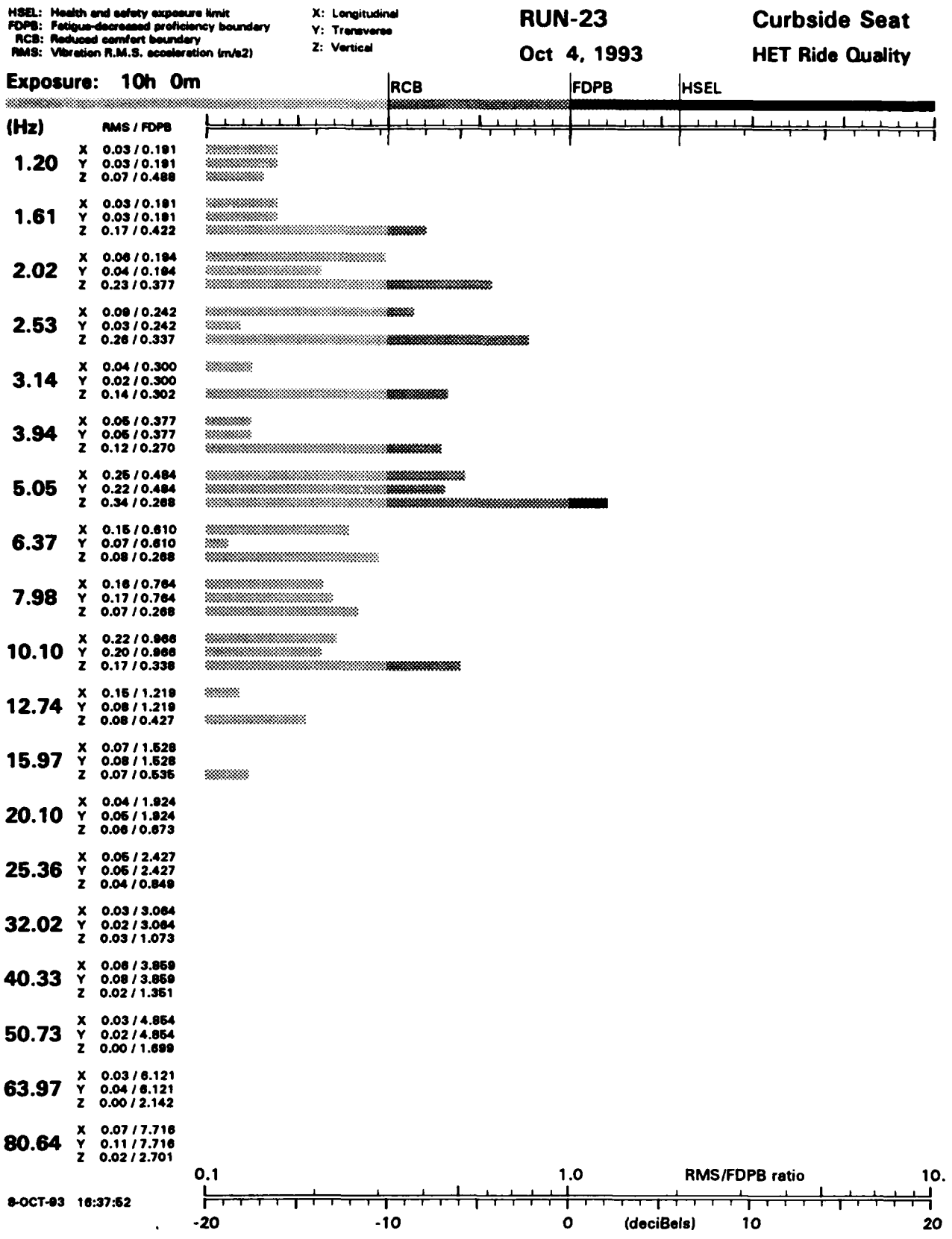


(Hz)		RMS / FDPB
1.20	X	0.03 / 0.191
	Y	0.04 / 0.191
	Z	0.07 / 0.488
1.61	X	0.03 / 0.191
	Y	0.02 / 0.191
	Z	0.17 / 0.422
2.02	X	0.07 / 0.194
	Y	0.03 / 0.194
	Z	0.21 / 0.377
2.53	X	0.09 / 0.242
	Y	0.03 / 0.242
	Z	0.22 / 0.337
3.14	X	0.03 / 0.300
	Y	0.02 / 0.300
	Z	0.13 / 0.302
3.94	X	0.07 / 0.377
	Y	0.04 / 0.377
	Z	0.16 / 0.270
5.05	X	0.20 / 0.484
	Y	0.24 / 0.484
	Z	0.33 / 0.268
6.37	X	0.17 / 0.610
	Y	0.07 / 0.610
	Z	0.09 / 0.268
7.98	X	0.20 / 0.764
	Y	0.17 / 0.764
	Z	0.14 / 0.268
10.10	X	0.24 / 0.966
	Y	0.19 / 0.966
	Z	0.13 / 0.338
12.74	X	0.15 / 1.219
	Y	0.08 / 1.219
	Z	0.08 / 0.427
15.97	X	0.07 / 1.528
	Y	0.07 / 1.528
	Z	0.08 / 0.535
20.10	X	0.04 / 1.924
	Y	0.06 / 1.924
	Z	0.06 / 0.673
25.36	X	0.04 / 2.427
	Y	0.05 / 2.427
	Z	0.04 / 0.849
32.02	X	0.03 / 3.064
	Y	0.03 / 3.064
	Z	0.02 / 1.073
40.33	X	0.07 / 3.859
	Y	0.09 / 3.859
	Z	0.04 / 1.351
50.73	X	0.02 / 4.854
	Y	0.02 / 4.854
	Z	0.01 / 1.699
63.97	X	0.02 / 6.121
	Y	0.03 / 6.121
	Z	0.00 / 2.142
80.64	X	0.04 / 7.716
	Y	0.07 / 7.716
	Z	0.02 / 2.701



8-OCT-93 16:37:52

Course: Paved
Speed: 99 mph
Note: No Load



Course: Paved
Speed: 99 mph
Note: No Load