CALSPAN ADVANCED TECHNOLOGY CENTER

IMPROVED LIGHTWEIGHT SUBCOMPACT SIDE STRUCTURE CRASH TEST REPORT

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Calspan Report No. 6225-V-15

Prepared For:
THE BUDD COMPANY
TECHNICAL CENTER
FORT WASHINGTON, PA 19034

PURCHASE ORDER NO. TC14436

TEST: TEST NO. 13
TYPE OF TEST: CAR-TO-CAR FRONT-TO-SIDE OBLIQUE
TEST DATE: 7 DECEMBER 1978

A DIVISION OF CALSPAN CORPORATION
AN ARVIN COMPANY PO BOX 400 BUFFALO, NEW YORK 14225

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TEST OBJECTIVE

The test objective was to obtain performance data on the side structure of a 1976 Volkswagen Rabbit modified by the Budd Company. The test vehicle had the alteration to the mid-weight (30 lbs) modification. The test, a 36 mph car-to-car front-to-side oblique impact involved,a 1978 Impala striking to modified side of the VW Rabbit.

The test program is part of the National Highway Traffic Safety Administration (NHTSA) Contract DOT-HS-7-01588 to improve subcompact side structures.

PRESENTATION OF RESULTS

This test report presents all the test results obtained from this car-to-car, front-to-side impact. Included in this document are still photographs, all vehicle and dummy response data in plotted form, vehicle interior and exterior damage sketches, figures of pre- and post-test vehicle side intrusion measurements and instrumentation identification. High speed motion pictures and color slides of pre- and post-test conditions were obtained, and have been submitted to the sponsor.

Calspan Report No. ZP-6144-V-1, Baseline Crash Test No. 1, of the Improved Lightweight Subcompact Side Structure Contract, Appendix A, contains information on the crash test facility and supporting equipment at Calspan.

TABLE 1

CRASH TEST SUMMARY

TEST NO. 13 PROJECT IMPROVED LIGHTWEIGHT SUBCOMPACT SIDE STRUCTURE

DATE 12/7/78 TIME 11:15 TEMP. 36°F

TEST CONDITION CAR-TO-CAR, 60° SIDE OBLIQUE

VEHICLE NO. 1 1978 CHEVROLET IMPALA

VEHICLE NO. 2 1976 VOLKSWAGEN RABBIT

	VEH. NO. 1	VEH. NO. 2
TEST WEIGHT (lbs)	3860	2360
IMPACT ANGLE (deg)*	60	0
IMPACT VELOCITY (mph)**	36.24	0
MAX. CRUSH (in)	See Fig. 12	16.2
MAX. INTRUSION (in)	--	15.1

DUMMIES	VEH. NO. 1	VEH. NO. 2
TYPE	HYBRID II, PART 572	HYBRID II, PART 572
LOCATION	LF (1)	LF (1), RF (2)
RESTRAINT	PRODUCTION 3-POINT SYSTEM	UNRESTRAINED DUMMIES

NUMBER OF DATA CHANNELS 63
NUMBER OF HIGH SPEED CAMERAS 10

*WITH RESPECT TO TOW TRACK CENTERLINE

**SPEED TRAP MEASUREMENT (±0.5% ACCURACY)

OBSERVATIONS (VEHICLE NO. 1) - 1978 CHEVROLET IMPALA

GLAZING UNDAMAGED

DOORS UNDAMAGED

SEAT ANCHORAGES INTACT

RESTRAINTS INTACT

OBSERVATIONS (VEHICLE NO. 2) - 1976 VOLKSWAGEN RABBIT

GLAZING Windshield was cracked, driver's door and rear side window were broken.

DOORS Passenger door was operable after test.

SEAT ANCHORAGES Driver's seat was crushed

RESTRAINTS ----

GENERAL COMMENTS

- All cameras operated properly.
- On Car No. 1, there is a noise spike in the data at 160 milliseconds.
- On Car No. 2, the lower door center Y accelerometer data bad after 60 milliseconds due to cut wire.
- On Car No. 2, Dummy 2 (LF) Y component of acceleration lost due to bad transducer - chest resultant acceleration calculated using X and Z only.

TABLE 2

VEHICLE TEST WEIGHTS - TEST NO. 13

BULLET VEHICLE

CAR 1 - 1978 CHEVROLET IMPALA

Left Front	1080 lbs.		Left Rear	850 lbs.	
Right Front	1080 lbs.		Right Rear	850 lbs.	
Total Front	2160 lbs.		Total Rear	1700 lbs.	
Total Weight =	2160 lbs.	+	1700 lbs.	=	3860 lbs.
Wheel Base	116.5 in.				
Cg_{FW} =	1700 lbs. / 3860 lbs.	116.5 in.		=	51.08 in.

TARGET VEHICLE

CAR 2 - 1976 VOLKSWAGEN RABBIT

Left Front	680 lbs.		Left Rear	440 lbs.	
Right Front	730 lbs.		Right Rear	510 lbs.	
Total Front	1410 lbs.		Total Rear	950 lbs.	
Total Weight =	1410 lbs.	+	950 lbs.	=	2360 lbs.
Wheel Base	94.5 in.				
Cg_{FW} =	950 lbs. / 2360 lbs.	94.5 in.		=	38.04 in.

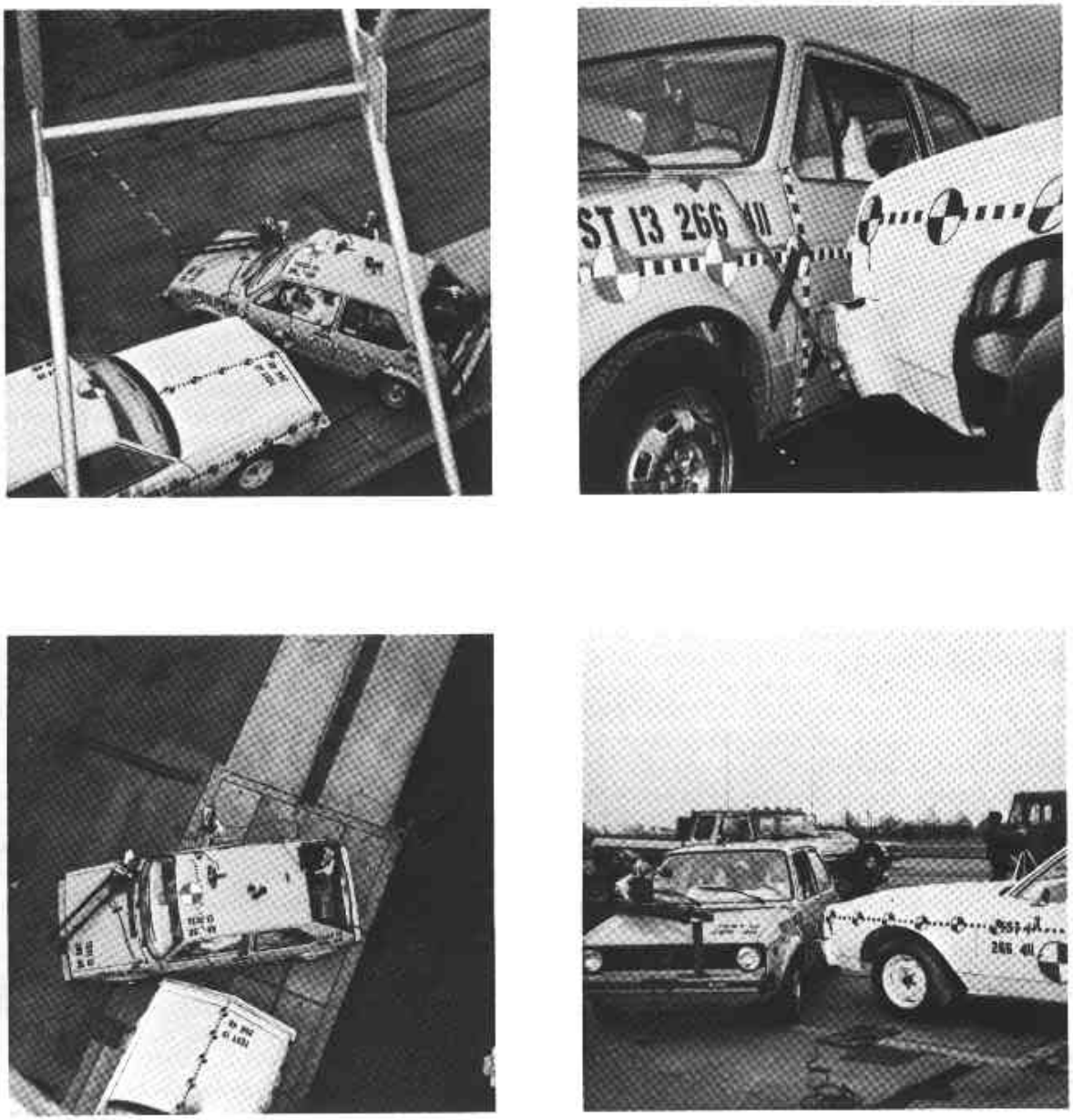


Figure 1 PRE-TEST NO. 13 – VEHICLE IMPACT CONFIGURATION

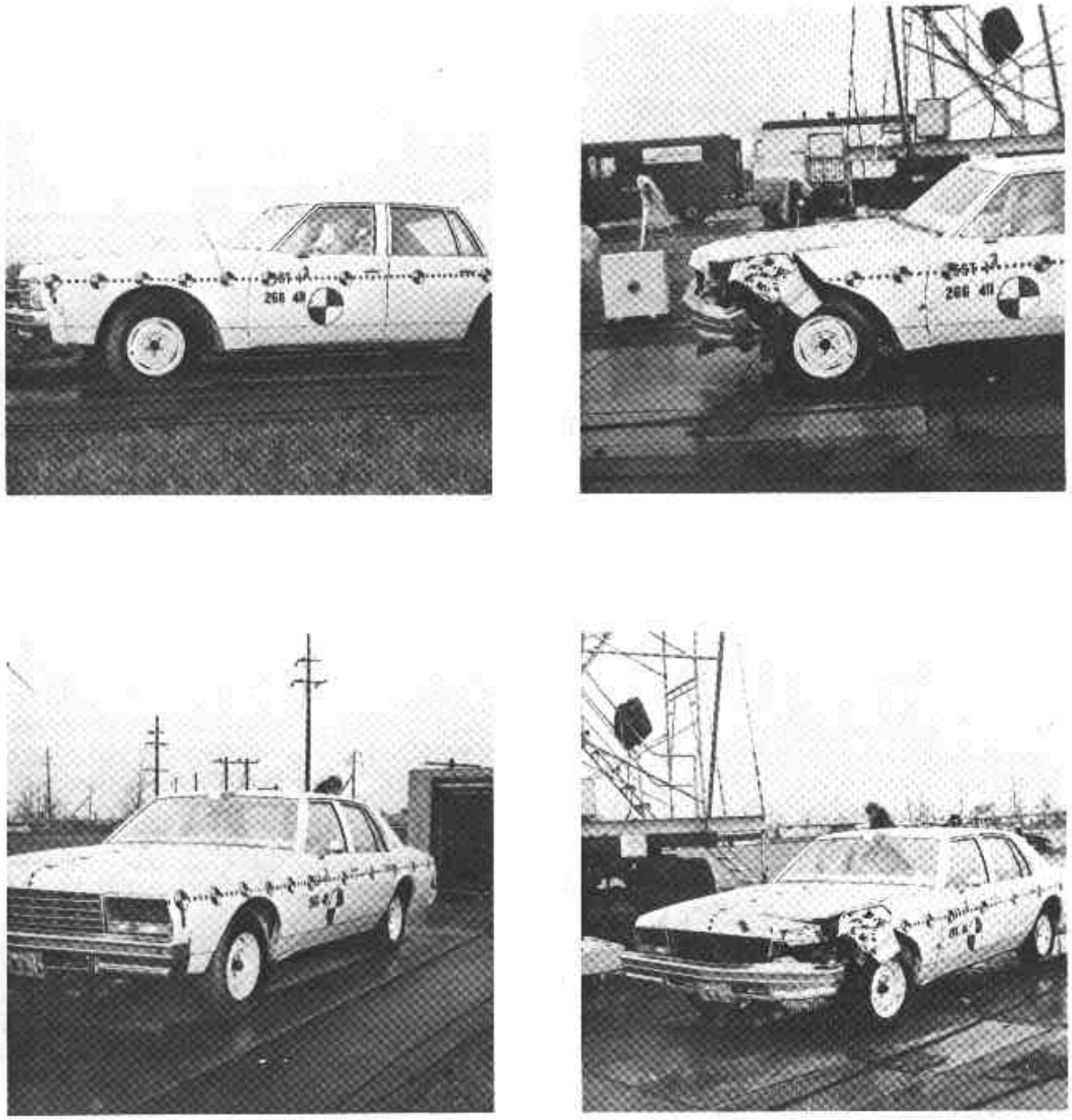


Figure 2 PRE- AND POST-TEST NO. 13 – CAR 1, 1978 CHEVROLET IMPALA EXTERIOR

Figure 3 PRE- AND POST-TEST NO. 13 – CAR 2, 1976 VOLKSWAGEN RABBIT EXTERIOR

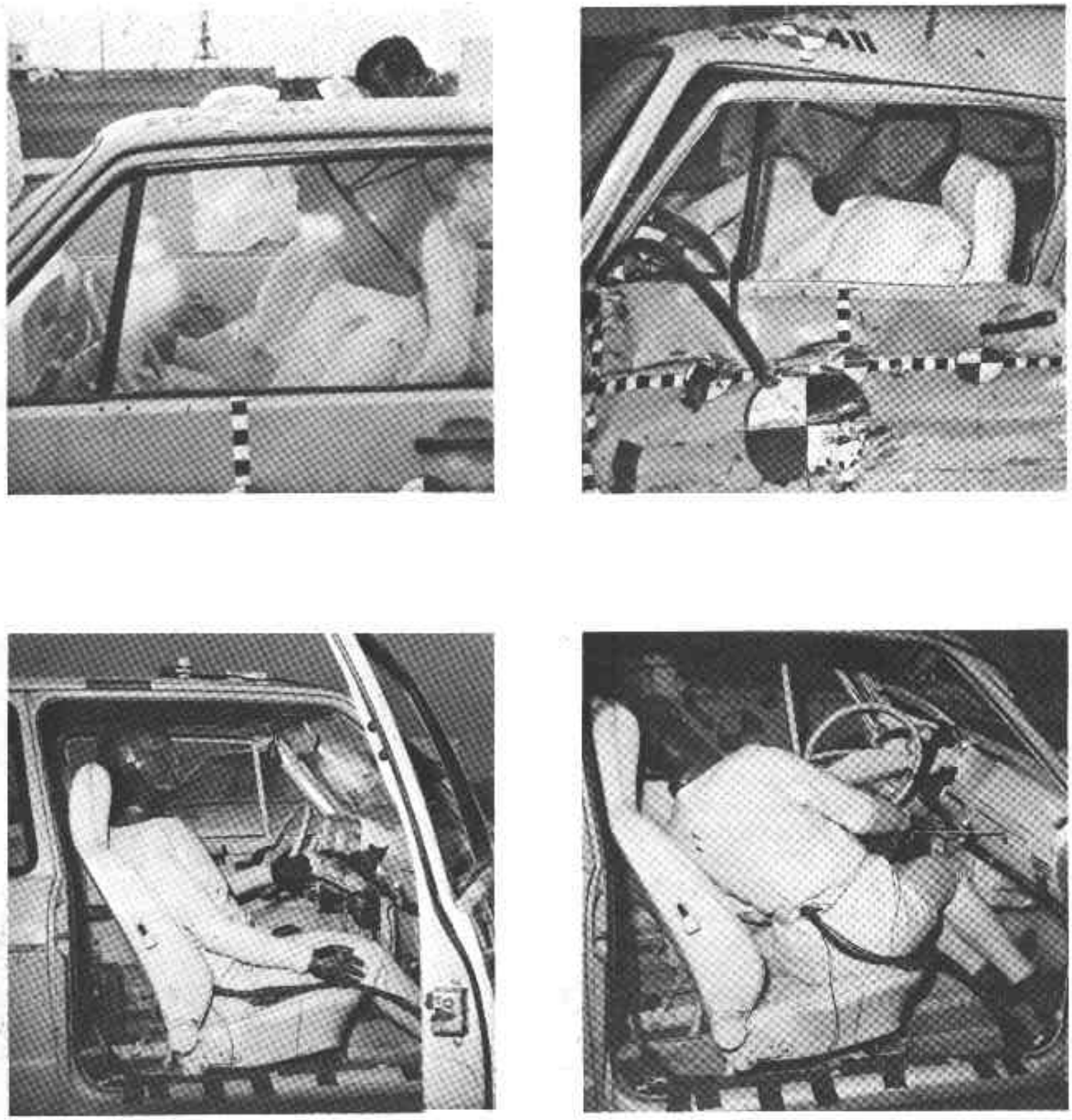


Figure 4 PRE- AND POST-TEST NO. 13 – CAR 2, 1976 VOLKSWAGEN RABBIT INTERIOR

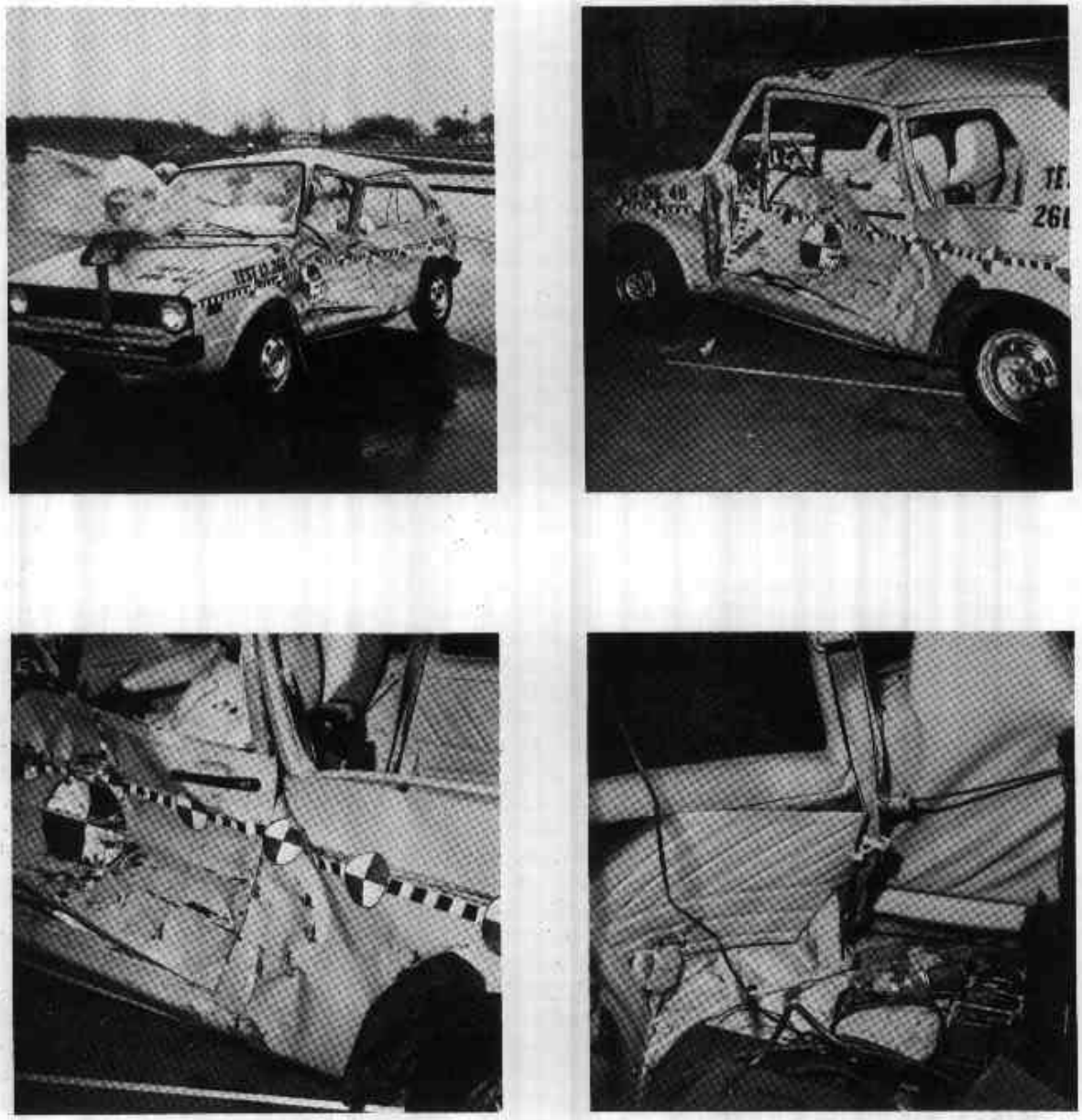


Figure 5 POST IMPACT DAMAGE OF VOLKSWAGEN RABBIT

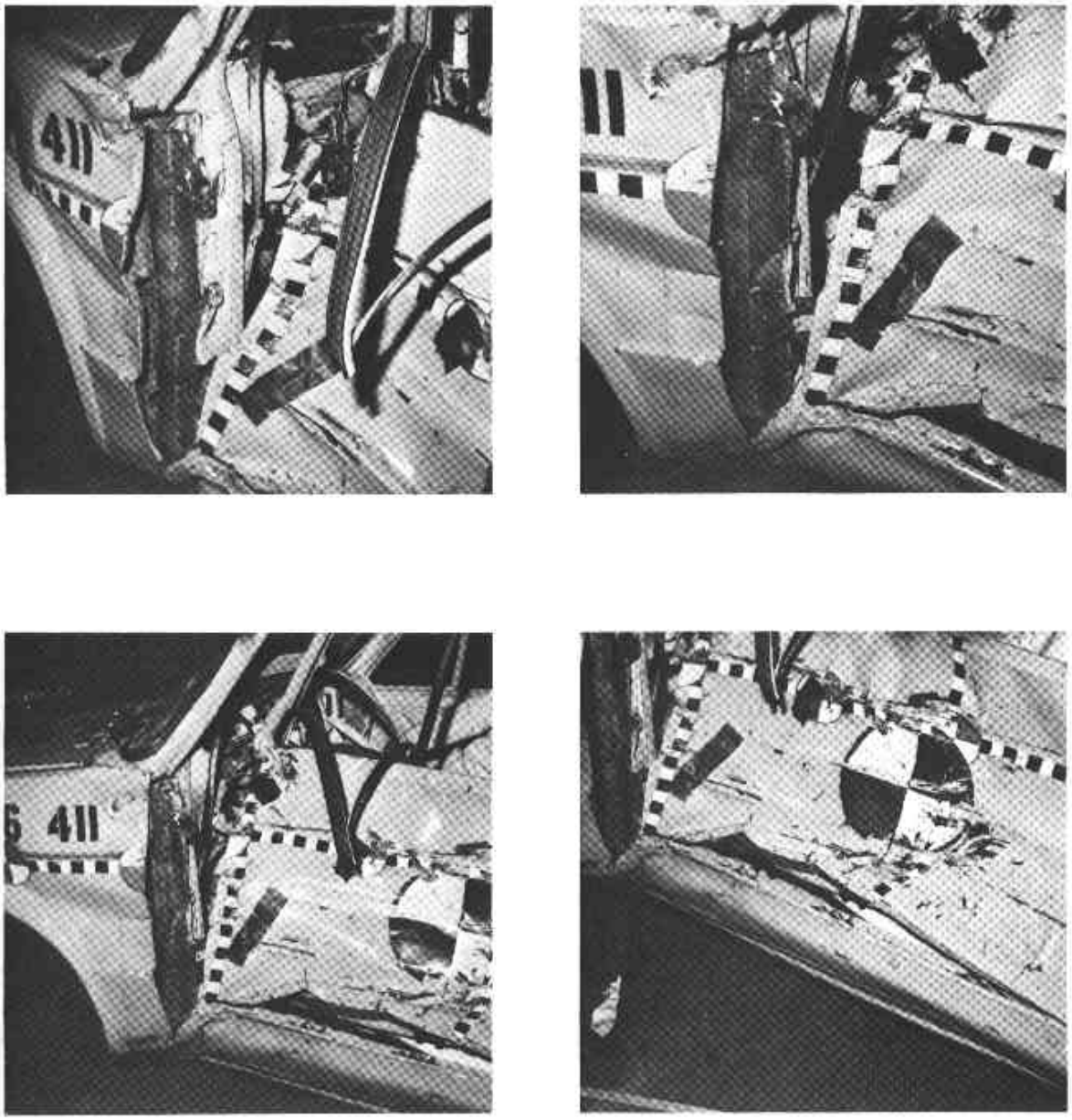


Figure 6 A-PILLAR AND SILL DAMAGE

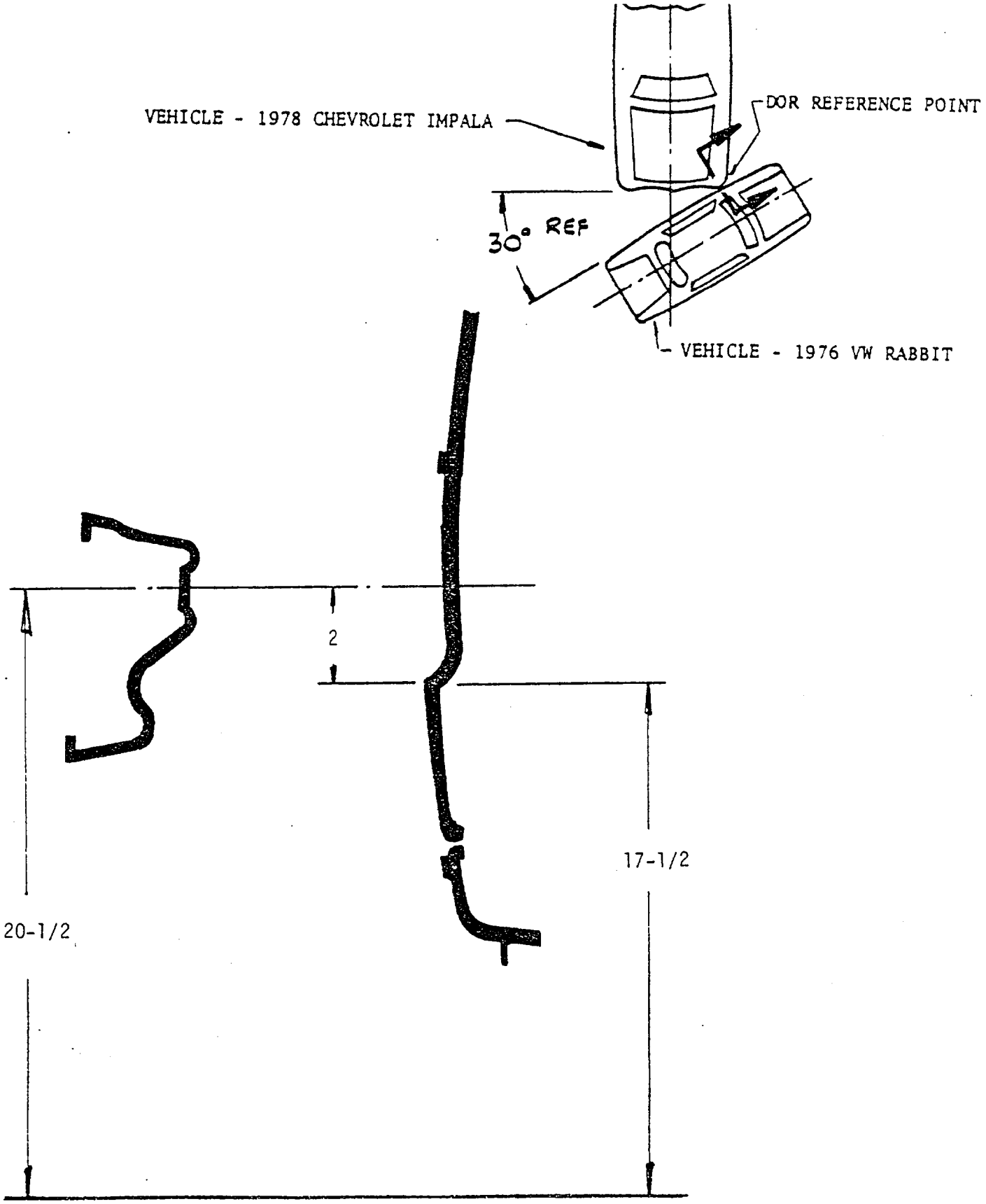
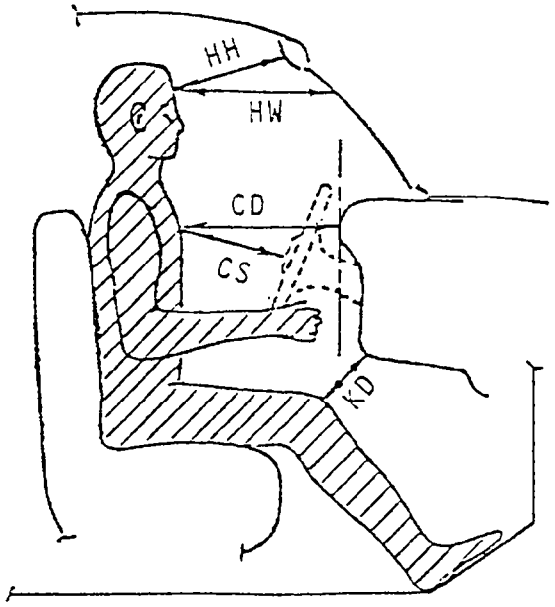
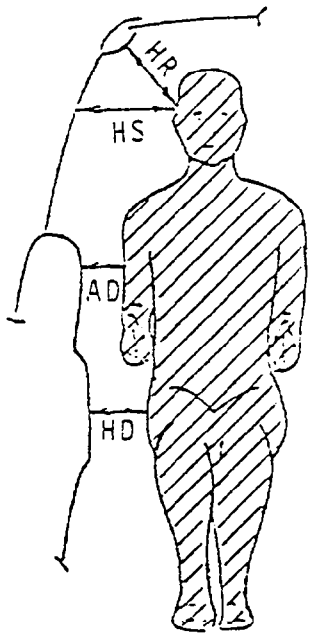


FIGURE 7 VEHICLE CRASH ATTITUDE

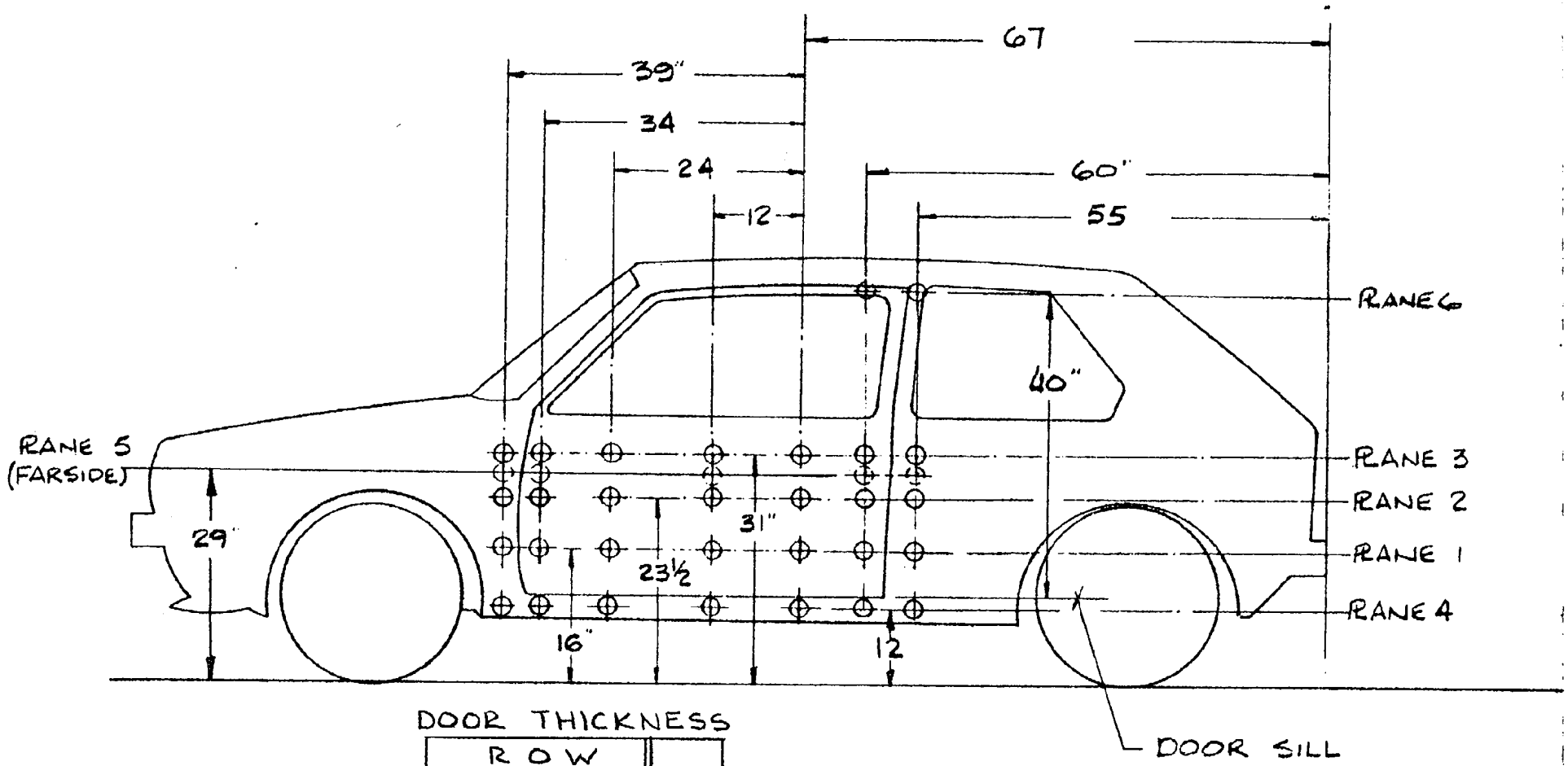


HH	19
HW	26
CD	23
CS	14-3/4



HR	6.5
HS	8.0
AD	3.5
HD	6.5

Figure 8 OCCUPANT CLEARANCE DIMENSIONS



DOOR THICKNESS

ROW				
3	4	5		
2 11/16	1 5/16	1 1/4	3	PLANE
7/8	1/4	3/8	2	
9/16	1 1/4	3/16	1	

1976 V.W. RABBIT

PRE-TEST LOCATION MEASUREMENTS

FIGURE 9 SIDE INTRUSION MEASUREMENTS

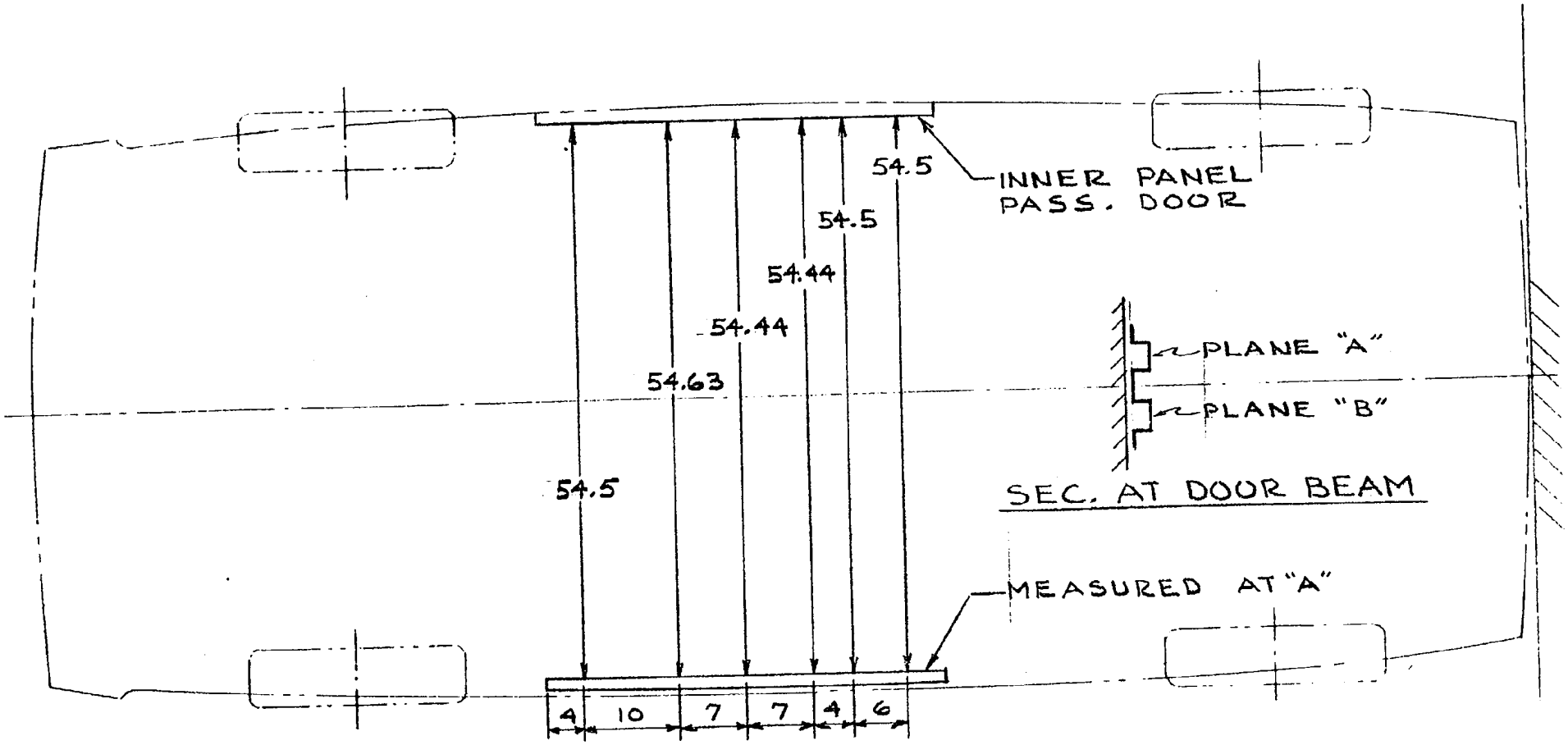
TABLE 3

SIDE INTRUSION MEASUREMENTS

DIMENSIONS LISTED BELOW ARE FROM POINTS SHOWN ON FIGURE 9 TO REFERENCE PLACES LOCATED PARALLEL TO AND OUTBOARD FROM ℄ OF VEHICLE (L. SIDE 34" R. SIDE 34")
(ROWS ARE FROM REAR TO FRONT OF VEHICLE)

PLANE NUMBER		DIMENSIONS (Inches) ROW 1	2	3	4	5	6	7
1	PRE	4-5/8	4-7/8	4-7/8	4-7/8	4-15/16	5	5-1/8
	POST	7-5/8	11-11/16	15-1/2	14-7/8	12-1/2	11-1/8	16-1/8
	DIFF.	3	6-13/16	10-5/8	10	7-9/16	6-1/8	11
2	PRE	3-7/8	3-15/16	3-15/16	3-15/16	3-15/16	3-15/16	4-3/16
	POST	8-11/16	16-13/16	18-3/4	19-1/2	16-15/16	14-3/4	13-3/16
	DIFF.	4-13/16	12-7/8	14-13/16	15-9/16	13	10-13/16	9
3	PRE	4	4	3-7/8	3-7/8	4	4	4-1/8
	POST	8-7/16	17	20-1/8	19-3/4	16-1/4	17	15-7/8
	DIFF.	4-7/16	13	16-1/4	15-7/8	12-1/4	13	11-3/4
4	PRE	5-7/8	6-1/8	6-1/4	6-1/4	6-1/4	6-3/8	6-1/2
	POST	7-15/16	10-3/4	9-7/8	9-7/16	9-1/4	9-1/4	8-5/8
	DIFF.	2-1/16	4-5/8	3-5/8	3-3/16	3	2-7/8	2-1/8
5	PRE	3-5/8	3-9/16		3-1/2		3-3/4	3-3/4
	POST	3	2-15/16		3		3-9/16	3-7/8
	DIFF.	5/8	5/8		1/2		3/16	1/8
6	PRE						12	12
	POST						14-1/4	16
	DIFF.						2-1/4	4
7	PRE							
	POST							
	DIFF.							

1976 VOLKSWAGEN RABBIT



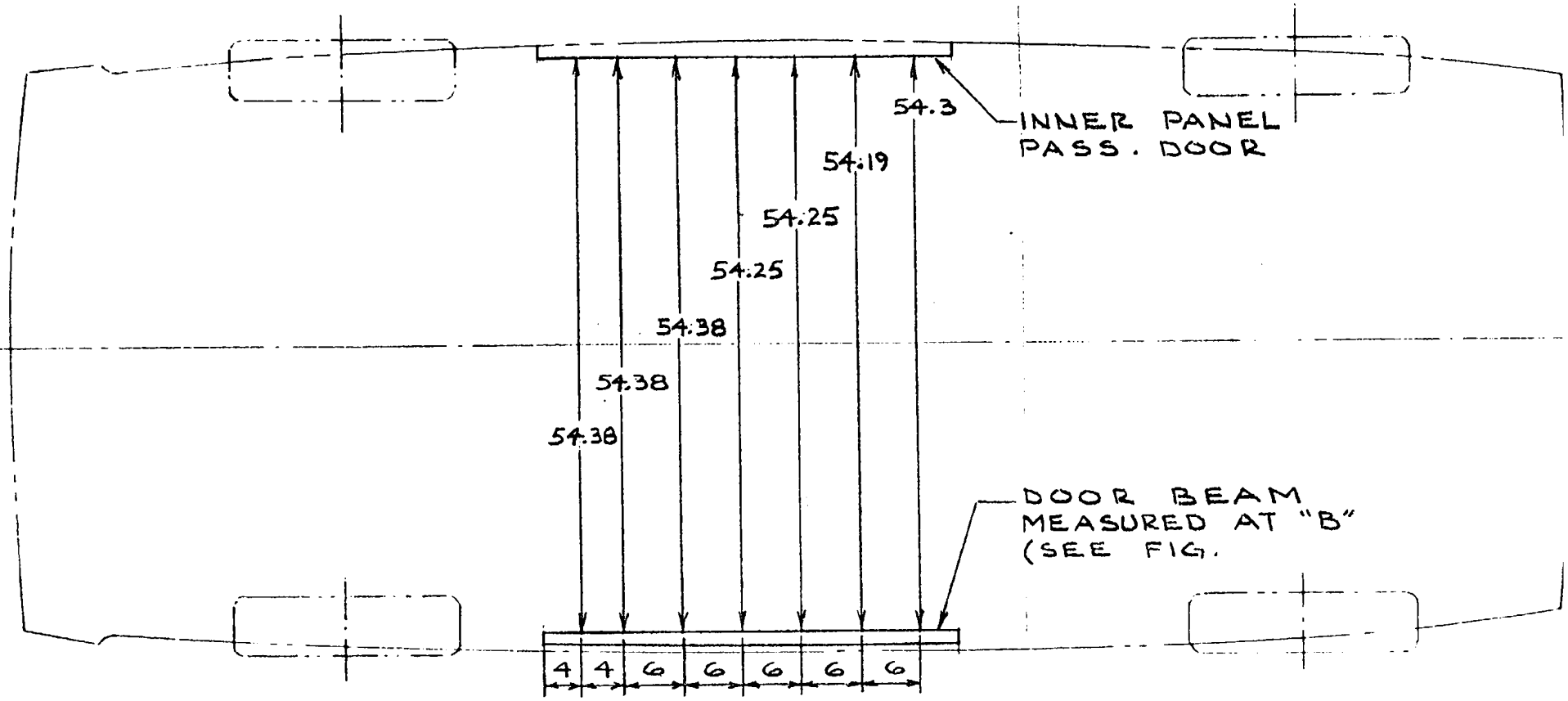
1976 V.W. RABBIT

SCALE .06" = 1"

Figure 10A PRE-TEST DOOR BEAM INTRUSION MEASUREMENTS

PLANE "A"

TEST



1976 V.W. RABBIT

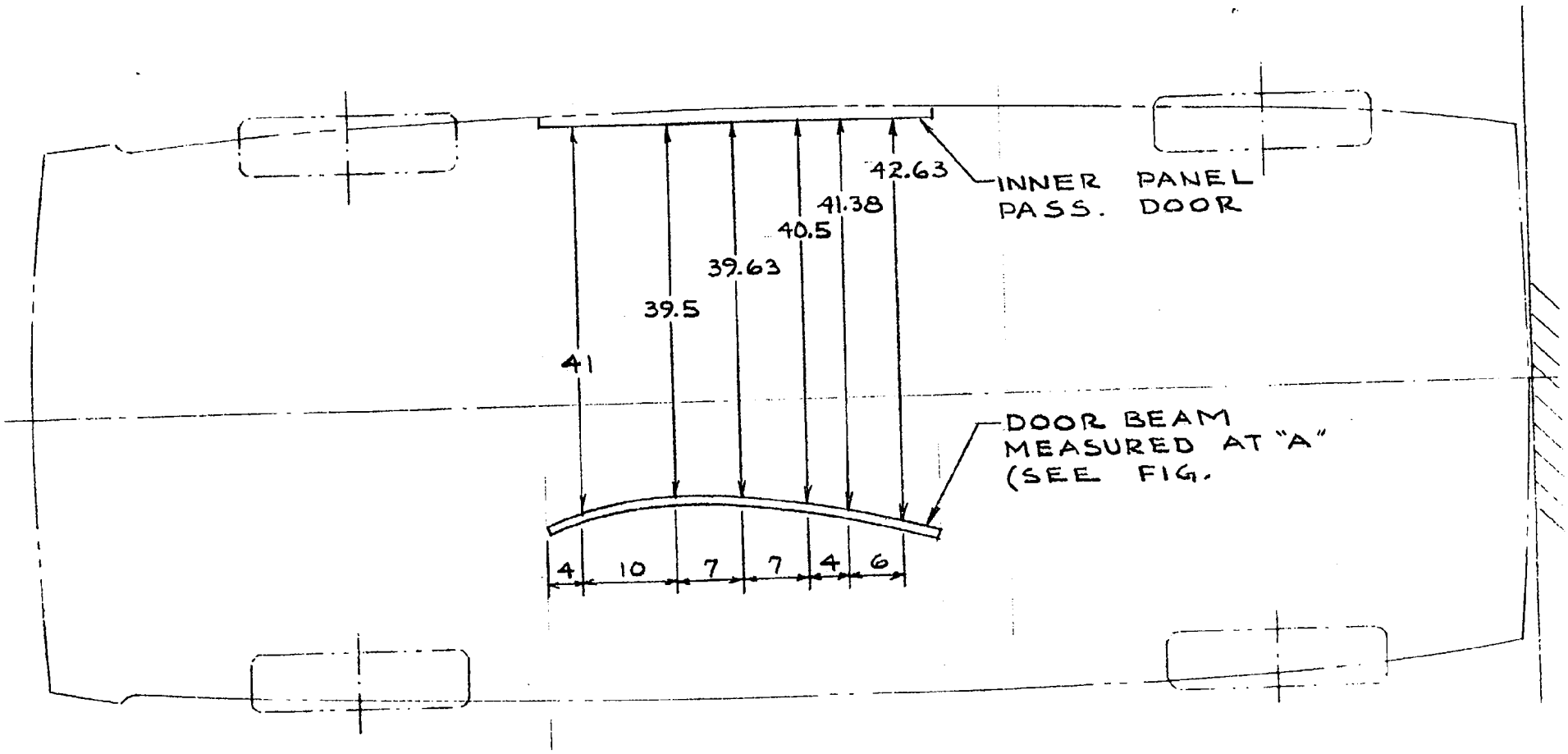
SCALE .06" = 1"

Figure 10B PRE-TEST DOOR BEAM INTRUSION MEASUREMENTS

PLANE "B"

TEST

6225-V-15

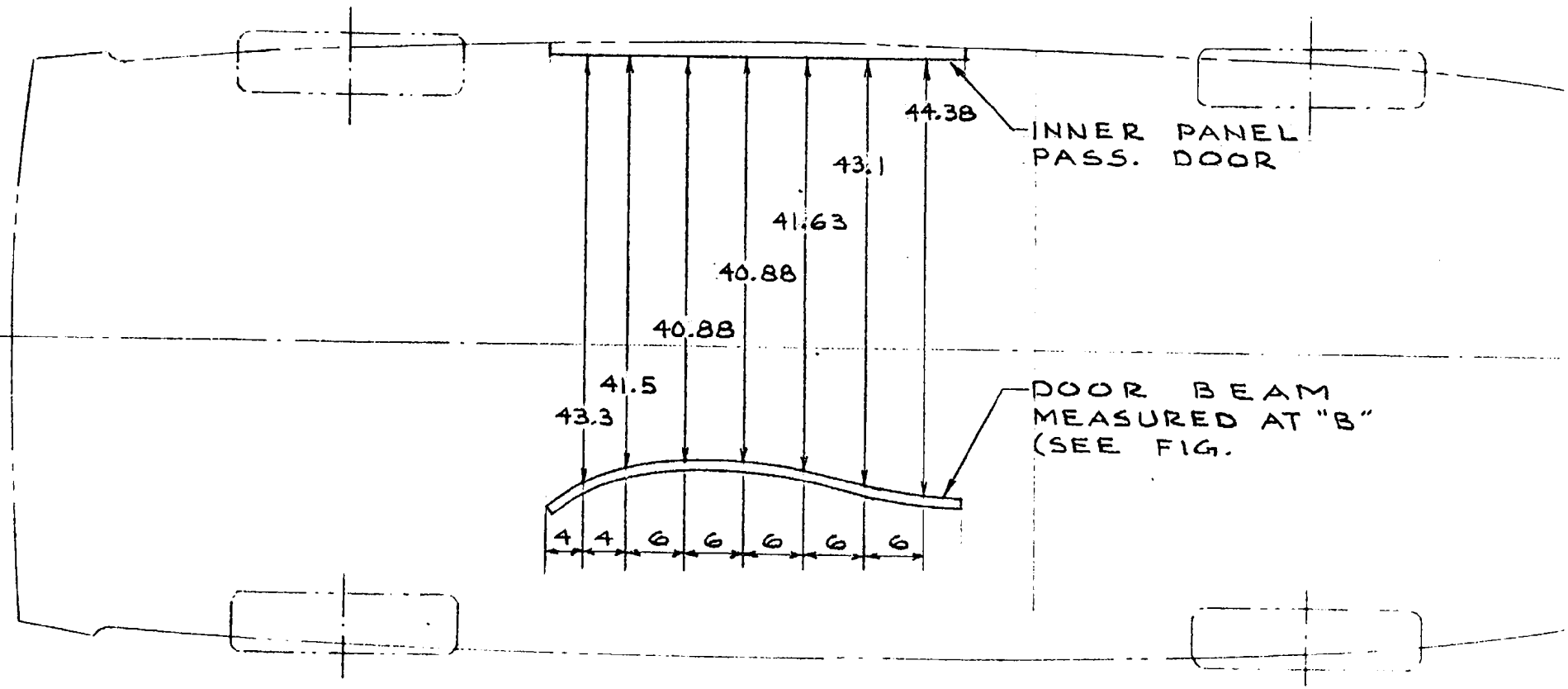


1976 V.W. RABBIT

SCALE .06" = 1"

Figure 11A POST-TEST DOOR BEAM INTRUSION MEASUREMENTS PLANE "A"

TEST



1976 V.W. RABBIT

SCALE .06" = 1"

PLANE "B"

TEST

Figure 11B POST-TEST DOOR BEAM INTRUSION MEASUREMENTS

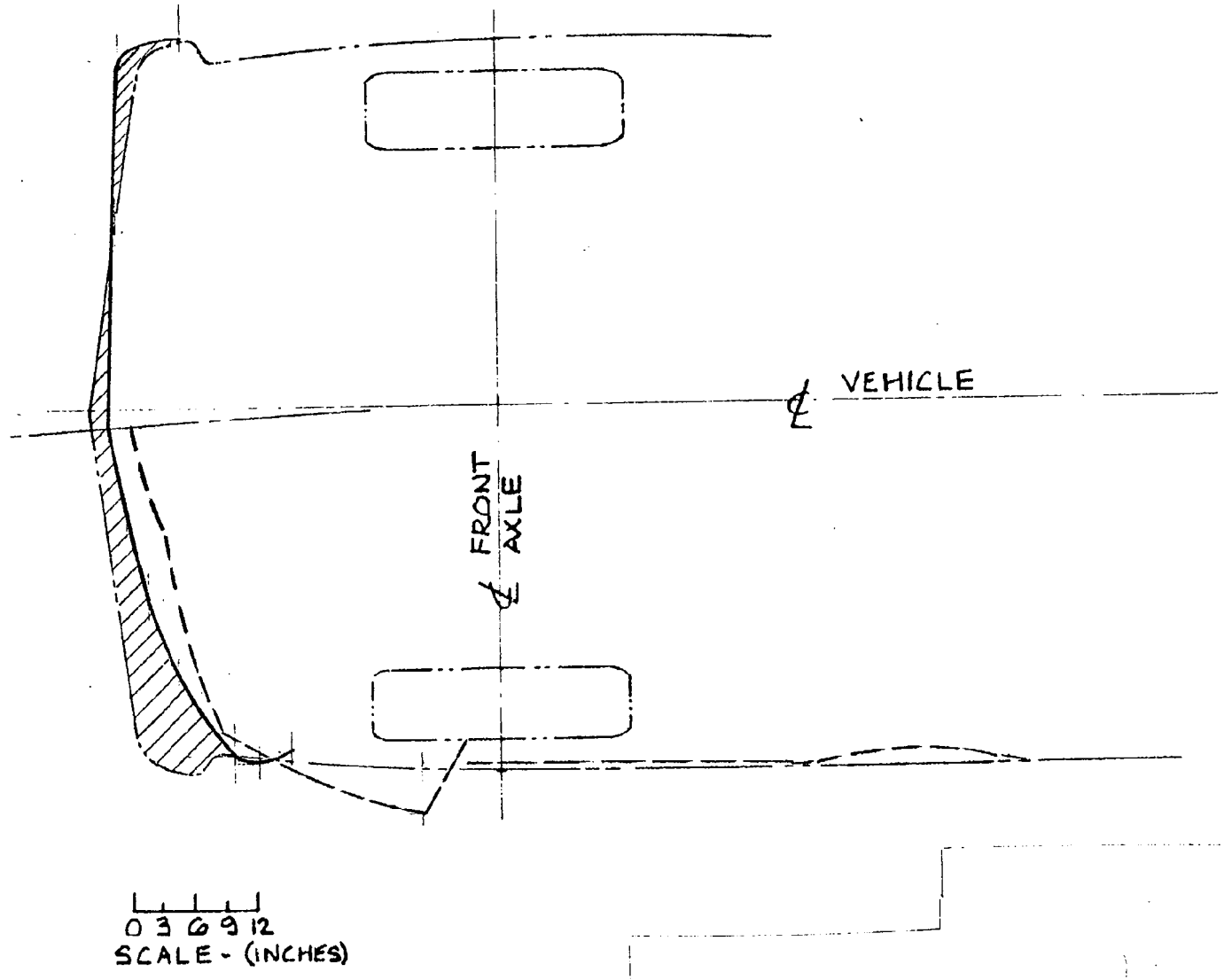


Figure 12 PRE- AND POST- TEST DEFLECTION - CAR NO. 1 - 1978 CHEVROLET IMPALA

TABLE 4

ELECTRONIC INSTRUMENTATION TEST NO. 13

Car 1 - Bullet Vehicle - 1978 Chevrolet Impala

TRANSDUCER DESCRIPTION OR ACCELEROMETER LOCATION*	DIRECTION OF PARAMETER BEING MEASURED	LOCATION ON VEHICLE	DESCRIPTION LISTED ON DATA PLOTS
VEHICLE ACCELEROMETER			
1	X	Left Sill next to rear seat	Left Compartment
2	X	Right Sill next to rear seat	Right Compartment
3	X, Y, Z	Deck over rear Axle	Rear deck
4	X, Y, Z	Firewall	Firewall
5	X	Rear Compartment	Left Rear Compartment - Angular X
6	X, Y, Z	Top of Engine, Carbureter	Engine
7	X	Front Crossmember	Front Crossmember
9	X	Rear Compartment	Right Rear Compartment - Angular X
DUMMY			
LF Head (Dummy(1))	X, Y, Z	Left Front Seat	Dummy (LF) Head
LF Chest "	X, Y, Z	Left Front Seat	Dummy (LF) Chest
LF Femurs "	R, L**	Left Front Seat	Dummy (LF) Femurs
LF Belts "	U, R, L***	Left Front Seat	Self-explanatory
MISCELLANEOUS			
10	Yaw Rate	Centerline behind Front Seats	Tunnel Yaw Rate
12	X-Accel.	Bumper (rear face)	Bumper

*See Accelerometer Layout Diagram Figure 13 **Right & Left Forces ***Upper, Lower Belt Forces

TABLE 5

ELECTRONIC INSTRUMENTATION TEST NO. 13

Car 2 - Target Vehicle - 1976 Volkswagen Rabbit

TRANSDUCER DESCRIPTION OR ACCELEROMETER LOCATION *	DIRECTION OF PARAMETER BEING MEASURED	LOCATION ON VEHICLE	DESCRIPTION LISTED ON DATA PLOTS
VEHICLE ACCELEROMETER			
1	X, Y, Z	Right Sill next to Front Seat	Right Front Compartment
2	X, Y, Z	Right Sell next to Rear Seat	Right Rear Compartment
3	X, Y, Z	Deck over Rear Axle	Rear Deck
6	Y	Lower Left Door Centerline	Lower Door Center
7	X	Rear Compartment	Left Compartment-Angular X
8	X	Rear Compartment	Right Compartment-Angular X
9	Y	Mid-rear of Left Door	Mid-aft of Door
10	Y	Upper Left Door Centerline	Upper Door Center
11	Y	Mid-Front of Left Door	Mid-front of Door
DUMMY			
LF Head (Dummy (1))	X, Y, Z	Left Front Seat	Dummy (LF) Head
LF Chest (Dummy (1))	X, Y, Z	Left Front Seat	Dummy (LF) Chest
LF Pelvix (Dummy (1))	X, Y	Left Front Seat	Dummy (LF) Pelvis
RF Head (Dummy (2))	X, Y, Z	Right Front Seat	Dummy (RF) Head
RF Chest (Dummy (2))	X, Y, Z	Right Front Seat	Dummy (RF) Chest
RF Pelvis (Dummy (2))	X, Y	Right Front Seat	Dummy (RF) Pelvis
MISCELLANEOUS			
12	Yaw Rate	Centerline behind Front Seats	Tunnel Yaw Rate
13 - 16	Side Intrusion	Side Intrusion (Driver Side)	Side Intrusion

*SEE ACCELEROMETER LAYOUT DIAGRAM FIGURE 14

Car 1 - Bullet Vehicle - 1978 Chevrolet Impala

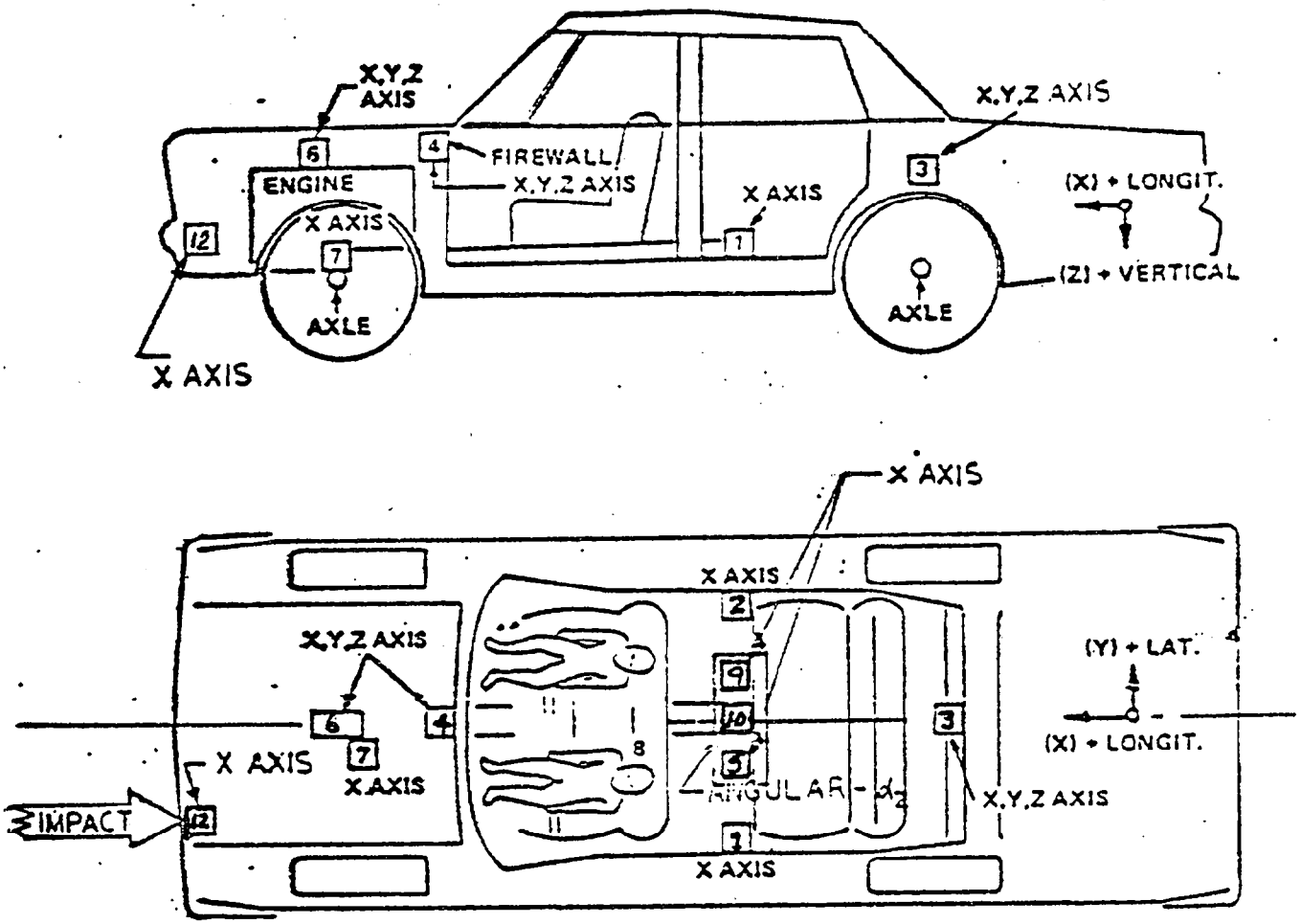
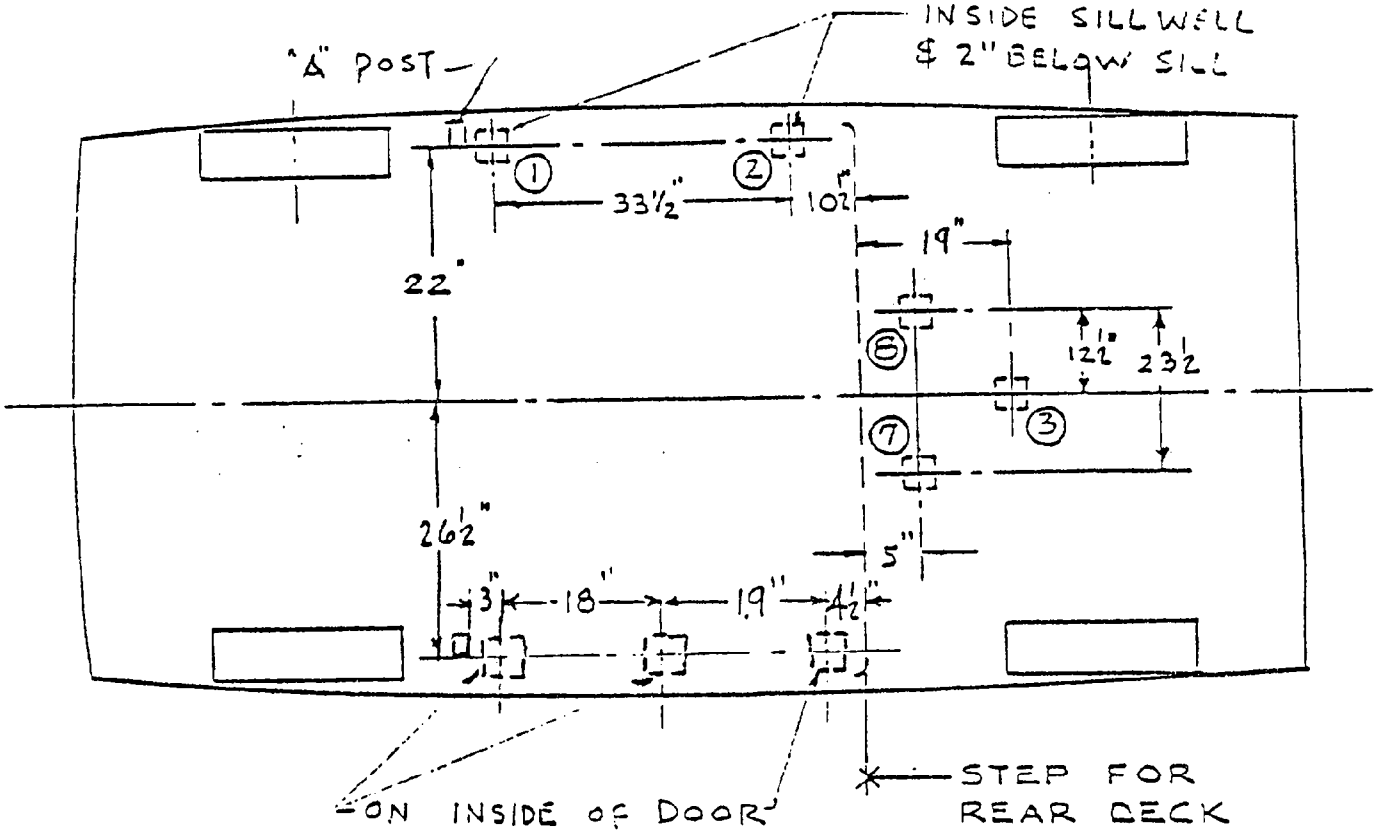
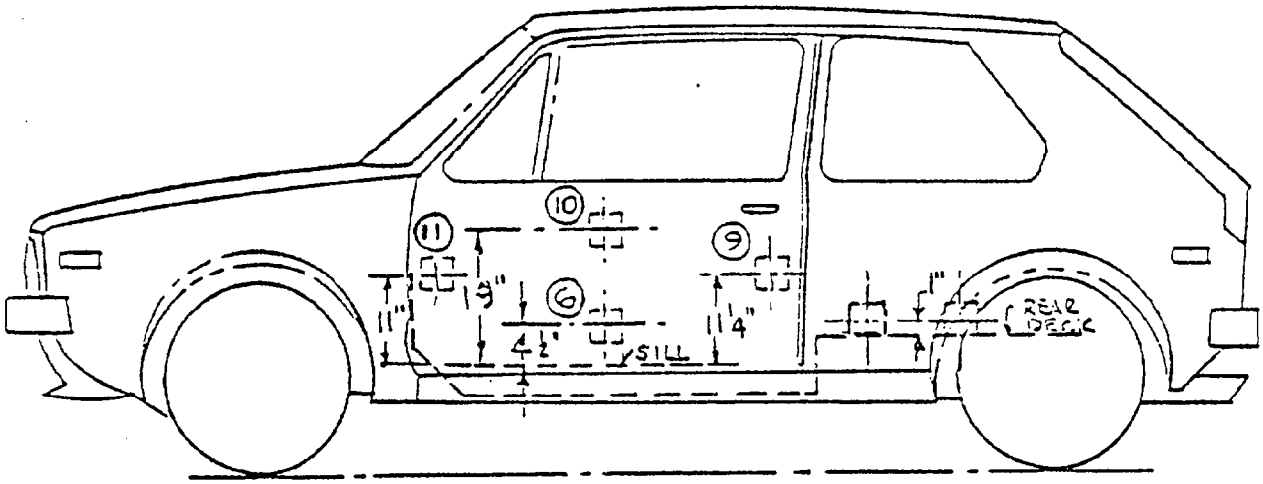


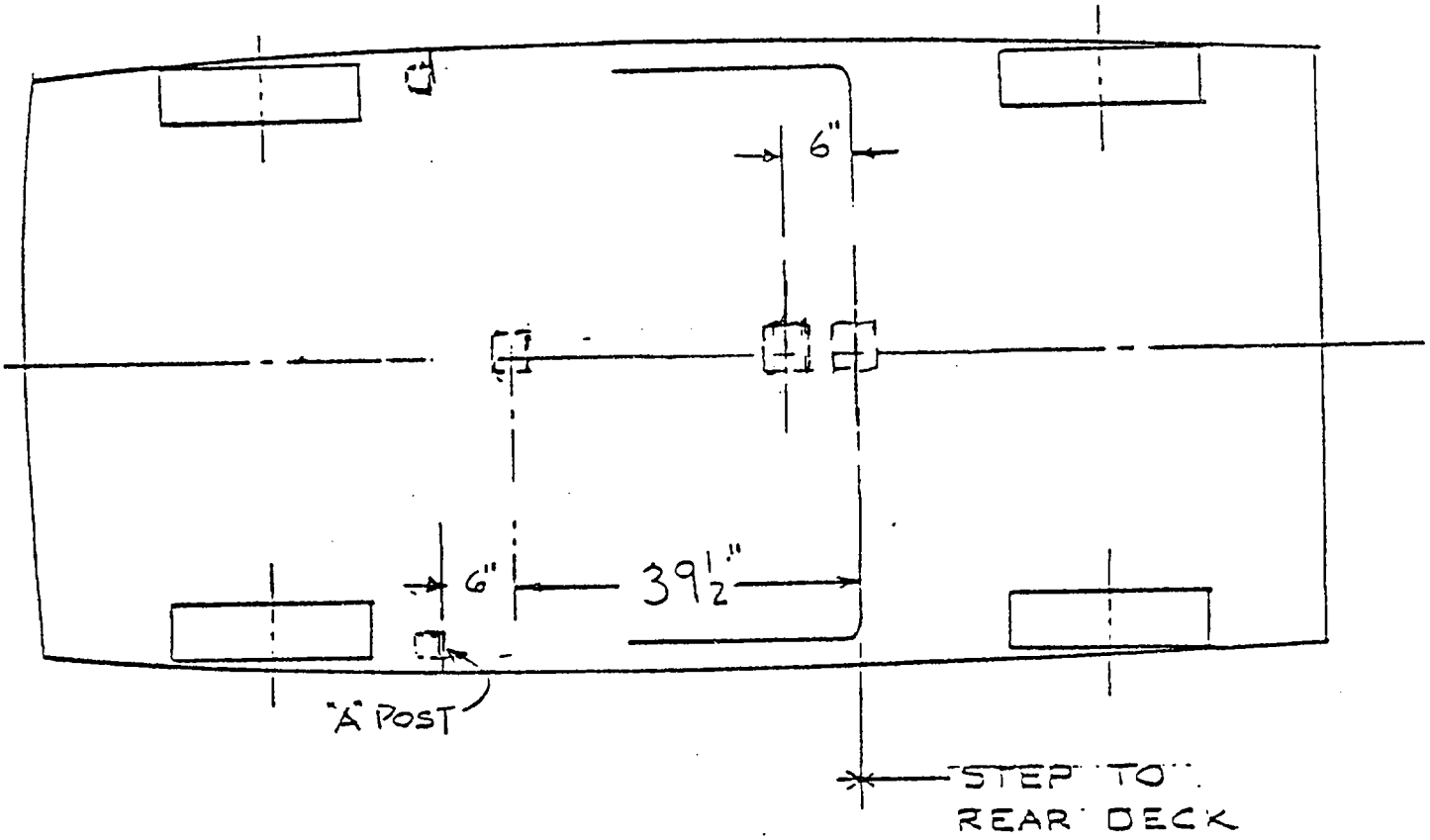
FIGURE 13 VEHICLE ACCELEROMETER LOCATIONS





CAR NO. 2 - TARGET VEHICLE - 1976 VOLKSWAGEN RABBIT

Figure 14 VEHICLE ACCELEROMETER LOCATIONS



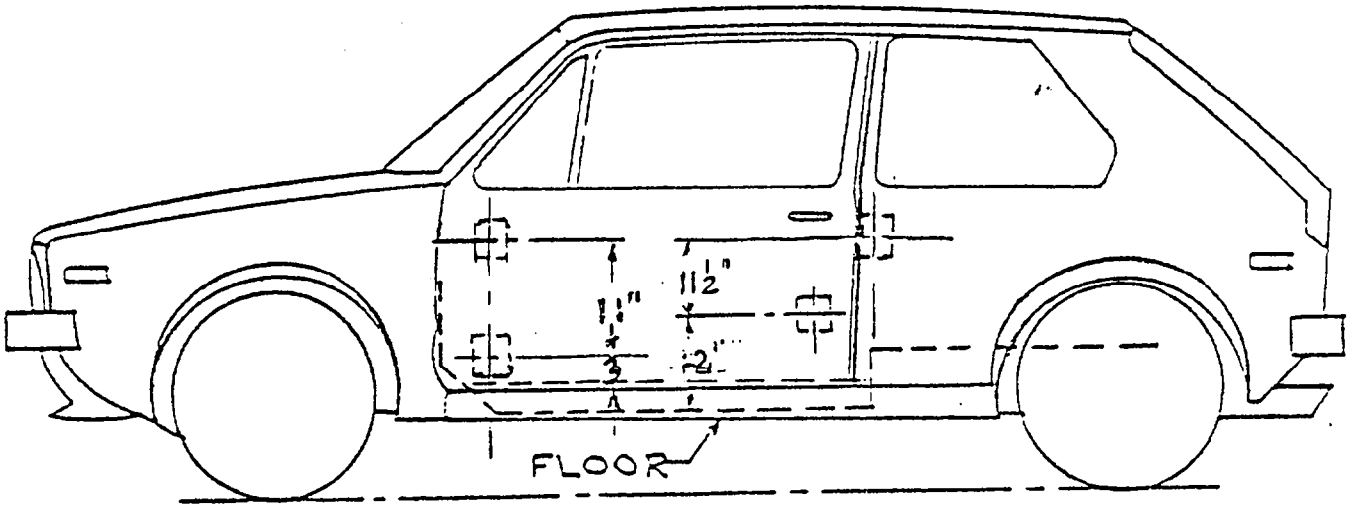


Figure 15 VEHICLE POTENTIOMETER LOCATIONS

TABLE 6

HIGH SPEED CAMERA INFORMATION (TEST NO. 13)

CAMERA NO.	LOCATION	TYPE	LENS (mm)	SPEED (fps)
1) SOUTH WIDE	A = 23 ft. B = 2 ft. 10 in.	PHOTOSONICS	13 MM	850
2) SOUTH CLOSE	C = 24 ft. 10 in. D = 5 ft.	PHOTOSONICS	25 MM	775
3) NORTH WIDE	E = 26 ft. F = 14 ft.	PHOTOSONICS	13 MM	650
4) NORTH CLOSE	G = 26 ft. 8 in. H = 19 ft.	PHOTOSONICS	25 MM	775
5) TOWER SOUTH	L = 29 ft. M = 16 ft.	PHOTOSONICS	13 MM	650
6) TOWER 45°	J = 21 ft. 7 in. K = 11 ft.	PHOTOSONICS	13 MM	900
7) TOWER	31 ft. 6 in.	PHOTOSONICS	13 MM	650
8) HOOD	ON-BOARD	STALEX	8	1000
9) PASSENGER DOOR	ON-BOARD	STALEX	8	1500
10) REAR	ON-BOARD	STALEX	8	950

NOTE: CAMERAS ARE NUMBERED ACCORDING TO SPLICING SEQUENCE OF FILM.

(24 fps) REAL TIME MOVIE FILM COVERAGE OF PRE-CRASH, POST-CRASH AND CRASH EVENT SPLICED AT START AND END OF FILM.

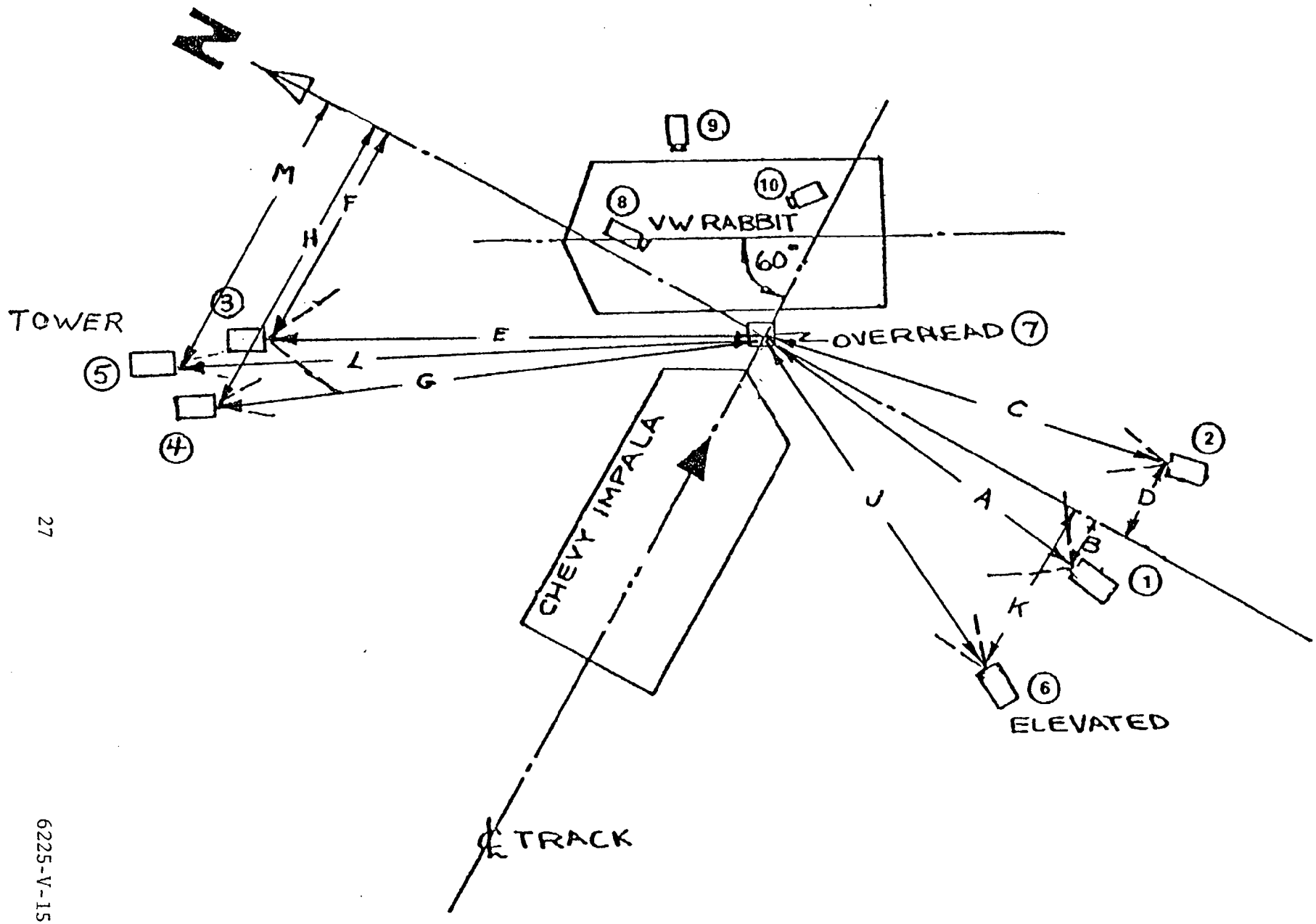


Figure 16 HIGH SPEED CAMERA LOCATIONS

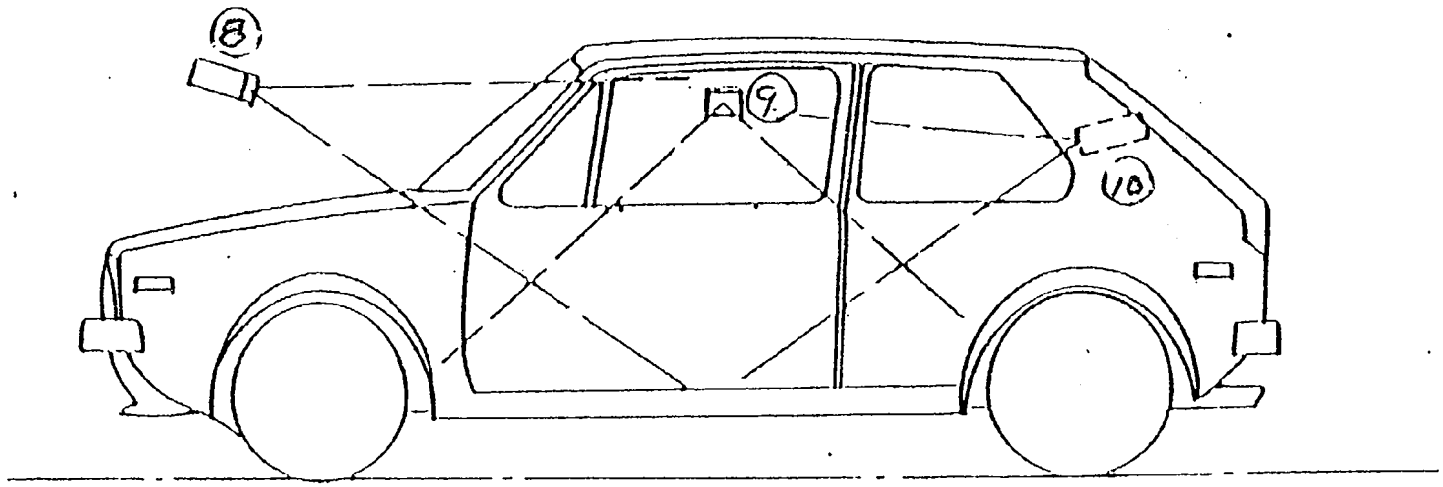


Figure 17 - ON-BOARD HIGH SPEED CAMERA LOCATIONS

DUMMY INJURY CRITERIA VALUES

CAR NO. 1 - STRIKING VEHICLE - 1978 CHEVROLET IMPALA

	MAXIMUM ACCELERATION ("G") *											
	HEAD				CHEST				PELVIS			
	X	Y	Z	R	X	Y	Z	R	X	Y	Z	R
DUMMY (1)	-15	2	12	16	-14	5	-3.5	14.8				
DUMMY (2)												
DUMMY (3)												
DUMMY (4)												

	MAXIMUM FORCE-FEMUR LOAD (LBS)		DUMMY LOCATION
	RIGHT FEMUR	LEFT FEMUR	
DUMMY (1)	-100	-100	Left Passenger
DUMMY (2)			Right Front Passenger
DUMMY (3)			
DUMMY (4)			

	MAXIMUM FORCE-SEAT BELTS LOADS (LBS)		
	SHOULDER STRAP UPPER BELT LOAD	LAP STRAP RIGHT BELT LOAD	LAP STRAP LEFT BELT LOAD
DUMMY (1)	680	1100	210
DUMMY (2)			
DUMMY (3)			
DUMMY (4)			

	HEAD INJURY CRITERIA**				SEVERITY INDEX	
	HIC	t_1 (SEC)	t_2 (SEC)	AVE. ACC. (g) t_1 TO t_2	HEAD	CHEST
DUMMY (1)	48.6	.071	.137	13.9	54	27
DUMMY (2)						
DUMMY (3)						
DUMMY (4)						

*DEFINED AS EXCEEDING 0.003 SEC. DURATION

**AS DEFINED IN FMVSS NO. 208

TABLE 8

DUMMY INJURY CRITERIA VALUES

CAR 2 - STRUCK VEHICLE - 1976 VOLKWSAGEN RABBIT

	MAXIMUM ACCELERATION ("G") *											
	HEAD				CHEST				PELVIS			
	X	Y	Z	R	X	Y	Z	R	X	Y	Z	R
DUMMY (1)	-70	90	78	110	20	80	-13	82	20	110		
DUMMY (2)	10	45	32	52	8	***	-9	18	-8	70		
DUMMY (3)												
DUMMY (4)												

	MAXIMUM FORCE-FEMUR LOAD (LBS)	
	RIGHT FEMUR	LEFT FEMUR
DUMMY (1)		
DUMMY (2)		
DUMMY (3)		
DUMMY (4)		

	MAXIMUM FORCE-SEAT BELTS LOADS (LBS)		
	SHOULDER STRAP UPPER BELT LOAD	LAP STRAP RIGHT BELT LOAD	LAP STRAP LEFT BELT LOAD
DUMMY (1)			
DUMMY (2)			
DUMMY (3)			
DUMMY (4)			

	HEAD INJURY CRITERIA**				SEVERITY INDEX	
	HIC	t_1 (SEC)	t_2 (SEC)	AVE. ACC. (g) t_1 TO t_2	HEAD	CHEST
DUMMY (1)	1382.3	.054	.077	80.5	1906.7	750
DUMMY (2)	194.0	.069	.104	31.5	280.0	21
DUMMY (3)						
DUMMY (4)						

*DEFINED AS EXCEEDING 0.003 SEC. DURATION

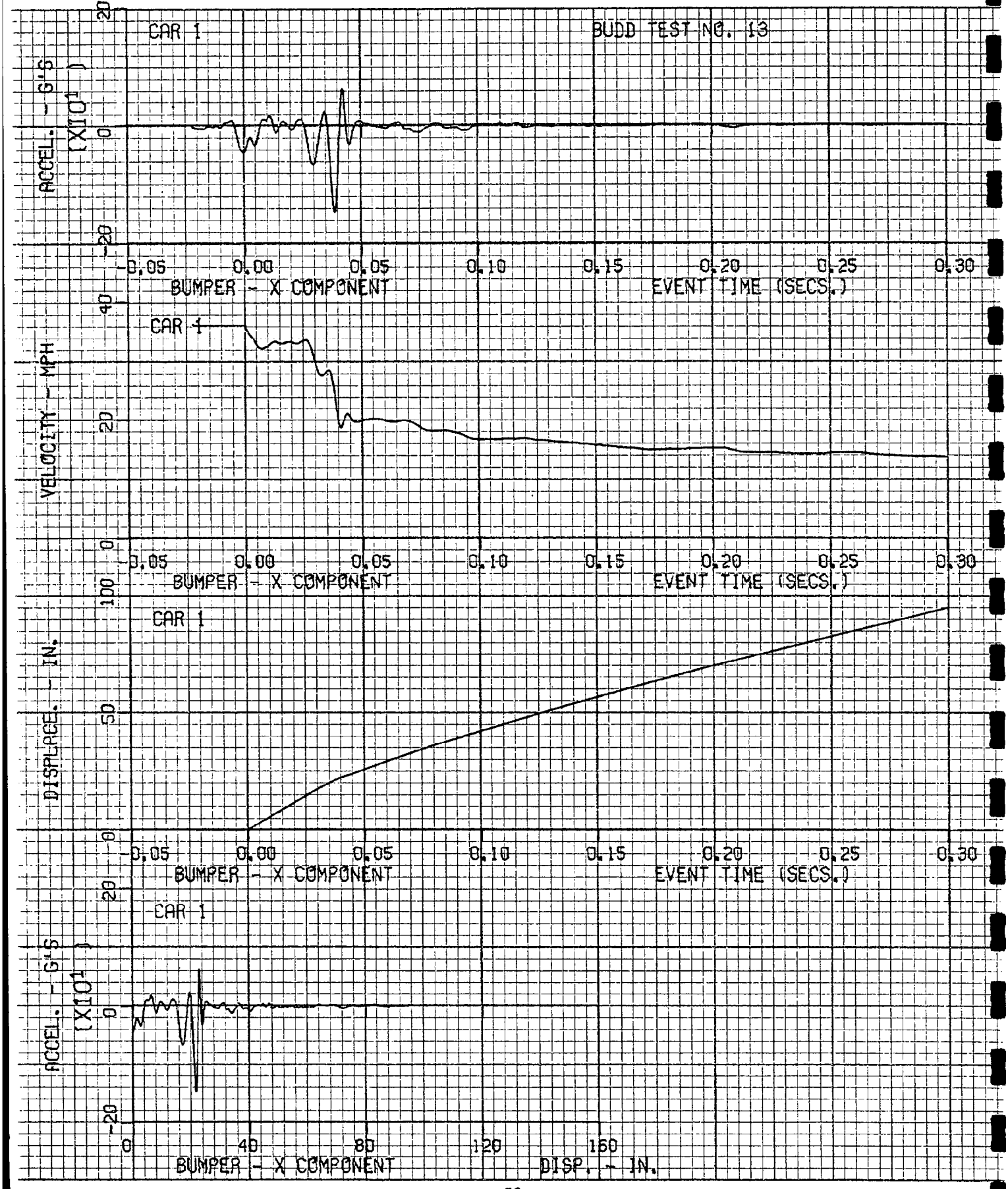
**AS DEFINED IN FMVSS NO. 208

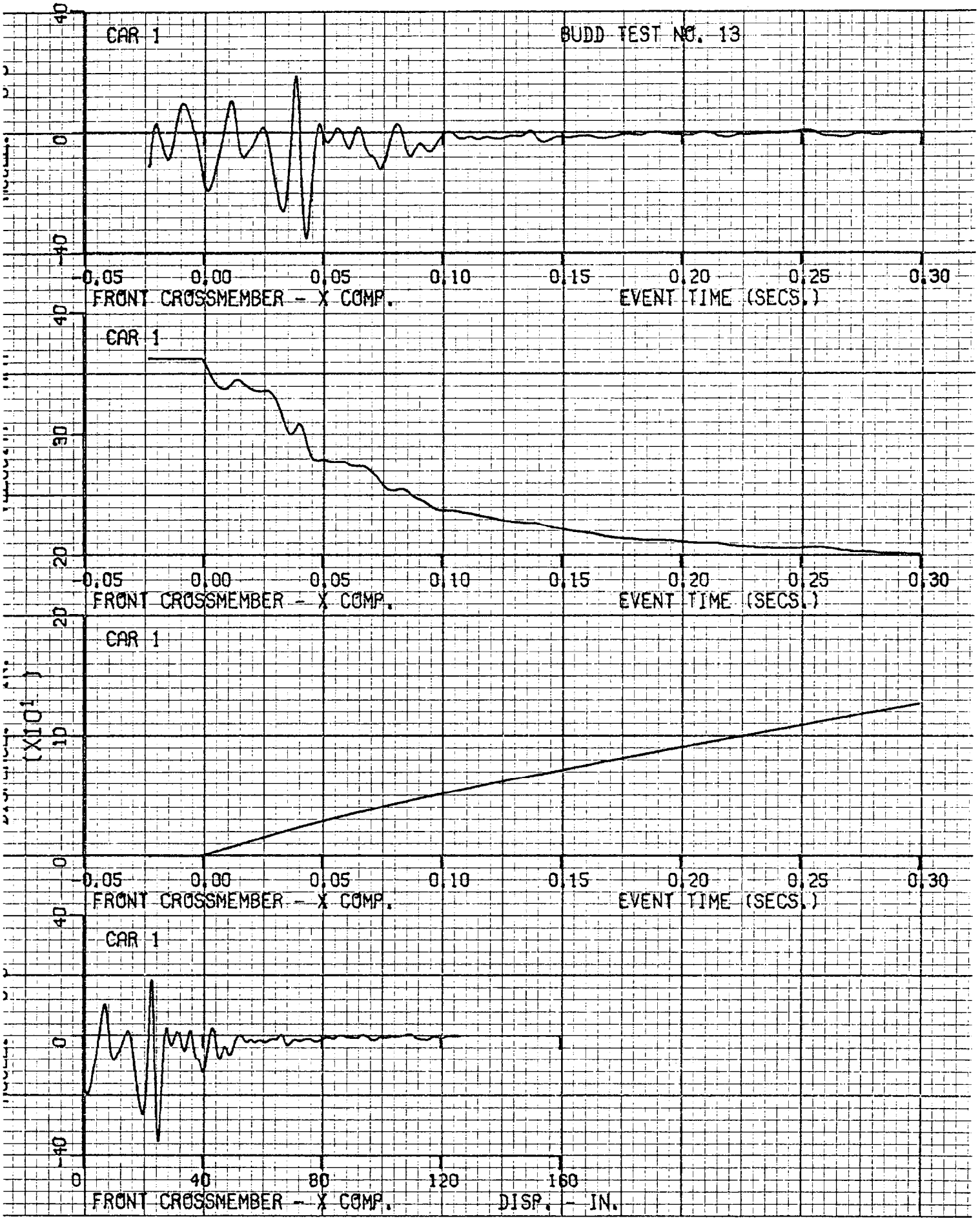
*** CHEST Y ACCELERATION LOST DUE TO BAD TRANSDUCER - CHEST RESULTANT CALCULATED WITH X AND Z COMPONENT ONLY.

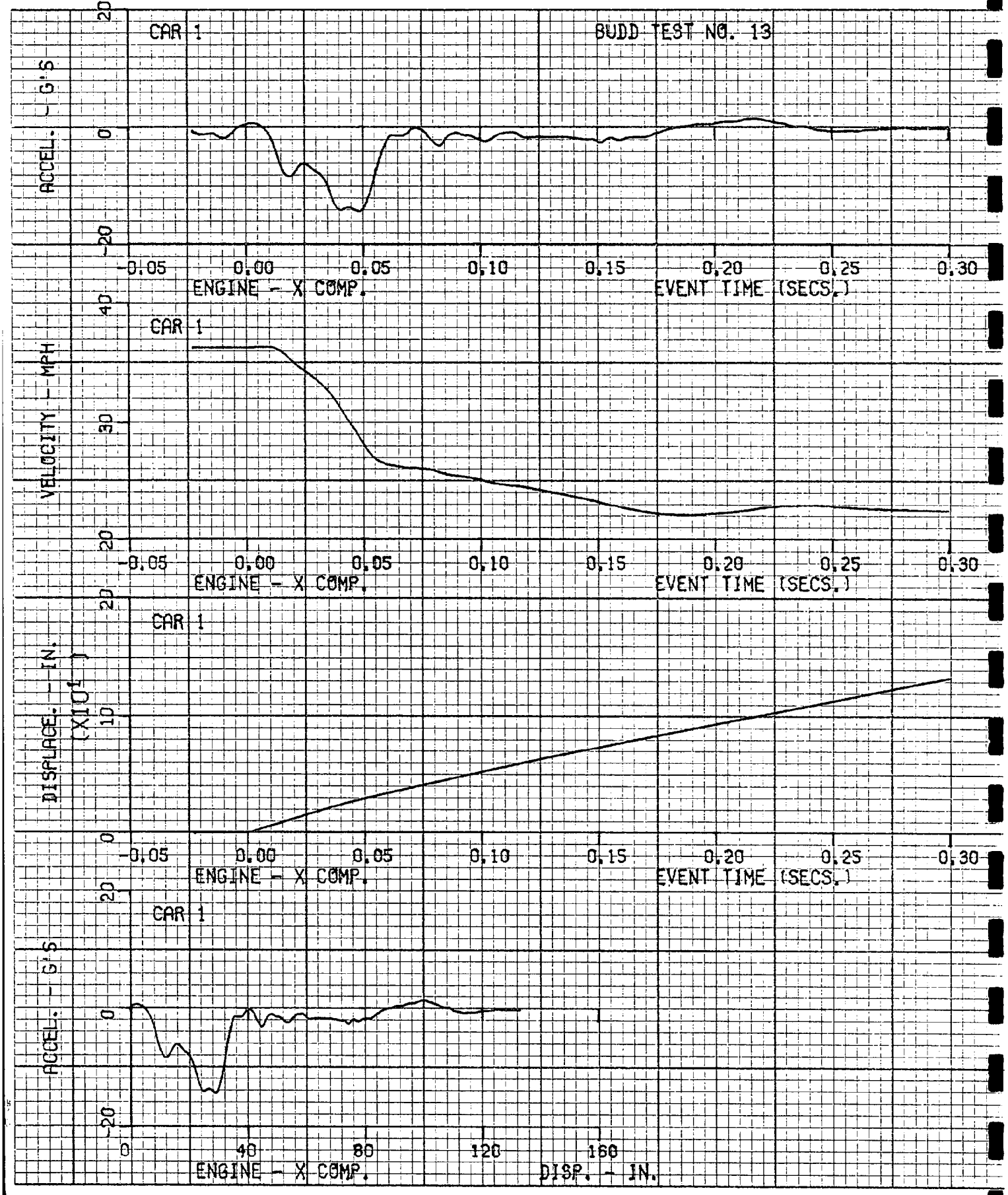
TEST NO. 13

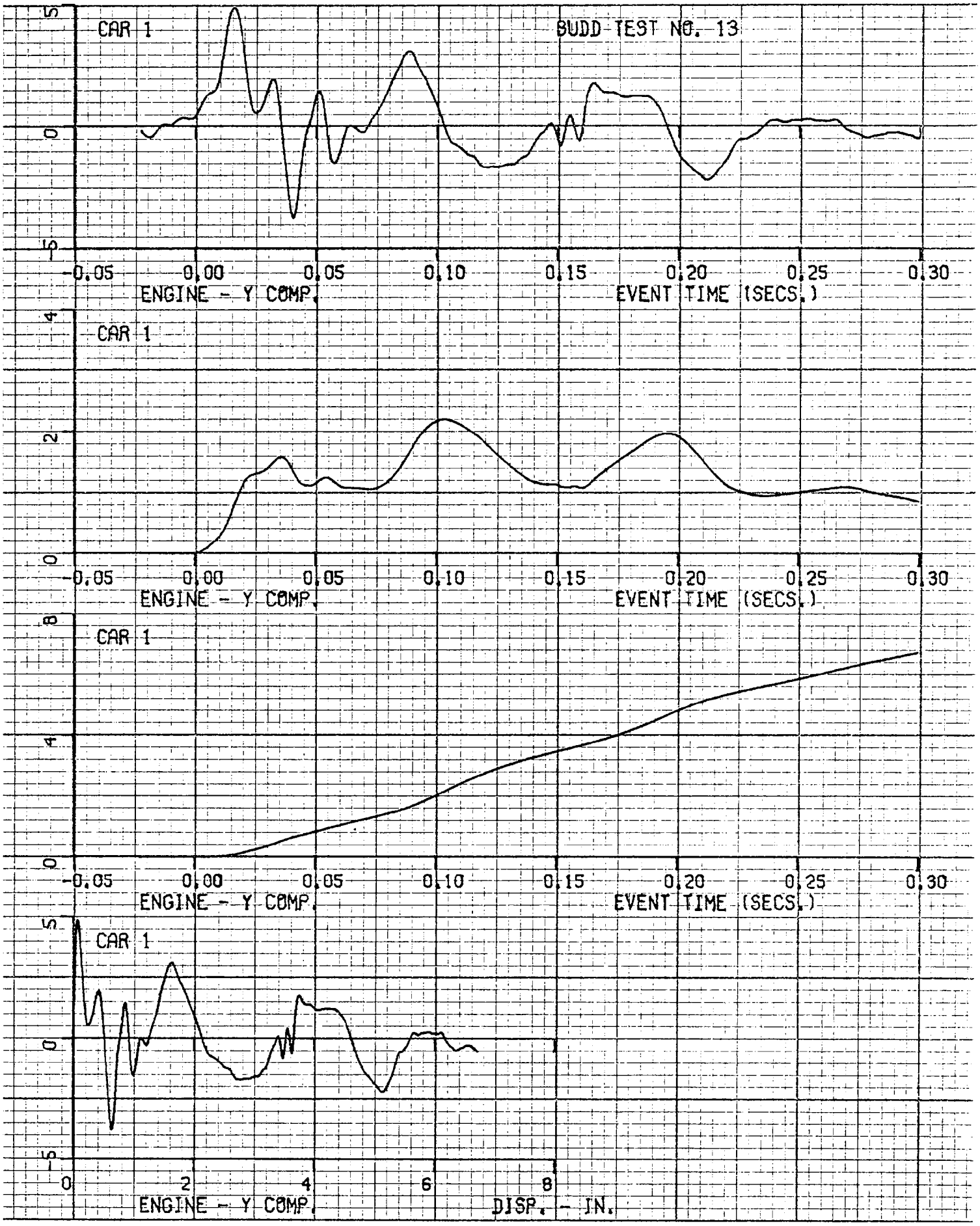
CAR NO. 1 - 1978 CHEVROLET IMPALA

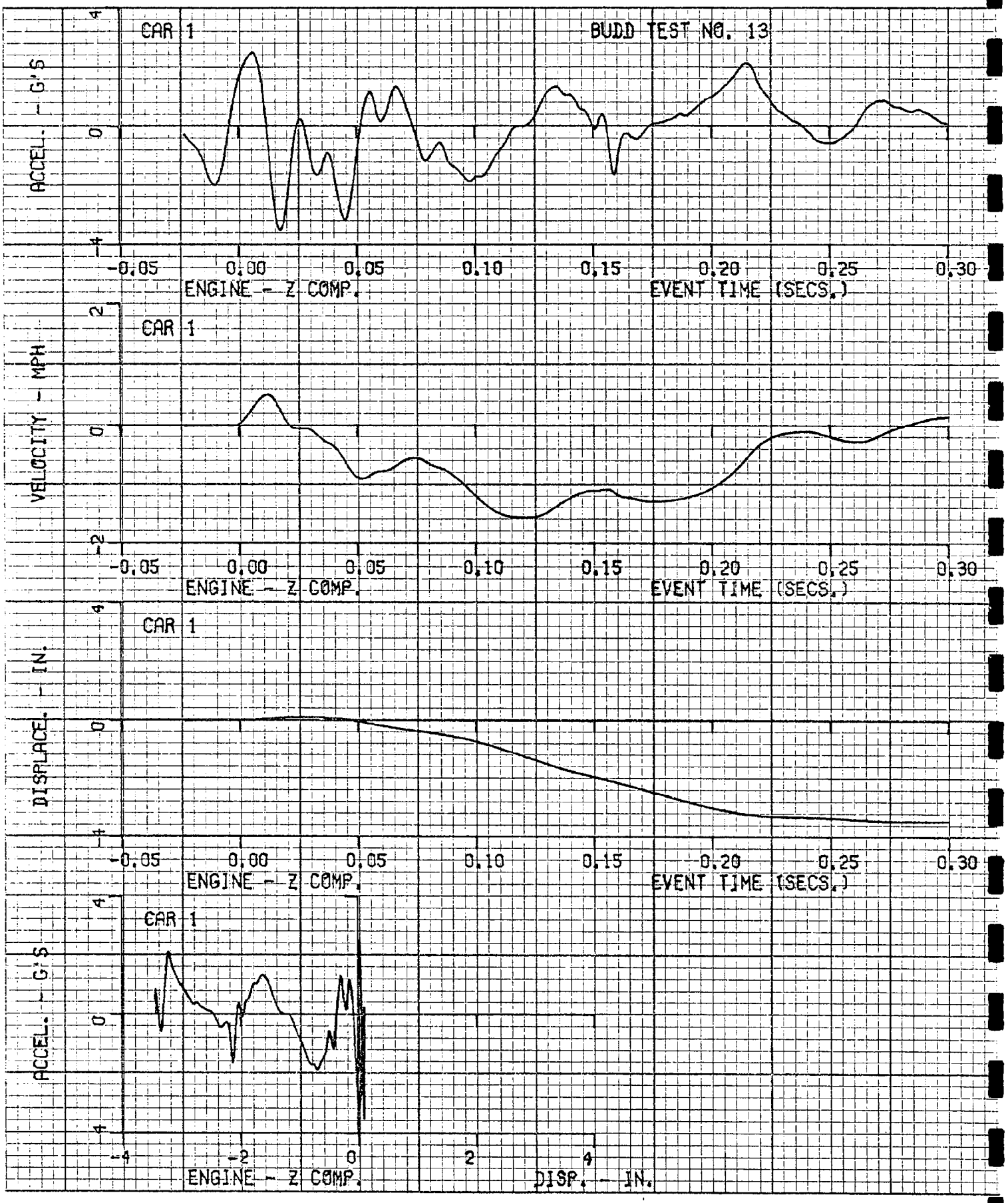
VEHICLE DATA - 60 HZ CHANNEL CLASS


CAR 1
BUDD TEST NO. 13
ACCEL. - G'S (X10¹)
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
BUMPER - X COMPONENT
EVENT TIME (SECS.)
CAR 1
VELOCITY - MPH
40
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
BUMPER - X COMPONENT
EVENT TIME (SECS.)
DISPLACE. - IN.
100
50
0
CAR 1
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
BUMPER - X COMPONENT
EVENT TIME (SECS.)
ACCEL. - G'S (X10¹)
20
0
-20
CAR 1
0
40
80
120
160
BUMPER - X COMPONENT
DISP. - IN.

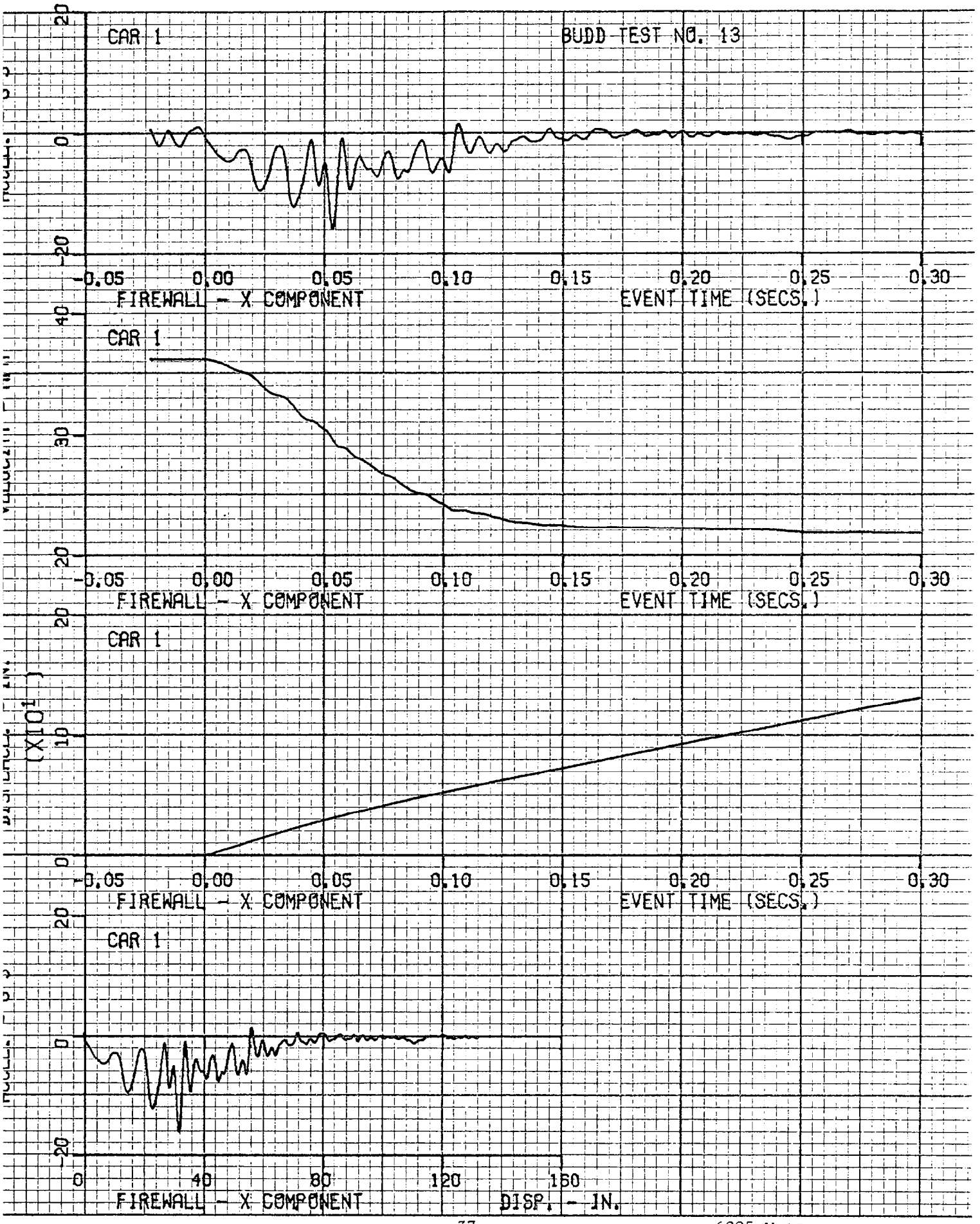

CAR 1
BUDD TEST NO. 13
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FRONT CROSSMEMBER - X COMP.
EVENT TIME (SECS.)
CAR 1
40
30
20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FRONT CROSSMEMBER - X COMP.
EVENT TIME (SECS.)
CAR 1
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FRONT CROSSMEMBER - X COMP.
EVENT TIME (SECS.)
CAR 1
40
0
-40
0
40
80
120
160
FRONT CROSSMEMBER - X COMP.
DISP. - IN.

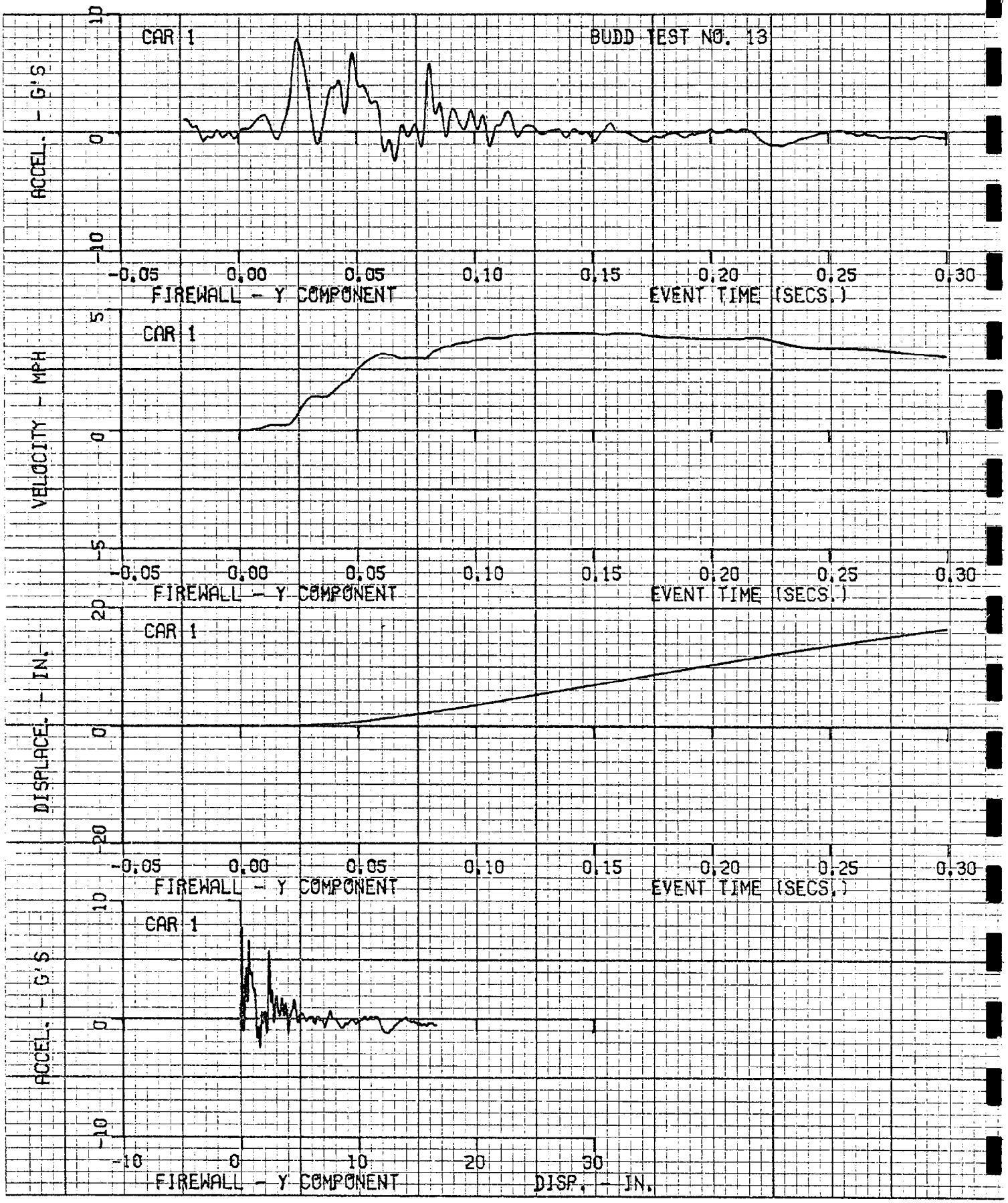

CAR 1
BUDD TEST NO. 13
ACCEL. - G'S
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - X COMP.
EVENT TIME (SECS.)
CAR 1
VELOCITY - MPH
40
30
20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - X COMP.
EVENT TIME (SECS.)
CAR 1
DISPLACE. - IN.
(X10¹)
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - X COMP.
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
20
0
-20
0
40
80
120
160
ENGINE - X COMP.
DISP. - IN.

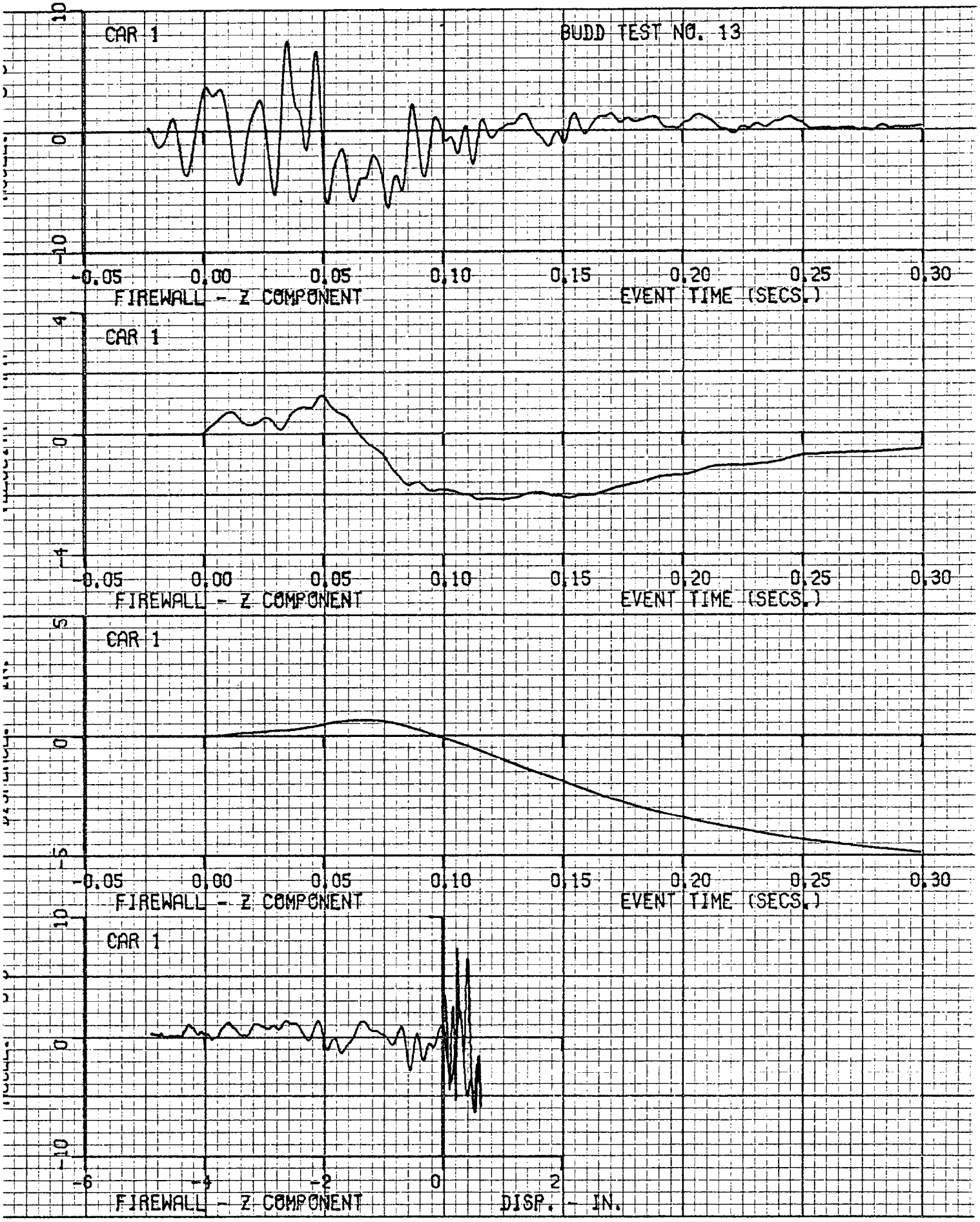

BUDD TEST NO. 13
CAR 1
5
0
-5
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - Y COMP.
EVENT TIME (SECS.)
CAR 1
4
2
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - Y COMP.
EVENT TIME (SECS.)
CAR 1
8
4
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - Y COMP.
EVENT TIME (SECS.)
CAR 1
5
0
-5
0
2
4
6
8
ENGINE - Y COMP.
DISP. - IN.

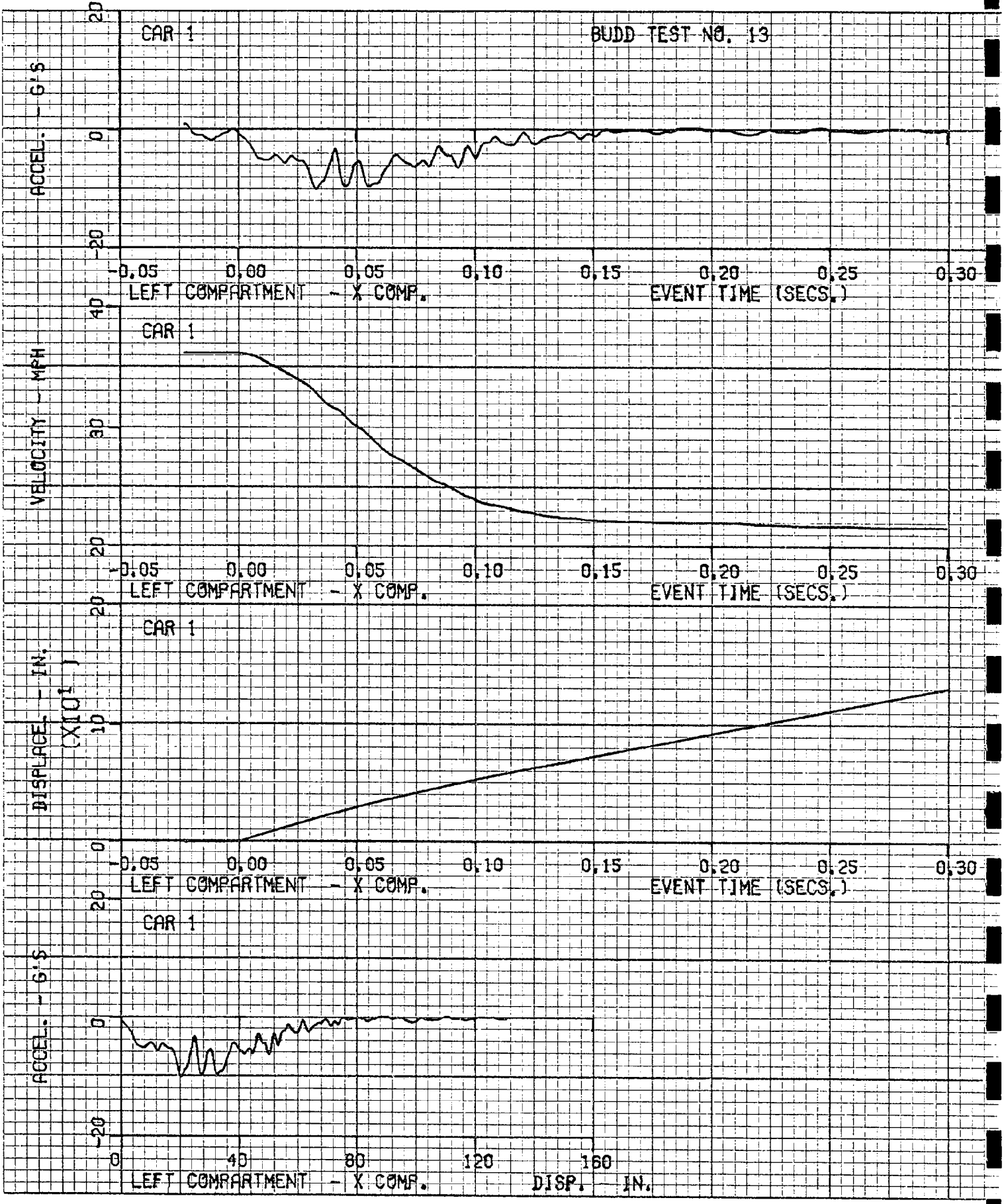

CAR 1
BUDD TEST NO. 13
ACCEL. - G'S
4
0
-4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - Z COMP.
EVENT TIME (SECS.)
CAR 1
VELOCITY - MPH
2
0
-2
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - Z COMP.
EVENT TIME (SECS.)
CAR 1
DISPLACE. - IN.
4
0
-4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - Z COMP.
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
4
0
-4
-4
-2
0
2
4
ENGINE - Z COMP.
DISP. - IN.

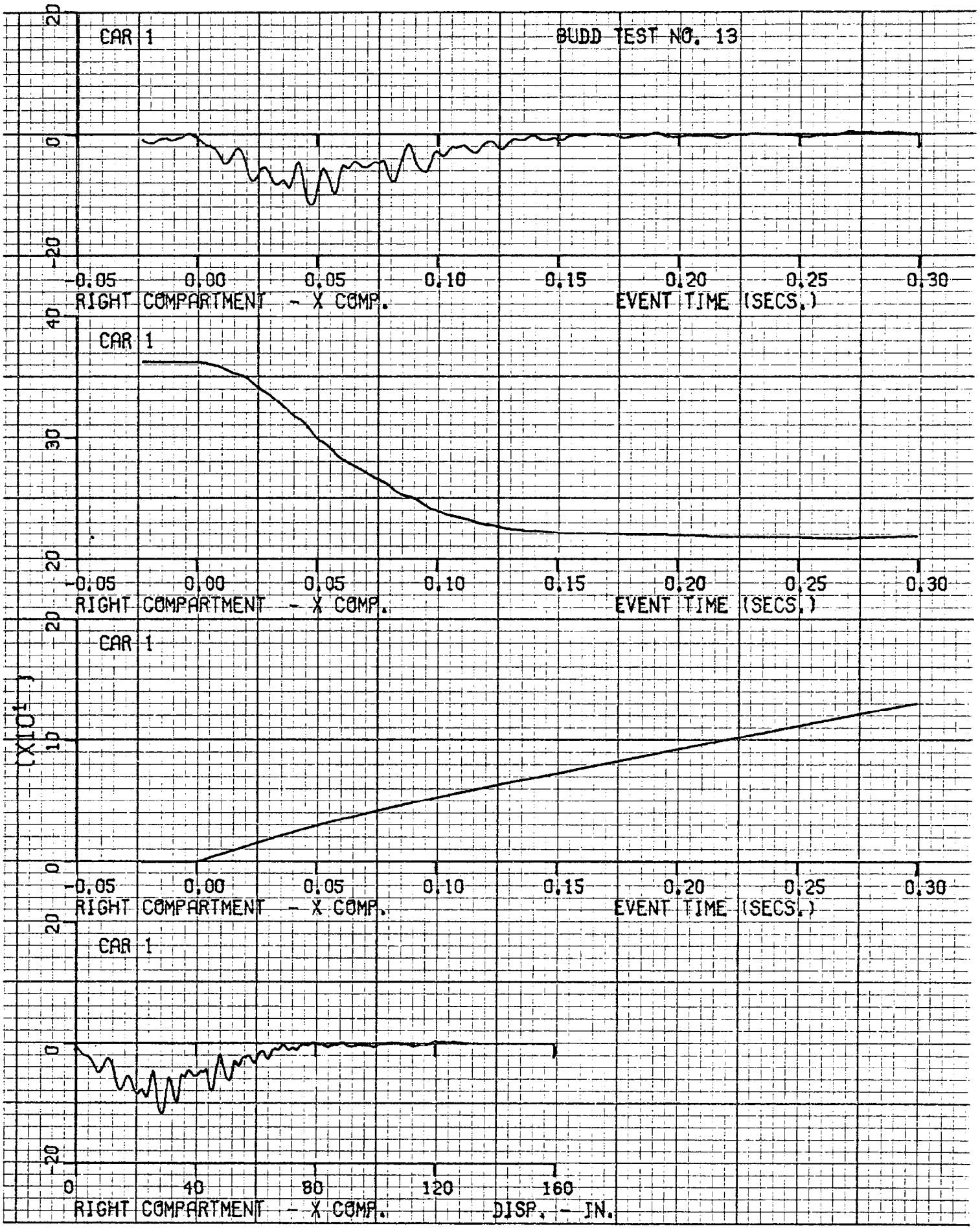
6225-V-15

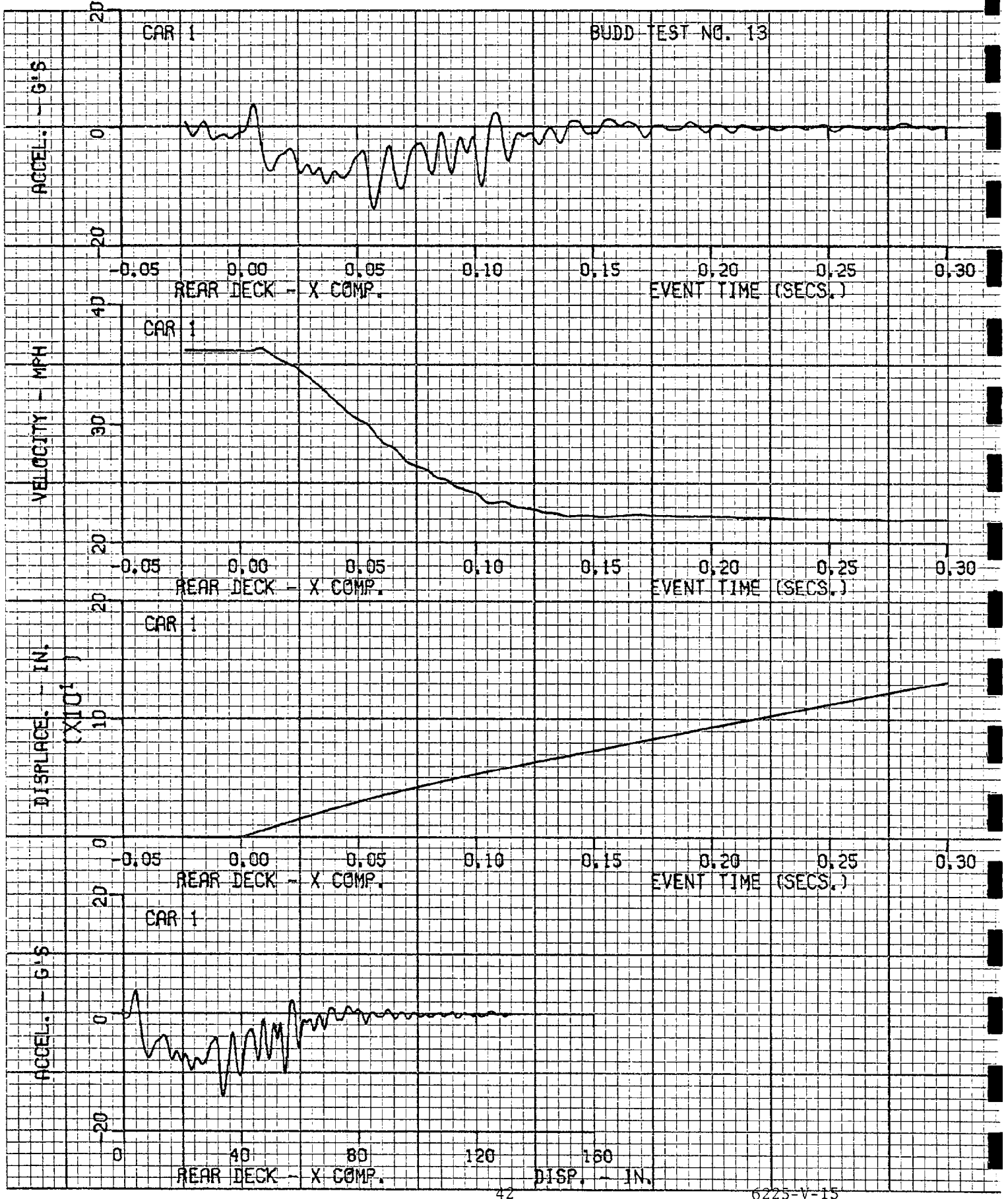

CAR 1
BUDD TEST NO. 13
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - X COMPONENT
EVENT TIME (SECS.)
CAR 1
40
30
20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - X COMPONENT
EVENT TIME (SECS.)
CAR 1
20
10
0
(X10¹)
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - X COMPONENT
EVENT TIME (SECS.)
CAR 1
20
0
-20
0
40
80
120
160
FIREWALL - X COMPONENT
DISP. - IN.

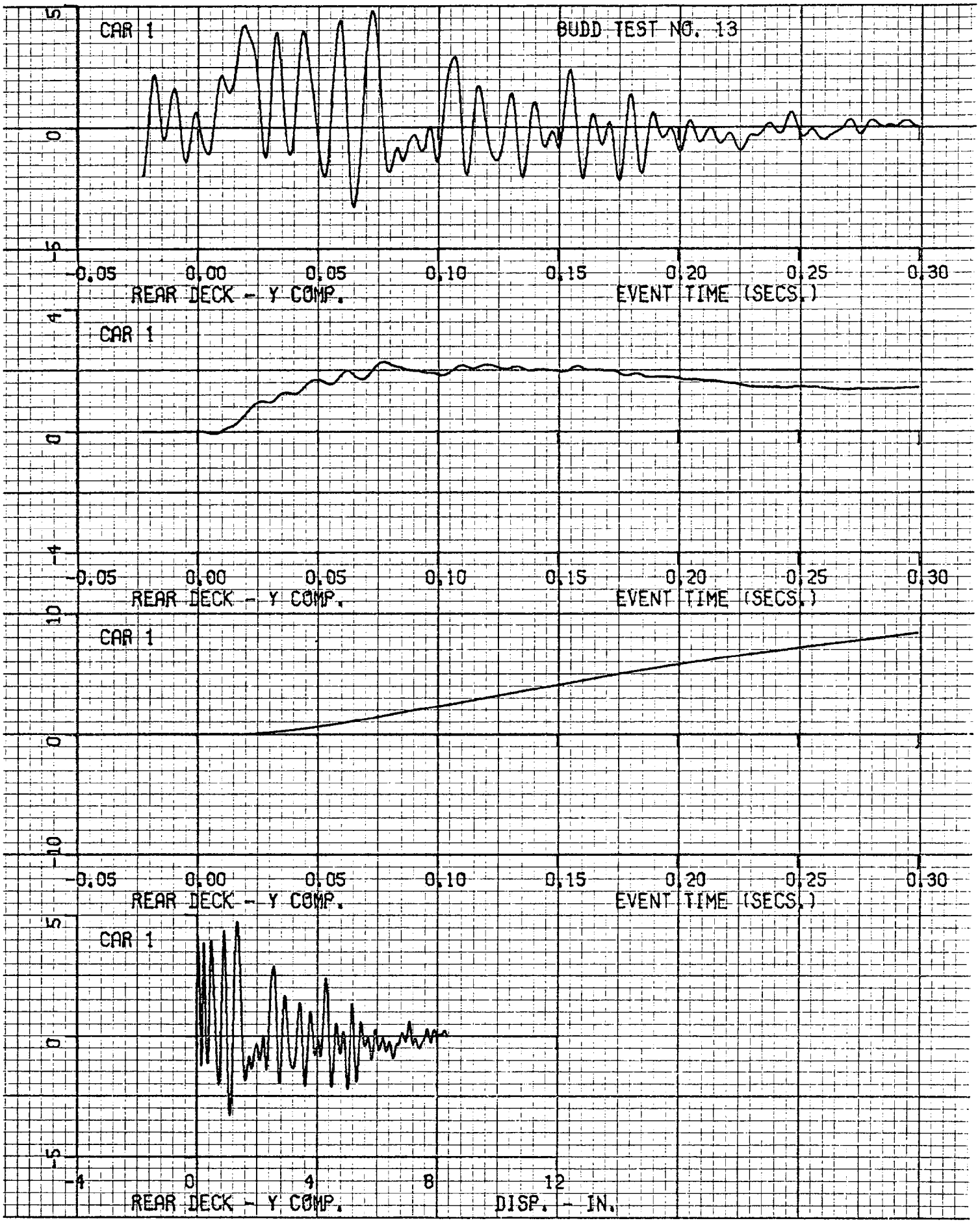

CAR 1
BUDD TEST NO. 13
ACCEL. - G'S
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - Y COMPONENT
EVENT TIME (SECS.)
CAR 1
VELOCITY - MPH
5
0
-5
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - Y COMPONENT
EVENT TIME (SECS.)
CAR 1
DISPLACE. - IN.
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - Y COMPONENT
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
10
0
-10
-10
0
10
20
30
FIREWALL - Y COMPONENT
DISP. - IN.

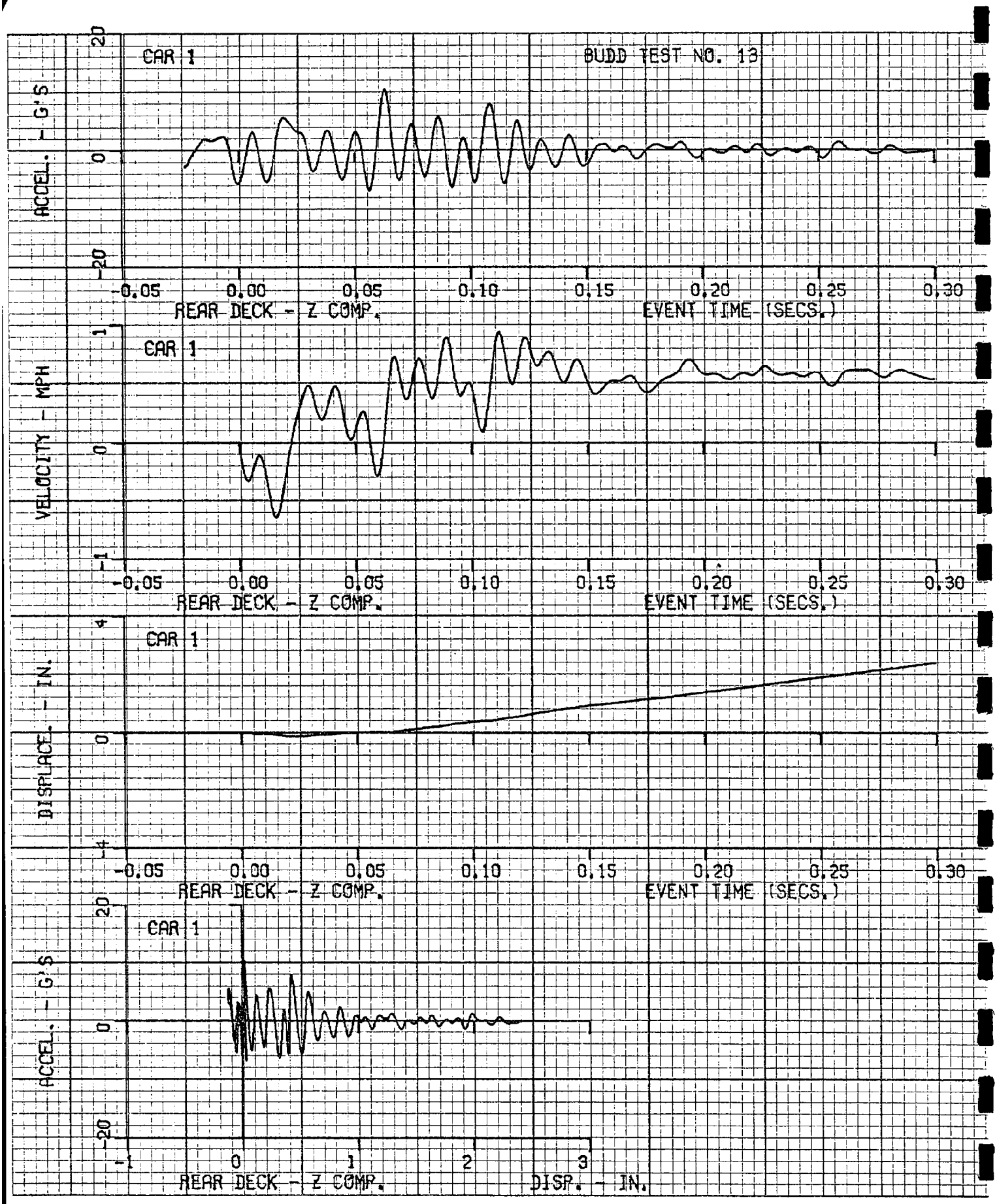

CAR 1
BUDD TEST NO. 13
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - Z COMPONENT
EVENT TIME (SECS.)
CAR 1
4
0
-4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - Z COMPONENT
EVENT TIME (SECS.)
CAR 1
5
0
-5
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - Z COMPONENT
EVENT TIME (SECS.)
CAR 1
10
0
-10
-6
-4
-2
0
2
FIREWALL - Z COMPONENT
DISP. - IN.

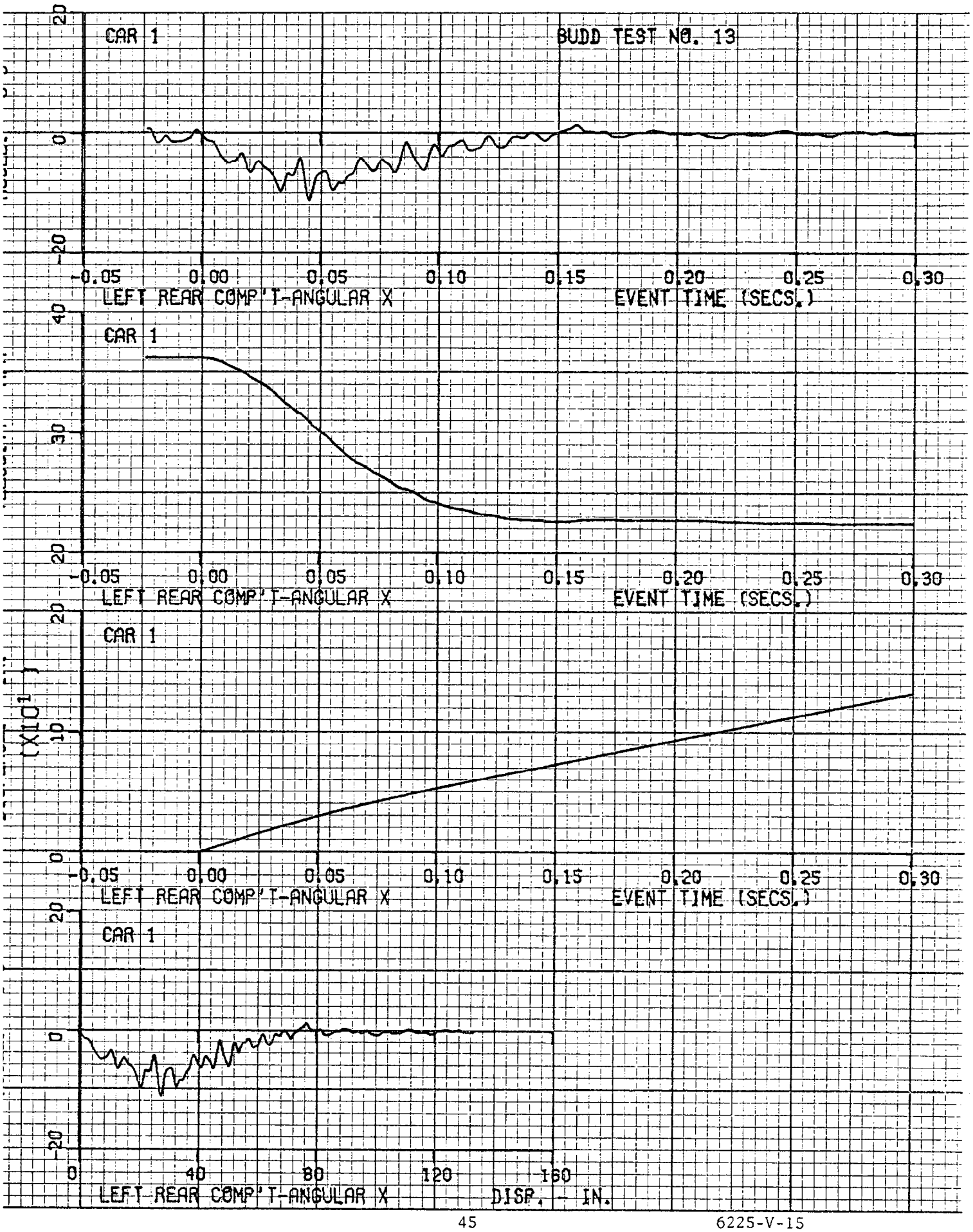

CAR 1
BUDD TEST NO. 13
ACCEL. - G'S
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LEFT COMPARTMENT - X COMP.
EVENT TIME (SECS.)
CAR 1
VELOCITY - MPH
40
30
20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LEFT COMPARTMENT - X COMP.
EVENT TIME (SECS.)
CAR 1
DISPLACEMENT - IN.
(X10¹)
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LEFT COMPARTMENT - X COMP.
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
20
0
-20
0
40
80
120
160
LEFT COMPARTMENT - X COMP.
DISP. - IN.

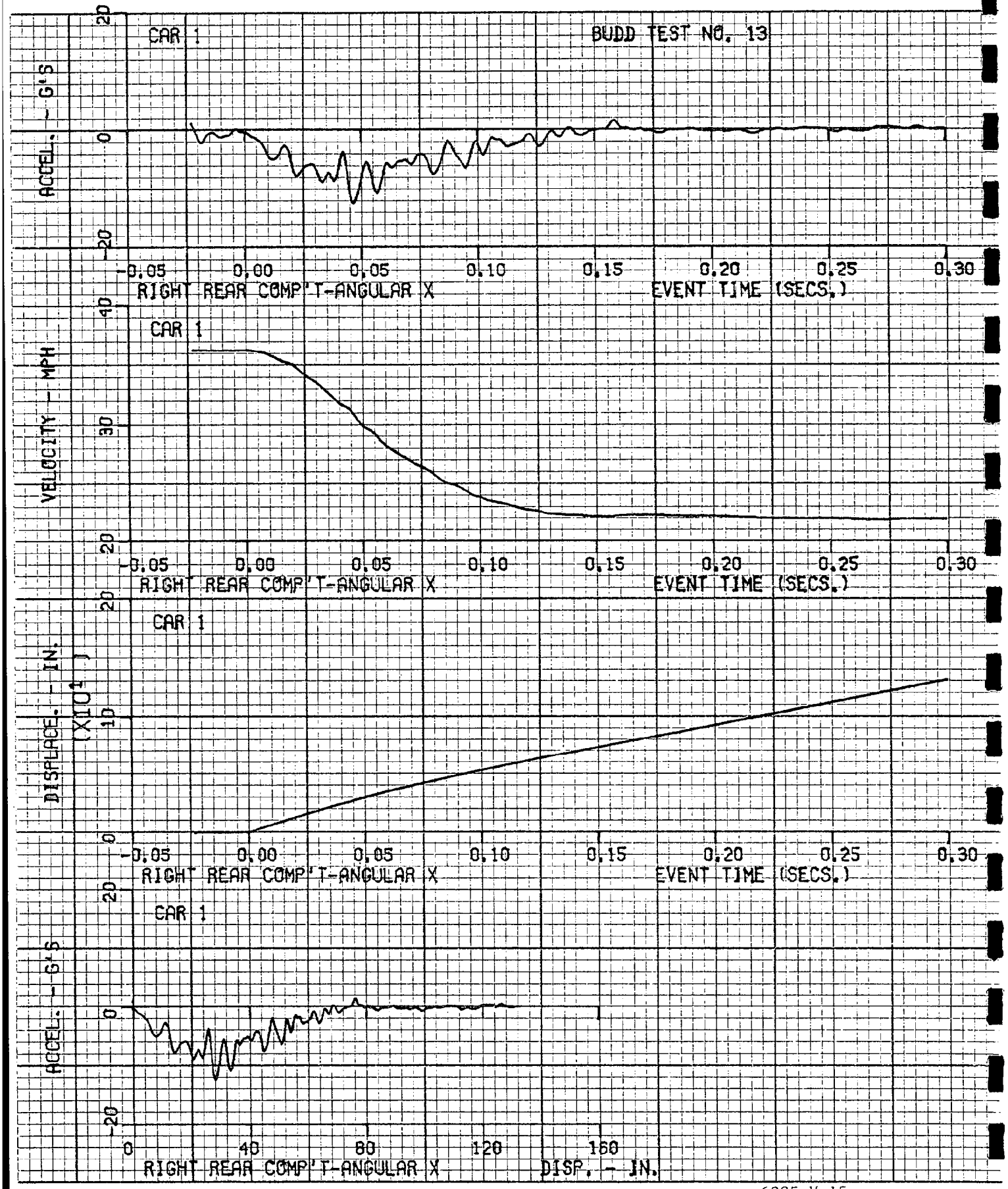

CAR 1
BUDD TEST NO. 13
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT COMPARTMENT - X COMP.
EVENT TIME (SECS.)
CAR 1
40
30
20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT COMPARTMENT - X COMP.
EVENT TIME (SECS.)
CAR 1
(X10¹)
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT COMPARTMENT - X COMP.
EVENT TIME (SECS.)
CAR 1
20
0
-20
0
40
80
120
160
RIGHT COMPARTMENT - X COMP.
DISP. - IN.

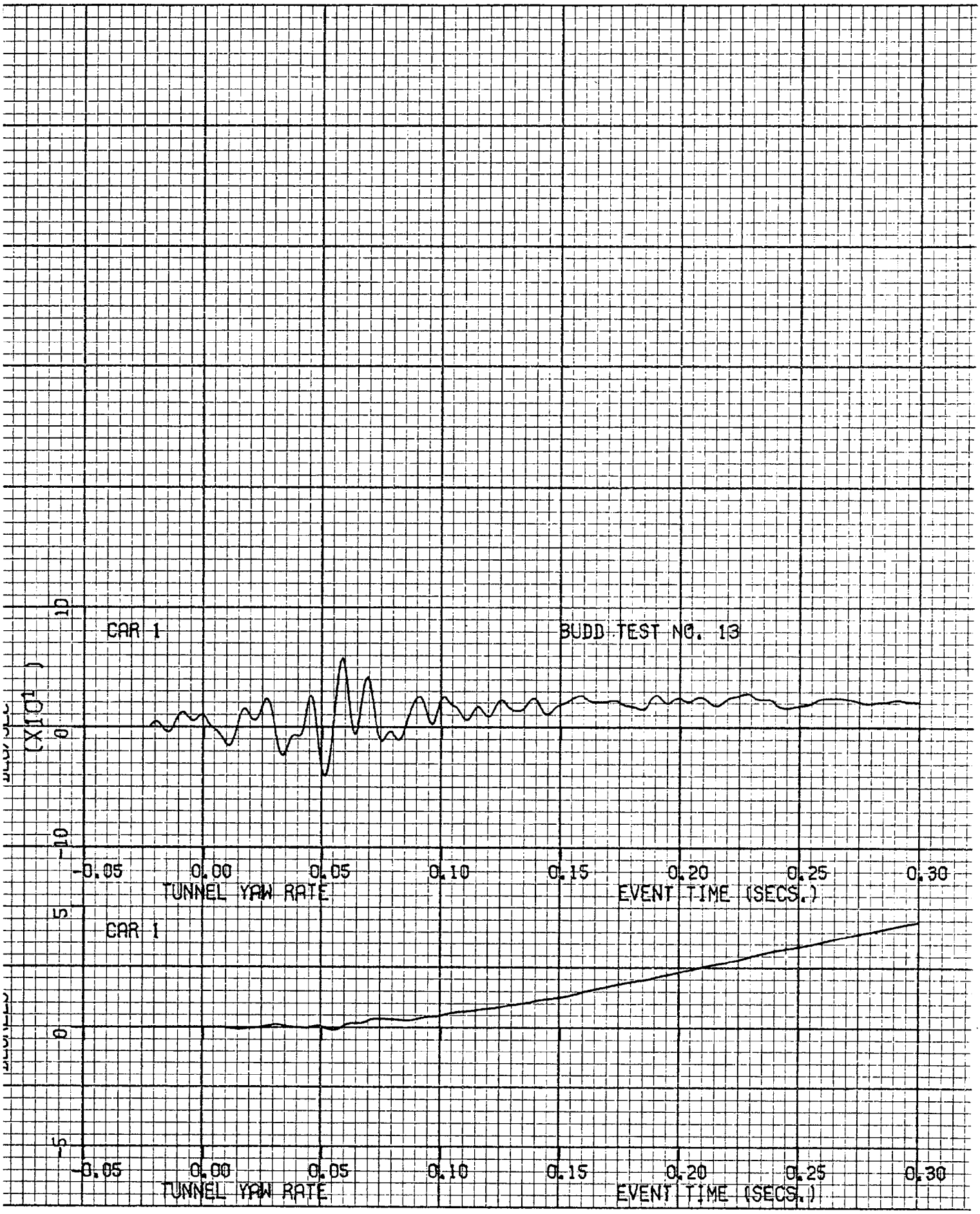

BUDD TEST NO. 13
CAR 1
ACCEL. - G'S
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - X COMP.
EVENT TIME (SECS.)
CAR 1
VELOCITY - MPH
40
30
20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - X COMP.
EVENT TIME (SECS.)
CAR 1
DISPLACE. - IN.
(X10¹)
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - X COMP.
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
20
0
-20
0
40
80
120
160
REAR DECK - X COMP.
DISP. - IN.


BUDD TEST NO. 13
CAR 1
5
0
-5
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Y COMP.
EVENT TIME (SECS.)
CAR 1
4
0
-4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Y COMP.
EVENT TIME (SECS.)
CAR 1
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Y COMP.
EVENT TIME (SECS.)
CAR 1
5
0
-5
-4
0
4
8
12
REAR DECK - Y COMP.
DISP. - IN.


BUDD TEST NO. 13
CAR 1
ACCEL. - G'S
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Z COMP.
EVENT TIME (SECS.)
CAR 1
VELOCITY - MPH
1
0
-1
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Z COMP.
EVENT TIME (SECS.)
CAR 1
DISPLACE. - IN.
4
0
-4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Z COMP.
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
20
0
-20
-1
0
1
2
3
REAR DECK - Z COMP.
DISP. - IN.


CAR 1
BUDD TEST NO. 13
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LEFT REAR COMP'T-ANGULAR X
EVENT TIME (SECS.)
CAR 1
40
30
20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LEFT REAR COMP'T-ANGULAR X
EVENT TIME (SECS.)
CAR 1
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LEFT REAR COMP'T-ANGULAR X
EVENT TIME (SECS.)
CAR 1
20
0
-20
0
40
80
120
160
LEFT REAR COMP'T-ANGULAR X
DISP. - IN.

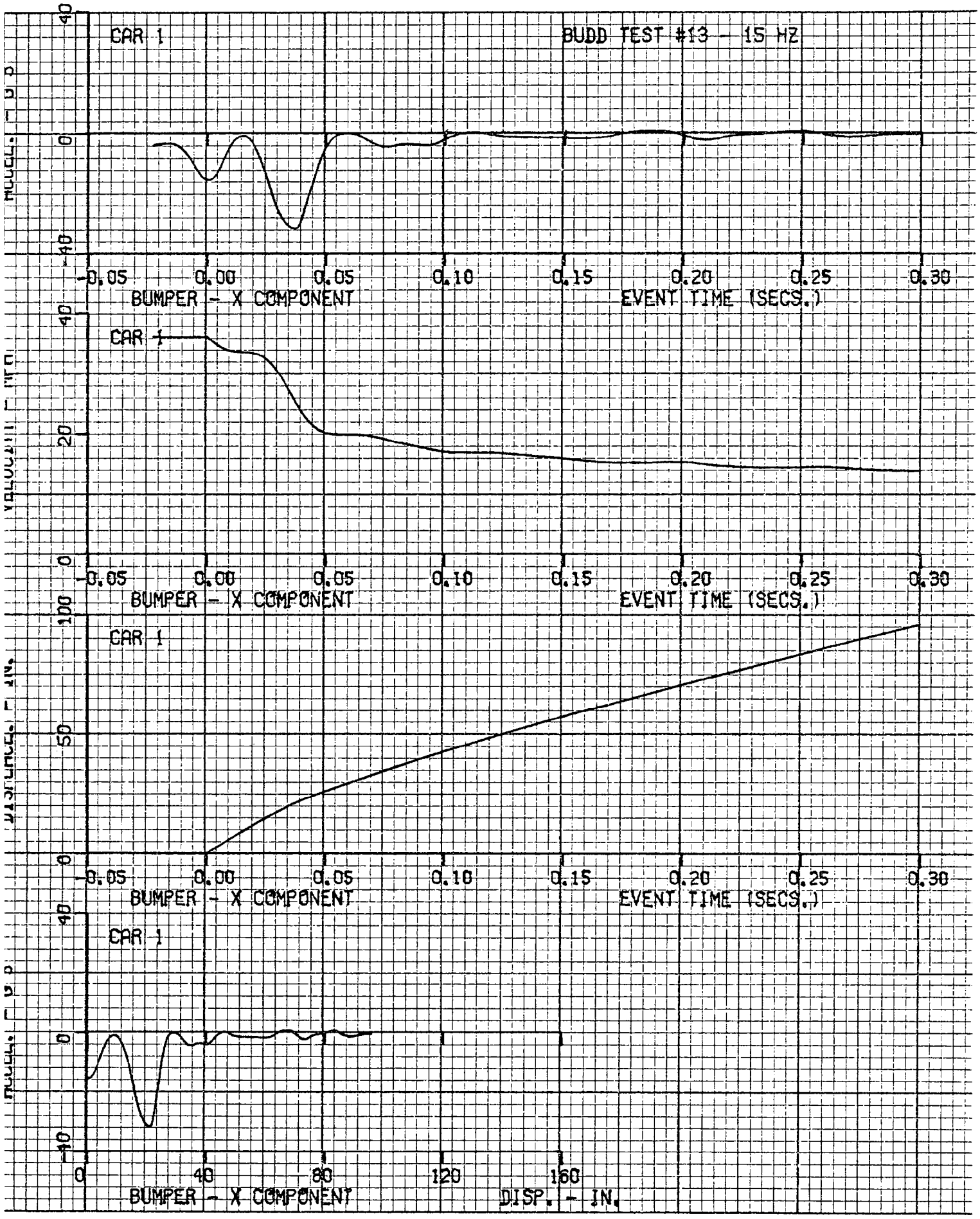

BUDD TEST NO. 13
CAR 1
ACCEL. - G'S
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMP'T-ANGULAR X
EVENT TIME (SECS.)
CAR 1
VELOCITY - MPH
40
30
20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMP'T-ANGULAR X
EVENT TIME (SECS.)
CAR 1
DISPLACE. - IN.
(X10¹)
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMP'T-ANGULAR X
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
20
0
-20
0
40
80
120
160
RIGHT REAR COMP'T-ANGULAR X
DISP. - IN.

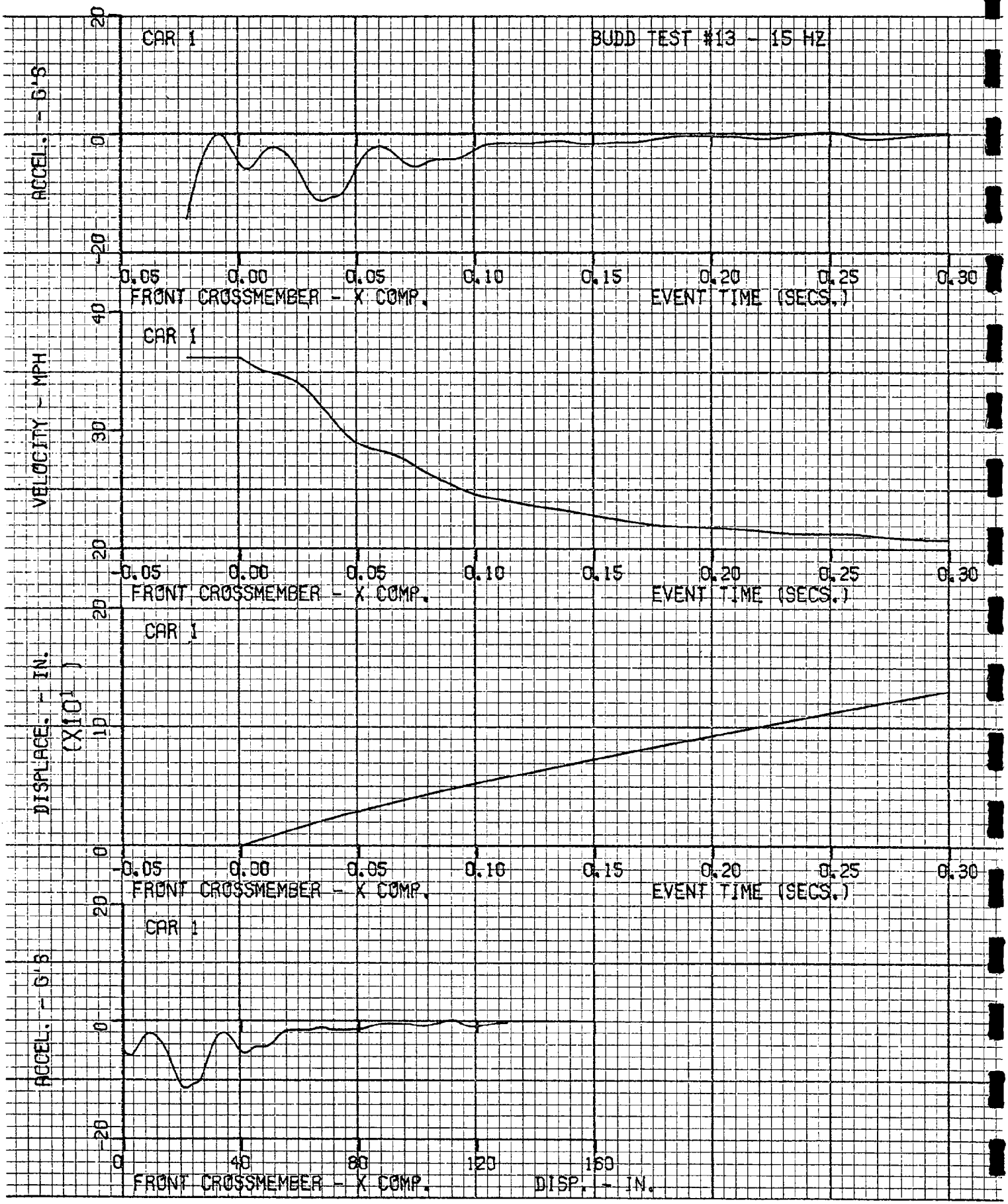

CAR 1
BUDD TEST NO. 13
(X10¹)
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
TUNNEL YAW RATE
EVENT TIME (SECS.)
CAR 1
5
0
-5
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
TUNNEL YAW RATE
EVENT TIME (SECS.)

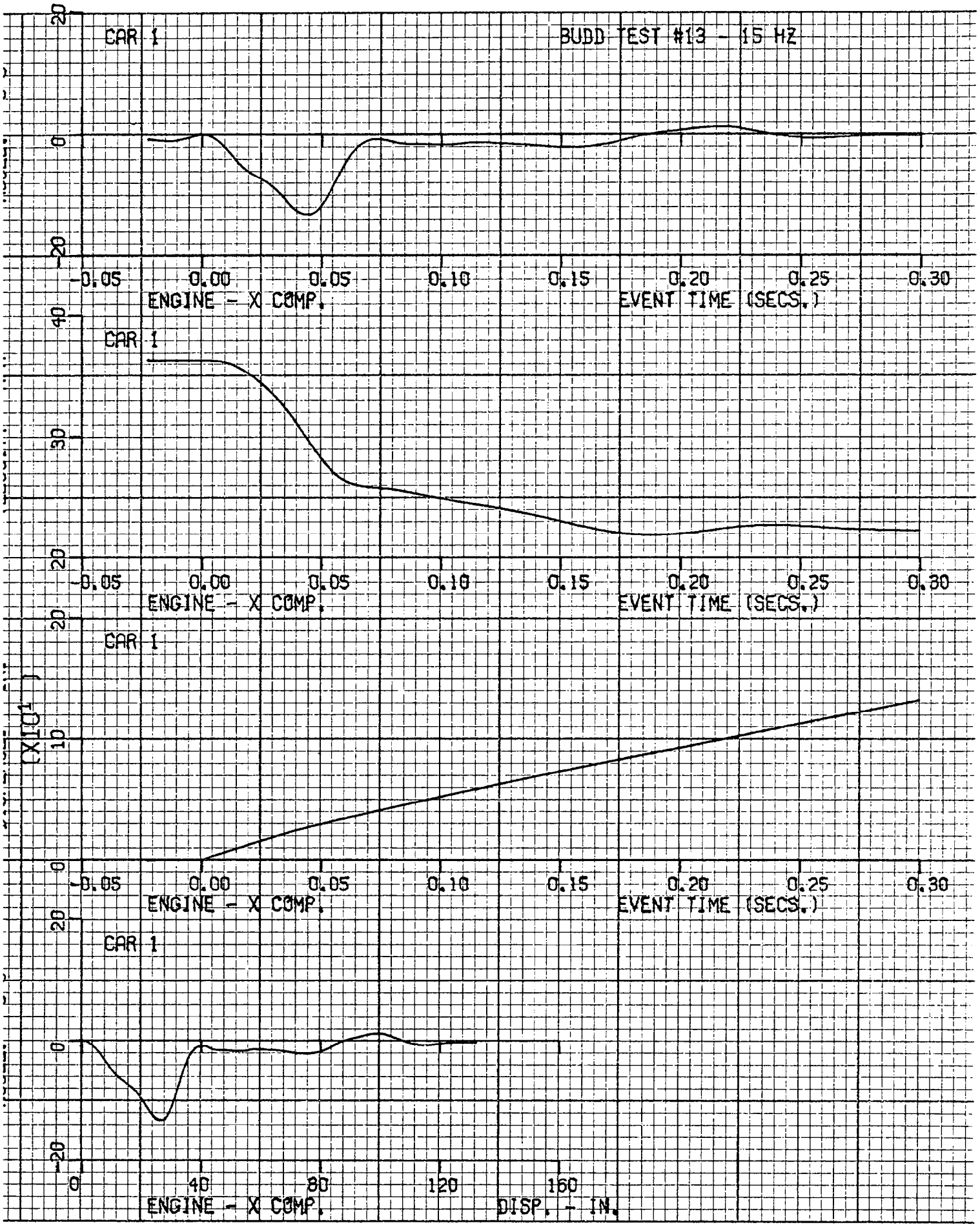
TEST NO. 13

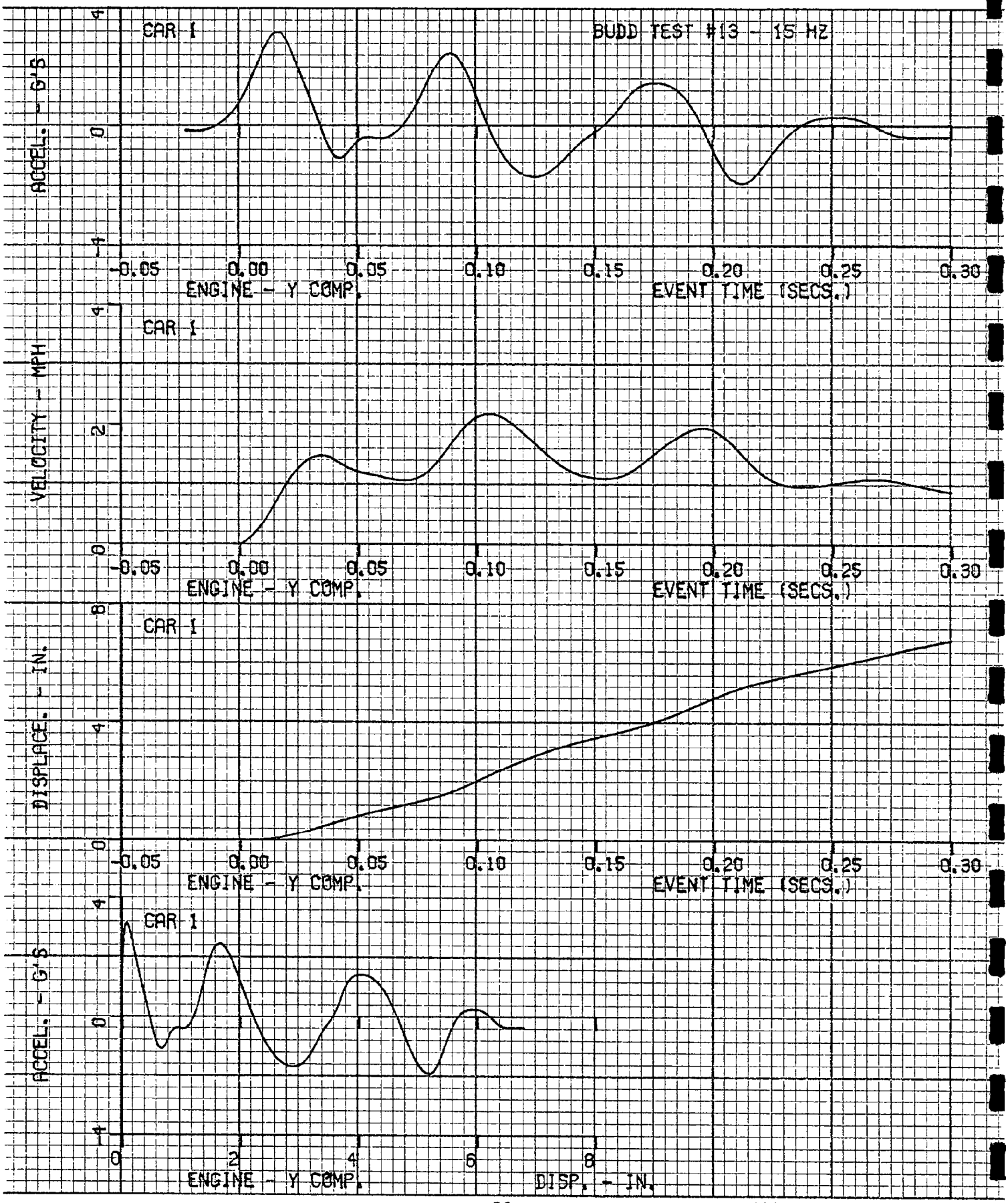
CAR NO. 1 - 1978 CHEVROLET IMPALA

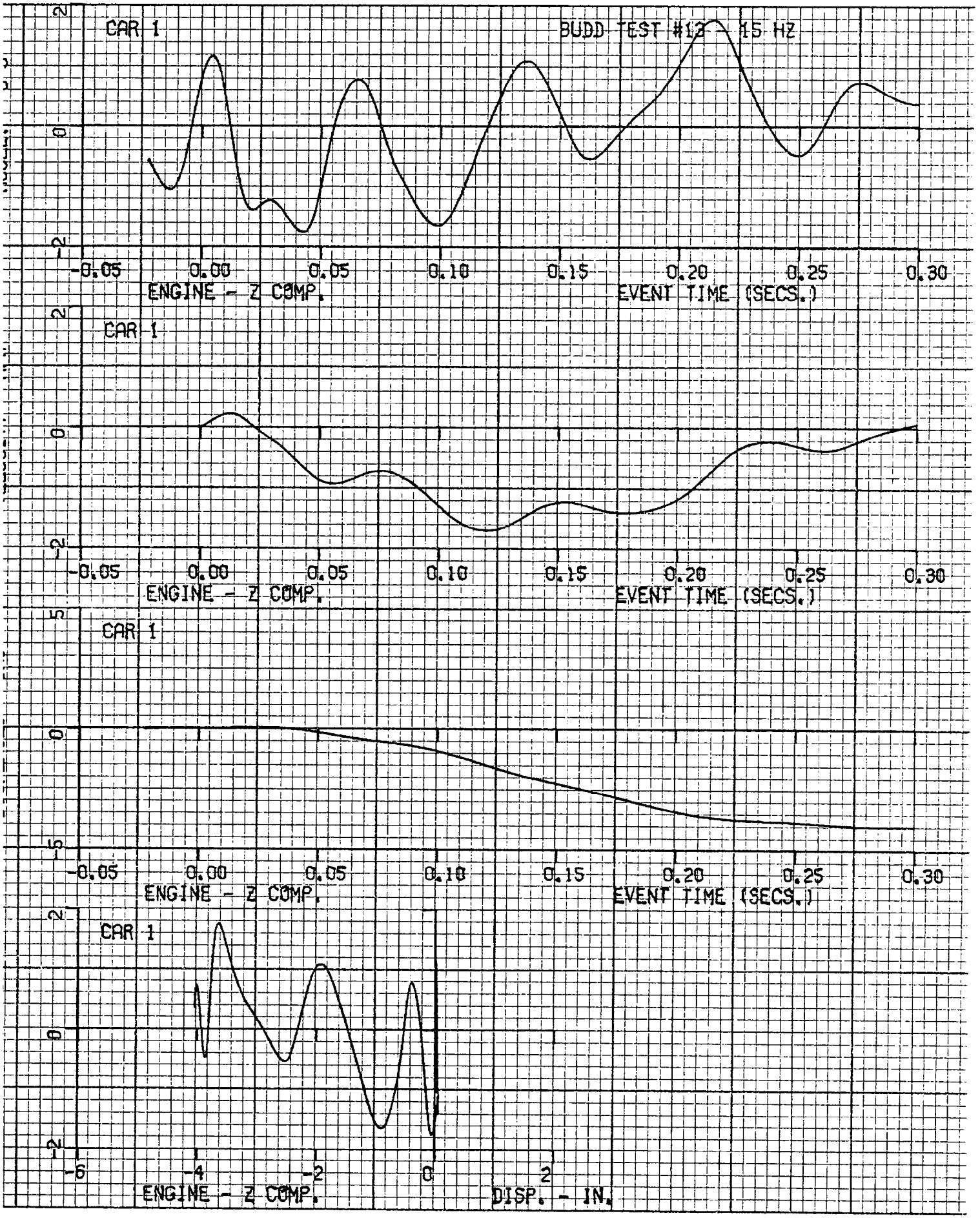
VEHICLE DATA - 15 HZ CHANNEL CLASS

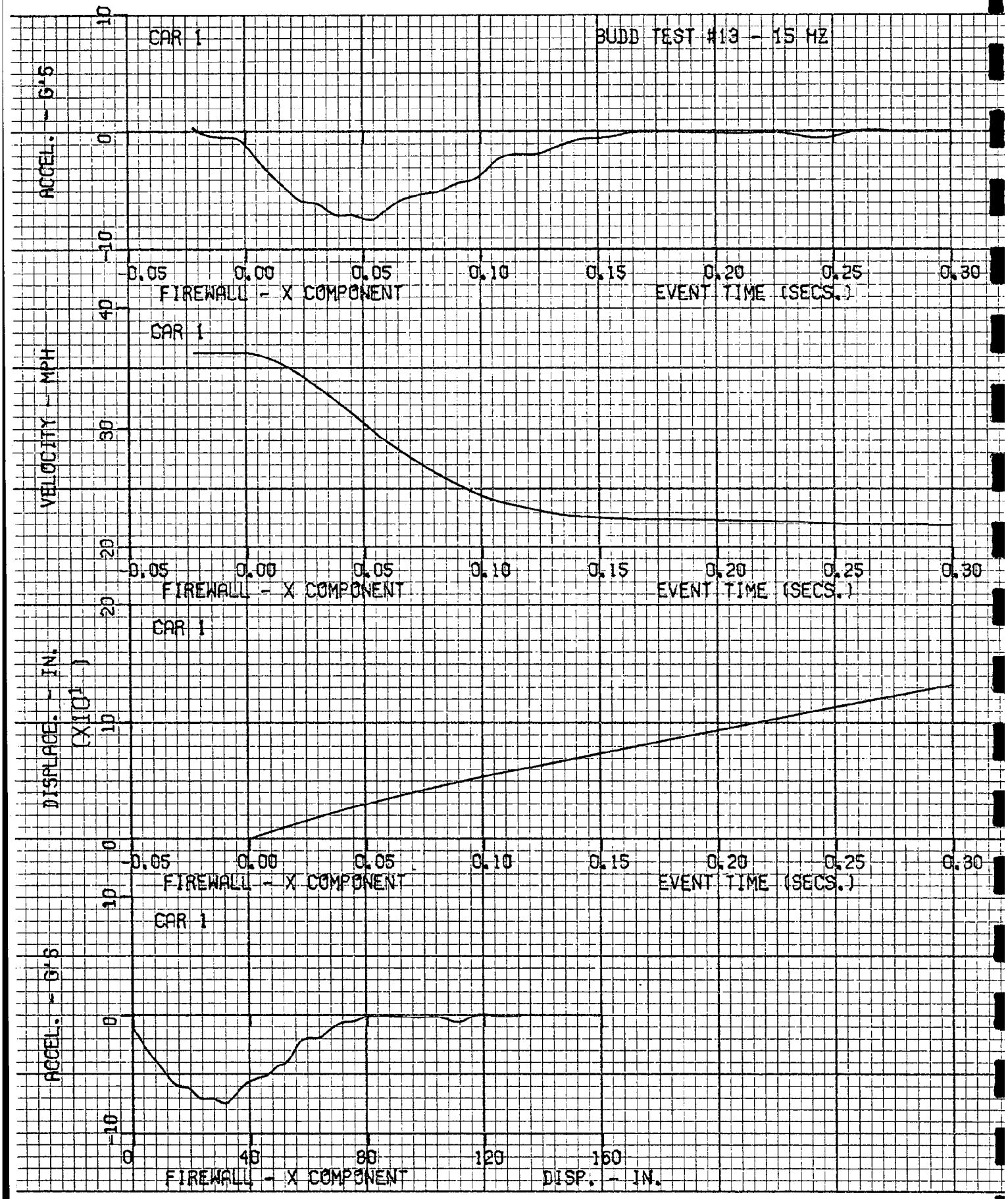

CAR 1
BUDD TEST #13 - 15 HZ
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
BUMPER - X COMPONENT
EVENT TIME (SECS.)
CAR 1
40
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
BUMPER - X COMPONENT
EVENT TIME (SECS.)
CAR 1
100
50
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
BUMPER - X COMPONENT
EVENT TIME (SECS.)
CAR 1
40
0
-40
0
40
80
120
160
BUMPER - X COMPONENT
DISP. - IN.

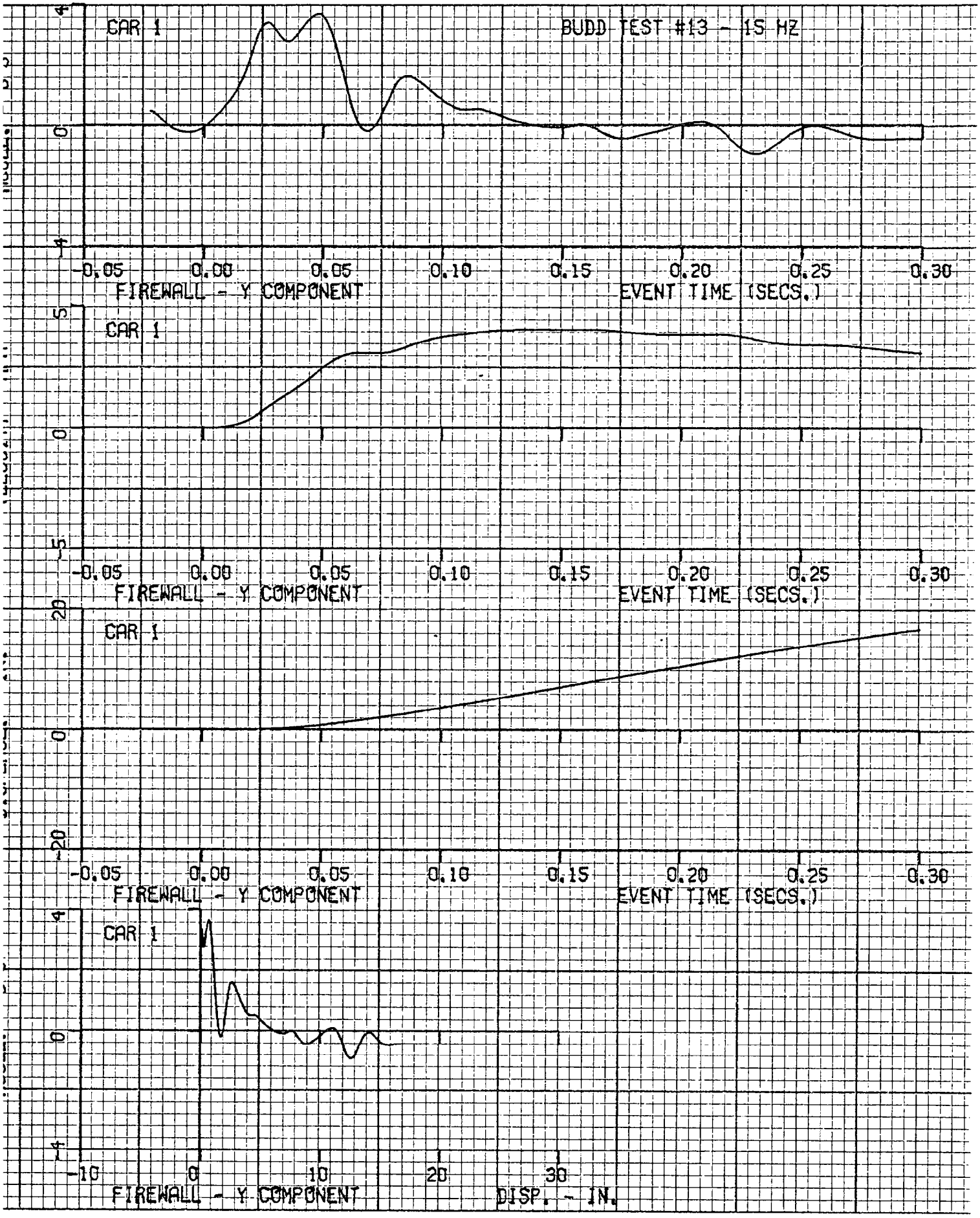

CAR 1
BUDD TEST #13 - 15 HZ
ACCEL. - G'S
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FRONT CROSSMEMBER - X COMP.
EVENT TIME (SECS.)
CAR 1
VELOCITY - MPH
40
30
20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FRONT CROSSMEMBER - X COMP.
EVENT TIME (SECS.)
CAR 1
DISPLACE. - IN.
(X10¹)
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FRONT CROSSMEMBER - X COMP.
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
20
0
-20
0
40
80
120
160
FRONT CROSSMEMBER - X COMP.
DISP. - IN.

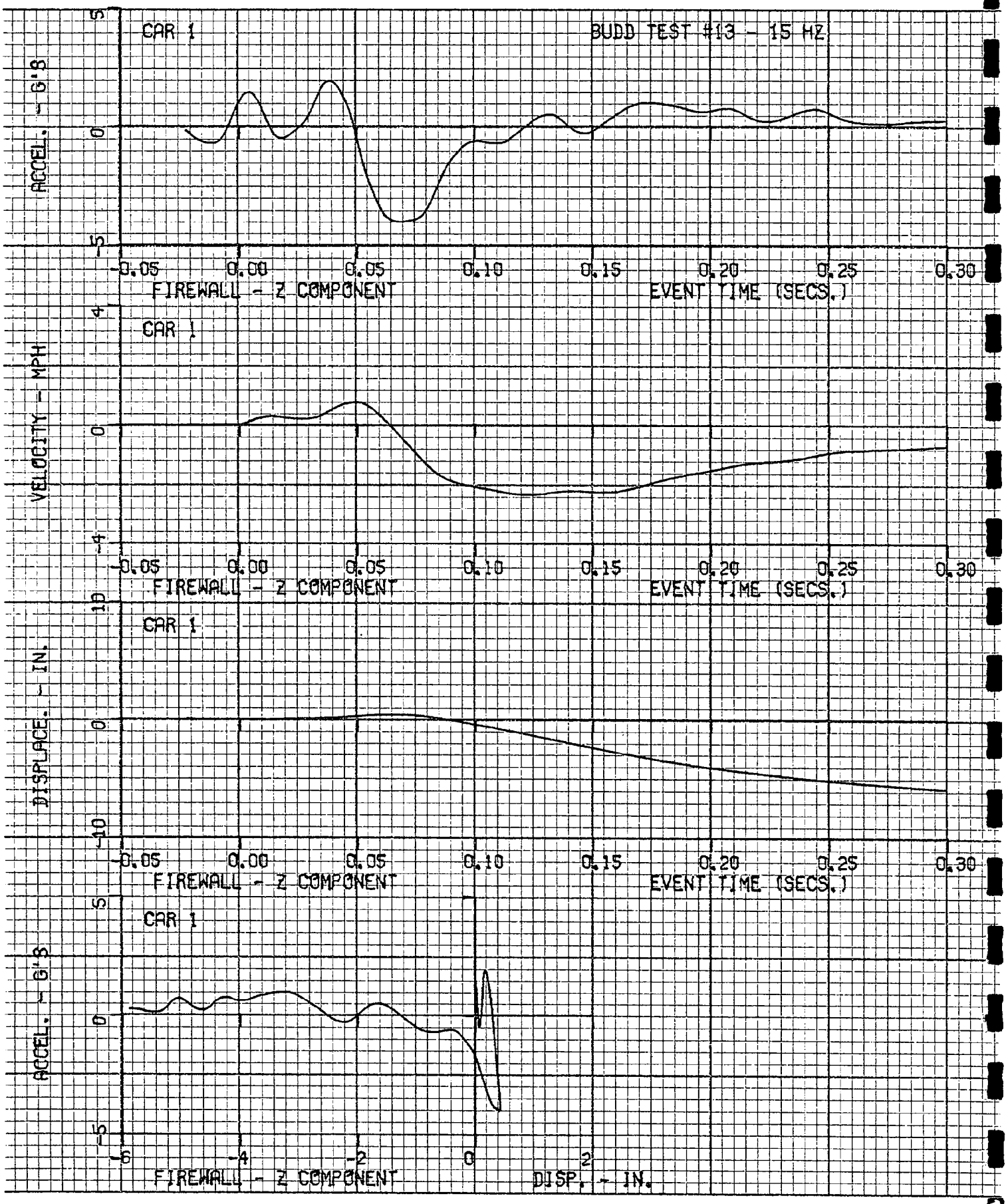

BUDD TEST #13 - 15 HZ
CAR 1
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - X COMP.
EVENT TIME (SECS.)
CAR 1
40
30
20
ENGINE - X COMP.
EVENT TIME (SECS.)
CAR 1
20
10
0
ENGINE - X COMP.
EVENT TIME (SECS.)
CAR 1
20
0
-20
0
40
80
120
160
ENGINE - X COMP.
DISP. - IN.

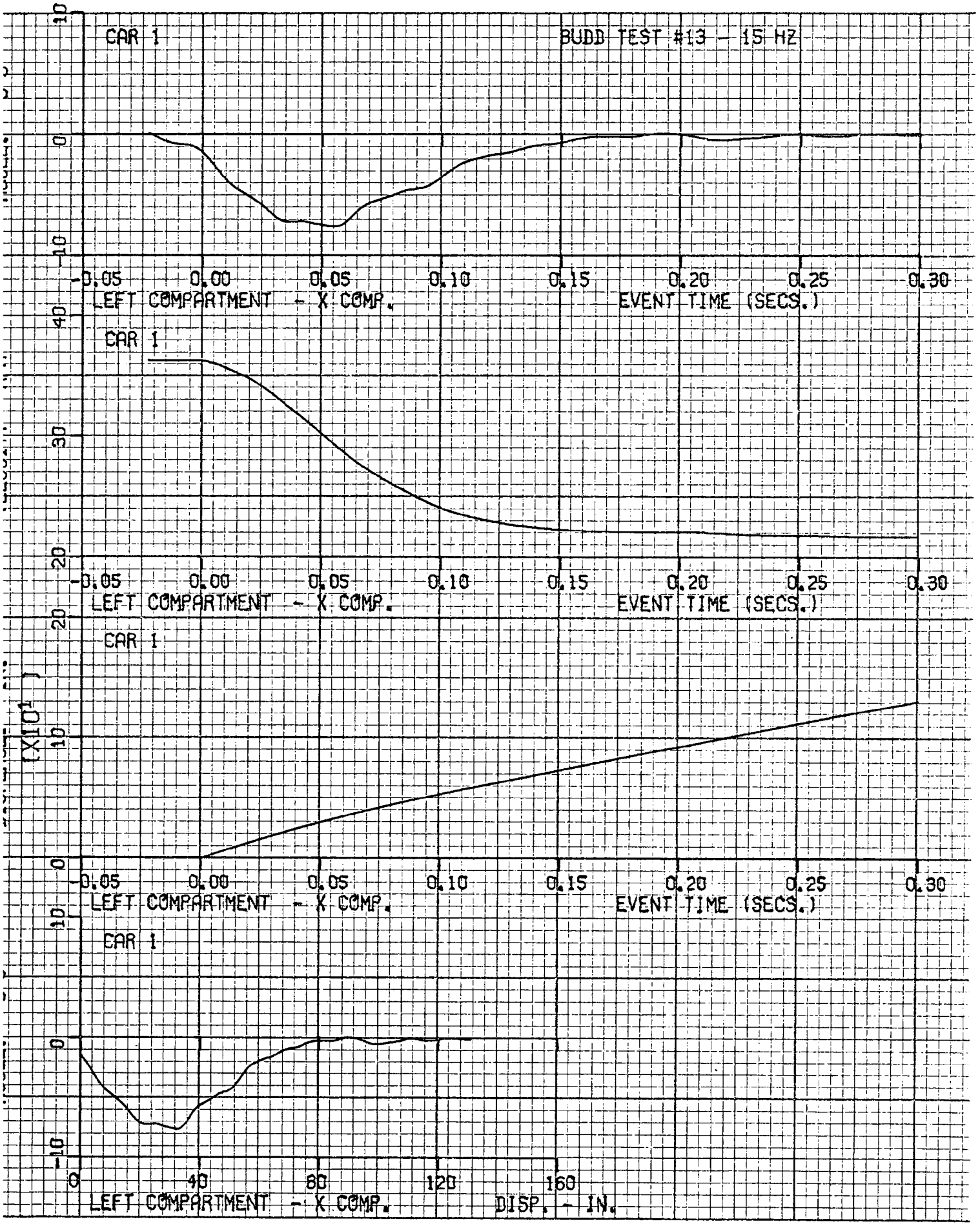

BUDD TEST #13 - 15 HZ
CAR 1
ACCEL. - G'S
4
0
-4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - Y COMP.
EVENT TIME (SECS.)
CAR 1
VELOCITY - MPH
4
2
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - Y COMP.
EVENT TIME (SECS.)
CAR 1
DISPLACE. - IN.
8
4
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - Y COMP.
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
4
0
-4
0
2
4
6
8
ENGINE - Y COMP.
DISP. - IN.

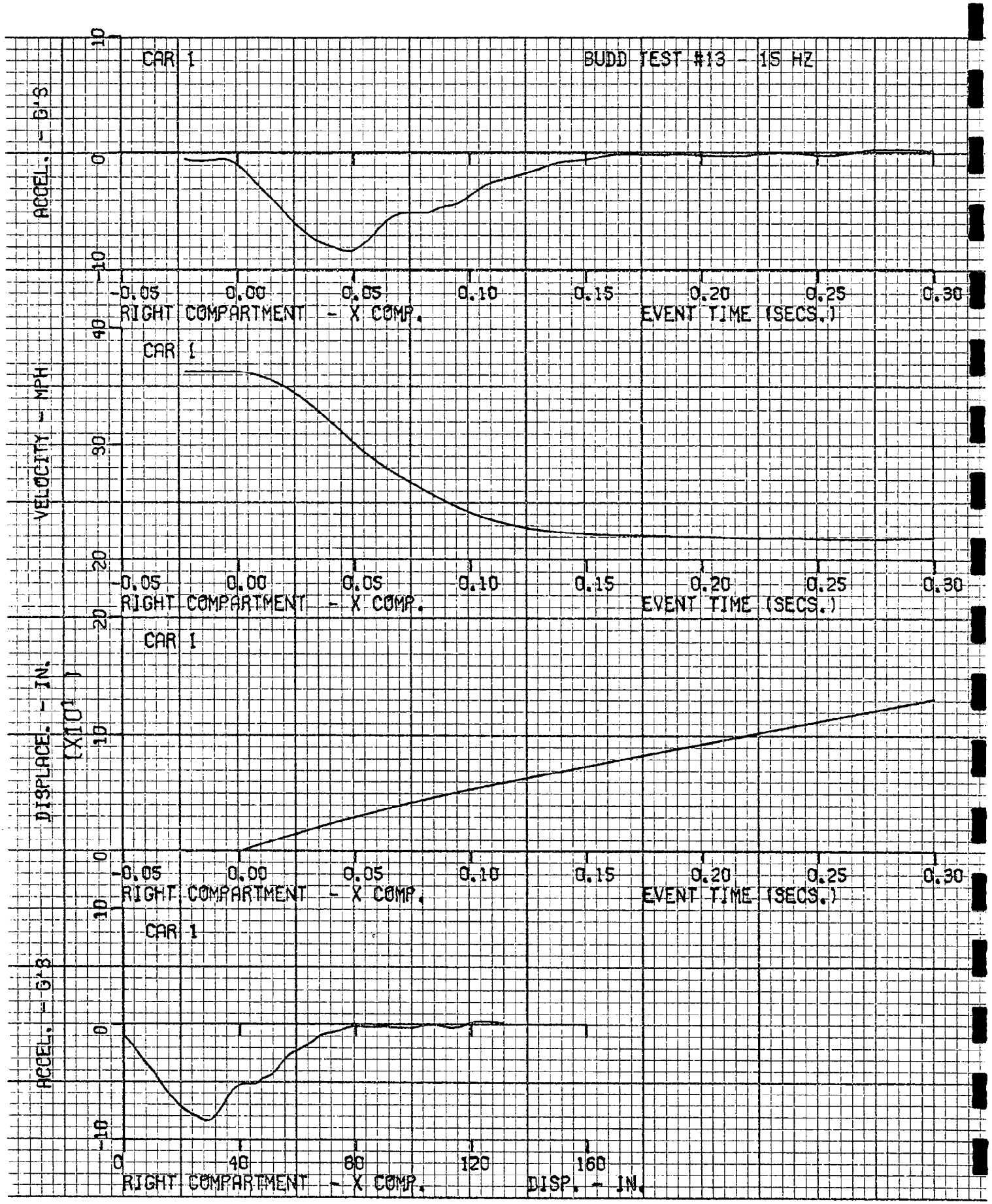

BUDD TEST #12 - 15 HZ
CAR 1
2
0
-2
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - Z COMP.
EVENT TIME (SECS.)
CAR 1
2
0
-2
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - Z COMP.
EVENT TIME (SECS.)
CAR 1
5
0
-5
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - Z COMP.
EVENT TIME (SECS.)
CAR 1
2
0
-2
-6
-4
-2
0
2
ENGINE - Z COMP.
DISP. - IN.

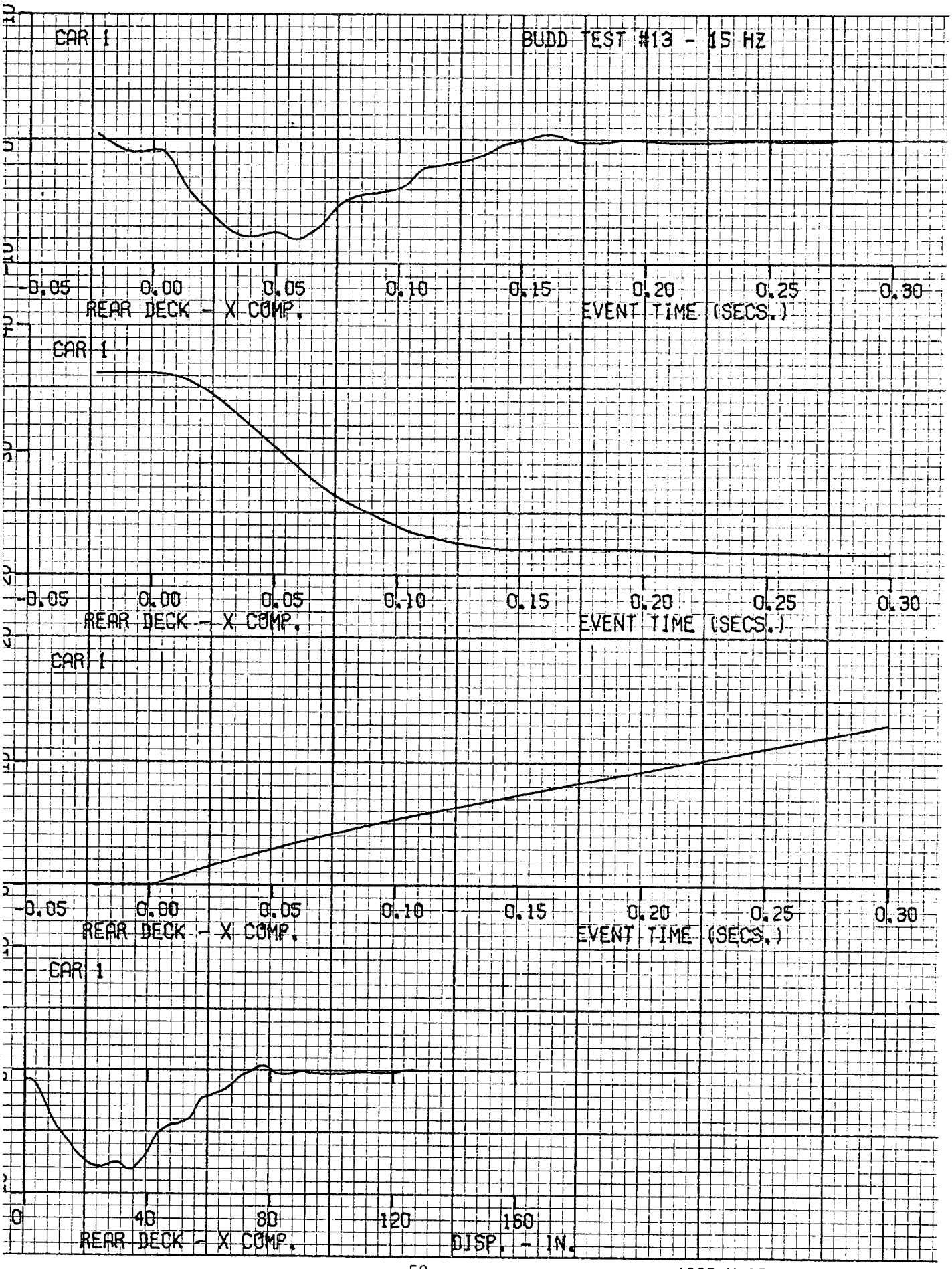

CAR 1
BUDD TEST #13 - 15 HZ
ACCEL. - G'S
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - X COMPONENT
EVENT TIME (SECS.)
CAR 1
VELOCITY - MPH
40
30
20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - X COMPONENT
EVENT TIME (SECS.)
CAR 1
DISPLACE. - IN.
(X10¹)
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - X COMPONENT
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
10
0
-10
0
40
80
120
160
FIREWALL - X COMPONENT
DISP. - IN.

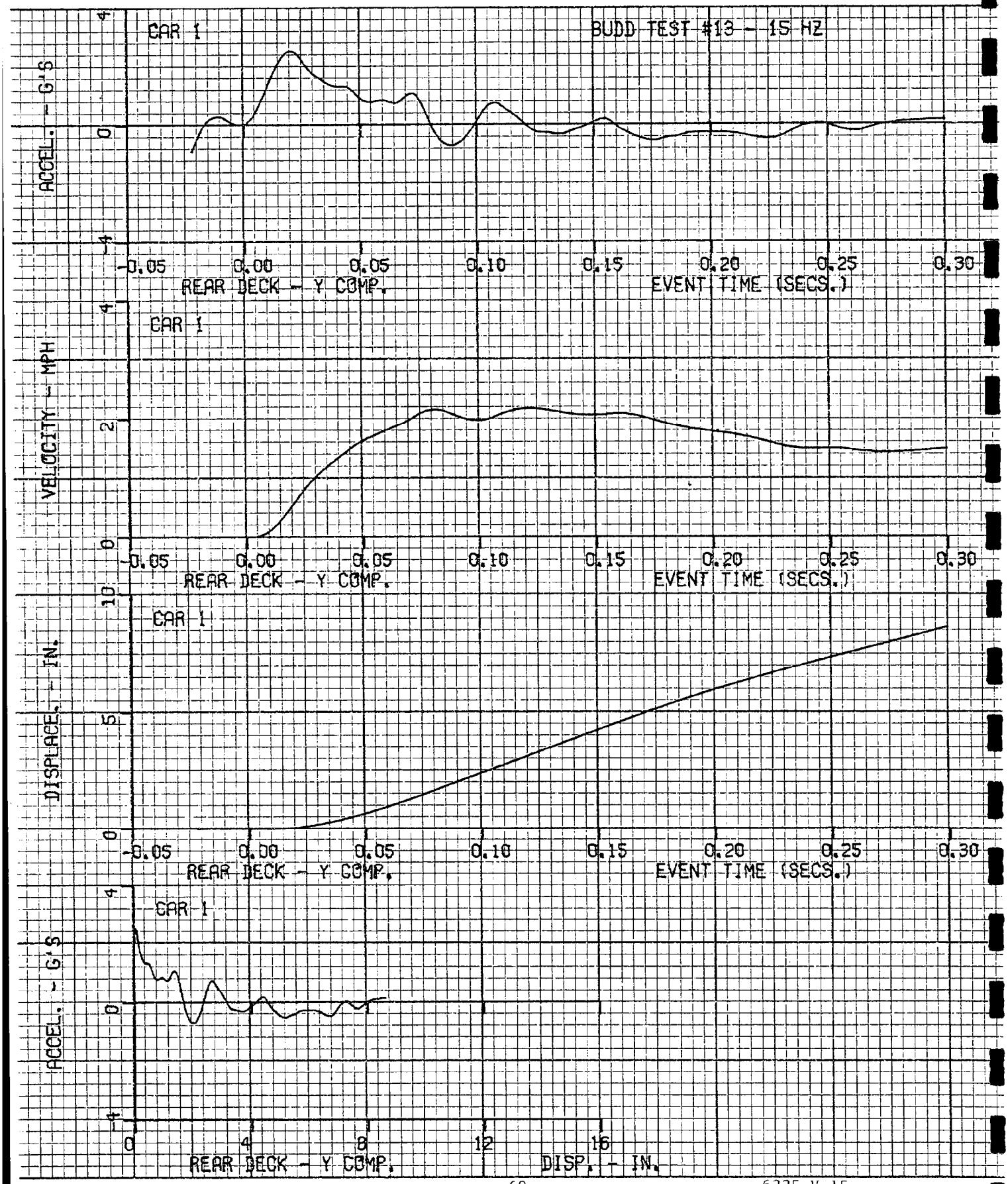

CAR 1
BUDD TEST #13 - 15 MZ
4
0
-4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - Y COMPONENT
EVENT TIME (SECS.)
CAR 1
5
0
-5
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - Y COMPONENT
EVENT TIME (SECS.)
CAR 1
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - Y COMPONENT
EVENT TIME (SECS.)
CAR 1
4
0
-4
-10
0
10
20
30
FIREWALL - Y COMPONENT
DISP. - IN.

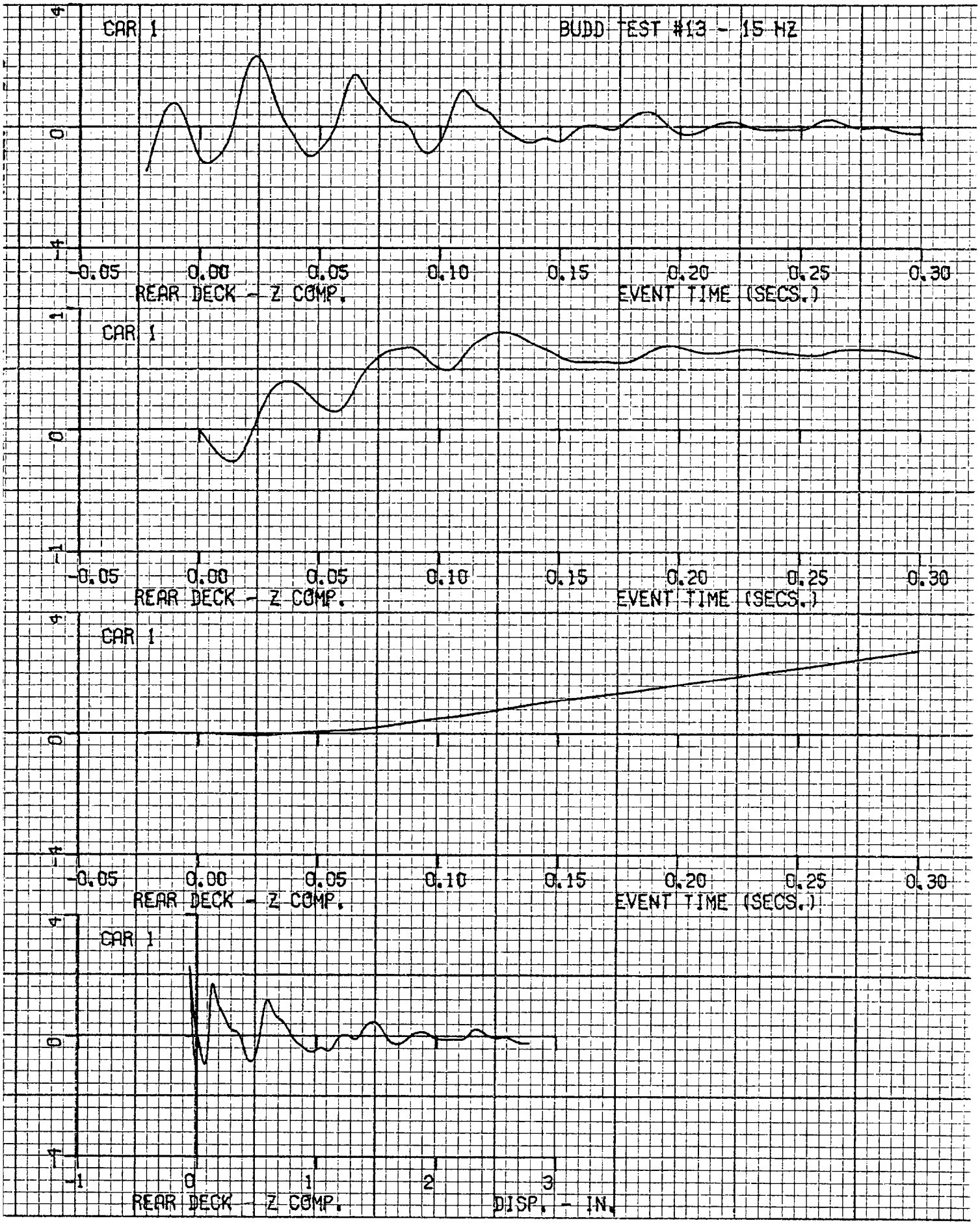

CAR 1
BUDD TEST #13 - 15 HZ
ACCEL. - G'S
5
0
-5
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - Z COMPONENT
EVENT TIME (SECS.)
CAR 1
VELOCITY - MPH
4
0
-4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - Z COMPONENT
EVENT TIME (SECS.)
CAR 1
DISPLACE. - IN.
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - Z COMPONENT
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
5
0
-5
-6
-4
-2
0
2
FIREWALL - Z COMPONENT
DISP. - IN.

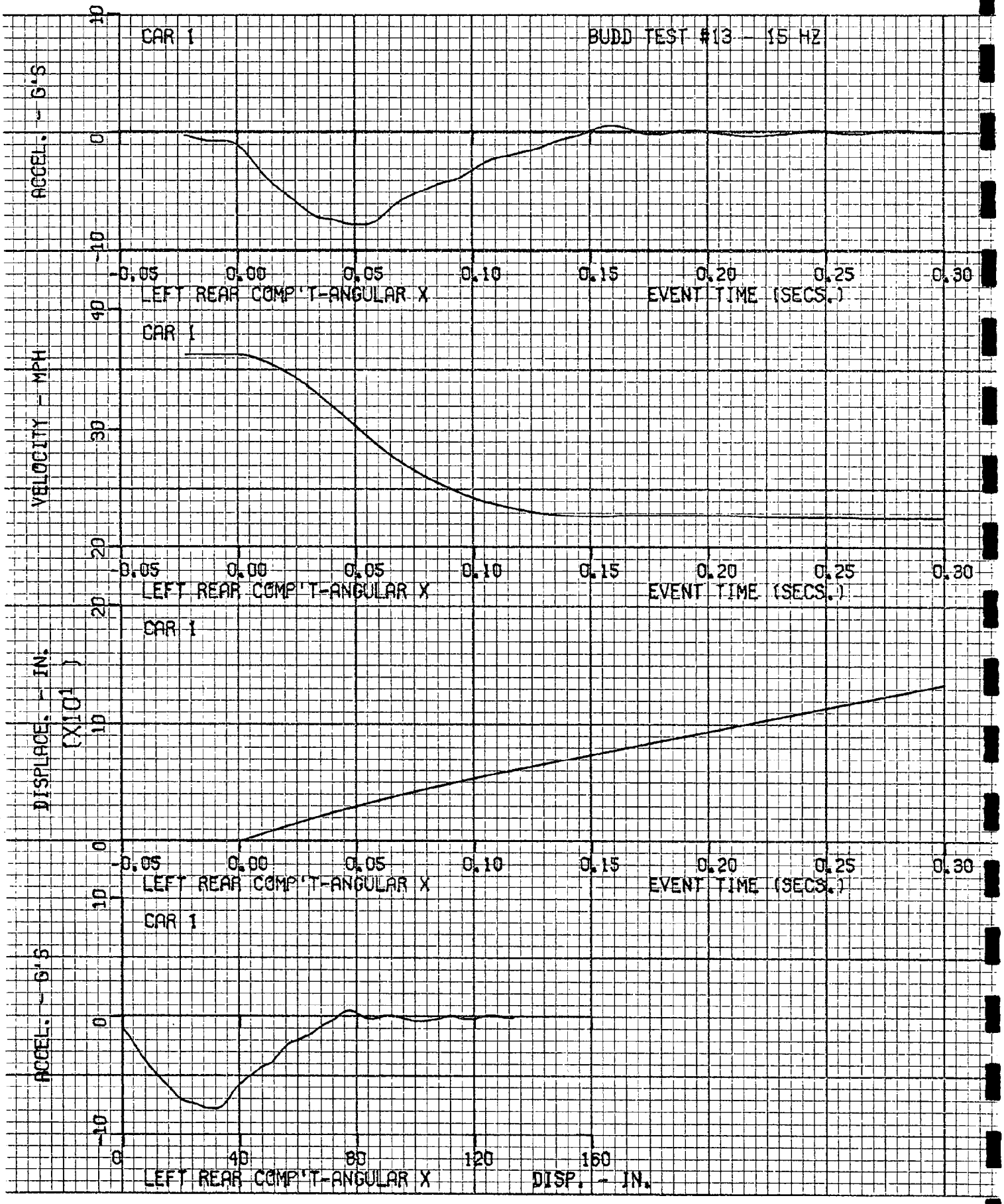

CAR 1
BUDD TEST #13 - 15 HZ
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LEFT COMPARTMENT - X COMP.
EVENT TIME (SECS.)
CAR 1
40
30
20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LEFT COMPARTMENT - X COMP.
EVENT TIME (SECS.)
CAR 1
20
10
0
(X10¹)
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LEFT COMPARTMENT - X COMP.
EVENT TIME (SECS.)
CAR 1
10
0
-10
0
40
80
120
160
LEFT COMPARTMENT - X COMP.
DISP. - IN.

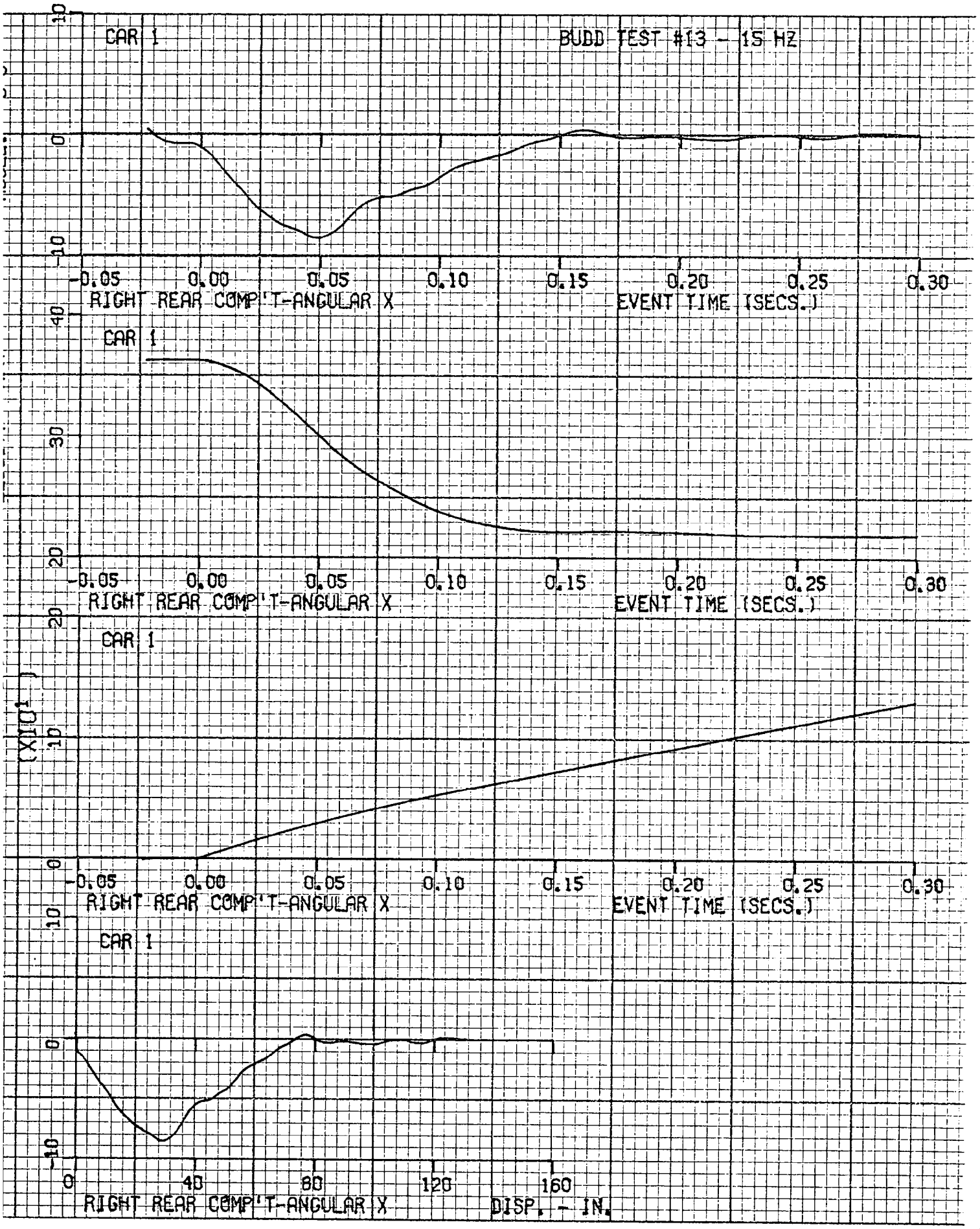

CAR 1
BUDD TEST #13 - 15 HZ
ACCEL. - G'S
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT COMPARTMENT - X COMP.
EVENT TIME (SECS.)
CAR 1
VELOCITY - MPH
40
30
20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT COMPARTMENT - X COMP.
EVENT TIME (SECS.)
CAR 1
DISPLACE. - IN.
(X10)
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT COMPARTMENT - X COMP.
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
10
0
-10
0
40
80
120
160
RIGHT COMPARTMENT - X COMP.
DISP. - IN.

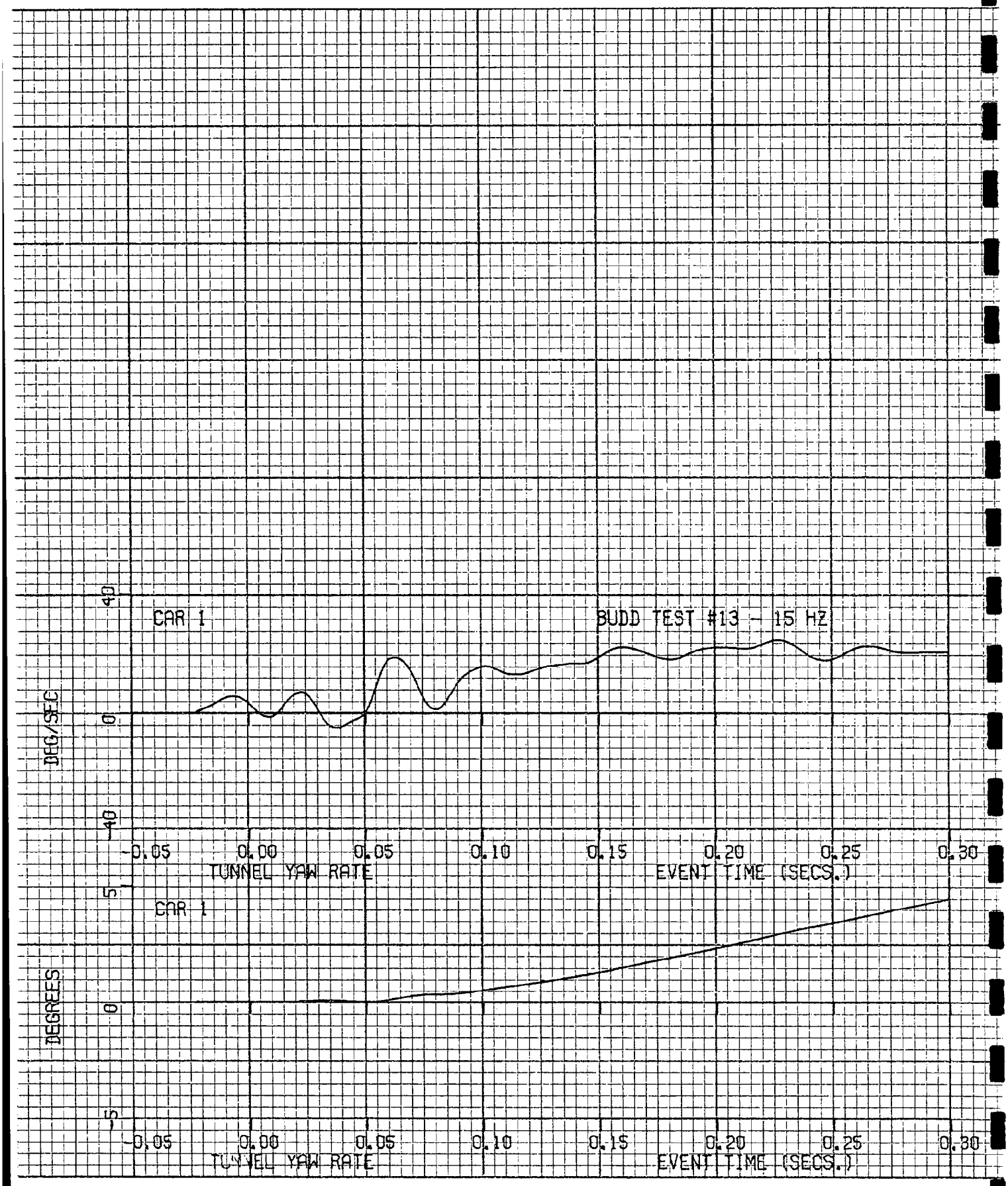

CAR 1
BUDD TEST #13 - 15 HZ
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - X COMP.
EVENT TIME (SECS.)
CAR 1
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - X COMP.
EVENT TIME (SECS.)
CAR 1
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - X COMP.
EVENT TIME (SECS.)
CAR 1
0
40
80
120
160
REAR DECK - X COMP.
DISP. - IN.


CAR 1
BUDD TEST #13 - 15 HZ
ACCEL. - G'S
4
0
-4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Y COMP.
EVENT TIME (SECS.)
CAR 1
VELOCITY - MPH
4
2
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Y COMP.
EVENT TIME (SECS.)
CAR 1
DISPLACE. - IN.
10
5
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Y COMP.
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
4
0
-4
0
4
8
12
16
REAR DECK - Y COMP.
DISP. - IN.


CAR 1
BUDD TEST #13 - 15 HZ
4
0
-4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Z COMP.
EVENT TIME (SECS.)
CAR 1
1
0
-1
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Z COMP.
EVENT TIME (SECS.)
CAR 1
4
0
-4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Z COMP.
EVENT TIME (SECS.)
CAR 1
4
0
-4
-1
0
1
2
3
REAR DECK - Z COMP.
DISP. - IN.


CAR 1
BUDD TEST #13 - 15 HZ
ACCEL. - G'S
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LEFT REAR COMP'T-ANGULAR X
EVENT TIME (SECS.)
CAR 1
VELOCITY - MPH
40
30
20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LEFT REAR COMP'T-ANGULAR X
EVENT TIME (SECS.)
CAR 1
DISPLACE. - IN.
(X10 1)
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LEFT REAR COMP'T-ANGULAR X
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
10
0
-10
0
40
80
120
160
LEFT REAR COMP'T-ANGULAR X
DISP. - IN.


CAR 1
BUDD TEST #13 - 15 HZ
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMP'T-ANGULAR X
EVENT TIME (SECS.)
40
CAR 1
30
20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMP'T-ANGULAR X
EVENT TIME (SECS.)
20
CAR 1
(X10(1)
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMP'T-ANGULAR X
EVENT TIME (SECS.)
10
CAR 1
0
-10
0
40
80
120
160
RIGHT REAR COMP'T-ANGULAR X
DISP. - IN.


CAR 1
BUDD TEST #13 - 15 HZ
DEG/SEC
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
TUNNEL YAW RATE
EVENT TIME (SECS.)
CAR 1
DEGREES
5
0
-5
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
TUNNEL YAW RATE
EVENT TIME (SECS.)

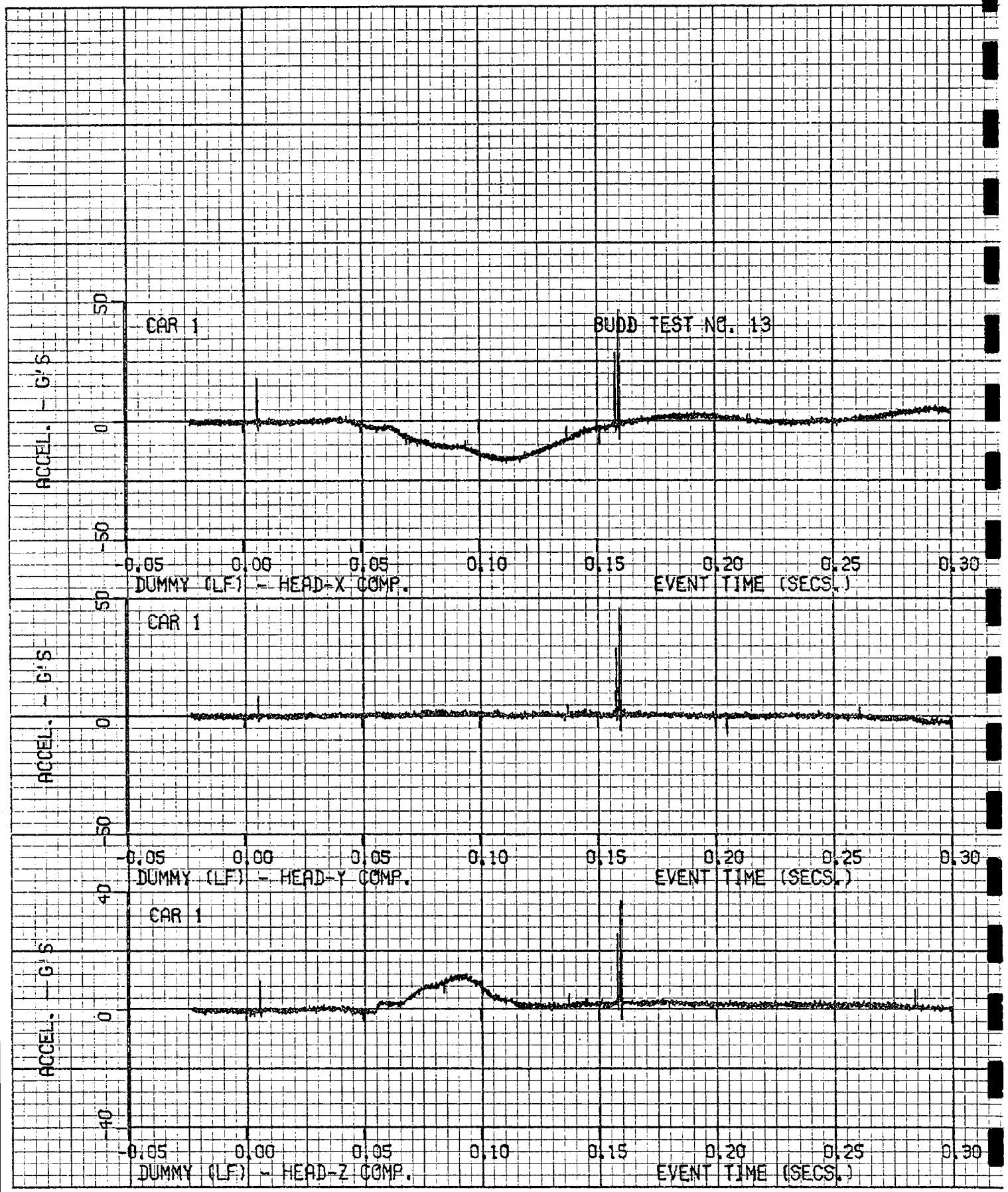
TEST NO. 13

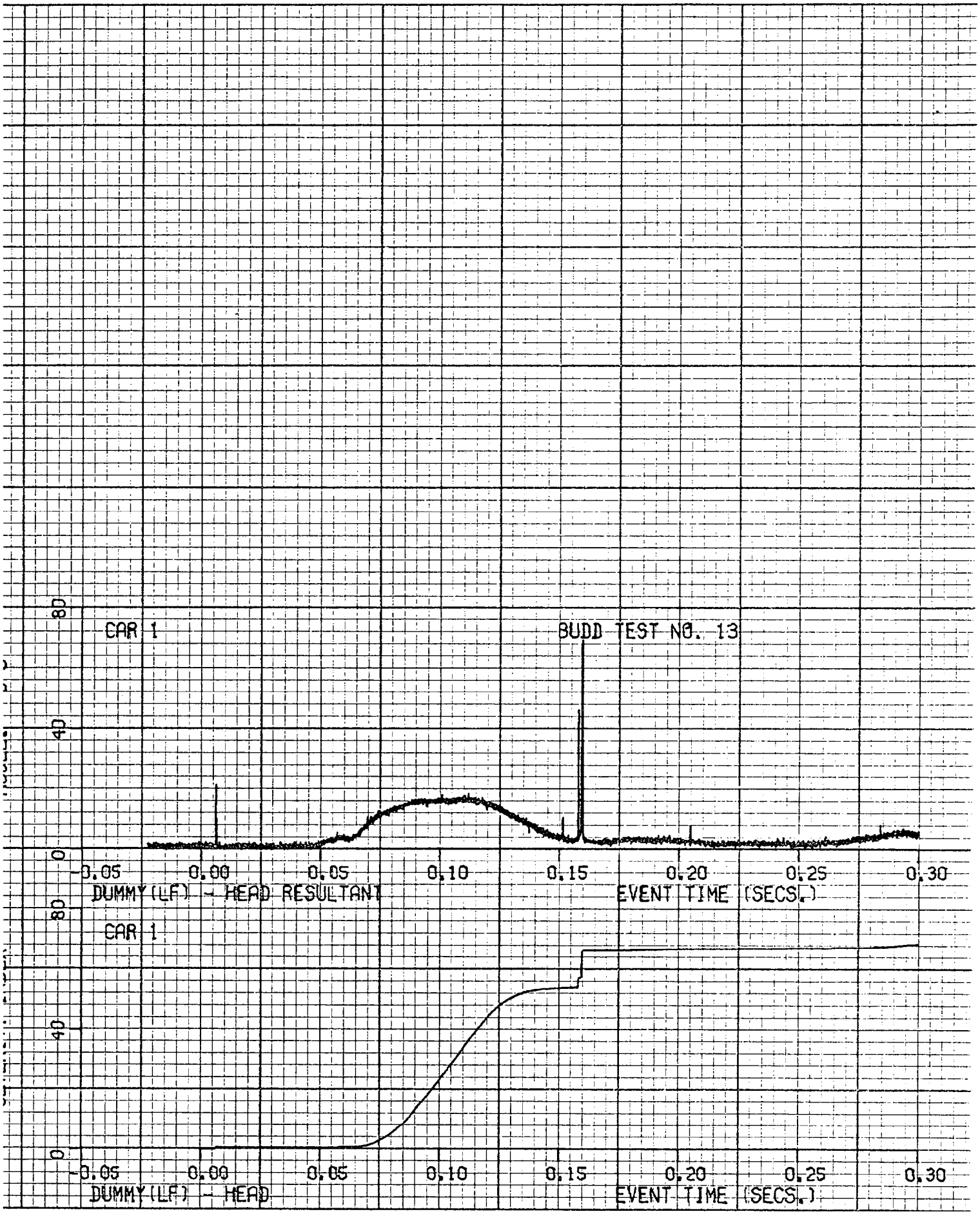
CAR NO. 1 - 1978 CHEVROLET IMPALA

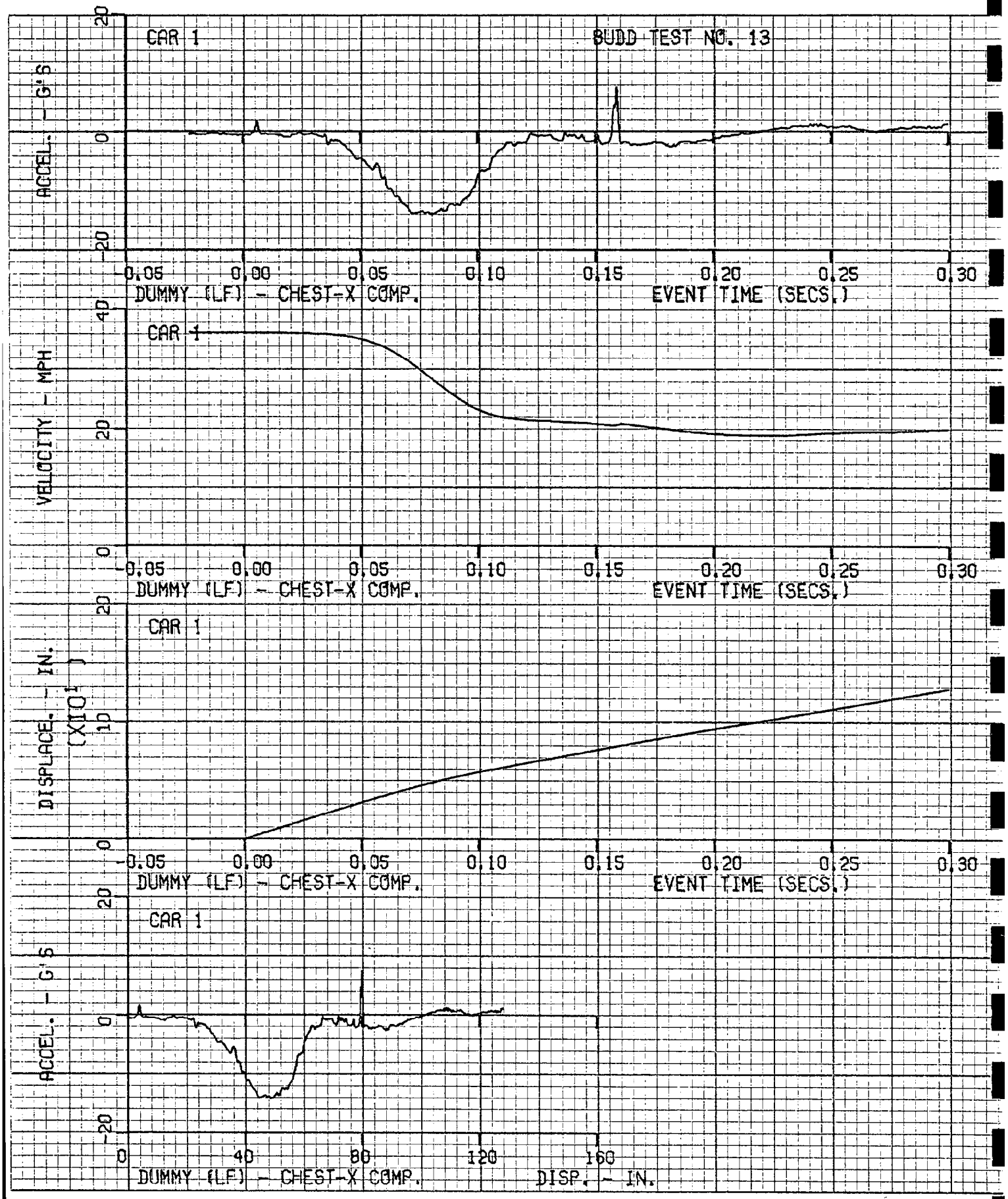
DUMMY DATA

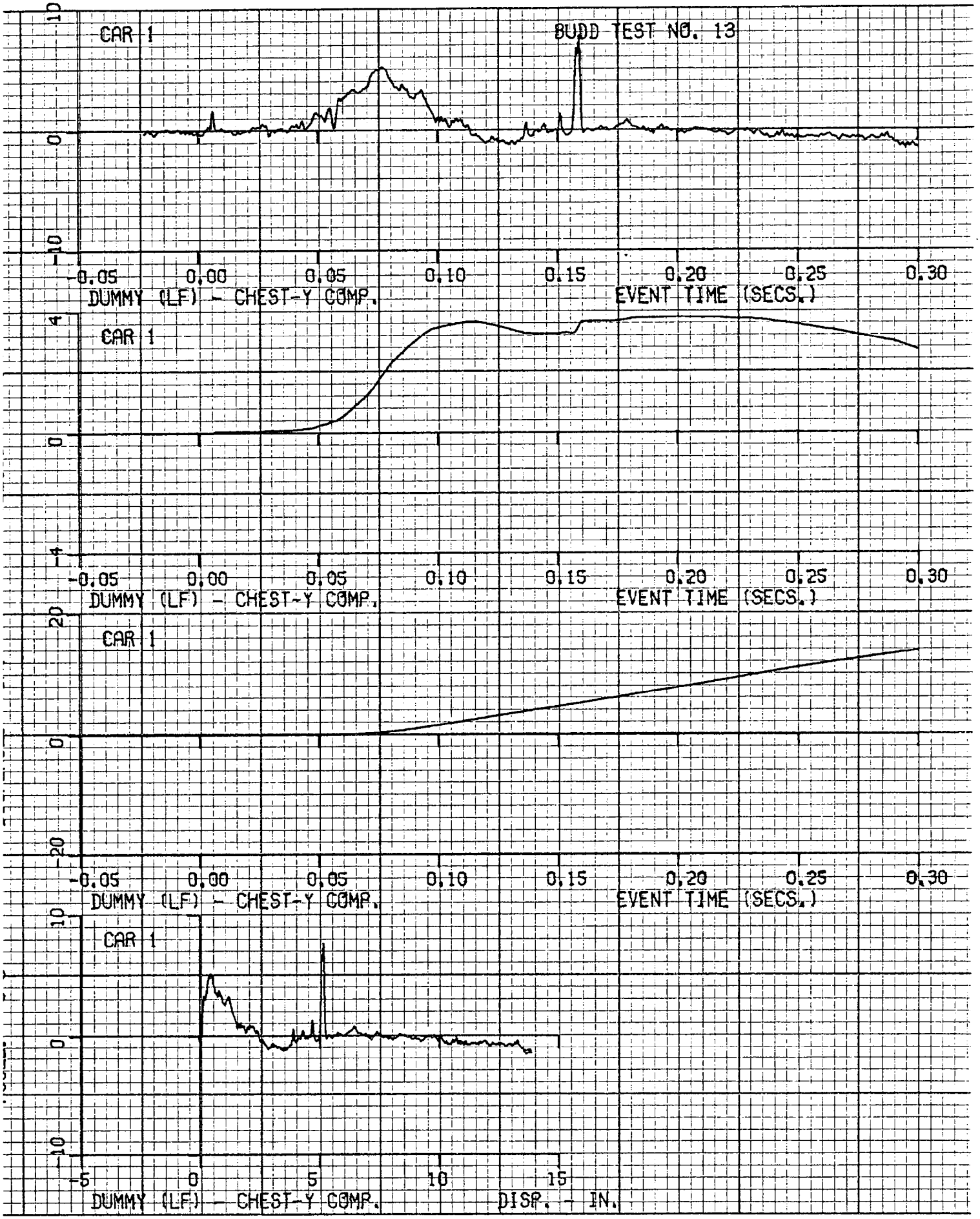
	FILTER CHANNEL CLASS
Head Acceleration	1000
Chest Acceleration	180
Femur Forces	600
Belt Loads	60

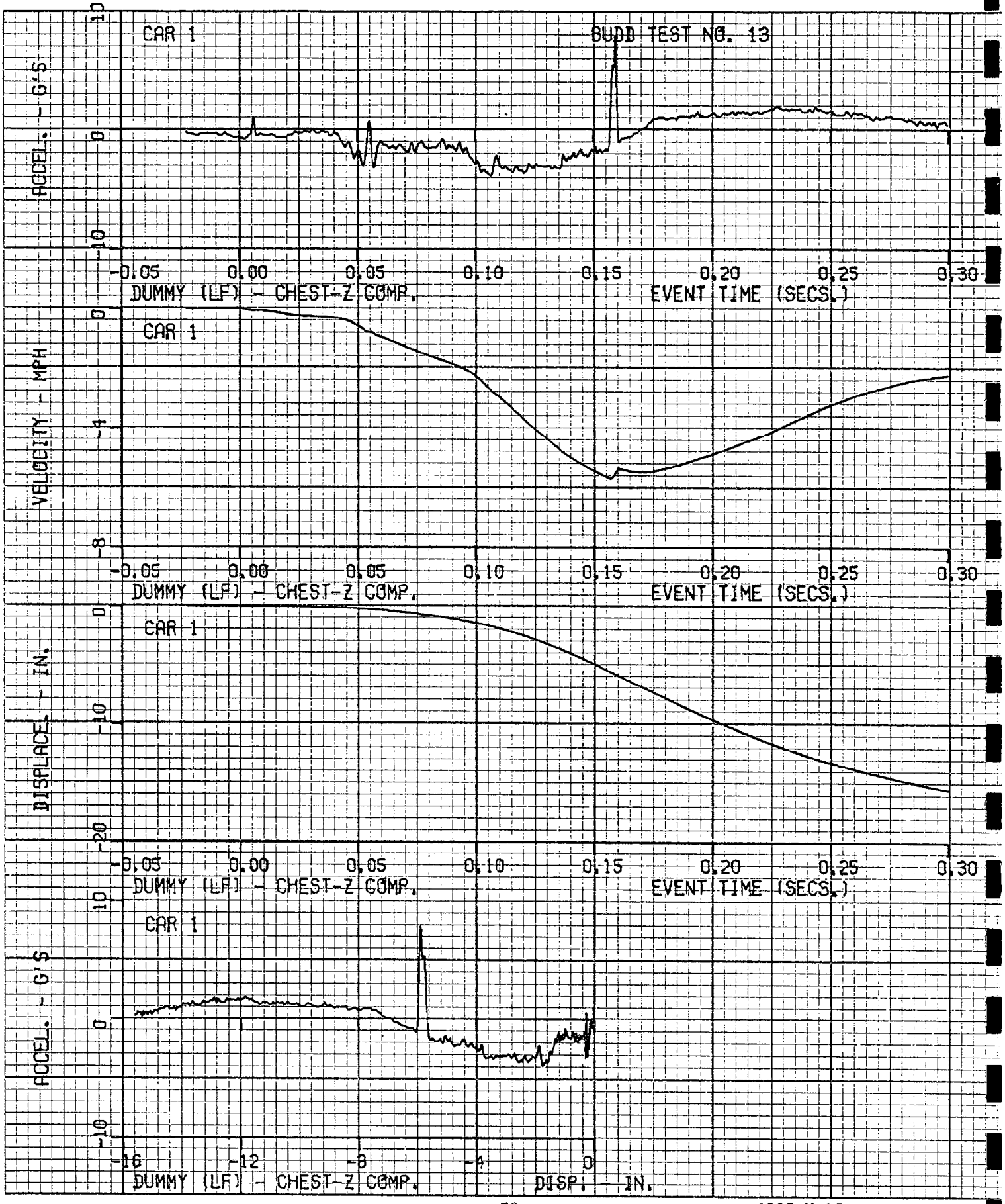
NOISE SPIKE IN DATA AT 160 MILLISECONDS.

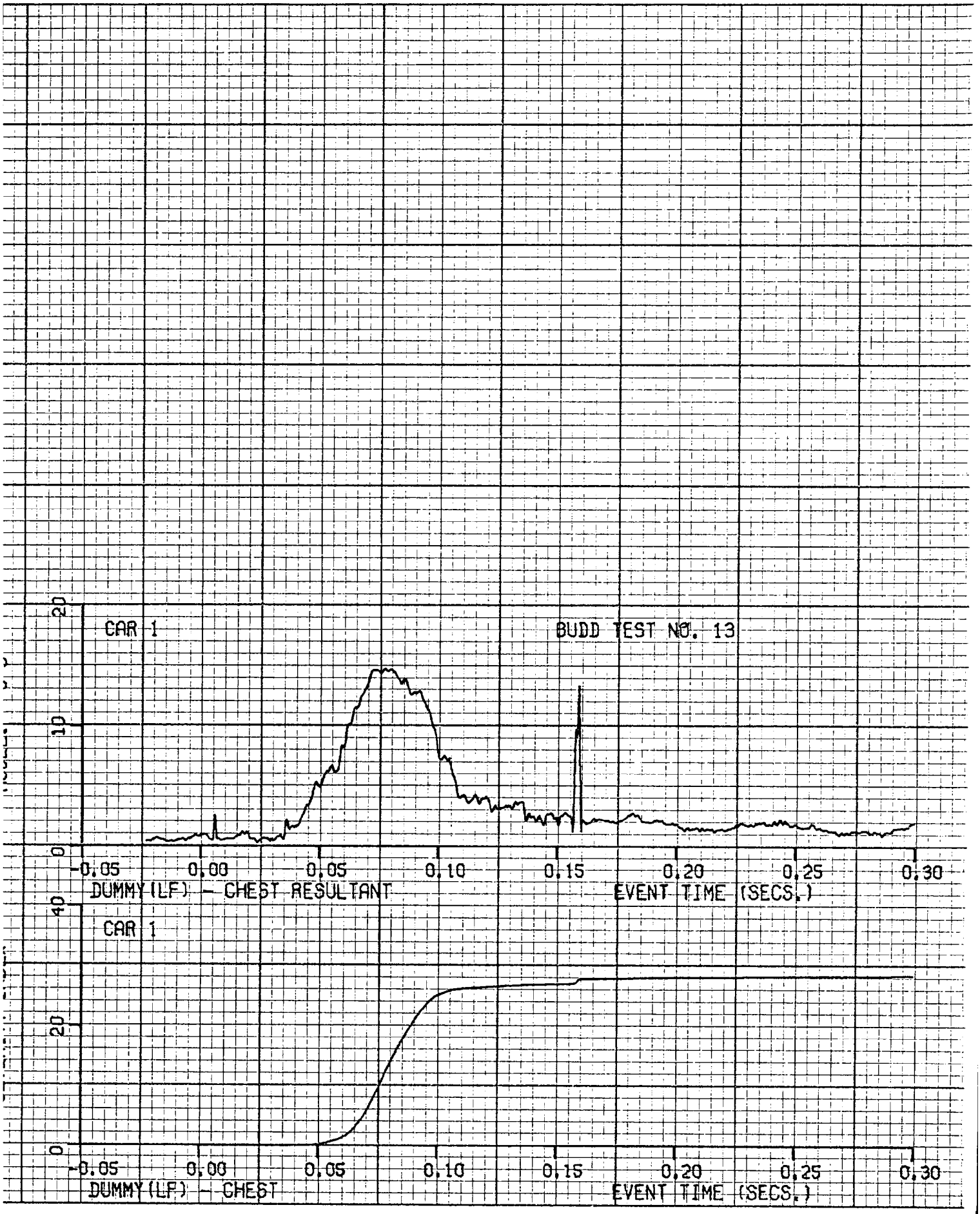

CAR 1
BUDD TEST NO. 13
ACCEL. - G'S
50
0
-50
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - HEAD-X COMP.
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
50
0
-50
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - HEAD-Y COMP.
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - HEAD-Z COMP.
EVENT TIME (SECS.)

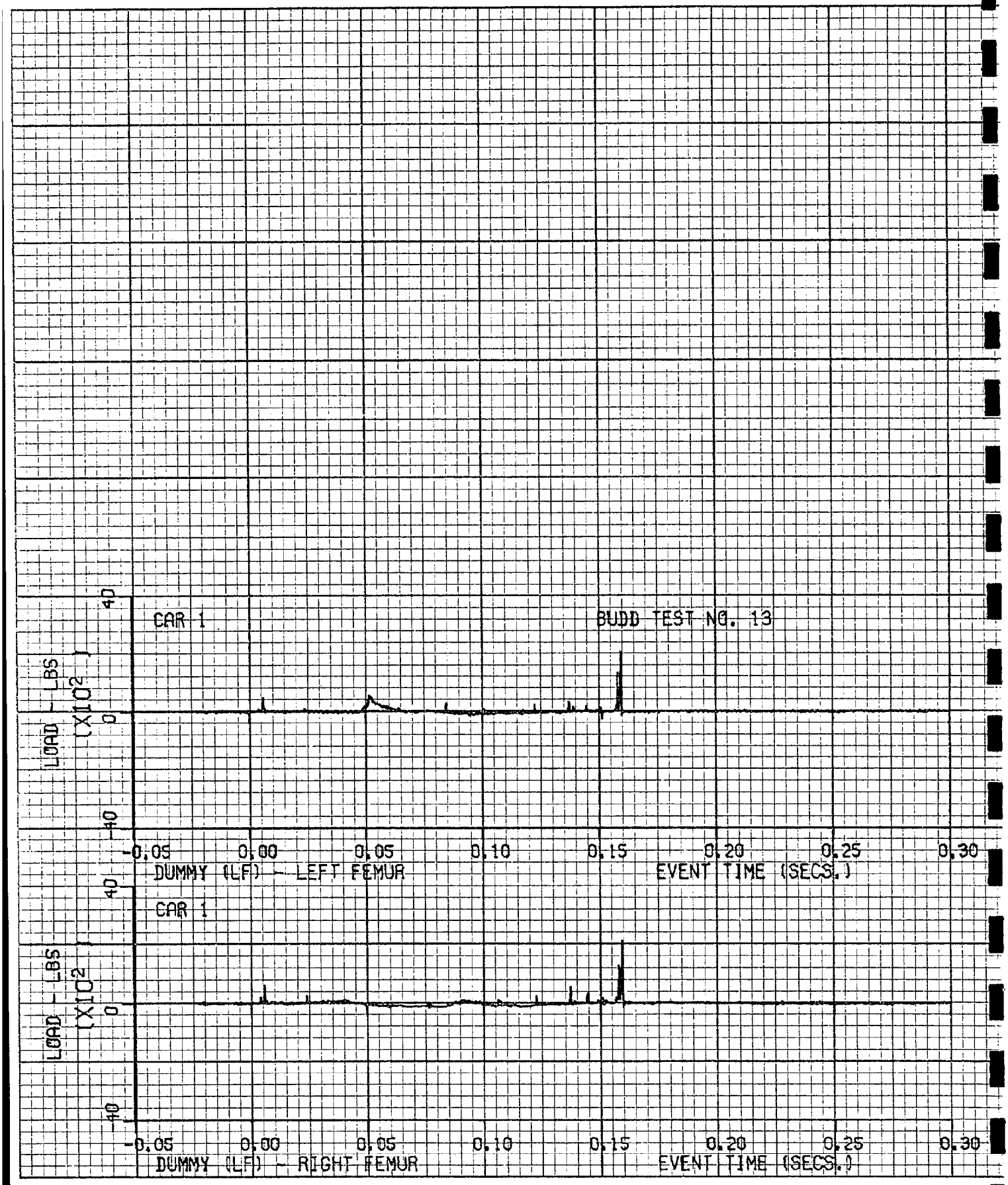

CAR 1
BUDD TEST NO. 13
80
40
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - HEAD RESULTANT
EVENT TIME (SECS.)
CAR 1
80
40
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - HEAD
EVENT TIME (SECS.)

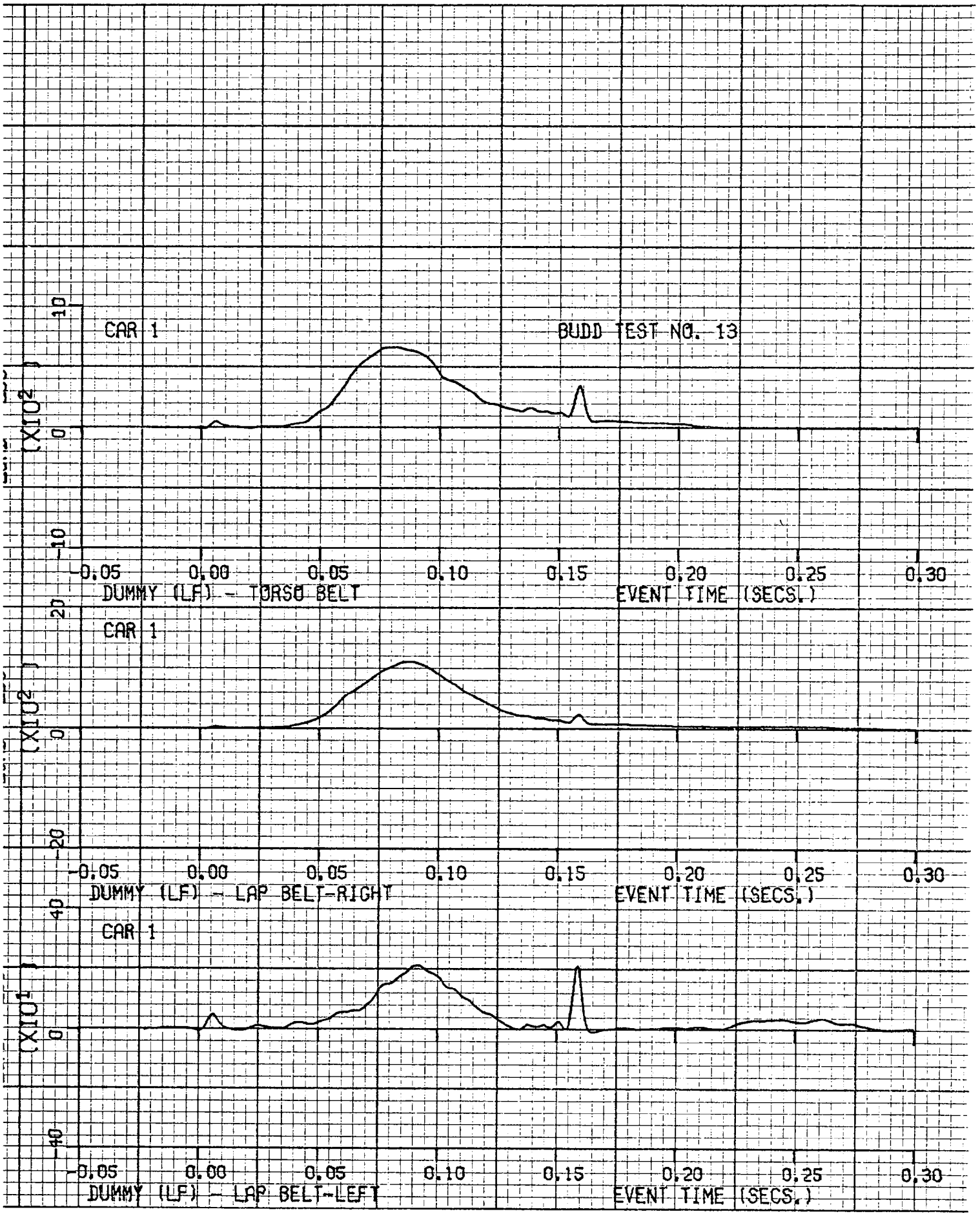

CAR 1
BUDD TEST NO. 13
ACCEL. - G'S
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST-X COMP.
EVENT TIME (SECS.)
CAR 1
VELOCITY - MPH
40
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST-X COMP.
EVENT TIME (SECS.)
CAR 1
DISPLACE. - IN.
(X10¹)
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST-X COMP.
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
20
0
-20
0
40
80
120
160
DUMMY (LF) - CHEST-X COMP.
DISP. - IN.


CAR 1
BUDD TEST NO. 13
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST-Y COMP.
EVENT TIME (SECS.)
CAR 1
4
0
-4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST-Y COMP.
EVENT TIME (SECS.)
CAR 1
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST-Y COMP.
EVENT TIME (SECS.)
CAR 1
10
0
-10
-5
0
5
10
15
DUMMY (LF) - CHEST-Y COMP.
DISP. - IN.


CAR 1
BUDD TEST NO. 13
ACCEL. - G'S
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST-Z COMP.
EVENT TIME (SECS.)
CAR 1
VELOCITY - MPH
0
-4
-8
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST-Z COMP.
EVENT TIME (SECS.)
CAR 1
DISPLACE. - IN.
0
-10
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST-Z COMP.
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
10
0
-10
-16
-12
-8
-4
0
DUMMY (LF) - CHEST-Z COMP.
DISP. - IN.


CAR 1
BUDD TEST NO. 13
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST RESULTANT
EVENT TIME (SECS.)
CAR 1
40
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST
EVENT TIME (SECS.)


CAR 1
BUDD TEST NO. 13
LOAD - LBS
(X10²)
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - LEFT FEMUR
EVENT TIME (SECS.)
CAR 1
LOAD - LBS
(X10²)
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - RIGHT FEMUR
EVENT TIME (SECS.)

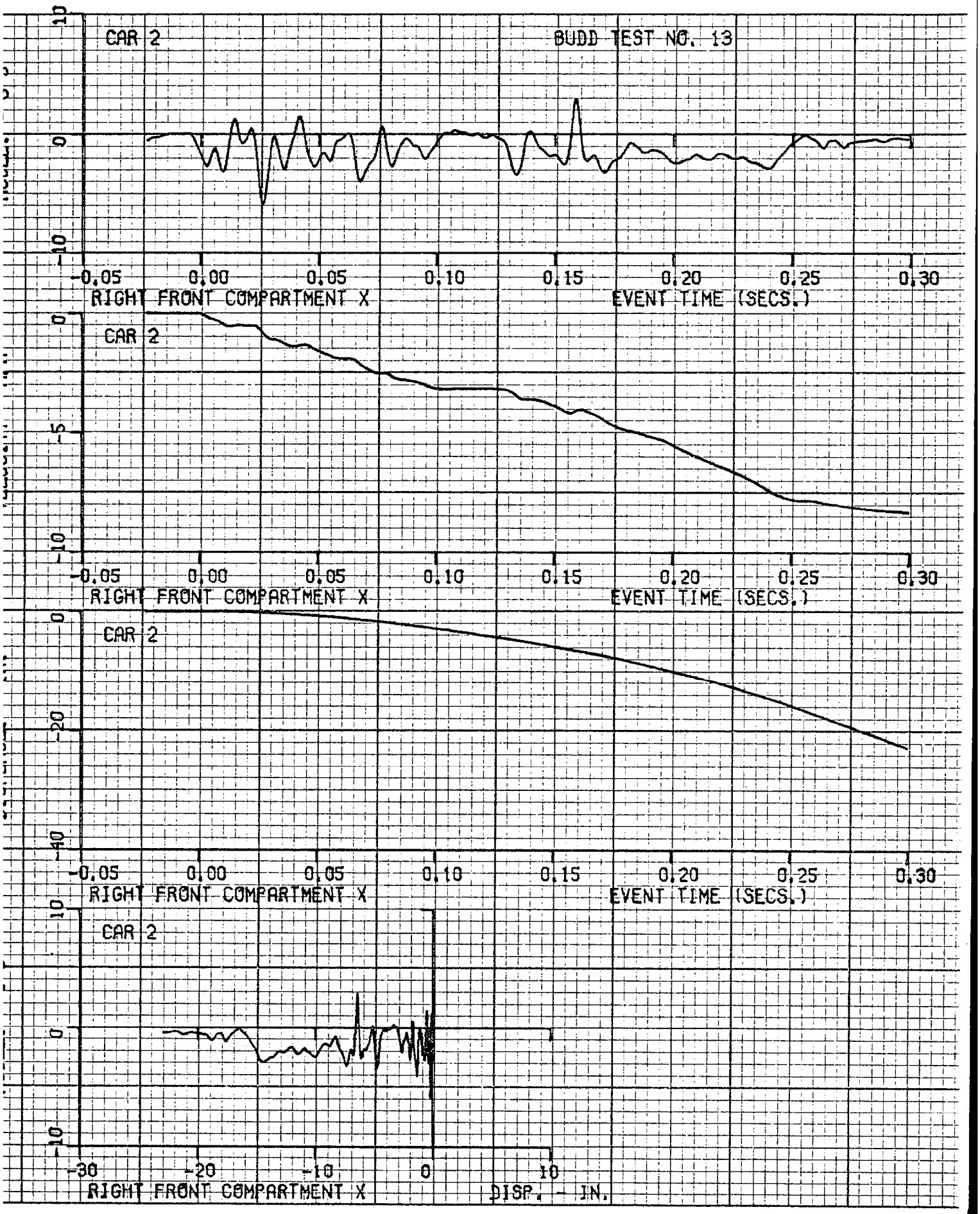

CAR 1
BUDD TEST NO. 13
10
0
-10
(X10²)
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - TORSO BELT
EVENT TIME (SECS.)
CAR 1
20
0
-20
(X10²)
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - LAP BELT-RIGHT
EVENT TIME (SECS.)
CAR 1
40
0
-40
(X10¹)
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - LAP BELT-LEFT
EVENT TIME (SECS.)

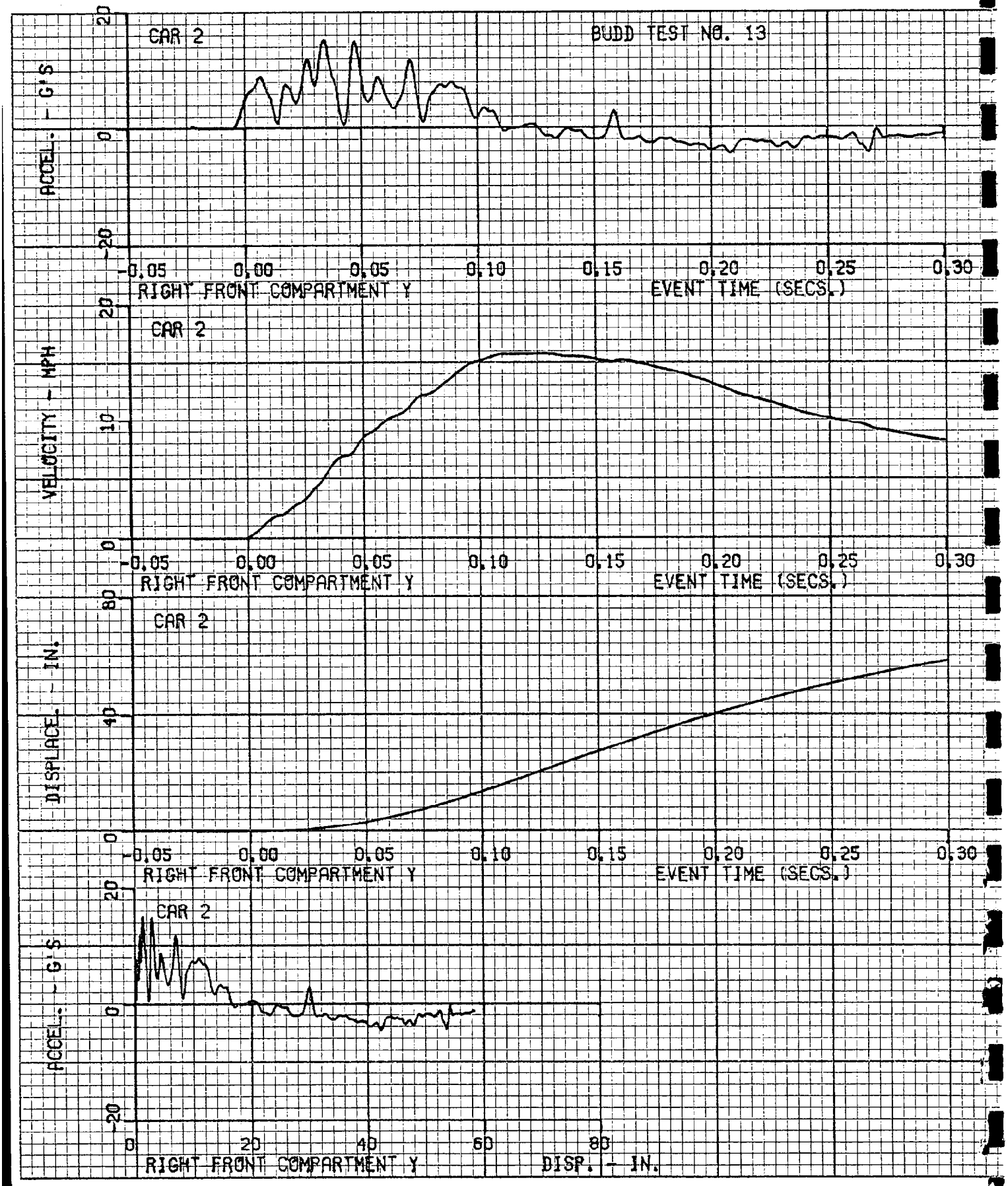
TEST NO. 13

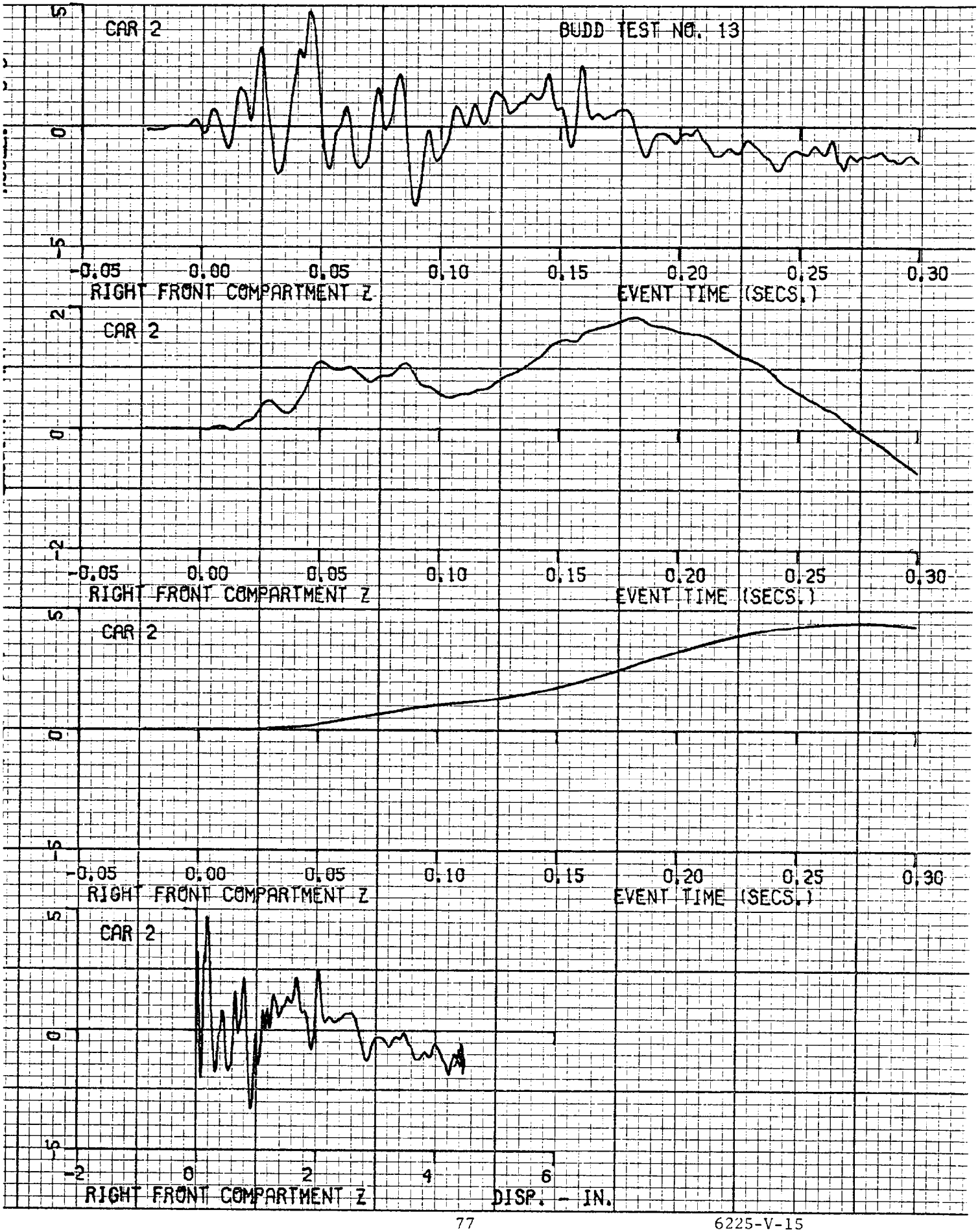
CAR NO. 2 - 1976 VOLKSWAGEN RABBIT

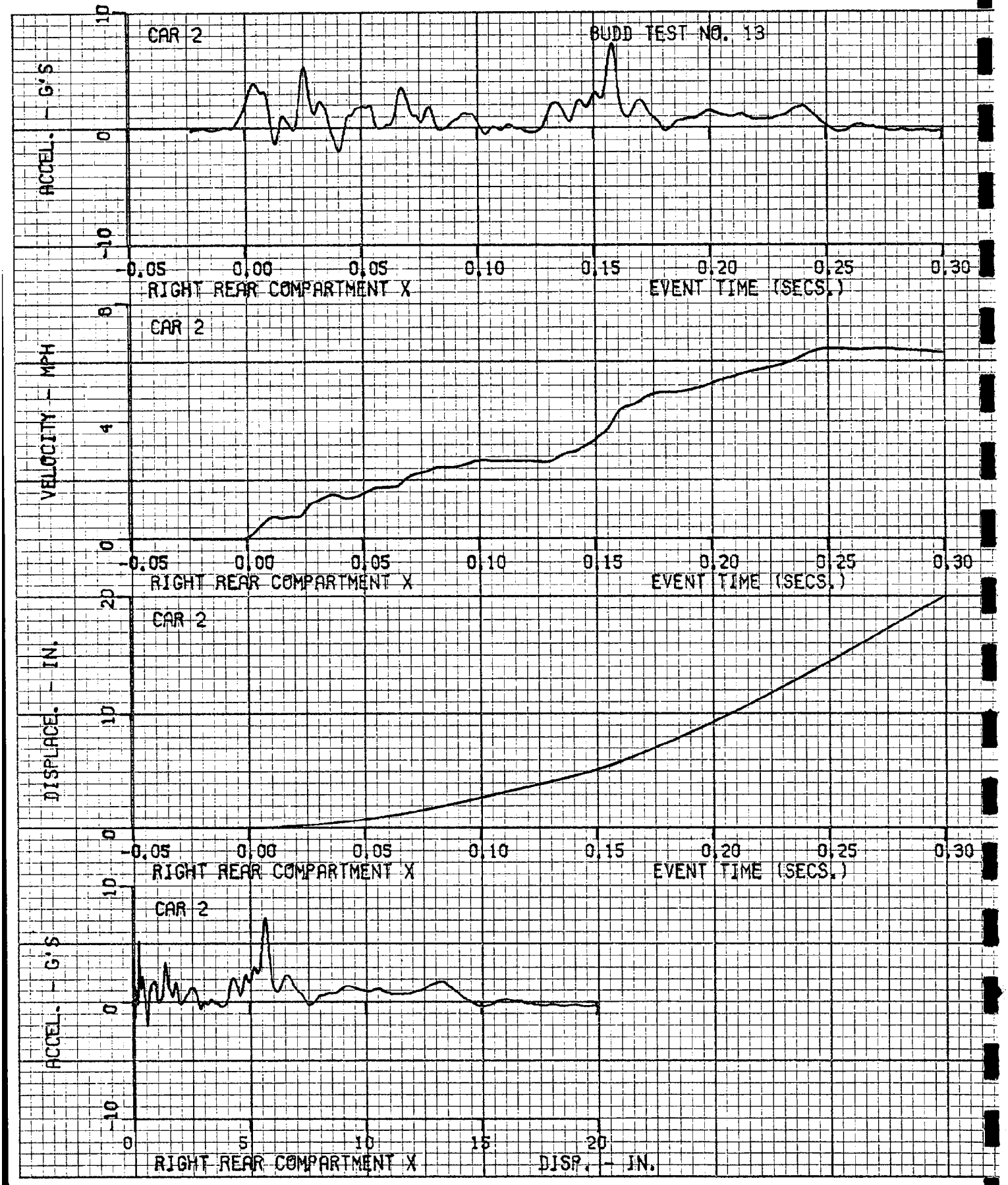
	FILTER CHANNEL CLASS
Vehicle Data	60
Side Intrusion Data	1000

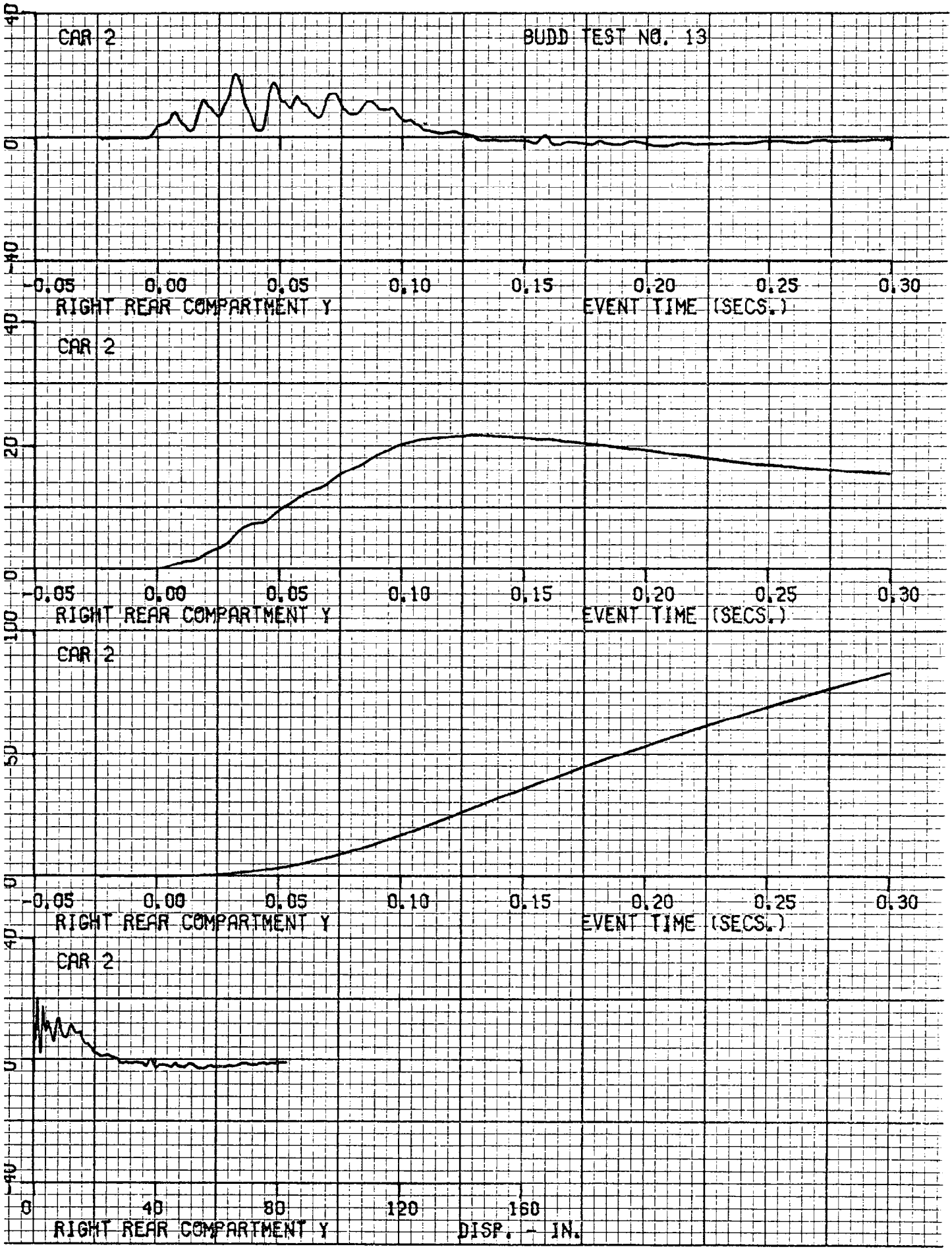
LOWER DOOR CENTER Y ACCELEROMETER DATA BAD AFTER 60 MILLISECONDS DUE TO CUT WIRE.

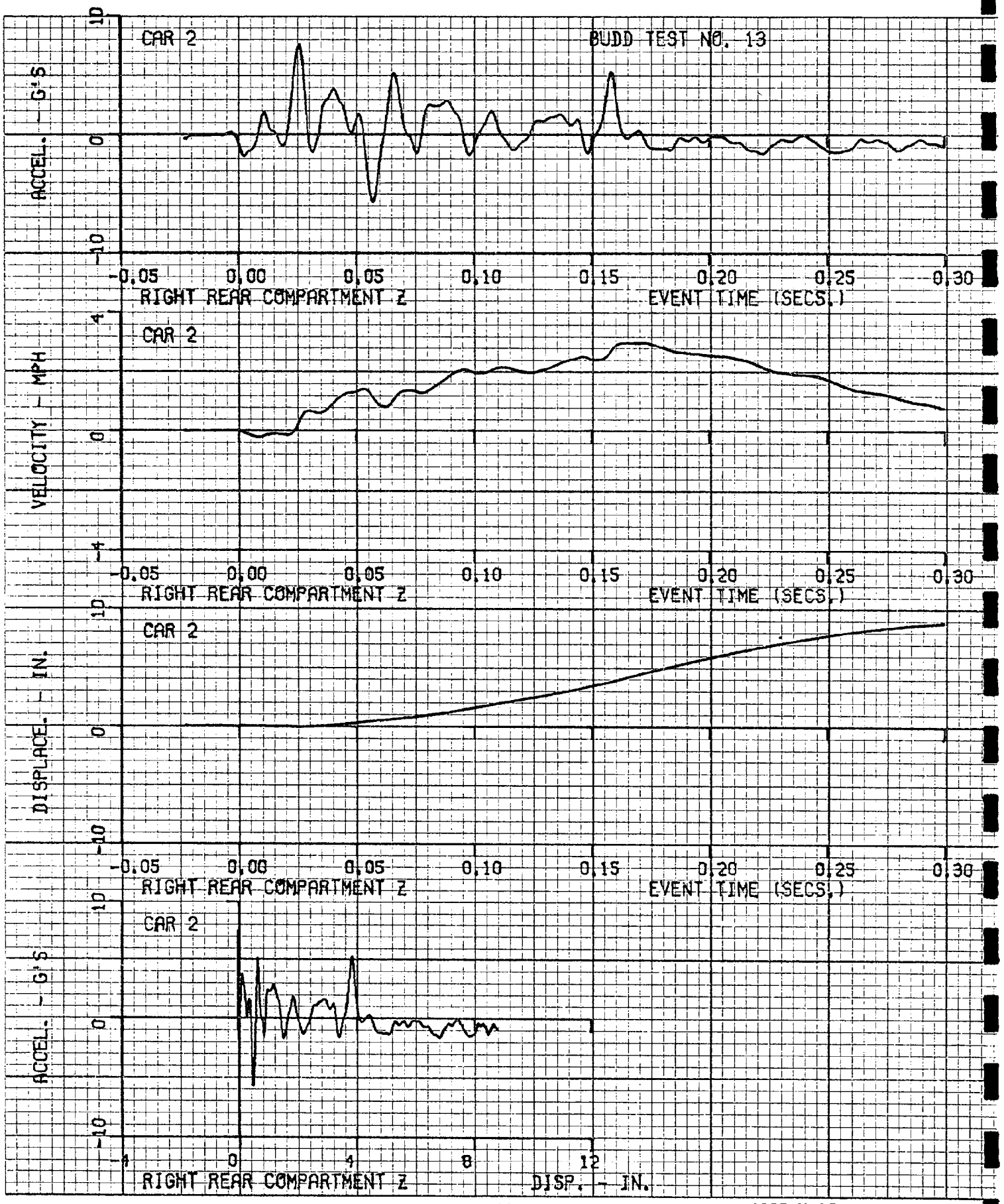

CAR 2
BUDD TEST NO. 13
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT FRONT COMPARTMENT X
EVENT TIME (SECS.)
CAR 2
0
-5
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT FRONT COMPARTMENT X
EVENT TIME (SECS.)
CAR 2
0
-20
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT FRONT COMPARTMENT X
EVENT TIME (SECS.)
CAR 2
10
0
-10
-30
-20
-10
0
10
RIGHT FRONT COMPARTMENT X
DISP. - IN.

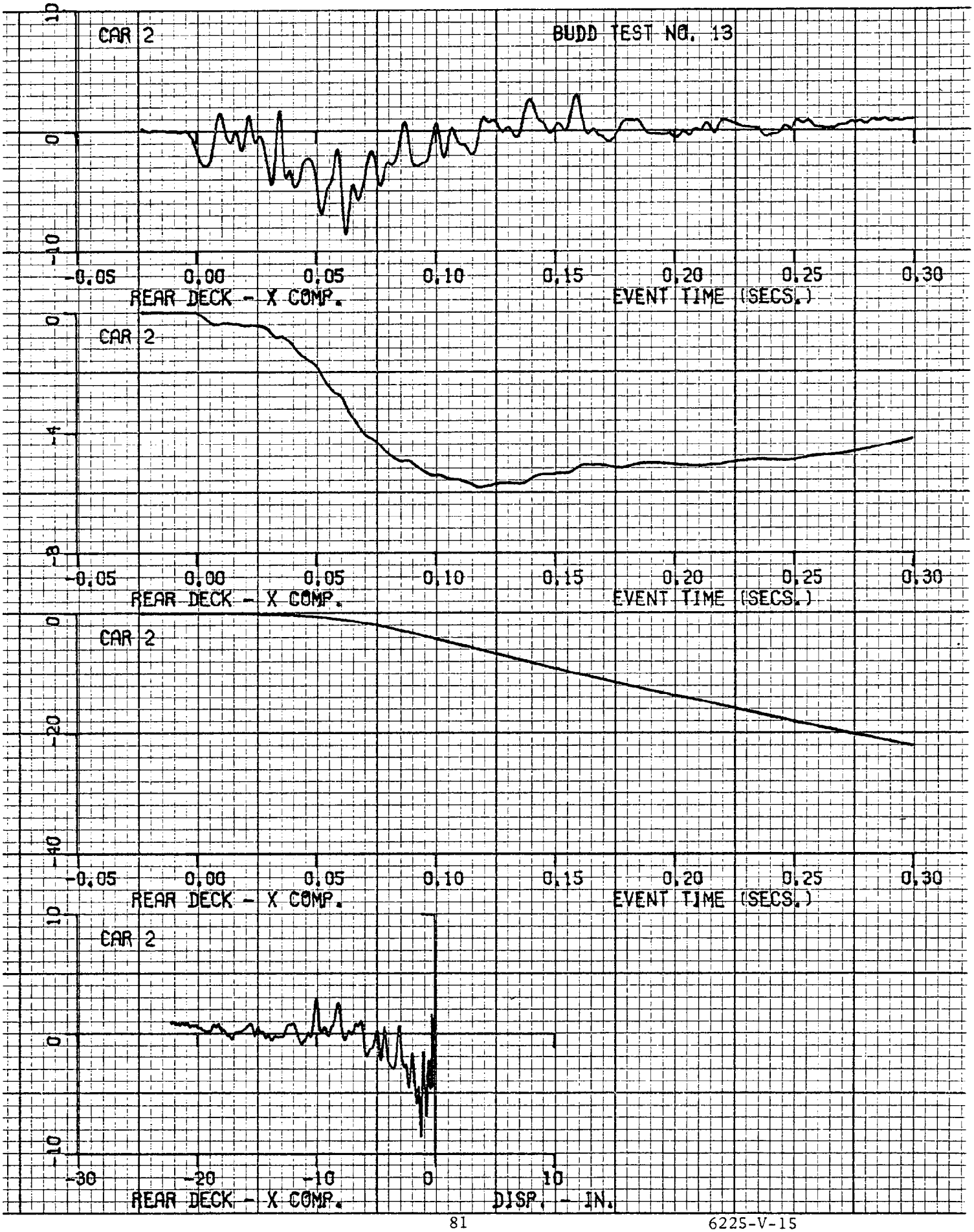

CAR 2
BUDD TEST NO. 13
ACCEL. - G'S
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT FRONT COMPARTMENT Y
EVENT TIME (SECS.)
CAR 2
VELOCITY - MPH
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT FRONT COMPARTMENT Y
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN.
80
40
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT FRONT COMPARTMENT Y
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
20
0
-20
0
20
40
60
80
RIGHT FRONT COMPARTMENT Y
DISP. - IN.

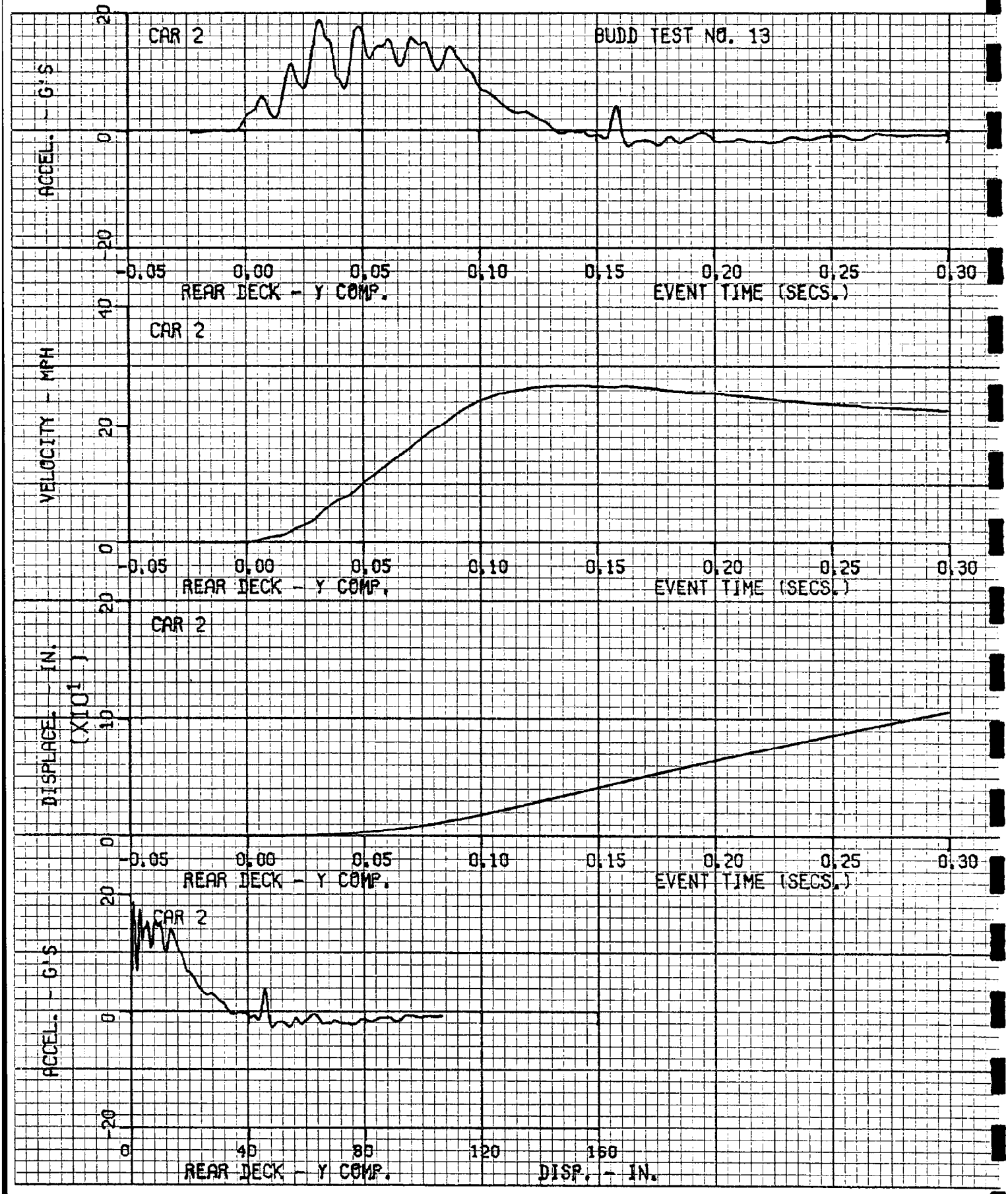

CAR 2
BUDD TEST NO. 13
5
0
-5
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT FRONT COMPARTMENT Z
EVENT TIME (SECS.)
CAR 2
2
0
-2
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT FRONT COMPARTMENT Z
EVENT TIME (SECS.)
CAR 2
5
0
-5
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT FRONT COMPARTMENT Z
EVENT TIME (SECS.)
CAR 2
5
0
-5
-2
0
2
4
6
RIGHT FRONT COMPARTMENT Z
DISP. - IN.

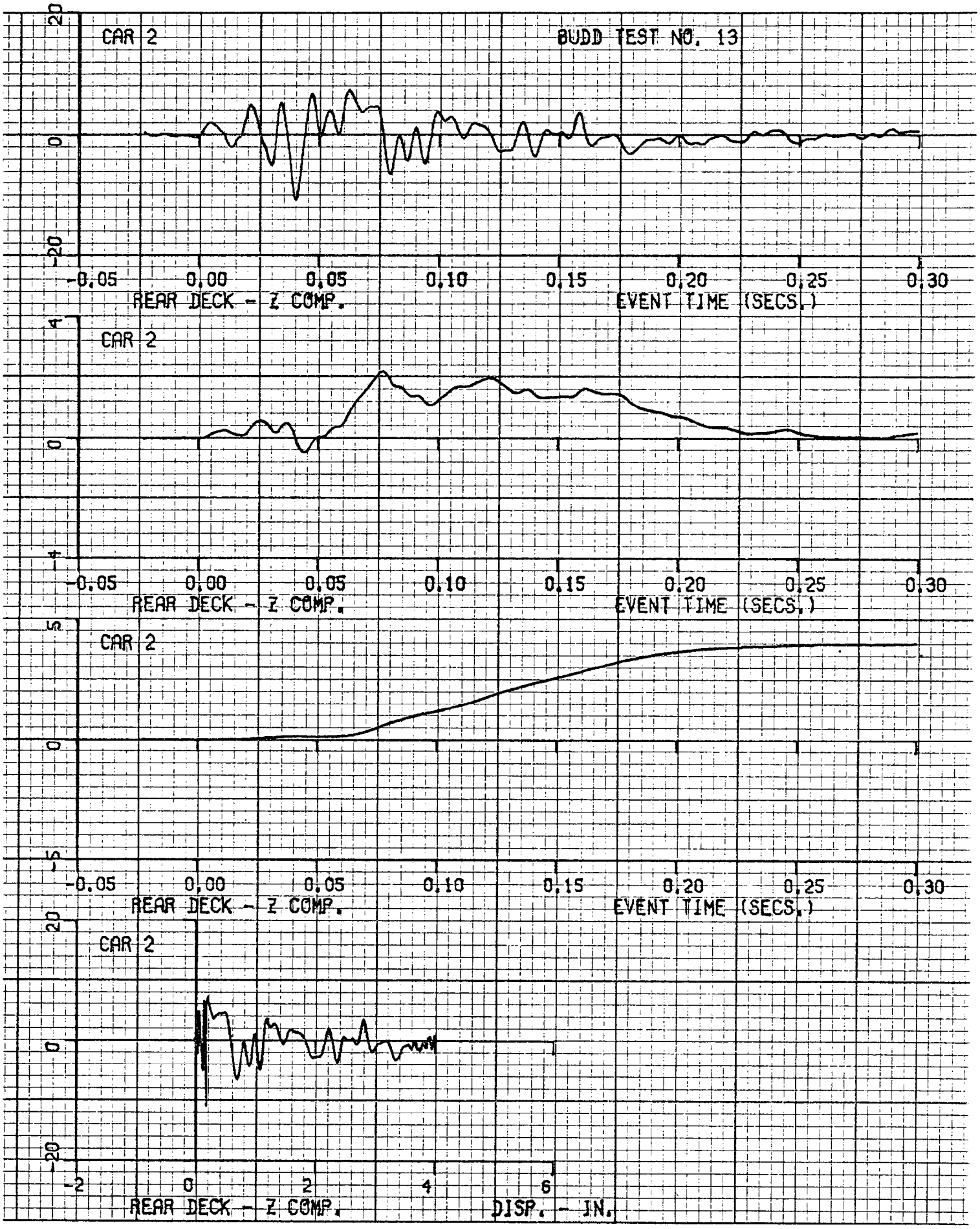

CAR 2
BUDD TEST NO. 13
ACCEL. - G'S
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMPARTMENT X
EVENT TIME (SECS.)
CAR 2
VELOCITY - MPH
8
4
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMPARTMENT X
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN.
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMPARTMENT X
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
10
0
-10
0
5
10
15
20
RIGHT REAR COMPARTMENT X
DISP. - IN.

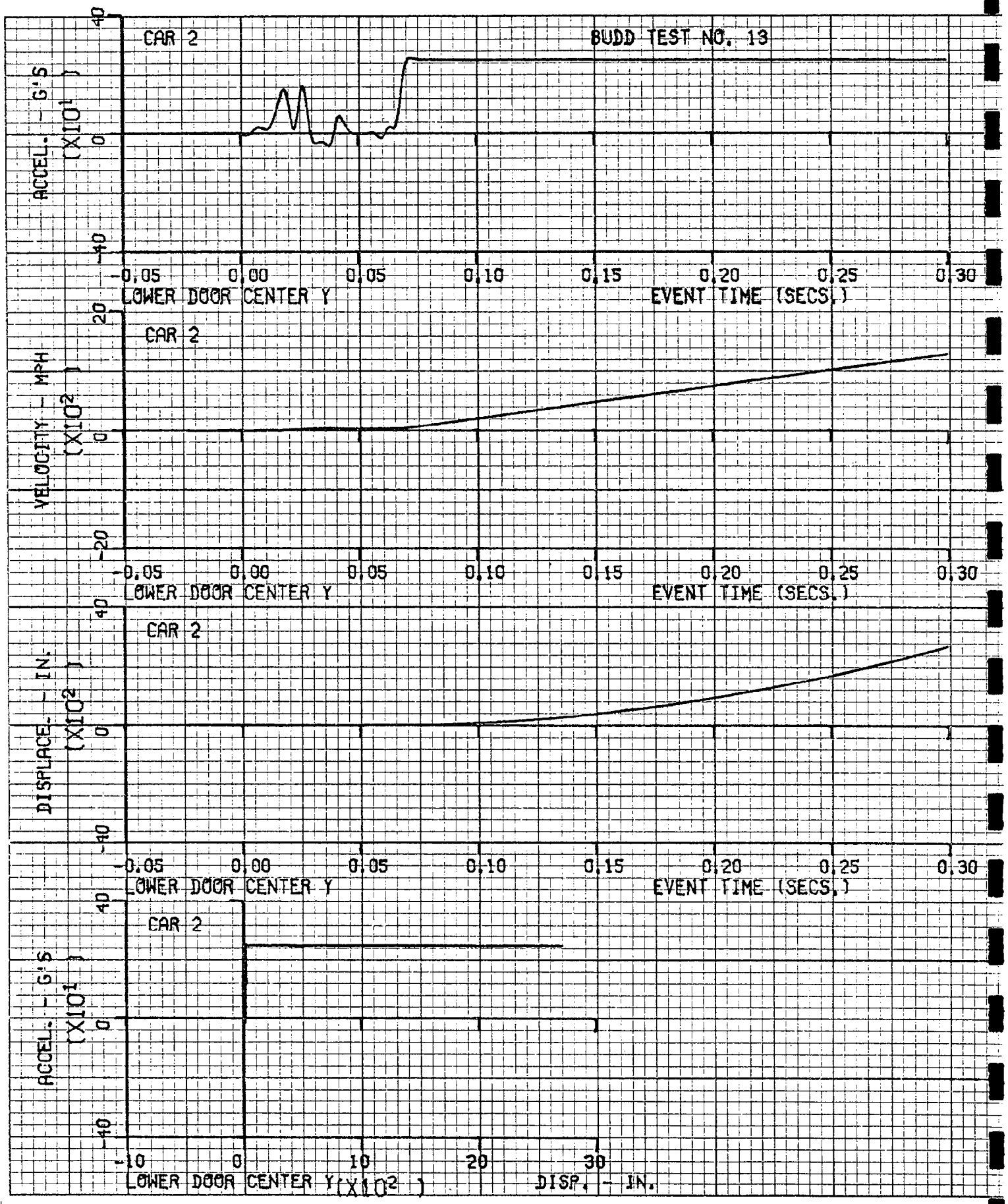

CAR 2
BUDD TEST NO. 13
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMPARTMENT Y
EVENT TIME (SECS.)
CAR 2
40
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMPARTMENT Y
EVENT TIME (SECS.)
CAR 2
100
50
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMPARTMENT Y
EVENT TIME (SECS.)
CAR 2
40
0
-40
0
40
80
120
160
RIGHT REAR COMPARTMENT Y
DISP. - IN.

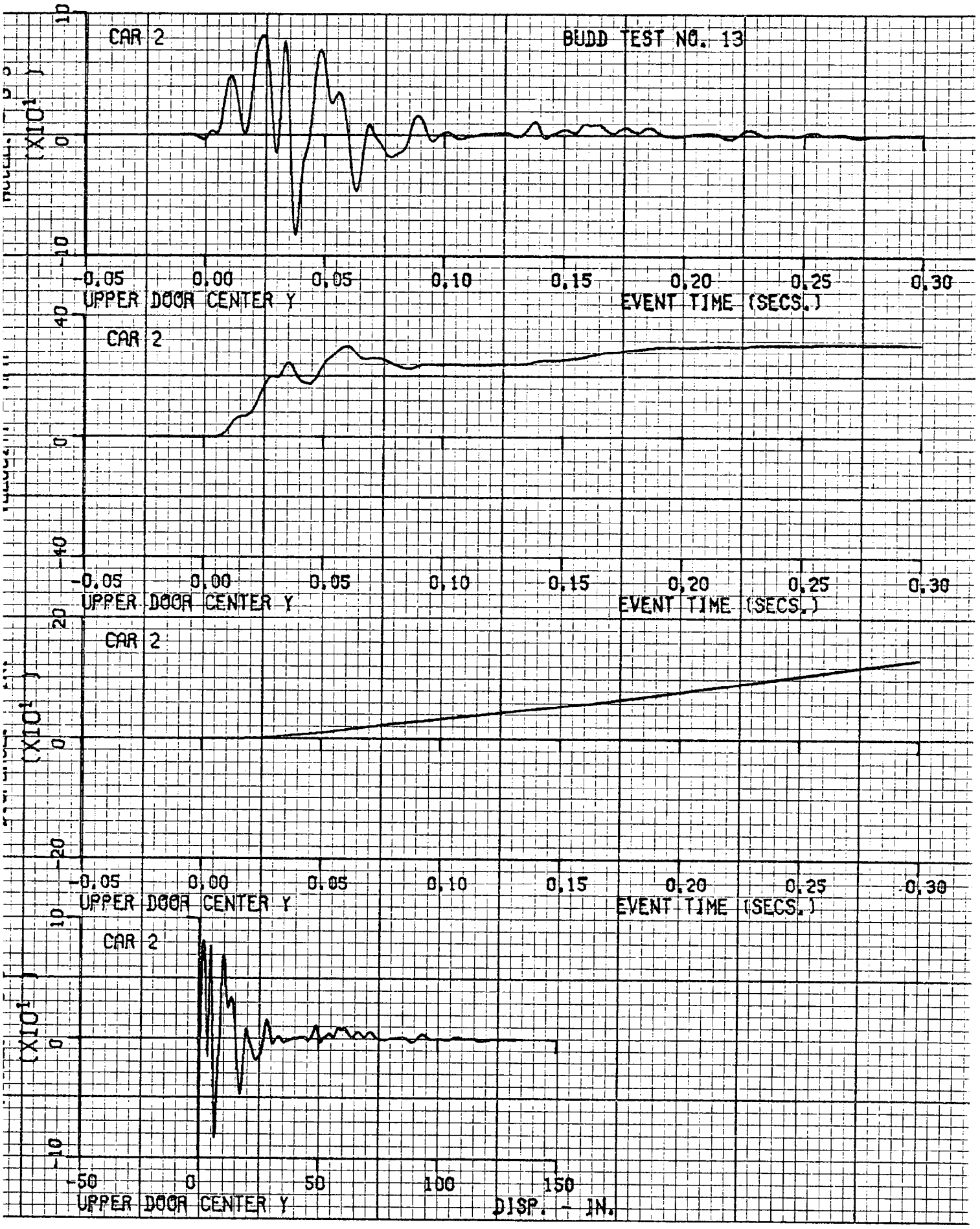

CAR 2
BUDD TEST NO. 13
ACCEL. - G'S
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMPARTMENT Z
EVENT TIME (SECS.)
CAR 2
VELOCITY - MPH
4
0
-4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMPARTMENT Z
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN.
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMPARTMENT Z
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
10
0
-10
-4
0
4
8
12
RIGHT REAR COMPARTMENT Z
DISP. - IN.

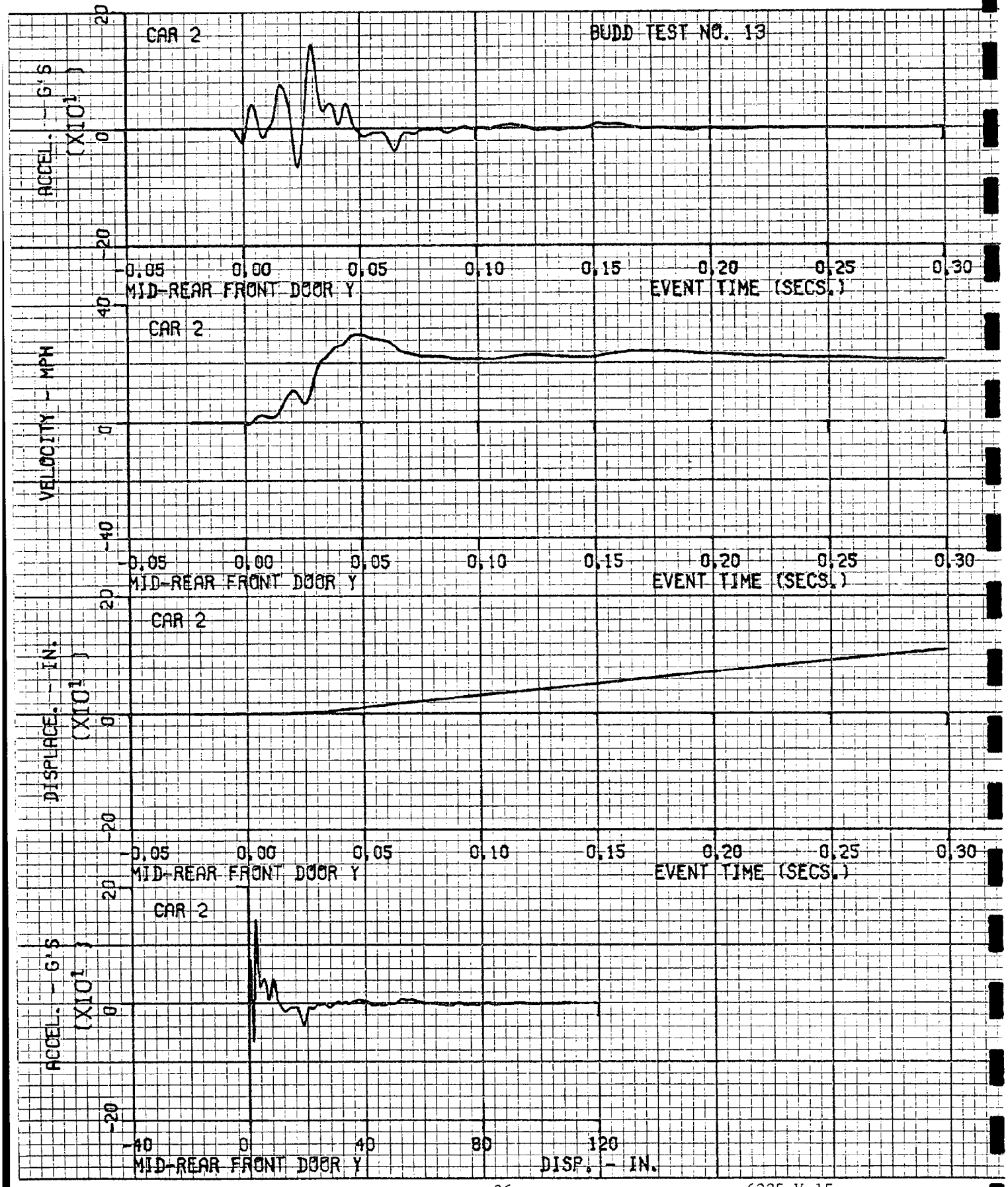

CAR 2
BUDD TEST NO. 13
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - X COMP.
EVENT TIME (SECS.)
CAR 2
0
-4
-8
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - X COMP.
EVENT TIME (SECS.)
CAR 2
0
-20
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - X COMP.
EVENT TIME (SECS.)
CAR 2
10
0
-10
-30
-20
-10
0
10
REAR DECK - X COMP.
DISP. - IN.

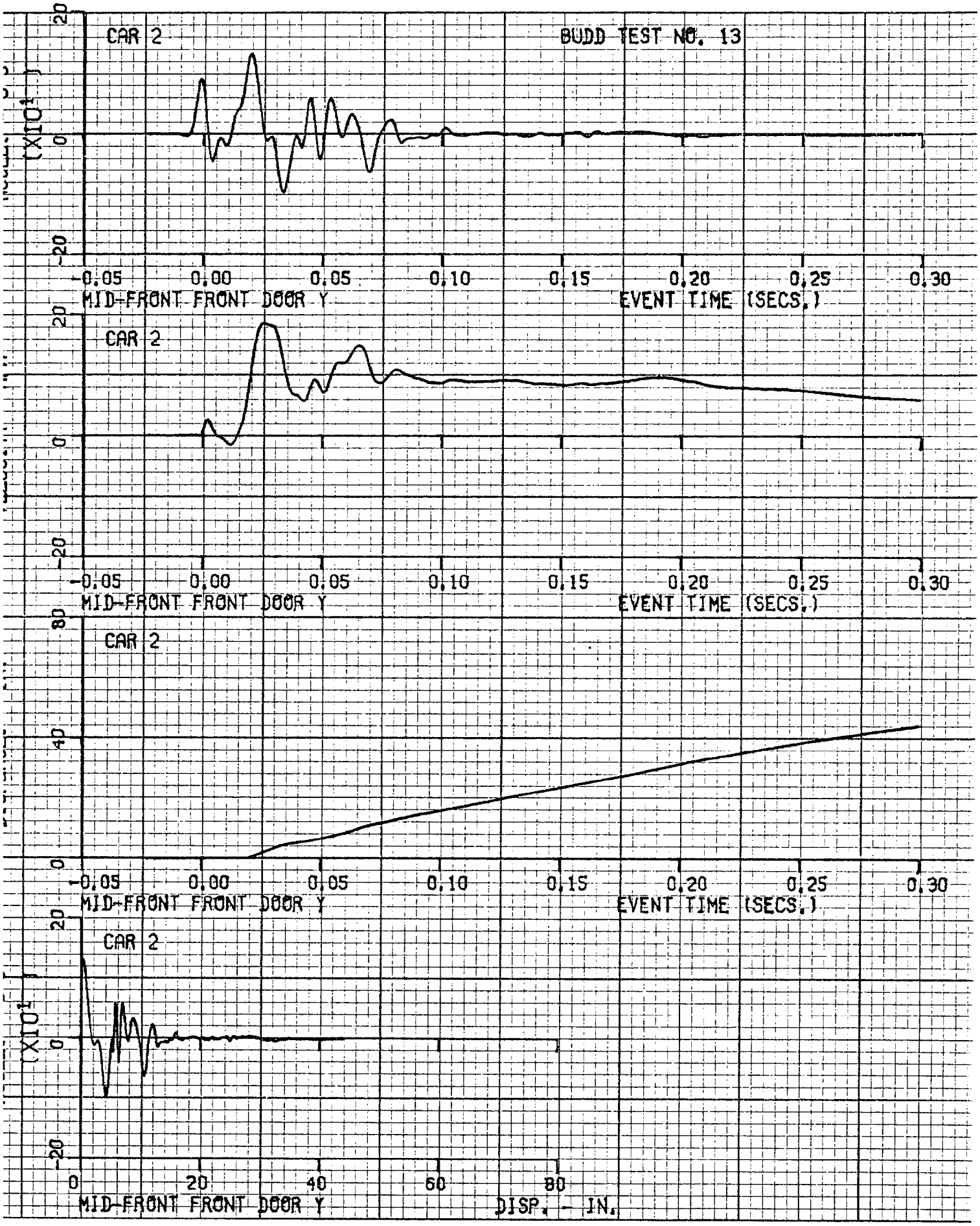

CAR 2
BUDD TEST NO. 13
ACCEL. - G'S
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Y COMP.
EVENT TIME (SECS.)
CAR 2
VELOCITY - MPH
40
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Y COMP.
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN.
(X10¹)
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Y COMP.
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
20
0
-20
0
40
80
120
160
REAR DECK - Y COMP.
DISP. - IN.

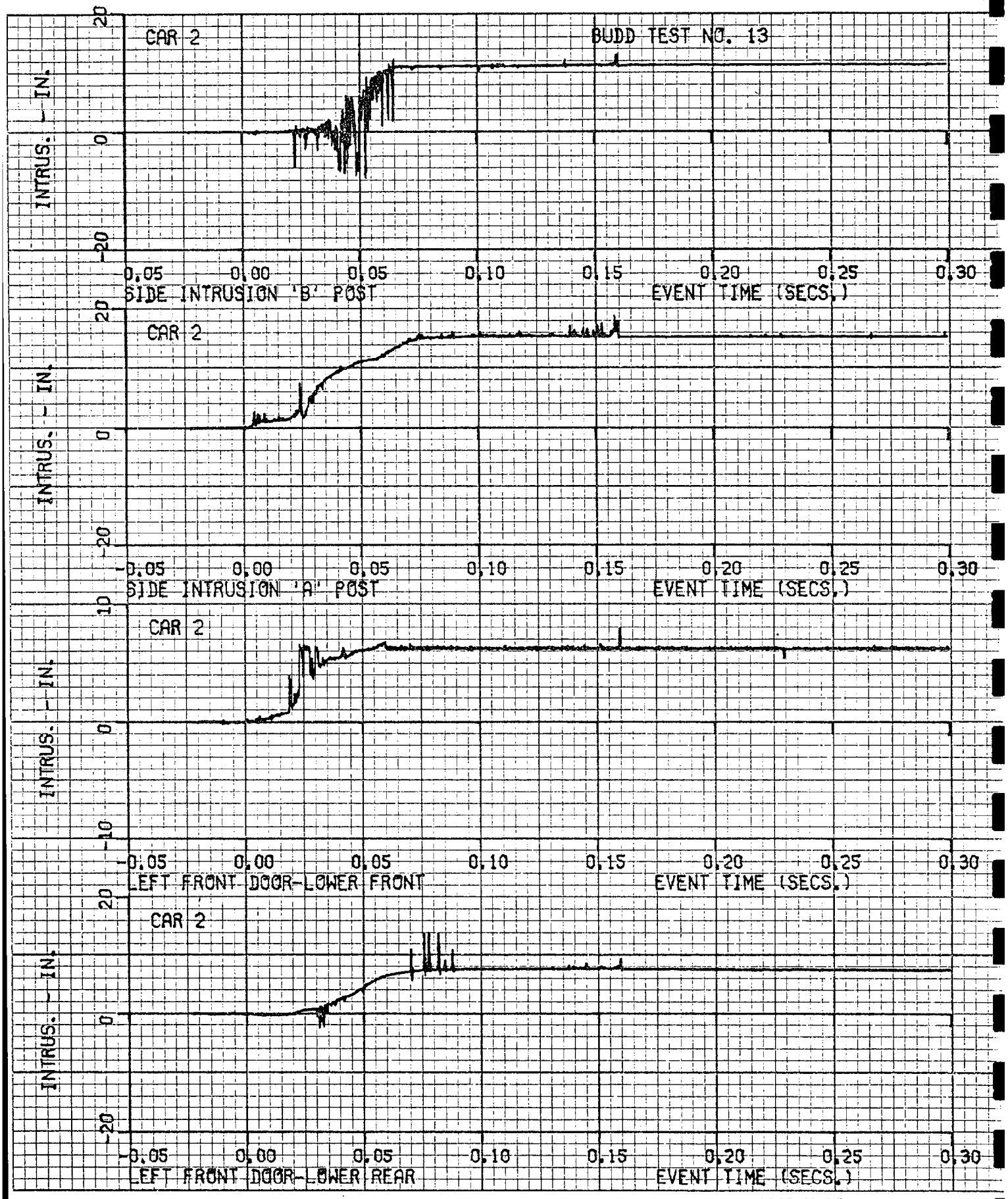

CAR 2
BUDD TEST NO. 13
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Z COMP.
EVENT TIME (SECS.)
CAR 2
4
0
-4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Z COMP.
EVENT TIME (SECS.)
CAR 2
5
0
-5
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Z COMP.
EVENT TIME (SECS.)
CAR 2
20
0
-20
-2
0
2
4
6
REAR DECK - Z COMP.
DISP. - IN.

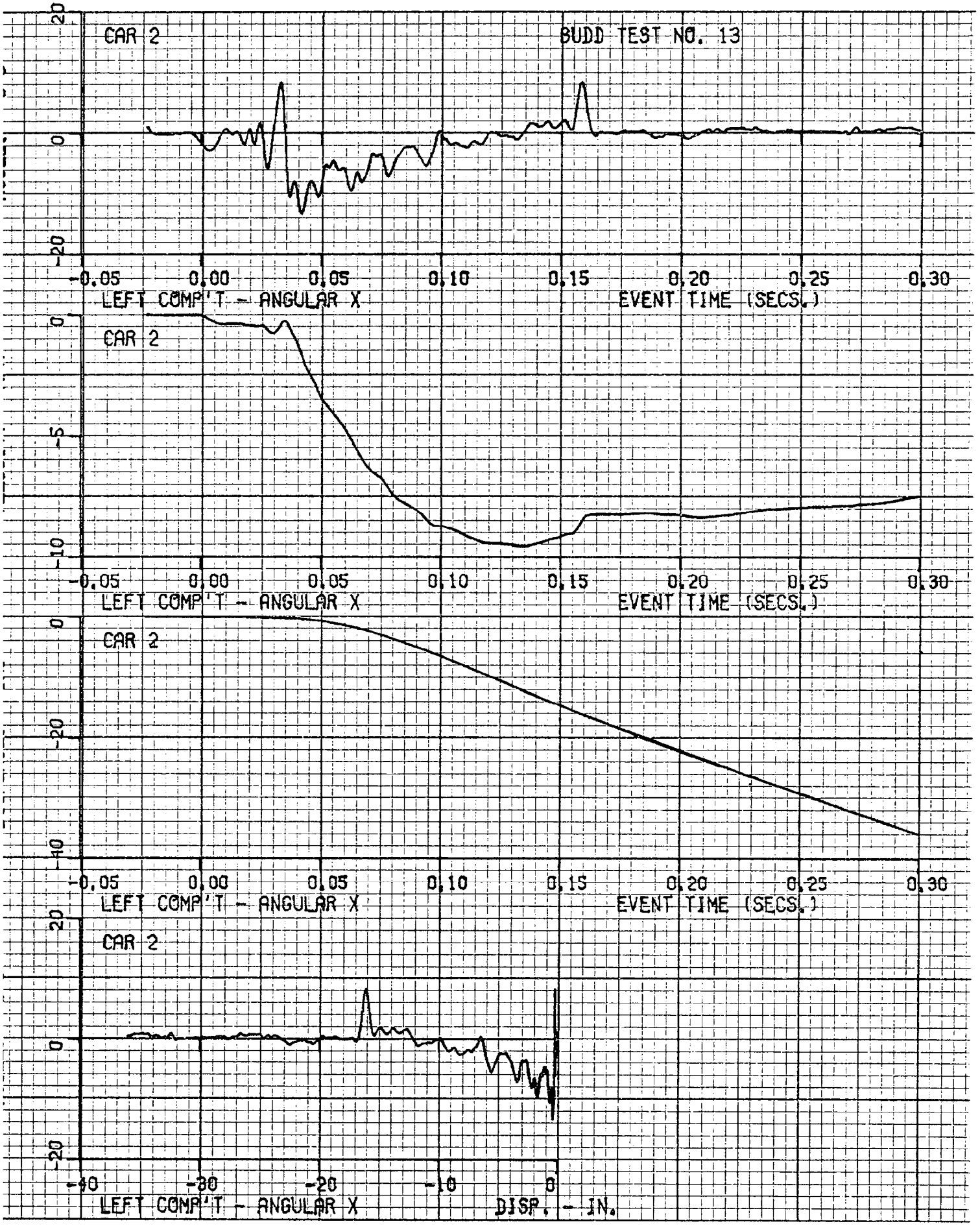

CAR 2
BUDD TEST NO. 13
ACCEL. - G'S (X10¹)
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LOWER DOOR CENTER Y
EVENT TIME (SECS.)
CAR 2
VELOCITY - MPH (X10²)
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LOWER DOOR CENTER Y
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN. (X10²)
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LOWER DOOR CENTER Y
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S (X10¹)
40
0
-40
-10
0
10
20
30
LOWER DOOR CENTER Y (X10²)
DISP. - IN.

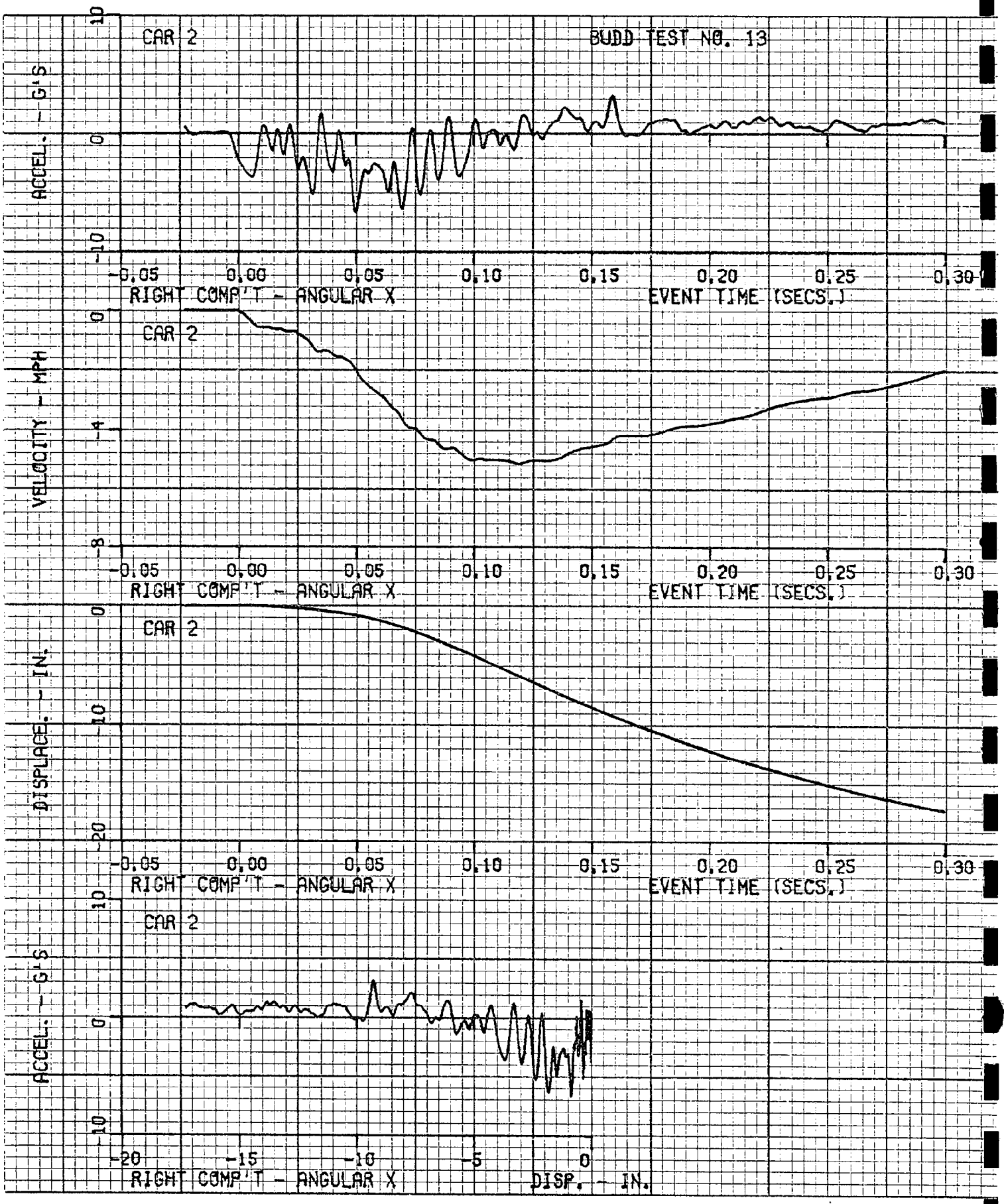

CAR 2
BUDD TEST NO. 13
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
UPPER DOOR CENTER Y
EVENT TIME (SECS.)
CAR 2
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
UPPER DOOR CENTER Y
EVENT TIME (SECS.)
CAR 2
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
UPPER DOOR CENTER Y
EVENT TIME (SECS.)
CAR 2
10
0
-10
-50
0
50
100
150
UPPER DOOR CENTER Y
DISP. - IN.

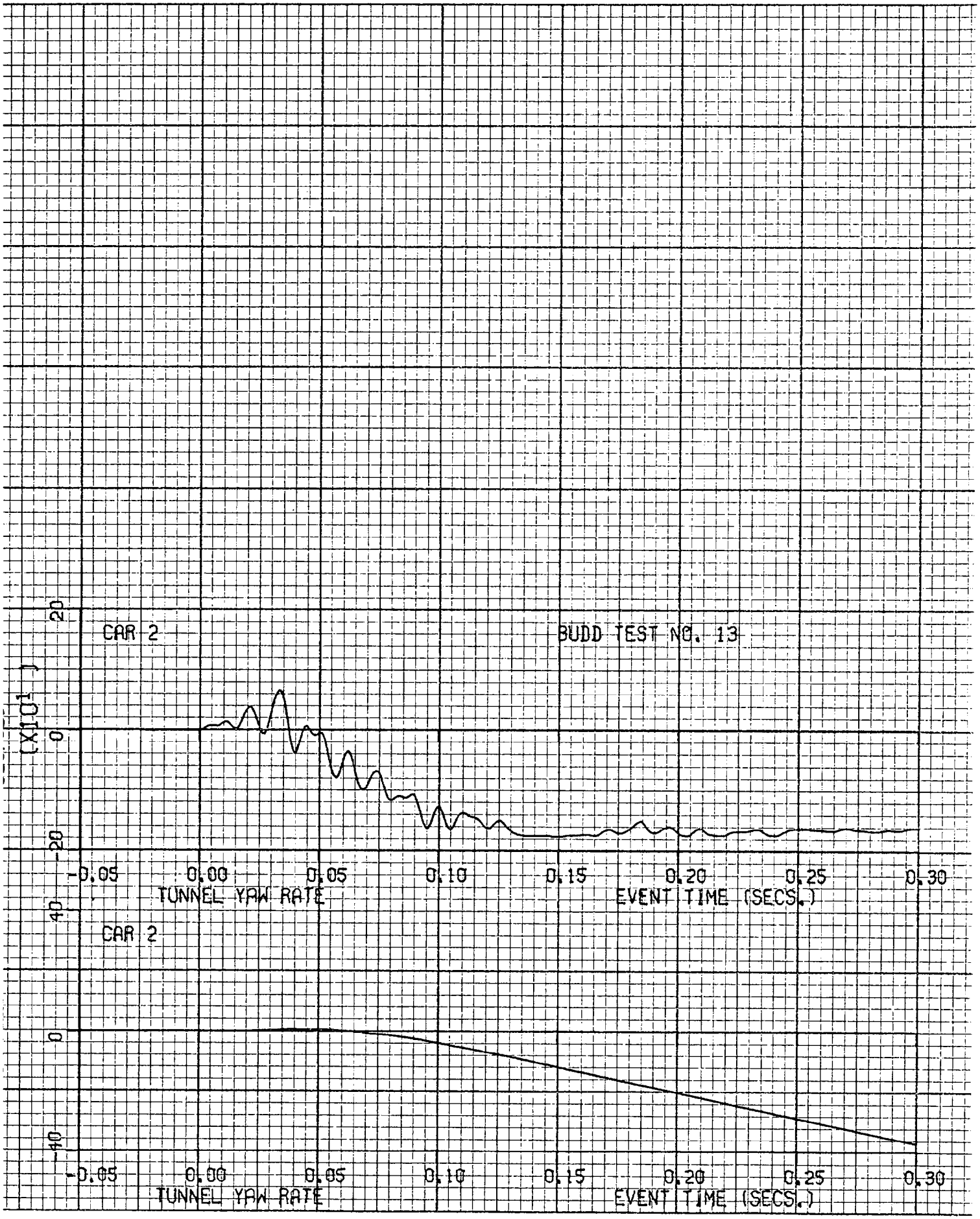

CAR 2
BUDD TEST NO. 13
ACCEL. - G'S
(X10¹)
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
MID-REAR FRONT DOOR Y
EVENT TIME (SECS.)
CAR 2
VELOCITY - MPH
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
MID-REAR FRONT DOOR Y
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN.
(X10¹)
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
MID-REAR FRONT DOOR Y
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
(X10¹)
20
0
-20
-40
0
40
80
120
MID-REAR FRONT DOOR Y
DISP. - IN.


CAR 2
BUDD TEST NO. 13
20
0
-20
(X10¹)
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
MID-FRONT FRONT DOOR Y
EVENT TIME (SECS.)
CAR 2
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
MID-FRONT FRONT DOOR Y
EVENT TIME (SECS.)
CAR 2
80
40
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
MID-FRONT FRONT DOOR Y
EVENT TIME (SECS.)
CAR 2
20
0
-20
(X10¹)
0
20
40
60
80
MID-FRONT FRONT DOOR Y
DISP. - IN.


CAR 2
BUDD TEST NO. 13
INTRUS. - IN.
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
SIDE INTRUSION 'B' POST
EVENT TIME (SECS.)
CAR 2
INTRUS. - IN.
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
SIDE INTRUSION 'A' POST
EVENT TIME (SECS.)
CAR 2
INTRUS. - IN.
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LEFT FRONT DOOR-LOWER FRONT
EVENT TIME (SECS.)
CAR 2
INTRUS. - IN.
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LEFT FRONT DOOR-LOWER REAR
EVENT TIME (SECS.)


CAR 2
BUDD TEST NO. 13
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LEFT COMP'T - ANGULAR X
EVENT TIME (SECS.)
CAR 2
0
-5
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LEFT COMP'T - ANGULAR X
EVENT TIME (SECS.)
CAR 2
0
-20
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LEFT COMP'T - ANGULAR X
EVENT TIME (SECS.)
CAR 2
20
0
-20
-40
-30
-20
-10
0
LEFT COMP'T - ANGULAR X
DISP. - IN.


CAR 2
BUDD TEST NO. 13
ACCEL. - G'S
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT COMP'T - ANGULAR X
EVENT TIME (SECS.)
CAR 2
VELOCITY - MPH
0
-4
-8
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT COMP'T - ANGULAR X
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN.
0
-10
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT COMP'T - ANGULAR X
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
10
0
-10
-20
-15
-10
-5
0
RIGHT COMP'T - ANGULAR X
DISP. - IN.

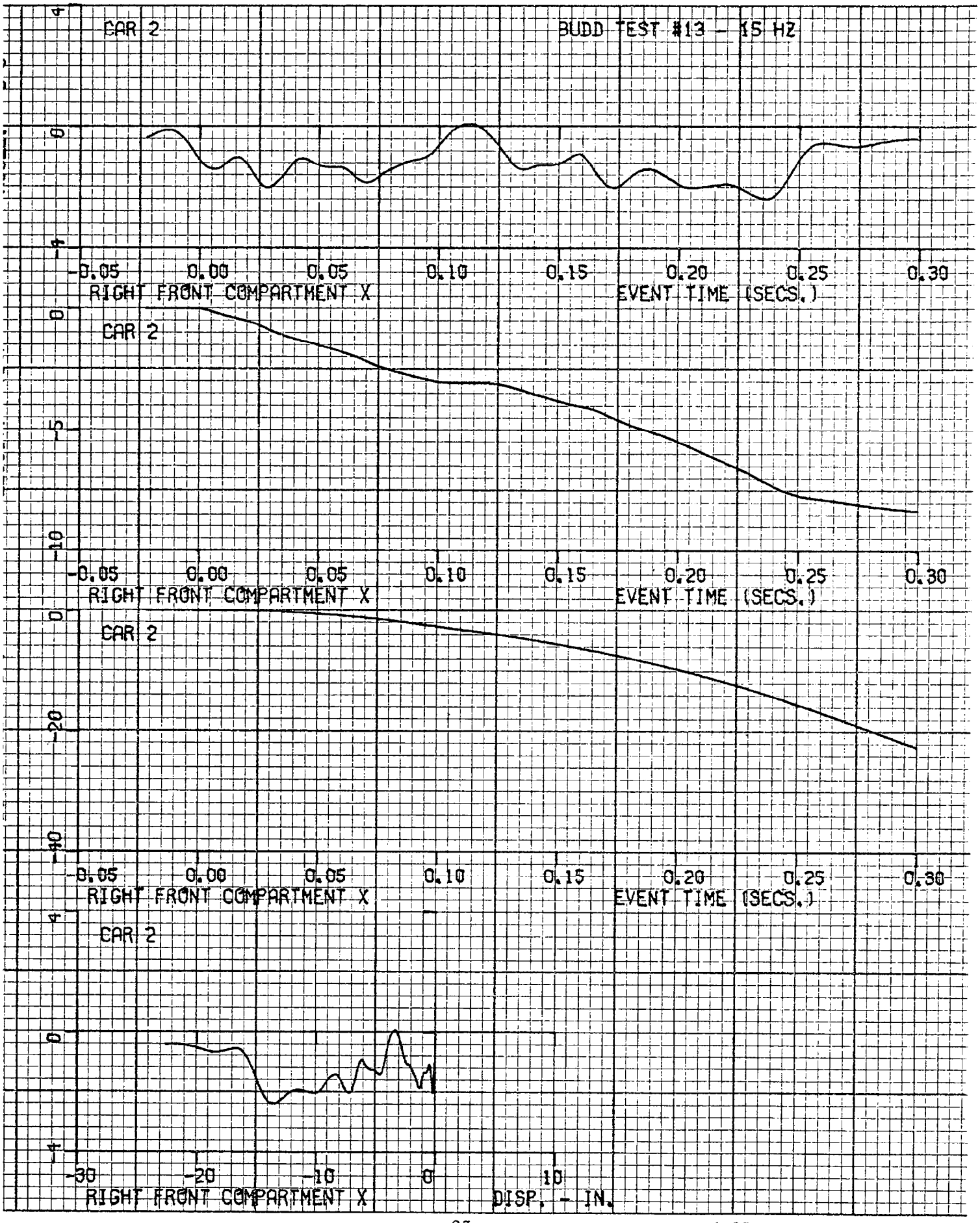

CAR 2
BUDD TEST NO. 13
(X10¹)
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
TUNNEL YAW RATE
EVENT TIME (SECS.)
CAR 2
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
TUNNEL YAW RATE
EVENT TIME (SECS.)

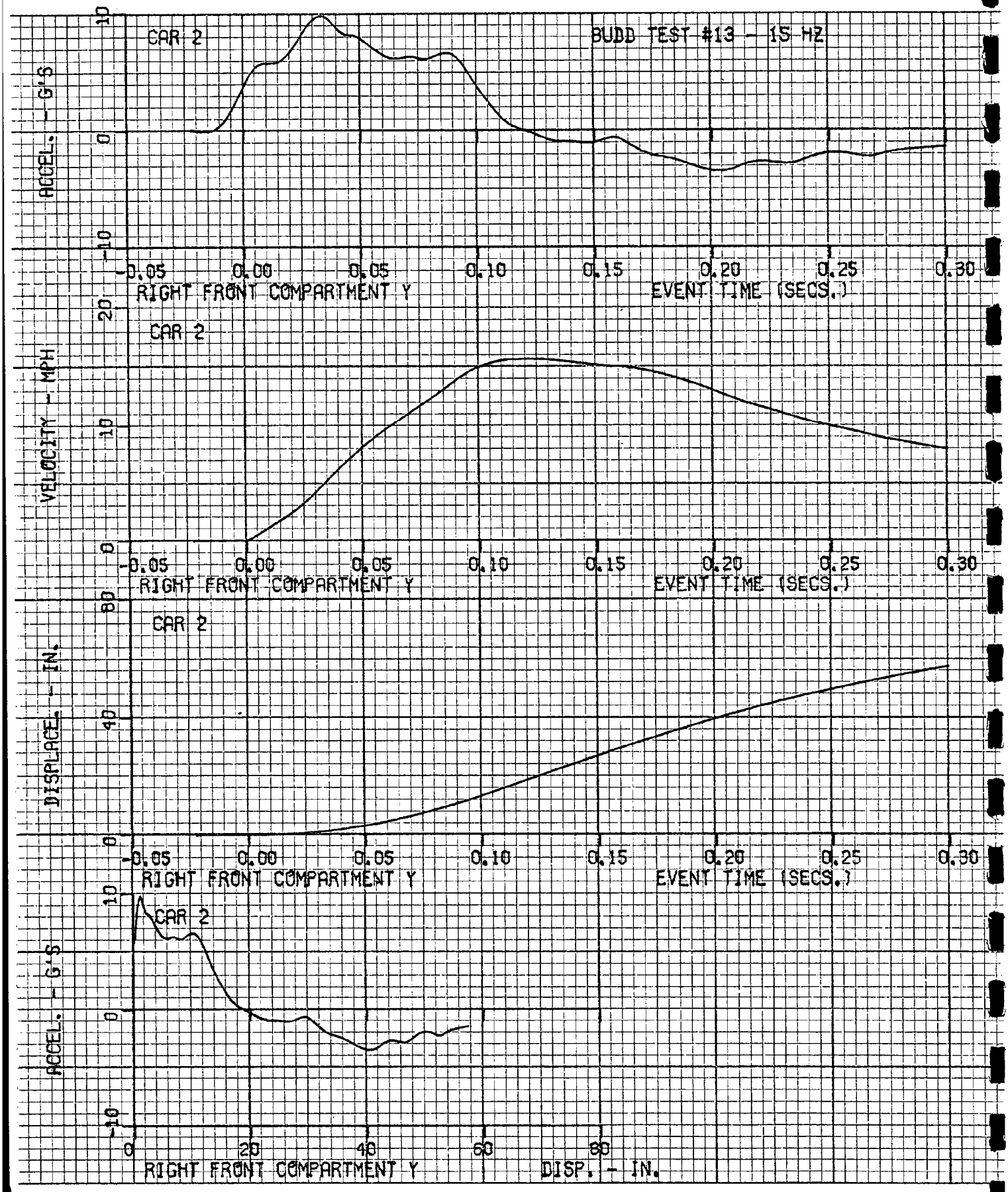
TEST NO. 13

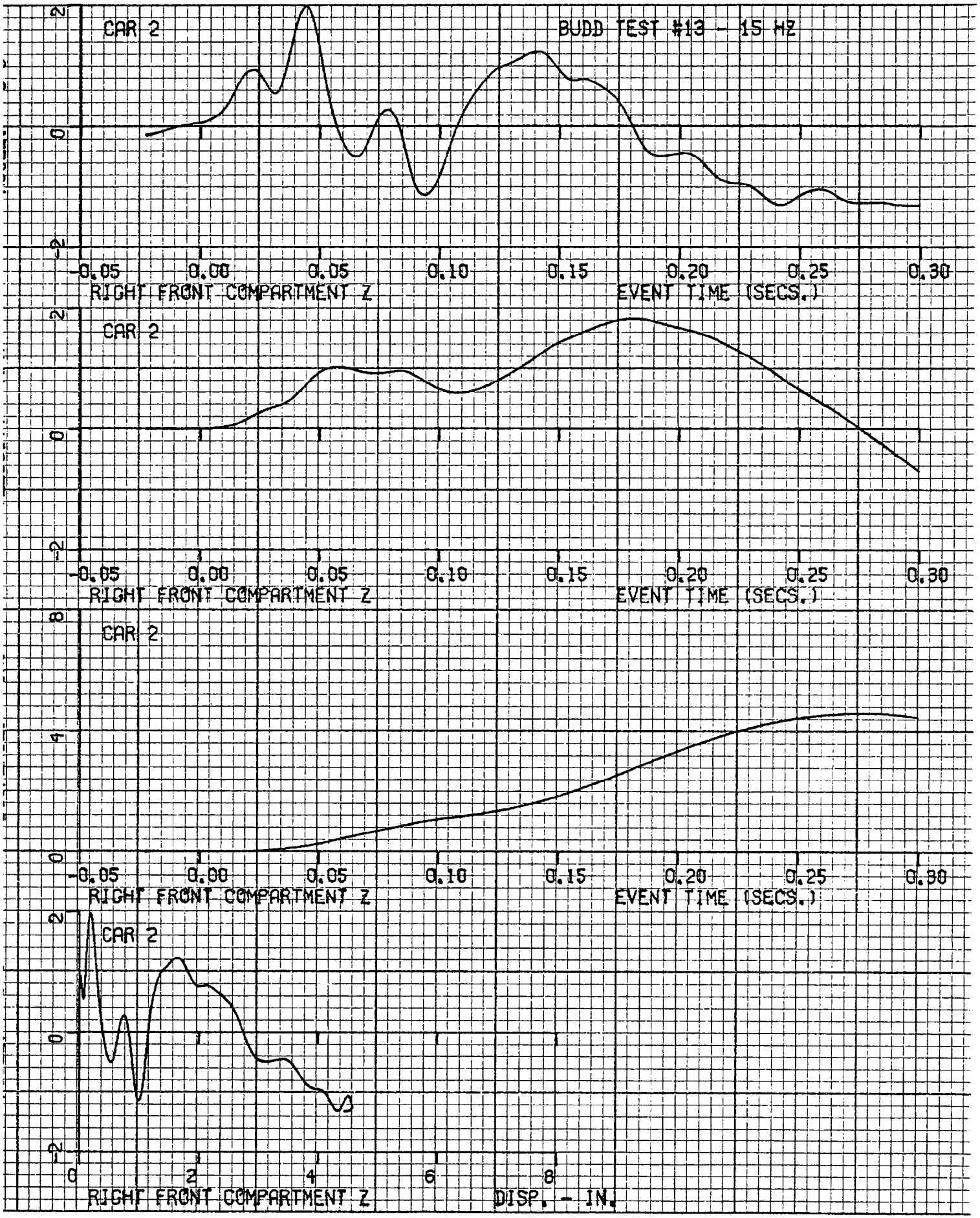
CAR NO. 2 - 1976 VOLKSWAGEN RABBIT

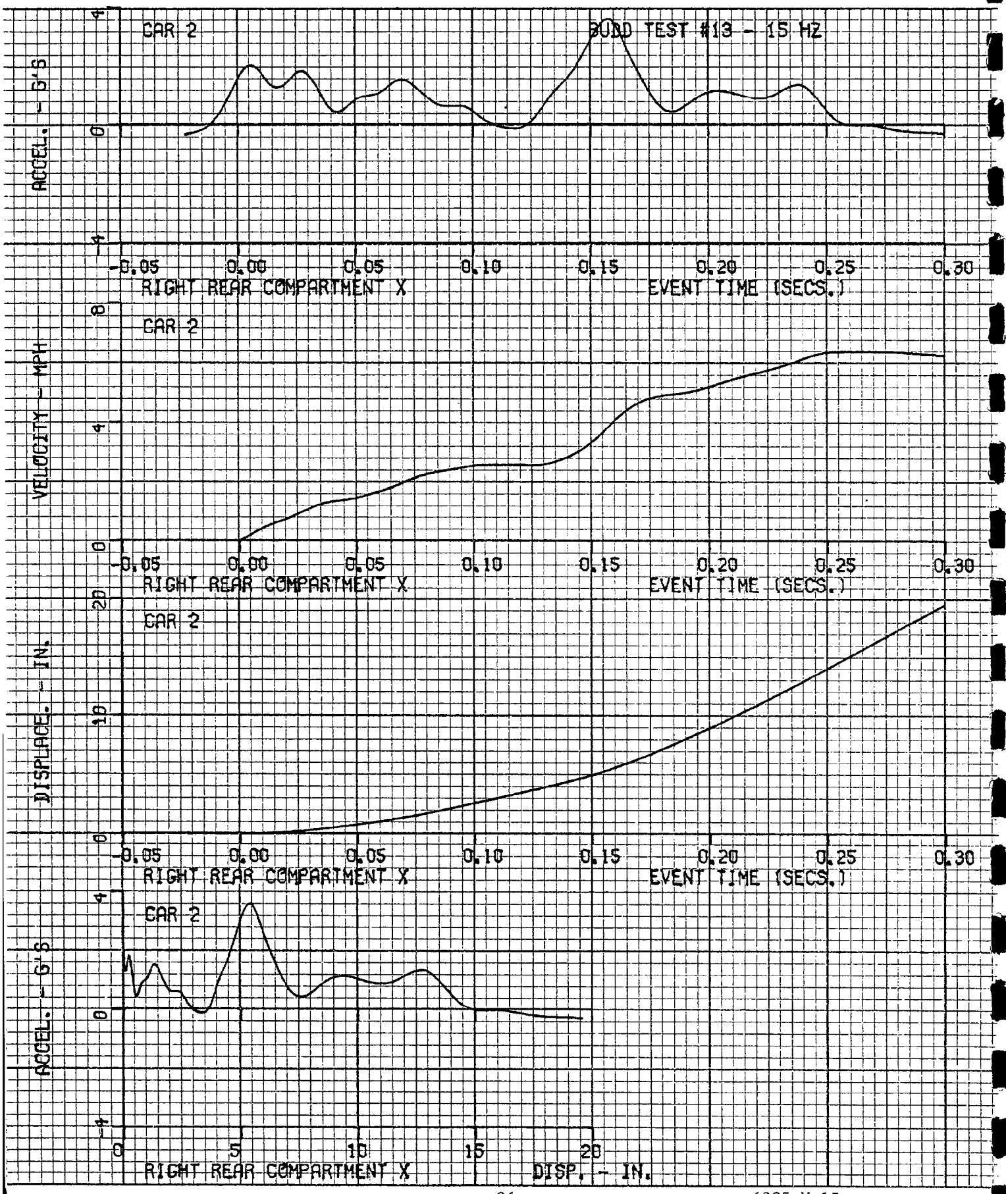
VEHICLE DATA - 15 HZ CHANNEL CLASS

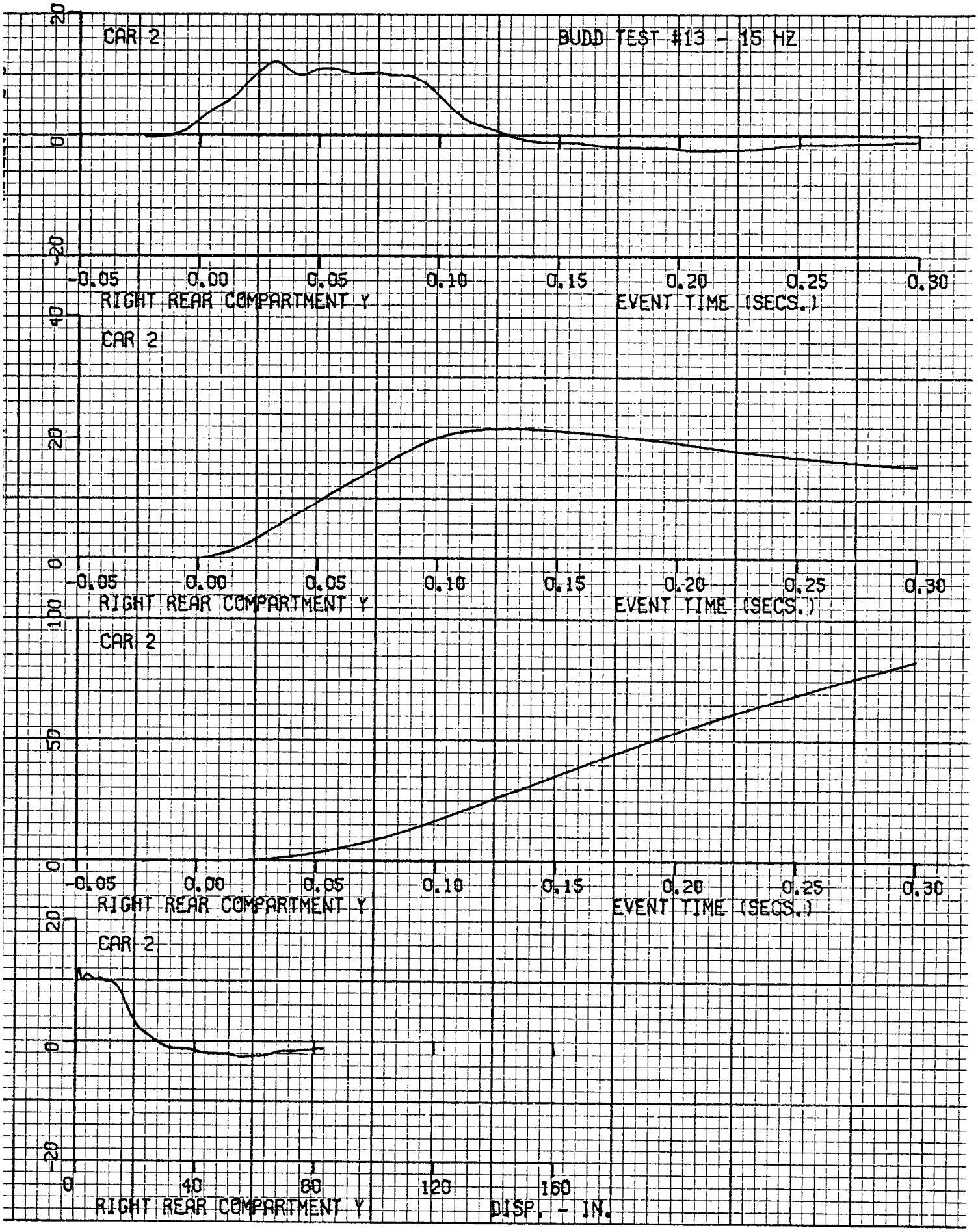
LOWER DOOR CENTER Y ACCELEROMETER DATA BAD AFTER
60 MILLISECONDS DUE TO CUT WIRE.

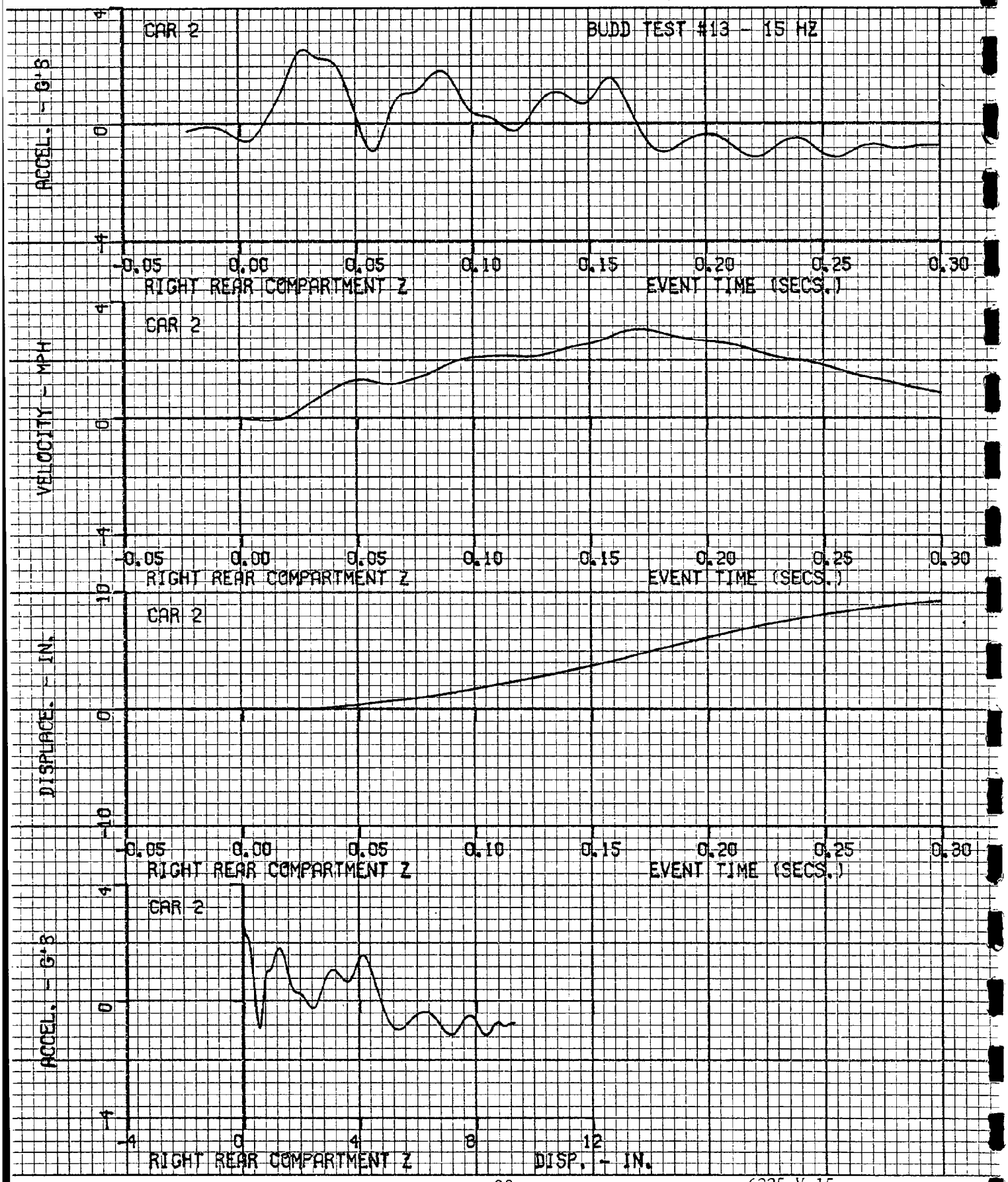

CAR 2
BUDD TEST #13 - 15 HZ
4
0
-4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT FRONT COMPARTMENT X
EVENT TIME (SECS.)
CAR 2
0
-5
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT FRONT COMPARTMENT X
EVENT TIME (SECS.)
CAR 2
0
-20
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT FRONT COMPARTMENT X
EVENT TIME (SECS.)
CAR 2
4
0
-4
-30
-20
-10
0
10
RIGHT FRONT COMPARTMENT X
DISP. - IN.

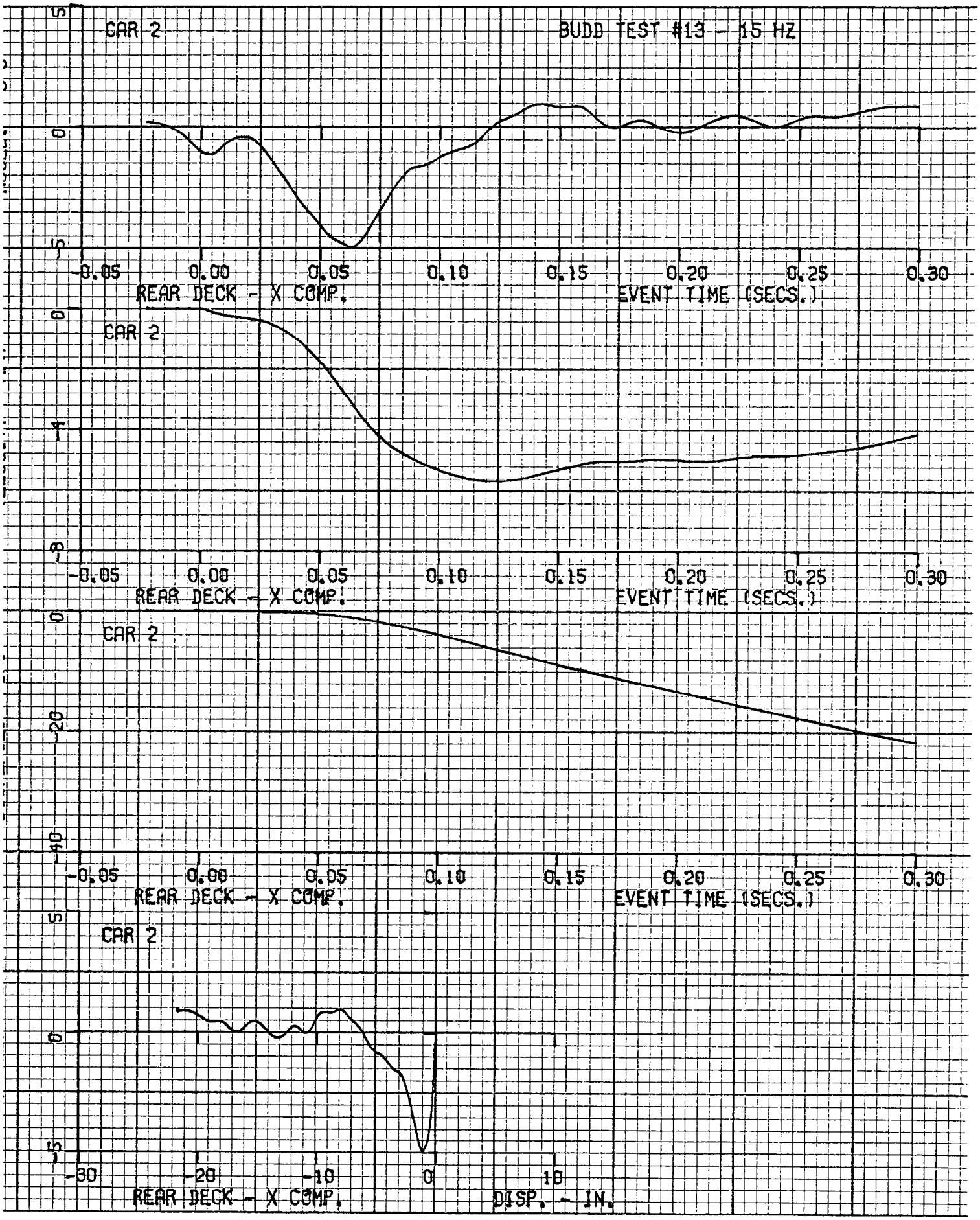

BUDD TEST #13 - 15 HZ
CAR 2
ACCEL. - G'S
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT FRONT COMPARTMENT Y
EVENT TIME (SECS.)
CAR 2
VELOCITY - MPH
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT FRONT COMPARTMENT Y
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN.
80
40
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT FRONT COMPARTMENT Y
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
10
0
-10
0
20
40
60
80
RIGHT FRONT COMPARTMENT Y
DISP. - IN.

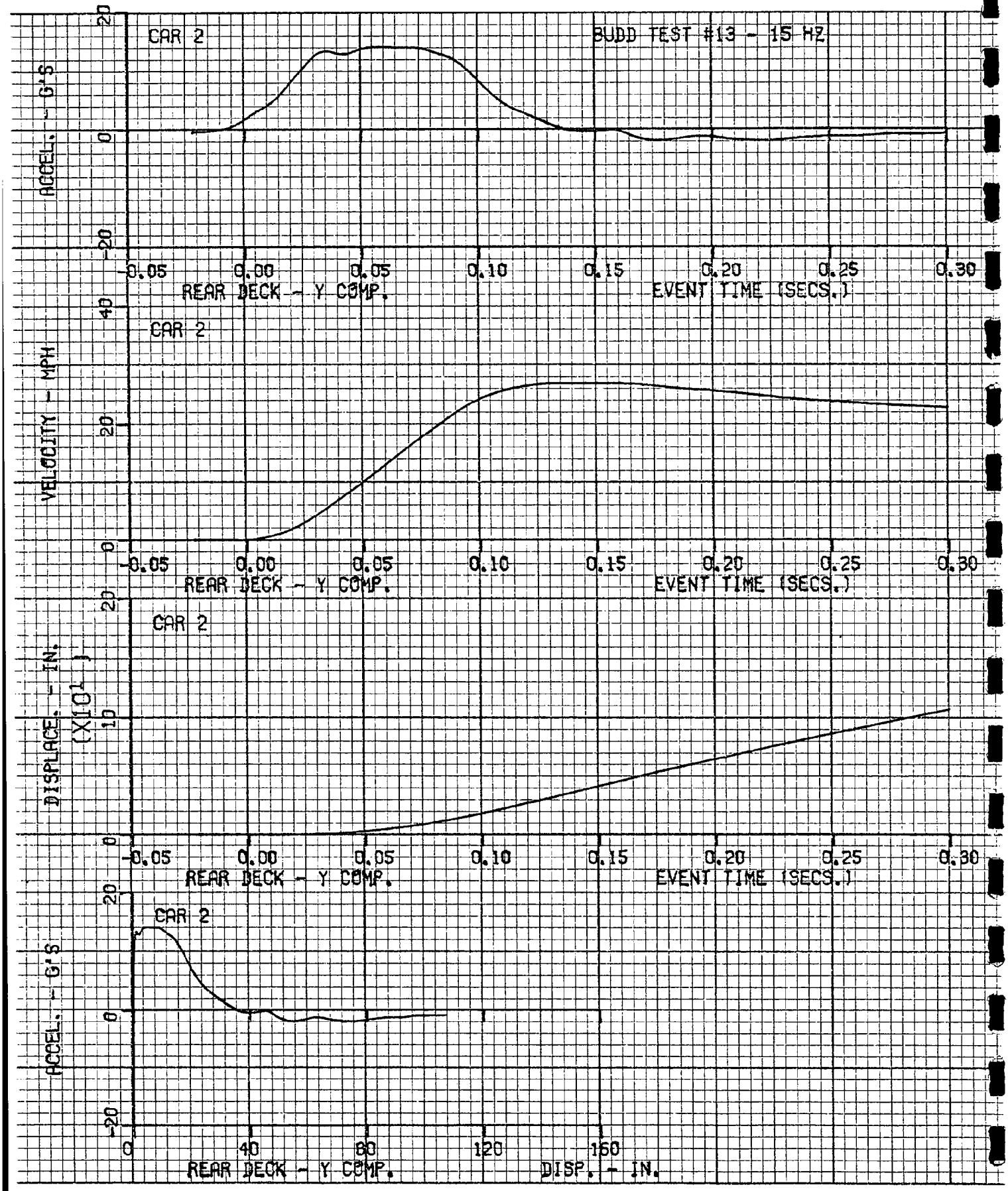

CAR 2
BUDD TEST #13 - 15 HZ
2
0
-2
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT FRONT COMPARTMENT Z
EVENT TIME (SECS.)
CAR 2
2
0
-2
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT FRONT COMPARTMENT Z
EVENT TIME (SECS.)
CAR 2
8
4
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT FRONT COMPARTMENT Z
EVENT TIME (SECS.)
CAR 2
2
0
-2
0
2
4
6
8
RIGHT FRONT COMPARTMENT Z
DISP. - IN.

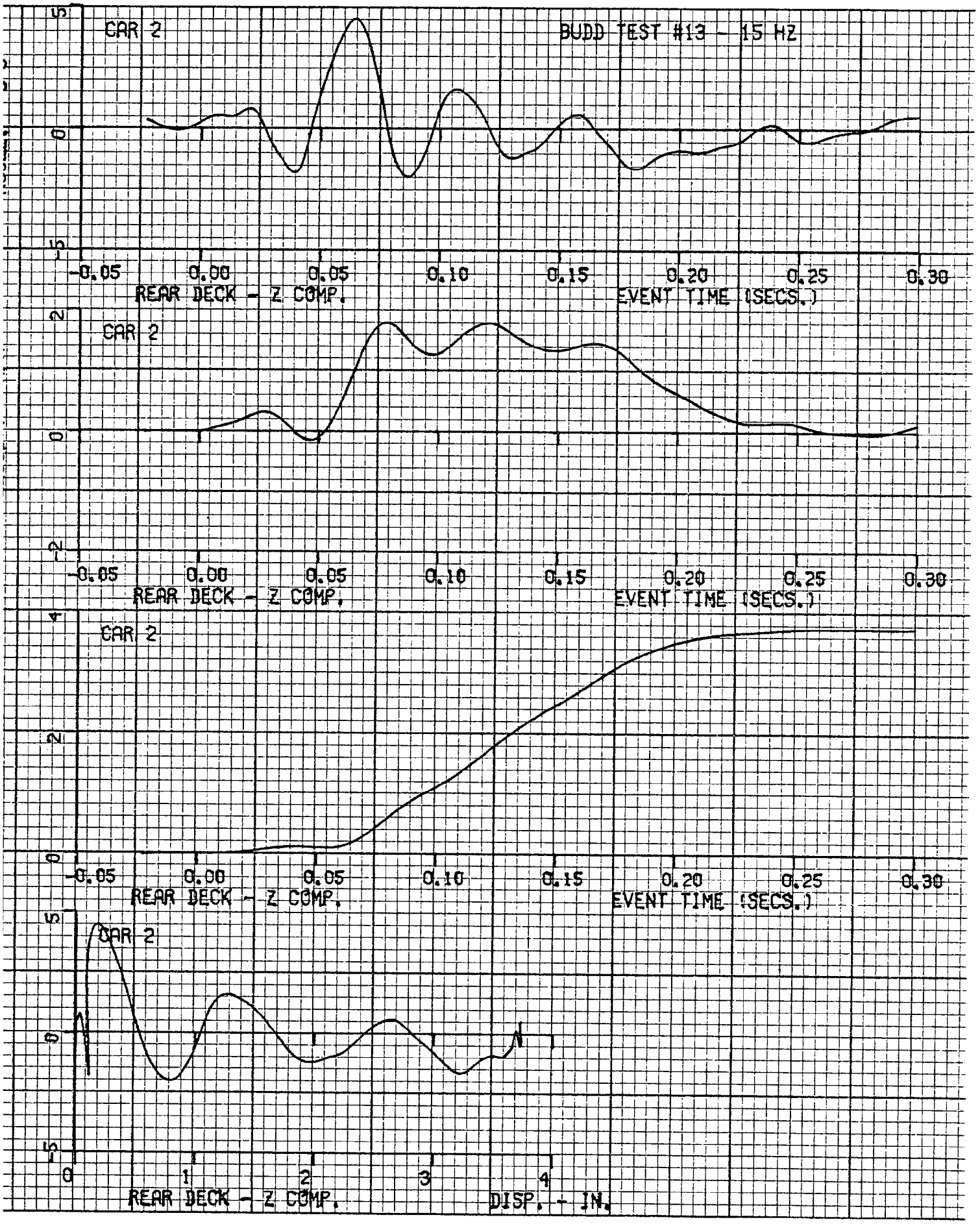

CAR 2
BODD TEST #13 - 15 HZ
ACCEL. - G'S
4
0
-4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMPARTMENT X
EVENT TIME (SECS.)
CAR 2
VELOCITY - MPH
8
4
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMPARTMENT X
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN.
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMPARTMENT X
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
4
0
-4
0
5
10
15
20
RIGHT REAR COMPARTMENT X
DISP. - IN.

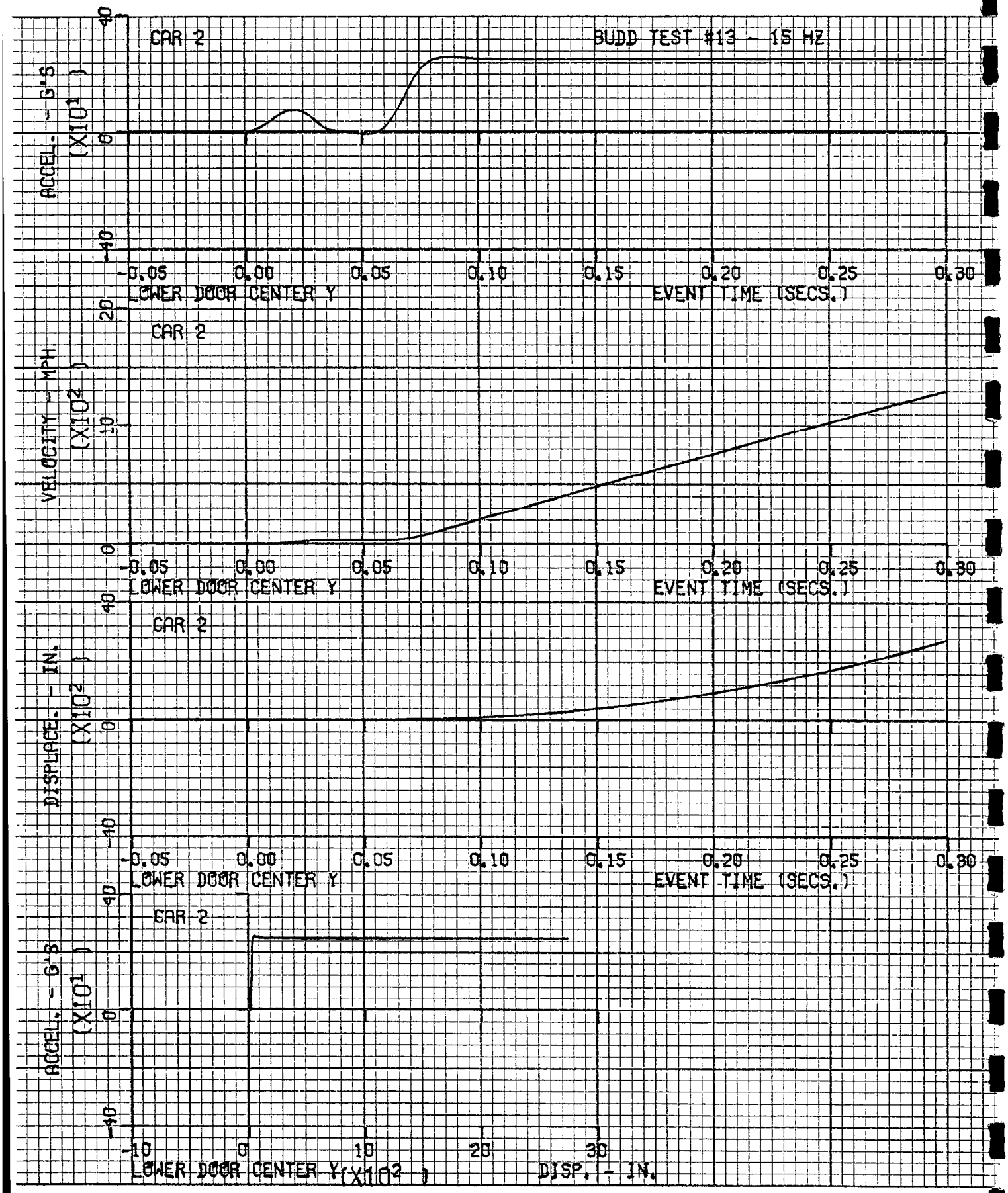

CAR 2
BUDD TEST #13 - 15 HZ
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMPARTMENT Y
EVENT TIME (SECS.)
40
CAR 2
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMPARTMENT Y
EVENT TIME (SECS.)
100
CAR 2
50
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMPARTMENT Y
EVENT TIME (SECS.)
20
CAR 2
0
-20
0
40
80
120
160
RIGHT REAR COMPARTMENT Y
DISP. - IN.

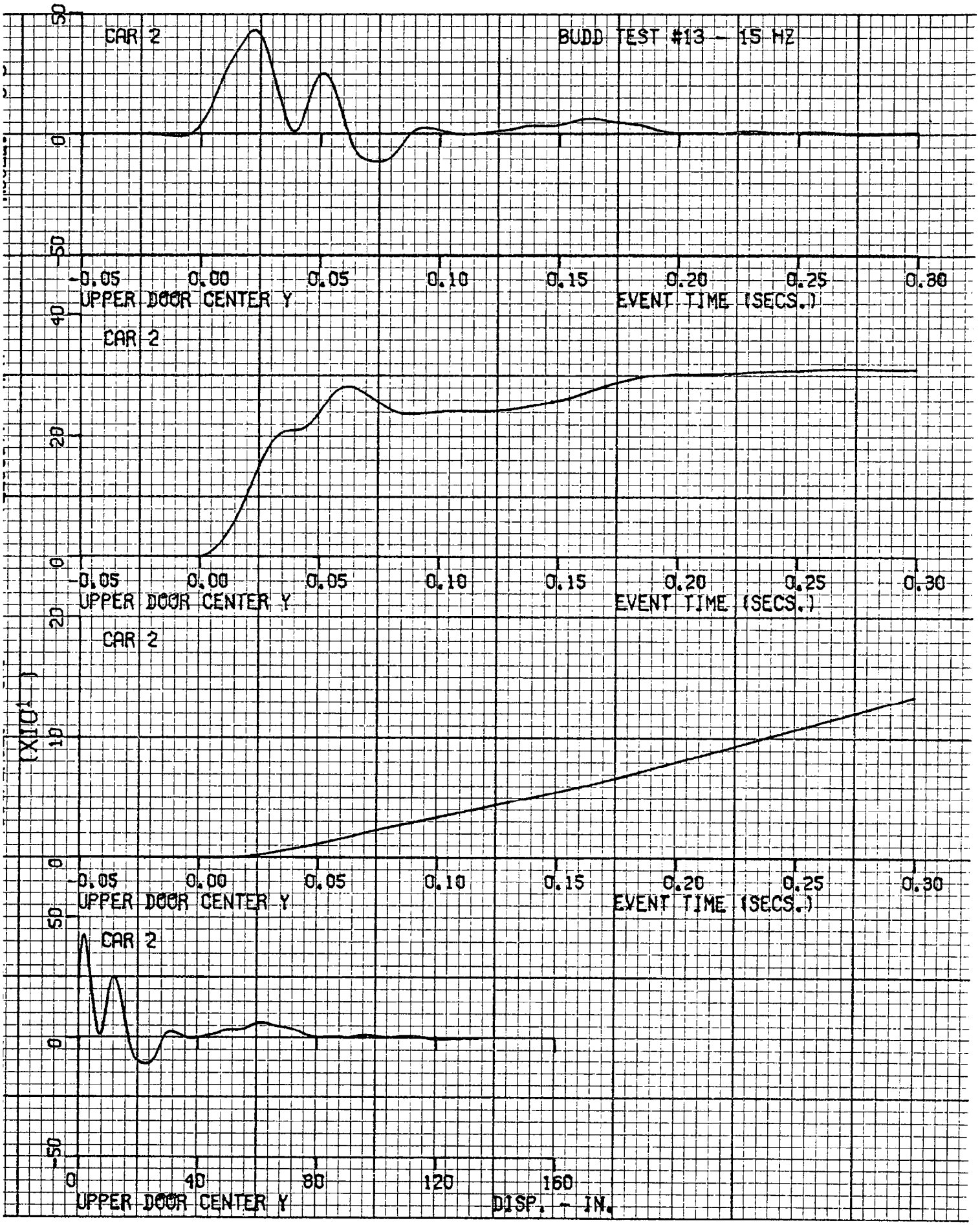

CAR 2
BUDD TEST #13 - 15 HZ
ACCEL. - G'S
4
0
-4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMPARTMENT Z
EVENT TIME (SECS.)
CAR 2
VELOCITY - MPH
4
0
-4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMPARTMENT Z
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN.
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMPARTMENT Z
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
4
0
-4
-4
0
4
8
12
RIGHT REAR COMPARTMENT Z
DISP. - IN.

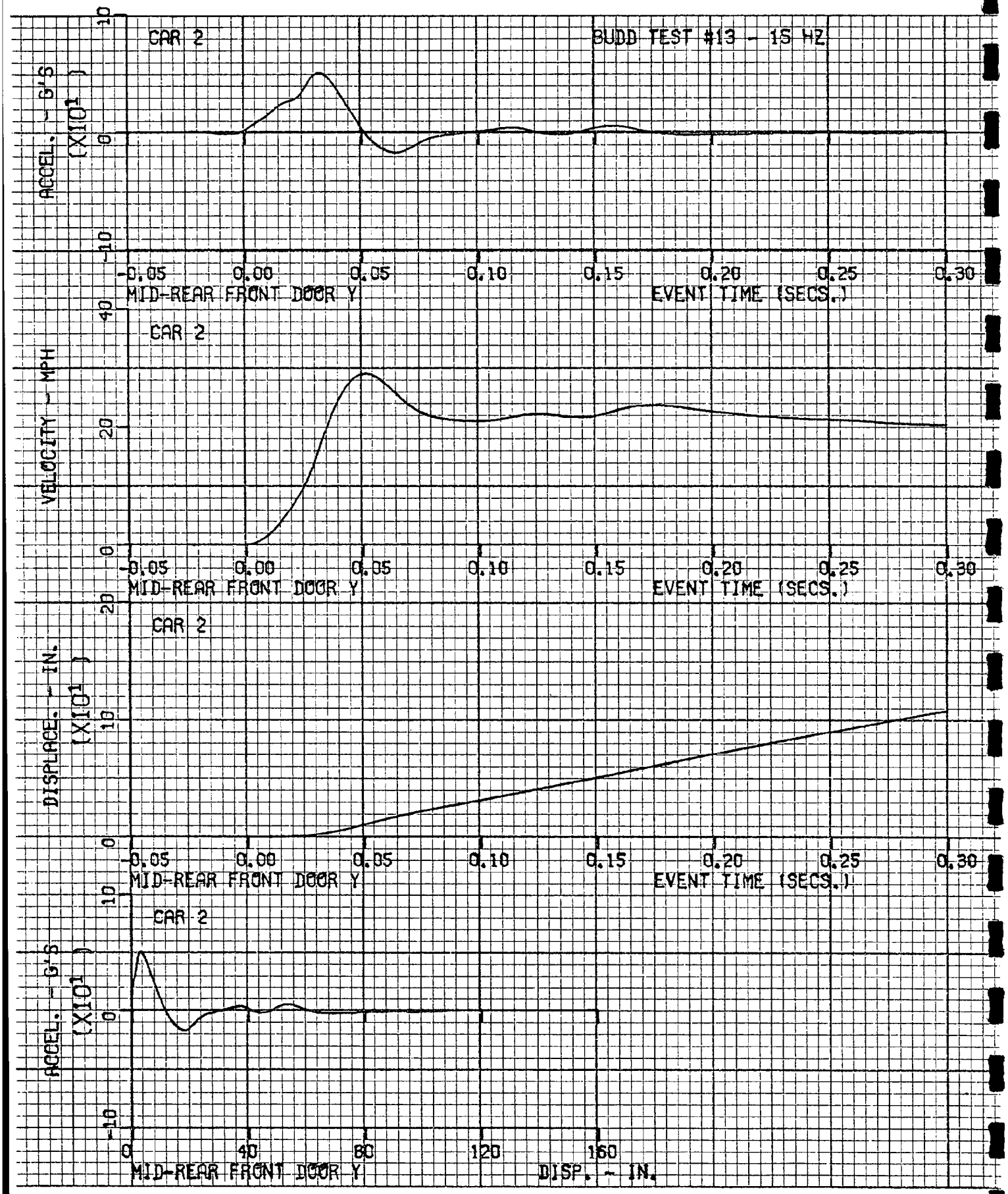

BUDD TEST #13 - 15 HZ
CAR 2
5
0
-5
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - X COMP.
EVENT TIME (SECS.)
CAR 2
0
-4
-8
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - X COMP.
EVENT TIME (SECS.)
CAR 2
0
-20
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - X COMP.
EVENT TIME (SECS.)
CAR 2
5
0
-5
-30
-20
-10
0
10
REAR DECK - X COMP.
DISP. - IN.

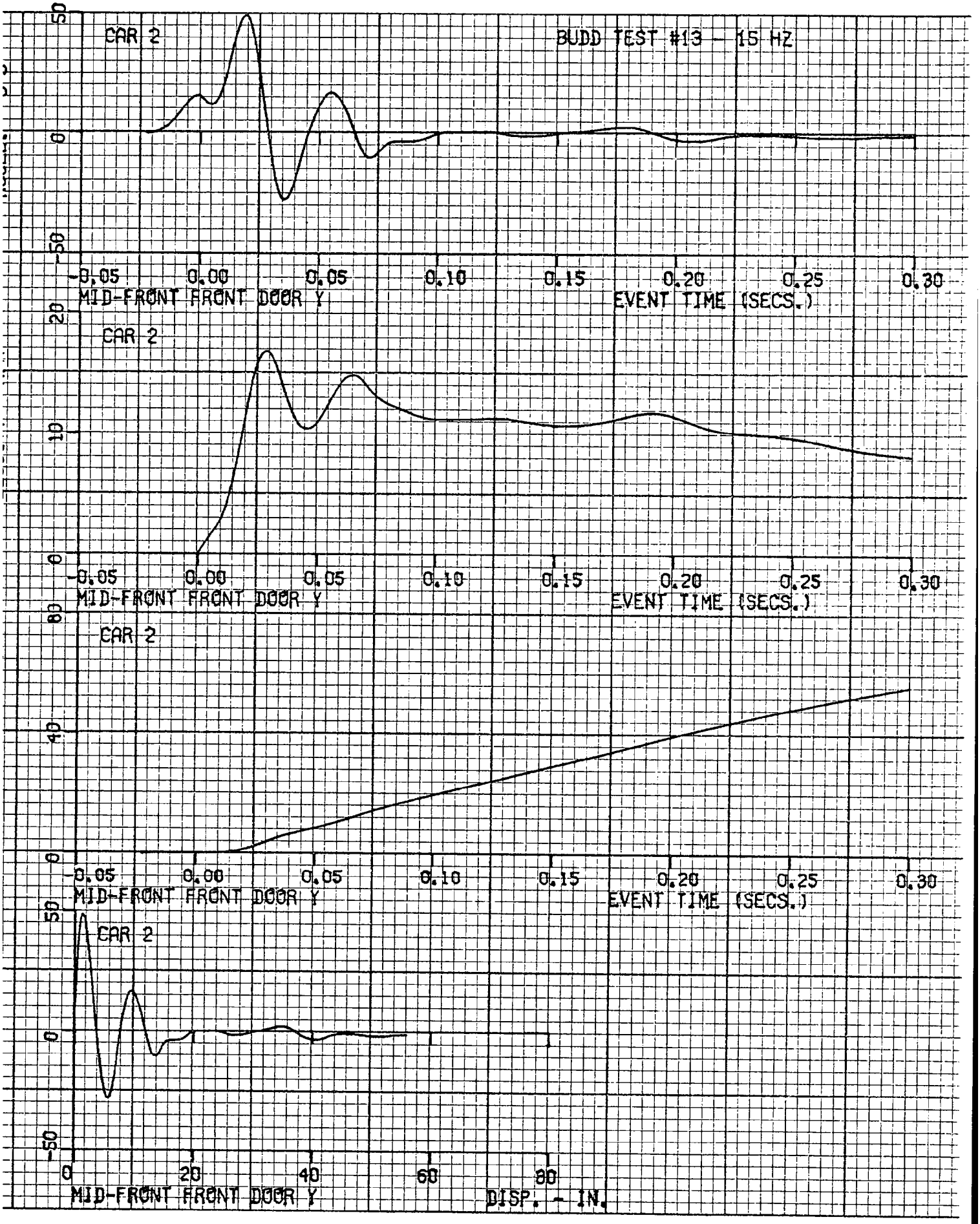

BUDD TEST #13 - 15 HZ
CAR 2
ACCEL. - G'S
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Y COMP.
EVENT TIME (SECS.)
CAR 2
VELOCITY - MPH
40
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Y COMP.
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN.
(X10¹)
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Y COMP.
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
20
0
-20
0
40
80
120
160
REAR DECK - Y COMP.
DISP. - IN.

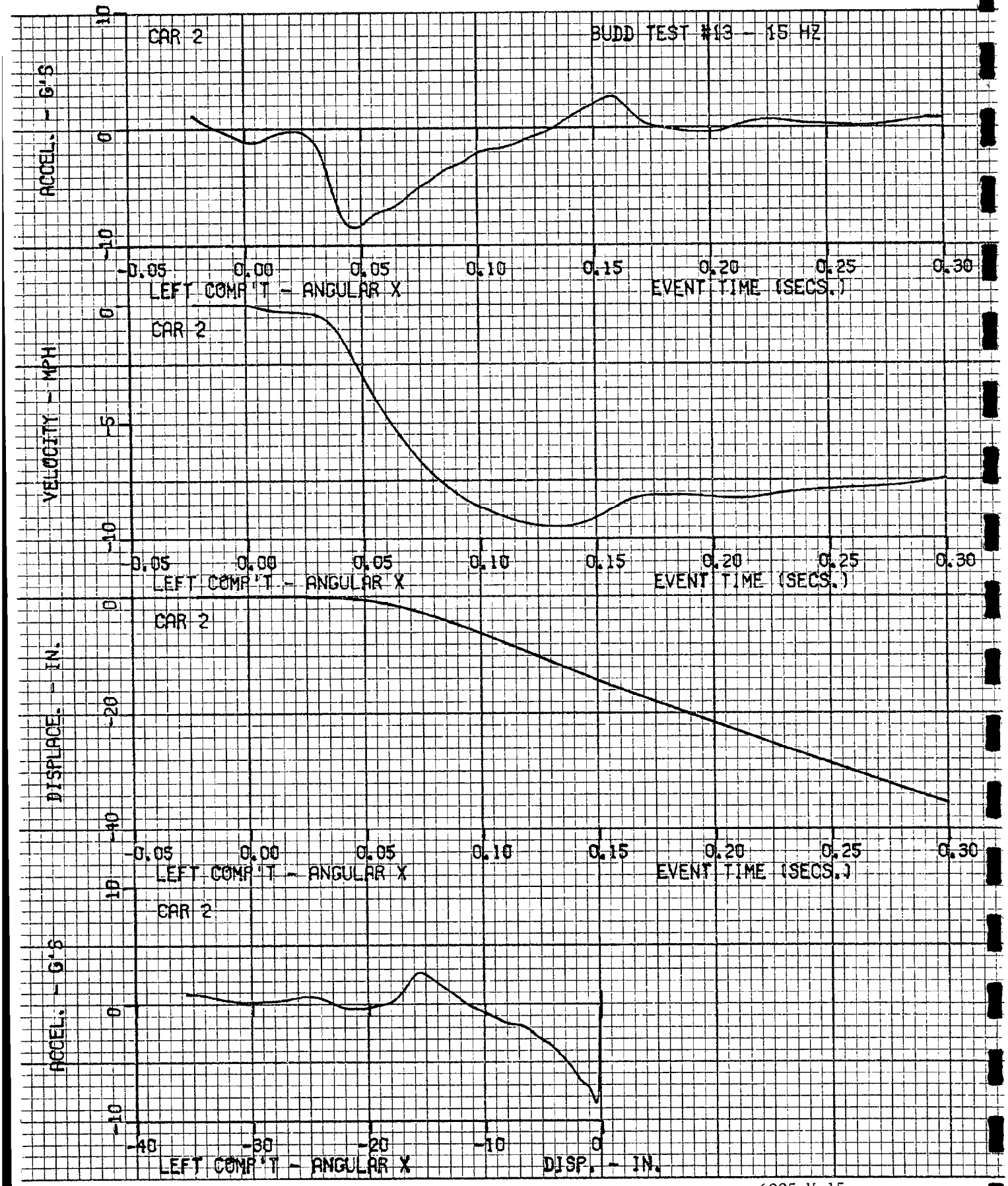

BUDD TEST #13 - 15 HZ
CAR 2
5
0
-5
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Z COMP.
EVENT TIME (SECS.)
CAR 2
2
0
-2
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Z COMP.
EVENT TIME (SECS.)
CAR 2
4
2
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Z COMP.
EVENT TIME (SECS.)
CAR 2
5
0
-5
0
1
2
3
4
REAR DECK - Z COMP.
DISP. - IN.


BUDD TEST #13 - 15 HZ
CAR 2
ACCEL. - G'S (X10¹)
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LOWER DOOR CENTER Y
EVENT TIME (SECS.)
CAR 2
VELOCITY - MPH (X10²)
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LOWER DOOR CENTER Y
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN. (X10²)
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LOWER DOOR CENTER Y
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S (X10¹)
40
0
-40
-10
0
10
20
30
LOWER DOOR CENTER Y (X10²)
DISP. - IN.


CAR 2
BUDD TEST #13 - 15 HZ
50
0
-50
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
UPPER DOOR CENTER Y
EVENT TIME (SECS.)
40
CAR 2
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
UPPER DOOR CENTER Y
EVENT TIME (SECS.)
20
CAR 2
(X10,)
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
UPPER DOOR CENTER Y
EVENT TIME (SECS.)
50
CAR 2
0
-50
0
40
80
120
160
UPPER DOOR CENTER Y
DISP. - IN.


CAR 2
BUDD TEST #13 - 15 HZ
ACCEL. - G'S
(X10¹)
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
MID-REAR FRONT DOOR Y
EVENT TIME (SECS.)
CAR 2
VELOCITY - MPH
40
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
MID-REAR FRONT DOOR Y
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN.
(X10¹)
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
MID-REAR FRONT DOOR Y
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
(X10¹)
10
0
-10
0
40
80
120
160
MID-REAR FRONT DOOR Y
DISP. - IN.


BUDD TEST #13 - 15 HZ
CAR 2
50
0
-50
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
MID-FRONT FRONT DOOR Y
EVENT TIME (SECS.)
CAR 2
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
MID-FRONT FRONT DOOR Y
EVENT TIME (SECS.)
CAR 2
80
40
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
MID-FRONT FRONT DOOR Y
EVENT TIME (SECS.)
CAR 2
50
0
-50
0
20
40
60
80
MID-FRONT FRONT DOOR Y
DISP. - IN.


CAR 2
BUDD TEST #13 - 15 HZ
ACCEL. - G'S
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LEFT COMP'T - ANGULAR X
EVENT TIME (SECS.)
CAR 2
VELOCITY - MPH
0
-5
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LEFT COMP'T - ANGULAR X
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN.
0
-20
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LEFT COMP'T - ANGULAR X
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
10
0
-10
-40
-30
-20
-10
0
LEFT COMP'T - ANGULAR X
DISP. - IN.

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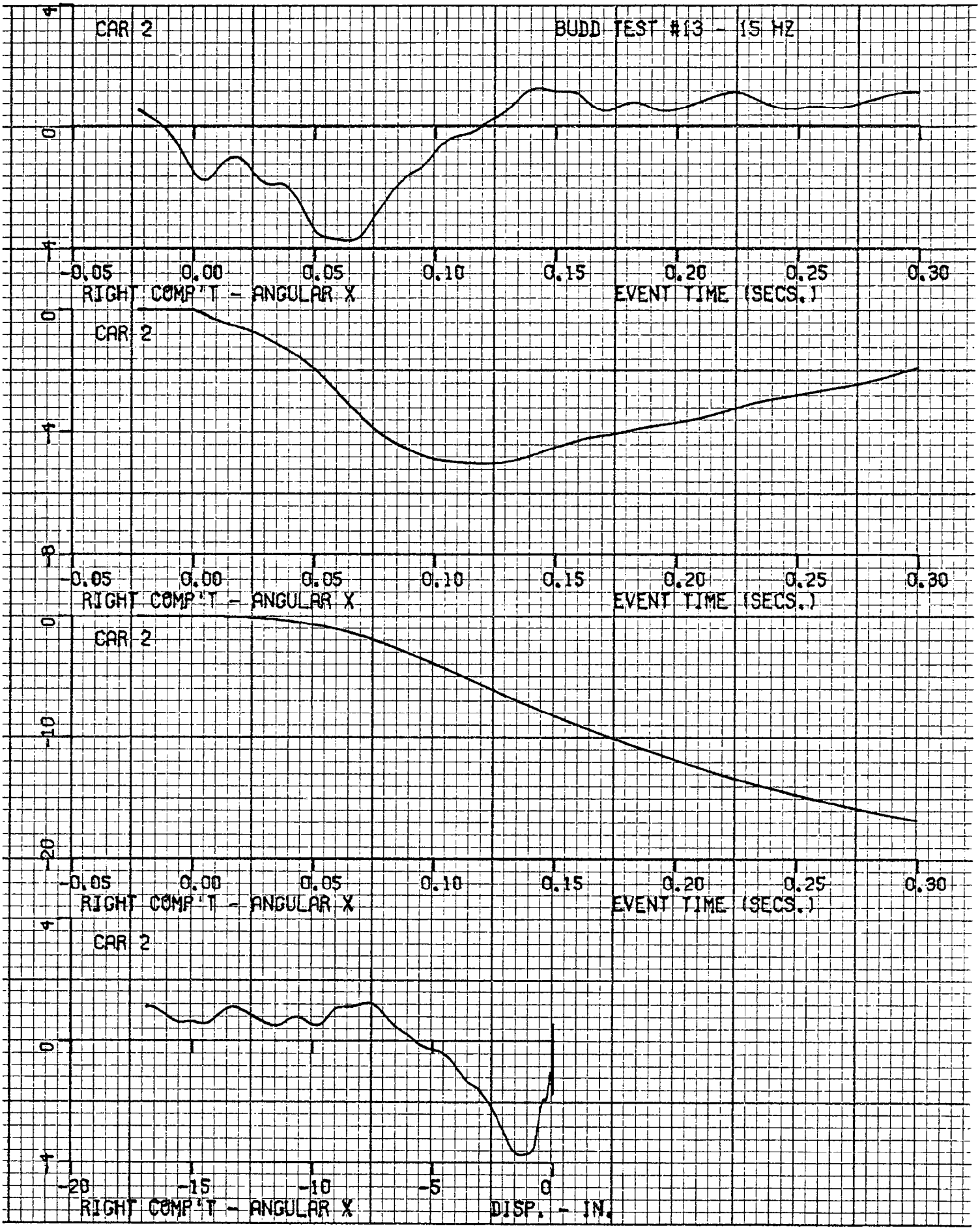
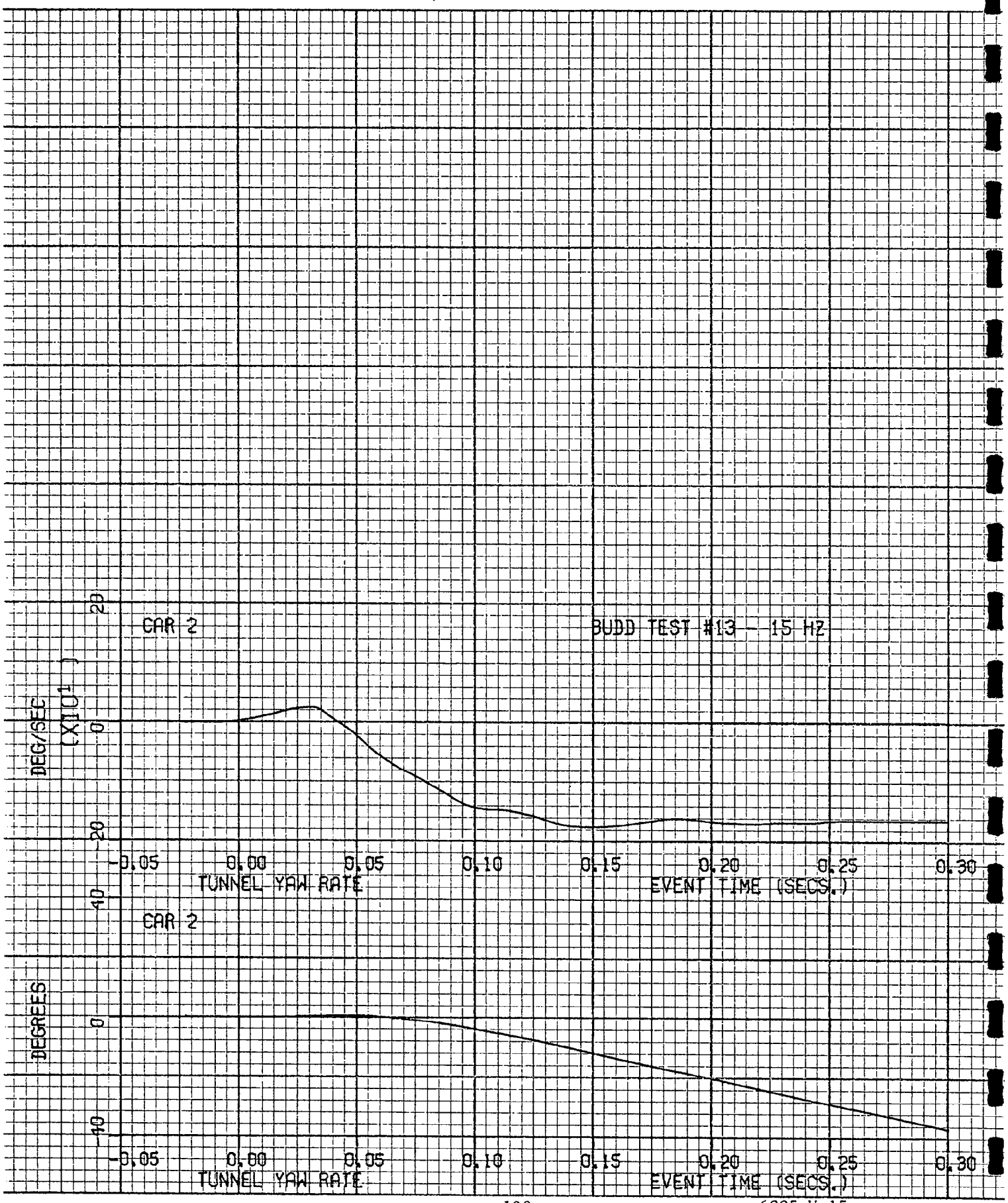

CAR 2
BUDD TEST #13 - 15 HZ
4
0
-4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT COMP'T - ANGULAR X
EVENT TIME (SECS.)
CAR 2
0
-4
-8
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT COMP'T - ANGULAR X
EVENT TIME (SECS.)
CAR 2
0
-10
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT COMP'T - ANGULAR X
EVENT TIME (SECS.)
CAR 2
4
0
-4
-20
-15
-10
-5
0
RIGHT COMP'T - ANGULAR X
DISP. - IN.


CAR 2
BUDD TEST #13 - 15 HZ
DEG/SEC (X10 1)
20
0
-20
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
TUNNEL YAW RATE
EVENT TIME (SECS.)
CAR 2
DEGREES
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
TUNNEL YAW RATE
EVENT TIME (SECS.)

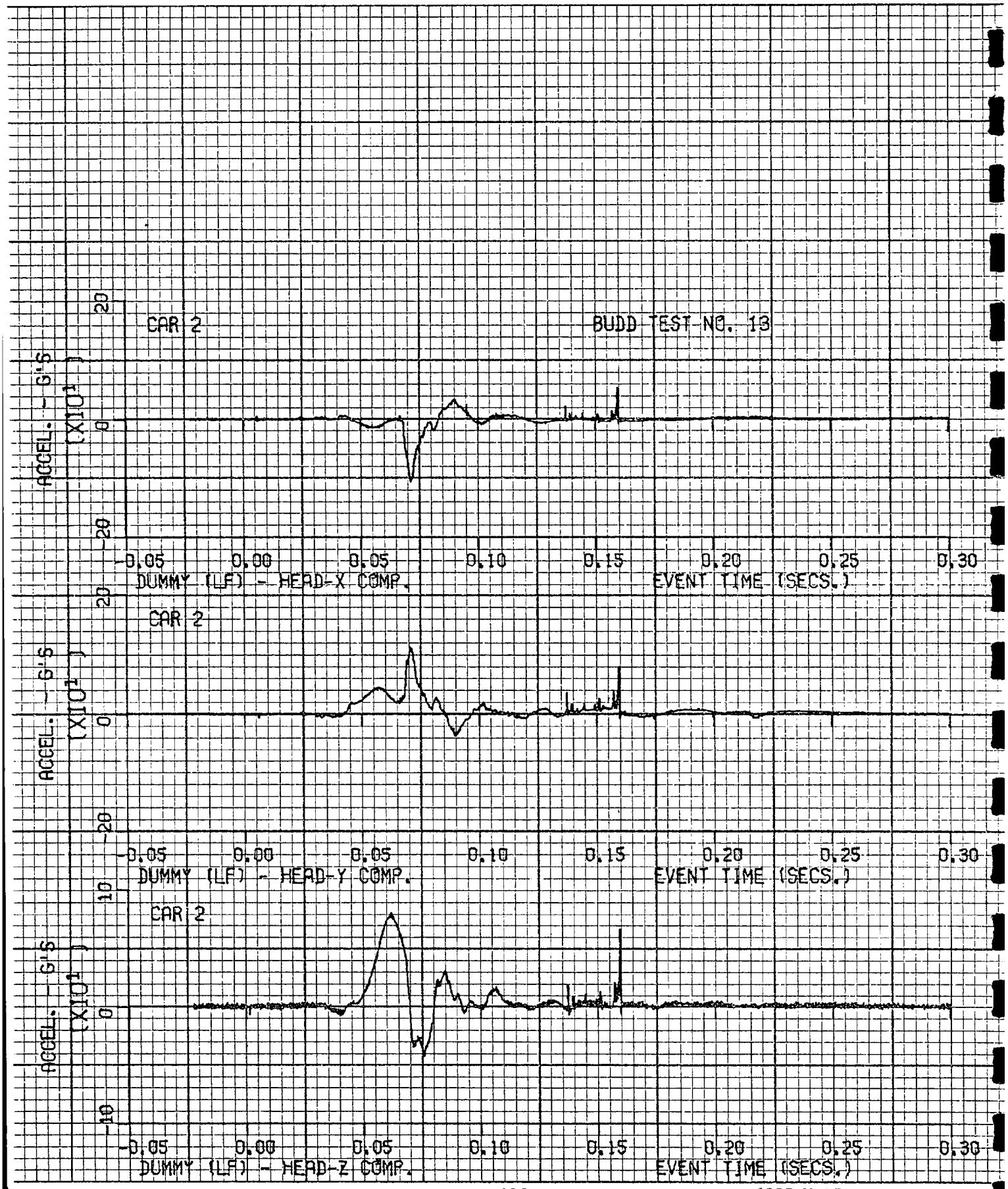
TEST NO. 13

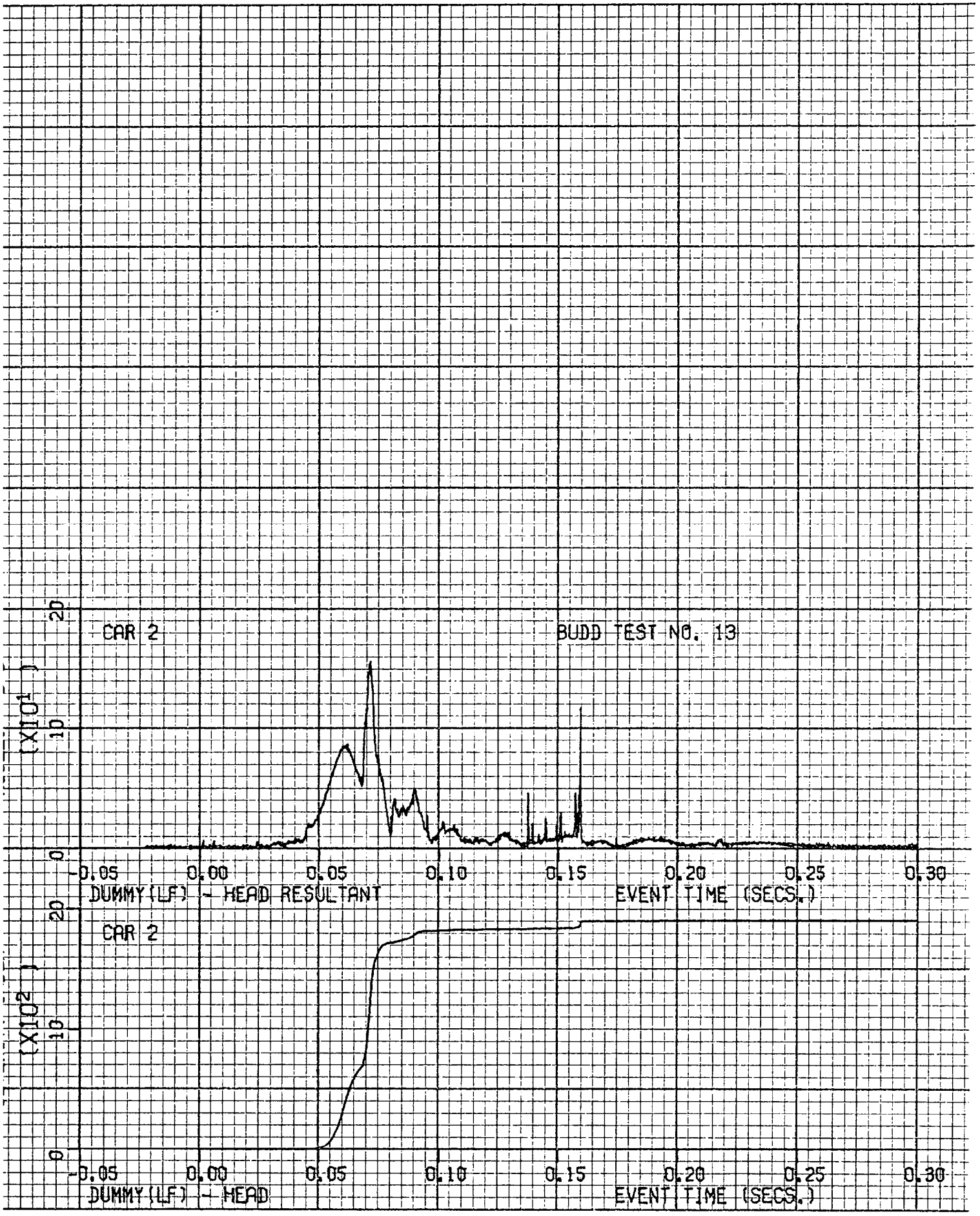
CAR NO. 2 - 1976 VOLKSWAGEN RABBIT

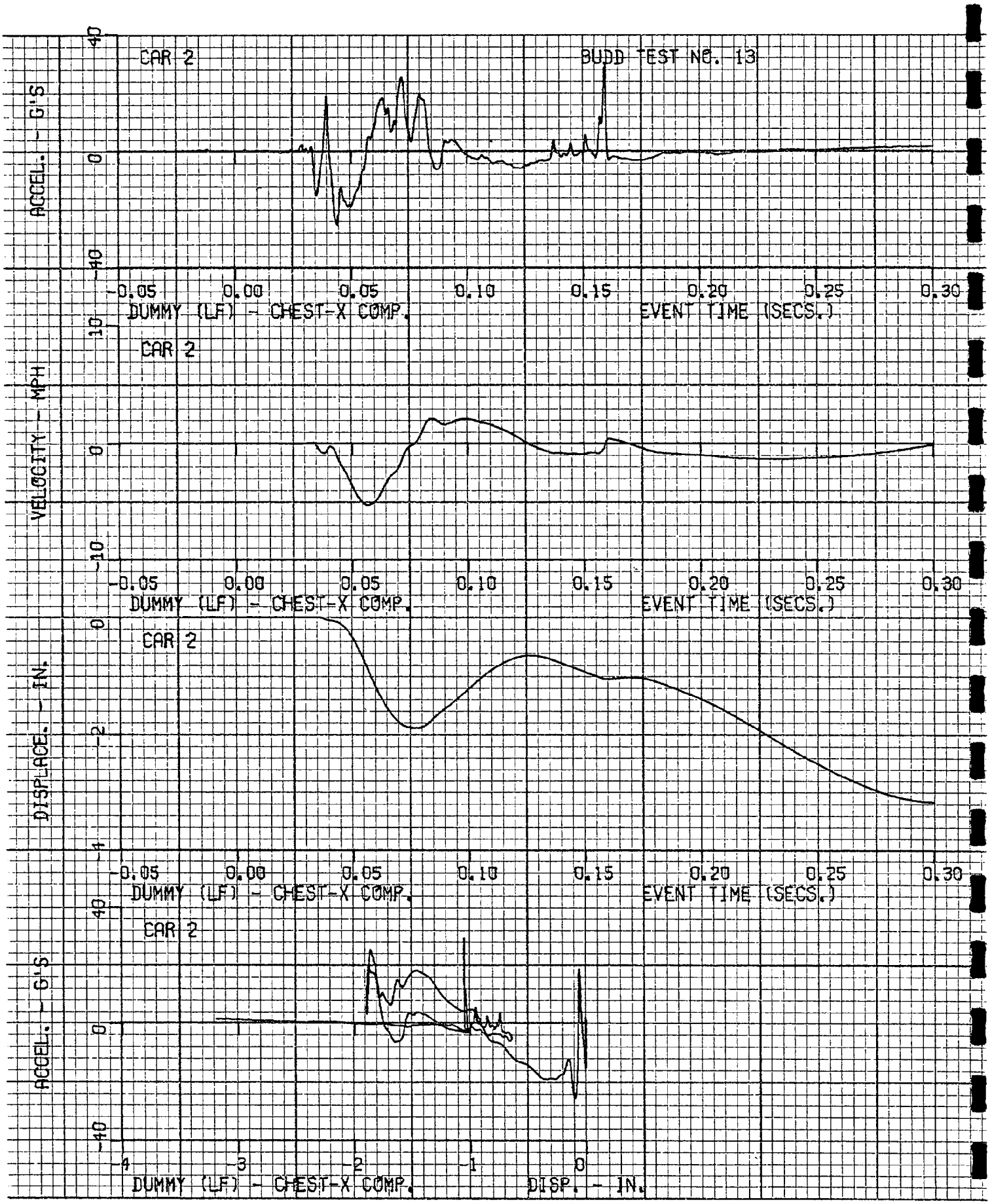
DUMMY DATA

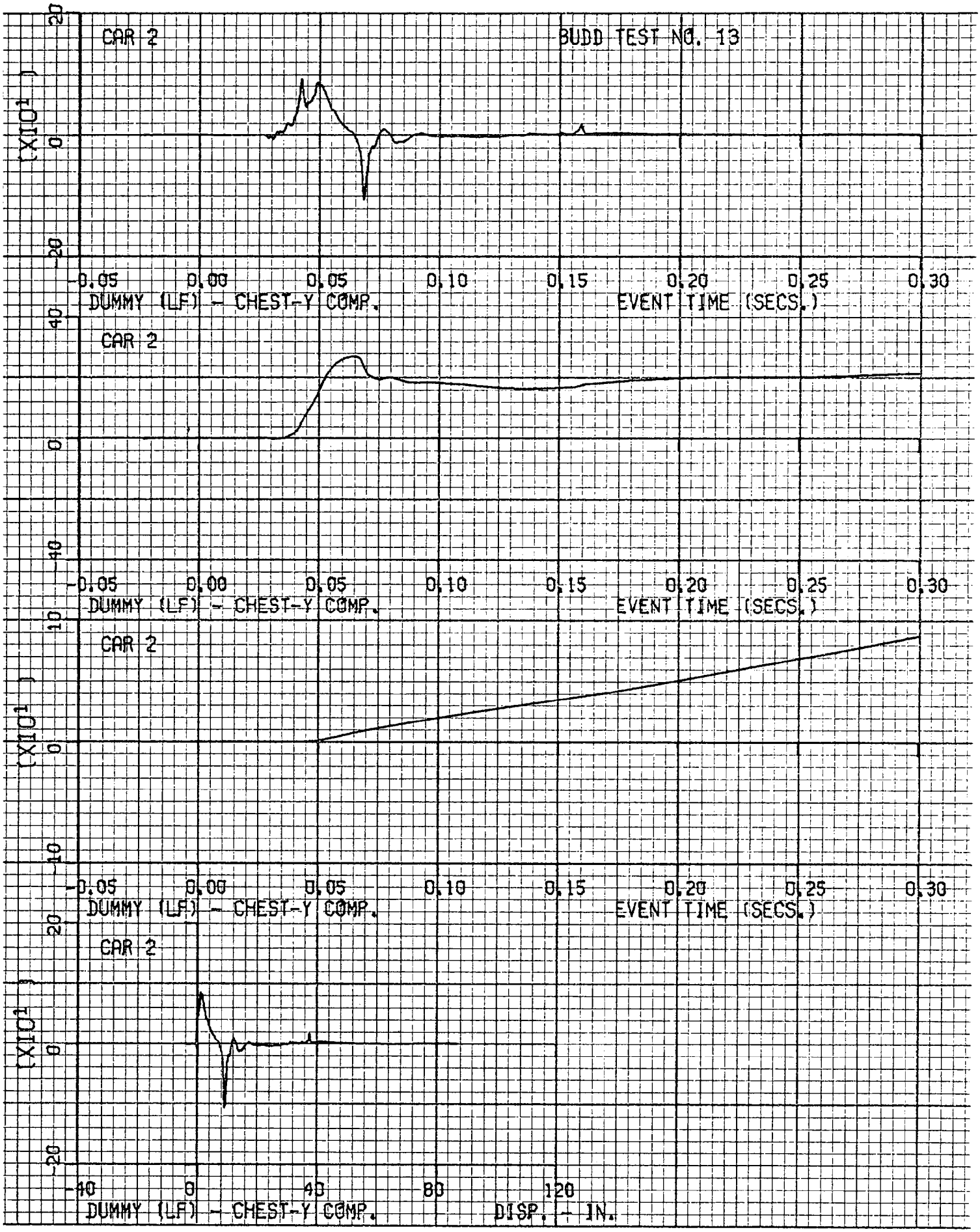
	FILTER CHANNEL CLASS
Head Acceleration	1000
Chest Acceleration	180
Pelvic Acceleration	180

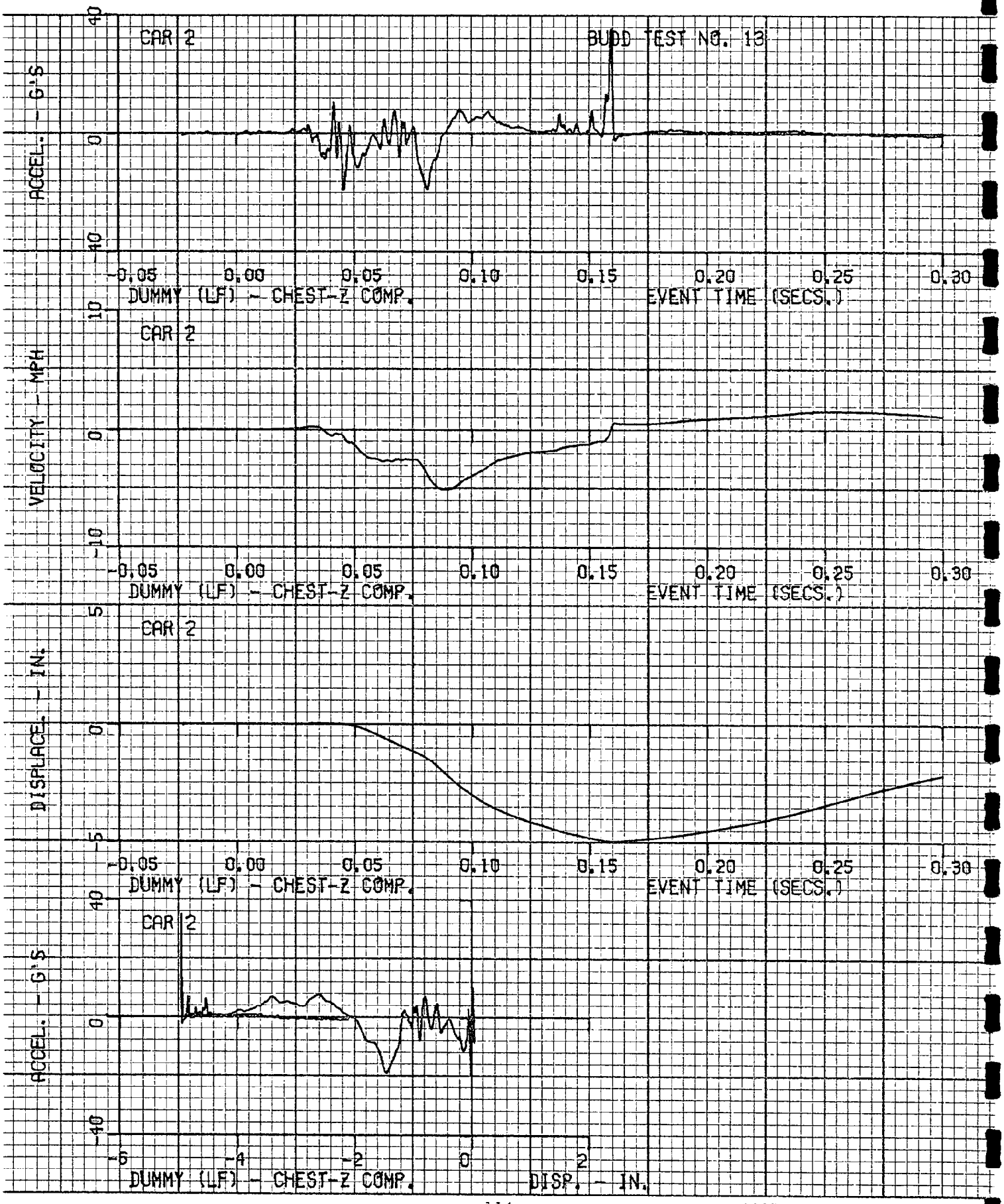
DUMMY (2) (LF) Y COMPONENT OF ACCELERATIONS LOST DUE TO BAD TRANSDUCER - CHEST RESULTANT CALCULATED USING X AND Z ONLY.

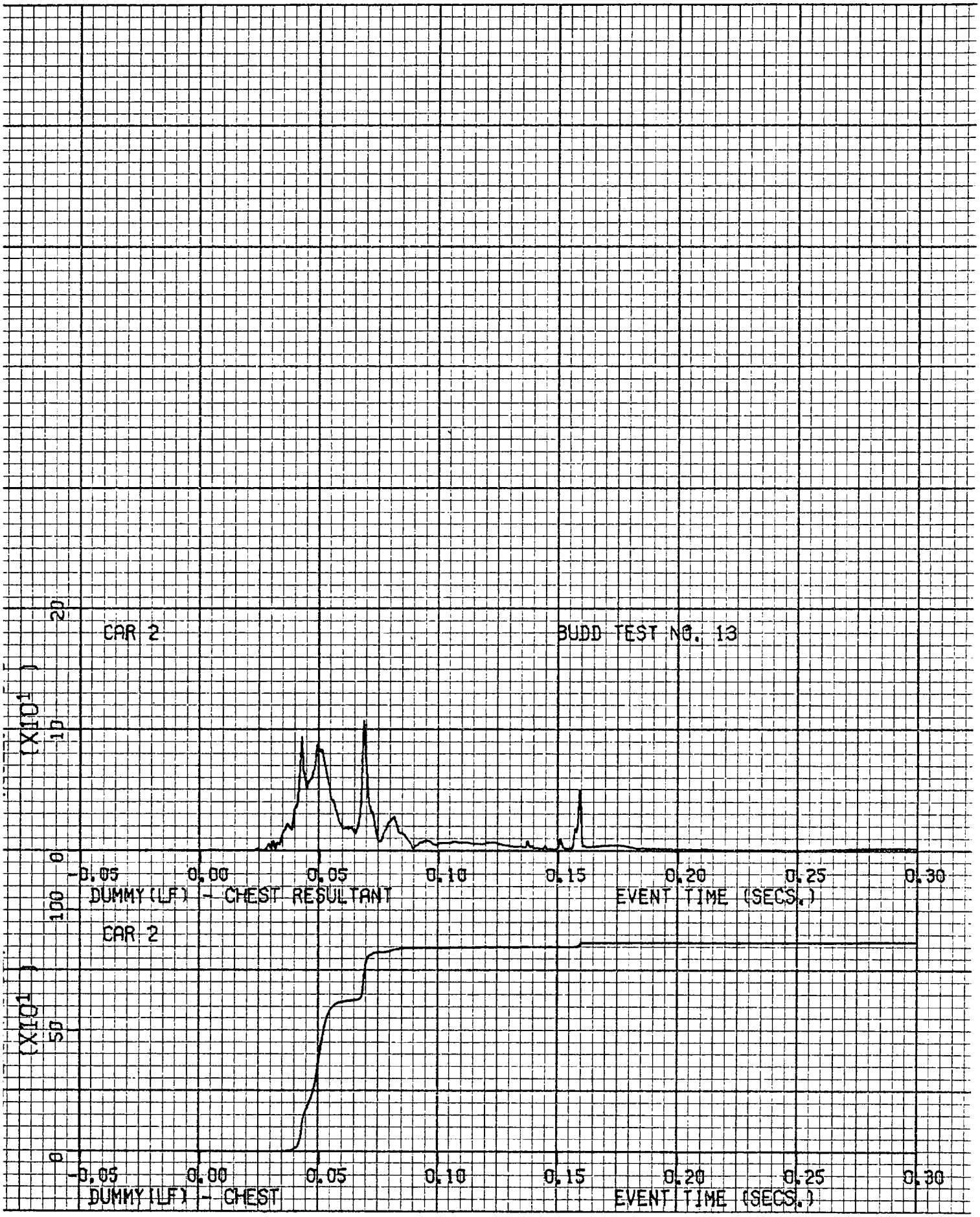

CAR 2
BUDD TEST NO. 13
ACCEL. - G'S (X10¹)
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - HEAD-X COMP.
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S (X10¹)
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - HEAD-Y COMP.
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S (X10¹)
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - HEAD-Z COMP.
EVENT TIME (SECS.)

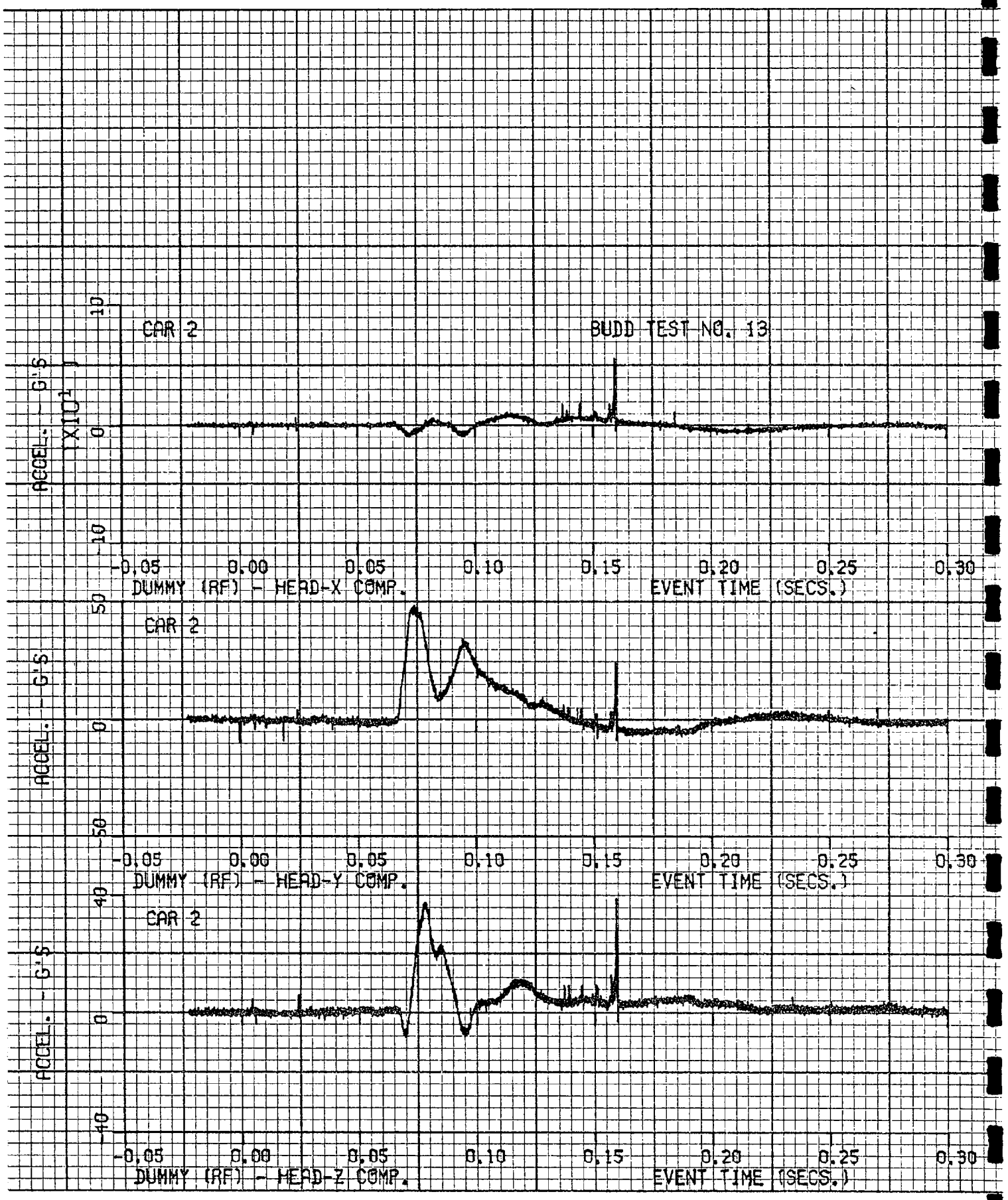

CAR 2
BUDD TEST NO. 13
(X10¹)
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - HEAD RESULTANT
EVENT TIME (SECS.)
CAR 2
(X10²)
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - HEAD
EVENT TIME (SECS.)

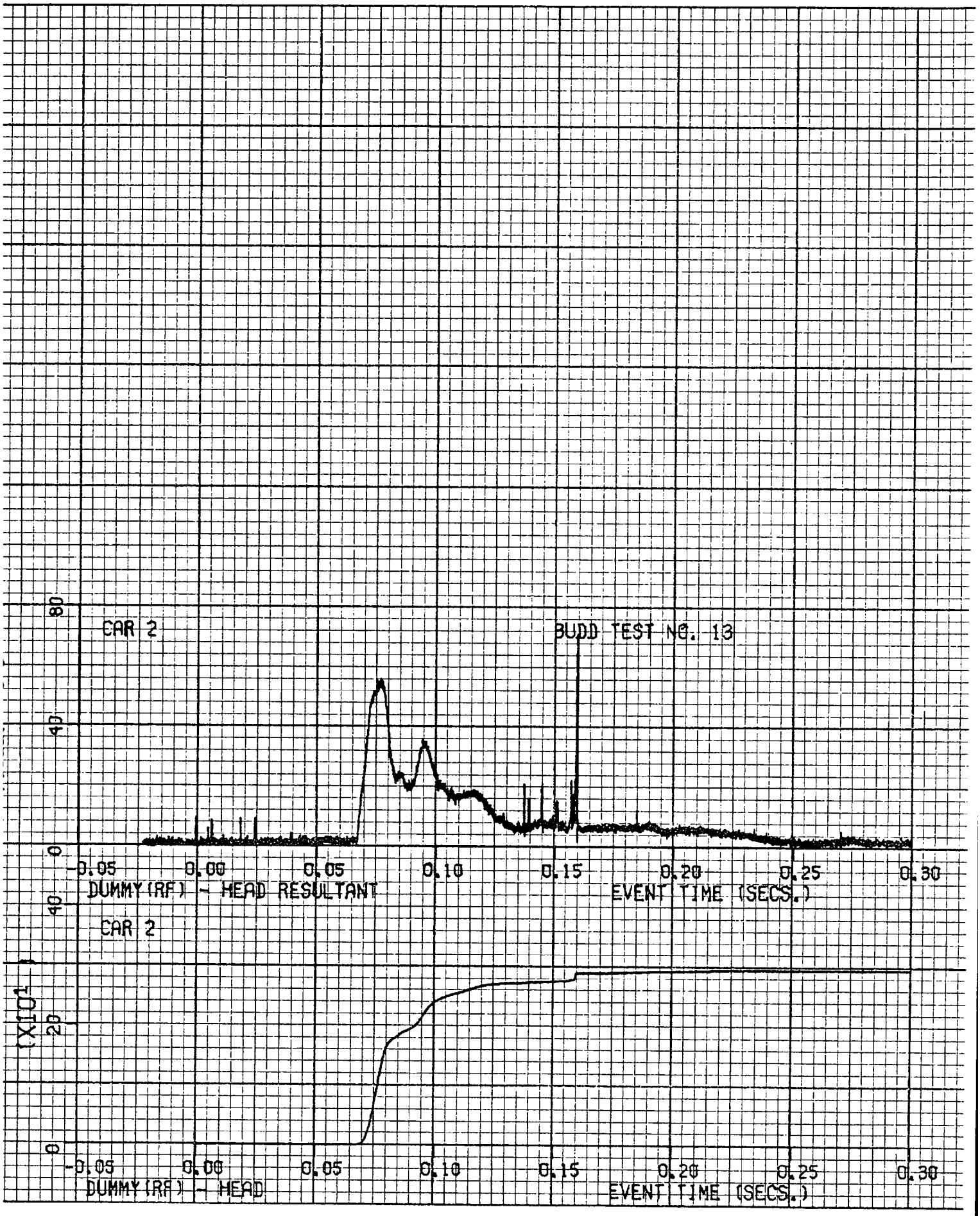

CAR 2
BUDD TEST NO. 13
ACCEL. - G'S
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST-X COMP.
EVENT TIME (SECS.)
CAR 2
VELOCITY - MPH
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST-X COMP.
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN.
0
-2
-4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST-X COMP.
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
40
0
-40
-4
-3
-2
-1
0
DUMMY (LF) - CHEST-X COMP.
DISP. - IN.

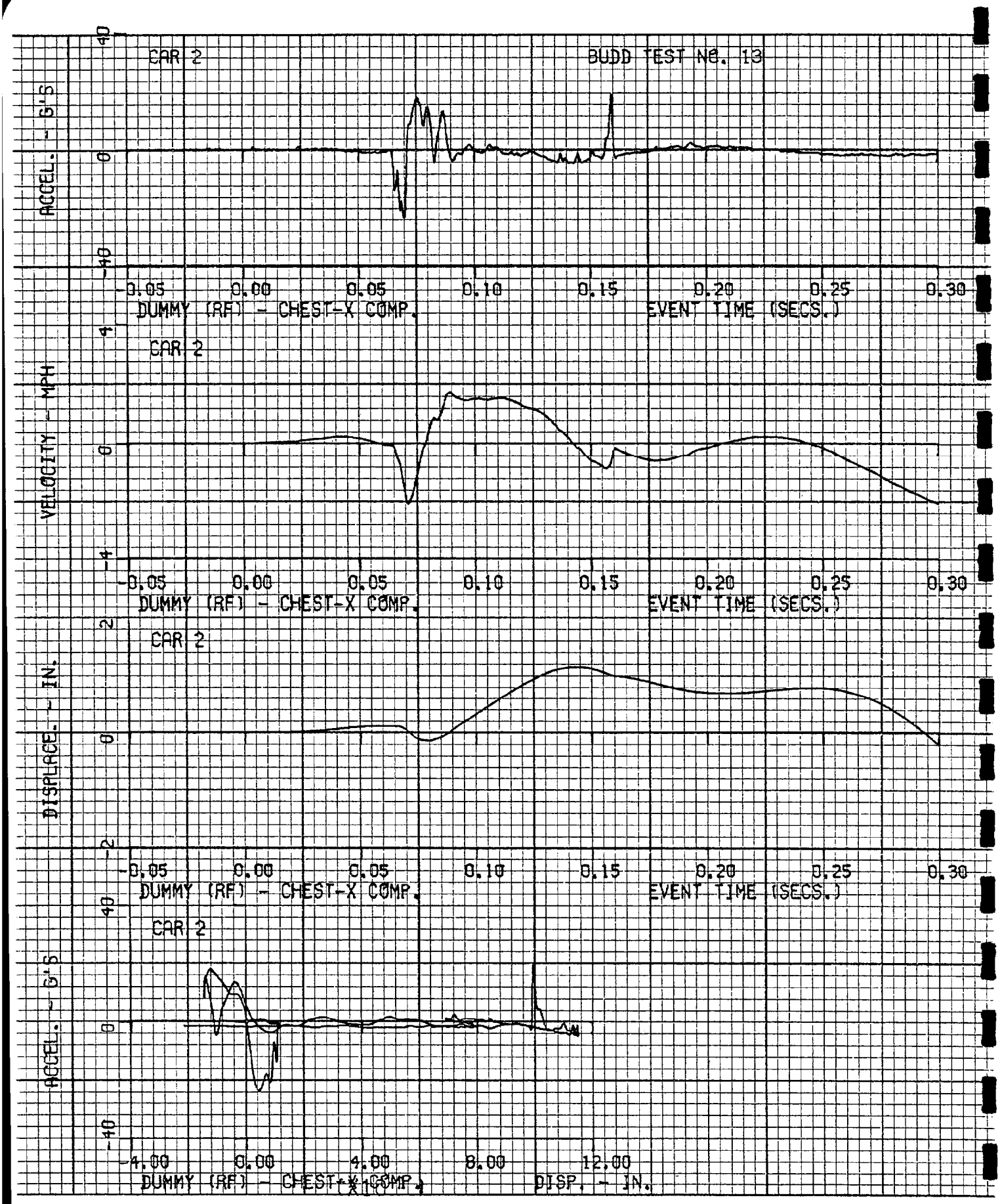

CAR 2
BUDD TEST NO. 13
(X10¹)
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST-Y COMP.
EVENT TIME (SECS.)
CAR 2
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST-Y COMP.
EVENT TIME (SECS.)
CAR 2
(X10¹)
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST-Y COMP.
EVENT TIME (SECS.)
CAR 2
(X10¹)
20
0
-20
-40
0
40
80
120
DUMMY (LF) - CHEST-Y COMP.
DISP. - IN.

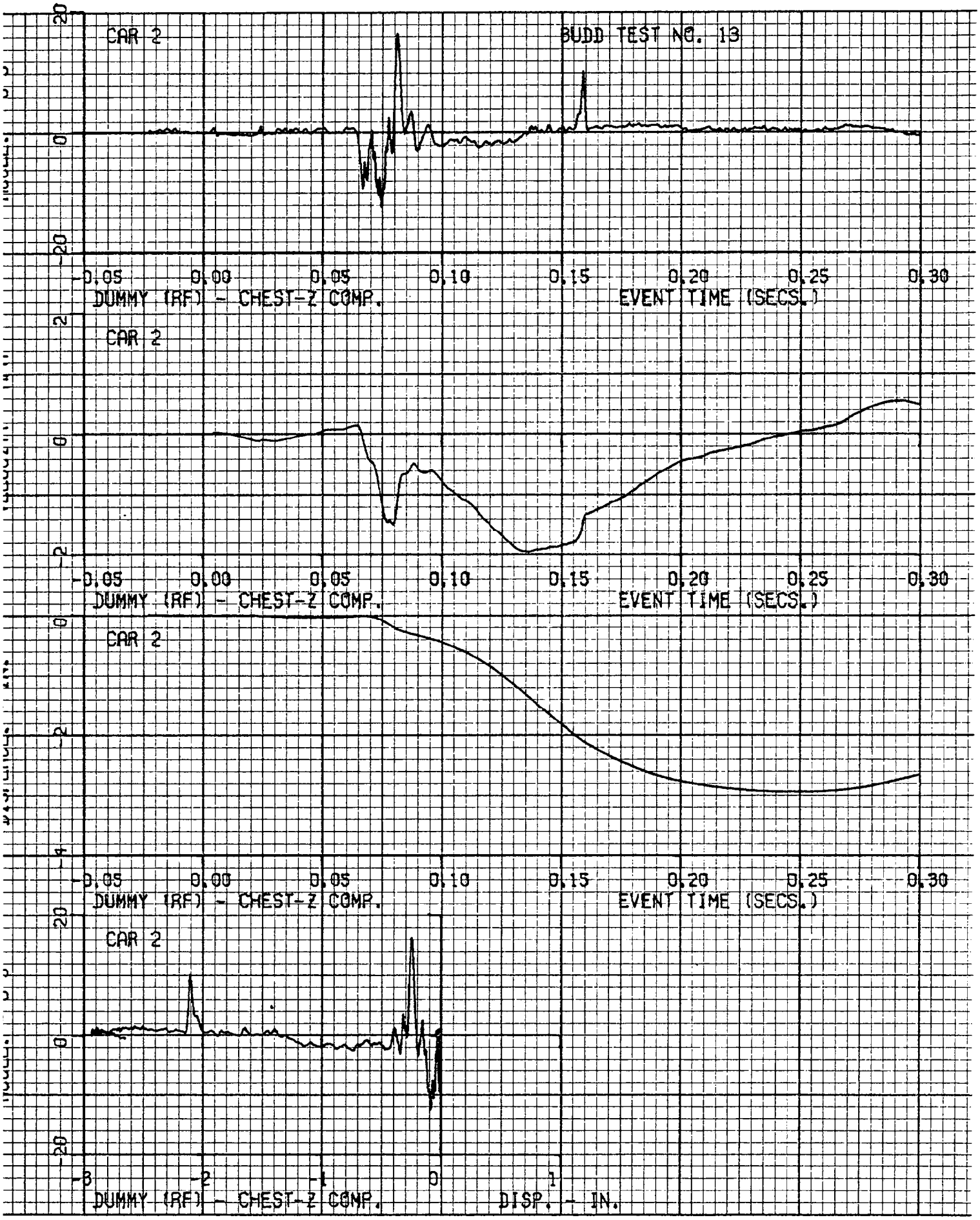

CAR 2
BUDD TEST NO. 13
ACCEL. - G'S
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST-Z COMP.
EVENT TIME (SECS.)
CAR 2
VELOCITY - MPH
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST-Z COMP.
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN.
5
0
-5
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST-Z COMP.
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
40
0
-40
-6
-4
-2
0
2
DUMMY (LF) - CHEST-Z COMP.
DISP. - IN.

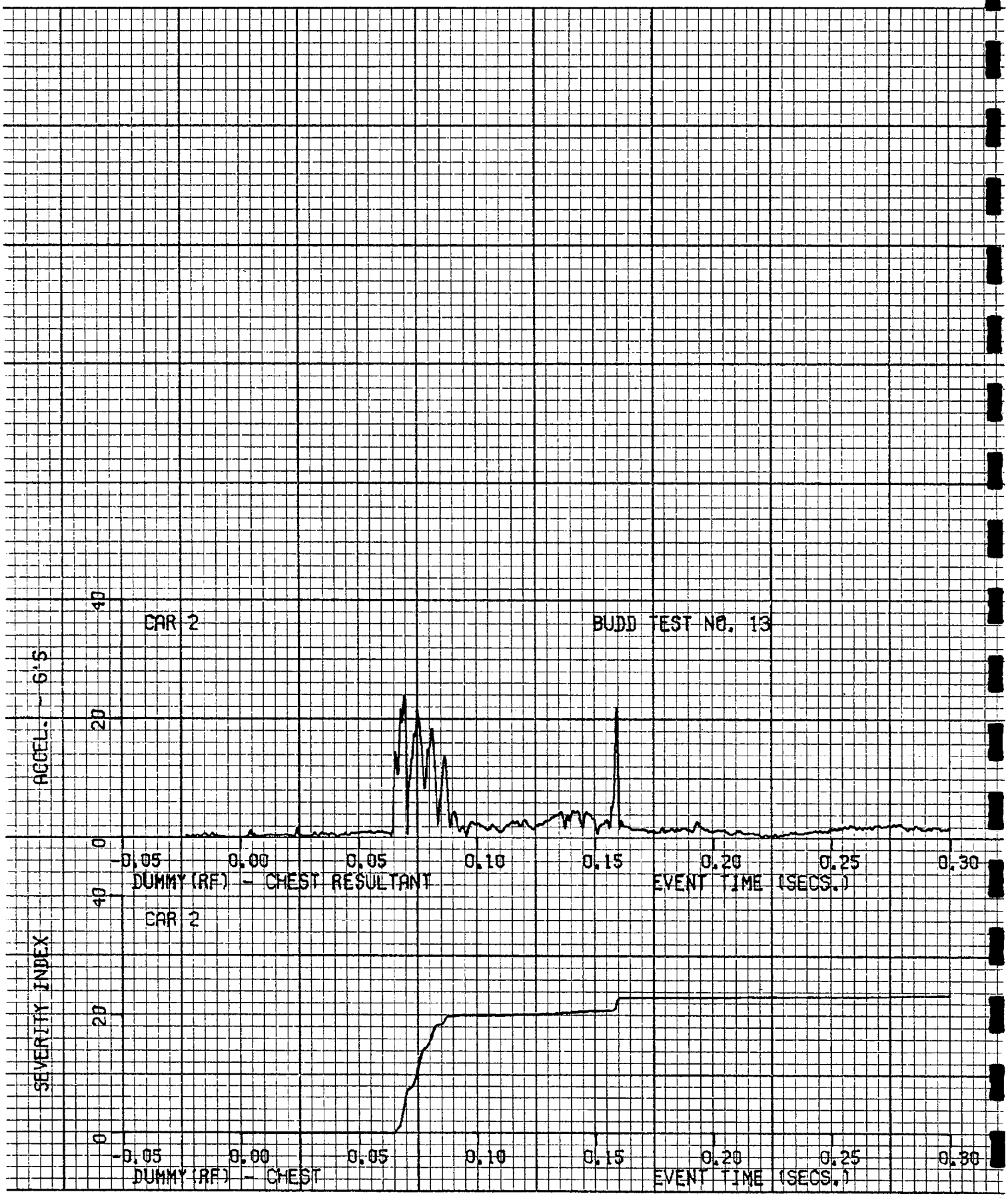

CAR 2
BUDD TEST NO. 13
(X10¹)
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST RESULTANT
EVENT TIME (SECS.)
CAR 2
(X10¹)
100
50
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST
EVENT TIME (SECS.)

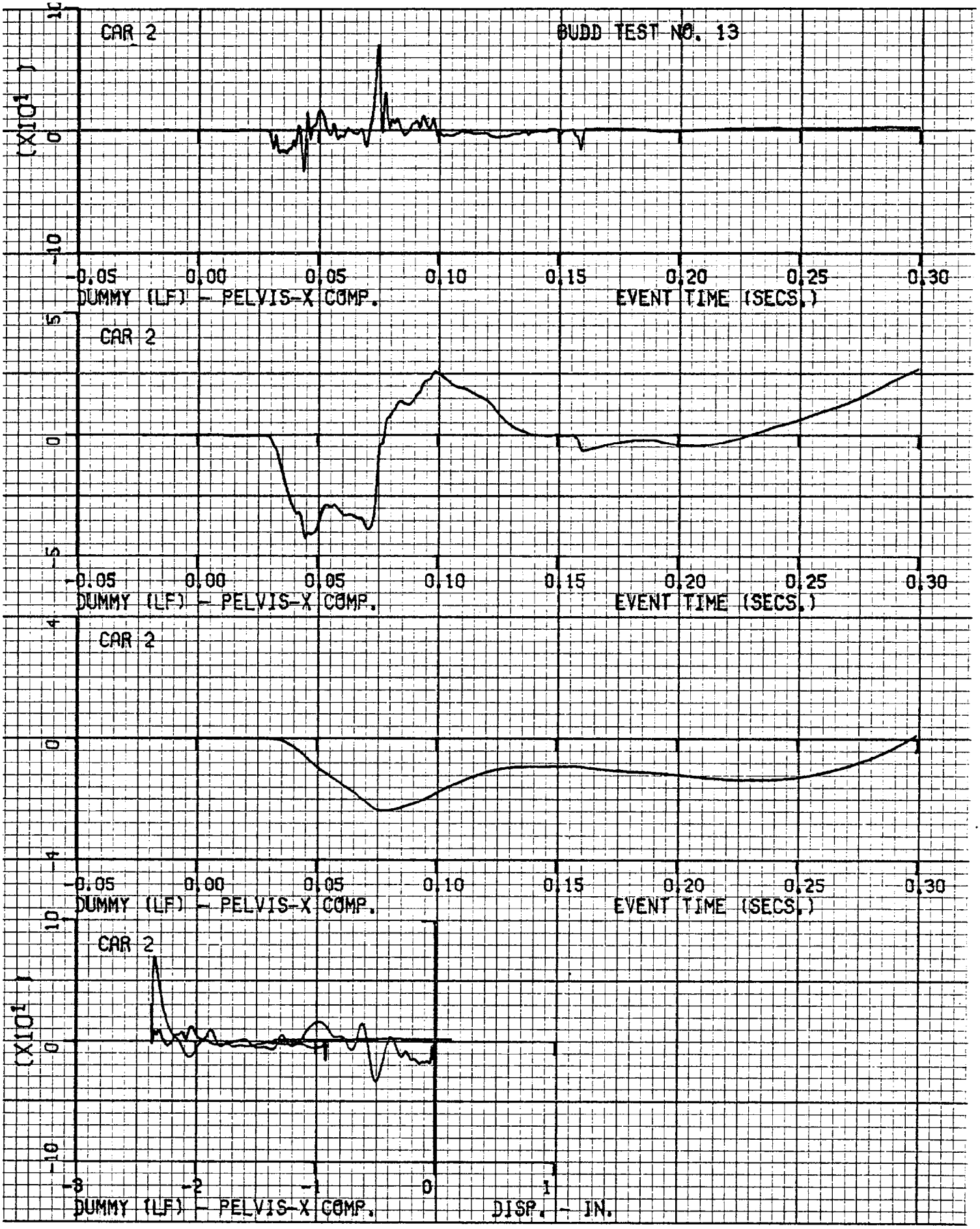

CAR 2
BUDD TEST NO. 13
ACCEL. - G'S (X10¹)
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - HEAD-X COMP.
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
50
0
-50
DUMMY (RF) - HEAD-Y COMP.
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
40
0
-40
DUMMY (RF) - HEAD-Z COMP.
EVENT TIME (SECS.)

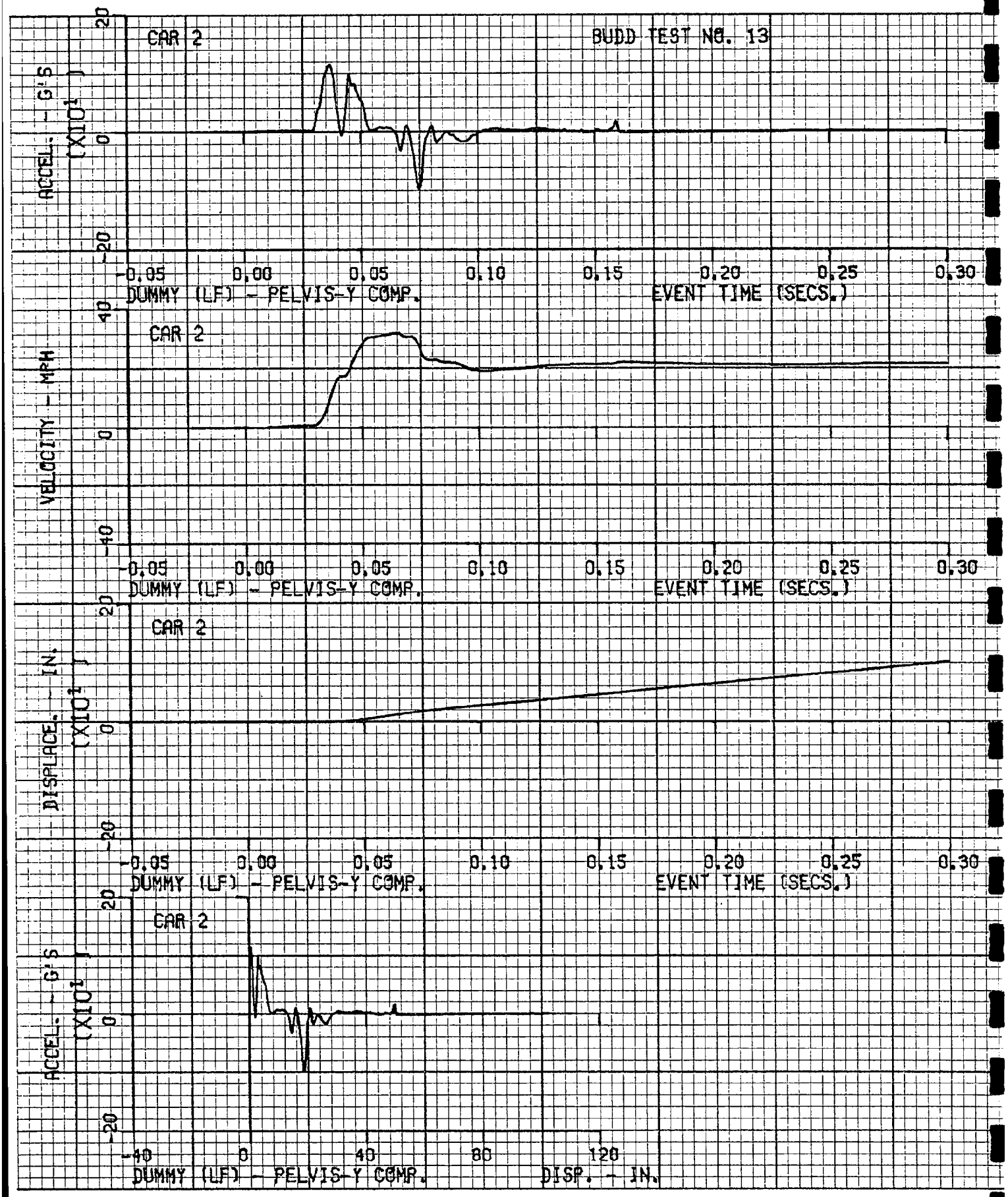

CAR 2
BUDD TEST NO. 13
80
40
0
40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - HEAD RESULTANT
EVENT TIME (SECS.)
CAR 2
(X10)
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - HEAD
EVENT TIME (SECS.)

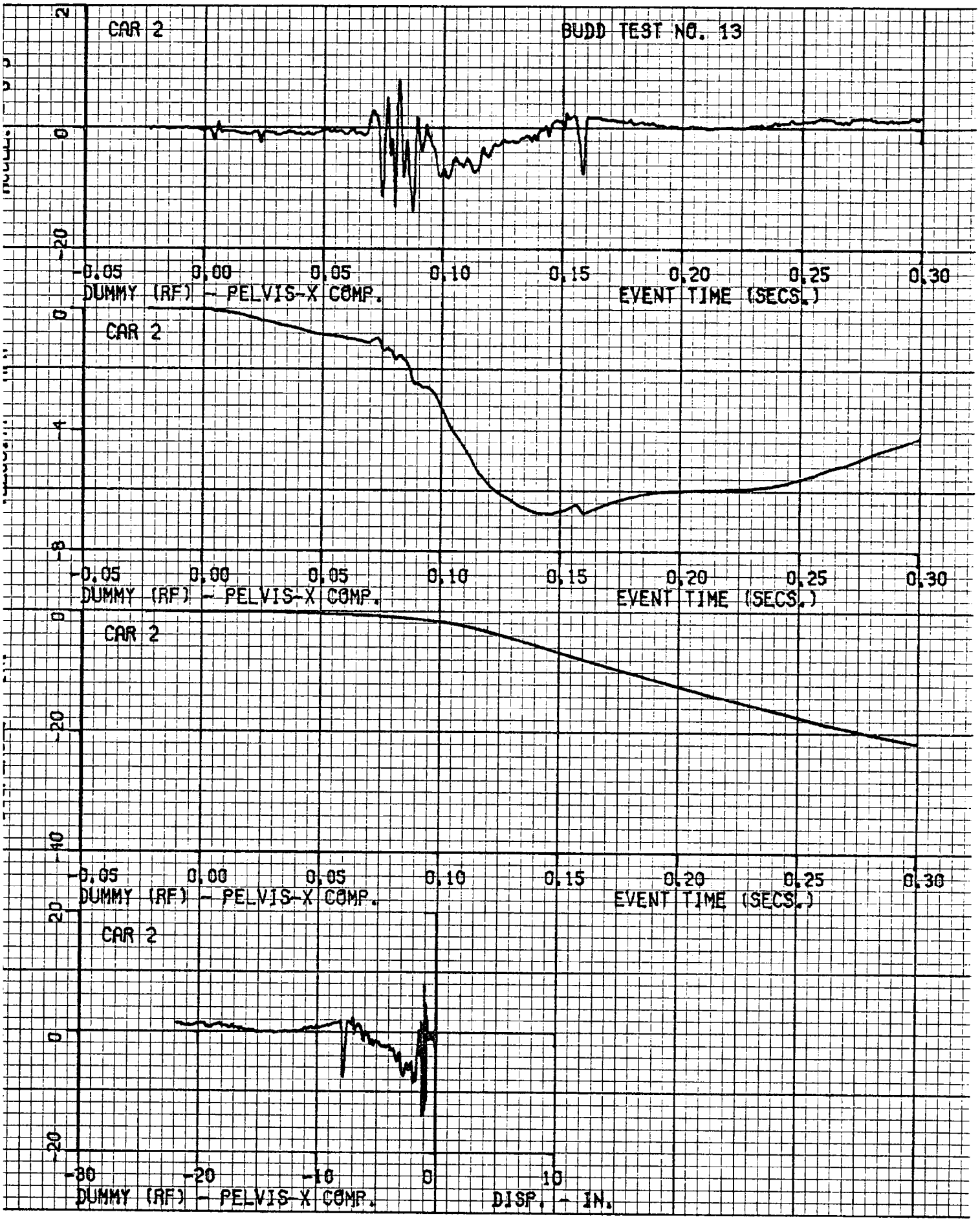

CAR 2
BUDD TEST NO. 13
ACCEL. - G'S
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - CHEST-X COMP.
EVENT TIME (SECS.)
CAR 2
VELOCITY - MPH
4
0
-4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - CHEST-X COMP.
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN.
2
0
-2
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - CHEST-X COMP.
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
40
0
-40
-4.00
0.00
4.00
8.00
12.00
DUMMY (RF) - CHEST-X COMP.
DISP. - IN.

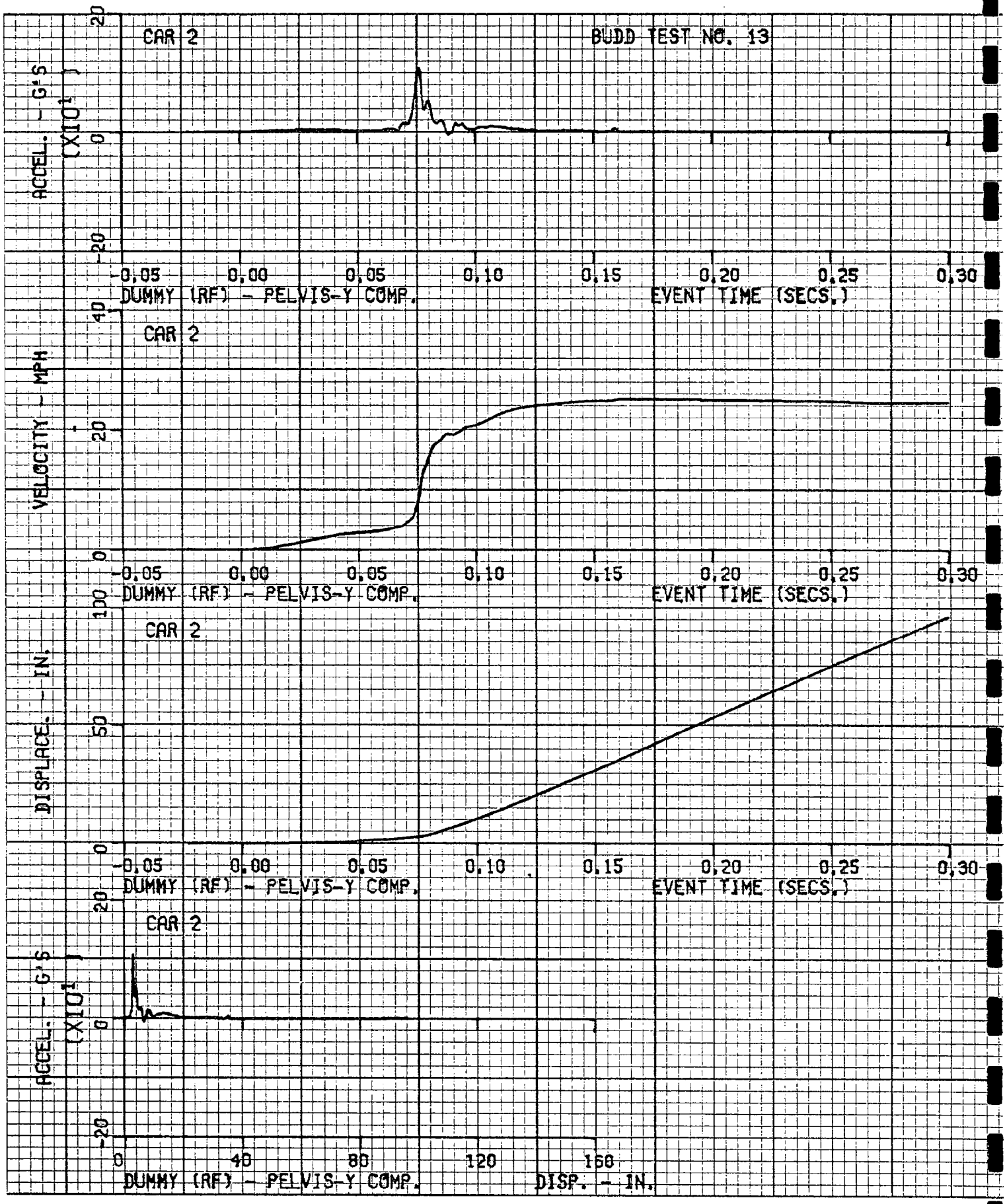

CAR 2
BUDD TEST NO. 13
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - CHEST-Z COMP.
EVENT TIME (SECS.)
CAR 2
2
0
-2
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - CHEST-Z COMP.
EVENT TIME (SECS.)
CAR 2
0
-2
-4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - CHEST-Z COMP.
EVENT TIME (SECS.)
CAR 2
20
0
-20
-3
-2
-1
0
1
DUMMY (RF) - CHEST-Z COMP.
DISP. - IN.


CAR 2
BUDD TEST NO. 13
ACCEL. - G'S
40
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - CHEST RESULTANT
EVENT TIME (SECS.)
CAR 2
SEVERITY INDEX
40
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - CHEST
EVENT TIME (SECS.)


CAR 2
BUDD TEST NO. 13
(X10¹)
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - PELVIS-X COMP.
EVENT TIME (SECS.)
CAR 2
5
0
-5
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - PELVIS-X COMP.
EVENT TIME (SECS.)
CAR 2
4
0
-4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - PELVIS-X COMP.
EVENT TIME (SECS.)
CAR 2
(X10¹)
10
0
-10
-3
-2
-1
0
1
DUMMY (LF) - PELVIS-X COMP.
DISP. - IN.


CAR 2
BUDD TEST NO. 13
ACCEL. - G'S
(X10¹)
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - PELVIS-Y COMP.
EVENT TIME (SECS.)
CAR 2
VELOCITY - MPH
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - PELVIS-Y COMP.
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN.
(X10¹)
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - PELVIS-Y COMP.
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
(X10¹)
20
0
-20
-40
0
40
80
120
DUMMY (LF) - PELVIS-Y COMP.
DISP. - IN.


CAR 2
BUDD TEST NO. 13
2
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - PELVIS-X COMP.
EVENT TIME (SECS.)
CAR 2
0
-4
-8
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - PELVIS-X COMP.
EVENT TIME (SECS.)
CAR 2
0
-20
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - PELVIS-X COMP.
EVENT TIME (SECS.)
CAR 2
20
0
-20
-30
-20
-10
0
10
DUMMY (RF) - PELVIS-X COMP.
DISP. - IN.


CAR 2
BUDD TEST NO. 13
ACCEL. - G'S (X10¹)
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - PELVIS-Y COMP.
EVENT TIME (SECS.)
CAR 2
VELOCITY - MPH
40
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - PELVIS-Y COMP.
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN.
100
50
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - PELVIS-Y COMP.
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S (X10¹)
20
0
-20
0
40
80
120
160
DUMMY (RF) - PELVIS-Y COMP.
DISP. - IN.