DOT 406

CALSPAN ADVANCED TECHNOLOGY CENTER

[redacted]

technical report

A DIVISION OF CALSPAN CORPORATION
AN ARVIN COMPANY P.O. BOX 400 BUFFALO, NEW YORK 14225

CALSPAN ADVANCED TECHNOLOGY CENTER

IMPROVED LIGHTWEIGHT SUBCOMPACT SIDE STRUCTURE CRASH TEST REPORT

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Calspan Report No. 6225-V-10

Prepared For:

THE BUDD COMPANY
TECHNICAL CENTER
FORT WASHINGTON, PA. 19034

PURCHASE ORDER NO. TC-14436

TEST:	TEST NO. 9
TYPE OF TEST:	CAR TO CAR, HEAD ON, OFFSET 26 INCHES
TEST DATE:	27 JULY 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 a 1976 Volkswagen Rabbit (with the 10 pound per side structural modification to the driver's side of the vehicle) when involved in a 30 mph offset frontal impact with a 1978 Chevrolet Impala. The test was performed on National Highway Traffic Safety Administration (NHTSA) contract DOT-HS-7-01588.

PRESENTATION OF RESULTS

This test report presents all the test results obtained from this frontal offset impact. Included in this document are still photographs, vehicle and dummy response data in plotted form, vehicle interior and exterior damage sketches, tabulated pre- and post-test vehicle dimensions, instrumentation identification, and occupant Restraint Survival Distance (RSD). High speed motion pictures were also obtained, and have been submitted to the sponsor.

In 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; and Appendix B of the same report explains the method of obtaining the occupant Restraint Survival Distances (RSD).

CRASH TEST SUMMARY

TEST NO. 9

PROJECT Improved Lightweight Subcompact Side Structure

DATE July 27, 1978

TIME 11:50 am

TEMP. 75° F

TEST CONDITION Car-to-Car, Head-on, Offset 26 Inches

VEHICLE NO. 1 1978 Chevrolet Impala (4-door Sedan)

VEHICLE NO. 2 1976 Volkswagen Rabbit

	VEH. NO. 1	VEH. NO. 2
TEST WEIGHT (lbs)	3810	2250
IMPACT ANGLE (deg)*	0	0
IMPACT VELOCITY (mph)**	30.69	30.69
MAX. CRUSH (in)	See Figure 7	See Figure 8
MAX. INTRUSION (in)	See Figure 9	See Figure 10

DUMMIES	VEH. NO. 1	VEH. NO. 2
TYPE	Hybrid II Part 572	Hybrid II Part 572
LOCATION	LF (1), RF (2)	LF (1), RF (2)
RESTRAINT	Production 3-point System	Standard 1976 Volkswagen Rabbit Passive Belt System

NUMBER OF DATA CHANNELS 72

NUMBER OF HIGH SPEED CAMERAS 10

*WITH RESPECT TO TOW TRACK CENTERLINE

**SPEED TRAP MEASUREMENT (±0.5% ACCURACY)

OBSERVATIONS (VEHICLE NO. 1)

GLAZING Undamaged

DOORS Undamaged

SEAT ANCHORAGES Intact

RESTRAINTS Intact

OBSERVATIONS (VEHICLE NO. 2)

GLAZING Hood intruded into windshield and windshield came out of frame.

DOORS Slight damage to driver's door - could be opened after crash.

SEAT ANCHORAGES Intact

RESTRAINTS Intact

GENERAL COMMENTS

- All Cameras Operated
- On Vehicle No. 2 - the following channels of data had shifts due to cut wires at about 100 milliseconds
- Engine X
- Engine Y
- Front Crossmember

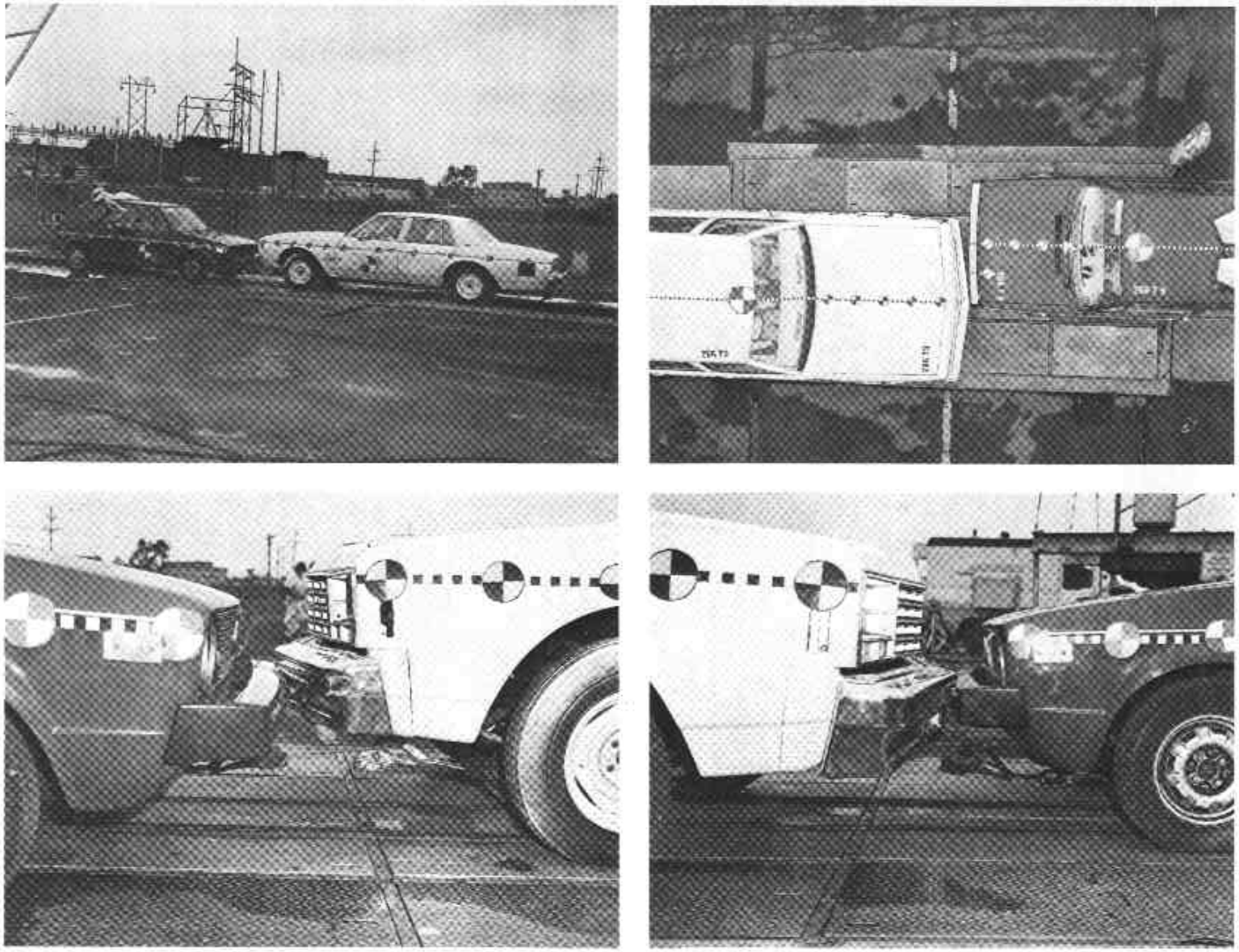


Figure 1 PRE-TEST NO. 9 - VEHICLE IMPACT CONFIGURATION

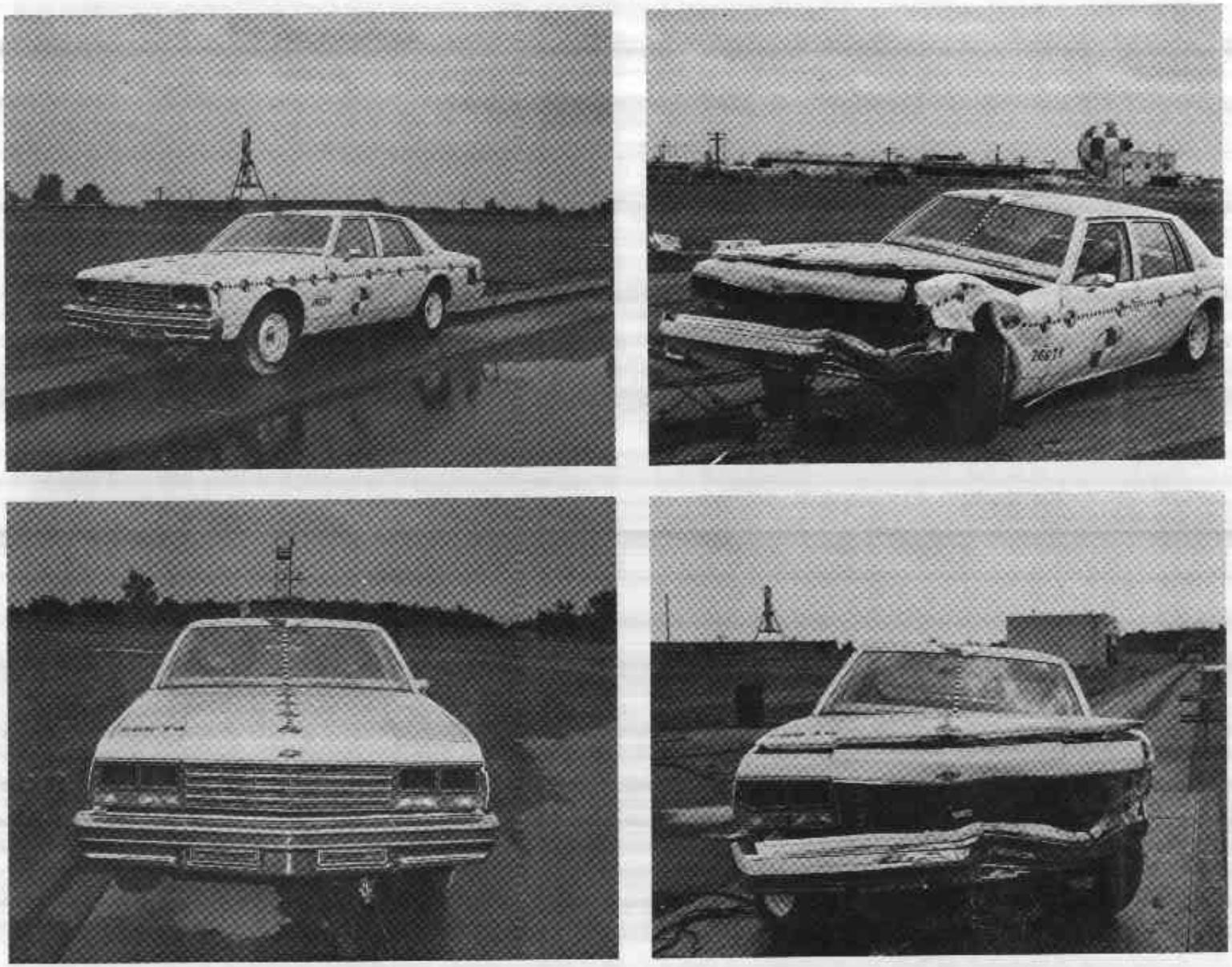


Figure 2 PRE- AND POST-TEST NO. 9 - CAR 1, 1978 CHEVROLET IMPALA

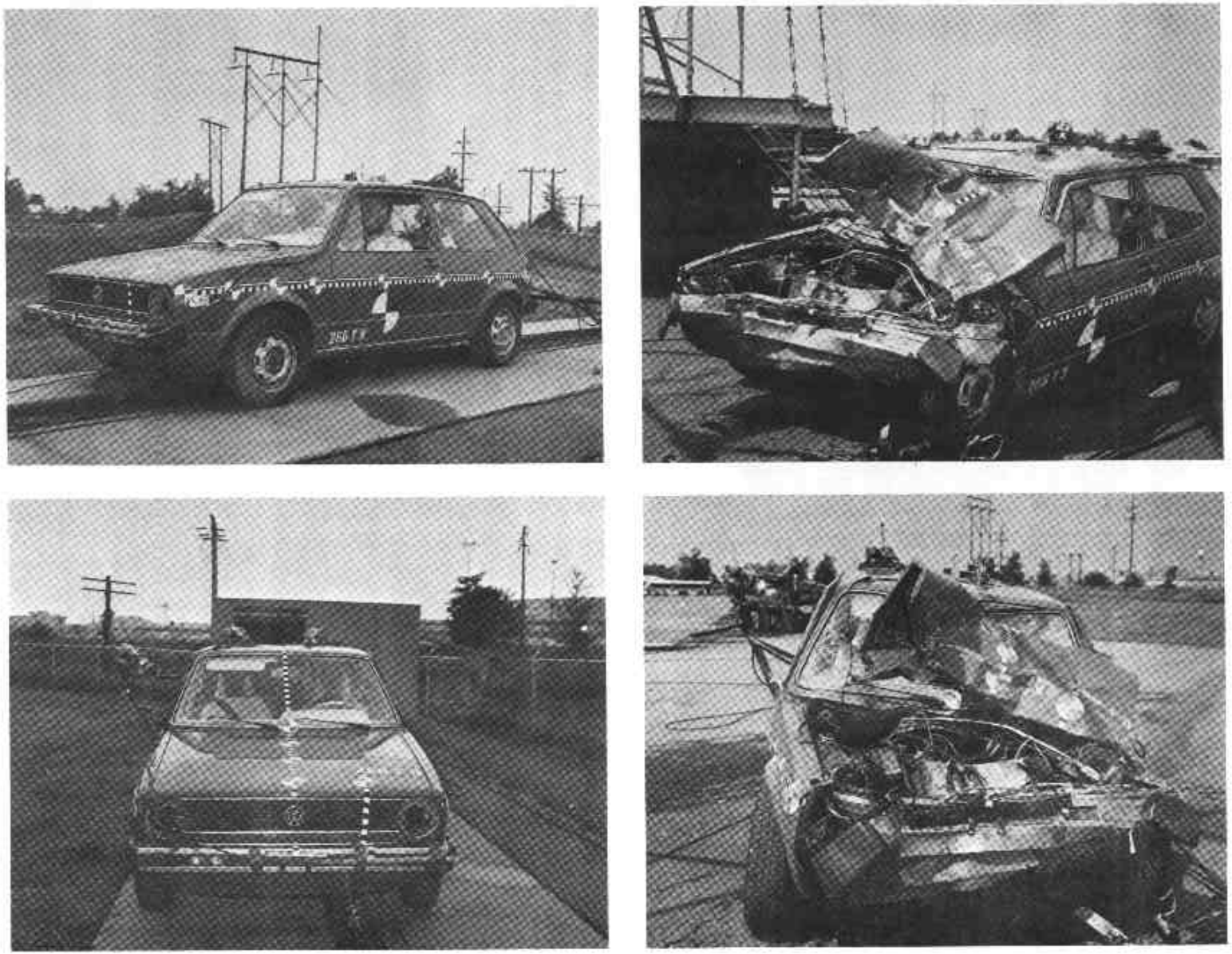


Figure 3 PRE- AND POST-TEST NO. 9 - CAR 2, 1976 V.W. RABBIT

Figure 4 PRE- AND POST-TEST NO. 9 - CAR 1, 1978 CHEVROLET IMPALA INTERIOR

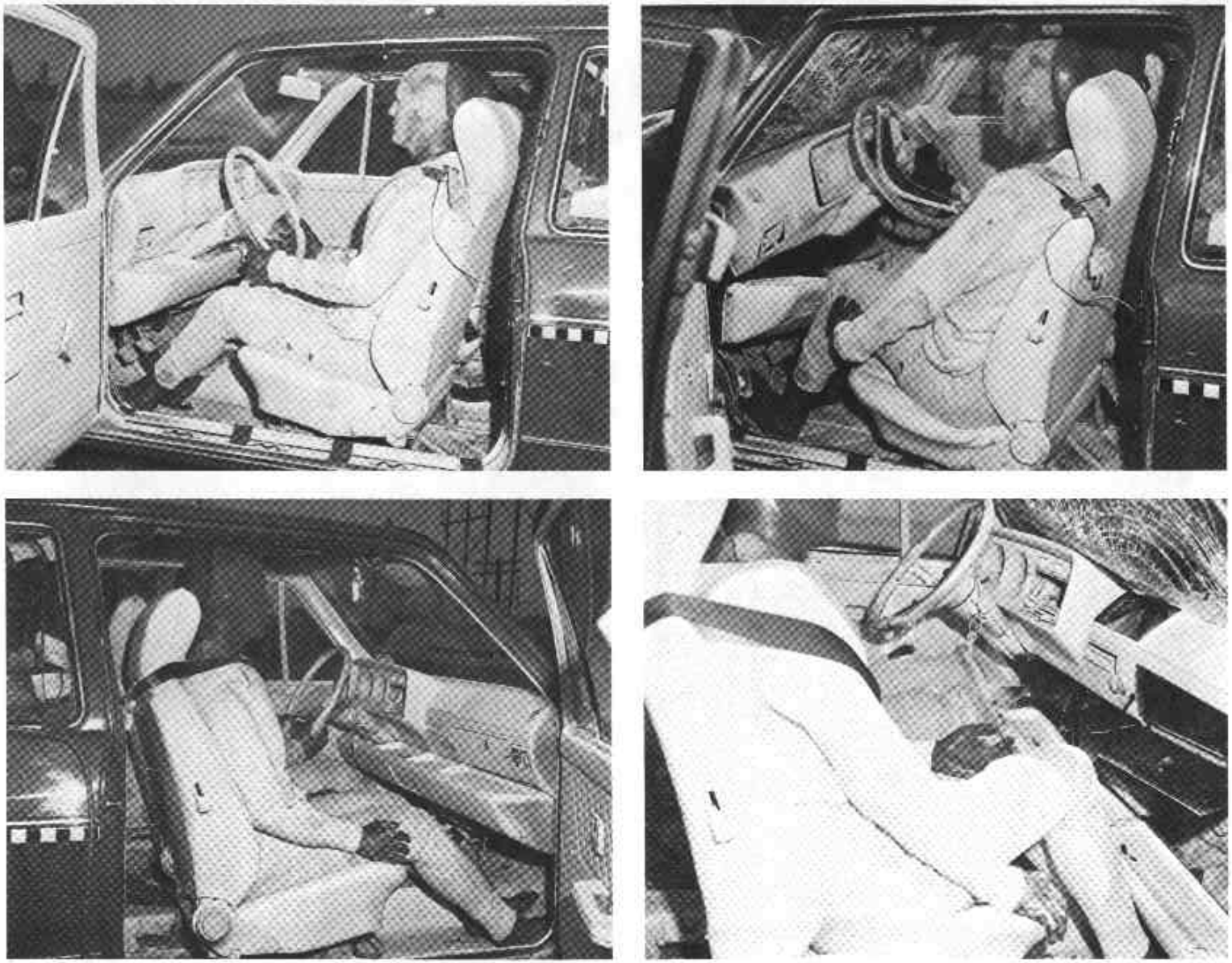


Figure 5 PRE- AND POST-TEST NO. 9 - CAR 2, 1976 V.W. RABBIT INTERIOR

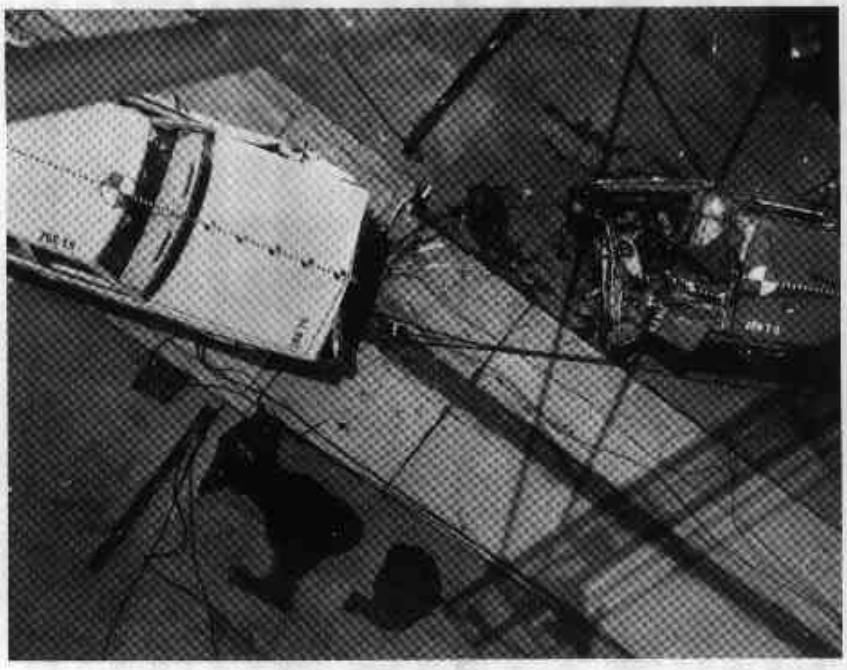
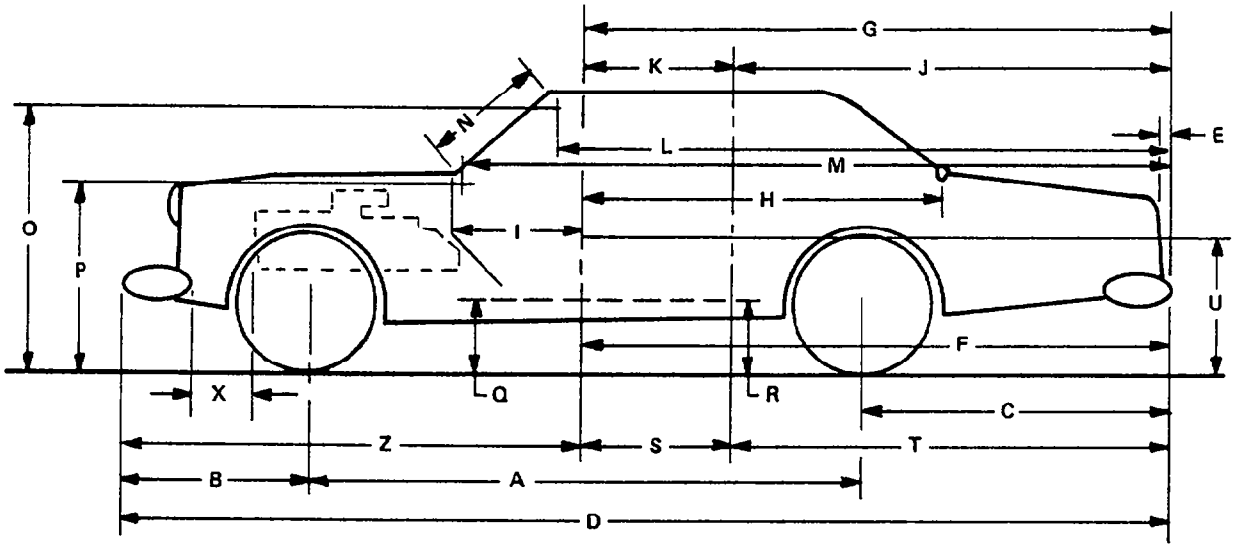


Figure 6 POST TEST NO. 9

TABLE 1

1976 VW RABBIT - **PRE- AND POST-TEST DIMENSIONS** - TEST NO. 9

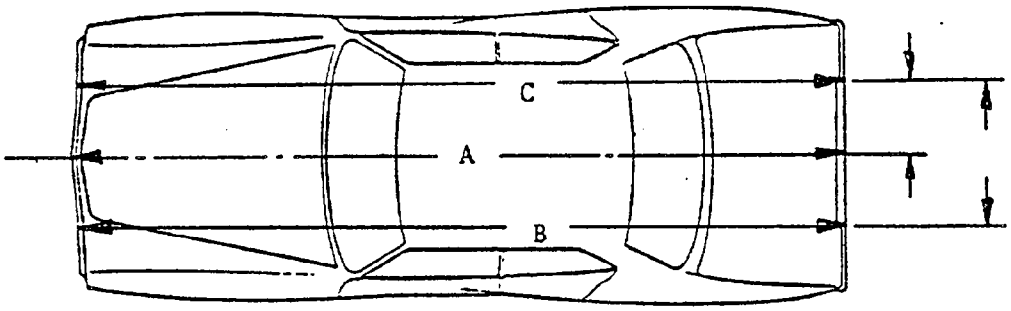
MEASUREMENTS (IN.)

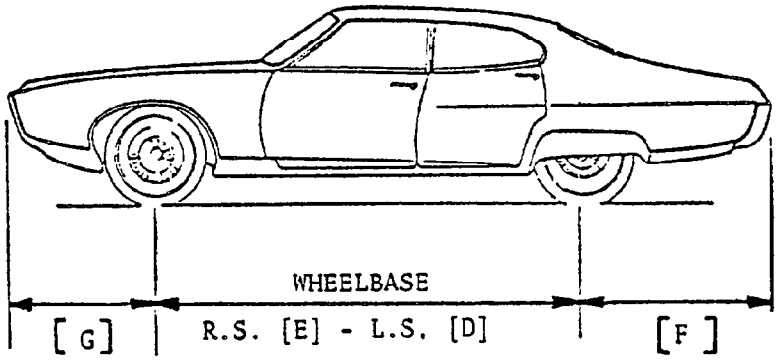


	PRE-TEST		POST-TEST	
	LS	RS	LS	RS
A =	94.7	94.7	91.0	94.7
B =	32.8	32.8	13.0	32.5
C =	27.3	27.3	27.3	27.3
D =	155.0	155.0	130.5	153.0
E = ℄	4.8		4.8	
F =	78.3	78.3	78.3	78.3
G =	78.3	78.3	78.3	78.3
H =	----------			
I =	35.7	36.3	27.3	34.2
J =	58.3	58.3	58.3	58.3
K =	20.0	20.0	20.0	20.0
L =	89.0	89.0	89.0	89.0
M =	102.0	102.0	101.0	102.0
N =	19.5	19.5	19.2	19.5
O =	51.6	51.6	46.3	49.7
P =	38.0	38.0	31.5	36.0
Q =	12.3	12.5	6.7	11.5
R =	12.5	12.7	9.3	13.7
S =	20.0	20.0	20.0	20.0
T =	58.3	58.3	58.3	58.3
U =	31.0	31.0	25.8F / 30.5R	30.7F / 35.2R

TABLE 2

1978 CHEVROLET - PRE- AND POST-TEST DIMENSIONS - TEST NO. 9





DESCRIPTION	DIM	PRE [in.]	POST [in.]
Length ℄	A	212.5	204.5
Length L.S.	B	207.8	198
Length R.S.	C	207.8	212.5
Wheelbase L.S.	D	116	106
Wheelbase R.S.	E	116	121
Overhang Rear	F	56	56
Overhang Front	G	40.5	L.S. 27.5 / R.S. 35.5

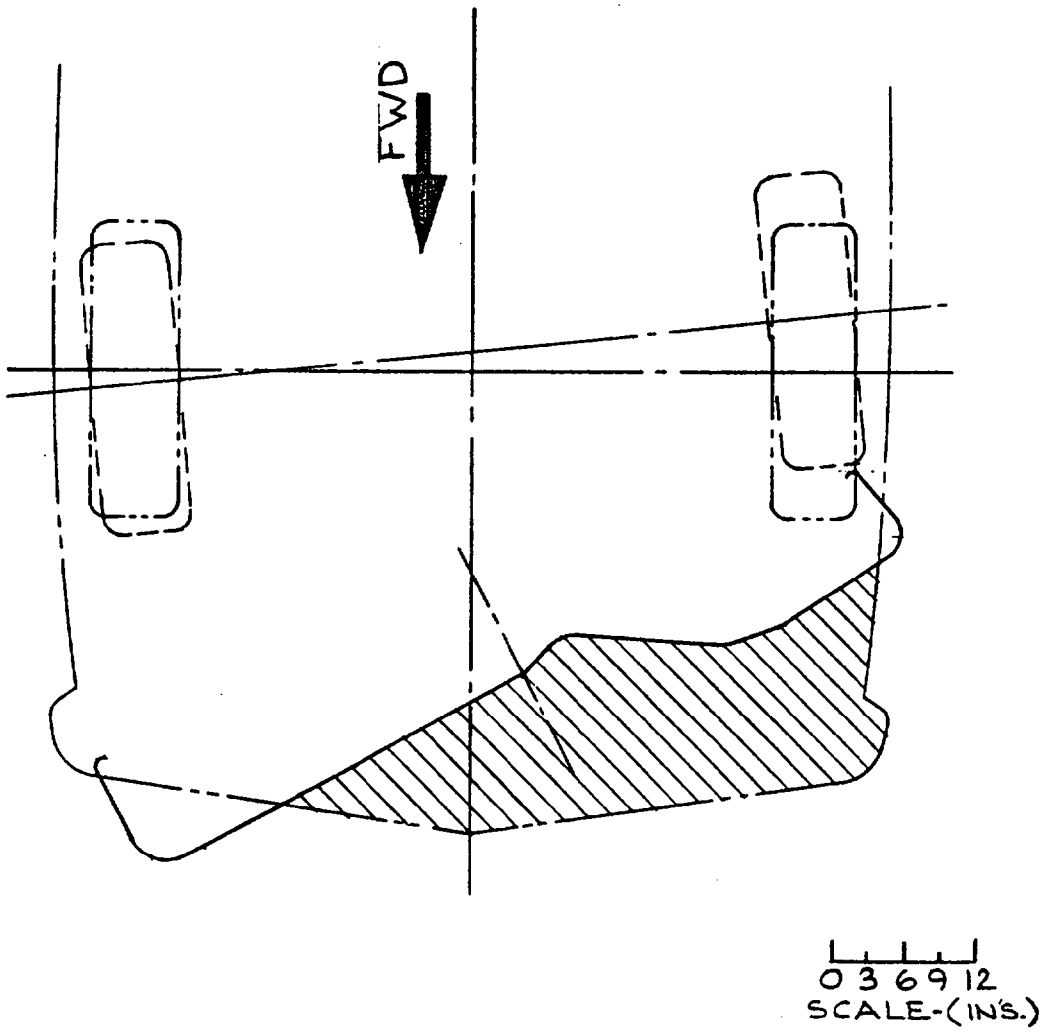


FIGURE 7 - CAR 1 - 1978 CHEVROLET IMPALA EXTERIOR DEFORMATION

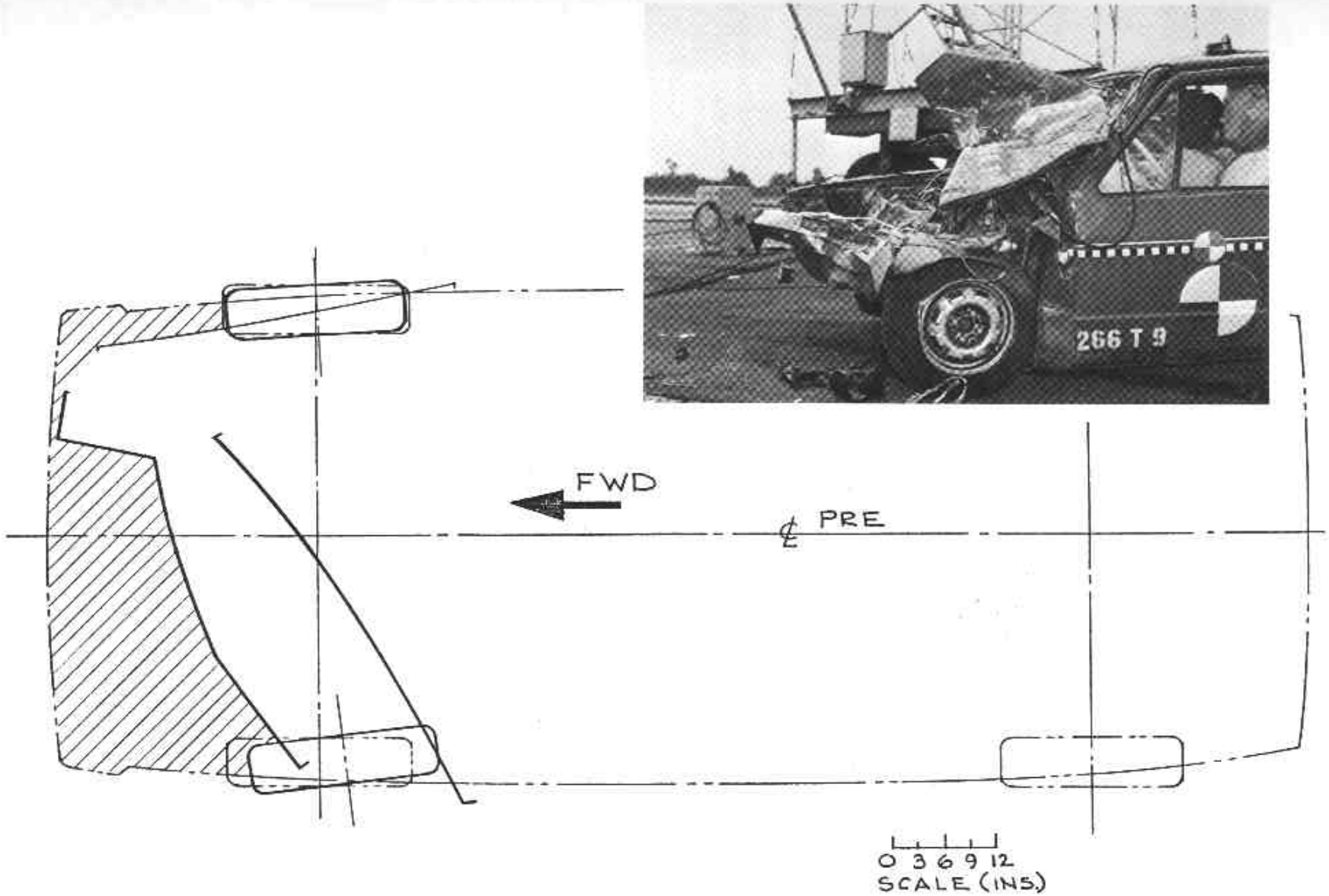


FIGURE 8 - CAR 2 - 1976 VW RABBIT EXTERNAL DEFORMATION

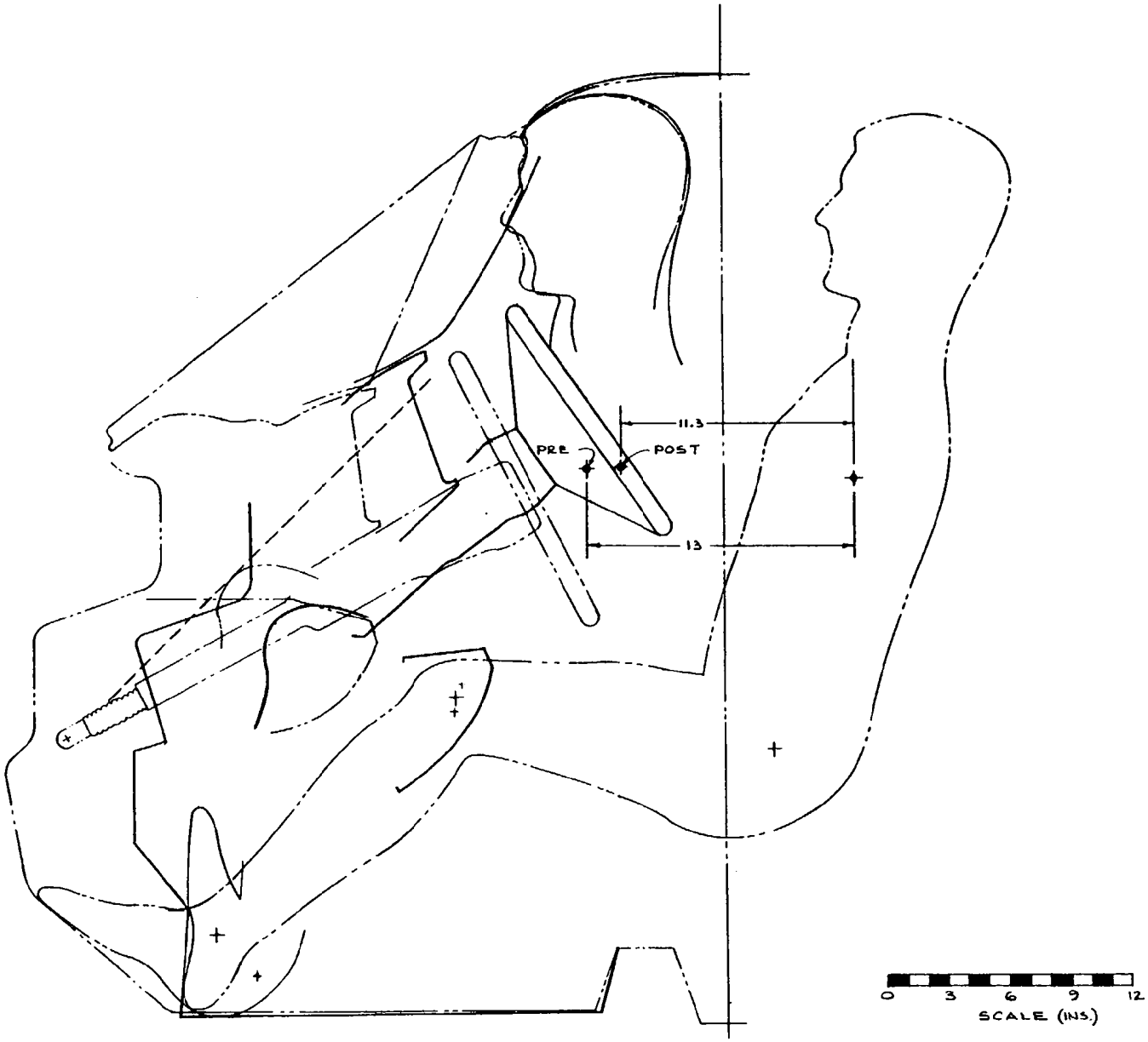


FIGURE 9 - 1976 VW RABBIT DRIVER SIDE PRE- AND POST-INTERIOR

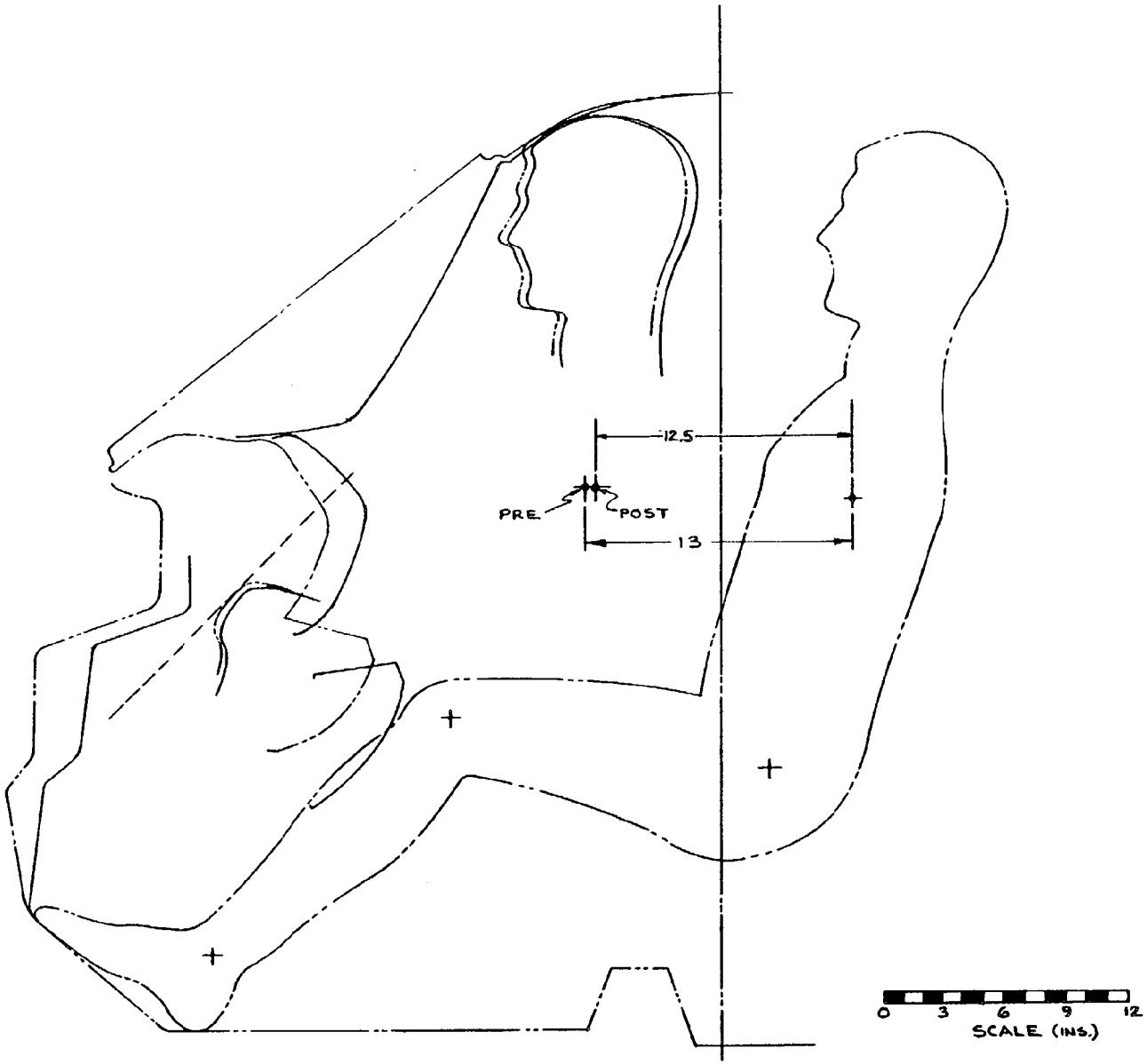


FIGURE 10 - 1976 VW RABBIT PASSENGER SIDE PRE- AND POST-INTERIOR

TABLE 3

RESTRAINT SURVIVAL DISTANCE (RSD) RESULTS

TEST NO.	VEHICLE	OCCUPANT	t^*(SEC)	Dc(in)	Dp(in)	AID		RSD	
						PRE	POST	PRE	POST
No. 9	VW RABBIT	DRIVER	.052	22	26.03	13	11.3	8.97	9.27
No. 9	VW RABBIT	PASSENGER	.052	21.5	26.03	13	12.5	8.47	7.97

TABLE 4

DUMMY INJURY CRITERIA VALUES

CAR 1 - STRIKING VEHICLE

1978 CHEVROLET IMPALA

	MAXIMUM ACCELERATION ("G") *											
	HEAD				CHEST				PELVIS			
	X -30	Y 5	Z 16	R 32	X	Y	Z	R	X	Y	Z	R
DUMMY (1)	-30	5	16	32	-20	3.5	-14	22				
DUMMY (2)	- 5	.16	1.4	22	-14	9.8	9.9	17				
DUMMY (3)												
DUMMY (4)												

	MAXIMUM FORCE-FEMUR LOAD (LBS)	
	RIGHT FEMUR	LEFT FEMUR
DUMMY (1)	100	140
DUMMY (2)	-90	130
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)	1000	1000	550
DUMMY (2)	1100	790	900
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)	190.45	.073	.195	18.9	256	95
DUMMY (2)	74.66	.070	.172	13.9	91.4	52
DUMMY (3)						
DUMMY (4)						

*DEFINED AS EXCEEDING 0.003 SEC. DURATION

**AS DEFINED IN FMVSS NO. 208

TABLE 5

DUMMY INJURY CRITERIA VALUES

CAR 2 - STRUCK VEHICLE
1976 VW RABBIT

	MAXIMUM ACCELERATION ("G") *											
	HEAD				CHEST				PELVIS			
	X	Y	Z	R	X	Y	Z	R	X	Y	Z	R
DUMMY (1)	-37	6	40	44	-36	6	-15	38				
DUMMY (2)	-14	14	28	30	-27	17	9	30				
DUMMY (3)												
DUMMY (4)												

	MAXIMUM FORCE-FEMUR LOAD (LBS)		DUMMY LOCATION
	RIGHT FEMUR	LEFT FEMUR	
DUMMY (1)	1600	1600	Left Front Passenger
DUMMY (2)	1200	1750	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)	1600	1100	
DUMMY (2)	1400	1380	
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)	429.45	.060	.132	32.33	480	270
DUMMY (2)	274.40	.055	.164	22.96	319	220
DUMMY (3)						
DUMMY (4)						

*DEFINED AS EXCEEDING 0.003 SEC. DURATION
**AS DEFINED IN FMVSS NO. 208

TABLE 6

ELECTRONIC INSTRUMENTATION TEST 1978 CHEVROLET IMPALA

CAR 1 - TEST NO. 9

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 FRONT SEAT	LEFT COMPARTMENT
2	X	RIGHT SILL NEXT TO FRONT SEAT	RIGHT COMPARTMENT
3	X,Y,Z	DECK OVER REAR AXLE	REAR DECK
4	X,Y,Z	FIREWALL	FIREWALL
5	X,Y,Z	TOP OF ENGINE, CARBURETER	ENGINE
6	X	FRONT CROSSMEMBER	FRONT CROSSMEMBER
8	X	REAR COMPARTMENT	LEFT REAR COMPARTMENT
9	X	REAR COMPARTMENT	RIGHT REAR COMPARTMENT
D U M M Y			
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
RF HEAD (DUMMY (2))	X,Y,Z	RIGHT FRONT SEAT	DUMMY (RF) HEAD
RF CHEST "	X,Y,Z	RIGHT FRONT SEAT	DUMMY (RF) CHEST
RF FEMURS "	R,L**	RIGHT FRONT SEAT	DUMMY (RF) FEMURS
RF BELTS "	U,R,L***	RIGHT FRONT SEAT	SELF-EXPLANATORY
MISCELLANEOUS			
7	YAW RATE	CENTERLINE BEHIND FRONT SEATS	TUNNEL YAW RATE

*SEE ACCELEROMETER LAYOUT DIAGRAM FIGURE 11

**RIGHT & LEFT FEMUR FORCES ***UPPER, LOWER BELT FORCES

TABLE 7

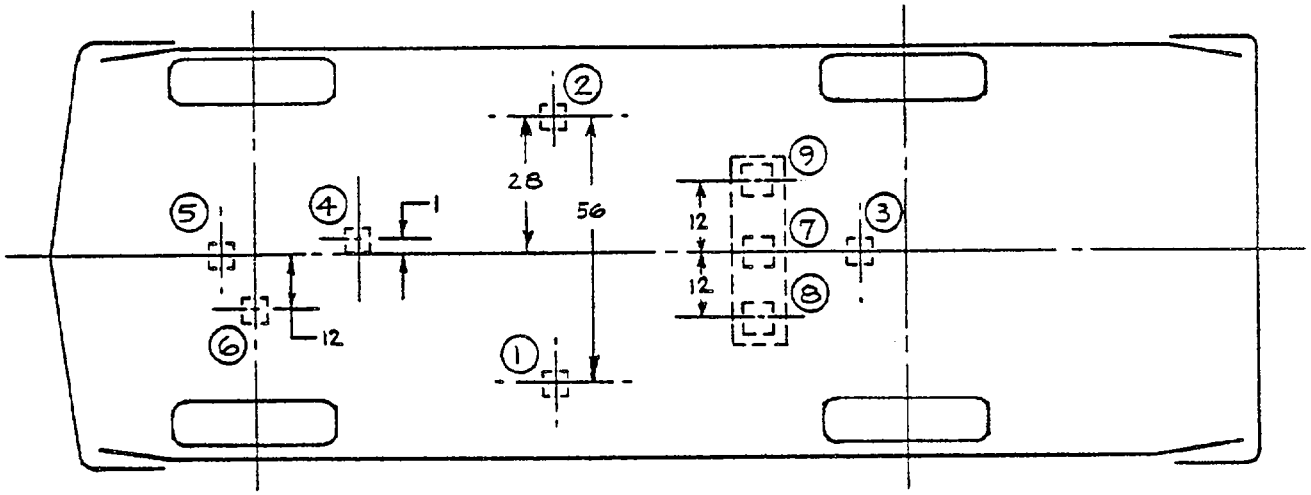
ELECTRONIC INSTRUMENTATION TEST 1976 VW RABBIT
TEST NO. 9

CAR 2

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 FRONT SEAT	LEFT COMPARTMENT
2	X	RIGHT SILL NEXT TO FRONT SEAT	RIGHT COMPARTMENT
3	X,Y,Z	DECK OVER REAR AXLE	REAR DECK
4	X,Y,Z	FIREWALL	FIREWALL
5	X,Y,Z	TOP OF ENGINE, CARBURETER	ENGINE
6	X	FRONT CROSSMEMBER	FRONT CROSSMEMBER
8	X	REAR COMPARTMENT	LEFT REAR COMPARTMENT
9	X	REAR COMPARTMENT	RIGHT REAR COMPARTMENT
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 ***	LEFT FRONT SEAT	SELF-EXPLANATORY
RF HEAD (DUMMY (2))	X,Y,Z	RIGHT FRONT SEAT	DUMMY (RF) HEAD
RF CHEST "	X,Y,Z	RIGHT FRONT SEAT	DUMMY (RF) CHEST
RF FEMURS "	R,L**	RIGHT FRONT SEAT	DUMMY (RF) FEMURS
RF BELTS "	U, L***	RIGHT FRONT SEAT	SELF-EXPLANATORY
MISCELLANEOUS			
7	YAW RATE	CENTERLINE BEHIND FRONT SEATS	TUNNEL YAW RATE

*SEE ACCELEROMETER LAYOUT DIAGRAM FIGURE 12

**RIGHT & LEFT FEMUR FORCES ***UPPER,LOWER BELT FORCES



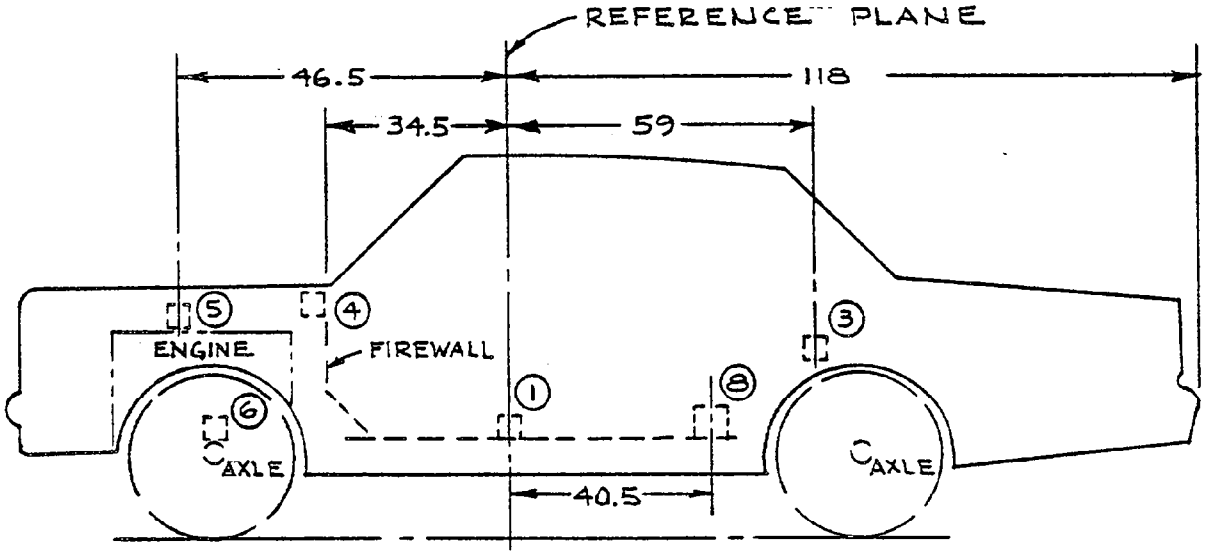
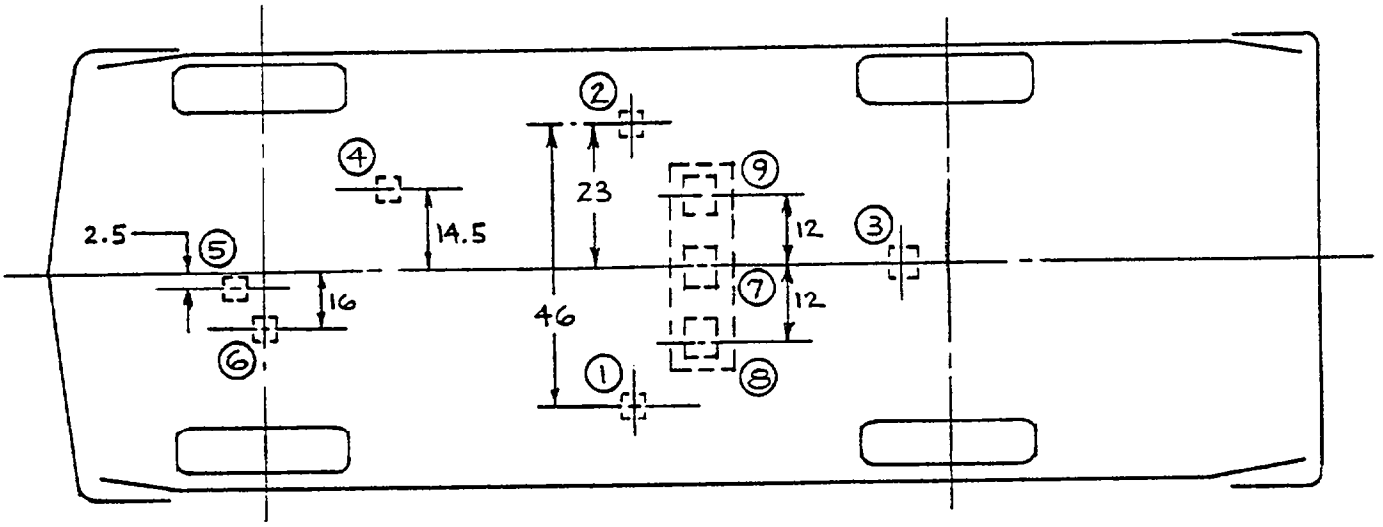


FIGURE 11 - VEHICLE ACCELEROMETER LOCATIONS - CAR 1 - 1978 CHEVROLET IMPALA



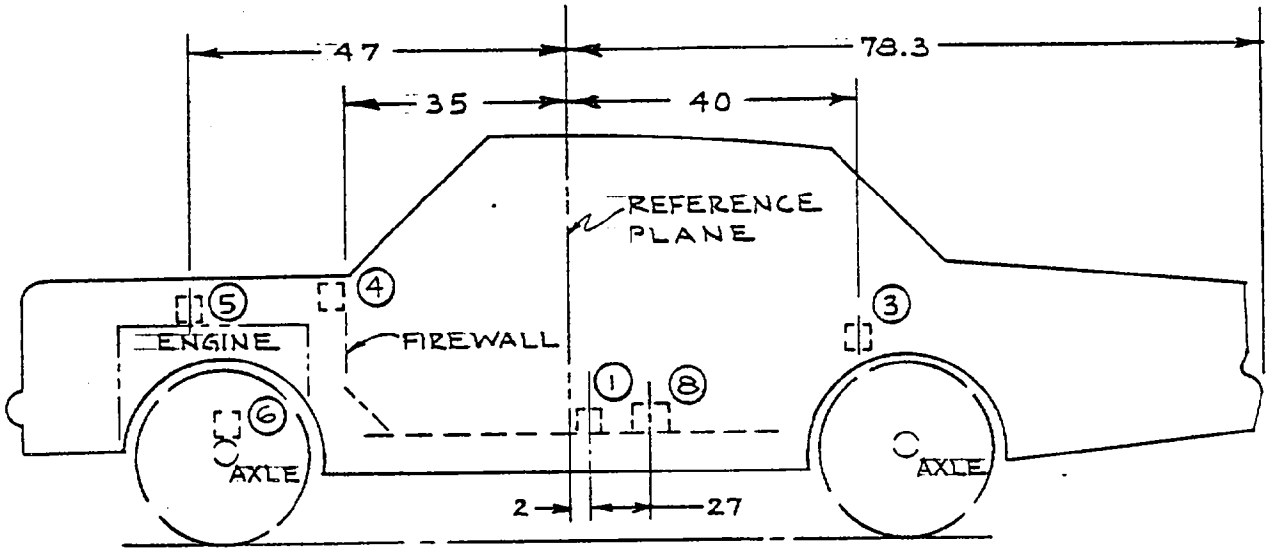


FIGURE 11A - VEHICLE ACCELEROMETER LOCATIONS - CAR 2 - 1976 VW RABBIT

TABLE 8

VEHICLE TEST WEIGHTS

CAR 2 - TARGET VEHICLE - 1976 VW RABBIT

Left Front	640	lbs.	Left Rear	440	lbs.
Right Front	690	lbs.	Right Rear	480	lbs.
Total Front	1330	lbs.	Total Rear	920	lbs.

Total Weight = 1330 lbs. + 920 lbs = 2250 lbs.

Wheel Base 94.5 in.

Cg_{FW} = $\frac{920}{2250}$ lbs. $\frac{94.5}{\text{lbs.}}$ in. _____ = 38.64 in.

CAR 1 - BULLET VEHICLE - 1978 CHEVROLET IMPALA

Left Front	1050	lbs.	Left Rear	860	lbs.
Right Front	1050	lbs.	Right Rear	850	lbs.
Total Front	2100	lbs.	Total Rear	1710	lbs.

Total Weight = 2100 lbs. + 1710 lbs. = 3810 lbs.

Wheel Base 116 in.

Cg_{FW} = $\frac{1710}{3810}$ lbs. $\frac{116}{\text{lbs.}}$ in. _____ = 52.06 in.

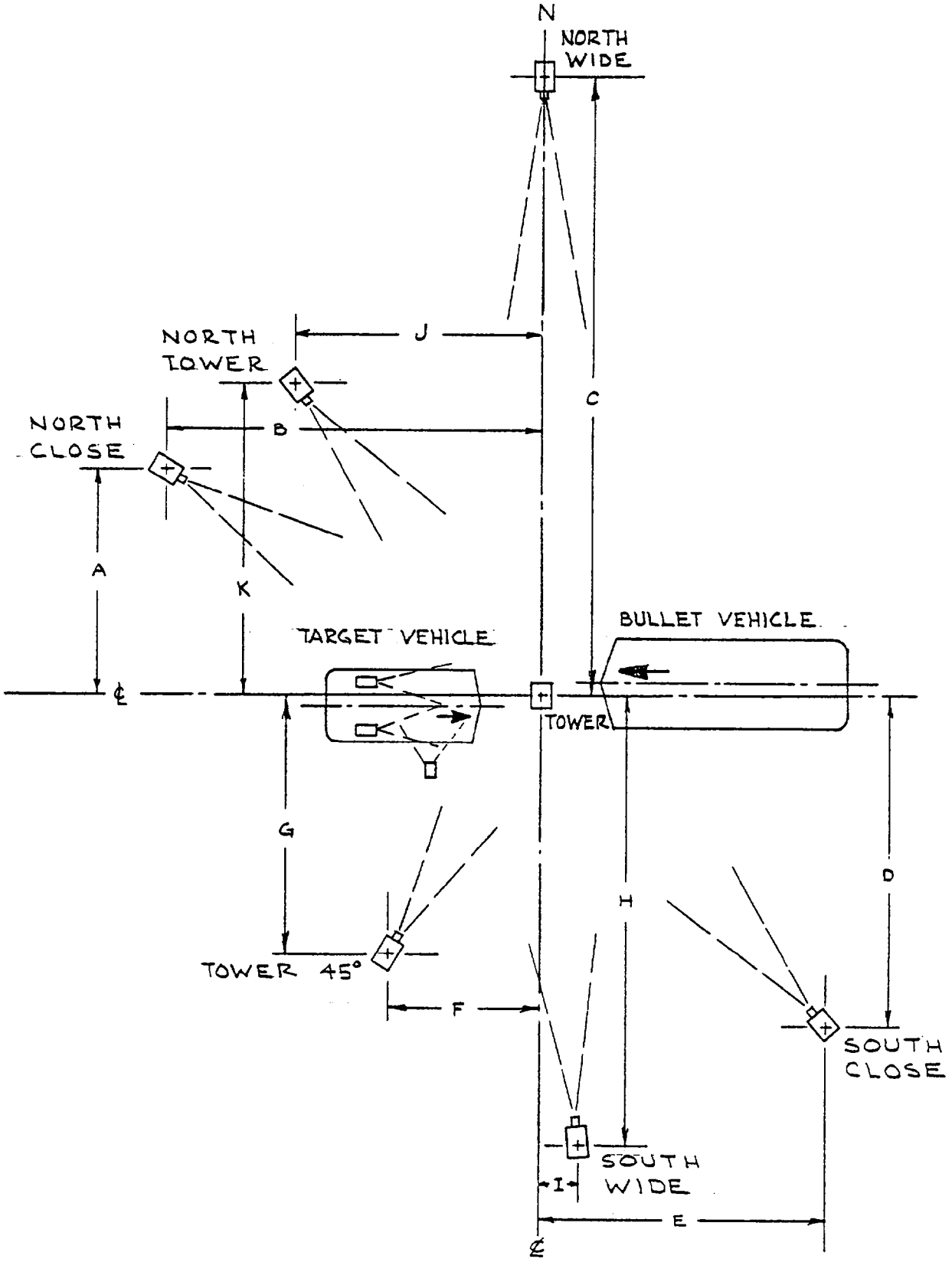


FIGURE 12 - HIGH SPEED CAMERA LOCATIONS

TABLE 9

HIGH SPEED CAMERA INFORMATION (TEST No. 9)

CAMERA NO.	LOCATION	TYPE	LENS (mm)	SPEED (fps)
SOUTH WIDE	H = 33 ft. I = 3 ft.	PHOTOSONIC	13	700
SOUTH CLOSE	D = 24 ft. 2 in. E = 21 ft.	PHOTOSONIC	25	700
NORTH WIDE	C = 46 ft.	PHOTOSONIC	13	650
NORTH CLOSE	A = 16 ft. 4 in. B = 27 ft. 6 in.	PHOTOSONIC	25	700
NORTH TOWER	K = 29 ft. J = 18 ft.	PHOTOSONIC	25	950
TOWER 45°	G = 22 ft. F = 11 ft.	PHOTOSONIC	13	750
TOWER OVERHEAD	36 ft. 6 in.	PHOTOSONIC	13	720
VW RABBIT PASSENGER	ON-BOARD	STALEX	8	400
VW RABBIT DRIVER	ON-BOARD	STALEX	8	500
VW RABBIT PASSENGER DOOR	ON-BOARD	STALEX	8	300

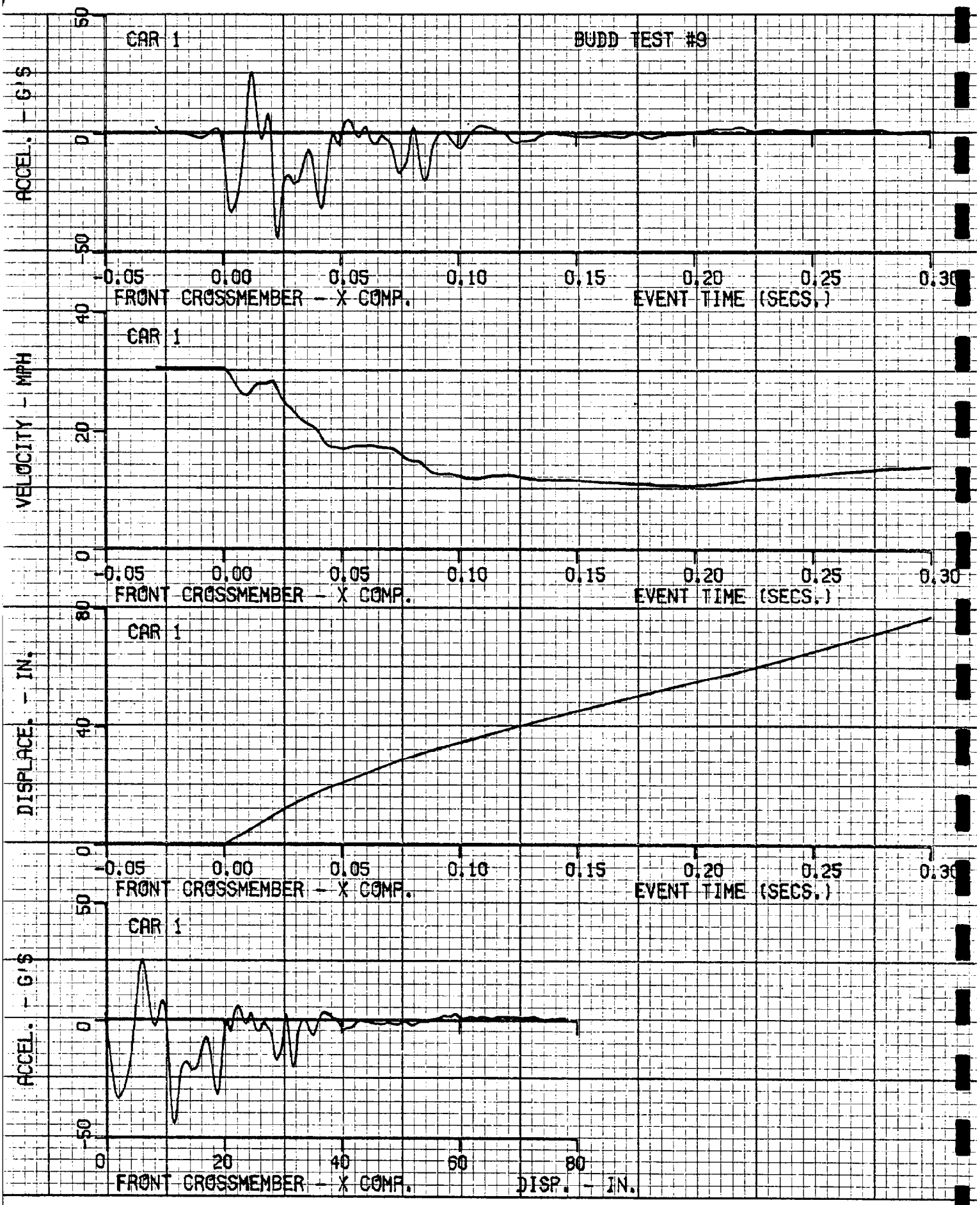
NOTE: CAMERAS ARE NUMBERED ACCORDING TO SPLICING SEQUENCE OF FILM.

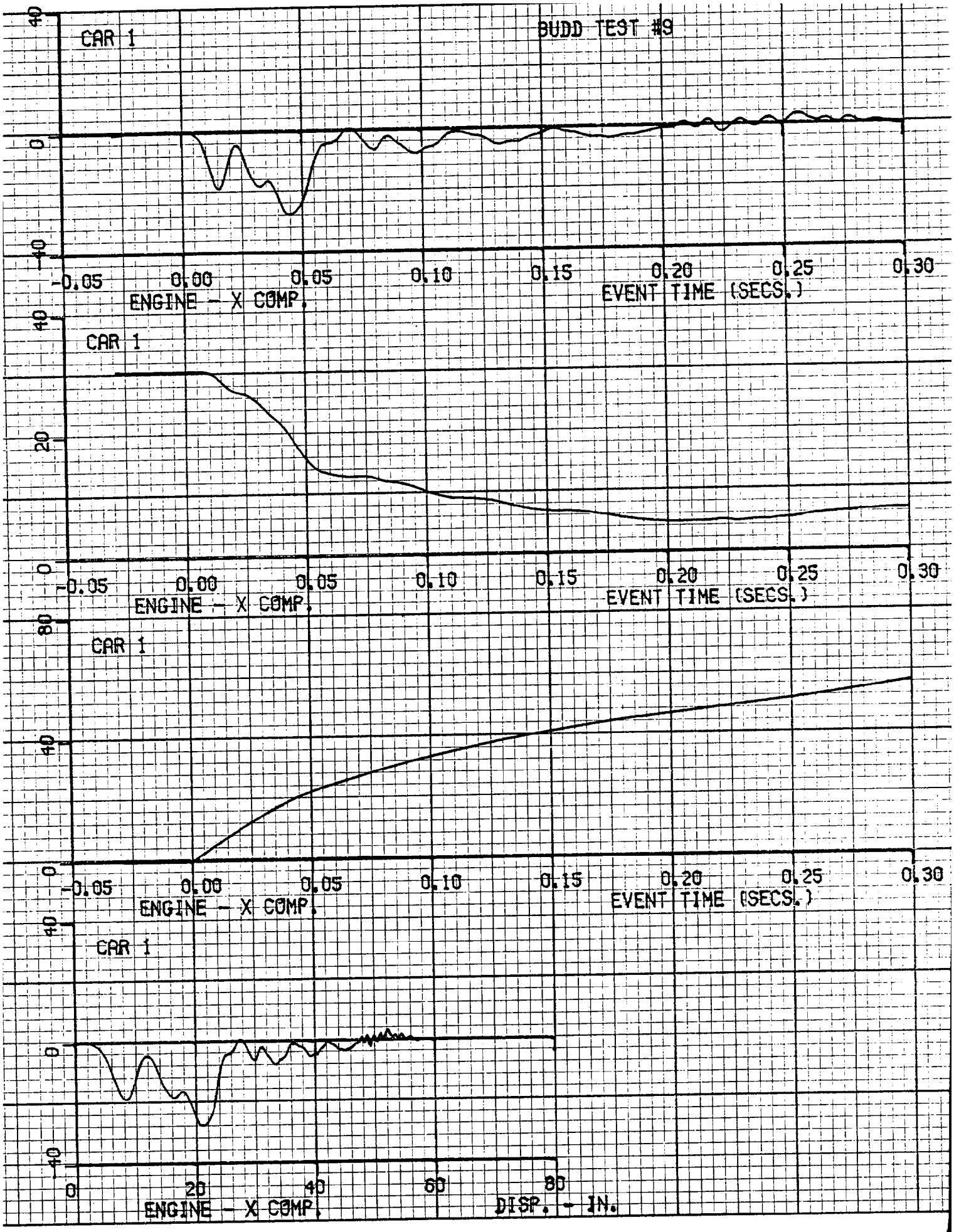
(24 fps) REAL TIME MOVIE FILM COVERAGE OF PRE-CRASH, POST-CRASH AND CRASH EVENT SPLICED AT START AND END OF FILM.

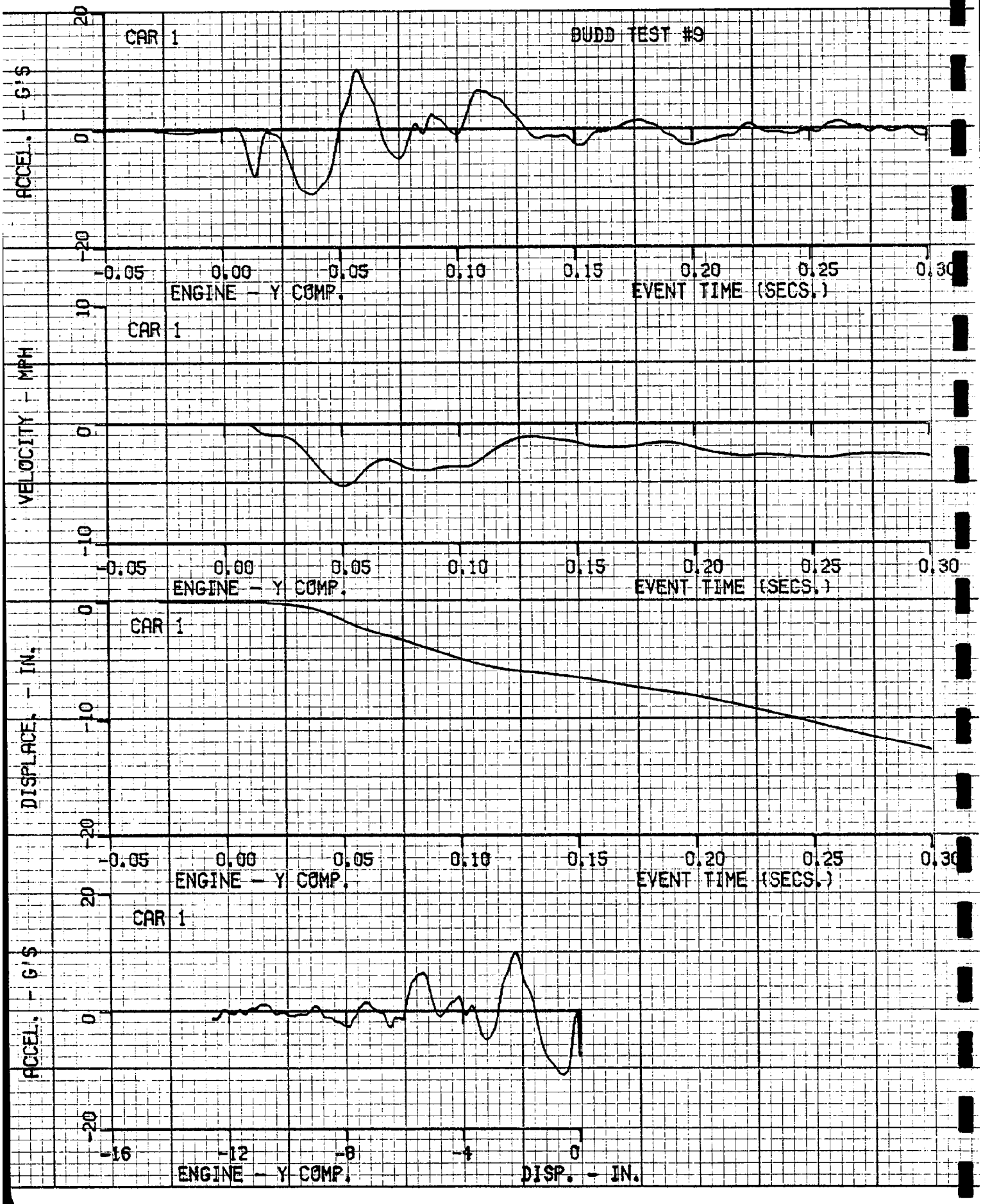
TEST NO. 9

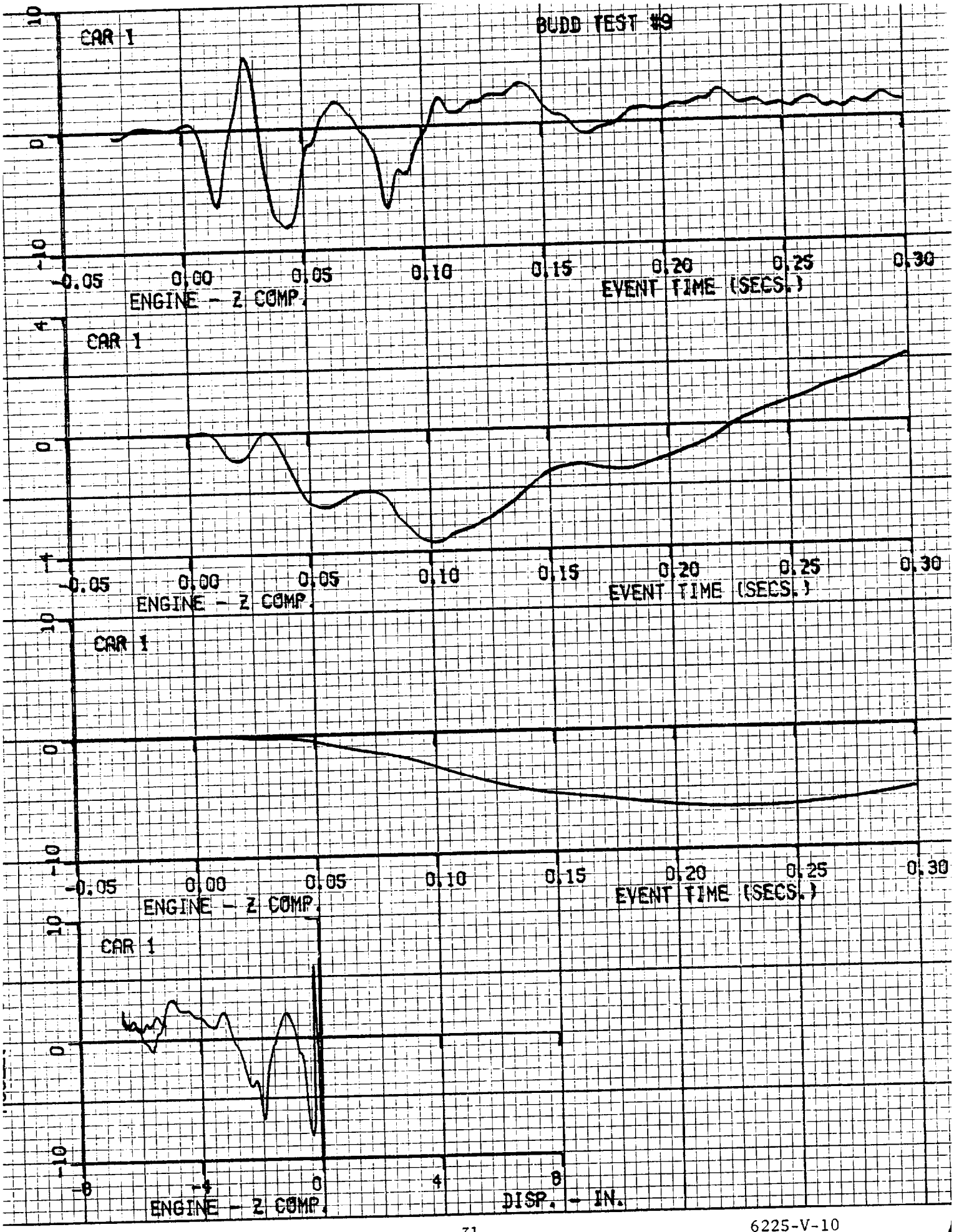
CAR 1 - 1978 CHEVROLET IMPALA

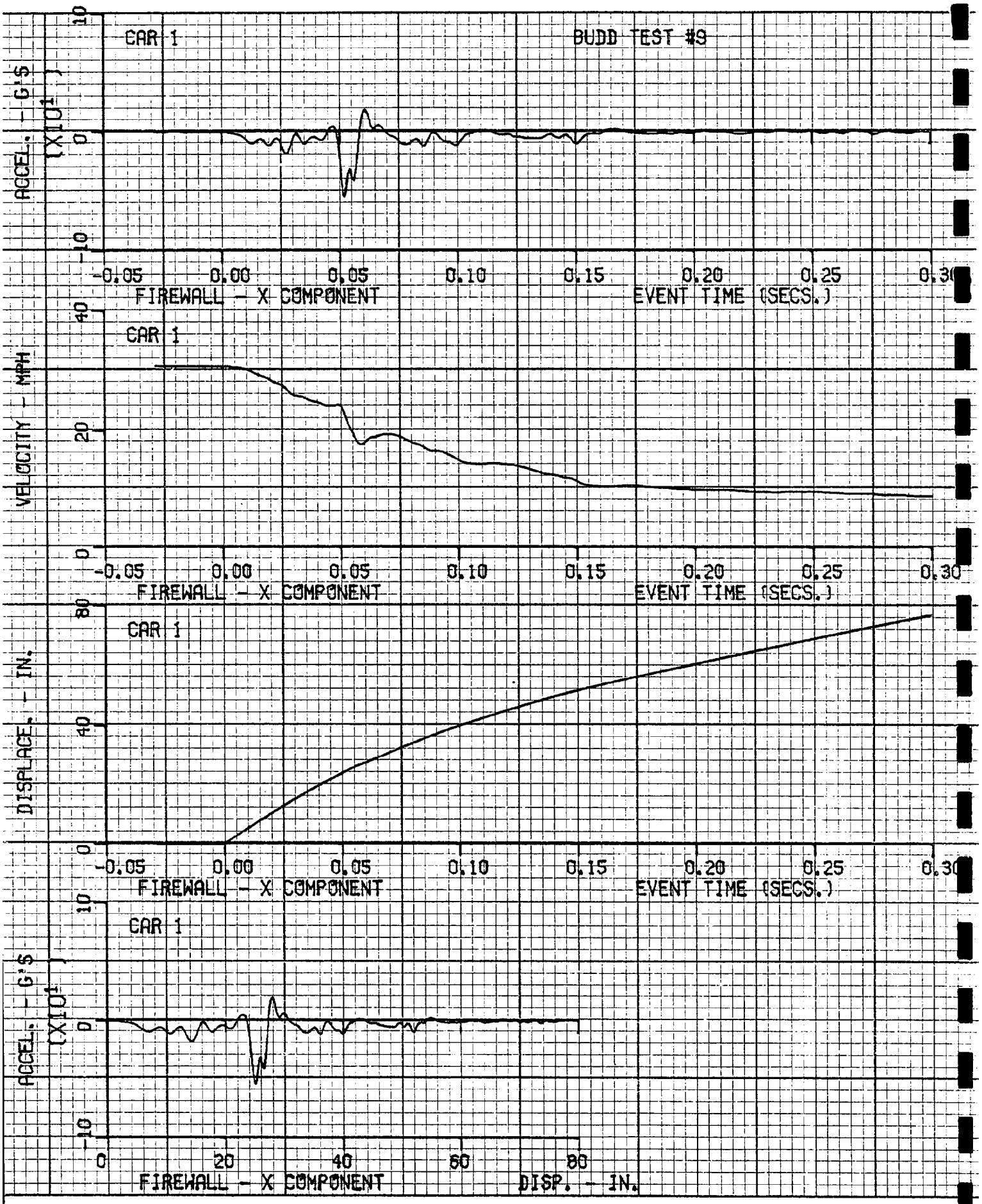
VEHICLE DATA, 60 HZ FILTER

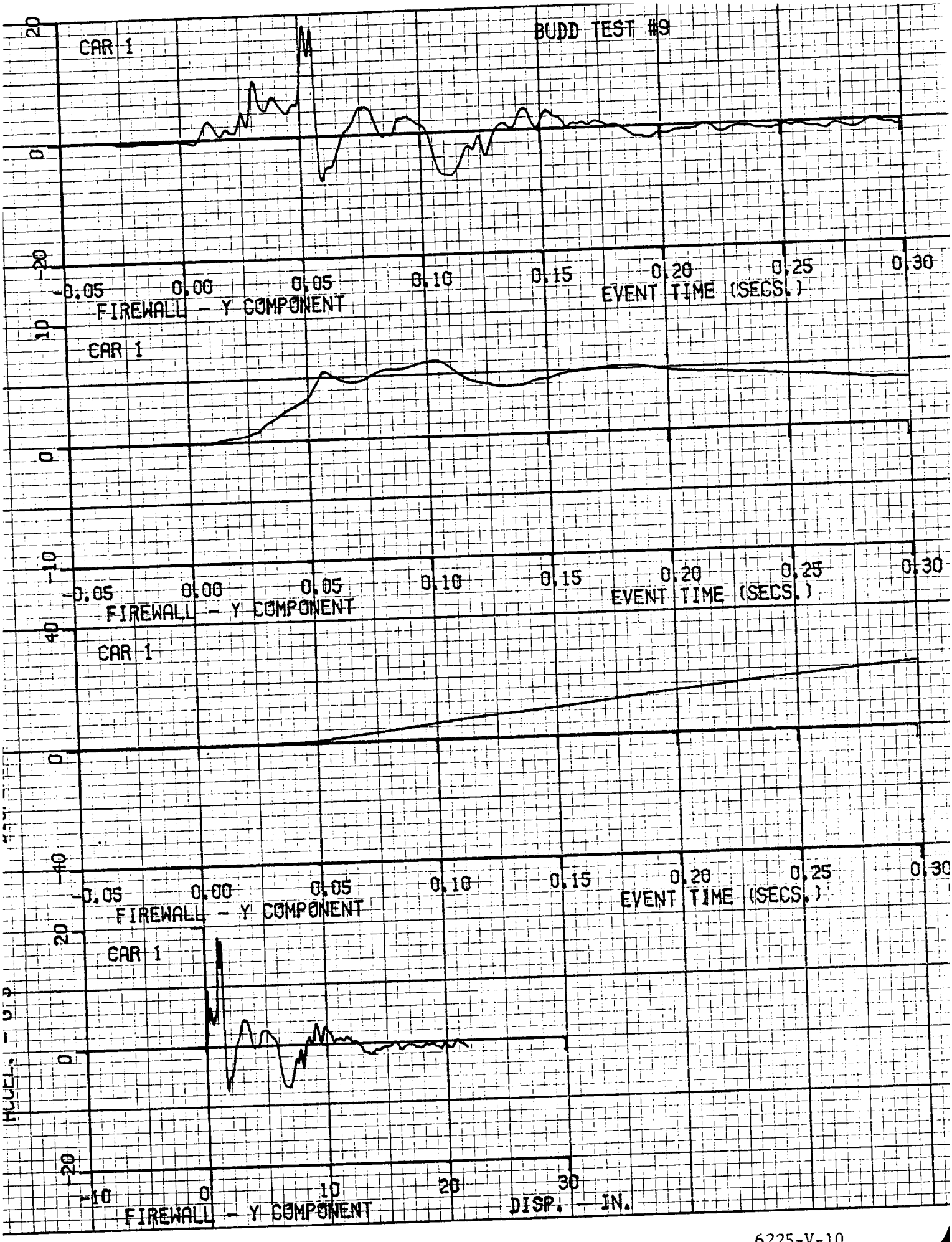

CAR 1
BUDD TEST #9
ACCEL. - G'S
50
0
-50
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FRONT CROSSMEMBER - X COMP.
EVENT TIME (SECS.)
CAR 1
VELOCITY - MPH
40
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FRONT CROSSMEMBER - X COMP.
EVENT TIME (SECS.)
CAR 1
DISPLACE. - IN.
80
40
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FRONT CROSSMEMBER - X COMP.
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
50
0
-50
0
20
40
60
80
FRONT CROSSMEMBER - X COMP.
DISP. - IN.


BUDD TEST #9
CAR 1
40
0
-40
-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
20
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
80
40
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
40
0
-40
0
20
40
60
80
ENGINE - X COMP.
DISP. - IN.


BUDD TEST #9
CAR 1
ACCEL. - G'S
20
0
-20
-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
10
0
-10
-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.
0
-10
-20
-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
20
0
-20
-16
-12
-8
-4
0
ENGINE - Y COMP.
DISP. - IN.


BUDD TEST #9
CAR 1
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
ENGINE - Z COMP.
CAR 1
4
0
-4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
ENGINE - Z COMP.
CAR 1
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
ENGINE - Z COMP.
CAR 1
10
0
-10
-8
-4
0
4
8
DISP. - IN.
ENGINE - Z COMP.


CAR 1
BUDD TEST #9
ACCEL. - G'S (X10¹)
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
20
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
DISPLACE. - IN.
80
40
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 (X10¹)
10
0
-10
0
20
40
60
80
FIREWALL - X COMPONENT
DISP. - IN.


BUDD TEST #9
CAR 1
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
FIREWALL - Y COMPONENT
CAR 1
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
FIREWALL - Y COMPONENT
CAR 1
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
FIREWALL - Y COMPONENT
CAR 1
20
0
-20
-10
0
10
20
30
DISP. - IN.
FIREWALL - Y COMPONENT

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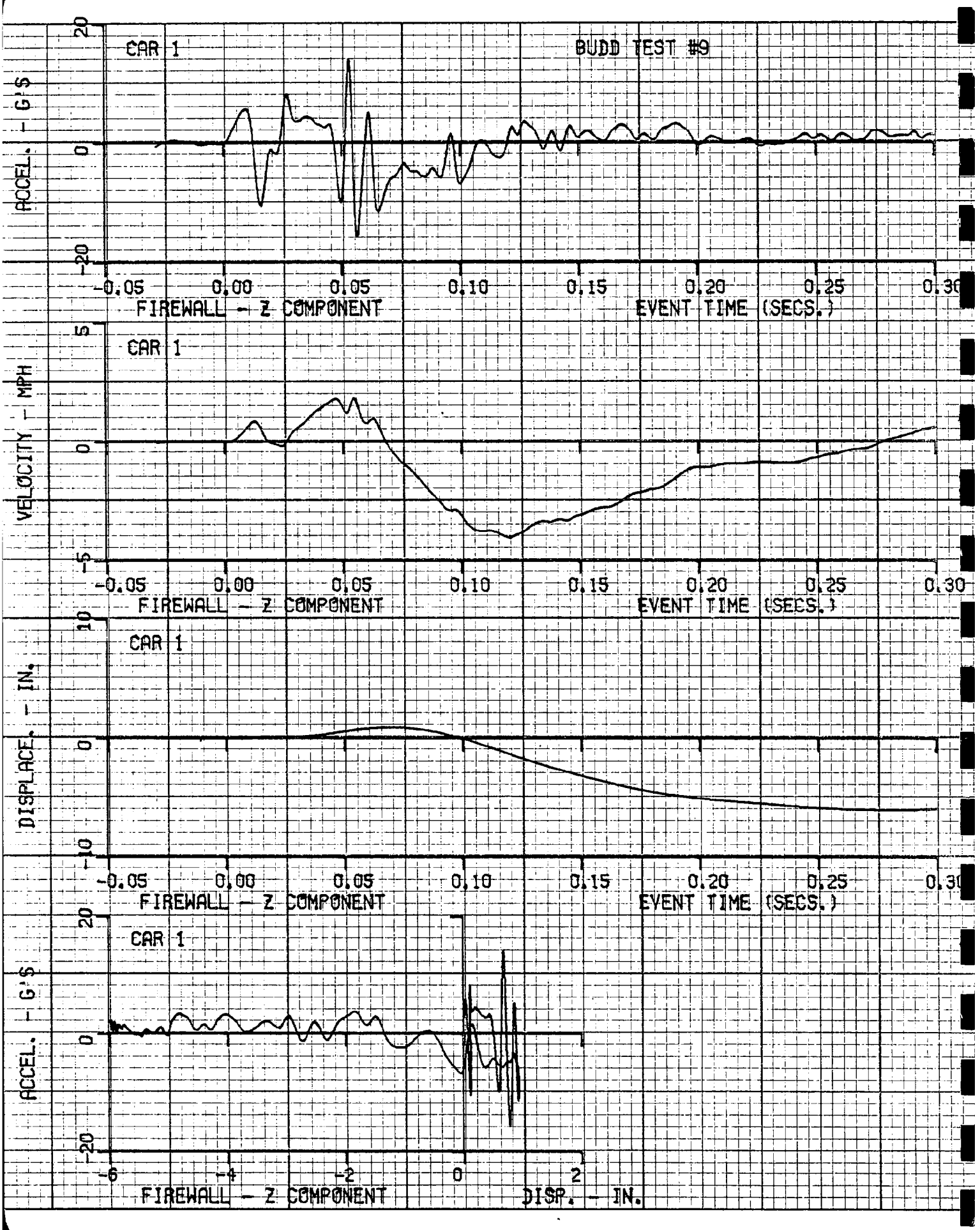
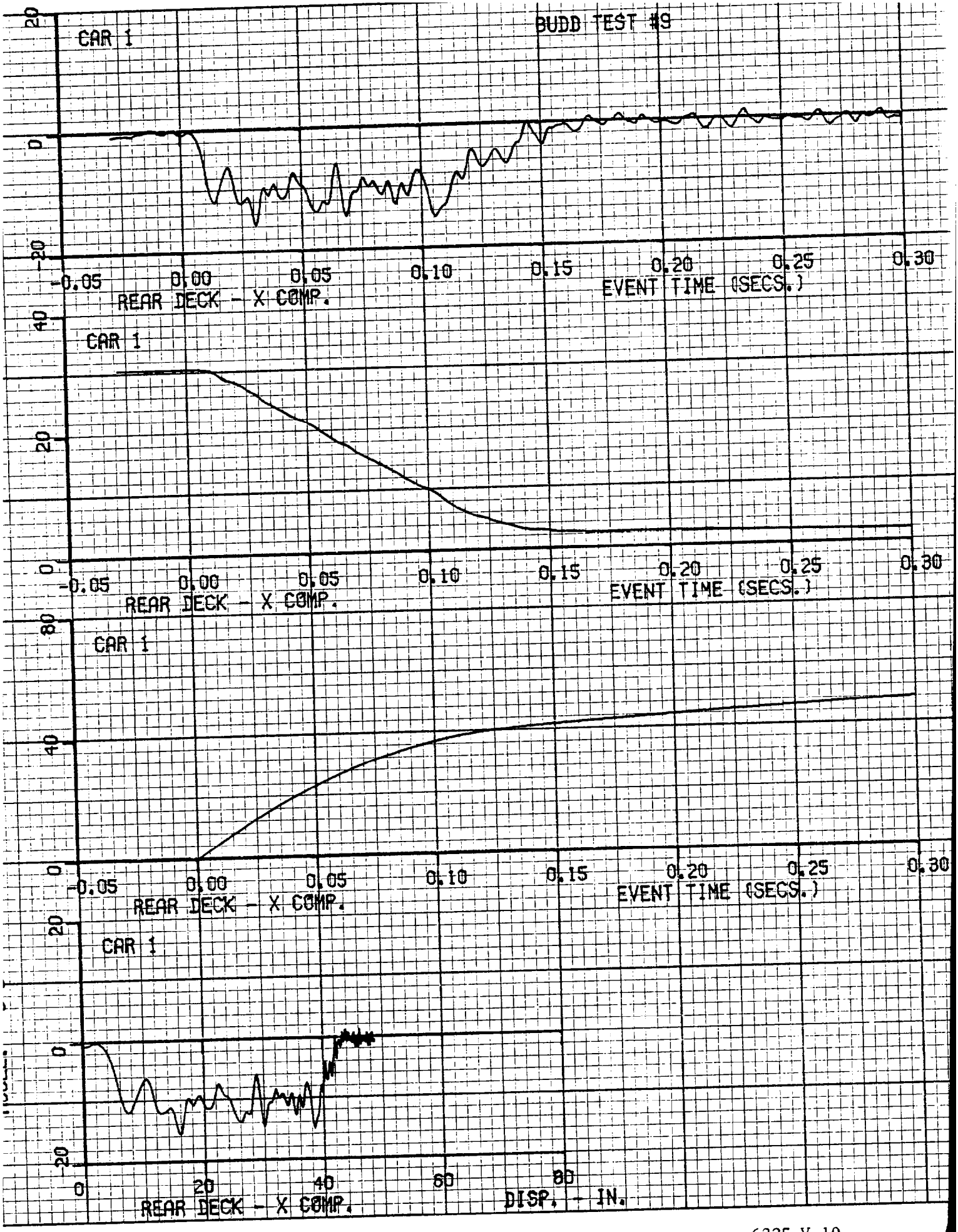
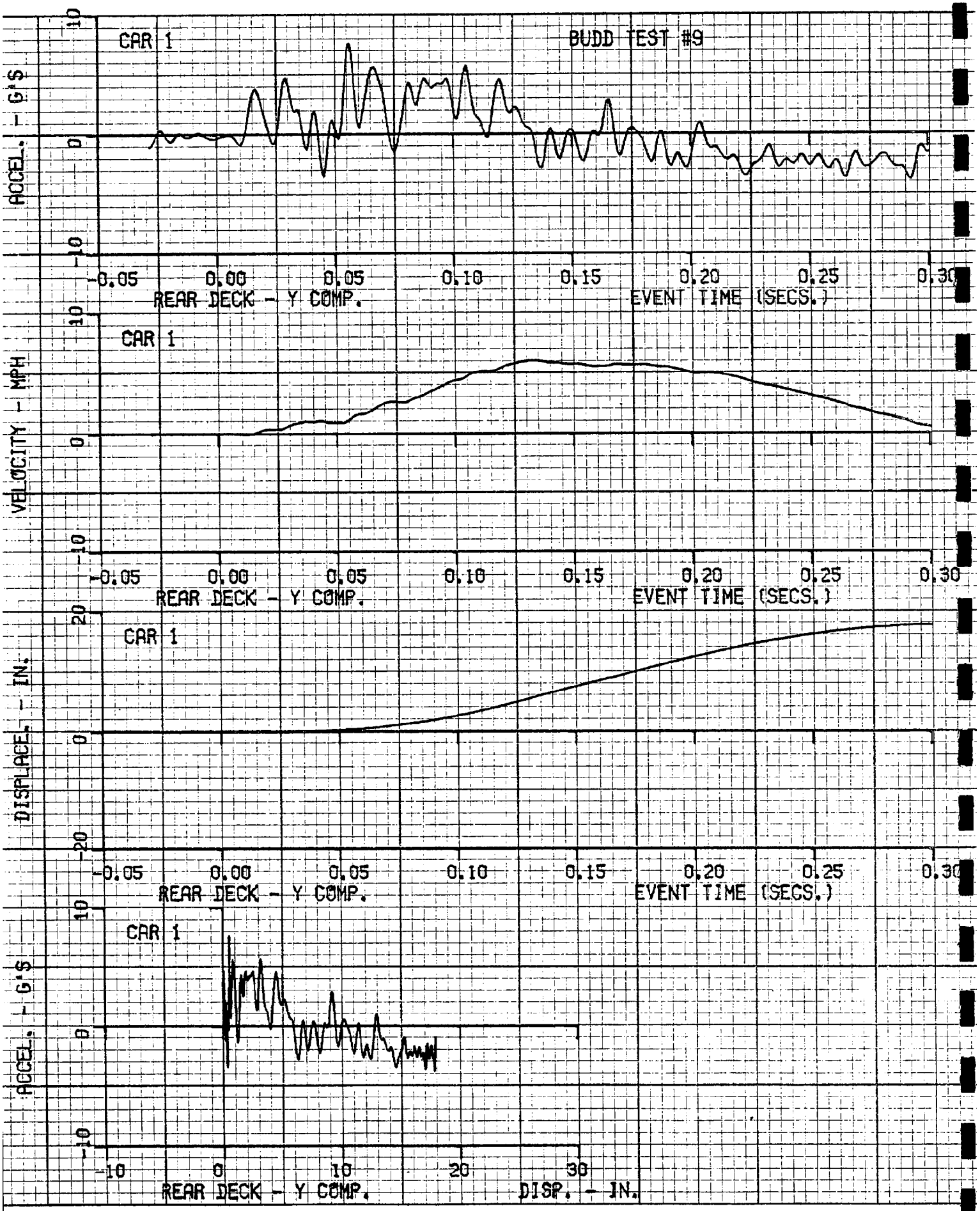
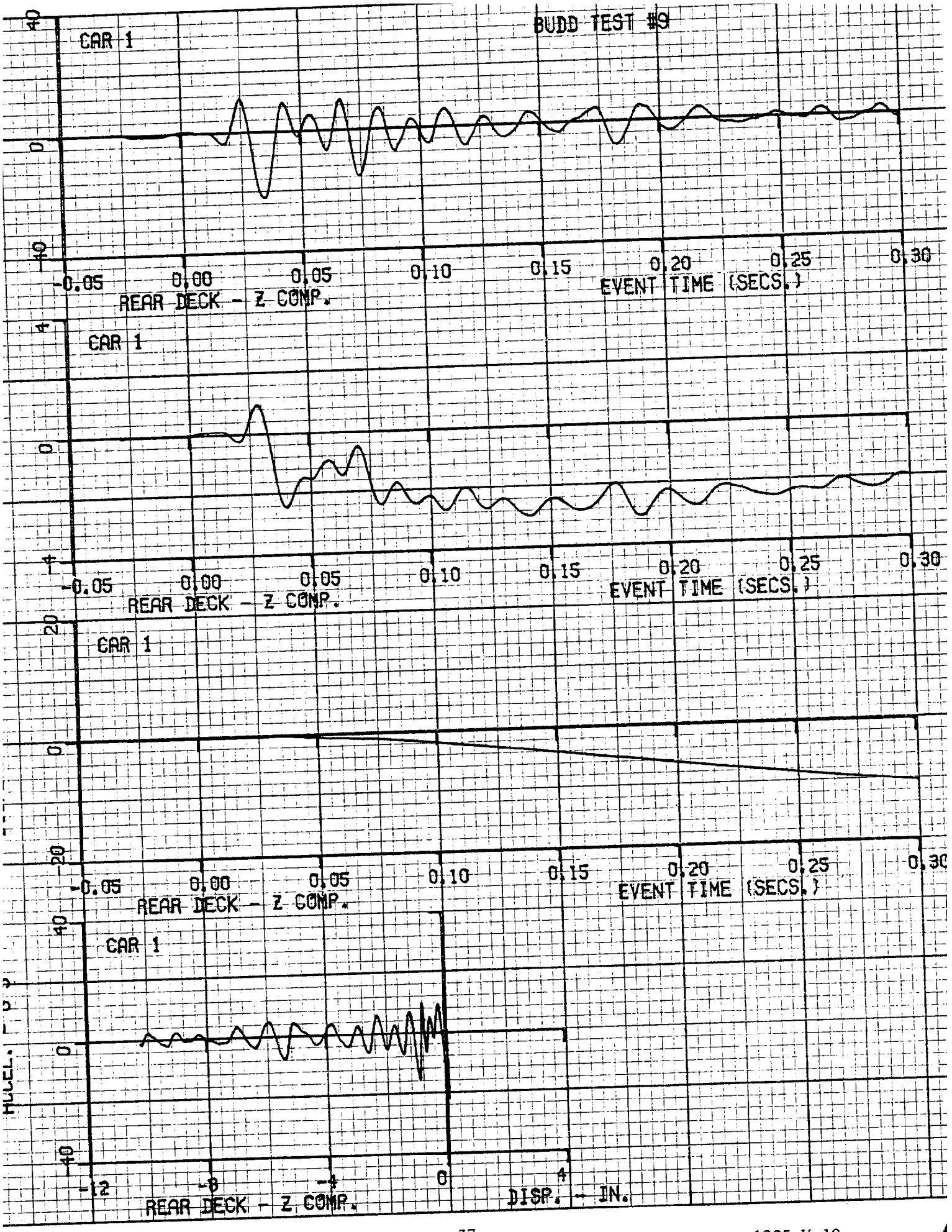
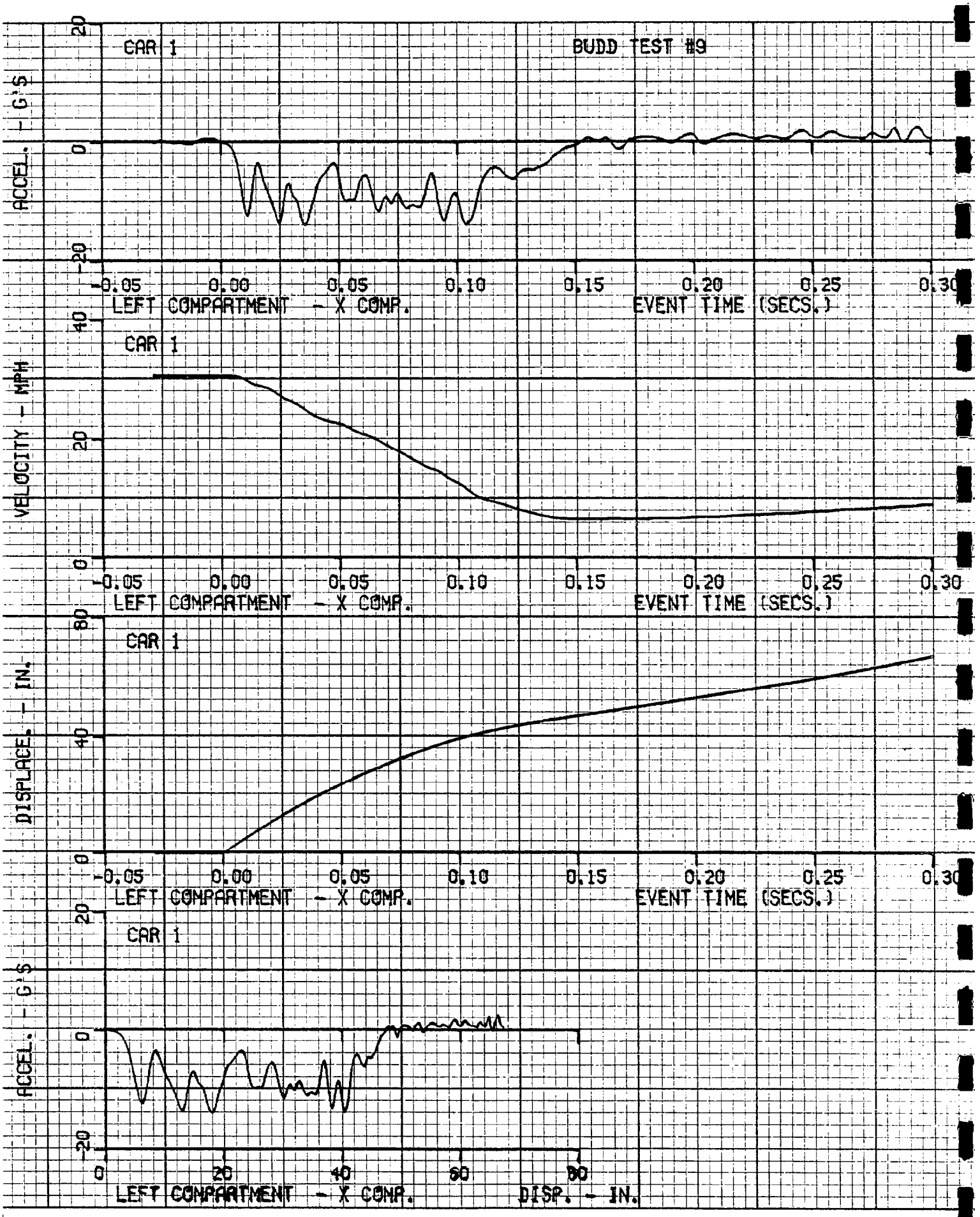
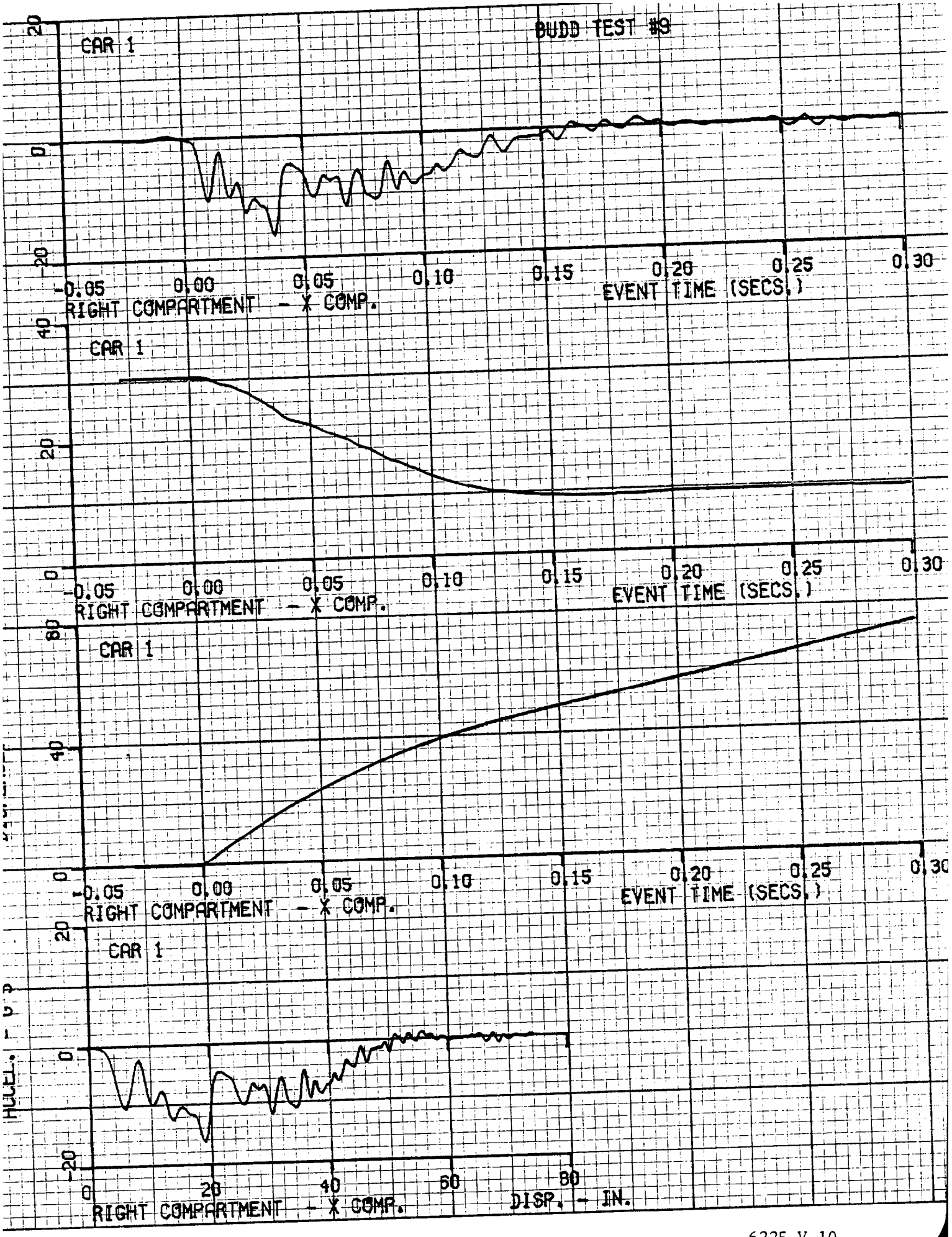

CAR 1
BUDD TEST #9
ACCEL. - G'S
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - Z COMPONENT
EVENT TIME (SECS.)
CAR 1
VELOCITY - MPH
5
0
-5
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - Z COMPONENT
EVENT TIME (SECS.)
CAR 1
DISPLACE. - IN.
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - Z COMPONENT
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
20
0
-20
-6
-4
-2
0
2
FIREWALL - Z COMPONENT
DISP. - IN.

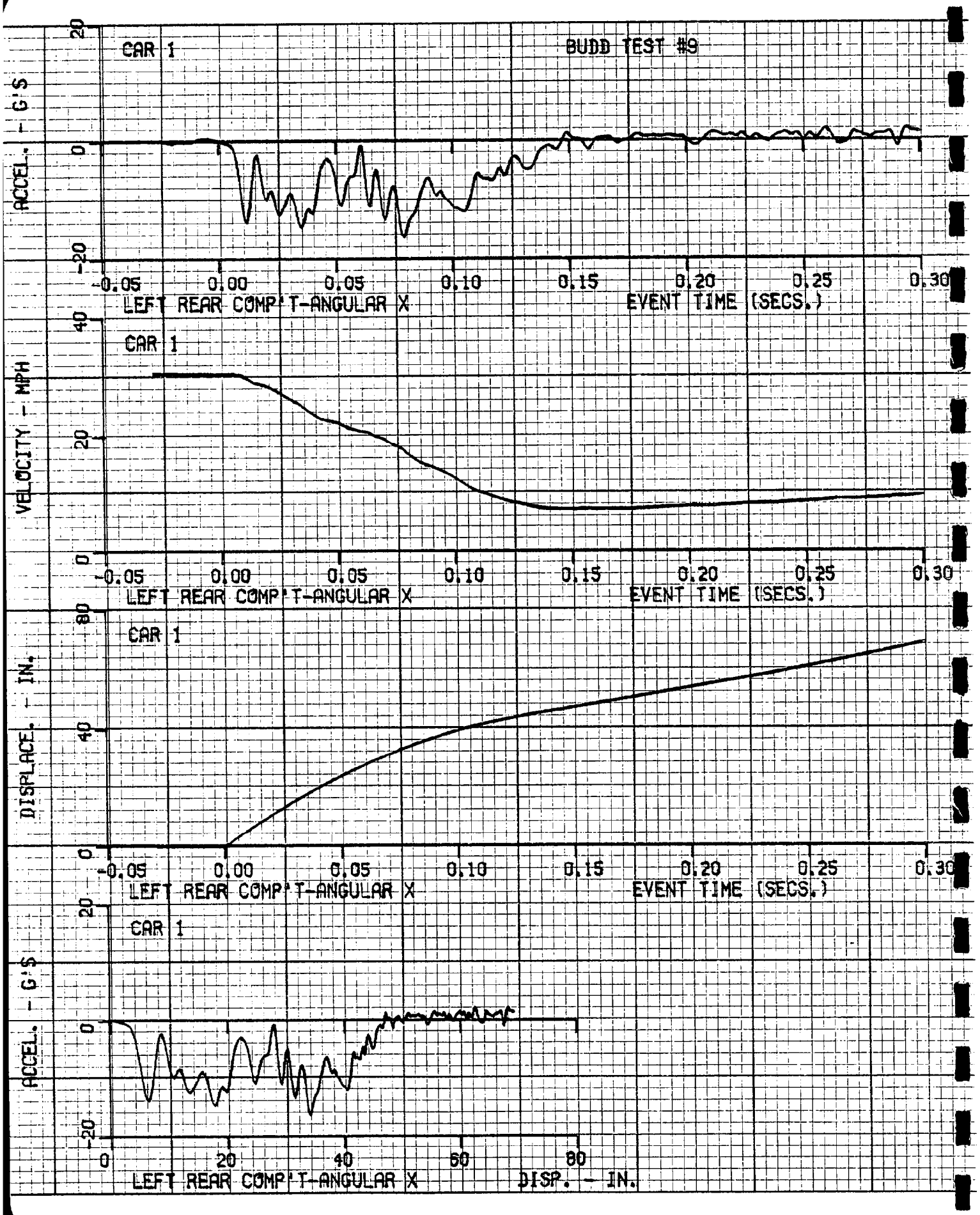

BUDD TEST #9
CAR 1
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
REAR DECK - X COMP.
CAR 1
40
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
REAR DECK - X COMP.
CAR 1
80
40
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
REAR DECK - X COMP.
CAR 1
20
0
-20
0
20
40
60
80
DISP. - IN.
REAR DECK - X COMP.

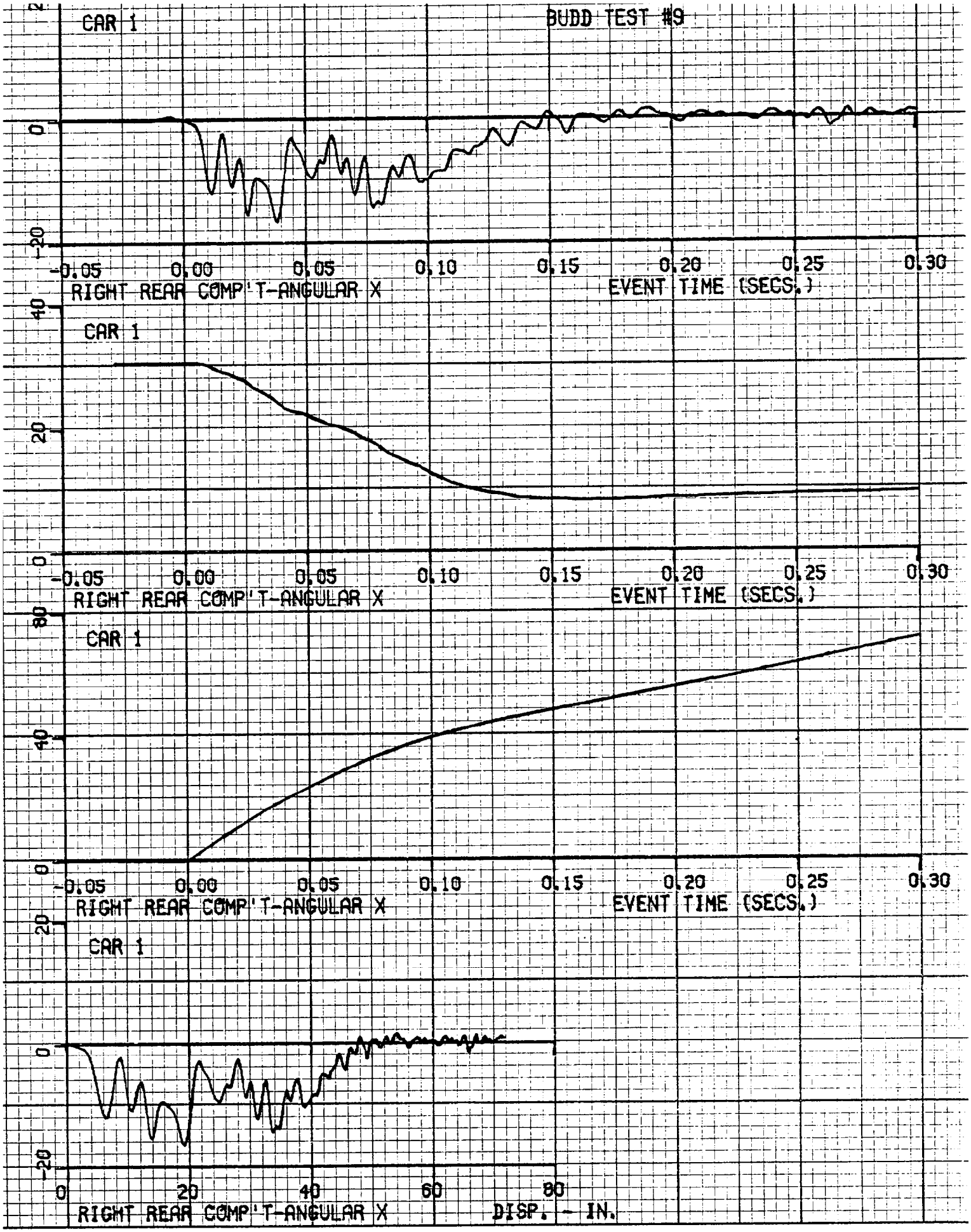

CAR 1
BUDD TEST #9
ACCEL. - G'S
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Y COMP.
EVENT TIME (SECS.)
CAR 1
VELOCITY - MPH
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Y COMP.
EVENT TIME (SECS.)
CAR 1
DISPLACE. - IN.
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Y COMP.
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
10
0
-10
-10
0
10
20
30
REAR DECK - Y COMP.
DISP. - IN.

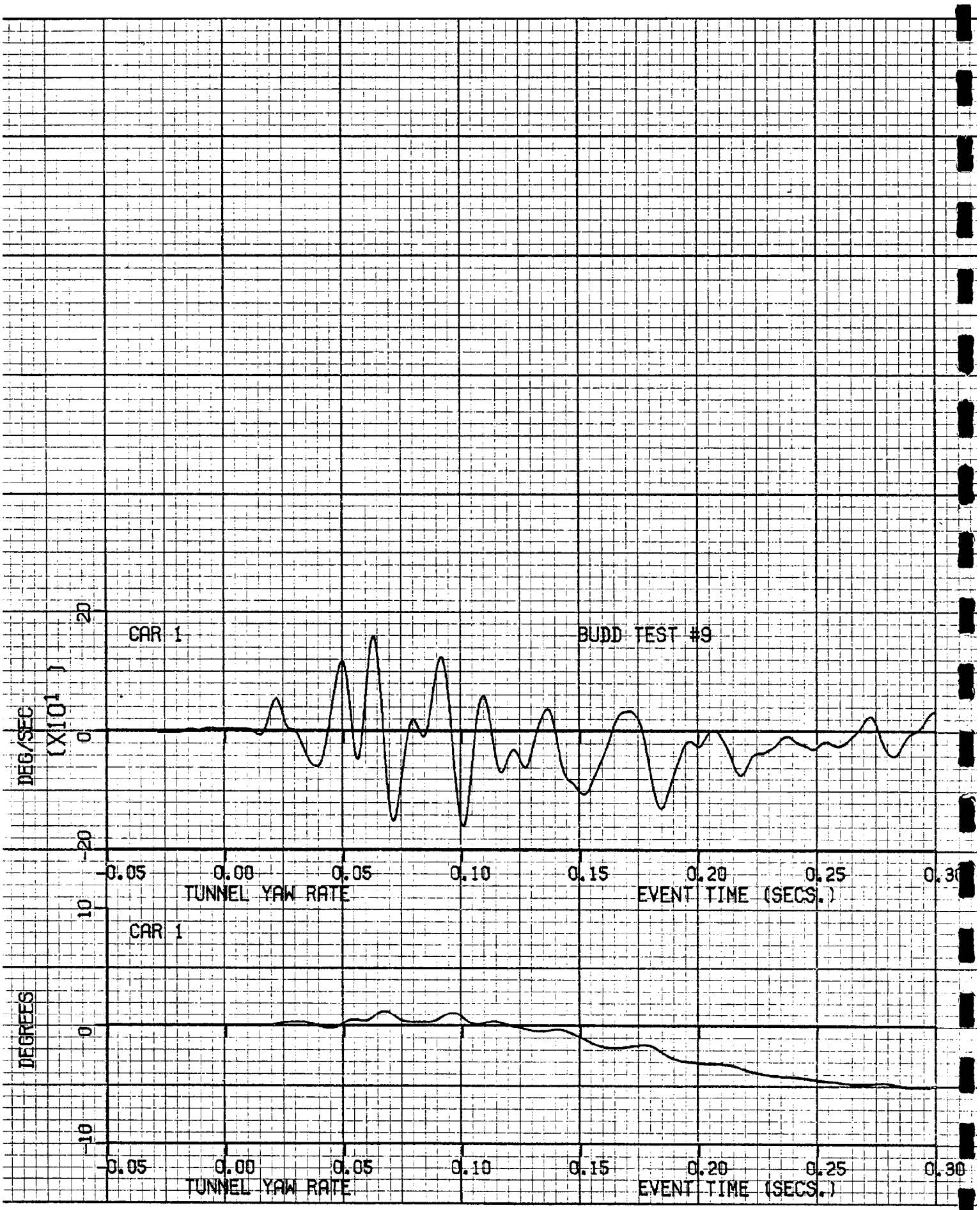

BUDD TEST #9
CAR 1
40
0
40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
REAR DECK - Z COMP.
CAR 1
4
0
4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
REAR DECK - Z COMP.
CAR 1
20
0
20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
REAR DECK - Z COMP.
CAR 1
40
0
40
-12
-8
-4
0
4
DISP. - IN.
REAR DECK - Z COMP.


CAR 1
BUDD TEST #9
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
20
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
DISPLACE. - IN.
80
40
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
20
40
60
80
LEFT COMPARTMENT - X COMP.
DISP. - IN.


BUDD TEST #9
CAR 1
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
RIGHT COMPARTMENT - X COMP.
CAR 1
40
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
RIGHT COMPARTMENT - X COMP.
CAR 1
80
40
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
RIGHT COMPARTMENT - X COMP.
CAR 1
20
0
-20
0
20
40
60
80
DISP. - IN.
RIGHT COMPARTMENT - X COMP.


CAR 1
BUDD TEST #9
ACCEL. - G'S
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
VELOCITY - MPH
40
20
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
DISPLACE. - IN.
80
40
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
20
0
-20
0
20
40
60
80
LEFT REAR COMP'T-ANGULAR X
DISP. - IN.

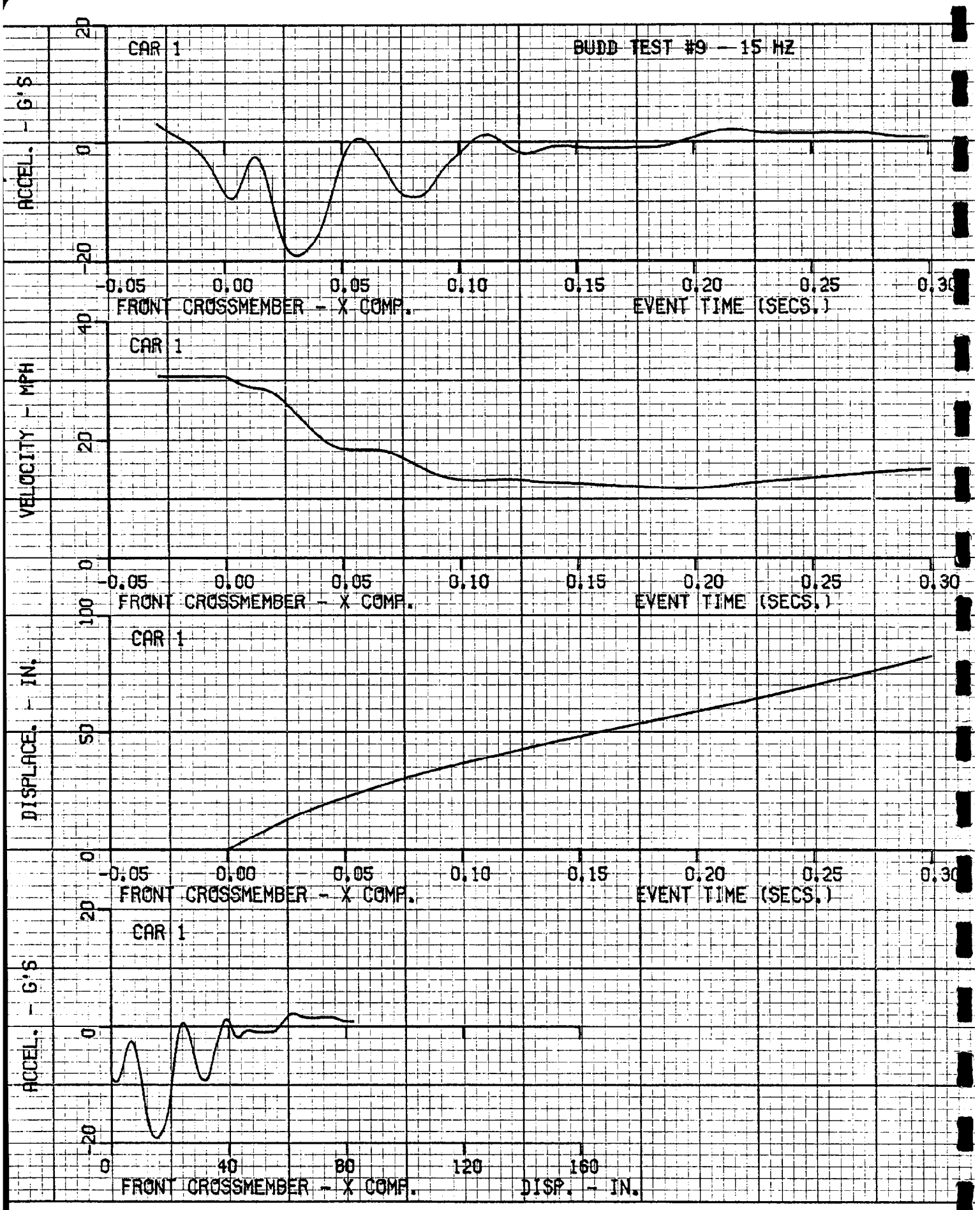

CAR 1
BUDD TEST #9
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMP'T-ANGULAR X
EVENT TIME (SECS.)
40
CAR 1
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMP'T-ANGULAR X
EVENT TIME (SECS.)
80
CAR 1
40
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMP'T-ANGULAR X
EVENT TIME (SECS.)
20
CAR 1
0
-20
0
20
40
60
80
RIGHT REAR COMP'T-ANGULAR X
DISP. - IN.

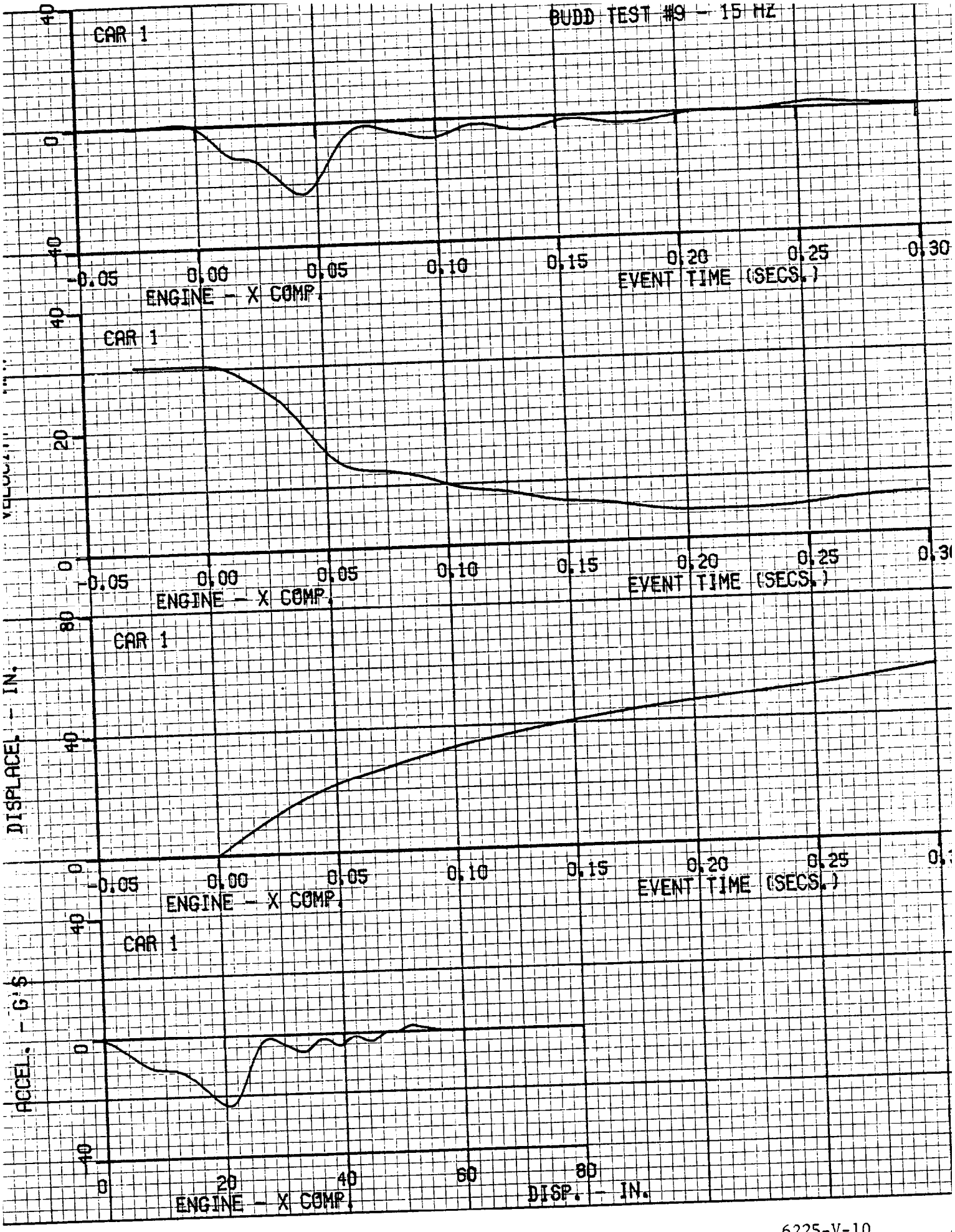

CAR 1
BUDD TEST #9
DEG/SEC (X10¹)
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
TUNNEL YAW RATE
EVENT TIME (SECS.)
CAR 1
DEGREES
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
TUNNEL YAW RATE
EVENT TIME (SECS.)

TEST NO. 9

CAR 1 - 1978 CHEVROLET IMPALA

VEHICLE DATA, 15 HZ FILTER


CAR 1
BUDD TEST #9 — 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
20
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
DISPLACE. - IN.
100
50
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 #9 - 15 HZ
CAR 1
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
ENGINE - X COMP.
CAR 1
40
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
EVENT TIME (SECS.)
ENGINE - X COMP.
DISPLACEL. - IN.
80
40
0
CAR 1
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
EVENT TIME (SECS.)
ENGINE - X COMP.
ACCEL. - G'S
40
0
CAR 1
40
0
20
40
60
80
DISP. - IN.
ENGINE - X COMP.

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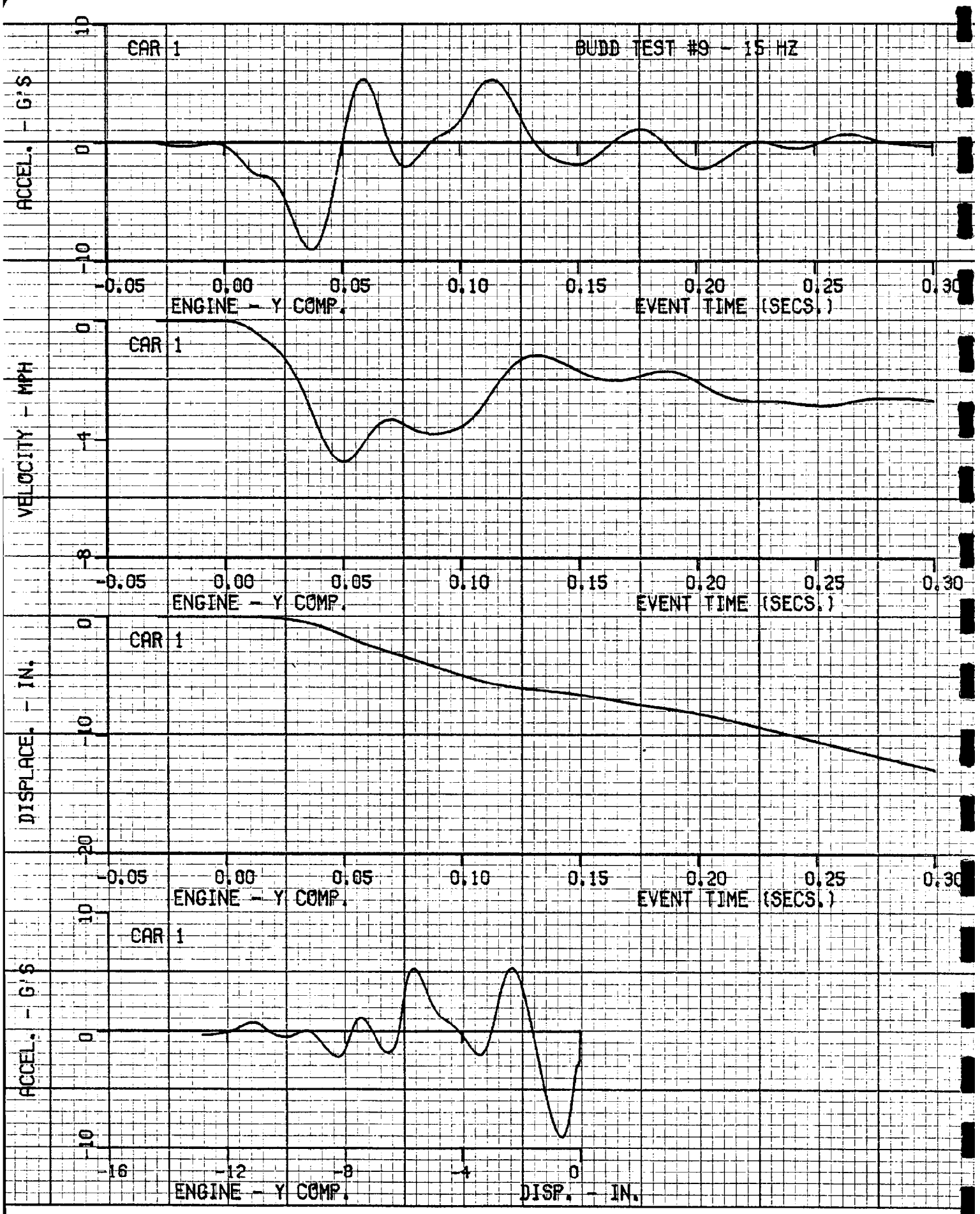
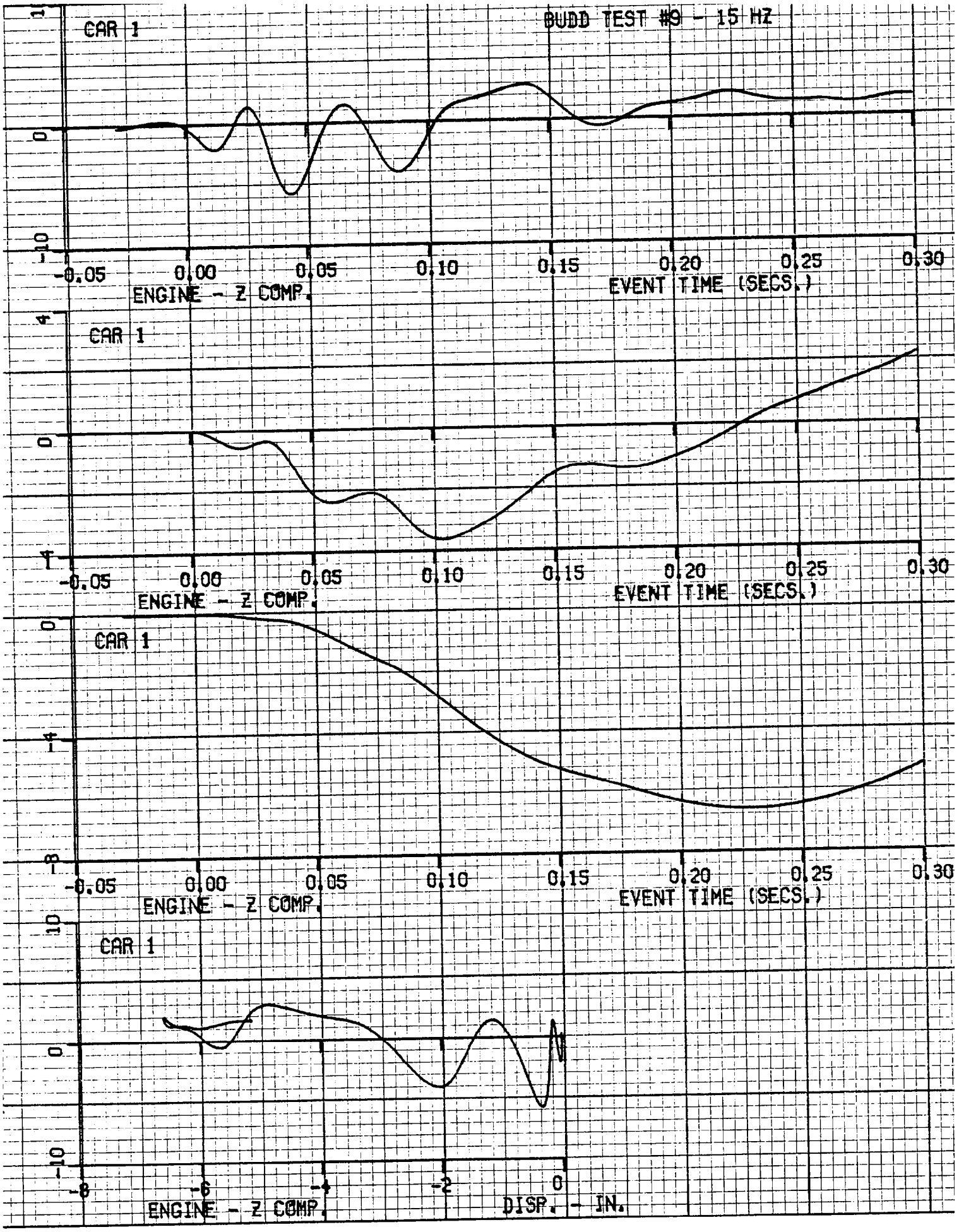
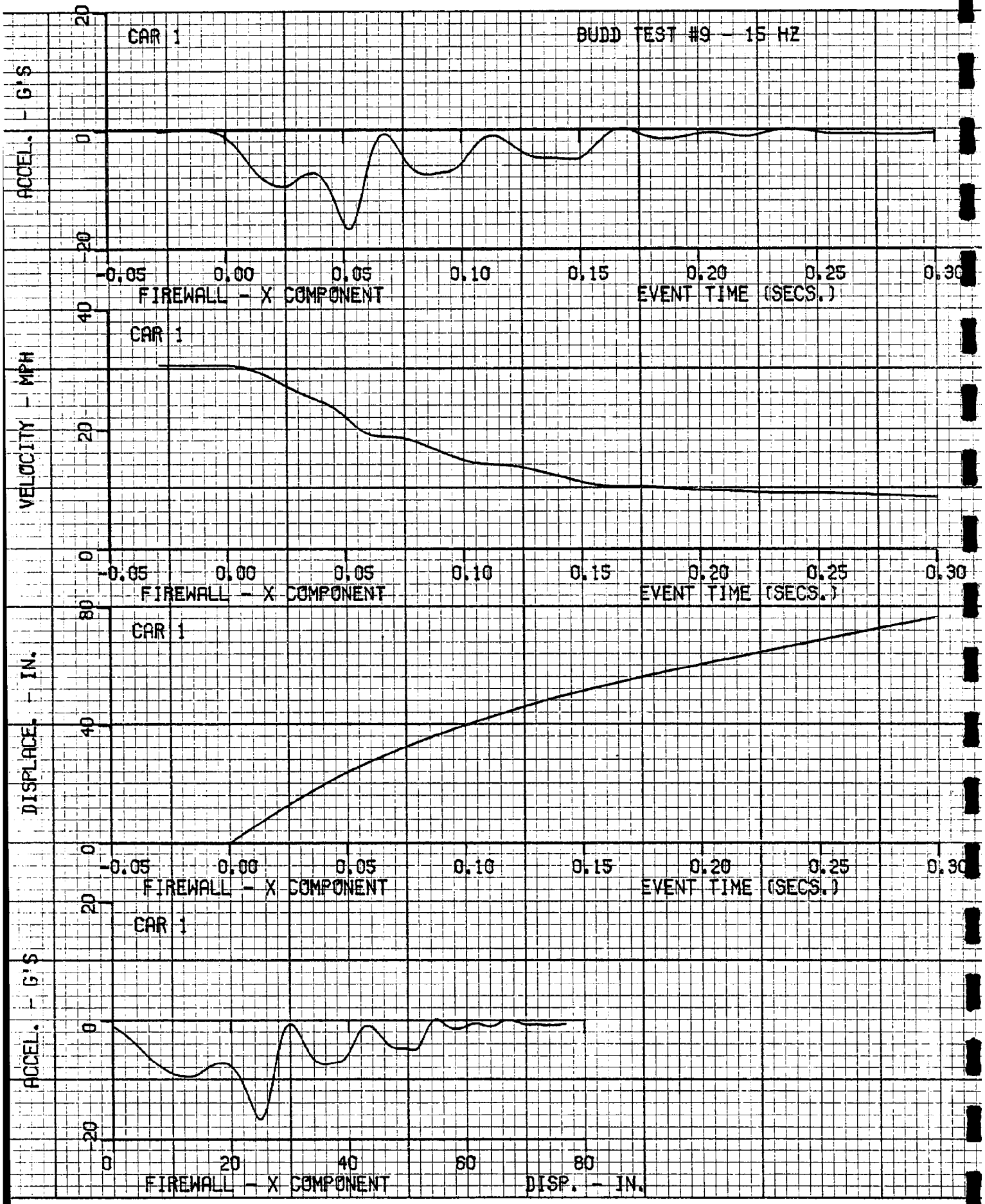
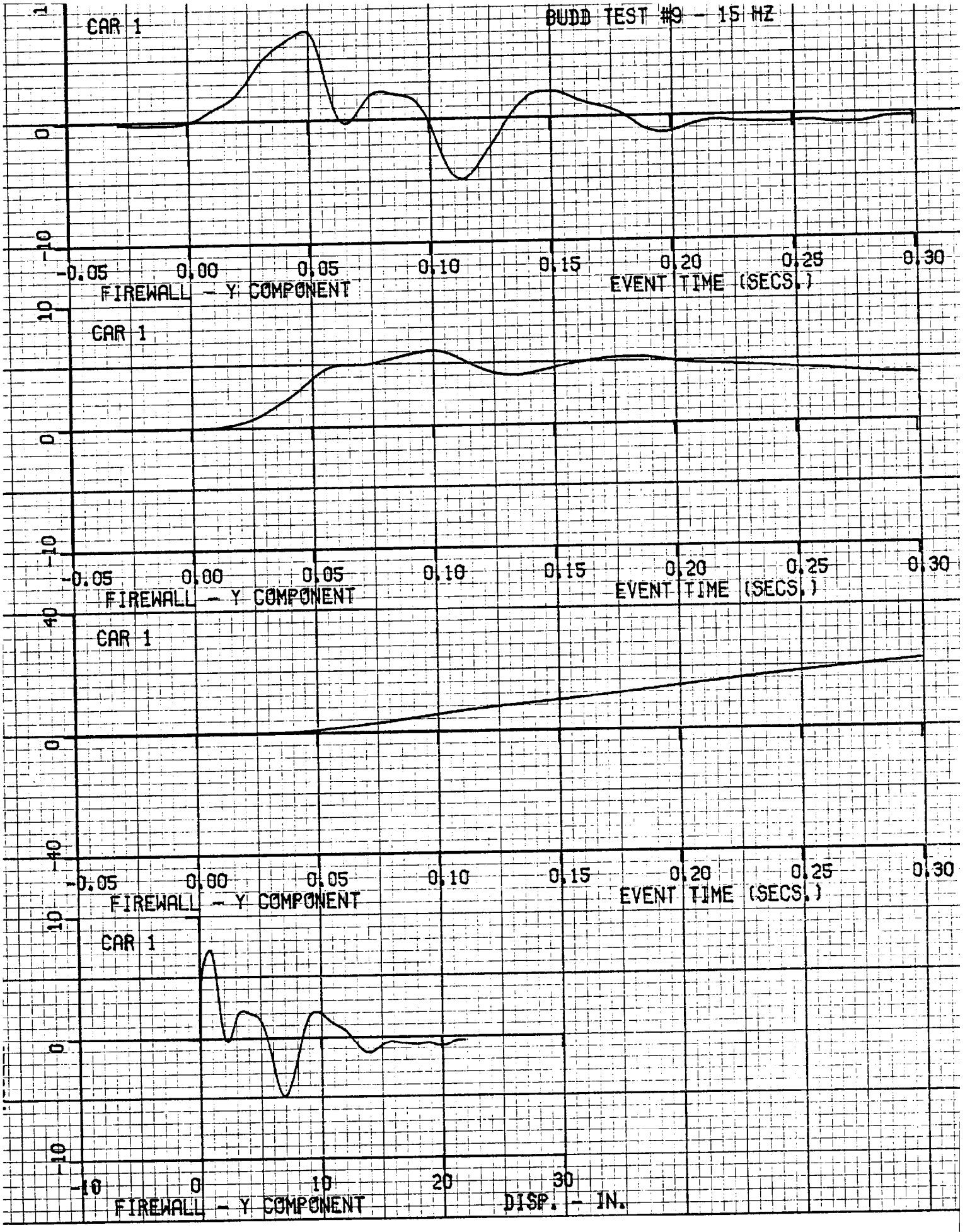
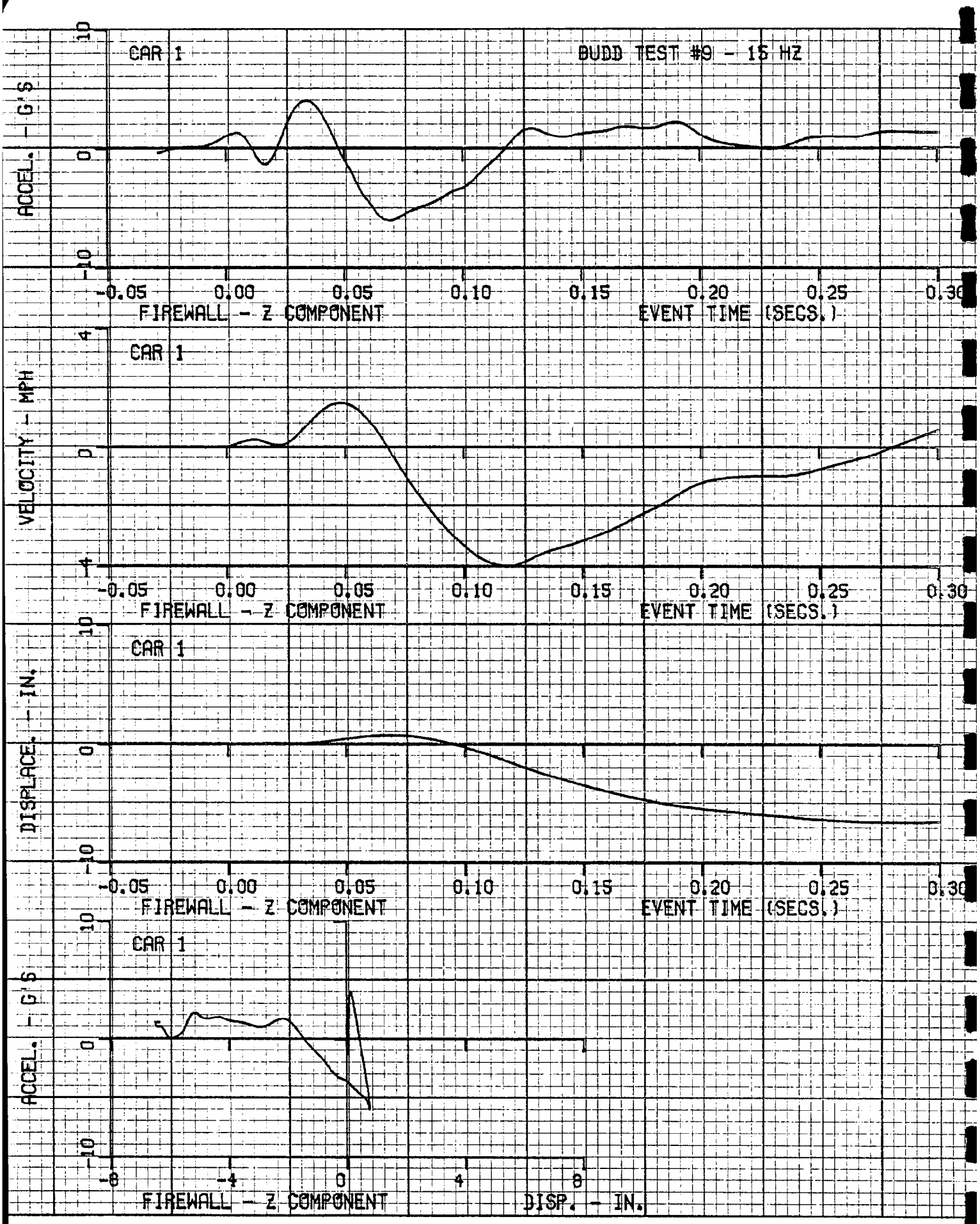
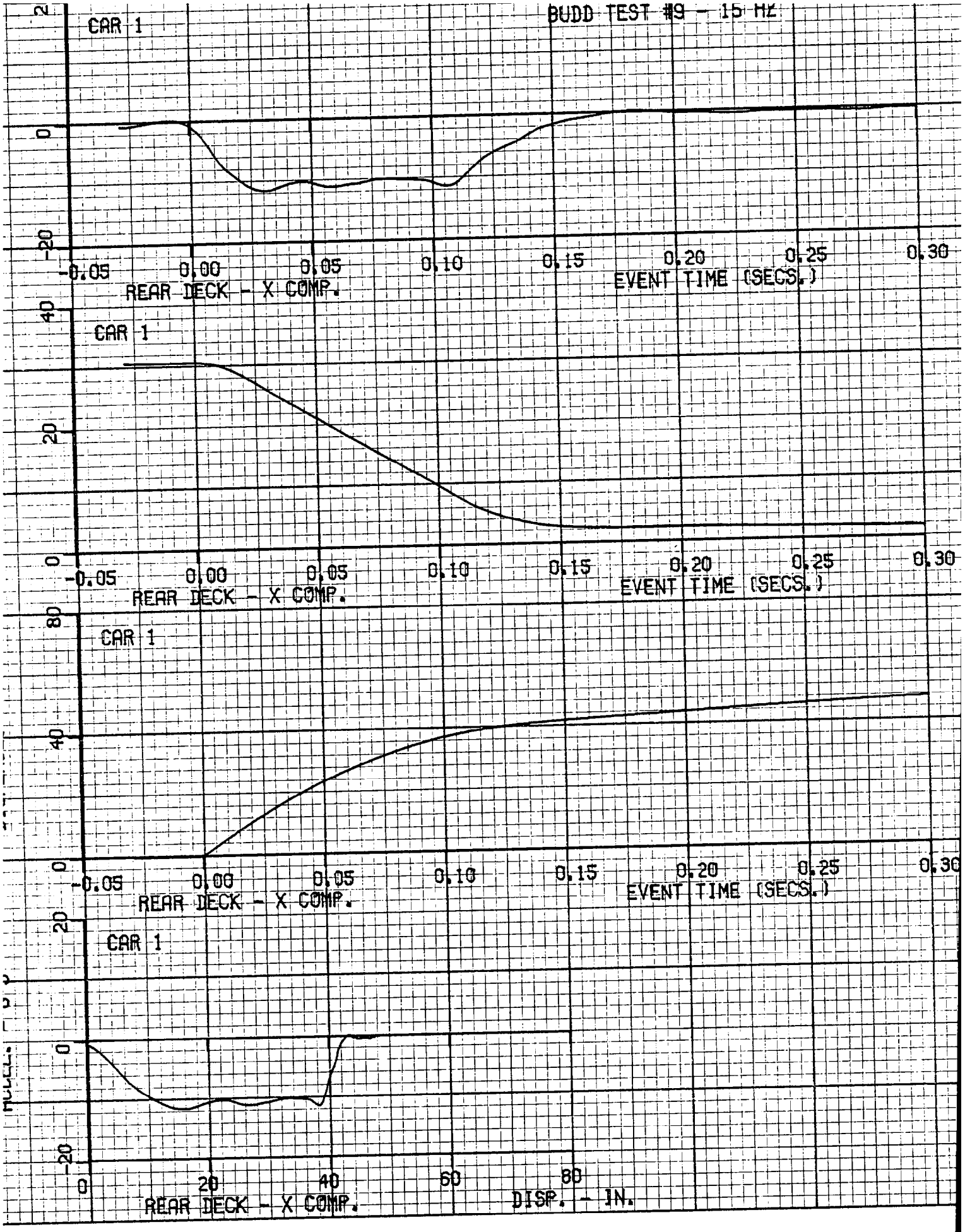

BUDD TEST #9 - 15 HZ
CAR 1
ACCEL. - G'S
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - Y COMP.
EVENT TIME (SECS.)
CAR 1
VELOCITY - MPH
0
-4
-8
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - Y COMP.
EVENT TIME (SECS.)
CAR 1
DISPLACE. - IN.
0
-10
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - Y COMP.
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
10
0
-10
-16
-12
-8
-4
0
ENGINE - Y COMP.
DISP. - IN.

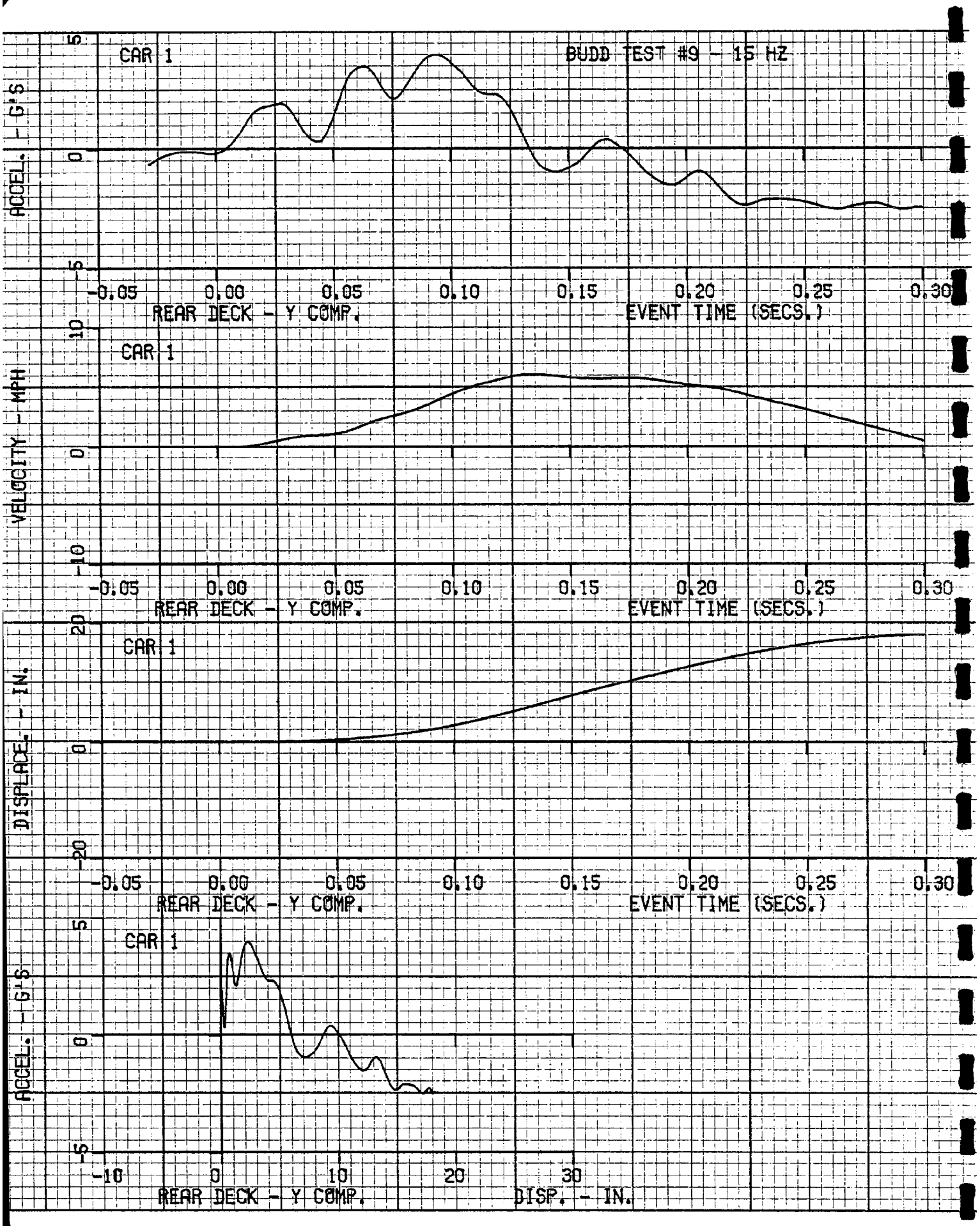

BUDD TEST #9 - 15 HZ
CAR 1
1
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - Z COMP.
EVENT TIME (SECS.)
CAR 1
4
0
-4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - Z COMP.
EVENT TIME (SECS.)
CAR 1
0
-4
-8
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - Z COMP.
EVENT TIME (SECS.)
CAR 1
10
0
-10
-8
-6
-4
-2
0
ENGINE - Z COMP.
DISP. - IN.

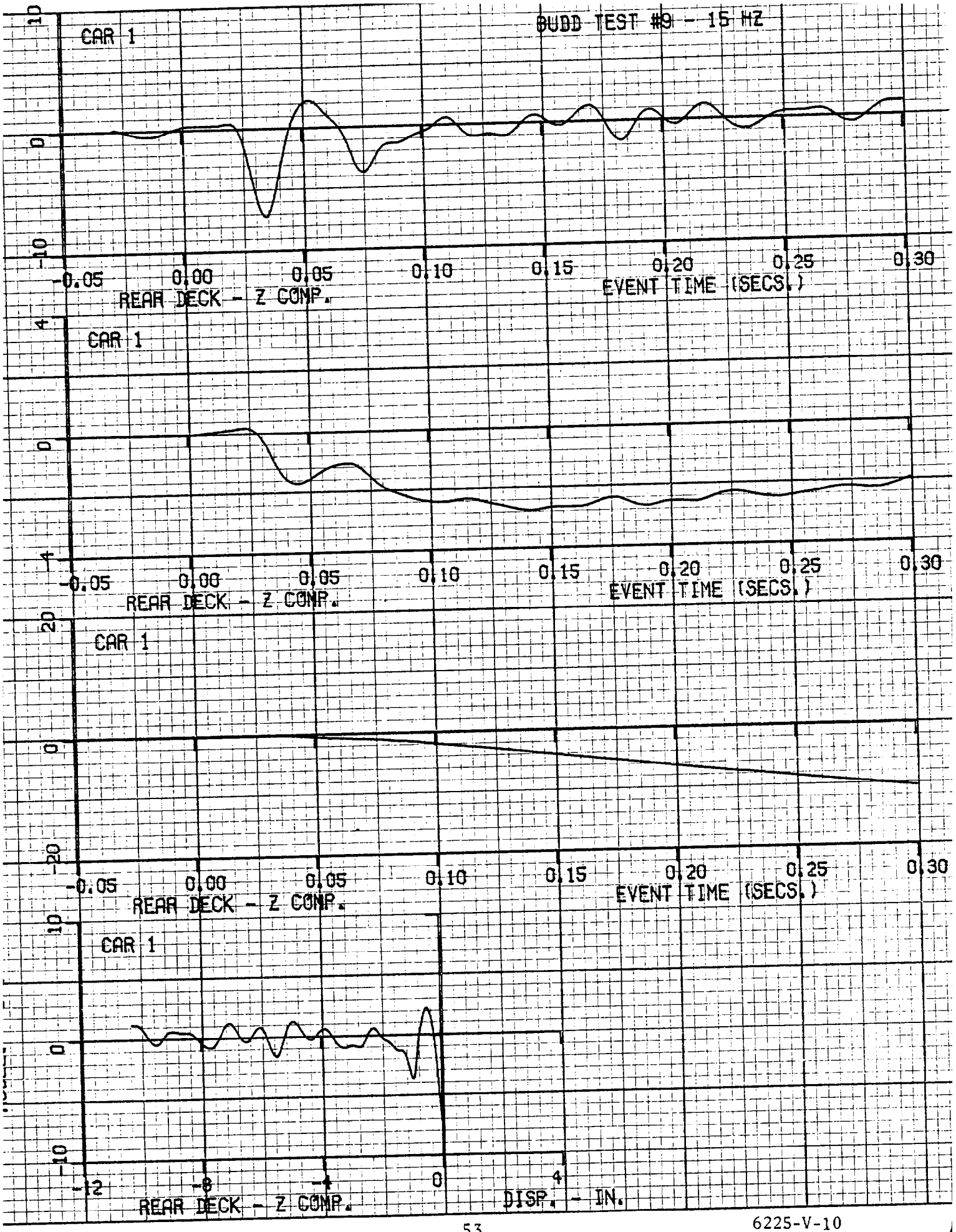

CAR 1
BUDD TEST #9 - 15 HZ
ACCEL. - G'S
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - X COMPONENT
EVENT TIME (SECS.)
CAR 1
VELOCITY - MPH
40
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - X COMPONENT
EVENT TIME (SECS.)
CAR 1
DISPLACE. - IN.
80
40
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - X COMPONENT
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
20
0
-20
0
20
40
60
80
FIREWALL - X COMPONENT
DISP. - IN.

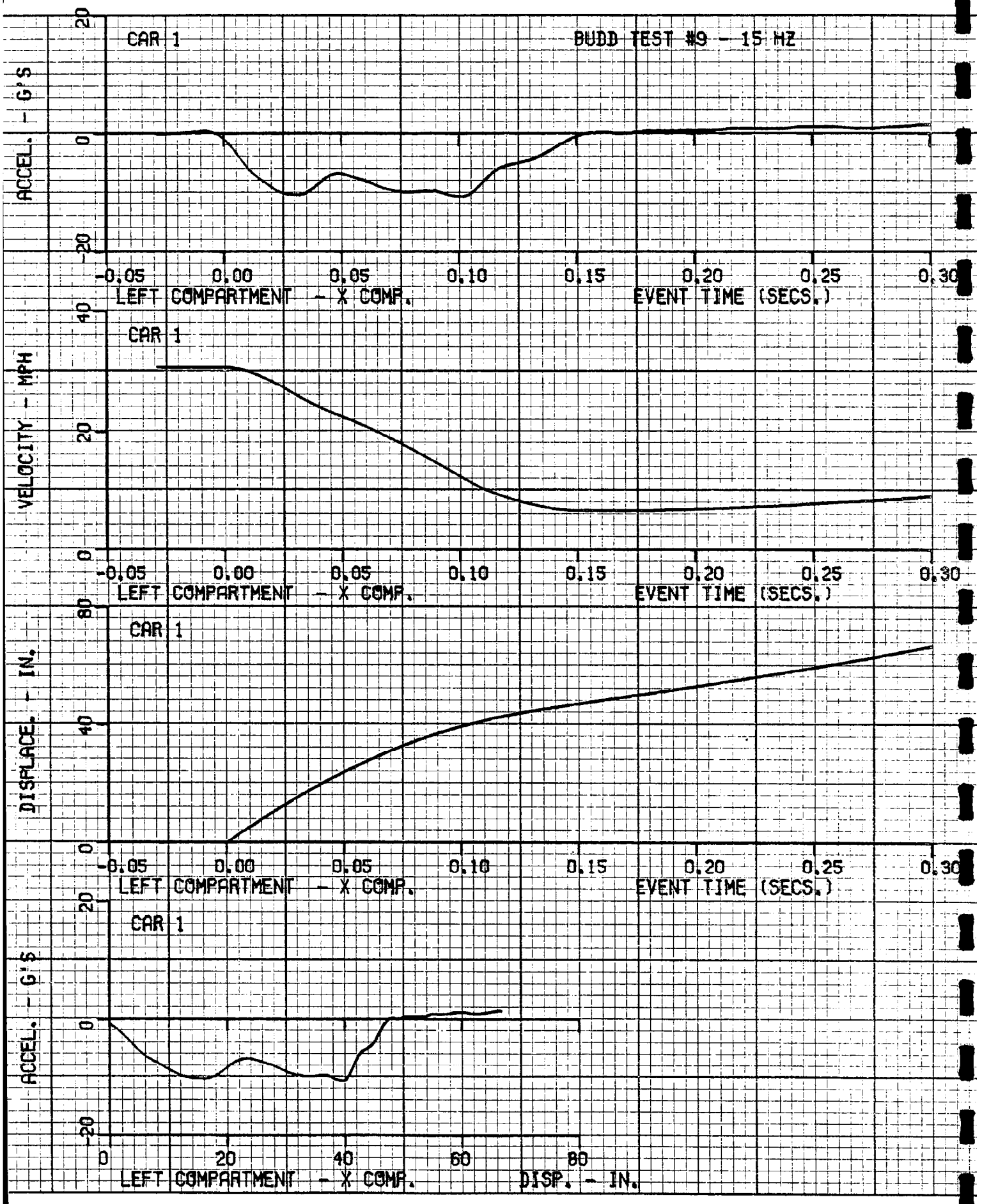

BUDD TEST #9 - 15 MZ
CAR 1
1
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
FIREWALL - Y COMPONENT
CAR 1
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
FIREWALL - Y COMPONENT
CAR 1
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
FIREWALL - Y COMPONENT
CAR 1
10
0
-10
-10
0
10
20
30
DISP. - IN.
FIREWALL - Y COMPONENT

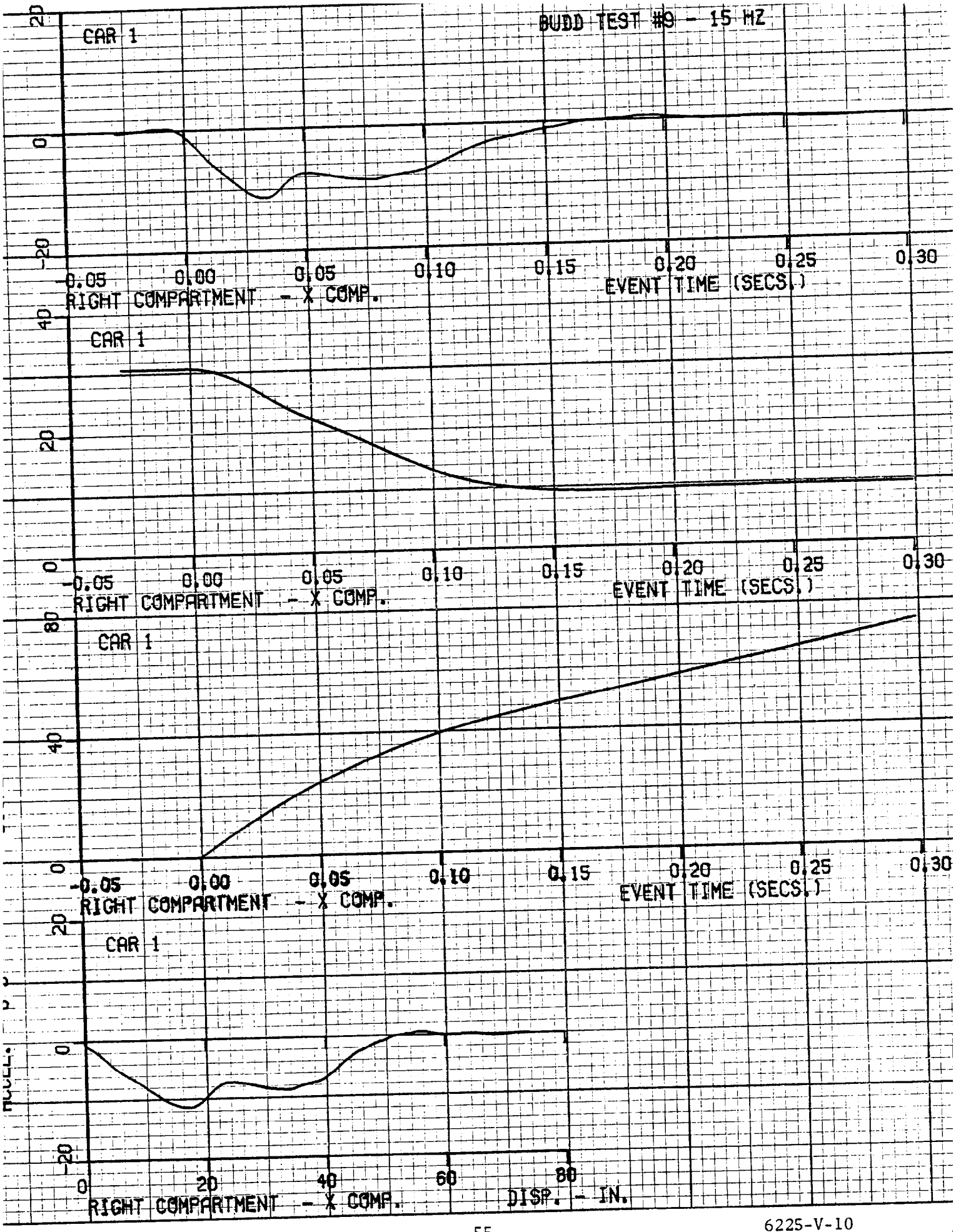

CAR 1
BUDD TEST #9 - 15 HZ
ACCEL. - G'S
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - Z COMPONENT
EVENT TIME (SECS.)
CAR 1
VELOCITY - MPH
4
0
-4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - Z COMPONENT
EVENT TIME (SECS.)
CAR 1
DISPLACE. - IN.
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - Z COMPONENT
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
10
0
-10
-8
-4
0
4
8
FIREWALL - Z COMPONENT
DISP. - IN.

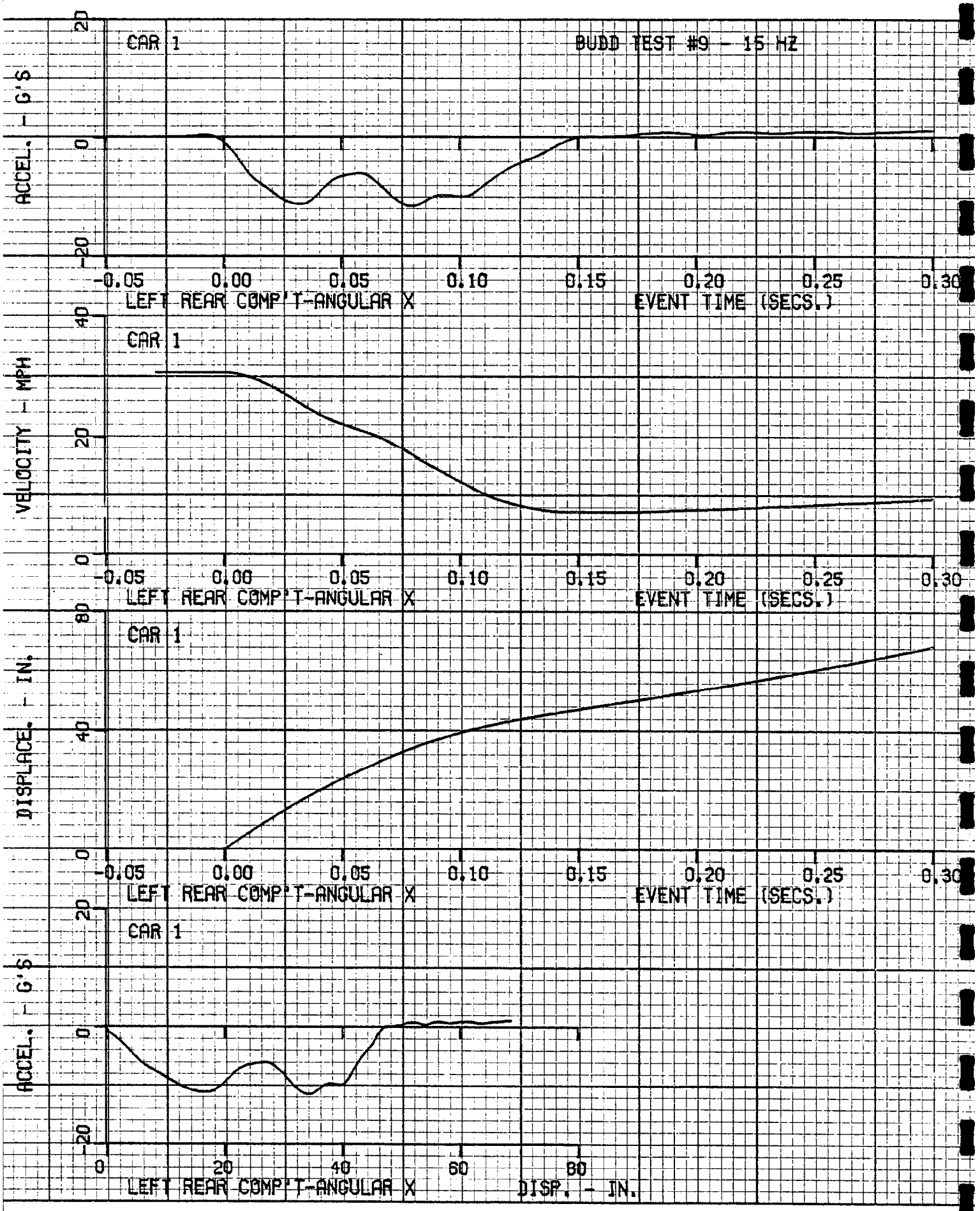

BUDD TEST #9 - 15 HZ
CAR 1
2
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
REAR DECK - X COMP.
CAR 1
40
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
REAR DECK - X COMP.
CAR 1
80
40
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
REAR DECK - X COMP.
CAR 1
20
0
-20
0
20
40
60
80
DISP. - IN.
REAR DECK - X COMP.

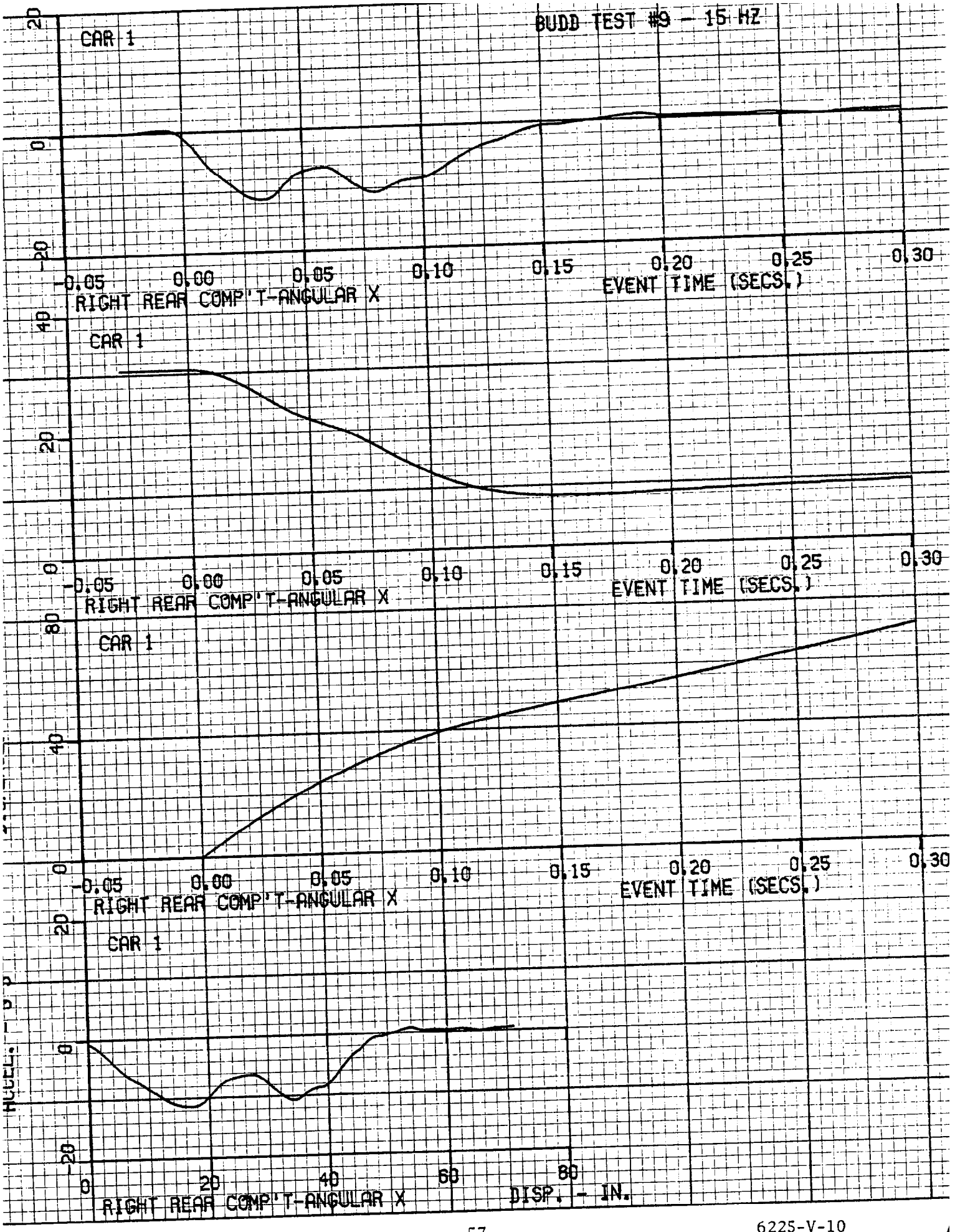

BUDD TEST #9 - 15 HZ
CAR 1
ACCEL. - G'S
5
0
-5
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Y COMP.
EVENT TIME (SECS.)
CAR 1
VELOCITY - MPH
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Y COMP.
EVENT TIME (SECS.)
CAR 1
DISPLACE. - IN.
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Y COMP.
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
5
0
-5
-10
0
10
20
30
REAR DECK - Y COMP.
DISP. - IN.

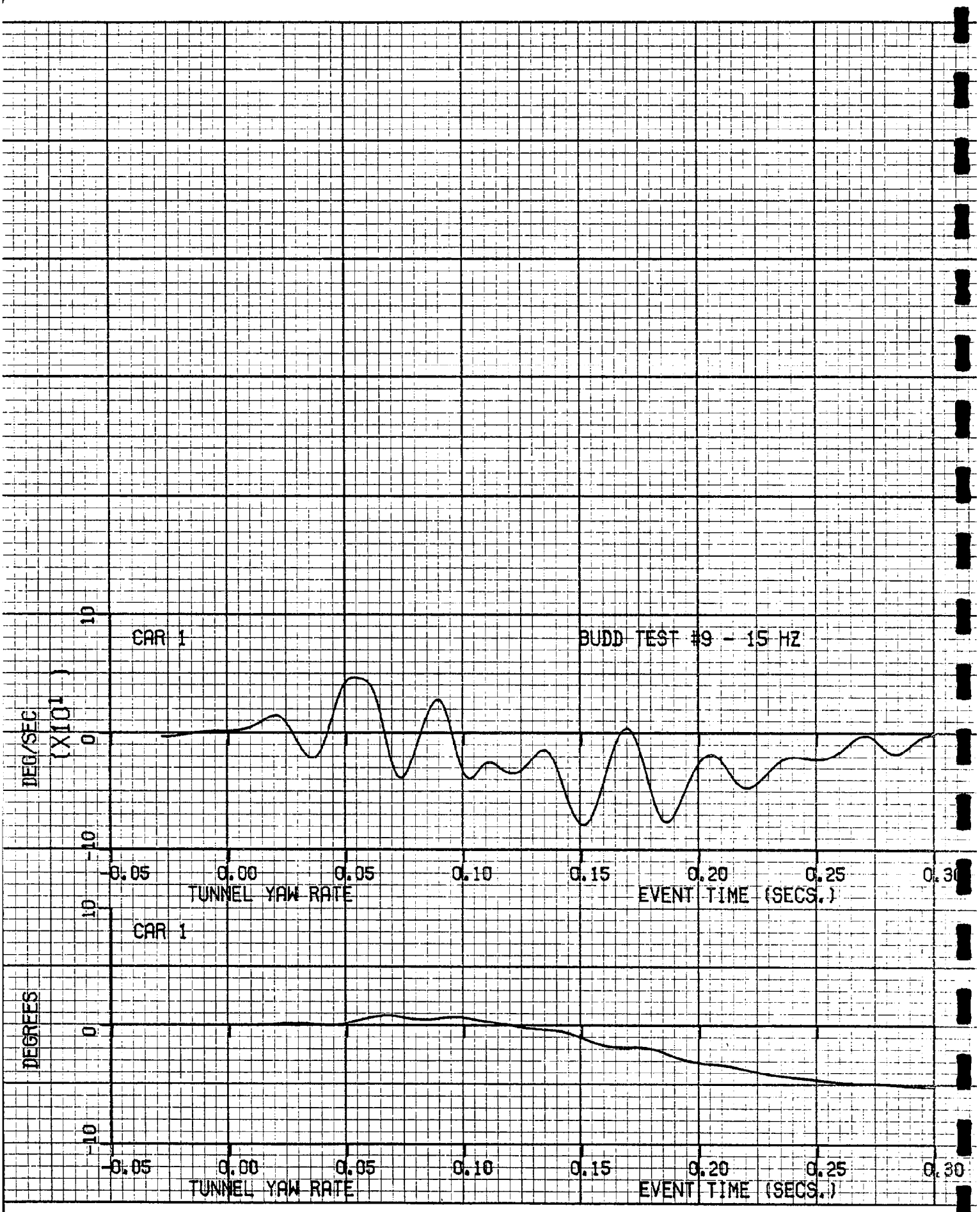

BUDD TEST #9 - 15 HZ
CAR 1
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
REAR DECK - Z COMP.
CAR 1
4
0
-4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
REAR DECK - Z COMP.
CAR 1
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
REAR DECK - Z COMP.
CAR 1
10
0
-10
-12
-8
-4
0
4
DISP. - IN.
REAR DECK - Z COMP.


CAR 1
BUDD TEST #9 - 15 HZ
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
20
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
DISPLACE. - IN.
80
40
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
20
40
60
80
LEFT COMPARTMENT - X COMP.
DISP. - IN.


BUDD TEST #9 - 15 MZ
CAR 1
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
RIGHT COMPARTMENT - X COMP.
CAR 1
40
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
RIGHT COMPARTMENT - X COMP.
CAR 1
80
40
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
RIGHT COMPARTMENT - X COMP.
CAR 1
20
0
-20
0
20
40
60
80
DISP. - IN.
RIGHT COMPARTMENT - X COMP.


CAR 1
BUDD TEST #9 - 15 HZ
ACCEL. - G'S
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
VELOCITY - MPH
40
20
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
DISPLACE. - IN.
80
40
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
20
0
-20
0
20
40
60
80
LEFT REAR COMP'T-ANGULAR X
DISP. - IN.


BUDD TEST #9 - 15 HZ
CAR 1
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
RIGHT REAR COMP'T-ANGULAR X
CAR 1
40
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
RIGHT REAR COMP'T-ANGULAR X
CAR 1
80
40
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
RIGHT REAR COMP'T-ANGULAR X
CAR 1
20
0
-20
0
20
40
60
80
DISP. - IN.
RIGHT REAR COMP'T-ANGULAR X

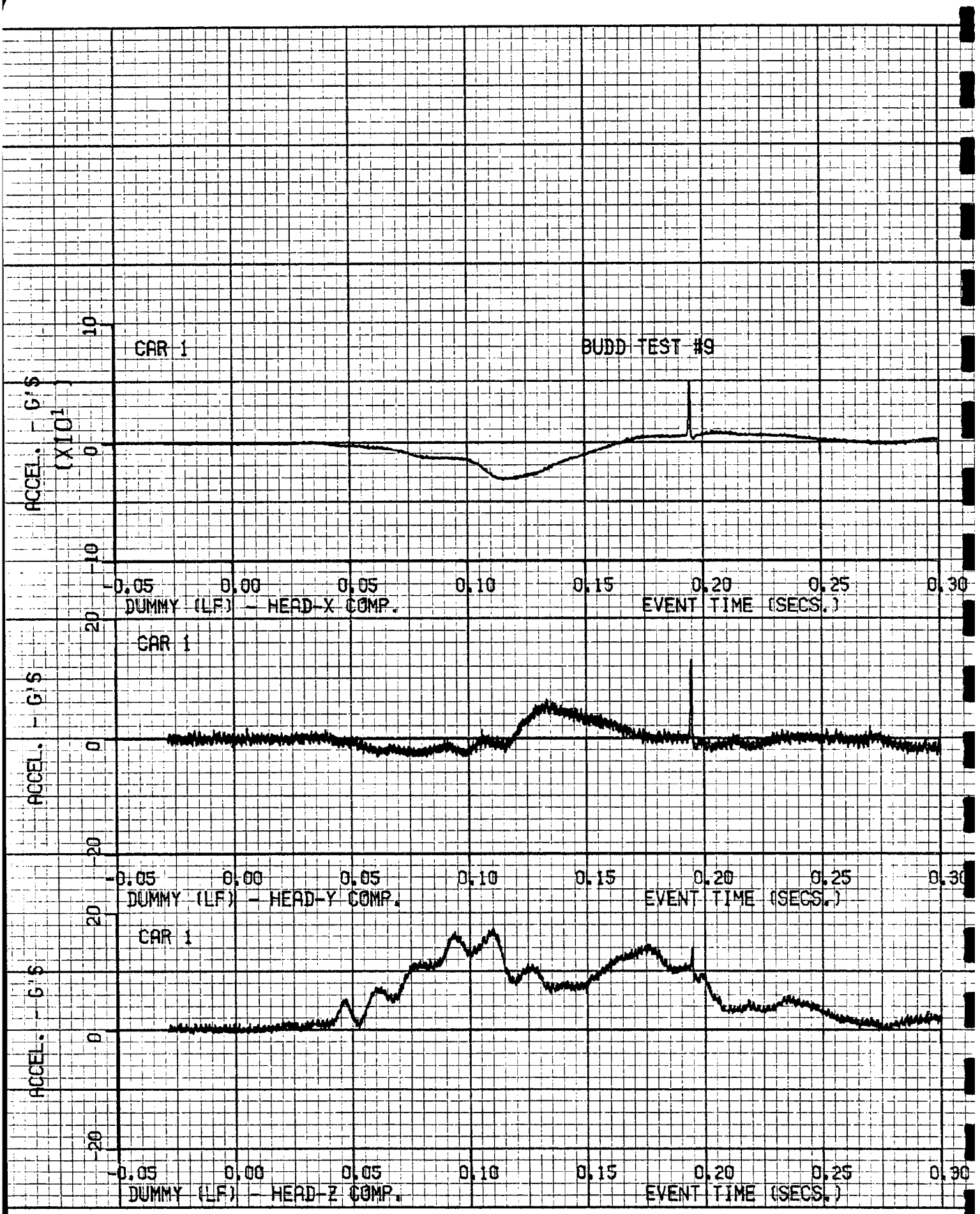

CAR 1
BUDD TEST #9 - 15 HZ
DEG/SEC
(X10¹)
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
TUNNEL YAW RATE
EVENT TIME (SECS.)
CAR 1
DEGREES
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
TUNNEL YAW RATE
EVENT TIME (SECS.)

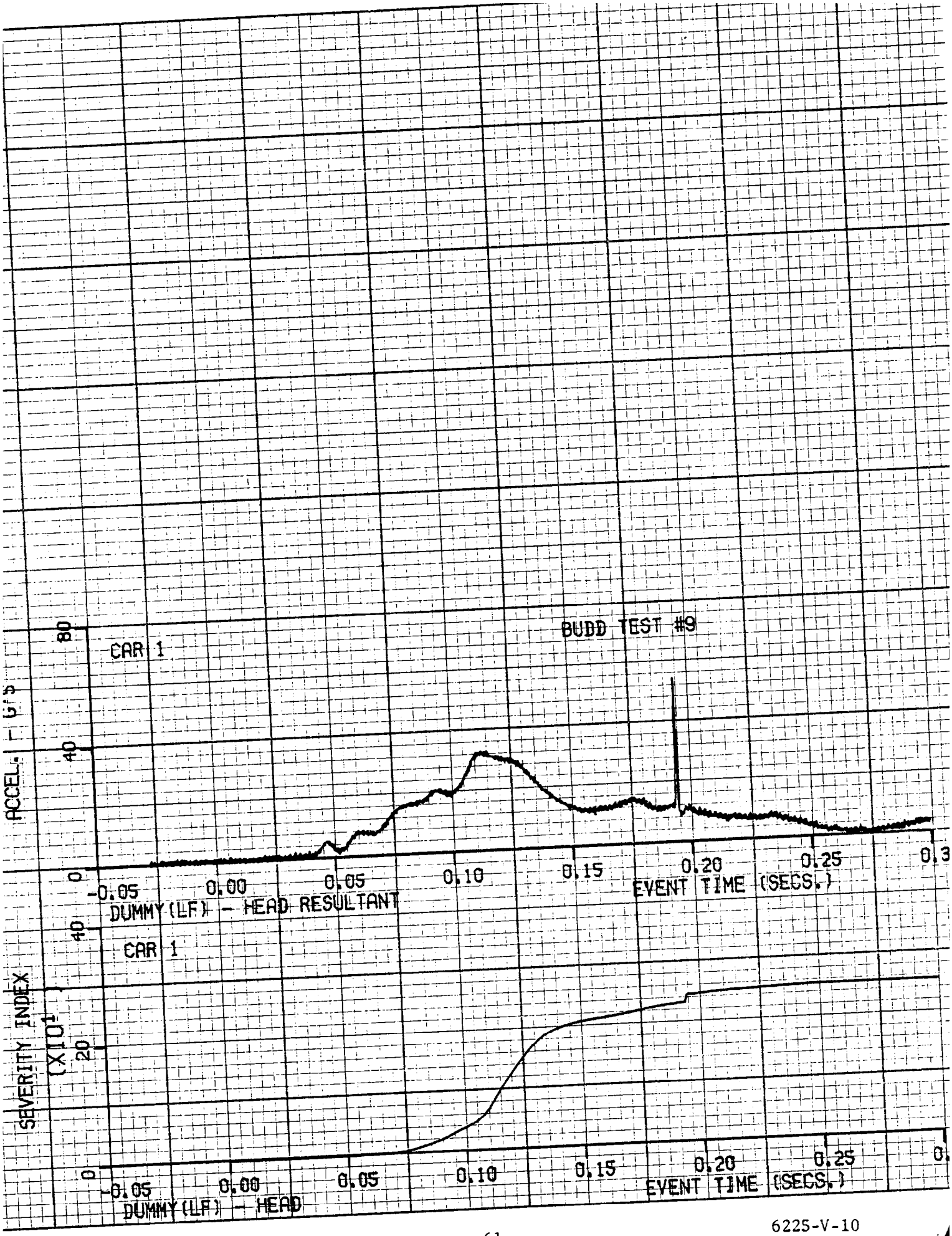
TEST NO. 9

CAR 1 - 1978 CHEVROLET IMPALA

DUMMY DATA

	FILTER CHANNEL CLASS
HEAD ACCELERATION	1000
CHEST ACCELERATION	180
FEMUR FORCES	600
BELT LOADS	60


CAR 1
BUDD TEST #9
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-X COMP.
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
20
0
-20
DUMMY (LF) - HEAD-Y COMP.
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
20
0
-20
DUMMY (LF) - HEAD-Z COMP.
EVENT TIME (SECS.)


BUDD TEST #9
CAR 1
ACCEL. (G's)
80
40
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.3
EVENT TIME (SECS.)
DUMMY (LF) - HEAD RESULTANT
CAR 1
SEVERITY INDEX
(X10¹)
40
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
EVENT TIME (SECS.)
DUMMY (LF) - HEAD

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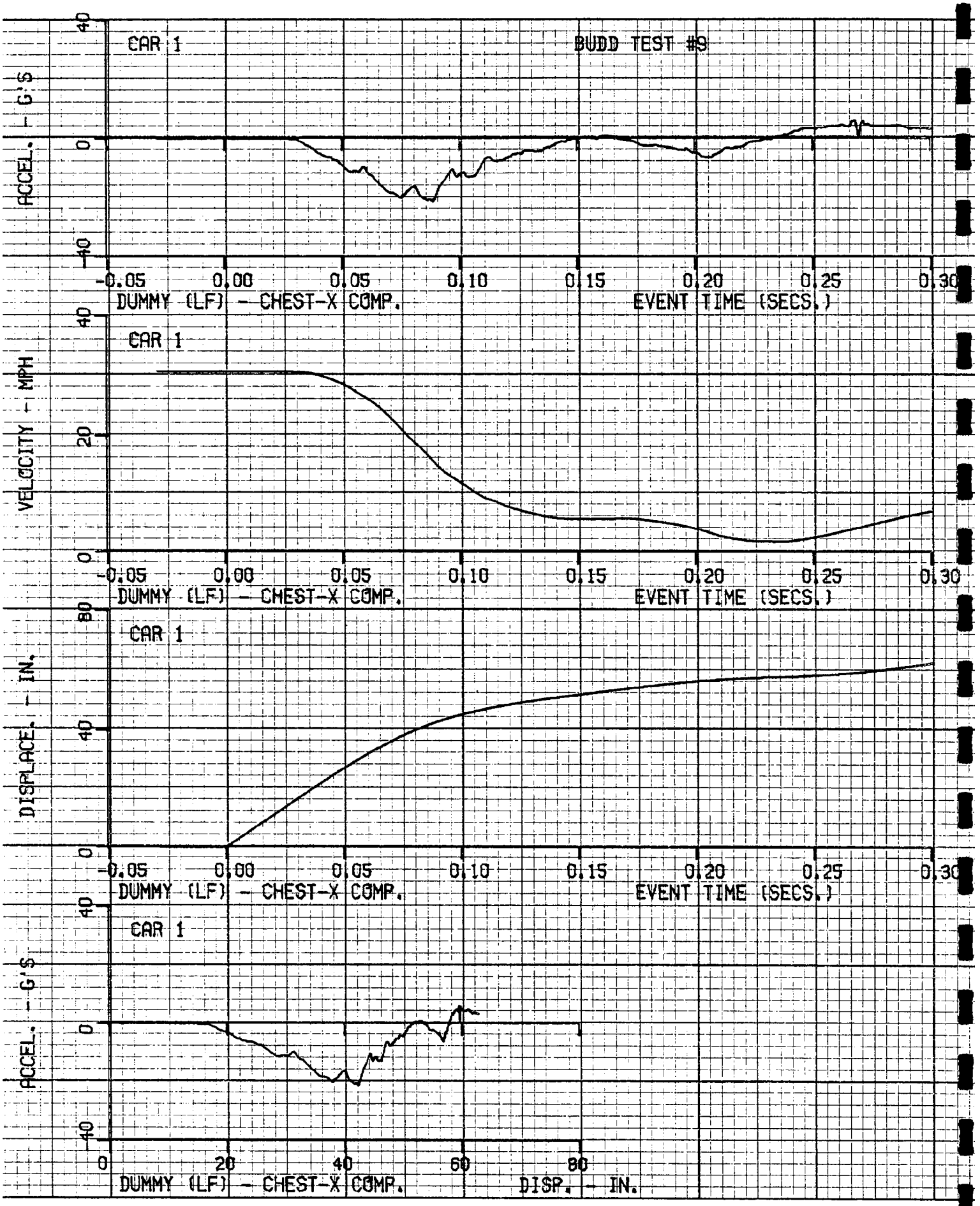
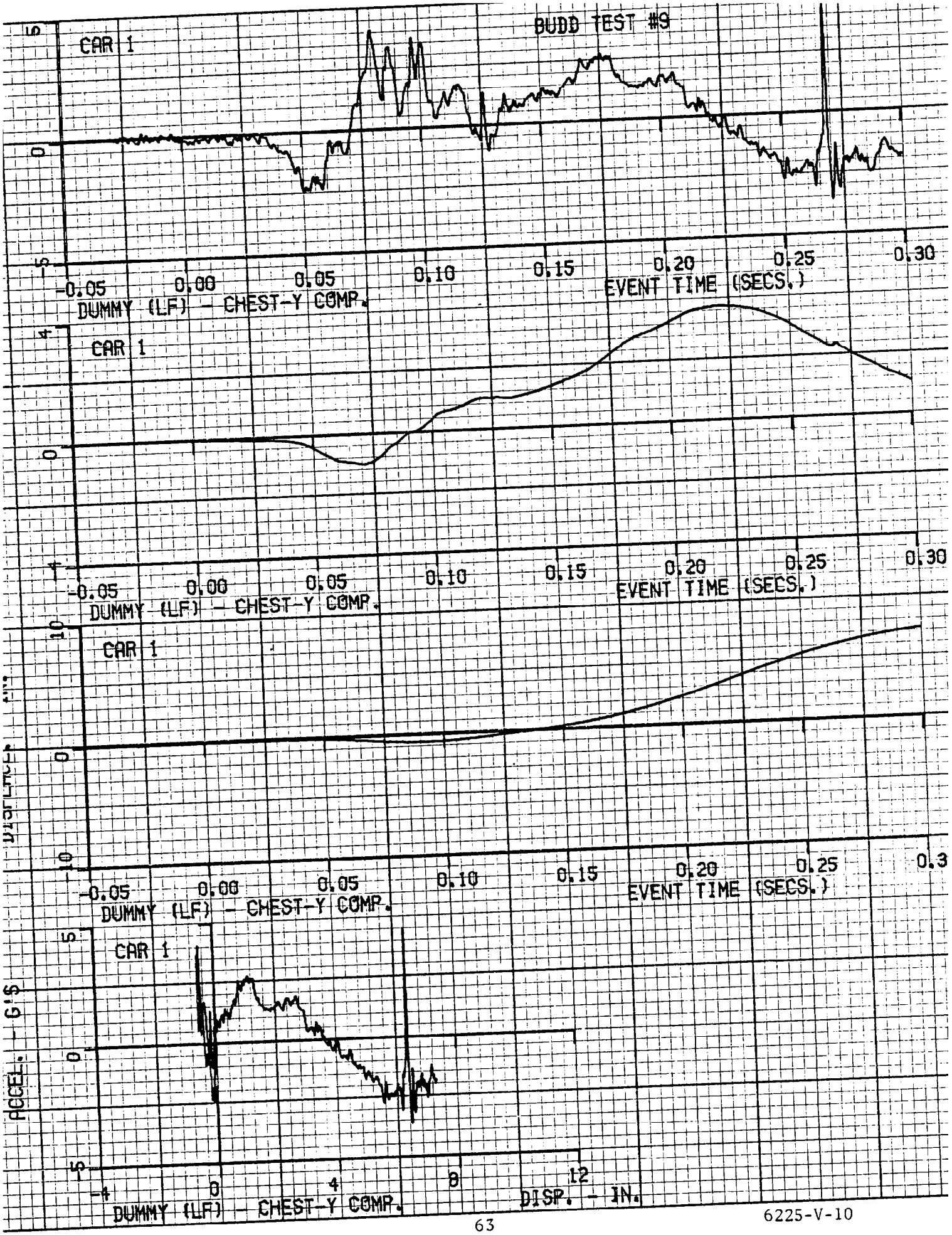

CAR 1
BUDD TEST #9
ACCEL. - G'S
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST-X COMP.
EVENT TIME (SECS.)
CAR 1
VELOCITY - MPH
40
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST-X COMP.
EVENT TIME (SECS.)
CAR 1
DISPLACE. - IN.
80
40
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST-X COMP.
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
40
0
-40
0
20
40
60
80
DUMMY (LF) - CHEST-X COMP.
DISP. - IN.


BUDD TEST #9
CAR 1
5
0
-5
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
DUMMY (LF) - CHEST-Y COMP.
CAR 1
4
0
-4
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
DUMMY (LF) - CHEST-Y COMP.
CAR 1
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.3
EVENT TIME (SECS.)
DUMMY (LF) - CHEST-Y COMP.
CAR 1
5
0
-5
-4
0
4
8
12
DISP. - IN.
DUMMY (LF) - CHEST-Y COMP.
ACCEL. - G'S

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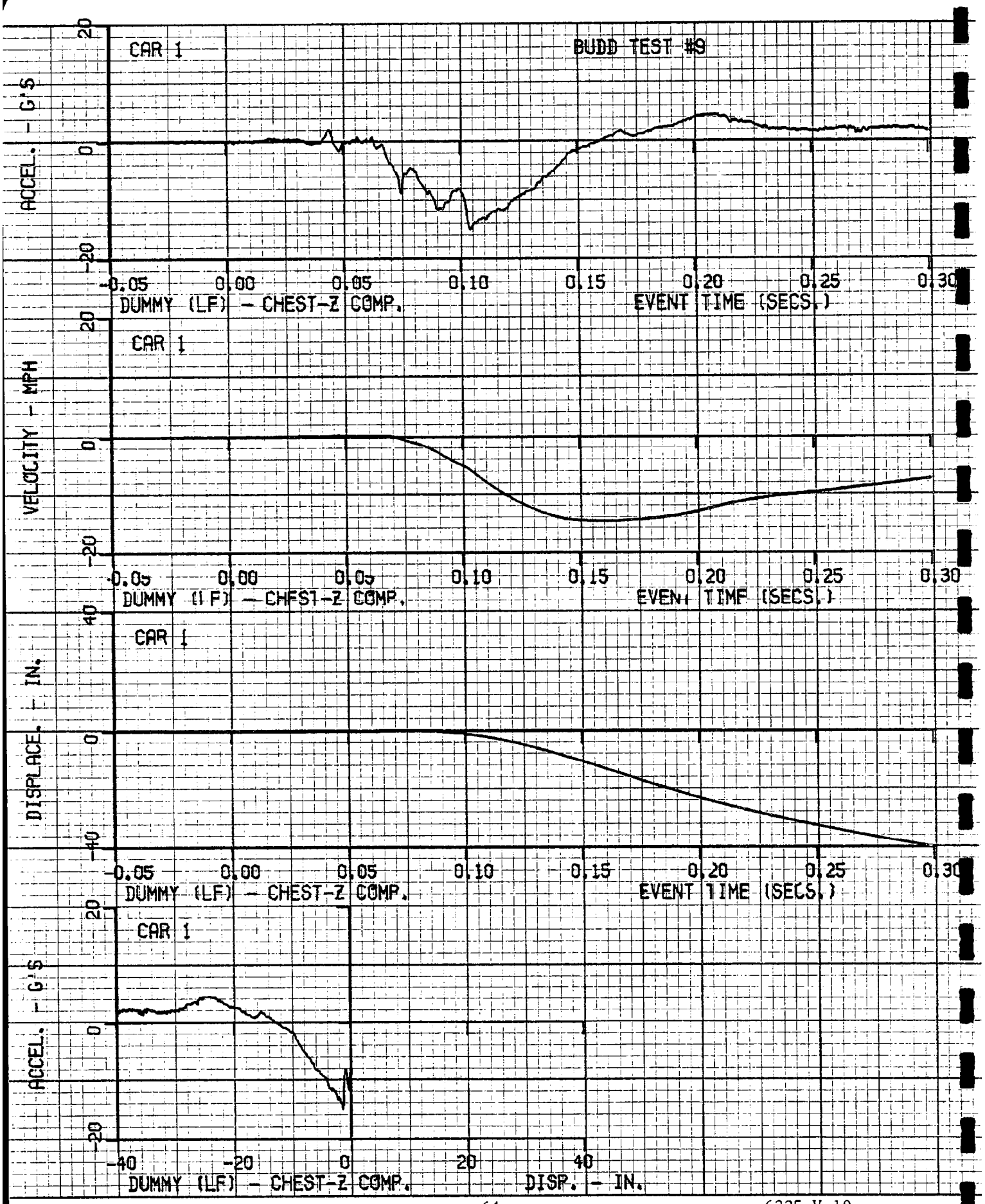
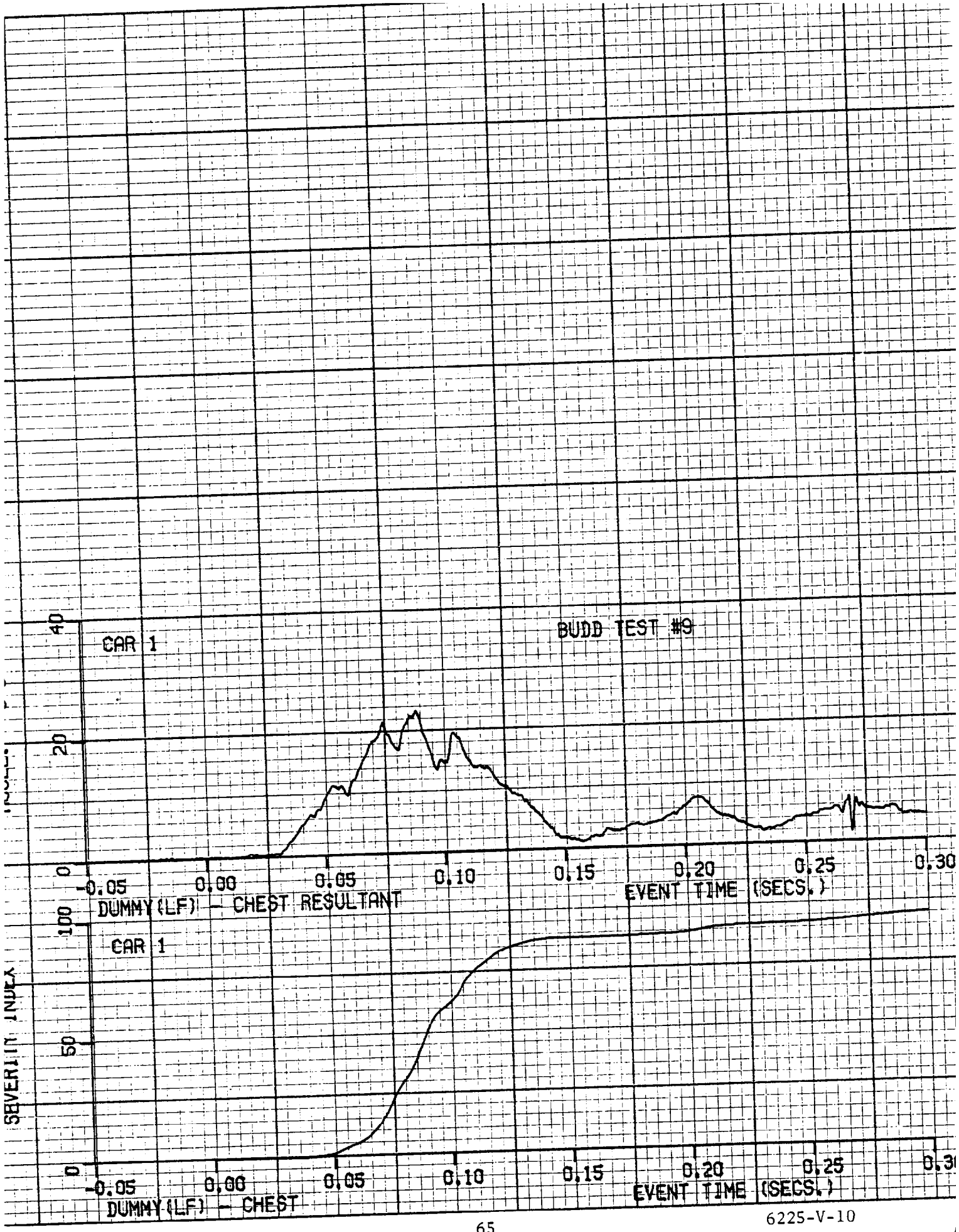
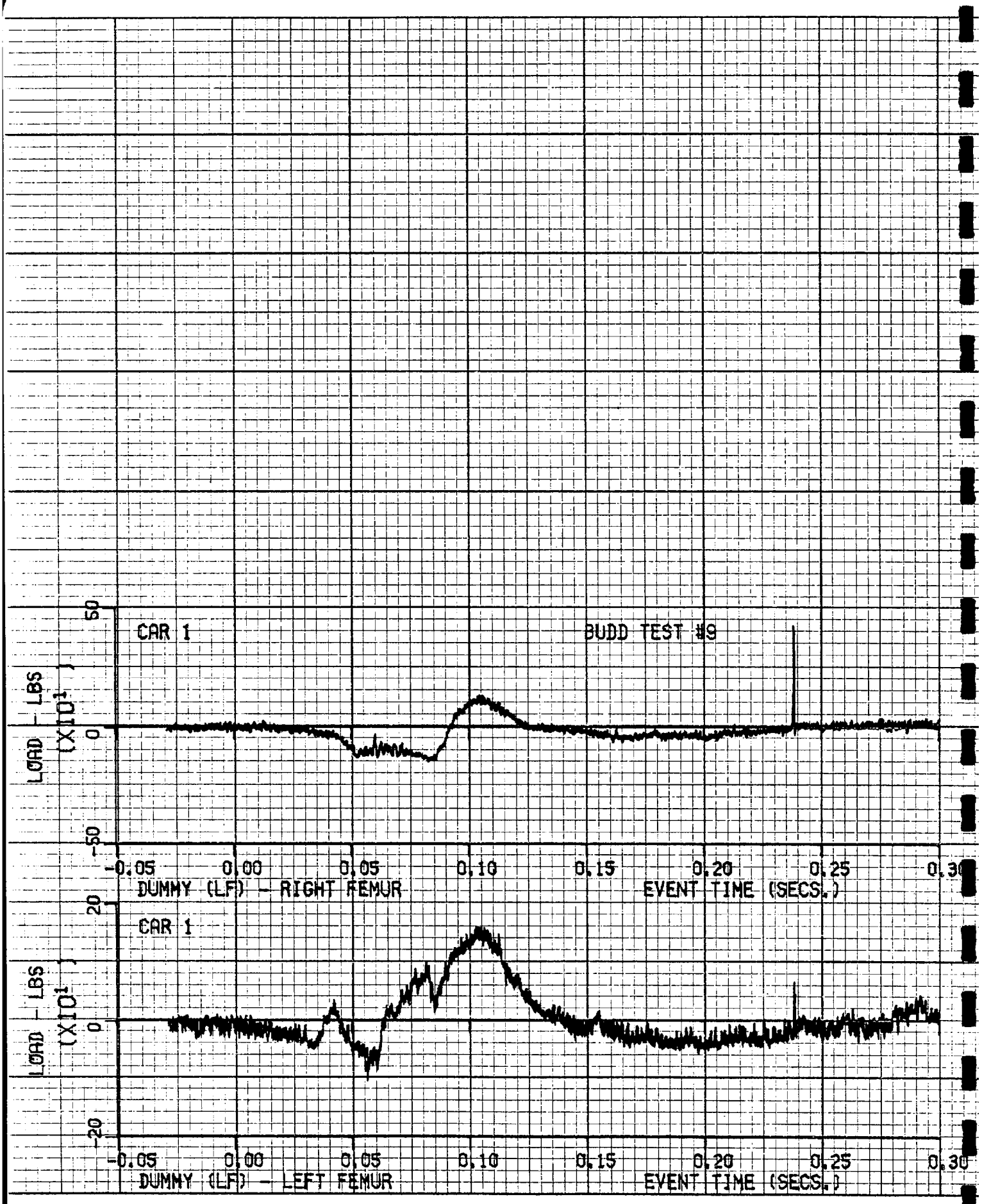
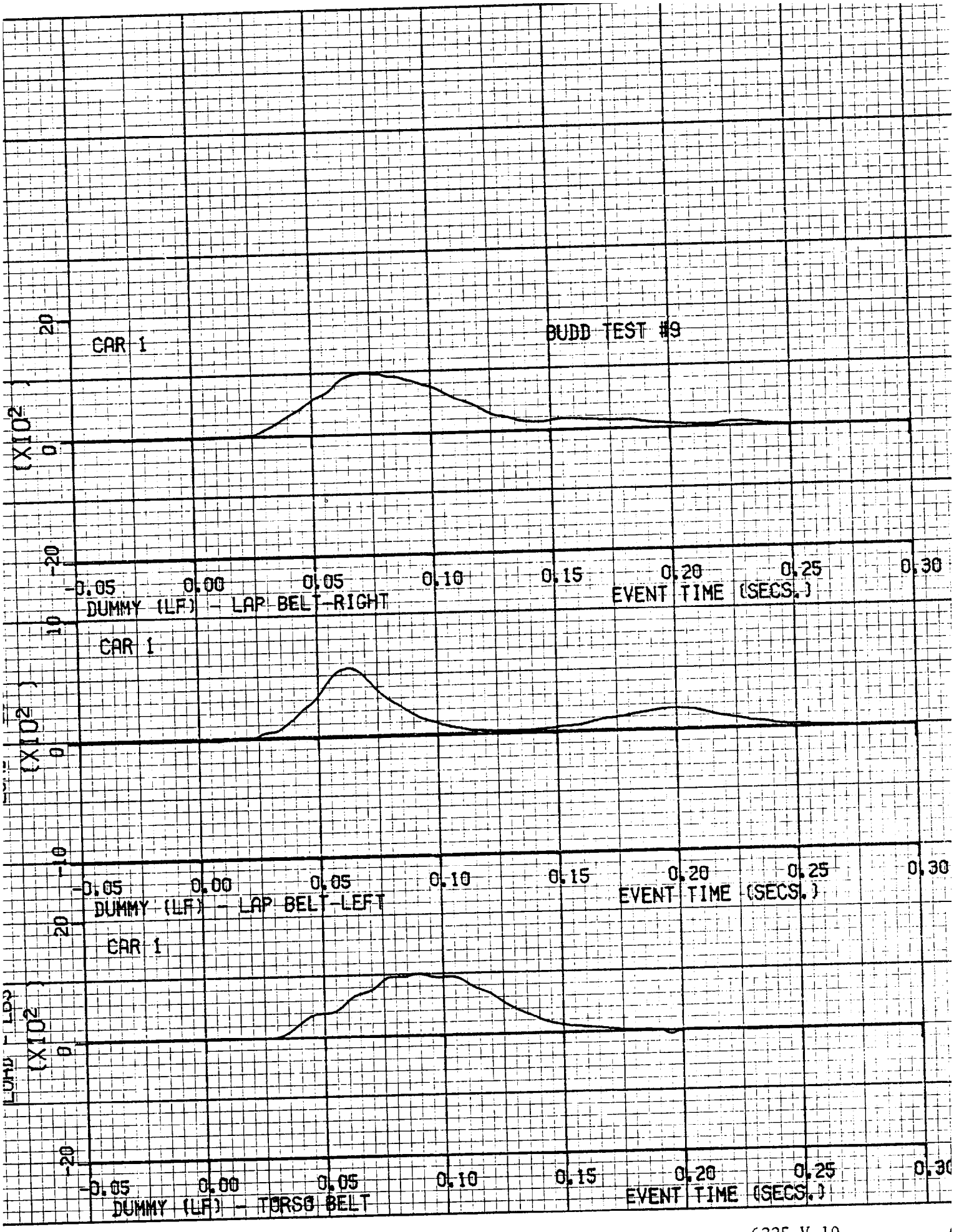
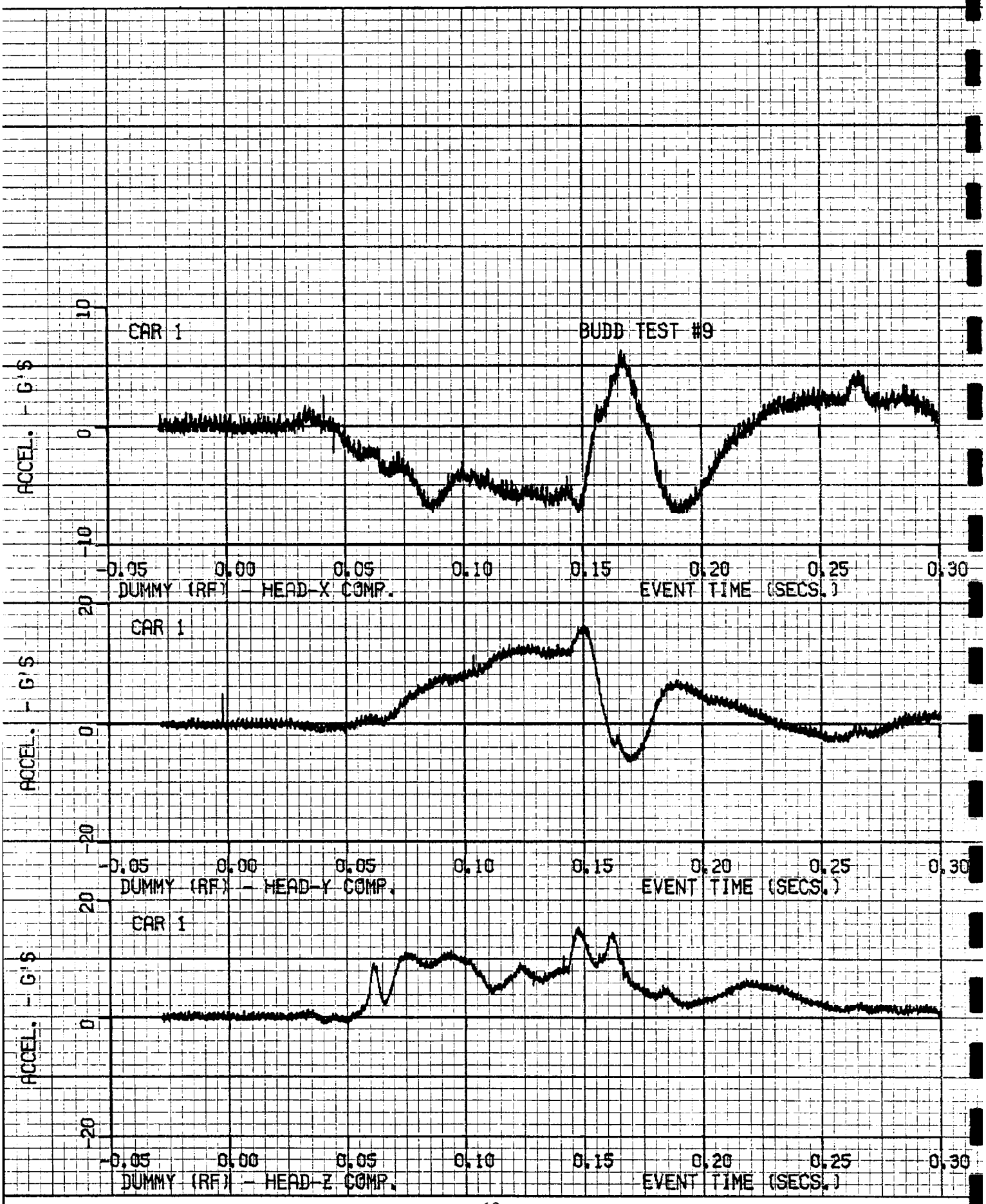

CAR 1
BUDD TEST #9
ACCEL. - G'S
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST-Z COMP.
EVENT TIME (SECS.)
CAR 1
VELOCITY - MPH
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST-Z COMP.
EVENT TIME (SECS.)
CAR 1
DISPLACE. - IN.
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST-Z COMP.
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
20
0
-20
-40
-20
0
20
40
DUMMY (LF) - CHEST-Z COMP.
DISP. - IN.

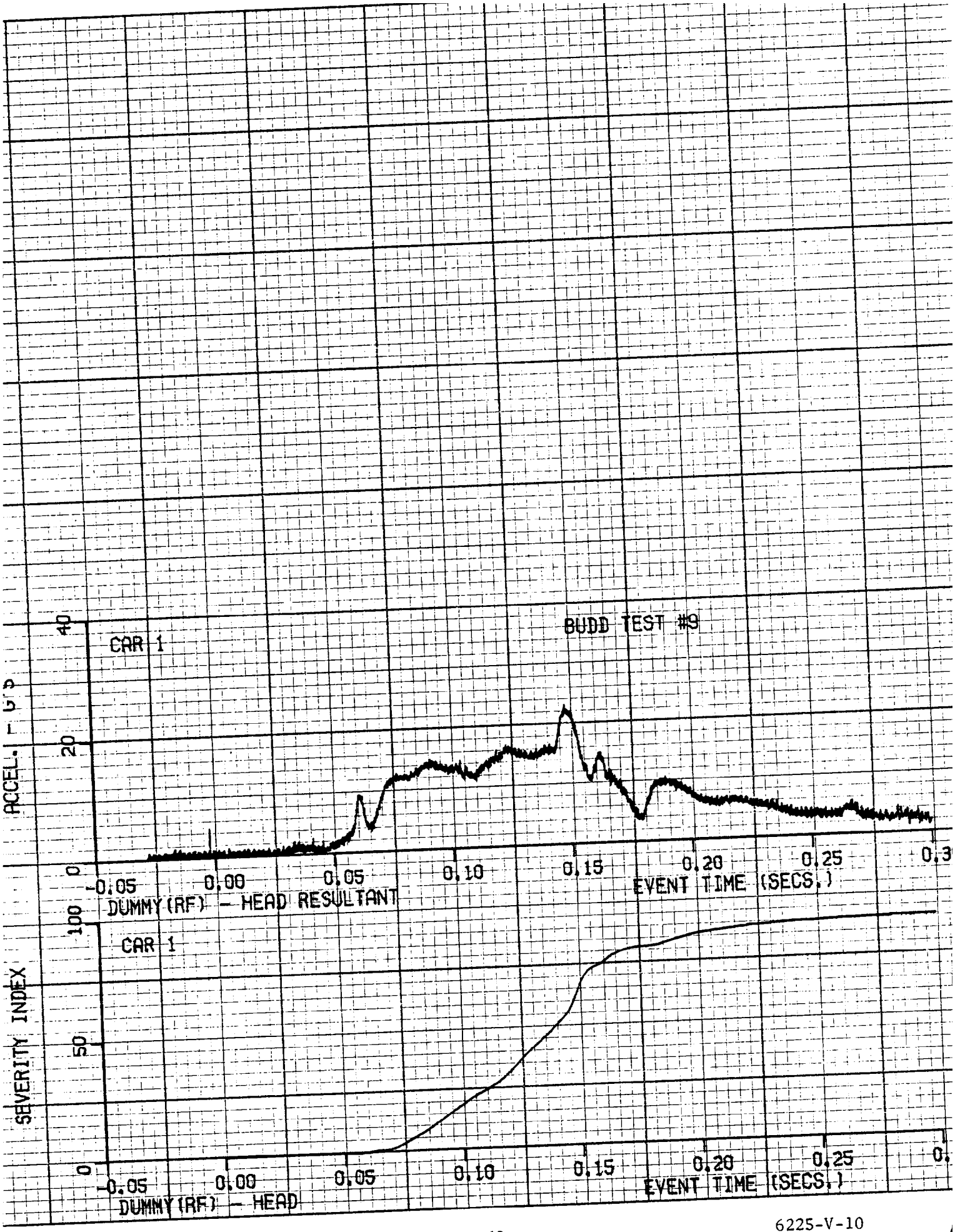

BUDD TEST #9
CAR 1
40
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
DUMMY (LF) - CHEST RESULTANT
CAR 1
100
50
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
EVENT TIME (SECS.)
DUMMY (LF) - CHEST

6225-V-10


CAR 1
BUDD TEST #9
LOAD - LBS
(X10¹)
50
0
-50
-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
LOAD - LBS
(X10¹)
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - LEFT FEMUR
EVENT TIME (SECS.)


BUDD TEST #9
CAR 1
(X10²)
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
DUMMY (LF) - LAP BELT-RIGHT
CAR 1
(X10²)
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
DUMMY (LF) - LAP BELT-LEFT
CAR 1
(X10²)
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
DUMMY (LF) - TORSO BELT


CAR 1
BUDD TEST #9
ACCEL. - G'S
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 1
ACCEL. - G'S
20
0
-20
DUMMY (RF) - HEAD-Y COMP.
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
20
0
-20
DUMMY (RF) - HEAD-Z COMP.
EVENT TIME (SECS.)


BUDD TEST #9
CAR 1
ACCEL. - G'S
40
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.3
EVENT TIME (SECS.)
DUMMY (RF) - HEAD RESULTANT
CAR 1
SEVERITY INDEX
100
50
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
EVENT TIME (SECS.)
DUMMY (RF) - HEAD

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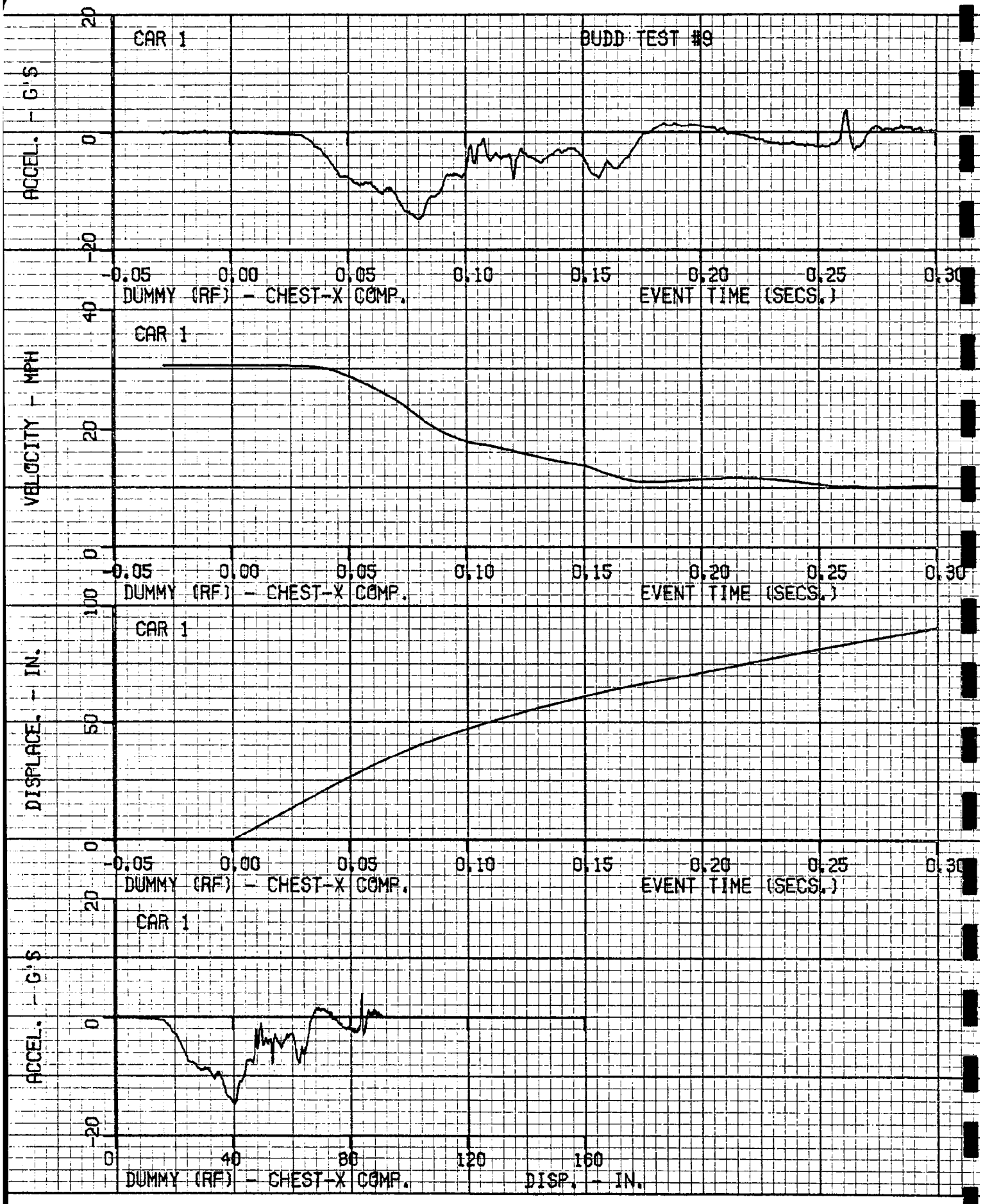
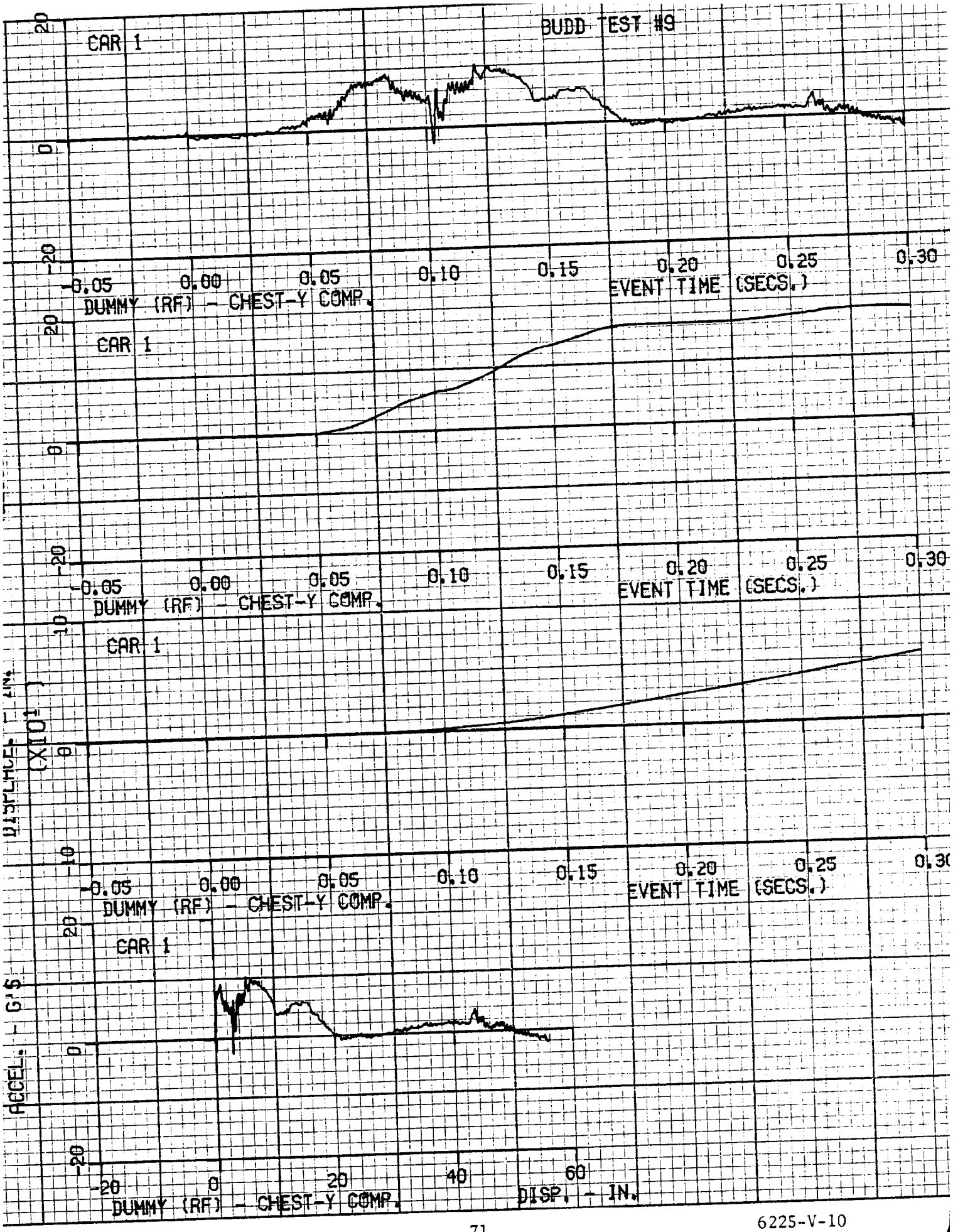

CAR 1
BUDD TEST #9
ACCEL. - G'S
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - CHEST-X COMP.
EVENT TIME (SECS.)
CAR 1
VELOCITY - MPH
40
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - CHEST-X COMP.
EVENT TIME (SECS.)
CAR 1
DISPLACE. - IN.
100
50
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - CHEST-X COMP.
EVENT TIME (SECS.)
CAR 1
ACCEL. - G'S
20
0
-20
0
40
80
120
160
DUMMY (RF) - CHEST-X COMP.
DISP. - IN.


BUDD TEST #9
CAR 1
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
DUMMY (RF) - CHEST-Y COMP.
CAR 1
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
DUMMY (RF) - CHEST-Y COMP.
CAR 1
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
EVENT TIME (SECS.)
DUMMY (RF) - CHEST-Y COMP.
CAR 1
20
0
-20
-20
0
20
40
60
DISP. - IN.
DUMMY (RF) - CHEST-Y COMP.
ACCEL. - G'S
DISPLMCE. - IN.
(X10¹)

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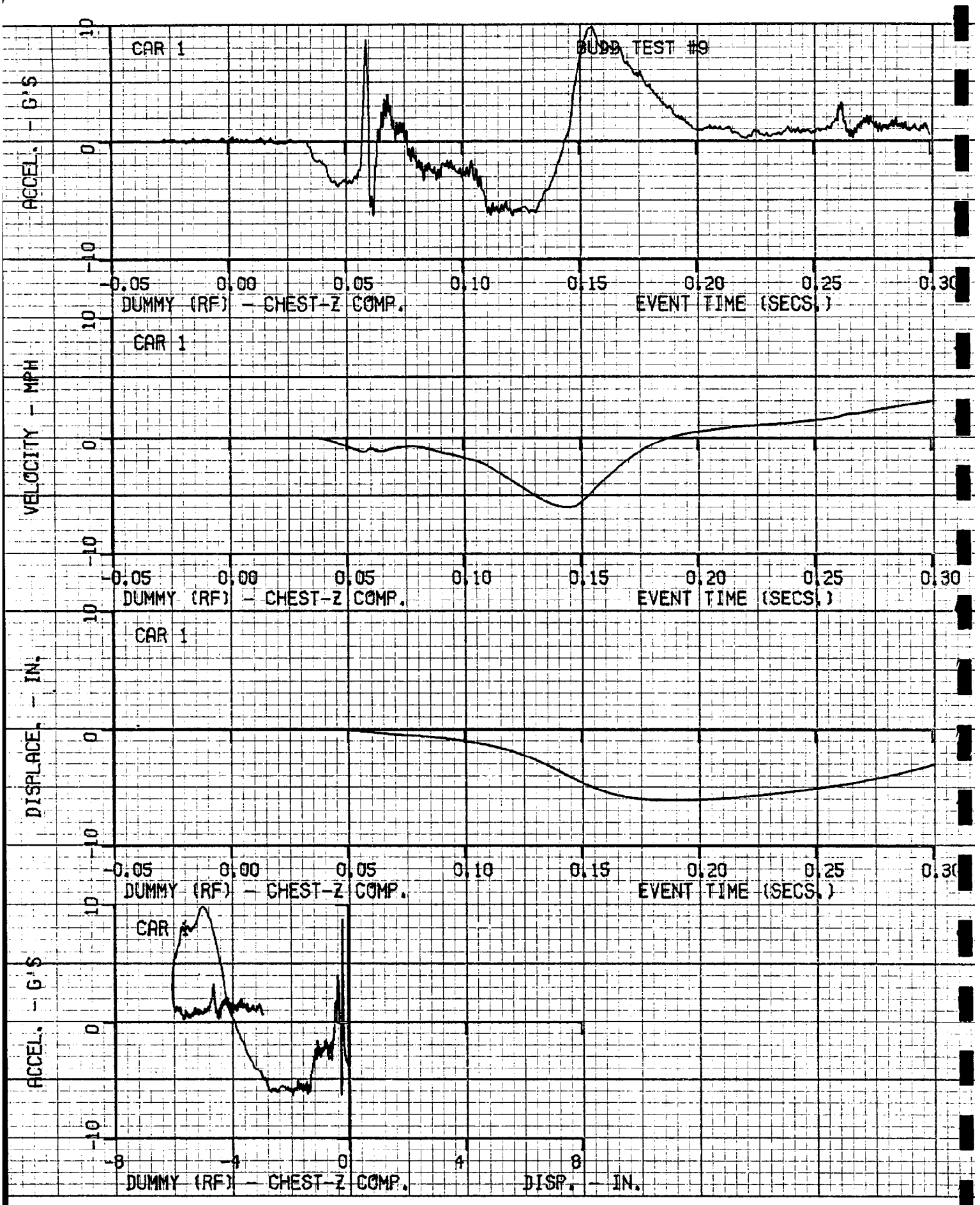
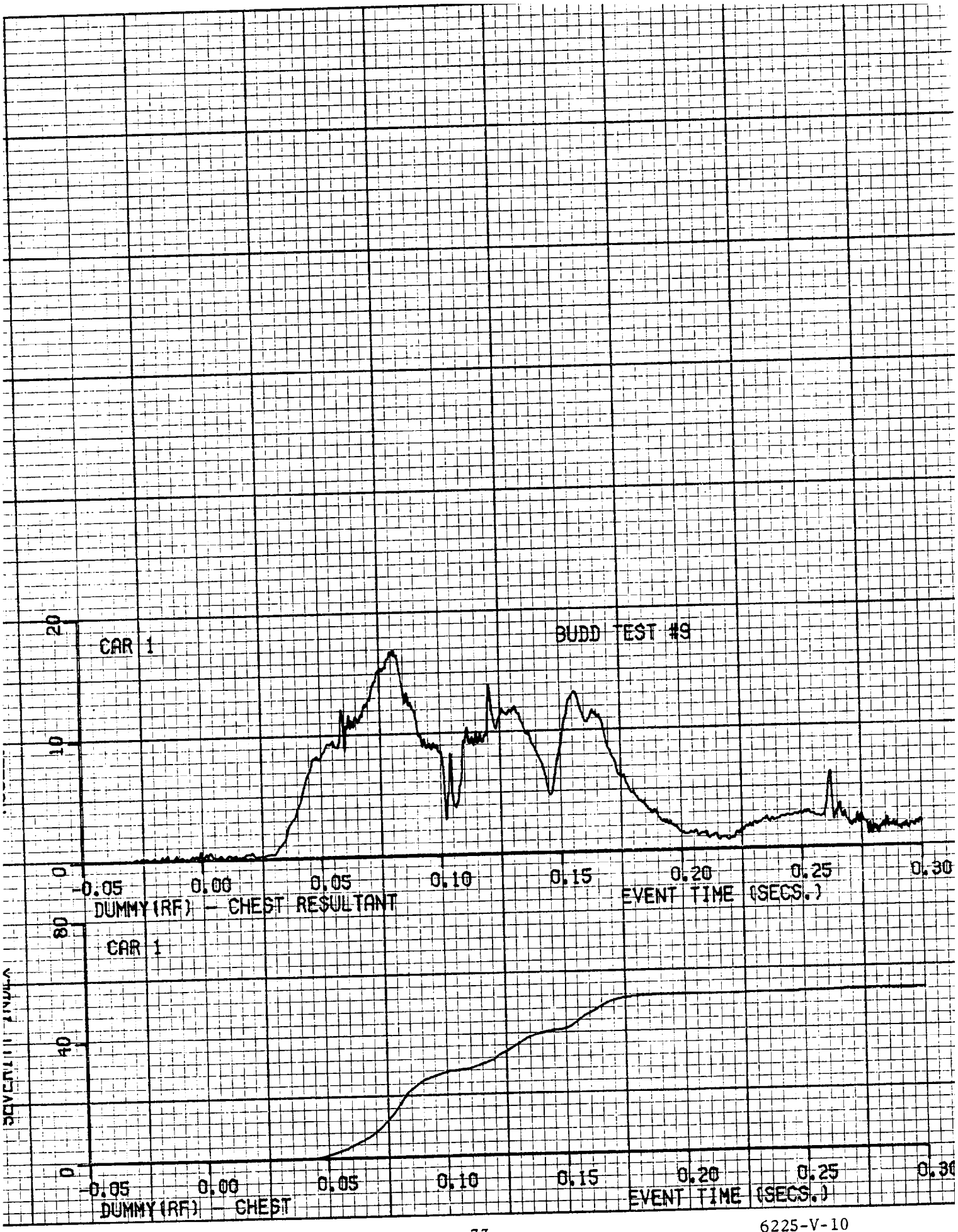

CAR 1
BUDD TEST #9
ACCEL. - G'S
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - CHEST-Z COMP.
EVENT TIME (SECS.)
CAR 1
VELOCITY - MPH
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - CHEST-Z COMP.
EVENT TIME (SECS.)
CAR 1
DISPLACE. - IN.
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - CHEST-Z COMP.
EVENT TIME (SECS.)
CAR
ACCEL. - G'S
10
0
-10
-8
-4
0
4
8
DUMMY (RF) - CHEST-Z COMP.
DISP. - IN.


BUDD TEST #9
CAR 1
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
DUMMY(RF) - CHEST RESULTANT
CAR 1
80
40
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
EVENT TIME (SECS.)
DUMMY(RF) - CHEST

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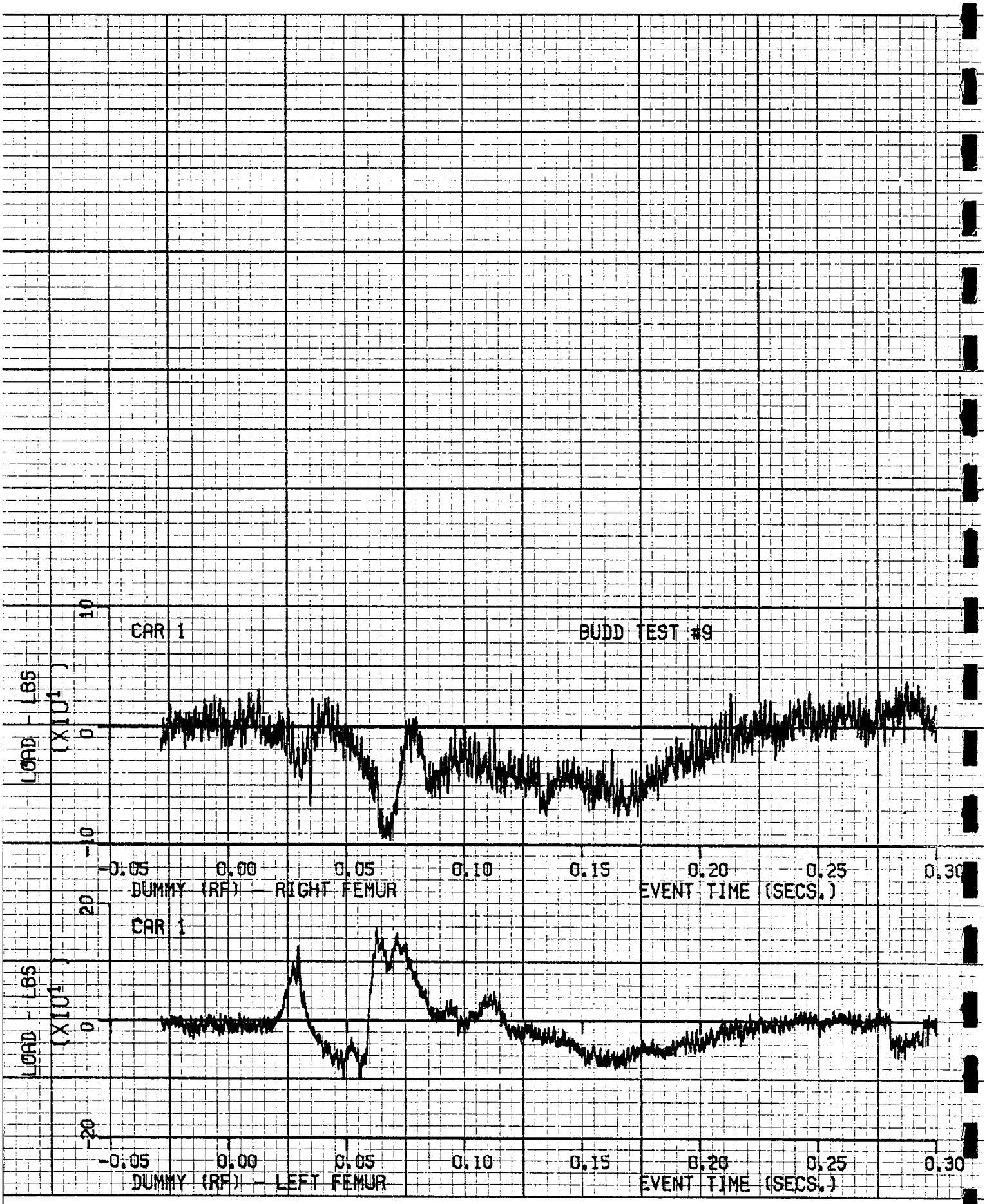
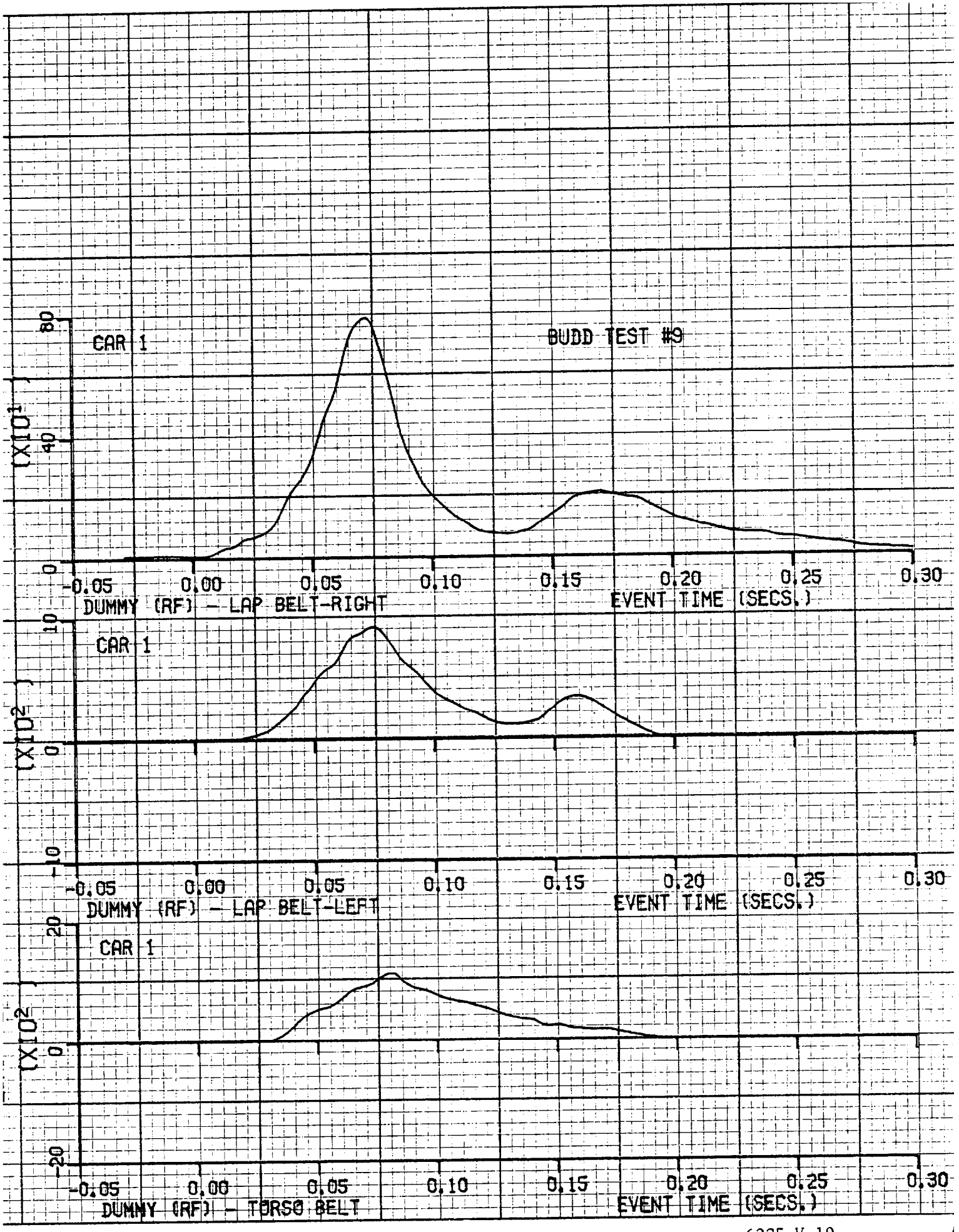
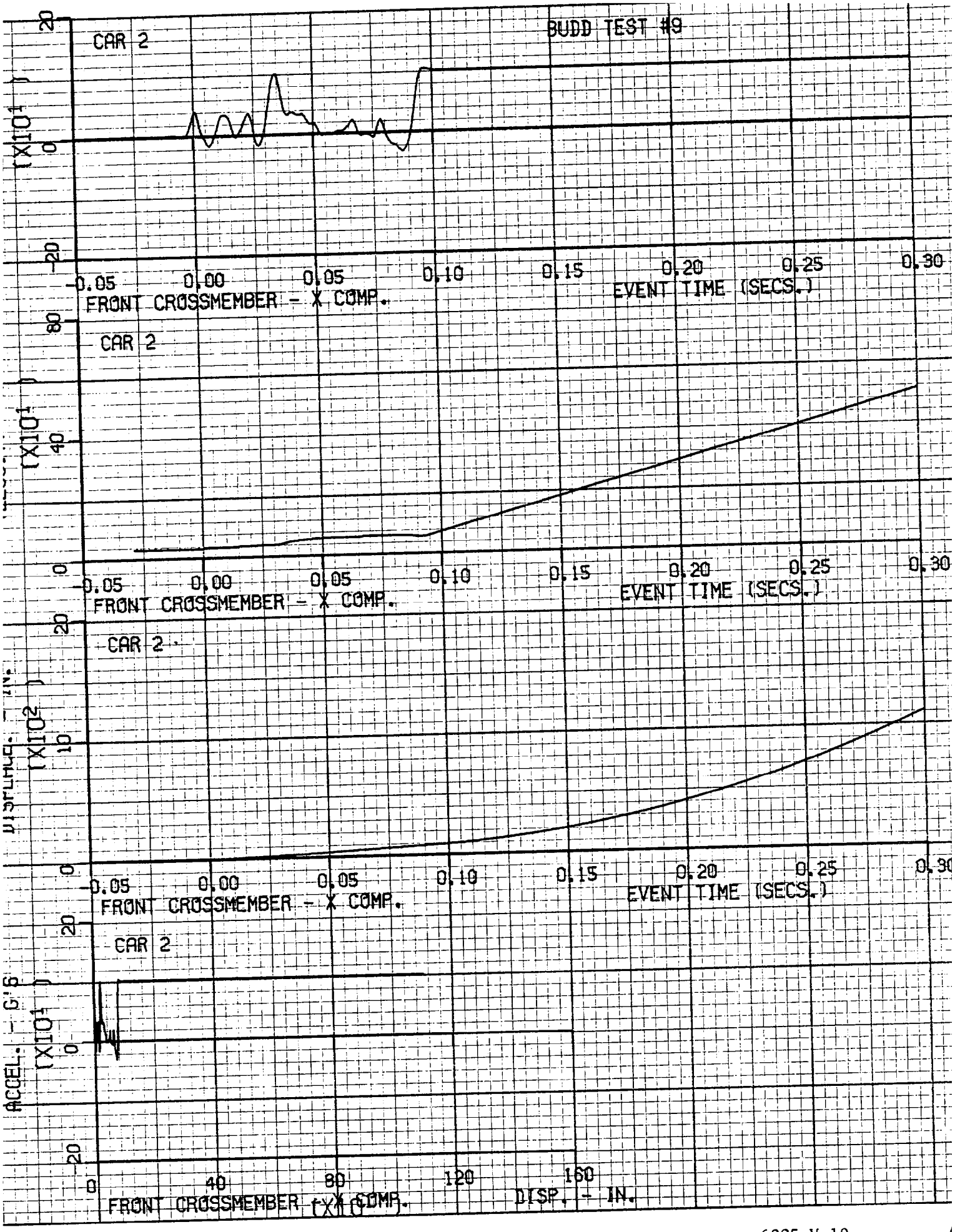

CAR 1
BUDD TEST #9
LOAD - LBS
(X10¹)
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - RIGHT FEMUR
EVENT TIME (SECS.)
CAR 1
LOAD - LBS
(X10¹)
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - LEFT FEMUR
EVENT TIME (SECS.)


BUDD TEST #9
CAR 1
(X10¹)
80
40
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - LAP BELT-RIGHT
EVENT TIME (SECS.)
CAR 1
(X10²)
10
0
-10
DUMMY (RF) - LAP BELT-LEFT
EVENT TIME (SECS.)
CAR 1
(X10²)
20
0
-20
DUMMY (RF) - TORSO BELT
EVENT TIME (SECS.)

TEST NO. 9

CAR 2 - 1976 VW RABBIT

VEHICLE DATA, 60 HZ FILTER


BUDD TEST #9
CAR 2
(X10¹)
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
FRONT CROSSMEMBER - X COMP.
CAR 2
(X10¹)
80
40
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
FRONT CROSSMEMBER - X COMP.
CAR 2
(X10²)
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
EVENT TIME (SECS.)
FRONT CROSSMEMBER - X COMP.
CAR 2
ACCEL. - G'S
(X10¹)
20
0
-20
0
40
80
120
160
DISP. - IN.
FRONT CROSSMEMBER - X COMP.

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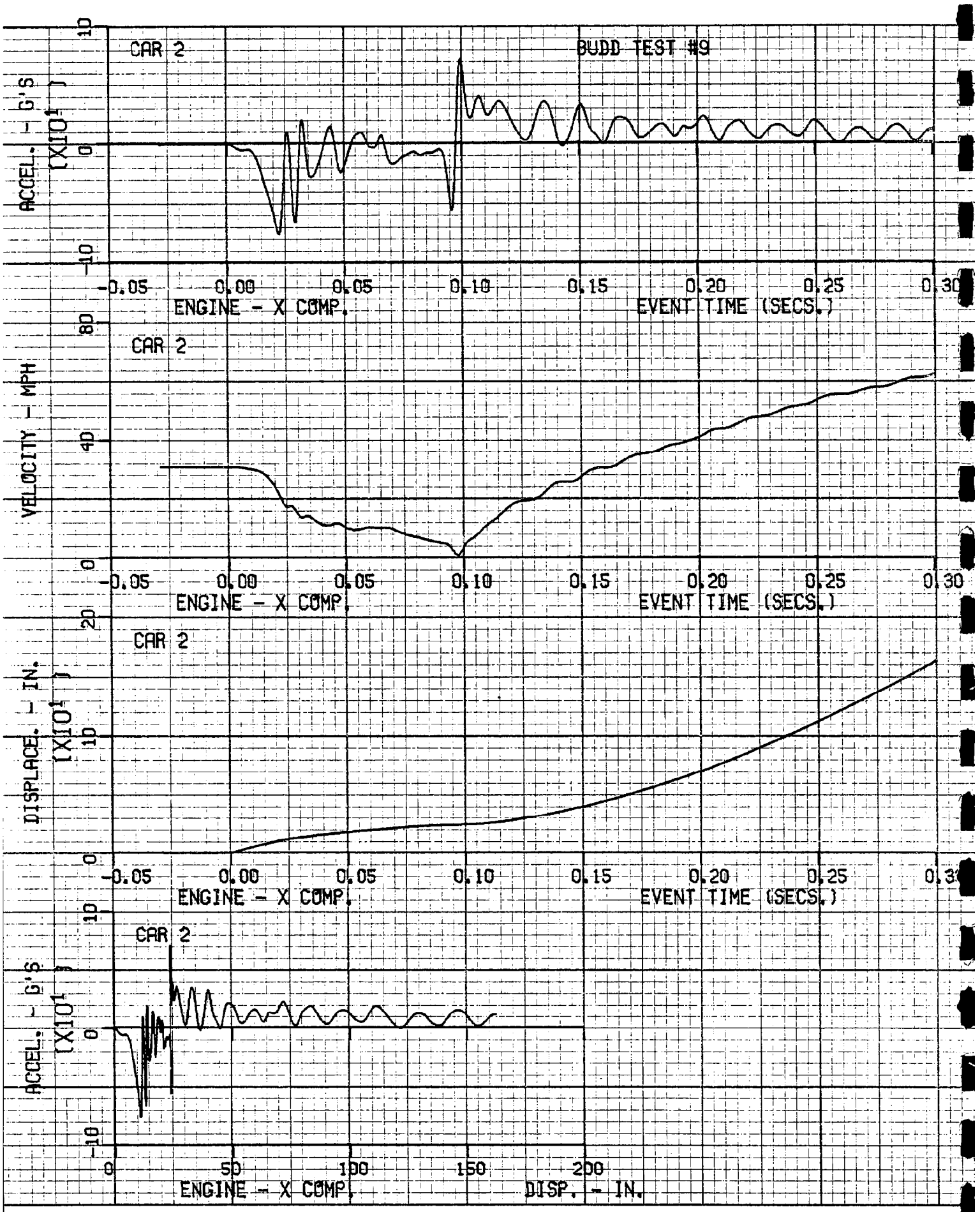
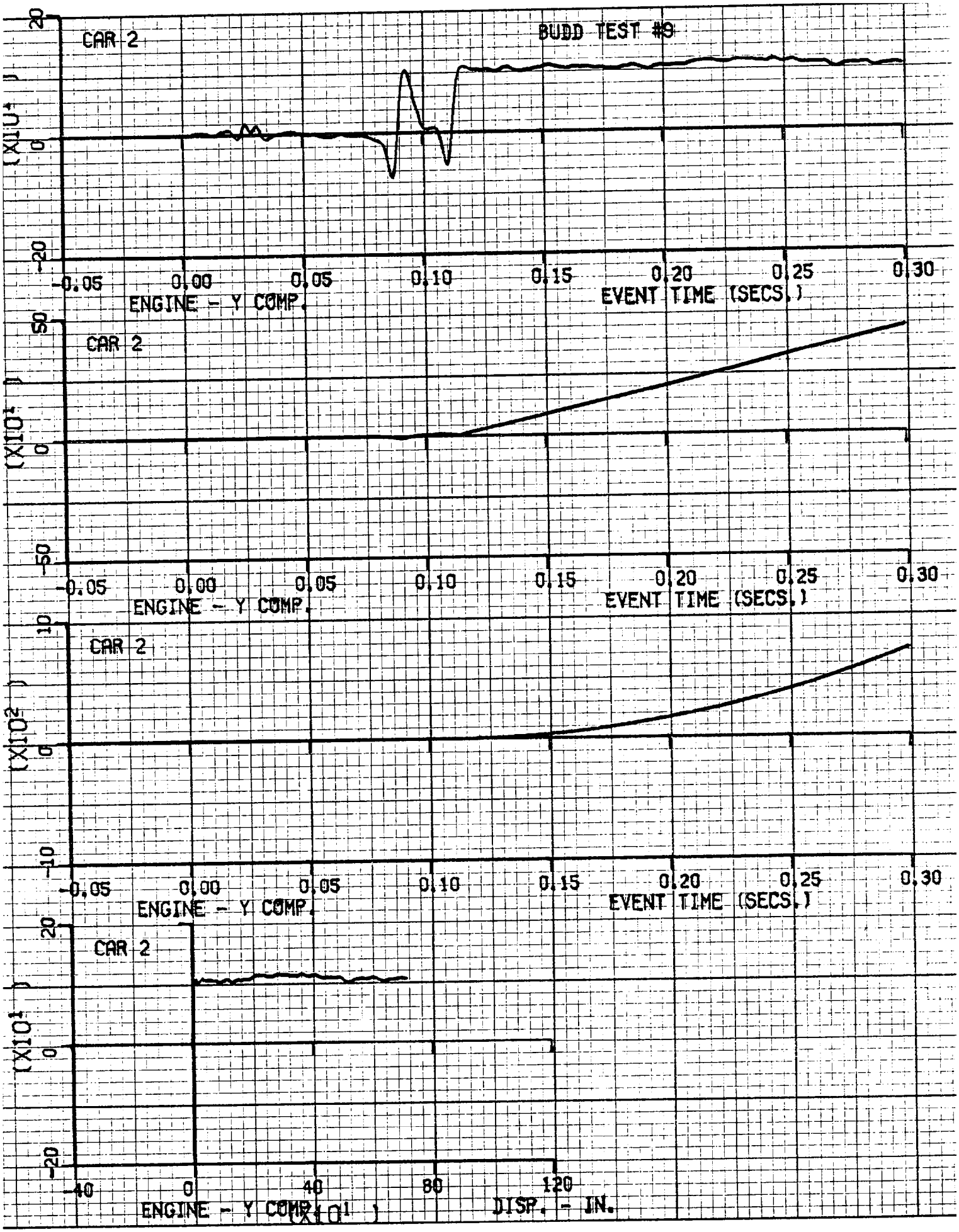
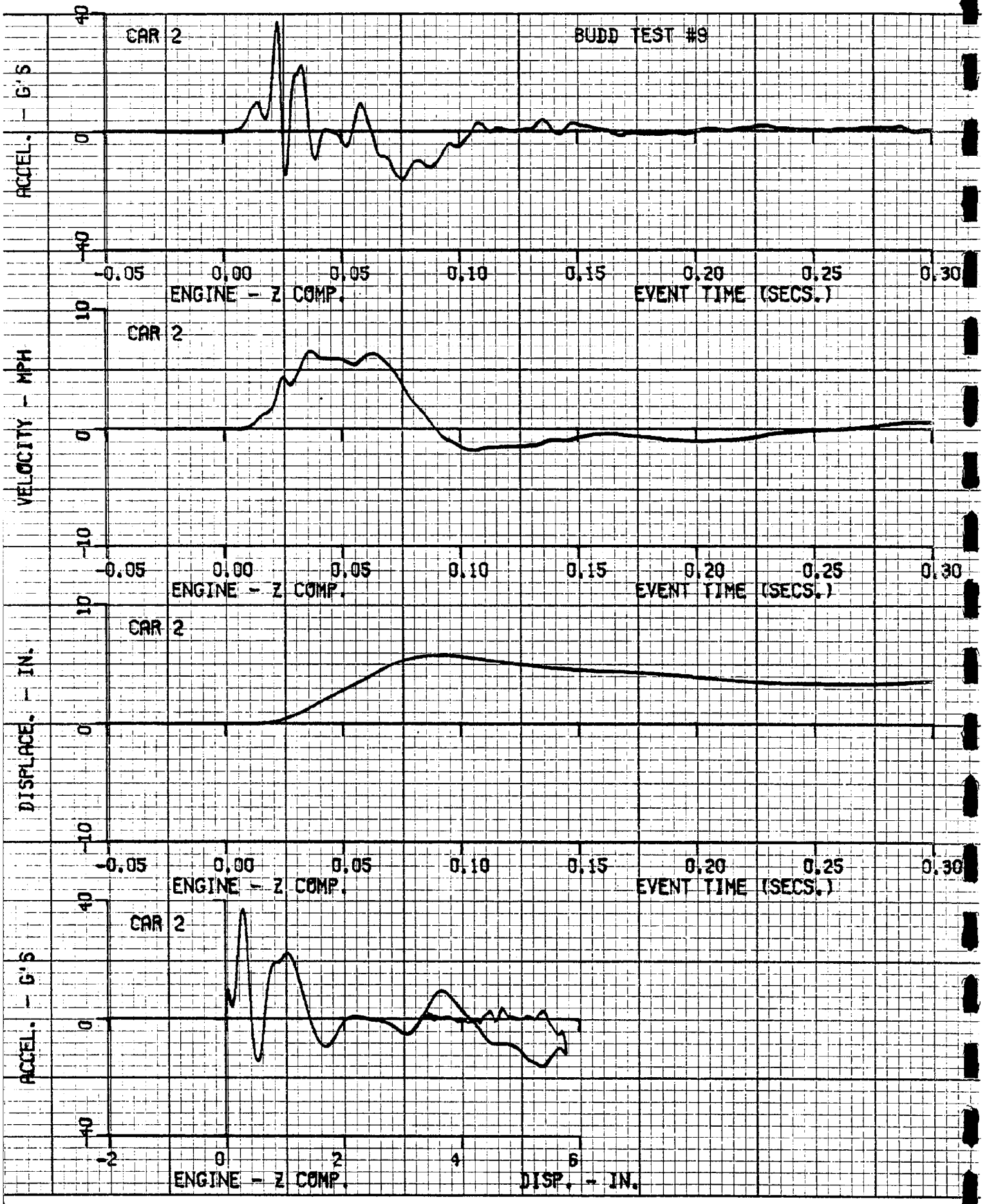
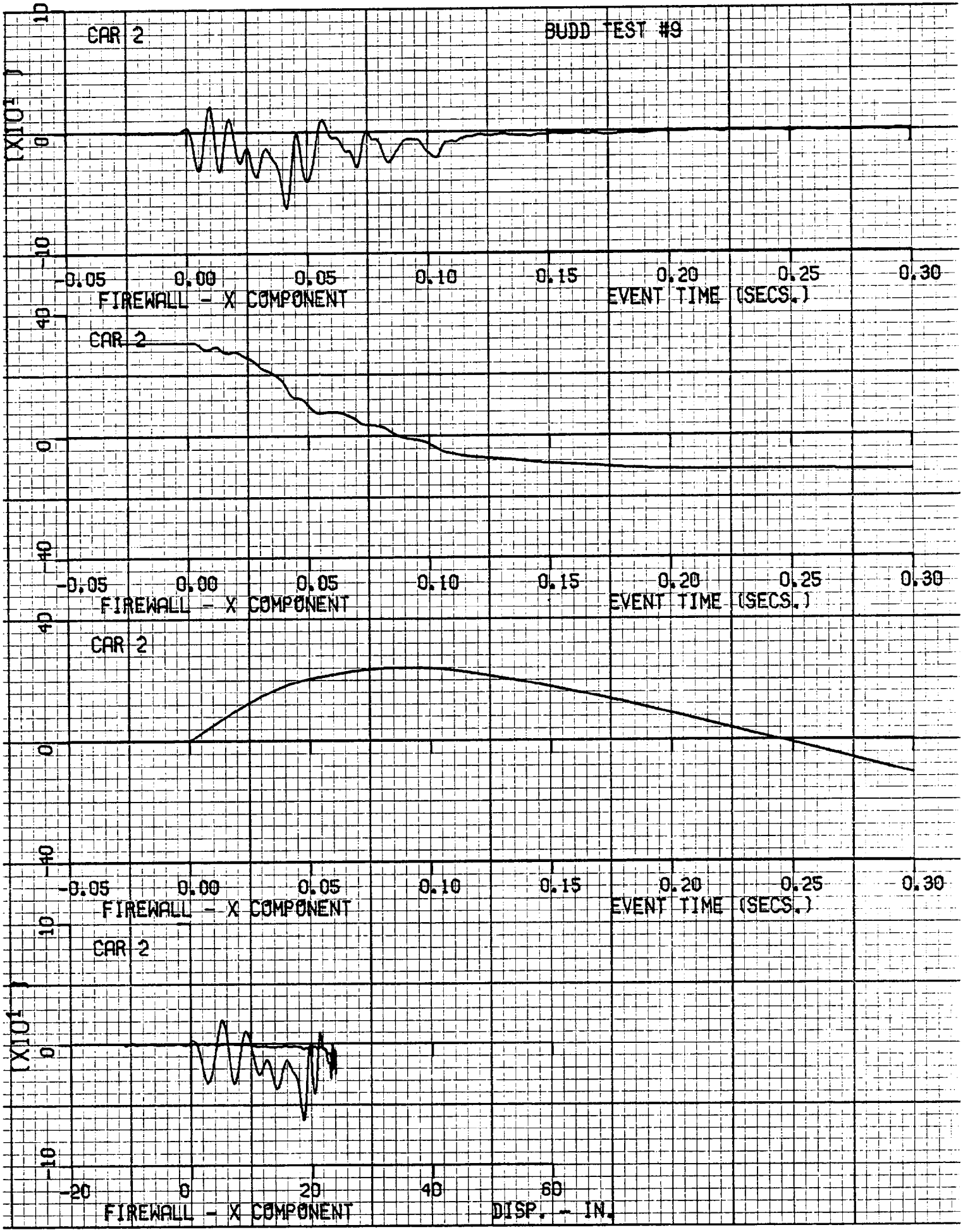
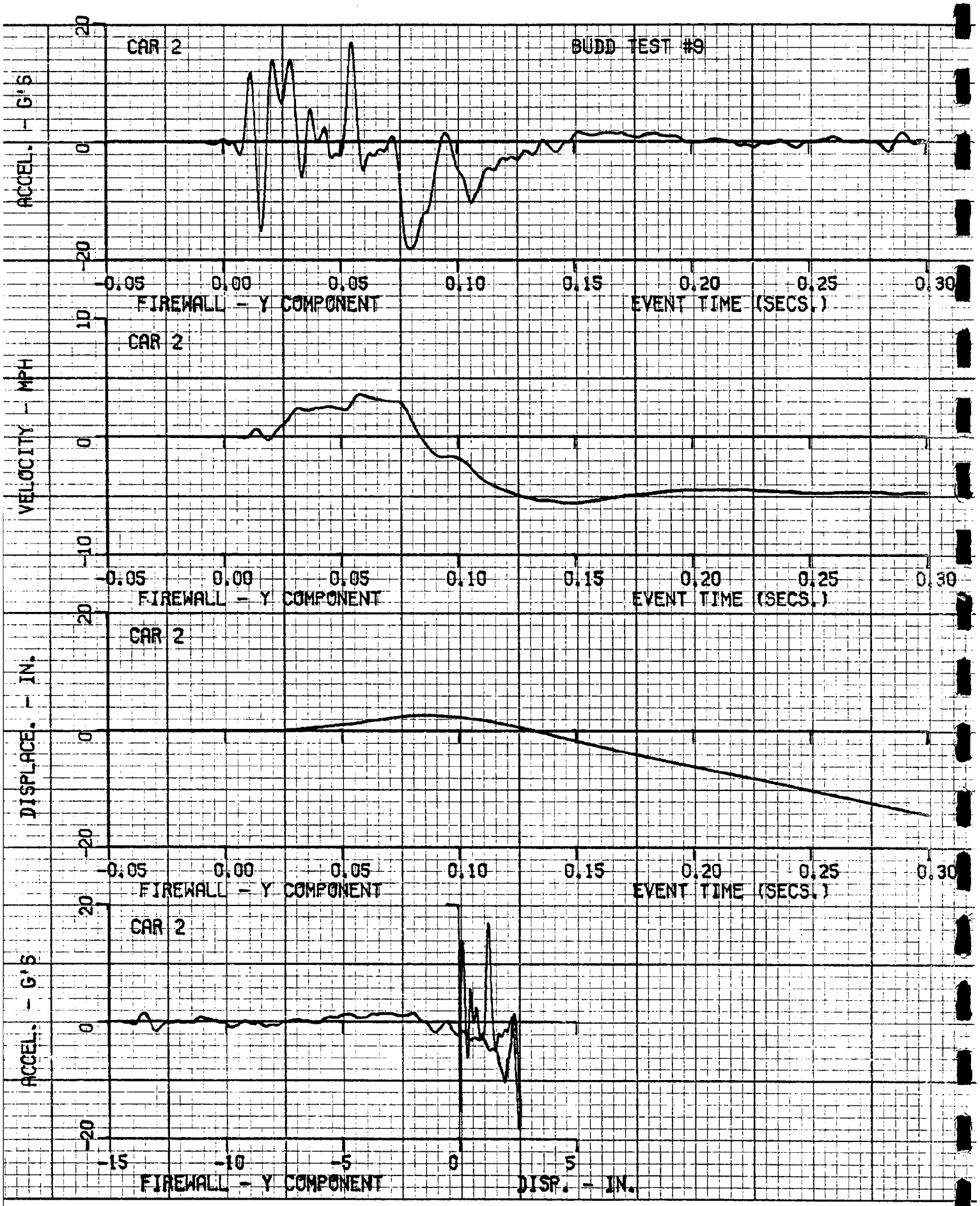
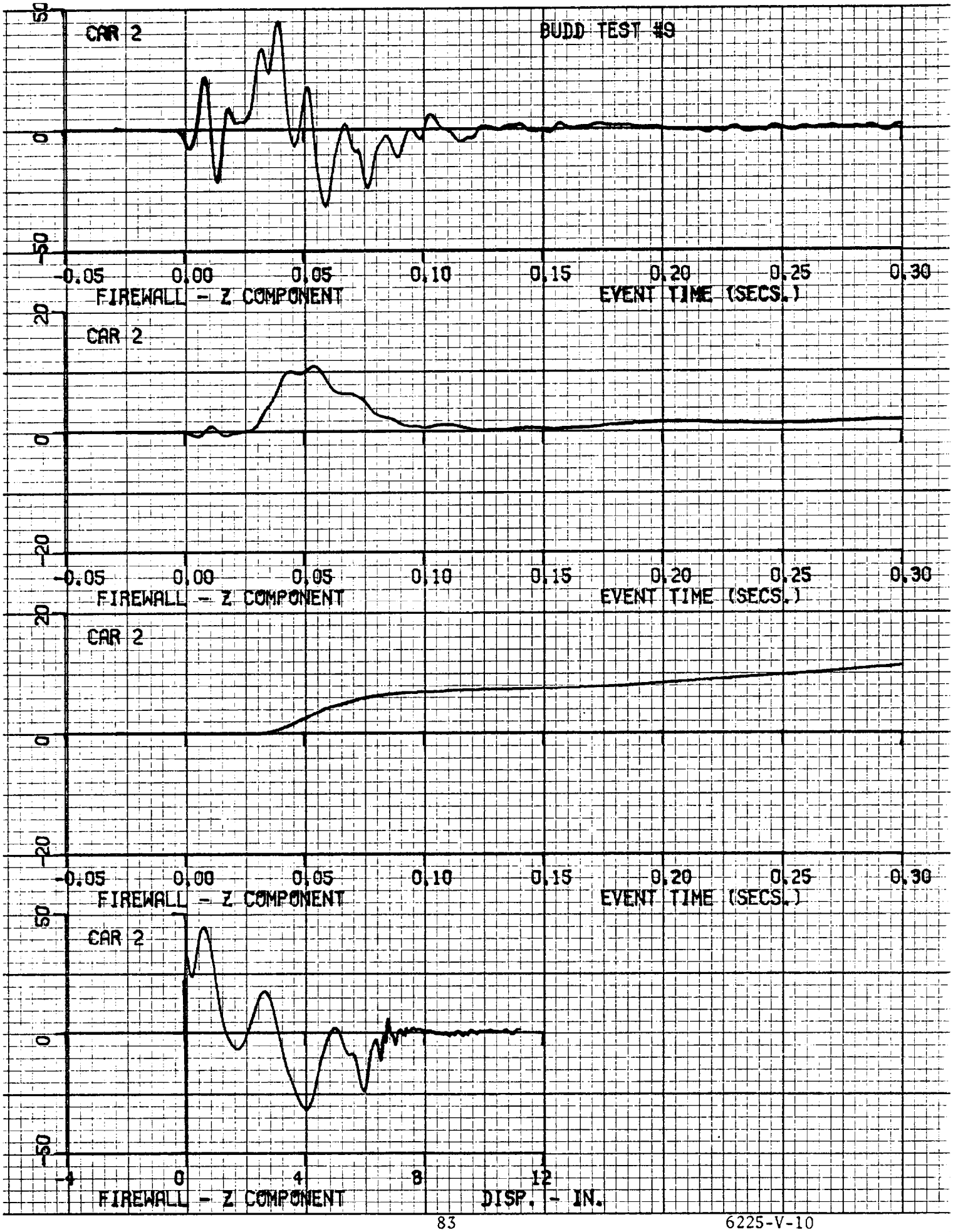

CAR 2
BUDD TEST #9
ACCEL. - G'S
(X10¹)
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - X COMP.
EVENT TIME (SECS.)
CAR 2
VELOCITY - MPH
80
40
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - X COMP.
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN.
(X10¹)
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - X COMP.
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
(X10¹)
10
0
-10
0
50
100
150
200
ENGINE - X COMP.
DISP. - IN.

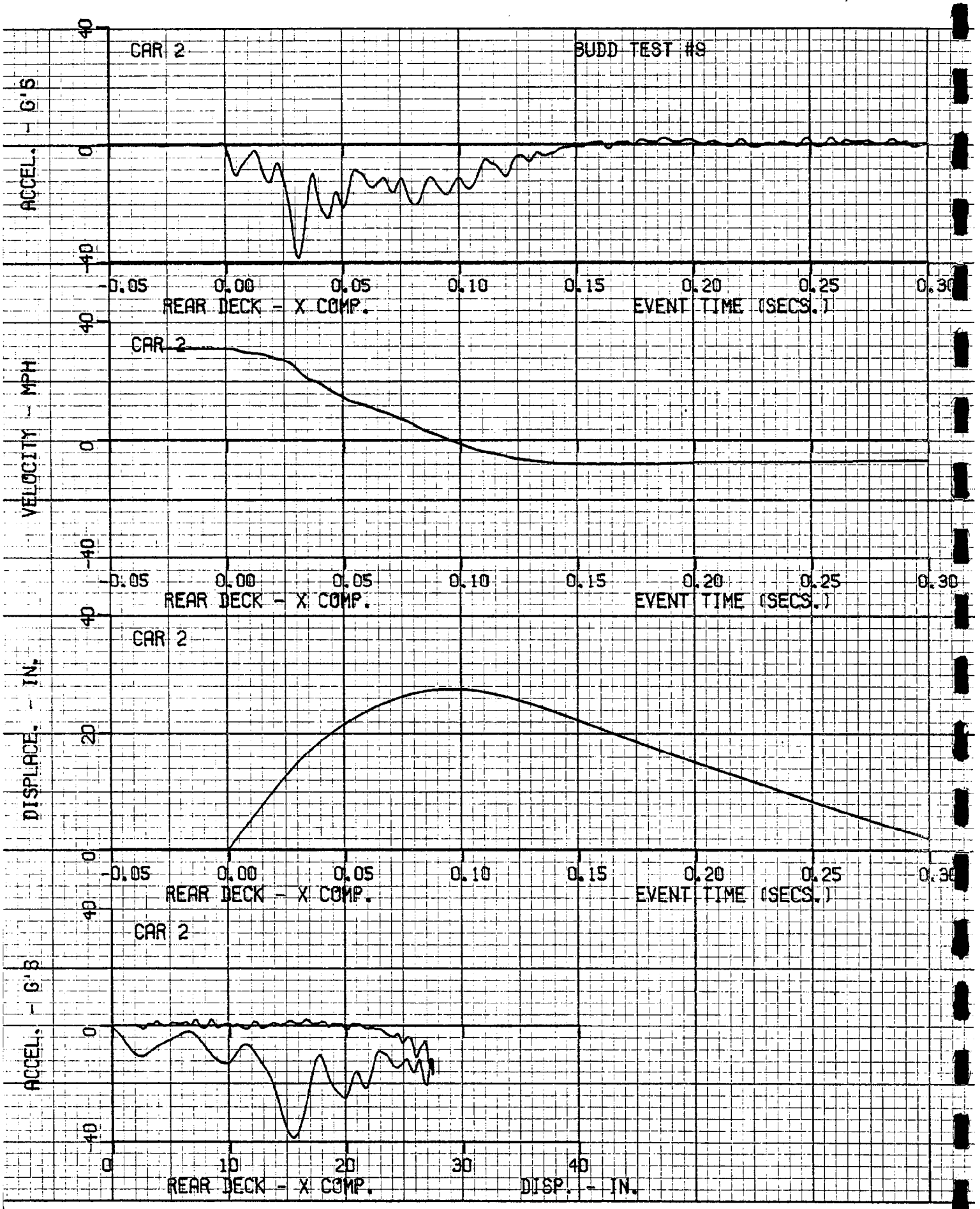

BUDD TEST #9
CAR 2
(X10⁴)
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - Y COMP.
EVENT TIME (SECS.)
CAR 2
(X10⁴)
50
0
-50
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - Y COMP.
EVENT TIME (SECS.)
CAR 2
(X10²)
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - Y COMP.
EVENT TIME (SECS.)
CAR 2
(X10¹)
20
0
-20
-40
0
40
80
120
ENGINE - Y COMP.
DISP. - IN.

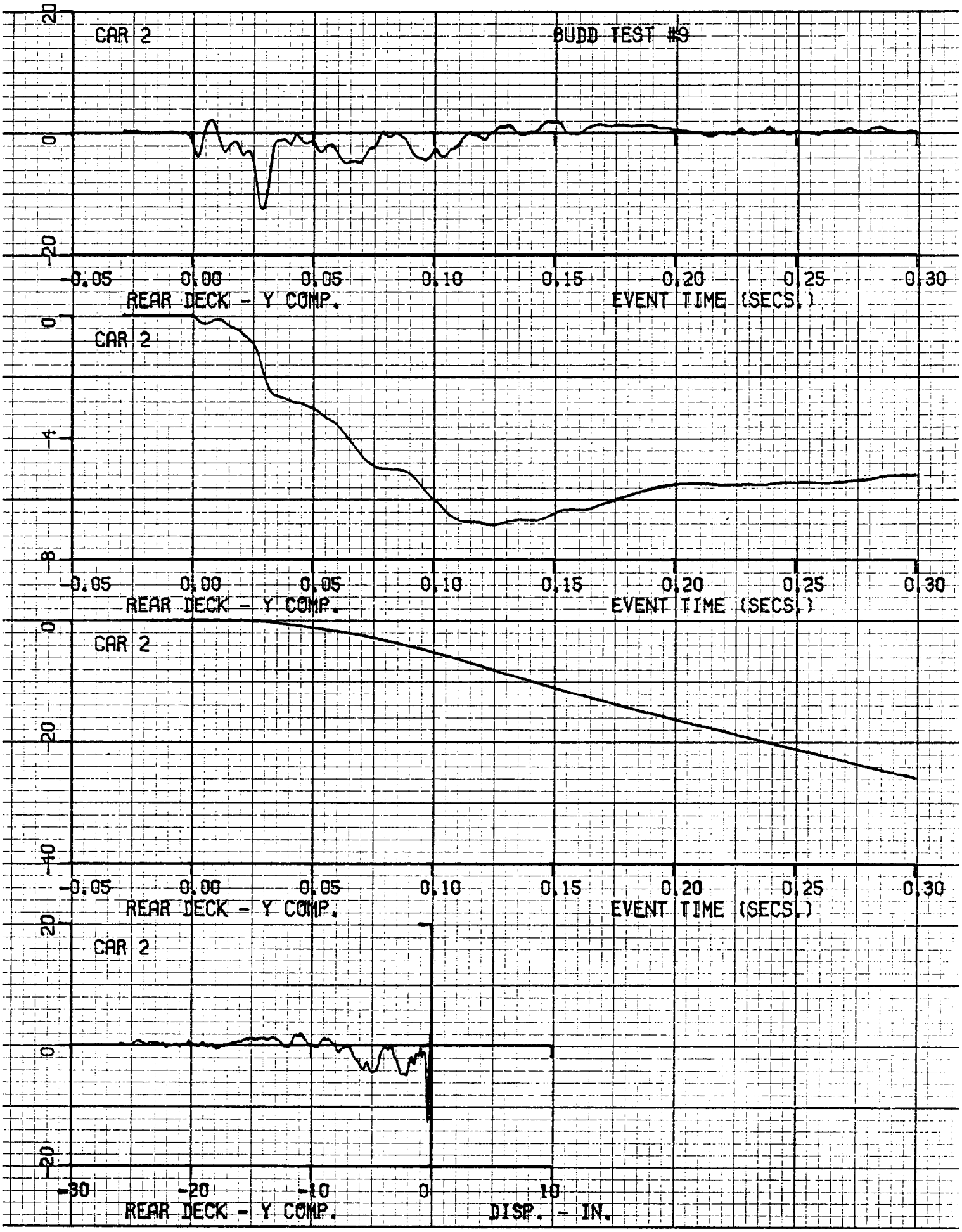

CAR 2
BUDD TEST #9
ACCEL. - G'S
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - Z COMP.
EVENT TIME (SECS.)
CAR 2
VELOCITY - MPH
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - Z COMP.
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN.
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - Z COMP.
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
40
0
-40
-2
0
2
4
6
ENGINE - Z COMP.
DISP. - IN.

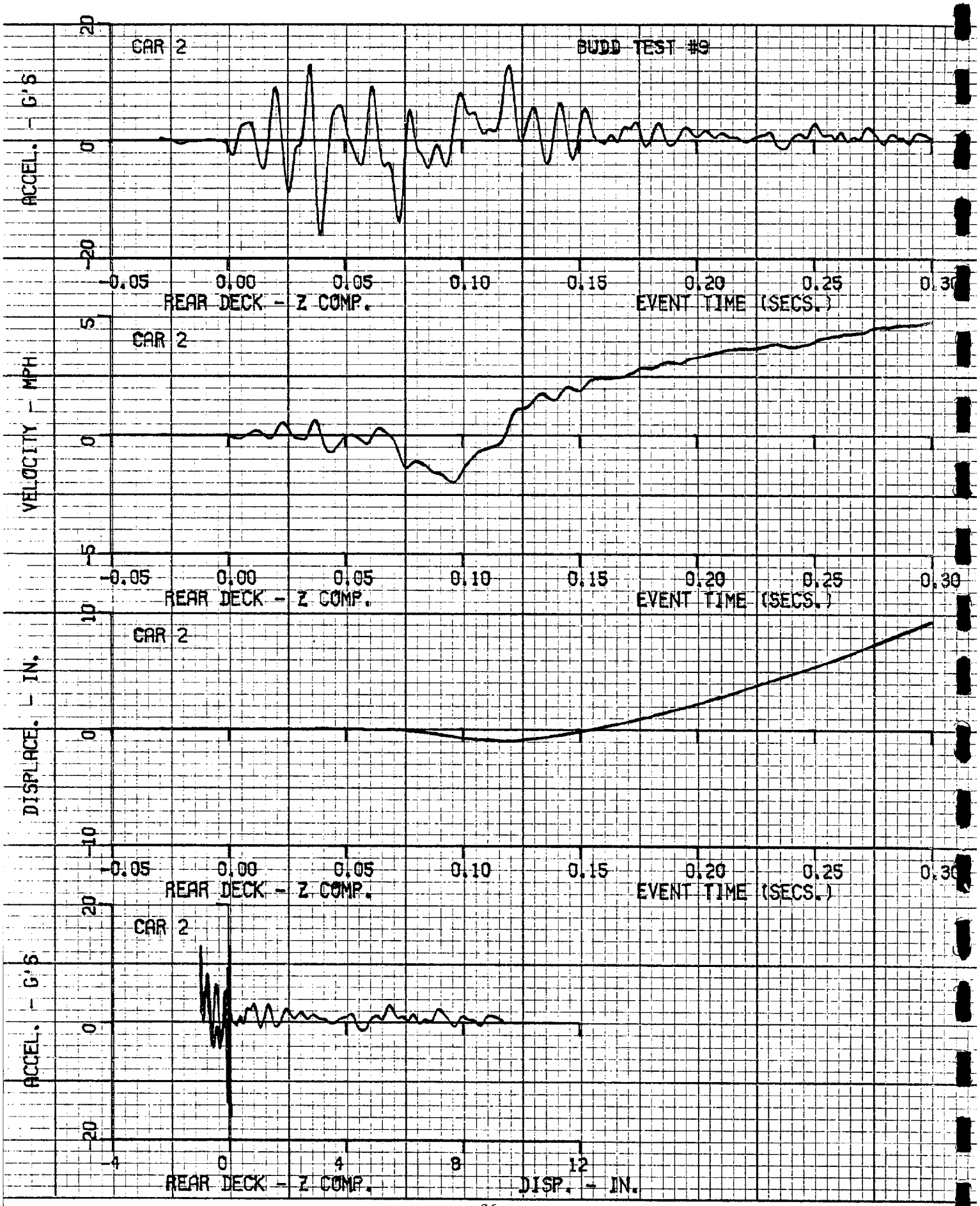

CAR 2
BUDD TEST #9
(X10¹)
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - X COMPONENT
EVENT TIME (SECS.)
CAR 2
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - X COMPONENT
EVENT TIME (SECS.)
CAR 2
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - X COMPONENT
EVENT TIME (SECS.)
CAR 2
(X10¹)
10
0
-10
-20
0
20
40
60
FIREWALL - X COMPONENT
DISP. - IN.


CAR 2
BUDD TEST #9
ACCEL. - G'S
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 2
VELOCITY - MPH
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 2
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 2
ACCEL. - G'S
20
0
-20
-15
-10
-5
0
5
FIREWALL - Y COMPONENT
DISP. - IN.


CAR 2
BUDD TEST #9
50
0
-50
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - Z COMPONENT
EVENT TIME (SECS.)
CAR 2
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - Z COMPONENT
EVENT TIME (SECS.)
CAR 2
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - Z COMPONENT
EVENT TIME (SECS.)
CAR 2
50
0
-50
-4
0
4
8
12
FIREWALL - Z COMPONENT
DISP. - IN.


CAR 2
BUDD TEST #9
ACCEL. - G'S
40
0
-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
VELOCITY - MPH
40
0
-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
DISPLACE. - IN.
40
20
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 2
ACCEL. - G'S
40
0
-40
0
10
20
30
40
REAR DECK - X COMP.
DISP. - IN.


CAR 2
BUDD TEST #9
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.)
0
CAR 2
-4
-8
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Y COMP.
EVENT TIME (SECS.)
0
CAR 2
-20
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - Y COMP.
EVENT TIME (SECS.)
20
CAR 2
0
-20
-30
-20
-10
0
10
REAR DECK - Y COMP.
DISP. - IN.


CAR 2
BUDD TEST #9
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 2
VELOCITY - MPH
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
DISPLACE. - IN.
10
0
-10
-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
ACCEL. - G'S
20
0
-20
-4
0
4
8
12
REAR DECK - Z COMP.
DISP. - IN.

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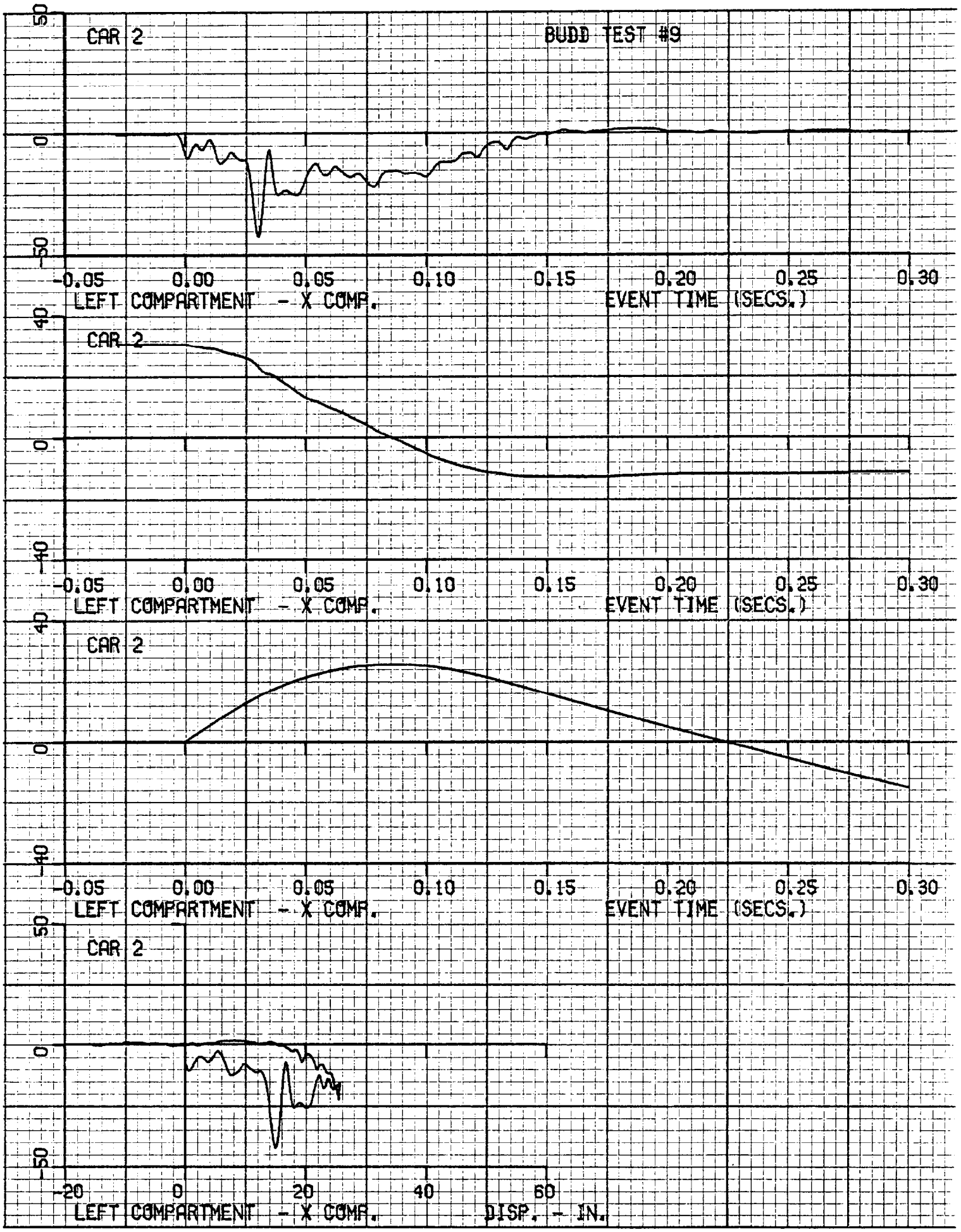
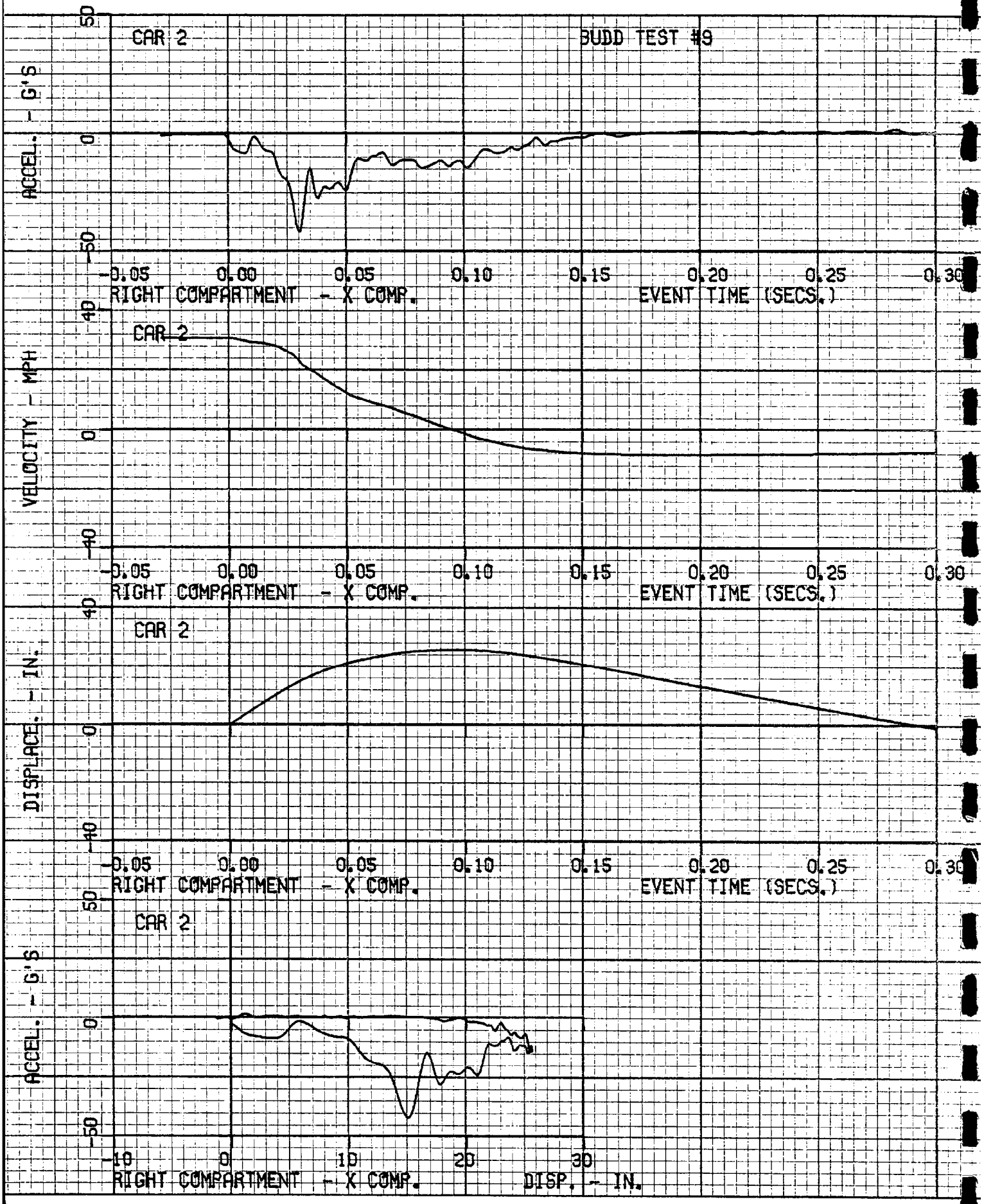
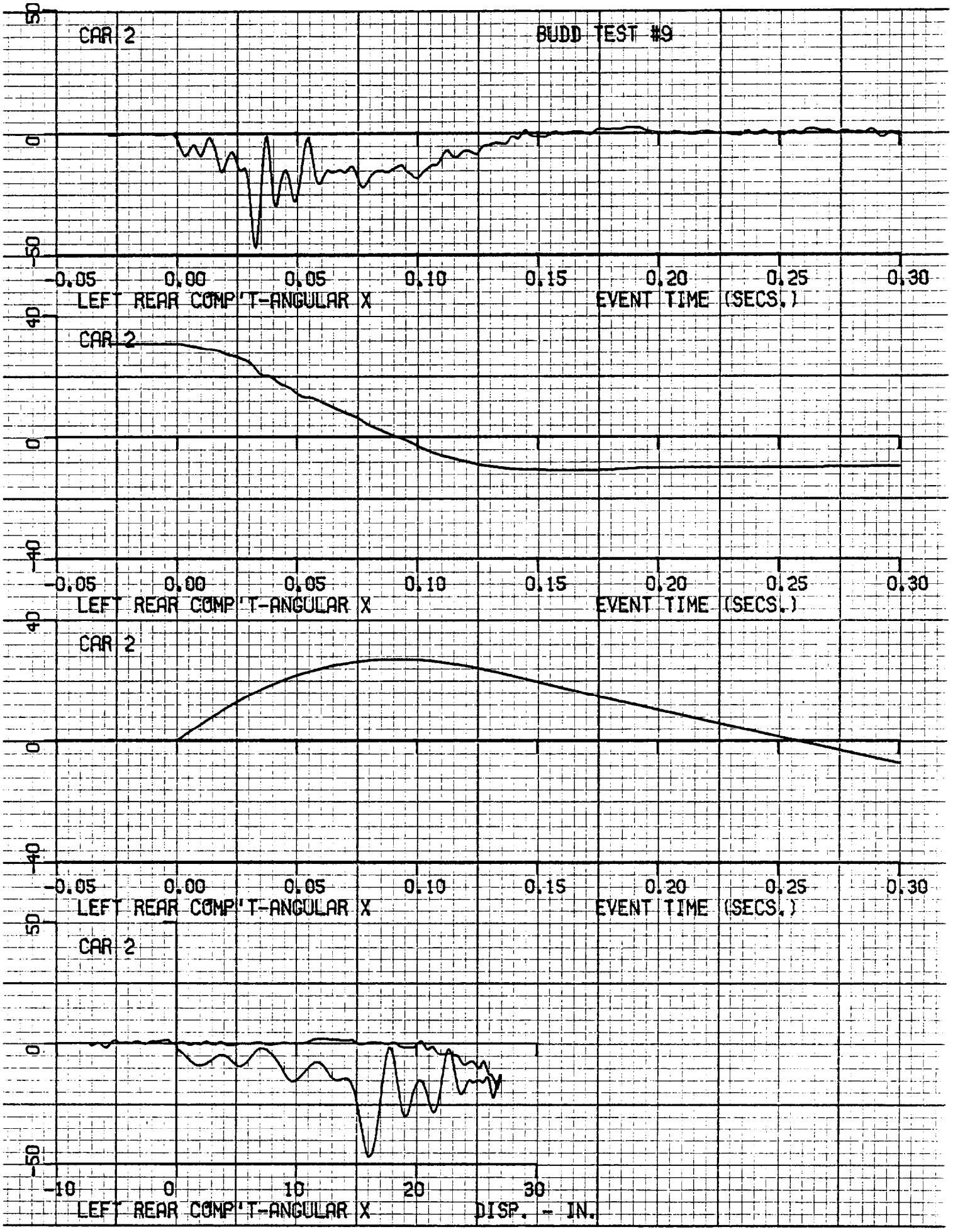
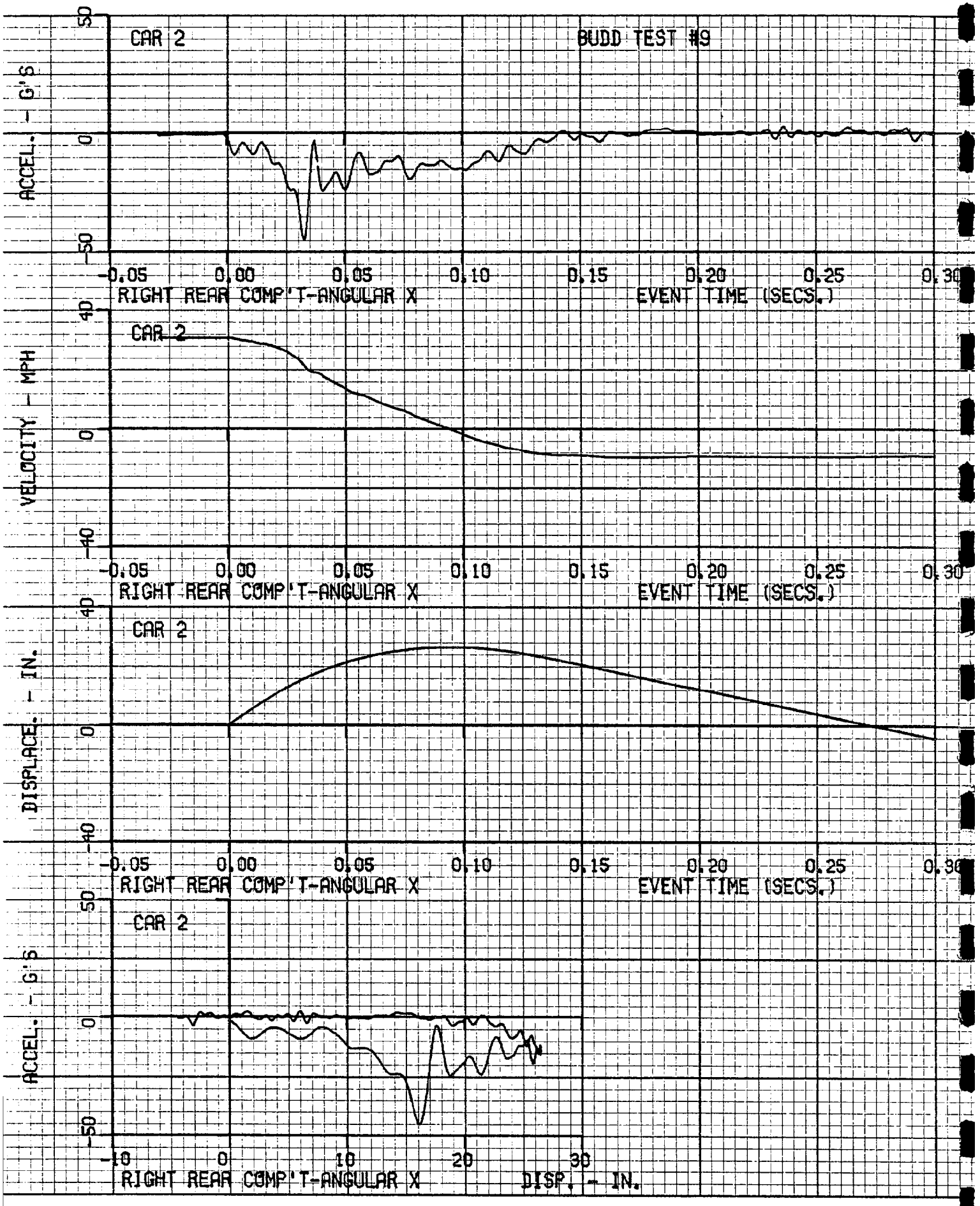
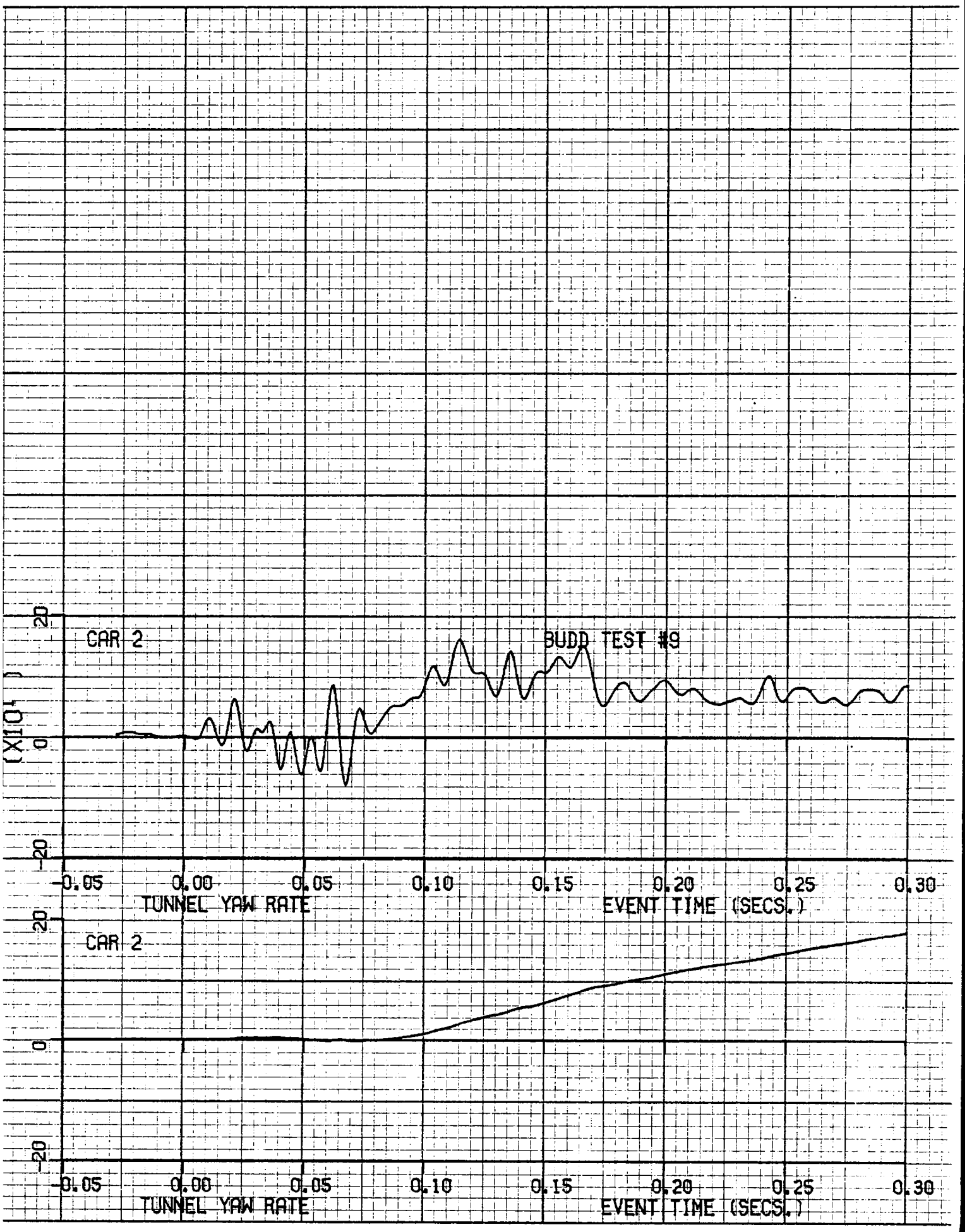

CAR 2
BUDD TEST #9
50
0
-50
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LEFT COMPARTMENT - X COMP.
EVENT TIME (SECS.)
40
CAR 2
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LEFT COMPARTMENT - X COMP.
EVENT TIME (SECS.)
40
CAR 2
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LEFT COMPARTMENT - X COMP.
EVENT TIME (SECS.)
50
CAR 2
0
-50
-20
0
20
40
60
LEFT COMPARTMENT - X COMP.
DISP. - IN.


CAR 2
BUDD TEST #9
ACCEL. - G'S
50
0
-50
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT COMPARTMENT - X 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
RIGHT COMPARTMENT - X COMP.
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN.
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT COMPARTMENT - X COMP.
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
50
0
-50
-10
0
10
20
30
RIGHT COMPARTMENT - X COMP.
DISP. - IN.


CAR 2
BUDD TEST #9
50
0
-50
-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 2
40
0
-40
-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 2
40
0
-40
-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 2
50
0
-50
-10 0 10 20 30
LEFT REAR COMP'T-ANGULAR X
DISP. - IN.

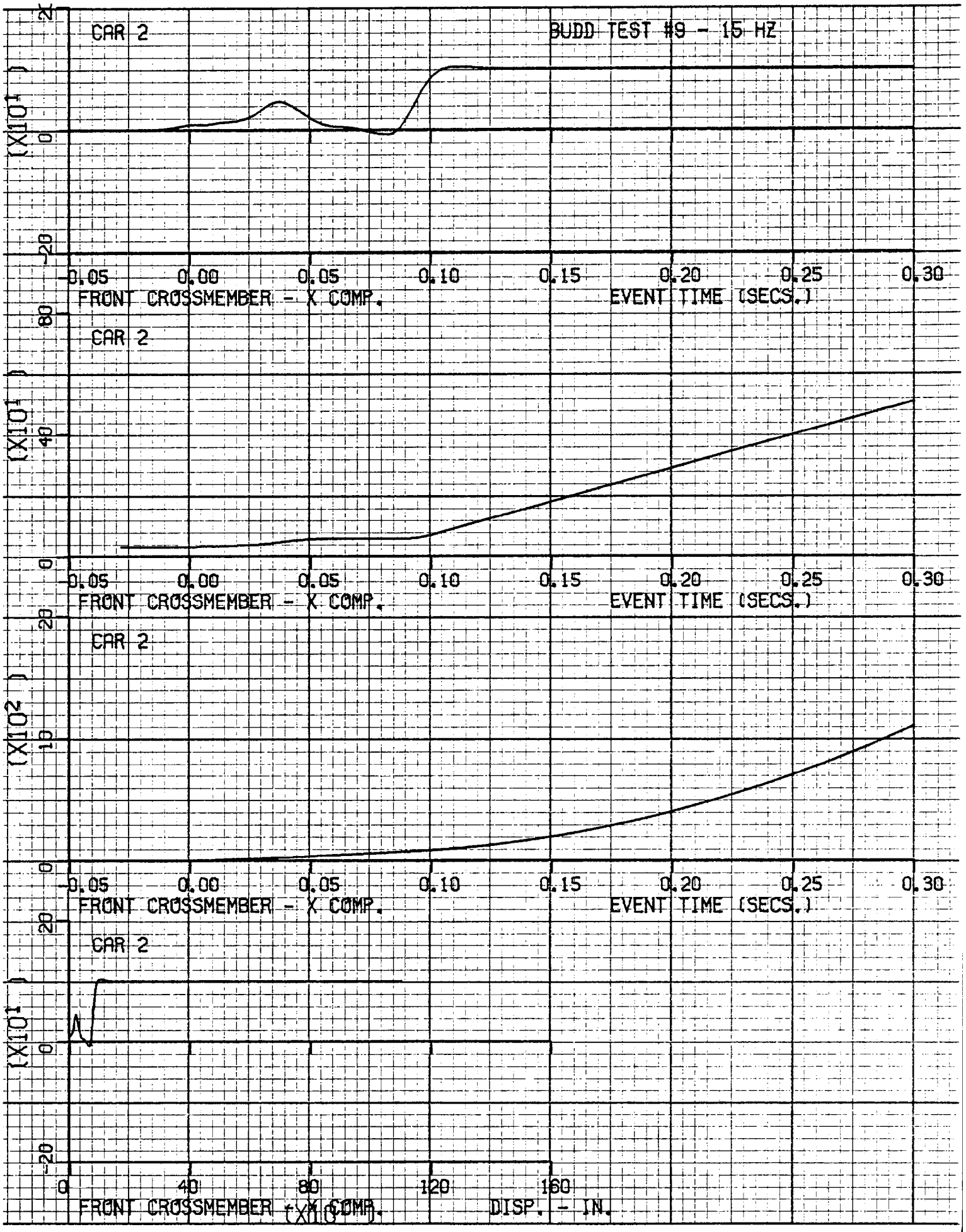

CAR 2
BUDD TEST #9
ACCEL. - G'S
50
0
-50
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMP'T-ANGULAR X
EVENT TIME (SECS.)
CAR 2
VELOCITY - MPH
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMP'T-ANGULAR X
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN.
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMP'T-ANGULAR X
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
50
0
-50
-10
0
10
20
30
RIGHT REAR COMP'T-ANGULAR X
DISP. - IN.

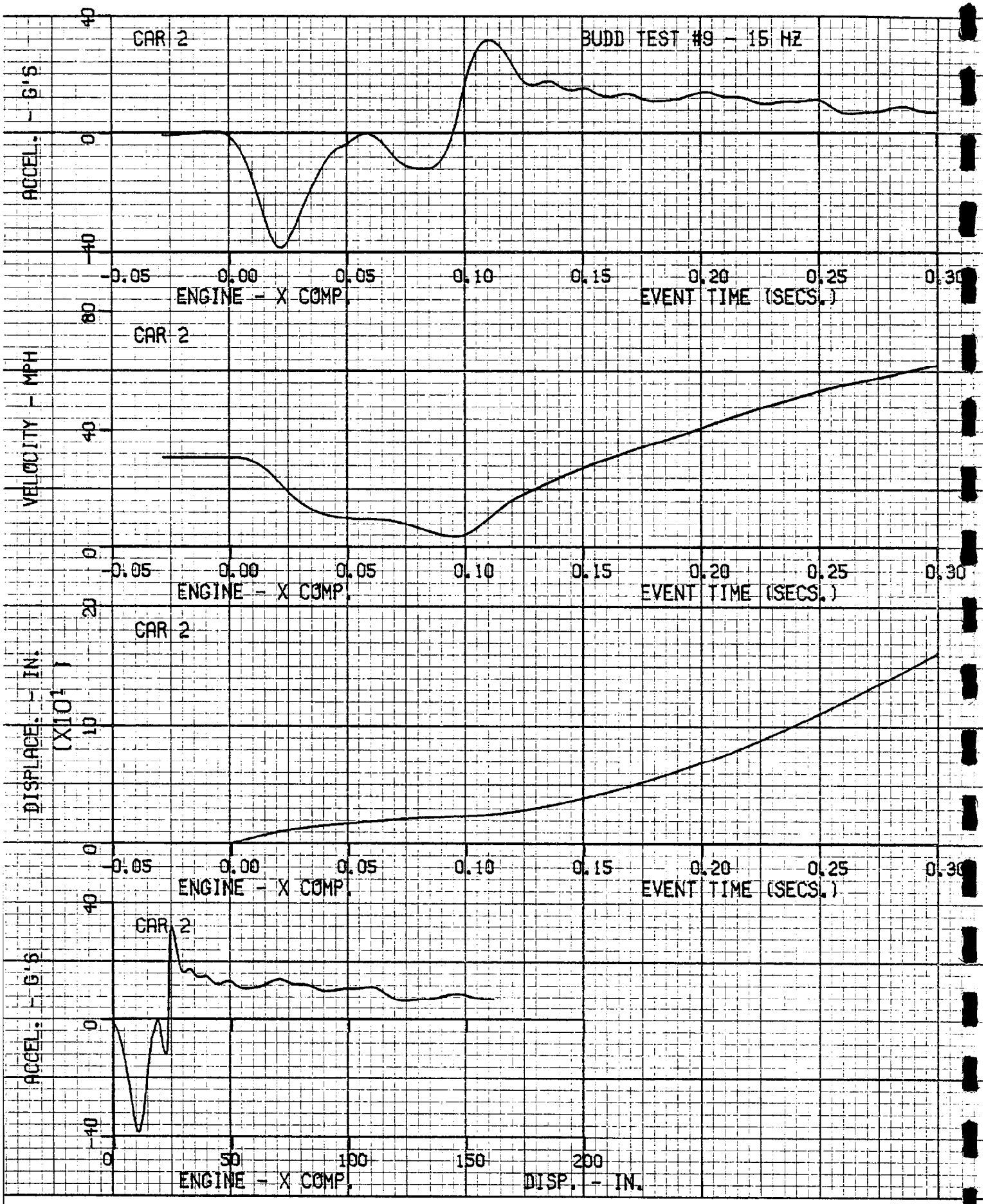

CAR 2
BUDD TEST #9
(X10¹)
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
TUNNEL YAW RATE
EVENT TIME (SECS.)
CAR 2
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
TUNNEL YAW RATE
EVENT TIME (SECS.)

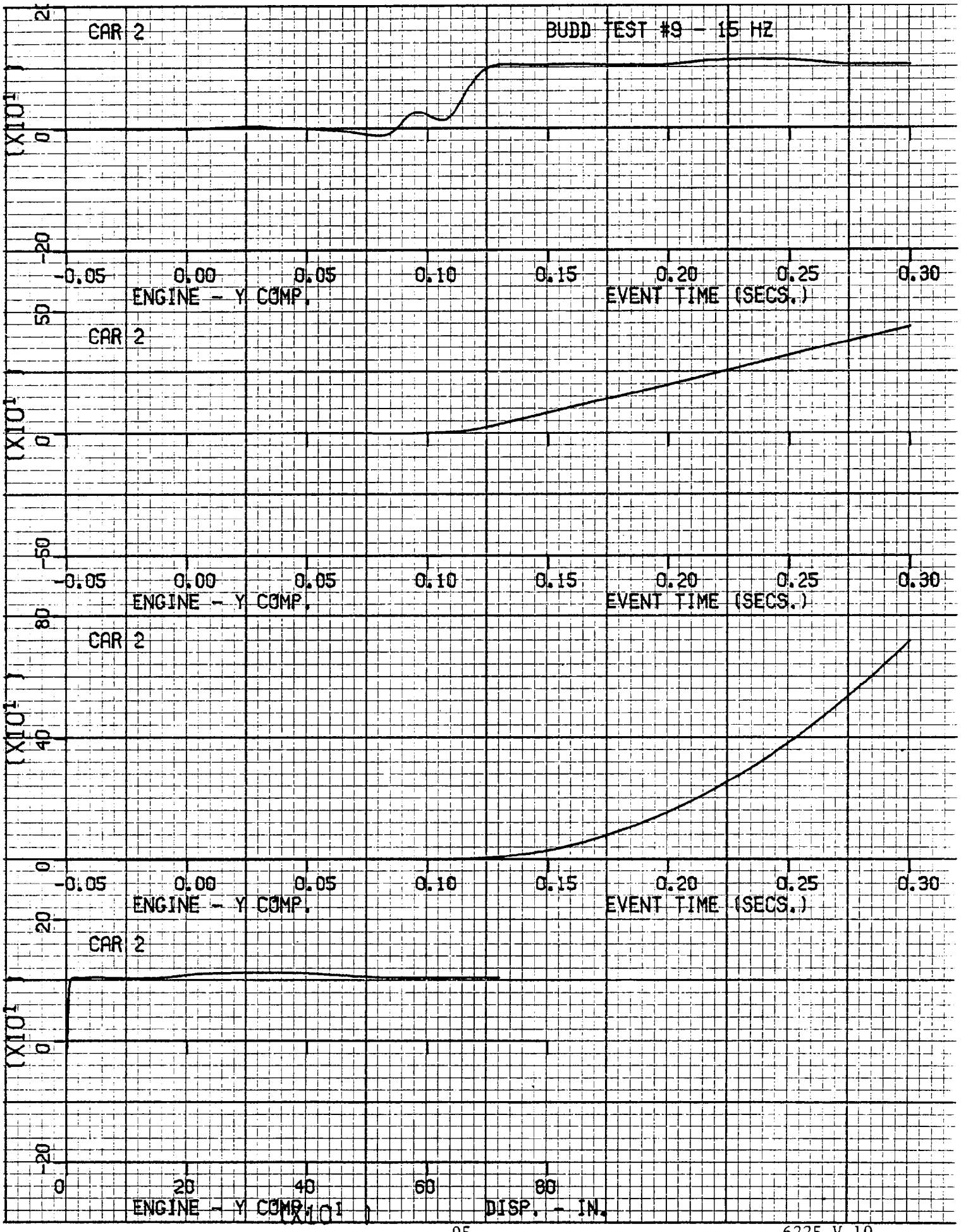
TEST NO. 9

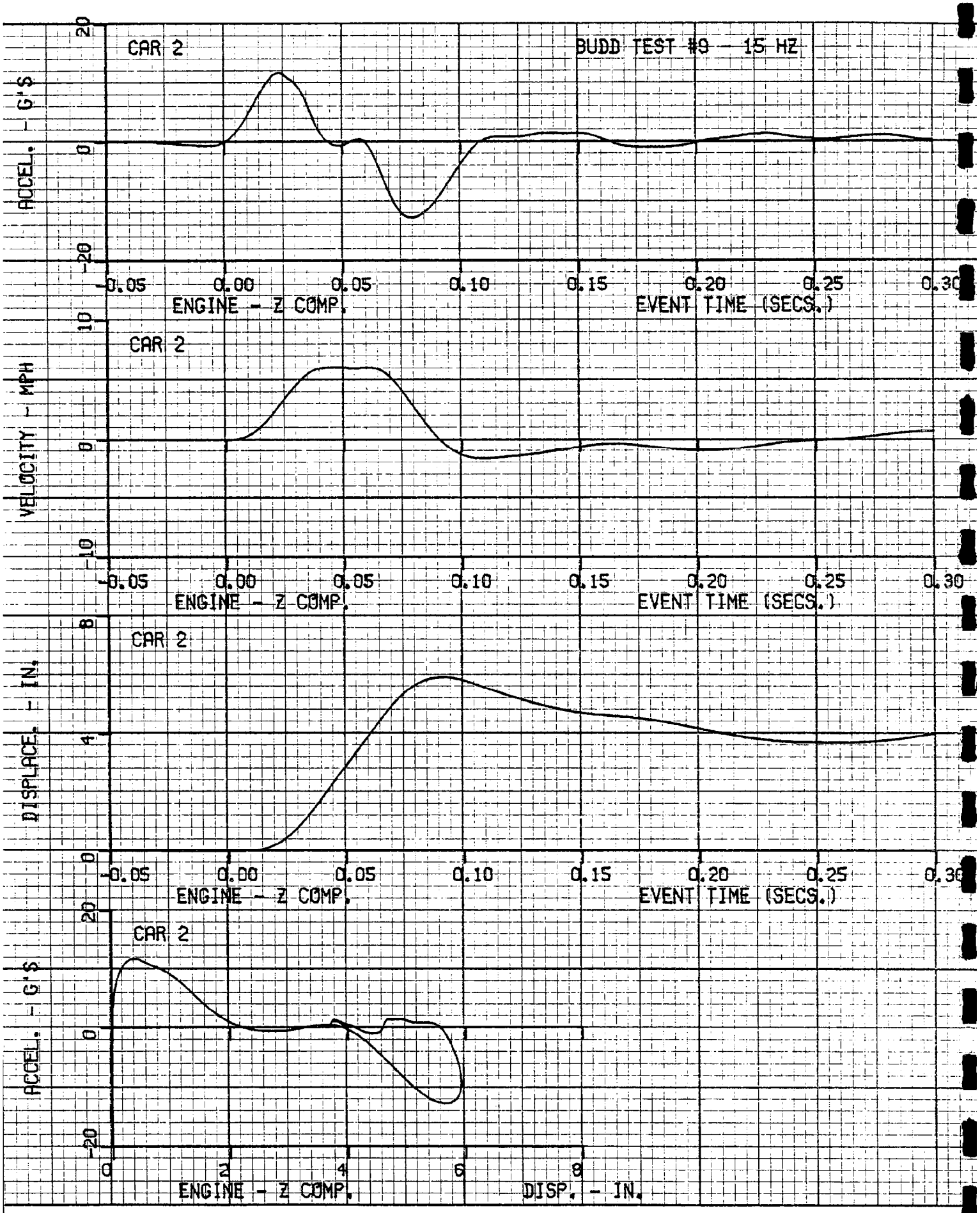
CAR 2 - 1976 VW RABBIT

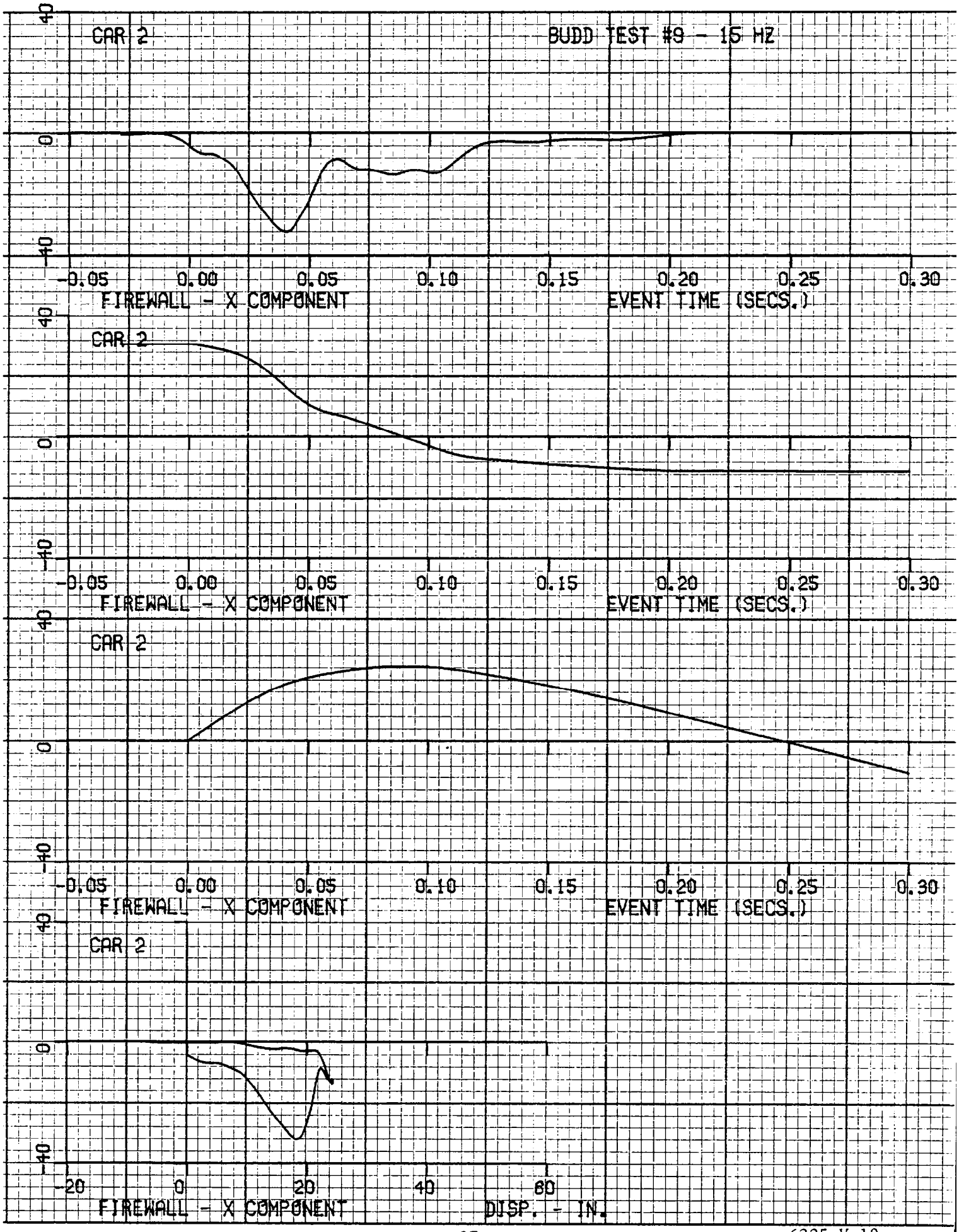
VEHICLE DATA, 15 HZ FILTER

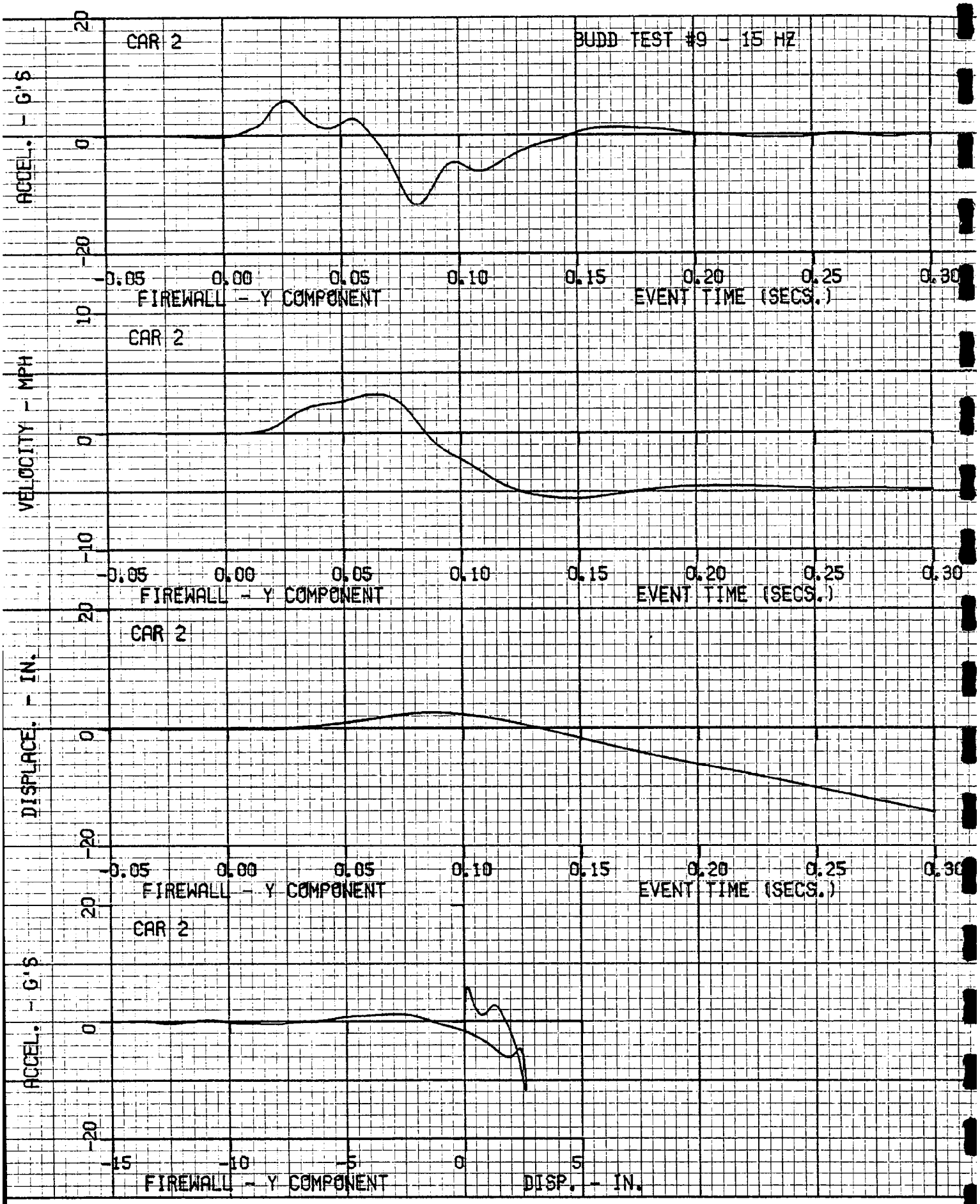

CAR 2
BUDD TEST #9 - 15 HZ
(X101)
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FRONT CROSSMEMBER - X COMP.
EVENT TIME (SECS.)
CAR 2
(X101)
80
40
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FRONT CROSSMEMBER - X COMP.
EVENT TIME (SECS.)
CAR 2
(X102)
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FRONT CROSSMEMBER - X COMP.
EVENT TIME (SECS.)
CAR 2
(X101)
20
0
-20
0
40
80
120
160
FRONT CROSSMEMBER (X10) COMP.
DISP. - IN.

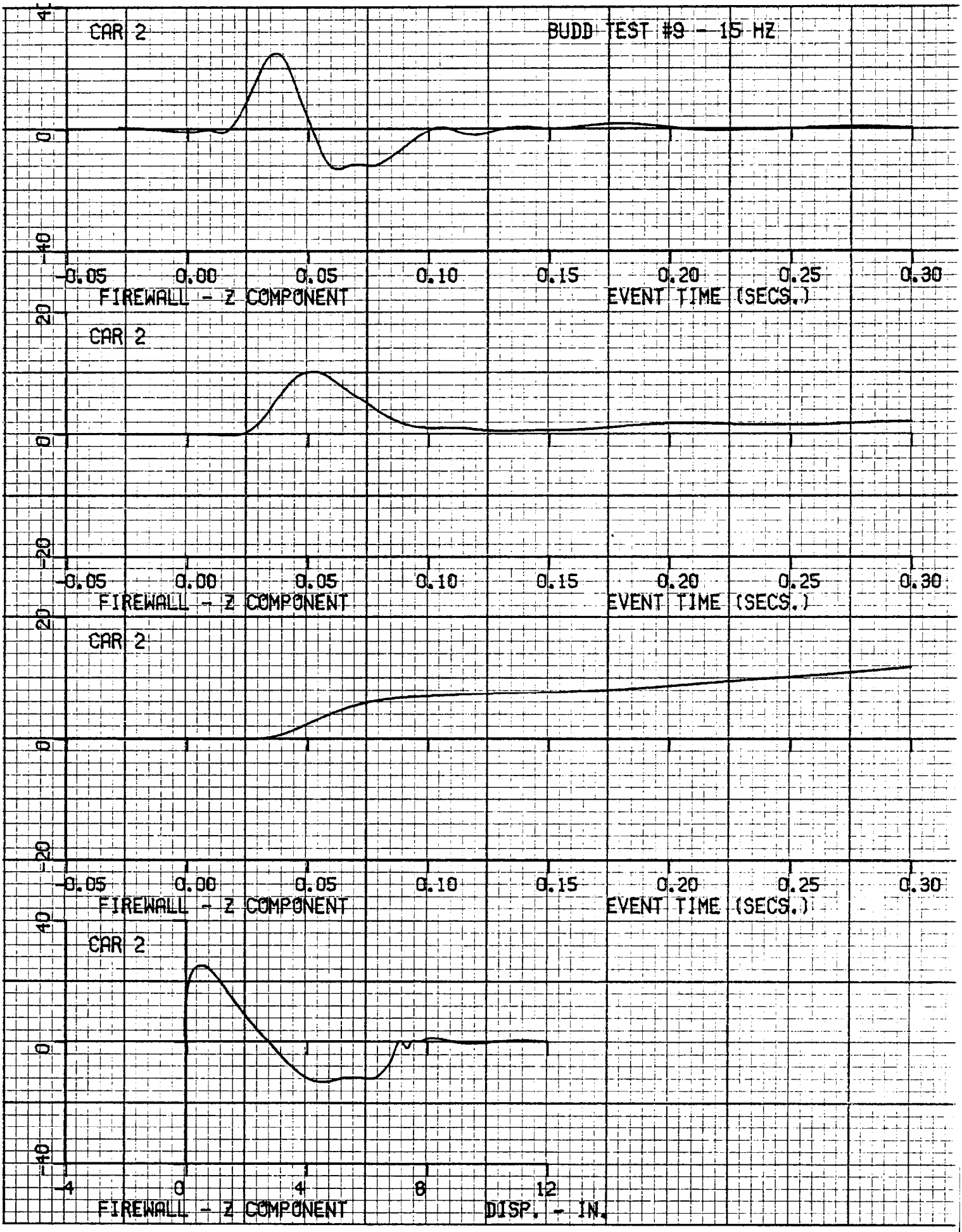

CAR 2
BUDD TEST #9 - 15 HZ
ACCEL. - G'S
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - X COMP.
EVENT TIME (SECS.)
CAR 2
VELOCITY - MPH
80
40
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - X COMP.
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN.
(X10¹)
20
10
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - X COMP.
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
40
0
-40
0
50
100
150
200
ENGINE - X COMP.
DISP. - IN.

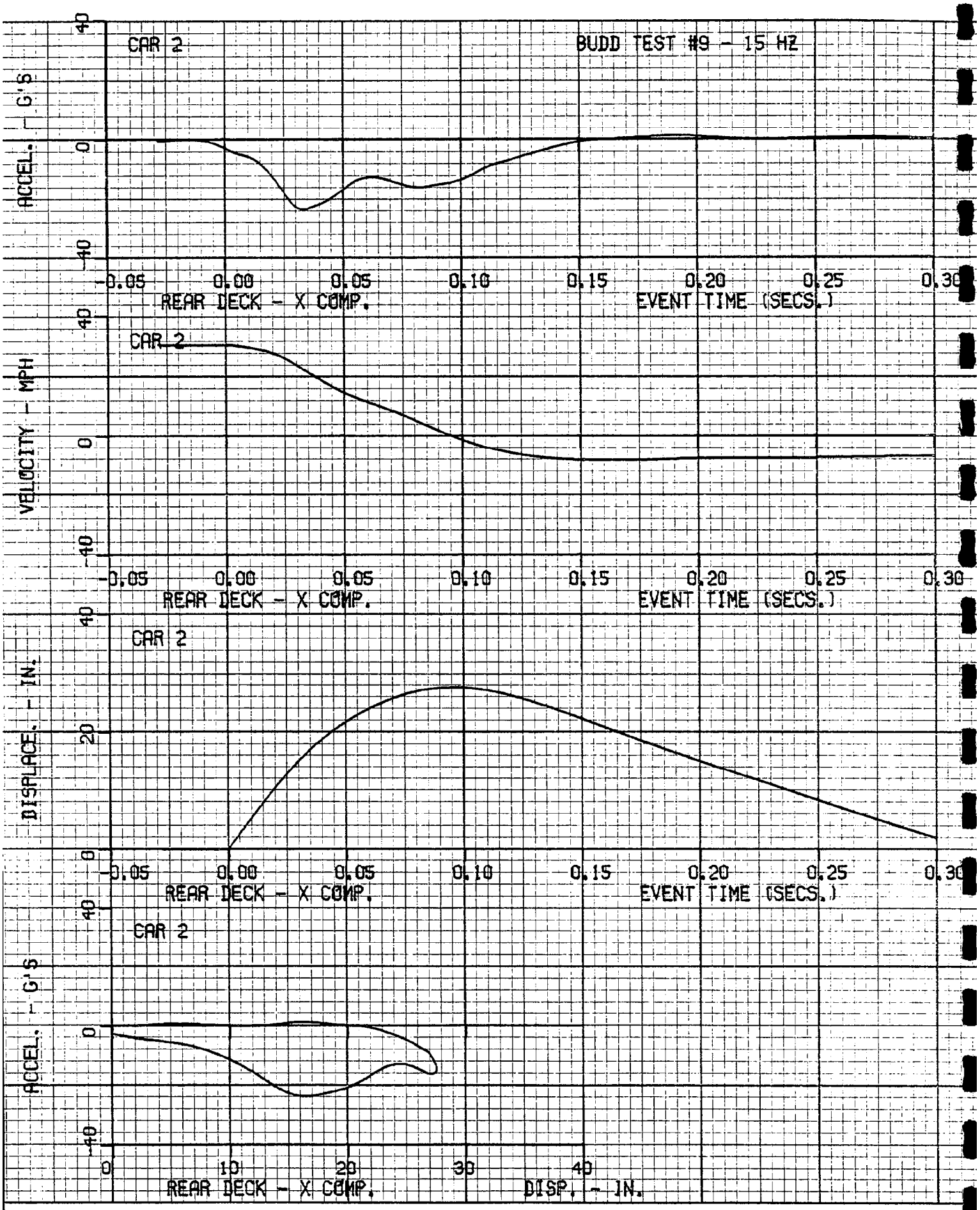

BUDD TEST #9 - 15 HZ
CAR 2
ENGINE - Y COMP.
EVENT TIME (SECS.)
CAR 2
ENGINE - Y COMP.
EVENT TIME (SECS.)
CAR 2
ENGINE - Y COMP.
EVENT TIME (SECS.)
CAR 2
ENGINE - Y COMP.
DISP. - IN.
(X10)
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0
20
40
60
80
2
0
-20
50
0
-50
80
40
0
20
0
-20

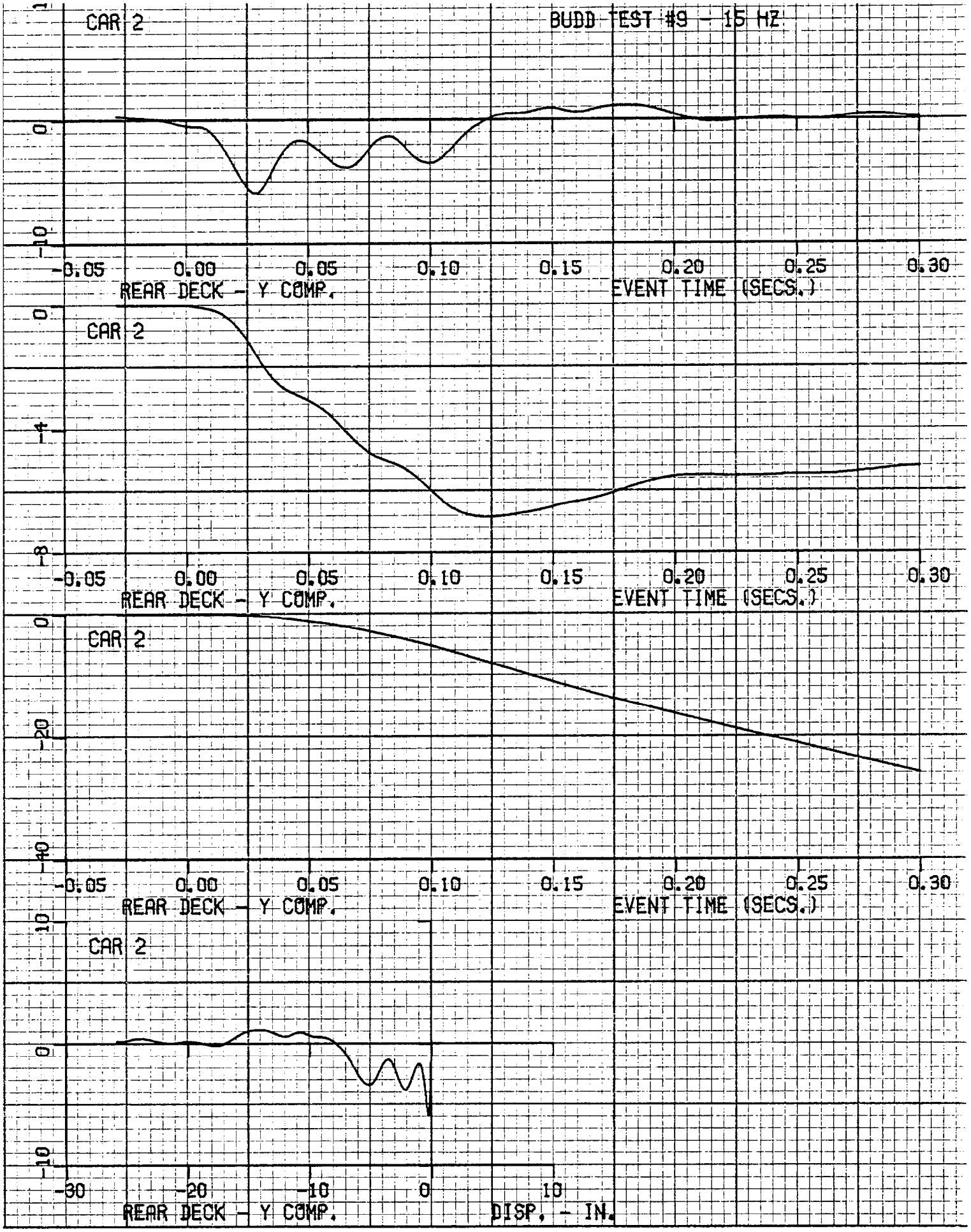

CAR 2
BUDD TEST #9 - 15 HZ
ACCEL. - G'S
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - Z COMP.
EVENT TIME (SECS.)
CAR 2
VELOCITY - MPH
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - Z COMP.
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN.
8
4
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
ENGINE - Z COMP.
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
20
0
-20
0
2
4
6
8
ENGINE - Z COMP.
DISP. - IN.

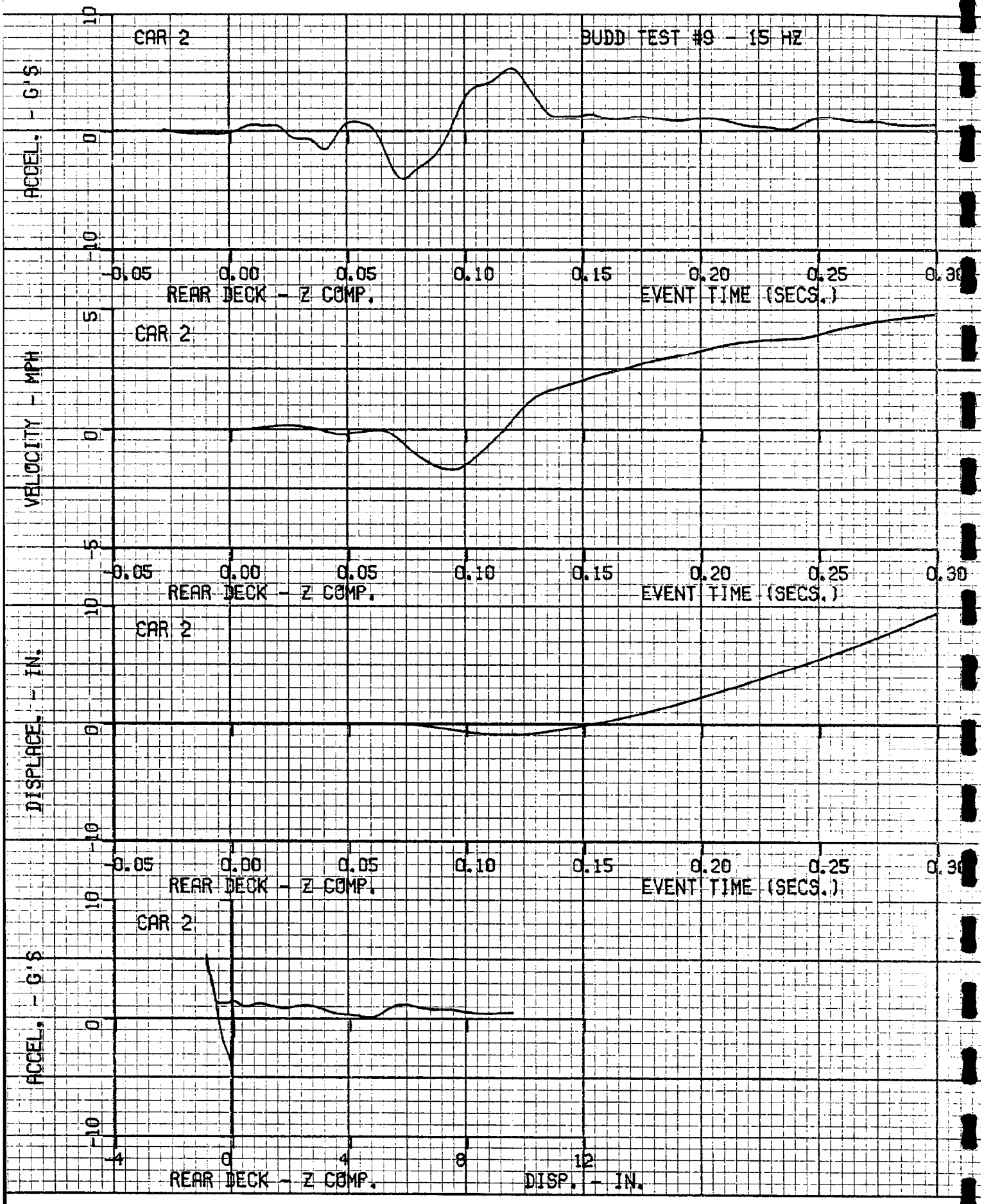

CAR 2
BUDD TEST #9 - 15 HZ
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - X COMPONENT
EVENT TIME (SECS.)
CAR 2
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - X COMPONENT
EVENT TIME (SECS.)
CAR 2
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - X COMPONENT
EVENT TIME (SECS.)
CAR 2
40
0
-40
-20
0
20
40
60
FIREWALL - X COMPONENT
DISP. - IN.

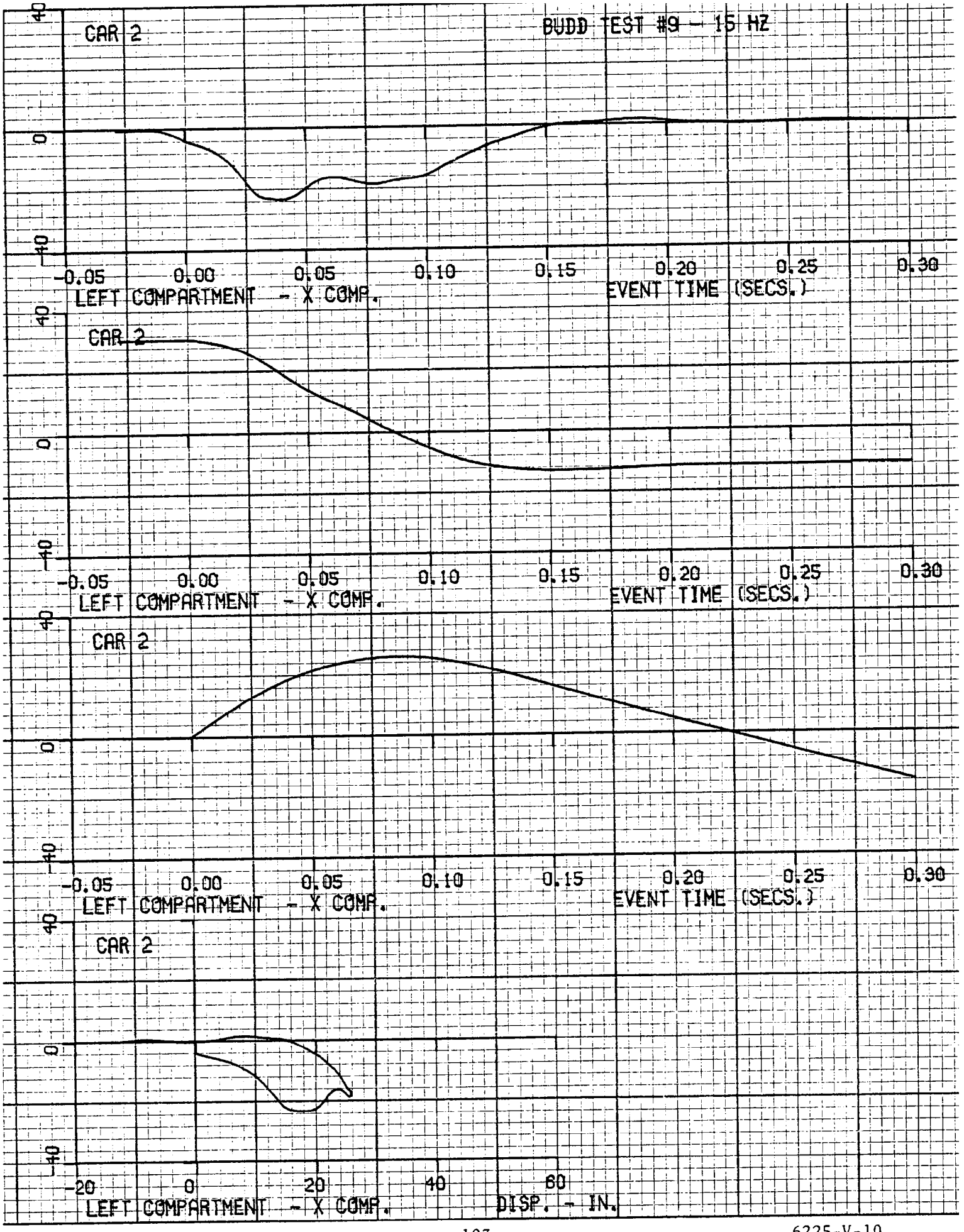

CAR 2
BUDD TEST #9 - 15 HZ
ACCEL. - G'S
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - Y COMPONENT
EVENT TIME (SECS.)
CAR 2
VELOCITY - MPH
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - Y COMPONENT
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN.
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - Y COMPONENT
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
20
0
-20
-15
-10
-5
0
5
FIREWALL - Y COMPONENT
DISP. - IN.

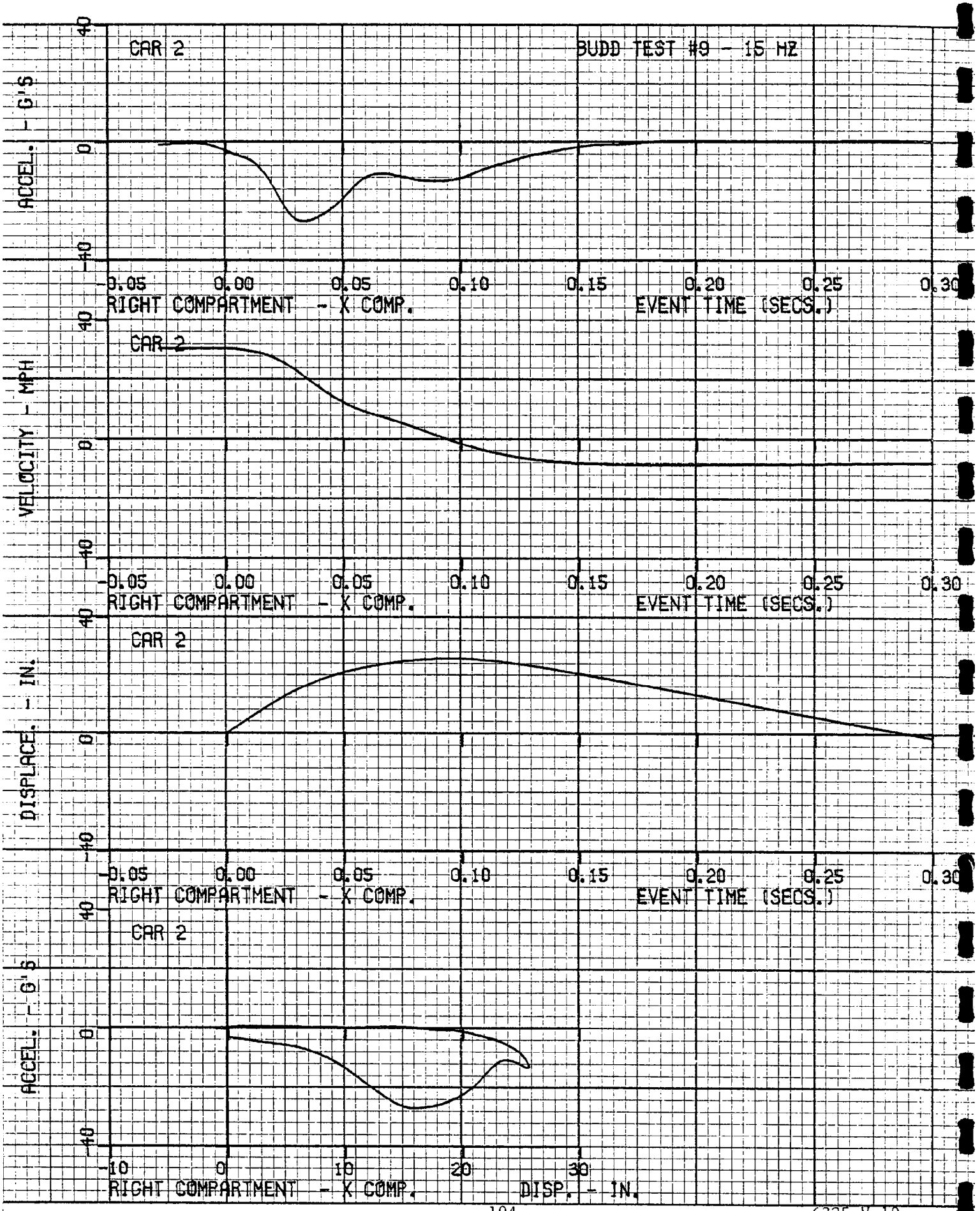

CAR 2
BUDD TEST #9 - 15 HZ
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - Z COMPONENT
EVENT TIME (SECS.)
CAR 2
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - Z COMPONENT
EVENT TIME (SECS.)
CAR 2
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
FIREWALL - Z COMPONENT
EVENT TIME (SECS.)
CAR 2
40
0
-40
-4
0
4
8
12
FIREWALL - Z COMPONENT
DISP. - IN.

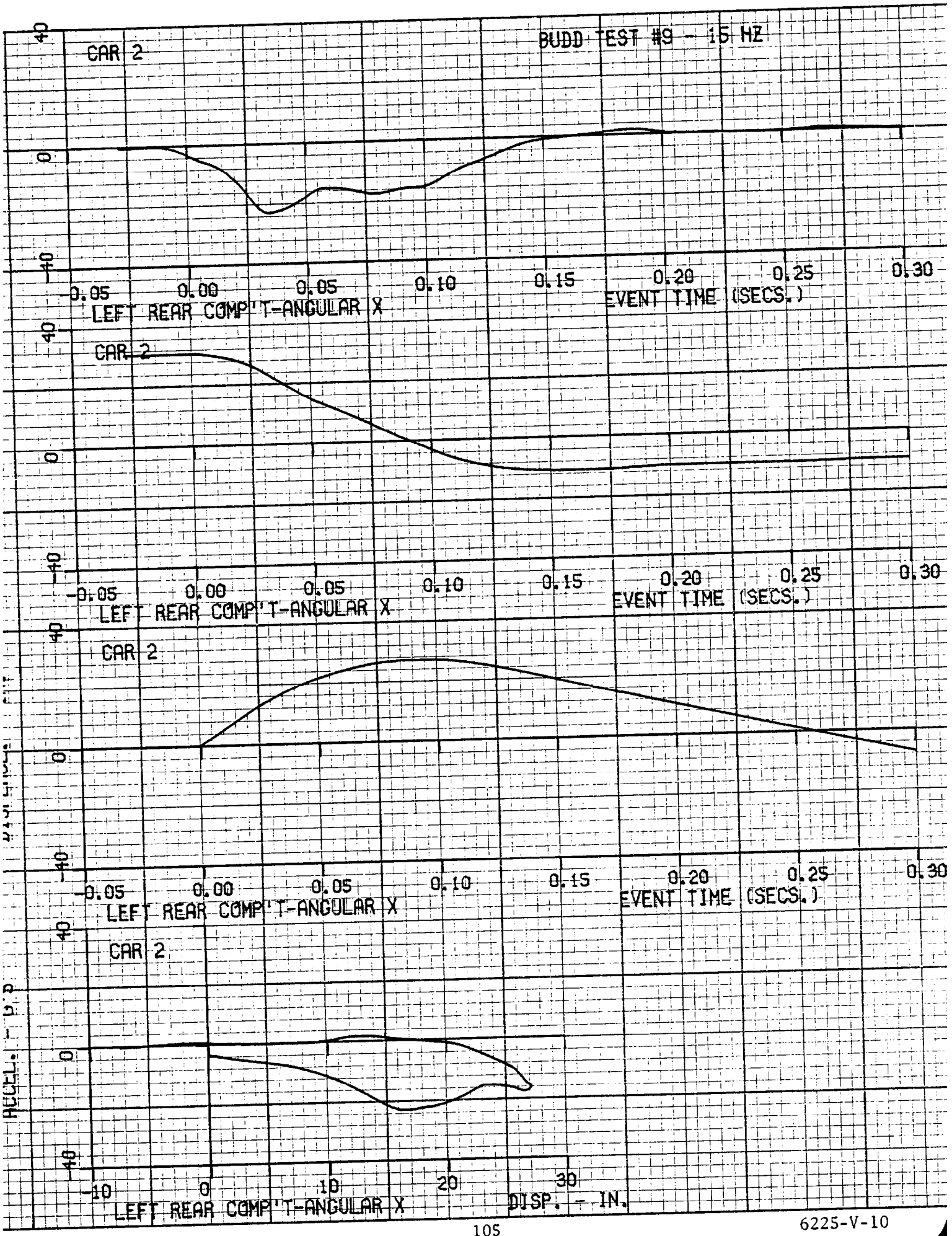

CAR 2
BUDD TEST #9 - 15 HZ
ACCEL. - G'S
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - X COMP.
EVENT TIME (SECS.)
CAR 2
VELOCITY - MPH
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - X COMP.
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN.
40
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
REAR DECK - X COMP.
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
40
0
-40
0
10
20
30
40
REAR DECK - X COMP.
DISP. - IN.


BUDD TEST #9 - 15 HZ
CAR 2
1
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 2
0
-4
-8
-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
0
-20
-40
-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
10
0
-10
-30
-20
-10
0
10
REAR DECK - Y COMP.
DISP. - IN.


CAR 2
BUDD TEST #9 - 15 HZ
ACCEL. - G'S
10
0
-10
-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
VELOCITY - MPH
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
DISPLACE. - IN.
10
0
-10
-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
ACCEL. - G'S
10
0
-10
-4
0
4
8
12
REAR DECK - Z COMP.
DISP. - IN.


BUDD TEST #9 - 15 HZ
CAR 2
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
LEFT COMPARTMENT - X 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
LEFT COMPARTMENT - X 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
LEFT COMPARTMENT - X COMP.
EVENT TIME (SECS.)
CAR 2
40
0
-40
-20
0
20
40
60
LEFT COMPARTMENT - X COMP.
DISP. - IN.


CAR 2
BUDD TEST #9 - 15 HZ
ACCEL. - G'S
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT COMPARTMENT - X 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
RIGHT COMPARTMENT - X COMP.
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN.
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT COMPARTMENT - X COMP.
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
40
0
-40
-10
0
10
20
30
RIGHT COMPARTMENT - X COMP.
DISP. - IN.


BUDD TEST #9 - 15 HZ
CAR 2
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
LEFT REAR COMP'T-ANGULAR X
CAR 2
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
LEFT REAR COMP'T-ANGULAR X
CAR 2
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
LEFT REAR COMP'T-ANGULAR X
CAR 2
40
0
-40
-10
0
10
20
30
DISP. - IN.
LEFT REAR COMP'T-ANGULAR X

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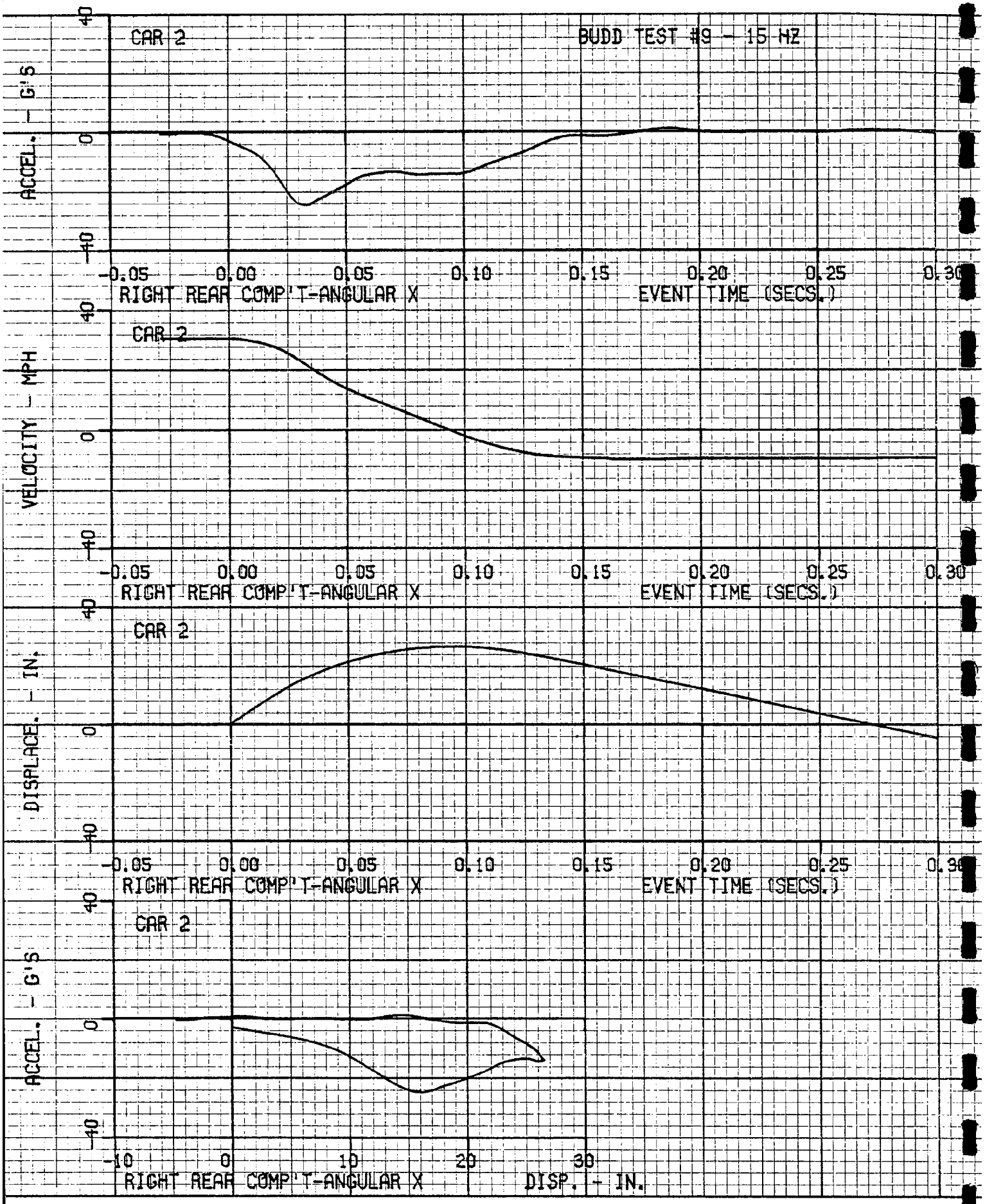
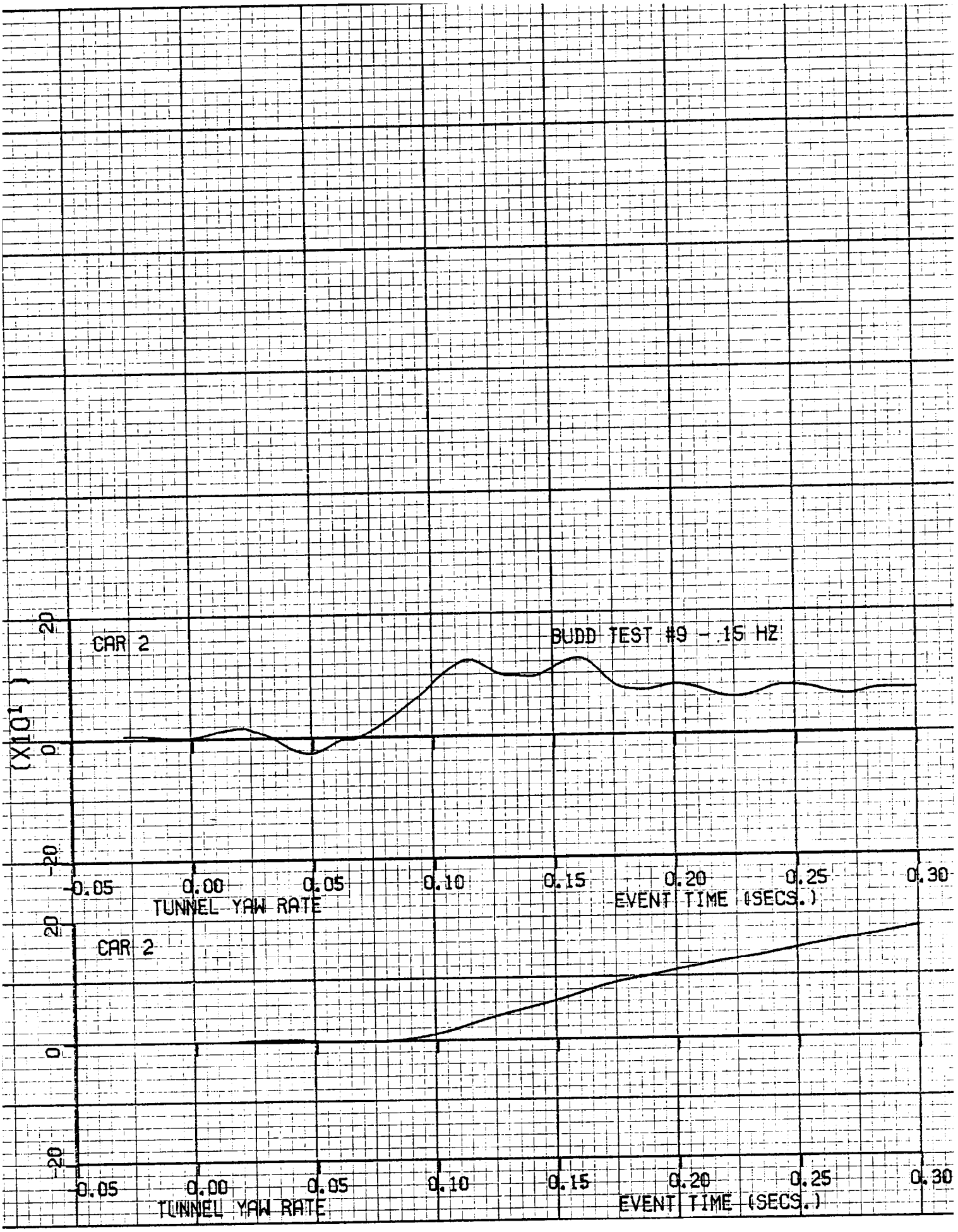

CAR 2
BUDD TEST #9 - 15 HZ
ACCEL. - G'S
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMP'T-ANGULAR X
EVENT TIME (SECS.)
CAR 2
VELOCITY - MPH
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMP'T-ANGULAR X
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN.
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
RIGHT REAR COMP'T-ANGULAR X
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
40
0
-40
-10
0
10
20
30
RIGHT REAR COMP'T-ANGULAR X
DISP. - IN.


CAR 2
BUDD TEST #9 - .15 HZ
(X10)
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
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.)

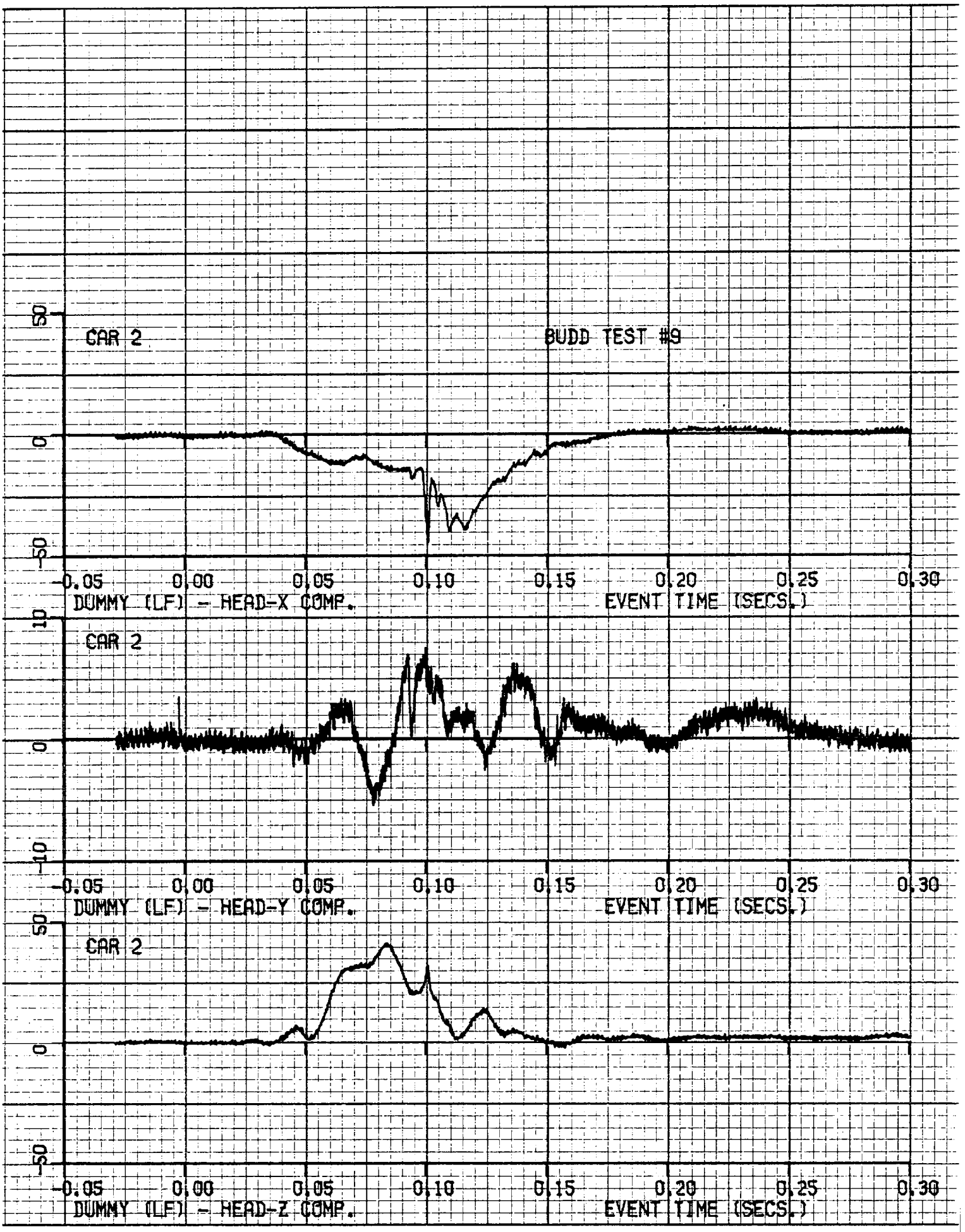
6225-V-10

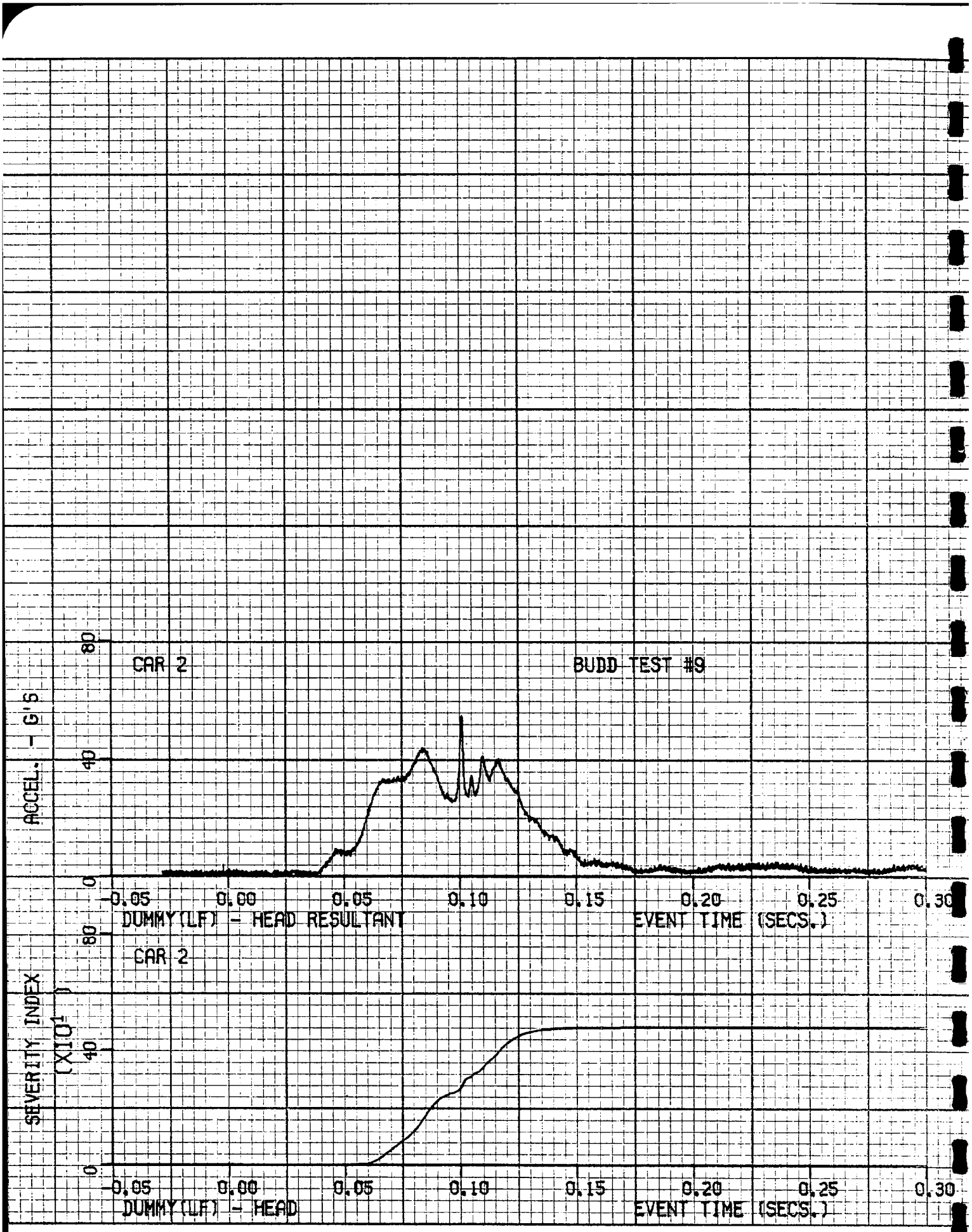
TEST NO. 9

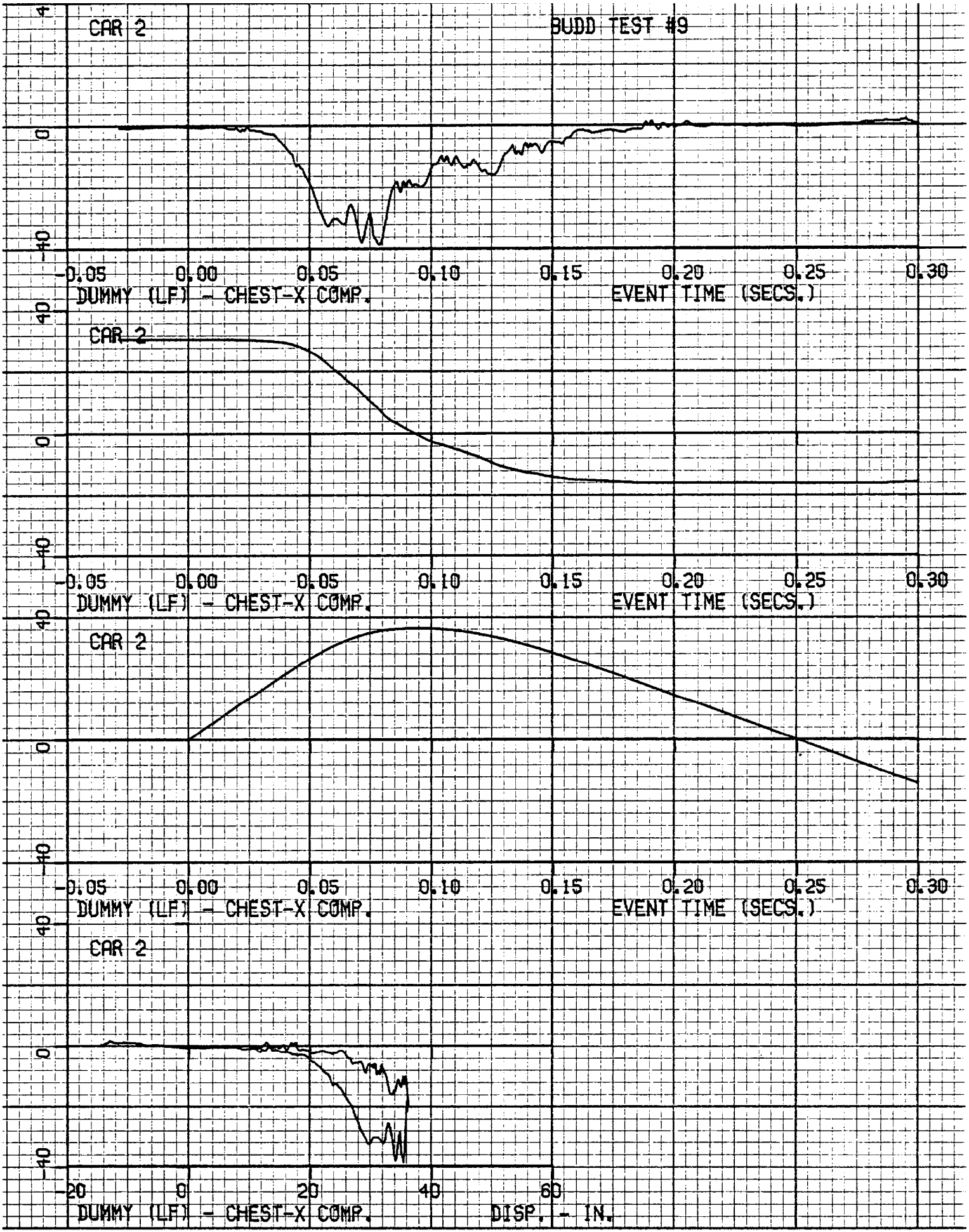
CAR 2 - 1976 VW RABBIT

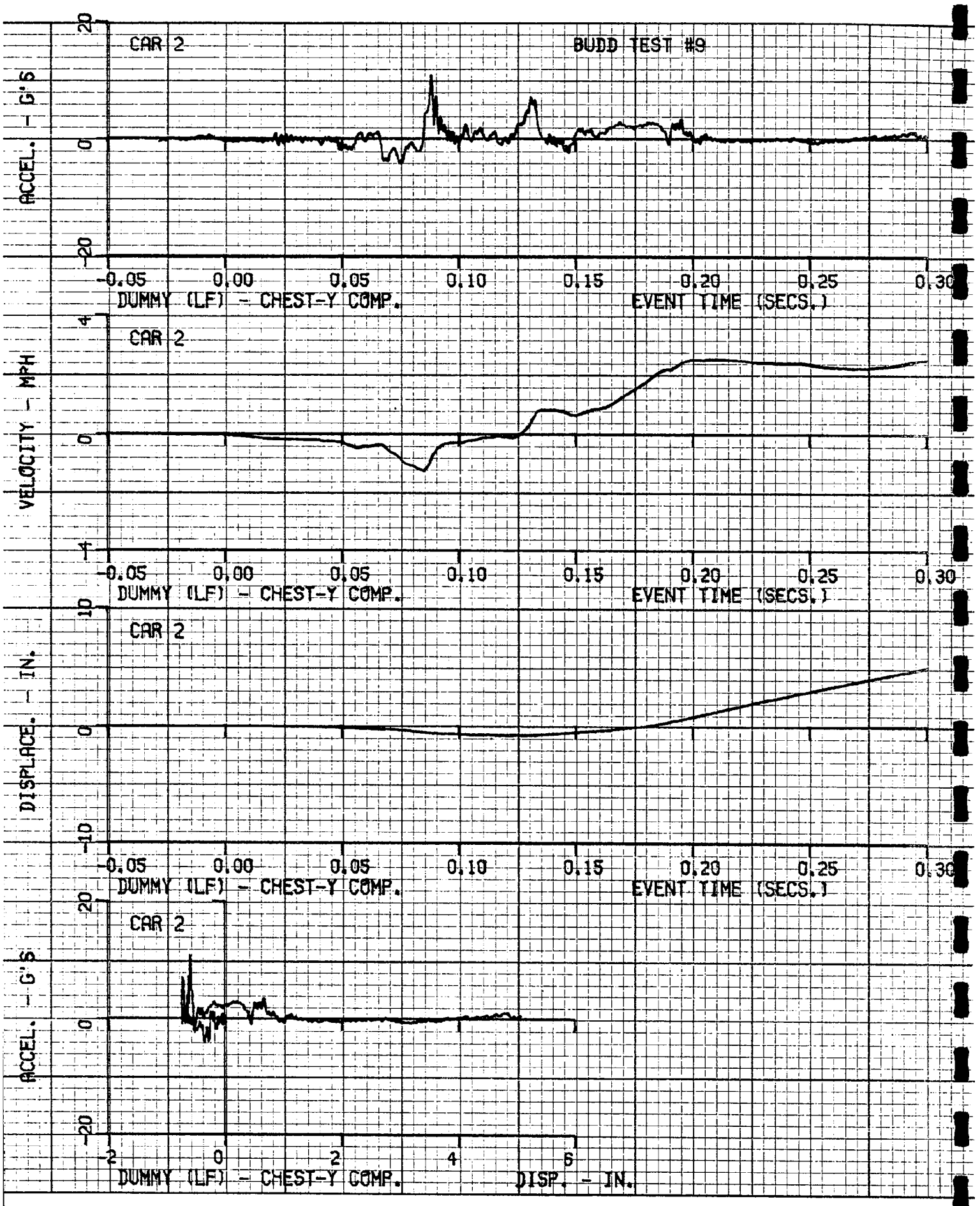
DUMMY DATA

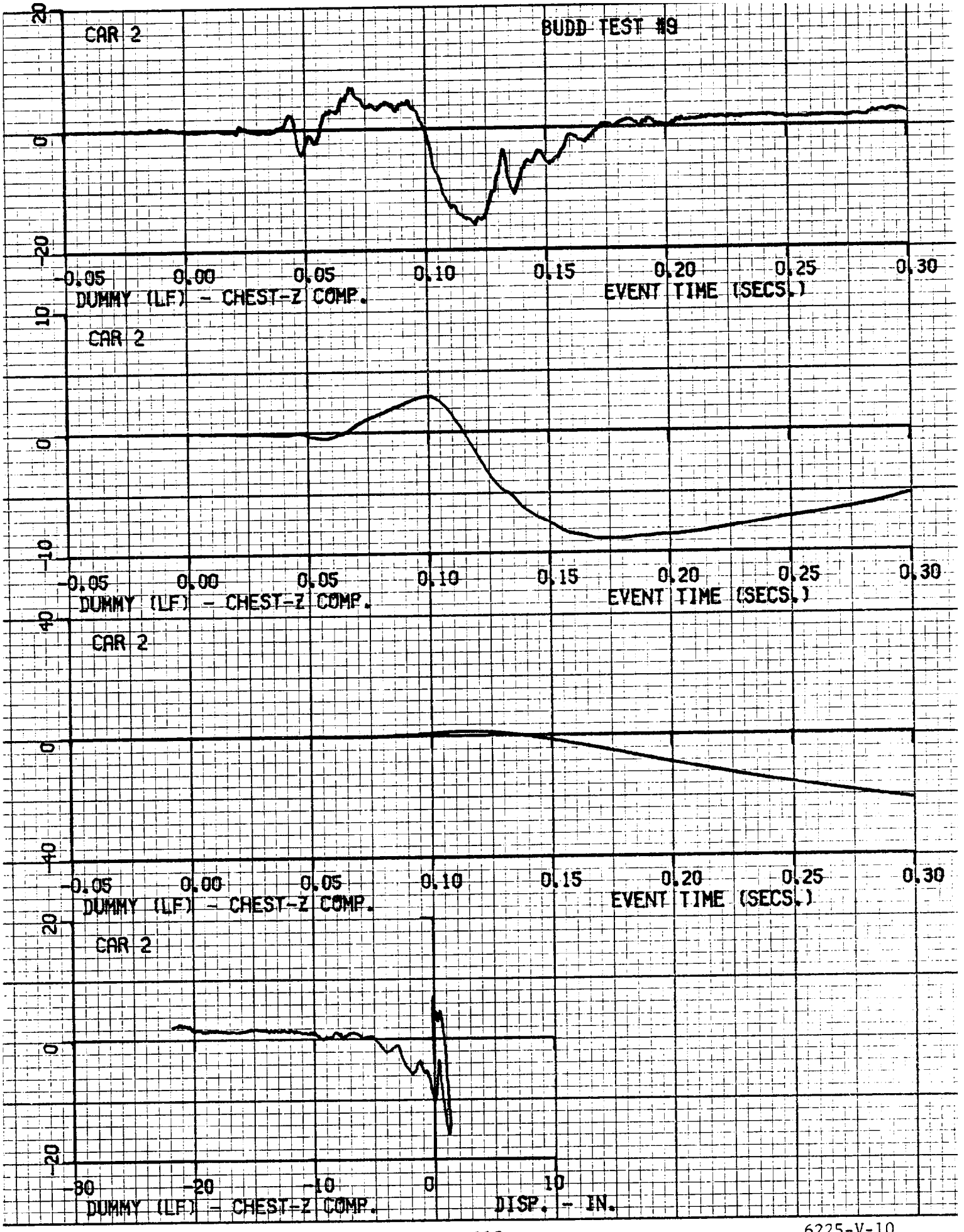
	FILTER CHANNEL CLASS
HEAD ACCELERATION	1000
CHEST ACCELERATION	180
FEMUR FORCE	600
BELT LOADS	60


CAR 2
BUDD TEST #9
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 2
10
0
-10
-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
50
0
-50
-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 #9
ACCEL. - G'S
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 2
SEVERITY INDEX
(X10¹)
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 2
BUDD TEST #9
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
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
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
40
0
-40
-20
0
20
40
60
DUMMY (LF) - CHEST-X COMP.
DISP. - IN.


CAR 2
BUDD TEST #9
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-Y 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 (LF) - CHEST-Y COMP.
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
DUMMY (LF) - CHEST-Y COMP.
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
20
0
-20
-2
0
2
4
6
DUMMY (LF) - CHEST-Y COMP.
DISP. - IN.


BUDD TEST #9
CAR 2
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
DUMMY (LF) - CHEST-Z COMP.
CAR 2
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
DUMMY (LF) - CHEST-Z COMP.
CAR 2
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
DUMMY (LF) - CHEST-Z COMP.
CAR 2
20
0
-20
-30
-20
-10
0
10
DISP. - IN.
DUMMY (LF) - CHEST-Z COMP.

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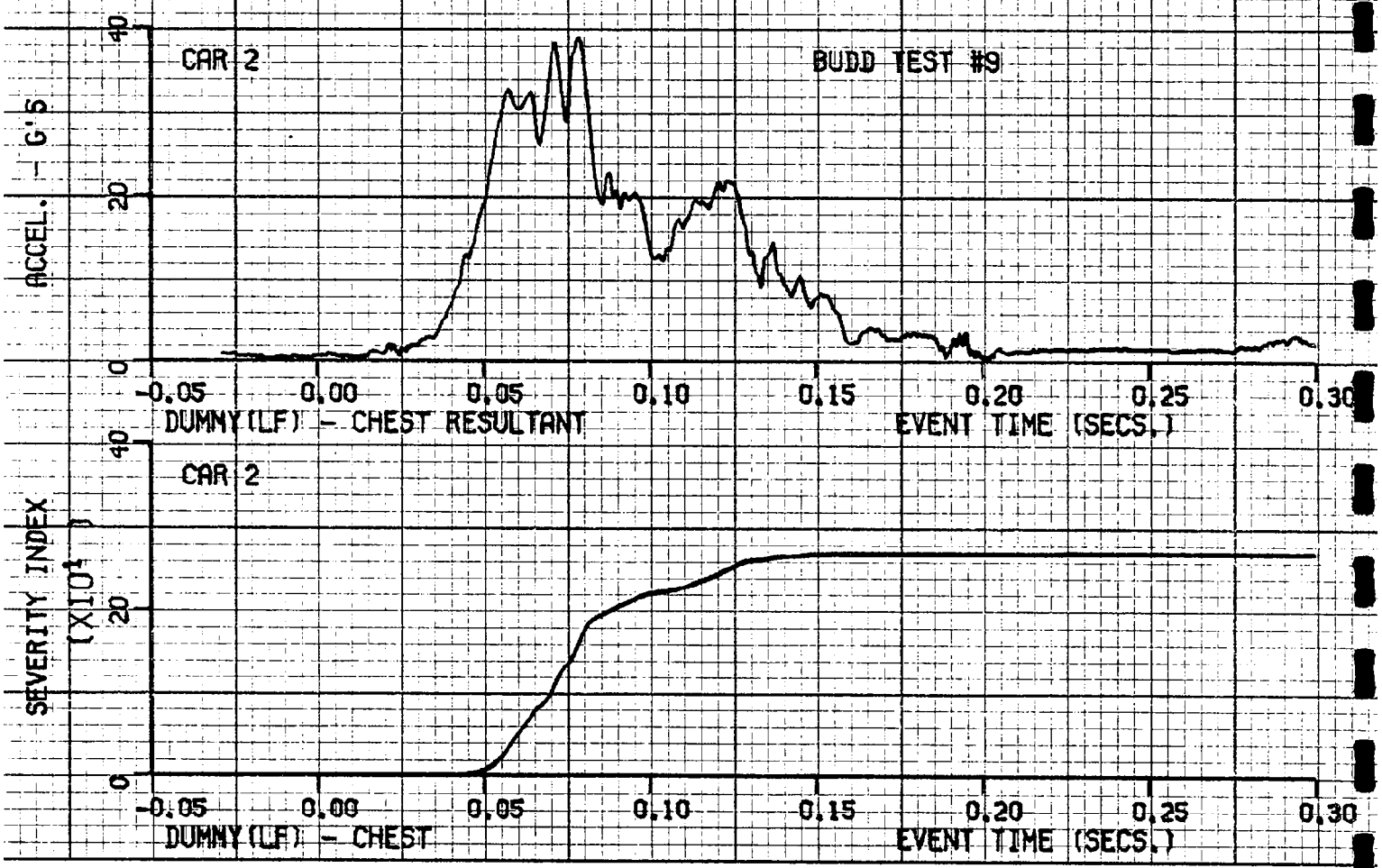
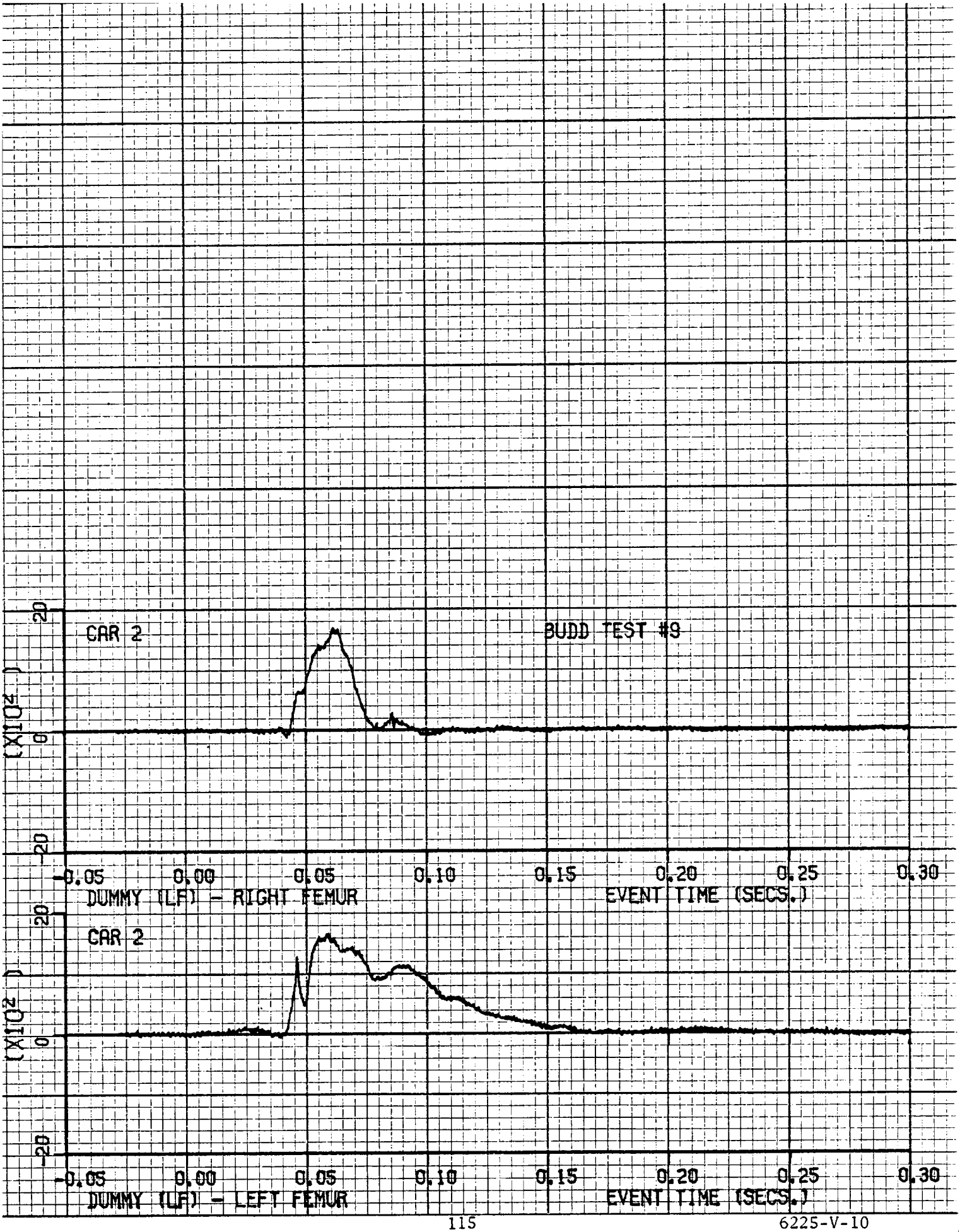
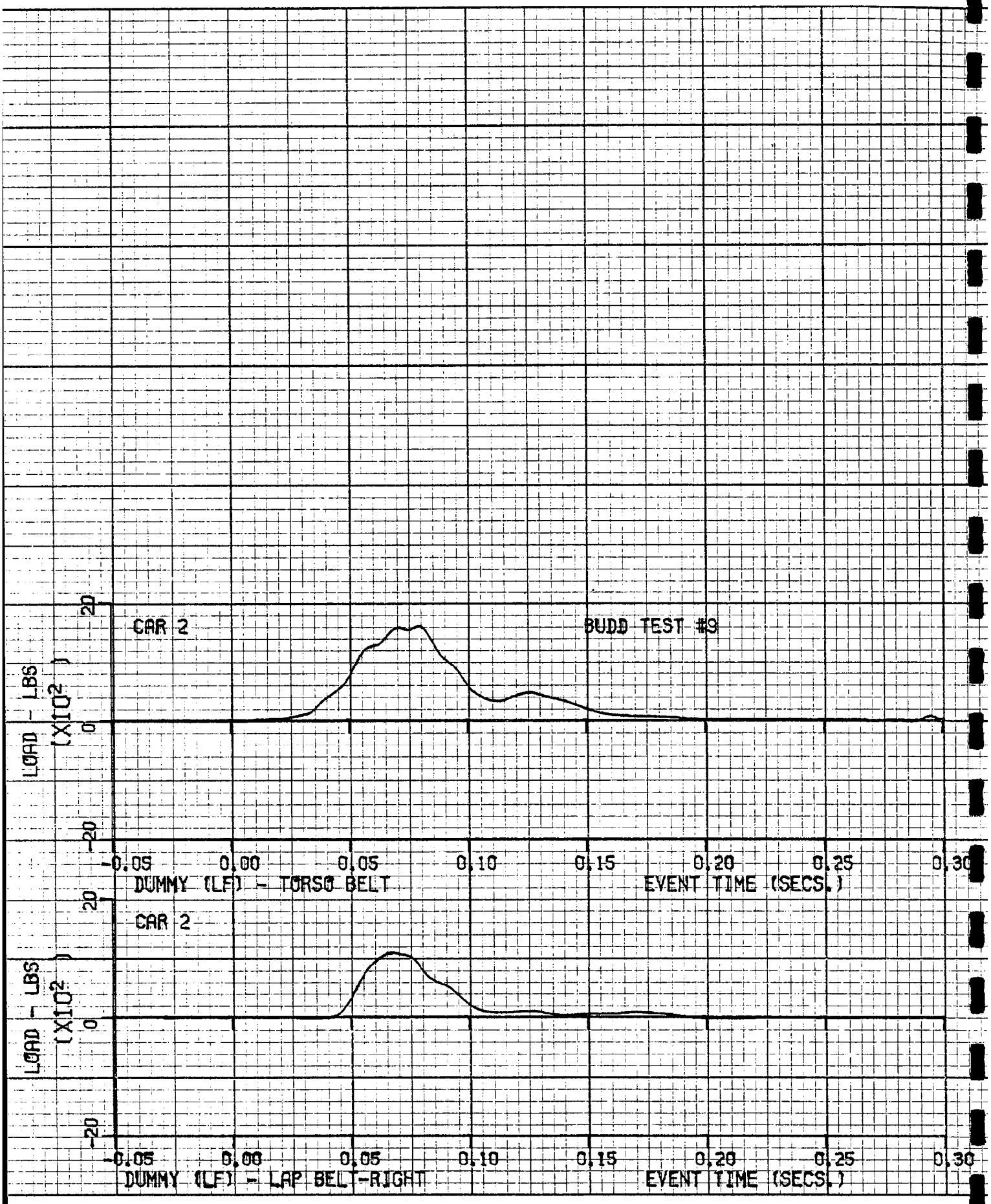
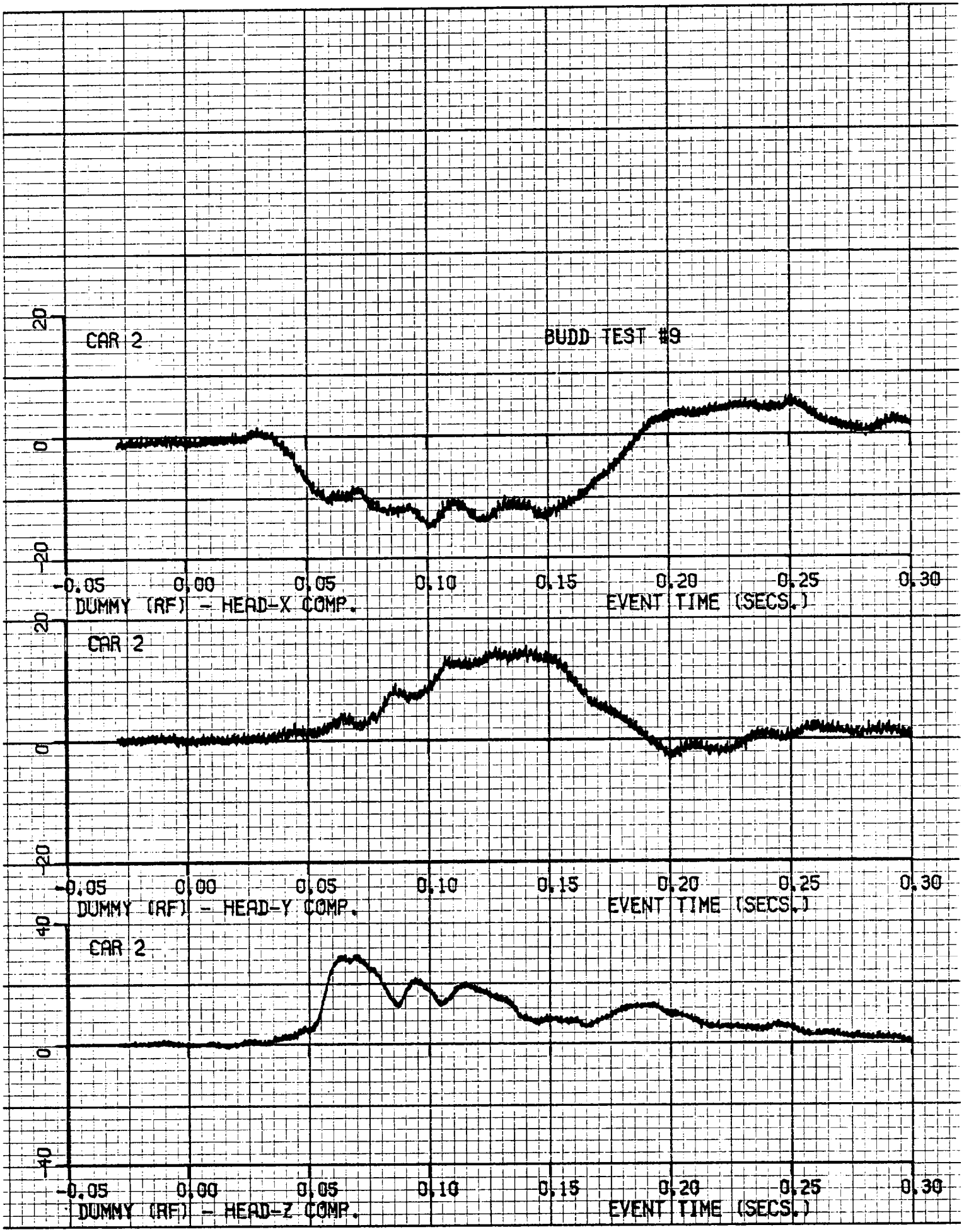
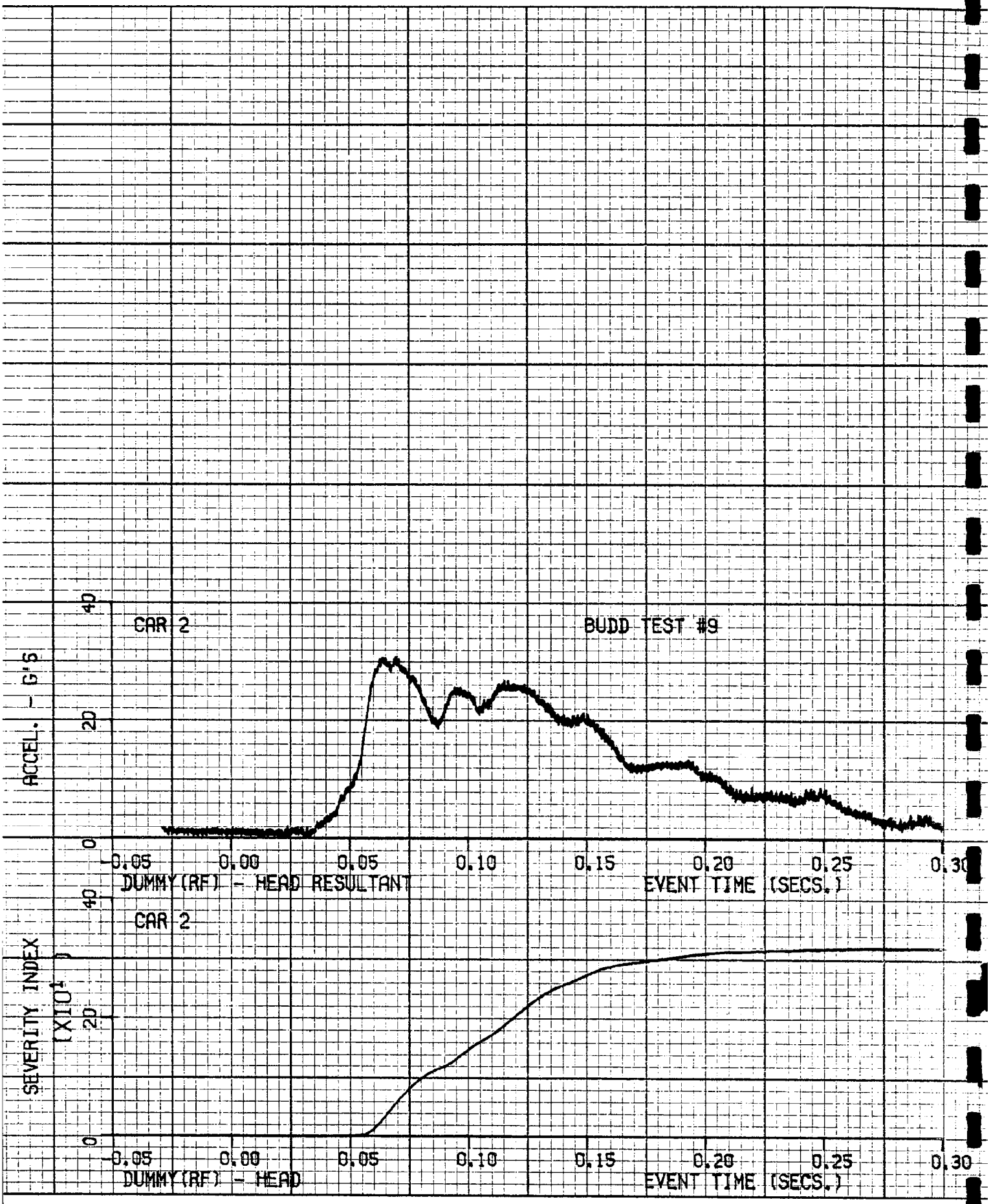
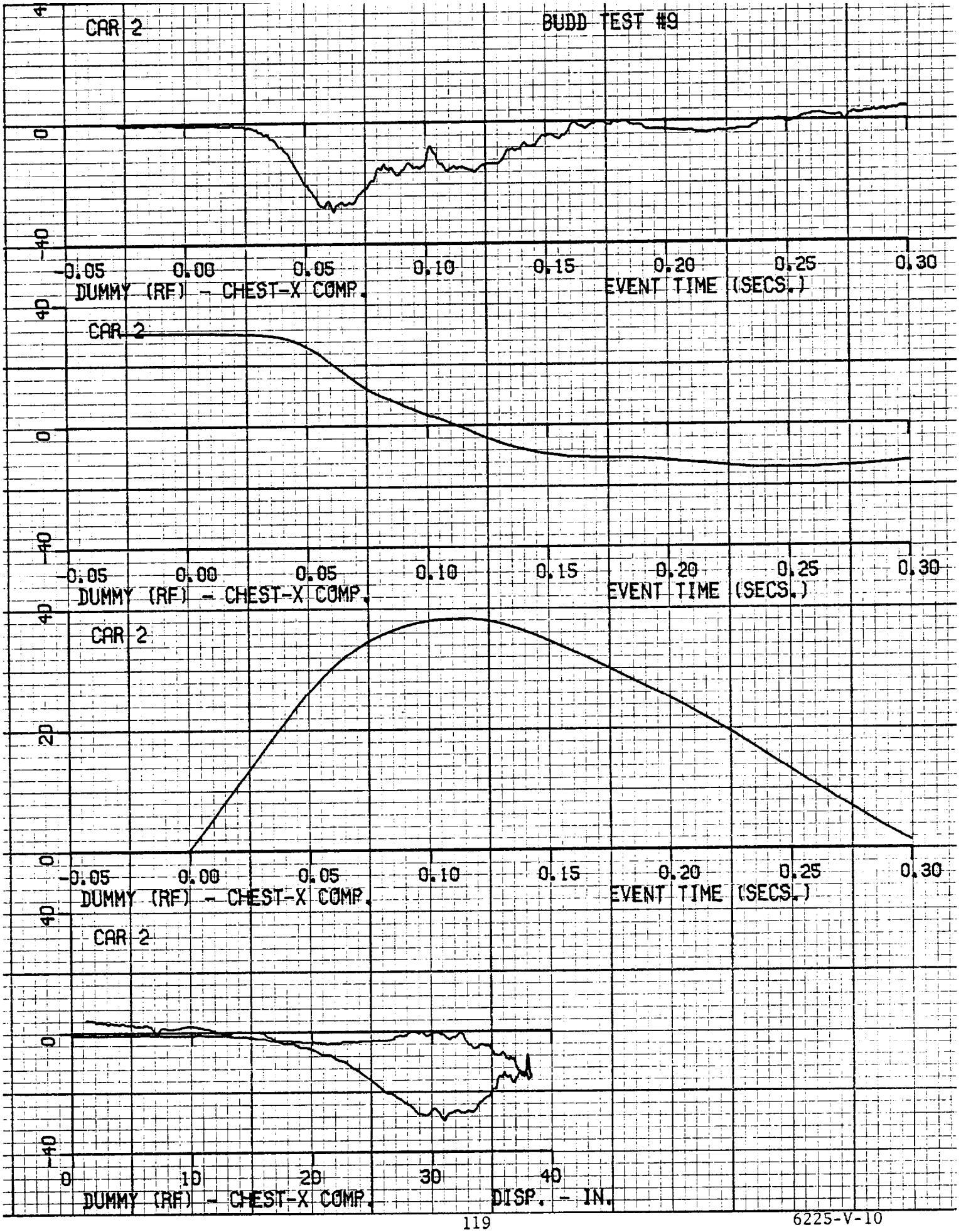

CAR 2
BUDD TEST #9
ACCEL. - G'S
40
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST RESULTANT
EVENT TIME (SECS.)
CAR 2
SEVERITY INDEX
(X10⁴)
40
20
0
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - CHEST
EVENT TIME (SECS.)


CAR 2
BUDD TEST #9
20
0
-20
(X10²)
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - RIGHT FEMUR
EVENT TIME (SECS.)
CAR 2
20
0
-20
(X10²)
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - LEFT FEMUR
EVENT TIME (SECS.)


CAR 2
BUDD TEST #3
LOAD - LBS
(X10²)
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (LF) - TORSO BELT
EVENT TIME (SECS.)
CAR 2
LOAD - LBS
(X10²)
20
0
-20
-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 2
BUDD TEST #9
20
0
-20
-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
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - HEAD-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 (RF) - HEAD-Z COMP.
EVENT TIME (SECS.)


CAR 2
BUDD TEST #9
ACCEL. - G'S
40
20
0
-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
SEVERITY INDEX
(X10¹)
40
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 #9
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
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
40
20
0
-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
40
0
-40
0
10
20
30
40
DUMMY (RF) - CHEST-X COMP.
DISP. - IN.

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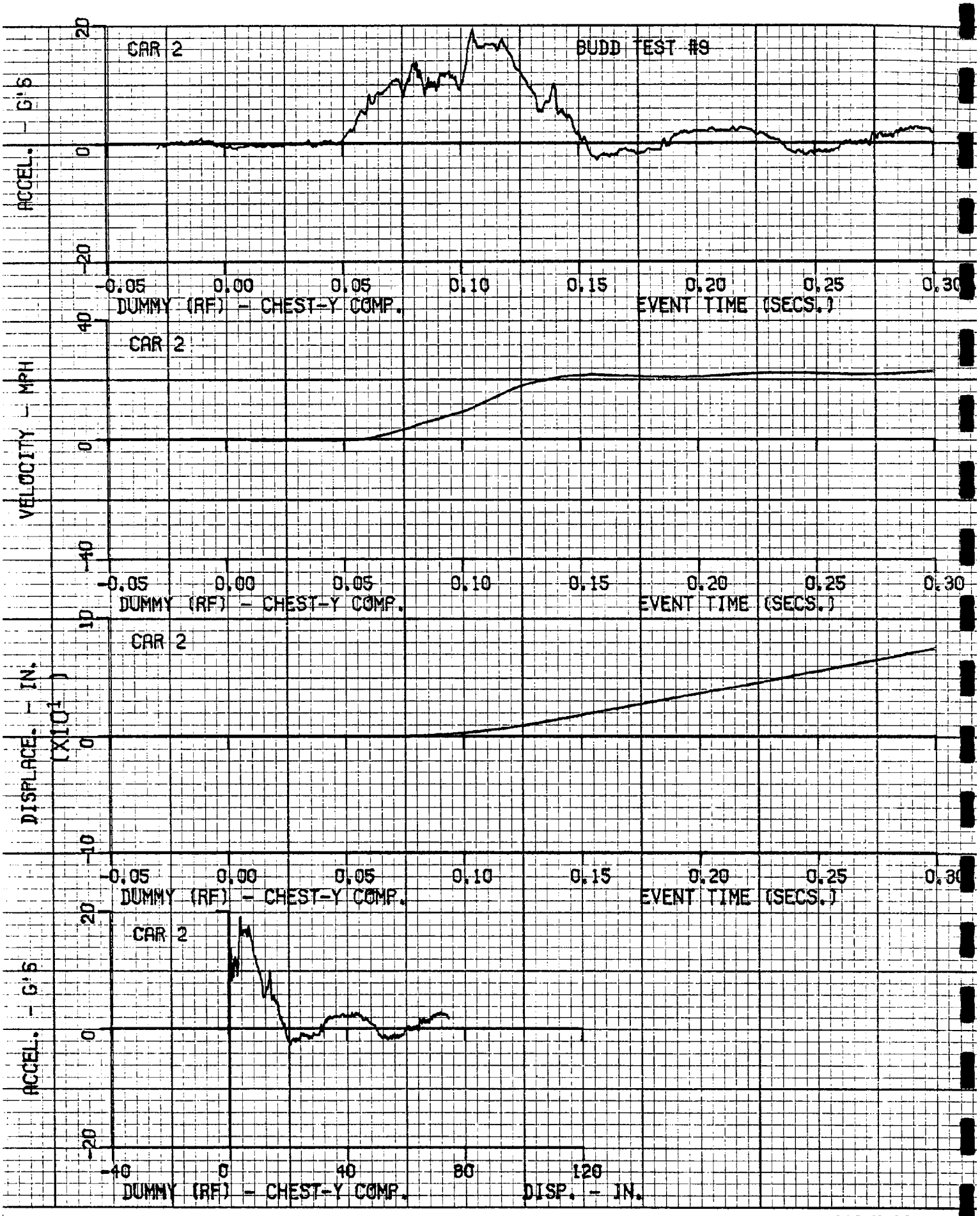
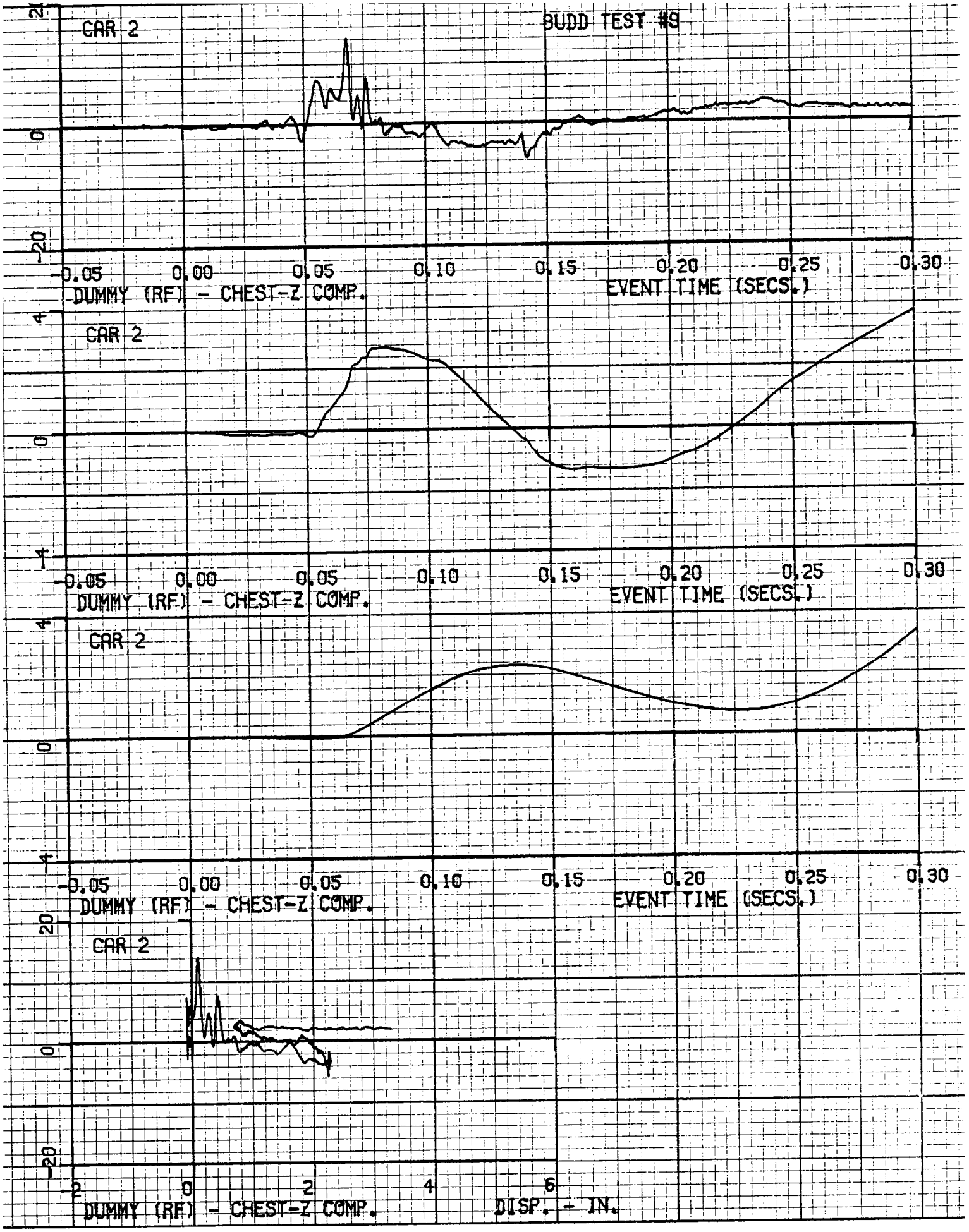
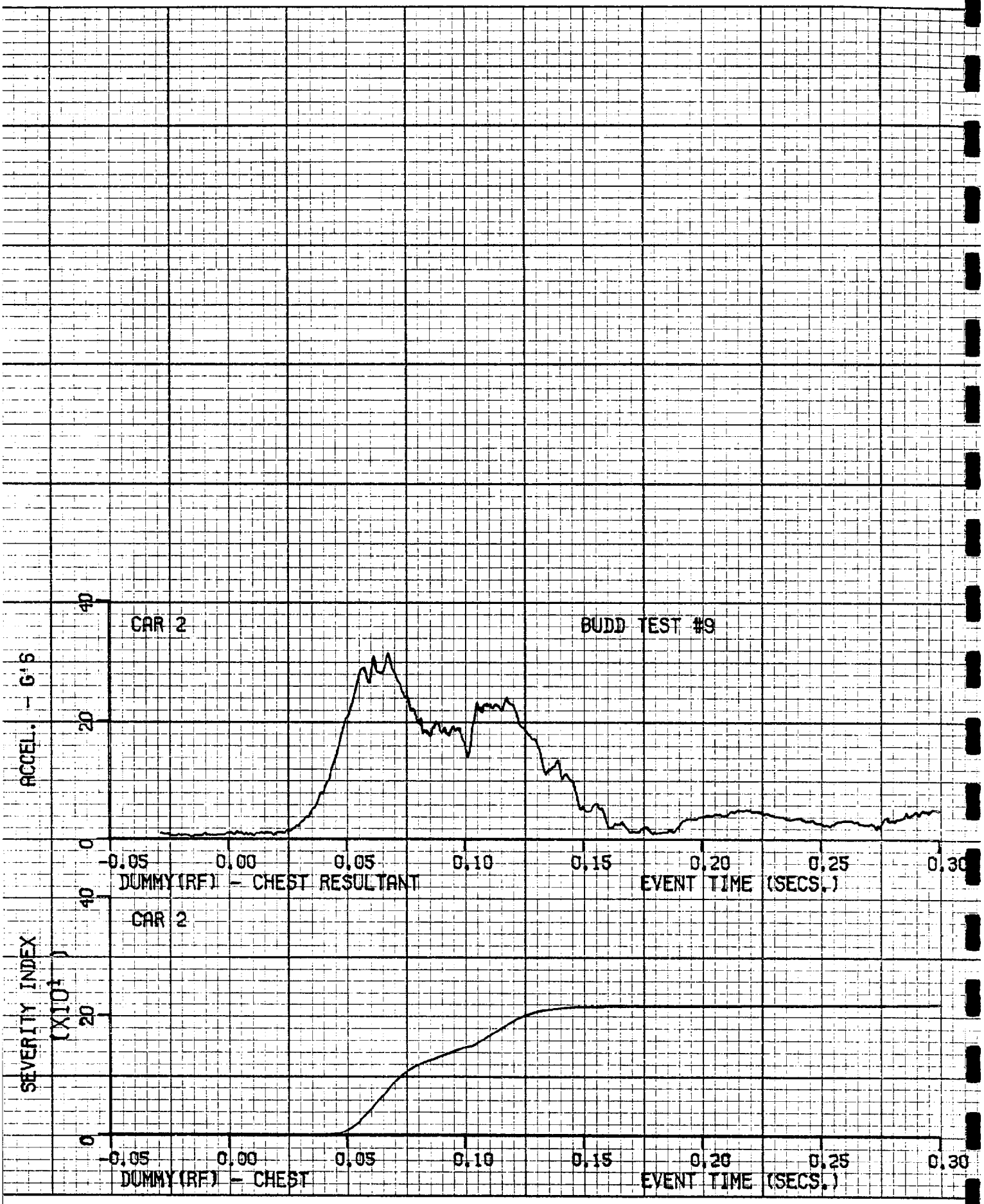
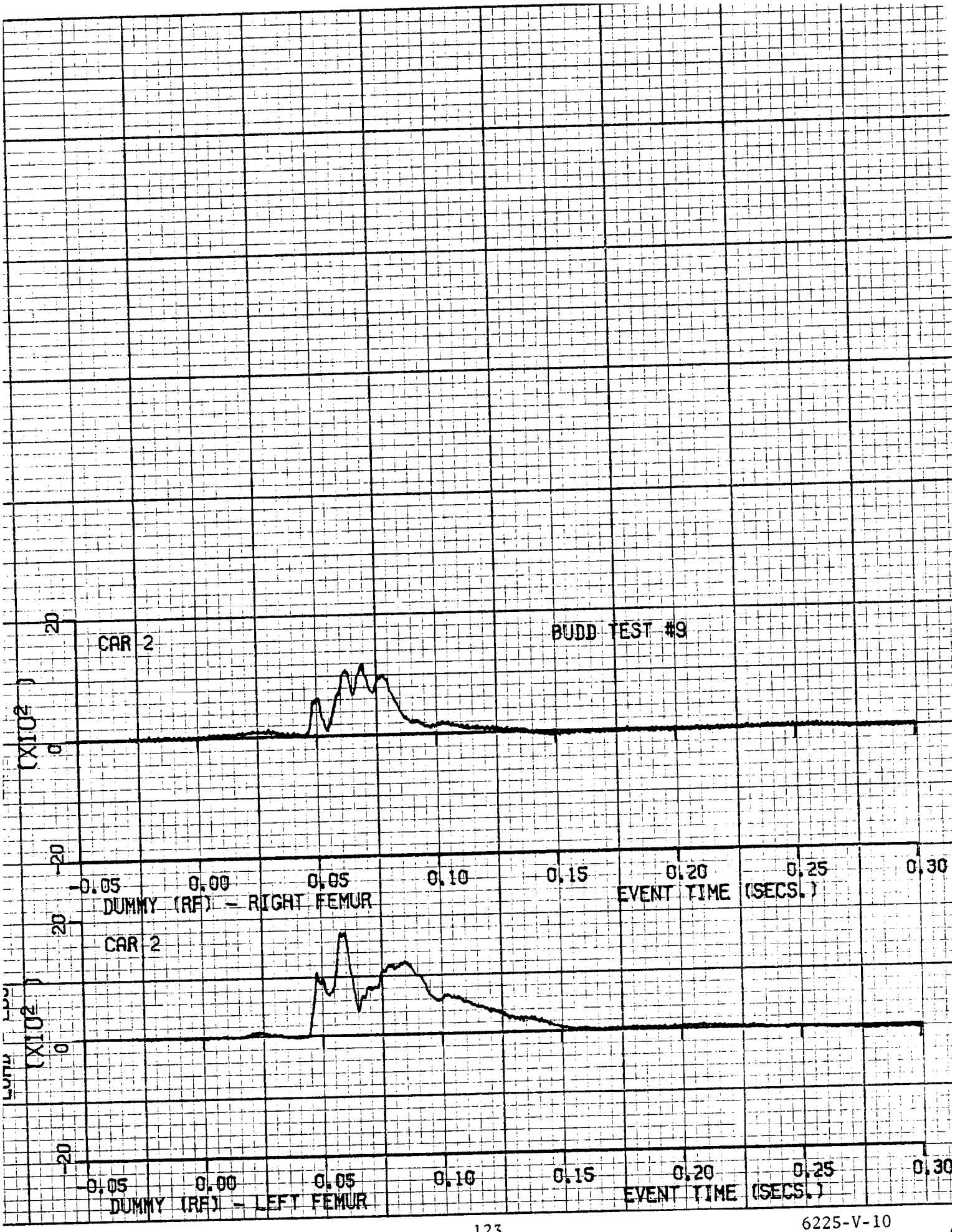
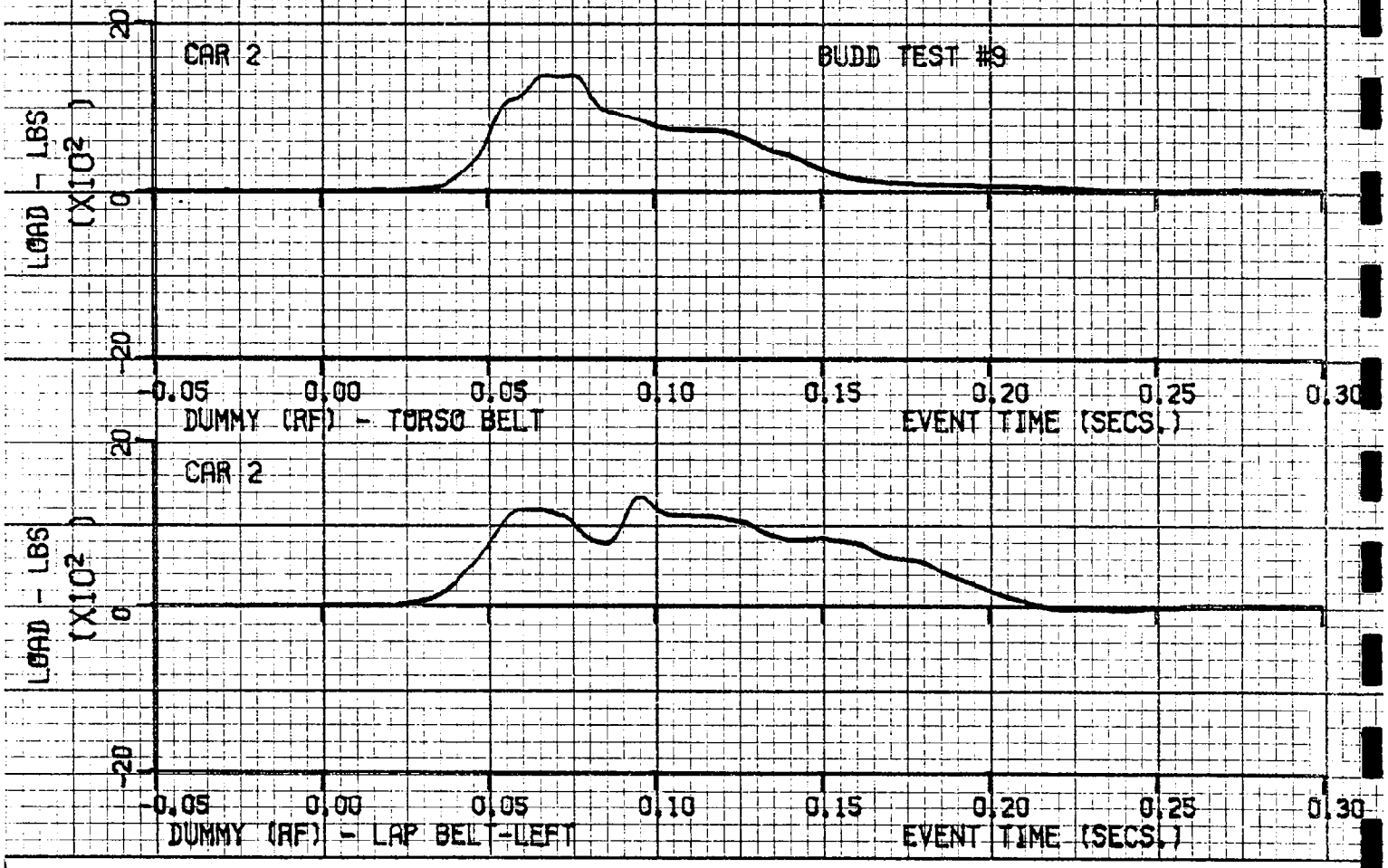

CAR 2
BUDD TEST #9
ACCEL. - G'S
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - CHEST-Y COMP.
EVENT TIME (SECS.)
CAR 2
VELOCITY - MPH
40
0
-40
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - CHEST-Y COMP.
EVENT TIME (SECS.)
CAR 2
DISPLACE. - IN.
(X10²)
10
0
-10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - CHEST-Y COMP.
EVENT TIME (SECS.)
CAR 2
ACCEL. - G'S
20
0
-20
-40
0
40
80
120
DUMMY (RF) - CHEST-Y COMP.
DISP. - IN.


BUDD TEST #9
CAR 2
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
4
0
-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
4
0
-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
-2
0
2
4
6
DUMMY (RF) - CHEST-Z COMP.
DISP. - IN.


CAR 2
BUDD TEST #9
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
(X10¹)
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.)


BUDD TEST #9
CAR 2
20
0
-20
(X10²)
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
DUMMY (RF) - RIGHT FEMUR
CAR 2
20
0
-20
(X10²)
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
EVENT TIME (SECS.)
DUMMY (RF) - LEFT FEMUR


CAR 2
BUDD TEST #9
LOAD - LBS
(X10²)
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - TORSO BELT
EVENT TIME (SECS.)
CAR 2
LOAD - LBS
(X10²)
20
0
-20
-0.05
0.00
0.05
0.10
0.15
0.20
0.25
0.30
DUMMY (RF) - LAP BELT-LEFT
EVENT TIME (SECS.)