

ADAMS Model Title:
1992 Explorer 2 door 4x4 (Prototype)

NOTE: * THIS MODEL CONTAINS NON-PRODUCTION COMPONENTS AND MODIFICATIONS *

Last Updated : 1/9/91
Ford FSUB : ADAMS90c
ADAMS Version : 5.2.1

Vehicle Description:

- Tire mu set to 1.00
- Tire relaxation set to 0.60
- Tire damping set to 0.1
- Springs have been changed to model actual vehicle rate test data
- Front stabilizer bar 23 mm
- Rear stabilizer bar 19 mm

Based on Models by:

1. 1985 Bronco II 4x2	P. Hackert	1/01/84
2. 1990 Explorer 4x2 Prototype	F. Figliomeni	10/03/88
3. 1990 Explorer 4x2	Don Tandy	2/14/90
4. 1990 Explorer 4 door 4x2	Don Tandy	11/08/90
5. 1992 Explorer 2 door 4x2	W. Smith	3/12/91

Recent Model Modifications:

- | | | |
|--|--------------|---------|
| - UN46 modified for SLA by A. Sitchin | A. Sitchin | 4/25/90 |
| - UN46 SLA modified steering geometry | Don Tandy | 5/01/90 |
| - Suspension points updated | Don Tandy | 8/10/90 |
| - Wts, CG's & Rr. suspension revised | A. Sitchin | 8/31/90 |
| - Updated SFORCE on jounce and rebound bumpers and on 2nd stage leaf | Greg Stevens | 1/09/91 |
| - Changed HAVSIN to STEP for steering | | |

Tires: Firestone ATX P235/75R15 29 psi 7 in Wheel

Manuever:

- | | | |
|-----------|----------------------|------------------------|
| - Speed | = 55 mph | |
| - Loading | = GVW 4 PASS + CARGO | baseline - 15% FRT SPR |
| - Angle | = 180 degrees | |

EXPP 2116

- ADAMS J-TURN TEST RESULTS -

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*** INITIAL CONDITIONS ***

Left Front Tire Load	-	1126.99 lbs
Right Front Tire Load	-	1079.91 lbs
Left Rear Tire Load	-	1295.58 lbs
Right Rear Tire Load	-	1277.67 lbs
Front Axle Load	-	2206.90 lbs
Rear Axle Load	-	2573.25 lbs
Total Vehicle Weight	-	4780.15 lbs
Vehicle Velocity	-	55.00 mph

*** TRANSIENT NUMBERS ***

Peak Yaw Rate	-	34.25 deg/sec
Peak Lateral Acceleration	-	0.78 G's
Peak Roll Angle	-	6.18 degrees
Peak Sideslip Angle	-	26.56 degrees
Yaw Rate Overshoot	-	85.14 %
Lateral Acceleration Overshoot	-	7.10 %
Roll Angle Overshoot	-	5.80 %
Sideslip Angle Overshoot	-	17.75 %
Maximum Front Outside Tire Load	-	2279.71 lbs
Maximum Rear Outside Tire Load	-	2361.02 lbs
Minimum Front Inside Tire Load	-	52.23 lbs
Minimum Rear Inside Tire Load	-	239.24 lbs

*** APPROXIMATED STEADY STATE VALUES ***

Yaw Rate	-	18.50 deg/sec
Lateral Acceleration	-	0.73 G's
Roll Angle	-	5.84 degrees
Sideslip Angle	-	22.55 degrees
Final Vehicle Velocity	-	24.80 mph
Left Front Tire Load	-	88.47 lbs
Right Front Tire Load	-	2172.36 lbs
Left Rear Tire Load	-	278.47 lbs
Right Rear Tire Load	-	2237.96 lbs
Steering Wheel Angle	-	180.00 deg Left

*** VEHICLE HANDLING PARAMETERS ***

Weight Distribution	-	46.168 % front
Lateral Load Transfer Dist.	-	51.869 % front
Lat. Accel. Response Time	-	0.358 sec to 90%
Yaw Rate Response Time	-	0.475 sec to peak

EXP 2117

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- Springs have been changed to model actual vehicle rate test data
- Front stabilizer bar 23 mm
- Rear stabilizer bar 16 mm

Based on Models by:

1. 1985 Bronco II 4x2	P. Hackert	1/01/84
2. 1990 Explorer 4x2 Prototype	F. Figliomeni	10/03/88
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| - UN46 modified for SLA by A. Sitchin | A. Sitchin | 4/25/90 |
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| - Updated SFORCE on jounce and rebound bumpers and on 2nd stage leaf | Greg Stevens | 1/09/91 |
| - Changed HAVSIN to STEP for steering | " | " |

Tires: Firestone ATX P235/75R15 29 psi 7 in Wheel

Manuever:

- Speed = 55 mph
- Loading = GVW 4 PASS + CARGO baseline - 15% FRT SPR
- Angle = 270 degrees

EXPP 2126

- ADAMS J-TURN TEST RESULTS -

ADAMS Model Title:
1992 Explorer 2 door 4x4 (Prototype)

*** INITIAL CONDITIONS ***

Left Front Tire Load	=	1127.44 lbs
Right Front Tire Load	=	1079.46 lbs
Left Rear Tire Load	=	1295.19 lbs
Right Rear Tire Load	=	1278.06 lbs
Front Axle Load	=	2206.90 lbs
Rear Axle Load	=	2573.25 lbs
Total Vehicle Weight	=	4780.15 lbs
Vehicle Velocity	=	55.00 mph

*** TRANSIENT NUMBERS ***

Peak Yaw Rate	=	35.67 deg/sec
Peak Lateral Acceleration	=	0.78 G's
Peak Roll Angle	=	7.27 degrees
Peak Sideslip Angle	=	22.67 degrees
Yaw Rate Overshoot	=	153.05 %
Lateral Acceleration Overshoot	=	13.15 %
Roll Angle Overshoot	=	28.98 %
Sideslip Angle Overshoot	=	111.71 %
Maximum Front Outside Tire Load	=	2529.27 lbs
Maximum Rear Outside Tire Load	=	2432.50 lbs
Minimum Front Inside Tire Load	=	1.48 lbs
Minimum Rear Inside Tire Load	=	177.02 lbs

*** APPROXIMATED STEADY STATE VALUES ***

Yaw Rate	=	14.10 deg/sec
Lateral Acceleration	=	0.69 G's
Roll Angle	=	5.64 degrees
Sideslip Angle	=	10.71 degrees
Final Vehicle Velocity	=	29.27 mph
Left Front Tire Load	=	144.15 lbs
Right Front Tire Load	=	2157.34 lbs
Left Rear Tire Load	=	363.67 lbs
Right Rear Tire Load	=	2115.15 lbs
Steering Wheel Angle	=	270.00 deg Left

*** VEHICLE HANDLING PARAMETERS ***

Weight Distribution	=	46.168 % front
Lateral Load Transfer Dist.	=	53.820 % front
Lat. Accel. Response Time	=	0.185 sec to 90%
Yaw Rate Response Time	=	0.388 sec to peak

EXPP 2127

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4. 1990 Explorer 4 door 4x2	Don Tandy	11/08/90
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Recent Model Modifications:

- UN46 modified for SLA by A. Sitchin	A. Sitchin	4/25/90
- UN46 SLA modified steering geometry	Don Tandy	5/01/90
- Suspension points updated	Don Tandy	8/10/90
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- Updated SFORCE on jounce and rebound bumpers and on 2nd stage leaf	Greg Stevens	1/09/91
- Changed HAVSIN to STEP for steering	"	

Tires: Firestone ATX P235/75R15 29 psi 7 in Wheel

Manuever:

- Speed = 55 mph
- Loading = rgawr
- Angle = 180 degrees

EXPP 2099

- ADAMS J-TURN TEST RESULTS -

ADAMS Model Title:
1992 Explorer 2 door 4x4 (Prototype)

*** INITIAL CONDITIONS ***

Left Front Tire Load	-	1124.97 lbs
Right Front Tire Load	-	1077.02 lbs
Left Rear Tire Load	-	1297.56 lbs
Right Rear Tire Load	-	1280.61 lbs
Front Axle Load	-	2201.99 lbs
Rear Axle Load	-	2578.17 lbs
Total Vehicle Weight	-	4780.16 lbs
Vehicle Velocity	-	55.00 mph

*** TRANSIENT NUMBERS ***

Peak Yaw Rate	-	35.40 deg/sec
Peak Lateral Acceleration	-	0.79 G's
Peak Roll Angle	-	6.95 degrees
Peak Sideslip Angle	-	27.13 degrees
Yaw Rate Overshoot	-	101.54 %
Lateral Acceleration Overshoot	-	7.76 %
Roll Angle Overshoot	-	20.22 %
Sideslip Angle Overshoot	-	26.49 %
Maximum Front Outside Tire Load	-	2497.91 lbs
Maximum Rear Outside Tire Load	-	2457.12 lbs
Minimum Front Inside Tire Load	-	0.00 lbs
Minimum Rear Inside Tire Load	-	192.33 lbs

*** APPROXIMATED STEADY STATE VALUES ***

Yaw Rate	-	17.56 deg/sec
Lateral Acceleration	-	0.73 G's
Roll Angle	-	5.78 degrees
Sideslip Angle	-	21.45 degrees
Final Vehicle Velocity	-	22.76 mph
Left Front Tire Load	-	94.42 lbs
Right Front Tire Load	-	2211.79 lbs
Left Rear Tire Load	-	299.64 lbs
Right Rear Tire Load	-	2186.85 lbs
Steering Wheel Angle	-	270.00 deg Left

*** VEHICLE HANDLING PARAMETERS ***

Weight Distribution	-	46.065 % front
Lateral Load Transfer Dist.	-	53.209 % front
Lat. Accel. Response Time	-	0.248 sec to 90%
Yaw Rate Response Time	-	0.388 sec to peak

EXPP 2100

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- Tire relaxation set to 0.60
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- Updated SFORCE on jounce and rebound bumpers and on 2nd stage leaf	Greg Stevens	1/09/91
- Changed HAVSIN to STEP for steering	"	

Tires: Firestone ATX P235/75R15 29 psi 7 in Wheel

Manuever:

- Speed	= 55 mph	
- Loading	= Curb plus driver	<u>baseline -15% FRT SUSP</u>
- Angle	= 360 degrees	

EXPP 2114

- ADAMS J-TURN TEST RESULTS -

ADAMS Model Title:
1992 Explorer 2 door 4x4 (Prototype)

*** INITIAL CONDITIONS ***

Left Front Tire Load	-	1131.97 lbs
Right Front Tire Load	-	1036.13 lbs
Left Rear Tire Load	-	999.20 lbs
Right Rear Tire Load	-	942.20 lbs
Front Axle Load	-	2168.10 lbs
Rear Axle Load	-	1941.40 lbs
Total Vehicle Weight	-	4109.50 lbs
Vehicle Velocity	-	54.99 mph

*** TRANSIENT NUMBERS ***

Peak Yaw Rate	-	39.59 deg/sec
Peak Lateral Acceleration	-	0.81 G's
Peak Roll Angle	-	5.85 degrees
Peak Sideslip Angle	-	17.25 degrees
Yaw Rate Overshoot	-	83.07 %
Lateral Acceleration Overshoot	-	16.20 %
Roll Angle Overshoot	-	34.71 %
Sideslip Angle Overshoot	-	207.17 %
Maximum Front Outside Tire Load	-	2339.00 lbs
Maximum Rear Outside Tire Load	-	1857.26 lbs
Minimum Front Inside Tire Load	-	186.54 lbs
Minimum Rear Inside Tire Load	-	33.71 lbs

*** APPROXIMATED STEADY STATE VALUES ***

Yaw Rate	-	21.63 deg/sec
Lateral Acceleration	-	0.70 G's
Roll Angle	-	4.35 degrees
Sideslip Angle	-	5.62 degrees
Final Vehicle Velocity	-	29.21 mph
Left Front Tire Load	-	332.00 lbs
Right Front Tire Load	-	1966.58 lbs
Left Rear Tire Load	-	210.57 lbs
Right Rear Tire Load	-	1595.34 lbs
Steering Wheel Angle	-	360.00 deg Left

*** VEHICLE HANDLING PARAMETERS ***

Weight Distribution	-	52.758 % front
Lateral Load Transfer Dist.	-	54.550 % front
Lat. Accel. Response Time	-	0.091 sec to 90%
Yaw Rate Response Time	-	4.101 sec to peak

EXPP 2115