

STATE OF FLORIDA



RIDE ACCEPTANCE TESTING: SURVEY OF CURRENT STATE PRACTICES

**Research Report
FL/DOT/SMO/01-453**

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December 2001

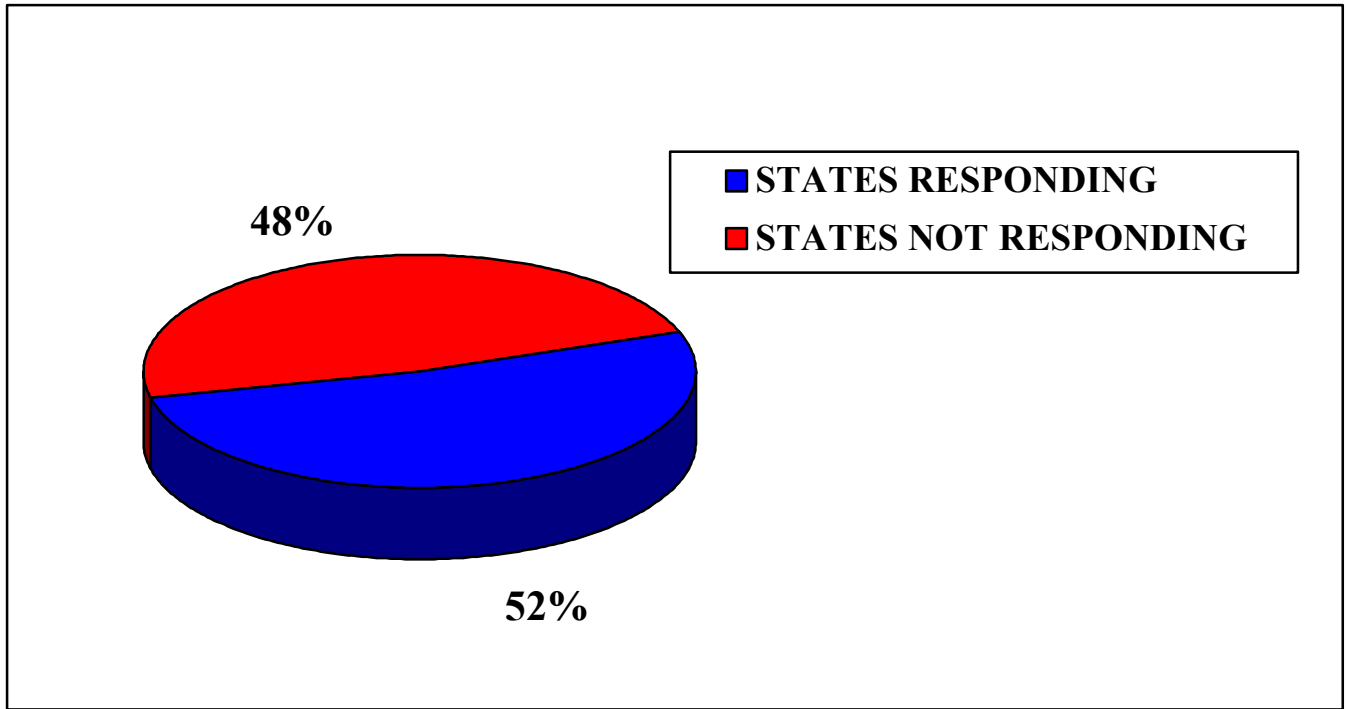
STATE MATERIALS OFFICE

BACKGROUND

Pavement smoothness/roughness is gaining growing importance as an indicator of a pavement condition, both in terms of performance, and as a major determinant of road user costs. Therefore, attaining acceptable surface smoothness on newly constructed or rehabilitated pavements is becoming a major concern to highway agencies. This need to quantify pavement surface smoothness has resulted in a number of measurement techniques and devices.

In August of 2001, the Florida Department of Transportation conducted a survey to assess the current practices for acceptance purposes of the final surface finish on both asphalt and concrete pavements. A total of 27 state highway agencies responded to a questionnaire used for this survey. The present report summarizes the information recorded from these responses.

SURVEY RESPONSE RATE



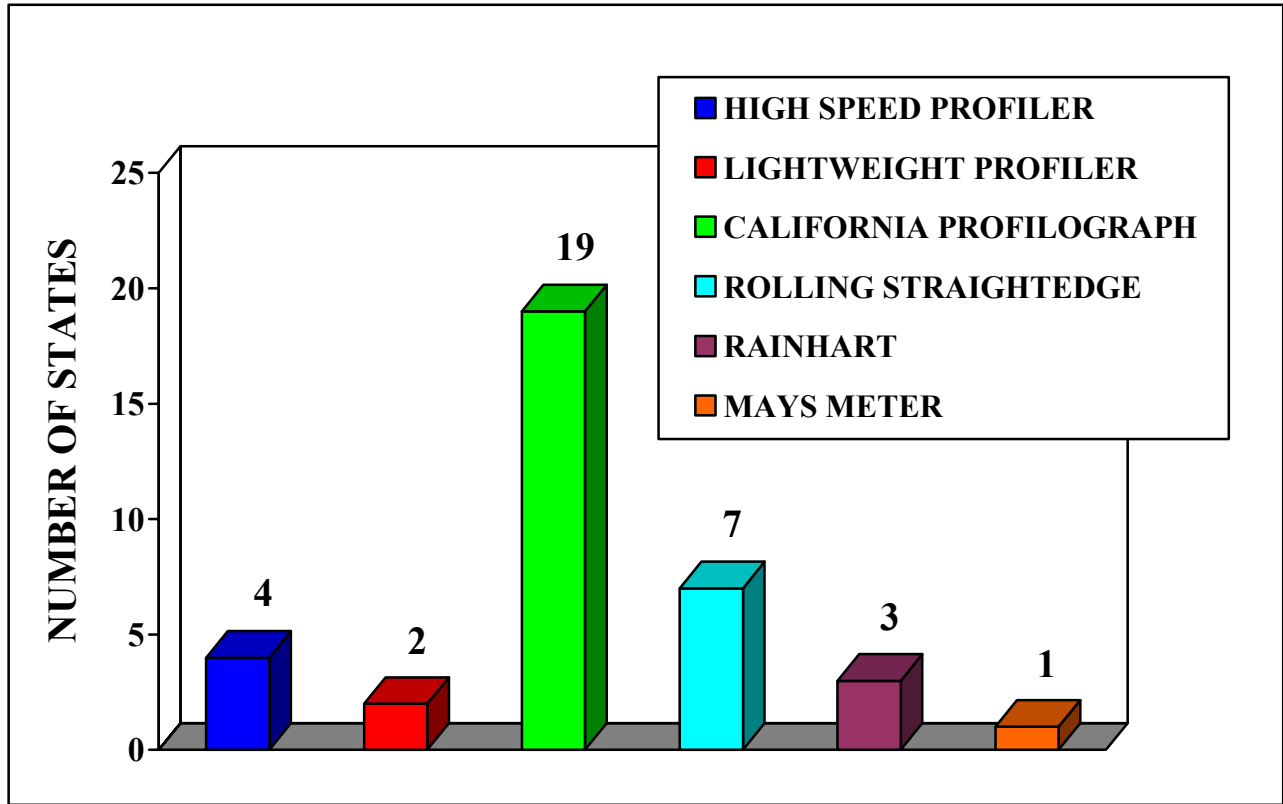
STATES RESPONDING	STATES NOT RESPONDING
AL, CA, CO, CT, FL, GA, HI, IA, IL, KY, LA, MD, MS, MT, ND, NE, NH, NJ, NV, NY, PA, SC, SD, UT, WA, WV, WY	AK, AR, AZ, DC, DE, ID, IN, KS, MA, ME, MI, MN, MO, NC, NM, OH, OK, OR, PR, RI, TN, TX, VA, VT, WI
TOTAL = 27	TOTAL = 25

PART I

RIGID PAVEMENT

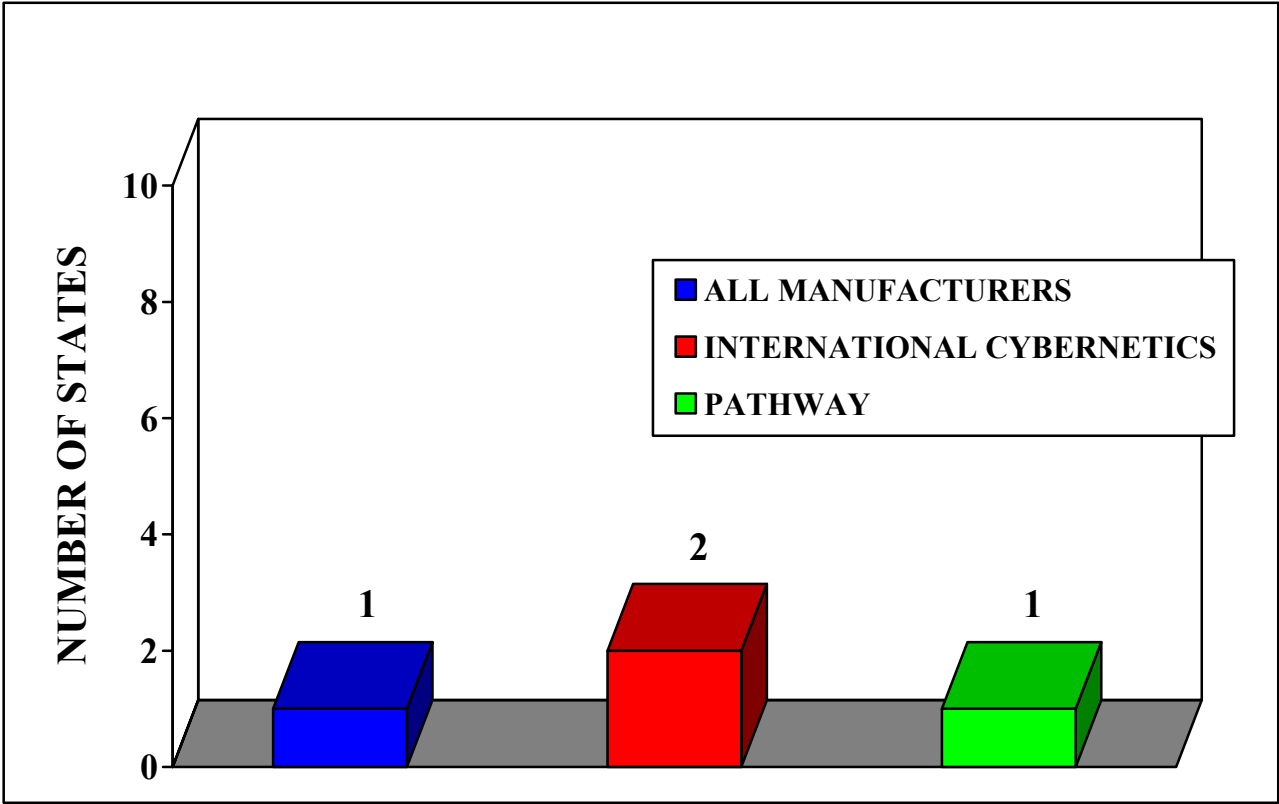
RIDE ACCEPTANCE TESTING

EQUIPMENT USED



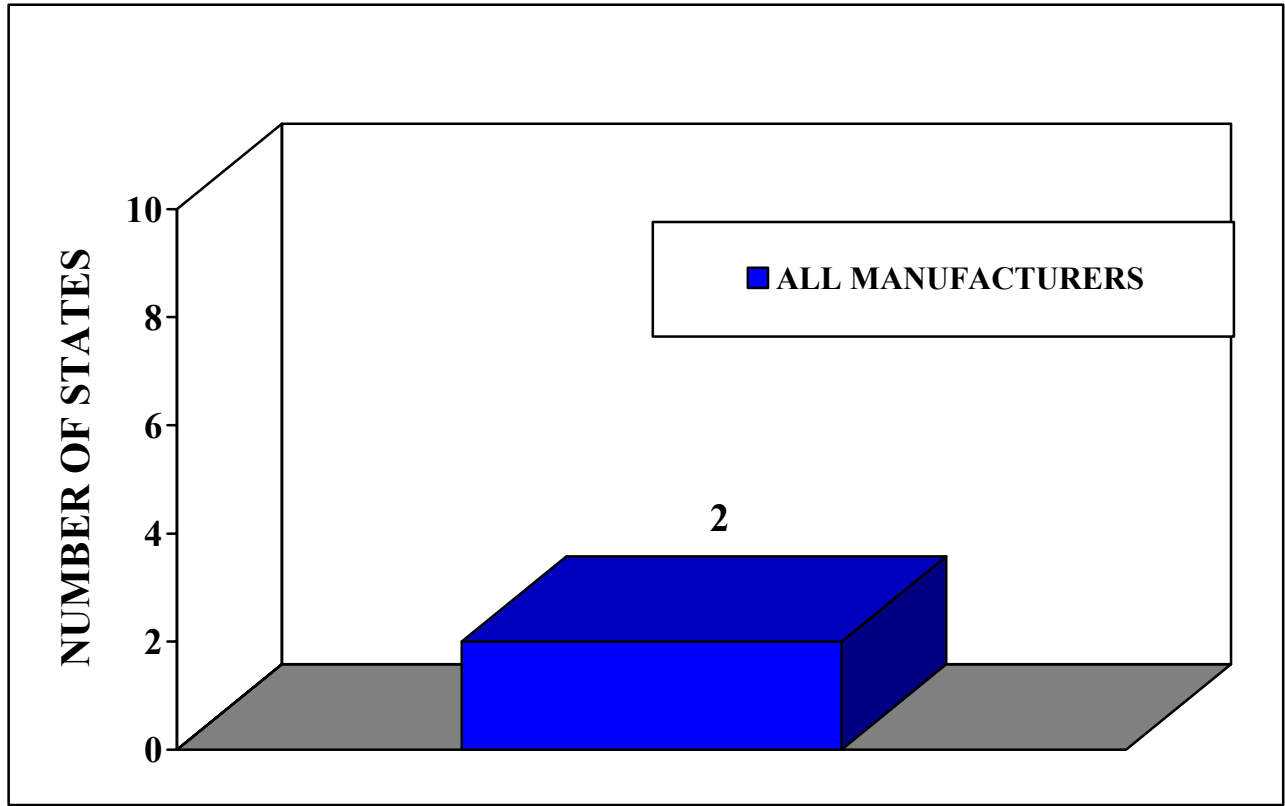
HIGH SPEED PROFILER	LIGHTWEIGHT PROFILER	CALIFORNIA PROFILOGRAPH	ROLLING STRAIGHTEDGE	RAINHART	MAYS METER
GA, MD, ND, WY	MD, PA	AL, CA, CO, CT, FL, HI, IA, IL, LA, MD, MS, ND, NE, NV, NY, SD, UT, WA, WY	CT, FL, IA, IL, ND, NJ, SD	GA, KY, SC	WV
TOTAL = 4	TOTAL = 2	TOTAL = 19	TOTAL = 7	TOTAL = 3	TOTAL = 1

MANUFACTURERS OF HIGH SPEED PROFILERS



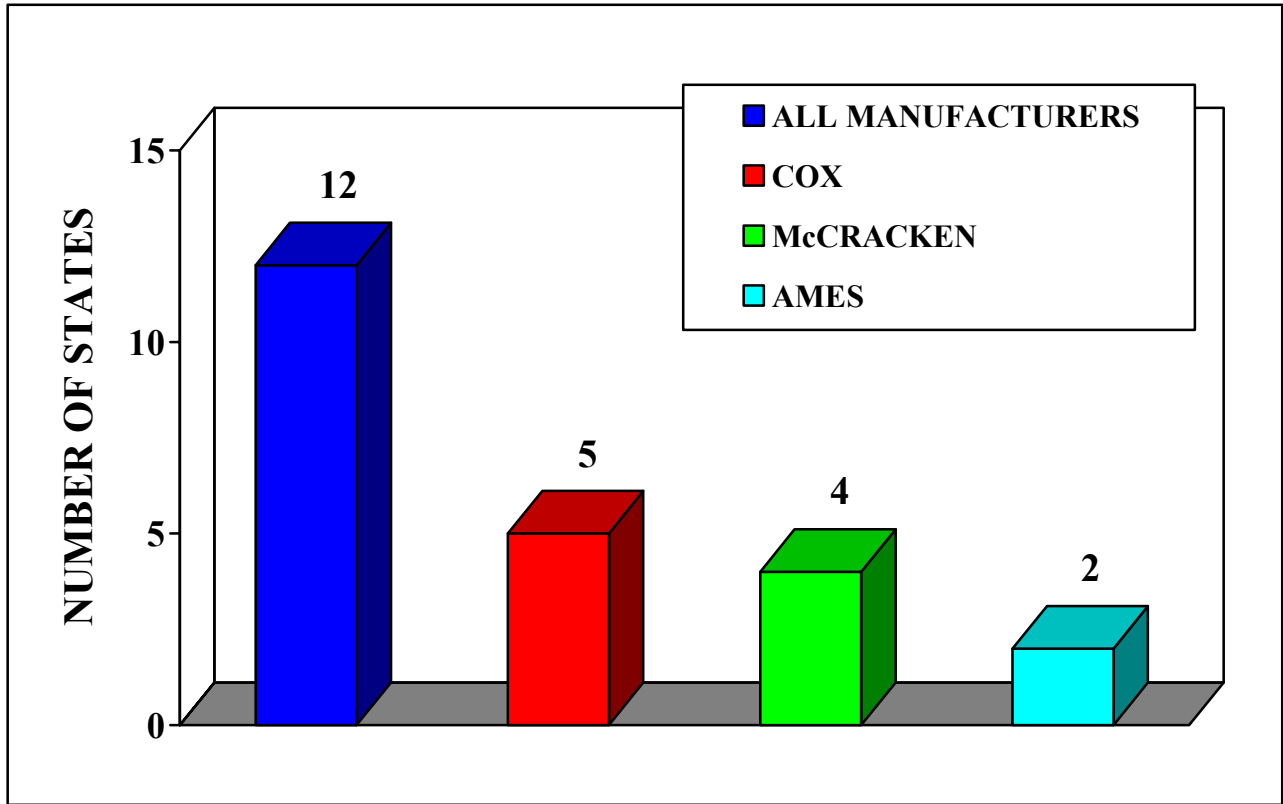
ALL MANUFACTURERS ACCEPTABLE	INTERNATIONAL CYBERNETICS	PATHWAY
MD	GA, WY	ND
TOTAL = 1	TOTAL = 2	TOTAL = 1

MANUFACTURERS OF LIGHTWEIGHT PROFILERS



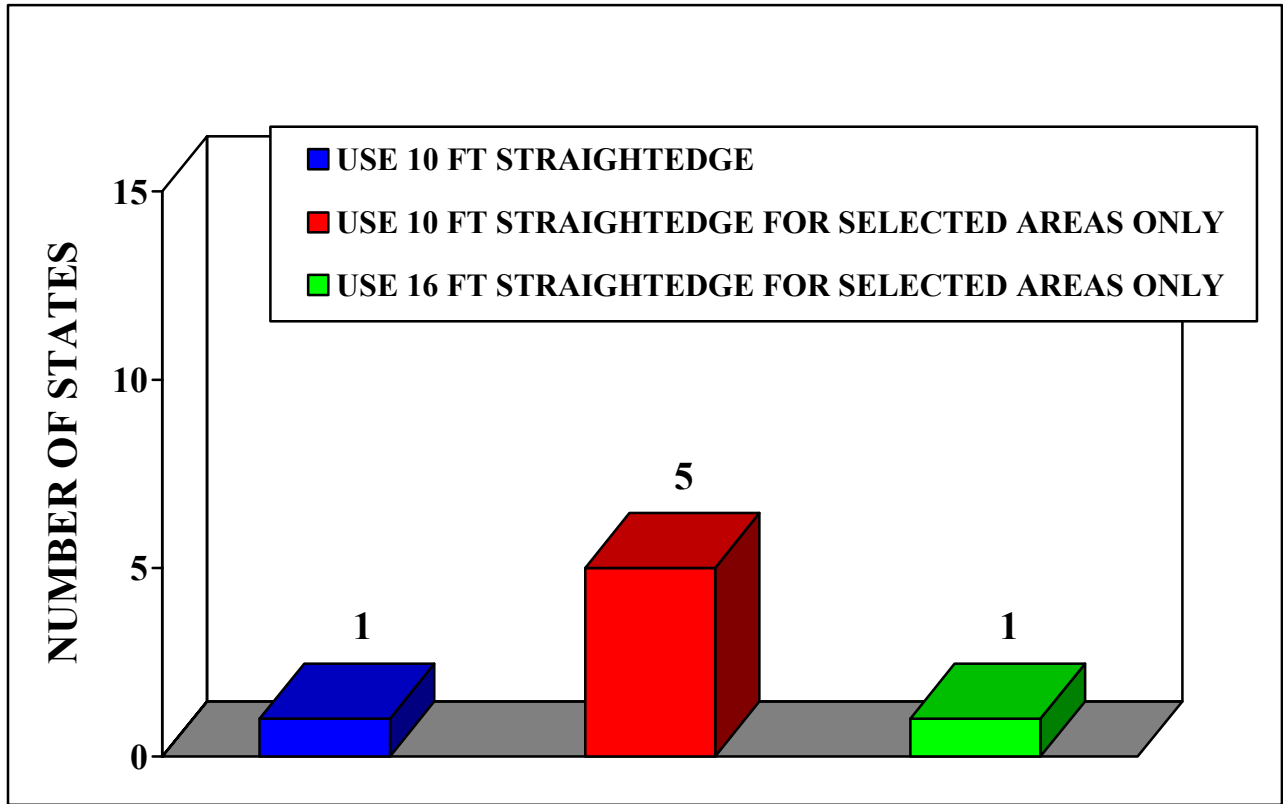
ALL MANUFACTURERS ACCEPTABLE
MD, PA
TOTAL = 2

MANUFACTURERS OF CALIFORNIA PROFILOGRAPH



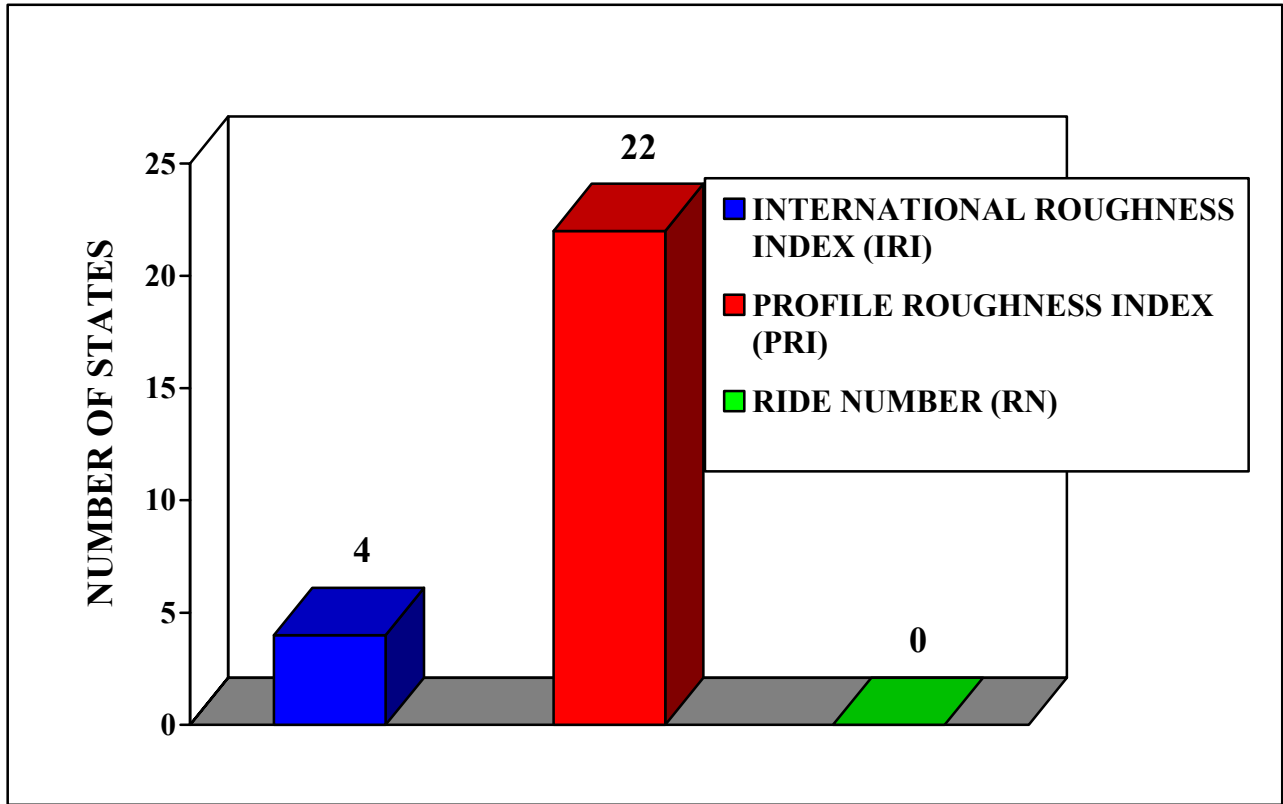
ALL MANUFACTURERS ACCEPTABLE	COX	McCRACKEN	AMES
AL, CA, CO, CT, MD, MS, NE, NV, NY, UT, WA, WY	FL, IA, IL, ND, SD	HI, IA, IL, SD	IA, LA
TOTAL = 12	TOTAL = 5	TOTAL = 4	TOTAL = 2

USE OF ROLLING STRAIGHTEDGE



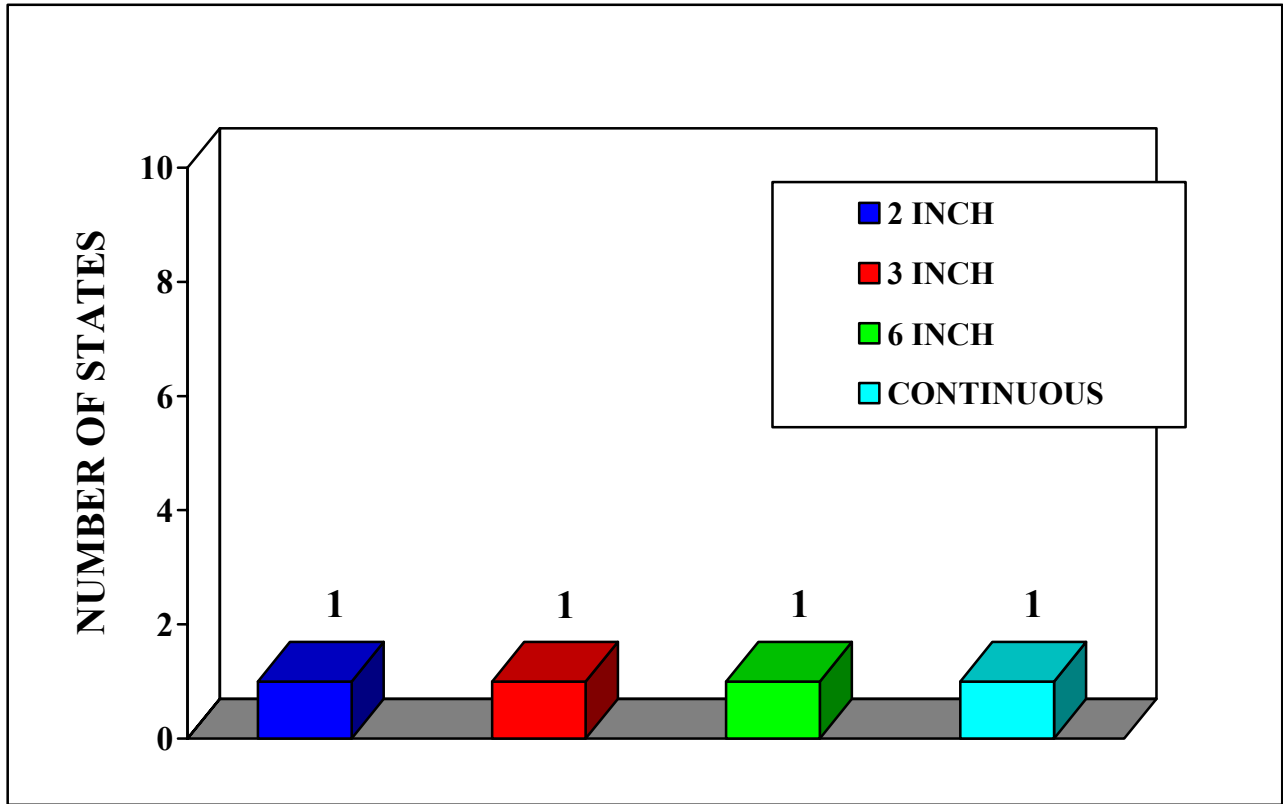
STATES USING 10 FT ROLLING STRAIGHTEDGE	STATES USING 10 FT ROLLING STRAIGHTEDGE FOR SELECTED AREAS ONLY	STATES USING 16 FT ROLLING STRAIGHTEDGE FOR SELECTED AREAS ONLY
NJ	CT, FL, IA, ND, SD	IL
TOTAL = 1	TOTAL = 5	TOTAL = 1

RIDE INDEXES



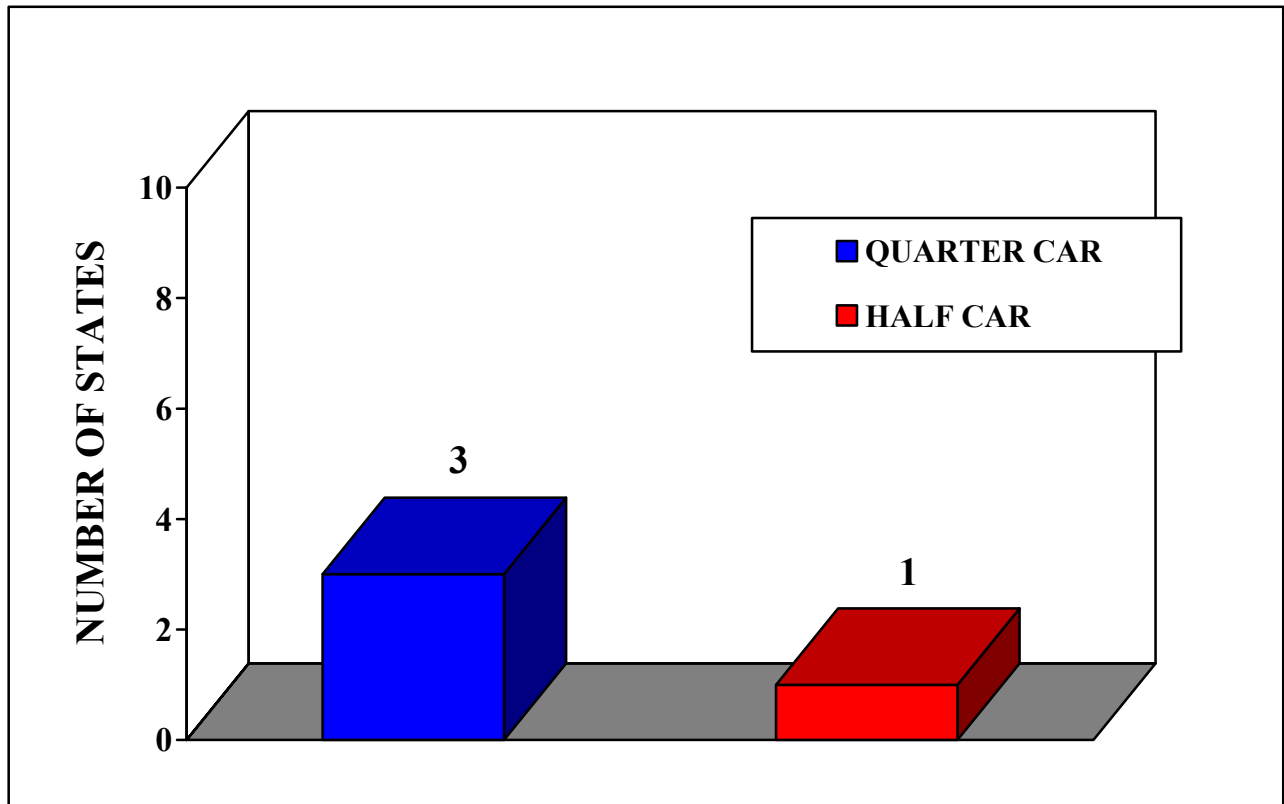
INTERNATIONAL ROUGHNESS INDEX (IRI)	PROFILE ROUGHNESS INDEX (PRI)	RIDE NUMBER (RN)
MD, ND, PA, WV	AL, CA, CO, CT, FL, GA, HI, IA, IL, KY, LA, MD, MS, ND, NE, NV, NY, SC, SD, UT, WA, WY	
TOTAL = 4	TOTAL = 22	TOTAL = 0

IRI / RN DATA COLLECTION RATE



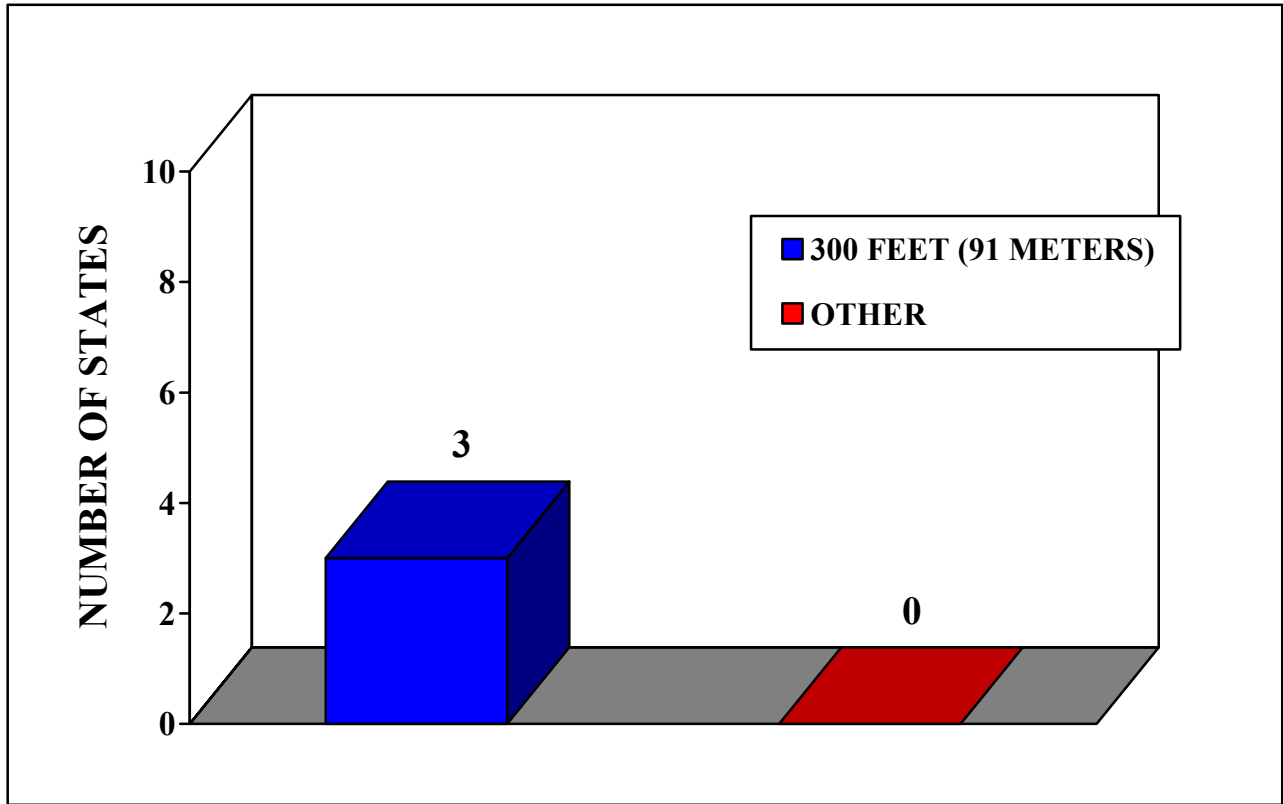
2 INCH	3 INCH	6 INCH	CONTINUOUS
MD	ND	PA	WV
TOTAL = 1	TOTAL = 1	TOTAL = 1	TOTAL = 1

IRI / RN ANALYSIS METHODS



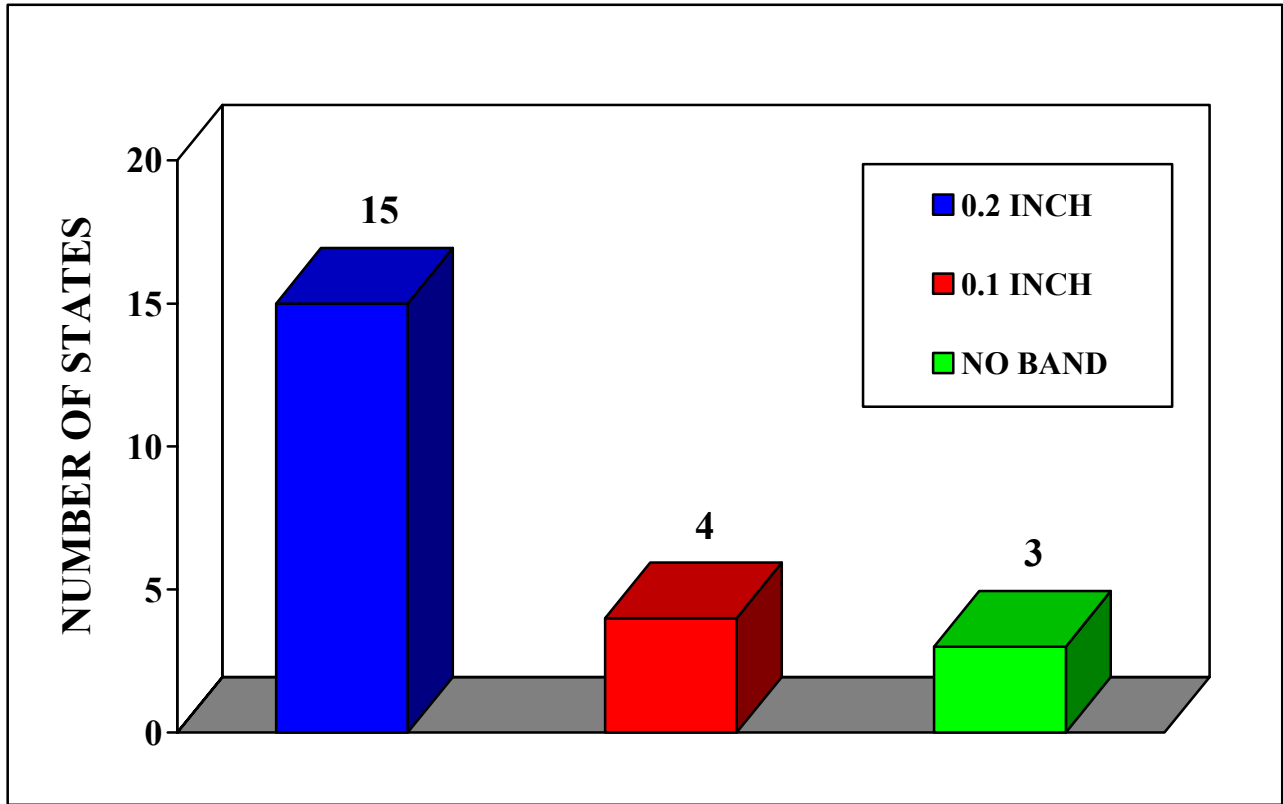
QUARTER CAR	HALF CAR
MD, ND, PA	WV
TOTAL = 3	TOTAL = 1

IRI / RN FILTER LENGTHS



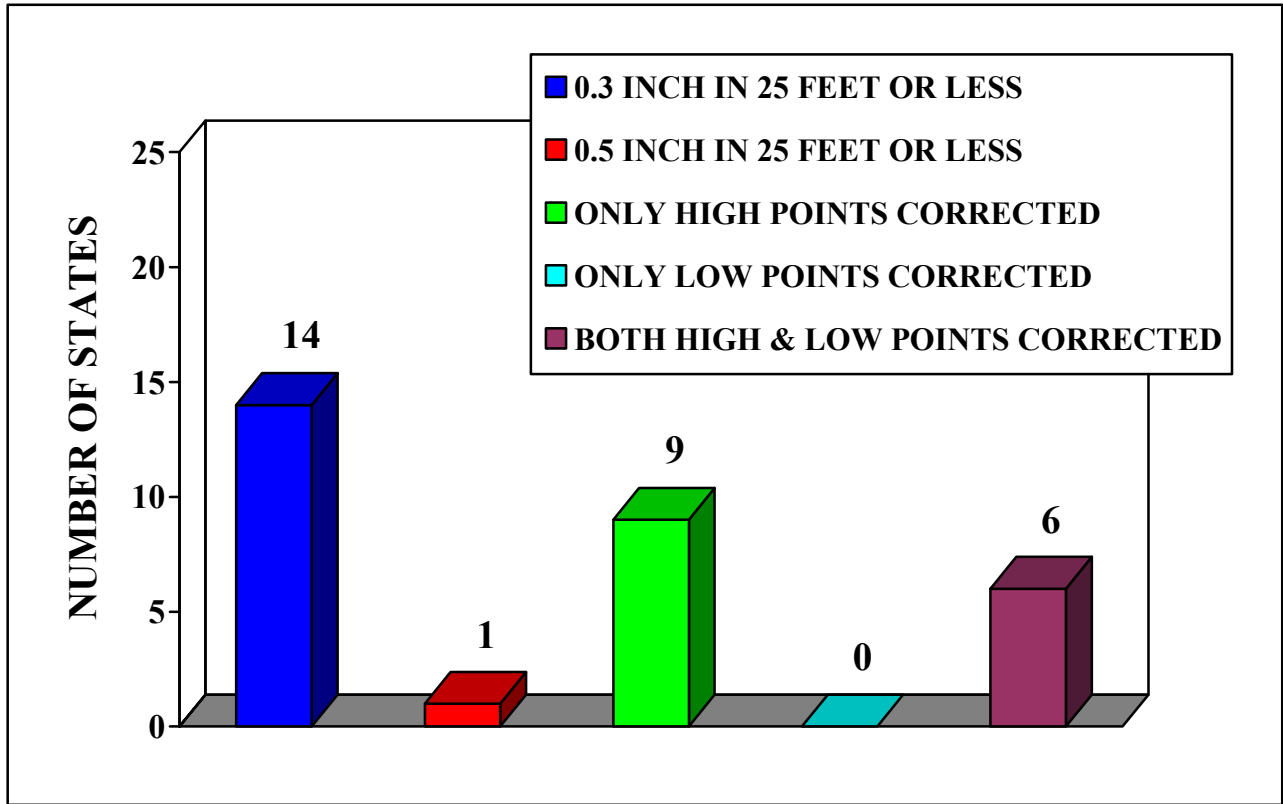
300 FEET (91 METERS)	OTHER
MD, ND, PA	
TOTAL = 3	TOTAL = 0

PRI BLANKING BANDS



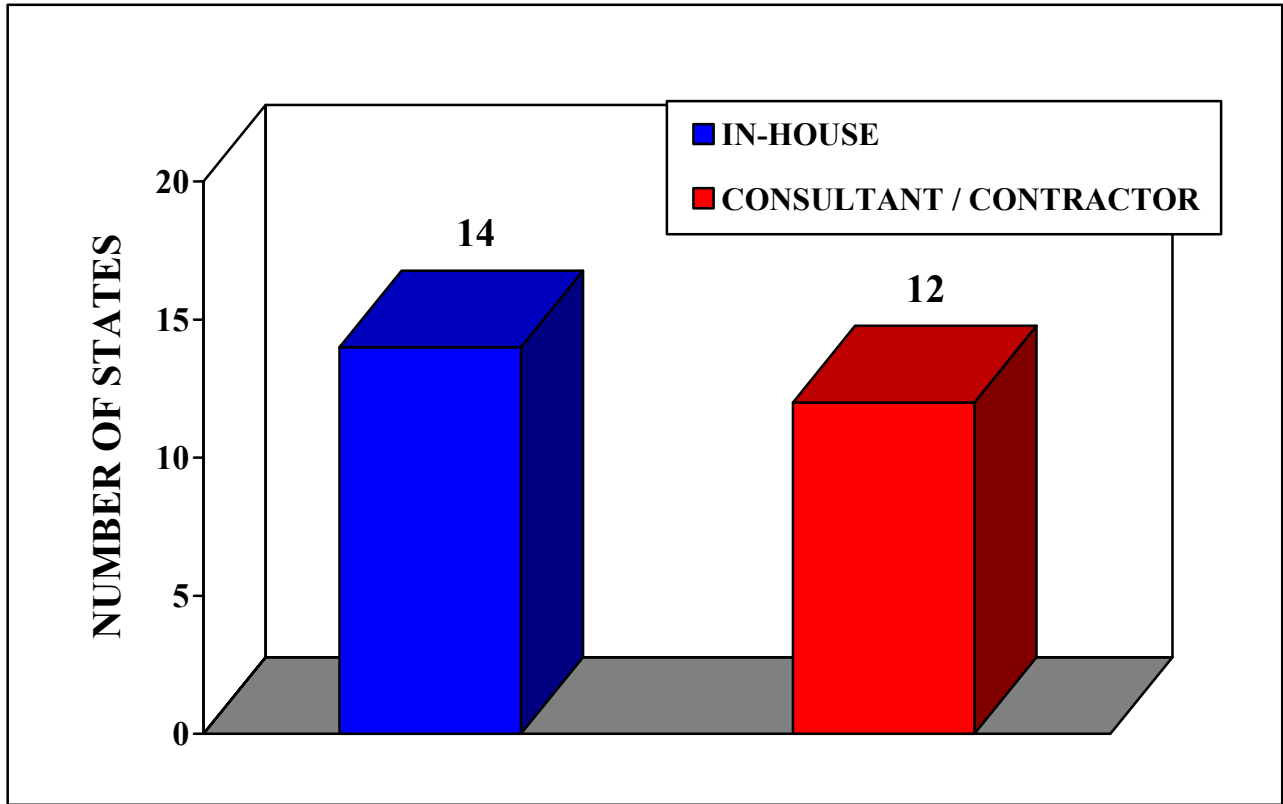
0.2 INCH	0.1 INCH	NO BAND
AL, CA, CT, FL, HI, IA, IL, LA, MS, NE, NV, NY, UT, WA, WY	CO, GA, KY, SC	MD, ND, SD
TOTAL = 15	TOTAL = 4	TOTAL = 3

PRI BUMP SPECIFICATIONS



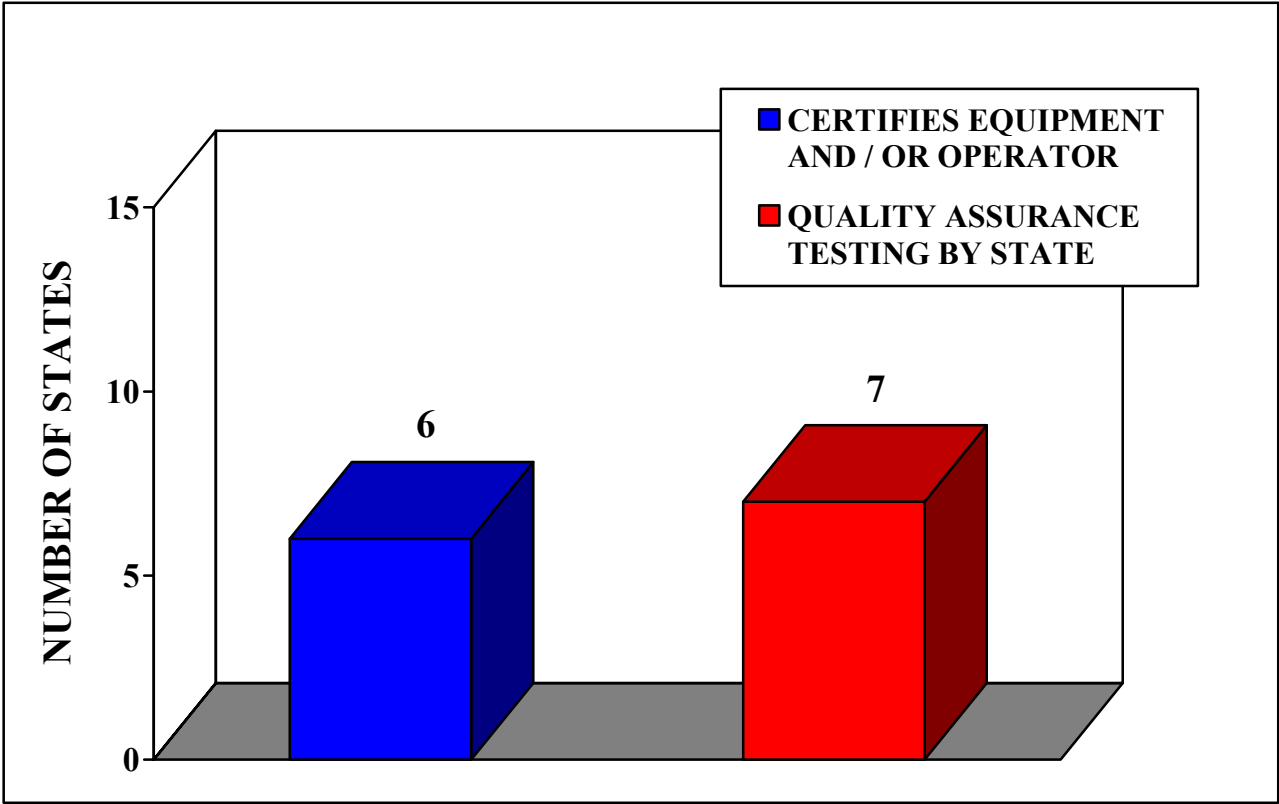
0.3 INCH IN 25 FEET OR LESS	0.5 INCH IN 25 FEET OR LESS	ONLY HIGH POINTS CORRECTED	ONLY LOW POINTS CORRECTED	BOTH HIGH & LOW POINTS CORRECTED
AL, CA, FL, HI, IL, KY, LA, MS, ND, NE, SD, UT, WA, WY	NY	CA, CT, IL, LA, NE, NV, SD, WA, WY		AL, FL, GA, IA, MD, SC
TOTAL = 14	TOTAL = 1	TOTAL = 9	TOTAL = 0	TOTAL = 6

TESTING SERVICE PROVIDERS



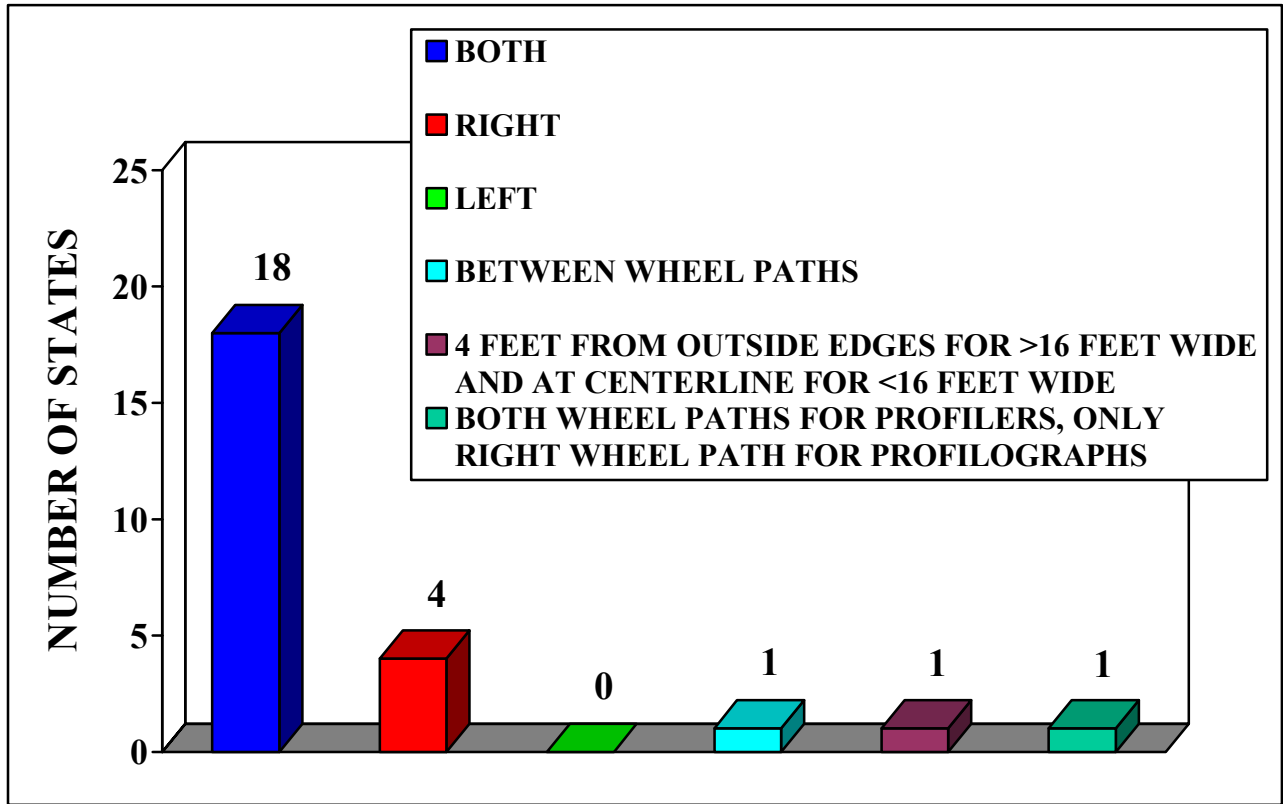
IN-HOUSE	CONSULTANT / CONTRACTOR
AL, CA, CT, FL, HI, IL, KY, LA, ND, NJ, SC, UT, WV, WY	CO, FL, GA, IA, MD, MS, NE, NV, NY, PA, SD, WA
TOTAL = 14	TOTAL = 12

QUALITY ASSURANCE OF CONTRACTED SERVICES



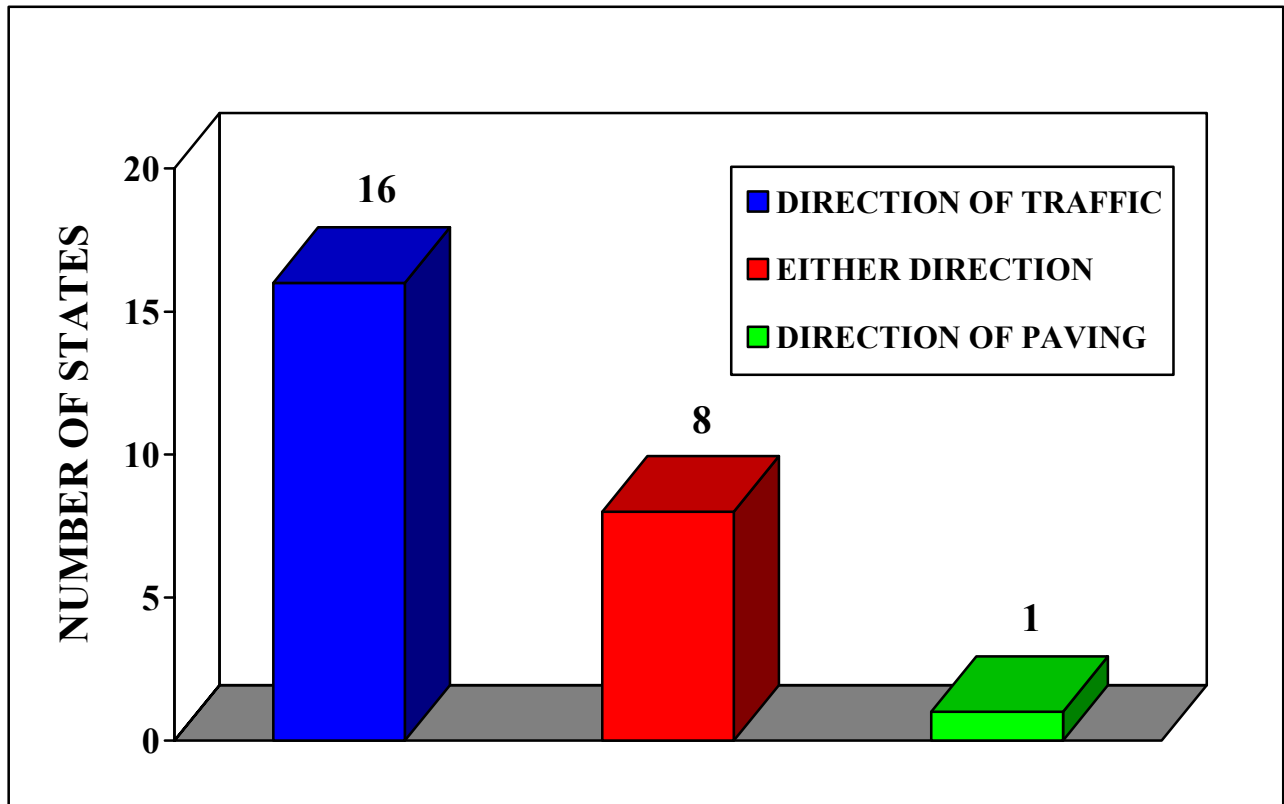
CERTIFIES EQUIPMENT AND / OR OPERATOR	QUALITY ASSURANCE TESTING BY STATE
CO, GA, IA, MD, NE, PA	FL, IA, MD, MS, NE, PA, SD
TOTAL = 6	TOTAL = 7

WHEEL PATH(S) TESTED



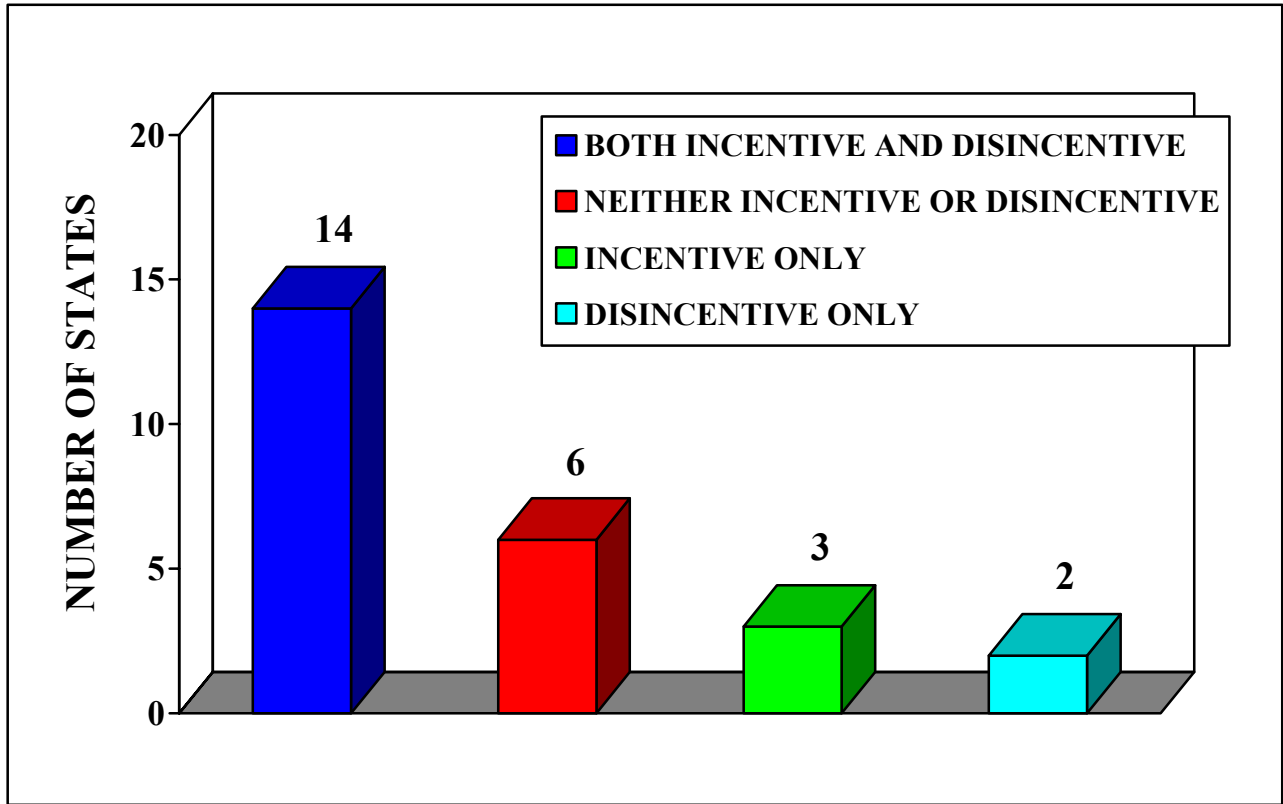
BOTH	RIGHT	LEFT	BETWEEN WHEEL PATHS	4 FEET FROM OUTSIDE EDGES FOR >16 FEET WIDE AND AT CENTERLINE FOR <16 FEET WIDE	BOTH WHEEL PATHS FOR PROFILERS, ONLY RIGHT WHEEL PATH FOR PROFILOGRAPHS
CA, CO, CT, FL, HI, IL, KY, LA, NJ, NV, NY, PA, SC, SD, UT, WA, WV, WY	AL, MS, ND, NE		IA	GA	MD
TOTAL = 18	TOTAL = 4	TOTAL = 0	TOTAL = 1	TOTAL = 1	TOTAL = 1

DIRECTION OF TESTING



DIRECTION OF TRAFFIC	EITHER DIRECTION	DIRECTION OF PAVING
AL, CO, FL, HI, IA, IL, LA, MD, MS, ND, NJ, PA, SC, UT, WV, WY	CA, CT, GA, KY, NE, NV, SD, WA	NY
TOTAL = 16	TOTAL = 8	TOTAL = 1

INCENTIVE / DISINCENTIVE SPECIFICATIONS



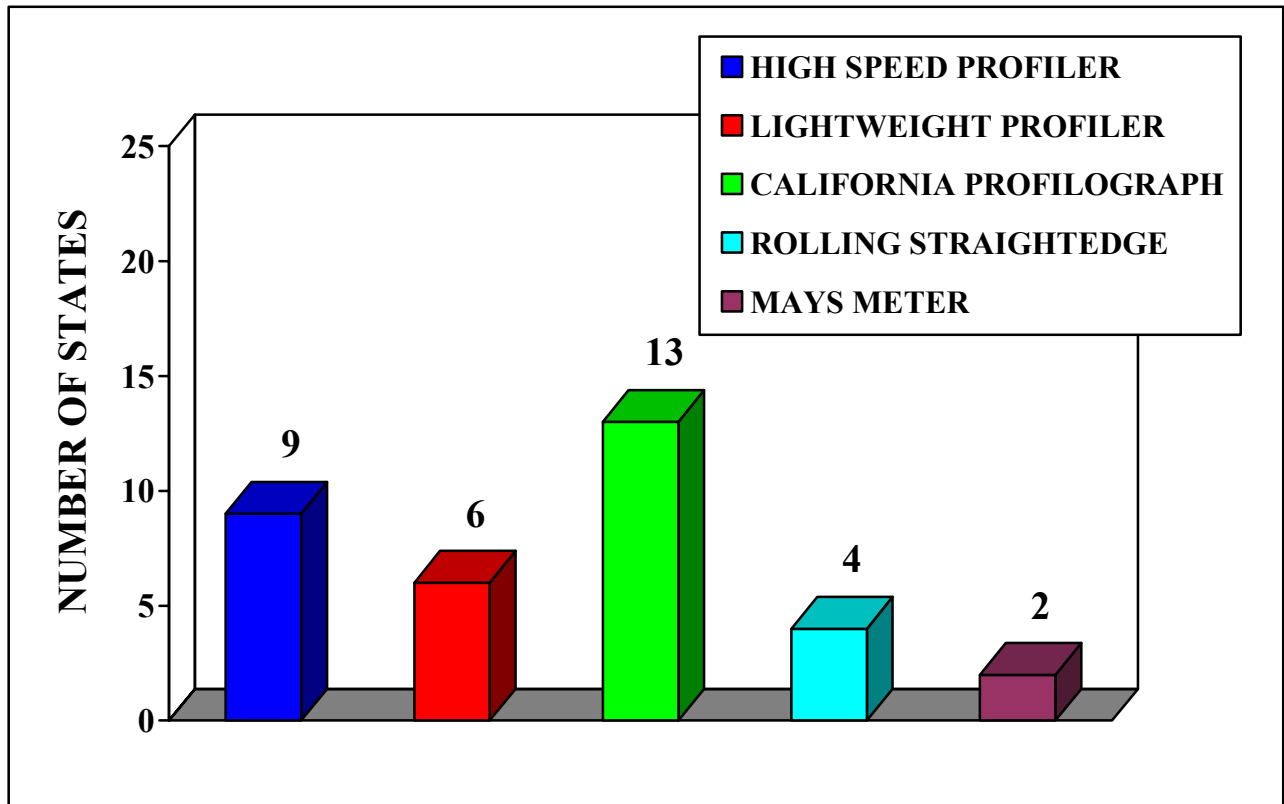
BOTH INCENTIVE AND DISINCENTIVE	NEITHER INCENTIVE OR DISINCENTIVE	INCENTIVE ONLY	DISINCENTIVE ONLY
AL, CO, CT, FL, IA, IL, KY, MD, MS, ND, NE, SD, UT, WA	CA, GA, LA, NV, NY, WV	PA, SC, WY	HI, NJ
TOTAL = 14	TOTAL = 6	TOTAL = 3	TOTAL = 2

PART II

FLEXIBLE PAVEMENT

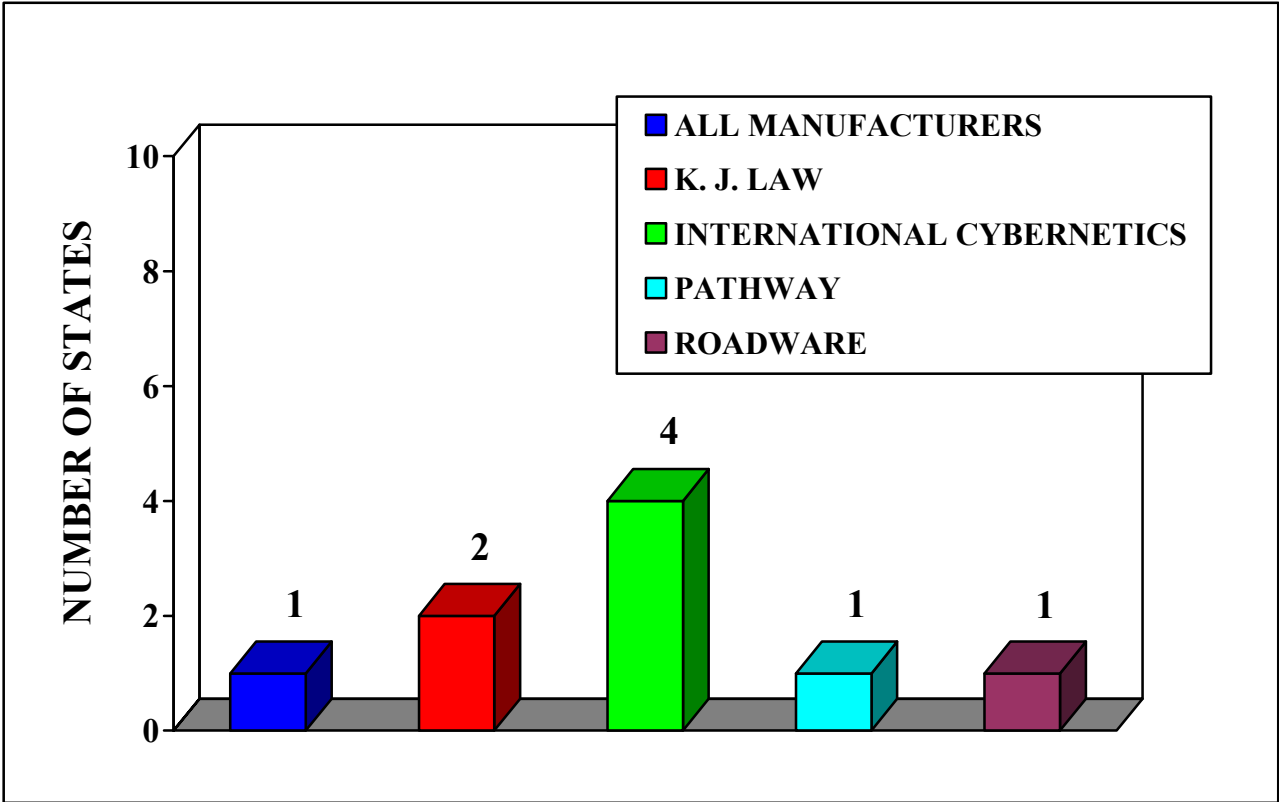
RIDE ACCEPTANCE TESTING

EQUIPMENT USED



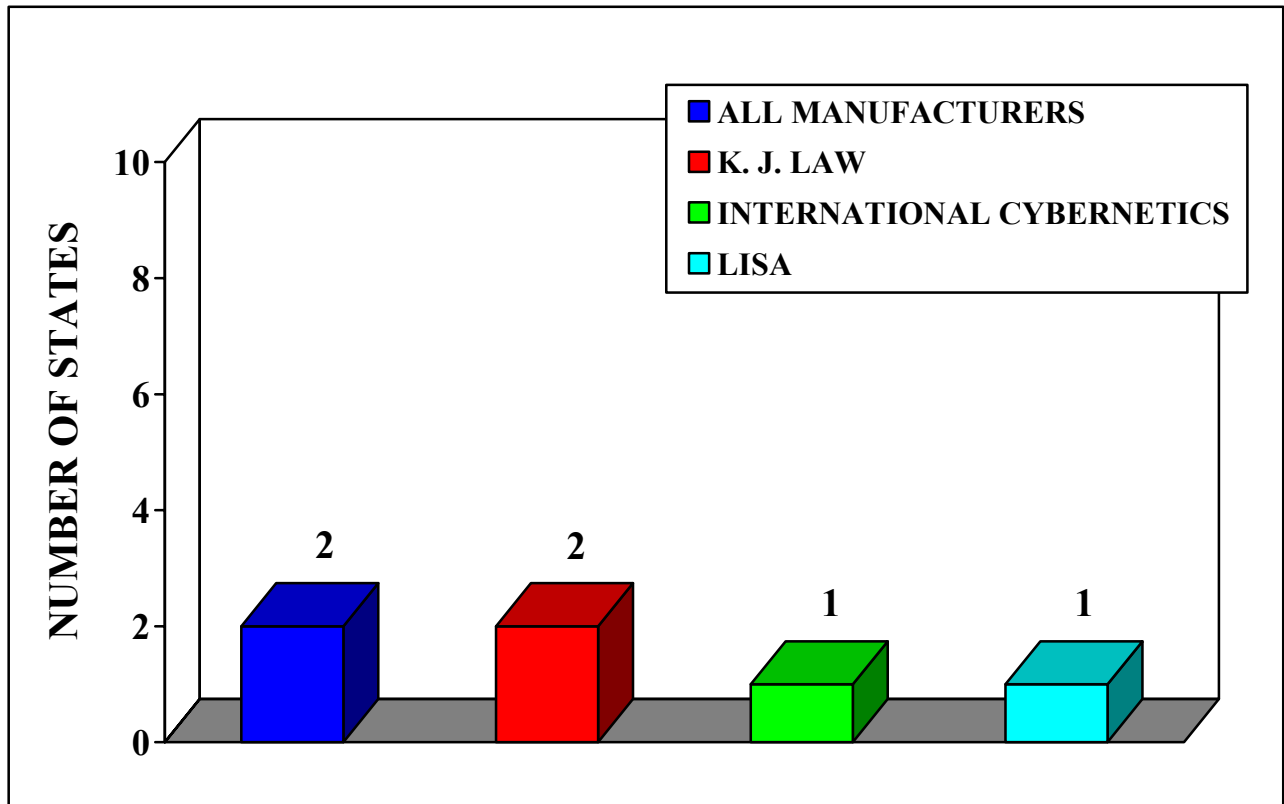
HIGH SPEED PROFILER	LIGHTWEIGHT PROFILER	CALIFORNIA PROFILOGRAPH	ROLLING STRAIGHTEDGE	MAYS METER
CT, FL, GA, KY, MD, MT, NH, WA, WY	GA, HI, MD, PA, SD, WA	AL, CA, CO, IA, IL, LA, MD, MS, NE, NV, NY, UT, WA	FL, IA, IL, NJ	SC, WV
TOTAL = 9	TOTAL = 6	TOTAL = 13	TOTAL = 4	TOTAL = 2

MANUFACTURERS OF HIGH SPEED PROFILERS



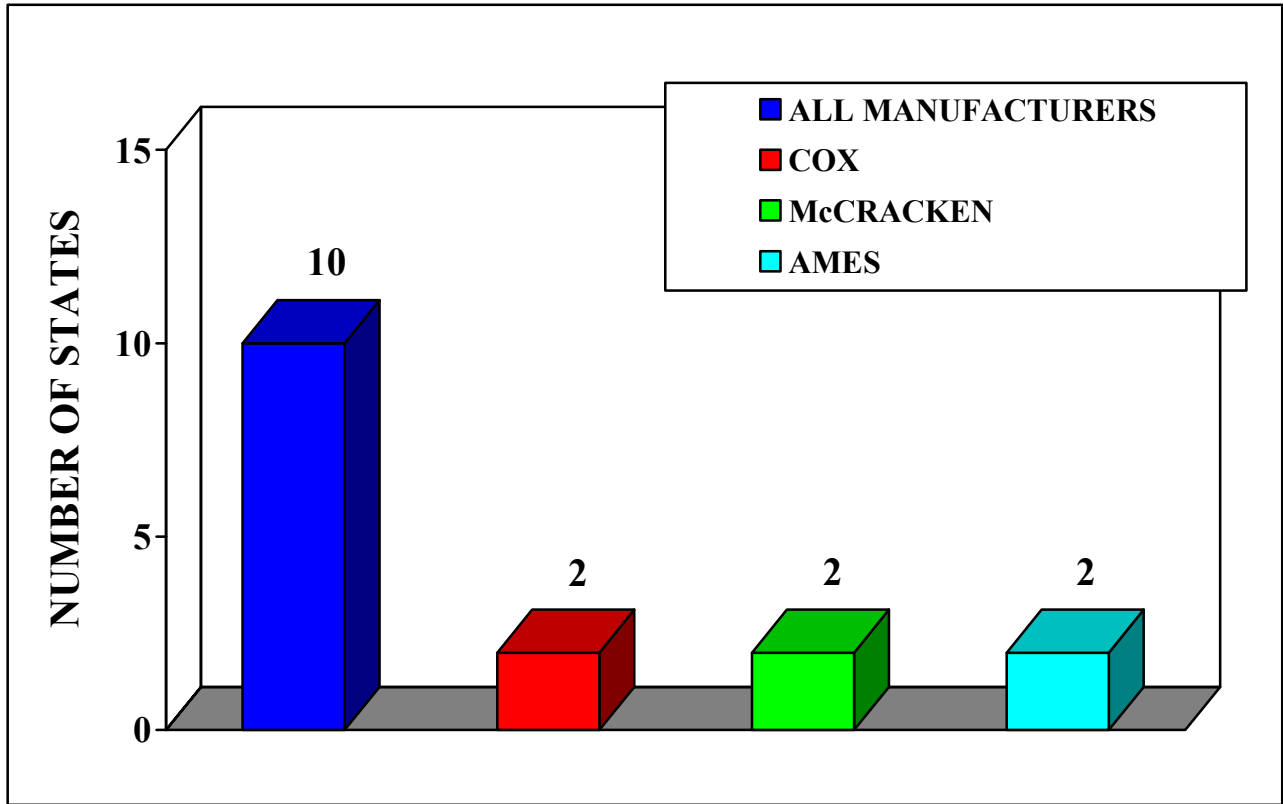
ALL MANUFACTURERS ACCEPTABLE	K. J. LAW	INTERNATIONAL CYBERNETICS	PATHWAY	ROADWARE
MD	KY, NH	FL, GA, MT, WY	WA	CT
TOTAL = 1	TOTAL = 2	TOTAL = 4	TOTAL = 1	TOTAL = 1

MANUFACTURERS OF LIGHTWEIGHT PROFILERS



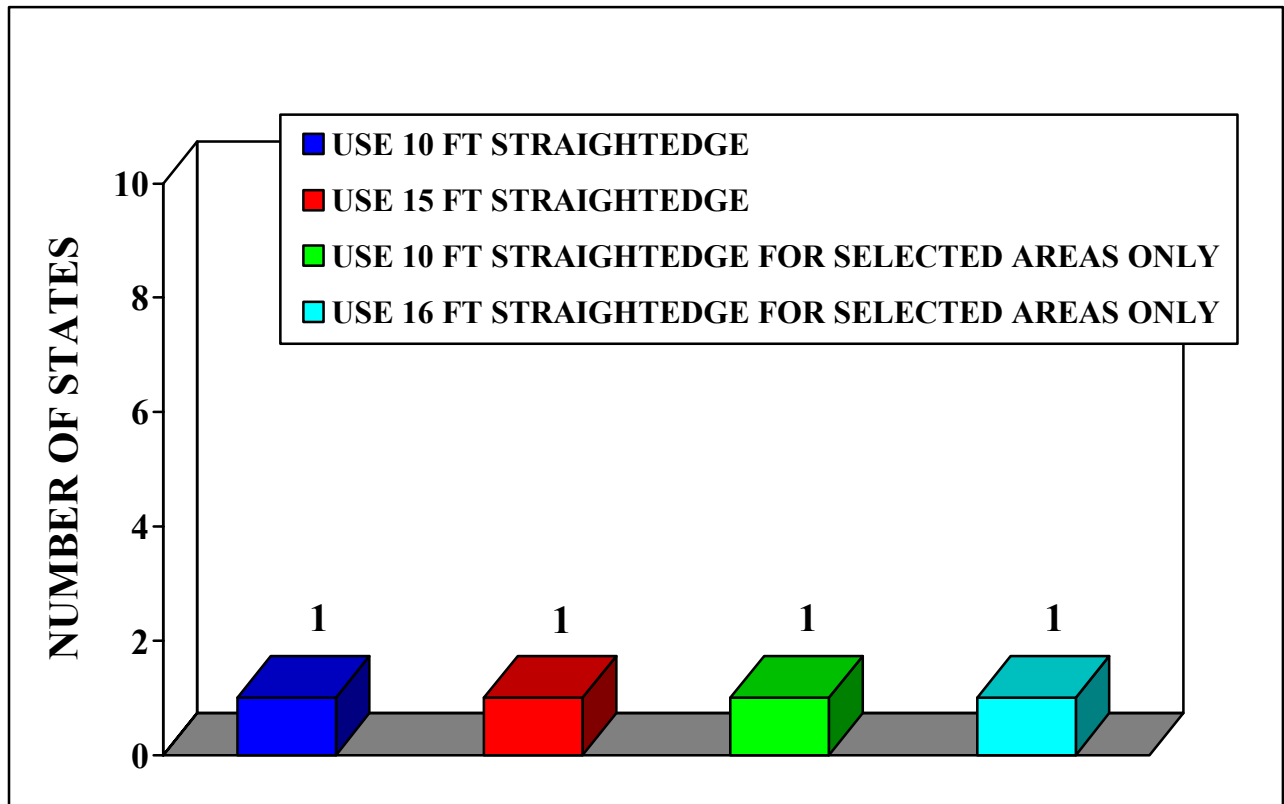
ALL MANUFACTURERS ACCEPTABLE	K. J. LAW	INTERNATIONAL CYBERNETICS	LISA
MD, PA	HI, SD	GA	WA
TOTAL = 2	TOTAL = 2	TOTAL = 1	TOTAL = 1

MANUFACTURERS OF CALIFORNIA PROFILOGRAPH



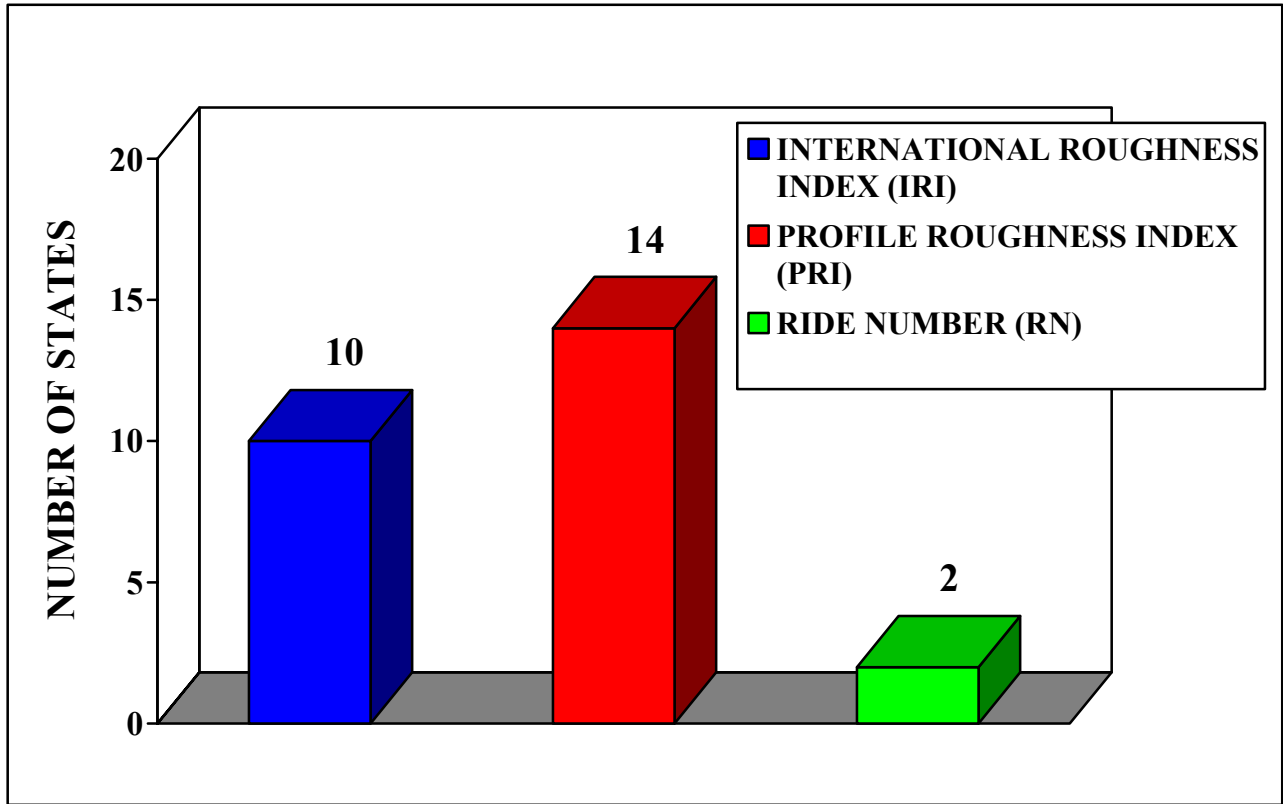
ALL MANUFACTURERS ACCEPTABLE	COX	McCRACKEN	AMES
AL, CA, CO, MD, MS, NE, NV, NY, UT, WA	IA, IL	IA, IL	IA, LA
TOTAL = 10	TOTAL = 2	TOTAL = 2	TOTAL = 2

USE OF ROLLING STRAIGHTEDGE



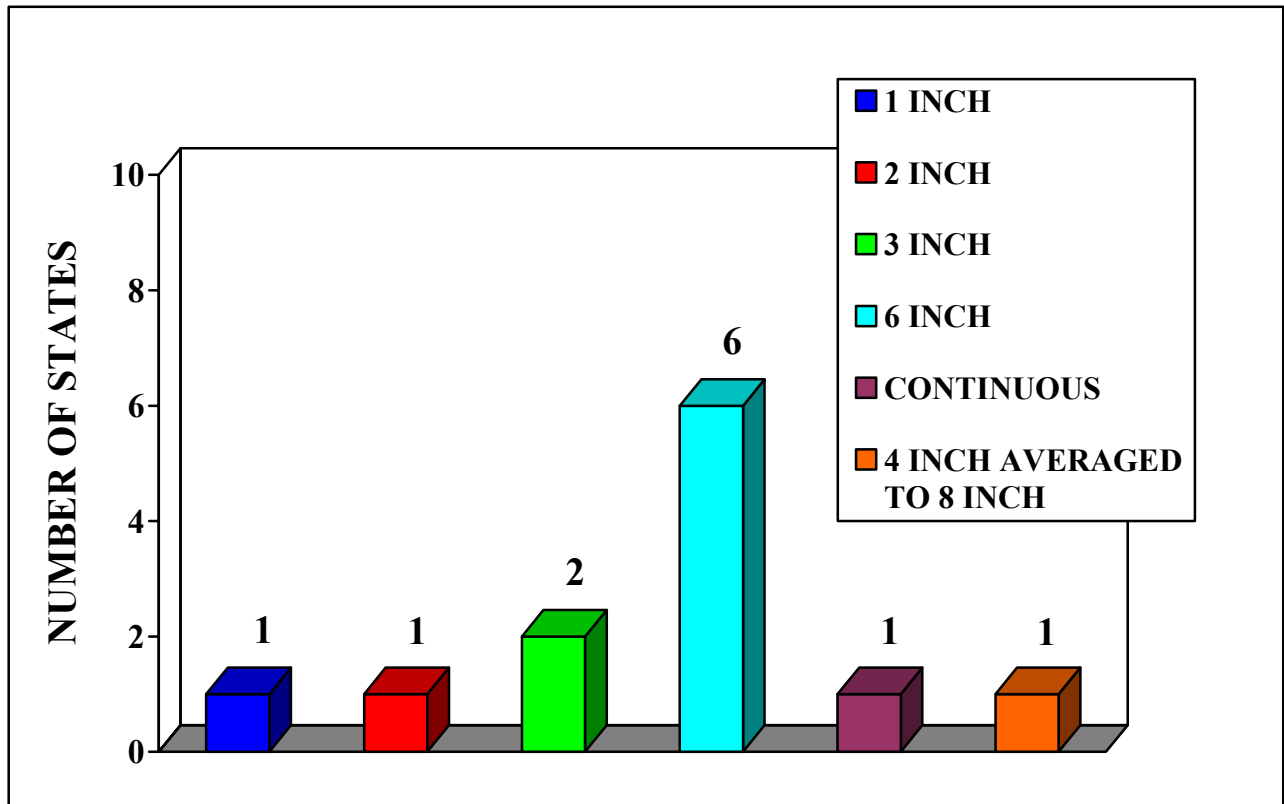
STATES USING 10 FT ROLLING STRAIGHTEDGE	STATES USING 15 FT ROLLING STRAIGHTEDGE	STATES USING 10 FT ROLLING STRAIGHTEDGE FOR SELECTED AREAS ONLY	STATES USING 16 FT ROLLING STRAIGHTEDGE FOR SELECTED AREAS ONLY
NJ	FL	IA	IL
TOTAL = 1	TOTAL = 1	TOTAL = 1	TOTAL = 1

RIDE INDEXES



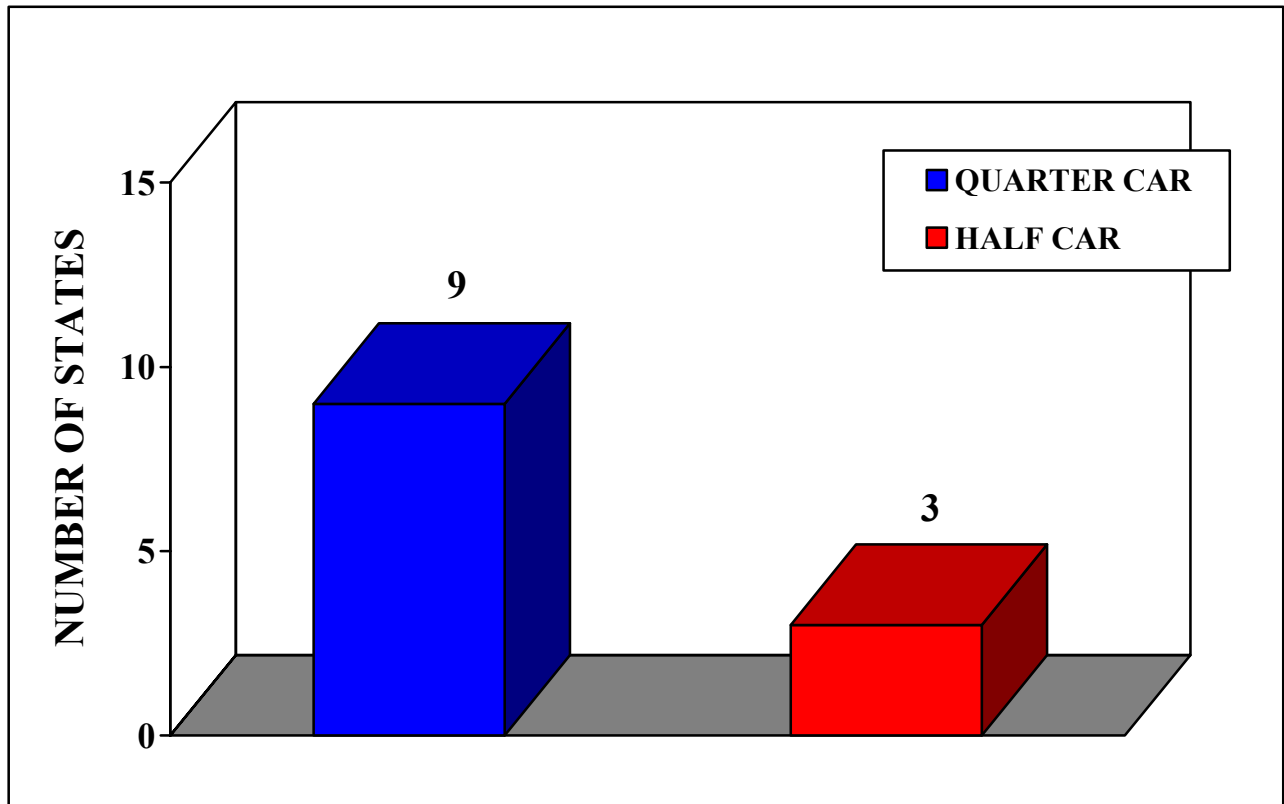
INTERNATIONAL ROUGHNESS INDEX (IRI)	PROFILE ROUGHNESS INDEX (PRI)	RIDE NUMBER (RN)
CT, GA, KY, MD, MT, PA, SD, WA, WV, WY	AL, CA, CO, HI, IA, IL, LA, MD, MS, MT, NE, NV, NY, UT	FL, NH
TOTAL = 10	TOTAL = 14	TOTAL = 2

IRI / RN DATA COLLECTION RATE



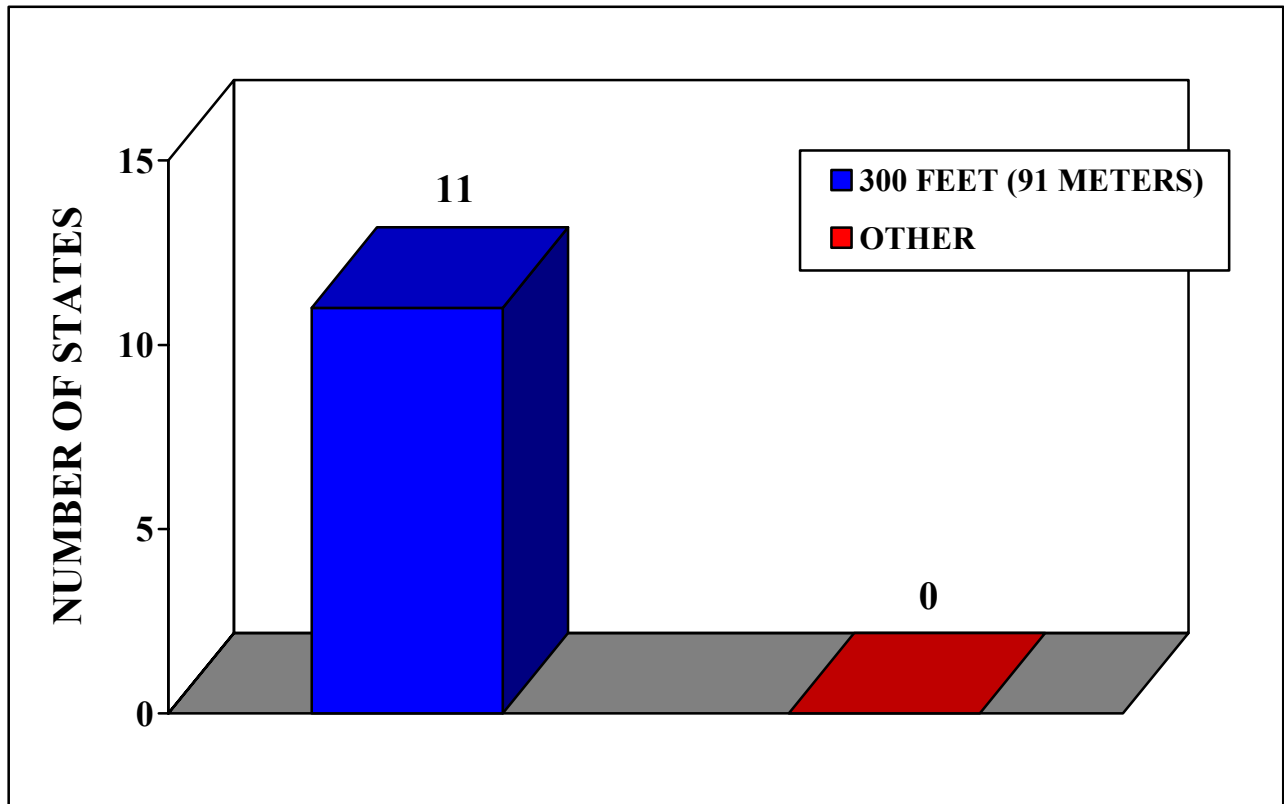
1 INCH	2 INCH	3 INCH	6 INCH	CONTINUOUS	4 INCH AVERAGED TO 8 INCH
NH (25mm)	MD	WA, WY	FL, GA, KY, MT, PA, SD	WV	CT
TOTAL = 1	TOTAL = 1	TOTAL = 2	TOTAL = 6	TOTAL = 1	TOTAL = 1

IRI / RN ANALYSIS METHODS



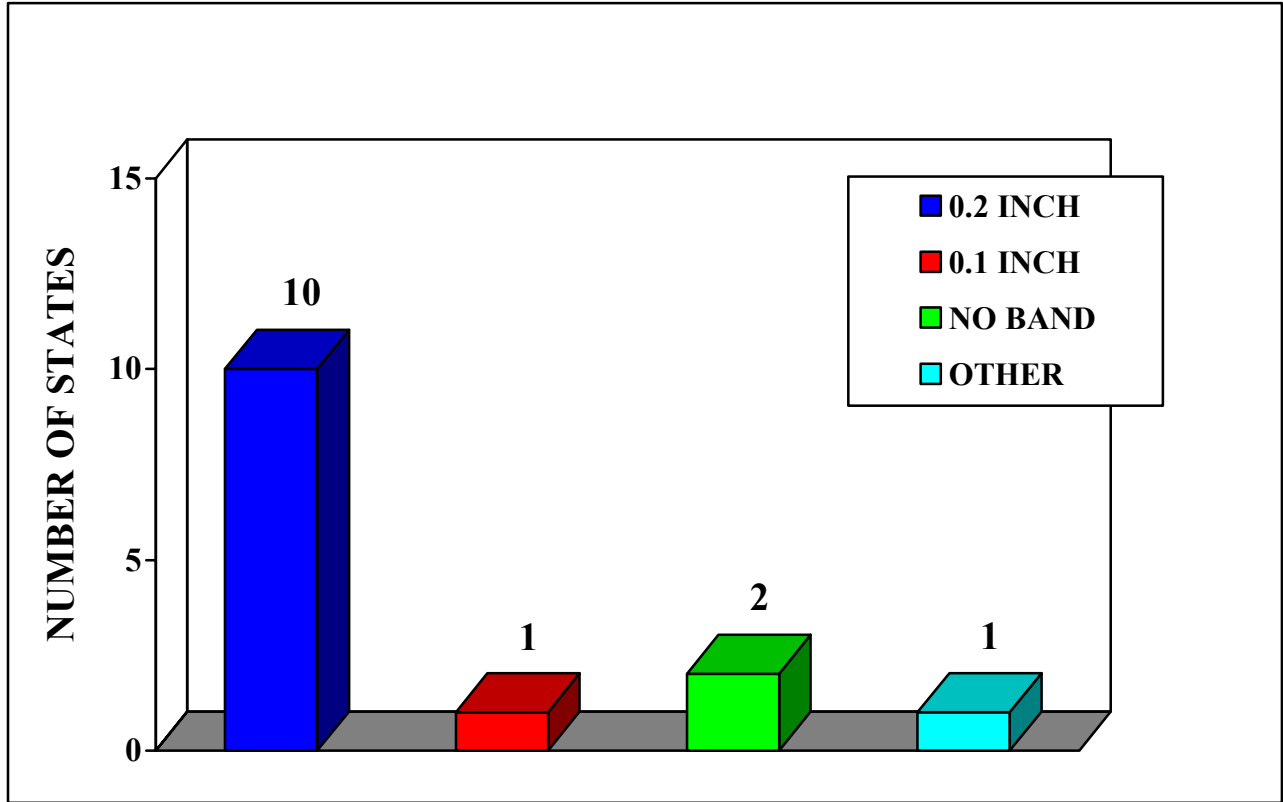
QUARTER CAR	HALF CAR
CT, FL, KY, MD, MT, PA, SD, WA, WY	GA, NH, WV
TOTAL = 9	TOTAL = 3

IRI / RN FILTER LENGTHS



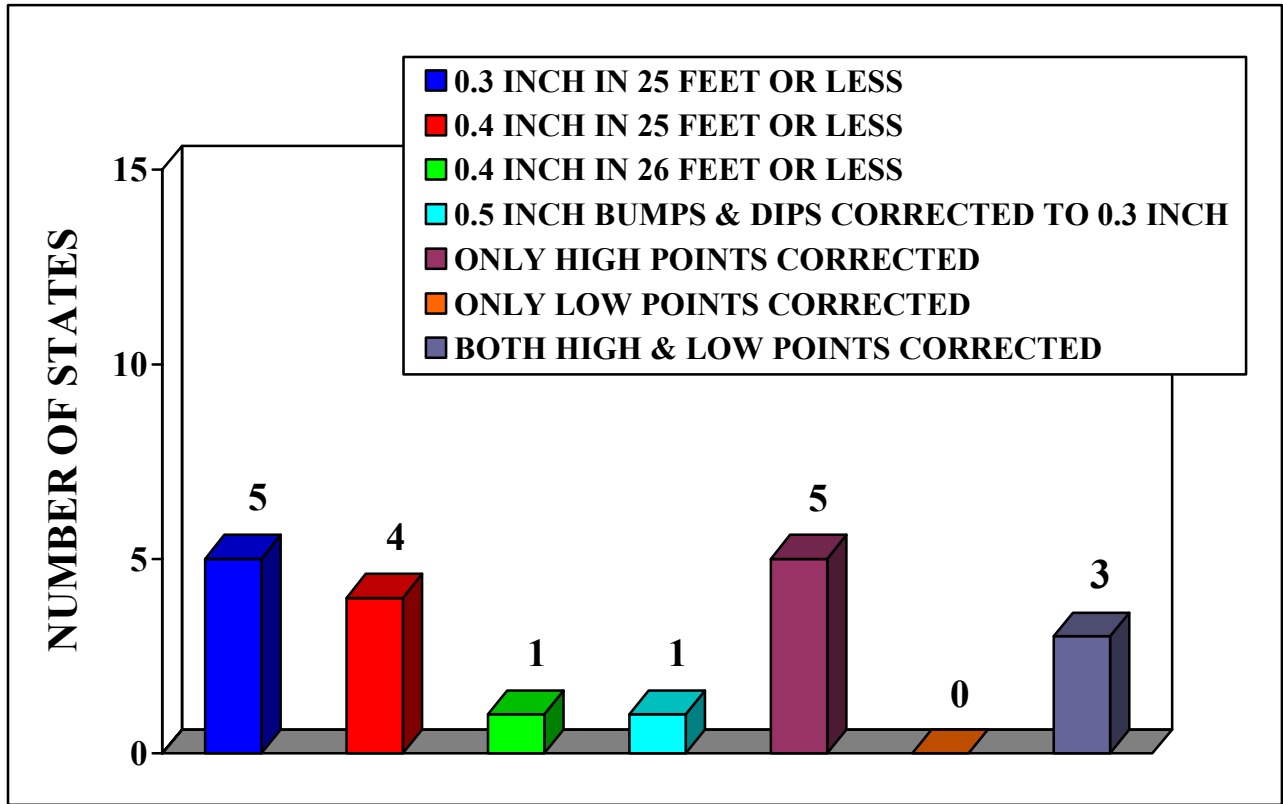
300 FEET (91 METERS)	OTHER
CT, FL, GA, KY, MD, MT, NH, PA, SD, WA, WY	
TOTAL = 11	TOTAL = 0

PRI BLANKING BANDS



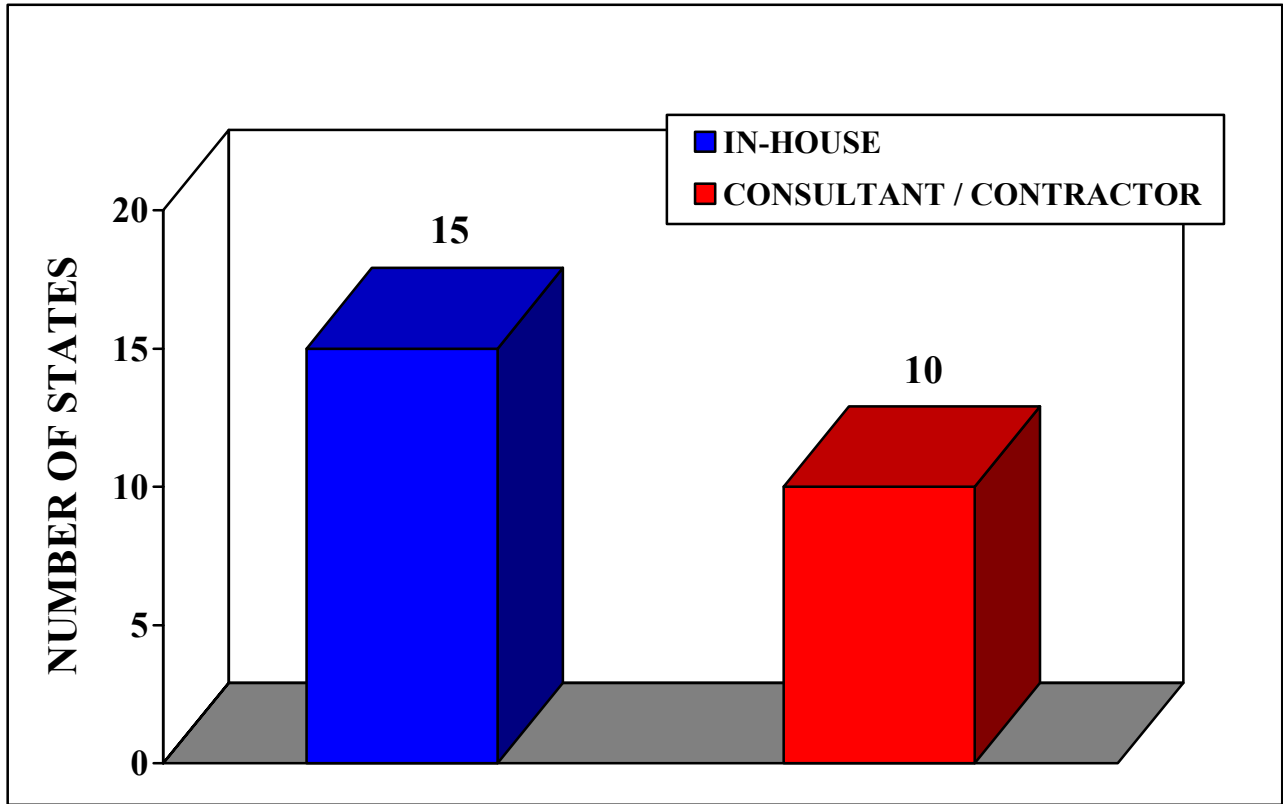
0.2 INCH	0.1 INCH	NO BAND	OTHER
AL, CA, HI, IA, IL, LA, MS, NE, NV, UT	CO	MD, MT	NY (NO BAND, 0.1 AND 0.2 INCH)
TOTAL = 10	TOTAL = 1	TOTAL = 2	TOTAL = 1

PRI BUMP SPECIFICATIONS



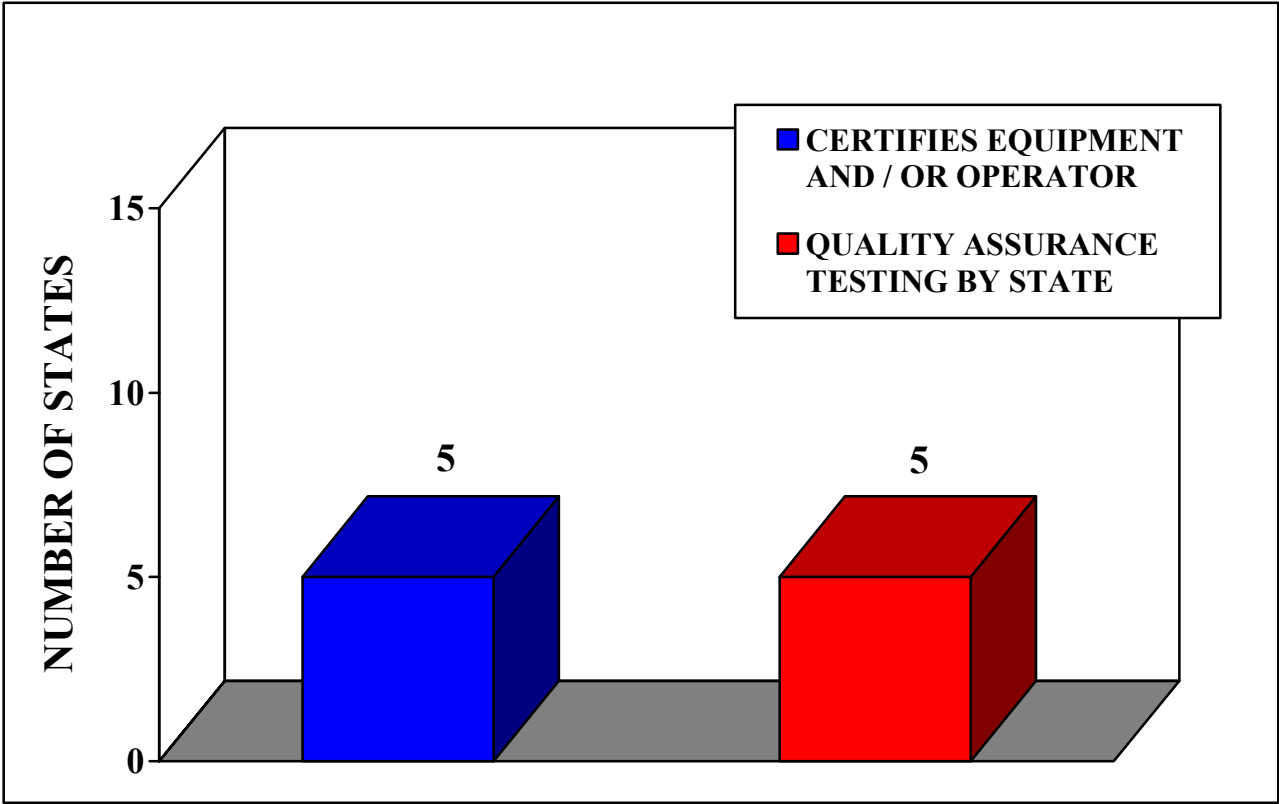
0.3 INCH IN 25 FEET OR LESS	0.4 INCH IN 25 FEET OR LESS	0.4 INCH IN 26 FEET OR LESS	0.5 INCH BUMPS AND DIPS CORRECTED TO 0.3 INCH	ONLY HIGH POINTS CORRECTED	ONLY LOW POINTS CORRECTED	BOTH HIGH & LOW POINTS CORRECTED
AL, CA, IL, LA, UT	HI, MS, MT, NE	NY	IA	CA, IL, LA, NV, UT		AL, IA, MD
TOTAL = 5	TOTAL = 4	TOTAL = 1	TOTAL = 1	TOTAL = 5	TOTAL = 0	TOTAL = 3

TESTING SERVICE PROVIDERS



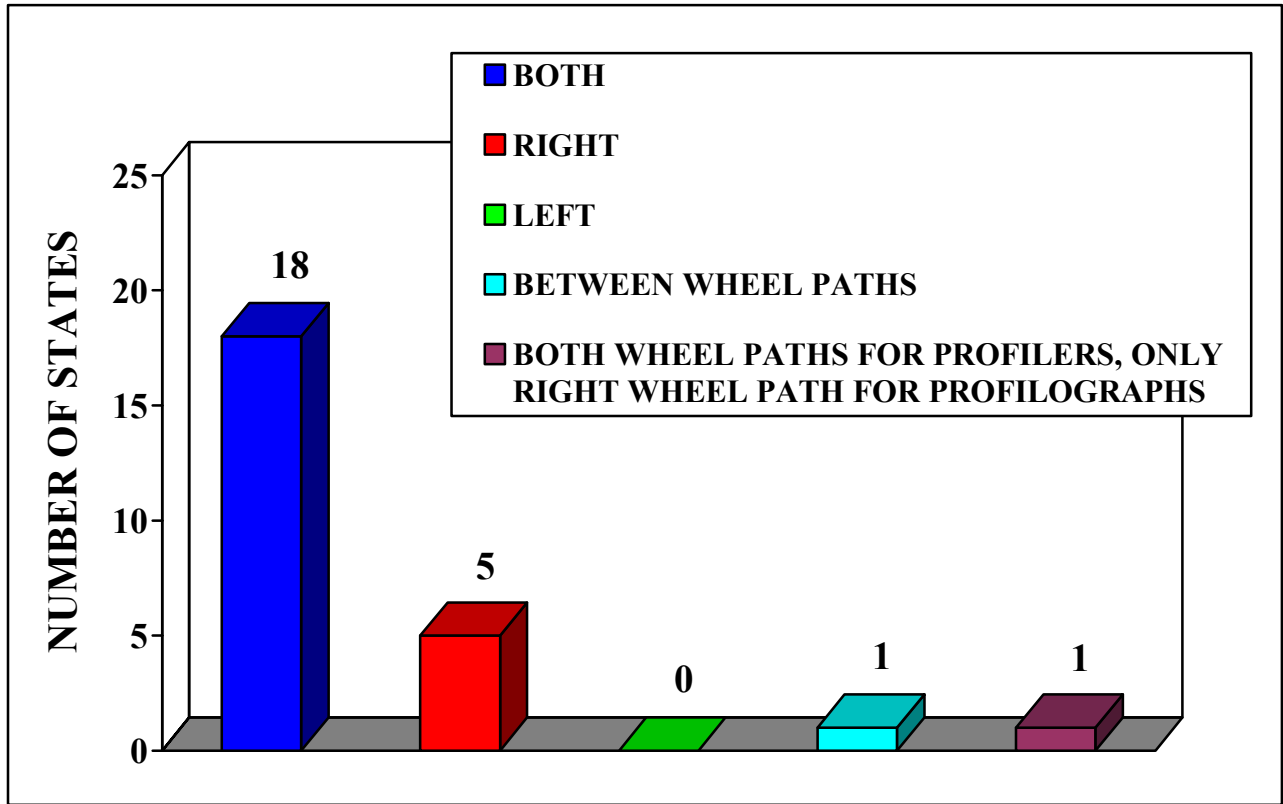
IN-HOUSE	CONSULTANT / CONTRACTOR
AL, CA, CT, FL, GA, IL, KY, LA, MT, NH, NJ, SD, WA, WV, WY	CO, HI, IA, MD, MS, NE, NV, NY, PA, UT
TOTAL = 15	TOTAL = 10

QUALITY ASSURANCE OF CONTRACTED SERVICES



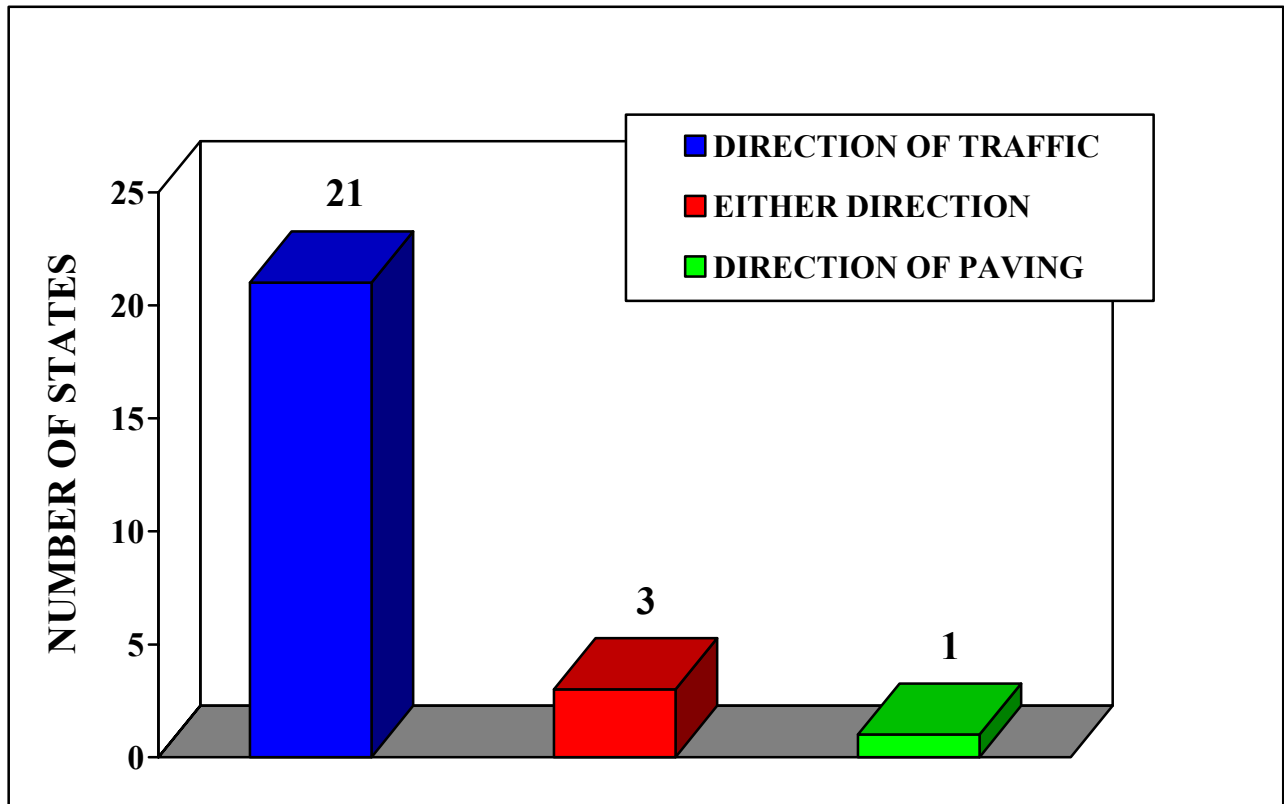
CERTIFIES EQUIPMENT AND / OR OPERATOR	QUALITY ASSURANCE TESTING BY STATE
CO, IA, MD, NE, PA	IA, MD, MS, NE, PA
TOTAL = 5	TOTAL = 5

WHEEL PATH (S) TESTED



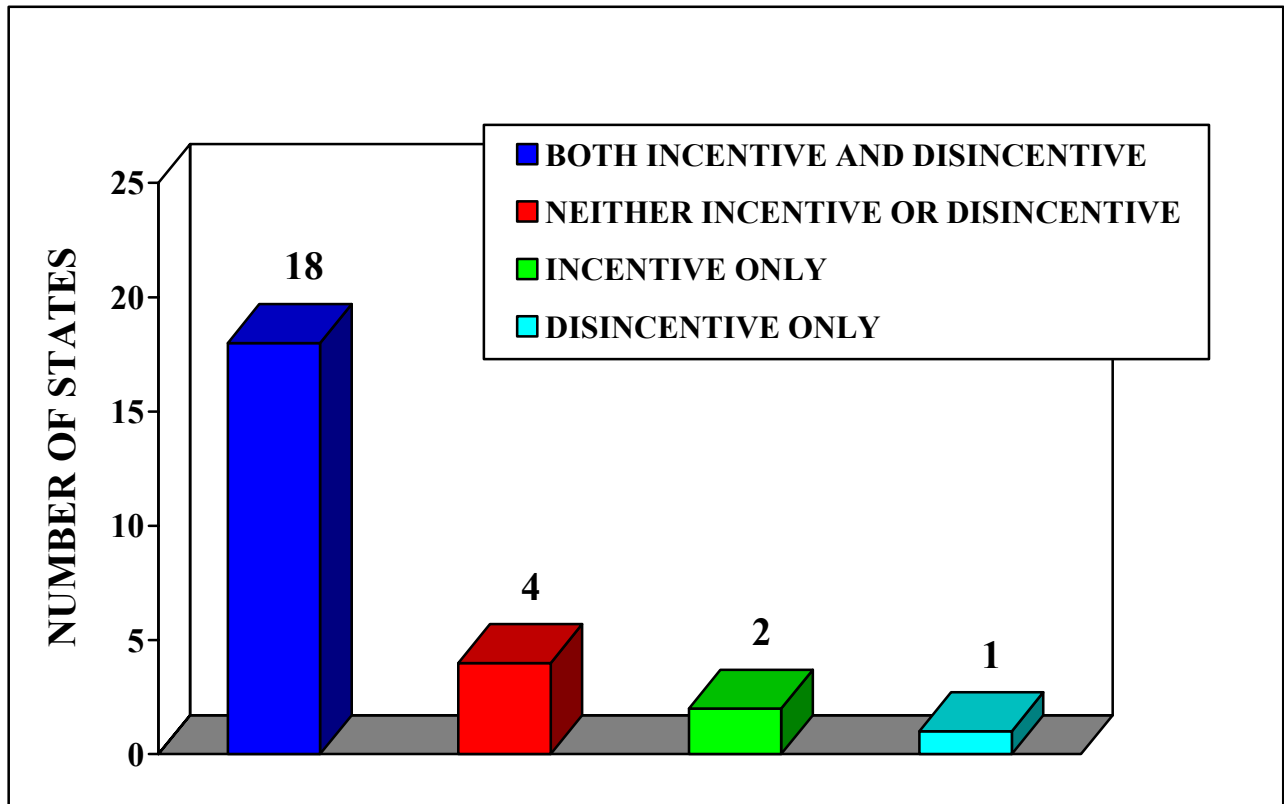
BOTH	RIGHT	LEFT	BETWEEN WHEEL PATHS	BOTH WHEEL PATHS FOR PROFILERS, ONLY RIGHT WHEEL PATH FOR PROFILOGRAPHS
CA, CO, CT, FL, GA, HI, IL, KY, LA, MT, NH, NJ, PA, SD, UT, WA, WV, WY	AL, MS, NE, NV, NY		IA	MD
TOTAL = 18	TOTAL = 5	TOTAL = 0	TOTAL = 1	TOTAL = 1

DIRECTION OF TESTING



DIRECTION OF TRAFFIC	EITHER DIRECTION	DIRECTION OF PAVING
AL, CO, CT, FL, GA, HI, IA, IL, KY, MD, MS, MT, NH, NJ, NV, NY, PA, SD, UT, WA, WV	CA, NE, WY	LA
TOTAL = 21	TOTAL = 3	TOTAL = 1

INCENTIVE / DISINCENTIVE SPECIFICATIONS



BOTH INCENTIVE AND DISINCENTIVE	NEITHER INCENTIVE OR DISINCENTIVE	INCENTIVE ONLY	DISINCENTIVE ONLY
AL, CO, CT, HI, IA, IL, KY, MD, MS, MT, NE, NH, NV, PA, SD, UT, WA, WY	CA, GA, LA, WV	FL, NY	NJ
TOTAL = 18	TOTAL = 4	TOTAL = 2	TOTAL = 1