

CDL Test System Modernization Project

Presented By:

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> FMCSA Motor Carrier Safety Advisory Committee October 1, 2019



Topics

Objectives

Goals

Overview of Proposed Vehicle Inspection

Overview of Proposed Basic Control Skills

Pilot Test – Jacksonville, Florida

Pilot Test – Concord, New Hampshire

Next Steps



Objectives

- Revise the AAMVA CDL Testing System to more closely align with industry standards and training practices.
- Produce a revised test model that will maintain high standards for evaluating whether an entry-level commercial driver has the required technical knowledge and skill to safely operate a CMV.
- Improve test administration effectiveness and efficiency.



Core Project Goals

- Safety Safety of drivers and the general public.
- Basic Skills Ensuring drivers have entry-level skill sets for licensure to enter the industry.
- Technology Create a test model that remains both valid and reliable in a fast changing technological environment.
- Rigid Flexibility An entry-level testing system with rigid standards that is flexible enough to adapt to change.



2005 Vehicle Inspection Test

Overview of the 2019 Revised Vehicle Inspection Test



Draft Score Sheet

VEHICLE INSPECTION TEST						
In-Vehicle/Engine Start ☐ lighting indicators (L-R-4-H-ABS-DEF) ☐ emergency equipment (F-E-T) ☐ windshield & mirrors & monitoring devices ☐ wipers & washers ☐ heater & defroster ☐ hom(s) ☐ parking & trailer brake check ☐ service brake check ☐ *air (1-2-3-4) or *hydraulic brake check	Steering Axle tires (I-C-D) rims lug nuts springs & air bags & shocks brake lines or hoses & leaks brake contaminates Side of Vehicle lenses & reflectors mirror(s) or monitoring devices battery & electrical systems fuel tank(s) frame(s) Rear of Vehicle or Trailer					
All Passenger Only □ passenger entry & lift □ emergency exits □ passenger seating □ passenger mirrors & monitoring devices School Bus Only □ student lights (front & back) □ stop arm(s) & safety arm □ first aid & body fluid kits	□ lenses & reflectors Combination Vehicles Only □ air &electric lines &connectors □ fifth wheel skid plate or pintle hook or tow hitch □ kingpin & apron & gap or drawbar ring & tongue or coupler & tongue □ locking & safety devices					
Lights Operations Check ☐ front (L-R-4-HL-HB-C) ☐ side (L-R-4-C) ☐ rear (L-R-4-TL-BL-C)	Trailer Only ☐ landing gear & clearance ☐ reflective tape TOTAL VI SCORE (tetal missed)					
Front of Vehicle/Engine Area ☐ lenses ☐ fluid levels (O-C-PS-HF) ☐ fluid & air leaks ☐ steering systems	(total missed) ☐ Automatic Failure ☐ Unsafe Act ☐ Failure to Follow Instructions					
* Automatic failure if not performed correctly	REFER TO APPENDIX A FOR PASSING SCORES					



Draft Instructions

CDL VEHICLE INSPECTION TEST GENERAL INSTRUCTIONS

Using the vehicle inspection checklist provided in Section 11 of the CDL Driver's Manual, please demonstrate that you know how to conduct a vehicle inspection of all vehicle safety critical items, as you would normally do for any vehicle you are about to operate. You are to conduct the vehicle inspection as outlined in the CDL Driver's Manual.

As you do your inspection, you must name each item, point to or touch the item or items you are inspecting and fully explain what you are inspecting each item for and why you are inspecting the item(s). If you do not do so, you will not get credit for that item(s).

During the test, you will only inspect items down the: [TRUCK – driver's side of the vehicle];

[BUS - passenger side of the vehicle

If there are any items that are unique to the other side of the vehicle, please inspect those items as well. When inspecting the operation of lights, inspect ALL lights on the vehicle.

When entering and exiting the vehicle during the test, you must set your parking brake, place the vehicle in neutral; and safely enter and exit facing: [TRUCK – the vehicle while maintaining three points of contact at all times];

[TNOCK — the vehicle while maintaining three points of contact at all times

[BUS – forward and maintain a firm grasp on handrails at all times].

You will begin your test with the in-vehicle / engine start procedures.

Do you have any questions?



Draft Check List

Class A Checklist Tractor Semi-Trailer or Truck & Trailer or Bus & Trailer In-Vehicle/Engine Start ☐ lighting indicators emergency equipment windshield & mirrors & monitoring devices ☐ wipers & washers ☐ heater & defroster □ hom(s) parking & trailer brake check ☐ service brake check air or *hydraulic brake check Lights Operations Check ☐ front □ side □ rear Front of Vehicle/Engine Area □ lenses ☐ fluid levels ☐ fluid & air leaks steering systems Steering Axle ☐ tires ☐ rims □ lua nuts springs & air bags & shocks □ brake lines or hoses & leaks □ brake contaminates Side of Vehicle ☐ lenses & reflectors mirror(s) & monitoring devices □ battery & electrical systems ☐ fuel tank(s) ☐ frame(s) Combination Vehicles Only ☐ air & electric lines & connectors fifth wheel skid plate or pintle hook □ kingpin & apron & gap or drawbar ring & tongue or coupler & tongue ☐ locking & safety devices Trailer Only ☐ landing gear & clearance Passenger Only School Bus Only passenger entry & lift ☐ student lights (front & back) ☐ reflective tape emergency exits stop arm(s) & safety arm Rear of Trailer passenger seating ☐ first aid & body fluid kits ☐ lenses & reflectors passenger mirrors & * Automatic failure if not performed correctly monitoring devices

You may use this checklist for your CDL Vehicle Inspection test, but NO additional markings or writing may be placed on this list. You MUST name, point to or touch each safety critical item and explain

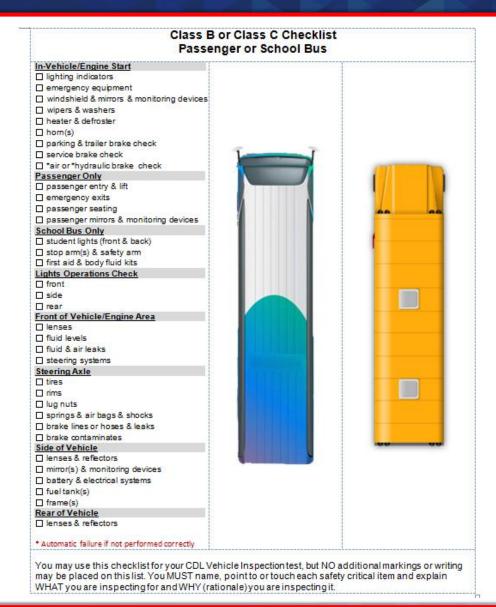
WHAT you are inspecting for and WHY (rationale) you are inspecting it.

In-Vehicle/Engine Start		
☐ lighting indicators		
mergency equipment		
☐ windshield & mirrors & monitoring devices		
☐ wipers & washers		
☐ heater & defroster		
hom(s)		
parking & trailer brake check		6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
service brake check		
air or *hydraulic brake check		
Lights Operations Check		
☐ front		
side		
□ rear	14	
Front of Vehicle/Engine Area		Hallestotelle
☐ lenses		
☐ fluid levels		
☐ fluid & air leaks		
steering systems		Q-
Steering Axle		
□ tires		
□ rims		0 - 0
☐ lug nuts		
springs & air bags & shocks		
☐ brake lines or hoses & leaks		1
☐ brake contaminates		
Side of Vehicle		A STATE OF THE PARTY OF THE PAR
☐ lenses & reflectors		1
mirror(s) & monitoring devices		
☐ battery & electrical systems		
☐ fueltank(s)		
☐ frame(s)		
Rear of Vehicle		
☐ lenses & reflectors		
* Automatic failure if not performed correctly		

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Draft Check List



Page 11-13



Driver Manual Section 11

11.1.3 – Lights Operations Check (All Vehicles)

Lights Operations Check

Description: Headlights, high-beam lights, turn signals, 4-way flashers, clearance lights, tail lights, and break lights on the front, side and rear of a commercial motor vehicle and trailer (combination only).

Why Inspect: Lights allow the driver of a commercial vehicle to see and be seen and to communicate with other traffic.

Inspection:

- Front of Vehicle Check that all lights on the front of the vehicle operate and illuminate when corresponding lights are turned on, including the left and right turn signals, 4-way flashers, low beam headlights, high beams headlights, and clearance or marker lights.
- Side of Vehicle and Trailer Check that all lights on the side of the vehicle and trailer (combination only) operate and illuminate when corresponding lights are turned on, including the left and right turn signals, 4-way flashers and clearance or marker lights.
- Rear of Vehicle or Trailer Check that all lights on the rear of the vehicle or trailer (combination only) operate and illuminate when corresponding lights are turned on, including the left and right turn signals, 4-way flashers, tail lights, brake lights and clearance or marker lights. Check that brake lights come "on" when brakes are applied and turn "off" when brakes are released.

Note: on a combination vehicle, you need only check the rear of the trailer.

11.2 – External Inspection (All Vehicles)

11.2.1 – Front of Vehicle / Engine Area (Engine Off)

Lenses

Description: Light lenses or covers on the front of the vehicle/tractor.

Why Inspect: Light lenses or covers must be free of damage for lights to work properly.

Inspection:

 Check that light lenses or covers are clean, not broken and not missing.

Critical Fluid Levels

Description: Engine oil for engine lubrication; coolant for cooling the engine; steering fluid for assisting wheel action to the front wheels; and brake fluid for vehicle braking (hydraulic brakes only).

Why Inspect: Proper fluid levels ensure that engine, cooling, steering and brake systems (hydraulic brakes only) operate correctly and extends the life of the engine and these systems.

Inspection: With the engine off, indicate that all fluids would be checked for proper levels including the:

- engine oil;
- cooling system/coolant;
- power steering fluid;
- and brake fluid (hydraulic brakes only).

If applicable indicate where to check the fluid level and where the dipstick(s) or sight glass(es) are located. Identify that you would check that the level is between the add and the full marks,



What's the Same?

- Much of the Vehicle Inspection is the same.
- Replaces the current Vehicle Inspection.
- Much of the scoring criteria with some enhancements to the Examiner's Manual.
- Score form layout.
- Marking the score form.
- Automatic failures.



What's Different?

Vehicle Inspection:

- Fewer items (focus on safety critical items).
- Driver VI Checklist.
- Driver's Manual now includes "Description" and "Why Inspect" (rationale). Driver's and Examiner's Manuals will be in sync on criteria.
- Drivers will be required to describe "What" they are inspecting and may include "Why" they are inspecting it.
- Four part Air Brakes check / revised hydraulic brake check.
- Revised coupling system criteria.
- Other revised scoring criteria.
- Calculate number of items missed.



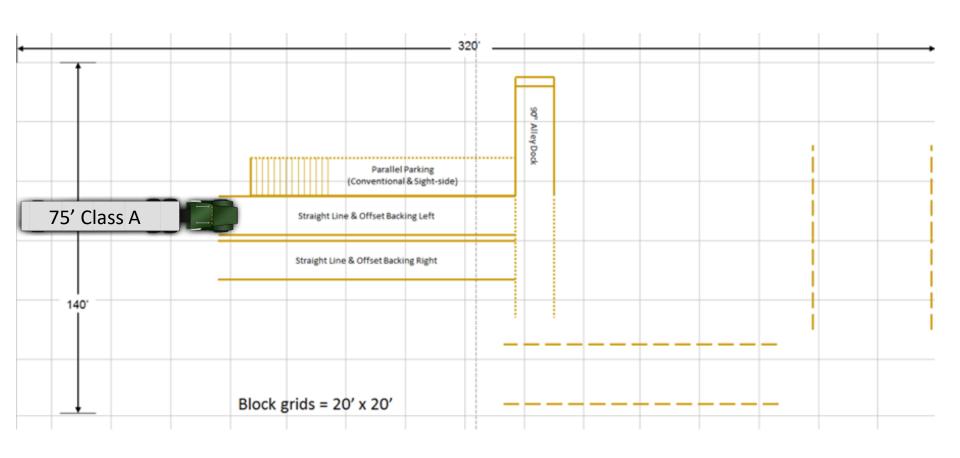
2005 Basic Control Skills Test

Overview of the 2019 Revised Basic Control Skills Test



Basic Control Skills

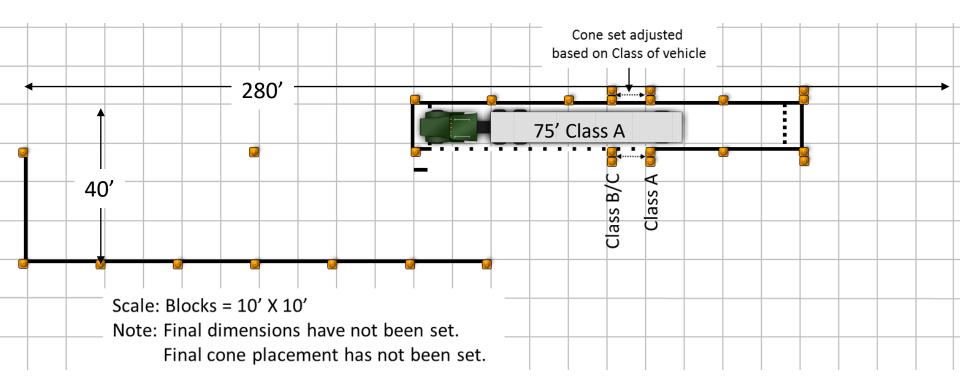
Current BCS Carousel





Proposed Basic Control Skills

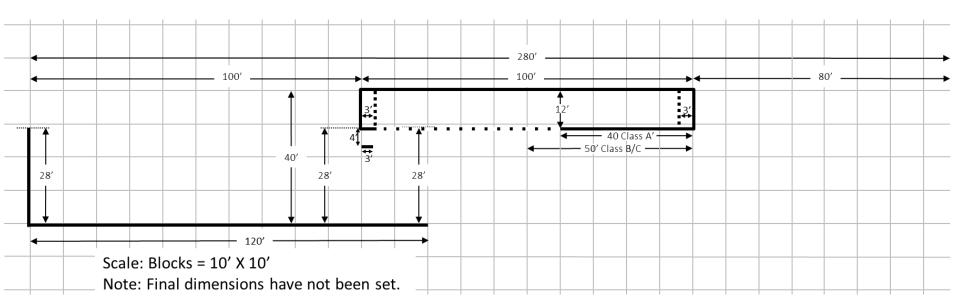
Proposed BCS – Forward Stop; Straight Line Backing; Forward Offset Tracking; Reverse Offset Tracking





Proposed Basic Control Skills

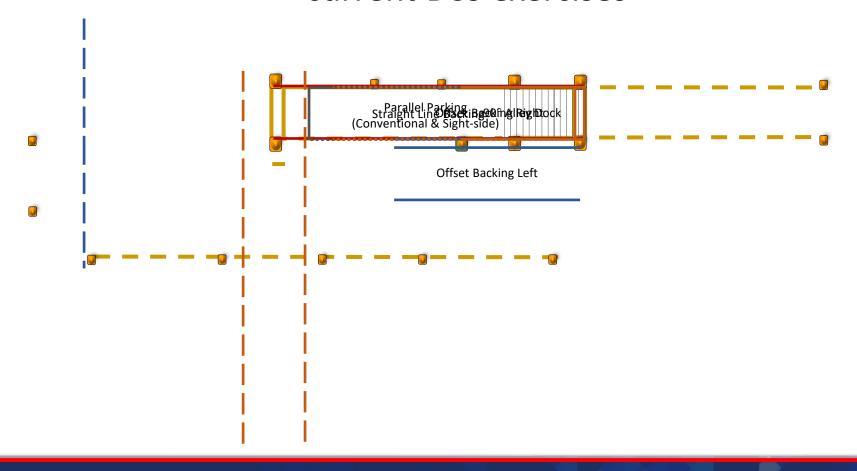
Exercise Dimensions



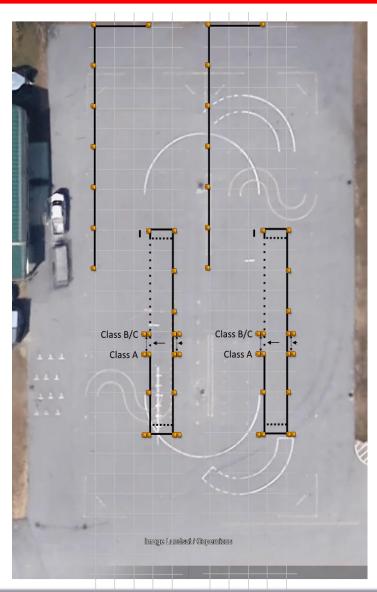


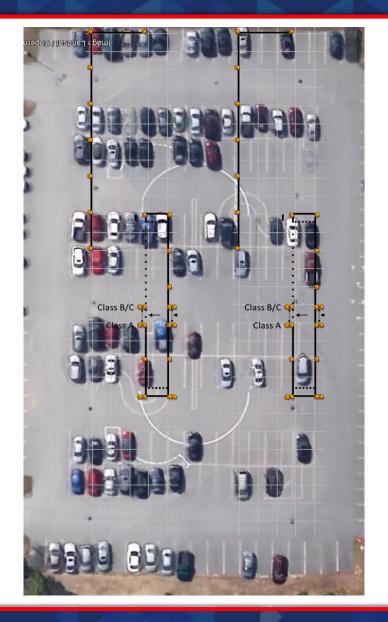
Comparison

Forward Stop Box, Straight Line Backing, Forward
Tracking and Off-Set Reverse Tracking – Comparison of
current BCS exercises







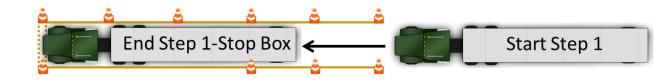


Safe Drivers · Safe Vehicles · Secure Identities · Saving Lives

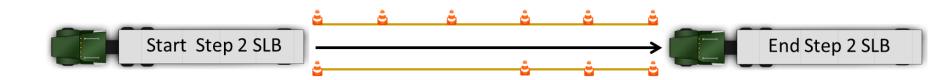


Proposed Basic Control Skills

Step 1 – Forward Stop



Step 2 – Straight Line Backing

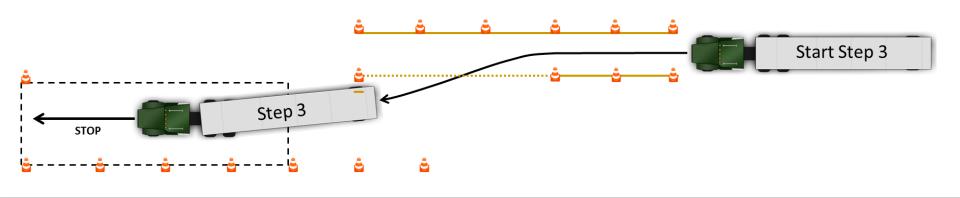


Page 12-2 thru 12-3

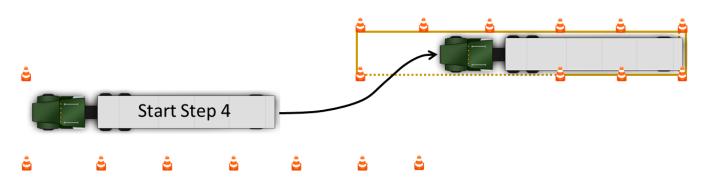


Proposed Basic Control Skills

Step 3 – Forward Offset Tracking



Step 4 – Reverse Offset Backing



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BCS Video

View Video of Revised BCS



BCS Score Instructions

CDL BASIC CONTROL SKILLS TEST GENERAL INSTRUCTIONS

For the basic control skills test, you will demonstrate your ability to maneuver a commercial vehicle around other objects as described in Section 12 of the CDL Driver's Manual. You will receive points for changing direction to gain a better position, crossing over or touching boundary lines or cones and for your final position. You may be permitted to exit the vehicle to check around the vehicle during backing exercises. When exiting or entering the vehicle, you must set your parking brake, place the vehicle in neutral; and safely exit/enter facing: [TRUCK — the vehicle while maintaining three points of contact],

[BUS — forward and maintain a firm grasp on handrails].

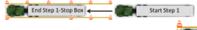
at all times. If you open the door, move from a seated position where in physical control of the vehicle, or [ona bus, walk to the back to get a better view], you will be scored for a look.

You must complete the exercise as directed. If you see me raise my hand (like this) [and I blow the whistle], stop and return your vehicle within the exercise boundary lines. I will give you specific instructions for each prior to performing them. Do you have any questions?

Step 1 - Forward Stop

You will demonstrate your ability to stop at a designated point.

Drive forward through the alley and stop with the vehicle's front



bumper in the box without going past the front of the alley. You may stop only once. When you have stopped, set your parking brake, shift to neutral and sound the horn. Do you have any questions?

Step 2 - Straight-line Backing

You will demonstrate your ability to back a vehicle in a straight line. Pull forward and stop when I raise my hand (like this then back straight through the alley until the front of your vehicle has cleared the last set of cones at the far end of the alley. You are allowed one free pull-up and may exit the vehicle only once to check around the vehicle. Set your parking brake, shift to neutral and sound your horn when you have completed the exercise. Do you have any questions?



Step 3 - Forward Offset Tracking

You will demonstrate your ability to maneuver a vehicle around other objects while moving forward. Drive forward and steer to the left through the opening. Then steer to the right around the cone at the front of the alley, tracking the right rear tires between the cone and the line without hitting any cones. You may safely exit the vehicle only once to check around the vehicle. Stop your vehicle when you are parallel to the outer boundary, prior to or at the set of cones at the far end of the exercise. When you have stopped, set your parking brake, shift to neutral and sound the horn. Do you have any questions?



Step 4 - Reverse Offset Backing

You will demonstrate your ability to offset back and park a vehicle at the end of an alley. Starting parallel with the outer boundary, offset back into the alley, bringing the rear of your vehicle within three feet of the rear of the alley. Stop with the rear bumper in the box. Your vehicle must be straight within the alley when completed. You may not go beyond the outer boundary line (point to boundary line). You are allowed two free pull-ups and may exit the vehicle a maximum of two times to check around the vehicle during this exercise. Set your parking brake, shift to neutral and sound your horn when you have completed the exercise. Do you have any questions?





BCS Score Sheet

BASIC CONTROL SKILLS TEST Step 1 - Forward Stop Total Forward Stop Box 5 Step 2 – Straight-Line Backing Total Pull-ups 3 5 6 14 Encroachments 4 10 12 0 Looks Final Position 13 Step 3 - Forward Offset Tracking Total Back-Up 10 Encroachments 4 6 12 14 10 Looks 0 Clearance Step 4 - Reverse Offset Backing Total Pull-ups 0 2 3 4 Encroachments 2 4 8 10 12 14 Looks 0 0 Final Position 13 TOTAL BCS SCORE ☐ Automatic Failure ☐ Unsafe Act (total errors all exercises) ☐ Failure to Follow Instructions Passing score: points or less all vehicles.



BCS Scoring Standards

<u>Clearance</u> – the distance between the cone and the line when performing Part 3 – Forward Offset Tracking

<u>Back-ups</u> – backing up on a forward moving exercise to clear an encroachment or to get a better position is scored as a "back-up".

<u>Pull-ups</u> – pulling forward on a backing exercise to clear an encroachment or to get a better position is scored as a "pull-up". Stopping without changing direction does not count as a pull-up.

<u>Encroachments</u> – crossing over or touching exercise boundary lines or cones with any portion of the vehicle is scored as an encroachment.



BCS Scoring Standards

<u>Looks</u> – exiting the vehicle to look around during a backing exercise. You may be permitted to safely stop and exit the vehicle to check the external position of the vehicle (look).

You may be allowed a maximum of one (1) look on Part 2 – Straight-line Backing and two (2) looks on Part 4 – Reverse Offset Backing, to check the position of your vehicle.



BCS Scoring Standards

<u>Final Position</u> – the final position of the vehicle for backing exercises. You will be scored for final vehicle position on Part 2 – Straight-line Backing and on Part 4 – Reverse Offset Backing.

<u>Failure to Follow Instructions or Unsafe Act</u> – Failure to follow examiner instructions for completing the exercise as directed may result in an automatic failure and the test may be terminated by the examiner.

Committing an "unsafe act" (e.g., not entering or exiting the vehicle safety or forgetting to set the parking brake), may result in an automatic failure for an unsafe act and the test may be terminated by the examiner.

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What's the Same?

- Much of the Basic Control Skills is the same by design.
- An alternative or addition to the current BCS.
- Pullups, encroachments, looks and final position are all scored the same.
- Stopping the driver on an encroachment to return within boundary lines is the same.
- Incorporates many of the same maneuvers into a circuit concept.
 - Straight-line backing
 - Offset backing
 - Parallel parking
 - Reverse docking



What's the Same?

- Score form layout.
- Marking the score form.
- Automatic failures.



What's Different?

Basic Control Skills:

- Forward Stop Box
- Forward Offset Tracking
- Scoring "Clearance" on Forward Offset Tracking
- Scoring "Back-ups" on forward moving exercises
- Reverse Offset Tracking vs. Parallel and Alley Dock
- Much smaller footprint



VI and BCS Score Forms

	PECTION TEST	BASI	c co	NTRO	DL SI	(ILLS	TES	ST.		
In-Vehicle/Engine Start	Steering Axle	Step 1 – Forward S	top							Total
☐ lighting indicators	☐ tires (I-C-D)	•	0	5						
(L-R-4-H-ABS-DEF)	□ rims	Forward Stop Box	U	5						
□ emergency equipment	□ lug nuts									
(F-E-T) ☐ windshield & mirrors &	☐ springs & air bags & shocks	Step 2 – Straight-L			_					Total
monitoring devices	☐ brake lines or hoses & leaks	Pull-ups	0	1	2	3	4	5	6	
☐ wipers & washers	☐ brake contaminates	Encroachments Looks	2	4	6	8	10	12	14	
□ heater & defroster	Side of Vehicle	Final Position	0	13						
□ horn(s)	☐ lenses & reflectors	Tillai Tosidon	- 0	10						
☐ parking & trailer brake check	☐ mirror(s) or monitoring devices	Step 3 – Forward C	Offset	Trac	king					Total
□ service brake check	☐ battery & electrical systems	Back-Up	5	10	15	20				
□ *air (1-2-3-4) or *hydraulic	☐ fuel tank(s)	Encroachments	2	4	6	8	10	12	14	
brake check	☐ frame(s)	Looks	0	_						
	Rear of Vehicle or Trailer	Clearance	0	5						
All Passenger Only	☐ lenses & reflectors	Stop 4 Boyeros C	er+	Dool	rin a					Total
☐ passenger entry & lift	Combination Vehicles Only	Step 4 – Reverse C	niset 0	0	ing 1	2	3	4	5	TOTAL
□ emergency exits	□ air&electric lines&connectors	Encroachments	2	4	6	8	10	12	14	
□ passenger seating	☐ fifth wheel skid plate or pintle	Looks	0	0	U	O	10	12	14	
☐ passenger mirrors &	hook or tow hitch	Final Position	0	13						
monitoring devices	☐ kingpin & apron & gap or									
School Bus Only	drawbar ring & tongue or	☐ Automatic Failure TOTAL BCS SCORE								
☐ student lights (front & back)	coupler & tongue	☐ Unsafe Act		(tota	al erro	ors a	ll exe	rcise	s)	
□ stop arm(s) & safety arm	□ locking & safety devices	☐ Failure to Follow In	struct	tions					· _ _	
☐ first aid & body fluid kits	Trailer Only									
Lights Operations Check	□ landing gear & clearance	Passing score: p	oints	or le	ess a	ll vel	nicles	S.		
☐ front (L-R-4-HL-HB-C)	☐ reflective tape									
□ side (L-R-4-C)		NOTES:								
□ rear (L-R-4-TL-BL-C)										
	TOTAL VI SCORE									
Front of Vehicle/Engine Area	(total missed)									
□ lenses										
☐ fluid levels (O-C-PS-HF)	☐ Automatic Failure									
☐ fluid & air leaks	☐ Unsafe Act									
☐ steering systems	☐ Failure to Follow Instructions									
* Automatic failure if not	REFER TO APPENDIX A FOR									
performed correctly	PASSING SCORES									



Pilot Test - Florida

The Test Maintenance Subcommittee conducted the first research and development pilot of the CDL Test Modernization at Florida State College Jacksonville - Cecil Center in Jacksonville Florida the week of February 18th.

- Thirty six drivers (36) drivers with varying levels of driving experience participated in the pilot with each driver taking two or more test segments.
- 97 test segments were conducted in a 2 day period by 5 teams of experienced CDL Skills Test Examiners.
- The R & D Pilot team consisted of volunteers from Florida (Highway Safety & Motor Vehicles, Florida State College Jacksonville, North Florida Technical College & Pike Electric), Iowa, Oklahoma, New Hampshire, Vermont, Missouri, Test Maintenance Subcommittee (Maine, Missouri & Virginia), Highway Safety Services, FMCSA and AAMVA.



Pilot Test - Florida

Class A		Class B	
New Vehicle Insp	27	New Vehicle Insp	13
Curr Vehicle Insp	3	Curr Vehicle Insp	5
New BCS	14	New BCS	11
Curr BCS	12	Curr BCS	12

Class A New Vehicle Insp: 12 used checklist

Class B New Vehicle Insp: 7 used checklist

Class A Vehicles: Tractor Trailer, Pintle Hook

combination

Class B Vehicles: Straight truck, School Bus,

Coach/Transit









Safe Drivers · Safe Vehicles · Secure Identities · Saving Lives



Pilot Participants - Florida

Jacksonville Transportation Authority Student Transportation of America First Group America Florida State College at Jacksonville **City of St Augustine North Florida Sales National Training, Inc. Marion Technical College North Florida Technical College Cypress Truck Lines Pike Electric** Florida Highway Safety & Motor Vehicles



Pilot Test – New Hampshire

The Test Maintenance Subcommittee conducted the second research and development pilot of the CDL Test Modernization at New Hampshire Division of Motor Vehicles in Concord, New Hampshire the week of April 29th.

 Sixty three drivers (63) drivers with varying levels of driving experience participated in the pilot with each driver taking two or more test segments.





- 126 test segments were conducted in a 3-day period by 5 teams of experienced CDL Skills Test Examiners.
- The R & D Pilot team consisted of volunteers from New Hampshire (Department of Public Safety, Division of Motor Vehicles), Iowa, Oklahoma, Vermont, Missouri, Utah, Test Maintenance Subcommittee (Maine, Missouri, Idaho & Virginia), Highway Safety Services, FMCSA and AAMVA.



Pilot Test – New Hampshire

Class A		Class B	
New Vehicle Insp	39	New Vehicle Insp	24
New BCS	39	New BCS	24

The Modernized Vehicle Inspection and Basic Control Skills test segments were given to all drivers.

The Checklist was used during the Vehicle Inspection by all drivers.

The age range drivers/participants was between 19 and 63 years of age with the average age of drivers being 42 years.

Class A Vehicles: Tractor Semi-Trailer, Truck Trailer combination, Pintle Hook

Class B Vehicles: Straight truck, School Bus, Coach/Transit, Fire Apparatus







Pilot Participants – New Hampshire

NE Tractor Trailer School (NETTS)

United States Air Force

Palmer Gas

State of New Hampshire,

Department of Transportation

(DOT)

City of Concord, School district

Community Transportation

State of New Hampshire, Liquor

Enforcement

Commercial Driving School of

New Hampshire (CDS)

Ross Express

Johnny Prescott Heating and Oil

XPO Logistics

Walmart

FedEx

Amoskeag Beverages

YRC Freight

State of New Hampshire, Fire Academy

Phoenix Precast Products

Concord Coach Lines

Ford Mountain Trucking

New Hampshire Towing Association

Continental Paving

Associated Grocers of New England

Student Transportation of America,

Goffstown NH

Student Transportation of America,

Epsom NH

Student Transportation of America,

Weare NH



Next Steps

- AAMVA has procured the services of the Traffic Injury Research Foundation (TIRF) to conduct a detailed analysis of the data collected during the pilot and field test phases.
- Pilot Test result data will be analyzed to determine test validity, test reliability and passing scores.
- The data analysis will begin in earnest the week of October 21st. The anticipated delivery date of the Pilot Test Report from TIRF is on/about January 1, 2020.



Field Tests

- Field Tests will be conducted in three States
- Each State will be representative of State and Third Party Testers.
 - (1) All State CDL Skills Test Examiners,
 - (1) Hybrid mix of both State and Third Party CDL
 Skills Test Examiners; and
 - (1) All Third Party CDL Skills Test Examiners
- Each State will test in three (3) test sites within the State



Field Tests (cont'd)

- The Field Test will run for 60 90 days in each State. Each State will conduct at least 300 CDL Skills Tests (combined number of all 3 sites) during that time:
 - We anticipate bringing up one Field Test State in early February, followed by one in March and the last in April.
 - States will be notified of the process to be followed for submissions Field Test participation.
- Upon completion of the Field Test, TIRF will conduct the data analysis and produce the Field Test Report and the Final Report to consolidate the Pilot and Field Tests and recommendations for moving forward



Contact

For More Information Contact Test Maintenance Subcommittee

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