



United States Department of Transportation
National Highway Traffic Safety Administration

DRIVERS INTERVIEW (CAPI)

Form Approved O.M.B. No. 2127-0626
Expiration Date: XX/XX/XXXX

Tire Pressure Monitoring System
Outage Rates and Repair Costs

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Formatting conventions:

Questionnaire item

///PROGRAMMING LOGIC///

Explanatory notes

Programmer Notes:

All variables are assumed to be numeric

For SELECT ALL THAT APPLY items, create a series of variables with _1, _2, etc. appended to original variable name to indicate selection status of each response option

Create variable "CURRYEAR" to equal the 4-digit year when survey is administered

Create variable "VAGE" to represent age of vehicle where VAGE=CURRYEAR - MODELYEAR; IF VAGE <0, SET VAGE=0

Create GPS variable to tag location of interview

Disposition Definitions:

23 = Refusal at MY_RECALL2

24 = Refusal at Primary Driver/Upkeep

25 = Driver already participated in this survey

26 = Refusal at INTRO1A

27 = Screen Out: Rental/Zipcar

28 = Refusal at Rental

29 = Screen Out: Model year/not FMVSS 138 compliant

30 = Refused dash inspection

31 = Screen Out: Primary driver/upkeep not with respondent

32 = Screen Out: Could not speak to primary driver/upkeep

33 = Refusal after transfer

34 = Screen Out: Unable to locate primary driver/upkeep after transfer

35 = Refused or unable to collect VIN

36 = Screen Out: Phase-in vehicle, no indication of TPMS, not reported as disabled

37 = Screen Out: Phase-in vehicle, no indication of TPMS, not reported as equipped

38 = Mid-terminate, eligible vehicle not selected

61 = Complete: Phase-in vehicle, TPMS reported to be disabled

- 63 = Complete: Post-phase-in vehicle, TPMS reported to be disabled
- 64 = Complete: Post-phase-in vehicle, no lights, not reported as disabled
- 66 = Complete: TPMS system malfunction
- 67 = Complete: TPMS low pressure
- 68 = Complete: TPMS functioning properly
- 71 = At Quota: Phase-in vehicle, TPMS reported to be disabled
- 73 = At Quota: Post-phase-in vehicle, TPMS reported to be disabled
- 74 = At Quota: Post-phase-in vehicle, no lights, not reported as disabled
- 76 = At Quota: TPMS system malfunction
- 77 = At Quota: TPMS low pressure
- 78 = At Quota: TPMS functioning properly

MODULE INTRO

///**Scan or enter MASTERID generated by INSPECTOR to sync this interview with Vehicle Observation data**///
///

PSU ID [1-24]

CREW ID [1-4]

INTRO1A Hello. I'm _____ and we are doing a survey related to vehicle safety for the US Department of Transportation. Would you spend a few minutes answering some questions about your dashboard displays and letting us check the make, model, and model year? It will only take a few minutes. To thank you for participating, we are offering to check whether your vehicle has any open manufacturer recalls.
[INTERVIEWER: CONTINUING WITH INTERVIEW?]

1. YES
2. NO
3. DRIVER ALREADY PARTICIPATED IN THIS SURVEY

///**IF INTRO1A=2 SKIP TO INTRO2: THEN SET DISPO=26, Refusal at INTRO1A**///
///

///**IF INTRO1A=3 SKIP TO END: SET DISPO=25, Driver already participated in this survey**///
///

///**IF INTRO1A=01**///
///

MY_RECALL1 First, what is the model year of this vehicle?
[IF NECESSARY: The year the vehicle was made.]
[IF NECESSARY: Your best guess about the year.]
DISPLAY BUTTONS FOR YEARS

1	BEFORE 2006
06 - 18	/SEPARATE BUTTONS FOR EACH YEAR /2006 - 2018/
9998	DON'T KNOW

///**ASK IF MY_RECALL1=9998, Don't know exact model year**///
///

MY_RECALL2 Is the model year of this vehicle 2006 or later?

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

///**IF MY_RECALL2=99, SKIP TO INTRO2; THEN SET DISPO=23, Refusal at MY_RECALL2**///
///

///**IF ((MY_RECALL1=01 OR 2017 OR 2018) OR (MY_RECALL2=02)), SET DISPO=29, Screen Out: Model year/not FMVSS 138 compliant**///
///

SCREEN9 It appears your vehicle is not eligible for our survey. I won't have any further questions for you today. Thanks for your time.
IF ASKED: We're only surveying model year 2006-2016 vehicles that meet Federal Motor Vehicle Safety Standard 138.

INTERVIEWER: Communicate to INSPECTOR that case screened out///
///

///ASK IF MY_RECALL1=2006-9998 OR MY_RECALL2=01,98///

RENTAL Is this vehicle a short-term rental or part of a car sharing service, such as a Zipcar?
[INTERVIEWER: SHORT-TERM=1 MONTH OR LESS; CAR-SHARE=SHORT_TERM HOURLY RENTAL]
1. YES
2. NO
99. REFUSED

///IF RENTAL=99, SKIP TO INTRO2; THEN SET DISPO=28, Refusal at Rental/Zip car///

///ASK IF RENTAL=1, Vehicle is rental/Zipcar, SET DISPO==27, Screened out: Rental/Zip car///

SCREEN1 I won't have any further questions for you today, since we're only surveying vehicles that are owned or leased. Thanks for your time.
1. CONTINUE

///ASK IF MY_RECALL1>01 OR MY_RECALL2=01///

PRIM1A Are you the main driver of this vehicle?
[IF NECESSARY: Are you the person who drives this vehicle most frequently?]
1. YES
2. NO
99. REFUSED

///ASK IF MY_RECALL1>01 OR MY_RECALL2=01///

PRIM1B Are you mainly responsible for having this vehicle repaired or serviced, other than just refueling?
1. YES
2. NO
99. REFUSED

///ASK IF PRIM1A=2 AND PRIM1B=2, Respondent is not primary driver and not primary for upkeep///

PRIM1C Is the main driver of this vehicle, or the person responsible for its upkeep, here with you?
1. YES
2. NO
99. REFUSED

///ASK IF PRIM1C=1///

PRIM1D May I speak with that person?
[IF NECESSARY: I need to talk in-person.]
1. YES
2. NO
99. REFUSED

///IF PRIM1A=99 OR PRIM1B=99 OR PRIM1C=99 OR PRIM1D=99, SKIP TO INTRO2; THEN SET DISPO=24, Refused Primary Driver/Upkeep///

///ASK IF PRIM1D=1///

INTRO1B Hello. I'm _____ and we are doing a survey related to vehicle safety for the US Department of Transportation. Would you spend a few minutes answering some questions about your dashboard displays and letting us check the make, model, and model year? It will only take a few minutes. To thank you for participating, we are offering to check whether your vehicle has any open manufacturer recalls.
[INTERVIEWER: CONTINUING WITH INTERVIEW?]
1. YES
2. NO

///ASK IF INTRO1B=1///

PRIM2A Are you the main driver of this vehicle?
[IF NECESSARY: Are you the person who drives this vehicle most frequently?]
1. YES
2. NO
99. REFUSED

///ASK IF INTRO1B=1///

PRIM2B Are you mainly responsible for having this vehicle repaired or serviced, other than just refueling?
1. YES
2. NO
99. REFUSED

///IF INTRO1B=2 OR PRIM2A=99 OR PRIM2B=99, SKIP TO INTRO2: THEN SET DISPO=33, Refusal after transfer///

SET VARIABLE PRIM=01 IF PRIM1A=01 OR PRIM1B=01 OR PRIM2A=01 OR PRIM2B=01, ELSE SET PRIM=02

///IF PRIM=01, Located PRIMARY respondent ///

MY_VIN1 Ok, to start my partner will get some basic information from the door jamb. If your vehicle is eligible for our survey we will then check your vehicle's dash to see what lights are coming on.

[INTERVIEWER: INSTRUCT INSPECTOR TO PROCEED TO VIN SCAN. EXPLAIN IF NECESSARY: we're checking the make, model, and year information. No private information will be stored in my system.]

[Training note: *Pause to provide educational materials and allow respondent to begin refueling vehicle as soon as ignition test is complete.*]

1. Continue
99. Refused

*****INSPECTOR PROCEEDS TO CAPTURE VIN*****

///IF PRIM=01///

ELIG INTERVIEWER: ENTER ELIGIBILITY STATUS FROM INSPECTOR SCAN

01 ELIGIBLE
02 INELIGIBLE

///IF ELIG=02///

SCREEN2 It appears your vehicle is ineligible. I won't have any further questions for you today.
Thanks for your time.

IF ASKED: We're only surveying model year 2006-2016 vehicles that meet Federal Motor Vehicle Safety Standard 138.

1. CONTINUE

///IF ELIG=02//

SKIP TO END: SET DISPO=29, SCREENED OUT: Model year/NOT FMVSS 138 COMPLIANT

///ASK IF ELIG=01, Eligible Vehicle///

DASHINT1 Your vehicle is eligible for our survey. Now we'll quickly check your vehicle's dash to see what lights are coming on. To do that we need the car key. Afterward, you can fuel your car while we finish the survey.
[Training note: Pause to provide educational materials and allow respondent to begin refueling vehicle as soon as ignition test is complete.]

01 CONTINUE
99 REFUSED

///IF DASHINT1=99 SKIP TO INTRO2: THEN SET DISPO=30, Refused dash inspection///

///IF DASHINT1=01///

DASHTRANS. INTERVIEWER PLEASE WAIT FOR WIRELESS TRANSFER OF DASH INSPECTION; PRESS "MANUAL ENTRY" IF WIRELESS TRANSFER DOES NOT WORK

///ASK IF DASHINT1=01///

MYINDMAL_SCAN PROGRAMMER: DISPLAY CODE AND RESULT TRANSFERRED FROM INSPECTOR TABLET [CONTAINS MODEL YEAR, INDIRECT TPMS CODE, AND DASH INSPECTION CODE]

MY_SCAN //STORE 2-digit MODEL YEAR//

IND_SCAN //STORE 2-digit IND_TPMS VALUE WHERE 01=INDIRECT AND 02=DIRECT//

MALF_CODE_SCAN //STORE 2-digit MALF_CODE VALUE WHERE

1. INDICATOR(S) @ ON, SYSTEM MALF @ START
2. INDICATOR(S) @ ON, LOW PRESSURE ONLY @ START
3. NO INDICATOR(S) @ ON, NO INDICATOR(S) @ START
4. INDICATOR(S) @ ON, NO INDICATOR(S) @ START
5. STATUS UNCLEAR

PROGRAMMER: SET SCANSTAT=1 IF SUCCESSFUL SCAN, ELSE SET SCANSTAT=2

//IF SCANSTAT=02, FAILED TO TRANSFER CODE FROM INSPECTOR TABLET//

MYINDMAL_MAN INTERVIEWER: ENTER MODEL YEAR, INDIRECT TPMS CODE, AND DASH INSPECTION CODE REPORTED BY INSPECTOR

MY_MAN //ENTER 2-digit MODEL YEAR//

IND_MAN //ENTER 2-digit IND_TPMS VALUE WHERE 01=INDIRECT AND 02=DIRECT

MALFCODE_MAN //ENTER 2-digit MALFCODE VALUE WHERE

1. INDICATOR(S) @ ON, SYSTEM MALF @ START
2. INDICATOR(S) @ ON, LOW PRESSURE ONLY @ START
3. NO INDICATOR(S) @ ON, NO INDICATOR(S) @ START
4. INDICATOR(S) @ ON, NO INDICATOR(S) @ START
5. STATUS UNCLEAR

//IF MY_MAN, IND_MAN, MALFCODE_MAN<>MISSING//

MYINDMAL_CFRM PROGRAMMER: DISPLAY MY_MAN, IND_MAN, MALFCODE_MAN ENTERED BY INTERVIEWER

INTERVIEWER: REPORT CODES TO INSPECTOR FOR MATCH CONFIRMATION

Do your codes match the vehicle inspector code?

- 1 YES
- 2 NO [GO BACK TO MYINDMAL_MAN]

///IF MODELYEAR NOT SET SKIP TO INTRO2: THEN SET DISPO=35, REFUSED OR UNABLE TO COLLECT VIN///

///MODELYEAR TARGET TO BE MONITORED AND ADJUSTED BASED ON FIELD EXPERIENCE///

MINIMA SAMPLE SIZES [REQUIRED SAMPLE FLOOR]

Model Year	Car	LTV
2006-2008	300	300
2009-2011	300	300
2012-2014	300	300
2015-2016	300	300

///PROGRAMMER CREATE VARIABLE MALFCODE///

1. INDICATOR(S) @ ON, SYSTEM MALF @ START
 - a. IF MALFCODE_SCAN=01 OR MALFCODE_MAN=01, SET MALFCODE=01
2. INDICATOR(S) @ ON, LOW PRESSURE ONLY @ START
 - a. IF MALFCODE_SCAN=02 OR MALFCODE_MAN=02, SET MALFCODE=02
3. NO INDICATOR(S) @ ON, NO INDICATOR(S) @ START
 - a. IF MALFCODE_SCAN=03 OR MALFCODE_MAN=03, SET MALFCODE=03
4. INDICATOR(S) @ ON, NO INDICATOR(S) @ START
 - a. IF MALFCODE_SCAN=04 OR MALFCODE_MAN=04, SET MALFCODE=04
5. STATUS UNCLEAR
 - a. IF MALFCODE_SCAN=05 OR MALFCODE_MAN=05///

At this point, the primary driver or upkeeper has been located (if not original respondent) and agreed to participate (confirmed within-range model year and agreed to dash inspection); all others have screened out.

///ASK IF AUTOELIG=01 OR ELIG_MAN=01, Eligible Vehicle///

TPMSEQ To your knowledge, is this vehicle equipped with a tire pressure monitoring system, known as TPMS,—whether or not it is currently working?

- 1. YES
- 2. NO
- 98. DON'T KNOW
- 99. REFUSED

///ASK IF TPMSEQ=1, Respondent reports vehicle is equipped with TPMS///






TPMSTYPE To your knowledge, is the TPMS system in this vehicle “direct”, using sensors in the wheels, or “indirect”, using sensors in the anti-lock braking system?

- 1. DIRECT
- 2. INDIRECT
- 98. DON'T KNOW
- 99. REFUSED

///ASK IF DASHINT=01, Continuing with interview, Located eligible respondent ///

TPMSDASH Looking at these pictures - and allowing for minor variations in style - please point to those items that you have seen on your vehicle’s dash at any time in the past, either when starting the engine or later when the vehicle was running.

[INTERVIEWER: SHOW RESPONDENT IMAGES OF TPMS SYMBOLS]

1. 	2. 
3. 	4. 
5. 	

///ASK IF DASHINT=01, Located eligible respondent ///

TPMSDASHA What does this light/these lights mean to you? [INTERVIEWER: BACKCODE RESPONSE; IF NECESSARY, ASK WHAT LIGHT(S) MEANS WITH REGARD TO SPECIFIC VEHICLE SYSTEMS]

- 1. RELATED TO TIRE PRESSURE/TPMS
- 2. OTHER
- 98. DON'T KNOW
- 99. REFUSED

///ASK IF DASHINT=01, Located eligible respondent///

NEXTVEH How important is it to you that your next personal vehicle be equipped with a TPMS system? Would you...

1. Strongly prefer the vehicle be equipped with TPMS?
2. Somewhat prefer the vehicle be equipped with TPMS?
3. Have no preference whether the vehicle is equipped with TPMS?
4. Somewhat prefer the vehicle NOT be equipped with TPMS?
5. Strongly prefer the vehicle NOT be equipped with TPMS?
98. DON'T KNOW
99. REFUSED

///ASK IF TPMSEQ=2,98,99 AND (MALFCODE in 3,5) AND (2006≤MODELYEAR≤2007), Phase-in vehicle, no indication of TPMS, not reported as equipped///

SCREEN8 I won't have any further questions for you today. Thanks for your time.

1. CONTINUE

///IF SCREEN8=1 SET DISPO=37, Screen Out: Phase-in vehicle, no indication of TPMS, not reported as equipped

///ASK IF 2006≤MODELYEAR≤2007 AND TPMSEQ=1 AND (MALFCODE IN 3,5), Vehicle manufactured during phase-in is said to be equipped but no indicator lights @ ON///

DISABLE1 You said earlier that your vehicle is equipped with TPMS, but during our vehicle inspection we were not able to confirm that your vehicle has a functioning TPMS system. Has the TPMS system in this vehicle been disabled?

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

///ASK IF DISABLE1=2,98,99 AND SET DISPO=36, Phase-in vehicle, no indication of TPMS, not reported as disabled ///

SCREEN7 I won't have any further questions for you today. Thanks for your time.

1. CONTINUE

///ASK IF MODELYEAR≥2008 AND TPMSEQ=1,2,98,99 AND (MALFCODE IN 3, 5), Vehicle manufactured after phase-in (known to be equipped) but no indicator lights @ ON///

DISABLE2 Based on the model year of your vehicle, it should have been manufactured with a TPMS system, but during our vehicle inspection we were not able to confirm that your vehicle has a functioning TPMS system. Has the TPMS system in this vehicle been disabled?

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

///ASK IF

(MALFCODE =02,04 AND IND_TPMS=02 AND NUMBER OF COMPLETES WITH (DISPO 67, 68) >= 350)

///

SCREEN6 I won't have any further questions for you today. Thanks for your time.
1. CONTINUE

///IF MALFCODE=02 OR 04 AND IND_TPMS=02 AND (MODELYEAR>=2006) THEN SELECT EVERY VEHICLE FOR EXTENDED INTERVIEW, ELSE IF MALFCODE=02 OR 04 AND IND_TPMS=02 AND (MODELYEAR>=2006) THEN SKIP TO INTRO2 AND SET DISPO = 38: ELIGIBLE VEHICLE NOT SELECTED///

SET 2 DAYPARTS: 8 A.M. - 12P.M.; 12:01 P.M.-5 P.M.

- SUBGROUP 1: DIRECT TPMS (MALFUNCTION/DISABLED)
- SUBGROUP 2: DIRECT TPMS (LOW PRESSURE, OK)
- SUBGROUP 3: INDIRECT TPMS (LOW PRESSURE, OK]
- SUBGROUP 4: INDIRECT TPMS (MALFUNCTION/DISABLED)

SET SUBGROUP1STOP=0, ELSE SET SUBGROUP1STOP=1, WHERE 0=NO AND 1=YES
 SET SUBGROUP2STOP=0, ELSE SET SUBGROUP2STOP=1, WHERE 0=NO AND 1=YES
 SET SUBGROUP3STOP=0, ELSE SET SUBGROUP3STOP=1, WHERE 0=NO AND 1=YES
 SET SUBGROUP4STOP=0, ELSE SET SUBGROUP4STOP=1, WHERE 0=NO AND 1=YES
 SET DP1STOP=0, ELSE SET DP1STOP=1, WHERE 0=NO AND 1=YES
 SET DP2STOP=0, ELSE SET DP2STOP=1, WHERE 0=NO AND 1=YES

EXTENDED INTERVIEWS DIVIDED AS FOLLOWS

1. TPMS MALFUNCTIONS/DISABLED [SUBGROUP 1 OR SUBGROUP 4]
 - a. MALFCODE=1 =MALFUNCTION
 - b. MALFCODE=(3 OR 5) AND (DISABLE1=1 OR DISABLE2=1) =DISABLED
 - c. MALFCODE=3 AND DISABLE2 IN (02,98,99) =MALFUNCTION
 - d. SELECT 100% OF THESE RECORDS FOR EXTENDED INTERVIEW
 - i. PROGRAM "HOOKS" TO ALTER 100% SELECTION IF FIELD EXPERIENCE PROJECTS TOO MANY CASES
2. DIRECT TPMS OK [SUBGROUP 2]
 - A. MALFCODE=2 OR 4 AND IND_TPMS=02
 - B. COLLECT 350 INTERVIEWS SPLIT AMONG 24 PSUS
 DIVIDE INTERVIEWS BETWEEN TEAM 1 AND TEAM 2 AT EACH PSU
 350/24 = 15 PER PSU
 15/2 = 7.5 PER CREW PER PSU.....CALL IT 7 TO 8

		DAY OF WEEK			
		WED	THURS	FRI	SAT
DAYPART	A.M.	1	NOTE 1	1	1
	S P.M.	1	1	1	1
NOTE 1 = ONE CREW HAS 1, THE OTHER ZERO, AT ½ THE PSUS. AT THE OTHER HALF, DO THIS 0-1 IN THE PM					

3. INDIRECT TPMS OK [SUBGROUP 3]
 - a. MALFCODE=2 OR 4 AND IND_TPMS=01
 - b. SELECT 100% OF THESE RECORDS FOR EXTENDED INTERVIEW

**i. PROGRAM "HOOKS" TO ALTER 100% SELECTION IF FIELD EXPERIENCE
PROJECTS TOO MANY SUBGROUP 3 CASES**

Respondents continuing past this point will be given an extended interview.

///ASK IF MALFCODE=1,2,4, Indicator lights on @ ON///

INTRO1C The remaining questions will focus on the results on our dash inspection.

1. CONTINUE

///IF DISABLE2=1 SKIP TO MODULE DISABLED///

///IF DISABLE2=2,98,99 SKIP TO MODULE MALFUNCTION #3///

///IF MALFCODE=1 SKIP TO MODULE MALFUNCTION #1///

///IF MALFCODE=2 AND IND_TPMS=02 SKIP TO MODULE MALFUNCTION #2///

///IF MALFCODE=4 AND IND_TPMS=02 SKIP TO MODULE PAST MALFUNCTION #1///

END MODULE INTRO

MODULE INDIRECT: IF IND_TPMS=01 AND MALFCODE=2 OR 4

This module is entered by any respondents who are driving a vehicle with an indirect TPMS system that is FMVSS-compliant and is not malfunctioning or disabled.

///ASK IF IND_TPMS=01 AND MALFCODE=2 OR 4///

IND_CHK **When was the last time you used a pressure gauge to check the tire pressure in the tires on this vehicle?**

- 01. TODAY
- 02. IN THE PAST WEEK
- 03. IN THE PAST MONTH
- 04. MORE THAN A MONTH AGO
- 05. NEVER
- 98. DON'T KNOW
- 99. REFUSED

IND_TPMS=01///

IND_RECB **Did you know that the Tire Pressure Monitoring System on this vehicle needs to be recalibrated on occasion?**

- 1. YES
- 2. NO
- 98. DON'T KNOW
- 99. REFUSED

///ASK IF IND_RECB=01///

IND_AWARE **Are you aware that you can recalibrate the Tire Pressure Monitoring System yourself?**

- 1. YES
- 2. NO
- 98. DON'T KNOW
- 99. REFUSED

///ASK IF IND_AWARE=01///

IND_KNOW **Do you know how to recalibrate your Tire Pressure Monitoring System?**

- 1. YES
- 2. NO
- 98. DON'T KNOW
- 99. REFUSED

///IF IND_KNOW=01, 98, 99, ASK//

IND_MRECB **Have you ever recalibrated your Tire Pressure Monitoring System on this vehicle in the past?**

- 1. YES
- 2. NO
- 98. DON'T KNOW
- 99. REFUSED

///IF IND_MRECB=1///

IND_RCBY Which of the following were reasons that you recalibrated this vehicle's Tire Pressure Monitoring System?

INTERVIEWER: READ EACH ITEM AND PAUSE TO SELECT EACH ITEM THAT APPLIES BEFORE READING NEXT ITEM

- IND_RCBY_1 After tire replacement or rotation
- IND_RCBY_2 After changing between winter / summer tires
- IND_RCBY_3 If the TPMS warning light stayed on after start
- IND_RCBY_4 After checking tire pressure and/or adding air to tires
- IND_RCBY_5 After vehicle service performed by dealership, gas station, or repair facility
- IND_RCBY_6 After you serviced your vehicle

///ASK ALL///

IND_SVC If you have had this vehicle serviced or have had the tires changed, did the facility or dealership recalibrate your Tire Pressure Monitoring System?

- 1. YES
- 2. NO
- 98. DON'T KNOW
- 99. REFUSED

//SKIP TO MODULE PAST MALFUNCTION #1//



MODULE DISABLED: IF DISABLE1=1 OR DISABLE2=1

This module is entered by any respondents who report that the TPMS system in their vehicle was disabled.

///ASK IF DISABLE1=1 OR DISABLE2=1///

DIS_OTH2 Who disabled the TPMS system in this vehicle?

1. RESPONDENT
2. MECHANIC/REPAIR FACILITY
3. FRIEND
4. RELATIVE
5. OTHER
98. DON'T KNOW
99. REFUSED

///ASK IF DISABLE1=1 OR DISABLE2=1///

DIS_HOW What was done to disable the TPMS system in this vehicle?

[SELECT ALL THAT APPLY]

1. REMOVED TIRE PRESSURE SENSORS
2. MODIFIED BRAKE SYSTEM/WHEELSPEED SENSORS
3. DISABLED ON-BOARD COMPONENTS
4. PULLED BULB OR FUSE
5. COVERED UP DASH LIGHT
6. OTHER
7. NOTHING
98. DON'T KNOW
99. REFUSED

///ASK IF DISABLE1=1 OR DISABLE2=1///

DIS_COST How much did it cost to disable the TPMS system? [INTERVIEWER: PROBE FOR NEAREST WHOLE NUMBER VALUE]

1. \$0.00
2. \$1 - \$49
3. \$50 - \$99
4. \$100 - \$299
5. \$300 - \$499
6. \$500 - \$999
7. \$1,000 OR MORE
98. DON'T KNOW
99. REFUSED

///ASK IF DISABLE1=1 OR DISABLE2=1///

DIS_WHY **What was the primary reason you decided to disable the TPMS system in this vehicle?**

[INTERVIEWER: BACKCODE]

1. TO GET THE DASH WARNING LIGHTS TO TURN OFF
2. TPMS IS NOT NECESSARY FOR VEHICLE OPERATION
3. TPMS WAS FAULTY/INACCURATE
4. TPMS WAS DISTRACTING/IRRITATING
5. TPMS IS TOO EXPENSIVE TO MAINTAIN/REPAIR
6. OTHER
98. DON'T KNOW
99. REFUSED

/// SKIP TO MODULE PAST MALFUNCTION #1 ///

END MODULE DISABLED: IF DISABLE1=1 OR DISABLE2=1

MODULE MALFUNCTION #1: IF MALFCODE =1

This module is entered by respondents experiencing TPMS Malfunction #1: TPMS System Malfunction indicator is currently illuminated.

///ASK IF MALFCODE =1///****

MALF1AW1 Are you aware that a TPMS dash light is currently on in your vehicle?

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

///ASK IF MALF1AW1=1///****

MALF1AW1A What does this light mean to you? [INTERVIEWER: BACKCODE RESPONSE; IF NECESSARY, ASK WHAT LIGHT MEANS WITH REGARD TO SPECIFIC VEHICLE SYSTEMS]

1. LOW TIRE PRESSURE
2. TPMS MALFUNCTION
3. OTHER
98. DON'T KNOW
99. REFUSED

///ASK IF MALF1AW1=1, Aware that TPMS Malfunction light is on///****

MALF1AW2 How long has this malfunction light been on? If the light has been turning on and off intermittently, please think back to the first time you noticed that the light was on.

1. LESS THAN 1 WEEK
2. 1 - 2 WEEKS
3. 3 - 4 WEEKS
4. 1 - 6 MONTHS
5. 7 - 12 MONTHS
6. MORE THAN 1 YEAR
98. DON'T KNOW
99. REFUSED

///ASK IF MALF1AW1=1, Aware that TPMS Malfunction light is on///****

MALF1AF1A Did any of the following events occur shortly before the TPMS system malfunction light came on? [INTERVIEWER: PAUSE AFTER EACH ITEM TO COLLECT "YES" OR "NO" RESPONSE]

[SELECT ALL THAT APPLY]

1. The tires were rotated
2. Specialty (e.g., seasonal or off-road) tires were switched out
3. One or more new tires or wheels were installed or replaced
4. One or more tire stems were installed or replaced
5. One or more tire pressure sensors were installed or replaced
6. Work was performed on the braking system
7. Work was performed to on the on-board computer system
8. The vehicle was involved in an accident
9. The vehicle experienced an extended period of flooding / snow
10. Anything else?
11. NONE OF THE ABOVE
98. DON'T KNOW

99. REFUSED

///ASK IF MALF1AW1=2,98,99, Not aware that TPMS Malfunction light is on///

MALF1AF1B Did any of the following events occur recently? [INTERVIEWER: PAUSE AFTER EACH ITEM TO COLLECT "YES" OR "NO" RESPONSE]

[SELECT ALL THAT APPLY]

1. The tires were rotated
2. Specialty (e.g., seasonal or off-road) tires were switched out
3. One or more new tires or wheels were installed or replaced
4. One or more tire stems were installed or replaced
5. One or more tire pressure sensors were installed or replaced
6. Work was performed on the braking system
7. Work was performed to on-board computer system
8. The vehicle was involved in an accident
9. The vehicle experienced an extended period of flooding / snow
10. Anything else?
11. NONE OF THE ABOVE
98. DON'T KNOW
99. REFUSED

///ASK IF MALF1AF1A=4,5 OR MALF1AF1B=4,5, Tire stems/sensors replaced///

MALF1AF2 Did you install or replace the tire stems or tire pressure sensors yourself?

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

///ASK IF MALF1AF1A=4,5 OR MALF1AF1B=4,5, Tire stems/sensors replaced///

MALF1AF3 How much did this work cost? [INTERVIEWER: PROBE FOR NEAREST WHOLE NUMBER VALUE]

1. \$0.00
2. \$1 - \$49
3. \$50 - \$99
4. \$100 - \$299
5. \$300 - \$499
6. \$500 - \$999
7. \$1,000 OR MORE
98. DON'T KNOW
99. REFUSED

///ASK IF MALF1AW1=1, Aware that TPMS Malfunction light is on///

MALFIX1 Has anyone explained to you what needs to be done to make the malfunction light turn off?

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

///ASK IF MALFIX=1, Someone explained how to correct malfunction///

MALFIX2 Who explained this to you?

[INTERVIEWER: SELECT ALL THAT APPLY]

1. RELATIVE/FRIEND/COLLEAGUE
2. DEALERSHIP/AUTO REPAIR SHOP/MECHANIC
3. OWNER'S MANUAL
4. OTHER BOOK, MAGAZINE, OR ARTICLE
5. TV OR RADIO
6. INTERNET
7. SOCIAL MEDIA (E.G., FACEBOOK, TWITTER, YOUTUBE)
8. OTHER
98. DON'T KNOW
99. REFUSED

///ASK IF MALFIX=1, Someone explained how to correct malfunction///

MALFIX3 What were you told needed to be done to correct the malfunction? [INTERVIEWER: IF THE DRIVER PROVIDES MORE THAN ONE ACTION, ASK THE DRIVER TO STATE THE MOST IMPORTANT ACTION THEY WERE TOLD TO TAKE]

1. RECALIBRATION
2. REPAIR/REPLACE TIRE PRESSURE MONITORING SENSORS
3. REPAIR/REPLACE ON-BOARD COMPONENTS (HARDWARE OR SOFTWARE)
4. OTHER: SPECIFY
98. DON'T KNOW
99. REFUSED

///ASK IF MALF1AW1=1, Aware that TPMS Malfunction light is on///

MALCOST1A Have you priced the work required to correct the TPMS system malfunction (whether or not you had the work done)?

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

///ASK IF MACLOST1A=1, Had the work priced///

MALCOST1B What was the price for this work? [INTERVIEWER: PROBE FOR NEAREST WHOLE NUMBER VALUE]

1. \$0.00
2. \$1 - \$49
3. \$50 - \$99
4. \$100 - \$299
5. \$300 - \$499
6. \$500 - \$999
7. \$1,000 OR MORE
98. DON'T KNOW
99. REFUSED

///ASK IF MALCOST1A=2,98,99, Haven't had repair priced/DK/REF ///

MALCOST2A Do you have a general idea of what the price to repair the system would be?

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

///ASK IF MALCOST2A=1, Has an idea of cost of work///

MALCOST2B What is your estimate of the price to perform this repair? [INTERVIEWER: PROBE FOR NEAREST WHOLE NUMBER VALUE]

1. \$0.00
2. \$1 - \$49
3. \$50 - \$99
4. \$100 - \$299
5. \$300 - \$499
6. \$500 - \$999
7. \$1,000 OR MORE
98. DON'T KNOW
99. REFUSED

///ASK IF MALF1AW1=1, Aware that TPMS Malfunction light is on///

MALFIX4 Do you plan to correct the current malfunction in the system?

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

///ASK IF MALFIX4=1, Plan to correct malfunction///

MALFIX5 How do you plan to correct the current malfunction?

1. TAKE MY VEHICLE INTO THE DEALERSHIP OR REPAIR FACILITY
2. HIRE SOMEONE ELSE TO REPAIR IT
3. ORDER THE PARTS AND REPAIR IT MYSELF
4. REPAIR IT MYSELF WITH THE HELP OF OTHERS
5. OTHER
98. DON'T KNOW
99. REFUSED

///ASK IF MALFIX4=2, No plan to correct malfunction///

MALFIX6 What is the primary reason you are not planning to repair the current malfunction in the system?

[INTERVIEWER: BACKCODE]

1. CURRENTLY USING SEASONAL TIRES AND WILL SWITCH TIRES OUT WHEN THE WEATHER PERMITS, WHICH SHOULD FIX THE PROBLEM
2. CANNOT AFFORD THE COST TO REPAIR
3. TPMS SYSTEM IS A LUXURY AND NOT NECESSARY FOR THE OPERATION OF THE VEHICLE
4. IT IS NOT MANDATED BY THE STATE THAT I REPAIR THE SYSTEM
5. WILL BE SELLING / GETTING RID OF THIS CAR SHORTLY
6. NOT SURE THE TPMS MALFUNCTION INDICATOR IS ACCURATE
7. TOO INCONVENIENT/IT'S JUST A NUISANCE
8. OTHER
98. DON'T KNOW
99. REFUSED

///IF MALFIX6=6, Not sure if TPMS indicator is accurate///

MALCONF Why do you think the TPMS system malfunction indicator is inaccurate?

[IF NECESSARY: What is the primary reason?]

[INTERVIEWER: BACKCODE]

1. THE TPMS MALFUNCTION LIGHT HAS COME ON BEFORE AND TURNED OFF BY ITSELF, WITHOUT ANY REPAIRS
2. HEARD FROM OTHER SOURCES THAT IT MAY BE INACCURATE
3. OTHER
4. NO SPECIFIC REASON
98. DON'T KNOW
99. REFUSED

///ASK IF MALCONF NE 1 OR MALF1AW1=2,98,99, Driver does not say TPMS malfunction light is flashing intermittently OR Not aware that TPMS Malfunction light is on ///

MALPREV1 A previous malfunction would be an episode in which the TPMS system malfunction light turned on and then turned off and remained off for at least one week, either by itself or due to servicing the vehicle. Aside from the current malfunction, have there been any previous malfunctions of the TPMS system?

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

///**ASK IF MALCONF=1 OR MALPREV=1, Previous malfunction episode reported**///
MALPREV2

Other than the current malfunction, how many times has the TPMS system malfunctioned?

1. 1 OTHER TIME
2. 2 - 4 OTHER TIMES
3. 5 OR MORE OTHER TIMES
98. DON'T KNOW
99. REFUSED

///**SKIP TO MODULE CLOSE**///
END MODULE MALFUNCTION #1: IF MALFCODE =1

MODULE MALFUNCTION #2: IF MALFCODE =2

This module is entered by respondents experiencing TPMS Malfunction #2: TPMS Low Tire Pressure indicator is currently illuminated.

///ASK IF MALFCODE =2///****

MALF2AW1 Are you aware that a TPMS dash light is currently on in your vehicle?

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

///ASK IF MALF2AW1=01///****

MALF2AW1A What does this light mean to you? [INTERVIEWER: BACKCODE RESPONSE; IF NECESSARY, ASK WHAT LIGHT MEANS WITH REGARD TO SPECIFIC VEHICLE SYSTEMS]

1. LOW TIRE PRESSURE
2. TPMS MALFUNCTION
3. OTHER
98. DON'T KNOW
99. REFUSED

///IF MALF2AW1=2,98,99 SKIP TO MODULE PAST MALFUNCTION #1///****

///ASK IF MALF2AW1=1, Aware that low tire pressure light is on///****

MALF2FIX1 Since this light came on, have you checked the pressure in any of your tires?

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

///ASK IF MALF2FIX1=1, Checked tire pressure///****

MALF2FIX2 Were all of the checked tires properly inflated?

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

///ASK IF MALF2AW1=1, Aware that low tire pressure light is on///****

MALF2AW2 How long has the low tire pressure light been on? If the light has been turning on and off intermittently, please think back to the first time you noticed that the light was on.

1. LESS THAN 1 WEEK
2. 1 - 2 WEEKS
3. 3 - 4 WEEKS
4. 1 - 6 MONTHS
5. 7 - 12 MONTHS
6. MORE THAN 1 YEAR
98. DON'T KNOW
99. REFUSED

///IF MALF2FIX1=2,98,99 OR MALF2FIX2=2,98,99, SKIP TO MODULE PAST MALFUNCTION #1///

///ASK IF MALF2FIX2=1, Verified all tires properly inflated///

MALF2AF1 Your TPMS system may be malfunctioning. Did any of the following events occur shortly before the low pressure light came on? [INTERVIEWER: PAUSE AFTER EACH ITEM TO COLLECT "YES" OR "NO" RESPONSE]

[SELECT ALL THAT APPLY]

1. The tires were rotated
2. Specialty (e.g., seasonal or off-road) tires were switched out
3. One or more new tires or wheels were installed or replaced
4. One or more tire stems were installed or replaced
5. One or more tire pressure sensors were installed or replaced
6. Work was performed on the braking system
7. Work was performed to on-board computer system
8. The vehicle was involved in an accident
9. The vehicle experienced an extended period of flooding / snow
10. Anything else?
11. NONE OF THE ABOVE
98. DON'T KNOW
99. REFUSED

///ASK IF MALF2AF1=4,5, Tire stems/sensors replaced///

MALF2AF2 Did you install or replace the tire stems or tire pressure sensors yourself?

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

///ASK IF MALF2AF1=4,5, Tire stems/sensors replaced///

MALF2AF3 How much did this work cost? [INTERVIEWER: PROBE FOR NEAREST WHOLE NUMBER VALUE]

1. \$0.00
2. \$1 - \$49
3. \$50 - \$99
4. \$100 - \$299
5. \$300 - \$499
6. \$500 - \$999
7. \$1,000 or more

///ASK IF MALF2AF1=6, Work done to brake system///

MALF2AF4 Did you perform the work on the braking system yourself?

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

///ASK IF MALF2AF1=6, Work done to brake system///

MALF2AF5 How much did this work cost? [INTERVIEWER: PROBE FOR NEAREST WHOLE NUMBER VALUE]

1. \$0.00
2. \$1 - \$49
3. \$50 - \$99
4. \$100 - \$299
5. \$300 - \$499
6. \$500 - \$999
7. \$1,000 or more

///SKIP TO MODULE PAST MALFUNCTION #1///

END MODULE MALFUNCTION #2: IF MALFCODE =2

MODULE MALFUNCTION #3: IF MALFCODE (IN 3) AND DISABLE2=2,98,99 OR MALFCODE (IN 5) AND DISABLE2=2,98,99 AND ELIG=1

This module is entered by respondents experiencing TPMS Malfunction #3: Vehicle is known to be equipped with TPMS and respondent denied disabling system, but no TPMS lights are illuminated at ON position.

///ASK IF MALFCODE IN (3) AND DISABLE2=2,98,99///****

MALF3RE **At any time since you've had this vehicle, have you seen any TPMS dash lights on?**
[IF NECESSARY: SHOW RESPONDENT IMAGES OF TPMS INDICATOR LIGHTS]

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

///ASK IF MALF3RE=1, Has seen TPMS indicator light previously///****

MALF1AW2A **When was the last time you noticed a TPMS dash light turned on?**

1. LESS THAN 1 WEEK AGO
2. 1 - 2 WEEKS AGO
3. 3 - 4 WEEKS AGO
4. 1 - 6 MONTHS AGO
5. 7 - 12 MONTHS AGO
6. MORE THAN 1 YEAR AGO
98. DON'T KNOW
99. REFUSED

///ASK IF MALFCODE IN (3) AND DISABLE2=2,98,99///****

MALF3AF **Since you've had this vehicle, have any of the following events occurred?**
[INTERVIEWER: PAUSE AFTER EACH ITEM TO COLLECT "YES" OR "NO" RESPONSE]
[SELECT ALL THAT APPLY]

1. The vehicle was involved in an accident
2. Service was performed that did or may have involved the vehicle's electrical wiring
3. The vehicle experienced an extended period of flooding / snow
4. Anything else?
5. NONE OF THE ABOVE
98. DON'T KNOW
99. REFUSED

///SKIP TO MODULE PAST MALFUNCTION #1///****

END MODULE MALFUNCTION #3: IF MALFCODE IN (3) AND DISABLE2=2,98,99

MODULE PAST MALFUNCTION #1: IF MALFCODE =2,3,4,5

This module is entered by all respondents except those currently experiencing TPMS Malfunction #1 (TPMS System Malfunction indicator is illuminated). Purpose is to gather data about this kind of malfunction if it happened in the past (when not currently indicated).

///ASK IF MODELYEAR>2007 AND TPMSEQ IN 2,98,99 AND MALFCODE IN (3,5)///

REMIND1 Earlier you indicated that your vehicle may not be equipped with a TPMS system, but based on the model year the vehicle should be equipped with TPMS.

1. CONTINUE

///ASK IF MALFCODE =2,3,4,5///

MALEVER Has the TPMS system malfunction dash light ever been on and stayed on while you were driving this vehicle?

[IF NECESSARY: SHOW RESPONDENT IMAGES OF MALFUNCTION INDICATOR LIGHT]

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

///ASK IF MALEVER=1, System malfunction light has been illuminated previously///

LASTMAL When was the last time the TPMS system malfunction light was on?

1. LESS THAN A MONTH AGO
2. 1 - 6 MONTHS AGO
3. 7 - 12 MONTHS AGO
4. 1 - 2 YEARS AGO
5. 3 OR MORE YEARS AGO
98. DON'T KNOW
99. REFUSED

///ASK IF MALEVER=1, System malfunction light has been illuminated previously///

LASTACT1 Did you take any action in response to the indicator light?

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

///ASK IF LASTACT1=1, Took some action in response to malfunction light///

LASTACT2 What needed to be done to correct the malfunction?

1. RECALIBRATION
2. REPAIR/REPLACE TIRE PRESSURE MONITORING SENSORS
3. REPAIR/REPLACE ON-BOARD COMPONENTS (HARDWARE OR SOFTWARE)
4. REPAIRS, OTHER THAN ABOVE
5. OTHER REPAIRS, SPECIFICS UNKNOWN
6. OTHER
98. DON'T KNOW
99. REFUSED

///ASK IF LASTACT1=1, Took some action in response to malfunction light///

LASTACT3 What actions did you take in response? [SELECT ALL THAT APPLY] [MUL=7] [06,98,99
ARE MUTUALLY EXCLUSIVE]

1. REPAIRED THE SYSTEM MYSELF
2. DISABLED THE SYSTEM
3. HAD THE DEALER / REPAIR FACILITY REPAIR THE SYSTEM AT A COST
4. HAD THE DEALER / REPAIR FACILITY REPAIR UNDER WARRANTY
5. HAD THE DEALER / REPAIR FACILITY DISABLE THE SYSTEM
6. PURCHASED NEW TIRES
7. PURCHASED NEW TIRE PRESSURE MONITORING SENSORS
8. NONE, BECAUSE THE MALFUNCTION INDICATOR TURNED OFF ON ITS OWN
9. OTHER
98. DON'T KNOW
99. REFUSED

///ASK IF MALEVER=1, System malfunction light has been illuminated previously///

LASTAF Did any of the following events occur shortly before the TPMS system malfunction light came on? [INTERVIEWER: PAUSE AFTER EACH ITEM TO COLLECT "YES" OR "NO" RESPONSE]

[SELECT ALL THAT APPLY]

1. The tires were rotated
2. Specialty (e.g., seasonal or off-road) tires were switched out
3. One or more new tires or wheels were installed or replaced
4. One or more tire stems were installed or replaced
5. One or more tire pressure sensors were installed or replaced
6. Work was performed on the braking system
7. Work was performed to on-board computer system
8. The vehicle was involved in an accident
9. The vehicle experienced an extended period of flooding / snow
10. The TPMS system was intentionally disabled
11. Anything else?
12. NONE OF THE ABOVE
98. DON'T KNOW
99. REFUSED

///ASK IF LASTAF=4,5, Tire stems/sensors replaced///

LASTFIX1 Did you install or replace the tire stems or tire pressure sensors yourself?

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

///ASK IF LASTAF=4,5, Tire stems/sensors replaced///

LASTFIX2 How much did this work cost? [INTERVIEWER: PROBE FOR NEAREST WHOLE NUMBER VALUE]

1. \$0.00
2. \$1 - \$49
3. \$50 - \$99
4. \$100 - \$299
5. \$300 - \$499
6. \$500 - \$999
7. \$1,000 OR MORE
98. DON'T KNOW
99. REFUSED

///ASK IF LASTAF=6, Work done to brake system///

MALF2AF4_2 Did you perform the work on the braking system yourself?

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

///ASK IF LASTAF=6, Work done to brake system///

MALF2AF5_2 How much did this work cost? [INTERVIEWER: PROBE FOR NEAREST WHOLE NUMBER VALUE]

1. \$0.00
2. \$1 - \$49
3. \$50 - \$99
4. \$100 - \$299
5. \$300 - \$499
6. \$500 - \$999
7. \$1,000 or more

///IF LASTAF=10 AND (MALFCODE NE (3,5), SKIP TO MODULE DISABLED, THEN RETURN///

///SKIP TO MODULE CLOSE///

END MODULE PAST MALFUNCTION #1

MODULE CLOSE

All respondents enter this module.

///ASK ALL EXTENDED INTERVIEWS///

TDRIVE How long have you had this vehicle?

1. LESS THAN 1 YEAR
2. 1 YEAR
3. 2 YEARS
4. 3 YEARS
5. 4 YEARS
6. 5 YEARS
7. 6 YEARS
8. 7 YEARS
9. 8 YEARS
10. 9 YEARS
11. 10 YEARS
12. MORE THAN 10 YEARS
98. DON'T KNOW
99. REFUSED

//IF TDRIVE IN (01,02,03,04,05,06,07,08,09,10,11,12) - 1 > VAGE THEN DISPLAY PROMPT: I need to confirm your answer. Based on the model year of this vehicle, [INSERT MODELYEAR], it is [INSERT VAGE] old.

///ASK ALL EXTENDED INTERVIEWS///

MAINT2A Does this vehicle currently have a manufacturer warranty or other vehicle protection/extended maintenance plan?

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

///ASK IF MAINT2A=1///

MAINT2B Is this the original manufacturer warranty?

1. Yes
2. NO
98. DON'T KNOW
99. REFUSED

///ASK ALL EXTENDED INTERVIEWS ///

AIR1 **Where would you look to find the pressure required for correct inflation of the tires on this vehicle?**

[INTERVIEWER: BACKCODE RESPONSE]

1. ON THE TIRE WALL
2. DOOR PLACARD
3. OWNER'S MANUAL
4. RELATIVE/FRIEND/COLLEAGUE
5. DEALERSHIP/AUTO REPAIR SHOP/MECHANIC
6. OTHER BOOK, MAGAZINE, OR ARTICLE
7. TV OR RADIO
8. INTERNET
9. SOCIAL MEDIA (E.G., FACEBOOK, TWITTER, YOUTUBE)
10. OTHER
98. DON'T KNOW
99. REFUSED

///ASK ALL EXTENDED INTERVIEWS ///

AIR2 **Do you know how to inflate your tires to the correct pressure?**

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

///ASK ALL EXTENDED INTERVIEWS ///

TRYFIX1 **Before today, has the TPMS low tire pressure light in your dash ever come on and remained on after driving your vehicle?**

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

///ASK IF TRYFIX1=1, Had low pressure light come on///

TRYFIX2 **Did you or someone else add air to one of more tires after this light came on?**

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

///ASK IF TRYFIX2=1, Had low pressure light come on and then added air to tires///

TRYFIX3 **Did the TPMS low tire pressure light continue to stay on even after adding air to the tires and driving?**

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

///ASK IF MALEVER=2, Has never experienced a TPMS system malfunction///

HYPMAL2 If the TPMS malfunction light turned on, indicating a problem with the system itself, what action would you most likely take in response?

[IF NECESSARY: What would be your primary action?]

[INTERVIEWER: BACKCODE]

1. TAKE NO ACTION
2. HAVE THE DEALER / REPAIR FACILITY REPAIR THE SYSTEM
3. ORDER THE PARTS AND REPAIR THE SYSTEM MYSELF
4. HAVE THE DEALER / REPAIR FACILITY DISABLE THE SYSTEM
5. DISABLE THE SYSTEM MYSELF
6. OTHER
98. DON'T KNOW
99. REFUSED

///ASK IF HYPMAL2=02-06, would take action to fix a TPMS malfunction///

HYPMAL3 How quickly would you try to get the problem fixed?

1. I WOULD FIX IT AS SOON AS I COULD GET THE VEHICLE TO THE SHOP
2. I WOULD HAVE IT FIXED, BUT TIMING WOULD DEPEND UPON THE COST OF REPAIR
3. I WOULD HAVE IT FIXED AT MY NEXT SCHEDULED MAINTENANCE APPOINTMENT (INCLUDING OIL CHANGE, TIRE ROTATION, ETC.)
4. I WOULD NOT FIX IT UNTIL I WAS GOING TO GET RID OF THE CAR
98. DON'T KNOW
99. REFUSED

///

IF MALFIX5=1,2,3 OR (LASTACT3_3, LASTACT3_4, OR LASTACT3_5=TRUE) OR MALF1AF1A=4,5 OR MALF1AF1B=4,5 OR MALF2AF1=4,5 OR LASTAF=4,5 OR HYPMAL2=1,2,3 THEN AUTOPUNCH

PAYFIX1=1, Has already indicated spending money to repair TPMS

ELSE, ASK ALL

///

PAYFIX2 What is the most you would be willing to spend to repair a malfunctioning TPMS system?

1. \$0.00
2. \$1 - \$49
3. \$50 - \$99
4. \$100 - \$299
5. \$300 - \$499
6. \$500 - \$999
7. \$1,000 OR MORE
98. DON'T KNOW
99. REFUSED

///ASK ALL EXTENDED INTERVIEWS ///

RESET1 Who would be able to reset the TPMS system in your vehicle when needed, such as after adding air to the tires or doing work on the tires or wheels?

[INTERVIEWER: SELECT ALL THAT APPLY]

1. THE OWNER/DRIVER

2. THE REPAIR SHOP OR DEALER
3. OTHER
98. DON'T KNOW
99. REFUSED

///ASK ALL EXTENDED INTERVIEWS ///

RESET2 What action is required to reset the TPMS system? [INTERVIEWER: PROBE FOR THE PRIMARY ACTION]

1. PRESS A BUTTON
2. SELECT OPTION VIA VEHICLE'S ELECTRONIC MENU CONTROL
3. SPECIAL TOOLS ARE USED BY A REPAIR SHOP/DEALER
4. OTHER
98. DON'T KNOW
99. REFUSED

///ASK ALL EXTENDED INTERVIEWS ///

TPMSREQ To your knowledge, is the TPMS system in your vehicle legally required to be functioning properly?

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

///ASK ALL///

INTRO2 Now I just need to ask you some basic demographic information.

1. CONTINUE

///ASK IF INTRO2=1///

AGE What is your age? [INTERVIEWER: IF RESPONDENT HESITATES TO REPORT SINGLE AGE READ THE LIST OF CATEGORIES AND ASK THEM TO INDICATE THE CATEGORY THAT BEST MATCHES THEIR AGE]

1. UNDER 18
2. 18 - 25
3. 26 - 35
4. 36 - 45
5. 46 - 55
6. 56 - 65
7. 65 OR OLDER
98. DON'T KNOW
99. REFUSED

///ASK IF INTRO2=1///

EDUC What is the highest level of education you have completed?

1. SOME ELEMENTARY/MIDDLE/HIGH SCHOOL
2. HIGH SCHOOL GRADUATE (OR DIPLOMA) OR GED
3. ASSOCIATE'S DEGREE / SOME COLLEGE
4. BACHELOR'S DEGREE
5. GRADUATE/PROFESSIONAL DEGREE

98. DON'T KNOW
99. REFUSED

///**ASK IF INTRO2=1**///

ZIP. **What is your home ZIP code?**

01 ///**ALLOW 5 DIGIT NUMERIC CODE**///
98 **RESPONDENT LIVES OUTSIDE U.S.**
99 **REFUSED**

///**PROGRAMMER: IMPORT TP_LOW (01=UNDER-INFLATED, 02=OK) FROM INSPECTOR TABLET**///

///**ASK IF IND_TPMS=01 AND TP_LOW=01 (AIR PRESSURE MEASURED 25+% BELOW PLACARD PRESSURE VEHICLE INSPECTION)**///

AIR_LOW **When we checked the tire pressure in your tires, they were under-inflated according to the manufacturer recommendations for this vehicle.**

01 **continue**

///**IF DISABLE1=1 AND SCREEN6 NE 1 THEN SET DISPO = 61, Complete: Phase-in vehicle, TPMS reported to be disabled - DISABLED COMPLETE**///

///**IF DISABLE1=1 AND SCREEN6 = 1 THEN SET DISPO = 71, At Quota: Phase-in vehicle, TPMS reported to be disabled** ///

///**IF DISABLE2=1 AND SCREEN6 NE 1 THEN SET DISPO = 63, Complete: Post-phase-in vehicle, TPMS reported to be disabled - DISABLED COMPLETE**///

///**IF DISABLE2=1 AND SCREEN6 = 1 THEN SET DISPO = 73, At Quota: Post-phase-in vehicle, TPMS reported to be disabled** ///

///**IF DISABLE2=2,98,99 AND MALFCODE =3 AND SCREEN6 NE 1 THEN SET DISPO = 64, Complete: Post-phase-in vehicle, no lights, not reported as disabled - MALFUNCTION COMPLETE**///

///**IF DISABLE2=2,98,99 AND MALFCODE =3 AND SCREEN6=1 THEN SET DISPO = 74, At Quota: Post-phase-in vehicle, no lights, not reported as disabled** ///

///**IF MALFCODE =1 AND SCREEN6 NE 1 THEN SET DISPO = 66, Complete: TPMS system malfunction COMPLETE**///

///**IF MALFCODE =1 AND SCREEN6=1 THEN SET DISPO = 76, At Quota: TPMS system malfunction** ///

///**IF MALFCODE =2 AND SCREEN6 NE 1 THEN SET DISPO = 67, Complete: TPMS low pressure** ///

///**IF MALFCODE =2 AND SCREEN6=1 THEN SET DISPO = 77, At Quota: TPMS low pressure** ///

///IF MALFCODE =4 AND SCREEN6 NE 1 THEN SET DISPO = 68, Complete: TPMS functioning properly ///

///IF MALFCODE =4 AND SCREEN6=1 THEN SET DISPO = 78, At Quota: TPMS functioning properly ///

///SET COUNTER FOR MODELYEAR AND INCREMENT COUNT FOR DISPOSITIONS 61, 63, 64, 66, 67, 68. TARGET TO BE MONITORED AND ADJUSTED BASED ON FIELD EXPERIENCE///

MINIMA SAMPLE SIZES [REQUIRED SAMPLE FLOOR]

Model Year	Car	LTV
2006-2008	300	300
2009-2011	300	300
2012-2014	300	300
2015-2016	300	300

**///SKIP TO MODULE END///
END MODULE CLOSE**

MODULE END

///**ASK IF PRIM1C=2, Primary driver/upkeep not with respondent**///
SCREEN3

I won't have any further questions for you today, since we're only surveying drivers who are primarily responsible for the upkeep of their car. Thanks for your time.

1. CONTINUE

///**IF PRIM1C=2 SET DISPO=31, SCREENED OUT: Primary driver/upkeep not with respondent**///
SCREEN4

///**ASK IF PRIM1D=2, Could not speak to primary driver/upkeep**///
SCREEN4

I won't have any further questions for you today, since we're only surveying drivers who are primarily responsible for the upkeep of their car. Thanks for your time.

1. CONTINUE

///**IF PRIM1D=2 SET DISPO=32, SCREENED OUT: Could not speak to primary driver/upkeep**///
SCREEN5

///**ASK IF PRIM2A=2 AND PRIM2B=2, Unable to locate primary driver/upkeep** ///
SCREEN5

I won't have any further questions for you today, since we're only surveying drivers who are primarily responsible for the upkeep of their car. Thanks for your time.

1. CONTINUE

///**IF PRIM2A=2 AND PRIM2B=2 SET DISPO=34, SCREENED OUT, Unable to locate primary driver/upkeep**///
THANK

///**ASK ALL IF INTRO3<>01**///
THANK

Thank you for your participation in this survey.

1. CONTINUE

//**ADD BUTTONS FOR INTERVIEWER TO INDICATE WHETHER TO UPLOAD RECORD**
SUBMIT

INTERVIEWER: SUBMIT TO ONLINE DATABASE?

01 YES

02 MARK QUESTIONNABLE ///**SAVE AND UPLOAD BUT DON'T INCREMENT TALLY**///
03 NO, UPLOAD LATER

///**IF SUBMIT=01 or 02**///
SUBMITV

INTERVIEWER: Are you sure you want to submit data to online database?

01 Yes

02 No

END MODULE END