



# “Pre Study for the discussion on Reversing Alarm System” -Japanese current situations-

Feb/2017

Noise Subcommittee/JASIC

Japan Automobile Standards Internationalization Center  
<http://www.jasic.org>

1. Technical Standard and History in Japan
2. Reversing alarm standard for unit ( JASO D901)
3. The attachment rate of the reversing alarm System for new Vehicles and sound pressure level
4. Questionnaire Research ( Truck & Bus users )

# 1. Technical Standard and History in Japan



- \* To equip reversing alarms is not mandatory.  
It is allowed to be equipped.

Reversing Alarm equipment is available for Retrofit

- \* In 1963, a Japanese company succeeded in developing the world's first reversing alarm system.
- \* JASO (Japanese Automobile Standards Organization) established D901 "Reverse buzzer standard" in 1975.

# JASO : Japanese Automobile Standards Organization



## *List of JASO Standards translated in English*

Number	Title
#D618 : 08	Automotive parts – Test methods for unscreened low-voltage cables
#D620 : 03	Automobile - Copper alloy strips for electric and electronic connectors
D621 : 04	Automotive parts - 42V Fuse-links - Definitions and general test requirements
#D622 : 06	Automotive parts - Bolt-in type high-voltage fuse-links
D623 : 15	Automotive parts–Test methods and general performance requirements for wiring harness connector operation
#D801 : 96	Glossary of terms relating to electric systems and parts for automobiles
D802 : 01	Terminology of air conditioners for automobiles
D805 : 12	Automobile parts - Glossary of terms relating to electrical and optical connectors
#D901 : 96	Backup buzzer for automobiles
#D902 : 95	Durability testing methods for automotive electronic equipment
#D903 : 99	Road vehicles - SRS air bag system disposition
E002 : 89	Crankcase emission control system test procedure

## 2. Reversing alarm standard for unit : JASO D901



### D901 : Main requirements

1. Sound pressure level : 75 - 95 dB  
Distance from the buzzer to microphone 1m,  
measured in anechoic chamber
2. Fundamental frequency : 400 - 4000 Hz  
(no fluctuation)
3. The intermittence number per minute  
: 60 - 120 count/min

### 3. The attachment rate of the reversing alarm system for new Vehicles



All new motor vehicles sold in Japan of categories N2, N3, and M3 are equipped with reversing alarms (beep type).

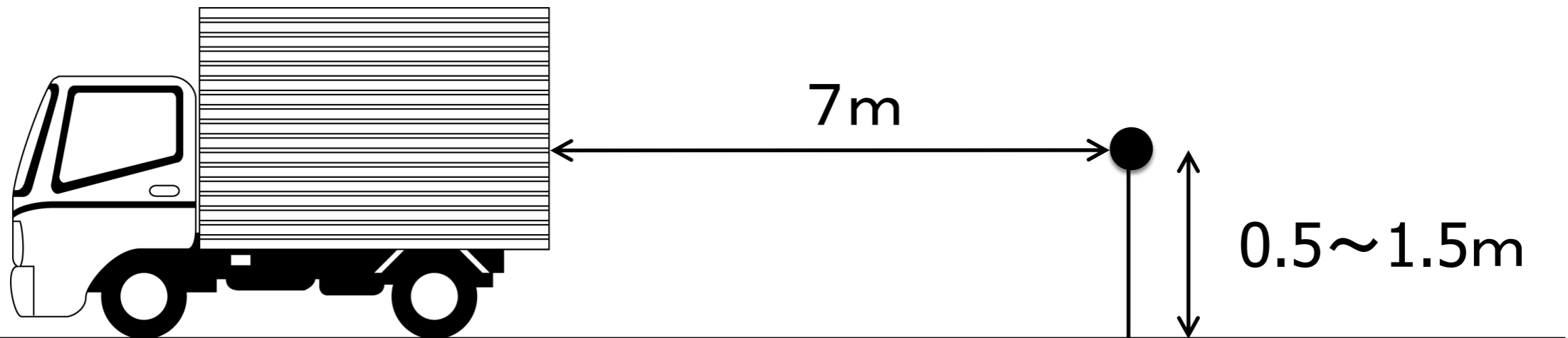
Categories	Company A	Company B	Company C	Company D
M3	—	100%	100%	100%
N3	100%	100%	100%	100%
N2	100%	100%	100%	100%

# Measuring Point same as Germany Proposal

## Measuring Point:

Distance from the end of the vehicle: 7m

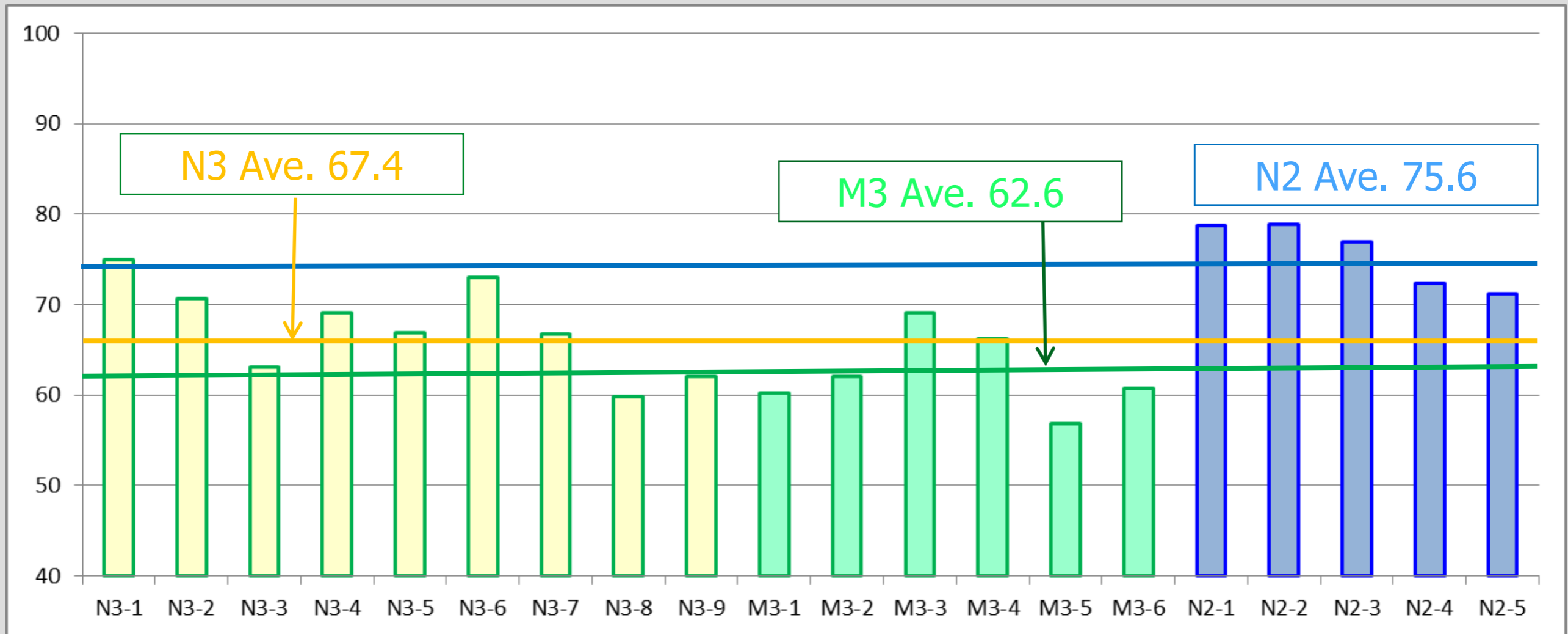
Maximum sound level during microphone height: 0.5 ~ 1.5m



# Measurement results of SPL



- N3 : 59.9~75.0dBA (Ave. 67.4dBA)
- N2 : 71.2~78.9dBA (Ave. 75.6dBA)
- M3 : 56.9~69.1dBA (Ave. 62.6dBA)





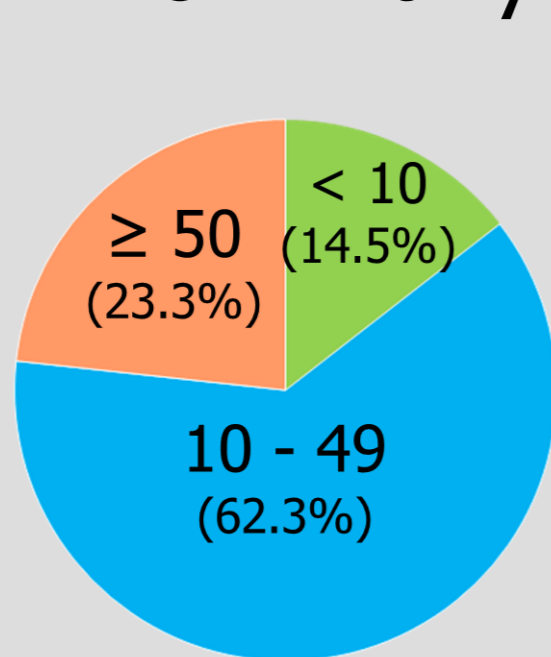
# 4. Questionnaire Research (Truck & Bus users)



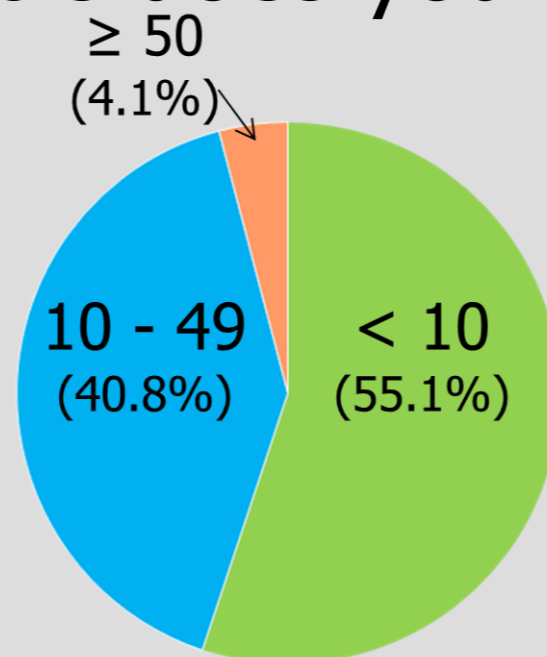
Number of company which responded our questionnaire

	Trucking Association (JTA)	Road Contractors Association (JRCA)	Bus Association (NBA)	Sum
Responded Company	159	98	49	307
Total Owned Vehicle Number	about 5,800	about 1,900	about 2,500	about 10,200

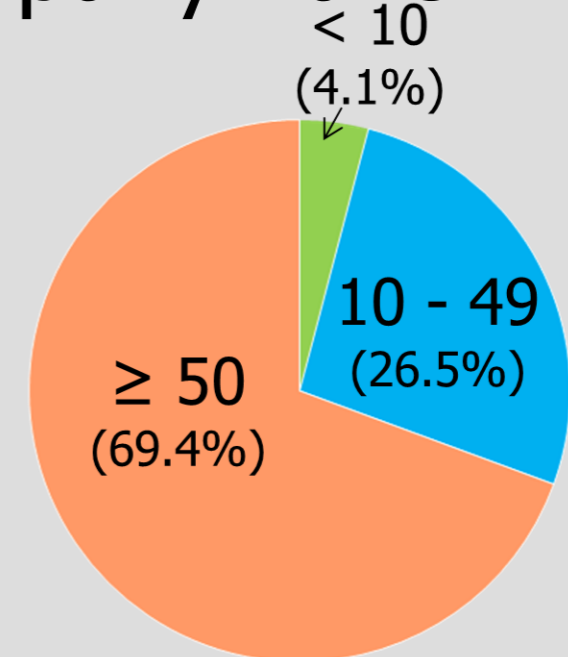
How many vehicle does your company have?



JTA



JRCA



NBA

# What is a major vehicle type at your workplace?

Japan Trucking Association (JTA) & Japan Road Contractors Association (JRCA)

No. of cases. (%)

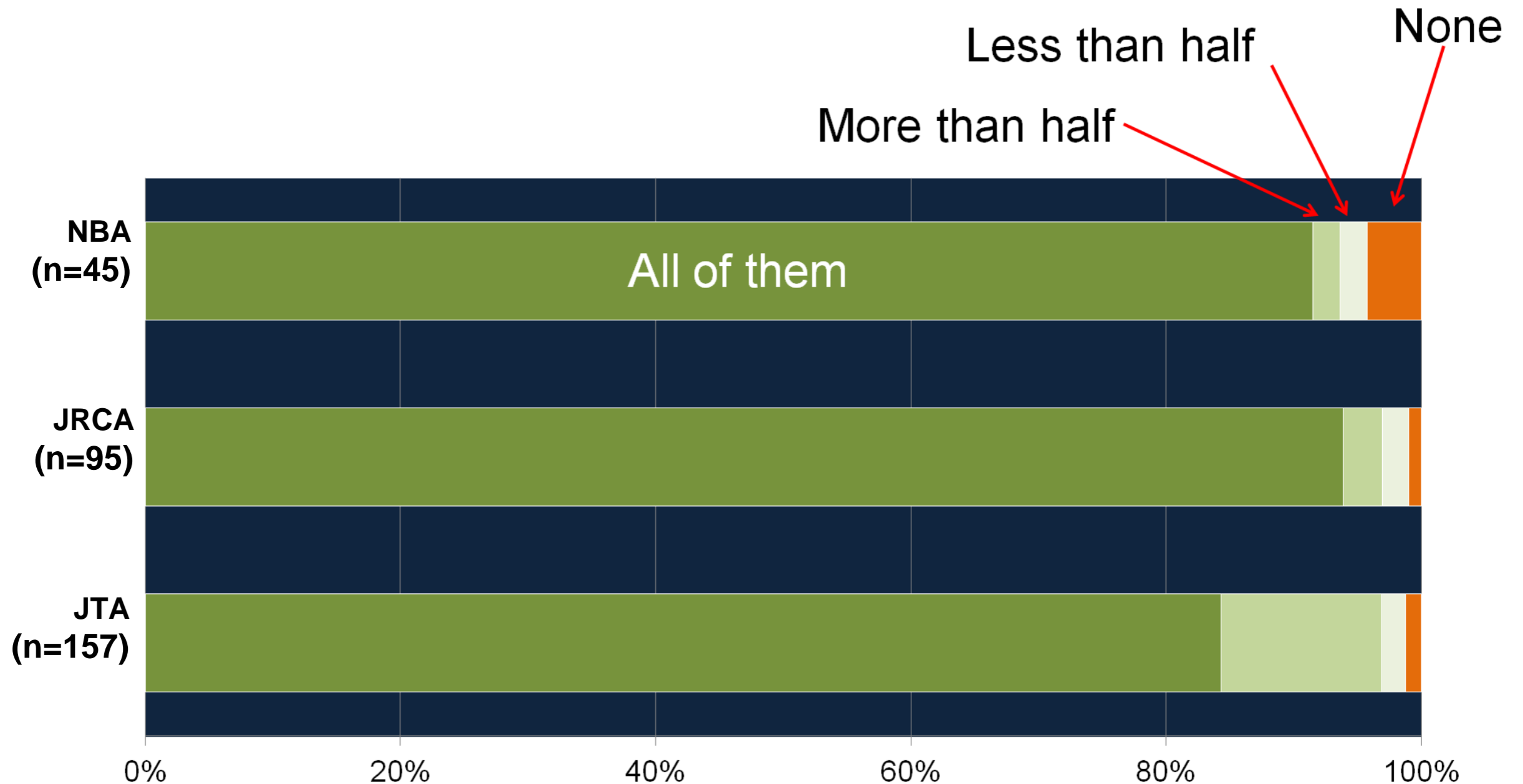
	JTA	JRCA
Tractors	15 (9.4)	2 (2.0)
Heavy duty	62 (39.0)	45 (45.9)
Medium duty	54 (34.0)	24 (24.5)
Small duty	5 (3.1)	5 (5.1)
Mltiple category	23 (14.5)	22 (22.5)

Nihon Bus Association (NBA)

No. of cases. (%)

	NBA
Large buses	41 (83.7)
Medium buses	2 (4.1)
Large & Medium	6 (12.2)

# Are your Main owned Vehicles Equipped with Reversing Alarms?



Almost all companies own vehicles equipped with reversing alarms. One bus company answered "None", however all the buses owned by the company are equipped with reversing camera.

# Do you think motor vehicles need reversing alarms?

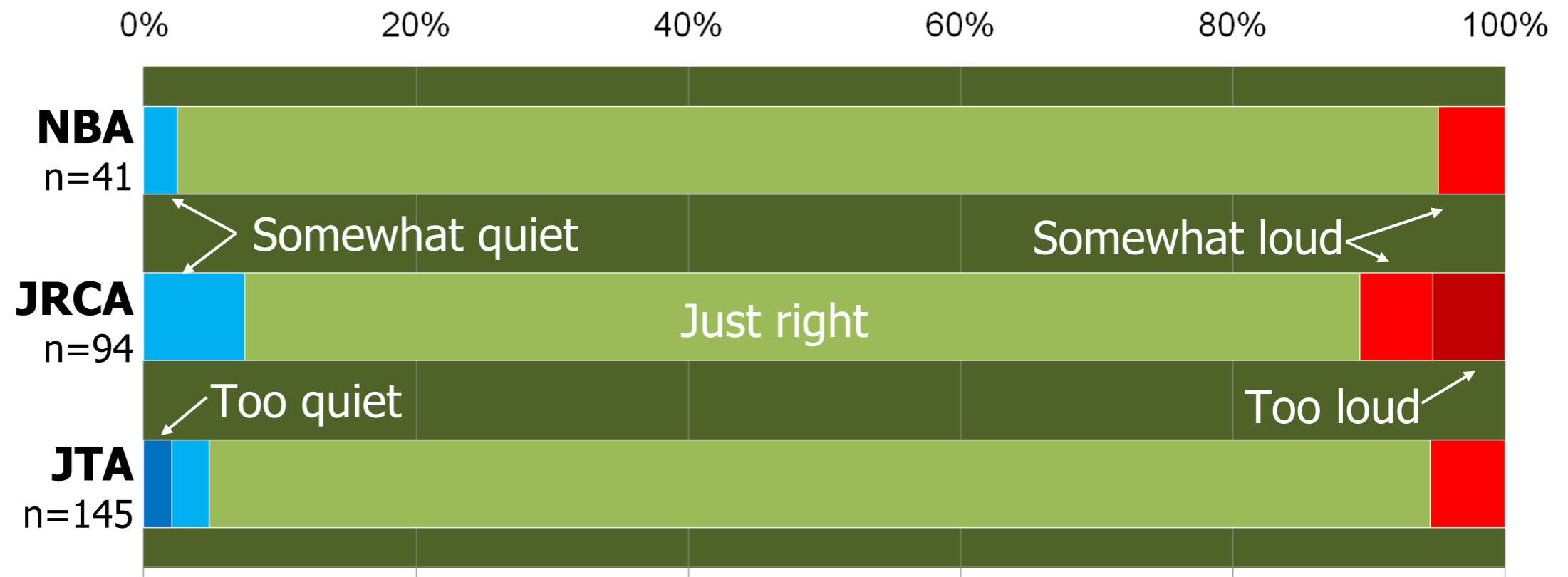
No. of cases. (%)

	JTA	JRCA	NBA
Necessary for all motor vehicles	141 (88.7)	91 (92.9)	43 (87.8)
Necessary for certain types of motor vehicles	11 (6.9)	5 (5.1)	2 (4.1)
Not necessary for any motor vehicles	3 (1.9)	1 (1.0)	2 (4.1)
Others	2 (1.3)	1 (1.0)	0 (0)
No answer	2 (1.3)	0 (0)	2 (4.1)
Total	159 (100)	98 (100)	49 (100)

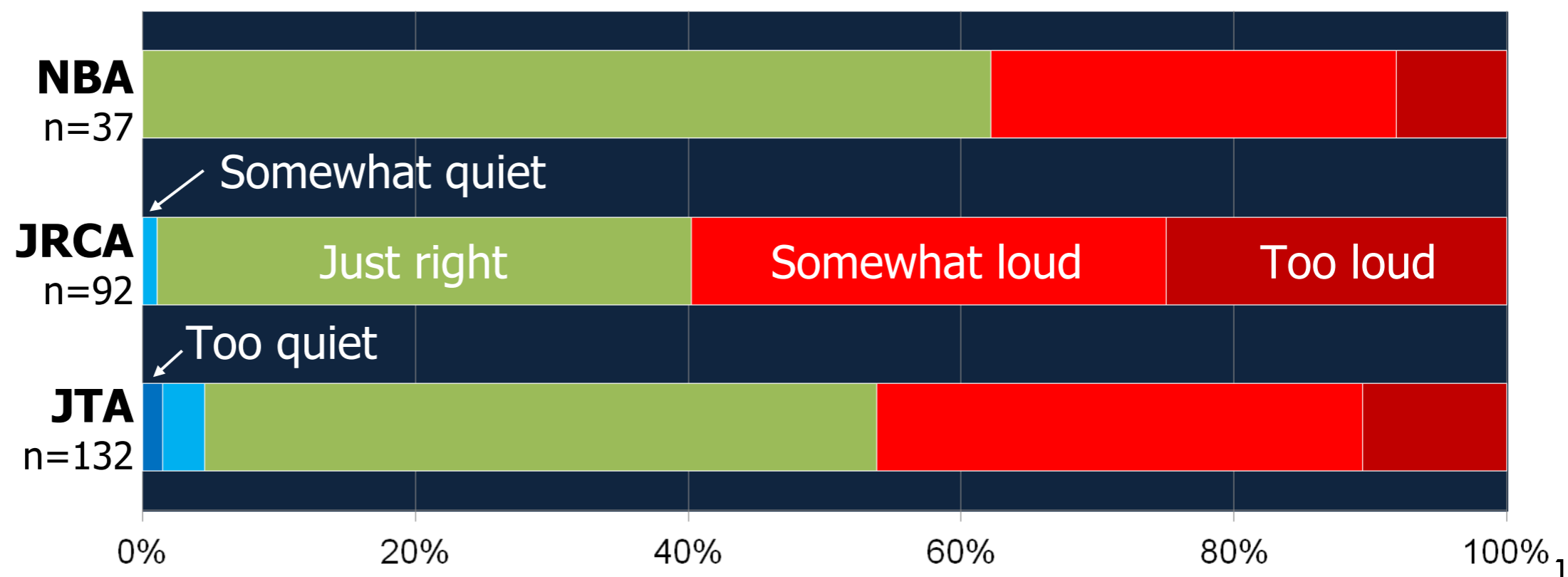
A lot of companies answered that reversing alarm is necessary for all motor vehicles.  
 5 of 6 companies who answered "not necessary for any" own vehicles equipped with reversing camera.

# How Do You Feel About Volume of The Reversing Alarms in The Daytime and at Night? (Not using an Alarm Sound Reducer)

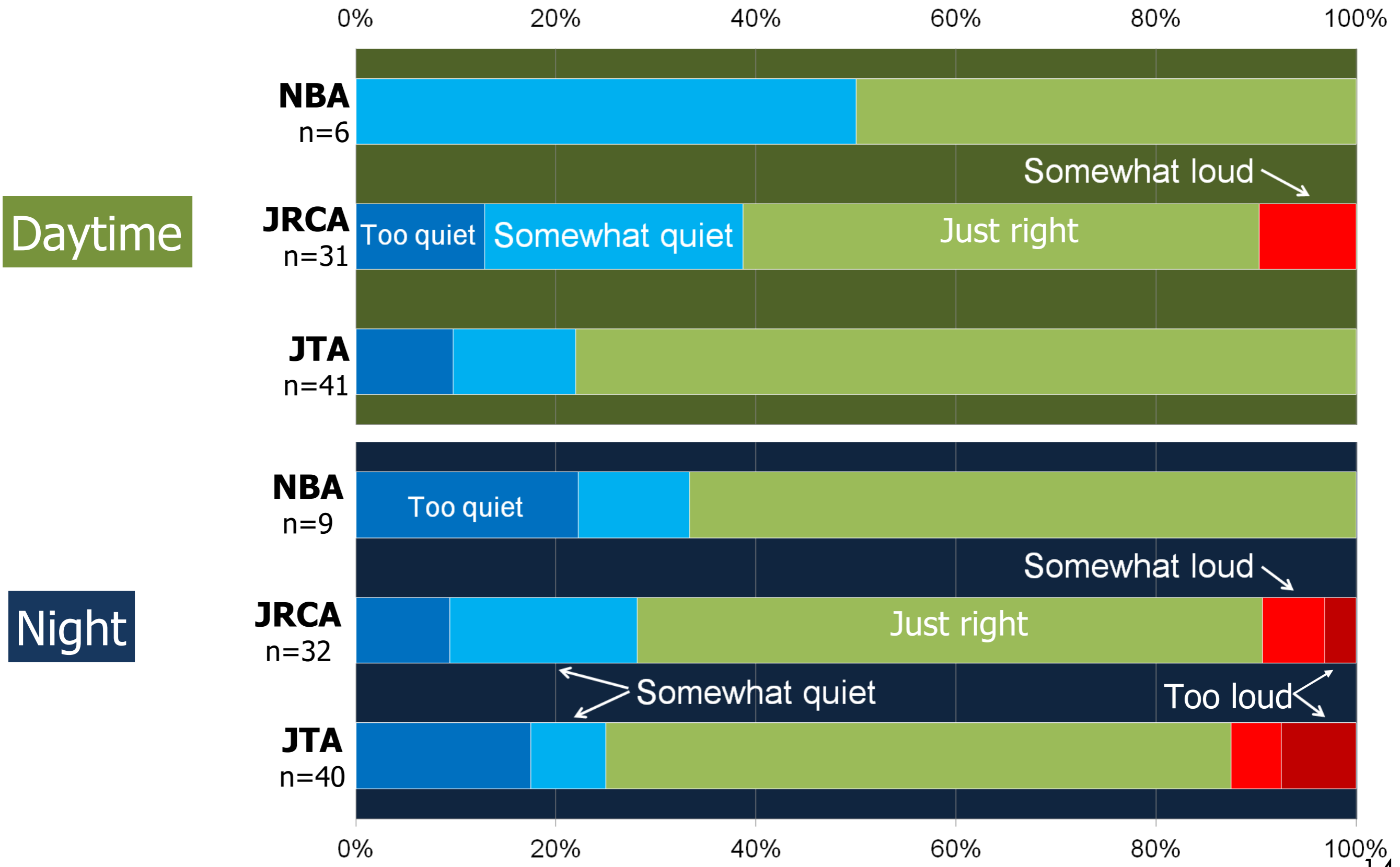
Daytime



Night



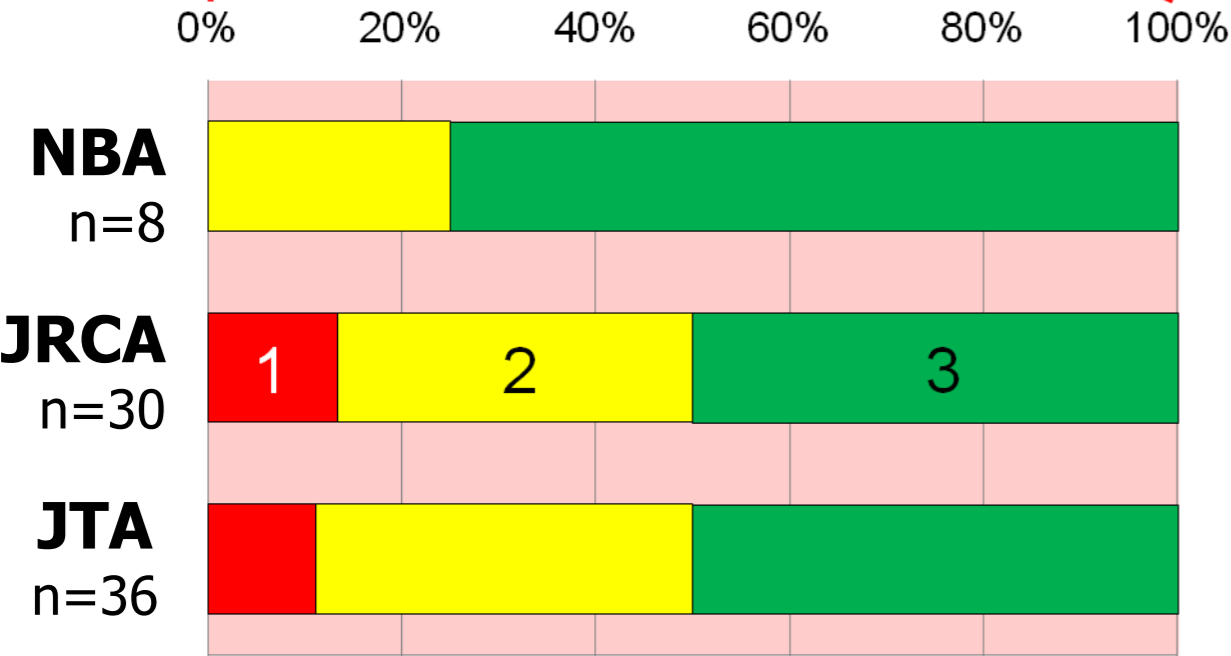
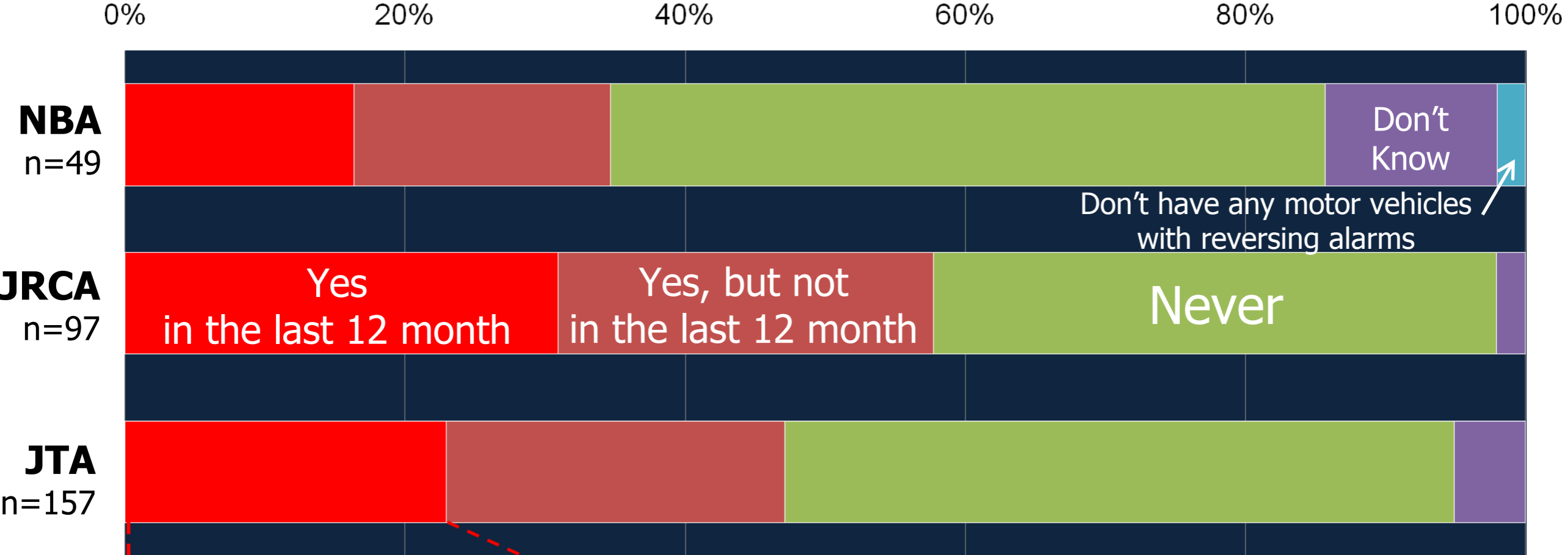
# How Do You Feel About Volume of The Reversing Alarms in The Daytime and at Night? *(Using an Alarm Sound Reduced)*



Daytime

Night

# Have Local Residents Ever Complained About Reversing Alarms?



1: Many times (> 10 times every year)  
 2: From time to time (5 – 10 times every year)  
 3: Not often (< 5 times a year)

**To ensure safety while reversing the vehicle, do you use any equipment or take any measures other than reversing alarms?  
(Multiple answers allowed)**

	JTA	JRCA	JBA
Reversing cameras	82.9	52.7	100.0
Rear sonars	2.4	7.3	12.5
Directional microphones	0.0	0.0	50.0
Someone guiding while reversing	19.5	47.3	18.8
Others	2.4	10.9	0.0

Many companies use several equipment (especially reversing cameras) other than reversing alarms, to ensure safety while reversing the vehicle. 'Directional microphones' are used in Bus association only



# Outline of the results of the survey



All new motor vehicles sold in Japan of categories N2, N3, and M3 are equipped with reverse alarms (beep type), which are in fairly high demand from operation managers of automotive transport companies who own trucks and buses.

- Though differing somewhat depending on the vehicle category, the sound level of reverse alarms commonly used in Japan is typically 60–78 dB (measured by the method proposed by Germany).
- Most operation managers feel the sound level of reverse alarms (60–78 dB) is just right in the daytime, but a majority feel it is too loud at night.
- Regarding the use of reverse alarms, roughly half of operation managers have received complaints from local residents.
- In addition to reverse alarms, most motor vehicles of categories N2, N3, and M3 are equipped with reverse cameras to ensure safety while reversing. In some cases, even further measures are taken such as sonars, microphones, and someone guiding while reversing.