

FINAL PROJECT

**EFFECT OF WEIGHT PASSANGER TO STOPPING
DISTANCE AND BRAKING PEDAL FORCE OF
CBR 250 CC**



RESEARCH PAPER

Submitted as a Partial fulfillment of The Requirements for Getting
Bachelor Degree of Engineering in Mechanical Engineering Department

by

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October 2011**

APPROVAL

The research paper entitled "**EFFECT OF WEIGHT PASSANGER TO STOPPING DISTANCE AND BRAKING PEDAL FORCE OF CBR 250 CC**", has been agreed by supervisor and authorized by the Director of International Program as partial fulfillment of the requirements for getting the Bachelor Degree of Engineering in Automotive Department of Muhammadiyah University of Surakarta.

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TESTIMONY

With this, I state that there is no plagiarism of the previous works which have been made to get bachelor degree of university and as long as the writer knows that there is also no work or opinion that ever been composed or published by other people, except referred written in this research paper mentioned in bibliography.

Hence, if it is proved that there is mistake in the writer's statements I will be wholly responsible.

Surakarta, October 2011

The writer

Muhammad Abduh
D 200 080 207

MOTTO

[5] For indeed, with hardship [will] be ease, [6] Indeed, with hardship [will be] ease (QS Al-Insyirah: 5-6)

Let there arise out of you a group of people inviting to all that is good (Islam), enjoining Al-Ma'ruf and forbidding Al-Munkar. And it is they who are the successful. (QS Ali Imran:104)

Allah burdens not a person beyond his scope. He gets reward for that (good) which he has earned, and he is punished for that (evil) which he has earned. (QS Al-Baqarah:286)

Many People say that the intelligence that make the great scientist. They are mistaken, it is the character. (Albert Einstein)

There is a way to make it better, find it.(Thomas A. Edison)

The best person is the person who is the most beneficial for others. (Narrated by Bukhori)

DEDICATION

This research paper is dedicated to:

Allah SWT,

Thanks for the best everything that You have given for me and thanks for Your love that always make me to never give up to do the best.

I believe that You will always give me the best for everything.

My beloved Mom and Dad,

Thanks for your prayer, love and support.

You always give me happiness but often I made you disappointed.

I am sorry and I promise to give you the best in the future.

My Sibling (*Aulia Lathifah*),

Thanks for your supports.

It is make me strong to get something more and more. Thanks for your love, support, spirit, attention and care.

You make my burden lighter.

My all family,

Thanks for your prayer, love, support and everything.

All my friends,

Thanks for your support and love me.

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8. His **room mate** (abg Handoko and abg Faizal) for sharing and support..
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10. Those who can not to be mentioned one by one for every helping in accomplishing this research paper. Thanks a lot for all.

The writer realizes that this research paper is far from being perfect, so the writer welcomes any constructive comment, criticism, and suggestion from anyone. Finally, he hopes that this research paper would help the other researchers who are interested in studying translation and enrich the reader's knowledge.

Wassalamualaikum Wr. Wb.

Surakarta, October 2011
The writer

ABSTRACT

MUHAMMAD ABDUH. D 200 080 207. EFFECT OF WEIGHT PASSANGER TO STOPPING DISTANCE AND BRAKING PEDAL FORCE OF CBR 250 CC. MUHAMMADIYAH UNIVERSITY OF SURAKARTA. 2011.

Braking system is becoming one of the important aspects of the vehicle because it is one of the safety systems. Vehicle that traveling at higher speed must fully equipped with more reliable braking system. Reliable braking system is important ro reduce speed or to stop vehicle.

Vehicle at high speed make unproportional braking between front and rear wheel, it make one of the wheel locking. Also the rider habbit that usually using only rear brake to reduce speed. It dangerous for the vehicle because it becoming unstable. Combined brake system is more reliable to maintain braking proportion between front and rear wheel.

As a braking vehicle decelerates or during the braking process, there is weight transfer, removes weight from the rear wheels and results in a minimum stopping distance. In this research investigates we present an analysis of the minimum stopping distance problem taking into acount the effect of weight transfer on (i) one passeger on vehicle (ii) two passegers on vehicle.

On the other, there is weight transfer to the front axle. It makes changing normal load on each wheel. With normal load can calculate how many braking pressure.

Keywords: *braking system, stopping distance, deceleration, weight transfer,braking pedal*

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