AUTOMATIC INCUBATOR

The thesis is presented to fulfil the
requirement of Advanced Diploma in Electrical
Engineering of MARA Institute of Technology

NORAINI BT. NOR

DIP. IN ELECTRICAL ENGINEERING (ELECTRONIC), ITM

SHARIFAH SALWAH BT. AHMAD

DIP. IN ELECTRICAL ENGINEERING (ELECTRONIC), ITM

NOV. 1993

Department of Electrical Engineering

School of Engineering

MARA Institute of Technology

40450 Shah Alam

Selangor

MALAYSIA

Acknowledgement

We would like to express our sincere gratitude to our project supervisor, Mr. Mahmud Ibrahim, who contributed the ideas, provided support, advice and helpful suggestions for our project and thesis. We also appreciate the time spent by him in discussion and implementation of the project.

We would also like to express our gratitude to the instructors and technicians at the School of Electrical and School of Mechanical Engineering, for their support and meaningful contribution in the development of this project.

Also, our gratitude to Mr. Azam (MARDI), who had provided the data and requirement our project and a very special thanks to our friends for their encouragement.

Finally, we express our gratitude and love to our families for their support and continued encouragement, both in our project and during on staying in ITM.

I

SUMMARY

This report represents the research, system and
mechanical design of an automatic incubator. An
incubator is a machine that is used for setting and
hatching process. The design requirement for incubators
are very stringent. It try to emulate the best
incubator of all is the hen. Failing which will come
the lost of chicks.

The automatic incubator is chosen because it is easy to
design the control mechanism. Moreover, it is
inexpensive for rural farmer. It used automatic control
to correct and stabilize the physical requirements. It
also needs a minimum human observation, dependable and
enable to increase hatchablity percentage.

This reports also included cost, advantages, problems
and recommendations. Some part of automatic incubator
are still not complete yet. So, it will be continued by
the other group next semester. Otherwise, the testing
result for hatchablity percentage cannot be shown.

CONTENTS   PAGE

1.0   INTRODUCTION

The incubation of eggs either naturally (with broody hens) or artificially (in an incubator), cannot efficiently be done without the knowledge of its fundamental principles and process involved.

Incubation is the process of providing heat, moisture and air in the correct amounts to the fertile eggs in order to cause development of the embyro and hatching out of vigorous chicks.   [1]

1.1   Natural Incubation

Natural hatching under a broody hen is ideal for small poultry keeper. One broody hen can usually incubate twelve to fifteen eggs. However during brooding the hen stops laying eggs, causing a loss 12 - 15 eggs. Natural incubation is very cheap and quite efficient. The cost of incubation 12 - 15 eggs is just the cost of feeding the hen and the loss of production of eggs amounting to RM less than RM 7.00. Under the natural incubation the total cost per egg equal to RM 0.80.

1