



**Ain Shams University**

**Faculty of Engineering**

**Public Works Department**

# **Investigation on Developing and Renovating Rural Passenger Stations in Egyptian Railways**

**By**

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## **STATEMENT**

**This thesis is submitted to Ain Shams University for degree of Master of Science in civil engineering “public works department”**

**The work presented in this thesis was carried out by the author in the department of public works, Ain Shams University from 2008 to 2010**

**No part of this thesis has been submitted for a degree or qualification at any other institute or university**

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**Name: Heba Mahmoud Barky Shalaby**

**Dedicated To My Parents for Their Cordial  
Encouragement, Inspiration and Love They  
Devoted To Me**

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# **Abstract**

**Master of Science Thesis by:**

**Eng. Heba Mahmoud Barky Shalaby**

## **Title: “Investigation on Developing and Renovating Rural Passenger Stations in Egyptian Railways”**

For the Egyptian Railways , it can be seen that the railway stations are spreaded over the whole map of the country . These locations include the different types of stations which are classified as :

- Terminal or end stations
- Intermediate central stations
- Branching stations
- Intermediate through stations
- Halt stations

Most of these stations are provided for passenger and freight services. The thesis will concentrate on passenger services only. Concerning the passenger services, each station should include the needed facilities such as:

- The main building and its facilities
- Number of tracks, platforms, sheds, overhead, footbridge or subway.  
Terminal stations may have
- Locomotive shed
- Minor repairing shed
- Cleaning and washing pits and their water and drainage systems.

This thesis will concentrate on investigation how to develop or renovate the passenger stations. Therefore, it concentrates on studying the following:

- The actual station components and the corresponding specifications to generate the reliable requirements. Then, a

feasibility study is proposed to select the feasible and optimum alternative.

- Numbers of the users and the number of the passenger for each station.
- The trains passing by or stopping at each of these stations to determine the needed tracks and comparing with the actual layout.
- Traffic demands and the official train schedule to verify the compliance with each other and design the suitable timetable.

The thesis analysis is based on Egyptian railway data, official time table, standards & specifications and the station field survey in 2003 as well as Egyptian and worldwide experiences.

To realize this goal, this thesis is divided into seven chapters, which can be summarized as follows:

Introduction, literature review, study on Passenger station classifications and its requirements. Traffic fluctuations for passengers and trains are also studied.

A study train-station-passenger interactions is presented, then two methodologies are proposed, the first to determine how the official timetable (supply) complies with the actual passenger flow (demand), while the second to determine the suitable timetable to realize the compliance of the supply with the demand. Station economics is also discussed to derive a recommended feasibility study to decide the best required development and the most suitable renovations. Finally, the thesis derives some conclusions & recommendations concerning field survey and others relating to station development and renovating. Further studies are proposed to be investigated

## **KEYWORDS**

Passenger - Trains – Stations – Design- Planning – Management- Development – Renovation – Egyptian railway- Rural – Platform- Waiting Room – Booking Office – Revenue- Cost- Fluctuations

# Table of contents

	Page no.
List of figures	vi
List of tables	viii
Symbols & Abbreviations	xiii
<b>Chapter (1): Introduction</b>	
1-1 General	1
1-2 Problem Definition	1
1-3 Thesis hypotheses	2
1-4 Thesis scopes	2
1-5 Thesis Objectives	2
1-6 Thesis Methodology	3
1-7 Thesis Contents	3
<b>Chapter (2): Literature Review</b>	
2-1 Introduction	8
2-2 Research Projects	8
2-2-1 The Consulting Unit for Transport Planning and Traffic Engineering Study (CUTPTE, May, 2004)	8
2-2-2 Design of Researches and Architectural Studies Unit Study (DRASUS, 2007)	10
2-3 Research Papers	12
2-3-1 Tracking People in a Railway Station during Rush-Hour	12
2-3-2 Visualizing Passenger Flow in Railway Station Using Laser Scanners	13
2-3-3 Intermodal Concept in Railway Station Design	14
2-3-4 A Visual Interactive Simulation Model For the Design of a Railway Station	15
2-3-5 Designs and practices of energy saving in Lhasa Railway Station	16
2-3-6 The Impact of Railway Stations on Residential	17



and Commercial Property Value: A Meta-analysis	
2-4 Conclusions	19
<b>Chapter (3): Station Classifications and Requirements</b>	
3-1 Introduction	20
3-2 Station Classifications	20
3-2-1 Station Classifications According to their Locations on the Railway Network	20
3-2-1-1 Terminal Station	20
3-2-1-2 Junction Station	21
3-2-1-3 Through stations	23
3-2-1-4 Route crossings	24
3-2-1-5 Elevated stations	24
3-2-1-6 Sub-surface (cut-and-cover)	24
3-2-1-7 Deep tube	25
3-2-2 Station Classifications According to Operations Performed	25
3-2-2-1 Block Stations	25
3-2-2-2 Non-Block Stations	26
3-2-2-3 Special Class Stations	26
3-2-3 Station Classifications According to Layout	27
3-2-3-1 City centre terminals	27
3-2-3-2 Rail-to-rail interchanges	27
3-2-3-3 Road-rail stations	27
3-2-3-4 Rail-to-sea interchanges	27
3-2-3-5 Park & ride (parkway) stations	28
3-2-3-6 Bus-to-rail interchanges	28
3-2-3-7 Suburban stations	28
3-2-3-8 Small town stations	28

3-2-3-9 International passenger terminals	29
3-2-3-10 Airport stations	29
3-2-3-11 Underground stations	29
3-3 Station Requirements	31
3-3-1 Architectural Spaces	33
3-3-1-1 Parking Area	33
3-3-1-2 Station Concourses	33
3-3-1-3 Ticket Halls	34
3-3-1-4 Station Retail	37
3-3-1-5 Platforms	38
3-3-1-6 Subway &Footbridge	39
3-3-2 Other Elements	41
3-3-2-1 Station Communications	41
3-3-2-2 Travel Information Services	41
3-3-2-3 Shed (canopies) and Furniture	43
3-4 Conclusions	47

## **Chapter (4): Traffic Fluctuations for Both Passengers and Trains Movements**

4-1 Introduction	49
4-2 Passengers' Classifications According to Their Journey Purposes	49
4-3 Capacity of Circulation Elements	51
4-4 Passenger Flows	53
4-4-1 Inside The Station	53
4-4-2 Outside The Station	54
4-5 Railway Traffic Fluctuations	54
4-5-1 Passenger Traffic Fluctuations Worldwide	54
4-5-2 Passenger Traffic Fluctuations in Egypt	56
4-5-2-1 Hourly Passenger Fluctuations	57

4-5-2-2 Daily Traffic Fluctuations	61
4-5-2-3 Annual Passenger Flow	62
4-5-3 Passenger Trains Traffic Fluctuations in Egypt	67
4-6 Conclusions	69
<b>Chapter (5): Proposed Methodology to Study Train, Station and Passenger Interactions - Application on Egyptian railway</b>	
5-1 Introduction	70
5-2 Interactions between Passenger Train and Station Requirements	70
5-2-1 Platform Length	70
5-2-2 Vertical and Horizontal distance Between Floor Edge and Platform Surface	72
5-2-2-1 Calculation of Both Vertical and Horizontal Distance Between Floor Edge and Platform Surface	72
5-2-2-2 Applications on Egyptian Railways	73
5-2-3 Required tracks, Refuge Sidings and Stabling Yards	77
5-3 Interactions between Station and Passenger	92
5-3-1 Platform Width	92
5-3-1-1 Platform Width Specifications	92
5-3-2-2 Application on Egyptian railways	93
5-3-2 Booking Windows Requirements	93
5-3-3 Seats and Canopies Requirements	94
5-3-4 Subway& Footbridge Requirements	94
5-3-5 Parking Area Requirements	95
5-4 Interactions between Passenger Train and Station User	96
5-4-1 Passenger per Train (Density):	96
5-4-1-1 Working Efficiency ( $\beta$ )	96
5-4-1-2 Boarding Rate ( $\alpha$ )	100
5-4-2 Proposed Train Schedule (Timetable)	107

5-5 Conclusions	113
<b>Chapter (6): Passenger Station Economics</b>	
6-1 Introduction	114
6-2 Station Revenue and Cost Elements	114
6-2-1 Revenue Elements	114
6-2-2 Cost Elements	114
6-3 Recommended Feasibility Study for the Required Development and the Proposed Renovations	115
6-3-1 Alternatives Study	116
6-3-2 Feasibility Study Steps	116
6-4 Egyptian Railway Stations Revenue and Costs	119
6-4-1 Egyptian Railway Stations Revenue	119
6-4-2 Egyptian Railway Stations Costs	119
6-5 Case Study on Egyptian Railway Using Proposed Feasibility Study	120
6-5-1 Alternative study	120
6-5-2 Feasibility Study Steps	120
6-6 Conclusions	129
<b>Chapter (7): Conclusions &amp; Recommendations</b>	
7-1 Introduction	131
7-2 Conclusions	131
7-3 Recommendations	132
7-4 Further Studies	135
<b>Appendix A</b>	136
<b>Appendix B</b>	144
<b>Appendix C</b>	146
<b>Appendix D</b>	150
<b>References</b>	

## List of Figures

	<b>Description</b>	<b>Page no.</b>
<b>Figures of chapter three</b>		
<b>Figure (3-1)</b>	Example of terminal station	21
<b>Figure (3-2-a)</b>	Example of single main line joins single branch line	22
<b>Figure (3-2-b)</b>	Example of Double main line joins single branch	22
<b>Figure (3-2-c)</b>	Example of Double main line joins double branch line	22
<b>Figure (3-3)</b>	Example of through station	23
<b>Figure(3-4)</b>	Example of route crossing station	24
<b>Figure (3-5)</b>	Three types of stations classified according to the operations performed	25
<b>Figure (3-6)</b>	Canopies (minimum dimensions)	44
<b>Figures of chapter four</b>		
<b>Figure (4-1)</b>	Fruin classification method	52
<b>Figure (4-2)</b>	Passenger journeys on national railway Great Britain	56
<b>Figure (4-3)</b>	Traffic fluctuations data for hourly passenger flow based on the field survey in 2003 for one day at Cairo station	57
<b>Figure (4-4 )</b>	Traffic fluctuations data for hourly passenger flow based on the field survey in 2003 for one day at Alexandria station	58
<b>Figure (4-5 )</b>	Traffic fluctuations data for hourly passenger flow based on the field survey in 2003 for one day at Tanta stations (CUTPTE, May, 2004).	58
<b>Figure (4-6 )</b>	Traffic fluctuations data for hourly	59

passenger flow based on the field survey in 2003 for one day at Banha stations (CUTPTE, May, 2004).

<b>Figure (4-7)</b>	Passenger journeys fluctuations on Egyptian railway during the period from 1977 to 2006/2007.	65
<b>Figure (4-8-a)</b>	Passenger fluctuations for Egyptian railway during the period (1990 – 2006/2007)	66
<b>Figure (4-8-b)</b>	Passenger fluctuations for Egyptian railway during the period (1990 - 2000)	66
<b>Figure (4-8-c)</b>	Passenger fluctuations for Egyptian railway during the period (2000 - 2007)	66
<b>Figure (4-9-a)</b>	Train fluctuations for Egyptian railway during the period (1990/91-2006/07)	68
<b>Figure (4-9-b)</b>	Train fluctuations for Egyptian railway during the period (1990/91–1999/2000)	68
<b>Figure (4-9-c)</b>	Train fluctuations for Egyptian railway during the period ( 1999/2000-2006/07)	68
<b>Figures of chapter five</b>		
<b>Figure (5-1)</b>	Platform distance dimensions according to Egypt railway	73
<b>Figure (5-2)</b>	2nd Class air conditioned couches SEMAF	74
<b>Figure (5-3)</b>	Egyptian railway Gabarit	75
<b>Figure (5-4-a)</b>	Cairo station as a through	78
<b>Figure (5-4-b)</b>	Cairo station layout	79
<b>Figure (5-5-a)</b>	Cairo station as a terminus	80
<b>Figure (5-5-b)</b>	Cairo station layout	81

<b>Figure (5-6-a)</b>	Tanta station as a through	82
<b>Figure (5-6-b)</b>	Tanta station layout (Northen part)	83
<b>Figure (5-6-c)</b>	Tanta station layout (Northen part)	83
<b>Figure (5-6-d)</b>	Tanta station layout (Sothern part)	84
<b>Figure (5-7-a)</b>	Tanta station as a terminus	85
<b>Figure (5-8-a)</b>	Alexandria station as a terminus	86
<b>Figure (5-8-b)</b>	Alexandria station layout	87
<b>Figure (5-8-c)</b>	Alexandria station layout (stablying yard)	87
<b>Figure (5-9-a)</b>	Abees station layout	88
<b>Figure (5-9-b)</b>	Abees station layout	89
<b>Figure(5-10-a)</b>	Nfesha station layout	90
<b>Figure(5-10-b)</b>	Nfesha station layout	91
<b>Figure (5-11)</b>	Relation between actual schedule &required train at Alexandria station as terminus	104
<b>Figure (5-12)</b>	Steps of timetable design	112