Ain Shams University

Faculty of Engineering

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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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Signature

Name: Heba Mahmoud Barky Shalaby

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

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Praise to ALLAH who guided and aided me to bring –forth to light this work and by whose grace this work has been completed

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Abstract

Master of Science Thesis by:

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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

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