

perhaps believe that 'hindsight' were a more apposite euphemistic expression for this theory, for whatever judgement this type of manager offers, it always rests upon seat of the pants decisions. The theory of management in truth is used simply to cover human ignorance, its aging intellectual incompetence, and its fear of natural consequences/conclusions which must follow from the work without a positive objective. According to contemporary theory, however, the good management does owe much to 'Academic Thinkings' because the nature of the difference between good and the bad in management is becoming better understood very much as a direct result of the academic promptings and explorations. One, thus, cannot afford to be antagonistic to academic efforts. Rather, one must try to break through the conventional barriers of management role, taking an inspiration from the academic thinkers. Management clearly needs help, research and advice for improvement of the quality of its management/decision making which can very aptly be provided by academic intelligence and impartiality. All said, the theory of Management by 'Academic Thinking' is nothing but Management Science as termed in the modern times and goes a long way in assisting the Management with 'Decision Making' in general and 'Economic Decision Making' in particular.

## 6.2 Management Tools.

The managerial methodologies/techniques, developed through science/research, as stated here and there in this paper pertaining to impact of science in management

and aptly applied by managers in day to day working and decision making process, will bring about tangible, vivid and revolutionary improvements in the existing/ conventional performances can neither be gainsaid, nor over-emphasized. It may not, however, be construed that the manager would become fully involved in the technical details of the science. Nay, he would rather adopt only its overall strategy and leave the tactical details to be sorted out by the trained management scientist who is fully conversant with the management tools, scientifically conducive to the advancement of the managerial functions.

Evolved through the aegis of management science, mathematics, engineering and economics etc., some of the management tools made available to the manager can be broadly classified into two categories viz 'Aids' and 'Techniques' as detailed in the chart at the next page.

specialized knowhow is available in the country and where and when it could be best made use of. The relevant expertise can then be hired/acquired and ploughed into the operations through the agency of relevant consultants available in the market. The technically advanced railways have made liberal and significant use of some of the tools listed below:

- Information collection and data analysis.
- Forecasting.
- Objective and corporate planning.
- Operations research.
- Project planning techniques and probability analysis, alternative decision making and cost benefit analysis etc.
- Budgetary controls including project progress and control techniques of PERT/CPM.
- Simulation/Modelling.
- Organization and methods.
- System Analysis.
- Computer technology.
- Inventory Control.

Pakistan Railways have, however, yet to venture for introduction of these techniques on the system in a positive and plausible manner although the need for the same has been felt for quite sometime in the past. Despite a positive awakening over the years, there has, however, been insignificant progress in this direction. Without breaking ice on this front substantially, productivity index will continue to register ever-deteriorating declines and overall

picture of operations/working will continue to be gloomy and dismal despite sporadic transplantation of sophisticated technologies such as:

- Diesel and Electric traction.
- Strengthened track structure comprising of long welded rails , pre-stressed concrete sleepers and mechanised maintenance.
- Automatic signalling comprising of C.T.C. (Centralized traffic control), All-relay interlocking and track circuiting etc.
- Manufacture of modern rolling stock.
- Semi-automatic marshalling yards.
- Micro-wave telecommunication facilities.

7. Training Methodologies.

7.1 General.

Knowledge has, from times immemorial, been considered as a most powerful tool. A bad workman, devoid of know-how of his trade and skill, as the axiom goes, quarrels with his tools without achieving any worthwhile productivity. All the same life is but very short for a person to gain the required knowledge all by personal experience. It is, therefore, training, based on knowledge evolved over the centuries, alone that provides the most effective tool for a management in any enterprise to keep it viable and productive. On the contrary, an organization without proper training facilities is doomed to degenerate. Training establishments are not only corner stones for achievement of self-reliance and productivity in an enterprise but also a major indicator of its healthy economy in operations.

Well planned and established training programmes vouchsafe satisfactory accomplishment of more than half of the assigned jobs. Basically the training covers the following facets/aspects:

- i) Adequacy of pre-service general and technical education.
- ii) Foundation and induction courses prior to joining actual service.
- iii) Orientation programmes preparatory to posting on specific jobs.
- iv) Re-orientation courses prior to induction of new technologies and methodologies.
- v) Higher studies including operational research and modern management techniques.

These training patterns known as training strategy and approach are considered to be of universal application irrespective of the nature of character of an enterprise. There can be variations or combinations of systems including provision of 'On Job' training for the attainment of desired results but concepts and principles will always remain identical. The common guiding factor of all training programmes makes it incumbent to intelligently devise some sort of inbuilt institutional framework that should keep pace with the changing conditions and times. In the modern scientific era a training notion without such an edifice/establishment would be nothing short of a mirage and quite untenable.

## 7.2

### Evolution of Training on Railways.

The Railways, the world over, were most conservative in their outlook towards research and development.

of their operations till after the second World War. They considered themselves to be the monopolists in the field of surface transport due comparatively to inadequate development of their rivals, namely Road Waterborne and Conduit Transport. They remained altogether complacent in practising low speeds with light axles. The advent of new technologies and modern methodologies were not only frowned at by railways but also kept wilfully at bay. As it is, the basic necessity for training in modernised practices, methods and procedures was neither considered feasible nor obligatory. Experience and the tradition of intuitive decision making by the serving personnel alone were regarded as the mainstay of the entire railway working. There was neither any room for the innovatory and talented roles nor any consideration for training staff to enhance their knowledge that would transform them into good railway technicians, technologists, engineers and managers in various fields, disciplines and operations, enabling them to face the challenges of survival with enterprising spirit in the modern competitive world. Surprisingly, sooner than expected, the World War II war-torn countries, like France, West Germany, Japan and many others in Europe, devoid of worthwhile oil/energy resources, adopted the railways as their major mode of transport realizing their inherent preponderant advantages, viz:

- Negligible rolling resistance to forward movements.
- Lesser land reservation/utilization.
- most favourable output in respect of load hauled,

speed attained, distance covered and comforts provided vis-a-vis consumption of fuel/energy.

- capable of making use of electric motor through electric traction obviating oil/fuel imports; &
- capable of developing much higher commercial speeds technologically than any other surface transport.

Thinking and reasoning on above lines were evolved through concerted efforts and unrelenting research with a view to harnessing and inducting the modern technologies and methodologies in various railway disciplines and operations; hence the necessity for the modernization and upgradation of the training practices and facilities as a logical follow-up action. The twin pronged resolute **attack**, therefore, made by the railway administrations of the foregoing countries in the areas of research/ development and training was most appropriate and need of the hour. Such a recourse has brought about the triumphal come-back of the Railways in the arena of transport business which was slipping away from them with the phenomenal development of road transport after the Second World War. It has also heralded the surface transport miracle through safe, comfortable and economical high speeds much to be envied by Air transport on short continental and major national routes in Europe and Japan. The phenomenon can be repeated with equal success by the various railways on the Asian, African and American Continents by radically improving training and research programmes and facilities.

7.3

#### Status and Scope of Training on Pakistan Railways.

Pakistan Railways inherited existing Walton

Training School as the sole training institute on the eve of Independence in 1947. With the passage of time, the following four institutions have been set up to supplement the training programmes provided at the Walton Training School:

- i) Pakistan Regional Railway Training Centre  
Walton, Lahore (P.R.R.T.C.).
- ii) Apprentices Training Centre, Moghalpura, Lahore
- iii) Diesel Training School, Karachi Cantt.
- iv) Institute of Railway Management.

It will be interesting to note that all the above institutions, including the premier one namely, the P.R. Walton Training School, impart either pre-service or in-service training or both to various categories of the railway staff, including probationary officers. However, no training courses are provided for Officers in Grade-18 and above at these institutions except in P.R.R.T.C. There too the scope is limited to only two fields viz Operating and Signalling with a negligible annual turn out of hardly one or two Grade-18 Officers. Besides, neither the Pakistan Railways have facilities to improve the basic general education of their staff nor for raising the level of technical/engineering education of their technical personnel of various disciplines.

Courses provided at various Polytechnic Institutes, Engineering Colleges/Universities in different technologies and major fields of civil, mechanical, electrical/electronic engineering too miserably fail to cater for the railway needs. Fresh Engineering Graduates and Diploma Holders in various technologies can, therefore,



neither apply their skill to modernise the existing railway system nor are they well-equipped to face the challenge of constructing a modern railroad system whose technologies have advanced to a level that favourably matches the space technologies.

The existing training institutes being ill-equipped to supplement and refurbish the basic technical/engineering education of these fresh graduates and diploma holders render them as 'misfits' who can hardly afford to become viable and competent engineers and technologists during their long span of productive career in the railways. They keep on ascending the promotion ladder with the passage of time by dint of sheer seniority gathering hardly any worthwhile knowledge and productive experience. Consequently, the Railways are faced with great difficulties in re-orientating and developing their operations to the satisfaction of their clientele much less making substantial contribution to the advancement of national economy. The acute problem of imparting effective and gainful training to all its employees as a continuous process has also to be tackled keeping in view the poor standards of general as well as technical/engineering education obtaining in the country.

Moreover, the aforesaid premier training institution viz Walton Training School caters for training of operational staff in general. Operating, commercial and technical staff are invariably trained in General Regulations in force on Pakistan Railways.

Imparting of knowledge and training in other subjects, technologies, scientific knowledge and expertise to Tech. branches of railway is relatively of secondary importance. It is for this reason that the school can at best be termed as only an 'operational school' more so when almost all the categories of staff attending whether for initial courses or promotion/refresher ones, have to study and qualify in the said 'Regulations'. Other institutions inaugurated after independence are either of very low standard or extremely limited in scope. These and Walton Training School are hopelessly inadequate for providing pre and in-service training facilities consistent with the requirements of a potentially dynamic and forward looking organization like Pakistan Railways. Technical/operational staff and officers, devoid of specialised and versatile railroad training, will always be reluctant to acquire sufficient expertise and ingenuity which is most essential for tackling grave problems. Such staff beset not only its day to day operations but also impede its development for attaining safe, comfortable and economical journeys at higher speeds over cross country and inter city routes most essential for relieving transport pressure in urban areas. It is through effective training of staff only that country and national economy can be extricated from existing 'Transport Muddle'.

7.4 Action Plan for Advancement of Training on Pakistan Railways.

Pakistan Railways will have to implement viable

schemes with a view to providing intensive and technologically advanced training at different levels of officers and staff belonging to various disciplines. Training programmes and institutions have to be re-organized on a suitable pattern and system commensurate with the principles and approach enunciated in para 7.1. To reiterate, the following programmes will have to be launched with all speed:

- i) Augmenting pre-service technical/engineering education in collaboration with Technical/Engineering Universities/Colleges/Polytechniques.
- ii) Training at initial or technician level including 'On Job' training.
- iii) Training at medium or supervisory/officer level including 'On Job' training.
- iv) Higher studies and advanced level training for senior officers/executives.
- v) Integration of above training programmes and schemes with research planning and development activities including design and standardization aspects.

Besides, management and management science subjects will invariably be included in syllabi / curriculum of all the programmes/courses to be formulated under the above training schemes.

#### 7.5 Other Aids.

There are many other aids available for the present day management in the form of SEMINARS, SYMPOSIUMS and Workshops etc. They help educate and update the knowledge of employees in respect of modern sophisticated

techniques, working methods and technologies whether these are in the process of being introduced or planned to be so done. They go a long way in transforming the outlook of the personnel who become objectively aware and positively receptive to new methods, equipment and systems and help bring about enhanced productivity. Besides, regular lectures, demonstrations, group meetings and discussions so broaden their outlook and vision that they become well-poised to counter any obstacles that may come in the way of smooth operations. As for practical demonstrations and 'On Job' training the aid of 'Pilot Project' is considered to be most effective. Through this, employees get practical experience and know-how to handle a new piece of equipment, tool or working method. They also feel doubly elated in their zeal, zest and confidence and tackle the change far more successfully, skipping over the uncertainties smoothly. As it is, Pakistan Railways have sadly snapped link with these new strategies and innovations which was so essential, for imbibing a spirit of self-reliance and self-attainment amongst vast cadres of its technicians, technologists, engineers and officers. In its absence abnormal feeling of apathy, helplessness and despondency has miserably crept in. Incalculable harm and damage in the shape of degenerating productivity and faltering discipline, that has come in its wake, can hardly be overemphasized. Old ambitions and zeal considered to be the hall mark and pride of railway operations have, therefore, to be reactivated and revived with all the vigour and tempo so as to regain the lost ground on one hand and stage

a triumphant forward march on the road of prosperity and viability with full confidence on the other. And for all this the only magna carta is impregnated and viable training.

8. Research Activities and Their Impact.

8.1 General.

No management worth the name can be indifferent to or oblivious of the importance and impact of the research. It is by virtue of research that mankind has been blessed with the fruits of phenomenal and once unthought of space age technologies in all walks of life. Thanks to the research conducted by operations researchers and scientists, management and management science has not lagged behind and has helped bring about progress and prosperity in all enterprises where it is practised. Modern research is in fact fountain head of all developments.

8.2 Application of Research on Railways.

The technically advanced railways of the world, such as Japanese National Railways, French National Railways and many other providing super fast and comfortable transport facilities to their clientele, owe their status to Research and Development efforts inbuilt in their system of working and operations. The products of their huge research efforts are ploughed back into day-to-day operations and short/long range planning through the major tool of training systems and practices painstakingly evolved to match the huge research and development activities.

8.3 Patterns of Research on Railways.

Research activities on the railways have to be conducted and predominantly oriented towards;

- a) Adaptative or Applied Research for acquiring the appropriate technology.
- b) Operations Research.

Obviously a manager or management is genuinely interested in both the above types of research. The former belonging to the realm of external environment can only be ignored by a management at the cost of its peril. The latter has enabled the management and management science to progress and develop to its present state of uneviable perfection. It has universally been recognized that further progress and advancement of human race is inalienably dependent on the prospects and quality of management process and patterns. Railroad industry too will, therefore, have earnestly to activate research efforts in these two fields for achievement of:

- c) Complete success and harmony in the cultivation and transplatation of inevitable and appropriate technologies so as to remain viable in business.
- d) Enriched management practices and management science tools.

business public utility i.e. governmental enterprises, the managerial goal is identical at all levels. The corporation president, army general, city administrator, hospital department hand, first line government supervisor, Boy Scout Leader, bishop, foot-ball manager, University President or Dean, have all, as managers, the same goals i.e. how best to maximise the achievements/out-puts of the concern with minimum of the costs.

9.1.4. WHAT IS MANAGEMENT?

Broadly speaking, management co-ordinates efforts of the people so that individual objectives/efforts are rendered into overall economical and social achievements. Viable development of management principles would be tantamount to increased efficiency of human as well as material resources and would, unequivocally, have a revolutionary impact on the socio-economical and cultural levels of a society. To illustrate further, nations with high material standards of living tend to have high levels of intelligence and skill in their management of business.

9.1.5 MODERN CONCEPT.

Modern management concepts emphasize on intelligent rather than harder work. Job simplification is considered by far the best technique for improving work standards thereby reducing human efforts and bringing about financial economy. Work is required to be done with as little an effort as is practicable and economical. Simplification

of work in other words means commercialization of the organization so as to bring economy in operations, augment profitability and usher in an era of prosperity for the enterprise, its management and personnel all alike.

9.1.6. DETAILS LEAD TO PIT-FALLS.

The negation of the above concept may spell ruin to the enterprise, culminate in its much dreaded bankruptcy, nay very closure, by no means a healthy situation for the management itself. Effective management has, however, to remain confined to setting broader goals, leaving the details to be appropriately tackled by those down in the line at the lowest rungs of the management.

How sagely the hero of Alamein Field-Marshal Montgomery observed in his memoirs that:

' No Commander whose daily life is spent in consideration of details and who has not time for quiet thought and reflection, can make a sound plan of battle on a high level or conduct large-scale operations efficiently. This principle applies equally in civil life and specially in government affairs. I often think that the principle if not understood and applied by Cabinet Ministers and by others who work in government posts might well have the following inscribed on their tombstones when they die. '

"Here lies a man who died of exhaustion brought about by pre-occupation with details. He never had the time to think because he was always reading papers.



He saw every tree, but never the whole wood".

9.2 RAIL-ROAD AND ALLIED INDUSTRY.

9.2.1 General.

The rail-roads and allied industry remained complacent and indifferent towards the management reforms both in the external environment and internal realm till the Second World War due perhaps to their monopolistic position in the Transport Sector. The phenomenal advancement in air and road transport during and just after the war brought Railways to the brink of extinction and they were dubbed openly on a "DEAD HORSE" of the Transport Sector. This stark eventuality gave rude shock to the rail-road industry and awakened the European and Japanese railways to take objective stock of this reality.

Having overcome initial shocks the rail-road industry, in particular of France, West Germany and Japan, seized upon the occasion to introduce radical management reforms in their working and operations through the aid of applied and operative research. The vividly poignant results bear out that these railroads have staged a triumphal comeback as highly viable transport mode. They have further proved that the future of National Economy and transport section is inalienably linked with the development of railways in modern era of energy and environment pollution crises that haunt the human race and the world at large with unprecedented dreads.

9.2.2 IN PAKISTAN

Eversince independence in August 1947, railroad industry has suffered beyond redemption mainly due to mismanagement in both external and internal environments. It is for this reason that for want of appropriate co-relating reforms in the management sphere, the implementations of accepted operational and technological reforms have ever gone by default. Sporadic incumbent replacements at higher or lower echelons of managements have not helped arrest the manifest system failures permeating the entire industry either. In fact the anomalous 'Diarchy' & 'Triarchy' at the top, in one or the other form, betrays that vested interests have on purpose kept national railways handicapped and fettered. Devoid of unity of command and unity of direction, the national railways have, therefore, been restrained to play its genuine and natural role in the development of national economy in general and fulfil its obligations towards its clientele in particular.

9.2.3 RECOMMENDATIONS

The corollary of the foregoing is that railways and its allied industry stand in dire need of external and internal environment reforms. Only then it can become economically viable common man's carrier and can simultaneously support the national economy.

9.2.3.1 External Environment.

A veritable renaissance of railways, no less than a wonder of the new age, has lent new dimensions to this enterprise and has attracted entrepreneurs mainly

on account of its inbred qualities to overcome.

- Energy dilemma and
- Environmental pollution.

It has also substantially been borne out that railways are pregnant with ever-increasing returns as their cost per unit of traffic carried diminishes rapidly with increase in traffic density. The cost crazy competition between different modes of transport in the advanced and affluent societies has stressed the need for optimisation of a multi-modal system, each mode playing a cooperative and complementary role instead of competitive one. Much too similar awakening has of late grown in developing countries, owing though largely to economical reasons aimed at harnessing the nation's resources for an optional intermodal split. Never before, at home, has such an experience veered round to a similar opinion. Two or more modes of transport need judiciously be in combination to help more goods being moved efficiently than by the same modes employed separately.

9.2.3.1.1 Constitution of an overall National Transport Authority.

To attain the stipulated output and maximise the returns, in consonance with the foregoing deliberations, constitution of an overall National Transport Authority becomes IMPERATIVE. Such an authority would frame policy and watch implementation of the coordinated efforts towards achievement of the multi-modal harmony within the Transport sector. The main functions of the so-constituted Transport Authority may besides others,

be as under:

- (i) Framing of policy recommending the single mode or multi-modal mix in transport keeping in view the minimum resource cost and other elements as follows;
    - Minimum cost to the operation, the user and the society.
    - Rational employment of potential in each mode.
    - Economical consumption of energy.
    - Maximum rural accessibility, and
    - Optimum use of land.
  - (ii) Recommendations to take due cognizance of the following factors which haunt the society:
    - Congestion.
    - Environmental pollution.
    - Risk of employment and
    - Dwindling resources of energy
  - (iii) Laying down of policy priorities and parameters towards achievement of;
    - Socio-economic objectives of the Government.
    - Adequate resource availability for Capital and financial investments mode-wise or Intermodal wise economics and
    - Rationalization of working/operations within the overall national financial constraints.
- The constitution of a high powered National Transport Authority will go a long way in facilitating prevention of wasteful and duplicate efforts involving huge state finances and resources.

representing Railway Transport in the Planning Commission. Organization Chart at end may be referred to for details.

9.2.3.3.1 Functions of Railway Board.

The Railway Board will be responsible for matters related to:

- (a) Planning and Policy making.
- (b) Highly technical Advisory/Decision making.
- (c) Management in the internal realm.

9.2.3.3.2 Railway Administration.

The Railway will be administratively controlled by a General Manager of Grade-21. He will be its working executive and responsible for day-to-day affairs and operations. Organization chart may be consulted for staff under him.

9.2.3.3.3 Training and Research.

The existing training and research institutions have not measured up suitably to meet the demands of modernization and technological advancement of the Railways which has resulted in abnormal deterioration of operations and working.

Really meaningful, adequate, and effective organizations in the Training and Research realms will be created with wide administrative, managerial and financial powers under the direct control of Railway Board consistent with the managerial/technical requirements of the management reforms brought about on the Railway Board/Pakistan Railways.

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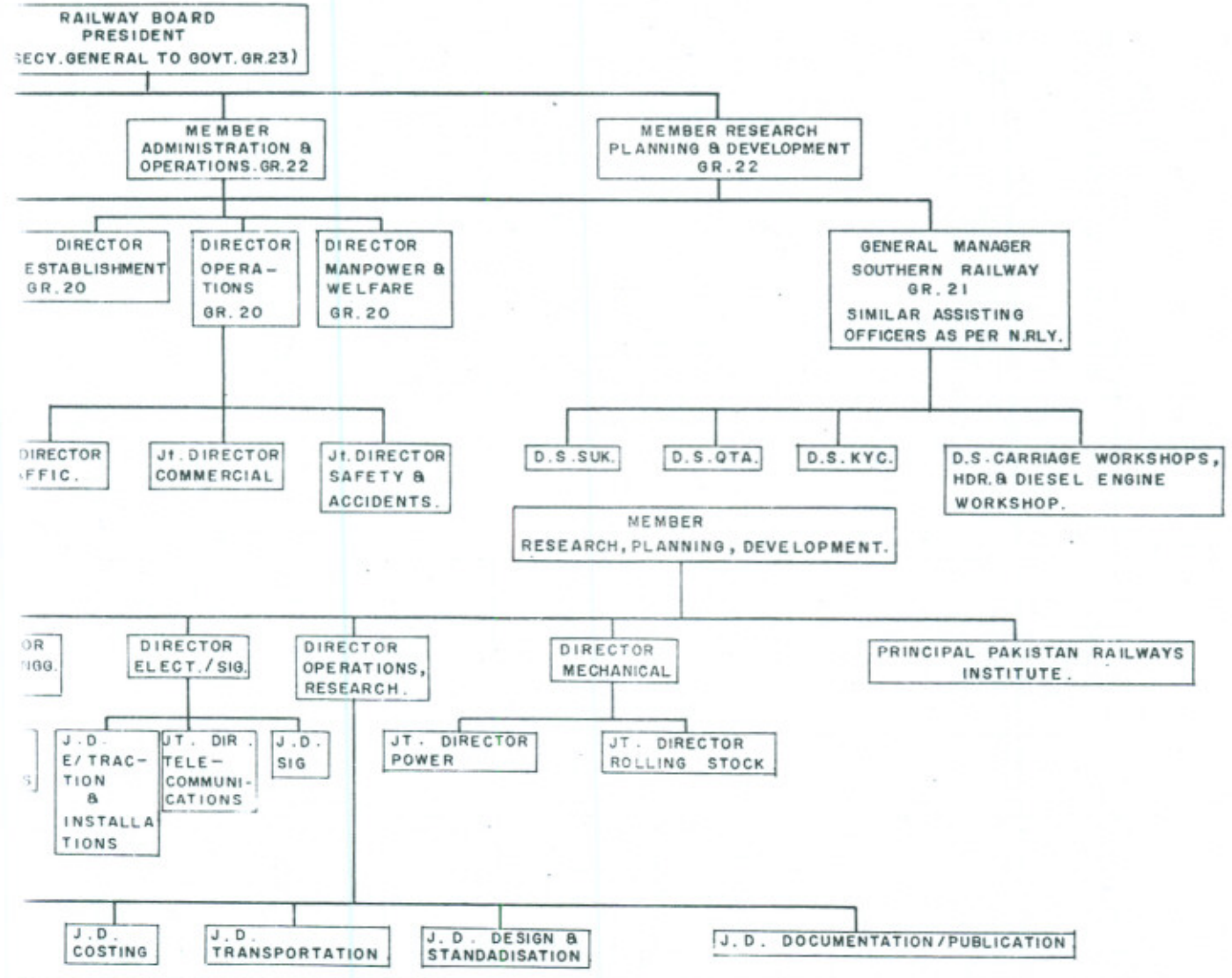
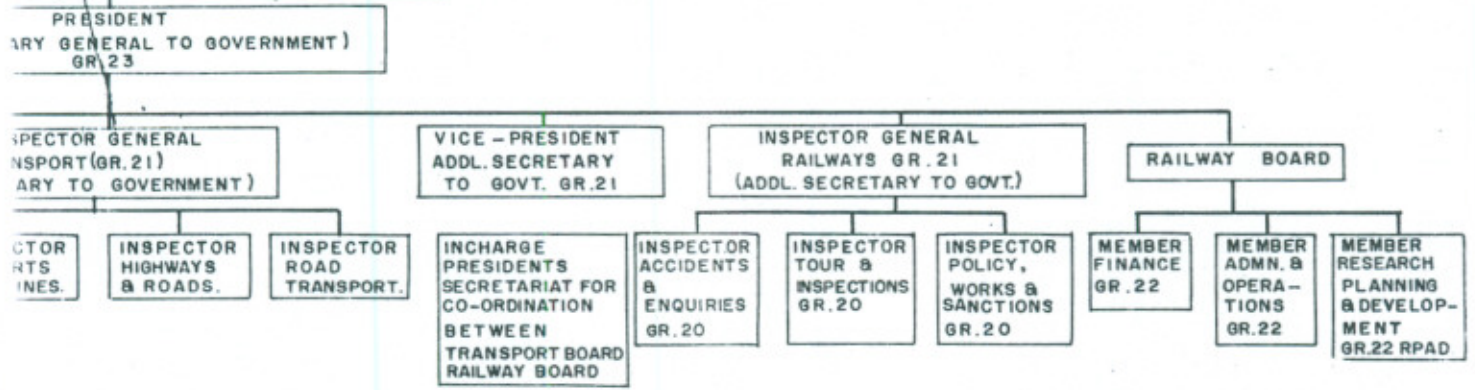
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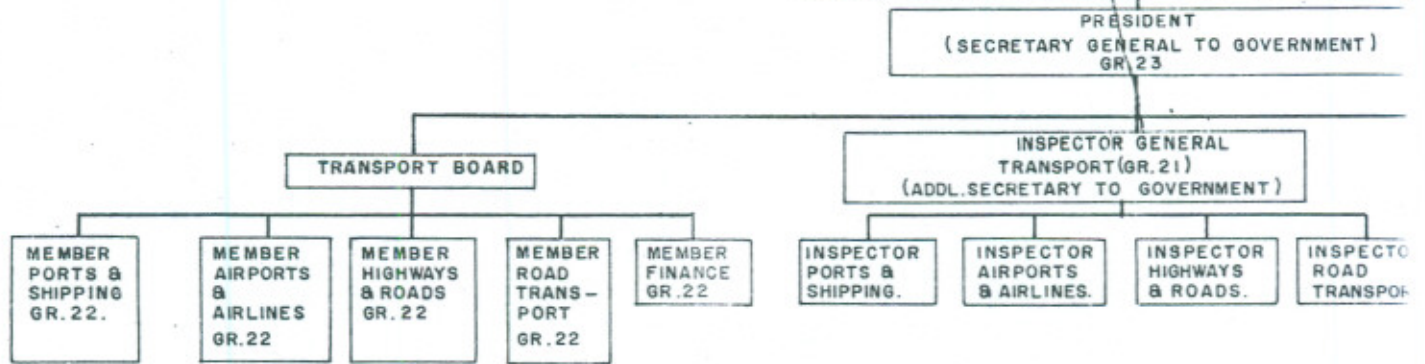
**ORGANIZATION CHART  
OF  
TRANSPORT AUTHORITY AND RAILWAY BOARD**

ANNEXURE 'A'  
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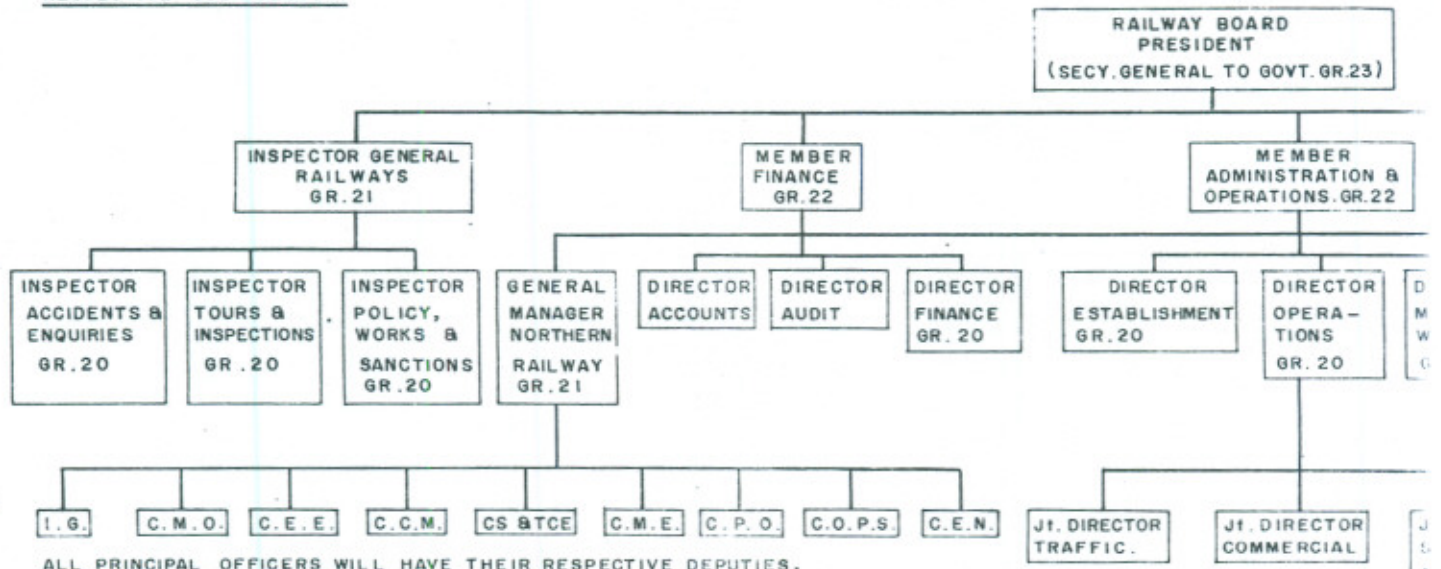




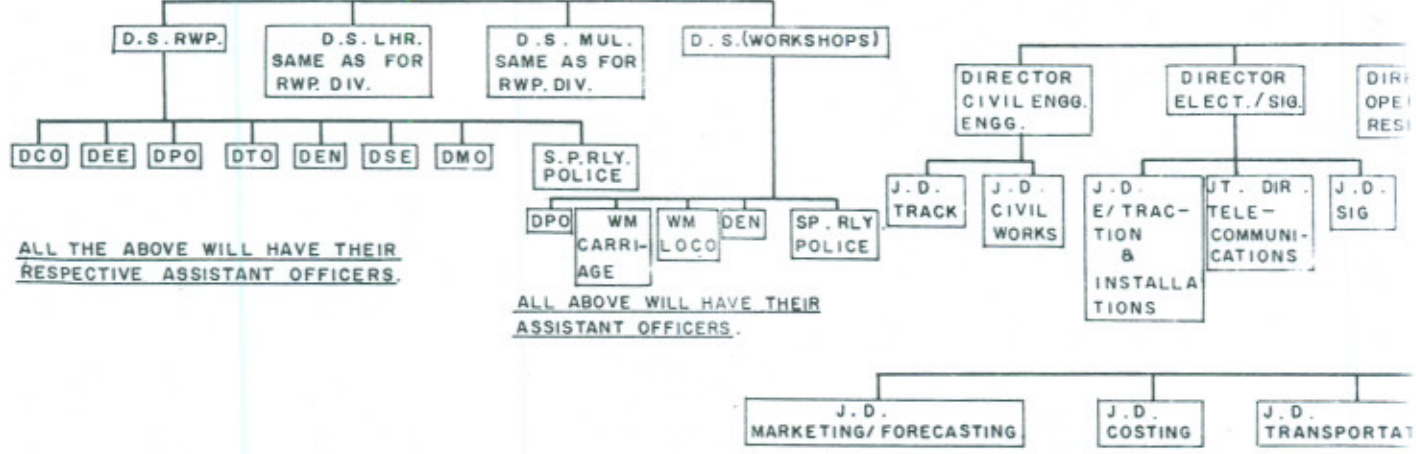
**ORGANIZATION CHART  
OF  
NATIONAL TRANSPORT AUTHORITY AND RAILWAY I**



DETAILS OF RESPECTIVE ASSISTING ORGANISATIONS TO BE ELABORATED BY THE RESPECTIVE SUB-SECTOR.



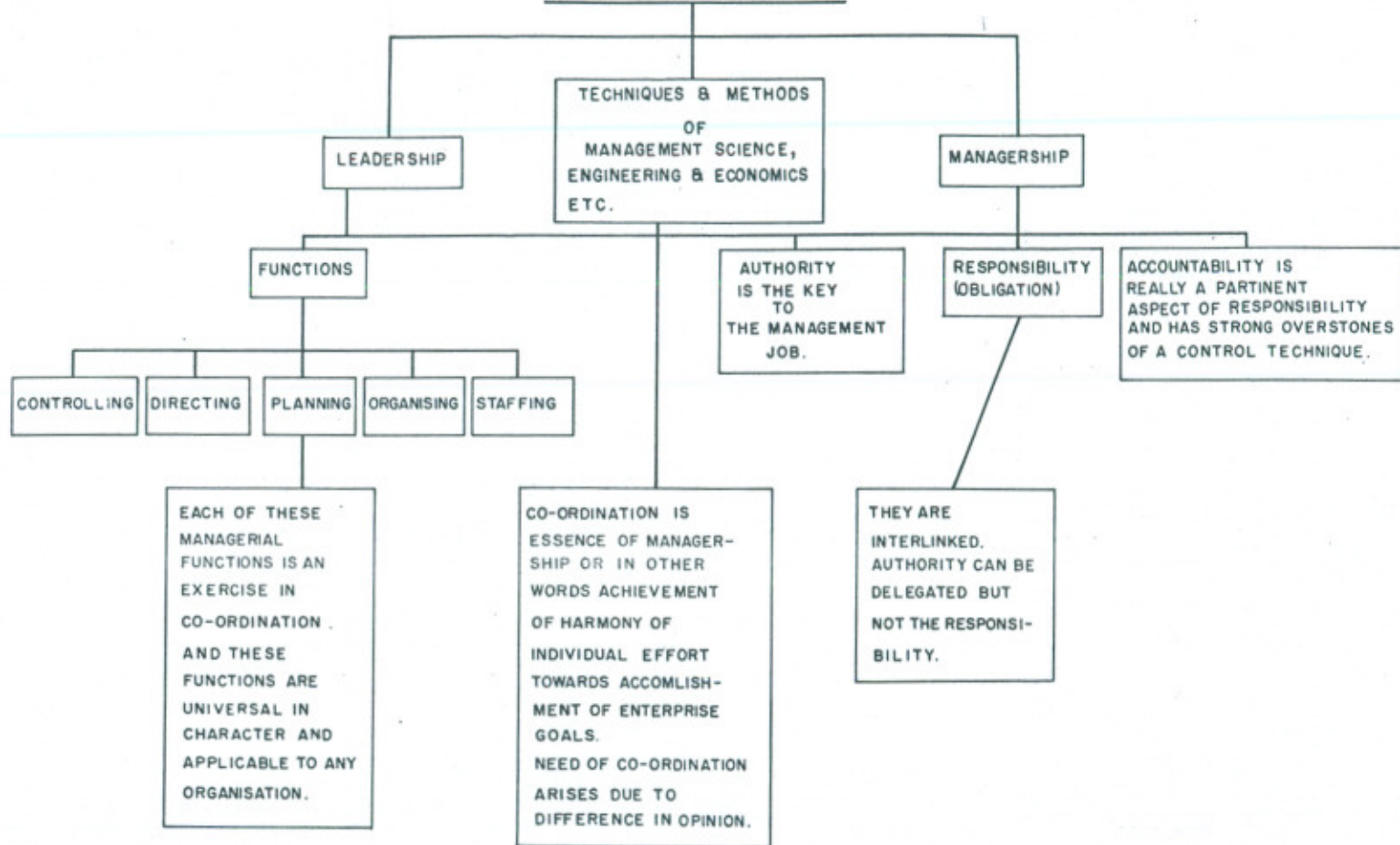
ALL PRINCIPAL OFFICERS WILL HAVE THEIR RESPECTIVE DEPUTIES, EXECUTIVES & ASSISTANT OFFICERS WITH NECESSARY OFFICE ESTABLISHMENTS AND HAVE CONTROL OVER D.S.S., IN THEIR RESPECTIVE SECTORS.



ALL THE ABOVE WILL HAVE THEIR RESPECTIVE ASSISTANT OFFICERS.

ALL ABOVE WILL HAVE THEIR ASSISTANT OFFICERS.

### MANAGEMENT KEY CHART



EXISTING ORGANISATION  
PAKISTAN RAILWAYS

PAKISTAN RAILWAYS

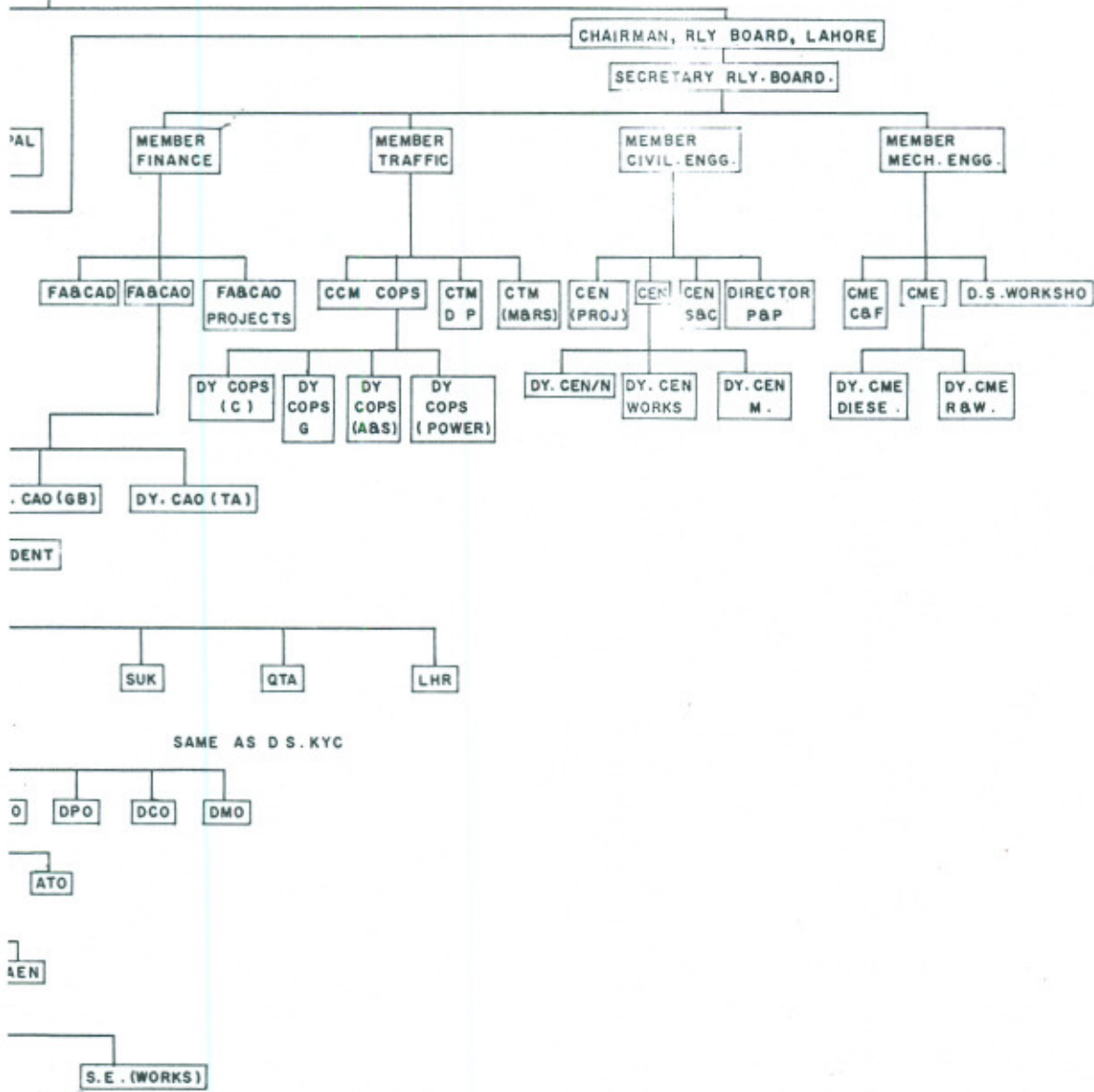


CHART OF EXIST  
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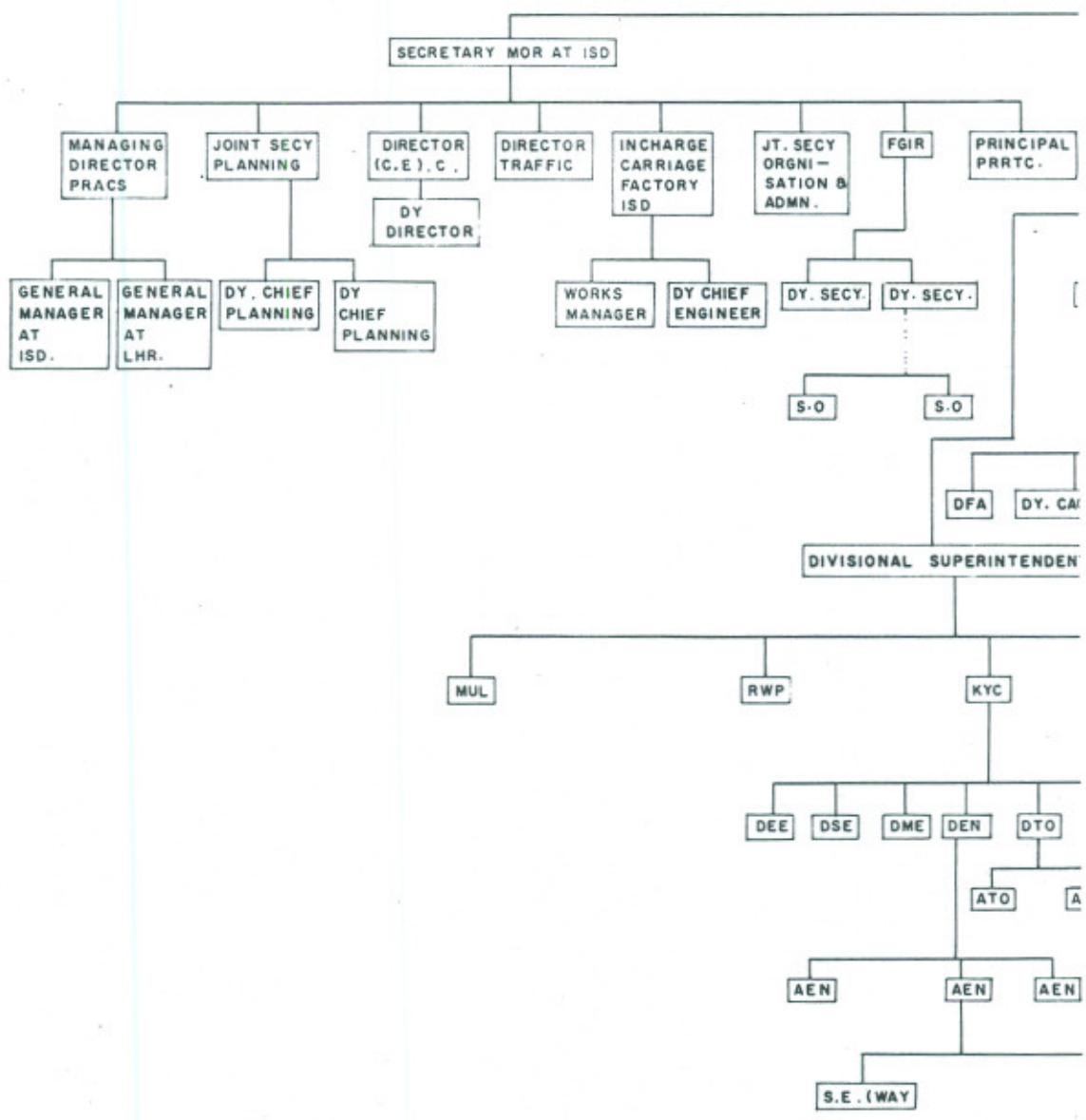


CHART OF EXISTING ORGANISATION  
OF PAKISTAN RAILWAYS

