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HUMAN RESOURCE PLANNING
IN THE VENEZUELAN OIL INDUSTRY

September, 1985

Jose Victor Delgado S.

HUMAN RESOURCE PLANNING
IN THE VENEZUELAN OIL INDUSTRY

by

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A Thesis Submitted in Fulfillment
of the Requirements for the Degree of
Doctor of Philosophy
before the University of Warwick
and Conducted in the
School of Industrial and Business Studies

September, 1985

To my sons Joseph
and Victor, wishing
that this effort
could be a source
of inspiration in
their lives.

ACKNOWLEDGEMENTS

The author wishes to acknowledge his gratefulness to Petr6leos de Venezuela, S.A. for the collaboration given for the completion of the present research and especially wishes to recognize his indebtedness to late Dr. J.B. Charnock for the encouragement, support and insight given as the initial advisor of this thesis. And particularly to Dr. B.T. Houlden for his guidelines and dedicated supervisory work that has been determined in the completion of the present investigation.

Finally, to all those who helped in any way to the completion of this study and especially to my wife, children and mother for their patience, comprehension and disposition during all these years.

SUMMARY

This dissertation presents the findings of a study of the effectiveness of the human resource planning in a large corporation working within the limitations of an underdeveloped country - Venezuela.

Because the economy of Venezuela is heavily dependant on its oil industry the company Petr6leos de Venezuela S.A. was chosen for the detailed study.

It was found that the system in use in the period 1980-81 was defective in that it did not address the serious medium and long term issues of manpower supply in a country seriously short of the skills needed. There was a lack of linkage between human resource planning and the corporation's long term objectives. Too much emphasis was being placed on quantitative, and too little on qualitative approaches to the problem.

A new approach was developed to complement the existing shorter term quantitative approach. This involved a direct and active interaction with corporate planning. Within this framework a qualitative method of human resource planning was proposed and implemented.

This method was approved by the Board and introduced within the Industrial Security function of the company in 1982. It has proved its usefulness in defining the type of personnel required by the organization in the distant future. Since then the method has been adopted in two affiliates of the company and it is planned to introduce the method in a third affiliate in 1985.

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1. INTRODUCTION

All the material contained in the present research has been developed by the author from 1978 to 1985. This study has been conducted in the Venezuelan Oil Industry. *Petróleos de Venezuela S.A. (PDVSA)*, the holding company created by the Venezuelan Government, is a state owned corporation, and is considered the largest Latin American corporation, in terms of annual sales, and among the ten biggest in the world. It has to compete within the ruthless international oil market but is rooted in the reality, infrastructure and restrained possibilities of an underdeveloped country.

Venezuela's oil industry is the main support of the nation's economy. As with other emerging nations, management of the basic resources of the country is through large public corporations. This corporation, *PDVSA*, has to compete on technological terms with transnational companies which control most of the oil commerce in the world. Moreover, oil industries are capital intensive companies that require highly qualified personnel. Consequently, success or failure will depend on the quality of the human resources managing *Petróleos de Venezuela S.A. (PDVSA)* and its affiliates in the present as well as in the distant future.

PDVSA, as an example of a third world corporation, presents the advantage of its access to the state-of-the art practices in human resource planning (HRP). This is due to the technological relations it still maintains with the world's leading oil corporations which operated the oil business in Venezuela until December 1978.

But the question is that, since *PDVSA* is part of a non-industrialized country with serious limitations in its national labour market, is it capable of properly planning at corporate level, for the obtention, development, retention and/or management of qualified human resources required for the future in order to achieve its medium and long term objectives and goals?

The situation is complicated by the following aspects:

- (a) A national labour market unable to provide the quantity and quality of human resources needed for high-tech industries. Consequently, a considerable effort must be

made to train new employees and to develop internal human resources within a clear future perspective.

This is because the underdeveloped countries are "technology importers" rather than "technology producers". Because Universities lack the infrastructure required to finance and conduct basic and applied research, they are unable to support the technological needs of the industrial setting, that so far has imported its production techniques and procedures from developed nations. Consequently, its graduates and postgraduates, at least in the applied sciences, have a low probability of mastering the present or future technological demands of major companies or corporations that have to compete in international markets.

- (b) Being a strategic industry, it must be directed and manned by Venezuelans, so that the alternative of recruiting foreign personnel should be avoided.
- (c) Since all the operating companies in the oil industry are affiliated, personnel cannot be "seduced" from companies in the same National Oil Corporation. This calls for recruiting candidates from the national labour market.

This research responds to the major concern of how the present state-of-the-art in HRP can provide enough support in order to successfully face the challenge of providing enough qualified personnel to achieve the corporate objectives set forth for medium and long term within the insufficient national labour market of an underdeveloped economy. Therefore, I decided to study the effectiveness of the existing HRP methods in a particular third world corporation with the aim of trying to design improvements if I found deficiencies in the existing practice. This dissertation presents my findings.

Should the examiners wish to have a fuller appreciation of the environment of Venezuela and particularly the place of Petr6leos de Venezuela, S.A. (PDVSA) in the economy of the country, please see Appendix A. Also, the same appendix gives a brief view of the background of HRP in Venezuela.

2. REVIEW OF THE LITERATURE

2.1 The need for high talented personnel

The need for highly talented personnel, as started to be felt by organizations since the early 1960's, can be considered among others, the main reason for the surge of manpower planning (MAP) as a tool for affronting this growing problem. The existence of national labour markets capable of providing the required number of experienced or up-dated workers, in key positions at different levels, was simply fading away.

Furthermore, as Hill, Brown, Harbison and other authors¹ point out, the trend for the years ahead promised to even deepen this situation. As the technological challenge increased, new circumstances made the supply of personnel even more complex: First, the accelerated formation rate of new technological knowledge has had a significant impact. The accumulation of experience, along with the traditional company's training and development programs, were no longer sufficient to cope with the state-of-the-art knowledge and technical capabilities required by complex organizations in upgrading its competitiveness and productivity levels needed to maintain or increase its share of consumer's market. This up-to-date knowledge could only be obtained through formal, intense, and long formation periods. So, in Vetter's terms², the organization's employees were faced with the risk of "professional obsolescence" that freezed personnel promotional potential and slowed the organization's dynamism and productivity.

Second, the appearance of the "highly talented" manpower introduced new elements in the personnel management. Being salary just a part of their personal complex motivation and reward system, we agree with Vetter³ in that the company must be in the position to retain these human resources by enriching the challenges of their positions and

offering certain opportunities of career development.

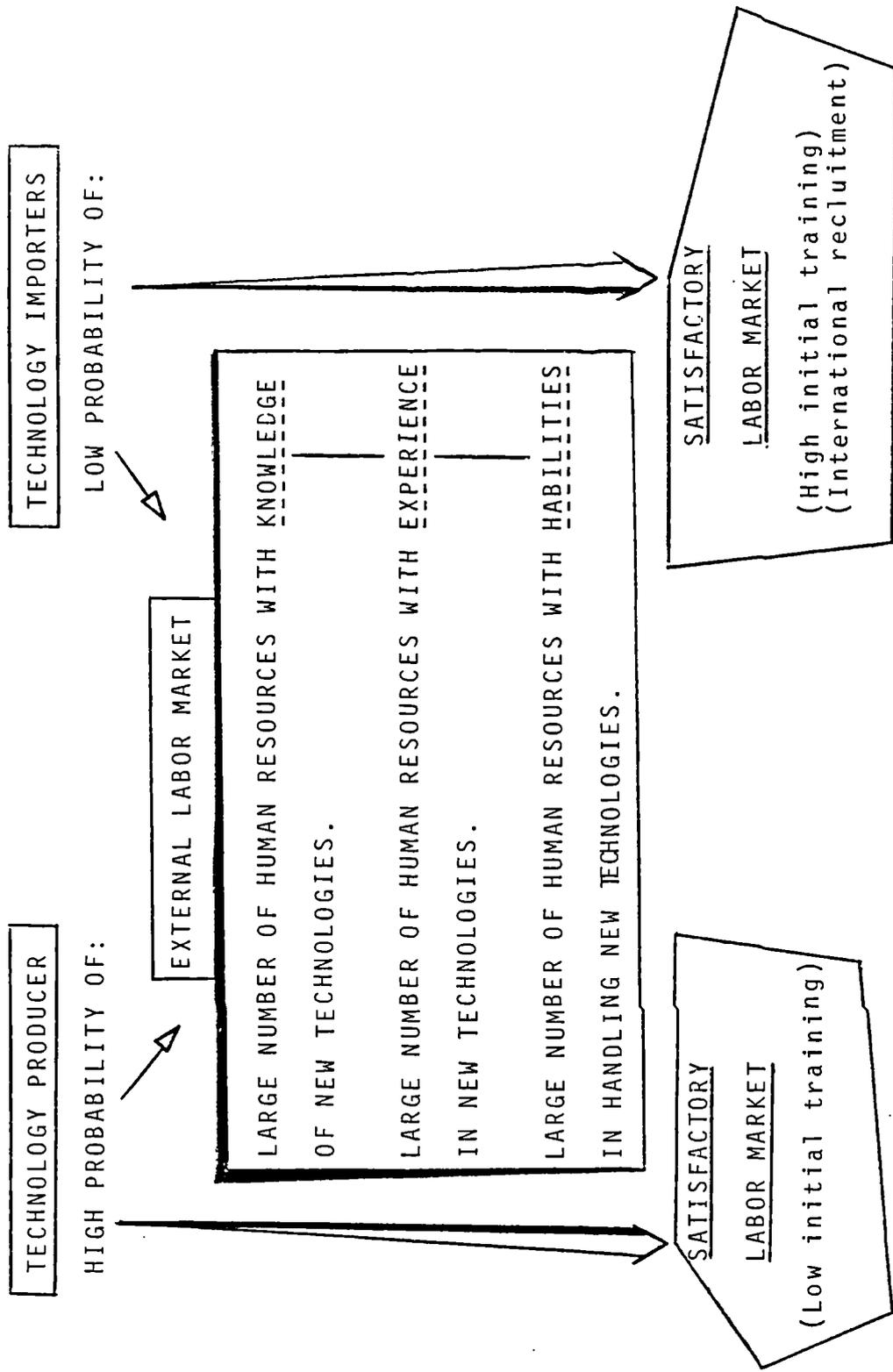
Third, the companies' particular way of doing things developed what can be called the "trusted employee". As stated by the Department of Employment and Productivity⁴, this is the personnel, at any level, that has adapted well to the culture and particular practices of the company. His loyalty is based on the identification with the organization's purposes and the security felt within the sub-culture that has accepted him. This company-man cannot be easily picked from the labour market. He must be internally developed and upgraded. Moreover, he feels that his seniority is his most valuable asset in order to climb to positions of higher responsibility in the company because: "he has earned this right".

The immediate consequence has been: first, the surge in companies of "internal labour markets", as defined by Leigh and Levitan⁵ in order to: assure an adequate internal supply of capable personnel, develop highly talented employees to promote the organization's dynamism, update "trusted employees" so they can maintain convenient performance standards when facing new challenges and technological changes, and update "highly talented" newcomers in the technological practice as well as the Research and Development (R&D) activities of the firm. Second, a more anticipated and aggressive approach to the supply of qualified personnel from the national and even international labour markets. This has led to early contacts with high performance students from universities and high potential workers from other sources such as competitors and government.

2.11 The National Labour Markets

The situation described in the above section is crucial when referred to the under-developed countries. Basically, corporations of emerging nations face the same requirements for high talented personnel if they want to maintain and even upgrade their competitiveness in order to place their product and/or services in the international markets. But there are some important differences

FIGURE No. 1 . . . EXTERNAL LABOR MARKETS IN
INDUSTRIALIZED AND NON-INDUSTRIALIZED NATIONS.



In Figure No. 1, countries are divided into two groups: technology producers and technology importers. The first group is characterized by the existence of an industrial setting that benefits from a considerable finance investment in R&D activities conducted in investigation centers and universities located in the same countries. As a result, as mentioned by Harbison and Myers⁶, companies follow very closely and even participate directly, in the development and industrial applications of scientific and technological achievements.

Consequently, undergraduate and postgraduate students have considerable chances of being exposed to the state-of-the-art in different fields because university professors have developed or are familiar with the new advances. Technology can be studied and handled in up-dated laboratories or in the corresponding research centers. There are efficient library information systems which gather recent knowledge acquired in any given field. Also there is always the possibility to visit a company where the latest techniques are being applied. This in turn has the advantage of having a high probability of finding up-dated personnel in the external labour market, that in the worst case, would only need discreet initial training for the particular situation of the employing organization.

The technology importers group is characterized by the existence of a recent industrial setting (since the 1910's in Latin America) conformed by a technological pattern imported directly from developed countries or brought by transnational companies, as stated by Barnes, Sunkel and Paz⁷. On the other hand, the investigation centers and universities cannot be considered as technology producers, at least in the applied science field, due to the considerable investment and infrastructure that basic and applied research demands, as pointed out by Harbison and Myers⁸. Consequently, companies receive technological support from firms and research centers located in industrialized countries.

Universities as well, relate with their counterparts in developed nations so as to update their imported knowledge.

The result, as demonstrated by Delgado⁹, is a lack of communication between employers and educators. Consequently, there is no interchange of experiences, needs or information between companies and universities, that could help define and produce the required type of personnel as needed by the industrial setting. Hence, as Vetter points out¹⁰, there is a low probability that graduates can respond to the company's technological urges or cope with future demands.

The consequence cannot be other than: first, a low probability of finding qualified personnel in the external national labour market with a state-of-the-art knowledge experience; second, considerable training is required for new entrants, which has to be provided by the recruiting organization within its premises.

The non-industrialized countries, faced with this situation, have two main alternatives: first, to import foreign talent in the form of: permanent or temporary employees, internal advisors, and different forms of technological assistance from foreign corporations or universities. This alternative was widely used during the '70s and early '80s, by hard currency under-developed countries. It is no longer very attractive due to: the increased value of the dollar; the economic recession; the strong currency devaluation suffered by many countries; pressure from the government (legislation and guidelines), labour unions and gremial/professional associations. This alternative is no longer feasible for most Latin American nations since they would have to pay high wages or contracts in hard currency at a time when they are facing a dramatic external national debt.

The second alternative is to determine a clear perspective of the

main characteristics of the type of men needed by companies, for the medium and long term, in order to give this information to the universities so the present curricula can be enriched with a future perspective. This will permit national educational centers to prepare human resources capable of facing the technological challenge that is the core of the development effort emerging nations must endure.

2.12 The Internal Labour Market

The increasing insufficiency of the national labour market for providing qualified personnel as needed by organizations, at least for key positions, has directed the attention to the internal labour market. Its significance has been underlined by the recognition of the outstanding employee, motivated to work and identified with the organizational culture, as the most valuable asset of any company. The loss or substitution of this personnel signifies considerable investment of time and money with the subsequent loss in productivity. In other words, it is cheaper to upgrade him than to replace him.

The capitalization of the trusted, the hard-worker, the qualified, the experienced, the high talented must be done within a perspective view of the external environment and the future goals of the organization. This will enable human resources to cope with the future challenges, responsibilities and technological demands the company must face in order to maintain its leading edge.

The intensive use of the internal labour market means a future perspective of the number and quality of the personnel needed in order to adopt the proper actions for its training, development and management. In the case of non-industrialized nations, particularly for the state owned and native companies, this approach is of particular importance due to the already mentioned limitations of the national and international labour markets.

2.2 The Development of Human Resource Planning

2.21 Development Before the 1980's. The Origins and Purpose of Human Resource Planning

Until the late fifties, Manpower Planning (MAP) only existed as part of the educational, the administrative, and particularly, the economic planning efforts that formally took place in the free world after the Second World War, as stated by Claritza Delgado¹¹. Following Russell¹² it can be said that MAP gained this term as a heritage of the first industrial revolution, when men were considered just another input of the on-going industrialization process.

Baug et al., as well as other authors¹³, point out that within the educational area MAP was seen as the final result that must be obtained in terms of preparing the labour force required to face the development needs of a country's different sectors. Nevertheless, it was in the economical area where MAP found its main consideration in its early stages. In fact, the necessity to anticipate employment requirements (main-d'oeuvre in French) as stressed in an O.E.C.D.'s document¹⁴, was a crucial aspect. It was focused as a demand-supply relationship orientated toward supporting the nation's development goals for the near and distant future, as stated by the U.S. Department of Labour and other institutions¹⁵. This situation was felt as a necessity in North America as far back as 1950, when the "Conservation of Human Resources Project" in Columbia University, as reported by Ginzberg¹⁶, was initiated as an answer to severe problems observed by General Eisenhower in the supply of adequate personnel for the U.S. Army.

Regarding other areas, some authors like Walker and Beaumont¹⁷ consider that MAP has been acting in the managerial and administrative activities of the organization since the surge of the modern industry. This could be accepted if considered as a non-intentional, asystematic, and intuitive practice of MAP being

conducted in the personnel function. In other words, MAP's practice during this stage, as discussed by Walker and Lawrence¹⁸, focused primarily on specific recruitment needs and work evaluation. This practice suggests the existence of a hire and fire model highly dependent on an adequate and satisfactory external labour market. That is why, as stated by Beach¹⁹, MAP was also called employment planning.

During the 1960's MAP surged as an independent activity in the macro scale or national plans, and in the microscale or the planning activities of the industrial setting. As a matter of fact, it was in 1962 when the United States government passed the Manpower Development and Training Act (MDTA) where it explicitly recognized its responsibility in the MAP area. Bezdek and Rehenber²⁰ consider this Act, ammended in 1963, 1965, 1966 and 1968, as the cornerstone of the U.S.A.'s manpower legislative body that goes as far as 1933 with the Wagner-Peyser Act.

With respect to the United Kingdom, Perry²¹ states that the Industrial Training Act of 1964 represents the first effort to formulate a modern industrial manpower policy. Its historical roots can be found in the Statute of Artificers of 1563 that can be described, in modern terms, as a national manpower and employment policy. Within this orientation, Bell²² points out that the Manpower Research Unit, set up within the then Ministry of Labor of Great Britain, in 1964 published a series of single industrial studies with more emphasis in gathering historical data than in forecasting. Bell²³ adds that in 1966, the Institute of Personnel Management published its first booklet regarding MAP problems as a consequence of the growing interest the subject was gaining in the industrial setting.

The same author²⁴ states that in 1969 the Institute of Manpower Studies, located at the University of Sussex and the London School of

Economics, was created under the sponsorship of the Engineering Industry Training Board (EITB) as an independent research body which highlighted the interest of large British companies in the matter. Also, in 1970 a Manpower Planning Unit was established at the University of Warwick with EITB finances²⁵. It was the recognition of the studies carried out on the subject since 1968 at the same university.

In Venezuela, Claritza Delgado²⁶ states that the National Council of Human Resources (NCHR) was created in 1967. Later it was absorbed by CORDIPLAN (the government planning office) as a Human Resource Planning Unit with a macro-economical approach. Then, the NCHR was re-established in 1976 by official Decree 1649²⁷, issuing its first study in 1977. The NCHR emphasized the necessity of forecasting the MAP requirements for the different sectors in order to achieve the objectives set forth in the V Economic Plan of the Nation. Presently, NCHR is once again part of CORDIPLAN. However, it is carrying out the same activities as before in the MAP area.

Another important aspect, as discussed by Lorange and Vancil²⁸, is the appearance of strategic planning as a concrete effort of managers to give a specific sense of direction to their organization in an increasingly turbulent environment. Among external changing conditions the organizations had to face were the raising cost of labour which, as stated by Bell and Beach²⁹, turned out to be significant when it amounted to more than than 50% of the operational budget and even more than twice the capital investment. Another important condition was the need for talented personnel required by organizations to maintain a highly competitive level to assure a healthy portion of a disputed consumer's market. This led, consequently, to a third aspect: shortages of manpower were felt in some skill categories in contrast to the constant availability to which the organizations were used to.

The reaction was the surge of MAP as a tool to balance the organization's internal demand of personnel with the external and internal supply. It was used to provide an overview of the general personnel requirements of the firm vis-a-vis the changing conditions of the environment. In other words, Walker³⁰ considers that MAP was viewed as a tool in which:

".. companies forecast their needs for manpower into the future, forecast their internal labour supply for meeting this need and identify the gaps between what will be needed and what will be available."

The operational consequences were that:

"Manpower planning develops plans for recruitment, selecting, and placing new employees; provide for training and development; and anticipate necessary promotions and transfers."

Hence, the purpose of MAP was aimed at a more distant scope than the mere present problems. Attention was focused on the identification and development of internal labour supply without distracting the acquisition of external work force.

During the 1970s the methods and technologies applied to the MAP area developed considerably, as Walker and Shafritz³¹ point out. The problems faced in supply and demand of personnel were significantly reduced by the introduction of the advancements in computer hardware and software, information system theory, and modeling and simulation methodologies. Also, companies began adopting new techniques as career planning, career patterns, job analysis, work design.

Thanks to the upgrading of the function, the scope offered by MAP in the previous decade tended to be overwhelmed. It seemed that it was not sufficient to have an approach reduced to predict the quantity of the future work force requirements versus the expected internal supply in order to detect possible gaps. MAP's concept had to be expanded to a new approach that would provide an overlook of all

personnel related activities of the company as well as with the state-of-the-art on planning methodology.

The term "human resource planning" (HRP) as stated by authors such as Walker and Stainer³², appeared as the concept that could provide a broader scope than merely supply-demand balancing or quantitative forecasting. Furthermore, the term "human resources" offered the convenience that eradicates the sexist implication of MAP and signified personnel as the main company's resource. Hence, the purpose of HRP would not only be the procurement of the work force needed by the organization. It would also be to solve the human resource problems with a comprehensive view of all personnel functions of the company and the external environmental-factors as the national labour markets.

2.22 The Present State of Human Resource Planning

2.221 Definition of Human Resource Planning:

Numerous definitions, as stated by Beach³³, have been given on the subject. Also, different terms have been used to identify it, such as: manpower planning, human resource planning, personnel planning, and employment planning. It is not the intention of this study to go through a thorough analysis of this concept. Nevertheless, Gareth Stainer's³⁴ definitions is proposed as the more suitable within the scope of the present research:

"Manpower planning aims to maintain and improve the ability of the organization to achieve corporate objectives, through the development of strategies designed to enhance the contribution of manpower at all times in the foreseeable future."

2.222 The Environment of the 1980's

These years have the distinction of being those in which the developed as well as the underdeveloped countries must do their best to turn the depressing 70's curve of the world economy towards a horizon of recuperation and growth. This will be achieved through

higher productivity standards that can face and defeat the inflation phantom. As a consequence, more sophisticated companies will surge as the answer to depression and stagnation. They will present high capital investment and a reduced personnel with increased levels of technological performance in the need to boost productivity and profits. Labour intensive industries will tend to move to low-cost labour countries and more complex capital-intensive firms will take their place in the developed nations.

Research and Development (R&D) efforts, as Hussey³⁵ sees it, will be the clue for survival in highly competitive and technology demanding markets such as: computers, automotive industries, space and military industries, and communications. The consequence for HRP will be the challenge to establish a more direct and permanent relationship with the identification and achievement of the organization's medium and long term objectives. The reason being that distant success will tend to be a direct consequence of the present capability to research and development advanced technologies that can provide the "winner's edge" over competitors. But in any case, companies must count on highly talented personnel in order to secure the efficient attainment of corporate goals.

The Department of Employment, as far back as 1974, and more recently Walker³⁶ proposed the link between HRP and strategic planning in order to establish a relationship with corporate objectives. Nevertheless, the role proposed by Walker for HRP is more passive than active. There is no clear explanation on how the link could be established. This passive role is identified when HRP reduces its activities to the implementation of the corporate business plan whatever its contents. In other words, either HRP is not included in the plan-making process or the information it produces is considered as an additional input. This expresses the implicit conviction managers have: human resources needed by the corporate business plan are already at hand or can be easily obtainable. In fact, the same

author³⁷ provides information about the general practice observed in HRP. It can be summed up as follows:

Practice done in a reduced number of organizations.

"In some organizations, where the process has been applied for several annual cycles, human resources issues are now routinely addressed as a component of business planning."

"In other organizations, human resources issues are studied solely by staff personnel, who present their findings to managers or to the business planning staff as inputs to strategic or operational planning."

The generalized practice.

"Perhaps the most common approach applied, however, is the informal planning process."

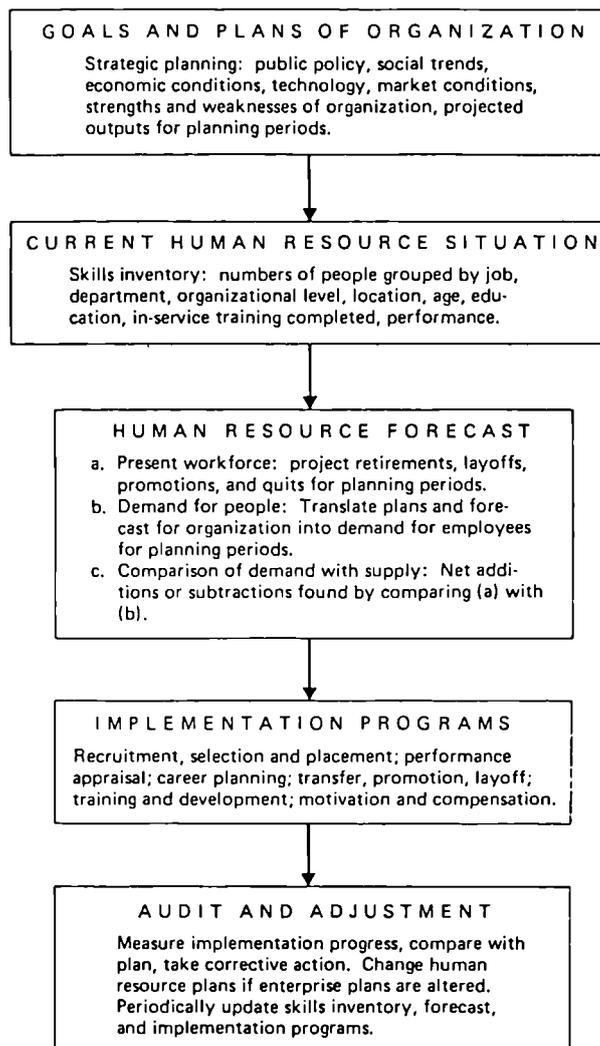
2.223 Present characteristics of Human Resource Planning

There is a large number of MAP/HRP experiences spread all over the world, not only in the developed nations but also in the leading corporations of emerging countries. All these experiences respond to the particular circumstances faced by different organizations from internal and external factors. It would be a task beyond the scope of the present work to go into a detailed analysis. Anyhow, an effort to summarize the dominant characteristic of the actual practice will be undertaken.

There are a considerable number of methodological processes in the literature described by different authors³⁸ that could be mentioned. However, Beach³⁹ expresses (see Figure No. 2) in our opinion what can be considered as the dominant practice in MAP.

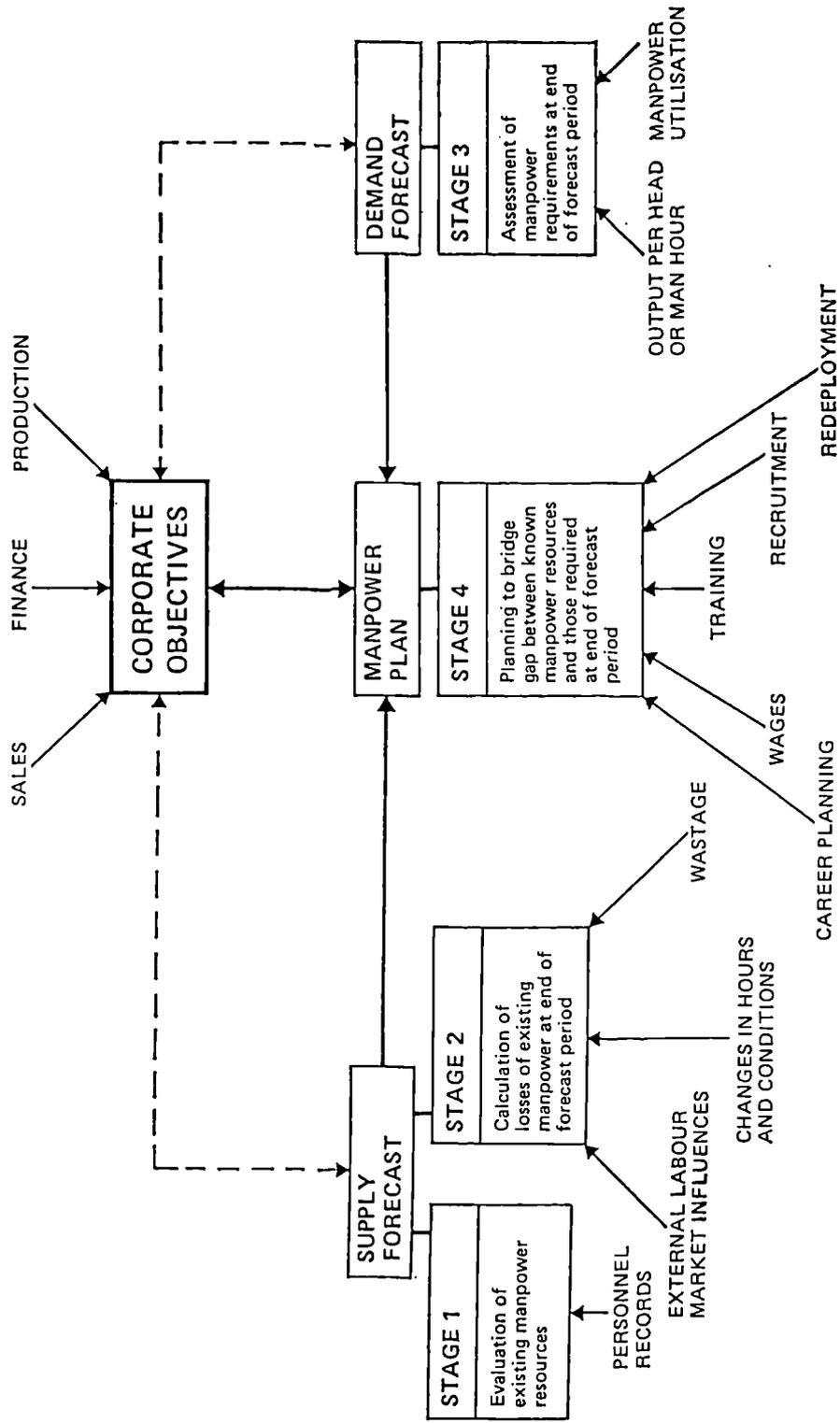
When MAP practitioners solve problems, conform a suitable practice or introduce a particular method or technique the resulting process turns out to be called a model. Consequently, different authors describe⁴⁰ a considerable number in the literature. That is why we

FIGURE No. 2: DOMINANT PROCESS IN THE PRESENT PRACTICE OF MANPOWER PLANNING



Dale Beach (1980)

FIGURE No. 3: SUPPLY-DEMAND MODEL



will try to identify the "basic dominant models" as to give a more comprehensive view of the matter.

Until 1960 the dominant model was the "hire and fire" practice based in an abundant and sufficient labour market where specialization was not yet a key problem for most companies. MAP was not an immediate preoccupation because, as stated by Lawrence⁴¹, any skill could be picked up when needed. Consequently, MAP activities were part of the recruitment function as a source of information capable of providing the hiring needs as discussed by Petterson and Tracy⁴². This situation began to change as specialized and experimented human resources were not so easily available due to the existence of a reduced number with a considerable demand.

Nevertheless, the existence of the "hire and fire" model did not inhibit the appearance of MAP efforts in "closed systems" organizations that required highly skilled personnel to be formed internally. This was the case of military structures like the Royal Navy, as mentioned by Lawrence⁴³, and large Japanese corporations, as mentioned by Abegglen⁴⁴. In those organizations highly talented professionals and managers were selected from the base of the pyramid and developed through its different levels and positions. In the case of the Royal Navy these experiences can be traced, as Lawrence⁴⁵ points out, as far as the XVI Century.

Since 1960 to date, a significant concern has developed so as to assure the right number of people at the right moment. During all these years a maturation process took place in which the successive scopes of MAP and HRP enriched its role in the organization. This basic practice, as established by The Department of Employment of the U.K.⁴⁶, (see Figure No. 3) could be denominated the "supply-demand model" that includes the relationship with the corporative objectives.

Based on authors like Thakur, Towers et al,⁴⁷, we could summarize the main characteristic of this basic practice:

- a. There is an increasing tendency to introduce MAP in large corporations and companies.
- b. The demand forecasting activity is used more than the supply forecasting exercise due to the difficulties encountered by the latter.
- c. The main purposes considered are: determine recruitment, training and development needs, and anticipate or avoid redundancies.
- d. MAP is mainly within the personnel department.
- e. There are not enough planning experts attached to the MAP activities of the personnel department.
- f. There is a strong tendency to move towards a strategic practice and to develop a more intense relationship with corporate planning.
- g. The late 1960's can be considered as the period of massive incorporation of independent units of MAP in organizations.
- h. There is a tendency to forecast 3-5 years ahead for managerial and technical staff, but only 1-2 years for operative workers.
- i. Labor unions and employee representatives are not taken into consideration in the forecasting process.
- j. There is a considerable development of employee information systems.

- k. The data more frequently introduced in information systems are: descriptive personal data, education and training data, payroll administration data, previous work experience data, performance data, employee skills, promotability and job references.
- l. The use of the data is mainly orientated towards: payroll processing, salary adjustment, internal job placement, manpower forecasting, manpower development and personnel research.
- m. Even though advanced modern techniques as computer modelling are not widely used, the most frequent forecasting techniques are: inventories of available talent, count of vacant positions, estimates of losses (turnover, retirement, etc.), analysis of operating and project plans, productivity analysis and projections, computer analysis or manpower needs (markov probability analysis, other mathematical methods), others (trend analysis, industry guidelines, etc.).
- n. Long range manpower planning is not commonly practiced. But when it is considered, the resulting practice tends to be subjective as an input for broader management planning. It is one of the less advanced aspects within MAP.
- o. The most common manpower programming activities are: recruitment planning, internal job placement, identifying replacement for managers, identifying promotable talents, planning for individual development.
- p. Career planning, careeer paths and "fast-track programs" are not widely used. However they tend to gain importance but only for highly talented personnel.
- q. Successional planning for management positions is used and tends to increase its importance.

2.3 Quantitative and Qualitative Methods of Human Resource Planning

2.31 Introduction

One of the first aspects that should be mentioned, before entering into the analysis of HRP methods, is the difference between forecasting and planning. Some planners, as well as managers, believe that forecasting is the essence of planning. Thus, consider that a good forecasting exercise is sufficient for a good planning because it is sufficient to give a clear notion of where a company is heading. In this sense, Vancil⁴⁸ is very explicit when he says:

"....forecasting involves trying to make educated guesses about the future, planning contains one additional crucial step, namely deciding on specific business actions for the future".

The second aspect to be mentioned is the different basic approaches that can be developed in the forecasting activities. The deterministic approach, as presented by Atchison and Hill⁴⁹, is based on the premise that the future is a direct function of the past. So, when trying to scan the distant horizon, the planner firmly supposes that past issues and the way they behaved, will maintain their tendency into the future. The symptomatic approach, by the same authors⁵⁰, is based on the premise that the present is an indication of what the future will be. In other words, the planner supposes that things will continue to be in the future as they are in the present.

Edwing⁵¹ identifies another approach which he calls normative. For the purpose of this work it will be labelled as strategic. This approach would move from the future into the present, and not from the present into the future. In other words, it does

not suppose the future to be shaped by the past and/or present, even though it takes into consideration its information.

The third aspect to be considered is that different authors⁵² have considered several classifications related to quantitative methods. The reason being that there has been a surge of many different such methods as an answer to particular MAP situations in companies all over the world. Nevertheless, the intention of this work is neither to discuss such classifications nor to analyze all existing quantitative methods developed so far. The intention would be to develop a general approach so as to discuss the benefits and limitations that both the quantitative and the qualitative methods have had.

The last aspect to be considered in this introduction is the criteria for selecting the best method. We agree with A.R. Smith⁵³ when he says:

"There is no ready-made methodology for forecasting manpower demand which can be taken off the peg by any organization coming new to manpower planning. Each organization must evolve its own methods to suit its own circumstances".

Moreover, Forbes⁵⁴ states that when different methods have been applied in the same situation, results obtained were not the same. This guided us in determining how to select the proper method. Its selection will depend on many factors. In the first place, there should be the conviction that they are an instrument and not an end in themselves. Consequently, a company cannot think that proper HRP is being done just because they are applying some particular methodology or technique. Moreover, the planner must consider, as Chambers and Hussey mention it⁵⁵, the urgency vs. the precision vs. the complexity required by the exercise in order to determine which method can

provide the type of information required by the firm within an available infrastructure.

2.32 Quantitative Methods:

To facilitate the analysis of the quantitative methods, several categories have been established. The human resource inventory method can be considered as the "data base" which is indispensable for HRP. The rest are used for forecasting purposes. It must be added that a huge bibliography was found on the matter. It is not the intention of this research to discuss what authors have said on the subject, since it would unnecessarily extend the length of the present study. Nevertheless, a summary of the main concepts will be proposed indicating the references consulted.

2.321 Human Resource Inventory:

Human Resource Inventory, as cited by many authors⁵⁶, is also called "manpower information system", "personnel register", or "skill inventory", and consists of a historical and up-to-date inventory regarding significant data about the company's personnel. This information can cover the entire firm or it can concentrate on certain categories of personnel. It makes a considerable use of statistics for the elaboration and presentation of its data.

It can adopt special denominations as "job structure categories", "critical skill reporting system", and "functional skill categories", depending on where the planner makes the emphasis. In other words, the denomination would depend on whether the data is grouped around the individual, the organizational structures or the positions, professions, functions or conditions. But, basically, it will consist of an inventory of personnel in a framework suitable for manpower diagnosis, projections and planning. The information that it

tends to gather, comprises all personal data of the employee (including education, past experiences and jobs held) as well as the information produced by the employee in the company (job, evaluation, potential, payroll, and possible positions to be held).

The human resource inventory is of great importance and is the basis for the HRP activity. When accumulated for several years it facilitates the study of any possible variation and facilitates the identification of relationships with external or internal variables. The results, as mentioned by Smith⁵⁷ are expressed in manpower profiles, where two or more variables are combined so as to show the information given by their interrelation. It can also be expressed in time series in which several variables or information item can be related.

Walker⁵⁸ considers that even though "skills inventory" were very popular in the 1960's, eventually many companies reduced the size of these inventories or abandoned the concept entirely. Even though the "human resource inventory" is of great help, there are some limitations that can question or even neutralize its benefits.

The size of the system is its first problem. Sufficient information is necessary but an excess is overwhelming for the system in terms of the effort and cost involved in up-dating it. There, the cost/benefit analysis yields towards the red column. Another important aspect is the reliability and validity of the information within the system. The operational definition of terms as well as the objective recollection of the data really needed, is of significant importance for the system.

Finally, it should be mentioned that the relation between the

effort demanded by the system be measured against the benefits to be obtained by the company's users. Moreover, it is important to notice that whatever the approach used, it must incorporate the past information on personnel. If this is not possible, the system implemented would probably jam the flow of historical information and the previous data would be lost.

2.322 Econometric Models:

As Hussey and other authors⁵⁹ consider it, these are basically the macro-economical methods used to handle national accounts but adapted to the company's use of HRP. This means that the methods adopted will try to establish manpower as a function of internal (sales, production, inputs, etc.), or external (gross national product, sector's output, etc.) variables. Basically, this approach works with huge numbers, as economic accounts, with which a sense of magnitude is defined.

These methods proved to be *too complicated and "powerful"*, at a micro level, as to provide the detailed information regularly required by the organization. Moreover, as time went by and HRP proved its effect in the overall functioning of the organization, it was considered as an independent variable.

2.323 Statistical Methods: Human Resources as a Unique Variable:

A considerable number of authors⁶⁰ have mentioned one or several of the methods to be considered in this section. That is why they can be regarded as the "workhorses" of HRP. They have observed a considerable development in the last decade in which different practitioners, planners and researchers like Shao, Benaventi and Gillford⁶¹, have applied the basic statistical techniques to particular problems within specific organizations. The consequences are the existence of an array

of labeled methods that, in its core, are no more than basic statistics applied to particular situations. These methods can be very much sophisticated. Nevertheless, they would have, in the long run, to be pondered against the cost/benefits, complexity, and usage the organizations really require.

It is not the intention of this study to have a comprehensive analysis of each one of the statistic methods. The purpose will be to have an overall approach and try to define the main limitations and benefits of the different groups identified.

Index numbers in their simplest expression as percentages, or indicators are widely used in the analysis of a given data. As a forecasting method, the "simple growth pattern" can be mentioned. Also, other methods are extensively used to analyze the internal manpower supply forecasting: Analysis of retention, stability index, Bowey's stability index, turnover analysis, retention profile, cohort analysis, census analysis, promotion movements, stationary population models (actuarial technique), and personnel flow.

Within the Time Series Analysis subgroup, we can consider methods such as: moving average, exponential smoothing, statistical curve fitting, mathematical trends, and extrapolations as the most mentioned by different authors. They are used when developing a closer look at past tendencies, in order to study the behaviour of historical data. When these tendencies are projected toward the future, the manager would assume that "everything will remain the same".

In the probability methods, the authors mainly consider the following: camel model, Markov's chains, Renewal theory models, cross-sectional models, push-pull models. They are all based on a detailed analysis of past situations or experiences

as to develop a probability patterns that, when applied to the organization, could define a highly probable outcome. It is extensively used in the study of personnel mobility in the company.

2.324 Statistical Methods: Human Resources as a Dependent Variable:

The relation of human resource figures with other variables in the organization has been mentioned by a considerable number of authors⁶². The first group of methods are related to the existence of an independent variable to which human resources had shown a significant relation during a determined period of time. The simplest way to express this relation is by establishing the ratio with which to determine the impact a change in the independent variable will produce in the dependent.

Another simple approach is the determination of work standard data, also called levels of activity. The information required can be obtained from: standard procedures or activities existing in the company which demand a fixed number of personnel; work hours required to operate given equipments. The information is given in coefficients of man-hours, man-day, man-month, men per equipment, etc. The limitation found is that it can only be applied to measurable activities.

Also, the regression analysis must be mentioned. It helps to analyze the existing correlation between two variables. Finally, the trend-projections is the long term perspective that this type of analysis can provide.

The second group includes techniques which are applied when a considerable interdependence is found between the dependent variable and more than one independent variable. The multiple

regression method can be mentioned as an example.

2.325 Simulations Models

A considerable number of authors⁶³ agree that the use of the computer has facilitated the implementation of complex models (sensitivity and risk analysis, model building and dynamic predictive models), that can consider a large number of variables as to determine the effect that they may have upon each other. This permits the use of numerous variables that have or might have a relationship with human resources' data. In this way, possible changes could be considered, providing a wide range of alternatives and possibilities that can help scan the future upon the premise of "what would happen if....".

Walker⁶⁴ has indicated that mathematical expressions such as: balancing equations, linear programming, non-linear programming and goal programming may also be useful in HRP.

2.326 Forecasting the External Demand and Supply

All methods considered so far have dealt with the internal supply and demand of future manpower. As Greenlaw, Biggs and Wilstrom⁶⁵ indicate, forecasting external demand and supply is not a very common activity in companies, due to the difficulties involved. In fact, it is not easy for just one company to carry out, by itself, a complete study of external supply and demand of personnel. Usually it is done by the industrial sector or a government office. Consequently, the demand and supply figures can be obtained from official sources.

Anyhow, in case the information is not at hand, a large corporation can make use of econometric methods as to calculate the demand for highly talented, skilled and non-skilled workers for the different industrial sectors in the medium and long

term. The supply can be obtained from the expected graduates and post-graduates output the national educational system expects to have in the different areas. These figures can be obtained applying a probability method that could determine the expected flow of students in the different promotions.

2.33 Intermediate Methods:

These are the methods that could be used in determining the quantification and qualifications of human resources within a company. They are very useful in the reconstruction of quantitative historical data when the information has vanished, or is too dispersed to gather it. Also, in determining key predictive variables in a particular industrial setting, establishing work standards, and to estimate future number of personnel needs.

2.331 Management Judgement:

This method has been called, by different authors that have considered it⁶⁶ as: inductive method, subjective method, experts-estimate method, judgement and experience method, executive judgement and intuitive method. Nevertheless, they have a common characteristic: they are based on the individual approach to the personnel estimation. This approach is developed by the supervisor, the manager, the one responsible for the exercise within a given department, or an expert.

The resulting information can be given in qualitative as well as in quantitative terms. The latter can be done by a "rule of thumb" approach and inclusively using ratios, probabilities, percentages and levels of activities. Nevertheless, it would always be obtained by guessing, intuitive or experienced based practice.

The process followed can be "top-down", "bottom-top", or a

combination of the two. The "bottom-top" practice is also denominated "the unit demand forecasting technique", which is based on the information gathered and sent from the basic unit to the top management. This upward procedure is sometimes enriched with a "census of people" as to actualize present files or the human resources inventory. Furthermore, the top management can establish the organization's estimates or general guidelines, so they can be discussed on their way down and approved on their way up.

This is by long, the most used method in small and medium-sized companies. It represents the benefits that is quick and involves the supervisor or manager who at the end have to live with the final decision. This method does not require a complex and huge data base storage or manipulation. Also, it considers an undetermined number of variables: as many as the different situations that can be affecting the basic units of the firm.

The author had an interesting experience in which the management judgement was compared with the results of a personnel forecast obtained through a study of activity levels. It was an experiment conducted by external consultants in the Venezuelan Oil Industry within a given basic unit. The results obtained with the two methods showed a 99% coincidence in the short run. In the medium term approach the management judgement had a conservative approach that explained the differences observed.

Its limitations are basically depending on the subjective approach that signifies the method. It is difficult for a person to have a real objective appreciation of a given situation or to consider all significant variables. The "status effect" can act as an important factor. In other

words, the need can surge to justify present and future demand of personnel in order to broaden the authority or power platform of a given position in the firm.

Another limitation are the prejudices of the manager. This leads to the manager's difficulty in recognizing other possibilities, alternatives, technological improvements and so forth to reduce its present needs or future personnel demands. This is of significant importance when the company wants to: improve its productivity in order to reduce its personnel; change its procedures in order to eliminate the redundant or not significant work load; upgrade the personnel's performance as a consequence of technological improvements.

2.332 Delphi Method:

This method has become very popular, as stated by different authors⁶⁷ since it was first designed by the Rand Corporation in 1940. It is also a very controversial one since different authors consider it is just another more refined way of guessing, while others signify its importance and derived benefits in forecasting activities, ranging from the short to the medium term (five years).

Despite that it is not a very well seen method by the quantitative approach followers, it has proved its benefits, as well as its accuracy, in exploring and defining future events. It has been our experience in the use of this method, that it is quite accurate in predicting future technological changes and the effects these changes could have in the number as well as the qualifications of human resources.

2.333 Scenario:

Is the crossing point of different methods with the intention of gathering comprehensive information that could help to

define a clear view of future events in different areas, as human resources. Basically, as stated by Hussey⁶⁸, it consists of establishing different alternatives, considered as highly probable. These alternatives are usually divided in the optimistic, the pesimistic and the present/past projected tendency. It is very helpul in terms of scanning the future. It considers a wide range of premises. It is based on past and present situations, as well as highly possible future ones.

With the help of the impact and cross-impact analysis methods, a more adjusted appreciation can be done in terms of the significant consequences certain variables can have over specific or general areas of the company. Thus providing criteria as how to avoid the undesirable effects.

2.334 Panel Consensus:

Also named "panel technique of intuitive forecasting", and "experts reunion". It is based on the assumption that several experts can arrive to a better decision or forecast than an individual can. It is extensively used. Nevertheless, as mentioned by Chambers et al.⁶⁹, it may not control the "bandwagon effect" by which a compromise and not a consensus accord can be reached. This effect could be the result of intervinient variables, such as: status, leadership, seniority, and the hierarchical level of any of the participants.

2.335 The Committee:

In our opinion, one of the simplest methods used in companies are the work sessions in which the decision-making-process takes effect. The committee, as the formal expression of these work groups with delegated authority within the firm, should be considered even though not mentioned by authors. It is not really a method but a decisional instance where results of HRP

exercises are accepted, changed or disregarded. Anyhow, its importance as a mean to define human resource requirements can not be ignored.

They are integrated by persons in terms of their hierarchical level in the firm. Scientific and systematic efforts must pass through these committees, who decide whether the conclusions and recommendations are convenient or feasible to the organization.

This method presents the same limitations mentioned for the pannel consensus. Its intervenient variables are enriched and enlarged, as a consequence of: resistance to change attitudes; sympathetic mood towards the study, its recommendation or the persons and department that conducted or promoted the research; unwillingness to facilitate success to fellow competitors within the organization; the "how this can affect my department" effect.

2.34 Qualitative methods:

Even though the quantitative methods have undergone a considerable development they cannot provide basic information in terms of the experiences, attitudes and abilities an employee must have in order to show a high probability of success in the realization of the basic functions, activities and tasks of a given position within a particular organizational level. This is only obtained with the qualitative approach.

Nevertheless, it should be clear that it is not a matter of deciding which is the best method. Both are necessary and must complement each other since they respond to different needs. The quantitative approach, as seen in previous sections, responded to a "hire and fire" practice which supposed the

the existence of a satisfactory external labor market. So when this situation changed, the need for qualification methods sprang.

The qualitative methods have not received the same attention and dedication as the quantitative methods. Actually, many of the practiced methods have been borrowed from the personnel function. Hence, this area seems to be a very important field in which to concentrate research efforts. Particularly, the development of a method that can identify the qualifications of the human resources needed to achieve future corporate objectives must be considered of particular significance.

2.341 Career planning

Career planning, as a formal practice in organizations, is a fairly recent development in human resource management. Nevertheless, it has been widely considered by many authors⁷⁰. Consequently, there are a considerable number of concepts used: career planning, career management, career development, individual career planning, career guidance, career life planning, career system, managerial career planning, career formulations, self-directed career, career paths, career ladders, promotional ladders, career patterns, and career plans. This considerable number of forms show a significant dispersion and even contradiction in the use and application of the term.

There still is hesitation as to deciding the role of the organization in the career planning activity. One approach stresses that it is mainly a personal activity in which the company must develop a guidance or counseling role. The other postulates that the firm must define the future possibilities an employee can expect when entering a company. This last approach is gaining ground due to the fact that highly talented persons want to have a clear outlook of their development possibilities within the firm. Also, due to the transformation observed in family companies that have evolved into

huge corporations, their professional managers and employees need to know their future opportunities.

Even countries like the United Kingdom, where the bottom-top mobility of personnel is more difficult due to union labor norms and regulations, career planning is practiced but restrained within particular organization segments. Nevertheless, in the long run the mobility pattern bottom-top will impose itself in the U.K. due to the organization's need to capitalize highly talented personnel and the individual's interest to promote himself in life through his work.

The career planning practice is not new. Actually, it can be traced in closed and opened organizations systems. In the former, experiences have been conducted for many years in the Royal Navy so as to assure the promotional patterns of officers through the different hierarchical levels. This can be perfectly understood due to the fact that, behaving as a closed system, newcomers can only enter at the bottom. Consequently, if the organization wants to secure an adequate source of high level personnel it should take the necessary provisions to facilitate its upgrading. This is also the case in the Venezuelan Navy where the author had the opportunity to design and implement a new career pattern for the institution due to the incorporation of the new missile frigates in the late 70's.

Also, as a non-military example of a closed system, large Japanese companies practice the contract-for-life relationships with the employee which implies the existence of a formal or informal career planning practice in order to develop the worker's possibilities in the firm. As for open-system organizations, the practice started when the companies found the need to develop their highly talented professionals and managers inside the company. This necessity generated the urge to identify and, consequently, develop a selected group of managers and professionals.

The actual practice is reduced mainly to managerial groups since there is not a method than can give and handle an integral overview of all levels and positions in the organization. Nevertheless, Tavernier⁷¹ describes an experience in which promotional ladders were established, including the operational level.

The present practice considers two important aspects:

- a. Individual career planning, mainly directed at managers or highly talented professionals. It consists of a personalized career plan in which different positions are foreseen as necessary to obtain the desired results for a particular person.
- b. Career paths, which is considered similar to other expressions such as promotional ladders, career patterns, and career formulations. It consists in an upward positional chain through which the employee can appreciate the development alternatives or opportunities he has in the company. There are short, long, medium, general and specific career paths. Consequently, several run parallel within an organization enabling the transfer of personnel from one career path to another.

In general, present practice is characterized by the combination of the individual career planning over defined career paths developed for the benefit of a reduced number of workers. Additional methods (to be considered later on) are incorporated in order to enrich the resulting practice: performance and potential appraisals, job profiles and job analysis. But the information is gathered over present and past situations with no attempt to estimate the medium and long terms. Consequently, present practice is mainly focused within the short term and the natural promotional path of the chosen personnel. This includes the definition of the actions to be taken

to assure their development. In some cases the committee tends to be the decision center where the highly talented are identified in order to program and control their organizational destiny.

2.342 Performance and potential appraisal:

Performance appraisal has been considered by a significant number of authors⁷². It is also known as personnel appraisal, personnel review, progress report, service rating, performance evaluation and effectiveness report. Some authors consider potential appraisal within the performance appraisal activity and others identify it both as independent but complementary activities.

The performance appraisal can be traced as far as the 1920's when it was initiated as a merit rating practice. From the 1950's till today, it has developed as an instrument to evaluate the quality as well as the quantity of work done by an employee in a given period of time. It could be defined as the administrative process by which the employee's performance is considered in terms of its contribution to the achievement of objectives as established by the company, the department or the supervisor for a determined period of time. Its consequences are: pay increases, promotions, transfer and discharges.

Its punishment or reward intention shapes and orientates the behaviour of workers in a given direction. That is why it is not limited only to the objectives the personnel is supposed to obtain during the year. The procedure also explores personal and social characteristics as well as the basic attitudes towards the company and the job. Nevertheless, it should be considered as a remarkable opportunity to orientate the employee in exactly what he has to do and how, so that he sees it as an opportunity to learn and not as an anguishing situation.

The potential appraisal is also an administrative process in which the company wants to determine the upgrading possibilities of the

worker, in the near and distant future, as to assume positions of higher responsibilities. It is usually conducted with the performance appraisal, but the latter is more developed in terms of existing methods and instruments. As a matter of fact, the existing practice and the present state-of-art reduces the potential appraisal to an intuitive and subjective activity developed by the supervisor who guesses how far his supervised can reach in the organization.

Both appraisals are reduced to the supervisor-supervised interaction because who else, besides the immediate supervisor, can have a more objective appreciation of the employee? That is why there is a tendency to ponder such results through the use of committees and/or standards of performance where job descriptions are also considered as an important input.

Performance appraisal, being rooted in the past, can only give information on how well the employee's performance was. But with the potential appraisal, the company has the possibility of detecting its high flyer. So in terms of future needs, the latter process tends to be more useful. The thing is, how can this potentiality be determined?

The practice establishes that the supervisor's judgement is the only source, but what are the bases of this judgement? A systematic approach would only be possible if the supervisor can give to his supervised the opportunity to express behaviours that could be identified as of higher positions and responsibilities.

The question is, does the supervisor have the time and/or expertise to facilitate this kind of situation for his employees? How can he identify a given behaviour as of upper levels? Will he be able to control his subjectivity? How can the first- impression-effect, which is no guaranty of future success, be controlled? The consequence is an asystematic and subjective practice. Based on this

situation, the potential appraisal has a very limited value for HRP purposes and only on a short term basis. Besides, it is generally limited to white-collar employees within upper levels.

2.343 Successional Planning:

This concept is also expressed by different authors⁷³ as: succession analysis, formal replacement planning, executive succession, management progression forecast, management replacement planning and management succession planning. Basically, it consists of the provisions taken by the organization in order to foresee the replacement of a given employee that will leave his present position for a given reason in a determined or undetermined future date.

It deals with the mobility of executive personnel with potential towards key positions in which provisions must be taken in case the titular leaves the organization or is moved to another post. These methods are expressed visually, through the replacement chart in which potential candidates as well as chain movements are considered. Consequently, it is the method used to foresee the management needs in the short and medium term for positions defined to be of supreme significance for the firm.

The quantity needs are handled through the nomination and analysis of potential candidates or by the creation of a pool of managers. The quality needs are considered thanks to: existing job descriptions, the definition of an "executive paradigm" based in the qualifications of the person holding the position and/or a should-be approach.

This method is indeed useful in terms of anticipating needs that should be covered from the internal labor market. But it is highly dependent on factors as organizational changes and unpredicted personnel mobilities that could impact existing replacement charts. Also, it must have the help of other method and personnel's functions such as individual career planning, performance and potential

appraisal, training and development and job analysis. Its usefulness in HRP is limited to a reduced number of persons and within a short term scope (up to two or three years).

2.344 Job Profiles:

Based on Edwards appreciation and practical applications⁷⁴, job profiles are considered as a list of attributes or personal characteristics that an employee should have to be able to fulfill the duties and responsibilities of a given job. The main aspect is the link established between the main objectives and duties of a given position and the general management skill, special knowledge, experience and personal traits required by the same position. That is why it is also called "profiling executive jobs".

The way job profiles are designed is basically through the consideration of the job description of the chosen position to which a job specification is attached. The job specification can be done, firstly, by the analysis of successful managers or employees. Secondly, by describing the what-should-be-necessary for the performance of the position. In both approaches it is assumed that the present will remain the same or with insignificant changes in the near and distant future. This can be noticed in the training and development (T&D) plans designed with the use of job profiles. The current T&D needs are considered without change even when the persons is to occupy the position several years from the present date.

Nevertheless, in an O.E.C.D.'s experience, job profiles were estimated for the long term. These efforts have been exploratory and aimed at identifying the possible changes within specific blue-collar job profiles as a consequence

of technological advancement. Other experiences, as Leal's, have integrated current job descriptions to general or specific career paths assuming the present will remain unaltered in the distant future.

2.345 Job Analysis:

This method is also considered by a large number of authors⁷⁵. There are a large number of concepts dealing with this subject: work analysis, work study, workload analysis, job specifications, job design, job description, job requirements, and task analysis. In order to clear up some of the terms, the following will be considered using Peterson and Tracy's definitions⁷⁶:

"Job analysis is the process of identifying the duties involved in jobs and determining the skills and abilities required of a person to perform those duties effectively. It consists of two separate elements: job description and job specification."

"Job description lists the general and specific duties to be performed by a person holding a given position."

"Job specifications state the education and skills needed by the job incumbent."

Job analysis establishes, in a definite manner, the link between job responsibilities and the requirements the employee must have. But, the present practice and the state-of-the-art is based on the assumption that present job analysis will remain the same for the future. Moreover, being very costly to cover the entire company and all its workers, it usually concentrates on medium and high responsibility positions.

The lack of future perspective and the absence of more

precise techniques that could foresee the redesign of present jobs or the design of new ones, limits the benefits of this methods for HRP. Nevertheless, it provides the basic data that must be handled in order to define the type of personnel that would be needed by the organization in the near and distant future.

3. METHODOLOGY

3.1 Introduction

The present research was done in three stages. First, assessing the HRP practice in PDVSA for the period 1980-1981 and diagnosing any weaknesses. Second, a new method was designed (referred to later as Strategic Career Pattern - SCARP) to overcome these weaknesses. Third, this method was tested in PDVSA, in a given function and at corporate level covering the whole Venezuelan Oil and Petrochemical Industry.

3.2 Assessing the Effectiveness of the Existing HRP System

3.21 Hypothesis, variables and indicators

To check the effectiveness of the system in use in PDVSA during 1980-81, I set up the following general hypothesis:

There is an adequate practice of Human Resource Planning at corporate level in the Venezuelan Oil Industry due to the presence of a plan that establishes the bases for the quantification and qualification of human resources required for the achievement of the future corporation's objectives in order to assure an adequate supply of personnel for the medium and long term.

When stated in a more specific and measurable way the following operational hypothesis was obtained:

During the period 1980-1981 there was an adequate practice of Human Resource Planning in PDVSA as could be determined through the existence of a human resource plan where a systematic approach was established as to identify the number and characteristics of the personnel required for the

achievement of the corporation's medium and long term objectives in order to prevent or reduce the impact of an insufficient internal and/or external labor market.

The operational hypothesis was divided in one dependent and three independent variables as can be appreciated in figure No. 4. Furthermore, in order to facilitate the investigation, based on the confirmation of the existence of the independent variables, a series of indicators were established for each one of them.

The indicators were, basically, the indispensable contents that must be found in order to be able to establish the presence of the corresponding independent variable. In the case of independent variable No. 1 a plan should be found for five and/or ten years term. In the event a formal written plan were not available, there should be evidence of at least five year policies, guidelines and strategies.

In the case of the other two independent variables, the same approach was applied. The research did not demand any particular method in the personnel inventory or for the quantification or qualification of human resources. Nevertheless, they were considered in the later analysis that evaluated the grade of success of such methods in the case their presence was confirmed.

Finally, the indicators were established within a medium (five years) and long-term (ten years) perspective. This was due mainly to the fact that PDVSA's operational definition for the medium and long term is of five and ten years respectively as can be observed in any of its official publications.

3.22 Design of the Study

A Hypothesis-Testing field Study Design was used in the present investigation. This particular design was chosen because the present

FIGURE No. 4: METHODOLOGICAL FRAME

OPERATIONAL HYPOTHESIS	DEPENDENT VARIABLE	INDEPENDENT VARIABLES	BASIC INDICATOR	SOURCES	METHODS
During the period 1980-1981 there was an adequate practice of Human Resource Planning at PDVSA as it can be determined through the existence of a human resource plan where a systematic approach was established as to identify the number and type of personnel required for the achievement of the corporation's medium and long term objectives in order to prevent or reduce the impact of an insufficient internal and/or external labor market.	There was an adequate practice of Human Resource at PDVSA during the period 1980-1981.	1. The existence of a human resource plan. 2. The existence of a systematic approach as to identify the number of personnel required for the achievement of the corporation's medium and long term objectives.	1.1 Evidence of a five years term plan. 1.2 Evidence of a ten years term plan. 1.3 Evidence of five years policies on human resources at corporate level (H.R. at C.L.). 1.4 Evidence of five years guidelines on H.R. at C.L. 1.5 Evidence of five years strategies on H.R. at C.L. 2.1 Evidence of a corporate methodology of personnel inventory. 2.2 Evidence of a corporate methodology for the quantification of human resource's needs at five years term. 2.3 Evidence of a corporate methodology for the quantification of human resource's needs at ten years term. 3.1 Evidence of a corporate methodology for the qualification of human resource's needs at five years term. 3.2 Evidence of a corporate methodology for the qualification of human resource's needs at ten years term.	The plan or related written material.	Documental analysis.
				- Current experience and practice. - Written material - Foreseeing practice.	- Participant observation. - Content analysis. - Unstructured interview. - Previous investigations.
				SAME	SAME
				AS	AS
				ABOVE	ABOVE

is an Ex-Post-Facto research done in the Venezuelan Oil and Petrochemical Industry at corporate level. Consequently, special attention was focused on the HRP experience and practice being carried out at Petr6leos de Venezuela, S.A. (PDVSA), the holding company of the Venezuelan Oil Corporation. Basically because the role of PDVSA is to coordinate and integrate cohesively the activities of its seven affiliates, including all matters concerning Human Resources Planning (HRP).

The organization within PDVSA having direct responsibility on this subject is the "Coordinaci6n de Organizaci6n y Recursos Humanos" (Human Resources and Organization Coordination) which reports directly to the Corporation's Board of Directors. Nevertheless, although the scope of the research converged at 1980-81 corporate practice of HRP in PDVSA, attention was given to the particular experience accumulated by the different affiliates. This was particularly significant because the affiliates, in their own internal practice, can develop particular approaches to solve specific HRP problems as long as they respond to PDVSA's guidelines on the subject.

3.23 Methods

3.231 Participant observation

This was the principal method used in the present investigation. The author was employed by PDVSA and appointed advisor in the areas of human resource planning and strategic organizational planning. This position was held since December 1st, 1980 until July 30th, 1981. Then he was given the responsibility to redimension the Security and Safety Management of PDVSA with enough discretion as to develop and implement the more convenient approach.

From July 1981 to the present date, the researcher has been in permanent contact with the area of HRP in PDVSA as a user of the basic information produced and as an advisor as well. In fact, he

represented PDVSA at several national seminars held in the HRP specialty presenting research work in the area.

The information obtained through participant observation was of considerable help because it made an internal insight possible, not only of the conceptual approach used, but of how things are really handled, which conforms the actual practice. Furthermore, it also facilitated a systematic approach to the different experiences conducted in PDVSA as well as in the affiliates.

To overcome the weakness of the present method, the bias effect on the information gathering process, other methods were used. This was done in order to weigh the possible impact the present would have on the final results and to develop an appropriate research scheme.

3.232 Unstructured interview

An unstructured interview was used during the period 1980-1981 in order to obtain information from people with different levels of responsibility in the area of HRP (see figure No. 5). It was conducted at all levels and whenever it was necessary to obtain or update information about the current, historical or future state of HRP; and when institutional written material was unavailable or insufficient. Additionally, Figure No. 6 lists the documents considered for the analysis.

3.233 Validity and Reliability

The validity of the information gathered, particularly the one obtained through the unstructured interview, was established with the use of the concurrent validity. Accuracy was the form of reliability considered in the present research. Consequently, the information obtained from the different subjects interviewed was compared with the data obtained from the other research methods applied.

FIGURE 5 PERSONS INTERVIEWED

ORGANIZATION	POSITION
PDVSA	Director of Human Resources. Coordinator of Human Resource Manager of Human Resource Planning
LAGOVEN	
MARAVEN	Managers of Human Resource Planning
CORPOVEN	Professional and Advisors in Human
MENEVEN	Resource Planning

FIGURE 6: INFORMATION CONSIDERED IN THE CONTENT
ANALYSIS FROM 1980-1981

1. MEDIUM TERM CORPORATE PLANNING DOCUMENTS OF THE VENEZUELAN OIL INDUSTRY.
2. MEDIUM TERM HUMAN RESOURCE PLANNING DOCUMENTS.
3. PAPERS PRESENTED BY PDVSA AND ITS AFFILIATES BEFORE INTERNAL AND EXTERNAL SEMINARS ON STRATEGIC HUMAN RESOURCE PLANNING IN THE VENEZUELAN OIL INDUSTRY.
4. PERFORMANCE AND POTENTIAL APPRAISAL PROCEDURES AND FORMS.
5. CAREER DEVELOPMENT PROCEDURES AND FORMS.
6. PERSONNEL DEVELOPMENT MANUAL.
7. PERSONNEL DEVELOPMENT AND DETERMINATION OF NEEDS FLYERS.
8. MISCELLANEOUS FORMS.

3.24 Analysis of other researchers

Other investigations done in the area of Human Resource Planning in the Venezuelan Oil Industry were considered, and they provided an external source of information from non-compromised systematic observers. Figure No. 7 lists the studies considered.

3.3 Designing and Testing an Improved Process

As will be seen later, the existing method of human resource planning was found to be deficient. Based on the understanding of the human resource planning problem gained during the analysis of the present system, I therefore designed a new system to overcome these deficiencies. To test it out in practice, one of the corporate functions was chosen: Industrial Security which covered the whole Venezuelan Oil Industry. This function needed a redefinition of its corporate role within a future perspective. It demanded a strategic approach that could define the type of personnel needed in order to face more demanding challenges.

Figure No. 7: OTHER RESEARCHES CONSIDERED

- a. Carmen M. Gerdler R., Ilda C. Damas de Marcano and Nancy M. Moria de Seguera, La Formación de Recursos Humanos y la Industria Petrolera en Venezuela (The Formation of Human Resources and the Venezuelan Oil Industry). Caracas: Central University of Venezuela, June 1980. Non-published thesis.
- b. Rosaria J. Silvio B. Planificación de Recursos Humanos en la Industria Petrolera Venezolana (Human Resource Planning in the Venezuelan Oil Industry). Caracas: Andres Bello Catholic University, 1981. Non-published thesis.
- c. Claritza Zavarce de Delgado, Study of a System of Training and Development of Human Resources for the Venezuelan Oil Industry. New Orleans: Southeastern University, May 1981 . Non-published thesis.
- d. Petróleos de Venezuela S.A. (PDVSA) and Simón Bolívar Univesity (SBU): First Seminar of Strategic Human Resource Planning. Caracas: PDVSA/SBU 1981. Non-published papers and researches on HRP in the Venezuelan Oil and Petrochemical Industry.
- e. Carlos Noguera Estudio sobre Planificación de Carrera Profesional (Study on Professional Career Planning) Caracas: Corpoven, Mayo 1984. Non-published internal documents.

4. THE EFFECTIVENESS OF THE SYSTEM IN USE IN 1980-81

4.1 Acceptance of the General Hypothesis:

To determine the presence of the independent variables, we should confirm three out of the five indicators established for the first independent variable, two out of the three for the second and one out of two for the third (see Figure No. 4). This was considered as the minimum evidence required in order to accept the presence of the independent variables. The quality of its presence will be discussed in the following analysis.

To confirm the presence of the operational hypothesis two out of the three independent variables should be accepted. In that case, the general hypothesis would also be accepted.

The actual finding would give us two main alternatives:

- a) The general hypothesis is accepted because all independent variables or just two are present. Then comments will be made as to how the practice could be improved.
- b) The general hypothesis is not accepted because two of the independent variables are not present. Then recommendations would be proposed for developing an adequate practice. If there is not a qualitative method that could establish the type of personnel required for medium and long term, then a qualitative method would be proposed.

4.2 Analysis of the results found for each indicator of independent variable No. 1: (See Figure No. 8)

4.21 Indicators Nos. 1.1 and 1.2: There was no evidence of the existence of a five- and/or ten-year human resource plan in 1980-1981, neither in PDVSA nor in any of the affiliates. Furthermore, there was no evidence of an interrelated and well-defined set of human resources objectives and goals clearly linked to PDVSA's business corporate plan for the medium and long range. There was only evidence of short term human resource objectives aimed basically at controlling the industry's manpower growth.

4.22 Indicators No. 1.3: There was no evidence of the existence of formally stated five-year policies in 1980-1981. The evidence found showed that there were policies for 1980-1981 but were established on short-term basis (one year). They were a continuation of the existing ones, explicit or not, that gave a frame of support and reference to the practice of human resources in the Venezuelan Oil and Petrochemical Industry. Furthermore, the researcher never came across formally written policies for human resources at corporate level and within a medium-term range. Neither was he informed of its existence in the numerous interviews sustained.

4.23 Indicator No. 1.4: There was no evidence of the existence of formally stated five-year guidelines during 1980-1981.

4.24 Indicator No. 1.5: There was no evidence of the existence of formally stated five-year human resource's strategies in 1980-1981. The common practice was to define short-term strategies orientated toward short-term solution of problems detected in the present or foreseen in the near

FIGURE No. 8: TESTING INDICATOR OF THE OPERATIONAL HYPOTHESIS

ACCEPTANCE OF SPECIFIC
OPERATIONAL HYPOTHESIS

PRESENCE OF INDICATOR
1980-1981

INDICATOR

INDEPENDENT
VARIABLE

1. Existence of a human resource plan.	1.1 Evidence of a five years term plan.	ABSENT	NOT ACCEPTED
	1.2 Evidence of a ten years term plan.	ABSENT	
	1.3 Evidence of five years polices on human resources at corporate level.	ABSENT	
	1.4 Evidence of five years guidelines on human resources at corporate level.	ABSENT	
	1.5 Evidence of five years strategies on human resources at corporate level.	ABSENT	
2. The existance of a systematic approach as to identify the number of personnel required for the achievement of the corporation's medium and long term objectives	2.1 Evidence of a corporate methodology of personnel inventory.	PRESENT	ACCEPTED
	2.2 Evidence of a corporate metodology for the quantification of human resource's needs at five years term.	PRESENT	
	2.3 Evidence of a corporate metodology for the quantification of human resource's needs at ten years term.	ABSENT	
3. The existance of a systematic approach as to identify the characteristics of the personnel required for the achievement of the corporation's medium and long term objectives.	3.1 Evidence of a corporate metodology for the qualification of human resource's needs at five years term.	ABSENT	NOT ACCEPTED
	3.2 Evidence of a corporate metodology for the qualification of human resource's needs at ten years term.	ABSENT	

future. But these were isolated strategies, that is, they referred to specific problems within a given area of personnel and not to a comprehensive view of its effects in proximate or remote human resource areas. Consequently, defined strategies directed at achieving five-year HRP's goals related to the achievement or support of the corporation's business plan were not found.

4.25 Conclusion: Thus the specific operational hypothesis No.1 cannot be accepted due to the absence of all indicators.

4.3 Analysis of the results found for each indicator of independent variable No. 2:

4.31 Indicator No. 2.1: There was evidence of a corporate methodology of personnel inventory used in 1980-1981. The evidence found shows that the methodology used was asystematic and basically based on compulsive information demands complemented by numerous telephone calls to the corresponding affiliates departments. There was no structured corporate information system with operationally defined terms and systematic procedures for obtaining the present and historial data required. Consequently, the information produced was unreliable and based on rule-of-thumb handling of the same.

4.32 Indicator No. 2.2: There was evidence of a corporate methodology used in 1980-1981 for the quantification of human resources requirements at five-year terms. During 1980-1981 some formal corporate exercises in human resource prognosis were carried out but they were: asystematic, based on rule-of-thumb and "common sense" approaches. They did not consider any external variables with which human resource estimates could be related, and used low reliable non-computerized information.

Evidence found shows that during this lapse not all the affiliates had a human resource planning department. Those who had it were of recent manufacture with the exception of Maraven, S.A. Nevertheless, in the affiliates a short-term human resources estimation was commonly made using the ask-the-manager-approach also referred to as the "managerial criterion". This practice was later extended as the platform for the corporate quinquennium prognostics done in PDVSA. But the difficulty in consolidating the estimates at corporate level, remained. This was due to the absence of a uniform informational system in human resource that would define common terms and data gathering procedures.

It is important to observe that during 1980-1981 the purpose of the corporate estimation exercises was orientated toward the control of the growth of personnel in the Venezuelan Oil Industry and its affiliates. Particularly, in 1981 a great concern was developed about the considerable increment of the total work-force in the industry since nationalization (January, 1976). This was due to external political pressures that accused PDVSA of introducing the Mexican-oil-syndrome. So PDVSA adopted a policy of restraining the yearly incremental demands of personnel, presented for approval by the affiliates, using human resource planning as an instrument. Consequently, the prognosis exercises were more related to a corporate procedure for restraining the growth of personnel, rather than to a strategic definition of the type of persons required to assure the achievement of corporate objectives and goals.

This policy was not shared by the affiliates that were faced with a considerable increase in the amount as well as the complexity of its basic operations. Among others: the increase from 2.55 million barrels to 2.8 million barrels daily production capability; neutralize the declining production of

the traditional oil field; increase the national oil reserves; development of the Orinoco Oil Belt project; change of the refining patterns of four large refineries.

4.33 Indicator No. 2.3: There was no evidence of a corporate methodology used in 1980-1981 for the quantification of human resources requirements for a ten-year term. Anyhow, isolated exercises were conducted using the same methods and procedures indicated in the analysis of the above indicator.

4.34 Conclusion: Thus the specific operational hypothesis No. 2 is accepted due to the presence of two out of three indicators considered.

4.4 Analysis of the results found for each indicator of independent variable No. 3

4.41 Indicators Nos. 3.1 and 3.2: There was no evidence of a corporate methodology used during 1980-1981 for the qualification of human resources requirements for five- or ten-year terms.

4.42 Conclusion: Thus the specific operational hypothesis No. 3 cannot be accepted due to the absence of all indicators.

4.5 Deficiencies in Human Resource Planning during 1980-1981:

Therefore, the general hypothesis cannot be accepted due to the absence of specific operational hypothesis Nos. 1 and 3. Consequently, there is not an adequate practice of Human Resource Planning at corporate level in the Venezuelan Oil and Petrochemical Industry due to the absence of a plan that establishes the bases for the quantification and qualification

of the human resources required for the achievement of future corporate objectives in order to assure an adequate supply of personnel for the medium and long term.

The main deficiencies found in HRP for 1980-1981 were:

- a) The Human Resource Planning (HRP) organizations of PDVSA and of the affiliates were reporting within the personnel function by the end of 1981, with the exception of Maraven. This signified that the personnel managers approved the strategic guidelines given by the HRP units. This meant that the same organization approved what will orientate and define its own objectives, activities and strategies. On the other hand, the weight of operational problems, which are the major concern of the personnel function diminished any medium term perspective and possible impact of HRP on corporate planning. To overcome this situation HRP should establish a close relationship with the future corporate objectives so its guidelines could gain more strength and medium term perspective.
- b) There was the criterion that the preparation of a Human Resource Plan at corporate level was operational. So the corporate role was reduced to the consolidation of the affiliate's plans which were then rationalized through guidelines given afterwards. The question was: how the affiliates could prepare such plans, within a unique cohesiveness and common direction, if there were no corporate policies, guidelines, strategies and objectives that could orientate the affiliate's effort toward the medium and long term? Consequently, the HRP's results were related to: the affiliates' needs, a short term perspective and the yearly budgetary process.

- c) The quantitative approach had two forms of expression: the first one was the inventory of human resources. This was mainly orientated towards the justification of the personnel growth since the nationalization of the Industry in January 1976. The analysis done was descriptive and simple. There was no intent to establish if there were any significant relations with other industry's variables or to develop a mathematical method that could quantify those relations. Also, the inventory methodology was under permanent revision. This was due to the difficulty in obtaining reliable information as a consequence of the different approaches the affiliates had in obtaining, handling, analysing and reporting data. A computerized information system was initiated since the beginning of 1981 to solve this situation.

The second form of expression was the prognosis. This responded to a different exercise in which the main methods were the ask-the-manager-approach and the use of common sense for the estimation of future needs. There was no quantitative relationship with other variables. The purpose of the prognosis was more orientated toward controlling the growth of the Corporation's personnel than to defining future needs.

To improve the above situation, the methodology used should be enriched through the development of a more analytic approach in which the behaviour of the historical and present personnel data could be explained and studied in their internal as well as external causes. This analysis could be related to other corporation's variables in order to determine its relationship with other activities and functions of the oil industry. The

prognosis should incorporate other methods that could broaden the field of analysis, provide a more systematic approach and reduce the administrative procedures.

- d) There was no corporate qualitative approach or methodology for defining the characteristic of human resource for medium- and long-term requirements. In some cases just the simple use of professional or skill categories were considered adequate for the qualification of human resources. Consequently, there is a need to develop a qualitative method within a strategic approach.

5. THE PROPOSED APPROACH AND QUALITATIVE METHOD

The system proposed for overcoming the weakness described in the previous section, consists of two parts, a strategic approach (SHARP) and a detailed method (SCARP). SHARP provides a new aspect to HRP by actively relating it to the strategic planning process of the organization. It is described in the first part of the present section.

SCARP is a method that, within the frame of reference provided by SHARP, permits the qualification of future personnel required for the achievement of medium and long term corporate objectives. It is described in depth in the second part of this section. The implementation of the method in the Venezuelan Oil Industry is discussed broadly in section No. 6 as to test its applicability and benefits.

5.1 The Strategic Human Resource Planning Approach (SHARP):

SHARP expresses the emphasis on the active participation of HRP in the elaboration of the organization's corporate plan. Being its role to determine the feasibility of the firm's medium and long term objectives in terms of: the quantity and quality of human resources required by such objectives versus the obtention capability of the organization to obtain the needed personnel considering its internal and external possibilities. The expected result is the elaboration of a strategic human resource plan aimed at linking human resources strategies to the achievement of the company's objectives.

The definition of SHARP can be observed in Figure No. 9. It can be noticed that HRP and SHARP are complementary. The former is related to an operational level while the latter to a strategic one (see Figure No. 10).

FIGURE No. 9: COMPLEMENTARY DEFINITIONS OF
HUMAN RESOURCE PLANNING AND
STRATEGIC HUMAN RESOURCE PLANNING

STRATEGY		
<u>LEVELS</u>	<u>C O N C E P T</u>	<u>D E F I N I T I O N</u>
"A" & "B"	Strategic Human Resource Planning (SHARP)	Is the process that effectively integrates the overview of the different personnel functions with the activities of Corporate Planning, as to elaborate a plan that can efficiently guide the action that has to be taken, in order to manage the type (quality and quantity) of human resource that can assure the achievement of the corporative objectives and goals.
"C"	Human Resource Planning (HRP)	Is the process by which the operational plan of all personnel functions is elaborated, specifying how, with whom, with what, and when the different activities will be carried out, in order to fulfill the corporative objective within the guidelines established by SHARP.

FIGURE No. 10: STRATEGIC HUMAN RESOURCE PLANNING LEVELS

<u>STRATEGY LEVELS</u>	<u>F U N C T I O N</u>	<u>A C T I V I T Y</u>	<u>P R O D U C T</u>
"A" CORPORATIVE	CORPORATE HUMAN RESOURCE PLANNING	ESTABLISHMENT OF GENERAL OBJECTIVES, POLICIES, GUIDELINES AND STRATEGIES.	CORPORATE HUMAN RESOURCE PLAN
"B" AFFILIATE'S	STRATEGIC HUMAN RESOURCE PLANNING	ESTABLISHMENT OF SPECIFIC OBJECTIVES, POLICIES, GUIDELINES & STRATEGIES.	STRATEGIC HUMAN RESOURCE PLAN
"C" AFFILIATE'S (PERSONNEL ADMINISTRATION)	OPERATIONAL HUMAN RESOURCE PLANNING	DEFINING AND PROGRAMMING THE SPECIFIC ACTIONS ON HUMAN RESOURCE ACTIVITIES.	OPERATIVE HUMAN RESOURCE PLAN

5.11 Scope of SHARP:

If SHARP is to participate actively in the corporate planning process, it must incorporate the basic methodology used in Corporate Planning (COP). Consequently, its scope is given by the strategic levels of a complex organization, as considered by Lorence and Vancil, among other authors⁷⁷.

Figure No. 10 shows the three strategic levels that are referred to SHARP in a large and complex organization. There is level "A", or corporate. Its main activities deal with: the definitions of corporate objectives and goals, policies, guidelines and the broad general strategies that give a sense of direction to the entire corporation in the area of human resources. This orientates all its effort to the support and obtention of the corporation's medium and long term objectives. The product is a Corporate Human Resource Plan (CHRP) with, at least, a medium term scope.

Level "B" comprises the affiliates or subsidiary companies. The main activity consists of adapting the CHRP to the particular situation of the affiliate. That is to say, establishing the specific objectives and goals, policies, guidelines and strategies under the premises established by the CHRP. The product is the Strategic Human Resource Plan (SHRP), with at least, a medium term scope.

Level "C" is the operative level where the personnel administration function of the affiliate undertakes the Operational Human Resource Planning responsibility. The main activity of this level is to define and program the specific actions that have to be developed in order to achieve the objectives and goals established by the affiliate in the SHRP within the cohesiveness of the CHRP. The product is the Operative Human Resource Plan with at least, a short term scope.

In the case of big and medium size companies with no subsidiaries,

Level "A" joins Level "B" at a strategic level. In small organizations, the three levels need to be together.

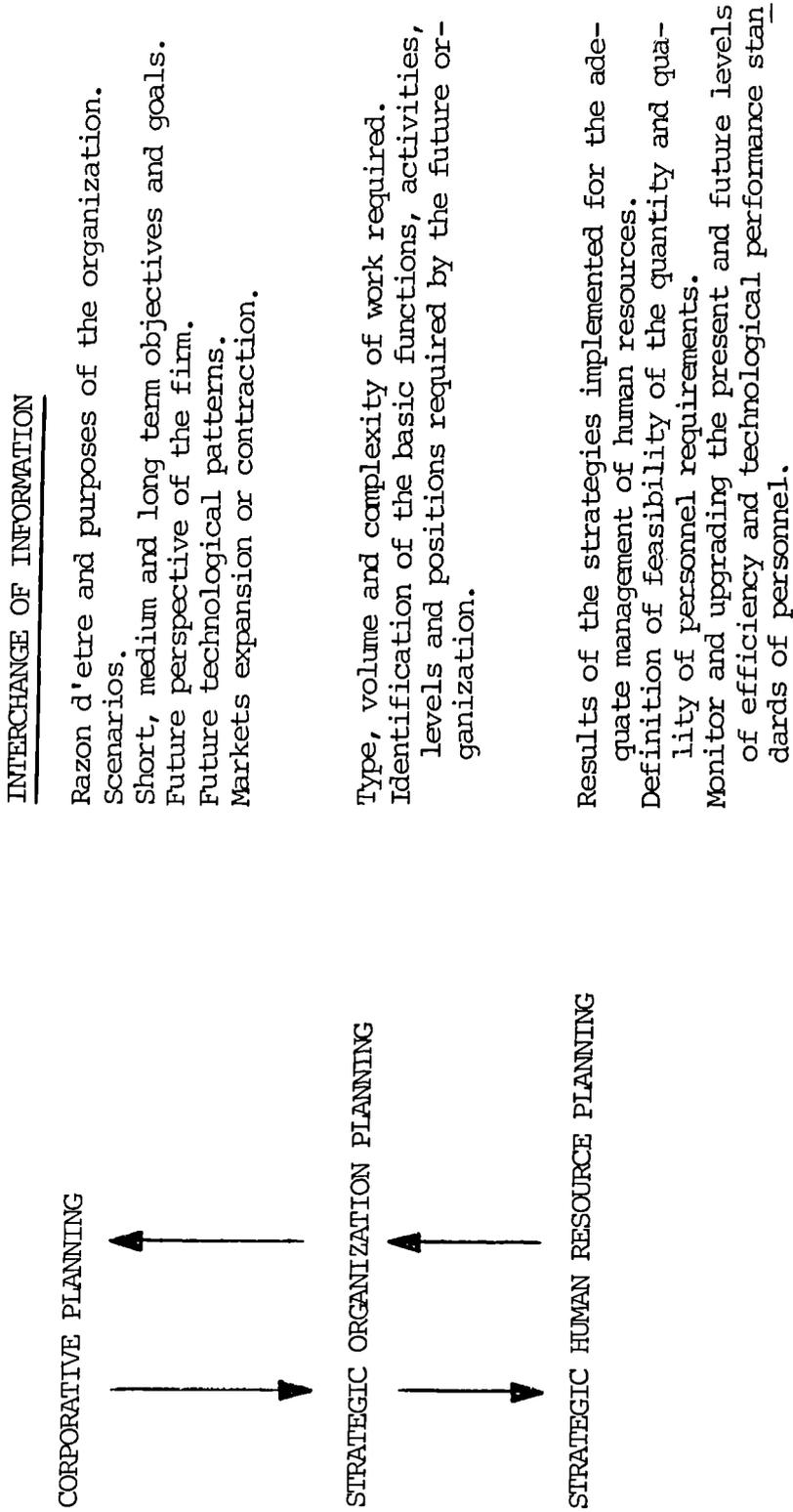
5.12 Organizational location of the SHARP unit

Authors such as Thakur, Wikstrom and Patten⁷⁸ as well as practice, seem to agree that SHARP units should be located within the personnel function. This, of course, is understood with a passive HRP overwhelmed with operational personnel's activities. On the other hand, as stated by Hussey and Argenti⁷⁹, COP units are generally independent and report to the highest level of the organization: the president itself, the board of directors or through a liason-director. The reason being that it is the only way to have sufficient hierarchy for establishing concrete guidelines and strategies that can provide cohesiveness and a common target to all the company's departments. Furthermore, if COP is to accomplish a follow-up and control of the firm's corporate plan, it must report to the top.

Consequently, if SHARP is to be given an active and strategic responsibility it is not reasonable to insert it within the personnel function. Even though it can be upgraded and well related to COP. The reason is that it is a difficult task to set guidelines and control measures for the same department of which it is a part. Consequently, if SHARP is to perform a real corporate strategic role it must be outside personnel. The point is, where to?

The alternatives are: first, as a part of COP. This would mean the recognition that the feasibility to obtain the required human resources is determinant in the elaboration itself of the corporate plan. Second, as a part of strategic organizational planning. Third, reporting to a liason-director. We prefer the first. Within COP, SHARP has the basic information it needs and access to the decision-making process without the operational weight of personnel's routine.

FIGURE No. 11: INTERRELATION AMONG STRATEGIC FUNCTIONS



5.13 The implementation of SHARP Practice:

5.131 Information Required by SHARP

The type of information that SHARP interchanges with COP, as indicated by Walker⁸⁰, and also with Strategic Organization Planning will be defined. In Figure No. 11 the three strategic units are considered. It shows the sequence in which they should interact and also the information that must be interchanged continuously because they complement and influence each other's results.

5.132 Main Steps:

SHARP must adapt to COP's planning process, as discussed by authors as Patten and Mc Beath⁸¹, which can be summed as follows:

- a) Define the corporate philosophy regarding human resources that can, in turn, be translated into explicit policies. Determine the company's role in the community vis-a-vis the present and future behaviour of educational, social and economic factors.
- b) Scanning of the internal and external environmental conditions as to foresee any significant variation that can have an impact on: the human resource management or the performance standards required for the achievement of the organizational goals. It is very important to study and determine the feasibility of the firm's technological future changes vis-a-vis the present and future quality level of the company's personnel.
- c) Diagnosis of the present situation in order to identify: existing problems, limitations, and achievements in the management of human resources.
- d) Definition of the guidelines that will orientate the strategies to be taken in order to achieve the human resource objectives and goals.

- e) Elaboration and development of the strategy chosen as the most efficient to obtain the proposed objectives.
- f) Establishment of objectives and goals orientated to support the attainment of the short, medium and long term goals and objectives of the organization. This activity is preceded by a feasibility analysis of the technological performance standards of personnel required for the future, in order to confirm or reject the objectives established by COP.
- g) Evaluation, follow-up and control of the resulting plan of SHARP.

5.133 The SHARP model:

The "Strategic Human Resource Planning Model" (see Figure No. 12) is characterized by the active role of SHARP in the elaboration of the corporate plan and the need to act upon such external variables as the national educational system.

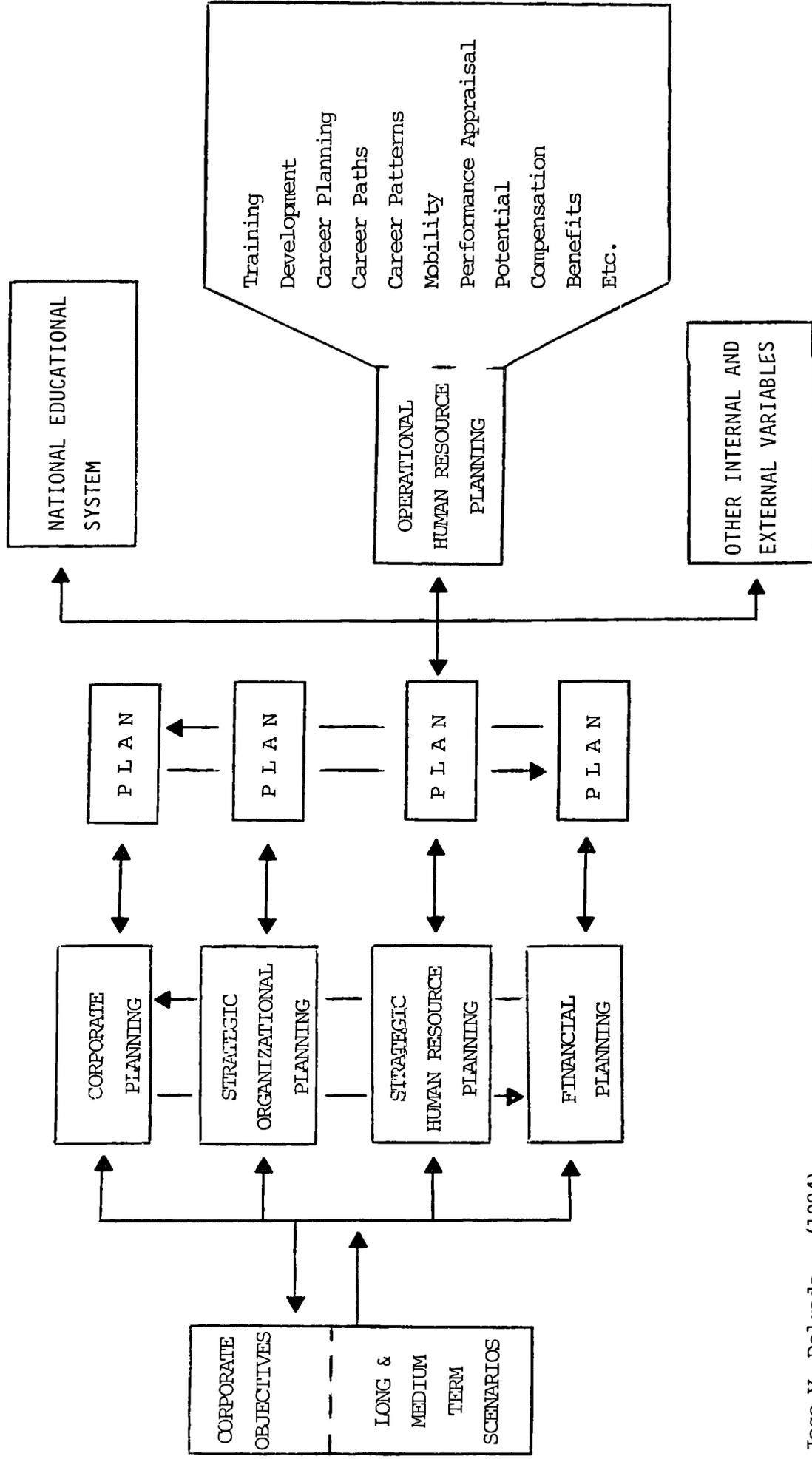
5.2 The Strategic Career Pattern (SCARP):

The present qualitative method was developed within the Venezuelan Oil Industry during the period 1982-1984 as a consequence of the deficiencies found in HRP for the period 1980-1981. It was developed as a Pilot Plan within the Industrial Security Function in PDVSA and at a corporate level. Later on, and based on the work set forth, the experiment was extended to four additional functions: Environmental Protection, Industrial Safety, Industrial Hygiene and Fire Control and Prevention. These five functions were comprised in a wider concept: Integral Protection. This concept established the bases for the creation of the Integral Protection Coordination which reports to the Board of Directors of PDVSA, since the 1st of May, 1984.

Nevertheless, the reader might ask what happened with HRP in PDVSA

FIGURE No. 1 2 :

STRATEGIC HUMAN RESOURCE PLANNING MODEL



during the period 1982-1984 in which the Pilot Plan was developed? The author kept in touch with the HRP function in PDVSA and it could be said that little progress was obtained as can be appreciated in Appendix B, where a more detailed analysis of the situation is summarized.

5.21 Definition

It is a matrix of multiple entries which permits the rational interaction of a set of variables considered to be determining in the identification of the type of man required at short, medium and long terms for the achievement of corporate objectives.

5.22 Background

Undoubtedly, its immediate antecedent is career path which is the echeloning of possibilities for progress offered to the worker by the firm. This method assumes that the job analysis or professional profiles that could enrich it, remains the same well into the future.

SCARP differs from career path in that it seeks to establish the type and characteristics of the personnel required for the achievement of future corporate goals and objectives. Such characteristics can be similar or different to those prevailing at present. In other words, it proceeds from the future into the present. Besides, career path is included as a variable of analysis in SCARP.

The only other antecedent known in Venezuela is that of the Armed Forces which, as indicated previously, works as a "Closed System". In this sense, the author actively participated and is familiar with the experience developed by the Venezuelan Navy. This experience sought to optimize the professional levels of its personnel upon acquisition of the new missile frigates built in Italy.

5.23 Main Characteristics of the Method

5.231 Close Relation with Corporate Planning:

One of the basic characteristics of the method is the close and active interaction that must maintain and develop with corporate planning. This interaction is not limited to a mere receiver of the guidelines and demands established by corporate planning for medium and long terms. SHARP can vary the strategies, objectives and goals set forth by corporate planning, in the event that the organization can not obtain the type of personnel required to secure the attainment of future corporate goals.

SCARP provides SHARP with a qualitative method to effectively interact with corporate planning. The quantitative methods do not call for such a close interaction. In fact, the number of personnel estimated for medium and long term can always be adjusted on a short-term basis. Moreover, in the event of new recruits, an adequate external labour market or an additional effort in initial training can always offset any misjudgement on this matter. However, this does not work the same way if the changes required deal with the quality of the personnel needed. Consequently, actions must be taken much in advance, because qualified human resources can not be "improvised" so as to meet new challenges, changes in technological patterns or new corporate objectives. Specific actions must be taken much in advance not only to develop the required human resources, but to adapt the personnel function to internal and external changes.

For SCARP to work properly, the following information is required from COP:

- a) The overall national and international scenarios where the organization is expected to be involved in the immediate future. Also, the specific scenarios of the main propelling and supporting functions in the organization.

- b) The perspectives of the organization/corporation for the future.
- c) The organization's short-, medium- and long-term objectives and goals.
- d) The technological profiles the organization plans to introduce in the future.

5.232 Relation with Strategic Organization Planning

Although we may consider the information provided by corporate planning to be determinant, the one provided by strategic organization planning bears significant importance. In effect, the following should be included:

- a) Definition of the work that must be carried out: the amount of effort required and the complexity level it shall demand from the personnel that will execute it.
- b) Information specifying the manner in which the work shall be divided in order to expedite its achievement. This means: the type of organizational structure; the relationship that must exist among its components; the functions, activities, positions and levels through which the work required for the achievement of corporate goals and objectives, must be channelled.

5.233 Orienting the Future toward the Present.

Another of the important characteristics of this method, is its orientation. In effect, we find that all qualitative methods considered in Section No. 2 respond to the following basic approaches:

- a) The tendencies observed in the historical analysis are

prolonged into the future.

- b) The present will remain unchangeable or undergo just a few variations in the mediate future.

Both approaches suppose that the present and/or the past will not suffer any variations which could change them significantly. This position is extremely simplistic since the firm's external environment undergoes a continuous and dynamic change which demands a permanent adaptation from all organizations.

In this sense, the basic assumption adopted in SCARP is to start out from the future and then build up to the present. In other words, the first thing to be defined is what are the organizations' requirements for the future. Then compare it against a diagnosis of the present situation. In this way, and thanks to this contrast, the difference can be established and, consequently, the corresponding actions can be defined.

5.234 Overview of the Human Resources Administration Function

Obtaining the required personnel is not the result of an isolated action of any of the functions which make up human resources administration within an organization. Isolated actions, (such as selection and recruiting) could not guarantee the availability of personnel required to achieve corporate objectives. This is only the result of a rational, integral and cohesive management of all the functions which constitute human resources administration. The interdependence which exists among them can not be ignored. The SCARP method, thanks to the information it handles, facilitates this coherent overview of all human resource administration functions.

5.235 Typical Positions

The method proposed uses "Typical Positions". It is what summarizes the basic functions and activities of all existing variations for a given position in an organization. It also gives more consistency to

the pattern defined for medium and long term in SCARP.

5.236 Active Role in the External Environment

The method defines basic aptitudes, attitudes, experience and knowledge of the personnel required to cope with future objectives of the company. Consequently it can assume a more active role in its external environment. With this information the national educational system can update its curricula to meet the quality standards required for the foreseen future of the industrial setting.

5.237 Consideration of all levels

SCARP is not reduced, as other methods, to just the high-talented or the managers. The levels of personnel are seen as an interactive structure that must be developed harmoniously, if it is going to work softly together in an interdependent and productive way. Consequently, the method considers all levels within an organization.

5.24 The way the Method works

Following are described the main steps used in SCARP. The variables considered by the method are later described in depth in section 5.25. The information gathered is related in a particular format that can be seen in Figure No. 13. Figure No. 14 shows an overall picture of how the method works.

5.241 Basic Information

The first step is to gather the basic information already discussed in sections Nos 5.231 and 5.232.

5.242 The Diagnosis Pattern

In the second step a diagnosis is made in which the characteristics of the personnel are established versus the description of the basic functions and activities for each basic position of the organization or unit under study.

Figure No. 13: Basic Format of the SCARP Method

Typical Position: _____

Payroll: _____

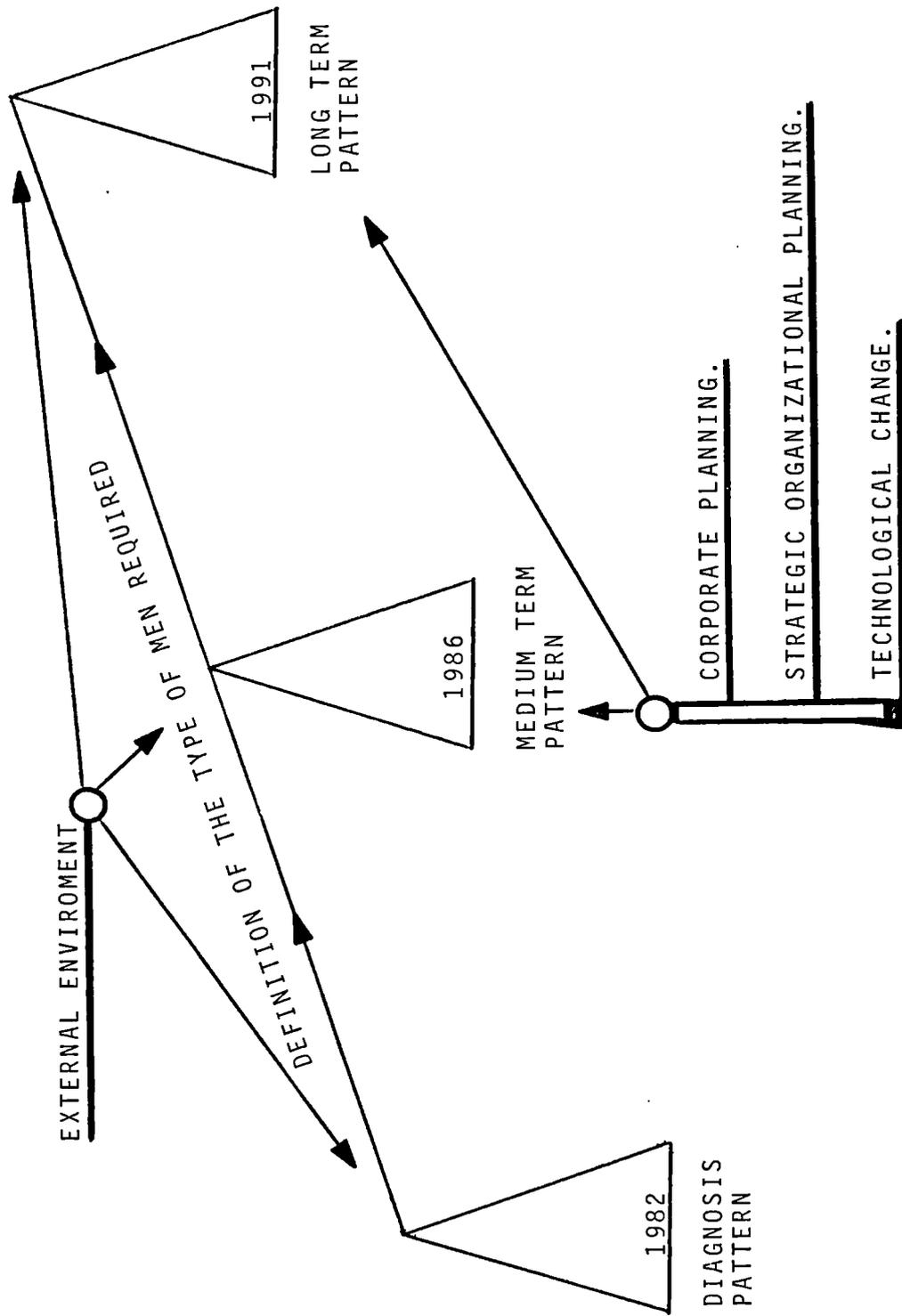
Minimum Academic Level Required: _____

BASIC FUNCTIONS

BASIC ACTIVITIES

ATTITUDES-APTITUDES-EXPERIENCE

FIGURE No. 14: MEDIUM AND LONG TERM SCOPE OF THE STRATEGIC CAREER PATTERN.



5.243 The Medium and Long Term Patterns

This is done by first, identifying the basic functions and activities required for each future basic position to accomplish corporate objectives set forth by the organization. Second, by establishing the personnel characteristics required to successfully perform in the typical positions identified.

5.244 The Resulting Analysis

A comparison is done of the three patterns. The purpose is to identify the effort that must be done not only in the development of personnel but in other areas of human resource administration. Consequently, a plan is designed to provide the organization with the required personnel at medium and long terms.

5.25 Main Variables of the Method

5.251 Professional Profile of the Position

It consists of establishing the basic functions and activities necessary to meet the responsibilities and challenges related to a present or future basic position.

5.252 Technological Profile of the Position

It provides the information which states future improvements on how things will be done in order to achieve corporate objectives in a more efficient or productive way. This can mean the incorporation of sophisticated equipment or just more efficient procedures that increase productivity. But whatever alternative is chosen, it will always demand new behaviour patterns from the worker. This information can be expressed independently or included in the Professional Profile of the position.

5.253 General Profile of the Level

Defines the organization's minimum expected behaviour requirements for the different hierarchical levels that will make up its basic structure at medium and long terms. This expected behaviour must be

carefully structured as to assure their complementarity in order to achieve the proper interaction among the personnel.

The information to be submitted for the General Profile of any given level may be expressed independently. Also, it may be included in the information submitted for the Professional Profile of the different positions of a given level.

5.254 Competence Profile of the Position

It consists of the knowledge, aptitudes, experience and attitudes a person must have for a high probability of success in carrying out the functions and activities related to a typical position. The information is included in the format of Figure No. 13.

5.255 Individual Competence Profile

This consists of the knowledge, aptitudes, experience and attitudes a person has, as a result of the various learning opportunities procured by himself or provided by the company. This variable is implicit in the method, since it is necessary to make a contrast between the Individual Competence Profile and the Competence Profile of the Position when identifying a candidate for a determined level and/or position.

5.256 Time of Permanence in the Position.

This consists in establishing the maximum, medium and minimum time a person can stay or is required to stay in a typical position. Minimum time is understood as the essential time required for a worker to accumulate the indispensable experience as to be promotable to positions of higher responsibility. Medium time refers to what is considered as the appropriate or expected time. Maximum time is understood as the limit of time beyond which lack of motivation would seriously affect the worker's productivity. These variables are analysed in three instances: present (diagnosis), medium and long term.

5.257 Career Paths

This variable establishes the positional echeloning of the company, function or organization unit under study. It serves to identify those homologous positions in the company which prove to be more complementary for eventual transfers. Career path involves the same three instances for analysis as in the previous variable.

5.258 Minimum Academic Levels

The academic level is considered essential for establishing the base of a solid Competence Profile of the Position. If the academic levels correspond adequately, it will help to establish a constructive interaction among the positions and levels. This variable also involves the same three instances of analysis mentioned for the above.

5.259 Payroll

The type of payroll and maximum and minimum salary levels for each basic position offers important information. It shows the relation between the contribution made by the position vs. the salary paid by the organization. Thus, the contribution of each position can be comparatively studied as well as the competence profile required. Consequently, a salary appraisal study can be established with the information provided by SCARP.

5.26 Benefits of the method proposed

The SCARP method proved very useful as a qualitative method within the SHARP approach. It was of considerable help in defining guidelines, policies and strategies which oriented personnel administration.

In other words, when the Patterns for medium and long term are compared against the diagnosis, the following benefits, among others, can be established:

- a. In the area of Recruiting and Selection it provides Recruitment Profiles for any position and level. This is obtained through comparison of Competence Profiles of the Positions to the Individual Competence Profiles of workers wishing to occupy a given position. This expedites horizontal and vertical shifting of personnel, as well as the design of induction, training and development programs.
- b. In the area of induction, the knowledge, experience and attitudes required for each position or level can be defined thanks to the information supplied by the Competence Profile of the Position. Consequently, induction programs can be designed and established for both new personnel and those moving either horizontally or vertically.
- c. In the area of training, it supplies information on the deficiencies of a given worker. This helps to establish training programs which aid the worker in better carrying out the tasks related to his position. This is obtained by comparing the Competence Profile of the Position with the Individual Competence Profile.
- d. In the area of development, it provides the information for defining the knowledge, experience and attitudes required for scalating to higher positions in the future. This information is essential for preparing development programs at all levels.
- e. In the area of evaluation of potential it serves to establish, clearly and in an objective manner, what type of behaviour shall characterize superior levels or positions. In this way the evaluation of a worker's potential need not be done only under the supervisor's subjective appreciation. It can be based on comparison of the behaviour expressed by the worker versus the Professional Profile of higher positions.

f. In the area of performance evaluation only the worker's performance must be compared against the Professional Profile of the Position (determined on the basis of achievement of corporate objectives) and the particular goals established for the period considered by the evaluation to define his contribution to the organization.

g. In the area of career planning, it is possible to extend it to all personnel at all levels within the company. This allows all workers of the organization to have a clear picture of what their future perspectives and possibilities are in the company.

On the other hand, with SCARP career planning can be done objectively. That is because it calls for evaluation of potential, performance evaluation, and outlines future perspectives for the individual's development in the organization. Moreover, it proposes a career path in his area of specialization as well as in other alternate positions with which his present responsibilities are more compatible.

h. For successional planning activities, SCARP helps to identify key positions and the type of worker that could occupy them in the mediate future.

i. In the area of job analysis, the SCARP method handles job descriptions, as well as job specifications.

j. In the area of position classifications, since the SCARP method actually presents job analysis for all basic positions, it is easier to determine the relative weight of each of those positions in the achievement of corporate objectives.

k. In the area of time of permanence, it is easier to establish minimum and maximum times of permanence for the personnel who,

for whichever reason, must be accelerated or desaccelerated in their development within the organization.

1. In the area of executive development, it aids in establishing guidelines and norms that could guarantee that the corporation's characteristic seal be implanted on the executive staff managing the company. This is achieved thanks to the information supplied by the variable: General Profile of the Level.

- m. In the area of remuneration, studies can be made of the possible future variations in salary structures for each basic position and level. It expedites the analysis for establishing strategies geared toward maintaining and/or attracting personnel of high professional standards.

6. TRIAL IMPLEMENTATION OF THE STRATEGIC CAREER PATTERN IN THE VENEZUELAN OIL INDUSTRY

6.1 Choice of location for the Trial:

The Industrial Security Function was chosen for this trial. Industrial Security covers the prevention and control of all intentional risks that could jeopardize the operational activities of the Oil and Petrochemical Industry in Venezuela. This function, which is coordinated from PDVSA, required in 1981 a complete review of its dimensions and strategic projection. Consequently, it was necessary to establish new perspectives so that its contribution to the achievement of PDVSA's goals could be of higher level and quality than before. But this could only be achieved if the required human resources needed to redimension the function could be obtained. To achieve this the SCARP method was applied.

6.2 Implementing SCARP in Industrial Security:

Implementation involved nine steps which are now described in broad terms. Anyhow, if the reader wishes to understand them in more detail, he can always consult Appendix C where steps fourth to ninth are described in depth.

6.21 Preparation of scenarios:

The first activities developed for the application of the SCARP method was the preparation of scenarios. They outlined the contour within which the oil and petrochemical industry would develop at medium and long terms. Those scenarios were developed: one for medium term covering 1982-1986, and another, for the long term covering 1987-1991. For the preparation of both scenarios, from the Industrial Security standpoint, the following variables were considered: political, economical, social, military and labour. The main methodology steps developed were as follows:

- a. Identification of each variable's most relevant historical facts which could have an impact in the future. Establishment of the assumptions which would help to infer possible variable's variations at medium and long terms. Both the facts and the assumptions were determined on the basis of documental analysis of the information obtained from books, pamphlets, dailies (for a period of six months), specialized opinion magazines (both local and foreign).
- b. Through the use of the morphologic analysis method several alternatives were identified which showed greater possibilities of occurrence.
- c. The resulting draft was submitted for consideration to the upper levels of PDVSA who, in one way or another, were involved with the different variables under study.
- d. A semi-final version was submitted to the Industrial Security corporate managers. Finally, an alternative was chosen as the more probable in order to conform the core of the Industrial Security's scenario.

6.22 Establishment of perspectives for the Venezuelan oil and petrochemical industry:

The purpose of this step was to identify the basic sense of direction that the Venezuelan oil and petrochemical industry would have in the foreseeable future. Basically, the intention was to determine the industry's tendencies with respect to: new producing areas; expansion or contraction of its basic operations; new installations; incorporation or reduction of new areas of exploitation; housing units, and administration and logistic support areas. The main methodological steps followed were:

- a. Documental analysis of the main corporate guidelines and

corporate plans set forth by the subsidiaries of the Venezuelan oil industry for medium and long terms. It should be pointed out that in 1981 there was not a key corporate medium term plan for the corporation. Only yearly guidelines were given.

- b. The draft, resulting from the above step, was submitted to superior hierarchical level of Petr6leos de Venezuela, S.A. in order to validate its content.

6.23 Raison d'etre of the Industrial Security Function:

Now it was necessary to define which would be the raison d'etre of the Industrial Security function within the perspectives visualized for the Venezuelan oil and petrochemical industry. In other words, if its scopes required a different orientation, or whether it had to be eliminated or integrated with another existing function.

Two very significant approximations were developed. First, the concept of Integral Protection, within which Industrial Security had its new raison d'etre and also found possibilities for development, growth and perspectives within the Venezuelan oil and petrochemical industry. Said concept of Integral Protection was based on the approach that risk was a global issue which had to be attacked through the rational and cohesive integration of those functions in the industry which, in one way or another, anticipate and control it. These functions were: Industrial Safety, Environment Protection, Fire Prevention and Control, Industrial Hygiene and Industrial Security. They constituted the professional and institutional answer to the prevention and handling of the different types of risks that could attempt against the continuity and suitability of the characteristic operations of the Venezuelan oil and petrochemical industry.

This approach of Integral Protection was of great significance within the framework of the study undertaken since it had a tremendous impact on the industry. In effect, this concept set the groundwork

for the creation of management units in Integral Protection in all of PDVSA's subsidiaries. Also, it accounted for the creation of a Coordination of Integral Protection in PDVSA which, at corporate level, is responsible for providing a cohesive sense of direction with respect to the handling and prevention of risks. In PDVSA a coordination unit bears the highest organizational rank in the industry and reports directly to the Board of Directors of the corporation.

The second approximation was to give Industrial Security a wider perspective at a higher level. This was achieved by emphasizing the prevention responsibility for safeguarding the company's interests from intentional actions.

The method basically used in this step was through meetings with the managers of Industrial Security.

6.24 Scopes and purposes of the Industrial Security function:

With all the information gathered throughout the previous steps, the scopes and purposes of the function were defined. A detailed analysis was made to determine the scope the Industrial Security function should have at medium and long term. Basically, it included a categorization of the different risks, which at any given moment could jeopardize the characteristic operations of the Venezuelan oil and petrochemical industry. The ones considered a direct responsibility of the function were identified.

After the scope of the function was defined, the purposes were then established. This was stated in terms of what the function had to do in order to ensure its active and dynamic role in those areas under its direct responsibility. Also, its supporting role if called upon to actively cooperate with State institutes or agencies in guaranteeing the industry's integrity.

Corporate objectives for the function were defined for medium and long terms by the corporate management of the function at PDVSA. This served to define the achievements of Industrial Security in the mediate future and its relation with corporate objectives.

The main method used in this step consisted of consecutive meetings with different management, supervisory and operative levels related to the Industrial Security function.

6.25 Diagnosis of the function (1981):

It was essential to have a global and precise overview of the characteristics and conditions Industrial Security Function had in September - December 1981. Several actions were developed.

First, the basic organizational characteristics were investigated through a survey. The questionnaires were forwarded to corporate managers of the function, in all the subsidiaries, and these were to be returned upon completion to PDVSA. The results obtained showed a considerable lack of intra and inter-affiliate coherence; a significant diversity of scopes and organizational structures; emphasis in a repressive approach (more emphasis in identifying the guilty than preventing the fault); generalized low level and a deteriorated image of the function.

Second, a Diagnosis Pattern was elaborated. It included Professional Profiles of the different typical Positions the function had at corporate level, together with its Competence Profiles (attitudes, aptitudes and experience required). Results obtained showed: over redundance in the supervisory effort, consequently, managerial and supervisory role distracted by operational urgencies; low academic, professional and managerial levels; routine and low impact activities; low technological profile.

Third, the mobility of personnel for 1981 was studied through a

career path elaborated considering the real development possibilities the personnel of the function could expect at corporate level. Fourth, the expected permanence lapses for 1981 were studied through the minimum, medium, and maximum times of permanence for each basic position. Results showed: inadequate mobility of personnel; personnel capabilities were not capitalized; academic echeloning was not observed; some positions had considerably more chances of promotion.

The main methods used in the diagnosis of the function were:

- a. Questionnaires forwarded to corporate managers in Industrial Security. The survey's validity and the reliability were determined through consultation meetings with the managers themselves.
- b. Documental analysis of the existing bibliography on: Industrial Security in the Venezuelan oil and petrochemical industries; job analysis. The information was obtained from the different subsidiaries in their existing plans, projects and programs at short term.
- c. Development and use of the Research Productivity Method at all levels in the Industrial Security function.
- d. Participant-observation done by the author. Conducted in the various operational areas of the Venezuelan oil and petrochemical industry.
- e. The career path method.
- f. Meetings with a management consultants group, which served as a supporting team for the field investigation carried out. At those meetings the information, obtained through the various

methods, was discussed and approved.

6.26 Preparation of the technological profiles for 1982, 1986 and 1991

One of the most important inputs was the identification of future technological progress in Industrial Security. The information helped to determine the type of personnel required. First, it was necessary to elaborate the present and future list of services to be rendered by the function. Second, for each service a simple, medium and advanced technological level was identified. Third, a level for every service was identified for 1982, 1986 and 1991. Finally, the technological profiles were established for 1982, 1986 and/or 1991 for each service.

The main methodological steps taken were as follows:

- a. Documental analysis of specialized journals, both national and foreign, to establish the different types of technologies used or to be incorporated so as to optimize the quality of Industrial Security's services.
- b. Use of the Investigation Productive Method with industry experts in the area of Industrial Security, in order to broaden the information obtained in the above step and determine the technological profile in use for 1981.
- c. Discussion of the draft prepared by the group of experts with the consulting management team of the study.

6.27 Medium Term Pattern (1986)

The purpose was to determine the type of personnel required (competence profile) to accomplish the basic functions and activities (professional profile) demanded by each basic position to achieve the future challenges and goals of Industrial Security within a given technological profile.

It must be pointed out that the medium term pattern included the Integral Protection approach which determined the upgrading possibility of Industrial Security. Its elaboration was divided in three instances:

The first instance included the analysis of the adequacy and permanence, for medium and long term, of the 1980-1981 basic positions. It was determined that only the watchmen level showed inconveniences. This was due to the fact that in 1981 these positions were dispersed and diverse. After analyzing the type, quantity and complexity of the work to be carried out at this operational level in 1986 and 1991, it was concluded that it was sufficient to establish three basic positions: Watchman I, Watchman II and Watchman III, within the basic corporate positions of watchmen.

The second instance included the analysis and definition of the type of functions and activities which characterize the basic positions identified for medium term. Special care was taken to ensure that the different basic positions and levels, defined at corporate level, would be complementary. To this effect, the responsibilities for the functions and activities in each basic position could not portray any redundancy. Yet they had to be logical, cohesive and show upgrading of responsibility, contribution, complexity and executive burden.

The last instance dealt with expected mobility of personnel for 1986 and 1991. It was established through the career pattern and the expected times of permanence. The purpose was to: rationalize the academic and professional echeloning; capitalize accumulated experience; rationalize the upgrading opportunities and alternatives.

Principal methods used:

- a. Analysis of all the information gathered on the previous steps.

- b. Use of the Investigation Productive Method with representatives from different levels in Industrial Security. The purpose was to verify the functions, activities, attitudes, aptitudes and experiences related to the basic positions identified for 1986 and 1991. Also, the expected mobility of personnel.
- c. The career path using the basic positions identified for the medium term within an Integral Protection approach.
- d. Discussion and analysis with the project management consulting group of the Medium Term Pattern and mobility paradigm resulting from this step.

6.28 Long Term Pattern (1991)

The most significant variation lied in the Minimum Basic Academic Level considered essential for entering or staying in any of the basic positions or levels within the organizational structure. This was due to the fact that the long and medium term pattern coincided. The appreciation was that the latter would be satisfactory for 1991. But only if the Minimum Academic Levels were modified so that they would sustain an ultimate upgrading of the function's personnel. The long term pattern was prepared following the same methodological guidelines indicated in the above step.

6.29 Preparation of Corporate Plans

- a. Comparison of objectives and goals for medium and long terms versus the reality diagnosed in 1981-1982.
- b. Comparison of the Diagnosis Pattern against the Medium and Long Term Pattern as to determine the effort required to upgrade the quality of existing personnel. Identification of minimum entrance requirements to newcomers.

- c. Definition of feasible and efficient strategies which could be established to guarantee the progression of the present into the desired future.
- d. Selection of the most convenient strategy for the function to be upgraded within an Integral Protection approach.
- e. Definition of guidelines which would serve as the framework for the actions to be developed by the strategy selected.
- f. Definition of policies which would serve to rightly interpret the guidelines and provide a sense of orientation.

The resulting plan was then presented as the "Corporate Plan for Industrial Security 1982-1991" published in May 1982 by Petr6leos de Venezuela, S.A.

6.3 Main benefits and limitations observed:

The application of the SCARP method in the Industrial Security function at a corporate level in PDVSA led to the following benefits:

6.31 Reshaping of the Function.

One of the most significant aspects was that Industrial Security was reshaped. Its new raison d'etre felt within a wider scope. This was provided by the concept of Integral Protection which also involved the following functions: Industrial Safety, Industrial Hygiene, Fire Prevention and Control and Environment Protection. As a result the possibilities for growth and development of Industrial Security personnel at all levels were considerably enriched. They had not only the opportunity for developing a career within the same function. They also had possibilities for vertical and horizontal development within the Integral Protection corporate organization.

6.312 Recruitment and Selection.

The Competence Profiles of each basic Position defined by the Medium Term Pattern, provided the recruitment profiles required for entering at the function at any level or position. This facilitated the recruitment and selection of personnel outside the corporation and of those workers who already worked in the company and wished to join Industrial Security.

6.313 Induction.

The information supplied by the Professional Profile and the Competence Profile of the position helped in the preparation of induction programs for the personnel both within and outside the function.

6.314 Training and Development.

Through a comparative analysis of the Diagnosis Pattern, the Medium Term Pattern and the Long Term Pattern, requirements for training and development (T&D) were detected. Thus facilitating the definition of corporate policies, guidelines and strategies that would orientate the subsidiaries to develop such programs.

This area can be considered as the most important in terms of expected benefits from SCARP. T&D is one of the specific actions by which an organization can upgrade and obtain the needed personnel with the required quality. That was the reason why this aspect was verified afterwards through a field experience. The intention was to prove the real benefit SCARP could offer to a corporation like PDVSA in terms of training and developing the required personnel. For detailed information of this experience the reader can refer to Appendix D.

6.315 Interrelation of basic Positions

The results obtained showed the diverse and disperse academic levels prevailing in 1982 within the organizational structure of Industrial

Security. Likewise, it showed that, in 1982 workers could occupy positions of higher responsibility without going first into the one immediately following. Also, office-work personnel could occupy supervisory and management levels in positions with a different professional background without undergoing special training.

The situation just described indicated the capability of SCARP to identify the interrelations that must exist among basic positions. It also considered if the mobility pattern responded to an adequate sequence. Thanks to the medium and long term career pattern, these situations were corrected.

6.316 Career Planning

The information supplied by the Diagnosis and Medium Term Pattern proved of considerable help in the preparation of career plans for personnel, at any level, in the function.

6.317 Times of Permanence

SCARP provided information for determining how the mobility of personnel was managed in Industrial Security. The possibilities for promotion and progress were dominated by those who joined with a higher academic level. This situation was corrected for the medium term through the definition of a minimum academic level for entrance and permanence in every basic position and level.

6.318 Position Classification and Compensation.

The SCARP was designed considering the contribution and level of responsibility of each basic position in order to obtain the corporate goals of the corporation. Consequently, they provided information for the classification and compensation system. With this information, future provisions were made as well as comparison with homologous positions elsewhere in the corporation.

6.319 A source of information:

The Strategic Career Pattern enabled supervisory and management levels to establish constructive and professional dialogues with representatives from personnel administration. The medium and long terms patterns of the method allowed them to provide information concerning future needs of the function as well as of its workers.

6.32 Limitation:

6.321 Long term scope:

Undoubtedly any method of estimation, be it quantitative or qualitative, poses the difficulty that as it is projected further in time its perspective becomes more diffuse. This could not exclude the Strategic Career Pattern. Difficulty was observed in appreciating significant differences between the Medium and Long Term Pattern.

6.322 Information required:

This method must work with information from other functions such as corporate planning and organization planning. In the event these functions do not exist or are not producing the information required by SCARP, then the elaboration of the information required must be included as one of the first steps to be followed by the method.

6.4 Acceptance by PDVSA since the Trial:

- a) Presentation at the Board of Directors of PDVSA's affiliate companies and explicit approval of the Strategic Career Pattern.
- b) Approval by the Board of Directors of Petr6leos de Venezuela, S.A., as per the letter forwarded by the First Vice-President to the presidents of PDVSA's affiliate companies (See Appendix No. E). This letter highlights very significant aspects of the Strategic Career Pattern.

- c) Creation of the Coordination of Integral Protection as of May 1st, 1984, reporting directly to the Board of Directors of PDVSA. The need of an Integral Protection approach was concluded thanks to the information gathered through the SCARP application. It should be pointed out that one of the most significant aspects which motivated the creation of the Coordination of Integral Protection was that it enabled the incorporation and/or conservation of high-level personnel, not only for Industrial Security but for the other functions as well. Furthermore, it allowed for training and development of personnel with an integral vision of those risks which at any given moment could jeopardize the continuity and integrity of the Venezuelan oil and petrochemical operations.
- d) In terms of further application of the method, two affiliates have developed similar approaches. Another affiliate plans to implement the method during 1985. Two coordinations in PDVSA are developing similar experiences.

7. THE GENERALIZATION OF THE METHOD TO OTHER ORGANIZATIONS AND COUNTRIES

7.1 Contribution of the research to the present state of the art

Before discussing generalization of the method to other organizations and countries it is important to understand the significance of this research within the state of the art in Human Resource Planning. This will be done in two stages: first, stating, very briefly, the main aspects that characterize the present practice and knowledge in the subject. Second, the reader will be able to appreciate the contributions set forth by this thesis.

7.11 Present state of the art in Human Resource Planning:

Human Resource Planning (HRP) and Business Planning (BP), as stated by Manzinin and Director, are not integrated. This does not exclude the fact that authors like Walker have established that a relation between HRP and Corporate Planning is needed. But this relationship has always been expressed in terms of a passive HRP's role.

Director points out that forecasting human-resources needs and forecasting human-resources availability are the most highly developed components of the HRP process. But the same author adds that of all the techniques used for forecasting activities in HRP, none provides insight into the characteristics of the individual who should fill future vacancies.

Analysis of the qualitative methods being used in HRP (see part 2.34 in the thesis) have shown that they have a short term scope and concentrate on particular levels of the organization: mainly managers, key positions and high flyers. As stated by

Manzini this is basically because there is a lingering view on the part of the line managers that human resources can be purchased at short notice. If they need "bodies", they can go out there and buy them, so who needs planning? This is one of the reasons for the considerable use of quantitative methods.

The formal HRP models described in the literature, as pointed out by Director, are not widely used. Line managers feel some difficulties in the application of the systems, approaches and methods of HRP (Schein, 1982).

Sheridan, Monigan and Feuer have pointed out that very little literature is available on scanning the human resource environment of particular organizations.

Human-resource programming, the translation of HRP objectives into action plans, has been described as the most critical, yet least well developed phase of the HRP process (Dyer, 1982). Most human resource specialists would agree that the integration of human-resource planning with personnel management functions is necessary to ensure that these functions make the maximum possible contribution to achieving the organization's goals and objectives (Director, 1985). Still, most companies have not integrated the various personnel actions with their human resource plans (Alpander, 1982).

Director states that the evaluation of alternative human resource programs, in terms of their impact on the organization's goals is another weak link in HRP. The same author adds that the recent literature has not paid sufficient attention to the complexities of estimating how much, if any, an employee's behaviour or performance was caused by a particular human-resource program. The alternative the literature relies upon is managerial judgement.

The concepts, practice and experiences developed so far in HRP have been mainly in developing countries and based on the needs and particular context of these nations.

Finally, it can be said that sufficient attention has not been given to the need for influencing the national educational systems. HRP is either considered as independent from the external educational system or the national educational system is looked upon as a good and reliable supplier of the required personnel.

7.12 Main future developments

Based on the present situation of HRP authors like Alpander (1982) and Director (1985), I consider that the following issues need to be addressed in future developments.

- (a) The need to integrate HRP horizontally with the personnel function and vertically with the strategic business plan.
- (b) The urgent need for HRP to integrate its internal processes and components.
- (c) The need to implement techniques that can provide insight into the characteristics of future personnel.

7.13 Contributions of the present research

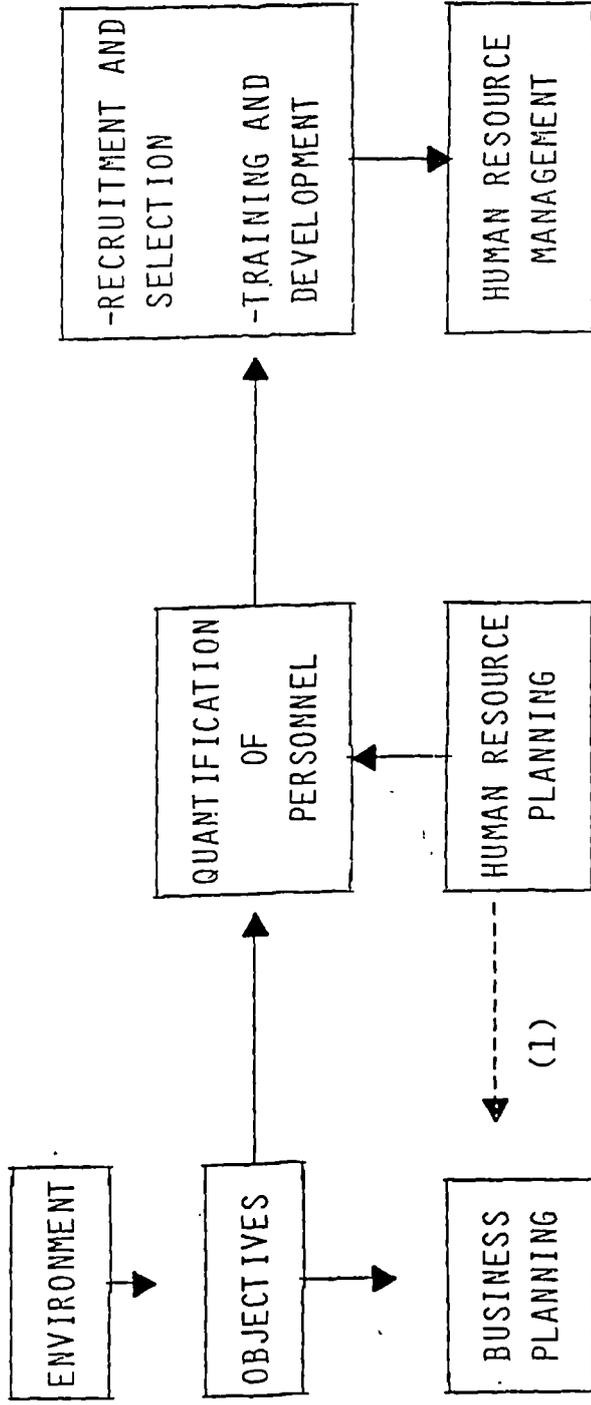
The research described in this dissertation:

- (a) Implements a broader approach for the Human Resource Planning concept and practice. This approach has been identified as Strategic Human Resource Planning (SHARP) because it positively and actively links HRP to Corporate Planning (see figure No. 1

and No. 2), and also because it establishes an active role in the determination and feasibility evaluation of the future objectives of an organization.

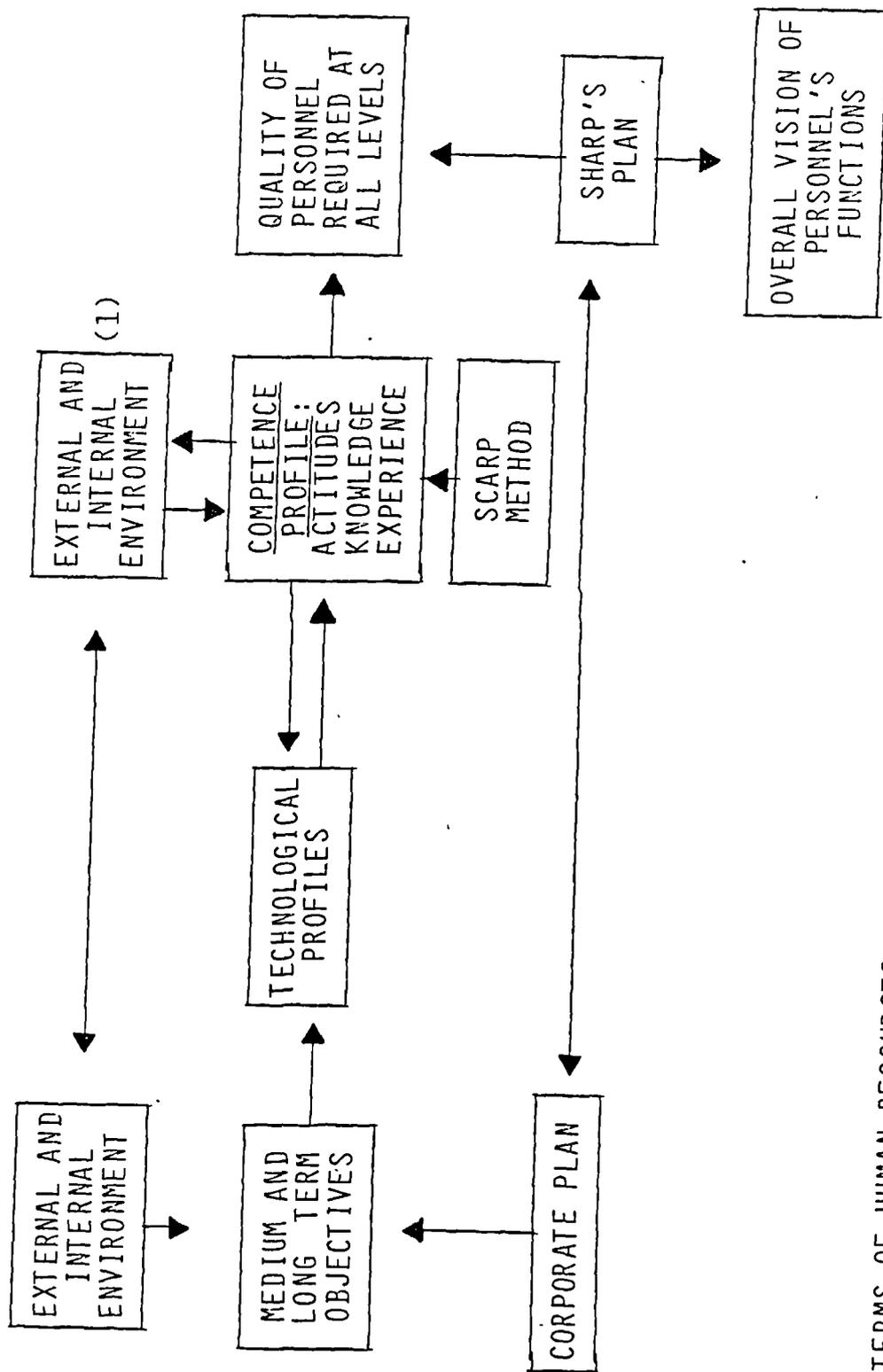
- (b) Defines through SHARP the relationship that should exist with Corporate Planning, Strategic Organizational Planning, Financial Planning, and Personnel Management.
- (c) Establishes an integration with personnel management, providing an overall vision of personnel functions linked to the achievement of the organization's goals and objectives.
- (d) Develops a method that can describe the characteristics of the human resources needed by the organization to respond to future objectives and challenges. This method has been called Strategic Career Pattern (SCARP) because it defines the new attitudes, aptitudes, experience and knowledge required by employees to fulfill future responsibilities in order to achieve corporate goals. Hence it provides the means to develop a human-resource program in order to achieve those new characteristics in the personnel.
- (e) Considers through the SCARP method all levels and positions in an organization with a medium and long term perspective. It is not limited to a given level with the organization, for example, the managerial level.
- (f) Has been conducted within the particular context of a large corporation in an underdeveloped country.
- (g) Has considered the external environment of the organization and thus provides the information, given by the SCARP method, to influence the national educational system.

TRADITIONAL RELATION BETWEEN
CORPORATE PLANNING AND HRP



(1) IF THERE IS A RELATION IT IS EXPRESSED IN TERMS OF PROVIDING INFORMATION ON EACH INDIVIDUAL OF THE ORGANIZATION OR PAST, PRESENT AND FUTURE QUANTITATIVE DATA ON THE FIRM'S PERSONNEL.

LINKING CORPORATE PLANNING WITH SHARP



(1) IN TERMS OF HUMAN RESOURCES.

7.2 Application of this approach and method in other organizations

The contributions mentioned above are supported by the previous six chapters of the present thesis. Nevertheless, the reader can wonder if these contributions can be applied in other organizations of developed or underdeveloped countries. The intention of the present part is to consider these aspects.

7.21 In a whole organizations as such

The research done in the present thesis covers a particular function within a corporation. This corporate aspect should be stressed because the investigations considered the different firms that form the Oil and Petrochemical Industry in Venezuela. Nevertheless, it remained within the scope of a given function: Integral Protection. So, can SHARP and SCARP be applied to an entire organization as such?

The answer is yes. This was possible to establish, thanks to the experience conducted in one of PDVSA's affiliates. Nevertheless, the SCARP method needed to be adjusted. It was not possible to approach the entire organization through the "typical position" concept because it was too concrete. Consequently, it was substituted by "main levels" of the organization which provided profiles of each level of the organization instead of profiles for each typical position that could be reported for every level. The rest of the method remained the same. Afterward, the experience was orientated to each particular function where the SCARP method was applied as described in the previous chapters.

7.22 In developing countries

The approach and the method proposed in this thesis can be applied by large and medium size organizations in developing

countries that consider their corporate objectives within a future perspective. It can be applied particularly to state owned and native industries that must deal with situations having the following characteristics.

- (a) National labour markets incapable of providing the required personnel, either in high tech or key positions, due to:
 - (i) insufficient quality of graduates from national universities,
 - (ii) a considerable demand by other companies of the same sector,
 - (iii) a technological and managerial profile required by a particular corporation or large industry that cannot be matched by the national educational system, or from other native companies.

- (b) difficulties or impossibility to recruit leading personnel due to:
 - (i) official regulations of the country where the industry operates (prohibition or limitations as to the number of leading personnel to be employed, particularly in key positions),
 - (ii) pressure from, or agreements with, labour unions,
 - (iii) high cost of wages as a consequence of the devaluation of the national currency and/or economic recession.

- (c) the need to develop the organization's high talented personnel in order to ensure researches, state-of-the art professionals

and managers identified with the specific situation of the firm and the country. This effort can be either entirely assumed by the particular organization or faced in a joint effort with the national educational system. In the case of the last alternative, information must be given by organizations as to the type of personnel required for the future in order to facilitate the curricula adjustments by the educational centres.

7.23 In developed countries

Even though in developed countries there is a high probability that the national educational system or the labour market can support the personnel's quality requirements of organizations, the following situations can always be faced:

- (a) Limitations of the national labour market to provide the required human resources for a particular profession or position highly specialized.
- (b) Develop, internally, the company's personnel.
- (c) Implement a substantial technological change developing, stage by stage, a plan in which the current personnel must support and implement it.

In order to solve any or all of the above alternatives the organization needs to define the characteristics its human resources will require in order to support the achievement of the medium and long term objectives. This research has tried to contribute in this direction by developing a strategic approach to human resource planning and a particular method that has shown evidence of being useful and applicable.

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APPENDIX A
THE OIL INDUSTRY AND HUMAN
RESOURCE PLANNING IN VENEZUELA

1. The Venezuelan Oil Industry

It could be said that Venezuela joined the group of oil exporting countries in 1917¹. In that year exports were initiated on a regular basis. Oil turned out to be the country's main source of income which at the time already had an impact on the national economy. In fact, as of August 15th, 1913, with the completion of the first oil well drilled², exploratory and production activities unfettered very rapidly, attracting the interest of transnational companies which would set up quarters in Venezuela during 1919³. This decade of expansion formed the basis for the rise and development of an industry which would have a significant impact not only on the nation's economy but also on its political and social development.

Throughout the years, Venezuela has been consolidating a dependency on its oil resources⁴. This can be observed through the effect that oil income has had since 1943 when it amounted to 139 million bolivars, (representing 43.6% of the total National Income). In 1974 when it summed 36,448 million bolivars⁵ (representing 85.6 of the National Income). In 1985 when it is estimated to be 63,014 million bolivars⁶(representing 61% of the National Income). This signifies that since 1950 this sector has been responsible for more than 50% of the Central Government's ordinary income, and for more than 90% of Venezuelan yearly exports. Consequently, the oil industry is the most important generator of the country's foreign currency⁷.

Conscious of this reality and after a long period of maturing its fiscal, legal and political structures⁸, the Venezuelan government nationalized the oil industry on August 29th, 1975. This was done through the enactment of the Organic Law which Reserves to the State

the Industrialization and Commerce of Hydrocarbons. It became effective on January 1st, 1976. Likewise, in order to make such resolution feasible, this Organic Law also considered the constitution of Petr6leos de Venezuela S.A. (PDVSA) on August 30, 1975. This company has the responsibility of executing and demanding the execution of policies related to hydrocarbons, as determined by the National Executive through the Ministry of Energy and Mines⁹.

In this way, PDVSA faced the breathless challenge of organizing and coordinating a sector of the national economy which, at the time of nationalization, was constituted by 31 companies¹⁰. The transnational companies which dominate the world oil scenario, were involved either directly or indirectly in such companies. The nationalization process established that of the 31 companies, which existed at the time the law was enacted, only 14 were to remain. These were to be under the coordination of PDVSA. By December 28, 1978, as a result of a well studied integration process, only four big operating companies were left: Lagoven (former Creole Petroleum Corporation), Maraven (former Shell Company of Venezuela), Meneven (former Mene Grande Oil Company of Venezuela and Gulf International) and Corpoven (former Mobil Oil Company of Venezuela and Corporaci6n Venezolana del Petr6leo)¹¹.

In order to complete the subsidiary companies, which would make up the new structure of the oil and petrochemical industry, the Ministry of Energy and Mines created the Instituto Tecnol6gico Venezolano del Petr6leo (INTEVEP) (Venezuelan Institute of Oil Technology) on that same December 28, 1978. It would be responsible for the development of an adequate technology adapted to the realities of the Venezuelan oil industry. Likewise, it created PEQUIVEN in order to rescue the Venezuelan petrochemical industry from the doom of inefficiency and inproductivity in which it had fallen¹².

In this way, Petr6leos de Venezuela, S.A., in 1979, initiated a new

organizational structure, more rational and efficient, with which it could better face the challenge posed by the nation: procurement of the foreign currency required by Venezuela to support the economic development on which the political, social and educational sector of the country is based. However, in order to face this challenge successfully, the levels of efficiency of the pre-nationalization era were to be maintained and developed. This would only be possible within a sound policy of self financing that would guarantee availability of the resources needed for the projects destined to ensure a continuous and dynamic expansion of the industry. The purpose was to compete in international markets which from the beginning of the century were under the domain of powerful transnational companies.

As of December 1984, the Venezuelan oil and petrochemical industry had a patrimony of 104,429 million bolivars, a total of 43,553 workers¹³, and carries out operations throughout the whole national territory. It has integrated all activities related to the oil business and meets entirely the hydrocarbon requirements of the country. It also created a new affiliate, Bariven, with the responsibility to rationalize all foreign commodities imports.

However, in the future it faces the responsibility of:

- a) Maintaining and also increasing the production potential by introducing new extraction techniques in wells which had been exploited for decades.
- b) Discovering and incorporating new production areas of light oil.
- c) Incorporating to production tremendous oil reserves of heavy and extra-heavy crudes in the Orinoco Oil Belt, an area which is still isolated and underdeveloped.
- d) Facing the challenge of developing its own technology in order to give an efficient answer to its particular production, refining and petrochemical needs.

- e) Overcoming the inefficiency and corruption which has characterized State bureaucracy, of which the Venezuelan Oil Industry is a part today.

2 Background of Human Resources Planning in Venezuela

Human Resources Planning in Venezuela arises from the big oil companies which saw the need for anticipating, well in advance, the requirements of personnel. The purpose was to support the achievement of different objectives and goals set forth worldwide and, consequently, in Venezuela. Before the nationalization of the oil industry, the big transnational companies directed all matters related to human resources planning from their headquarters scattered throughout different countries in the world. Specific actions, at national level, would then be executed through the different departments or managements of human resources administration.

After the nationalization, at the beginning of 1978, Maraven established the first Manpower Management unit in the Venezuelan oil industry. It was initially subjected to the personnel administration department, but before long it started reporting directly to the Board through a liason director. This unit was responsible for defining a concrete approach to Maraven's human resource problematic with a short-, medium- and long-term perspective¹⁴.

This initiative had a rapid effect in the Venezuelan Oil Industry. In April 1980 PDVSA decided to create the Manpower Management under the Coordination of Organization and Human Resources. This Management unit would change its name at the beginning of 1981, to Strategic Planning of Organization and Human Resources. Likewise, in September 1980 Lagoven, the biggest subsidiary of PDVSA, established the Human Resources Planning Management. During 1981 the rest of PDVSA's subsidiaries created similar groups in the area of human

resources planning¹⁵.

The creation of these organizational structures, responsible for human resource planning, constituted a precedent since up to 1980 no other Venezuelan organization or corporation had a similar structure. It can thus be appreciated that this activity was closely linked to large corporation that had to consider specific expansion projects or plans at medium and long-term which require considerable foresight. Besides, the international projection of the Venezuelan Oil Industry demands that its human resources be topnotch to ensure a high level of competitiveness and efficiency when facing up to transnational rivals in the struggle for international markets.

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APPENDIX No. B
HUMAN RESOURCE PLANNING
IN PDVSA DURING 1982-1984

During the development of the strategic approach and qualitative method proposed in this research, the HRP function continued working within the Human Resources Coordination of Petr6leos de Venezuela, S.A. where it belonged. That is why the author has considered the need to incorporate, at least as an Appendix, the evolution observed by the HRP function during the lapse 1982-1984. The main reason has been to identify if a maturation process took place introducing aspects that could have changed significantly the evidence found for the period 1980-1981. The methods used for the following analysis were the same as for 1980-1981.

1. A Human Resource Plan

There was no evidence of a Human Resource Plan. Neither of five or ten-year policies, guidelines or strategies. The characteristic remained the same as for the period 1980-1981.

Nevertheless, when the existing written material for 1982-1984 was analysed in depth the following aspects were found:

- a. There was an apparent confusion between terms like: policies, guidelines, premises, functional guidelines.
- b. Even though the guidelines were supposed to have a medium range scope, they were really established over annual bases. In other words, the guidelines were not established in order to provide a sense of direction or institutional reference that could orientate the possible actions aimed toward the achievement of clearly defined goals for the quinquennium. Instead, the guidelines were based on the problems and situations detected on the present or near past. They had a

defined influence towards the short term.

2. A Personnel Inventory:

During the period 1982-1984, a considerable effort was made as to systematize the demands and handling of historical and present information on the human resource's characteristics of the corporation. The procedures for obtaining the information required were systematized and several versions of a glossary of operational terms were produced as to assure their equal interpretation by the different affiliates. Consequently, the level of reliability was improved as well as the amount and quality of information produced at a corporate level. Nevertheless, there were still problems in implementing, at corporate level, a computerized human resource information system (which was initiated during 1981). This was due to the difficulties found in interrelating the previous existing affiliate's computerized human resources information systems, and in establishing a final corporate operational term definition's glossary.

3. A methodology for the quantification of human resources at five-year terms:

The practice found in 1980-1981 was more orientated toward restraining the growth of personnel. This purpose persisted throughout the period 1982-1984 in which a drop in oil prices and consumer's demand justified it. In this new scenario HRP only demanded the reduction or stabilization of the industry's manpower without establishing clear strategies and objectives for the medium and long terms with the subsequent consideration of the possible strategic effects.

During the lapse 1982-1984, a more systematic corporative procedure was developed with the active participation of international consulting companies. This process was improved in 1984 as a result of the experiences accumulated based on a trial-and-error approach. During this period all affiliates consolidated their human resource planning organizations. Also the gathering of corporate human

resource information, as stated previously, was improved.

The Corporate HRP statistics information was given by basic functions, payroll, and critical professions in the form of a five year human resource prognosis. Still, the procedure particularly stressed the justification of any growth of personnel rather than the planning activity as such. To illustrate the point, during the lapse 1982-1984 the prognosis exercises were conducted within a zero-base-approach orientated towards the need for reducing the total work force of the industry. The result was that the affiliates justified not only their actual personnel but also the need for more.

Nevertheless, it should be added that during 1982-1984 interest grew in identifying the critical problems that could be foreseen in the corporate human resource situation within one to two year's scope. The quantitative methods developed and used were the following:

3.1 Levels of activities:

This has been called PDVSA's methodology and consists in the use of levels of activities. The general steps are: first, to identify a present level of activity within a given area or function. Second, based on the future increase or decrease in the activity, a linear estimation of human resource requirements is established.

3.2 The management-criterion:

Used whenever the level of activity method could not be used.

3.3 The Committee:

This was not expressed as a method but as a step in the procedure. It consists of the analysis and discussion process to which the human resources estimates are subdued at a managerial level, within the affiliate and within PDVSA, before they are finally accepted. This may alter the initial figures obtained, no matter which was the method actually used.

3.4 The functional Skills Categories:

An attempt was made to introduce this method at corporate industry level, but with little success. At present it is being used only by the affiliate that developed it. Basically, it consisted of a more sophisticated approach to a skills inventory.

4. A methodology for the quantification of human resources at ten-year terms:

No evidence was found.

5. Qualification of human resource planning:

No evidence was found. Nevertheless, during the investigation a confusion was detected as to the manner in which a qualitative method is understood. The simple use of professions or positions in establishing estimates based on personnel inventories, sometimes was considered as a qualitative approach. This was the reason why the functional skills categories were considered, in some cases, as a qualitative method.

PDVSA as well as the affiliates extensively use career planning, sucesional planning, personnel's potential evaluation, career development, professional and development profiles, and carries out programs in training and development of personnel. Even though these practices provide qualitative information they are used more with a short-term personnel administration purpose than with a human resource planning intention. The operational characteristics of the mentioned methods are similar to those considered in Section No. 2 of the present study.

6. Additional information gathered:

6.1 Organizational setting: Six out of the seven affiliates had a formal human resource planning unit. All had the mentioned functions within human resource administration. In 1981, two human resource planning units were reporting directly to the affiliate's board of directors. At the present time they are not. The function, at PDVSA's level has always been within a coordination where all

matters dealing with personnel administration has been handled.

6.2 Relations with corporate planning:

There was no significant relation. HRP exerted a direct control on the increments of personnel. There was no impact on corporate plans in terms of questioning the capability of the industry for obtaining the personnel required, in quantity as well as in quality, to support the achievement of corporate objectives.

6.3 Human Resource Planning models:

There were those with emphasis on the administration process (the planning cycle) and others that particularly considered the methodological process. The first ones differed significantly from one affiliate to another, even though they all had to respond to the corporate yearly human resource cycle established by PDVSA. This corporate cycle basically consisted of deadlines to be observed and of guidelines as to how to obtain and report the information required.

Among the models that stress the methodological process, the one shown in Figure No. 3, section No. 2 of this study, illustrates the basic content and general approach of the ones developed so far in the Venezuelan Oil Industry.

6.4 Future perspectives: The evidence found in order to describe the future perspective of human resource planning in the Venezuelan Oil Industry, indicated an intention to implement a computerized human resource information system at corporate level.

7. Conclusions

Basically, the same situation observed during 1980-1981 continued during the period 1982-1984. Nevertheless, a considerable effort was invested in the quantification of human resources. But the absence of effective relation with corporate planning and the orientation towards the control of the growth of personnel figures remained.

APPENDIX C

THE DETAILED METHOD AND EXAMPLES OF APPLYING SCARP TO THE INDUSTRIAL SECURITY FUNCTION IN PDVSA

This appendix gives a fuller appreciation of steps fourth to ninth of the Strategic Career Plan (SCARP) described in Sections 6.24 to 6.28 of the main text. These sections correspond to the present Appendix as follows:

- Appendix C.1 Scopes and Purposes of Industrial Security
 (section 6.24)
- Appendix C.2 Corporate Diagnosis of Industrial Security
 (section 6.25)
 - C.2.1 Organizational Characteristics
 - C.2.2 Diagnosis Pattern of Industrial
 Security
 - C.2.3 The Mobility of Personnel
 - C.2.4 Expected Permanence Lapses
 - C.2.5 Research Productivity Method
- Appendix C.3 Technological Profiles of Industrial Security
 for 1982, 1986 and 1991 (section 6.26)
- Appendix C.4 Medium Term Pattern of Industrial Security
 (section 6.27).
 - C.4.1 Basic Positions of the Watchman for the
 Medium Term.
 - C.4.2 Medium Term Minimum Requirements for
 Watchmen
 - C.4.3 Medium Term Pattern for 1986
 - C.4.4 Expected Mobility of Personnel for 1986
 - C.4.5 Expected Permanence Lapses for 1986
- Appendix C.5 Long Term Pattern for 1991

APPENDIX C.1

SCOPES AND PURPOSES OF INDUSTRIAL SECURITY

One of the first activities that had to be done was the definition of the job assignment for the function of Industrial Security. In other words, to establish a clear scope of its responsibility area within an industrial setting

Consequently, two-risk levels were defined. Level I, sub-level A was chosen as the responsibility area for the function. Level I, sub-level B and Level II, required the participation of the Venezuelan Armed Forces and/or of the security agencies of the government.

1. Level I:

This refers to those risks where Industrial Security would develop a preventive, disuasive and operative action, needing only the effective participation of the National Armed Forces or State Security Agencies if required by the Industry.

However, for functional purposes this level was divided into two categories which would allow a more specific approach to the subject:

1.1 Sub-level A:

Those risks based on non-organized actions as the result of only a few persons and to at-the-time favourable conditions.

1.2 Sub-level B:

Risks based on organized actions conducted by professionals in capacity to dodge or neutralize existing security systems at the various installations of the Oil Industry.

2. Level II:

This refers to those risks where Industrial Security would develop an action of internal support to the National Armed Forces and State Security Agencies. These institutions are the only ones capable of handling the risks considered at this level.

LEVEL	RISKS	SECURITY SYSTEMS/ACTIONS
Assaults Robbery Thefts		Perimeter Barriers Lighting Controls at the entrance and exit of people and materials
Fraud Blackmail Extortion		Identification System Permanent Vigilance Develop conscientiousness in all the personnel
Kidnapping Murders Unauthorized Entry		Pre-employment investigation Special investigations Electronic Cleaning in the offices
Disorderly conduct Violent behaviour		Executive protection Regulations and Procedures for handling information
Peaceful and violent demonstrations Vandalism		Procedures Manual on Industrial Security Preventative Action
Sabotage Invasion of Property		Emergency Plans Training and Improvement of Skills
Labor conflicts Natural Disasters		<u>Participation: National Armed Forces</u> State Security Agencies
Industrial and Strategic Espionage Information Leaks		Other Government Agencies
Conflict of Interests Infringement of Ethic Regulations Consumption and Traffic of Drugs Organized Crime		

II

Guerrilla Activities
Limited War
Total War

Strategic information
Emergency Plans
Intervention: National Armed Forces
Permanant Presence of State Security Agencies

APPENDIX C.2

CORPORATE DIAGNOSIS OF INDUSTRIAL SECURITY FOR 1982

C.2.1 Organizational Characteristics:

In the following pages the reader will find the diagnosis done in Industrial Security at a corporate level for 1982. The intention was to establish a clear look of the overall situation of the function: its weak points, problems and positive aspects.

The following information was presented in an internal seminar on Industrial Security in PDVSA, organized to propitiate the interchange of information. The purpose of this seminar was to upgrade the function on a short-term basis. The information, now included in this Appendix, was one of the crucial inputs.

AREA	LAGOVEN	MARAVEN	CORPOVEN	MENEVEN	INTEVEP	PEQUIVEN
1. FUNCTION'S CORPOKATE PLAN						
1.1 Annual (basically due to budget purposes):	YES	YES	YES	YES	YES	YES
1.2 At medium term:	NO	NO	NO	NO	NO	NO
1.3 At long term:	NO	NO	NO	NO	NO	NO
2. FUNCTION'S ORGANIZATION PLAN						
2.1 Annual (basically due to budget purposes):	YES	YES	YES	YES	YES	YES
2.2 At medium term:	NO	NO	NO	NO	NO	NO
2.3 At long term:	NO	NO	NO	NO	NO	NO
3. IS THERE CORPORATE MANAGEMENT FOR THE FUNCTION?:	YES	YES(1)	YES(1)	YES(1)	N.A.	YES
4. CORPORATE MANAGER WITH OPERATIONAL ROLE:	YES	YES	YES	YES	NO	YES
5. EXISTENT LINEAR-FUNCTIONAL RELATION WITH OPERATIONAL AREAS:	YES	YES(1)	YES(10)	YES(1)	YES	YES
6. INDUSTRIAL SECURITY IS:						
6.1 Scattered throughout the organization:	NO	YES	NO	YES	NO	NO
6.2 Integrated in a uniform line:	YES	NO	YES	NO	YES	YES
7. INDUSTRIAL SECURITY IS TOGETHER WITH:						
7.1 Industrial Security:	NO	YES(1)	YES	YES	YES	NO

(1) In progress

(2) In the areas

AREA	LAGOVEN	MARAVEN	CORPOVEN	MENEVEN	INTEVEP	PEQUIVEN
7.2 Fire Prevention and Control:	YES	YES(2)	YES	YES	YES	YES
7.3 Environment Protection:	NO	NO	YES	YES	YES	NO
7.4 General Services:	YES	YES(3)	NO	NO	WILL CEASE	YES
8. IS THERE A REGULATIONS AND PROCEDURES MANUAL?:	YES	NO	YES(1)	YES	NO	NO
9. COMMUNICATIONS						
9.1 Between Caracas and the areas:	YES	YES	YES	YES	YES	YES
9.2 Between the affiliates and Caracas:	YES	YES	TELEPHONE	YES	YES	TELEPHONE
10. IS THERE VIGILANCE UNDER CONTRACT?:	YES	YES(2)	UNDER ELIMINATION	YES	YES	NO
11. PROTECTION SYSTEMS						
11.1 Artificial Barriers:	YES	YES	YES	YES	YES	YES
11.2 Gates:	YES	YES	YES	YES	YES	YES
11.3 Lighting:	YES	DEFFICIENT	YES	NO	YES	YES
11.4 Permanent Vigilance:	YES	YES	YES	YES	YES	YES
11.5 Land Patrol:	YES	YES	YES	YES	YES	YES
11.6 Water Patrol:	YES	NO	NO	NO	--	NO
11.7 Air Patrol:	YES	NO	SPORADIC	NO	--	NO
11.8 Electronic Alarms:	YES	VERY FEW	YES	NO	--	NO
11.9 Sentinel Post:	YES	NO	NO	YES	YES	NO
11.10 Intraffiliate Communications:	YES	YES	YES	YES	YES	YES
11.11 Interffiliate Communications:	YES	YES	YES	YES	YES	YES

(3) In Caracas

AREA	LAGOVEN	MARAVEN	CORPOVEN	MENEVEN	INTEVEP	PEQUIVEN
11.12 Closed T.V. Circuits:	YES	CARACAS	YES	NO	NO	NO
11.13 Identification Systems:	YES	YES	YES	YES	YES	YES
11.14 Keys and Locks Systems:	YES	NO	YES	YES	YES	YES
11.15 Company pre-employment investigation:	YES	YES	YES	YES	NO	YES
11.16 Outside pre-employment investigation:	YES	OUTSIDE	YES	YES	YES	YES
11.17 Company special investigations:	YES	YES	YES	YES	YES	YES
11.18 Outside special investigations:	YES	YES(4)	NO	NO	YES(4)	NO
11.19 Strategic information:	NO	NO	NO	NO	NO	NO
11.20 Protection for executives:	YES	YES	YES	YES	NO	NO
11.21 Detection of surreptitious hearing devices:	YES	NO	NO	YES	NO	NO
11.22 Utilization of National Guards (5):	YES	YES	YES	YES	YES	YES
11.23 Perimeter Roads:	YES	YES	YES	NO	NO	YES
11.24 Exchange of confidential information:	YES	YES	YES	YES	YES	YES
12. STATISTICS ON HUMAN RESOURCES						
12.1 Historical:	YES	YES	YES	YES	YES	YES
12.2 Actual:	YES	YES	YES	YES	YES	YES
12.3 Annual Forecast:	YES	NO	YES	YES	YES	YES
12.4 Medium term:	YES	NO	NO	NO	YES	NO
13. STATISTICS ON PROTECTION						
13.1 Historical:	YES	NO	YES	YES	YES	YES
13.2 Actual:	YES	YES	YES	YES	YES	YES
13.3 Annual estimate:	NO	YES	NO	YES	YES	YES
13.4 Medium term:	NO	NO	NO	NO	YES	NO

(4) Sporadic

(5) Deficient as to quantity and quality. Basic attitude is passive.

AREA	LAGOVEN	MARAVEN	CORPOVEN	MENEVEN	INTEVEP	PEQUIVEN
14. FORMAL TRAINING AND DEVELOPMENT STRUCTURED AT DIFFERENT LEVELS:	NO	NO	NO	YES	NO	YES
15. JOB DESCRIPTIONS:	YES	YES	YES	YES	YES	NO
16. MAINTENANCE PLAN FOR PROTECTION SYSTEMS (6):	YES	NO	NO	NO	NO	YES
17. ARE THERE EMERGENCY PLANS?	YES	YES	YES	YES	IN PREPARATION	YES
17.1 Strikes or labour lockouts:	YES	YES	YES	YES	YES	YES
17.2 Fire:	NO	NO	NO	NO	NO	NO
17.3 Sabotage:	NO	NO	YES	NO	YES	NO
17.4 Earthquake:	NO	NO	YES	NO	NO	NO
17.5 Floods:	NO	NO	YES	NO	NO	NO
17.6 Kidnapping (of individuals or groups):	YES	YES	NO	NO	NO	NO
17.7 Explosions:	NO	NO	YES	NO	NO	NO
17.8 War (air raid):	NO	NO	NO	NO	NO	NO
17.9 Seizure of installations:	NO	NO	NO	NO	NO	NO
17.10 Mutual aid plans:	YES	YES	YES	YES	NO	YES
18. INSTRUCTIONS GIVEN TO PERSONNEL THAT DEVIATE FROM DAILY ROUTINE, ARE THEY GIVEN IN WRITING:	YES	YES	YES	YES	YES	NO

(6) In general, it was demonstrated that maintenance is deficient in: fences, lighting, porter's booths, electronic alarms, peripheral fences, control of weeds.

AREA	LAGOVEN	MARAVEN	CORPOVEN	MENEVEN	INTEVEP	PEQUIVEN
19. EXISTENCE OF INDUSTRIAL SECURITY COMMITTEE AT THE HIGHEST LEVEL:	YES	NO	YES	YES	YES	YES
20. EXISTING POSITIONS						
20.1 Watchman:	YES		YES	YES		
20.2 Special watchman:	YES			YES		
20.3 Second level guardian:		YES		YES		
20.4 First level guardian:		YES		YES		
20.5 Special guardian:		YES		YES		
20.6 Third level watchman:			YES	YES		
20.7 Second level watchman:			YES	YES		YES
20.8 First level watchman:			YES		YES	YES
20.9 Patrolling watchman:			YES			YES
20.10 Special fourth level watchman:			YES			
20.11 Special third level watchman:			YES		YES	
20.12 Special second level watchman:			YES		YES	
20.13 Special first level watchman:			YES			
20.14 First level watchman:			YES			
20.15 Inspector:	YES	YES	YES	YES	YES	YES
20.16 Major inspector:		YES	YES			
20.17 Supervisor:	YES	YES	YES	YES	YES	YES
20.18 Coordinator:	YES		YES	YES		YES
20.19 Superintendent:	YES	YES	YES	YES		YES
20.20 Area manager:					YES	
20.21 Function manager:	YES	YES	YES			YES
20.22 Investigators:	YES	YES	YES	YES		

C.2.2 DIAGNOSIS PATTERN OF INDUSTRIAL SECURITY

The information that follows conforms the 1980-1981 basic responsibilities and activities of the basic positions in Industrial Security during the period 1980-1981. It presents the most representative positions because it was done at a corporate level, so the general characteristics observed in different affiliates had to be summarized.

The purpose was to identify which were the basic activities that conformed the typical positions identified and also the hierarchical level of the organizational structure of Security in all the oil industry. Special consideration was given to the interdependence and interrelation of positions and level in order to check whether they were complementary or redundant. The information obtained is summarized in the following pages.

DIAGNOSIS PATTERN FOR 1980-1981

POSITION	PAYROLL	BASIC FUNCTIONS	BASIC ACTIVITIES
			<ul style="list-style-type: none">- Controls entry and exit of vehicles, people and materials.- Operates short-wave radio.- Drives pick-up trucks.- Deals with all type of public, both internal and external (portrays company image).- Participates in executive protection.- Prepares reports concerning his vigilance work.- Makes the first investigations concerning different types of accusations.- Takes pictures.- Acts in case of possibility of fires.- Cooperates immediately with company personnel (car accidents, orientation, etc.).
WATCHMEN	DAILY	VIGILANCE AND SUPPORT	
INSPECTORS INCLUDES THE MAJOR INSPECTOR		SUPERVISION OF WATCHMEN MINOR	<ul style="list-style-type: none">- Programs, assigns and supervises the work of watchmen.- Work training.- Supports his personnel.- Evaluates.- Motivates.- Controls status of equipment.
		MANAGEMENT PROCEDURES	<ul style="list-style-type: none">- Fills out various forms related to his job.- Prepares reports concerning his area of responsibility.
		FIELD WORK	<ul style="list-style-type: none">- Gives support to his subordinates.- Resolves non-routine situations.

POSITION	PAYROLL BASIC FUNCTIONS	BASIC ACTIVITIES
AREA SUPERVISOR	SUPERVISION OF INSPECTORS	<ul style="list-style-type: none"> - Programs and assigns work to inspectors. - Work training. - Gives support to his personnel. - Evaluates. - Motivates. - Reviews or adjusts his subordinates' job descriptions. - Controls status of equipment at his disposal.
MAJOR	FIELD WORK	<ul style="list-style-type: none"> - Gives support to his subordinates. - Resolves non-routine problems. - Carries out studies on industrial protection. - Makes preliminary investigations concerning accusations. - Keeps abreast of contractor activities and their personnel. - Maintains relations with area authorities: National Guard, political authorities and others. - Maintains relations with supervisors in operational areas of the subsidiary.
	FORMAL WORKING RELATIONS	<ul style="list-style-type: none"> - Maintains relations with area authorities: National Guard, political authorities and others. - Maintains relations with supervisors in operational areas of the subsidiary.

POSITION	PAYROLL	BASIC FUNCTIONS	BASIC ACTIVITIES
COORDINATOR (EQUIVALENT TO DISTRICT SUPERVISOR)	MAJOR	SUPERVISION	<ul style="list-style-type: none"> - Gives support to subordinates. - Evaluates. - Motivates. - Reviews or adjusts his subordinates' job descriptions.
		FIELD WORK	<ul style="list-style-type: none"> - Carries out studies on industrial protection. - Submits technical reports on his areas of responsibility. - Participates in investigations (cooperation). - Up-dates contingency and emergency plans. - Offers counseling on security matters. - Designs and coordinates protection for executives. - Designs new systems and procedures.
		FORMAL WORKING RELATIONS	<ul style="list-style-type: none"> - Relations with National Armed Forces, State Security Institutes and Public Institutions. - Interaffiliate relations. - Integrates different subsidiary committees related to his functions.
		ADMINISTRATION WORK	<ul style="list-style-type: none"> - Assists the superintendent in management of the function's budget. - Prepares and manages the Coordination's expense budget. - Handles and controls the subsidiary's various forms and procedures related to his job and function. - Handles correspondence. - Preparation of various internal communications.

POSITION	PAYROLL	BASIC FUNCTIONS	BASIC ACTIVITIES
			<ul style="list-style-type: none"> - Gives support to his subordinates. - Evaluates. - Motivates. - Reviews or adjusts his subordinates' job descriptions. - Determines the needs for training and development of his personnel. - Controls the operating status of his equipment.
	MAJOR	SUPERVISION	
			<ul style="list-style-type: none"> - Relations with the National Armed Forces, State Security Agencies and Public Institutions. - Relations with other functions with respect to protection. - Represents the General Manager on several occasions. - Maintains a functional relation with Caracas.
		FORMAL RELATIONS	
		FIELD WORK	<ul style="list-style-type: none"> - Counsels the Division Manager on Industrial Security matters. - Up-dates emergency and contingency plans.
		ADMINISTRATION WORK	<ul style="list-style-type: none"> - Prepares the unit's budget (annual planning). - Budget administration. - Correspondence. - Internal and external communications.

SUPERINTENDENT

POSITION	PAYROLL	BASIC FUNCTIONS	BASIC ACTIVITIES
			<ul style="list-style-type: none"> - Gives support to his immediate subordinates. - Evaluates. - Motivates. - Reviews or adjusts his subordinates' job descriptions. - Determines the needs for training and development of his personnel. - Controls the operating status of his equipment.
		SUPERVISION	
FUNCTION MANAGER	MAJOR		<ul style="list-style-type: none"> - Supervises execution of policies at subsidiary level. - Counsels the subsidiary's Board of Directors on matters related to his function. - Responsible for physical protection in the metropolitan area. - Controls management statistics.
		FORMAL WORKING RELATIONS	<ul style="list-style-type: none"> - Relations with National Armed Forces, State Security Agencies and Public Institutions. - Functional relation with areas. - Relations with PDVSA.
		ADMINISTRATION WORK	<ul style="list-style-type: none"> - Prepares and manages the function's budget. - Handles internal and external correspondence related to the function.

POSITION	PAYROLL BASIC FUNCTIONS	BASIC ACTIVITIES
INVESTIGATOR	MAJOR PRE-EMPLOYMENT AND SPECIAL INVESTIGATIONS	<ul style="list-style-type: none"> - Development and conservation of internal and external sources. - Preparation of technical and special reports. - Preparation and handling of files on cases and sources.
	PREVENTIVE ACTIVITIES	<ul style="list-style-type: none"> - Development of external and internal operatives with the cooperation of various Government institutions.
	FORMAL WORKING RELATIONS	<ul style="list-style-type: none"> - Permanent relations with National Armed Forces, State Security Agencies and Public Institutions. - Relations, at all levels, within the subsidiary. - Working relations within the oil and neighbouring communities.
	SUPERVISORY ACTIVITIES	<p>These are applicable when the person has been assigned personnel for carrying out job related activities.</p>
	TEACHING ACTIVITIES	<p>These are applicable when the person must train another in job related activities and functions. Likewise, he must make different type of presentations before public audiences.</p>

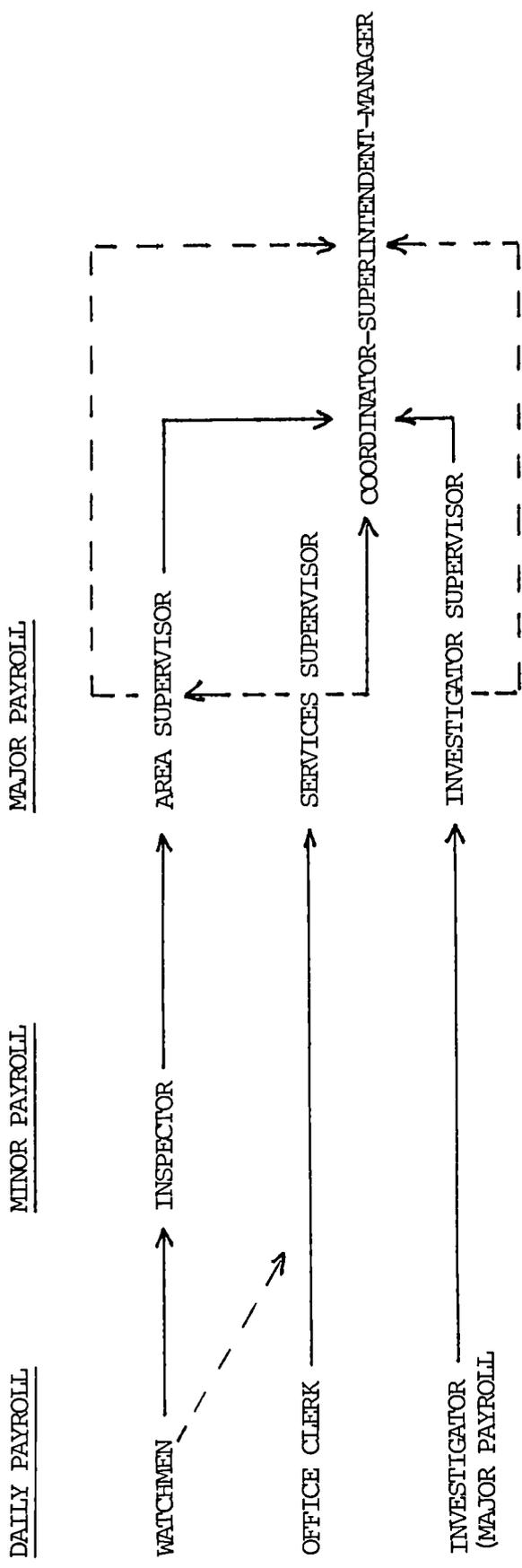
POSITION	PAYROLL BASIC FUNCTIONS	BASIC ACTIVITIES
INVESTIGATION SUPERVISOR	THE SAME FUNCTIONS AND ACTIVITIES AS THE PRECEDING POSITION MAJOR	<ul style="list-style-type: none"> - Programs and assigns work to investigators. - On the job training - Gives support to this personnel. - Evaluates. - Motivates. - Reviews or adjusts his subordinates' job descriptions.
	SUPERVISION	
	RECEPTION	<ul style="list-style-type: none"> - Gives support to company personnel. - Reception of public in general and contractors. - Working relations at all organization levels.
OFFICE CLERK	MINOR ADMINISTRATION WORK	<ul style="list-style-type: none"> - Handling of forms related to area of activity. - Simple typing work - Handling of files related to his activities and to the function as a whole.
	OPERATIONAL	<ul style="list-style-type: none"> - Relations at several organization levels. - Identification of the type of locks or systems to be installed.
	HANDLING OF "BEST" SYSTEM	<ul style="list-style-type: none"> - Installation. - Maintenance. - Control.
	OPERATIONAL HANDLING OF SYSTEM	<ul style="list-style-type: none"> - Relations at all company levels and with contractors. - Preparation and handling of corresponding forms. - Handling of photographic equipment. - Basic maintenance of photographic equipment. - Filing and control of identification cards and entrance permits issued.

POSITION	PAYROLL	BASIC FUNCTIONS	BASIC ACTIVITIES
		ADMINISTRATION OF "BEST" SYSTEM AND IDENTIFICATION SYSTEM	<ul style="list-style-type: none"> - Carries out studies on the needs for his services. - Programs maintenance for both systems. - Supervises and controls services rendered. - Prepares technical reports.
SERVICES SUPERVISOR		SUPERVISION	<ul style="list-style-type: none"> - Programs and assigns work to his subordinates. - On the job training. - Gives support to his personnel. - Evaluates. - Motivates. - Reviews or adjusts his subordinates' job descriptions.
	MAJOR		
		FORMAL WORKING RELATIONS	<ul style="list-style-type: none"> - Relations with supervisors for rendering of services.
		ADMINISTRATION WORK	<ul style="list-style-type: none"> - Handles files related to the function. - Handles all that concerns uniforms for the watchmen: inventory, cost and washing. - Handles payment forms to contractors. - Handles reposition of material required by the function.

C.2.3 THE MOBILITY OF PERSONNEL

The mobility of Security Personnel for 1980-1981 can be observed in the present appendix. First, the career path of the function during this period was determined. It can be observed that a non-formal path could be followed (dotted lines). This indicates by-passing crucial positions and climbing to higher responsibilities without stepping up through lower ones. Also, the academic level was mis-managed because they were not related to positions. Consequently, a person with high school instruction or less could be supervising a graduate or post-graduate.

CAREER PATH FOR 1980-1981



BASIC ACADEMIC LEVEL: DIVERSE

C.2.4 EXPECTED PERMANENCE LAPSES

The 1980-1981 permanence lapses for each typical position of Industrial Security can be observed. They were distorted. Consequently, the typical position of investigator had higher opportunities to scale the organizational ladder and occupy supervisory and management levels in lesser time.

EXPECTED PERMANENCE LAPSES FOR 1980-1981

PERMANENCE LAPSE

LEVEL	POSITIONS PAYROLL	MINIMUM	MEDIUM	MAXIMUM
MANAGEMENT	FUNCTION MANAGER	5	7.6	10
	SUPERINTENDENT	3	6.6	10
SUPERVISORY	COORDINATOR	3	5	7
	INVESTIGATORS SUPERVISOR	5	2.6	10
	PROTECTION SUPERVISOR	10	20	30
	SERVICES SUPERVISOR	10	20	30
	INSPECTOR	10	20	30
OPERATIONAL	INVESTIGATOR	5	7.6	10
	OFFICE CLERK	10	20	30
	WATCHMAN	5	17.6	30

Source: Meeting with the Project's Consulting Group

Note: It is understood that the employment duration to be determined is that prevailing at time and not the one desired.

C.2.5 RESEARCH PRODUCTIVITY METHOD

1. Purpose

- a. The main purpose of this method is to provide an expedite, reliable and efficient mean of obtaining objective information within an organization. It involves the various persons directly related to the subject under investigation.
- b. Expedite the handling of considerable volumes of information obtained from different organizational levels.
- c. Develop an alternative for the traditional methods of structured and non-structured interviews. This is due to the fact that although such methods have the advantage of allowing a direct and personal relationship with the person interviewed, there are considerable disadvantages which lessen their effectiveness within an organization:
 - i) They consist in a process which, in most cases, is long and costly. This is basically due to the need for ensuring that the measuring instrument or survey being used is reliable and valid, and to the recruiting, selection and training of the surveyors who must apply such instrument. Without mentioning the ever present process of design, preparation, printing, standardization, application, tabulation and analysis of said survey.
 - ii) Do not weigh the opinions of those being

interviewed. Many times the interviewee either: exaggerates or underestimates the answer he is giving the interviewer; gets carried away by the mood of the moment; is interested in impressing the person trying to get the information. These distortions are not always weighed when the global results obtained are being consolidated and analysed.

- iii) Do not diminish the investigator's influence. Under most circumstances it is up to the investigator to do the consolidation and analysis of the results obtained. The investigator bears great influence. It is left to him to identify and handle the information he considers most prominent for the purpose of the investigation being carried out.
- iv) Do not diminish the causes for distortion of the information. The information obtained is considerably distorted due to the chain created: interviewee - instrument - interviewer - tabulation - investigator - report.
- v) Do not provide the person interviewed with an overview of the work concluded. Generally, the participant is not provided with the results of the investigation for which he was requested relevant information. Consequently, he does not appreciate the importance which he, as the person interviewed, has had in the process.

2. Main Components of the Research Productivity Methods:

essential to this method, since his functions are as follows:

- a. Defines the objectives and results expected.
- b. Prepares and submits the initial information required by the participants so that the method's activities may be commenced.
- c. Selects the experts who will participate.
- d. Carries out the initial sensibility exercises which will determine the interaction guidelines among the participants.
- e. Encourages a constructive interchange of information among the experts.
- f. Expedites the means to achieve consensus at the different stages set forth by this method.
- g. Strives to overcome situations of intransigence among individuals or groups.

2.2 The experts: This component is essential to the method. They must be selected based on the experience or knowledge they have of the subject under investigation. Consequently, in the selection process, status or authority factors should not be taken into consideration as these could force the incorporation of persons who are not experts in the area to be investigated.

2.3 Sensibility Exercises: These are done at the beginning, and also as a reinforcement throughout the method. Their

significance lies in the fact that they allow for a definition of what should be the expected behaviour of the participant in the different stages considered by the method.

2.4 Consensus: This is the main component of the method. Consensus, must be achieved before going on to the following stages proposed by the method. However, if for any reason whatsoever a consensus could not be achieved, the matter on which agreement can not be reached within the group must be identified.

2.5 Task forces: A minimum of four people and a maximum of six per group should be established. This would ensure an adequate interaction among the different constituents. Consequently, the total number of participants with which the work could be carried out would be a minimum of eight (two groups) and a maximum of thirty persons (five groups). More than thirty persons would diminish participation at assembly level.

2.6 Time limit: It is essential for this method that the participants concentrate on the important and relevant aspects of the subject being studied. If only a limited time is available, the participants will be obliged to cast aside the superfluous and marginal information and concentrate on the more relevant aspects. Consequently, expected results are achieved within the limit of time established.

3. Basic Premises

"The results of an assembly, if obtained through consensus among the representatives from the different task forces,

are superior to the partial results obtained through consensus by each task force, and are likewise superior to initial individual results".

In Social Sciences, the search for the objective truth is the road transited by investigators. Basically, we arrive at this truth by a logical conviction reached at by those persons who shall use the information. In fact, any information or data shared by all persons familiar with the subject becomes an objective truth, at least for these persons. Consequently, "the truth" will be objective in the measure that it is shared or accepted by the persons who are therein involved and are comprised by such a "truth".

It is not the purpose of this method to analyse or weigh the psychological or social variables which have a favourable or unfavourable weight in promoting the common acceptance of an individual truth.

The objective is only to establish that an individual's productivity is exceeded by that of a group, and the latter's is likewise exceeded by that of an assembly when a consensus is achieved as a result of constructive interaction. This is due to the fact that consequent consensus reached by an individual, group and assembly, effectively leads to a truth share, at least, by those persons.

4. Stages Established in the Method:

a. Selection of a facilitator

b. Statement of the purposes and objectives to be achieved

by the investigation being carried out.

- c. Identification, selection and structure of the information material essential at the meetings. The purpose is to provide participants with the most up-dated information available. It must be presented in a summarized manner.
- d. Selection of experts.
- e. Selection of sensibility exercises. They are applied upon initiation of activities by the group. Probably only one initial exercise would be enough, although two may be required. If meetings are considered to last more than one day, it is advisable that different exercises are done as a reinforcement for the participants. It helps in redefining the behaviour that is expected of them throughout their various activities.
- f. Individual work. After the sensibility exercise has been completed and the facilitator has clearly stated what are the purpose and objectives of the meeting, each participant proceeds to give a first definition of what his opinion or position is concerning the subject being considered. This requires a presentation by the facilitator indicating the most significant aspects of the subject being discussed. Also, the participant is provided with the corresponding support material.
- g. Task force. The task forces are established after the participants have finished their individual work. The facilitator then creates the conditions necessary for those in the task forces to interact adequately. They

are given a limited time in which to reach a consensus based on the proposals made by each individual.

- h. Each task force makes a presentation of the consensus achieved and comments on any possible doubts which may arise. However, any type of confrontation, as a result of differences in criteria between two groups who have reached different conclusions, must be avoided.

- i. Each of the groups selects a representative to conform the final task force. Said representative is responsible for explaining which is his group's position and what was the process which lead them to their conclusions. Likewise, said representative must be in a position to change his group's conclusions based on the criteria presented by representatives of other groups and to expedite a consensus which would truly endorse the best contributions available.

- j. Someone selected by the representatives' task force makes a presentation before the general assembly of the aspects agreed upon by consensus. At this point, any observation or doubt indicated by any participant, must be clarified. Moreover, any aspect considered interesting or that can significantly improve the achievements reached, must be incorporated.

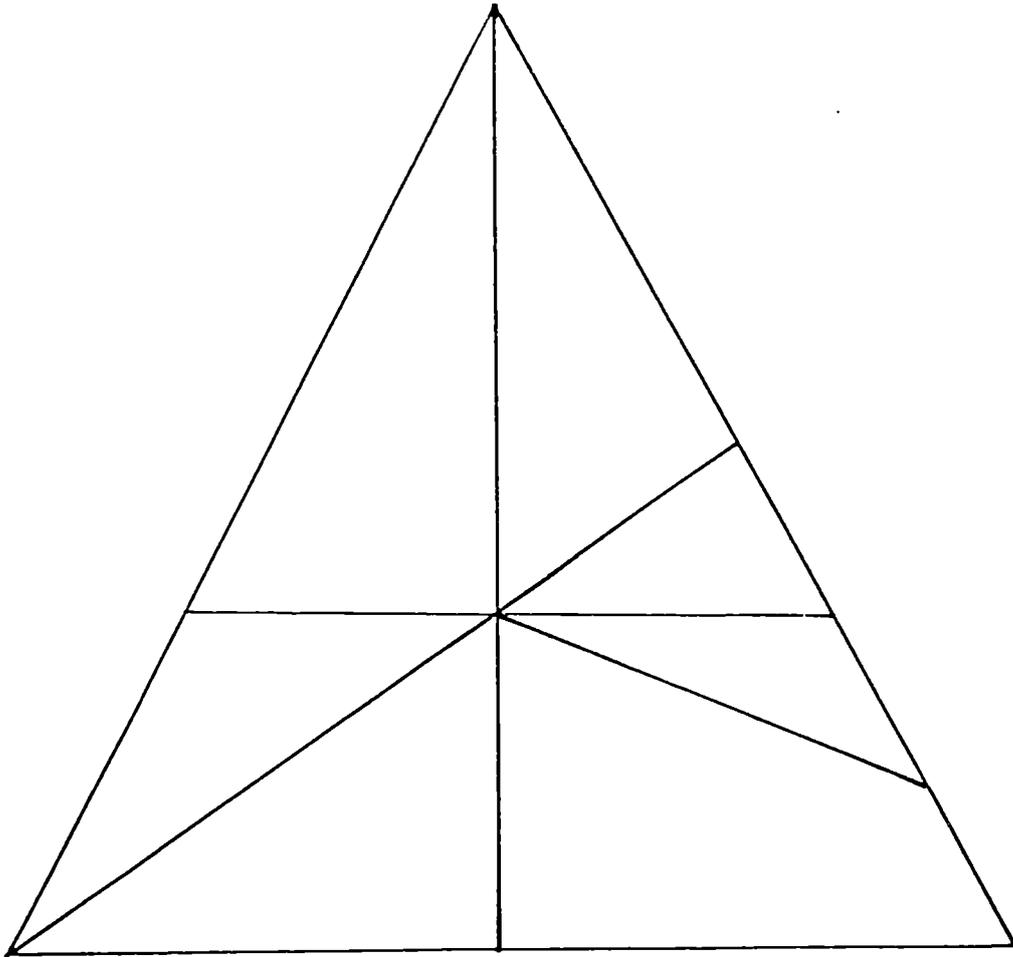
5. Trial of the Method

5.1 Design: Field Experiment

5.2 Independent variable: Agreement by consensus achieved by constructive interaction.

- 5.3 Dependent variable: Concentration of concensus as progress is made throughout the various stages of the method.
- 5.4 Individuals: Men and women between 18 and 60 years of age, of public and private organizations, and universities. Selected by accidental random.
- 5.5 Number of experiences: 50. For a total of 228 persons distributed as follows: 55% men and 45% women.
- 5.6 Reliability: Obtained through stability of both the final results and the process itself in obtaining them.
- 5.7 Validity: The content validity was used with 5 judges, with similar characteristics to those of the individuals used in the experiment.
- 5.8 Initial stimulation used: A geometric figure, used before by Napier and Gershenfeld¹, was shown to the persons participating in the experience (see Figure No. 1), and they were asked to identify the number of triangles they could see. They were given 10 minutes for this activity, and such time proved to be more than sufficient for all to easily do their individual exercise. After the individual exercise was concluded the facilitator distributed a format (see Figure No. 2), that should be filled in by the participant for consolidation of the results, which were communicated immediately.
- 5.9 Results:
- a. At individual level:
- 1) In 100 per cent of the cases, the answer given at

FIGURE No. 1: SENSIBILITY EXERCISE.



¿ CUANTOS TRIANGULOS IDENTIFICA UD ?

(HOW MANY TRIANGLES ARE THERE?)

FIGURE No. 2

SENSITIVITY EXERCISE FORMAT

NAME: _____

ANALYSIS OF THE EXERCISE

1. Was it easy? Yes _____ No _____
2. Was it complicated? Yes _____ No _____
3. My result was _____
4. I am sure of my result Yes _____ No _____
5. Is my result correct? Yes _____ No _____
6. I think that we will coincide
on the amount of triangles
(indicate only one):
ALL _____
Between 75% and 100% _____
50% and 74% _____
25% and 49% _____
0% and 24% _____

individual level showed a vast dispersion which could include answers ranging from numbers 1 to 16, to indicate the number of triangles observed.

ii) The results tended to fall within the following parameters:

-- 95% of those who completed the exercise, considered it to be easy, not complex, were sure of their answer and considered it correct.

-- 85% answered that between 75-100% of the participants would coincide with the correct answer. 10% fell between 50 and 74%. The remaining 5% fell in other intervals.

b. At task force level: The results submitted by the different groups, showed a tendency to concentrate the answers. In 98% of the cases, said answers ranged between the values of 11 to 16.

c. Results at assembly level:

i. In 96% of the experiences conducted, the representatives from the different task forces reached the correct answer of 16 triangles. In some cases none of the task forces had previously identified the correct answer.

ii. Only 4% of the experiences directed showed a consensus which did not identify the corresponding 16 triangles.

6. Conclusions

- a. It was confirmed that group results are superior to the simple addition of individual results thanks to the consensus achieved through constructive interaction. This was confirmed by the fact that many of the groups, through consensus, arrived at answers which were different to the ones individually given by their own members.
- b. It was also demonstrated that productivity through consensus, at assembly level, was superior to the answers obtained by each group. Under most circumstances the assembly was able to reach the correct answer although some representatives arrived without their group having identified the correct number of triangles.
- c. The presence of the facilitator showed to be a determining factor in ensuring an appropriate mood and climate for constructive and dynamic interchange of information.
- d. The importance of the sensibility exercises was also appreciated. These created the appropriate climate so that the participants could identify the behaviour expected of each one of them in achieving group goals.

7. Differences between the Delphi Method and the Panel Consensus:

There are two methods that resemble the one proposed in this Appendix: the panel consensus and the Delphi Method.

7.1 The Delphi Method:

The main difference between the Research Productivity Method and the Delphi as described by Hussey², lies in the interaction to which the experts are exposed from the beginning. The Delphi considers that lack of interaction ensures that the criteria among the experts will not be contaminated. In the method proposed, a creative interaction is considered essential in expediting an interchange of information which often leads to a conclusion which is totally different from the ones reached at individual level.

Furthermore, the Research Productivity Method eliminates the tedious and painstaking process of preparing the questionnaires over and over, as it is done in the Delphi method until consensus is reached. Finally, the facilitator has no direct participation in structurizing criteria and conclusions. This is not so with the Delphi, where the coordinator must synthesize and summarize the opinions given by the different experts interviewed so as to encourage a final consensus through subsequent repetitions.

7.2 The Panel Consensus:

This method, as described by Chambers et Al.³, also relies on the use of experts, which will try to reach a conclusion through a consensus obtained thanks to an open interchange of information and ideas. The basic differences are that in the method proposed there is the need of a facilitator that with the use of sensitivity training exercises and an appropriate guidance will try to neutralize any variable that could produce a false consensus.

Moreover, the final consensus is the result of an interpersonal interaction stimulated in the participants through the implementation of subsequent stages (individual, task force and assembly levels) aimed at upgrading creativeness. Finally, the initial information given to participants is elaborated and given by the facilitator at the beginning. It is not a part of the activities of the experts group meeting sessions which is the basic structure of the panel consensus.

8.0 Benefits and Limitations Observed in its Usage:

8.1 Benefits:

- a. If results are obtained through consensus, it makes it easier for all participants to share and accept them.
- b. The persons participating in such an experience feel involved and co-responsible for the results obtained. If later on in an organization, these persons must participate in taking decisions or implementing recommendations obtained through this method, resistance to change would be considerably less, and even nil.
- c. Results are obtained considerably faster.
- d. The information obtained by this method is weighed during the process by the participants themselves. Therefore, it is not distorted by: social, academic or status variables or by external variables such as the facilitator.
- e. The dynamic thus developed during the method propitiates the surge of creativity as a resource for

conciliating criteria that have different approaches for one same reality or problem. Consequently, the participants are urged to synthesize those complementary views into one only conclusion or recommendation.

- f. Participants have the possibility to appreciate the final result of the effort made.
- g. The information being pursued, through the application of the method, would already be summarized in the final conclusions reached at the assembly.
- h. The method offers a quick and economic means of obtaining information which is either complex or needs to be structured.

8.2 Limitations:

- a. One of the limitations in this method is that it requires the permanent presence of an experienced facilitator. He must orient and ensure an appropriate working environment for a constructive and creative interchange of information among the participants. Also, he is needed to solve any tanglings due to intransigence or misunderstandings that could arise among the individuals or groups.
- b. Another aspect that poses certain limitations is the selection of experts. This is particularly true when there are not enough experts available as to ensure that the method will be duly implemented.
- c. The experience developed has shown that two intensive

days is the adequate maximum for this type of exercise.

- d. Although not frequently, serious disagreements among individuals could arise which will be difficult to overcome. If this were to happen, the issues must be handled constructively by the facilitator. Otherwise, it could turn into a point of conflict which could jeopardize productivity in all participants.

- e. A determining factor for ensuring the success of this method lies in the foregoing preparation. The participants must have available all essential information so that they may have all the judgement elements available for optimum contribution and creativity.

List of references

- 1 Napier, Rodney W. and Gershenfeld, Mattick. Grupos: Teoría y Experience (Groups: Theory and Experience), trans., Roberto Helier (Mexico: Editorial Trillas, S.A., 1975) p. 17.
- 2 Hussey, David. 2nd. Ed. Corporate Planning. Theory and Practice, (Oxford: Pergamon Press, 1982) p. 72.
- 3 John C. Chambers at al., How to Choose the Right Forecasting Technique, Harvard Business Review, (July-August 1971).

C.3 TECHNOLOGICAL PROFILES OF INDUSTRIAL SECURITY FOR 1982, 1986 AND 1991

The following technological profiles for Industrial Security have been established for 1982, 1986 and 1991 in order to define the expected complexity its basic services will have. It is an important input of the SCARP method due to the information it handles regarding the future technological improvements that are expected to take place in the near as well as the distant future.

The approach used is based on the echeloning of a simple, medium and advanced technological level a given service could present. Once the technological profile is elaborated, a diagnosis is done for the year base. Also it is necessary to identify the year in which a particular technology for a given service will be a dominant practice. It should be noticed that several technological practices can be acting at once but there will always be a dominant or more common one that will define the practice for a given year within the profile.

The information obtained would orientate the basic knowledge and experience the security personnel must have in order to be able to handle the technological advances foreseen to date. Consequently, provisions could be taken in advance. Finally, the basic services are those identified as coherent with the objectives and goals set forth for Security in the medium and long term and sensitive to technological improvements.

BASIC OPERATIONAL SERVICES OF SECURITY

TECHNOLOGY

	<u>SIMPLE</u>	<u>MEDIUM</u>	<u>ADVANCED</u>
HANDLING AND CONTROL OF KEYS AND LOCKS	• REGISTRATION	• KARDEX (1982)	• COMPUTERIZED (1986)
HANDLING AND CONTROL OF ENTRIES, EXITS AND CIRCULATION OF PEOPLE, CARS AND CARGOES	• REGISTRATION	• KARDEX OR FILE (1982)	• COMPUTERIZED (1986)
ISSUANCE OF PERMITS TO VISITORS	• PHOTOGRAPH	REGISTRATION REGISTRATION • MANUAL VERIFICATION (1982)	• COMPUTERIZED (1986)
VIGILANCE OF INTERNAL AND EXTERNAL INDUSTRIAL AREAS	• OCCASIONAL AND VISUAL PATROLLING	• CONTINUOUS PATROLLING WITH RADIO (1982)	• CLOSED T.V. CIRCUITS • ELECTRONIC ALARMS (1986)
VIGILANCE OF DISPERSE OR ISOLATED INSTALLATIONS	• OCCASIONAL AND VISUAL PATROLLING (1982)	OCCASIONAL PATROLLING WITH RADIO (1982)	ELECTRONIC ALARMS (1986)

BASIC OPERATIONAL SERVICES OF SECURITY

TECHNOLOGY

<u>SIMPLE</u>	<u>MEDIUM</u>	<u>ADVANCED</u>
VIGILANCE OF SEA PLATFORMS		
• AT PLATFORMS	• CONTINUOUS SEA PATROLLING • LOCAL EMERGENCY PLAN • NATIONAL GUARD EMERGENCY PLAN (1991)	• ELECTRONIC ALARMS • WATER DETECTION
COAST GUARDS	• OCCASIONAL SEA AND AIR PATROLLING (1982)	• CLOSED T.V. CIRCUITS (1991)
LOCATION OF SUBREPTITIOUS HEARING DEVICES	• MANUAL-VISUAL AND OCCASIONAL (1982)	• MECHANICAL • ELECTRONIC (1986)
INFORMATION CENTRES (OPERATIONAL AND STRATEGIC)	• RECORDS • CENTRAL FILES (1982)	• COMPUTERIZED (1986)
COMPANY PERSONNEL ACCESS TO INSTALLATIONS	• VISUAL • I.D. CARDS (1982)	• ELECTRONIC CARDS (1986)

OBSERVATIONS:

1. This technological profile analysis only considers those basic operational services in which special equipment should be used.
2. The technological profiles for 1982, 1986 and 1991 are a combination of simple, medium and advanced technology. Nevertheless, a distinct profile can be observed for each.
3. The year 1991 might not be observed for some of the different basic services. When this occurs, it is because the advanced technology has been scheduled for 1986.
4. The year 1982 could be observed in two different technological levels. This is due to the co-existence of the two levels for 1982.

C.4 MEDIUM TERM PATTERN FOR INDUSTRIAL SECURITY

The Medium Term Pattern was developed based on the objectives established for Industrial Security in the near and distant future. In the following pages the reader will find, first, the identification of the basic position for the watchman for the medium term as compared with the work areas in which his services will be needed (Appendix C.4.1).

Second, minimum requirements in the medium term for the watchman, starting from the recruitment profile that should be demanded to the conditions required for promotion to the three positions identified (Appendix C.4.2). Third, with the preceding information at hand the Medium Term Pattern for 1986 was prepared (Appendix C.4.3). This pattern showed the relationship between: the basic functions, the basic activities of such functions and the attitudes, aptitudes and experience a person must have in order to have high probability of successfully performing the different positions and levels of the security function required for 1986. Also the academic level for each position was related. Particular attention was given to the interdependence between positions and levels as to avoid redundant activities in order to facilitate the articulation of a work team oriented toward the achievement of defined objectives.

The mobility of Security personnel for the lapse 1986-1991 can be observed in Appendix C.4.4. The intention was to provide, in the first place, a reasonable career path in which the upgrading and future development could be coherent within specific or related professional fields. Also, to sincere those professions that could not make further development in this career path.

Expected permanence lapses were established to provide equal alternatives for all positions (see appendix C.4.5). This was achieved by avoiding the preminence of one over the other by the unification of the expected permanence lapses. This determined that the basic positions within the operational level must have the same academic standard. Consequently, the upgrading of the watchmen, as compared to 1982, was a specific action to achieve.

C.4.1 BASIC POSITIONS OF WATCHMEN
FOR MEDIUM TERM

<u>POSITIONS</u>	<u>WORK AREA</u>
WATCHMAN III	RESIDENTIAL POST RESIDENTIAL PATROLMAN
WATCHMAN II	INDUSTRIAL POST INDUSTRIAL PATROLMAN
WATCHMAN I	SPECIAL PATROLMAN (RURAL) SPECIAL POST (CRITICAL INSTALLATIONS AND EXECUTIVE PROTECTION)

C.4.4.2 MEDIUM TERM MINIMUM REQUIREMENTS FOR WATCHMEN

REQUIREMENTS	RECRUITMENT PROFILE			
	III	II	I	
1. HIGH MORAL SOLVENCY AND RELIABILITY	X	X	X	
2. VOCATIONAL DRIVE TOWARD SECURITY	X			
3. EMOTIONAL STABILITY				
4. CAPACITY TO EXPRESS HIS IDEAS TO OTHERS	X			
5. POSITIVE ATTITUDE TOWARDS GROUP WORK	X			
6. OPTIMUM PHYSICAL CONDITIONS	X			
7. CAPACITY TO REACT ADEQUATELY BEFORE UNPREDICTIBLE SITUATIONS	X			
8. DISCIPLINED	X			
9. HIGH SCHOOL GRADUATE	X			
10. VENEZUELAN BORN	X			
11. DRIVING LICENSE	(X)*			(X)
12. EXPERIENCE IN DRIVING MOTORCYCLES AND HORSE-BACK RIDING	(X)			X
13. BASIC KNOWLEDGE IN PERSONAL DEFENSE/USE OF STICK NEUTRALIZING GAS, ANAESTHETIZING FIRE ARMS				(X)

REQUIREMENTS	RECRUITMENT PROFILE		
	III	II	I
14. BASIC KNOWLEDGE OF LAWS	(X)		
15. FIRST AID BASIC KNOWLEDGE	(X)		
16. BASIC KNOWLEDGE OF THE OIL ENVIRONMENT	(X)		
17. BASIC KNOWLEDGE OF FIRE PREVENTION AND CONTROL	(X)		
18. OPERATION OF I.D. SYSTEMS BY ELECTRONIC CARD	(X)		
19. REPORT ELABORATION	(X)		
20. KNOWS HOW TO OPERATE A WALKY-TALKY	(X)		
21. KNOWS THE POSITION'S PROCEDURE	(X)	(X)	(X)
22. BASIC KNOWLEDGE OF INDUSTRIAL SECURITY			(X)
23. KNOWS HOW TO OPERATE A RADIO TRANSMITTER			(X)
24. BASIC KNOWLEDGE OF EXECUTIVE SECURITY			(X)
25. ADVANCE KNOWLEDGE OF THE OIL ENVIRONMENT			(X)
26. SKILL IN DESUASIVE TECHNIQUES			(X)
27. OPERATION OF PHOTOGRAPHIC CAMERAS			(X)
28. BASIC KNOWLEDGE IN ENVIRONMENT PROTECTION		(X)	
29. SKILLS IN HANDLING TRAINED DOGS		(X)	
30. KNOWLEDGE IN THE INITIAL GATHERING OF INFORMATION FOR AFTERWARD INVESTIGATION			(X)

RECRUITMENT
PROFILE

REQUIREMENTS	III	II	I
31. ADVANCED KNOWLEDGE IN EXECUTIVE SECURITY			(X)
32. OPERATION OF C.T.V.C.			(X)
33. BASIC KNOWLEDGE IN HANDLING; REVOLVER, AUTOMATIC PISTOL, SHOTGUN, BULLET PROOF JACKET, HANDCUFFS, TEAR GAS, INFRARED LENSES			(X)
34. OPERATION OF ELECTRONIC DETECTION OF HIDDEN GADGETS			(X)
35. BASIC MAINTENANCE OF ELECTRONIC SENSORS & CTVC			(X)
36. FIRST AID ADVANCE KNOWLEDGE			(X)
37. INDEPENDENT WORK			(X)
38. ADVANCE KNOWLEDGE IN INDUSTRIAL SECURITY			(X)
39. ADVANCE KNOWLEDGE IN ENVIRONMENT PROTECTION			(X)
40. ADVANCE KNOWLEDGE IN FIRE PREVENTION & CONTROL			(X)

Position: WATCHMEN

Payroll: DAILY OR MINOR

Minimum Academic Level Required: HIGH SCHOOL as minimum level for recruitment or permanence in the position.

BASIC FUNCTIONS

- Vigilance: efficient action to prevent, dissuade or neutralize intentional Level I and "A" category risks.
- Integral Protection Services in Industrial Safety, Hygiene, Fire Prevention and Environmental Protection Areas.

BASIC ACTIVITIES

- Computerized control of entry, circulation and exit of vehicles, persons and cargoes.
- Control of operating conditions of the different security systems, including: electronic alarms and Closed T.V. Circuit.
- Operation of centralized control systems: telemetric electronic alarms, Closed T.V. Circuit and communication systems.
- Computerized control of entrance to restricted areas.
- Preparation of reports in Industrial Security, Industrial Safety, Hygiene, Environmental Protection and Fire Prevention areas.
- Immediate action in case of: fire, industrial accidents, traffic accidents, support to operational personnel, environment deterioration.
- Immediate action in case of disorders, entrance of trespassers or violence.

ATTITUDES-APTITUDES-EXPERIENCE

- Basic knowledge in the usage of computers or its terminals.
- Basic knowledge and experience for the efficient operation of centralized control systems.
- Basic knowledge and experience in handling traffic accidents.
- Basic knowledge of public relations.
- Capable of cordial treatment to newcomers.
- Knowledge of regulations and procedures applicable to his activities.
- Positive and constructive attitude in the interaction and handling of subordinates.
- Positive attitude toward the securities routine services.
- Willingness to grow and develop within the Security profession.

Note: The information in Appendix No. 8 should be added to this test.

BASIC FUNCTIONSBASIC ACTIVITIESATTITUDES-APTITUDES-EXPERIENCE

- Carries out preliminary investigations on any deviated behaviours or actions against the firm or its employees.
 - Participates in protection of executives
 - Operates various communications systems
 - Projects a company image in his relation with visitors and personnel.
 - Knowledge and experience in the application of air, sea, lacustrian and river interception tactics against trespassers trying to gain access to the installations by water or land.
-

Position: INSPECTORS

Payroll: DAILY, MINOR or MAJOR

Minimum Academic Level Required: Technical at University Level for recruitment or permanence in the position.

BASIC FUNCTIONS

BASIC ACTIVITIES

ATTITUDES-APTITUDES-EXPERIENCE

PROGRAMMING

- Programs annual activities to be carried out by his unit, determining personnel and resources required.
- Programs maintenance of equipment assigned to his unit.

- Knowledge and experience of annual programming of unit activities.

FIELD WORK

- Summarizes, verifies, resolves and follows-up on any novelty reported by his subordinates in the areas of: Security, Safety, Hygiene, Fire Prevention and Environment Protection.
- Gives direct support to his subordinates in daily work activities.
- Resolves non-routine situations.
- Carries out studies on the conditions and effectiveness of existing protection systems for the different installations.
- Carries out drills and simulations in his area of operations.
- Carries out statistics related to his operational area.

- Knowledge in the preparation of technical reports.
- Knowledge and experience in the handling and preparation of basic statistics in his unit.
- Good disposition toward team work.

BASIC FUNCTIONS

BASIC ACTIVITIES

ATTITUDES-APTITUDES-EXPERIENCE

- Prepares periodic reports concerning any situation or novelty not resolved within his area of operations. This includes a summary of the services rendered by the National Guard.

- Tracking of subreptitious electronic hearing devices.

- Assigns work to watchmen.

- Carries out on-the-job-training

- Carries out or coordinates induction programs for his personnel.

- Controls condition of equipment.

- Evaluates personnel's potential and performance.

- Defines basic characteristics for the personnel he requires.

- Participates in the description of functions and activities for the different positions.

- Motivates personnel under his supervision.

- Basic knowledge for evaluating potential and detecting training needs in reaching the unit's objectives.

- Knowledge and experience in objectively evaluating personnel performance.

- Basic knowledge for preparing job descriptions.

- Knowledge and experience in on-the-job-training techniques, evaluation and follow-up.

- Basic knowledge of personnel supervision and handling of work teams.

- Basic knowledge of techniques for designing, and preparing lectures with instruction aids.

SUPERVISION

BASIC FUNCTIONS

BASIC ACTIVITIES

- Studies the replacements required and the most convenient type of development for his personnel with potential.
- Does initial estimates concerning the quality and quantity of human resources required for the short-term.
- On a continuous basis, he gives lectures to his personnel concerning security, safety, hygiene, fire prevention, environment protection, etc.

ATTITUDES-APTITUDES-EXPERIENCE

- Knowledge and experience of supervisory techniques.

- Reports the necessary details for preparing the unit's budget together with his immediate supervisor.
- Together with his supervisor, establishes the most convenient development plan for his personnel with potential.
- Fills out the various formats pertaining to his job and reviews those submitted by his subordinates.

ADMINISTRATION WORK

- Knowledge of the firm's regulations and procedures applicable to his activities.
- Basic knowledge concerning preparation and control of budgets and human resource requirements.

BASIC FUNCTIONS

BASIC ACTIVITIES

ATTITUDES-APTITUDES-EXPERIENCE

- Consolidates, together with his supervisor, personnel requirements as well as other resources needed for the short-term.

- Relations with other supervisors of the different operating areas.
- Basic knowledge in handling unusual and conflictive situations.

FORMAL WORK RELATIONS

- Relations with contracting companies in his areas.

Position: AREA SUPERVISOR

Payroll: MAJOR

Minimum Academic Level Required: Technician at University Level for recruiting or staying in the position

BASIC FUNCTIONS

BASIC ACTIVITIES

- Programs short-term activities (1-3 years) to be carried out by his unit in reaching the objectives established by Management in his operational area.
- Programs all activities related to personnel administration in his area: evaluation of performance and potential, training and development, vacations, job descriptions, etc.
- Programs the incorporation and usage of different resources required for the achievement of annual goals based on the budget approved.

PROGRAMMING

- Carries out studies to determine critical and vulnerable points at the different installations in the zone.
- Acts to resolve novelities reported by his subordinates (which they were unable to resolve) in the areas of: safety, hygiene, fire prevention environment protection and security. Tries to avoid that these situations are repeated.

FIELD WORK

ATTITUDES-APTITUDES-EXPERIENCE

- Knowledge and experience in short-term (1-3 years) programming of his unit's activities and needs.

- Knowledge concerning integration, analysis and interpretation of his unit's statistics related to the different activities and risks to be faced during a certain period of time.

- Knowledge and experience in the preparation of technical studies concerning critical and vulnerable points at the different installations in the zone.

BASIC FUNCTIONS

BASIC ACTIVITIES

ATTITUDES-APTITUDES-EXPERIENCE

- Gives direct and immediate support to his subordinates.
- Resolves non-routine situations at subordinates level.
- Integrates statistics related to his security area.
- Prepares periodic reports concerning any situation or novelty not resolved in his area of operation. This reports should include and evaluation concerning the quantity and quality of the services rendered by the National Guard in the zone.
- Coordinates drills and simulations in his area of operation.
- Carries out the protection of executives.

- Assigns objectives and goals (quantity and quality of work) to be achieved by the teams under each inspector.
- Assigns areas to be covered by protection services.

- Intermediate knowledge concerning personnel administration according to the regulations and procedures set forth by the company and the guidelines issued by PDVSA concerning security.

SUPERVISION

BASIC FUNCTIONS

BASIC ACTIVITIES

ATTITUDES-APTITUDES-EXPERIENCE

- Receives reports on the status and condition of the equipment under his supervision.
- Responsible for personnel administration in his unit and for ensuring that his immediate subordinates carry out their personnel administration functions within the periods and conditions established. He is responsible for his subordinates': evaluation of performance and potential, recruiting and selection, career planning, induction, description and classification of jobs, planning of replacements, training and development.
- Motivates personnel under his supervision.
- Together with his supervisor, establishes the most convenient development plan for his personnel with potential.
- Intermediate knowledge for a quantitative and qualitative estimate of his personnel requirements in accordance with the short-term objectives established.

BASIC FUNCTIONS

ADMINISTRATION WORK

BASIC ACTIVITIES

- Handles statistics of the personnel under his supervision as well as the estimates for personnel short-term requirements, both in quality and quantity.
- Prepares his unit's budget with the assistance of his subordinates.
- Fills out formats related to his position.
- Consolidates, together with his supervisor, personnel requires and other resources for the following year.

ATTITUDES-APTITUDES-EXPERIENCE

- Basic knowledge in the preparation of a budget based in the yearly programmed activities, and the norms and procedures established by the Industry.
- Knowledge concerning integration, analysis and interpretation of statistics related to the unit's significant data.

- Relations with supervisors in different operating areas.

Basic knowledge in the development of formal institutional public relations.

- Relations with contracting companies and their site supervisors.

FORMAL WORKING RELATIONS

- Relations with the major authorities in the area: National Guard and security institutes in the area.

- Relations with equivalent supervisors in other affiliates, industry and local business.

Position: COORDINATOR

Payroll: MAJOR

Minimum Academic Level Required: Technician at University level as minimum level for recruiting or staying in the position.

BASIC FUNCTIONS

BASIC ACTIVITIES

ATTITUDES-APTITUDES-EXPERIENCE

- Programs activities on a short and medium term basis, to be carried out by under his coordination.
- Procures cohesion and follows-up on the programming of all activities related to personnel administration, which he is to evaluate and ensure that they are continuously optimized.
- Programs all matters concerning personnel administration related to his immediate subordinates.
- Establishes short and medium-term planning related to equipment required for achievement of goals established.

- Knowledge and experience in short and medium-term programming of activities under his coordination.

PROGRAMMING

BASIC FUNCTIONS

BASIC ACTIVITIES

- Carries out studies on critical and vulnerable points in the different systems and sub-systems in his area.
- Carries out studies to determine the convenience of existing security systems or of those to be incorporated (whether electronic or not) based on vulnerability studies conducted in his area.
- Prepares emergency and contingency plans applicable in his area for the different critical installations covered by his units.
- Integrates and analyses basic security statistics of his area.
- Integrates information from different sources related to actual and possible off-justice actions in his area. Analyses this information and determines what are the possible outcomes in his area.

ATTITUDES-APTITUDES-EXPERIENCE

- Knowledge and experience in the preparation of studies on critical and vulnerable points at regional level.
- Knowledge and permanent up-dating of technical and operating characteristics of the various protection systems available in the market.
- Knowledge of the methodology for preparing emergency and contingency plans applicable at regional level, for vulnerable and critical installations.
- Knowledge in integral and coherent analysis of information from different sources in order to predict local and regional scenarios for off-justice groups.
- Knowledge and experience in executive protection and anti-terrorist techniques.
- Knowledge in project analysis and evaluation.

FIELD WORK

BASIC FUNCTIONS

BASIC ACTIVITIES

ATTITUDES-APTITUDES-EXPERIENCE

- Gives immediate support to his subordinates by solving those situations or novelties which they were unable to solve in: security, hygiene, safety, environment protection, and fire prevention.
- Carries out periodic studies on his area's situation and those unresolved novelties which demand the action of a manager or superintendent. Likewise, he evaluates the services rendered by the National Guard or security agencies in the area.
- Prepares, coordinates and evaluates routine and special executive protection programs to be carried out in his area.
- Assists in Security projects under study or being executed.
- Gives lectures in his specialization.
- THE SAME ONES INDICATED FOR THE SUPERVISOR, BUT AT COORDINATION LEVEL
- THE SAME ONES INDICATED FOR THE SUPERVISOR.
- Basic teaching knowledge.
- Intermediate knowledge of the basic procedures and techniques used in safety, fire prevention, hygiene, and environmental protection.

SUPERVISION

BASIC FUNCTIONS

BASIC ACTIVITIES

- Prepares the budget based on the programmed activities of his units with the assistance of his subordinates.
- Together with his supervisor, he prepares de most convenient development plan for his personnel with potential.
- Fills out the different formats related to his job.
- Consolidates, together with his supervisor, personnel needs and other requirements for short and medium-term.

ADMINISTRATION WORK

ATTITUDES-APTITUDES-EXPERIENCE

- Knowledge of and experience in the methodology for estimating short and medium-term requirements of personnel and other supplies required by his unit.

- Relations with line Managers in different operating areas.

- Relations at executive level with different contracting companies.

- Relations with major authorities in the area: National Guard and National Security Agencies. Said relations must be oriented toward optimization of services rendered by such institutions.

FORMAL WORK RELATIONS

- Intermediate knowledge in the development of formal institutional public relations.

Payroll: MAJOR

Minimum Academic Level Required: University Graduate as minimum level for recruiting or staying in the position.

BASIC FUNCTIONS

BASIC ACTIVITIES

- Makes adjustments in the Integral Protection Corporate Plan to satisfy particular needs in his area, in short, medium and long-term basis.
- Makes necessary adjustments in the Internal Instructive Manual, to satisfy the existing and future needs in his area.
- Controls and gives special attention to all activities related to personnel administration.
- With the cooperation of his immediate subordinates, prepares an estimate of personnel and material requirements for short and medium terms.
- Prepares the scenarios of his security responsibility area within an Integral Protection scope.

OPERATIONAL PLANNING

ATTITUDES-APTITUDES-EXPERIENCE

- Basic knowledge of operational planning (carry out a concrete execution of corporate plans) for short, medium and long-terms.
- Basic knowledge of operational planning of human resources, that is, carry out in practice those corporate policies and guidelines together with the concrete needs and possibilities in his area.
- Knowledge and experience in the preparation of scenarios.

FIELD WORK

- Carries out studies on Integral Protection in his area. That is, from an integral point of view, he determines actual conditions and establishes future possibilities in the areas of security, environment, safety, hygiene and fire.

- Intermediate knowledge concerning those functions which are under his supervision, but are not within his area of professional development.

BASIC FUNCTIONS

BASIC ACTIVITIES

ATTITUDES-APTITUDES-EXPERIENCE

- Carry out studies of integrated systems which seem more efficient and compatible with those functions under his supervision.
- Controls the preparation and up dates emergency and contingency plans, to ensure that they are feasible and integrated by the various functions.
- Counsels the Division Manager concerning the different functions under his supervision, always with the support of his experts by specialization.
- Integrates and analyses those statistics related to his area of management.
- Gives immediate support to his subordinates, and investigate why they were unable to solve any novelities occurred. Takes appropriate measures.
- Prepares reports for corporate management and area Division Manager.

- Outstanding capacity to manage, develop and direct interdisciplinary teams.

- Same as the above position.

BASIC FUNCTIONS

BASIC ACTIVITIES

ATTITUDES-APTITUDES-EXPERIENCE

- Submits a short, medium and long-term working plan for each of the functions under his supervision.

- Same as the above position.

- Gives total support to his subordinates.

SUPERVISION

- Carries out personnel administration activities related to his immediate subordinates and coordinates those same activities for the rest of his personnel.

- Together with his subordinates, establishes the most convenient development plan for his personnel with high potential.

- Same as the above position.

- Prepares the budget of his management area with the cooperation of his subordinates and based on the programmed activities.

ADMINISTRATION WORK

- Fills out the different formats related to his job.

BASIC FUNCTIONSBASIC ACTIVITIES

- Direct relation with operational managers in the area.
- Represents the Division Manager in any compromise involving any of the functions under his supervision.
- Develops relations with the communications media in order to issue declarations related to the functions under his supervision.
- Develops relations with the highest ranking regional authorities related to his functions.

FORMAL WORK RELATIONSATTITUDES-APTITUDES-EXPERIENCE

- Advanced knowledge in the development of formal institutional relations.

Payroll: MAJOR

Minimum Academic Level Required: University Graduate as minimum level for recruiting or staying in the position.

BASIC FUNCTIONS

BASIC ACTIVITIES

- Prepares the Corporate Plan of the functions related to his area of Management (from an Integral Protection standpoint) an taking into consideration the Corporate Plan of his affiliate company and the objectives, guidelines and policies established by PDVSA for the different functions. Said plans shall include policies, guidelines, objectives and strategies to be implemented at short, medium and long-terms.
- Prepares Internal Instructive Manual for the different functions as relates to the Regulations and Procedures Manual issued by PDVSA.
- Preparation of scenarios at short, medium and long-terms in order to provide to the Board of Directors of his affiliate with sufficient foresight in the area of Integral Protection as to enhance the process of decision making.

STRATEGIC PLANNING

ATTITUDES-APTITUDES-EXPERIENCE

- Knowledge in strategic planning which allows to relate the objectives and guidelines set forth by PDVSA in the different functions of Integral Protection, to the objectives, projects and levels of activities to be developed by the corresponding affiliate company.
- Basic knowledge in organization planning, so that he may identify the functions, activities and tasks required to assure organizational support in the achievement of short, medium and long-term objectives.
- Basic knowledge in human resources planning, so that he may estimate the quality and quantity of human resources required and to establish the most appropriate means in obtaining them, as long as they are oriented to the achievement of corporate goals.
- Knowledge and experience in establishing scenarios at short, medium and long-terms.

BASIC FUNCTIONSBASIC ACTIVITIESATTITUDES-APTITUDES-EXPERIENCE

- Counsel the Board of Directors of his corresponding affiliate.
- Integrate statistics related to his management functions, both in matters of human resources as in those activities involved in his functions.
- Evaluates the execution and controls the achievements of the corporate plans as they relate to the functions under his supervision.
- Evaluates the execution and control the achievements of the human resources plan as they relate to the functions under his supervision.
- Gives functional support to the different functions in the operating areas.
- Establishes procedures in the preparation of emergency and contingency plans.

- Same as in the above position.

FIELD WORK

<u>BASIC FUNCTIONS</u>	<u>BASIC ACTIVITIES</u>	<u>ATTITUDES-APTITUDES-EXPERIENCE</u>
SUPERVISION	- The same as the above position	- The same as the above position.
ADMINISTRATION WORK	- IDEM	- Idem
FORMAL WORK RELATIONS	<ul style="list-style-type: none"> - Relations with the Headquarters Managers. - Functional relations with area managers reporting to him. - Represents his Director at different events related to Integral Protection functions. - Relations with Petróleos de Venezuela, S.A. at the different meetings and requests made by PDVSA. - Relations with the highest ranking authorities in Caracas, related to the functions under his management. 	- Idem

Payroll: MAJOR

Minimum Academic Level Required: University Graduate as minimum level for recruitment or permanence in the position.

BASIC FUNCTIONS

BASIC ACTIVITIES

ATTITUDES-APTITUDES-EXPERIENCE

- Prepares the medium and long-term Corporate Plan for the various functions, which make up his area of Corporate Management, based on the Industry's Corporate Plan.
 - Prepares the Plan and integral programming for the functions under his responsibility.
 - Prepares the corporate scenarios for medium and long-terms with an Integral Protection approach so that they may enhance in the decision making process of the Board of Directors of PDVSA.
 - Prepares the Regulations and Procedures Manual for the different functions under his responsibility.
- Intermediate knowledge of the various functions under his responsibility.
 - Theoretical and practical knowledge of Corporate Management at PDVSA's Headquarters.
 - Knowledge of the reality at the different functions in the various affiliate companies.
 - Capacity to creatively manage the various functions under his responsibility.

STRATEGIC PLANNING

BASIC FUNCTIONS

BASIC ACTIVITIES

ATTITUDES-APTITUDES-EXPERIENCE

- Counsels PDVSA's Board of Directors on the functions under his responsibility.
- Integrates statistics at Industry level, as relates to matters of human resources and activities related to the various functions under his responsibility.
- Coordinates the execution and controls the results of corporate plans of the Industry as relates to the functions under his responsibility.
- Coordinates the execution and controls the results of the human resources plan for the different functions under his responsibility at industry level.
- Establishes norms and guidelines for the preparation of emergency and contingency plans at industry level.

- Same as the above position.

FIELD WORK

- Same as the above position.

ADMINISTRATION WORK

- Idem.

BASIC FUNCTIONSBASIC ACTIVITIESATTITUDES-APTITUDES-EXPERIENCE

- Relations with managers and directors of the different affiliate companies in the functions covered by Integral Protection.
- Relations with the coordinators and directors at PDVSA's Headquarters.
- Relations with the highest ranking officials related to the functions under his responsibility.
- Relation with the highest ranking authorities in Caracas, related to the function under his corporative management and representing PDVSA.

FORMAL WORKING RELATIONS

Position: INVESTIGATOR

Payroll: MAJOR

Minimum Academic Level Required: Technician at University Level as minimum level for recruitment or permanence in the position.

BASIC FUNCTIONS

BASIC ACTIVITIES

ATTITUDES-APTITUDES-EXPERIENCE

- Development and conservation of internal and external company data sources.
- Preparation of technical and special reports.
- Organization and handling of files and sources.
- Complete knowledge of investigation techniques.
- Knowledge of an investigation methodology which emphasizes more the what and how, than the search and identification of who.
- Knowledge and experience in identification and conservation of data sources.
- Knowledge and experience in the obtention, handling and analysis of information obtained through several sources.
- Knowledge of methods for establishing the degree of reliability of the information obtained.
- Knowledge and experience in the preparation of technical reports.
- Knowledge and experience with different methods of organization and file handling.

PRE-EMPLOYMENT AND
SPECIAL INVESTIGATIONS

BASIC FUNCTIONS

BASIC ACTIVITIES

ATTITUDES-APTITUDES-EXPERIENCE

- Positive and constructive attitude toward company personnel.
- Be discreet, skillful and respectful in obtaining confidential or delicate information.
- Knowledge of interviewing techniques.
- Knowledge of the techniques in handling and developing public relations.
- Basic knowledge for planning events or operatives.
- Knowledge and experience in techniques of executives protection.
- Basic knowledge and experience in the handling of fire arms.
- Basic knowledge in personal defense.

- Development of internal and external operatives with or without the cooperation of National Security Agencies.
- Executive protection.
- Development and conservation of internal and external sources for obtaining information which permits the prediction of possible off-justice actions in any given area or region.

PREVENTIVE ACTIONS

BASIC FUNCTIONS

FORMAL WORK RELATIONS

BASIC ACTIVITIES

- Permanent relations with National Armed Forces, National Security Agencies in order to establish joint actions and interchange information.
- Relations, at all levels, within the affiliate company.
- Relations with and within the oil and surrounding community.

ATTITUDES-APTITUDES-EXPERIENCE

- Knowledge about the techniques and practices of public relations.
- Development of an investigation methodology which emphasizes more on the what and how, than on the search and identification of who.

- THE SAME AS THOSE INDICATED FOR THE INSPECTOR, AND SHALL APPLY WHEN THE INVESTIGATOR HAS PERMANENTE SUBORDINATES FOR THE EXECUTION OF HIS ACTIVITIES OR THEY ARE ASSIGNED ON A TEMPORARY BASIS.

SUPERVISORY ACTIONS

- THE SAME AS THOSE INDICATED FOR THE INSPECTOR.

BASIC FUNCTIONS

BASIC ACTIVITIES

ATTITUDES-APTITUDES-EXPERIENCE

- Presentations before different audiences, to submit the results of his investigations.
- Preparation of presentations for informative lectures, training or illustration of operatives within the company.
- Make presentations before the oil community concerning the measures being taking in preventing and dissuading criminal acts.

- Basic knowledge of conceptualization, design and development of matters based on the usage of modern teaching techniques (usage of support material, audiovisual aids, objectives to be achieved, presentation techniques, etc.) taking into consideration that audiences could be different.

TEACHING ACTIVITIES

Position: INVESTIGATION SUPERVISOR

Payroll: Major

Minimum Academic Level Required: Technician at University Level as minimum level for recruitment or permanence in the position.

BASIC FUNCTIONS

PROGRAMMING

- THE SAME AS THOSE INDICATED FOR THE AREA SUPERVISOR

- Evaluates the methodology and controls the results of pre-employment and special investigations.
- Coordinates or executes himself, special investigations of vital importance to the Industry.
- Evaluates the procedure and controls the results of different internal or external operatives executed.
- *Designs, programs and coordinates* those operatives, which due to their magnitude or significance, run over the level and possibilities of his subordinates.
- Together with his area supervisor, coordinates routine and special operatives for executives protection.
- Controls the results of the objectives assigned to his section.

ATTITUDES-APTITUDES-EXPERIENCE

THE SAME AS THOSE INDICATED FOR THE AREA SUPERVISOR.

- Knowledge and experience in the consolidation, analysis, interpretation, verification and establishment of the degree of reliability of the information gathered by his subordinates.
- Knowledge and experience in the preparation of scenarios for the purpose of predicting off-justice actions in the region.

FIELD WORK

BASIC FUNCTIONS

BASIC ACTIVITIES

- Orders, consolidates, analyses and interprets the information gathered by his subordinates and prepares scenarios in which off-justice actions in the region may be predicted.

ATTITUDES-APTITUDES-EXPERIENCE

ADMINISTRATION WORK

THE SAME AS THOSE INDICATED FOR THE AREA SUPERVISOR.

THE SAME AS THOSE INDICATED FOR THE AREA SUPERVISOR.

FORMAL WORKING RELATIONS

HE SAME AS THOSE INDICATED FOR THE INVESTIGATOR.

THE SAME AS THOSE INDICATED FOR THE INVESTIGATOR.

TEACHING ACTIVITY

THE SAME AS THOSE INDICATED FOR THE INVESTIGATOR.

THE SAME AS THOSE INDICATED FOR THE INVESTIGATOR.

Position: OFFICE CLERK

Payroll: MINOR

Minimum Academic Level Required: High School as minimum level for recruitment or permanence in the position.

BASIC FUNCTIONS

THE SAME AS THOSE INDICATED IN THE DIAGNOSIS PATTERN FOR 1982

BASIC ACTIVITIES

THE SAME AS THOSE INDICATED IN THE DIAGNOSIS PATTERN FOR 1982

ATTITUDES-APTITUDES-EXPERIENCE

- Basic knowledge of public relations.
- Intermediate knowledge on the usage of computers in: information, files, control of services rendered, material inventory and uniforms, maintenance programs, etc.
- Intermediate knowledge of basic operation and maintenance of the equipment used: issuance of identity cards, computers, Bests equipment, etc.

Position: SERVICES SUPERVISOR

Payroll: MAJOR

Minimum Academic Level Required: Technician at University Level as minimum level for recruitment or permanence in the position.

BASIC FUNCTIONS

ADMINISTRATION OF BEST SYSTEM AND IDENTIFICATION SYSTEM

BASIC ACTIVITIES

- Carries out studies concerning the need for the services rendered.
- Prepared technical reports.
- Programs maintenance of both systems.
- Executes the evaluation and control of services rendered.
- Evaluates and controls handling of files in the Function.
- Evaluates and controls all matters related to uniforms for the watchmen: inventory, cost and washing.
- Evaluates and controls payment forms to contractors.
- Evaluates and controls replacement of material required by the Function.

ATTITUDES-APTITUDES-EXPERIENCE

- Advanced knowledge concerning the operation and maintenance of the systems used.
- Advanced knowledge in handling computerized information.
- Advanced knowledge of handling computer information for files, control of services rendered and inventory.

ADMINISTRATION WORK

SUPERVISION

THE SAME AS THOSE INDICATED FOR THE AREA SUPERVISOR.

THE SAME AS THOSE INDICATED FOR THE AREA SUPERVISOR.

BASIC FUNCTIONS

PROGRAMMING

BASIC ACTIVITIES

THE SAME AS THOSE INDICATED FOR THE AREA SUPERVISOR

ATTITUDES-APTITUDES-EXPERIENCE

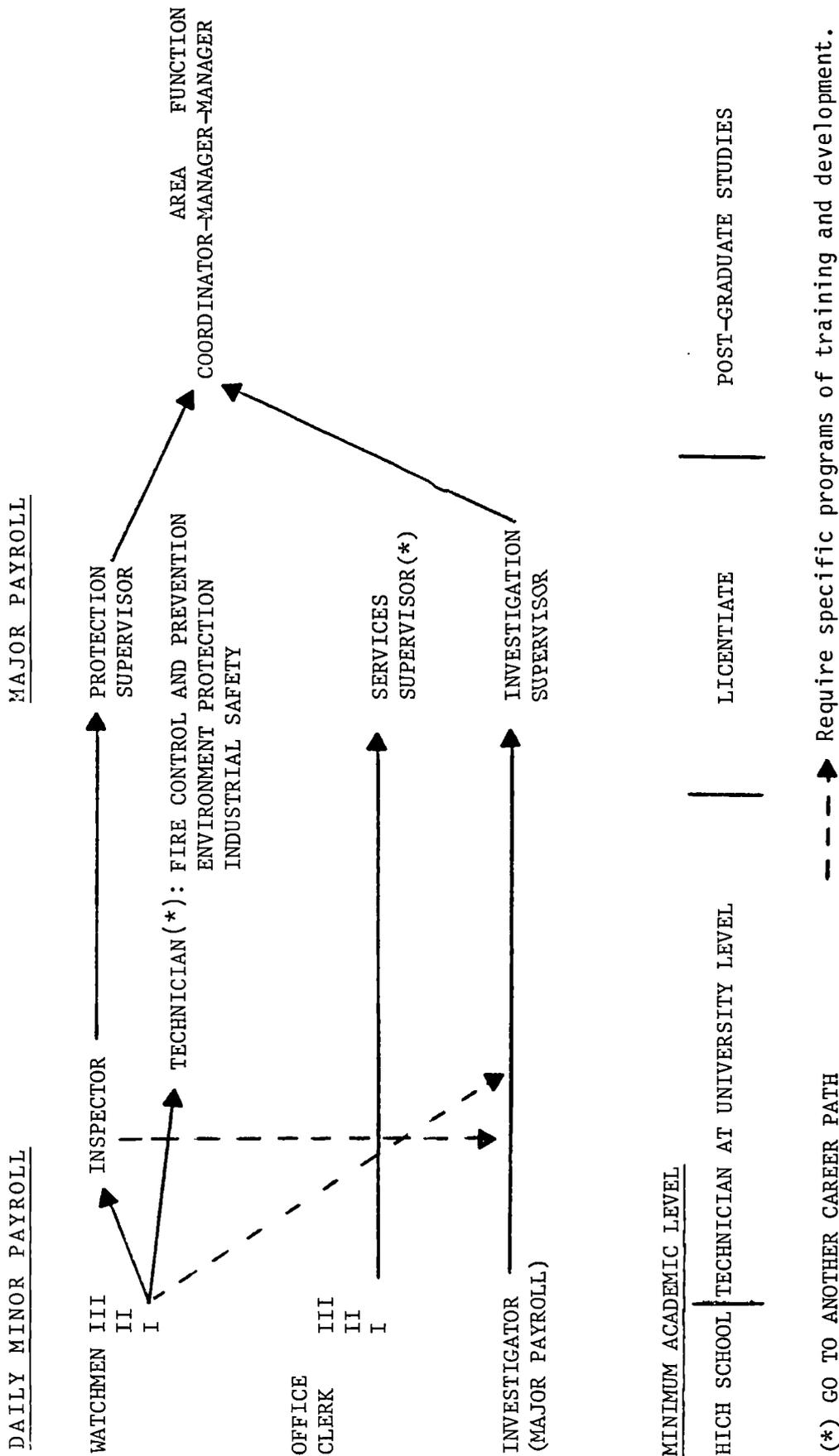
THE SAME AS THOSE INDICATED FOR THE AREA SUPERVISOR.

FORMAL WORK RELATIONS

- Relations with supervisors, for rendering of services at almost all levels within the company.

- Basic knowledge of public relations.

APPENDIX C.4.4
 CAREER PATH FOR 1986-1991



APPENDIX C.4.5

EXPECTED PERMANENCE LAPSES FOR 1986-1991

PERMANENCE LAPSE

LEVEL	POSITIONS	MINIMUM	MEDIUM	MAXIMUM
MANAGEMENT	GENERAL MANAGER	2	3,6	5
	FUNCTION MANAGER	2	3,6	5
	AREA MANAGER	2	3,6	5
SUPERVISORY	COORDINATOR	2	3,6	5
	INVESTIGATORS SUPERVISOR	2	3,6	5
	PROTECTION SUPERVISOR	2	3,6	5
	SERVICES SUPERVISOR	2	3,6	5
	INSPECTOR	1	3	5
OPERATIONAL	INVESTIGATOR	4	12	20
	WATCHMEN	4	12	20
	OFFICE LERK	4	12	20

Source: Meeting with the Project's Consulting Group

C.5 LONG TERM PATTERN FOR 1991

It was prepared following the same approach as for the Medium Term Pattern. The most significant change that can be observed is in the academic level demanded. The mobility as well as the expected permanence lapses remained the same as for 1986.

POSITION	PAYROLL	BASIC FUNCTIONS	BASIC ACTIVITIES	ATTITUDES-APTITUDES-EXPERIENCE	ACADEMIC LEVEL
WATCHMEN	DAILY OR MINOR	SAME AS 1986 PROFILE	<ul style="list-style-type: none"> - SAME AS 1986 PROFILE - Handling of Closed TV Circuits integrated to air patrolling. - Operation of different equipment and techniques for detecting intruders. - Electronic localization of subreptitious hearing devices 	<ul style="list-style-type: none"> - Knowledge and experience in the operation of Closed TV Circuits integrated to air patrolling. Likewise, in the reading and interpretation of information obtained from it and of its analysis techniques. - Basic knowledge in the use and characteristics of telemetric alarms for detecting intruders. 	SAME AS 1986 PROFILE
INSPECTORS	DAILY MINOR OR MAJOR	IDEM	SAME AS 1986 PROFILE	SAME AS 1986 PROFILE	SAME AS 1986 PROFILE
AREA SUPERVISOR	MAJOR	IDEM	IDEM	IDEM	LICENTIATE AS MINIMUM LEVEL FOR RECRUITMENT OR PERMANENCE IN THE POSITION
COORDINATOR	MAJOR	IDEM	IDEM	IDEM	IDEM
AREA MANAGER	MAJOR	IDEM	IDEM	IDEM	MASTERS DEGREE AS MINIMUM LEVEL FOR RECRUITMENT OR PERMANENCE IN THE POSITION
FUNCTION MANAGER	MAJOR	IDEM	IDEM	IDEM	IDEM

APPENDIX D

VERIFICATION OF THE STRATEGIC CAREER PATTERN
AT THE OPERATIONAL LEVEL IN THE VENEZUELAN OIL INDUSTRY

One of the challenges of the Strategic Career Pattern (SCARP) was to prove its usefulness, not only at a corporate level but also at an operational one. In fact, the purpose was for it to be a practical tool for the planner as well as for the manager engaged with the operational as well as the personnel needs. Consequently, a specific application was conducted with two affiliates in a particular operational area of the Oil Industry.

The project was called "Corporate Program of Training and Development for the Operational Personnel of Integral Protection". As the reader will notice, it was extended from Industrial Security to the Integral Protection function which comprises besides Security, Industrial Safety, Fire Prevention and Control, Industrial Hygiene and Environmental Protection. Furthermore, the results were presented before the IX Venezuelan Workshops of Personnel Administration, in Maracay, State of Aragua, Venezuela, in May 1984.

1. Objectives of the experience

- a. Provide the Venezuelan oil and petrochemical industries with a training and development program consonous with the objectives, expectations and challenges the operational personnel (Daily and Minor payroll) must face at medium and long terms in the Integral Protection Function.
- b. Develop a flexible corporate program capable of satisfying the specific needs of different subsidiaries in the Venezuelan oil and petrochemical industries.
- c. Design a program capable of offering an overview of the five functions pertaining to Integral Protection: Industrial Safety, Industrial Hygiene, Fire Prevention and Control, Industrial Security and Environment Protection.
- d. Structure a program capable of producing a new approach, a new image, and new practices in preventing and controlling risks in the industry.
- e. Verify whether the Strategic Career Pattern is applicable in defining the characteristics for the type of personnel required for the future.

2. Main Phases and Steps taken in the Experience Developed

2.1 Phase I

a. Preparation of the Industrial Security Corporate Plan

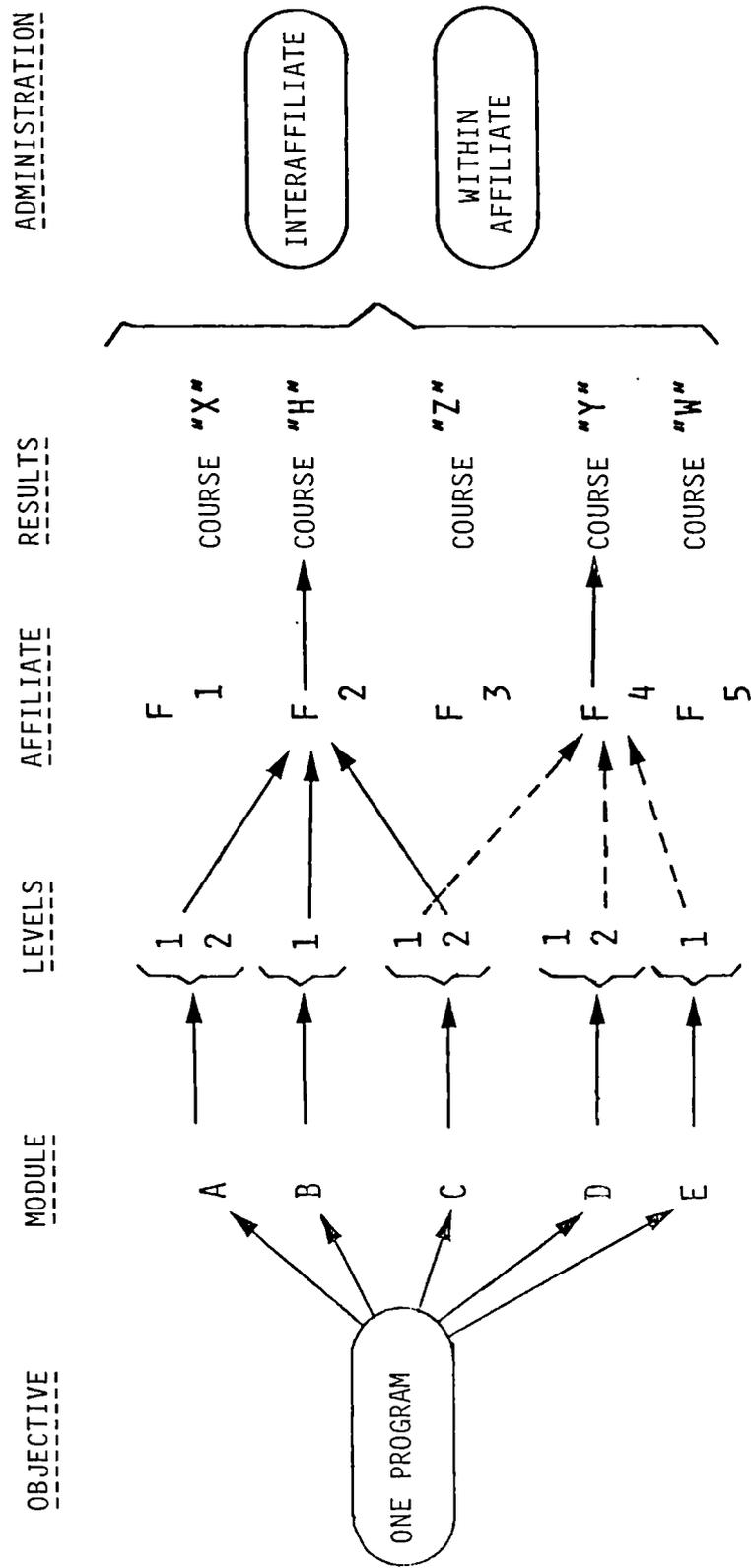
- i) The scope, perspective and raison d'etre of the function.
- ii) Diagnosis of the function and possible scenario for medium and long term.
- iii) Services to be rendered, within a given technological profile, to satisfy corporate specific objectives and goals.
- iv) Corporate policies, outlines and strategies which fundament the achievement of objectives and goals of the function.

b. Preparation of the Strategic Career Pattern with a medium and long term scope

- i) Typical Positions and levels required by Industrial Security.
- ii) Basic functions and activities for each typical position identified.
- iii) Attitudes, aptitudes and experience required by operational personnel in order to successfully assume the functions and activities of each typical position and level.

- iv) Minimum academic level for each typical position and level.
 - v) The career path of the different typical positions, considering their interrelation and interdependence.
 - vi) Estimation of the minimum and maximum expected permanence lapses for each typical position and level.
- c. Design of the approach and scopes of the modular system approach to be used in the training and development program to be prepared (see Figure No. 1).
- d. Creation of an inter-affiliate team responsible for structuring the program.
- e. Preparation of the basic professional sub-profiles considered for watchment at five and ten years.
- f. Formal request to INAPET for counsel in the design of specific programs for the different modules, as well as for the implementation and evaluation².
- g. Meetings with experts in the different areas covered by the modules, to define their scope, content and generalization to all functions related to Integral Protection. Modules considered:

FIGURE No. 1: OBJECTIVES AND SCOPE OF THE MODULAR SYSTEM



- Introduction to the Industrial Security function.
- Human Relations.
- First Aid.
- Communications Equipment.
- Access Control: Conventional system.
- Access Control: Computerized system.
- Electronic protection systems.
- Environment protection.
- Fire Prevention, Control and Extinguishing.
- Introduction to Defensive Driving.
- Industrial Safety.
- Fire Arms.
- Patrolling.
- Report of Integral Protection events.

2.2 Phase II:

- a. Identification of experts for defining:
 - i) Final content of each module.
 - ii) Definite implementation plans.
- b. Define generalization of programs for Integral Protection personnel in minor and daily payroll.
- c. Modifications to Modules:
 - i. Introduction to the Integral Protection Function instead of Introduction to Industrial Security Function.
 - ii. Introduction of Module No. 15: Industrial Hygiene.

2.3 Phase III:

2.31 First Step:

2.311 Persons: 15 workers in the daily payroll from Lagoven (8) and Meneven (7) in the eastern region of the country, all belonging to the Industrial Security function.

2.312 Place: Morichal Camp, State of Monagas, Lagoven.

2.313 Duration: Three days of intensive work, total of 24 hrs.

2.314 Modules: The modules used in this first pilot experience were:

- Patrolling.
- Industrial Hygiene.
- Human Relations.

2.315 Instructors: Personnel from the Venezuelan Oil Industry, specialized in this area.

2.316 Evaluation: Two evaluation formats were prepared: one for the instructor (to be filled in by the participants) and another for the participants (to be prepared by the instructor).

2.32 Second Step:

2.321 Persons: The same ones as in the preceding pilot experience.

2.322 Place: Training Room at Quiriquiri, State of Monagas, Lagoven.

2.323 Duration: Three days of intensive work, total of 24 hours.

2.324 Modules: The modules used in this pilot experience were as follows:

- Access control: Conventional System
- Fire Arms
- Fire Prevention, Control and Extinguishing

2.325 Instructors: Personnel from the industry specialized in this area.

2.326 Evaluation: The same ones as in the preceding pilot experience.

2.33 Third Step: Elaboration of the final report.

2.34 Fourth Step: Submittal of the program to the Human Resources Organization of the Venezuelan oil and petrochemical industries, in order to proceed with its administration and optimization at national level.

3. Main Methods Used:

3.1 The Strategic Career Pattern:

Already explained in the main body of the present thesis.

3.2 Modular System:

Understood as the terminal behaviours desired in certain areas considered essential to satisfy the needs for either training or development. 15 modules were prepared to thus achieve 15 terminal behaviours. Each one of the modules was designed for 8 hours. The

total program consisted of 120 hours. The relationship between theory and practice was set at 50%-50%. Most of the modules include a basic and an advanced level to broaden its flexibility for application.

3.3 Instruction Model from the Oil and Petrochemical Training Institute (Instituto de Adiestramiento Petrolero y Petroquímico -INAPET)³:

This method was applied thanks to the participation and cooperation of INAPET in the preparation of this program.

It consists of four sequential and complementary steps:

- Analysis of occupation.
- Training design.
- Training implementation.
- Training evaluation.

3.4 Meetings with Experts:

Several professionals from the Venezuelan oil industry related to the function were called upon to define the contents of the various modules.

3.5 Columnar Method in the Preparation of Programs:

This method was chosen as the most explicit for preparing the program of the different modules. It combines, both horizontally and comparatively, the following aspects: specific objectives, time of

exposition, contents, learning techniques, teaching resources required, and type of evaluation to be used.

3.6 Pilot Experiences:

These were carried out in order to verify the potential benefits of the program designed. Also to check, during the instruction process itself, any difficulty which could be corrected so as to optimize the scope and results of this effort.

4. Results Obtained

4.1 Acceptance of Modules:

One of the crucial aspects in the pilot experience was the acceptance of the modules by the participants. Initially the program had only been conceived for the personnel integrating the operational level of Industrial Security (the watchmen). Then it was extended to include all the personnel in minor and daily payroll belonging to the functions under Integral Protection. This meant that personnel at the operational levels of Industrial Hygiene, Industrial Safety, Fire Prevention and Control and Environment Protection, would be taking those modules considered to be most convenient for essential training or development opportunities.

Nevertheless, the modules used were totally accepted. This included Industrial Hygiene that was considered as incompatible with the watchmen positions.

4.2 Evaluation:

The evaluation obtained from the first and second pilot experiences, was excellent. Either the evaluation made by the participants or the one made by the instructors.

4.3 Institutional Acceptance:

Institutional acceptance was total. In fact, it was requested that the rest of the modules were dictated and the program extended to all the Venezuelan Oil and Petrochemical Industry.

5. Main Conclusions

- a. The program does satisfy present and future needs of the various functions within Integral Protection.
- b. The modular system facilitates the design of versatile and flexible programs for training and development of personnel.
- c. The usefulness of the Strategic Career Pattern was demonstrated. It determined the characteristics of the type of personnel required for Integral Protection at corporate level for short, medium and long terms.

6. Importance and Usefulness of the SCARP Method

6.1 At Theoretical and Methodological Level:

- a. The applicability of the Strategic Career Pattern was

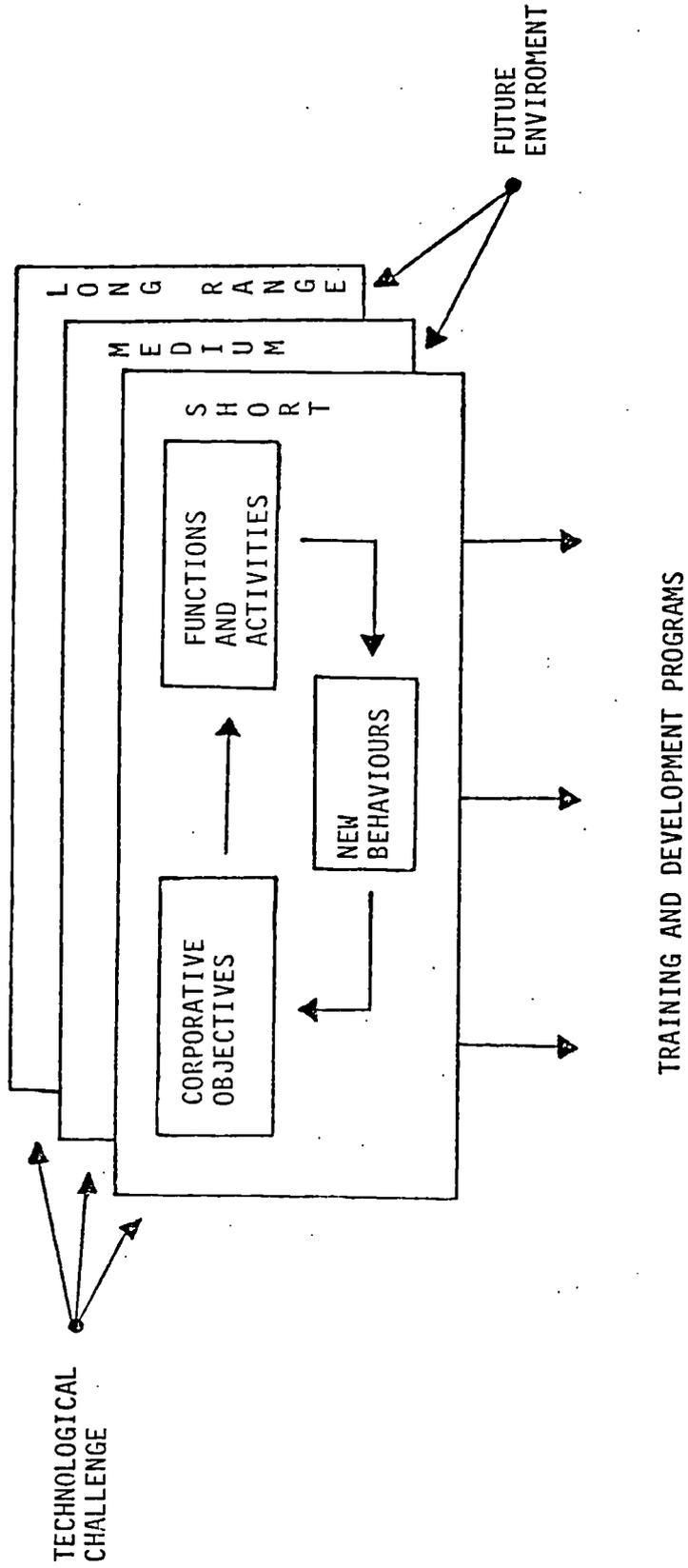
demonstrated, as a basic tool for effectively interrelating: i. corporate objectives; ii. the functions and activities required to achieve them; iii the levels of competence required by the personnel. This relations was established within a short, medium and long term perspective. It incorporated the future environment and technologic challenge the organization must face (see Figure No. 2).

- b. The training and development program outlined at short, medium and long term, can be updated with only minor annual adjustments. Consequently, the tedious burocratic load of the traditional yearly approach to the determining of annual training and development needs, can be significantly avoided or reduced.
- c. The methodology identified future needs. Consequently, it did not handle the assumption that past or present training and development needs are recurrent towards the future.

6.2 At Institutional Level:

- a. The interdisciplinary component of the functions involved in the concept of Integral Protection is observed.
- b. The training and development effort showed to be

FIGURE No. 2 : THEORETICAL AND METHODOLOGICAL BENEFITS OF
THE ESTRATEGIC CAREER PATTERN.



consistent with future operational requirements of the Venezuelan Oil and Petrochemical Industry.

7. List of References

- 1 Coordination for Organization and Human Resources of Petr6leos de Venezuela, Industrial Security and Industrial Safety Management, Corporate Plan for Industrial Planning 1982-1991, (Caracas: Petr6leos de Venezuela, May 1982).

- 2 INAPET, Planning and Development Management, Instruction Design of the Integral Course for Watchmen (Corporate -PDVSA). (Caracas: INAPET, December 1983).

APPENDIX E

ACCEPTANCE OF THE STRATEGIC CAREER PATTERN

BY PETROLEOS DE VENEZUELA, S.A.

In the following pages the reader will find a transcription of the letter from the First Vice-President of Petr6leos de Venezuela, S.A. (PDVSA) addressed to the Presidents of the affiliates. In the third paragraph the acceptance of the Strategic Career Pattern can be found. Also, in the last paragraph, it is proposed that this method be extended to other functions.

Caracas, December 16, 1982

Sirs:

Guillermo Rodríguez Eraso	Lagoven, S.A.
Alberto Quirós Corradi	Maraven, S.A.
Juan Chacín Guzmán	S.A. Meneven
Frank Alcock	Corpoven, S.A.
Manuel Ramos	Pequiven
Armando Segnini	Intevep S.A.

The CORPORATE PLAN FOR INDUSTRIAL SECURITY 1982-1991 was submitted to the Board of Directors of this Holding Company on November 2nd, 1982, for its consideration, after having been reviewed by the Board of Directors of each affiliate company.

This Board wishes to state its deep satisfaction with the efforts involved in the achievement of a Plan which will provide our Security function with a sense of direction and cohesion. Therefore, we consider that the policies, guidelines, objectives, goals and strategies proposed in the Plan be ratified as the governing guidelines for Security in the Oil and Petrochemical Industries on a short, medium and long term basis.

As a consequence we consider it necessary that all affiliate companies develop a Career Pattern for Security employees, as proposed in the above-mentioned Plan, since this method effectively links the objectives to be obtained within the following ten years, to the type of worker required to achieve these objectives. Furthermore, it will also offer these employees the opportunity of accelerated professional development and career growth within the Industry.

Regarding Integral Protection as presented in the CORPORATE PLAN FOR INDUSTRIAL SECURITY, we were most pleased to see the experiences accrued by Corpoven, Meneven and Intevep through the integration of the following functions: Security, Fire Prevention and Control, Industrial Safety and Hygiene and Environmental Protection, in order to optimize overall protection within the Industry. Consequently, we have requested the Industrial Safety and Security Management of Petr6leos de Venezuela S.A. to carry out a thorough analysis and consolidation of developing experiences to determine

whether they would effectively provide us with: a higher level of efficiency in Integral Protection activities as a whole, a rationalization regarding the number of workers employed in the five functions mentioned above, and to what extent these workers, under the concept of Integral Protection, would have their responsibilities for career growth and development enhanced.

Finally, we would like to inform you that as of January 1st, 1983, the Industrial Safety and Security Management of Petróleos de Venezuela, S.A. will undertake the preparation of corporate plans, and the corresponding career patterns for: Fire Prevention and Control, Industrial Safety and Hygiene for the period 1984-1983, consequently we will be counting on your cooperation and support.

Sincerely yours,
PETROLEOS DE VENEZUELA, S.A.

Julio César Arreaza A.
First Vice-President