

**THE C.A.T. COMPANY**

A case study in the organization and operations  
of an all-Arab contracting and trading company  
as viewed within the context of the industrial  
development of the Arab Near East.

By

**WILLIAM WILSON MILLER**

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## P R E F A C E

The writer came to the Arab World two years ago with the intention of studying the industrial development of the area in all its diverse ramifications: economic, social, political, and psychological. In order to render greater validity to his conclusions, he believed that he should buttress on academic approach to the subject with practical experience working in an indigenous firm. Accordingly, he made an extensive review of the several possibilities available. After due deliberation, it became clearly evident that he could find no better Arab firm with which to associate himself for the purpose of his study than the Contracting and Trading Company of Beirut, Lebanon. This is the largest of Arab companies and has operations in all of the countries of the Near East. Moreover, it is perhaps the most advanced of Eastern firms in its internal organization and methods of operation.

A proposal to study the expansion of Arab run business was made by the writer to the Management of C.A.T. Company in September, 1953. After it was accepted, it was agreed that the writer should be engaged by the C.A.T. Company as a regular employee. He was to work for the succeeding twenty months on C.A.T. projects in Jordan, Lebanon, Iraq, and the Arabian Gulf States of Qatar, Bahrein, and Kuwait. His work was to be in a diversity of positions, administrative and manual, to enable

him to acquire a well rounded view of the Company. In addition, the Management gave the writer full authority to interview Company personnel at all hierarchical levels and to consult Company records with respect to organization and operations. Only one reservation was imposed on the study, namely that the details of the Company's financial affairs be kept strictly confidential. The resultant endeavor is a composite of these combined efforts. It purports to be a picture of the Contracting and Trading Company as of the year 1954-1955.

The Management of C.A.T. and all personnel from senior executives down to working men proved to be very cooperative, despite the aura of suspicion attendant upon all such investigations conducted by foreigners. The writer, therefore, extends his full appreciation to all persons in the C.A.T. Company who rendered him assistance. He is particularly grateful to the three Partners, Mr. Emile Bustani, Mr. Shukri Shamma, and Mr. Abdulla Khoury who made this study possible in the first instance.

A debt of thanks is also owed to those members of the teaching staff of the American University of Beirut who guided the molding of this thesis. Special thanks are due to Professor Arthur Mills of the Department of Commerce who supervised the work, and to Professor Nabih Faris, Chairman of the Arab Studies Program. Without their forbearance, this thesis would never have reached its present form.

Beirut, Lebanon  
June 1, 1955.

W.W.M.



## A B S T R A C T

This thesis is primarily concerned with a study of the problems and prospects attendant upon the current industrial development of the Arab Near East. To lend greater texture and meaning to the work, a case study of the organization and operations of the Arab Contracting and Trading Company was selected as the focus of the thesis. This Lebanese firm was chosen principally because it is the largest and most progressive of Arab companies, and because it maintains operations in all the countries of the Arab East. This gave a breadth of scope to the study. Moreover, the Management of C.A.T. Company afforded the writer the excellent opportunity of integrating himself into the firm in the capacity of a regular employee, meanwhile continuing his academic research on industrial problems.

In order to set the subject matter in proper context, the Introduction is devoted to the role of industrial development within the total revolutionary change currently transfiguring the Near East. Chapter two is designed to provide a general review of economic forces in the Near East, with emphasis upon those factors which directly condition the growth of industry. With these background characteristics in mind, the framework has been established for a comprehensive study of the Arab C.A.T. Company. Chapter three concerns itself with an historical review of the C.A.T. Company's rise to

being the leading Arab industrial firm in the Near East. In Chapter Four the Company is analyzed in broad perspective with respect to its internal organization and methods of operation. Departments and inter-departmental relationships are examined as well as country operations against the criteria of scientific management practices which have developed in Western industry. Chapter Five, the core of the thesis, deals with the C.A.T. organization in Iraq as viewed within the broader context of Iraqi economic development. The C.A.T. Kirkuk-Tasloojah Road Construction Project is selected for intensive study. It is felt that such a case study of a living construction project, when amplified, shall enable the reader to better grasp the inner workings of the Company as a unity. Throughout this case study the accent is upon management problems in the fields of organization, planning, and control.

Chapter Six is devoted to a brief summary of the preceding material followed by a critique of the organization and operations of the C.A.T. Company as previously remarked. In this critique the writer attempts to evaluate critically the salient aspects of internal Company organization and methods of operation. The criteria of this evaluation are those practices of scientific business management which have become accepted by Western industrial organizations as standard procedure rendering maximum efficiency. C.A.T.'s adherence and deviations from these management principles are examined in the broader light of traditional Arab culture, customs, and patterns of thought. Principal defects of C.A.T. Company

organization and operations are concluded to flow from five main conditions: (1) a dearth in the Arab East of competent managerial, technical, and administrative personnel; (2) a disequilibrium in the socio-economic and political context of the area; (3) a general scarcity of industrial materials and difficulties in supply; (4) a shortage of mobilized capital and limited markets; (5) adverse geographic and climatic conditions.

The writer concludes that for indigenous Arab industrial growth to keep pace with potentialities, much stress must be laid by local educational institutions on the development of technically and administratively competent personnel. Then, with years of conditioning to industrial practices in C.A.T. Company and other indigenous firms, this body of engineers, administrators, and technicians will be better prepared to operate local industry with a degree of efficiency equal to that of competing Western firms.

The value of this thesis has a three fold character: (1) it is unique as a study of C.A.T., the "pathfinder" among Arab run businesses; (2) principles herein evolved should prove useful as a guide to prospective Arab business men wishing to establish indigenous entrepreneurships; (3) the data herein recorded from original research should be of utility to other researchers into problems of industrialization as well as to Western business men working in the Arab world.

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### CHAPTER ONE

#### INTRODUCTION

The Arab Near East of the mid-twentieth century is undergoing a rapid transformation politically, economically, socially, and psychologically. The dynamism behind this movement has resulted, in part, from that interaction between the civilizations of East and West which Toynbee claims to be the salient characteristic of contemporary world history.<sup>1</sup> But as well, this dynamism is a self-generating phenomenon which increases in power as the movement itself gains in momentum. Symptomatic of this transformation in the political field is

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1. Toynbee, A.J., The World and the West. London, Oxford University Press, 1953, preface.

the Arab States' newly found national independence. In the economic sphere the swift growth of Arab owned and operated industrial enterprises testifies to the strength and genuineness of this revolutionary movement with all its diverse social and psychological ramifications. It is this particular phase of the total transformation which I propose to examine in this thesis: i.e., the pattern of industrial development of the Arab Near East. In order to more brightly illuminate the picture, I have selected one of the principal Arab firms, the Contracting and Trading Company of Beirut, Lebanon, better known as C.A.T., to be the focus of this study.<sup>2</sup>

The term "Arab Near East" as herewith employed will, for purposes of delimitation, specifically denote the territories of Lebanon, Syria, Jordan, Iraq, and the Arabian Peninsula. To properly set the stage for our study of C.A.T., I propose to briefly examine at the outset those economic factors or conditions relevant to the growth of indigenous industry in the above specified areas. Then, with these basic background characteristics in mind, I shall proceed to a detailed study of the C.A.T. Company: the history of its rapid rise to being the leading Arab industrial firm in the Near East, its existing pattern of organization and scope of opera-

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2. Emile Bustani, Chairman of C.A.T. Company, deliberately selected the name so that its initials spell CAT. He claims that he has a great admiration for the cat, a clean animal inherently clean in its habits. That, he says, is the way he likes to run his C.A.T. Company.



tions, and assorted problems tangential to its operations in the Arab world. I have selected for intensive study C.A.T.'s Contracting operations in Iraq with particular emphasis on the Kirkuk-Tasloojah Road Construction Project which was recently contracted from the Development Board of Iraq. It is hoped that such a case study of a living construction project shall, when amplified, enable us to gain an understanding of other C.A.T. contracting operations elsewhere in the Near East.

In conclusion, I intend to summarize the preceding descriptive sections and to provide a final critique on C.A.T.'s organization and operations. Specifically, I shall endeavor to evaluate C.A.T. management using as criteria those basic principles of scientific business administration which are accepted as standard operating procedure by similar Western business concerns. The reader shall then be better able to judge where C.A.T., as an Arab company, both parallels and diverges from Western business behavior. It is thus to be hoped that C.A.T. Company will serve as a model or guide for the eventual formation of other comparable indigenous companies to meet those needs arising from the development of the Arab world.

## CHAPTER TWO

### THE ECONOMIC BACKGROUND OF THE NEAR EAST

It will be my purpose in this necessarily brief chapter to pin point those principal factors existing in the Arab world today which condition the rise of indigenous industry: its birth and development. The reader, if sufficiently stimulated, should then study for himself aspects of these topics in much greater detail from amongst the vast amounts of literature available on the subject. This survey is thus to be construed as a challenge to the reader's interest; the benefit will vary directly with the reader's response to this challenge.

#### A. The Region

The territories included in the Arab Near East encompass numerous regions diverse in geography, climate, natural resources, and populations. The combined area of these regions under discussion reaches approximately one-million three-hundred thousand square miles with a population estimated at eighteen million people.<sup>3</sup>

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3. Royal Institute of International Affairs, The Middle East, a Political and Economic Survey. London, Oxford University Press, 1954.

The Near East is bordered on the north and east by a great chain of mountains. The mountains found in central Turkey and Iran form, in effect, a semi-circular ridge surrounding the Mesopotamian and Syrian plains. This land lying between the mountains and the Syrian desert is commonly referred to as the Fertile Crescent. To the south-east lies the Persian Gulf, while directly south is situated the Arabian Peninsula. The desert plateau of Arabia resembles an inclined plane sloping upwards from east to west. The region is bordered on the west by the Mediterranean Sea and further inland by the mountainous coastal areas of Lebanon and Jordan. These mountains are, for the most part, eroded and deforested, and, therefore, like the vast desert regions, are capable of sustaining only limited life. The plains regions, despite adverse climatic conditions, support life on an agricultural basis with the most productive sector being the Fertile Crescent. In none of these areas are those natural resources capable of sustaining large-scale industry found in abundance, excepting, of course, petroleum.

Climatic variations over this entire area are quite considerable; yet they can be classified into four main patterns:<sup>4</sup>

- (1) The Mediterranean, characterized by hot, rainless summers and cool, wet winters, is found on the coast of Palestine, in western Jordan, Lebanon, and in western Syria.
- (2) The Continental, with colder winters and warmer summers plus a lower average rainfall, occurs in eastern Syria and Iraq, with ex-

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4. R.I.I.A., op. cit., p. 1-3.

tremes in central and southern Iraq. (3) The Desert, resembling the Continental but with less or no rainfall, prevails in eastern Jordan and in most of the Arabian Peninsula. Toward the center of these land masses winters are generally cold but not long. (4) The Sub-Equatorial, with wet summers of the monsoon type and dry winters, prevails in south-western Arabia and Yemen. These categories of climates are by no means exhaustive, and one type tends to blend into another with special cases arising here and there. Nonetheless, the significant feature of climatic conditions in the Near East is the widespread insufficiency of rainfall to sustain agriculture.<sup>5</sup>

The natural resources of the Arab Near East, when measured by the area's capacity to sustain the existing population, are few and are sparsely distributed. This paucity of resources is the prime factor governing the economic situation of the Near East, and it conditions all endeavor in agriculture and industry. In agriculture, which probably constitutes a source of livelihood for at least eighty percent of the Arab peoples, the basic deficiencies are in fertile soil and adequate moisture sources. Yet the endowment in agricultural resources is in excess of that of industry whose development is severely handicapped by a lack of basic mineral resources, apart from petroleum. Thus the Near East is naturally deficient in such industrial raw materials as coal, iron, and timber which are fundamental to heavy industry. Considering

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5. Ibid., p. 61.

the region as a whole, the prospects for rapid economic development do not, therefore, offer very much hope. In the words of the United Nations Economic Survey Mission to the Near East in 1949, the situation is essentially this: "Basically the area is, and for a long time to come will remain, agricultural. ... There are some small manufacturing industries; more are needed ... but to talk or plan now of the industrialization of any of these countries in terms appropriate to the great industrial centers of the world would be to fly in the face of nature and common sense."<sup>6</sup> Though the Mission stressed the basic need for development in the sphere of agriculture, it emphasized as well the vital necessity of realizing the region's maximum industrial potentialities.

#### B. The People

Of the several factors making for the economic backwardness of the Near East, certainly the historic factor can be counted as one of the more important. A study of recent Near Eastern history will reveal that neither the Mongol, Mameluke, nor Ottoman empires had ever been able to develop the strongly centralized administrations necessary to countries which depend on a highly organized irrigation system for their agriculture.<sup>7</sup>

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6. United Nations, Final Report of the United Nations Economic Survey Mission for the Middle East, part I. New York, United Nations, 1949, p. 2.

7. R.I.I.A., op. cit., p. 61-62.

The consequent deterioration in irrigation forced landed peasants to become nomadic, while public security decreased and trade was greatly hampered. This situation persisted throughout the five centuries of Turkish rule over the area. Lacking administrative direction and encouragement towards economic advancement, and without any stimulus or sense of security, the Arab world lost whatever power or enthusiasm to develop such resources as did exist. It was only in the first part of the nineteenth century that Mohammed Ali started in Egypt to lay the foundations of an administrative system designed to produce a capitalist economy.

During the later part of the nineteenth century a trend toward a gradual reawakening from centuries of economic stagnation became visible in the Near East. The tempo of this trend increased considerably with the breaking away of the area from Ottoman rule as a result of World War One. Basically detrimental to the indigenous economic development of the region was the fact that the investments requisite to this development were for the most part undertaken by the Great Powers. Consequently, the industries which were developed were mainly tied to the national economies of the foreign investing countries. An excellent example of this phenomenon is the petroleum industry. The result was a situation of industrial specialization in the Near East whose benefit could be reckoned primarily in terms of capital formation. But with the exigencies of the Second World War a change in emphasis was apparent. Domestic production in the Near East became increasingly important not only to the Allied



Powers but as well to the Arab peoples who achieved a deeper understanding of the value and potentialities of their own industries. In addition, they learned that industrial management and mechanical skill as developed in the West could be applied in the Near East with only minor adaptations to comply with local customs and traditions. World War Two and its aftermath of nationalism coupled with a desire for economic independence thus witnessed a sharp growth of Arab owned and operated industries. This development of complementary industries signaled a wider diversification of production with an overall increase in supply and demand. Following this trend through the whole economic cycle, we can forecast a slow but certain rise in employment and purchasing power, a wider internal market, and a greater capacity for domestic saving and investment with its resultant impact on capital formation.

A cursory glance at the socio-economic conditions obtaining in the Near East will reveal the dire need for social reform as a basis for economic advancement. A fundamental problem which the Arab world shares in common with other under-developed areas is a rapid population growth which tends to outstrip any increase in domestic production, whether agricultural or industrial. Tied to this is the widespread poverty and poor health conditions of the vast majority of the Near Eastern peoples who are mostly subsistence farmers with a low living standard. Since these conditions are due in large measure to the concentration of land ownership in the hands of the wealthy few, a redistribution of land on an equitable basis seems vital to any

economic advance. Such government-directed action would, it is hoped, reduce the disparity between the low national income per capita of population and the high income of the privileged few. Graduated income taxes for the Near Eastern countries would definitely expedite the process. It is, then, quite logical to presume that a more even distribution of incomes and wealth would stimulate demand, production, and employment. At first, a decrease in the level of savings and investment is to be expected, but a long-run rise may be hoped for to enhance the expansion of locally financed industry.<sup>8</sup> The various development programs currently being outlined and implemented by several Near Eastern countries will serve to buttress these aforementioned efforts.

Contributory to the underdevelopedness of the Near East are the low educational standards and widespread illiteracy of the broad masses of the people. Until today, it has been the prerogative of a very privileged few to receive education beyond the most elementary level. And it should be noted that this primary education obtained by the rural and urban masses alike has been and still is patterned/upon the traditional religious model of education which has obtained in the East since the days of the Prophet Mohammed. In like manner, the more advanced education of the wealthy few has been mainly devoted to those professions which suited their philosophical attitude toward life, such as law and theology. The end result is the present

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8. This discussion is based upon Professor Nurkse's argument with respect to the problem of capital formation in underdeveloped areas, i.e. areas under-equipped with capital in relation to their population and natural resources.



dearth at the managerial level of people trained in the practical sciences and in the administrative techniques of modern business and government. There exists a similar shortage of skilled and semi-skilled manual labor. This has meant that the people of the Near East are embarking on the road to industrialization without having been previously conditioned by education and training in modern industrial practices and systems of values.

The implications of this predominantly rural socio-economic complex coupled with the lack of persons educated and trained for modern industry permeate the entire picture of economic development in the Near East. It is, in fact, one of the major obstacles which industrial enterprises face when they attempt to expand beyond the single entrepreneur-size business. The experience of large-scale western industry has taught us that decentralization of command and diversification of functions are fundamental to the efficient operation of big business. But this, in turn, depends upon a body of personnel who are sufficiently experienced in business practices that they can assume that degree of responsibility and decision-making power commensurate with a decentralized administrative system, wide in scope. We shall observe later that this is one of the problems fundamental to the C.A.T. organization.

### C. The Economy

As already noted, the Near East as an economic unit is basically agricultural. According to the findings of the United Nations Economic Survey Mission to the Near East in

1949, about seventy percent of the population gain a livelihood directly from agriculture.<sup>9</sup> In addition, there must be reckoned those many others who minister to the needs of an agricultural community or exist by marketing its produce. Each of the Near Eastern countries is principally agricultural, yet vast areas of all but Lebanon are desert. The widespread river systems are the arteries supplying the life-blood to the region. Nevertheless, the present scope of cultivation and agricultural practices hardly suffice to produce enough food products to keep life in the people. At <sup>the</sup> heart of any program of economic development lies the necessity to increase agricultural production to better feed the people and to export a surplus for obtaining foreign exchange. Agricultural production may be amplified by two main measures: by increasing the area under cultivation and by developing more efficient agricultural techniques. The expansion of irrigation systems in drought-ridden areas is the key to the first remedy. This key, in turn, provides a vast scope for the operations of local companies in the area. This is born out in the case of the C.A.T. Company which includes two large irrigation projects in its current register of contracts. The need to mechanize agriculture and to introduce new techniques will, as well, serve as a field to be fruitfully exploited by private enterprise. Thus we see that the development of the agricultural potential of the Near East is closely linked to the growth of industry in the area. Not only will a

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9. United Nations, op. cit., p. 1.

sound agricultural system create the economic prerequisites to the formation of industry, but equally important is the vital role which indigenous industry can play in the expansion of agriculture.

The main problems besetting the growth of industry in the Near East today are, as we have pointed out above, a dearth of essential raw materials, adverse geographical and climatic conditions, a disequilibrium in the politico-economic history of the region, and a shortage of skilled labor and efficient management. Equally basic are the added problems of a weak supply of internal capital and limited markets for industrial products owing to the poverty of the population. As a result, a fair estimate of the proportion of the Near Eastern population directly engaged in industrial pursuits would probably not exceed ten percent.<sup>10</sup>

In the main, the governments of the Near Eastern countries are fully awake to the necessity of creating conditions in which industrialization can prosper. Not only do they recognize the development of industry to be a remedy for rural over-population and wide scale under-employment, but also many have embarked on industrial policies for political reasons involving questions of national prestige. Yet despite the rapid progress made in recent years, industries other than the petroleum industry have remained at a very early stage of development. Of the manufacturing industries in the Near East

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10. R.I.I.A., op. cit.

today, the most important are textiles, food processing, and cement production. In the field of light industries several modern factories are being successfully established, often through local initiative. Nevertheless, artisan work and home handicrafts still predominate.<sup>11</sup> In the field of construction-engineering which is of special relevance to this thesis, the picture is largely dominated by firms of European and American extraction. As a result, business is highly competitive and only the most efficient and economical companies can function. There is a definite trend, however, toward the growth of indigenous owned and operated construction companies, of which the outstanding example is the Contracting and Trading Company of Beirut, Lebanon. This firm, as we shall see, has grown from the war effort and is prospering largely from the recent expansion of petroleum facilities and the development programs currently being undertaken by several Near Eastern governments. Apart from the construction field, the accent must be upon the initiation of industry based on agriculture, and on tertiary and service industries. But it is not yet in keeping with the realities of the situation to envisage the development of large-scale primary industry in the Near East.

To insure that industrialization should proceed on a logically integrated and coordinated basis, the governments of the Near Eastern countries are endeavoring to plan their programs of development in accordance with fundamental needs. They must

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11. Ibid., p. 67-68.

also offer/<sup>more</sup>encouragement to individuals who evidence an interest to risk their capital and effort in building up private concerns. Government promotion efforts could be directed to financing new industries, legislating minimum guarantees for the security of investments, and instituting basic controls over unfair business practices and labor conditions. In addition, much could be done by way of planning for the development of those public utilities and facilities which necessarily underlie the growth of industry. Among these can be counted power installations, transport facilities, and communication media. The dire shortage of such public services is painfully apparent in all the countries of the Near East, but some progress can be noticed in recent years. The best example of planned development is taking place today in Iraq whose government is turning over a major portion of its annual oil royalties to the Iraqi Development Board for this purpose. Such action should act as a stimulus to the other Arab countries.

Having this basic economic background of the Near East in mind and paying special regard to those salient factors conditioning the growth of industry in the area, let us now turn our attention to the C.A.T. Company proper: its history, organization, and operations.

## CHAPTER THREE

### THE HISTORY OF THE C.A.T. COMPANY<sup>12</sup>

The Contracting and Trading Company, henceforth known as the C.A.T. Company, is, as its name indicates, a firm which derives its existence from contracting and trading operations throughout all the countries of the Near East except Israel. It is an all-Arab owned and managed firm established by Mr. Emile Bustani and his Partners in Palestine in 1938. Its present headquarters are located in Beirut, Lebanon, but it maintains branch offices in all the States of the Near East to handle local business. The C.A.T. Company is a partnership composed of three men: Mr. Emile Bustani as Chairman with Mr. Abdulla Khoury and Mr. Shukri Shammas as co-Partners. This triumverate holds equal shares in the capital value of the Company which is estimated at approximately three million pounds sterling. In addition, the triumverate forms the Board of Directors which establishes broad operating policy for the Company. Each of the three Owners-Directors occupies, as well, executive positions. Thus they act in the capacity of General Managers of the three main divisions into which the

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12. The ensuing data was obtained from C.A.T. Company records.



Company is divided, to wit: (1) Contracting, (2) Trading, and (3) Administration. The present organization of C.A.T. developed as a result of a very general plan conceived by its founder, Mr. Emile Bustani, who drew heavily upon the experience of other large foreign concerns working in the area.<sup>15</sup> Total current C.A.T. employment throughout the Near East fluctuates between twelve to fifteen thousand persons with approximately one-sixth of these being considered staff or permanent personnel.

The C.A.T. Company is associated with a British firm, the Motherwell Bridge Engineering Company, Ltd., of Scotland to form the Motherwell Bridge Contracting and Trading Company, otherwise known as Mothercat. This association was effected in 1952 for political, financial, and engineering purposes to advance the work of both firms in the Near East. The Directors of C.A.T. Company are on the Board of Directors of the Mothercat organization, but do not, in this case, hold management positions. The General Manager of Mothercat is a Britisher who resides at Mothercat headquarters in Tripoli, Lebanon. The financial arrangement regarding the Mothercat Company, whose assets are estimated at one million pounds sterling, is an equal division of the shares and profits between C.A.T. and the Motherwell Bridge firm. But for the purposes of this thesis, I shall concern myself solely with the C.A.T. Company.

C.A.T. has several other ramifications of a business

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15. For Example: The Iraq Petroleum Company; The Bechtel Corporation, and the Morrison-Knudsen Company.

and financial nature which together total about another half-million pounds sterling. There exists on the business side a number of subsidiary companies, the principal of which are: (1) Autoworks; and (2) Tyresoles. C.A.T.'s financial arrangements, which are naturally quite confidential, are subject to constant flux. They depend primarily upon current economic conditions in Lebanon and elsewhere in the Near East except Israel, as in the world generally. This is a situation quite typical of Near Eastern business as a whole. Be that as it may, it is not the intention of the writer to deal here with these less tangible aspects of C.A.T. due to the virtual impossibility of obtaining the necessary information. Instead, the main area of our concentration shall be the more significant Contracting side of C.A.T., with an analysis of Trading only to the extent that it advances Contracting.

The C.A.T. Company originally received its start under its present name when Mr. Emile Bustani of Lebanon joined in partnership with a noted Arab business man in 1938 to undertake small contracting jobs in British occupied Palestine. Prior to his entry into private enterprise, Emile Bustani had worked for several years as an engineer in the British managed Iraq Petroleum Company, one of the largest foreign concerns in the Near East. C.A.T. of Palestine continued to function on a fairly small scale through the outbreak of the Second World War. At this early date, the main source of C.A.T.'s contracts were the British forces about Palestine and the Palestine Government, as well as the foreign oil companies, mainly I.P.C.



Meanwhile, a Syrian engineer, Mr. Shukri Shammās, who had previously been an educator and had also worked in the I.P.C., went into the contracting business for himself in Homs, Syria in 1939. During the ensuing few years he received several contracts from the French forces and administration then occupying Syria and Lebanon. A third energetic young man, Mr. Abdulla Khoury, a Lebanese, had entered the trading and commercial business in Lebanon after gaining, as did the others, a basic experience with the I.P.C. From 1939 onward Mr. Khoury was supplying the British in Haifa with materials for construction purposes besides expanding other aspects of his business. When the British Army occupied Lebanon and Syria in late 1941, Emile Bustani and Abdulla Khoury met with Shukri Shammās in Homs and agreed to form a partnership in the already existing C.A.T. Company of Palestine. This newly reorganized company, which began with four partners instead of the present three, was officially agreed to in Homs, Syria in September 1941.

Largely due to the unique combination of partners, each diverse in background and experience, the new C.A.T. Company was able immediately to enter the dual business of contracting and trading. They continued their work mainly for the British forces in the regions of Syria, Lebanon, and Palestine, and expanded rapidly. This happy state of affairs carried on throughout the Second World War. C.A.T. Company, under the leadership of these energetic and experienced young men, began to rise rapidly until today it has gained the distinction of being the foremost Arab business concern in the Near East.

After the end of the War and with the consequent removal of the main bodies of foreign military forces from the area, C.A.T. entered upon a decade of construction work for several oil companies, business organizations, educational institutions, military units and Arab governments. Thus whereas prior to 1945 most of C.A.T.'s work directly involved foreign organizations, either military or business, in the ensuing period a greater proportion of their work was being undertaken in the interest of indigenous concerns. As regards the organizational aspects of the firm, the original fourth partner withdrew during the War, but when C.A.T. later joined with certain Haifa construction works there were again four partners and assets were amalgamated. However, 1949 witnessed the withdrawal of this Palestinian partner and the Company was reduced to its present working arrangement consisting of a triumvirate of Partners-Directors.

The internal growth and geographical expansion of the C.A.T. Company in the decade following the Second World War was surprisingly rapid. C.A.T. entered business in Jordan and Iraq in late 1946, and it continued its expansion into the Arabian Gulf States during 1948 and 1949 and into Aden in 1951. The principal causes for the rapid rise of this Arab owned and managed business to a point where it could compete successfully with comparable firms of European and American extraction appear to be three: (1) the rapid steps taken towards the economic development of the Near East by local governments and private concerns; (2) the expansion of the petroleum

industry and dependent industries in the area; (3) the state of military preparedness required to be maintained by the Western Powers in the Near East in view of the threat of aggression by the Soviet Union and her communist allies. Obviously these are not exhaustive as there are always other mitigating circumstances which contribute to the rise of any business concern. Not the least of these in C.A.T.'s case are the power, drive, intelligence, and experience of the young Directorate of the Company. This enables them to seek out and secure advantageous contracts. It should be mentioned that all three men are between forty-five and fifty years of age. Moreover, the singular educational, business, and political associations of the three men undoubtedly plays a substantial role in so far as business in the Near East depends upon such factors.

To begin with, it has already been mentioned that all three men are well educated, being ex-students of the American University of Beirut. Emile Bustani received one additional year of education at the Massachusetts Institute of Technology in the United States. Apart from the purely educational value, their attending the well-known A.U.B. has provided them with a wide base of contacts at all levels of business and government in the Arab world. The added fact that each is an ex-employee of the I.P.C. has considerably enhanced the development of C.A.T. as a modern company. Their experience with I.P.C. has not only provided them with sound training in the principles of scientific business management as practised in

the West, but it also has enabled them to develop invaluable working friendships with the senior personnel of this and other major oil concerns.

Politically wise, the complexion of these men continues to be a definite contributing factor to the success of C.A.T. It has been stated by a leading Arab business man that politics and contracting are inseparable in the Near East. Thus C.A.T. Management endeavors to maintain close working relationships with local and national Arab governments in order to expedite company operations. In addition, Mr. Bustani has chosen to associate the C.A.T. Company for business purposes with the British and the Americans as the leading foreign political forces in the Near East. This association, he feels, will promote the growth of indigenous Arab enterprise. The success of such policy has been born out by C.A.T.'s excellent experiences with I.P.C. and the Bechtel Corporation, to name only two. Sometimes, however, such alignment with foreign powers may actually be detrimental to C.A.T. activity, as evidenced by the anti-British regime of Shishakly in Syria which was reluctant to accord work to C.A.T. Admittedly, there were other factors involved as well, such as the low margin of profit deriving from government contracts, etc., coupled with the desire of that Syrian government to award contracts mainly to purely Syrian firms in order to promote national industry. Mr. Bustani believes, moreover, that his efforts in promoting the growth of Arab enterprises in cooperation with certain selected foreign interests will advance the cause of Arab unity.

The outcome of this idea, of course, awaits realization. Thus while Bustani acts as the principal C.A.T. liaison man for governmental affairs, Shammas and Khoury limit themselves largely to the internal job of running C.A.T. Company.

It should be noted in passing that the triumverate is wholly Christian, Bustani being a Maronite, Khoury a Roman Catholic, and Shammas a Greek Orthodox. Though the impact of religious differences is minimized in C.A.T. operations, nevertheless, certain ramifications may still be felt at times in the religion-conscious society of the Near East. This question shall be discussed more fully in the final chapter. In the Near Eastern business world where the Arabic, English, and French languages are used in near equal proportion, the fact that all three Partners control these languages fluently has certainly contributed to their success. The official languages of C.A.T. Company are Arabic and English.

It appears appropriate at this juncture to make mention of C.A.T.'s principal construction projects which have been successfully completed. More than any other peripheral comments, a composite view of these projects will provide the reader with a real understanding of the nature, purposes, and capabilities of C.A.T. Then, a delineation of C.A.T.'s current projects or jobs-in-hand should give the reader a feel of the present scope of company operations.

(A) Major Projects Executed by the C.A.T. Company<sup>14</sup>

I) Contracts Performed for the British Army During World War II:

- 1) Reinforced concrete fortifications in the Tripoli area of Lebanon, 1941-1942, value £.200,000.
- 2) Reinforced concrete fortifications in the Baalbeck-Bekaa area of Lebanon, 1941-1942, value £. 150,000.
- 3) Military roads in Syria and Lebanon, 1941-1945, value £. 500,000.
- 4) Aerodromes for the British Army in Syria and Lebanon, 1941-1944, £. 200,000.
- 5) Army camps constructed in Ras Baalbeck, South Lebanon, and Syria, 1941-1942, value £. 500,000.
- 6) General irrigation and drainage works for the British Army in Lebanon and Palestine, 1941-1944, value £. 100,000.
- 7) Tree-felling and conversion to timber for the British Army, Lebanon and Palestine, 1943-1945, value £. 1,000,000.

II) Contracts Performed for the Petroleum Companies:

- 1) Sixteen inch pipeline ditch and pump-houses from Kirkuk in Iraq to Tripoli, Lebanon, and from Jordan to Palestine on the Mediterranean coast for the I.P.C. (Iraq Petroleum Company), April 1944 to October 1949, value £. 600,000.

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14. This data was obtained from C.A.T. Company records filed in the Beirut Headquarters of C.A.T. Company.



- 2) thirty inch pipeline ditch from Kirkuk in Iraq to Banias, Syria on the Mediterranean coast for the I.P.C., sub-contracted from the Arabian Bechtel Company, October 1950 to April 1952, value £. 1,500,000.
- 3) Survey work and derrick construction for the I.P.C. in the Trucial Coast, post-war period.
- 4) Pump-house stations for the I.P.C. in Iraq (K3, T1), and in Syria (T2, T3, T4), value £. 280,000.
- 5) Construction of roads and aerodromes for the I.P.C. in Iraq, Syria, and Jordan, plus large-scale building programs for the I.P.C. in Iraq (H1, H2, H3) between 1947 and 1952, approximate value £. 1,100,000.
- 6) C.A.T. completed all pipework connections and filling and discharge lines in Banias, Syria, and in Baghdad and Basra, Iraq, and in Kuwait and Qatar for the I.P.C., post-war period.
- 7) Five gathering and degasing stations for the K.O.C. (Kuwait Oil Company), post-war period. These installations handle 60% of the field production and include separator, pipeline, pumphouse, and tankage facilities, as well as main transit lines from the field to the Company Tank Farm in Ahmadi. In addition, two revamps of two old gathering centers were completed to increase output by 10%. Approximate value £. 1,000,000.
- 8) Conversion of a cargo jetty to an oil jetty in Ahmadi, Kuwait for the K.O.C., 1952, value £. 75,000.
- 9) Erection of 22 oil tanks varying from 50,000 bbls. capacity

to 210,000 bbls. for the K.O.C. in Kuwait, 1951-1952, value £. 500,000.

- 10) Miscellaneous mechanical engineering and air-conditioning jobs for the K.O.C. as well as construction of buildings and bungalows for the K.O.C. in Kuwait, 1950-1954, approximate value £. 1,000,000. This included a bitumen producing plant handling 50 tons of straight or cut-back bitumen per day, and an air-conditioning plant for the Ahmadi residential and industrial area, including all plant assembly and chilled-water reticulation piping for approximately 600 tons of air-conditioning.
- 11) Building program for the Q.P.C. (Qatar Petroleum Company) in Qatar, post-war period. This included oil derricks and storage tanks, power houses, work shops, industrial buildings, cold storage buildings and central air-conditioning plants, administrative buildings and offices, housing schemes, etc. Approximate value £. 5,000,000.
- 12) Two hundred miles of pipeline from 6 inch to 34 inch constructed in Qatar and Kuwait, 1951-1954, value £. 500,000.
- 13) Miscellaneous mechanical work for the Q.P.C. including the overhaul of existing engines in field pumphouses 6000 H.P. and installation of plant complete; also the installation of engines and generators for a power-house at Umm Said to produce a total horse-power of 22,800. The largest engines assembled being 3 Harlan and Wolf engines, each 1500 H.P. combined gas and oil engines.



Value approximately £.50,000.

- 14) Complete oil field organization, handling of all civil, mechanical, and electrical work both during construction and maintenance of oil installations for the American Independent Oil Company (Aminoil) in the Neutral Zone. This was the first 30,000 bbls. per day producing project to be completed by one contractor. It involved a flow-line, a gathering center, degasing and pumping facilities from the field, tank foundations and construction, the construction and launching of a subline, and the construction of entire terminal facilities including a tank farm. Work terminated in 1953. Value approximately £. 500,000.
- 15) Construction of petroleum installations for the Aminoil Company in the Neutral Zone, 1953-1954, value £. 200,000.
- 16) Refinery maintenance work in Bahrein, 1953-1954, value over £. 100,000.
- 17) Aden Refinery Civil Engineering Works for the Anglo-Iranian Oil Company, 1953-1954, value £. 500,000.

### III) Other Miscellaneous Contracts Performed:

- 1) Construction of the "Azariah Building" in Beirut, Lebanon, 1951-1952, value £. 100,000.
- 2) Construction of buildings for the American University of Beirut, including a Faculty Apartment House, the Hospital addition, and the Engineering and Physics Building, 1951-1953, value £. 250,000.

- 3) Dual Military and Commercial Aerodrome for the Royal Air Force in Amman, Jordan. Contracted from the British Air Ministry, 1952-1953, value JD. 750,000.
- 4) Construction and asphaltting of extensive roads in Kuwait Town, 1951-1953; also the installation of an air-conditioning unit and the construction of the public health department of the Amiri Hospital; and consulting-engineering work for the University Town of Kuwait. Total value approximately £. 2,500,000.
- 5) Steel Sheds for Kuwait Government, value £. 100,000, and the Sheikh Hossa house in Kuwait, value £. 30,000.

#### IV) Trading Operations:

Trading operations were developed between 1941 and 1954 to cover the countries of Lebanon, Jordan, Syria, Iraq, Kuwait, Qatar, Bahrein, Aden, and Saudi Arabia, with extensions into Egypt and Libya.

#### (B) Major Jobs-in-Hand or Current Project of C.A.T. Co.

##### I) Projects in Lebanon:

- 1) Construction of a Private Lebanese School at Souk-el-Gharb, value approximately L.L. 1,000,000.
- 2) Construction of the "Saifi Building" in down-town Beirut for the purpose of replacing present C.A.T. Headquarters and for housing all C.A.T. Offices when completed. Approximate value L.L. 1,500,000.

**II) Projects in Syria:**

- 1) Little Contracting at present.

**III) Projects in Jordan:**

- 1) Little Contracting at present.

**IV) Projects in Iraq:**

- 1) The Kirkuk-Tasloojah Road contracted from the Ministry of Development of Iraq in January 1954. Approximately 90 kilometers of macadem road to be completed in 30 months, value approximately ID. 2,500,000.
- 2) Construction and completion of the New Royal Palace in Baghdad for the King of Iraq. Project began in June 1952 and is to be completed in 1956. Contracted from the Development Board of Iraq. Value approximately ID. 2,500,000.
- 3) The Greater Mussayeb Irrigation Scheme contracted from the Development Board of Iraq in February 1953. Expected completion date is February 1955. Value estimated at ID. 300,000 plus an additional ID. 100,000.
- 4) Construction on the Euphrates near Nassiriyeh of several water control structures for irrigation and flood control. Contract awarded by the Iraqi Development Board in February 1954 and project expected to be completed in two years. Approximate value ID. 650,000.
- 5) Construction of station buildings including schools, mess halls, etc. as previously undertaken for the I.P.C. at

stations K3 and T1. Contracts awarded by the I.P.C. on a unit/fixed price basis. Value ID. 35,000.

V) Projects in or About the Arabian Peninsula:

1) Kuwait:

- a) Extension and completion of the University Town of Kuwait. Contracted from the Kuwait Development Board with C.A.T. as consulting-engineers and architects only. Value approximately £. 2,500,000.
- b) Erection of two Water Reservoirs of 15 million gallons capacity each. Contracted from the Kuwait Development Board with C.A.T. as contractor, value £. 1,100,000.
- c) For the K.O.C. at Ahmadi the bi-annual overhaul of Refinery; pipe-line and tankage work; fire-protection scheme on jetty; civil work for water evaporators; chilled-water line for air-conditioning; Construction of a Sand Lime Brick Factory. Total value approximately £. 60,000.

2) Qatar:

- a) Various construction at Doha for the Government including a State Hospital, Police Fort, Commandant's House, garage and workshop, jail, living facilities for one-hundred men, a jetty extension, a sea water pump house, high and low level line ditch, Peeman and "B" type houses for the State Hospital Staff, a Nurses' Hostel, power house extensions, etc. Approximate value £. 1,500,000.

- b) Construction of a guest house and personal house for Sheikh Ahmad at Doha.
- c) Construction for the Shell Oil Company at Doha of a dry store, repairs to jetty, building of 3 cast iron sea water lines, steel high-level storage tanks, circular sea water tanks, living accommodations at Doha.
- d) General construction at Dukhan for the Q.P.C. This includes derrick foundations and steel derricks 150 feet high for petroleum extraction.
- e) Construction at Umm Said for the Q.P.C. of tank bases, a 20 inch pipe line ditch, MP married quarters, a power house, a Government House, a distillation plant, pre-fabricated houses, a topping plant or refinery, messes and commissariats, a steel jetty, pump houses, a hospital, swimming pool, etc. Approximate value £. 1,000,000.

3) Neutral Zone:

- a) General construction at Wafra and Mina Abd for Aminoil.

4) Bahrain and the Trucial Coast:

- a) Miscellaneous construction for the oil companies and governments.

5) Aden:

- a) Completion of Aden Oil Refinery Works, etc.
- b) Construction of 1512 flats for a Government Housing Scheme, value £. 800,000.

VI) Trading Operations:

Trading operations continue to be actively conducted in Lebanon, Jordan, Syria, Iraq, Kuwait, Qatar, Bahrein, Aden, and Saudi Arabia, with extensions into Egypt and Libya.

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With this broad historical view of the C.A.T. Company in mind together with an idea of C.A.T.'s major past and current projects, we are now prepared to examine in some detail the existing pattern of organization and operations of the Company.

ΜΕΡΑΜΟΣ Τ.Α.Σ

ΑΔ ΟΥ ΑΔΑ

ΜΟΤΑΣΙΜΑΔΩΟ

ΥΠΗΡΑΜΟΣ ΔΙΟΙΚΗΤ ΔΥΑ ΟΥΤΑΡΑΤΥΟΣ ΑΗΤ

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## CHAPTER FOUR

### THE C.A.T. COMPANY: A BROAD VIEW

#### A. Organization

The Contracting and Trading Company, as the accompanying organization chart depicts, receives its directive force from a Board of Directors composed of three men who are also equal Partners and co-Owners of the Company. The Chairman of the Board of Directors is Mr. Emile Bustani, and Mr. Abdulla Khoury and Mr. Shukri Shammam are co-Directors. The principal functions of the Board under the leadership of the Chairman are three: (1) to establish broad principles of operating policy and to control Company activities, within the framework of these principles; (2) to determine financial policy, i.e. to authorize capital expenditure and the disposition of profits or losses incurred in the course of business; (3) to ensure that the Company's legal obligations are fulfilled. In addition, the Board appoints the Company's staff of senior personnel. The Directors also determine policy for the respective departments, and decide upon the creation of new departments together with whatever reorganization is necessary of existing departments to advance the successful evolution of the Company.

The C.A.T. Company is divided into three main divisions following logically from its principal divergent fields of activity: (1) Contracting (2) Trading (3) Administration. The three men who compose the Board of Directors also hold various executive positions in the leadership of each of these primary divisions. One of these three men, Abdulla Khoury, has been designated as Managing Director of overall Company activities. In this capacity he is responsible for supervising the implementation of broad operating and financial policy laid down by the Board of Directors.

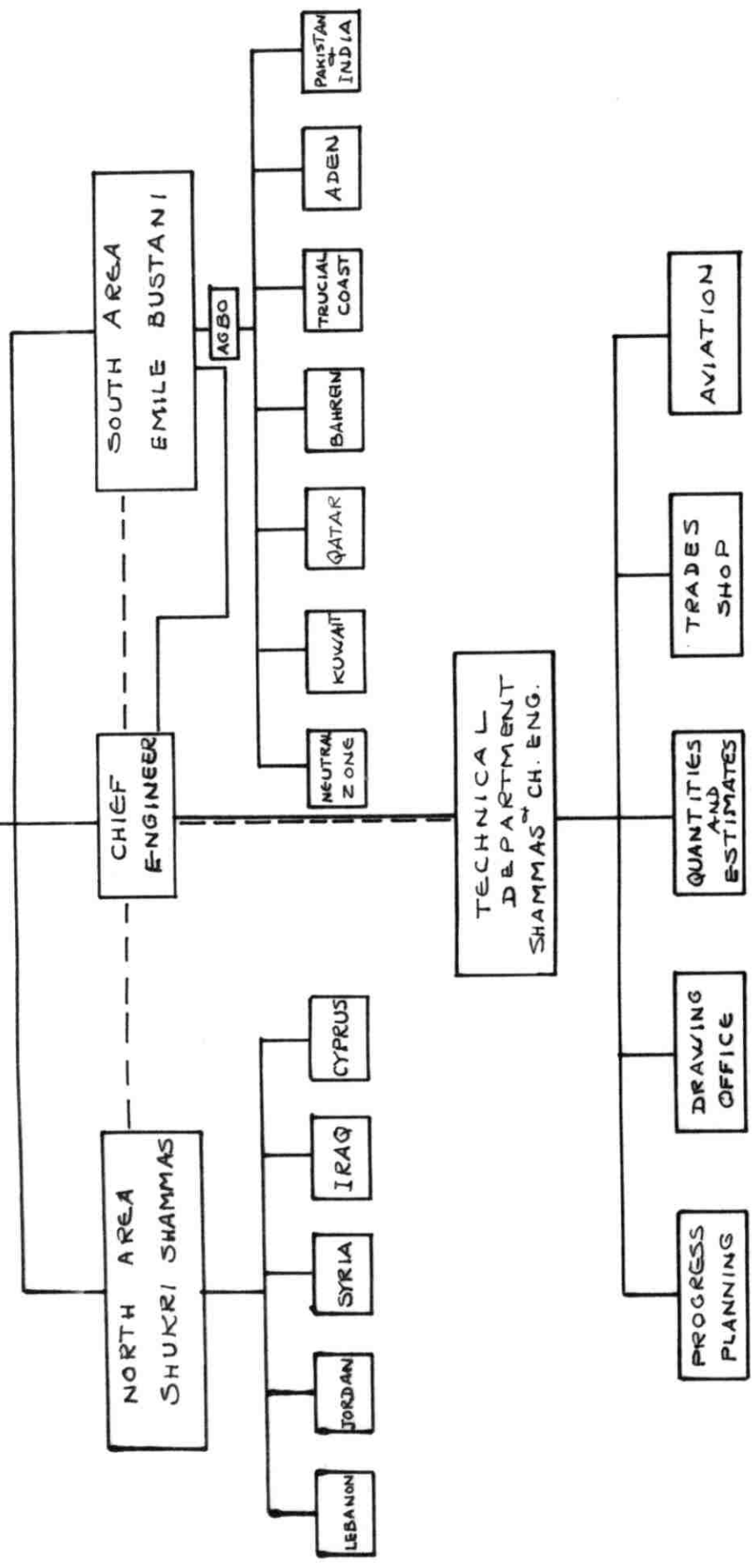
As shown on the Company organization chart, the Contracting Division has been sub-divided into two major Areas: (1) the North Area, and (2) the South Area. Broad executive direction is supplied to the Contracting Division as a unity by Emile Bustani who is renowned, through his pre-eminence and inspiring confidence, as C.A.T.'s major contract-getter. However, executive supervision over Contracting is divided between Shukri Shammam and Emile Bustani. Thus Shukri Shammam can be said to occupy the position of General Manager over the North Area of Contracting, while Emile Bustani fills the position of General Manager over the South Area of Contracting. Under the existing plan of organization executive direction is supplied to both the Trading Division and the Administrative Division of the Company by the same person, Abdulla Khoury. In effect, therefore, Abdulla Khoury acts as General Manager over both the Trading and Administrative Divisions of C.A.T. Company. Thus a workable chain of command based upon a unity of command at

C.A.T. CONTRACTING DIVISION

C.A.T. COMPANY  
CONTRACTING DEPTS.  
OF THE  
BEIRUT HEADQUARTERS  
AND THE  
AREAS OF OPERATIONS

CONTRACTING  
 E-MILE BUSTANI  
 SHUKRI SHAMMAS

LEGAL



the level of top management has been established.

1. Contracting: Planning and control of construction operations have been facilitated by the sub-division of Contracting into North and South Areas. The North Area includes the countries of Lebanon, Jordan, Syria, Iraq, and Cyprus, while the South Area covers the Arabian Gulf States of Kuwait, Qatar, Bahrein, the Trucial Coast, and the Neutral Zone, as well as Aden, Pakistan, and India. This phase of the C.A.T. Company has grown so sizeable in post-war years that it would be virtually impossible to delegate overall supervision to one person, given the existing system of C.A.T. administration which burdens senior executives with excessive responsibility. The Headquarters from which Contracting is directed are C.A.T.'s Beirut offices located in down-town Beirut and at Hazmieh, a suburb of Beirut. Currently, the head offices of the North Area of Contracting supervised by Mr. Shammaas are located at Hazmieh, while Mr. Bustani's South Area departments are in C.A.T.'s Khan Antoun Bey Beirut office. All in all there are approximately one-hundred employees engaged in both headquarters of the Contracting Division. The various technical and functional departments which exert functional authority over both Areas of Contracting are dispersed, most being located in Hazmieh but some in Khan Antoun Bey. Supervision over this Technical Department is administered jointly by Mr. Shammaas and the Chief Engineer for C.A.T. This Technical Department includes about fifty employees of various categories and

professions. When the construction of the Saifi Building in down-town Beirut is completed, it is planned to be the Headquarters of all C.A.T. Contracting departments. Such centralization will advance unity of command and coordination of field operations with the functions of the home office.

The duties and responsibilities of the General Managers in charge of Contracting cover the whole spectrum of activities involved in the planning and control of diverse construction projects. Before enumerating these specific duties, it must be borne in mind that the three main factors involved in the execution of a construction project are: (1) the allocation to the job of the plant, machinery, and vehicles required to perform the work involved; (2) the purchase of the necessary building materials; (3) the allocation of senior engineering and administrative staff together with the skilled and semi-skilled artisans and labor personnel to execute the job. Once a particular contract has been awarded to C.A.T., it devolves upon the General Manager of the Area concerned to direct the execution of these main phases of the project.

As and when information of any proposed works in which the Company might be interested become known, either from notices published in newspapers or periodicals or by direct invitation from prospective clients, the General Manager will study the proposition. He will then decide, in consultation with his senior planning staff, upon the desirability of tendering for the proposed contract. If the decision is favorable and a tender is obtained, then the General Manager must determine the

value of the tender, again in consultation with the heads of the various functional or specialist sections of the Technical Department. Tenders are generally priced and contracts awarded on a "unit/fixed price" basis which provides for a defined unit of work and materials at a fixed rate per unit with a margin of profit included therein, usually ten percent. From the composite sum of these unit prices given in the Bill of Quantities of the contract, the total value of the contract is obtained. In such contracts a time limit is generally imposed for the completion of the project. Only in certain special instances, when the "unit/fixed price" basis proves impracticable, does the "cost reimbursement" basis come into play. This is usually with respect to secondary jobs undertaken for oil companies and similar large concerns.

In order of importance, the principal factors which condition the pricing of a contract are the following: (1) the nature and scope of the works as described in the tender; (2) the availability and cost of staff and the degree of skill and output of the available labor force; (3) availability and cost of construction materials, local and foreign; (4) availability and cost of the plant, machinery, and vehicles necessary to perform the work; (5) availability of working capital; (6) the client: his reputation, solvency, potentiality for continuous work, post treatment of contractors, stability of management, and previous relations with said client if such exist, i.e. personal, political, etc.; (7) possibilities for sub-contracting; (8) questions of transport and supply on the



job; (9) location and availability of public utilities such as facilities for power, water, and communications; (10) questions of personnel accommodation such as location of camps, water and food supply, security, etc.; (11) other tangential aspects of the job such as weather, climatic, and terrain conditions, etc.

All these aforementioned factors are taken into consideration and prices for the work are determined by C.A.T. within the general conditions of the contract as laid down by the client. These prices are arrived at either on the basis of previous experience with the costs of similar work or operations or, if these are unknown, the prices are computed by an analysis and assessment of the value of the work. The resultant estimates are then collected together in the Bill of Quantities to obtain the total value of the proposed works. This estimate is submitted to the client who, if the tender is in open competition, will decide by comparison with other tenders to which contractor the contract should be awarded. If, by reason of keen and competitive tendering, or by satisfactory negotiation between the C.A.T. Company and the client concerned, it is agreed that C.A.T. shall perform the work, then the contract enters the dual phases of project planning and execution.

With job implementation underway, the General Manager sees that a definite plan of execution is drawn up for the project. In this plan the job will be broken down into its various phases and the sequence of work determined. Once the plan and timetable of execution have been laid out, the General



Manager must work in close coordination with the functional departments concerned to see that the job site receives on schedule its necessary supplies of plant and equipment, construction materials, and complement of personnel. In addition, there are several matters pertaining to the execution of the job which need supervision. Principal among these are: (1) the continuous supply of the job with respect to plant, materials, and personnel; (2) the financing of the job; (3) the maintenance of good relations with the client, local governments, and the general public; (4) the proper settlement of legal matters as they arise; (5) the delegation of duties and responsibilities to senior personnel appointed to the project; (6) the concern for general matters relating to the job such as camp problems, questions of local supply, wage levels, salaries, and bonuses for the personnel, the allocation of sub-contracts if desired, plus the countless other details relegated to management for decision in connection with job execution.

In principle, both Mr. Shamma and Mr. Bustani, as General Managers of the North and South Areas of Contracting respectively, adhere to the aforementioned duties and responsibilities. However, whereas Shamma tends to these matters directly for his area, Bustani, because of his wider duties as Chairman of C.A.T. and as a Deputy in the Lebanese Parliament, has delegated certain of his powers to a staff of assistants.

The first step in this direction was the establishment in 1948 of the Arabian Gulf Beirut Office, commonly referred to as the A.G.B.O. This office was created to act as a liaison

office between the contracting projects in the Arabian Gulf States which fall under Bustani's jurisdiction and the Beirut Headquarters. In other words, the A.G.B.O. is a coordinating center for all contracting operations in the Arabian Gulf. Because of their long distance from Beirut, projects in these more remote areas obviously require such a special center as A.G.B.O. to expedite urgent administrative and technical matters. The A.G.B.O. concerns itself primarily with the following activities with respect to Contracting in the South Area: (1) Personnel, the recruitment, testing, grading, and appointment thereof to project sites; (2) Travel of personnel to and from the areas of operation; (3) Stores supplies, the allocation thereof to project sites; (4) Accounting matters pertaining to the various projects and personnel stationed thereon. Thus the A.G.B.O. exerts a degree of functional control over contracting operations in these countries.

To further unburden Bustani of secondary engineering and administrative duties, a Chief Engineer was appointed for C.A.T. in 1952. His line and functional authorities are indicated on the organization chart of the Contracting Division of C.A.T. In his line capacity, the Chief Engineer acts as personal assistant to Bustani and issues orders for the South Area based on the policies laid down by Bustani as General Manager. Aside from these engineering and administrative duties, the Chief Engineer is responsible for all C.A.T. engineers, their appointments, duties, salaries, etc. Finally, this officer shares in the direction of the Technical Department. In addition, a Chief

Technical Inspector has been assigned to the Arabian Gulf Area to act as a personal representative and assistant to Emile Bustani in his capacity as General Manager of the South Area.

The Technical Department of the Contracting Division has functional authority over all construction operations in so far as its pronouncements carry the full sanction of higher Management. This department is supervised by Mr. Shammās of the North Area of Contracting and by the Chief Engineering of the South Area. Specialist services are rendered by the following sections of the Technical Department: (1) the Quantity Surveying and Estimation Office concerns itself with the pricing of tenders, the measurement and valuation of executed works in accordance with the terms of contracts, and the preparation of statistical details for engineering costs as a basis for job finance; (2) The Drawing Office produces all drawings pertaining to construction projects, architectural plans, and other technical data requiring graphic reproduction; (3) The Progress Planning Office directs the planning of the various construction projects and assesses achievements against pre-established standards of performance and programs of action; (4) the Trades Shop trains or tests new employees at the artisan level with a view to them becoming competent tradesmen in those skills or trades which C.A.T. finds to be in demand on its construction sites; (5) the Aviation Section transports C.A.T. personnel and equipment to project sites by the medium of C.A.T.'s five privately owned aircraft and chartered services. Each of these functional sections of the Technical Department has its own

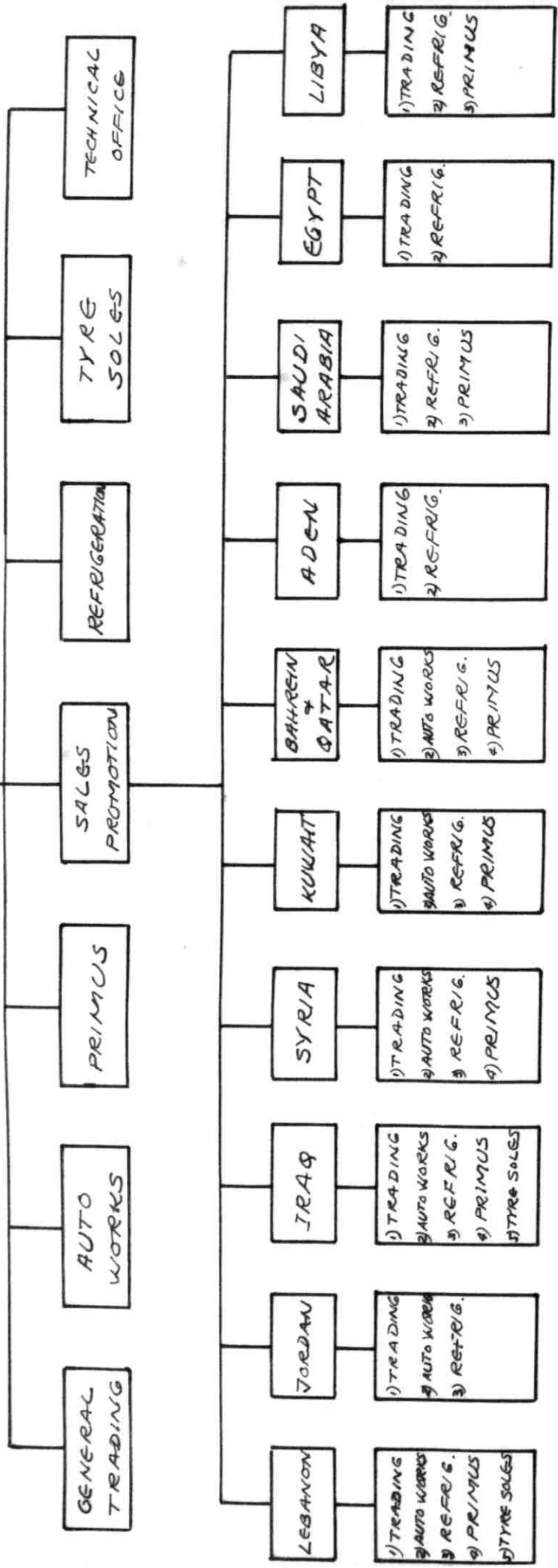
C.A.T. TRADING DIVISION

C.A.T. COMPANY  
 TRADING DEPARTMENTS  
 OF THE  
 BEIRUT HEAD QUARTERS  
 AND THE  
 AREA BRANCH OFFICES

TRADING  
 ABDULLA KHOURY

ADVERTISING

LEGAL



chief; therefore it is Management's job mainly to supervise and render policy decisions with respect to their operating procedure.

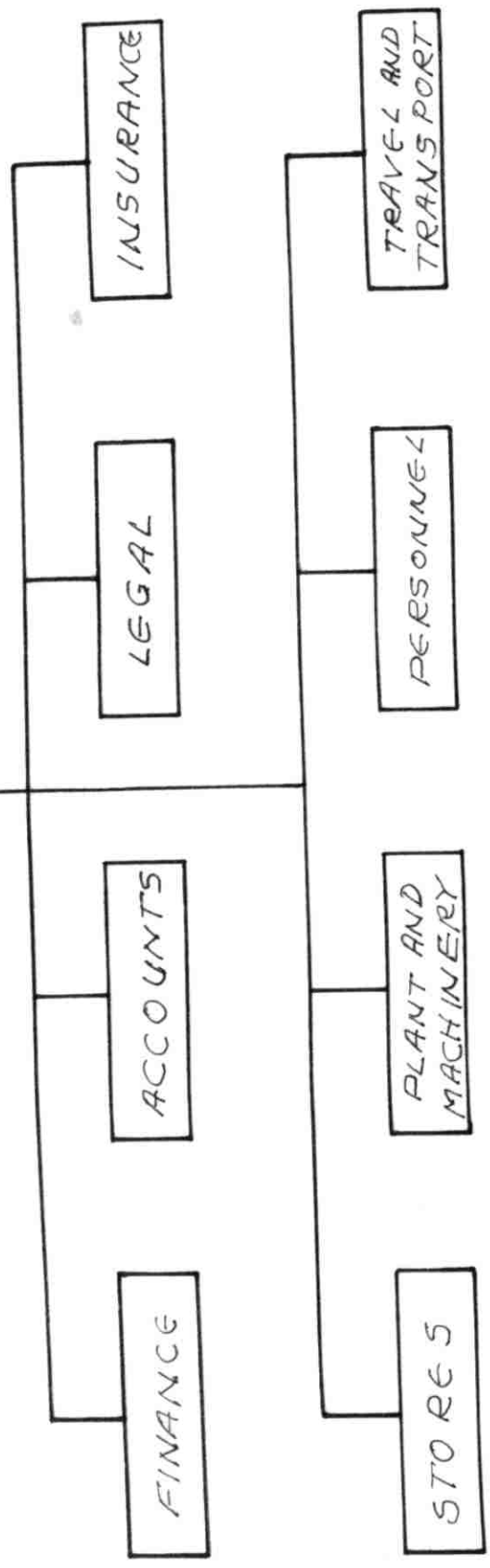
2. Trading: The Trading Division of C.A.T. Company receives its executive direction from Mr. Khoury who thus acts as General Manager of Trading. The central offices of the Trading Division are located in C.A.T.'s Khan Antoun Bey building in down-town Beirut. These head departments, as indicated on the organization chart for Trading, exert both functional and line authority over the Area Branch Trading Offices. Besides a Coordinating Staff and a Technical Office, there are located in Beirut offices for General Trading, Autoworks, Tyresoles, Primus, and Refrigeration. There is also an Advertizing Office. The approximate number of employees in these Trading headquarters is fifty.

C.A.T.'s trading activities are of a widely varied character. They include certain companies subsidiary to C.A.T. as well as agencies representing European and American manufacturers. Principal among the subsidiary companies are Autoworks and Tyresoles. Autoworks is concerned with the sale and maintenance of Roots vehicles and automotive equipment in Lebanon, Syria, Jordan, Iraq, Kuwait, Bahrein, and Qatar. Tyresoles is a company which repairs and recaps used tires, and it currently operates in Lebanon and Iraq. In addition, C.A.T. Management has interests in several other concerns in Lebanon and elsewhere in the Near East. However, these financial arrangements which involve senior C.A.T. personnel but not the

C.A.T. COMPANY  
FUNCTIONAL  
DEPTS  
OF THE  
BEIRUT  
HEAD QUARTERS

C.A.T. ADMINISTRATIVE DIVISION

ADMINISTRATION  
ABDULLA KHOURY





C.A.T. Company are outside the scope of this thesis.

The trading establishments which C.A.T. maintains throughout the Near East include agencies for the distribution of mechanical equipment and machinery, refrigerative units, Primus stoves, agricultural machinery, and diverse types of building materials such as steel, iron, cement, timber, paints, windows, scaffolding, insulation, asbestos, ad infinitum. Electrical equipment is distributed through the agency for the Crompton-Parkinson Company of England. C.A.T. also acts as distributors of certain textile goods. These trading operations are conducted on both a wholesale and retail basis, serving consumers throughout the Arab world.

5. Administration: The Administration Division of C.A.T. Company is supervised by Mr. Khoury upon whom, therefore, can be confirmed the title of General Manager of Administration. This division renders specialized services largely of a technical nature to both Contracting and Trading establishments, though most of its services go to the former. The departments of Administration are: (1) Finance, (2) Accounts, (3) Legal, (4) Insurance, (5) Stores, (6) Plant and Machinery, (7) Employment and Personnel, and (8) Travel and Transport. These diverse departments maintain functional authority over C.A.T. operations by reason of their special services which carry complete Management sanction.

Matters involving top-level company financial planning and control belong to Management as a unity. However, Mr. Khoury



enjoys the greatest influence in this sphere of company activities. The Accounts Department is directed by a Chief Accountant responsible to Mr. Khoury. C.A.T. accounting transactions for both Contracting and Trading are coordinated from this head office through Area Branch Accounting Departments. Legal matters concerning both Contracting and Trading are handled by a Senior Attorney and his staff located in Beirut headquarters. To handle local legal issues on sites of operation outside Lebanon, separate legal staffs composed of nationals are maintained by C.A.T. They are responsible to their respective Area and Project Managers, but remain in contact with Beirut for legal advice. Insurance of C.A.T. property is handled by a Chief Insurance Officer and his assistants in Beirut. But there are also area insurance staffs to attend to local insurance policies and claims arising therefrom. These staffs are functionally connected to Beirut.

Stores for C.A.T. are directed by a Chief Storekeeper in Beirut who reports directly to Mr. Khoury. Stores Beirut acts primarily as a Maison office which expedites the procurement and flow of stores supplies to Area Branch Stores located at construction sites and at trading centers. The Plant and Machinery Department is headed by a Plant Manager who reports to Khoury. It is the task of the Plant Manager to plan and control the purchase and flow of plant, machinery, and vehicles to sites of operation when required. The Employment and Personnel Office under the supervision of the Chief Personnel Officer procures, tests, and engages all employees of C.A.T., and directs their placement within the Company. However, with respect to

the selection and placement of senior personnel Management naturally exerts considerable discretion. Personnel records, contracts, etc. are maintained by the Personnel Office in Beirut. The travel and transport of personnel and supplies to and from areas of C.A.T. operations outside Lebanon is the responsibility of the Chief Transport Officer. He likewise reports directly to Mr. Kheury.

Before concluding this description of the C.A.T. Organization, a few comments are in store. Firstly, one notices the over centralization of authority and responsibility in the hands of the three Owners-Partners-Directors-Managers. The obverse of this centralization of command over C.A.T. activities is the general reluctance of the Management to delegate any large measure of decision-making power to the senior executives. These comments will be amplified more fully in the critique section of the final chapter. It need only here be pointed out that the continued existence of such a state of affairs will lend weakness to the organization and administration of the Company as it grows in size.

## B. Operations

1. Contracting: C.A.T. Contracting operations are organized on an area, country, and project basis. Area organization and administration involving General Managers at the head of each Area, North and South, has already been discussed. Directly under the supervision of the Area General Managers in

the chain of command or line of authority come the Managers of Contracting in each country where C.A.T. has construction work. As will be seen more clearly from the ensuing case study of C.A.T. Iraq, the country branch offices directed by these Managers act as services and control centers through which Management Beirut can direct all phases of Contracting operations in the countries concerned. In addition, where there are actual construction works going on, a Project Manager or Resident Engineer is in charge of said works. As anomalous as it may sound, under the present administrative system these Project Managers also report directly to their respective area General Managers in Beirut, circumventing, in effect, the country Managers. It should thus appear that there are two lines of command impinging upon project management, one from headquarters Beirut and another from the country branch officer. In actual fact, these country branch offices render only functional direction or special services largely of a technical nature to the individual projects. The lines of command stemming from the area General Managers in Beirut to their respective Project Managers are not, therefore, crossed by lines of command from the country branch office Managers. Functional direction, in addition to that rendered by the country branch offices, is supplied to the various projects by the Technical Department and the Administrative Division of C.A.T. located in Beirut.

In general, the principles of Contracting as undertaken by C.A.T. apply to operations in both Areas. Since the same pattern of organization and administration prevails throughout

the North Area, I have selected for special study in Chapter Five the Kirkuk Road Construction Project. Then, with an understanding of C.A.T. operations in Kirkuk, one may, by analogy, claim a comprehension of other Contracting operations in Mr. Shammās's North Area. However, the pattern of Contracting which has evolved in the South Area under the guidance of Mr. Bustani does differ in certain marked respects from that in the North Area. It will, therefore, be worthwhile to devote some attention to Contracting in the South Area, especially with respect to the Arabian Gulf States.

The principal factors which differentiate Contracting in the Arabian Gulf States from that in Lebanon, Jordan, Syria, and Iraq are: (1) the greater permanence of the work, most of the contracts being from the oil companies and local governments; and (2) greater regional autonomy in the administration of these works.

In Qatar the C.A.T. Company is the only foreign contracting firm, and it has had continuous construction work with the Qatar Petroleum Company since 1948. The annual volume of work since that date has averaged E. 800,000. As the foregoing list of projects performed by C.A.T. indicates, all Q.P.C. installations in Qatar have been built by C.A.T., no mean undertaking. The two significant clients of C.A.T. in Qatar are the Q.P.C. and the Government. From Q.P.C. the C.A.T. Company receives direct contracts by which it agrees to execute jobs at a pre-agreed schedule of rates. Under current arrangements the Q.P.C. provides the heavy plant and machinery needed on the job plus



imported materials such as cement, steel, timber, etc. C.A.T. provides the technical staff, imported artisans, and some vehicles and light machinery, together with such locally obtained building materials as aggregates, sand, and stone. C.A.T. also maintains its own calcining plant for producing gypsum and a tile plant for fabricating terrazzo tiles. Unskilled cooly labor is obtained by C.A.T. through a local contractor, the Darwische.

C.A.T. is in partnership with the D.D.P. (Doha Development Project, Qassem & Abdulla Darwische Engineering Department) for the purpose of executing development projects for the Government of Qatar. This agreement provides that plant, machinery, and materials shall be supplied by C.A.T./Darwische, imported artisans by the A.G.B.O. of C.A.T., and local cooly labor by Darwische. C.A.T. supplies the engineering and administrative direction necessary to execute the works, while investment is joint C.A.T./Darwische. A Resident Engineer in Doha is responsible.

The prospects for continued work for C.A.T. in Qatar exist for several years to come. Though construction work for the Q.P.C. is beginning to level off due to the near completion of necessary facilities, development work for the Government is on the increase. Of the estimated ten million pounds sterling in annual oil royalties accruing to the Government, one-fourth is allocated to development schemes. Since by agreement with the Ruler C.A.T. is the only foreign contracting firm in Qatar, and since competition from local contractors is negligible, the Company must maintain a sizeable staff to cope with the volume of work. Thus total C.A.T. imported personnel in and about Qatar

ranges in the neighborhood of six hundred. This includes engineers, administrators, and artisans. A Resident Engineer situated in Umm Said is responsible for all C.A.T. operations with respect to Q.P.C. jobs in Qatar and the Trucial Coast. He reports directly to Bustani on matters involving major works, but otherwise deals with the Chief Engineer and the A.G.B.O. Due to four factors, the permanence of the C.A.T. organization in Qatar, the low level of C.A.T. investment in plant and materials, the remoteness of this area from Beirut, and Bustani's confidence in his Resident Engineers, this area has been accorded a greater degree of autonomy than its northern counterparts. Higher efficiency and effectiveness in the organization and execution of works appear to be the end results of this effort toward introducing regional decentralization into C.A.T. Company.

The work potential for C.A.T. in Kuwait and in the Neutral Zone is at least on a par if not in fact superior to that of Qatar. Since 1948 C.A.T. has completed work in this area whose value has averaged E.3,000,000. per year. Most of the projects were performed for the area's two major oil companies: the Kuwait Oil Company and the American Independent Oil Company. However, in recent years with increased state revenues from oil royalties becoming available for economic development, C.A.T. is doing a greater amount of work for the Government of Kuwait.

C.A.T. currently has large scale work in Kuwait town, at Ahmadi, and some minor jobs in the neutral zone. By Kuwait law which requires that all foreign concerns operating in Kuwait

be associated with a Kuwaiti partner, C.A.T. has developed partnership agreements to execute its contracts. With respect to its work with the K.O.C., C.A.T. contracts are generally of the lump sum type based on the latter's own measurements of the work specified, or on an estimate of works required to fulfill specified requirements. This type of contract is used principally in a situation where the works are of a mechanical engineering nature which can be precisely valued and where competition for jobs is keen. Unlike Qatar, there are several other international contractors competing with C.A.T. for the larger projects in Kuwait. Current arrangements with the K.O.C. provide that C.A.T. supplies the administrative and technical organization, labor, and plant, machinery, and vehicles required on the jobs, while K.O.C. supplies the necessary building materials. As regards its contracts with the Development Board of the Government of Kuwait for executing development projects, C.A.T. in this instance provides all the labor, plant, and materials. Thus C.A.T. must maintain a sizeable investment in plant and equipment in Kuwait. Skilled labor and senior staff personnel are imported, being mainly Lebanese and Palestinians, while cooly labor is obtained locally. In addition, a few Britishers are employed to perform the highly technical aspects of C.A.T.'s work, but these are rapidly being replaced by Easterners as the latter become trained.

The Chief Technical Inspector who represents Emile Bustani in the Arabian Gulf in his capacity as General Manager of the South Area of Contracting is ultimately responsible for



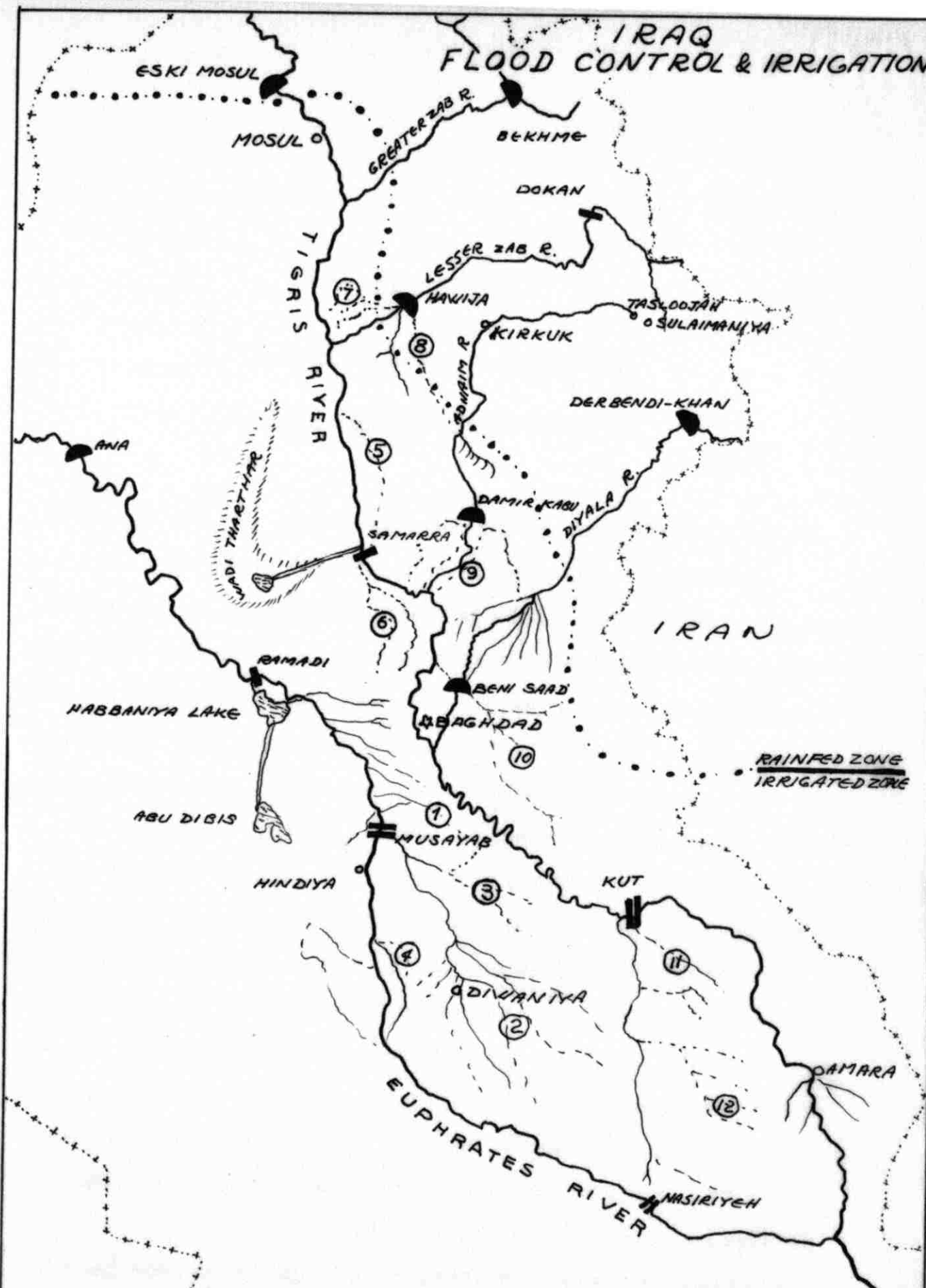
all C.A.T. operations in Kuwait. Next in rank is the Company Agent who is responsible for all administrative matters together with C.A.T.'s relations with the Kuwaiti Government authorities. In addition, there is one Resident Engineer in charge of all C.A.T. works with K.O.C. and Aminoil in Ahmadi and the Neutral Zone. A second Resident Engineer directs C.A.T. projects in and about Kuwait Town which have been contracted from the Government. At present, C.A.T.'s labor force in Kuwait totals some four-hundred men, about equally divided between imported and locally engaged personnel, but this number is expected to rise sharply as the pace of work increases.

In several respects C.A.T.'s operations in Kuwait bear a close resemblance to those in Qatar. Principal among these is the permanence and continuity of work which is mostly for oil companies and government development projects. This obviously has done much towards the growth of good Company organization in these areas. Secondly, it is apparent that greater regional autonomy obtains in the Arabian Gulf operations than elsewhere in C.A.T. Besides the reasons already enumerated, this may in part be explained by the presence in the Gulf of the Chief Technical Inspector who, as Bustani's representative, is able to take independent action on most administrative and technical matters. It is only with respect to major policy decisions involving large contracts and heavy financial investment that reference is made to Management Beirut. In Kuwait and Qatar alike, this effort towards decentralization of command and responsibility with a concurrent development of area autonomy has been noticeably rewarded by a greater effectiveness of

organization and efficiency of operations.

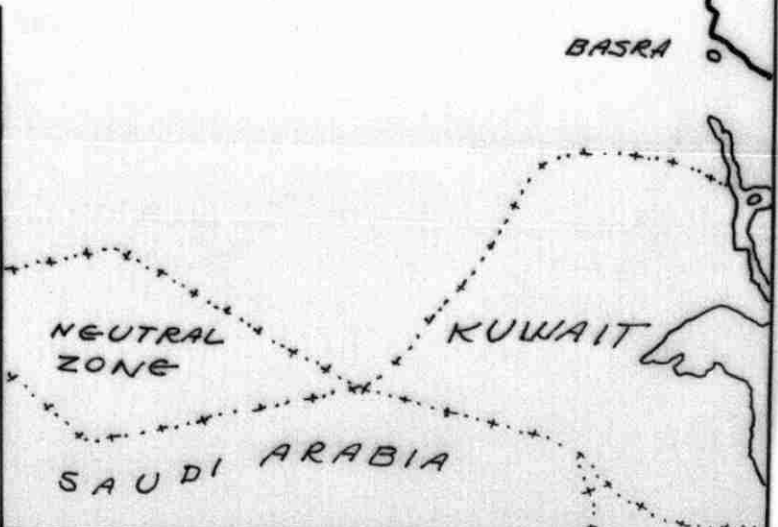
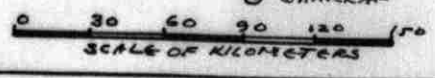
2. Trading: C.A.T. Trading operations are organized on a country basis. That is, in each country where trading is carried on one or more major cities have been selected as trading headquarters. In each such city a Trading Branch Office has been established. These branch offices are placed in charge of Trading Managers to whom are assigned small staffs of personnel. The Trading Managers are responsible for all trading matters in their respective areas or countries, as the case may be. They, in turn, report directly to Abdulla Khoury in Beirut on their activities. The branch offices receive functional or technical direction from the functional departments of the Trading and Administrative Divisions in headquarters Beirut.

# IRAQ FLOOD CONTROL & IRRIGATION



## KEY

- PROPOSED DAM SITE
  - DAM & BARRAGE UNDER CONSTRUCTION
  - EXISTING BARRAGE
  - EXISTING CANAL
  - PROPOSED CANAL
  - RIVERS
  - INTERNATIONAL BOUNDARY
- NEW IRRIGATION PROJECTS**
- |           |                  |
|-----------|------------------|
| ① MUSAYAB | ⑦ TIKRIT         |
| ② HILLA   | ⑧ ISHADI         |
| ③ BABIL   | ⑨ HAKHMUR        |
| ④ SHAMIYA | ⑩ HAWIJA         |
|           | ⑪ ADHAIM         |
|           | ⑫ LOWER NAIRAWAN |
|           | ⑬ DUTAILA        |
|           | ⑭ GHARRAF        |



## CHAPTER FIVE

### C.A.T. IN IRAQ: A CASE STUDY

#### A. Economic Development in Iraq

Of all the countries included in our delimitation of the Arab Near East, Iraq is that country wherein economic development is progressing most rapidly. Consequently, it is that Near Eastern country most worthy of study from the point of view of regional development. It is herewith appropriate, therefore, that some mention be made of current development activities in Iraq as a prelude to describing the role of C.A.T. therein. However, since the focus of this thesis is the C.A.T. Company proper, the ensuing analysis will perforce be superficial and generally inadequate to satisfy the interest of even the average reader in the subject. The attempt will be made merely to describe conditions only in so far as this will aid the reader to envisage the role of C.A.T. in the total context of Iraqi development. For more detailed information the reader will have to consult the vast amount of literature available in book and pamphlet form on the subject.

Economic development in Iraq is the unique example in the Near East of planned development buttressed by adequate

financial resources which permit realization of these plans. Until the Second World War and its aftermath accompanied by a greatly heightened demand in the West for all available petroleum products, Iraqi development remained at a bare minimum. Actually, it has been only in very recent years that Iraq's financial resources have permitted large-scale development as a result of increasing oil revenues brought about by: (1) the fifty-fifty sharing of the profits agreement between the Iraqi Government and the Iraq Petroleum Company, effective January 1, 1952; (2) the opening of the thirty inch oil pipeline from Kirkuk to the Mediterranean port of Banias in April, 1952 (constructed jointly by Bechtel Company and C.A.T. Company); and (3) the recent expansion of the oil field in Basra.<sup>15</sup>

From these eventualities, oil royalties increased from ID 3.2 million in 1949-1950 to ID 51 million in 1953-1954 and are expected to reach ID 60 million by 1955. Seventy percent of all oil revenues accruing to the Iraqi Government are allocated to the Development Board for economic development under Law No. 6 of February 1952, retroactive to April 1, 1951. Thus the Iraqi Government has available over ID 40 million annually for economic development.<sup>16</sup>

With this vast augmentation in finances for development,

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15. United Nations Relief and Works Agency, Quarterly Bulletin of Economic Development, Number 11, July 1954. UNRWA, Beirut, 1954, p. 31.

16. Ibid., p. 31.

the Iraqi Government in October 1950 officially requested the International Bank for Reconstruction and Development to make a thoroughgoing economic study of the country. This study was completed and published in book form in 1952. The Iraqi Government in the same year then revised its own Five Year Plan (calling for ID. 65.8 million expenditure for 1951-1956) on the basis of the Bank's recommendations to the new Six Year Plan calling for the expenditure of ID 155.4 million during the period April 1, 1951 to March 31, 1957. This new Six Year Plan envisages the following program of expenditures:<sup>17</sup>

The Development Program of Iraq (in millions of Dinars)

<u>Projects</u>	<u>1951/52</u>	<u>52/53</u>	<u>53/54</u>	<u>54/55</u>	<u>55/56</u>	<u>56/57</u>	<u>Total</u>
1) Irrigation Projects:	3.02	7.10	10.84	11.95	10.34	10.12	53.37
2) Land Re- clamation:	1.69	3.45	4.15	4.40	4.60	4.70	22.99
3) Communica- tions:	2.07	3.80	4.70	5.30	5.45	5.45	26.77
4) Buildings:	2.37	2.65	3.10	3.30	3.30	3.50	18.02
5) Industry & Mining:	.05	3.00	5.00	6.00	8.00	9.00	31.05
6) Administration & Studies:	.17	.46	.60	.65	.65	.65	3.18
<b>TOTAL</b>	<b>9.36</b>	<b>20.46</b>	<b>28.39</b>	<b>31.60</b>	<b>32.34</b>	<b>33.22</b>	<b>155.37</b>

17. Ibid., p. 51.



Responsibility for the execution of this Six Year Plan was entrusted to the Development Board of Iraq which was established under Law No. 23 of 1950, as amended by Law No. 6 of 1952.<sup>18</sup> The Chairman of the Board is the Prime Minister, who is assisted by the Minister of Finance and six executive members. The six executive members include three experts: one in finance and economics who is British, one in irrigation who is American, and another in a still undefined field. These executive members are nominated by the Council of Ministers from outside the civil service for a period of five years. The Board prepared the original development program, and it must submit to Parliament annually any changes in that program, as well as gearing the development program of the several ministries with its own. In addition, the Board implements the program by giving the contracts for the execution of projects to world renowned contractors and supervising the works until they are completed. Thereafter, it turns them over to the ministries concerned for management and maintenance.

In July 1953 a Ministry of Development was brought into being as the executive arm of the Board, under Law No. 27 and Regulation 30 of 1953.<sup>19</sup> The new Minister is the ninth voting member and the executive agent of the Board, besides acting as the Board's representative on the Council of Ministers. He is responsible for presenting to Parliament for the necessary

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18. Ibid., p. 32.

19. Ibid., p. 33.

approval prior to implementation a new Seven Year Plan which will be prepared by the Development Board. Both the Board and the Ministry are served by one Administrative Section and four Technical Sections. The fields covered by the Technical Sections are: (1) Irrigation and Drainage; (2) Highways, Bridges, and Buildings; (3) Industry and Mining; and (4) Agriculture. Also an Economic Section was established to render advice regarding the economic and monetary effects of the program. These technical sections of the Ministry cooperate with the Board in planning and supervising the execution of all Iraqi development projects.

The premise underlying this ambitious development program is that Iraq possesses great economic potentialities which thus far have remained relatively untouched. It is estimated that these potentialities when developed could support more than double the present population at a considerably higher living standard than is currently enjoyed. As in any backward country, the theme of capital formation lies at the very heart of the whole problem of development. Underdeveloped areas, as opposed to advanced areas, are underequipped with capital in the form of investment in relation to their population and natural resources. The problem of development in Iraq, therefore, resolves itself largely into a matter of accumulating the necessary capital assets.

The population of Iraq is today just over five million people who live in an area of a little over 444,000 square kilometers. Of this, only about 12 percent is cultivated and less

than 5 percent is actually cropped annually. Per capita income is low, about ID 30 per annum and for the agricultural population comprising about 70 percent of the total it is probably much lower.<sup>20</sup> Thus the development program has as its principal objective the relief of the population-production pressure. From the program presented above in table form, it is to be noted that this relief is expected to be derived primarily through the expansion of agricultural output and only secondarily from industry. Experts have calculated that if the water resources of the Tigris and Euphrates and tributary rivers are harnessed for irrigation, Iraq's increase in cropped area will outpace her population growth by 1960. In other words, irrigation and land reclamation projects now under way or planned, if completed by 1960, will more than double the effective cropped area and will support an expected population increase of 1,500,000 persons. When all the major projects are completed, Iraq might well support another 8 million persons, given the present man-land ratio and consumption standards.<sup>21</sup>

To complement this rapid expansion of the agricultural capacity of the country, it has been realized that a concurrent development in the field of industry must be effected. Iraqi industry is still in its very early stages of growth. Total employment in industries and crafts is roughly 75,000, a little over half of whom are employed in factories and shops having

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20. United Nations, General Assembly Report of May, 1954, Appendix 2 Sub-section I. U.N., 1954, p. 1.

21. U.N., op. cit., Summary of Appendix 2, p. 1

four or less workers. Excepting the petroleum industry which is financed mainly by foreign capital and employs about 16,000 workers, there are today few other large modern industries in Iraq.<sup>22</sup> Most of these are industries which obtain their raw materials locally and primarily from agriculture or animal husbandry. Principal among these are textiles, cement, beer, alcohol, vegetable oil, tanning, and soap production. It has been recognized as vitally important to expand existing industry and encourage the growth of new industry as a means to raising the level of national production and income, and as well to provide productive employment to labor displaced from agriculture resulting from increased mechanization. In formulating a program of industrial development, the effort has been made to diversify industry and to foster the growth of complementary industries to avert the disabilities of over specialization. Supply and demand will thus be distributed more equally over the entire economy and, when combined with a heightened national income, can be expected to result in an expanded internal market.

Buttressing this exploitation of the agricultural and industrial potential of Iraq is the development occurring in the fields of transportation and communications, public utilities or services, public housing, public health, and in government sponsored education. In general, the idea of the need for community planning has caught hold, i.e. the process of effecting the orderly layout of a community and the continuous

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22. U.N., op. cit., Appendix 2 Sub-section 1, p. 5.

improvement of that community for the physical, economic, and social welfare of its residents. Though programs in these adjunct fields may not be implemented in as thorough and efficient a manner as would be desired, still, hope may be taken from the recognition in Iraq that progress in agriculture and industry cannot be wholly fruitful without advances in these allied spheres. Agriculture and industry do not function in a vacuum, but are closely dependent upon the material and social conditions in which they exist. Cognizance of this essential fact underlies the development program in Iraq.

Let us now conduct a brief survey of current development projects in Iraq in order to obtain a qualitative understanding of the program and, as well, to visualize the role which the C.A.T. Company, as an all-Arab industrial firm, is playing within the framework of this development.

(1) Irrigation and Flood Control:<sup>25</sup> The overall program includes ten dams, irrigation and drainage works, and roads and land levelling related to the irrigation works. It is assumed that the implementation of this program will take twenty-five years and will cost approximately ID 335 million, of which nearly ID 200 million will go for irrigation canals and installations and most of the remainder for dams. This program is expected to expand by 75 percent the total amount of land, irrigated and rainfed, which is now cropped annually. Even

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<sup>25</sup> U.N., Quarterly Bulletin of Development,  
p. 34-41.



greater effect will be had if some areas should produce two crops per year. Projects underway include: (a) The Lake Habba-niya reservoir and Ramadi dam for flood control and irrigation. This includes the greater Mussayeb Canal awarded to C.A.T. in 1952 for approximately ID. 400,000 in total. (b) The Wadi Tharthar flood control project and Samarra dam. (c) The Dekan dam on the Lesser Zab river to store water for irrigation. (d) The Diyala projects for irrigation. (e) The Bekme dam on the Greater Zab river for irrigation. (f) Irrigation projects in the Erbil and Mosul area. (g) Irrigation and flood control works in the South, of which C.A.T. was awarded in 1954 the Nesiriyeh project involving dams and water control structures for a value of approximately ID. 650,000. (h) Drainage projects in the areas of Dujaila, Soklawiya, Tweiirij, and Mussayeb.

(2) Land Reclamation and other projects:<sup>24</sup> Current projects in this field include the reclamation of agricultural land in diverse areas, afforestation and the upkeep of forests, filling of swamps and marshes, the drilling of artesian wells for the supply of drinking water, the improvement of animal stock and organization of pastures and refuge, plus the development of facilities for agricultural research.

(3) Communications:<sup>25</sup> Current plans call for linking up the major cities and towns by highway and constructing secondary

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24. Ibid., p. 42.

25. Ibid., p. 43-44.



roads and feeder roads to join project sites with other parts of the country. Development Board intentions are also to improve airports and telephone, telegraph, and wireless facilities, as well as rendering aid to the railroads through the Department of Railways. Contracts have thus far been awarded for the construction of the Baghdad-Kirkuk road, the Baghdad-Shergat road, the Baghdad-Basra road, the Hilla-Najaf road, and several mountainous roads in the North. Of these, C.A.T. received the contract for the Kirkuk-Tasloojah road in 1954 for a value of approximately ID. 2,500,000. The main purpose of this road, as part of the total Kirkuk-Tasloojah-Dokan highway scheme, is to link up the Dokan dam site with Kirkuk and other sections of Iraq to expedite the movement of machines, materials, and personnel to construction sites. But the long-run economic advantages of such a road system in opening the surrounding region to further development, both agricultural and industrial, are readily apparent. In addition, this new road system will have strategic and military ramifications of great importance to Iraqi national defense. Several bridges are also under construction, two in Baghdad. A new runway for the Baghdad Airport is nearing completion. This will enable the Airport to receive the largest of transport planes.

(4) Buildings:<sup>26</sup> Considerable activity has been recorded in this field during the early years of the development program

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26. Ibid., p. 45.

as part of the overall capital buildup scheme. Buildings include hospitals, schools, post offices, government and military structures, a Parliament House, and the new Royal Palace. The contract for the new Royal Palace was awarded to C.A.T. Company in 1952 and the project is valued at about ID. 2,500,000.

(5) Industry and Mining:<sup>27</sup> The Development Board has undertaken the establishment of industrial enterprises either directly or through a government department or through the Industrial Bank of Iraq. The following comprise the major industrial projects sponsored by the Board: (a) an asphalt factory near Mosul; (b) a lubricating oil refinery; (c) a cotton weaving and spinning mill in Mosul; (d) two cement plants, one in Mosul; (e) a sugar refinery; (f) a natural gas project; (g) a paper factory; (h) a glass factory; (i) a rayon plant; (j) facilities for the exploitation of sulphur resources; and (k) a one-million ton oil refinery costing ID. 10.5 million to be built at Al Dora near Baghdad.

(6) Administration and Studies: This includes expenditure for the purpose of training technical staff capable of planning and implementing the development program, as well as drawing up the actual studies and designs for specific projects.

In addition to these projects directly sponsored by the Development Board, the Iraqi Government carries out various

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27. Ibid., p. 45-47.

other development projects under the so called "Capital Works And Economic Projects" item of the Extraordinary Budget.

Allotments and Anticipated Expenditures by the Development Board Under the Six Year Plan (in millions of dinars).<sup>28</sup>

<u>Projects</u>	<u>1951/52</u>		<u>1952/53</u>		<u>1953/54</u>	
	<u>Allots.</u>	<u>Ant.Exp.</u>	<u>Allots.</u>	<u>Ant.Exp.</u>	<u>Allots.</u>	<u>Ant.Exp.</u>
1) Irrigation Projects:	3.02	1.73	7.10	1.06	10.84	4.00
2) Land Reclamation:	1.74	.95	3.45	2.08	4.15	2.15
3) Communications:	2.07	.84	3.80	2.93	4.70	2.50
4) Buildings:	2.37	1.37	2.65	2.65	3.10	2.90
5) Industry & Mining:	.05	--	3.00	--	5.00	.50
6) Administration & Studies:	.17	.11	.46	.26	.60	.30
<b>TOTAL:</b>	<b>9.36</b>	<b>5.00</b>	<b>20.46</b>	<b>8.99</b>	<b>28.39</b>	<b>12.35</b>

From the above table it is to be noted that actual expenditures under the Six Year Plan fell substantially short of planned expenditures. The programs in the fields of Buildings and Communications ran closest to schedule, while Irrigation and Industry were most in arrears. The causes for this condition are to be found in the general administration of the program and, more specifically, in the shortage of trained technicians to execute the projects.

28. Ibid., p. 34.

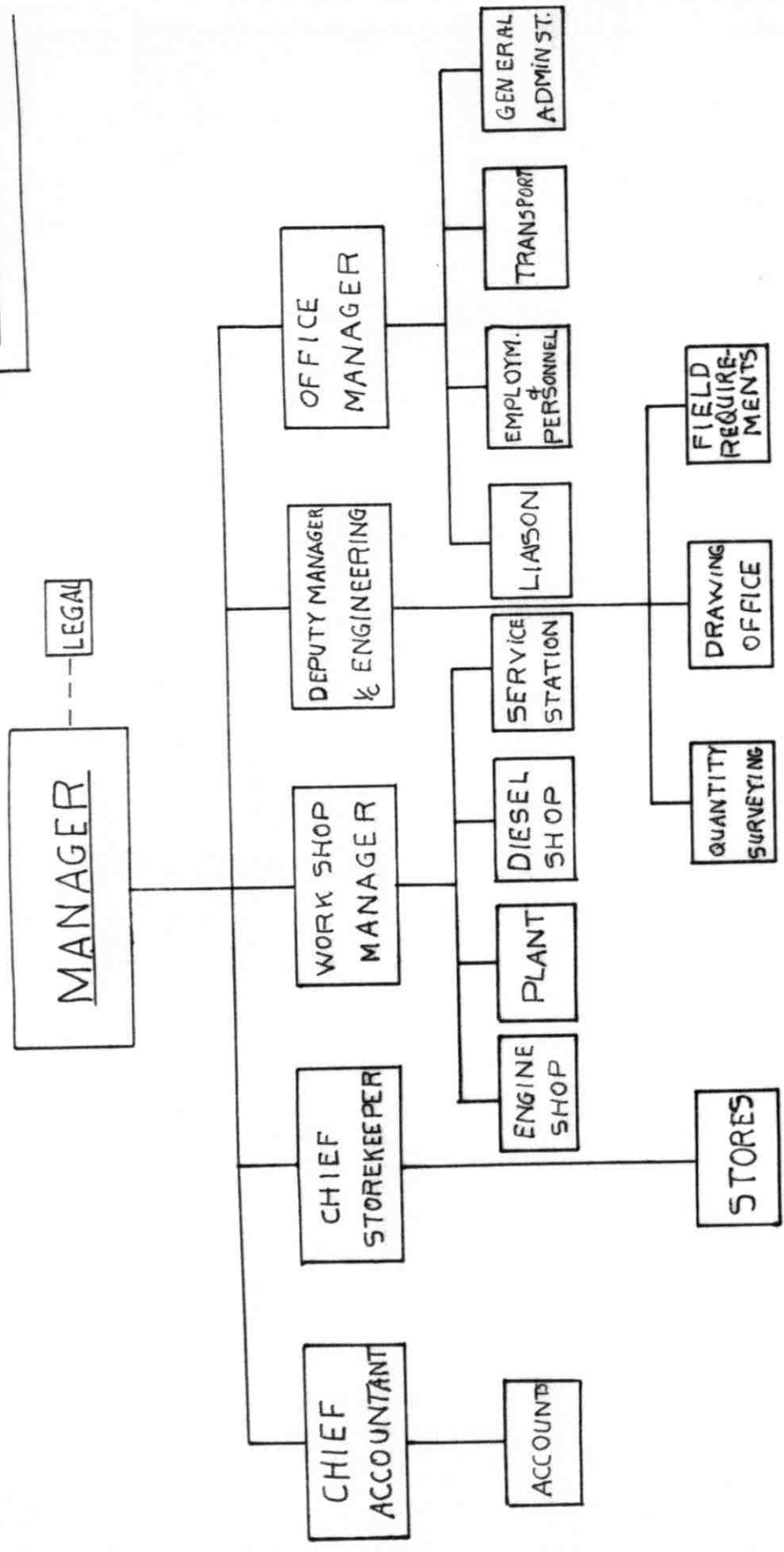
The role of the C.A.T. Company as an all-Arab firm in the Six Year Plan of Iraqi development is obviously quite considerable. Of the ID 155 million to be spent by the Board through 1956/57, C.A.T. will receive in contracts thus far awarded it approximately ID 5 million, or about 4 percent. Naturally, it must be born in mind that this situation is by no means immutable, i.e. with three more years to go on the current Six Year Plan it can reasonably be assumed that additional development contracts will be awarded to C.A.T. Thus by providing work to C.A.T. as well as to other local Arab firms, the development programs in Iraq and elsewhere in the Near East have an added impact in the sense of indirectly spurring the growth of indigenous industry. This is a unique example of the economic accelerator principle at work. Not only does this allow for savings and capital investment by these firms, but as well the more work done by local firms employing local personnel means greater productivity and a rise in the real income and purchasing power of these local people. This, in turn, will be an added stimulus to economic development in the Near East.

Bearing the foregoing in mind, let us turn to an analysis of C.A.T. Company operations in Iraq, the paramount emphasis being placed on C.A.T.'s Kirkuk-Tasloojah Road Project. This concrete example of a construction operation will buttress our general knowledge of Iraqi development and should contribute to our understanding of the role of indigenous industry in the growth of the Arab world.

C.A.T. BAGHDAD

PLAN OF ORGANIZATION

THE C.A.T. COMPANY BAGHDAD BRANCH OFFICE



### B. The C.A.T. Organization in Iraq

The C.A.T. organization in Iraq has been established to handle both contracting and trading operations within that country. In Baghdad there are two main divisions: the C.A.T. Baghdad Branch Office and the Autoworks Company. The C.A.T. Baghdad Branch Office was set up as a services and control center through which Management Beirut could direct all phases of contracting operations in Iraq. Sub-Branch Offices exist in Basra and Kirkuk to deal with immediate contracting problems which develop in the surrounding regions. Autoworks, on the other hand, is, as we have learned, a subsidiary company of C.A.T. Beirut registered in Iraq. It was established directly after World War Two to effect trading operations in Iraq. Trading in central Iraq is handled by the Autoworks office in Baghdad, while sub-agents are situated in Mosul and Kirkuk to deal with business in these northern regions. In the south trading is controlled through the C.A.T. office in Basra.

The C.A.T. Baghdad Branch Office is directed by a Manager who reports directly to Mr. Shammas as General Manager of the North Area. He has under his immediate supervision a staff of approximately two-hundred employees. The primary function of the Manager is to act as liaison officer between Management Beirut and the Project Managers of the various C.A.T. construction projects in Iraq. As such, he sees that field requirements in the nature of personnel, plant, machinery, vehicles,



and stores materials are supplied on time to the Job sites. Secondly, the Manager deals closely with the Government of Iraq on matters pertaining to contracts. The one Government agency with which he has particularly close relations is the Development Board of Iraq from which C.A.T. currently has four major contracts. He must also stand in close touch with possible clients as well as remaining abreast of the activities of C.A.T. competitors. As Manager of the Baghdad Office he directs administration, implements Management decisions, and has a limited power of attorney for C.A.T. in Iraq, plus being responsible for matters pertaining to finances and personnel in the area. He receives legal advice from the Company lawyer. With respect to contracts, when it appears that a desirable contract is in the offing the Manager will report that fact to Management Beirut who, in turn, if favorably disposed, will order further investigation and field study. The Manager has the authority to sign contracts for C.A.T. in Iraq within the limits defined by Management Beirut. He is ultimately responsible for the satisfactory execution of his duties to Management Beirut. The Manager also represents Mothercat interests in Iraq.

The Manager has under his supervision a Deputy Manager, an Office Manager, a Work Shop Manager, a Chief Accountant, and a Chief Storekeeper. From the administrative point of view, the Management in Baghdad may be said to consist of the Manager, his Deputy, and the Office Manager. The Deputy Manager assumes the duties and responsibilities of the Manager in the latter's absence. In addition, he acts as Deputy Manager in charge of

Engineering. Thus under his control falls the employment of technical personnel, expediting the shipment of field requirements, and the work of the Drawing Office and Quantity Surveyors. The Office Manager acts as administrative officer for C.A.T. Baghdad. In this capacity he supervises employment of personnel, liaison, the Motor Pool, travel and accommodation of Company personnel, the registry and filing of personnel records, etc. plus the typing done by the Chief Clerk and his assistants, and any personnel problems such as disciplinary actions, transfers, etc. which may crop up within the Baghdad Office. Approximately fifty people come under his control, but this number does not appear to be sufficient to cope with the large volume of work.

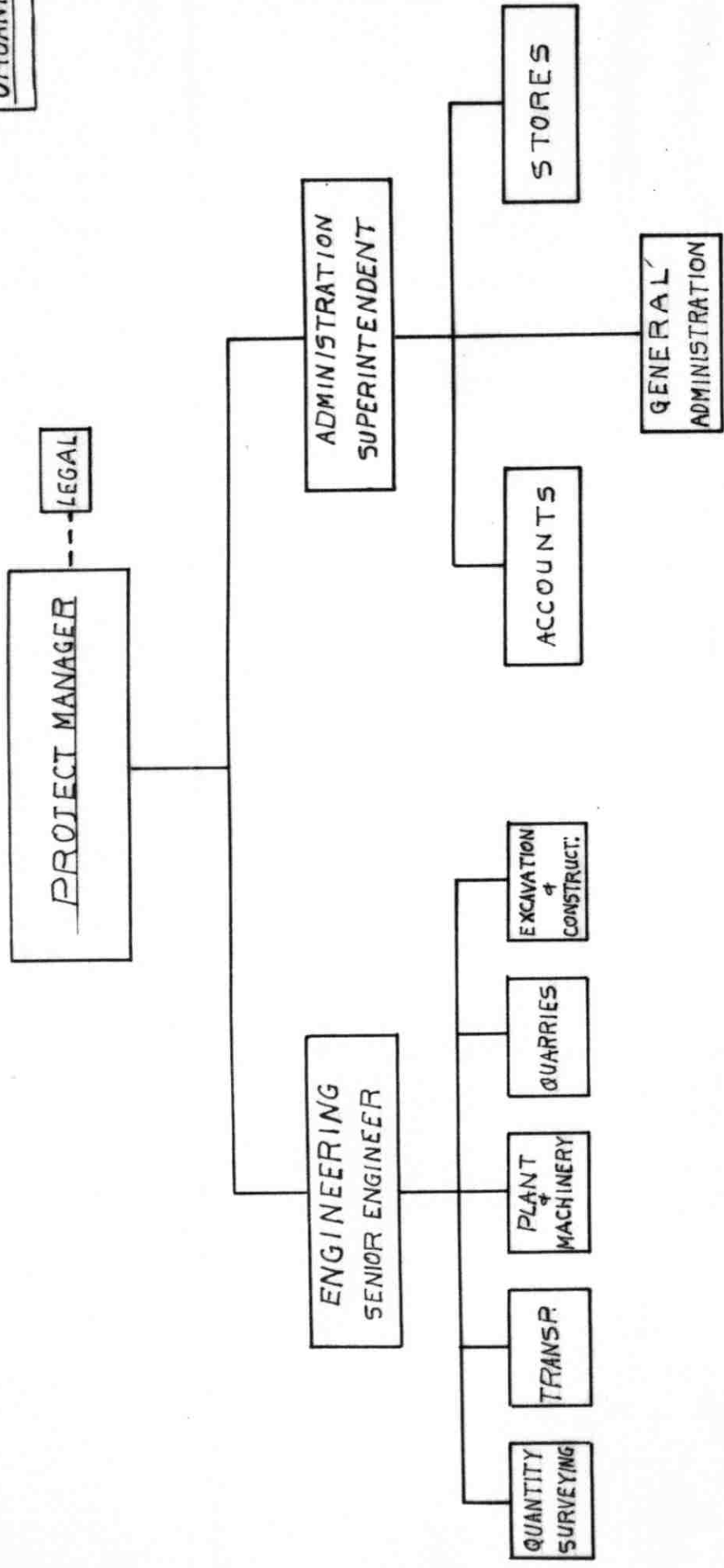
The Work Shop Manager assisted by a Work Shop Engineer supervises the Engine Shop, the Body Shop, the Diesel Shop, and the Service Station. This Work Shop is a vital link in the C.A.T. Baghdad system for it not only services private customers who have purchased automobiles and equipment from Autoworks, but as well it provides essential repairs and maintenance to C.A.T. plant and vehicles being rerouted to projects in Iraq. The Company Lawyer naturally handles the legal aspects of contracts together with advising on labor laws and insurance. The Chief Accountant handles accounts, while the Chief Storekeeper controls stores activities. These officers report directly to the General Manager as shown in the appended table of organization of C.A.T. Baghdad.

It has been stated above that C.A.T. trading is carried

on in the environs of Baghdad by the Autoworks Company, a subsidiary of C.A.T. Beirut. The Management of C.A.T. also constitutes the Management of Autoworks, and they control about seventy percent of the shares. The remainder is owned by several Iraqis. This Company acts as both a wholesaler and retailer of automobiles and automotive, mechanical, and electrical appliances, as well as of other assorted processed articles obtained within and without Iraq.

The Baghdad Office of Autoworks is in charge of a Manager who supervises a staff of about fifty employees. The division of functions comprises Sales, Stores, Accounts, a section for minor repairs and maintenance of appliances, clerks and typists, and office boys and security. The diverse items of goods handled by Autoworks includes all Roots automobiles, vehicles, and spare parts of the following makes: Hillmans, Humbers, Sunbeam Talbots, Commer commercial vehicles, and Karrier municipal vehicles. In addition, Autoworks are agents for David Brown agricultural and industrial tractors, Ransome agricultural implements, Electrolux refrigerators, Ingersol-Rand pneumatic tools, L.S. Starrett precision instruments, Crompton-Parkinson batteries, G.A. Harvey office equipment, and others. Tyresoles also comes under the Management of Autoworks. The volume of business effected during 1952 to 1953 reached nearly ID. 750,000, though this was slightly exceptional since about ID. 400,000 of this resulted from the sale of pipes for a public water scheme on government contract. Nevertheless, C.A.T. Trading in Iraq is sizeable and is increasing annually.

C.A.T. KIRKUK - TASLOOJAH ROAD CONSTRUCTION PROJECT



The principal customers of Autoworks fall into four categories: private persons; the Iraqi Government; the Iraqi Development Board; and the C.A.T. Company proper. In so far as Autoworks is a major supplier of C.A.T. in Iraq, it constitutes an integral part of the whole C.A.T. system. As such, its activities must be closely integrated with the several C.A.T. construction projects scattered about Iraq. It devolves upon the Manager and his assistants of the C.A.T. Baghdad Office to provide this integration.

Employing as a relief the total Iraqi economic development picture and bearing in mind the organization of C.A.T. in Iraq, let us now examine the Kirkuk-Tasloojah Road Project in considerable detail. It is hoped that such a study shall knit together all of C.A.T. into one intelligible whole.

## C. The Kirkuk-Tasloojah Road Project<sup>29</sup>

### 1. Introduction

The Kirkuk-Tasloojah Road Construction Project was awarded in contract by the Development Board of Iraq to the Contracting and Trading Company of Beirut on January 27, 1954. This contract is of the unit/fixed price type and was awarded on the basis of competitive bidding. This contract calls for the original cons-

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29. The ensuing information was obtained from Company records and on-the-job observation by the writer.

truction of approximately ninety kilometers of surfaced road between Kirkuk and Tasloojah in northeastern Iraq. The total value of the contract is two and one-half million Iraqi Dinars, subject, of course, to minor adjustments as the work progresses. The length of time in which C.A.T. Company is required by the contract to complete the road project is thirty months as from the date on which the contract was awarded. However, due to natural causes beyond the control of either C.A.T. or the Development Board, three additional months of leeway were granted.<sup>30</sup> Thus the road should be completed by October of 1956.

The specific responsibilities of the Development Board as contractee are to determine the specifications of the road by design, settle controversies of a technical nature, supervise C.A.T.'s work in progress, and issue monetary payments according to measurements of work completed. In addition, Development Board representatives act as liaison officers between C.A.T. Company and the various government departments concerned with this project. To execute its duties and responsibilities, the Development Board has assigned a Resident Engineer and three assistants to the Project. The Resident Engineer is permanently stationed in the main C.A.T. Camp at Chemchemal, while each of his assistants have been assigned a section of the road project. Their duties require them to be present at the construction sites during most of their working time. Thus they work in

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30. The natural causes referred to above include the disastrous flood about Baghdad during the spring of 1954.

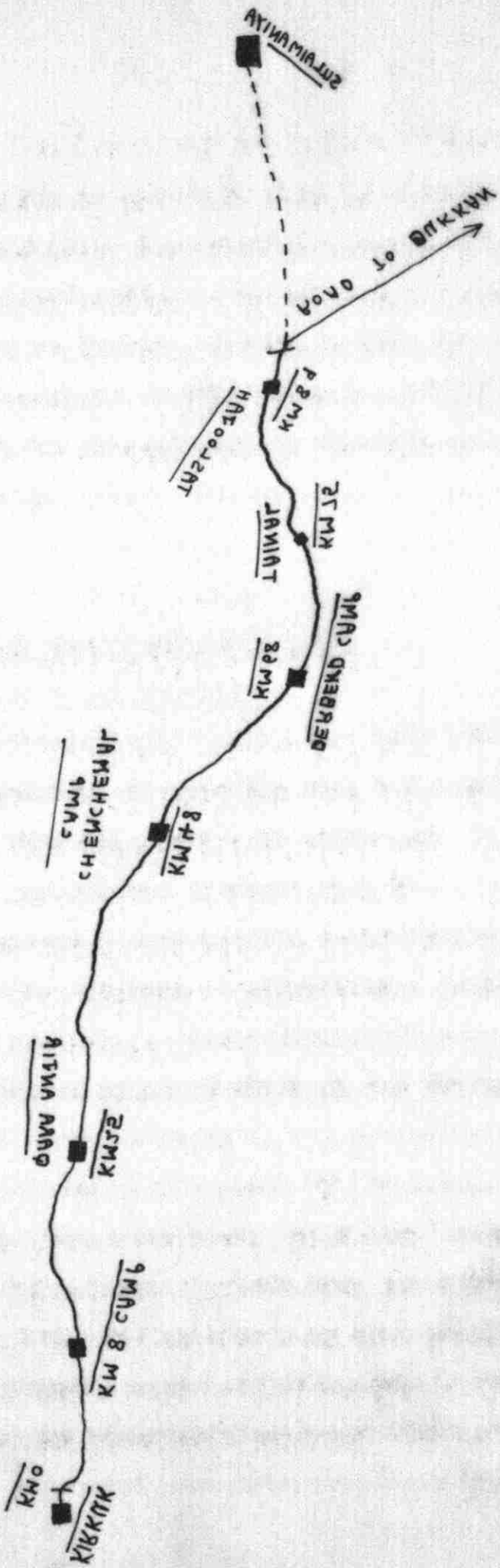


close conjunction with C.A.T.'s Section Engineers. The Resident Engineer's duty is largely one of broad planning and control, and he therefore must work closely with C.A.T.'s Project Manager. The Resident Engineer is responsible to the Senior Development Board Engineer stationed in Kirkuk proper. This Senior Engineer is, in turn, responsible to the Chief Development Board Engineer in Baghdad who directs the Second Technical Section concerned with the construction of highways, bridges, and buildings.

The function of C.A.T. Company as contractor is to execute the construction of the road according to the specifications laid down by the Development Board in the contract. Thus C.A.T. must create a plan of execution. Such a plan not only involves design and layout of the various aspects of the project, but equally important it includes a timetable of job implementation. According to this plan, the Company is to amass at the sites of operation the plant, machinery, and vehicles, materials, and personnel necessary to execute the project in the time allotted. The planning of the job was completed at Beirut by the Management in consultation with the Project Manager and his staff of key personnel. The tasks of the Project Manager are vast and diverse, requiring as it were the supervision of both the technical and administrative aspects of the job, besides being responsible for approximately two-thousand men who fall under his command. Furthermore, he must coordinate C.A.T. activities with Development Board requirements, and must tend to all matters involving C.A.T. and the local government authorities. The Project Manager is directly responsible to

АВЕРТУВ КИЕМ ОЛ РОУД

КИРКНІК ~ ІУЗГОДІАТ РОУД ПРОТЕСТ



ІЕЗІІІ) Р/Р . ОМ ТІАДІТМОД

ІАДІІ ОІ ТОМ

Mr. Shammass as General Manager of the North Area of Contracting.

In the ensuing discussion, I propose to analyze in detail the Kirkuk Road Project department by department, starting first with those on the engineering side and then taking up those of an administrative nature. I hope in this way to guide the lay reader to an intensive understanding of one construction project organized and executed by the all-Arab C.A.T. Company in the Near East.

## 2. Job Layout and Facilities

The Kirkuk-Tasloojah Road Project has been organized by C.A.T. and Development Board planners into three main geographical sections for the purpose of expediting the executional phase of operations. Each section is of approximately equal length and has as its base of operations a camp located centrally in that section. Accordingly, the layout of the job and the organization of its facilities are orientated about these sectional camps as shown in the accompanying diagram.

All four camps have been erected by the C.A.T. Company to implement construction of the road. These are: the Kirkuk Camp, the Kilometer Eight Camp, the main Camp at Chemchemal, and the Derband Camp. The Kirkuk Camp acts as a combination of administrative headquarters and receiving center for C.A.T. personnel, materials, and plant and machinery procured from

outside the immediate area of construction. Moreover, its proximity to the city of Kirkuk enables the Project Manager and his assistants to work in close contact with the officers of the Development Board and with local government officials when necessary. The sub-divisions of the main departments of the road project located at the Kirkuk Camp are: Engineering, Transport, Plant and Machinery, General Administration and Services including employment and personnel, company records, communications and correspondence, etc., Stores, and Accounts. There exist camp facilities for approximately fifty men. Water and power are obtained through special services from the city of Kirkuk. The Project Manager, whose office is situated in the Kirkuk Camp, is in charge. The remaining three camps are dispersed at well planned intervals along the projected route of the road.

The main camp is located about four kilometers east of the town of Chemchemal which, in turn, is situated approximately fifty kilometers east of Kirkuk. Thus this main camp is quite centrally located between Kirkuk and Tasloojah, a distance of approximately ninety kilometers. It acts as headquarters of C.A.T. operations for Section Two, and as headquarters for Engineering and Development Board activities for the entire job. Section Two extends from kilometer thirty to kilometer sixty-two along the projected ninety kilometer route of the new road. This camp at Chemchemal was selected to be the main camp of the whole project principally for two reasons: one, its central location, and two, the fact that it was ideally

suites to accommodate the necessary personnel, materials, and equipment. The facilities, i.e. housing, messing offices, and stores, had been constructed about two years ago by the Iraq Petroleum Company as a site for oil drilling. Subsequently, however, it was discovered that the oil existing in that particular area had no commercial value. Then when the road project was envisaged the camp site plus facilities was sold by the I.P.C. to the Development Board of Iraq for approximately ID. 15,000. As headquarters for C.A.T. Engineering on the road project, Chemchemal camp houses the following sections:

(1) Office of the Senior Engineer; (2) Office of the Chief Quantity Surveyor, plus the main body of Land Surveyors and their offices, the Drawing Office and the draughtsmen, and the office of Engineering Costing; (3) Headquarters for all transport up and down the line; (4) The main section of the Plant and machinery department including a Work Shop plus site units and operators; (5) Headquarters for the Engineer in charge of Section Two who has under his direct control all operations in that section dealing with excavation and construction. In addition, Chemchemal camp acts as headquarters for C.A.T. Administration. As such, it houses the Main Stores from which the other three stores are serviced. Moreover, it is quite naturally the site of the largest camp facilities including Commissariat, Accommodation, and Medical services for about three-hundred men. Water requirements are transported at considerable expense from springs located in the town of Chemchemal, but the construction of a water pipe has been

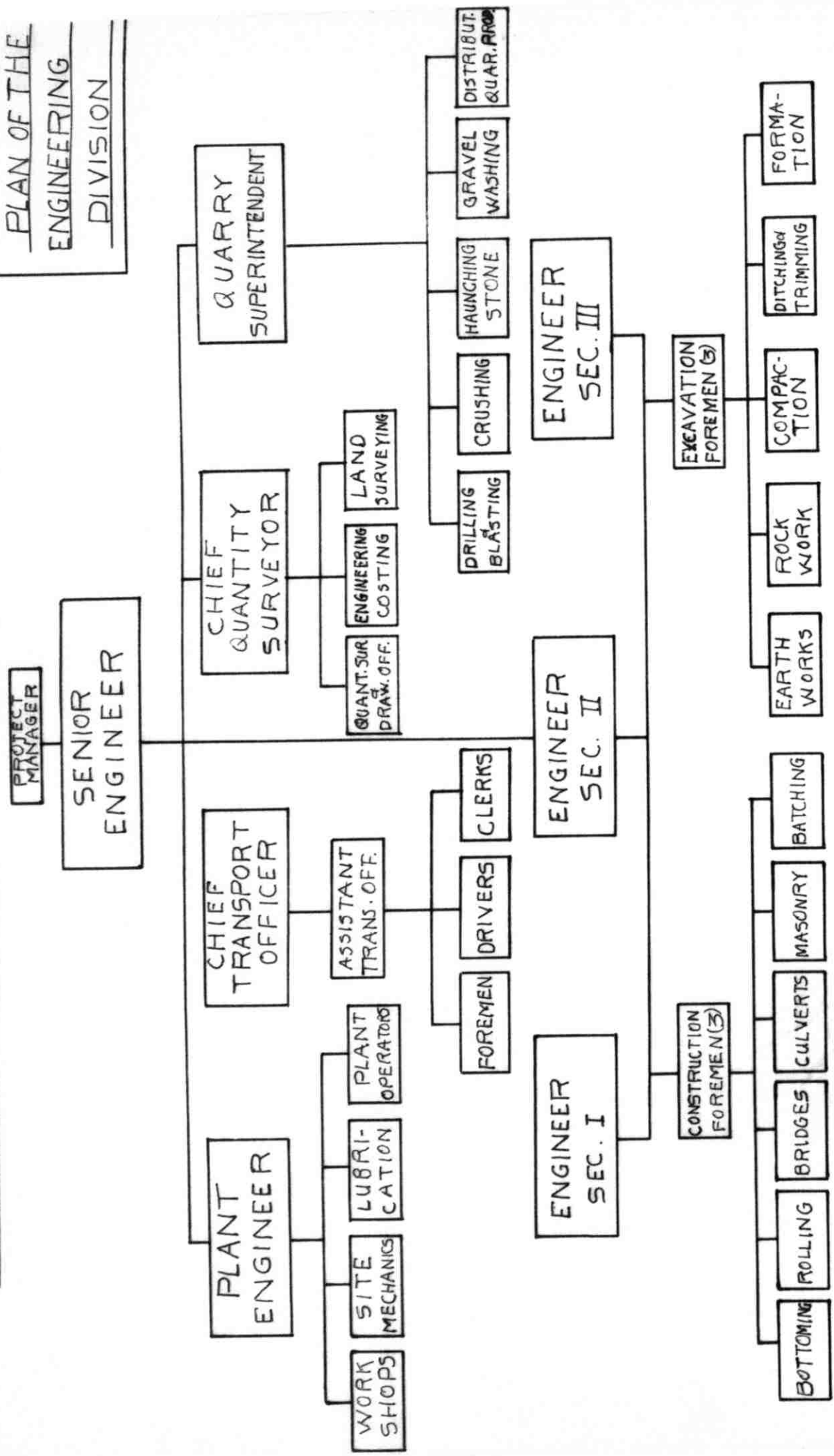
proposed. Electric power is generated by company facilities within the camp itself. The Engineer for Section Two is in charge.

Two subsidiary camps are located at Kilometer Eight and Derband. The Kilometer Eight Camp was selected to direct operations in Section One extending from Kirkuk to Kilometer Thirty. Kilo Eight, as this camp is generally termed, was chosen because of its fairly large expanse of flat land lying amongst a rather hilly and rugged terrain. As its name indicates, Kilo Eight Camp is situated about eight kilometers east of Kirkuk. In this camp there exists a stone crushing plant for producing crushed stone and gravel to be used in the bottoming or rock foundation of the road and also for asphaltting. There is as well a batching plant for producing the correct mixture of aggregates necessary for the production of concrete and bitumen through the first half of the road. Kilo Eight is also the base for the plant and machinery and men necessary for executing all aspects of excavation and construction in Section One. Sub-divisions of certain other departments are located in Kilo Eight to expedite the work. These are Land Surveying, Transport, Stores, and, of course, the necessary Commissariat, Accommodations, and Medical facilities for approximately one-hundred men. Water needs are obtained from springs close by, while power is generated within the camp proper. The Engineer for Section One is responsible.

The second subsidiary camp is located at Derband which lies about fifteen kilometers east of Chemchemal camp along



C.A.T. KIRKUK-TASLOOJAH ROAD PROJECT:ENGINEERING



the route of the new road. It is the base of operations for Section Three which extends from kilometer sixty-two to kilometer ninety. This site was selected for the camp space available and more important because of the proximity of stone quarries to supply aggregates along the second half of the road. Thus, in similar fashion to Kilo Eight, there has been erected at Derband Camp a stone crushing plant and a batching plant for concrete and bitumen. Also like Kilo Eight there exists at Derband sub-divisions of Transport, Stores, Commissariat, Accommodation, and Medical facilities for about one-hundred men. Moreover, it acts as the headquarters for the plant, machinery, and men required for implementing all aspects of the job in Section Three. Water is obtained from a spring river seven kilometers east of Derband Camp, while power is generated at the camp itself. The Engineer in charge of Section Three is responsible at Derband.

### 5. Engineering

Engineering, as herewith employed, refers to the field of planning and execution of the actual physical construction of the road. This department is under the direction of the Senior Engineer who is the second in command after the Project Manager of the technical aspect of the project. Engineering can be broken down into two major phases: planning and execution. The technical study and planning of the job, i.e. getting

the job down on paper, is done under the direction of the Project Manager in consultation with the Senior Engineer and his staff with advice from Management Beirut. This planning phase is largely complete by the time the actual work gets underway; however, it is to be expected that secondary planning for each successive aspect of the job will continue throughout the life of the project. The other major phase of engineering is the actual physical execution of the job. To achieve better organization and control, the project has been subdivided into three equidistant sections as described in Job Layout. Each of the sections is in charge of a Section Engineer who is directly responsible to the Senior Engineer. Within each section there is again a division of work into excavation and construction. In addition, there is a Quarry Superintendent to supervise the extraction, processing, and distribution of quarry products.

The contract between C.A.T. Company and the Development Board of Iraq calls for the construction of a surfaced road between Kirkuk and Tasloojah, a distance of approximately ninety kilometers. Simply stated, a surfaced road is one which is scraped and levelled, then has its bed packed with sand and crushed stone. Thereafter, layers of tarmac (a composition of crushed stone and bitumen) are layed on hot and compacted. An additional carpet layer of fine quality bitumen will complete the road. The pre-construction planning for this road comprises the several phases of job layout, logistics, allocations of plant and machinery and personnel, quantity surveying and costings, topographical surveying followed by the drawing up of blue



prints with specifications, and any other aspects relating to construction operations. Planning of this nature is done at several levels within the company; at the Management Beirut level, at the Project Manager and senior staff level, and at the technical staff level in Kirkuk. As these steps in planning have been described in greater detail in other sections of this report, we shall herewith concentrate on the equally important phase of execution.

Job execution is divided into two principal aspects: excavation and construction. The former precedes the latter in time of occurrence. The Senior Engineer sees that the job is executed to meet plan specifications. Accordingly, he draws up programs of work and directs their implementation through the Section Engineers. But his primary task is one of establishing inter-departmental unity and developing a balanced and co-ordinated approach to the job among otherwise self-contained atomized departments. It devolves upon the Section Engineers to organize the work in their respective sections plus attending to administrative and personnel matters. These Section Engineers must perforce work closely with the heads of other Departments so that their sections should receive the necessary services in order that the job may proceed smoothly.

Excavation comprises that series of operations which leads to the creation of the formation level of the road, i.e. the level of the road bed just under the first layer of crushed stone. The first of these operations falls under the category of earthworks and calls for cut and fill of earth where necessary.



Heavy earth moving equipment is involved in this costly and time consuming task, equipment such as scrapers, bulldozers, tournapulls, and tractors. Rock excavation and blasting is often involved in this operation. Next comes the phase termed compaction. This refers to the leveling, watering, and rolling of the earth base to provide a firm road bed. Then there follows ditching and trimming which involves placing drainage ditches where necessary and trimming elevated embankments along the sides of the road. These successive operations designed to bring the road bed to the formation level are each under the supervision of section foremen.

Construction comprises those stages of work necessary for bringing this road (approximately ninety kilometers long, twelve meters wide, and thirty-two centimeters deep) to completed form. The first stage involves the laying down of the sub-base upon the formation level. This sub-base consists of stone consolidation packed into the earthworks. Bottoming follows immediately. This refers to the spreading over the sub-base of two layers, each twelve centimeters in thickness, consisting of three inch crushed stone obtained from the batching plants. After levelling and rolling the road bed is prepared to receive its bituminous base course of tarmack. This base course is a layer five and one-half centimeters thick composed of crushed stone, bitumen, and five percent cement. This bitumen compound is mixed in special batching plants and is layed hot upon the road, levelled, and rolled repeatedly. The finishing touches are given the road by way



of a two and one-half centimeter carpet course of extra fine bitumen layed down six months after the base course has been opened to vehicle traffic. Thus any defects in the base course will come to light and be corrected by this final carpet course.

Masonry is another phase which must be mentioned in connection with construction operations. This consists in part of the placing of haunching stones, eighteen by thirty-two centimeters in size, along the edges of the road to help keep the bottoming, base course, and carpet course in correct alignment. In addition there is other stone work such as the erection of retaining and parapet walls, and masonry in connection with bridges and culverts together with some carpentry. Of fundamental importance in the construction of the road is the building of bridges and culverts. Altogether along the length of the road there are approximately one-hundred and fifty of these, of which a little fewer than half are bridges. The construction of bridges and culverts has been sub-contracted to two sub-contractors, one for bridges and one for culverts. According to this agreement, C.A.T. supplies the sub-contractors with equipment and materials plus finances while the sub-contractors furnish the labor. The actual building, i.e. shuttering, pouring of concrete, steel work, etc., is done by the sub-contractors under C.A.T. supervision. The underlying theory is that this arrangement relieves C.A.T. management of excess worry regarding labor matters and generally increases the pace of construction due to the specialized efficiency of these sub-

contractors in this type of work.

The Quarry Section is supervised by a quarry Superintendent appointed by C.A.T. He works in close coordination with the Chief Transport Officer who directs the distribution of quarry products to the construction sites. The actual extraction and processing of quarry products has been sub-contracted to three men experienced in this type of work. The several aspects of quarry activities are drilling and blasting for extractive purposes, transportation of the haunching and other stone to the batching plants, stone crushing and gravel washing, and the final distribution to the sites of these processed quarry products. The quarry superintendent is responsible to the Senior Engineer for these activities.

The Engineering phase just described in the layman's language lies, needless to say, at the core of the entire project. Upon its smooth and efficient execution the success or failure of the job largely depends. Though the onus thus rests in the final analysis with the Engineering Department, Engineering in itself does not function in a vacuum. A near equal proportion of the burden for the successful execution of the project falls upon the supporting departments which render those services to Engineering making actual construction possible.

#### 4. Quantity Surveying

The Quantity Surveying Department, briefly stated, is concerned with the measurement of the work executed for the

purpose of obtaining payments from the contractee, i.e. the Development Board. Under this Quantity Surveying Department there is included for organizational convenience (1) the Land Surveyor's Section, (2) the Drawing Office, and (3) the Engineering Costing Section. After the purposes and operations of Quantity Surveying per se have been amplified, the functions of these sub-sections will be analyzed. The Chief Quantity Surveyor on the Kirkuk project is fully responsible by way of line authority to the Project Manager for the satisfactory fulfilment of his technical duties on the job. He remains at the same time functionally connected to the Main Quantity Surveying Office in the Technical Department of Headquarters Beirut.

In principle, the Quantity Surveying Department translates the physical quantity of work done by the Company into money values. Quite obviously, the work done must be adequately paid for. Thus the work done is measured on site, recorded into numerical measurement by the Chief Quantity Surveyor, and is then reflected into Monthly Progress Payment Certificates according to the prices pre-determined in the contract between the Board and C.A.T. This Monthly Progress Payment Certificate covering the work done and its value is passed on to the Board's Resident Engineer. With his concurrence it goes to the Development Board Executive in Kirkuk who in turn sends it on to Board Headquarters in Baghdad with his approval. The original monthly measurement and accounting made jointly by C.A.T.'s Quantity Surveyor and the Board Engineer is remitted, less a retention

value against satisfactory completion of the work, by a check from the Board to C.A.T. Company. This, then, is the broad cycle of work done according to specifications, measurement of said work, its translation into money values, with final approval and payment by the Development Board to C.A.T.

The technical process of quantity surveying has several ramifications. This process has its beginning with the agreement reached between the two parties to the contract as to the final form and substance of said contract for executing a particular project. The principal part of this unit/fixed price contract is the Bill of Quantities which specifies the type of materials to be used on the job, the quantity of each type of material, and the unit price or amount charged by the company for producing a unit or measure of that type of material. In contracts generally, the quantities to be employed are a constant factor, while the rates charged for the specific items of quantities by individual contractors competitively bidding for tenders form the variable factors of a contract. The determination of these rates in turn depends upon the conditions of the respective contractors as well as those factors mentioned previously which C.A.T. Management takes into consideration when bidding for a contract. Once the rates for quantities have been agreed upon and the contract awarded, the execution phase of the contract commences. The total final value of the contract might vary about five to ten percent above or below the originally estimated contract value. This again depends largely upon the final quantities employed together with whatever adjustment of rates

might take place. Rates are agreed beforehand for items stated in the contract, but often during the execution phase of the contract unforeseen situations arise which call for the use of additional (or less) materials which require financial readjustments. Often too, excavation will be conducted in areas where soil conditions are incorrectly predicted in the original contract. Thus where the rock content of the soil is higher than anticipated, rates charged by the Company for excavating that area will have to be raised. In the case of the Kirkuk-Tasloojah Road Project, the final determination of quantity measurements and adjustment of rates is based upon agreement between the Development Board as contractee and the C.A.T. Company as contractor of the job.

Once contractual agreements are arrived at, the execution phase of the work begins. We already know that C.A.T. started on this phase of the Kirkuk road in June 1954. Following the planning of operations in the Beirut Headquarters with follow-ups from Iraq, the land surveyors were called upon to provide maps of the area. But prior to the surveyors' actually going to work, four questions regarding the character of the road were decided by the Development Board. These were: (1) traffic density, or the approximate number of vehicles that would use the highway. (2) nature of the traffic: passenger cars, trucks, or both. (3) assumed design speed, or the presumed speed of the vehicles. (4) and the location of the new highway. The Development Board decided these specifications for the Kirkuk road in advance of tendering the contract. Before the

road could be pinned down on paper, however, other matters pertaining to the road's alignment or its course over the countryside, the typical cross-section or width of pavement and shoulders with their construction, the degree of curvature to determine horizontal curves, the percent of grades to determine vertical curves, sight distances, intersections, and finally the number of culverts and bridges necessary had to be worked out by the Development Board Engineers. With this and other data in hand, the work of the land surveyors could commence.

1. Land Surveying: The Land Surveyors check original data and designs drawn up by the Development Board, prepare alternatives when necessary, and then commence laying out the road. Three basic plans are used: an overall plan of the projected route, profiles, and cross-sections. These three fundamental plans were drawn up from the data obtained by two teams of surveyors working in the field. One team stationed at Kilometer Eight Camp covered approximately the first half of the road, while the second team from Chemchemal Camp surveyed the remainder. The bulk of the field work had been completed by late summer. The first step in getting the road on paper involved the creation of the general plan of the area with the route of the road inscribed thereon. This plan was based upon the field work of setting-out and establishing a tentative center-line as judged best given existing terrain formations. Then, if approved by the Board, these C.A.T. recommendations were put into effect. Once the route and center-line of the



road were finally determined, ground levelling operations for producing profiles and cross-sections began. From these statistics obtained in the field, the Surveying Office provided meaningful data concerning terrain conditions to the Quantity Surveyors and the Drawing Office.

2. Drawing Office: The draughtsmen, with estimates from the Q.S. Office, chart in blue-print form these general plans, profiles, and cross-sections for the use and convenience of Board staff and C.A.T. engineers and foremen. An additional plan called the mass-haul diagram is produced jointly by the Q.S. and Drawing Offices. This mass-haul diagram shows the bulk of earth to be moved and whereto, or in other terminology the locations and amounts of cut and fill necessary to arrive at the pre-determined ground formation level of the road. From such diagrams it is possible for the Project Manager and his engineers to determine the most economical method of moving earth, for in the contract different rates are specified for transporting earth over certain varying distances. The Drawing Office also produces record drawings of bridges and culverts constructed for submission to the Q.S. Department and Development Board. With construction underway, the work of the quantity surveyors, land surveyors, and draughtsmen continues, either in original production or in a checking and control capacity.

3. Engineering Costing: The Engineering Costing Section which is administratively responsible to the Chief Quantity

Surveyor has as its principal aim the determination of the cost of doing the various units of work specified in the Bill of Quantities. The running picture of the direct costs of the job thus derived provides C.A.T. Management with a definite basis for working out progressive programs for the future. The Accounts Department provides a monthly picture of actual expenditures in terms of money values which is not rendered until the end of each month. Engineering Costing, on the other hand, keeps a daily record of approximate direct costs of unit items of work. Then, at the month's end these figures will be adjusted to conform with actual costs by Engineering Costing if there are any discrepancies. This adjustment is carried out on the basis of work done as measured by the Q.S. Department. Wastage, inefficiency, etc., thus come to light for the edification of the Project Manager and his staff.

More specifically, Engineering Costing deals with three main items: (1) Labor man days; (2) Plant, machinery, and vehicles' working and idle hours; and (3) Quantities of materials used in the execution of a specified constructional operation. Each of the three Section Engineers and the Quarry Superintendent are responsible for the daily completion of two special forms for rendering the required information. These are the Daily Site Reports and the Progressive Daily Allocation Sheets. The procedure for obtaining the data is as follows: Section chiefs measure the daily output in their respective sections for the various categories of work as designated by assigned code numbers through supervising the return of the Daily Site

Reports. These D.S. Reports are completed by the foremen on the different jobs and contain the following information: (1) man-days worked on the item, man-days being calculated by adding the overtime hours to the normal work day of nine hours. The work times are obtained from the time keepers on the sites who are responsible to the Accounts Department for the purpose of computing wages. (2) Quantities of materials used on the specific categories of work. These include concrete, aggregates, timber, steel, etc., and are measured by the site engineer or foreman. (3) Plant, machinery, and vehicles' working hours on the various categories of work as obtained from the site plant and machinery foremen who record this data on the log cards maintained for each unit of plant and machinery. The data thus obtained of direct costs is returned daily to the Section Engineers. This information is then collated and recorded by the Section Engineers on the Progressive Daily Allocation Sheets, after which the Engineering Costing Clerk summarizes this data on the Progressive Cost Sheet. When considered over time, this summary will give a cumulative picture of the progress of the whole job as to input, output, and daily costs.

Once having obtained this data concerning the three productive elements, these direct charges can be translated into money values by multiplying man days by the average labor wage, working hours of plant and machinery by the hire rate for each unit of machinery, and the units of materials used by the cost per unit. Then, when these direct site costs as recorded on the

Progressive Cost Sheet are added to the overhead site costs (costs directly allocatable to a specific item of the contract) and to the general overhead costs (undefinable costs incurred with respect to the execution of the job as a whole which are distributed on a pro rata basis over the various component aspects of the job) on the Total and Unit Cost Summary Sheet, total unit costs for any item of work are obtained from the following formula:

$$\left. \begin{array}{l} \text{unit cost of an} \\ \text{item of work} \end{array} \right\} = \frac{\text{direct costs \& site overhead \&} \\ \text{general overhead}}{\text{amount of output}}$$

The Engineering Division of C.A.T. Company and of the C.A.T. Kirkuk Road Project in particular is interested in having the above data recorded and direct costs compiled on a cumulative basis for three main reasons: (1) For purposes of the specific job, engineering costing enables the Project Manager to ascertain how the contract is progressing from a day to day financial point of view; (2) It enables the Project Manager and his staff to compare progressively the actual cost per unit of work done with the tender price of said unit, so that if loss or insufficient profit is indicated in any item or combined items of work, this can be investigated immediately and remedied. The yardstick is always the unit costs as set forth in the original Bill of Quantities; (3) By establishing data of accurate average costs on this typical heavy construction project, the Company will be able to price tenders more scientifically for contracts of a similar nature in Iraq and other Near Eastern countries. Minor adjustments will, of course,

have to be made for variations in local conditions.

### 5. Plant and Machinery

The history of the Plant and Machinery Department of C.A.T. Company dates only to 1948 when C.A.T. began acquiring a sizeable quantity of heavy earth-moving equipment in connection with the construction of the pipe lines for the I.P.C. Prior to this date, little direct investment was made in plant, the management preferring to obtain the necessary plant on a short term contractual basis from already established companies. However, though C.A.T. did already own some of the plant in its control, it was really not until 1950 that a Plant and Machinery Department was organized with a Plant Manager and complement of personnel. During recent years, largely as a result of the I.P.C. pipe lines and Amman airport job, C.A.T. has acquired a large volume of plant, vehicles, and equipment. This influx of new plant outpaced the capacity of the department to execute its duties due to the weakness in the initial organization of the department and to a shortage of trained plant personnel. This weakness came to light recently as the company continued expanding its contractual commitments. Accordingly, the Plant Department is currently undergoing extensive reorganization as regards both policy as well as operating procedure under the direction of a British expert. Moreover, a conscious effort is being made to train C.A.T. employees in modern methods of plant

preservation, maintenance, and administration to counteract the paucity of such skilled personnel in the Near East. This re-organizational effort must proceed slowly for it can only take roots as the employees themselves become conditioned to the new, more scientific methods of handling plant. Be that as it may, the effects of this reorganization directed from the Beirut Office are already making themselves felt at C.A.T. Kirkuk, the test project.

In brief, the organization of the Plant and Machinery Department of C.A.T. is as follows. The Department is directed by a Plant Manager who resides at Headquarters Beirut. As the head of a department in the Administrative Division of C.A.T. Company, the Plant Manager is ultimately responsible to Mr. Khoury on matters of policy. The Plant Manager and his staff in consultation with Management formulate and execute policy regarding: (1) the purchase and acquisition of C.A.T. plant, (2) its allocation to areas and projects, (3) determination of hire rates, (4) resale of all C.A.T. plant, and (5) procurement and allocation of plant personnel. Functional control over these five principle activities of the Plant Department is centered in Beirut. However, each area and project becomes responsible for indenting for and maintaining the needed plant under the direction of Area Plant Managers and Plant Engineers located on the various projects. The area plant departments are, in turn, responsible for feeding the job sites with the necessary plant, spare parts, and plant personnel. Thus C.A.T. Kirkuk is fed through C.A.T. Baghdad which has its own area



plant department and workshop.

The Kirkuk Plant Department has been established with a Plant Engineer in charge at Chemohemal Camp. Under his direct supervision comes all plant, vehicles and equipment employed on the job. He must see, to begin with, that the project is supplied with the necessary plant to execute the job in so far as is possible within the limitations imposed by overall company policy and operations. The remainder of his duties consists of supervising the allocation of the existing plant and machinery to particular job sites as requested by the site engineers, directing the repairs and maintenance done by the Work Shop, seeing that the proper spares flow into the job either through local purchase or indents to Baghdad, and supervising the plant operators. This Plant Engineer is responsible in matters of line duty to the Project Manager, but receives functional direction from the Plant Manager in Beirut. Returning to the job itself, we observe that the Work Shop Manager who is responsible to the Plant Engineer directs both the administrative and the technical operations of the Work Shop. Within the Work Shop proper there is a Work Shop Foreman who is directly responsible for effecting the actual repair of the plant and equipment. Roaming the sites of work is the Site Mechanical Engineer who looks after the plant and equipment in operation, the two-hundred odd operators, the site section mechanics, and all minor repairs and maintenance effected on the sites.

By the nature of the contract between C.A.T. and the Development Board, the Kirkuk Road is a mechanized project.

thus plant, vehicles, and equipment are of primary importance. Machinery, in other words, is considered cheaper than hand labor or time. Plant and equipment needs for the Kirkuk project were determined by the Project Manager in consultation with the Manager of the Plant Department and Management Beirut. The standard formula for arriving at plant requirements was employed, namely:  $\frac{Q}{T} = D.O.$ , then  $\frac{D.O.}{C} = N$  (Q stands for the quantity of work to be done, T for time allowed, D.O. for the daily output required, C for the capacity of the various machines, and N for the number of machines necessary to complete the job in the given period of time with the given labor supply and quantity of materials). As a precautionary measure, twenty-five percent over the estimated equipment needs was accepted as the final number of units of plant and machinery required for a satisfactory execution of the job.

Unfortunately, the plant situation during the first months of the Kirkuk project left something to be desired. Not only did a shortage of plant and equipment retard the execution of the job, but as well the second-hand heterogeneous nature of the existing plant caused considerable delay and economic loss. For example, of the estimated I.D. 600,000 worth of plant needed for the job, there was in Kirkuk for several months after the start of the job plant worth little more than one half this value. And of this plant, about two-thirds of it was second hand equipment obtained from Amman after completion of the airport project and from I.P.C. surplus sales. As this equipment was about fifteen percent serviceable when it arrived in Kirkuk,

much overhauling was necessary to place the plant in working order. Another factor which continues to detract from a progressive execution of the job is the heterogeneous nature of the plant, a characteristic found throughout C.A.T. This condition makes it virtually impossible to establish a logical and workable system of scaling and feeding spare parts onto the project. The result is that the repairs and maintenance of plant and machinery is always falling into arrears for lack of immediately available spares. This total state of affairs can be traced to two causes, one being the mediocrity in organization and personnel of the Plant and Machinery Department. The second cause is perhaps the more deep-seated: the apparent reluctance of C.A.T. Management to invest in heavy plant and machinery on a broad scale. However, as the job progresses a greater effort is being made by Management to allocate the necessary plant to the project.

It shall now be instructive for us to analyze the organization and administrative system of the Plant Department at the Kirkuk project. This study will shed light on the workings of other branch plant departments in C.A.T. Little more need be said regarding the procedure for allocating plant and equipment to sites of work. It has previously been mentioned that this allocation is directed by the Plant Engineer in consultation with the Project Manager, various site engineers, and sub-contractors. Of greater importance from the administrative point of view are the operations of the Work Shop and the system of plant costing currently in effect. Repairs and maintenance of plant and machinery are, as we have already seen, under the

joint supervision of the Work Shop Manager and the Site Mechanical Engineer. When a piece of plant or equipment fails on the site and requires major repair, it goes directly to the Work Shop accompanied by an Inter Departmental Services Requisition signed by the Site Mechanical Engineer. As the plant enters the Work Shop an Inspection Report is prepared from which a Job Card is subsequently issued giving the following information: fleet or registration number of the plant, make and type, destination, speedo reading, date started in the shop, date completed, received vide LN or IDSR, sent vide LN, work carried out while in the Shop, lubricants used and cost, quantity, description and cost of materials used in repairs, number, type, and cost of labor involved, and finally a cost summary of overhead costs, labor, materials, outside repairs if any, lubricants, and total costs involved. This information is later passed on to the Accounts Department for accounting action. In addition, similar data concerning the nature and cost of repairs is recorded in the Plant and Machinery Log Book maintained for each unit of plant. This Log Book contains the plant serial number, make, type, where and when used; days and hours worked, under repairs, and idle; issues of fuel and lubricants; and repairs carried out, spares used, costs of maintenance, and the Job Card Number of the unit of plant. A similar procedure is employed in the case of repairs on vehicles, except that a Daily Running Report Book is kept for each vehicle instead of a Log Book. In the D.R.R. is recorded the vehicle fleet number, make and year, driver's name and number, miles run, tools and equipment used,

vehicle's jobs and times of operation, and fuel and tire issues. When minor repairs are effected on the sites of work, Job Cards are also used and filed with the Work Shop Manager for registry and accounting purposes. A vital element of Work Shop administration is the proper analysis and recording of costing data regarding the repairs and maintenance of plant and machinery, for these costs are one important factor in determining the hire rates for units of plant. The procedure for obtaining accurate results is to distribute costs to each plant and vehicle as it undergoes reparation. Periodically this costing data together with the PMLBs and DRRs goes to the Main Plant Office in Beirut.

Repairs in the main Work Shop are conducted under the direction of the Work Shop Foreman who, in turn, is responsible to the Work Shop Manager. The Work Shop Foreman supervises the ganger heads of the major sub-divisions of the shop, namely: the diesel section, tire repair, radiator repair, electrical repair, welding, blacksmith, and carpentry. As for repairs and maintenance carried out at the sites of work, the Site Mechanical Engineer has under his control various repair crews who deal with the following matters: earth moving equipment; crushers, rollers, and concrete mixers; gravel washers and miscellaneous; batching plants; mobile lubrication; and mobile welding. This Site Mechanical Engineer is responsible to the Plant Engineer, but coordinates his work closely with the Work Shop Manager. As well, the direction and time-keeping of the plant operators, of which there are about two-hundred, is the duty of the Site Mechanical Engineer. An additional duty of the Plant Engineer

in connection with Work Shop activities is to indent for spare parts either to Baghdad or Beirut or through local purchase when possible. Such indents are always conditional upon the approval of the Project Manager.

The plant and machinery owned by C.A.T. Company is leased out to specific projects by the Beirut Office on the basis of hire rates established for each unit of equipment. Thus C.A.T. Beirut acts in the capacity of a parent company for plant and machinery and rents out this plant to the various projects which are charged accordingly. These hire rates form a convenient accounting system within the C.A.T. organization for arriving at one of the major factors in the cost of a job, namely the cost of the plant and machinery used in executing the project. Centralized financial control is thus obtained by charging the respective jobs with the hire rates of their plant, while crediting the Plant and Machinery Operating Cost Accounts with the same hire charges representing a recovery of costs. The Plant Department thus works on a financial balance system. Operating control is also obtained through this medium since the projects submit monthly reports to the Plant Department in Beirut showing the existing equipment with its working and idle hours and hours under repair. These hire rates are basically civil engineering contractors' rates obtaining in the United Kingdom with the necessary adjustments made to allow for the varied working conditions in the Near East. The factors considered by the Plant Manager in determining hire rates are: (1) capital costs of the equipment; (2) depreciation calculated in operating hours or years;



- (3) costs of repairs and maintenance as recorded on past jobs;
- (4) operating costs of the plant including operators' wages unless deducted, fuel and lubricants, and insurance and licenses;
- (5) differentiations for local conditions.

On the whole, this ideal form of organization and administration of the Plant and Machinery Department work itself out in practice remarkably well under existing circumstances. The main obstacle to maximum efficiency is the dual problem of a dearth of trained plant personnel in the Near East coupled with C.A.T.'s own short experience in plant ownership and maintenance. In time, we can reasonably expect that the somewhat muddled state of affairs which is a natural consequence of a quick expansion into this new field will work itself out satisfactorily. Considerable effort is already being made under the guidance of the Plant Manager in Beirut to reorganize all of C.A.T.'s plant departments, to purchase new equipment, and to train an adequate staff of plant personnel.

## 6. transport

The main functions of the Transport Department of the C.A.T. Kirkuk Road Project are: (1) to allocate vehicles according to the requests from authorized persons for the movement of personnel on the job; (2) to deliver to the project sites of work those materials necessary for construction of the road; (3) to maintain operating records for the vehicles and personnel

and to see that all the transport facilities are maintained in a serviceable condition. The Transport Department of the Kirkuk project is a sub-division of the larger Plant and Machinery Department for all of C.A.T. As such, it comes under the functional control of the Plant Department in Beirut which allocates C.A.T. vehicles to the various projects. But for purposes of project execution, the Chief Transport Officer in Kirkuk is directly responsible by way of line command to the Project Manager.

The Transport Department is directed by a Chief Transport Officer who has his headquarters in the main camp of Chemchemal. Under him comes the Assistant Transport Officer who supervises transport in and about Chemchemal plus transport Officers located at Kirkuk, Kilometer Eight Camp, and Derband to supervise transport facilities in these areas. There is, as well, a small Transport Staff located at each of these camps. In general, there are three main categories of transport: (1) passenger cars such as saloons, land-rovers, etc.; (2) pickups and similar light trucks; (3) heavier trucks such as tippers, dumpers, trailers, tankers, etc. These transport facilities are allocated to the sites of operation as required.

The Transport Officer maintains full control over the use and disposition of vehicles for both the C.A.T. Company and the Development Board. Vehicles are assigned to jobs and sites of operation on request of authorized persons if available. A certain number of vehicles have been permanently assigned to specified persons for executing a particular job. The remainder

are allocated on the basis of an advanced vehicles' work program made out on a day-by-day basis. Currently, vehicles are assigned on a permanent basis to the following sections of the respective camps: (1) Chemchemal - for the Development Board, Work Shop, the Land Survey Party, Camp Maintenance and construction, Stores, Fuel and Oil Supply, Quantity Surveyors, Water supply, the Engineer in charge of Section Two; (2) Kirkuk - for Stores, camp maintenance, and commissariat; (3) Kilometer Eight - for excavation, repairs and maintenance of plant, water, camp use; (4) Derband - for camp maintenance, quarries, and water supply. Site engineers and section chiefs place requests for additional vehicles as their work load demands. These requests together with the prior allocation of permanent vehicles form the basis for the daily vehicles' work program of the Transport Officer in Chemchemal. In order for these programs to be drawn up correctly, the Transport Officer must be fully cognizant of work requirements, number and type of vehicles currently available, and the tonnage or work-load capacity of each type of vehicle. Vehicles are also issued to sub-contractors on their AR/AP accounts. Of extreme importance to the successful progress of the project as a whole is precise timing in the allocation of vehicles to jobs. Thus Transport must be prepared to satisfy the more important requirements for the movement of personnel and to supply the necessary materials to construction sites each day.

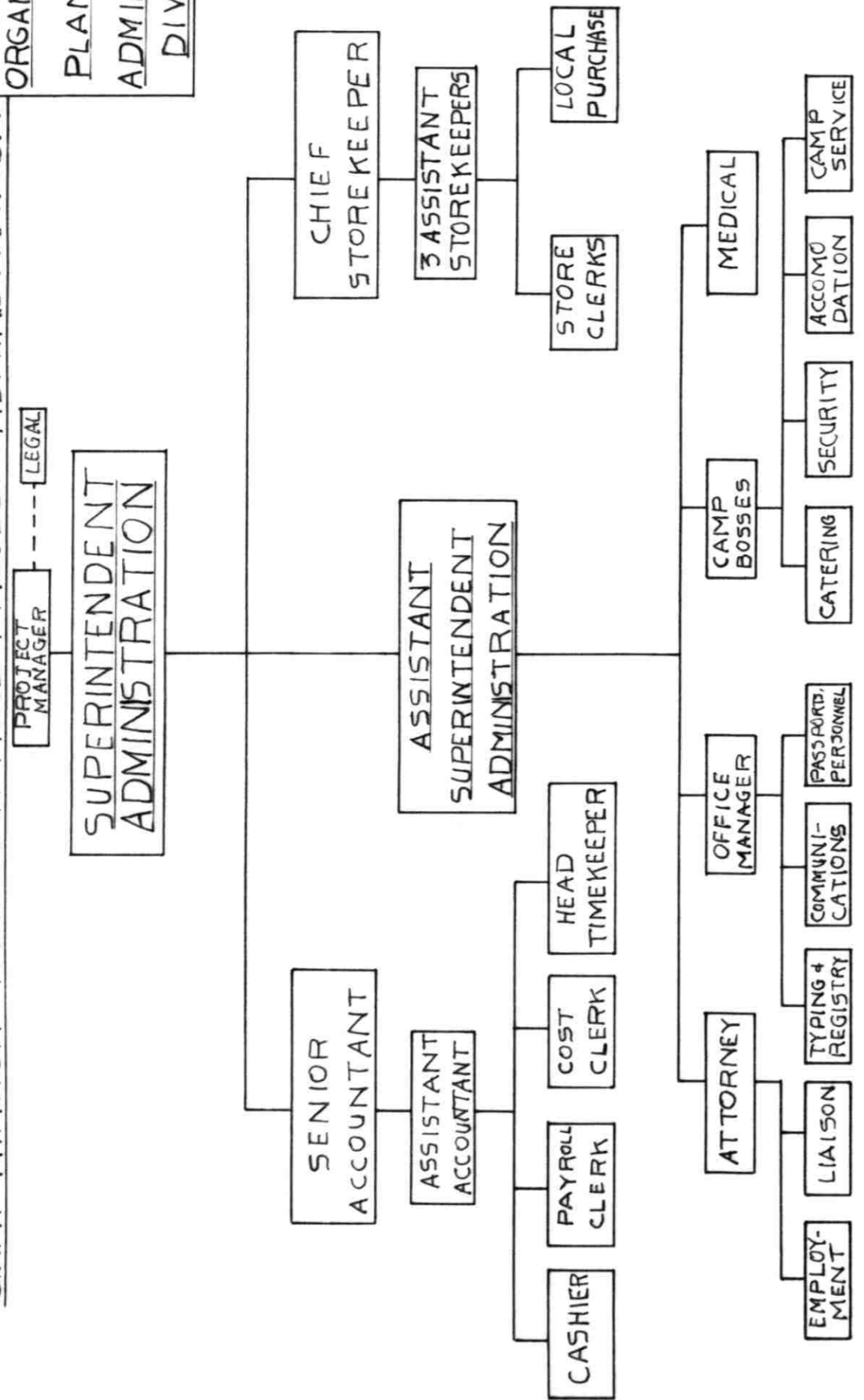
In addition to the advanced vehicles' work programs and records of the vehicles' daily operations, the transport staff

maintains detailed records for each unit of transport. These records are summarized in the Daily Running Reports maintained in book form for each vehicle. The data recorded in these D.R.R.'s is as follows: month and year of operation, make of vehicle, fleet number, hire rate, driver's name, number, and wages, station, times in and out, hours worked and mileage, job worked and to be debited, total miles run during month, fuel and oil consumption, tire record, tools and equipment issued, amount and cost of repairs and maintenance during the month, plus license and insurance data. Each section keeps these records for its own vehicles and at the end of every month they are centralized at the main office of Chemchemal and the information is passed to the Accounts Department for financial action. The information gleaned from these D.R.R.'s thus keeps the Accounts Department informed of the monthly running or operating costs of each vehicle. This, in turn, is passed on to Management in the form of periodic reports from the Transport Officer. A Staff of Timekeepers is assigned to transport to maintain time sheets for the drivers. On this sheet is recorded the pay card numbers of the drivers, their names, car numbers of the respective drivers, hours worked, and rates of pay. This data is subject to monthly accounting action for payment of personnel.

As regards relations with other departments, Transport deals most closely with the Work Shops for the repairs and maintenance of vehicles. When a vehicle requires attention, it is sent along with an Inter-Departmental Service Request Form for

repair and its D.R.R. plus any demands for priority. The Work Shop then records time in and costs of repairs made and returns the vehicle when completed. Stores supplies equipment and issues of fuel and oil. Vehicles are requisitioned through the Project Manager. At present there are about eighty vehicles but at the peak of operations there should be approximately one-hundred and thirty. In similar fashion, the drivers, of which there are now about sixty, are obtained by requisition from the Personnel Department. More will be engaged as required. Final control of both vehicles and drivers rests with the transport Department. Transport personnel includes the Transport Officers, clerks, foremen, and drivers.

Supplementary to his purely transport duties, the Chief Transport Officer has been assigned the responsibility of organizing the Kirkuk Road supply system for materials allocation to construction sites. This task requires that he visit daily each site of operation and contact the three section engineers to obtain approximate material requirements. Then, in cooperation with the Senior Engineer, material requirements for the whole project are worked out on a monthly program basis. Daily needs are then determined with an additional thirty percent allowance for wastage and inefficiency. The materials thus distributed to the job include: sand, gravel, crushed stone, pipe culverts, steel reinforcements for bridges and culverts, cement, etc. Two sub-contractors produce the aggregates and another sub-contractor produces the gravel as a means to economy for C.A.T. Other materials are obtained through Stores on



requisition by the Chief transport Officer. Finally, this Officer must submit monthly reports on the condition of transport facilities and the functioning of the supply system to the Project Manager and to the Plant Manager in Beirut.

7. Administration and Services

The head of all aspects of administration for the C.A.T. Kirkuk road scheme is, of course, the Project Manager. But as indicated on the appended organizational chart, certain duties have been delegated to his subordinates in keeping with the chain of command concept. This presupposes delegation of authority and responsibility, and specialization of functions where possible to expedite the execution of the job. These basic principles of administration have been followed in the C.A.T. Kirkuk Project in so far as existing conditions will permit. Thus direct supervision and control of administrative functions have been delegated to the Superintendent of Administration who also acts as Assistant Project Manager, while control of the Engineering aspect has been delegated to the Senior Engineer. This system permits the Project Manager to devote most of his time and effort to deciding on major issues of policy planning and execution. On the purely administrative side functions have been divided between Accounts, Stores, and General Administration. The latter comprises Employment and Personnel, Office Management, Government Relations and Legal,



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Camp Administration, and Medical Facilities. These general administrative activities fall under the direction of the Assistant Superintendent.

In theory, C.A.T. administration works on the principle that the measure of authority and responsibility delegated by the senior staff to junior personnel should be commensurate with what the latter are capable of bearing. This capacity is evaluated on the basis of length of tenure with C.A.T. as well as upon other well known traits of leadership such as ability, clear-headedness, integrity, etc. In practice, however, the situation often resolves itself into an over concentration and centralization of power and responsibility in the hands of the top Management which can be detrimental to the smooth functioning of the organization. The reasons for this are many, but most important are a lack of trained and experienced personnel plus the ever-present caution of the Arab peoples with respect to each other as well as to foreigners. But efforts are being taken by C.A.T. Management to minimize the adverse effects of this predicament.

More specifically, the Project Manager has final control over the formation and implementation of engineering and administrative policy. However, we have already seen that he has delegated a good part of these duties and responsibilities to senior staff personnel and subordinates. Yet the one aspect of administration over which the Project Manager retains direct control is in the matter of financial expenditures. Even the smallest sums paid out for local purchases or in terms of

salaries and promotions must bear his signature. Thus all incidents for personnel, equipment, and material supplies required for the execution of the job, whether made locally or external to the Kirkuk area, must have the formal approval of the Project Manager. In his absence he has delegated these duties and responsibilities to the Assistant Project Manager who is, as well, the Superintendent of Administration. This policy of centralized control over finances is based not so much upon an inherent distrust of subordinates as it is upon the necessity of keeping expenditures strictly within the limitations imposed by the terms of the contract. For instance, roughly forty percent of the project value is paid out in wages. We must ask, is not the ultimate purpose of contracting to maximize profits? The possible criticism which might logically be directed to this system of financial control is that the approval of the Project Manager or his Assistant tends to become a mere rubber stamp approval. Obviously, each item of expenditure cannot be thoroughly investigated by the Project Manager; therefore, in the majority of cases authenticity must be based upon the word of the departmental heads. A situation thus develops wherein subordinates effect decisions without bearing the consequent responsibilities. Perhaps a more effective system of control would be one which held each departmental head personally responsible for all action, financial and otherwise, taken by the management on behalf of his department. Finally, all correspondence emanating from Kirkuk in the name of C.A.T. Company must be written by and bear the signature of the Project Manager or his Assistant.

It has already been pointed out that the Superintendent for Administration who also acts as Assistant Project Manager is responsible for the Administrative (as opposed to Engineering) aspect of the project within the limitations described above. Under his jurisdiction comes the Senior Accountant, the Chief Storekeeper, and the Assistant Superintendent of Administration. The functions of Accounts and Stores are described in the succeeding chapters; here, therefore, we shall concentrate on the duties of the Assistant Superintendent of Administration. This latter individual is responsible for determining policy and supervising its execution in the fields of Employment and Personnel, Office Management, Government Relations and Legal, Camp Administration, and Medical Facilities. An analysis of these five important functions is now appropriate.

1. Employment and Personnel: This department is directed by a Chief Employment Officer who also acts in the capacity of Company Attorney. He is directly accountable to the Assistant Superintendent of Administration for the satisfactory performance of his duties.

On all C.A.T. construction projects and in trading centers as well there are two fundamental categories of personnel: (a) the imported staff, and (b) the locally engaged staff. Each of these categories is again subdivided into monthly paid personnel and daily paid personnel, depending on their in-Company grade and type of work performed. Employment Agreements or Personnel Contracts, as appended, delineate the employee's pay grade,

conditions of work, length of tenure, travel, messing, and accommodation arrangements, and appropriate allowances. Such contracts are agreed to between the Company and the employee before the latter proceeds to his place of work.

The procedure for the employment of the locally engaged staff is as follows. Department heads submit requisitions to the local Employment Office for the number of men of specified qualifications to fill existing vacancies. Alternatively, the department concerned will often suggest certain persons whom they believe could best fill the posts. The Employment Officer then contacts the persons required and sends them to the Company physician for examination. If found fit, the prospective employees obtain labor identity cards which are required of all persons employed in Iraq. Meanwhile, the prospective employees complete the necessary application forms, and if then found satisfactory they are formally engaged. An Office Order is subsequently issued, copies of which are sent to the departments concerned, to Accounts, and to the employees' personal files. A personal file is maintained for all monthly engaged staff, whether local or imported. Daily paid cooly laborers are issued individual pay cards from which a payroll for daily paid labor is compiled. AR/AP Accounts are maintained for imported monthly and daily paid employees. All newly engaged staff remain on probation for a two-week period. For this reason a supplementary sheet is delivered with the Office Order to the department head concerned who makes recommendations regarding the capacity of the new employees. If the evaluations are favorable, the men are retained.

Thus far, only about five percent of the probationees have been rejected as unsatisfactory. To obtain coolly labor, as opposed to clerical staff and artisans, the Employment Officer goes to that village nearest the site of work and procures the required number of laborers through the village mukhtar or sheikh, if the area happens to be tribal. Thus in the event of a labor dispute, the C.A.T. supervisor settles the matter with the aid of the mukhtar or sheikh concerned.

The procedure for the employment of the imported staff differs from that of the locally engaged staff in certain fundamental respects. These imported personnel are generally engaged in Beirut on both a monthly and daily paid basis. The senior engineering and administrative personnel comprise the monthly paid staff, while the daily paid staff are largely artisans and other technicians such as tractor drivers, electricians, etc. whose specialities are scarce in Iraq. Most of the senior engineering and administrative personnel were assigned by Management Beirut to Kirkuk at the start of the project, but replacements from C.A.T.'s large complement of permanent personnel continue to flow in as the volume of work increases. Recruitment for the imported daily paid staff is carried on by the Employment and Personnel Office at Beirut Headquarters. This department procures, tests, and engages all C.A.T. personnel hired from Beirut, and supervises their trans-shipment to the projects where they are needed. A requisitioning process similar to the one already described for local employment is in effect in Beirut, Baghdad, and other employment centers for C.A.T.



All imported personnel, both monthly and daily paid, are engaged on a contract basis. The contracts or Employee Agreements for the daily paid staff specify the grade and salary of the man, with arrangements regarding living allowances included therein. Contracts for the monthly paid staff specify the employee's grade and basic salary plus certain living allowances. At present, food allowances provide for either free-messing at company expense or permit the man an additional twenty-five percent of his base salary. Similarly, the accommodation allowances provide for either free lodging or allow the employee an additional ten percent of his base salary. Besides these, there is an expatriation allowance of twenty-five percent of the base salary payable to all monthly paid staff stationed outside their countries of normal residence. The company also pays a climatic allowance to employees stationed in areas where difficult climatic conditions obtain. This allowance may be up to thirty-five percent of a man's base pay. Satisfaction has been evidenced regarding these latter two allowances. However, the consensus of company opinion is that food and accommodation allowances should not be a standard percentage of base salary, but should be on a sliding scale in order to reflect the different cost of living levels prevailing in the respective areas where C.A.T. personnel are stationed. Under the existing system adjustments for variations in the cost of living from one area to another are made in base salaries. The result is that different base salaries prevail for personnel in the same pay grade. This issue has been the source of some controversy and dissatisfaction among personnel

in certain areas, and therefore requires some consideration from Management Beirut.

The rates of pay and hours of work vary, of course, according to the grade into which an employee is placed. The minimum wage as stipulated by Iraqi law is two-hundred and fifty fils per nine hour day. This minimum wage is generally paid to coolies who have just started with C.A.T. But raises are granted up to four-hundred fils or more per day depending upon the length of tenure and efficiency of the laborer. Naturally, wage levels differ from unskilled to semi-skilled to skilled workers, and from junior to senior engineering and administrative staff.

Promotions are generally recommended by the immediate supervisor or foreman of the employee and the management approves. Increments and bonuses for imported personnel are recommended by the management of C.A.T. Kirkuk, but they require the approval of Management Beirut. Wages and overtimes are paid to locally engaged day workers fortnightly from the records kept on the workers' pay cards. Nine hours is considered a working day on the site in Iraq, while the eight hour day is adhered to for office work. If the seventh day of the week is worked the employee gets double time - if not worked he is paid a regular day. Moreover, Iraqi law calls for one day of leave every month and four days of sick leave every three months. While Iraqis work according to the Iraqi Labor Laws, imported personnel work according to the terms under which they were employed, but follow the labor laws of that country in which they are stationed,

in this case Iraq. Imported personnel are entitled to fifteen days annual leave, but may earn more by hard work and good behavior. They have their salaries and overtimes recorded by the Accounts Department, and this together with their efficiency records will form the basis for the bonuses which are awarded at the end of each calendar year.

The assignment of employees to their jobs and duties in C.A.T. Kirkuk is, as described above, part of the functions of the Employment Officer in either Kirkuk, Baghdad, Beirut, or elsewhere. But this assignment is conditional, of course, upon the discretion of the Project Manager who may transfer an employee to a more suitable job. The procedure for resignation is that a man submits his request in writing to the head of his department who approves and delivers it to the Employment Officer and Accounts for the necessary action. In a disciplinary case, three warnings are issued by the department head and thereafter a man may be discharged. The Assistant Administrative Superintendent must be notified in all cases of discharges or resignations, and discharge orders must be verified by the Superintendent of Administration. To date, about five percent of the personnel have resigned or have been discharged from C.A.T. Kirkuk.

The composition of the Kirkuk staff is of a very heterogeneous nature which complicates operations no end. Roughly ninety percent of the total personnel are Iraqi nationals. The remainder are mostly senior staff or technical people who may come from Lebanon or elsewhere in the Near East or even from

Europe. The staff engaged on the C.A.T. Kirkuk project thus smacks of a distinctly international flavor, being a composite of Arabs, Kurds, Turks, Assyrians, Armenians, and a few Europeans, Britishers, and even two Americans. At present, about eighty percent of the personnel are Sunni and Shiite Muslims, the rest coming from various Christian communities. Roughly ninety-five percent of the site laborers are Muslim, while clerks, mechanics, foremen, etc. are more evenly divided between Muslims and Christians. The junior and senior engineering and administrative staff positions are held predominantly by Christians, and the Management is wholly Christian. This heterodoxy of nationalities and religions quite naturally presents additional problems to the Management in addition to the technical execution of the job. Yet surprisingly enough, though periodically symptoms of unrest crop up, on the whole the atmosphere is tranquil. Such tranquility is directly proportional to the justice, firmness, and equality of treatment meted out by the Management in the exercise of their collective duties and responsibilities. Unfortunately, the entire staff of C.A.T. Kirkuk is male.

2. Office Management: This task includes all the paper work generally done by offices maintained by other similar organizations. The duty of the Office Manager is to open and redirect to the persons concerned all company correspondence, dispatch private mail in and out, etc. The Office Manager has under his direction company clerks, typists, registration and filing, passport affairs, communications, and any other details

which may come up. The proper maintenance of personnel records forms a major part of the Office Manager's job. This includes keeping contracts and employment agreements, personal record cards, and any correspondence concerning employees such as letters of recommendation, notations, and resignations. This material is all retained in the employee's personal file, a duplicate of which is kept in Baghdad and Beirut.

A subdivision of Office Management is the Insurance Section. Insurance currently covers all C.A.T. camps and plant and equipment against fire and third party damage as are all motor vehicles. Stores materials are insured against fire only, as insurance against theft is extremely difficult to obtain on a large scale in the Near East. All C.A.T. personnel, laborers and staff alike, are insured against accidents and illness incurred on the job in accordance with the requirements of the Iraqi Labor Law concerning workmen's compensation.

5. Government Relations and Legal: As previously mentioned, the Employment Officer also acts in the capacity of Liaison Officer vis-a-vis the local government and as Legal Advisor to the Company in Kirkuk. This man is an Iraqi by nationality and has been professionally trained as a lawyer. His varied duties and responsibilities involve him in all conflicts or problems arising between C.A.T. and the Iraqi Government. Though his main concern lies with the application of the Iraqi Labor Laws to C.A.T. personnel, he handles as well any minor legal claims arising from C.A.T. operations in the Kirkuk area.

4. Camp Administration: This department is supervised by the Assistant Superintendent of Administration who has appointed four Camp Bosses to attend to Camp Administration in each of the four camps. It is the duty of these Camp Bosses to direct catering and messing, accommodation, camp services such as room and office boy service, the distribution of mail, laundry facilities, etc., and camp security.

As regards catering, food supplies are purchased locally and are distributed daily to the camp messes according to prior requisitions by the Camp Bosses. Local food purchases are designed to obtain the best quality stuffs at the lowest prices. Messing costs to employees are computed on the basis of the original cost of the food plus about fifteen percent to cover services.

Housing accommodations vary from tents for laborers, semi-skilled and skilled workmen, and some office clerks, to aluminum and wooden shacks, and concrete dwellings for the higher grades of employees. Following Company policy of attempting to please all employees, Europeans receive preferential treatment regarding accommodation and messing to suit their tastes. Services are generally in the hands of the multitudinous office, room, and mess boys who permeate the camps distributing small cups of Turkish coffee to all and sundry, together with mail, laundry, etc. Camp Security lies in the hands of a head watchman and his men, mostly Kurdish tribesmen judging by their martial appearance, who are obtained through the local Sheikh or village headman. In brief, the Camp Bosses are



responsible for maintaining the general condition of their respective camps to the satisfaction of the employees.

5. Medical: The Company has engaged the services of the local senior military physician, a Colonel in the Iraqi Army, to act as Company doctor. He is in charge of the medical dressers stationed in each camp for the purpose of dispensing first aid. Reports are submitted to him every week concerning health matters, the cleanliness of the camps, etc. In addition, the doctor visits the camps each week and on special call. He is finally responsible for camp health matters to the Project Manager.

### 8. Accounts

Standard accounting records are maintained of all financial transactions incurred in the course of the execution of the Kirkuk-Tasloojah Road Project by the C.A.T. Kirkuk Project Site Accounting Department. This Department is headed by a Senior Accountant, an assistant, and a small staff of accounting and costing clerks plus timekeepers. The Senior Accountant is responsible for the satisfactory fulfillment of his duties to the Project Manager, but is functionally linked to the Chief Accountant for C.A.T. in Beirut. The latter is responsible to Mr. Khoury in line authority.

The cumulative information showing the financial position

of the project is prepared by the Kirkuk Accounting Department. Such financial data is summarized in the form of trial balances of the various control accounts in the Main Ledger. From these trial balances total expenditure and total income on the project can be ascertained. This information is passed monthly to the Main Accounts Department in Beirut with copies to the Branch Accounting Department for Iraq in Baghdad. The latter Department gathers these financial returns from the Kirkuk and other C.A.T. projects in Iraq and prepares an annual balance sheet and profit-and-loss statement to show contracting results for all of C.A.T. in Iraq. Then, with this data received from Iraq and other C.A.T. Branch Accounting Departments elsewhere in the Near East, Management Beirut is able to determine the annual financial position of the C.A.T. Company as a unity.

Taking the C.A.T. Kirkuk Project in isolation, the accounting procedure is as follows. Accounting summaries are received monthly from the various departments of the project which incur expenditure during the execution of the job. These summaries are then worked into Journal Entries by the Senior Accountant and these are posted into the Main Journal Book. From the Journal these entries are posted to the Main Ledger Control Accounts, each of which is sub-divided into a number of subsidiary account headings. The entries are then posted to the cost ledgers. A cost accounting system has thus been effected whereby costing data is tabulated so that direct costs and overheads are allocated or charged to the various aspects of the job. This cost accounting system parallels and acts as a check

upon the estimated daily costing carried out by the Engineering Department. To continue the purely accounting phase, monthly returns containing the trial balances of the main control accounts are passed to Baghdad where this financial data is, in turn, incorporated into the branch accounts.

Main Accounts Maintained by C.A.T. Kirkuk

- 1) Plant, Machinery, and Vehicles Operating, Repairs, and Maintenance Cost Control Account plus about two-hundred and fifty subsidiary operating costs accounts maintained for each unit of P.M. and V.
- 2) Main Stores Control Account plus subsidiary accounts for each store and for the principal stores items.
- 3) Work Shop Control Account.
- 4) Contracting Cost Control Account with subsidiary accounts differentiated by jobs according to the several costing code number designators.
- 5) Main Canteen Stores Control Account with subsidiary accounts for each of the five messes.
- 6) Main AR/AP Account and individual AR/AP Accounts for designated employees and sub-contractors.
- 7) Commissariat AR/AP Accounts.
- 8) Drivers' and Operators' Wages Control Account.
- 9) Imported Operators' Wages Control Account.
- 10) C.A.T. Baghdad Kirkuk Project Current Account.

- 11) Plant, Machinery, and Vehicles Capital Control Account.
- 12) Unclaimed Wages Account.
- 13) Insurance Control Account.
- 14) Rafidain Bank Kirkuk Account.
- 15) Main Cash Control Account.
- 16) Money Orders Clearing Control Account.
- 17) Deposits Receivable Account.

In the enumeration of the above accounts maintained by the Accounts Department of the C.A.T. Kirkuk Project, an attempt has been made to list them in order of importance. For the purposes of this study, it will best avail us to concentrate on only the most significant accounts in the hope that this will help to clarify the interworkings of Accounts with the other departments of the project. It should be noted that a study of accounting transactions is particularly useful for acquiring an understanding of a construction job, since Accounts exerts close financial control over all aspects of the project. Because of this, Accounts is closely linked to every other department. Its periodic returns and summaries provide a meaningful basis for management decisions, providing as they do a clear-cut picture of the economic progress of the job. Now let us examine Kirkuk accounting in greater detail.

The Plant, Machinery, and Vehicles Operating, Repairs, and Maintenance Cost Control Account consists of debits for the operating costs of the P.M. and V. and credits for the hire charges which represent a recovery of costs. These operating

costs include costs of fuel and oil consumed, tires and tubes used, insurance and licenses, depreciation, operating overheads, branch overheads, work shop overheads, and outside job costs. Subsidiary accounts are maintained on this same basis for each unit of P.M. and V. From the Plant and Machinery Department and from transport Accounts receives monthly the machines' operating times and idle times as recorded in the Log Books and Daily Running Reports. Accounts then debit each P.M. and V. subsidiary account with operating costs and credit same with the hire charges computed by multiplying hire rates by hours worked. These hire charges are, in turn, debited to the job as a whole. From these accounts it is possible to ascertain over a given period of time whether the hire rates charged for each unit of P.M. and V. is in line with the operating costs of said units. The optimum point, of course, in this arrangement is that at which hire charges just equal or recover operating costs.

In the Main Stores Control Account and Stores subsidiary accounts credits represent stores issues while debits signify stores receipts. The types, quantities, prices, and other details concerning issues of materials, spare parts, and fuel and oil from Stores are recorded on Stores Issues Vouchers. Copies of these are passed to the Stores Accounts Section where they are daily posted to Stock Record Cards, summarized fortnightly, and passed to the Main Accounts Section. Similar data regarding items received by the stores are recorded on Stores Receipts Vouchers, copies of which are also passed to Stores Accounts as in the case of the SIVs. From these records

Accounts prepares Journal Vouchers and credits the Main Stores Control Account with the total cost of issues while debiting same with the total value of stores receipts. This same procedure is carried out in connection with the Stores' subsidiary ledger accounts which are subdivided into stores vocabulary sections. Tight financial control is thus retained over Stores' operations for the edification of Management.

A Work Shop Control Account is maintained to measure the cost of repairs and maintenance of plant, machinery, and vehicles against the value of work produced by the Shop. Thus the Work Shop Control Account is debited with the salaries and wages of the Work Shop staff, including both supervisors and mechanics, and also with the cost of spare parts and other stores' materials employed in the Shop. The counterbalancing credits represent the total value of repairs and maintenance produced by the Work Shop monthly. The Work Shop Manager allocates the Work Shop costs on Job Cards to each unit of P.M. and V., and debits the operating costs accounts maintained for each unit of P.M. and V. with the actual cost of repairs while crediting each operating cost account with the hire charges of each operating unit of P.M. and V. It is readily apparent that over any given period of time these records will enable the Plant and Machinery Department to ascertain more correctly the appropriate hire rates for P.M. and V.

A Contracting Cost Control Account is maintained in order to record and control costs and expenditures incurred on the job. This account receives debits of the expenditures



incurred in the execution of the job. Credits in this case represent the value of work executed as estimated by the Quantity Surveyor approved and released in payment certificates issued by the Development Board.

When the Development Board agrees to the payment certificates the Development Board AR/AP Account is debited and the Contracting Cost Control Account is credited. Then when payment is received the Development Board AR/AP Account is credited and the Rafidain Bank Kirkuk Account is debited. A similar procedure is followed in the case of the sub-contractors whose AR/AP accounts are credited with amounts earned according to the value of the work certified to by the Quantity Surveyor less retention money. The counter debits go to the Contracting Cost Control Account.

The Main Contracting Cost Control Account into which are collected the various items of expenditure in a total cost form is broken down into several subsidiary accounts maintained according to a series of costing code numbers which refer to the various aspects of the project. Costs are entered as debits against the relevant costing code numbers, each being designated by a lettered code: (1) OH, designating general and site overheads; (2) SA, designating suspense accounts for supplies of materials ex-stock; (3) P, designating preliminary expenses; (4) C, designating contract execution, i.e. excavation, construction, etc.; (5) DW, designating day work or extra work not specified in the initial contract but required by the Development Board. Within each of these five categories additional

breakdowns have been made of the various aspects of each category of job. These have been designated by the lettered code plus a numerical code as, for instance, OH 2 which refers to administrative expenses as one part of overheads. A study of the appended list of job code numbers will reveal the system in its entirety. The costings clerk maintains the cost accounts on the basis of returns received from each section of the job. Costs or expenses are thus distributed over and charged to each item of work in order to obtain a monthly picture of the nature and amount of expenditures incurred by C.A.T. on the Kirkuk Road Project. This monthly summary of costs is then presented to the Project Manager who checks it with the data obtained from Engineering Costing. The actual costs thus derived together with the adjusted estimated running costs when compared against the prices for the various items of work as set forth in the contract provide Management with a current view of the profit-and-loss situation of the project. This monthly economic picture of profits-and-losses forms the primary basis for Management decisions concerning the advanced planning and execution of the project.

The other accounts enumerated above are maintained in similar fashion. We shall, therefore, run through them summarily. The Main Canteen Stores Control Account is kept to record receipts and issues of food stuffs as debits and credits respectively. Subsidiary canteen accounts are likewise maintained for each of the five messes: Mess A in Kirkuk, Messes B and C in Chemchemal, Mess D in Kilometer Eight Camp, and

Mess E in Derband. Subsidiary accounts are also opened at each mess to keep a record of the cost of food consumed by the various categories of personnel in accordance with their terms of employment, i.e. free messing, food, allowances, etc. These are referred to as Commissariat AR/AP Accounts. AR/AP Accounts (Accounts Receivable/Accounts Payable) are maintained for each staff employee and sub-contractor who has signed a contract with C.A.T. On the basis of the terms of appointment contained in these contracts, a monthly staff payroll is prepared. Each staff member's pay is then credited to his AR/AP account while cash advances are debited to his AR/AP accounts. The locally engaged artisans and laborers are paid fortnightly on the basis of a payroll prepared from the time sheets and laborers' pay cards. Pay cards are issued to each laborer fortnightly using a different colored card for each pay period. These pay cards contain the laborer's name, rate of pay, and number of days worked plus overtime. A head timekeeper and ten assistants are responsible for time keeping on the sites and recording the pertinent data on the time sheets and laborers' pay cards. The fortnightly payroll payments are registered as credits to the appropriate Wages Control Account which is debited with the amount of wages paid out from the Main Cash Control Account.

The remaining accounts are self-explanatory excepting the C.A.T. Baghdad Kirkuk Project Current Account which requires some comment. This account has been opened in the Main Ledger to show how much cash has been transferred from C.A.T. Baghdad to the C.A.T. Kirkuk Project. Funds thus transferred to C.A.T.

Kirkuk are debited to the Rafidain Bank Kirkuk Account and credited to the C.A.T. Baghdad Kirkuk Project Current Account. Cash withdrawals in Kirkuk are, as already mentioned, recorded in the main Cash Control Account. Consequently, we see that C.A.T. Baghdad acts as the central supplier of cash to the Kirkuk project in addition to exercising accounting control over all C.A.T. Kirkuk project accounts.

Thus it is in the above described manner that the Senior Accountant and his staff in Kirkuk control the financial situation of the project. Strict financial control together with administrative and engineering control is vital to the success of the job as a whole. It is from the Accountant that the Project Manager and his staff receive the financial information needed to help form a realistic basis for future management decisions. The steady flow of correct financial data is necessarily dependent upon the efficiency, accuracy, and consistency of the Accounts Department in gathering, collating, and recording company financial transactions. Much effort must, therefore, be devoted by Accounts to perfect the functioning of the existing system.

### 9. Stores

The Main Store for the Kirkuk Project is situated in the Chemchemical Camp while each of the other three camps have their own sub-stores. The Kirkuk Store acts as a clearing

house for stores items flowing into the project as a whole and from there they are distributed to the Main Store and sub-stores. The sub-stores at Kilometer Eight Camp and Derband are primarily for issuing fuel and oil and spare parts for minor repairs when required. Consequently, the Main Store at the central camp at Chemchemal contains the bulk of stores materials for issuing to the Main Work Shop, transport, etc. This latter is also the administrative headquarters for all the stores.

The Stores Department supplies all items of materials required in the execution of the project. Stores goods are divided into consumable and non-consumable items which are stocked in types and quantities as dictated by past experience with similar civil engineering jobs. Most of these stores supplies, which are manufactured in either the U.S.A., U.K., or Europe are obtained from Baghdad and elsewhere in the Near East, but a sizeable amount is also purchased locally in Kirkuk. Materials stocked by stores include spare parts for motor transport, tractors, turnapulls, scrapers, crushers, road rollers, finishers, compressors, and other items of plant and machinery, plus tools, tires, and expendable materials such as fuel and oil, cement, iron, timber, nails, paper, ad infinitum. Stores administration lies in the hands of a Chief Storekeeper, three assistant storekeepers and staff, and a local purchase officer. The Stores establishment at Kirkuk is linked functionally to the Main C.A.T. Stores Department situated in Beirut which is directed by the Chief Storekeeper for all of C.A.T. He, in turn, is finally accountable to Mr. Khoury. But for the purposes of the execution

of the Kirkuk Project, the Chief Storekeeper for Kirkuk is directly responsible for the satisfactory performance of his duties to the Superintendent for Administration and ultimately to the Project Manager.

Materials flow into the stores of C.A.T. Kirkuk from several sources. They arrive at C.A.T. Stores with a Loading Note to be covered forthwith by a Stores Issue Voucher. The LN includes a description of the materials, quantity, source, destination, dispatched and received by whom, etc. Stores then check the materials to see that they correspond with the LN data. Following the LN comes the Stores Issue Voucher which contains descriptions, quantities, and prices, plus other details such as part numbers, etc. These SIVs are issued from the C.A.T. Store which previously handled the goods. A Stores Receipt Voucher is then prepared to confirm the receipt of materials by the store concerned and to cover the SIV from the preceding store. Locally purchased materials are recorded on an SRV covering the merchant's invoice. Stock Cards are maintained for each item of stock carrying its description, quantity, price, and destination. An inventory is conducted periodically to check that actual stock corresponds with Stock Card records. Stock Sheets are used as vouchers when closing the stores after completion of the Project for the purpose of transferring the remaining stores materials elsewhere. These Stock Sheets show types, quantities, and prices of remaining supplies.

The procedure for drawing stores materials is as follows. When a certain item is required from Stores by a department,



for instance Work Shops, Transport, Site Engineering, or Commissariat, etc., the head of that department is authorized to issue a requisition for said stores items according to an inter-departmental circular. When the duly authorized requisition form reaches the Stores the order is effected immediately if the item is available. If not, Stores makes out a requisition slip to purchase the item locally if possible; otherwise the order is sent to C.A.T. Baghdad. In the case of requisitions for spare parts the department concerned is obliged to return the worn out parts for purposes of stores control. Certain non-consumable items such as tools, furniture, fixtures, etc., are issued to authorized C.A.T. personnel and sub-contractors on a temporary loan basis. Such items are issued on a Temporary Equipment Receipt (TER) giving the description, quantity, and price of the supplies, to whom and when issued, etc. These TERs are recorded in a Summary Records Book. When these items are returned, Stores completes a Receipt for Temporary Equipment (RTE), a copy of which is given the borrower. The issue of consumable materials is covered in a Stores Issue Day Book. This SIDB gives a description of goods issued, the part number and vocab number if any, quantity, destination, date, and name and signature of the recipient. At the same time these materials are posted off their Stock Card records. When goods are transferred from one store to another a Transfer Voucher (TV) is made out giving the description, quantity, price, and destination of the transferred items.

The Stores of C.A.T. Kirkuk work in close conjunction

with the Accounts Department for the purpose of controlling financial transactions. Original copies of all SRVs, SIVs, SIDBs, and TVs are sent to Accounts for accounting action. This latter includes the documentation of all stores receipts and issues as debits and credits respectively in the Main Stores Control Account. Stores also deals closely with several of the other departments, especially Plant and Machinery, Transport, Site Engineering, and Commissariat.

Stores supplies are stocked and catalogued on the basis of expendable, exchangeable, and non-consumable materials, a general description of which has already been given. Stock requirements are based on experience as there has been no progressing or scaling systems of stores supplies introduced as yet, though this is in the offing. Of Stores materials, about three-fourths of all spare parts are obtained through C.A.T. Baghdad, Auto-Works, or John Birch who represents Caterpillar tractors and other heavy machinery manufacturers in Iraq, and one-fourth are purchased locally. About two-thirds of those materials other than spares, such as cement, iron works, timber, paint, pipes, electrical fittings, etc, are purchased locally. These local purchases must firstly be authorized by the Project Manager or his Assistant.

The Stores establishment for C.A.T. Kirkuk seems to be adequate to execute the road project. However, the flow of spare parts for repairs and maintenance of the plant, machinery, and vehicles which is vital to a steady execution of the job could be improved. Planning for advanced requirements appears

to be weak both from the Kirkuk end as well as in the Baghdad office which acts as the procurer and feeder for Kirkuk. Moreover, within the Stores system at Kirkuk the introduction of a scaling system for spares where possible would simplify stores procedure and expedite operations. However, the implementation of such a water-tight system is made quite difficult in view of the heterogeneous nature of plant, machinery, and vehicles allocated by C.A.T. to perform at Kirkuk. Scaling of spares is, of course, possible only where plant has been standardized. The current reorganization of the Plant Department of C.A.T., progressing slowly but surely, is designed to gradually effect the desired standardization of plant. A reorganization and standardization of Stores procedure will then follow.

## CHAPTER SIX

### SUMMARY AND CRITIQUE

In the foregoing chapters the history, organization, and operations of the C.A.T. Company have been studied within the broader context of the current industrial development of the Arab Near East. The swift economic growth of this area, to which the C.A.T. Company provides ample testimony, was seen in the Introduction to be only a part of the total revolutionary movement overtaking the region. Next, the principal economic factors which condition the growth of industry in the Near East were briefly examined. In Chapter Three the history of the C.A.T. Company was set forth from its pre-war inception in Palestine through its rise to being the leading Arab industrial firm in the Near East. C.A.T.'s total organization and methods of operation were analyzed in Chapter Four. In Chapter Five a case study was conducted of the C.A.T. establishment in Iraq. General trends of economic development in Iraq were reviewed in Part A, while Part B dealt with the C.A.T. organization in Iraq as a whole. In Part C our attention was restricted to an intensive study of the C.A.T. Kirkuk-Tasloojah Road Project. From such a detailed analysis of a living construction project it is hoped that some light has been shed upon the more intricate and diverse machinations of the C.A.T. Company as a unity.

I propose to devote the major part of this final chapter to a critical review and evaluation of the C.A.T. Company, its organization and methods of operation, using as a basis the factual material presented in the foregoing expose. The criteria for this critique shall be those principles of scientific management which have developed in the West and have become accepted as standard operating procedure in all major business concerns. However, because C.A.T. is an Arab owned and managed firm which perforce must operate within the existing economic, social, and political context of the Near East, certain allowances will be made for these environmental differences. From this critique the reader should be able to deduce for himself certain principles which underly and condition large scale Arab business in the Near East. Perhaps these principles may also provide a useful guide to the multitudinous European and American firms engaged in business activities in the Arab world.

For purposes of clarity and simplification, I shall present the ensuing critique in several sections. Each section shall be devoted to one main aspect of the total subject of scientific business management in its application to the C.A.T. Company.

#### A. C.A.T. Organization and Operations.

1. Organization Structure: The existing organizational structure of the C.A.T. Company which was fully described in Chapter Four grew up on the basis of only a very general plan

developed by Management. In its finer ramifications the present organization took form as a result of Management's adjustments and readjustments to the constantly shifting demands of the Near Eastern business scene. This fluidity of organizational structure is still characteristic of C.A.T. today, and will remain so as long as the Company continues to grow and expand. However, this does not imply that the existing organization cannot be appraised with validity; on the contrary, it is most suited in its present stage of development for critical judgment.

Very clearly the prime determinant of C.A.T.'s present organizational structure has been the objectives and policies of the business as originally conceived by the three Partners. The objectives of the firm have been and are still: to develop the complementary activities of contracting and trading throughout the Near East under the coordinating framework of a single all-Arab management. Thus from the outset the dual activities of the Company, by the very divergency of their nature, dictated the division of the firm into two main branches: Contracting and Trading. Then, as these activities gained in scope and complexity, the third division of Administration grew up to provide the two operating divisions with vital services. Naturally, each of these divisions requires a chief executive or general manager. One might have presumed that with three Partners - Executives available, each would have been assigned to direct a division. But as the main organizational chart depicts, the Trading and Administrative Divisions fall under



the supervision of one executive, Abdulla Khoury. The Contracting Division, on the other hand, is jointly directed by the two other Partners - Executives, Emile Bustani and Shukri Shammam. The basic reasons for this are simple. Of the two C.A.T. operations, Contracting and Trading, the former is the more basic to the organization and is the more widespread from the point of view of volume of work, numbers of employees engaged, and investments made in plant and material. As a consequence, the top executive responsibilities of Contracting are sufficient to occupy the attentions of two chief executives. Secondly, Trading in its major aspects bears very close working relationships to most of the activities encompassed by the Administrative Division. It is, therefore, most logical to assign the direction of these two inter-related divisions to a single chief executive to achieve greater coordination and control. In addition, as we shall see later, the personalities and qualifications of each of the three Partners - Executives have fitted them, par excellence, for their respective posts within the C.A.T. organization.

The patterns of distribution of authority and responsibility constitute a second important determinant of C.A.T.'s organizational structure. The C.A.T. organization is a composite of line and functional authority as clearly evidenced by the charts of the headquarters establishment. On the Contracting side line of operating authority extends from the Board of Directors who formulate policy through the two General Managers in charge of Contracting in the North and South Areas to the

Project Managers and Resident Engineers posted on the actual sites of work. All such persons standing in this relationship of line authority to one another are responsible for the satisfactory implementation of operating decisions up and down the chain of command. Similarly on the trading side the line of command authority stems from the Board of Directors through the General Manager in charge of trading to the Area Branch trading Managers. These executives are responsible for the execution of command decisions with respect to all trading operations. Integrated into and sometimes cutting across these clear lines of command authority are the functional or specialist sections which have functional authority over diverse aspects of both Contracting and trading operations. As already indicated, the bulk of these specialist sections are found in the Administrative Division which is supervised jointly with trading by one General Manager. But in addition, both the Contracting and the trading Divisions maintain their own functional sections in headquarters Beirut to render the necessary technical or specialist advice to the operating sections in the field. These various functional and service sections maintain what is known as functional authority on the sites of operation where they have been accorded jurisdiction by Management. For instance, the Senior Accountant on a construction site is responsible in command authority to the Project Manager as far as overall project operating procedure is concerned. But with respect to the professional execution of his job as an accountant, he receives his functional direction from the Chief Account-

ant for C.A.T. in Beirut. This situation is, in general, representative of other similar situations where there is an integration of line and functional authorities.

As in the case of similar organizations of comparable scope, this integration of functional and specialist sections with line authority at times complements and at times conflicts with the clear lines of responsibility and command. This latter phenomenon appears to more characteristic of the Contracting Division than of Trading, though such a generalization is difficult to confirm. Trading by nature calls for a more fixed and permanent organizational structure and framework of operating procedure; therefore, lines of command and functional authority can be more clearly defined. But with regards to Contracting, the organization must be more flexible to permit rapid adjustments as new construction projects are undertaken and old ones completed. As a consequence, there is a greater tendency in Contracting toward confusion in lines of responsibility. This predicament obtains especially in the early stages of a new project, i.e. in the initiation period of a job. However, once the job is set on a sure footing with the organization and operating procedure delineated, chains of command and areas of responsibility, both on the job itself and vis-a-vis the home and branch offices, become more clearly defined and less apt to confusion. Though the present situation with respect to authority and responsibility patterns in C.A.T. Company leaves much room for clarification, it is by no means unworkable. Moreover, efforts are continuously being made by Management and the senior

staff to improve these important matters.

Company organization, being as widespread and diffuse in activities as it is, is also conditioned by the problem and solution thereto of the degree of local autonomy to be enjoyed by the country and project organizations within the total C.A.T. framework. In Chapter Four, Part B on Operations, some discussion was made on this issue. Though definite judgements are difficult if not virtually impossible to pronounce on such an intangible question, it was generally concluded that there was little uniformity between organizations and operations in the various countries. In the South Area of Contracting it was found that the regional organizations and projects had been granted by Management a greater degree of local autonomy vis-a-vis headquarters Beirut than its counterpart organizations in the North Area. Then again certain projects within both areas have been accorded greater independent decision-making powers than others in the same region. This is roughly the same situation obtaining among the area Branch Offices of the Trading Division. The degree of local autonomy to be conferred upon the diverse country and project organizations depends in large measure upon the quality, experience, reliability, trustworthiness, and length of tenure with C.A.T. of the supervisory personnel as judged by Management Beirut. This, of course, is not meant to imply that the personnel in the Arabian Gulf works are of a higher caliber than those in Iraq or elsewhere in the North Area of Contracting. But it does mean that certain experienced officers who are of long tenure with C.A.T. (i.e.

the Chief Technical Inspector who acts as Emile Bustani's personal representative in the Arabian Gulf) have been delegated a wider latitude of discretionary powers. Certain analogous steps have been recently undertaken by Management with respect to administration in the North Area, but the situation there is in too premature a stage of development to warrant appraisal. The issue of local autonomy also involves the matter of permanence or length of establishment of the organization in question. If, as in the North Area, there is little longevity of contracts (i.e. Iraq where contracts are for about two years duration), Management Beirut must perforce exert greater control over the planning and execution of the jobs. In the Arabian Gulf States, however, where works are more permanently fixed in certain pre-known localities due to most of the contracts coming from the petroleum companies and local governments, wider discretionary powers can be granted to the local C.A.T. authorities as workable systems of control are developed. Moreover, as in the case of establishing chains of command, once projects are initiated and proved working procedures inaugurated, Management Beirut can more readily afford to decentralize its control over the respective projects. A construction project can thus be likened to a clock which, once set in motion, continues to run of its own accord, requiring only periodic rewinding and adjustment.

Though such a flexible organizational structure constantly in flux may give headaches to the maker of organization charts, it appears that it works quite efficiently and practically. In so far as it lacks rigidity, it is capable of adjustment

to the Arab Near Eastern business scene which may best be described as consistent inconsistency. This description is as applicable to the people of the area as it is to the other factors of production and distribution. These and other such influences peculiar to the Arab East which condition C.A.T. organization and operations will be more fully discussed later in this chapter. Suffice it now to state that such flexibility of organization appears best to suit the demands of Near East business which currently rests on foundations constantly in flux. Admittedly, this lack of uniformity between C.A.T. organizations and operations in the various countries of work poses problems often complex for the Management. It means, for instance, that the Management must devote more time and effort to matters of administrative, technical, and financial detail than is generally necessary in most Western organizations. This not withstanding, it appears correct to assume that the problems which such flexibility of organization solves are more numerous and of greater significance to the process of doing business in the Near East than are the problems which it creates for the management of firms. Of course, an evenly balanced solution to both sides of the issue - flexibility vs. rigidity in the Company structure - is the ultimate goal of Management. It may well be that European and American business men working in the Arab world have something to learn from a study of the manner in which Near Eastern business men direct their concerns.

Departmentation in the C.A.T. Company appears, for the most part, to be adequate to meet the major purposes of the



enterprise. Departments seem to be sufficient in number and diversification of activities to enable Management to translate its policies into action. However, several departments have been formed in recent years (for example, the Plant and Machinery Department) due to the rapid growth and expansion of C.A.T. in the post-war period. These newly formed departments must obviously experience a term of settlement before they attain the expected degree of operational efficiency. During this period, therefore, much reorganization and reshuffling of personnel will continue to take place within these newly formed departments. But reorganization is not limited solely to new departments; currently there are several examples of near complete reorganization occurring in the oldest of the departments (for example, Accounts and Stores) under the guidance of a British expert. Among the various departments as set forth in the Company organizational chart, the division of work appears to be quite reasonable. However, it is within the respective departments that one often discovers an unbalanced distribution of work loads and responsibilities. Detailed office work is, in principle, supposed to be done by the clerks according to pre-established routines. Yet, mainly because such routines often fail to be completely comprehended by the office staff and often because policies are not given clear delineation, matters of little consequence which should be handled by routine often find their way to the section or department head for action. This phenomenon, if unchecked may severely hamper Company efficiency by robbing executives of their much needed

time for clear-headed planning and control of operations. As far as the staffing of departments is concerned, this seems to be inadequate only to the extent that personnel of the desired technical or professional abilities are not available in the Near East. One finds, on the contrary, that in the majority of instances departments and sections are over-staffed with relatively inefficient personnel who are often forced upon unwilling supervisors by higher authority. This obviously is a detracting factor from Company efficiency.

At the Management level spans of authority and supervision unquestionably defy all principles of business organization related thereto. This is apparent from the Company organizational Charts. In Contracting the two General Managers have not only their respective field officers reporting to them, but as well they are directly responsible for the supervision of the technical sections. This results in a minimum of ten or twelve section and department chiefs reporting directly to Bustani and Shammās. For maximum efficiency spans of control should not exceed six subordinates reporting to one executive. In Trading and Administration the same situation is even more pronounced. As indicated on the organizational charts Khoury controls directly, or at least endeavors to control, all departments within these two divisions. This amounts to some twenty persons reporting to him directly, if field heads are to be included. At this point the problem becomes one of delegation of authority and responsibility which shall be more fully discussed in the ensuing section on Delegation. It need only here be pointed out that

the development of Staff Assistants and Staff Specialists would reduce the burdens of these senior executives, thereby increasing management effectiveness.

Control will be discussed in an ensuing section; however, brief mention might here be made of the relationship between organizational structure and control. The principal factor herein involved is the lack of uniformity between country and project organizations and in operating procedure as well. As already pointed out this diversification permits of adaptability to the constantly shifting requirements of the Near Eastern business world. However, it does pose a real problem in control. Control may be summarily described as the formulation of methods for assessing achievements against pre-established standards of performance and programs of action. Thus if uniformity in the company structure is lacking, a greater diversity of control procedures is required. Control, in this case, becomes a more complex and often personal matter to be dealt with by a multitude of people in a multitude of ways. To the extent that this is applicable to C.A.T. Company, the existing organizational structure hampers control.

2. Policy: Top-level policies, especially financial, are quite rightly treated as confidential by C.A.T. Management. However, by a retrospective analysis of C.A.T. operations certain conclusions can be arrived at with respect to Management policy.

On the Contracting side probably the single most

important policy decision concerns periodic investments in plant and machinery together with the necessary fixed assets. The financial requirements of labor and materials are relatively stable items in the annual budget and cannot be reduced below certain standards. Plant requirements, on the other hand, generally constitute the largest item in the budgets for most construction jobs and is also the one item most subject to flux. C.A.T.'s heaviest investments in plant and machinery are in Kuwait in the Arabian Gulf States and in Iraq where much construction is taking place. But even in these areas certain deficiencies regarding investment policy come to light. For example, C.A.T. engineers voice near unanimous complaint of the over-used and heterogeneous nature of most C.A.T. plant. When coupled with the difficulty in feeding adequate spare parts to the various jobs and relatively inexperienced maintenance personnel, this state of affairs obviously hampers operational efficiency. Such a condition is symptomatic of the seeming reluctance of C.A.T. Management to invest or reinvest a sufficient percentage of company earnings in heavy plant and machinery on a scale commensurate with job requirements. This rather unrealistic approach to business based on the philosophy of "getting something for nothing" appears to be characteristic of business practices in general throughout the Arab East. It is, perhaps, in itself a reflex of the deep-seated economic, social, and political insecurity which pervades the Near East.

Whatever may be the underlying reasons for this phenomenon, such a short-sighted approach characterized by a reluc-

tance to invest earnings towards a long term goal of capital formation signifies a certain transitoriness in Arab business organizations. It would logically seem that unless Arab business men soon commence to think in terms of business permanence and invest with a view towards long term capital formation, their enterprises might well succumb to the rising competition from more adequately prepared foreign firms. Moreover, should the "status quo" continue, little progress can be expected in the indigenous industrial development of the area. The Near East will, as a consequence, continue to remain under foreign economic and political influences. With respect to C.A.T. operations, it was pointed out that this reluctance on the part of Management to invest in adequate plant has already resulted in considerable financial loss to the Company's Kirkuk Road Project. Unless this philosophy is altered to one calling for more stability in investment based on long-range planning, the Company will have difficulty in maintaining its competitive position in large-scale Near East contracting.

More specifically, a policy could be followed which would call for the purchase of new or relatively serviceable plant and equipment at the start of each major construction project. Then, at the termination of each such project, the works having been efficiently executed, the once new plant could be sold to other companies operating in the area, or, if still serviceable, could be transferred to other C.A.T. job sites. But in the latter course let the stress be on the adjective "serviceable". Efforts should also be made when

making new investments to standardize plant as fully as conditions will permit. The rental of plant under certain circumstances might also be borne in mind as a possible alternative to outright ownership of plant by C.A.T.

Finally, in order that the necessary investments can be accurately arrived at with respect to both plant and materials before undertaking job execution, efforts should be made to develop and tighten up the existing costing system. Not only will accurate engineering costing help in arriving at capital investment requirements, but it will, at the same time, place the pricing of tenders on a more scientific basis.

As regards trading, investment is more readily amenable to budgetary estimates than that with respect to Contracting. This is due to the fact that sales are easier to predict in advance and have greater stability over time. There is one danger, however, to investment policy which is inherent in the Company organizational structure. The fact that one man, Abdulla Khoury, controls both trading and Finance tends, under certain circumstances, to weigh investments in favor of trading over Contracting. Thus trading, characterized by short term investments and quick profits, may receive more sizeable investments than its overall position in the C.A.T. scheme of things would objectively warrant. The possibility of such a dilemma existing should be borne in mind when concurrence is sought from the Board of Directors on financial policy.

The determination of policy, financial and otherwise, could be placed on a more objective basis through the encor-



poration of C.A.T. Company. The resultant divorce of ownership from management would place business operations on a relatively impersonal plane in which the sudden impulses of individual owners would tend to play a less significant role. This is being contemplated.

3. Planning and Control: Planning and control work is carried on at several levels of Company operations and covers both contracting and trading activities. In Contracting the principal fields of planning and control are works in progress, finance, and personnel, while in Trading attention is devoted primarily to distribution, finance, and personnel. Control can be defined as the establishment of scientifically objective methods of assessing Company achievements against pre-determined standards of performance and programs of action. Through accurate systems of control firms can assure a thorough implementation of top and mid-level policy and plans.

Control in the contracting business must perforce be of two kinds, technical and administrative. The former type has been discussed at fairly great length in the study of the Kirkuk Road Project. Because such technical control ranges into civil engineering, only the basic features are intelligible to the lay reader. But administrative control and specially financial control is of at least equal importance to the proper direction of operations. This aspect of control in C.A.T. Company appears to be comprehensive enough in principle, but often deteriorates when arriving at the stage of implement-

ation. This is due not so much to the actual systems themselves, but rather to the lack of experience on the part of the people responsible for executing the systems. Time and education are the sole cures for this malady.

The main need of C.A.T. Company with respect to control is to tighten up control over general operating costs and overheads. This is especially applicable to site operating costs which form the bulk of expenses incurred in contracting work. As previously mentioned, accurate cost returns enable executives and project managers to check on and evaluate job efficiency. Of equal if not greater importance is the role which such costings data plays in the price estimation of future tenders. C.A.T. can no longer rely on a purely intuitive method of tender pricing in view of the currently keen competition for work in the Near East from firms of international reputation. Budgetary control schemes are being introduced in Trading and Administration to give a more scientific analysis of overheads and direct costs. But because of the relative instability or transitoriness of the construction business in the Near East, it is extremely difficult if not virtually impossible to introduce budgetary control in Contracting. In this division the onus will fall on the perfection of existing engineering and cost accounting systems of control.

4. Delegation: In Chapter Four the overall organization and operations of the C.A.T. Company were analyzed in considerable detail. The organizational charts are a graphic represent-

ation of the formal organization now in existence. From this bird's eye view of C.A.T. Company, it is possible to draw certain fundamental conclusions regarding delegation of authority and responsibility. There should be little need here to explain the necessity of adequate delegation of duties and decentralization of powers in a Company reaching the magnitude of C.A.T. Insufficient delegation and overcentralization detracts from Management efficiency in policy formation, planning, and control. Moreover, it tends to weaken the organization at all levels of authority by causing a lowering of morale and work incentive.

From our study of C.A.T. Company the over centralization of command in the hands of the three Partners is readily apparent. These Partners act not only as policy making directors, but also as executives in charge of line and functional departments. Almost by definition, this diversity of functions implies weakness in C.A.T. Management and general administration. Linked to this over centralization of command is the rather obvious reluctance of Management to delegate any large measure of decision-making power to their senior executives. This is evidenced in several ways, principal among them being the fact that few of these potentially top executives occupy senior management positions. Thus the duties and responsibilities of the three Partners - Directors-Managers as executives unnecessarily permeate several levels of Company organization. This unwillingness to delegate is not only the illness of Management; it is also a sickness which seems to prevail at all levels of

authority both within Headquarters Beirut and in the country and project organizations. This condition has been pointed out with respect to the Kirkuk Road Project. Though in theory C.A.T. Administration works on the principle that the measure of authority and responsibility delegated by Management should be commensurate with what junior officials are capable of sustaining, in practice this is seldom the case. The capacity of an individual for responsibility is supposed to be judged on the basis of length of tenure with C.A.T. as well as upon the several other well known traits of character such as ability, clear-headedness, integrity, etc. But unfortunately, as pointed out above, the practical application of this theory generally resolves itself into an over concentration and centralization of power and responsibility in the hands of Management, a situation detrimental to the smooth functioning of any organization. Added to this is the equally frequent phenomenon of authority not being commensurate with responsibility mated out to subordinates. One often hears the complaint from persons at all levels of the hierarchy to the effect that: "I am responsible for a certain job, but I am not able to execute my job because Management has tied my hands. They have not given me the necessary authority to enable me properly to execute my job. What can I do?" The introduction of terms of reference for categories of jobs would help greatly in arriving at a sound solution to this dilemma. Job descriptions are now in the planning stage.

The causes for the growth of this top-heavy organizational structure are many. Foremost among them might be counted

the rapid expansion of C.A.T. Company especially in post-war years. Throughout this period Management has been persistently faced with the problem resulting from the essential incompatibility of the need to diversify authority and responsibility with the need to retain unity of command. To date, Management has favored the latter course, perhaps quite rightly under existing circumstances. The present low level of business education and conditioning in large scale industrial organizations has also been a contributing factor. This dearth of education and experience in business responsibility has meant that the personnel available for important executive positions are relatively scarce in the Arab World today. One cannot, therefore, expect to find Near Eastern businesses organized and operated on the same basis as Western enterprises which have developed under vastly different economic, social, and educational circumstances. This top-heavy C.A.T. structure also has its roots partially in the deep-seated caution of peoples in the Arab world for one another as well as for foreigners. It is virtually a maxim in the Arab East that a person is to be considered as guilty until proven innocent in direct antithesis to Western thought.<sup>31</sup> Combined with this is the time-honored

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31. There are, of course, several good historical reasons behind this philosophy. The Arab East has been subjected to conquest and exploitation by foreigners for centuries. It is, therefore, a definite prerogative of the Easterner to be cautious of others. Yet this reasoning or justification of their position does not detract from its detrimental effect upon the development of scientific management in Eastern industry.

idea stemming from Bedouin ways that the leader of the tribe, village, or group by virtue of his position is all-knowing and all-wise. This concept, of the infallible leader or chief, still persists in Arab business organizations. The result of this combination is that authority is meted out piecemeal by the trusted and controlling few, often in an haphazard and slow fashion. Thus it is hardly surprising to discover that subordinates often lack a clear and integrated picture of their duties and responsibilities. Such a situation is more prevalent in non-technical positions; nevertheless, it pervades the whole system of C.A.T. Since the existence of such a predicament severely impairs operations, especially civil engineering works, much care should be devoted to perfecting the existing system.

Though Management does recognize this deficiency in its organizational setup, few steps have been taken as yet to initiate pilot schemes for experimentation in allocating wider discretionary and decision-making powers lower down in the hierarchy. Such plans are still in the formative stage under the guidance of a British management expert. And even if such plans were already drawn up, their feasibility under present conditions is questionable. Admittedly, a good deal more effort should be devoted to solving this dilemma; yet it must be remembered that Management is not at all prepared to decentralize completely, i.e. to delegate expansive authority in toto to anyone. Perhaps with eventual incorporation and the consequent evolution of a professional managerial class



divorced from ownership, the situation will change. But it will be a very slow change at best.

5. Communication and Coordination: These are two other techniques which Management has at its command to ensure prompt and efficient implementation of policy decisions. Coordination is best enhanced through the development of proper methods of in-company communication. Channels of communication, i.e. the issue of instructions and administrative supervision of operations, should flow along the lines of authority and responsibility. Thus there is a close relationship between formal and informal organization and communication. This, in turn, will tend to affect efficiency and morale throughout the organization.

Communication in C.A.T. Company could be rated generally as average in efficiency given the difficulties of language and cultural differences between Company personnel. Communication is both written and verbal. Officials are kept informed of important notices, documents, reports, letters, etc. drawn up by Company personnel through a system of sending copies of originals to persons indirectly concerned. Management naturally receives copies of the most important of these. In the majority of instances written communications do flow along the lines of authority and responsibility established in the formal organization. But in addition verbal communication, which plays a very important role in the Arab C.A.T. Company, travels along the lines of informal organization which has developed over time. In an Arab company such as C.A.T. an employee's status and

role and ability to produce results is often based more on that individual's personal relationships with the "right people" than his position in the formal hierarchy. However, the two work hand-in-hand and cannot be divorced from each other. As would be expected from the existing pattern of social relationships in the Arab East, friendships mean a great deal in getting one's job done in C.A.T. It is, perhaps, mainly through this informal manner of communication between levels of authority that Management and senior executives best arrive at coordinating Company affairs.

Authority and control thus become quite personal in C.A.T. Company. This, we remember, is contrary to Mary Parker Follett's thesis that authority and command work best when depersonalized.<sup>32</sup> The premise underlying this hypothesis is that subordination of man to man fails to bring out the best in employees, nor does it help to engender a true spirit of cooperation within an organization. She conceived people as being inherently logical and therefore would readily respond to the depersonalized objective "law of the situation". This is quite generally true of Western organizations, but it is extremely doubtful if it has much validity for organizations of the Arab East. Apart from the factor of friendship underlying and conditioning inter-personal relationships in the East, the added factor of Arab character and motivation is herein

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32. Metcalf and Urwick, eds., Dynamic Administration, New York, Harper and Brothers, 1940.

involved. In general, Arabs are of a highly emotional nature and therefore are easily influenced by personal contacts. They do not seem to respond as readily as Westerners to abstract principles or objectively verifiable laws of the situation. This question of Arab character and reaction patterns is, however, a very mute point and one about which it is especially difficult for foreigners to form an opinion. However, from surface judgement it would appear that personal relationships form the strongest basis for Arab motivation, and thus in-company communication will remain in C.A.T. largely a personal matter for some time to come. Furthermore, it may well be that closer employer-employee relationships of this kind actually do much to foster cooperation and coordination. In any event, the respect for depersonalized authority will come from a lengthy process of personnel conditioning in large scale industry. At present, the existing system seems best adapted to traditional Arab ways.

6. Personnel: The modern business firm, Western or Eastern, is essentially a human organization formed for the purpose of carrying out certain specified tasks. In industry, therefore, the human element is at least equal in importance to the other principal factors of production, plant and materials. To this C.A.T. is no exception.

The human element in industry is commonly known as personnel, with its multitudinous aspects and diversity of problems. It is, perhaps, from the point of view of personnel

and the handling thereof by Management that C.A.T. as an all-Arab firm differs most radically from comparable Western firms. The most striking aspect of personnel relations in C.A.T. as an Arab company is the exceedingly close relationships obtaining between employer and employee on the one hand, and between superior and subordinate on the other. Though at first glance these relationships appear diffuse and confused to the Western eye, on closer observation they can be noted to follow certain predictable patterns. It is, in fact, these patterns of interpersonal relationships which find their roots in the Arab past that contradict several of the fundamental principles of modern Western business organization with its rather rigid hierarchical structure. The postulate underlying the Arab system of Company relationships is that there should be no artificial social barriers between either the employer and employee or between the superior and subordinate. There appears to be closer man-to-man relationships obtaining between people occupying different levels of the hierarchy than one would find in a purely Western company. Thus the lowest tractor driver sees no iniquity, no inconsistency, in his communicating directly with the General Manager of his area if he feels unjust treatment or other personal circumstances may warrant such action. He will, in such a case, circumvent his immediate superiors to come face-to-face with his General Manager. The latter, in turn, will feel constrained to lend this ordinary workman an ear, regardless of the cost to his time and more important affairs. This direct approach also characterizes relations between superiors

and subordinates. One of the main problems which faced the Project Manager in Kirkuk and which severely disrupted administration at the outset of the project was his constant harassment by staff and workmen alike with minor difficulties and complaints. Such affairs of secondary import could, if rationally approached, have been solved at lower levels in the chain of command especially established for this purpose. The same difficulties in personnel administration beset Management Beirut. Thus if one sits for a morning in the offices of either Bustani, Shamma, or Khoury, a continuous stream of personages, Company and non-company, important and unimportant, will be seen passing through to "see the boss" about a diversity of matters.

It has been suggested that this pattern of social relationships stems from tribal and village organizations. Therein the individual tribesman or villager felt within himself the God-given right to be received by his sheikh or mukhtar on matters of group or personal import. And the chieftain, on his part, could only hope to retain his position of leadership by lending a full ear to each of his followers whenever the necessity arose. From a study of the science of organization it can be realized that such an approach, when applied to modern competitive large scale business, tends to result over time in inefficiency and economic loss to the company. The acceptance of a hierarchical business structure can come only through long term conditioning in industry on the part of Arab personnel. Efforts are being made by C.A.T. Management in this direction, but such social change, like all change in the East, will be

slow and grinding.

The influence of close personal contacts conditions all aspects of the personnel problem in C.A.T. Yet certain objective systems are discernable. As indicated on the organizational chart, there is an Employment and Personnel Department which comes under the supervision of the General Manager of the Administration Division. The Personnel Department carries on diverse activities such as recruitment, testing, selection, and placement of employees. It also maintains personnel files whereon are recorded the personal history and qualifications of each employee. On these records are also noted the training, grade and salary, promotion transfer, discharge or lay-off, and rehiring of all C.A.T. employees. Actual training, promotion, transfers, etc. are determined largely by the senior line officers in each area in consultation with Management. The Personnel Office in conjunction with Management establishes as well the grading of jobs, salary ranges, and allowances within grades. Statistical data regarding grades and wages of engineering and administrative personnel is herewith appended for the reader's own convenience.

The Employment and Personnel Department seems adequate to handle C.A.T. personnel requirements given existing labor conditions in the Near East. There does not as yet appear to be an all-embracing personnel program for the Company, since personnel problems are generally handled locally and on a personal basis in the country and project organizations. Moreover, Management has much to do with personnel matters. The



Employment and Personnel Office in Beirut is, then, largely a processing center for C.A.T. personnel.

The technicalities of recruitment have already been discussed with reference to personnel requirements for the Kirkuk Road Project. Employment is largely a matter of recruiting specified categories of labor and staff personnel from the available labor market, the final selection being made on the basis of testing or examination. Placement within the Company is made on the basis of requisitions from country and project organizations, as are transfers and lay-offs. Personnel records containing the recruits' history and qualifications are used in the determination of the employees' grades and salaries within grade. Though personality evaluation tests have been advocated by certain persons within C.A.T., the Company has not as yet chosen to adopt this type of testing as a basis for employee placement. It is, however, under serious consideration by Management. Once an employee is assigned to a job in a country or project organization, he falls under the line authority of the senior C.A.T. officer in charge. He receives functional direction regarding the performance of his work from his immediate department supervisor. No job descriptions or terms of reference have as yet been drawn up for C.A.T. positions. However, these also have reached the planning stage under the guidance of a British management expert. Because of the consequent uncertainty engendered in many employees regarding their jobs and positions, this lack of adequate job descriptions tends to have an adverse effect upon

employee morale.

Working in conjunction with and sometimes at cross purposes to the formalized personnel system are the subjective judgements of supervisors regarding their subordinates. This is especially true with respect to the determination of salaries, bonuses, leaves, and various fringe benefits such as permissions to bring employees' families to work sites, etc. Efforts are continually being made by Management to set such questions on an impartial plane, but complete impartiality cannot be obtained given the close inter-personal relationships characteristic of the Arab world.

The principal deficiency in the C.A.T. personnel program is the absence of extensive training facilities. Training should be an especially important part of the policy of such a Near Eastern company as C.A.T., for one of its main operating difficulties is the dearth of trained personnel in the area. True, there is a Trades Shop in Beirut which gives some additional training to semi-skilled workmen. Moreover, many persons have advanced in position through experience acquired in job performance. But no training-within-industry scheme as such exists. There are several foreign technicians in the Company, but they have regular jobs to perform and consequently have little time for training purposes. The introduction of concerted schemes of on-the-job training for employees, both technical and administrative, holds considerable potential in terms of long range gains to the Company. Admittedly, such schemes would at first add to overhead burdens and might well reduce operating

efficiency. But by increasing employee incentives to work for C.A.T. by offering them the opportunity of improving themselves, dividends might accrue manifold to the Company. Moreover, such C.A.T. efforts would certainly contribute to developing the industrial potential of the Arab East. Management, has however, been seriously considering the introduction of a scheme whereby selected C.A.T. personnel of high standing and long tenure with C.A.T. would be sent abroad for further specialized training. The Company would, of course, pay for this foreign training. One of the principal objectives of such a scheme would be to provide engineers and other technical personnel with training in the art and science of modern business management and administration. This combination of engineer-administrator which is quite prevalent in the West is scarce, if not virtually entirely lacking, in the Arab East. It is a combination of vital importance as industry grows and its practices become refined. Such training needs great encouragement within C.A.T. Already a few top C.A.T. officers have been sent to England for such training, but thus far only a small beginning has been made.

7. Motivation and Morale: The state of morale in the C.A.T. Company seems, on the whole, to be fairly high. As will be discussed later, certain conditions of life in the Near East make the conduct of Arab business not the easiest and most pleasant of tasks. Coupled with this are the difficulties and hardships which inhere in civil engineering work per se. Yet morale, especially in the more efficiently run country and

project organizations remains quite high.

It is difficult to generalize on the states of morale at the various levels of authority in the Company due to the diversity of peoples involved. Yet observation would lead one to conclude that at the laboring and artisan levels morale is high, given conditions of work. Employment with the Arab C.A.T. Company has given many of these people a feeling of importance to themselves and to their countries for the first time in their lives. The great majority of these people enjoy a feeling of immense pride in working for the largest of Arab companies, the first Arab company which can successfully compete with Western firms, a company whose high quality of workmanship is universally recognized throughout the Near East. It is no wonder, then, that working for C.A.T. is a source of envy by many would-be employees. This feeling of pride and status derived from association with C.A.T. is, of course, prevalent among the higher administrative and engineering staff as well. But it seems that there is a slight decrease in this feeling among the higher levels of authority. Perhaps this is evidence to a basic correlation between higher education, worldly-wisdom, and the development of a more cynical approach toward life. Nevertheless, pride in employment with the Arab C.A.T. Company is prevalent at all levels.

A second factor in making for high morale is the excellent treatment accorded by C.A.T. Management to the Palestinian refugees who are afloat throughout the Near East. Wherever one goes in C.A.T. and at every level of authority one discovers a

plurality of Palestinian Arabs. On the Near East labor scene these Palestinians are counted among the most educated, skillful, and hard-working of people. Employment with C.A.T. has provided many with a newly found security and hope for the future, things which were left behind several years ago. Not only has this policy of aiding Palestinians boosted morale within the C.A.T. organization itself, but it has also done much to advance the good reputation of the Company throughout the Arab East. Morale at the managerial level remains at a general high, perhaps partly because of the pride and status of the managers and partly because of their confidence in the three Partners-Directors.

There is always in any company a close correlation between organization and morale. In C.A.T. it seems that this relationship is one factor which more than any single other makes for a lowering of morale. The C.A.T. organization has already been described as loose, often lacking in coordination, subjective, and in general very fluid. In addition, with the lack of terms of reference for jobs and with subjective judgments influencing salaries, promotions, and bonuses, employees often experience a sense of insecurity in their respective positions. This insecurity is certainly detrimental to worker morale and motivation. Though admittedly fluidity of organization is necessary to some degree in C.A.T.; nevertheless, the introduction of a sounder and more determined organizational structure would do much to boost morale.

The individuality of Arab behavior patterns has perforce

conditioned managers and supervisors to resort often to methods of force to achieve cooperation and unity of effort. This generalization is particularly applicable to the motivation and control of labor forces and artisans. But the role of force pervades the entire organization in inducing motivation from Management down to gang foremen. This use of force in getting things done appears, unfortunately, to be detrimental to employee morale; yet the majority of Arabs will agree that without a strong but just hand at the top nothing could be accomplished. This is indeed a dilemma for only the Orientals to solve. A more propitious use of consultation at the departmental level might be one facet to a solution along with industrial conditioning.

8. The Roles of Leading Personalities: In all major organizations there are certain leading personalities who, by their force of character, are able to shape the policies and operations of their respective organization. To this truism C.A.T. is no exception. In C.A.T.'s case the leading personalities are the three Partners-Directors-Managers: (1) Emile Bustani, Chairman; (2) Abdulla Khoury, Managing Director; and (3) Shukri Shammam, General Manager.

The characters of these leaders permeate through and reflect themselves in the whole spirit and performance of the Company. Perhaps the influence of the leaders is more pervasive in C.A.T. than in comparable Western firms because of the closeness of inter-personal relationships pertaining in the Near East.



These C.A.T. leaders possess widely varying personalities. But they do share certain characteristics in common, not the least of which is a forceful and courageous personality. This enables them to plow through the untold difficulties which face and often severely impede Near Eastern business. In addition, such force of personality constitutes a decisive factor in the ability of C.A.T. Management to gain the confidence of its business associates and employees alike with respect to the fulfillment of their business obligations. Amenability, or perhaps more correctly, malleability is certainly another characteristic shared in common by the three Partners. This ability to adapt one's thought patterns and habits of life is extremely important for business personages in the Orient where cultural patterns vary widely from region to region. Moreover, the presence of large numbers of foreigners in the East who have dealings with C.A.T. and other local firms requires that the Directors also understand Western ways and are prepared to act accordingly when circumstances so dictate. Each has already proven himself to be as honest, responsible, and straight forward as the somewhat abstruse methods of Eastern business permit. In situations involving their personnel they act firmly but with justice. Beyond this, each Partner has certain special traits of character which, when meshed together with those of the other two, definitely advance C.A.T. interests in a unilateral direction.

Emile Bustani is representative of the internationally educated, cosmopolitan Easterner who can conduct himself with equal aplomb in Oriental or Occidental society. He has developed

a combination of driving power with infinite tact and diplomacy in his relationships, whether they be with city Arab, bedouin Arab, or an important personage from the West. Indeed, his motto of life runs to the effect that if one wants to get ahead, one must get around. Thus Bustani is the revered contract-getter for the C.A.T. Company. His range of acquaintanceships appears to be as wide in Britain, Europe, and America as it is in his own Lebanon and indeed throughout the Arab world. He plays upon this for all it is worth and quite rightly, for business confidence and success attracts more and more business. By the same means Bustani has inspired a similar confidence within his own organization. Thus within his own South Area of Contracting he will often know personally many of his foremen, tractor drivers, etc. in addition to his staff of senior personnel. Working for C.A.T. Company is, then, often synonymous with working for Emile Bustani.

Shukri Shammās is the Eastern educated engineer-administrator responsible for Contracting operations. Yet he is the most direct and straight forward of the three. He is, for this reason above others, the most understood by the Westerners in the Company. In his dealings with his employees he is big-hearted, generous, jovial, and above all hard-working to the point where one often wonders if he will not eventually succumb to his tremendous responsibilities. Of course, all three Partners are about equally loaded with their respective work, Shammās takes infinite pains to know personally the employees under his control, whether artisans or senior staff, and often

their private problems. He devotes great attention to these and other such details tangential to his work. Thus he runs his North Area of Contracting with an exuberance and confidence hard to match in any other country or among any other people.

Abdulla Khoury is of the traditional Lebanese stock which has practiced the art of trading for centuries on end. This stock lives and breathes the profit motive, and sees the normal code of ethics as chains which bind their competitors. Khoury directs the Trading and Administrative Divisions of C.A.T., and holds the purse strings of the entire organization. One hears that certain traits of his character are admirably suited to such a punctilious task. In matters concerning his side of C.A.T. business he tends to be the antithesis of his partners in that he is less outgoing, more cautious, and acts with greater restraint. He thereby imposes a type of brake upon the perhaps more impulsive but well-meaning and often too generous acts of his fellow partners.

In effect then, we observe among these three leaders the existence of a give and take, push and pull type of relationship. The equilibrium thus obtained, rather than impairing company unity and coordination, actually promotes a more unilaterally directed business effort.

9. Possibilities for a Management Audit: The potentialities of a management audit of C.A.T. Company are, in the author's opinion, rather premature. The Company is still in its formative stage. After it has shaken itself down in

perhaps another decade of operations, the refinements of management audit and consultant work will be appropriate.

This concludes the author's critique of the most important aspects of the internal organization and operations of the C.A.T. Company. However, it is hardly appropriate to terminate this thesis without a general analysis of certain factors in the socio-economic and political environment of the Arab East which help explain those defects of organization prevailing in C.A.T. and other large Arab firms. These defects of Arab business organizations range over the whole field of the modern science of management. Here the author shall attempt to pinpoint only the principal defects and their causes which appear common to Arab firms generally and to C.A.T. in a greater or less degree.

## B. Socio-Economic Factors

1. Influence of Family or Kinship Groupings: In most Near Eastern businesses the family firm is the type which most predominates. Only in relatively few instances has there been the development of a salaried managerial group, non-related to the ownership of the business, which is answerable to an impersonal board of directors. The implications of this predominance of the family for business organization and operations are deep-seated and diffuse. Certainly one of the

most significant effects of this phenomenon is the decreased efficiency of such firms. Since personnel are positioned in these firms more on the basis of family connections than merit, i.e. education, training, experience, and capacity to perform on the job, it is a natural result that such firms would be characterized by undue inefficiency both in their organizational setup and execution of operations. A corollary to this hypothesis is that such firms would find it extremely difficult to operate under conditions approximating full employment and pure competition.

In addition to causing internal defects of organization within Arab firms, the domination of family groupings in business holds implications for the consumers as well. Products and services may often be distributed on a near monopolistic basis with attention being paid more to the social reputation and status of the family owning the business than to the type and quality of the products sold or work completed. The continued existence of such a situation will generally prove to result in the production of an inferior grade of product or quality of work performed.

2. Influence of Religion: In business, as in nearly every other facet of Near Eastern life, religion or religious-directed forces play a major role. Religion can influence the policies of business firms in several ways, the most important of these being in the recruitment and placement of personnel and in the general conduct of operations. Personnel policies

may be shaped in varying degrees by the denominational affiliation of the firm in question, i.e. whether it be Christian or Moslem. Also the religious climate of the area in which the firm may be operating and the denomination of its clients tend to have a controlling effect over the firm's personnel and labor policies. Because of the relative backwardness of certain areas predominantly Moslem, Near Eastern companies operating in these regions are often forced to send Christian managerial and technical staff from Lebanon and Palestine to supervise operations. The resultant dichotomy in religions between the company supervisors and the laborers on the one hand and between the supervisors and the local governmental authorities on the other often proves to be a source of difficulty to such firms. Thus a company's religious affiliation will tend to affect not only its internal organization, but as well its business dealings with suppliers, clients, and consumers outside the firm. The impact of religion on business policy is, then, to hinder the diffusion and application in Eastern companies of certain principles of scientific management which hold that personnel and labor policies should be based on an objective merit system. Efforts are made in C.A.T. to mitigate these religious influences.

3. Low General Educational Standards: The prevalence of a low general standard of education throughout the Arab East exerts an obviously debilitating effect upon the conduct of business in the Near East. It is recognized that educa-



tional standards are low at every level: elementary school, high school, and university. In addition, there has been a gross neglect in the collation and dissemination of technical knowledge and skills within the area. Only very recently has this situation begun to change with the rapid expansion of educational facilities. Moreover, the great strides which the region has taken in recent years towards economic and industrial development has, by opening opportunities to many, spurred a general interest in technical education and training. The present dearth of educated and skilled personnel in the Near East labor market causes severe difficulty to companies in the recruitment of competent personnel. The result is that in most Arab firms personnel are up-graded; in other words, one finds persons occupying positions for which they are neither by education, training, nor experience qualified. This reflects itself in operational inefficiency. A second outcome is that authority and responsibility for diverse company operations are concentrated in the hands of one or a few individuals. There is little delegation for the obvious reason that competent and reliable personnel are difficult to procure.

4. Lack of Long-term Conditioning in Industry: The predominance of a rural socio-economic environment based upon the Near East's historical dependence on an agricultural economy has meant that there has been little conditioning to industrial practices. One discovers as a consequence that from top management down the chain of command of most Near Eastern businesses

the personnel have little knowledge or experience of working together in cooperation to achieve a common goal. The tendency to work at cross purposes for subjective reasons and to divert to tangents seems to predominate in larger Arab firms. This situation reflects itself as well at the managerial level where there is a distinct lack of anything approximating a managerial class as in Europe or the United States.

5. Widespread Social and Economic Insecurity: The social values dictated by Near Eastern traditions and the rigid need to adhere to them often fly in the face of business productivity and efficiency. More specifically, because manual work carries with it the taint of social disreputability, the training for and performance of manual work is relegated to the lowest of coolly labor. There is, therefore, little social or occupational mobility based on advancement by merit in most large Eastern firms. Secondly, the Arabs' stress on the essential equality of men creates problems with respect to the development of and adherence to hierarchical forms of business organization. Thus in C.A.T. it has already been noticed that each employee feels he should have direct access to any of the three Partners-Managers. The Managers must acquiesce to a degree in this to maintain Company morale, though such practice decreases managerial efficiency. Economic insecurity together with a general low level of remuneration tends to result in corruption at the financial end of company operations. This accounts for the lack of delegation of financial responsibility by management.

The giving and receiving of "backshish" and other diverse forms of bribery is not an uncommon phenomenon in the conduct of Near Eastern business. This, I submit, has little to do with the personal integrity of Arabs which is certainly high. It is, rather, a reflection of widespread social and economic insecurity. At the managerial level, this reflects itself in business policies which adhere to the traditional market-place philosophy of "get rich while you can". The accent is thus on maximizing quick term profits as opposed to long term investments to induce a continuity of industrial growth with greater profits in the long run.

6. The "Ma'lish" and "Boukrah" Attitudes: These two words which recur constantly in the talk of the average Near Easterner, especially the Arab, represent a state of mind best described as procrastinating. The reasons for the existence of this attitude toward worldly matters can partly be found in history, partly in psychology. Perhaps much of the cause lies in the long centuries without change which the Near East has experienced. This breeds the <sup>fatalistic</sup> attitude of "what is the use in effort, what can it change that has not already been changed?" The continued existence of this procrastinating attitude of "it does not matter" and "tomorrow" when projected into business is obviously disruptive to the prompt, orderly, and efficient execution of commercial activities. We have reason to hope that with the spread of education and technological advance the Easterner may renew his hope in the possibilities of

creating a better world for himself, his family, and countrymen.

7. The Character of the Arabs: To the average Westerner who has lived and worked among the Arabs, these people strike him as being individualistic to the extreme. Moreover, they are people who react to a given stimulus primarily on the basis of emotion and sentiment, and only secondarily on the basis of a clear-headed scientifically objective rationale. This type of personality make-up is without doubt a significantly contributing factor to defects of Near Eastern business organization and operations. It makes planning difficult, and makes the adherence to plans even more difficult. It thus often militates against the harmony of company interests. Company administration is weakened by the dominance of personal interests over broader company interests. Diversification rather than the coordination of individual efforts is generally the end result. Correlative to this is the "veto" often used by persons who do not stand in agreement with the policies and decisions of superiors. This may evidence itself in either overt or covert obstructionism of company plans and interests by strategically placed individuals. Administration, therefore, in Arab organizations must be quite centralized with command authority fixed in the hands of one or a few powerful figures.

As far as Arab thinking is concerned, it appears that there is a tendency more toward concrete thought based on immediate and direct contact with people and matter than with abstract thinking. This pattern of thinking has diverse historical,

psychological, and perhaps linguistic roots, of which an analysis is outside the scope of this thesis. But its impact on business in making consistent long range planning and control difficult is important. More emphasis is thus needed on objective and abstract measurement of data and the application thereof to management problems. This is largely an educational and industrial conditioning task.

8. Elaborate Inter-Personal Relationships: Relationships between individuals and groups in the Near East are elaborate and diffuse when compared to Western practices. This phenomenon characterizes relationships between equals as well as between employers and employees. For example, the Directors of C.A.T. Company must not only be directors in the strictly business sense of the term, but must also act as father, big brother, and confidential advisor to the employees under their supervision. This obviously complicates administration, and adds to the work load of these men already burdened with the management of C.A.T. In addition, the prevailing suspicion with which Arabs view one another as well as foreigners, especially new-comers to the organization, tends to disrupt the normal assumption and discharge of work responsibilities. Jealousy, especially of Westerners, appears to be another phenomenon exhibited by Arabs towards their comrades-in-arms which, if not controlled, is disruptive to smooth business operations.

9. Linguistic and Cultural Differences: In such large

Arab companies as C.A.T. the personnel are drawn from several diverse segments of the Near East community as well as from the West. In C.A.T. one finds Arabs who predominate, Armenians, Levantines, Kurds, Assyrians, etc. together with British, German, French, and Americans. The Easterners themselves are drawn from various sectors of the area, each of which has its own peculiarities of customs and language. The most used languages in C.A.T. are Arabic, English, and French; however, several other languages are employed as well. These cultural and linguistic differences between Company personnel make more difficult smooth personnel relations and in-company communication and coordination.

### C. Political Factors

#### 1. The Inextricable Entwining of Politics and Business:

This intermixture of business and politics, or perhaps more correctly government, relates largely to the inter-personal relationships obtaining between the two. People in high government positions, both in the parliaments and in the civil services, generally come from that strata of Near Eastern society which has extensive business connections, the term business being used here in its wider sense. To advance their business interests often means to advance their political positions. Similarly, business leaders find it vitally necessary to maintain close personal connections and strong friend-



ships with influential government personnel to enable them to carry on their work. Otherwise, the ever present threat of government inefficiency and outright obstructionism might severely hamper, if not actually end, the life of their respective concerns. This close interaction between business and politics, though necessary to the conduct of business in the present stage of Near Eastern development, does detract from sound business organization, management, and practices. This is particularly evident with respect to personnel policies, for one often discovers in such companies as C.A.T. individuals placed in certain positions merely for the sake of their political connections without consideration to merit. Change in this sphere of business will be geared to general social change in the Arab world and thus will be slow.

## 2. Lack of Good Government Organization for Business:

A pronounced inefficiency of organization and red-tape in operations characterizes Near Eastern governments. Added to this is the traditional laissez-faire attitude which Arab governments maintain toward the business sector of their national economies. It is still felt that businesses must fend for themselves, though change is being introduced in this attitude through increased industrialization of the area. There are as yet few provisions for the establishment of public utilities and other public services. Likewise, there is a minimum of laws providing for government control of unfair business practices. Where such legislation does exist it is

generally circumvented by the more powerful and influential business concerns. This situation exerts a debilitating effect upon the organization and operations of Arab firms working throughout the Near East. Not only are they forced to provide their own auxiliary services, but they must as well guard against irregular encroachments from rival companies.

3. General Political Instability: The ever present instability which characterizes Near Eastern politics remains a constant threat to business equilibrium. The consequent inability of companies to rely on a stable political situation often reflects itself in the policies of these firms. Their organizations are generally fluid in nature in order to remain adaptable to sudden changes in political factors affecting business. Organization of Arab firms is thus looser than that of comparable Western concerns, to wit the C.A.T. Company. But this looseness of organizational structure acts, under most circumstances, more to impede than to contribute to operational efficiency.

4. The Political Division of the Arab World: It is a widely recognized fact that the Arab East has been divided on a largely unnatural basis into several nation states. Several causes are responsible for this, the main one being the imperialistic action of Western Powers in the area during this present century. The artificial differences, political, governmental, legal, customs, currency, etc., thereby created quite naturally

place sizeable barriers in the way of companies operating in the Arab world on a regional or inter-country basis. Not only is the existence of such essentially artificial barriers disruptive to the operational efficiency of C.A.T. and similar companies, but as well it impedes the natural industrial development of the region as a unity.

THE KIRKUK-TASLOOJAH ROAD PROJECTCONTRACT R/9 (1953)LIST OF COSTING ITEMS

CODE No.	ITEM		CHARGE
(1) <u>Overheads:</u>			
OH/1	Technical Supervision Engineer, Draftsmen Surveyors	OH/1/1 OH/1/2 OH/1/3	Salaries Accommodation & Feeding P.M.V. Hire Charges.
OH/2	Administration Expenses	OH/2/1 OH/2/2 OH/2/3	Salaries Accommodation & Feeding P.M.V. Hire Charges.
OH/3	Stores Expenses		
OH/4	Stationery & P.T.T.		
OH/5	Medical Attention ..... (including BQ.7)		
OH/6	Idle Time		
OH/7	Workmen Compensation & other Insurances	BQ.6 etc.	
OH/8	Air Fares & Passages & Travelling		
OH/9	Miscellaneous		
OH/10	Preliminary tendering & compliance with contract expenses	BQ.1, 9, 12.	
OH/11 B	Branch Contracting Overheads		
OH/12	Head Office Contracting Overheads		
OH/13	Depreciation: Tools Furniture & Office Equipment First-Aid Equipment Portable Buildings: Huts etc. Camp Equipment		

## Costing Items (Continued)

CODE No.	ITEM	CHARGE
(1) <u>Overheads:</u> (Cont'd.)		
OH/14	Sick Pay	
OH/15	Leave Pay	
OH/16	Bonuses	
OH/17	Gratuities	
OH/18	Bank Charges	
OH/19	Interests.	

CODE No.	ITEM	Unit	Source of Returns	Covering B.Q.
(2) <u>Supply of Materials Ex-Stock</u>				
SA/1	Commissariat			SA/10 Stone Plumm (Dabash)
SA/2	Cement	Tons	Accounts	SA/11 Workshop
SA/3	Gravel	M.C. or Tons	D.S.R.	SA/12 Haunch Stone
SA/4	Sand	" "	" "	SA/13 Bitumen
SA/5	Aggregate (Crushed Stone)	" "	" "	SA/14 Explosives
SA/6	M.S. Bars	Tons	Accounts	SA/15 Trspt Expenses of P.M. & V.
SA/7	Timber	N.C.	"	
SA/8	Miscellaneous Stores	Costs	"	
SA/9	Small Plant & Tool compendable	Costs	"	

## Costing Items (Continued)

CODE No.	ITEM	Unit	Source of Returns	Covering B. Q.
(3) <u>Preliminary Expenses:</u>				
P/1	Setting Out	M.R.	D.S.R.	2
P/2	C.A.T. Camp Erection & Maintenance	Costs	Accounts	4
P/3	Resident Engineer Office	"	Accounts	10, 13, 14, 15.
P/4	Maintenance of Completed Works	M.R.	D.S.R.	8
P/5	Resident Engineer Transport	Costs	Accounts	18
P/6	Miscellaneous	"	"	1, 3, 5, 6, 7, 9, 11, 12, 17, 18, 19, 20, 52, 53, 54, 55, 56, 104, 105, 106.

- NOTE: 1) D.S.R. means Daily Site Report Form (1)
- 2) Source of information D.S.R., Returns from P.M.V. Dept. Accounts, Stores.
- 3) Sub-Contracting should be analysed for costing under the relevant Code Number of the Contract Execution.



## Costing Items (Continued)

CODE No.	ITEM	UNIT	CHARGE B.Q. Nos.
<u>(4) Contract Execution:</u>			
C/1	Excavation ordinary soil including transport to fill or spoil	M.C.	21, 22, 24, 26, 28, 29, 31, 33, 34, 36, 38, 39, 40, 59, 60, 95, 98.
C/2	Excavation Rock including transport to fill or spoil	M.C.	25, 27, 30, 32, 36, 37, 53, 61, 96, 97.
C/3	Compaction fill and top soil	M.S.	23.
C/4	Spread top soil	M.S.	41.
C/5	Soil stabilization & bottoming 24 cms.	M.S.	42, 44.
C/6	Haunching	M.R.	43.
C/7	Bituminous Basecourse	M.S.	45, 46.
C/8	Bituminous Surface course	M.S.	47.
C/9	Scarifying Existing Roads	M.S.	48.
C/10	Concrete Works	M.C.	49, 50, 51, 62, 63, 66, 67, 70, 71, 72, 73, 74, 89, 91, 103.
C/11	30" Pipe Culverts	M.R.	64, 65.
C/12	Rough Shuttering	M.S.	68, 85, 86, 87.
C/13	Wrought Shuttering	M.S.	69, 86.
C/14	Bridge Accessories	Costs	75, 76, 77, 84, 90, 92, 94, 106.
C/15	M.S. Bar Reinforcement	Tons	78, 79, 80, 81, 82, 83.
C/16	Masonry and Pitching	M.S.	90, 100, 101, 102.
<u>(5) Day Work:</u>			
DW/1	Day Work Order	Cost	(Day Work)

(for the above, the source of Returns is from the Daily Site Report -  
(D.S.R.)).

Estimated Equipment Requirements for Kirkuk-Tasloojah Road

<u>I) Earth Excavation:</u>	<u>Origin</u>
2 Rooters (small) and 1 Rooter (20 ton)	Ex Amman
8 Tournapulls	Used & New
8 Bulldozers	Used & 3 new
11 Scrapers	Ex Amman
3 Tractors D 8	Ex Musayib
3 " D 7	Ex I.P.C.
10 " T D 18	Used
1 Cheshire Boring Machine	New
2 Cedarapide Compactors (Rollers)	"
4 Soil Compactors	"
4 Rollers 18-12 tons	New & Used
<u>II) Concrete:</u>	
12 Mixers 7/10	Used, I.P.C.
5 Transit Mixers	Ex Amman
2 Gravel Washing Machines	Ex I.P.C.
2 Bucket Loaders	Used
1 D 4 Dozer	Ex Baghdad
10 Lighting Sets	Ex Amman
2 Batching Plant with Generator	"
10 Vibrators	New
10 Concrete Carts	Ex Amman
2 Shovels, Muir Hill	Ex I.P.C.
1 Turbopress with Moulds	New

III) Bottoming:

	<u>Origin</u>
3 Graders	Used
2 Aggregate Spreaders	New
10 Stone Crushers	Used
2 Bucket Loaders	New
3 Conveyor Belts	Used
3 Air Compressors with kit, 210 C.F.	Ex Amman
6 Rollers, 8-10 tons	"
4 Rollers, 10012 tons	New
1 Crusher w/3 Generators, w/Batching Plant "	

IV) Asphalting:

Mixers - 3 Millars	Ex Amman
1 Bristowes w/Dryer	Ex Baghdad
1 Barber Greens w/Dryer	"
5 Dryers	Used
Tar Boilers - 1 Main tank	Ex Amman
2 T.B. 1000 Gals. Capacity	Ex Baghdad
8 Tar Sprayers	Used
4 Rollers	Ex Amman
3 Finishers	Used
4 Cedarapid Crushers	"

V) Rock Excavation:

10 Air Compressors 500 C.F. w/complete kit	Used
3 Angle Drills	New

V) Rock Excavation: (Continued)

Excavators - 1 33 RB.  
 2 10 RB.  
 2 Mich. Excavators

Origin

New  
 Used  
 "

VI) transport:

3 Saloons + 12 hired vehicles  
 32 Pickups  
 8 Lorries fixed - box trucks  
 59 Tippers  
 10 Dumpers  
 7 Trailers  
 2 Low Loaders  
 5 Land Rovers  
 12 Tankers

New and used  
 " " "  
 " " "  
 " " "  
 " " "  
 " " "  
 Used  
 "  
 "  
 New

VII) Work Shop Equipment:

1 Mobile W/Shop  
 5 Tecalemit Units (lubricating)  
 4 Welding Machines  
 5 Oxy. Acetylene Sets  
 2 Chaseside Cranes  
 1 Mobile Crane  
 1 Breakdown Car  
 Tools as required  
 Special Tools

Ex Amman  
 New  
 Used  
 Used and new  
 Ex Amman  
 Used  
 Ex Amman  
 Ex Amman  
 Used and new

VIII) General:

	<u>Origin</u>
4 Generating Sets, 3.5 K.V.A.	Ex Amman
1 Water Pump, Mobile	Ex Baghdad
3 Water Pumps, Portable	Ex Amman
1 Generating Set, 31 K.V.A.	" "
2 Rubber-tired Tractors	" "

Note: The above requirements were determined by the Project Manager in Consultation with the Senior C.A.T. Engineers at Beirut, May 1954. The value of Machinery is approximately ID. 500,000. The value of Vehicles is approximately ID. 200,000.

Estimated Material Requirements for the Kirkuk-Tasloojah Road

Materials	Quantities	Days	Daily Output
1) Concrete	92,000 M <sup>3</sup>	400	230 M <sup>3</sup>
2) Haunch Stones	180,000 M R	500	360 M R
3) Sub-Base	27,000 M <sup>3</sup>	500	54 M <sup>3</sup>
4) Bottoming	150,000 M <sup>3</sup>	500	300 M <sup>3</sup>
5) Blinding	6,000 M <sup>3</sup>	500	12 M <sup>3</sup>
6) Base-Course	30,000 M <sup>3</sup>	600	50 M <sup>3</sup>
7) Carpet Course	15,000 M <sup>3</sup>	600	25 M <sup>3</sup>

Note: This schedule is calculated as of October 1, 1954, when the actual construction of the road commenced. The total cost of these buildings materials to C.A.T. Company is estimated at ID. 700,000.



Estimated Personnel Requirements for the Kirkuk--Tasloojah Road

Description	Approx. Nos.	W a g e s	
		Minimum ID	Maximum ID
<b>1) <u>Engineering</u></b>			
Engineer	12	120	250
Surveyor	6	60	120
Draughtsman	3	60	75
Accountant & Cashier	5	50	100
Chief Clerk	1	80	80
Storekeeper	16	45	90
Clerk	28	30	60
transport	10	35	60
	-----	-----	-----
	81	480	835
<b>2) <u>Supervision</u></b>			
General Foreman	15	60	100
Foreman	35	35	70
Machinery Foreman	8	70	100
Timekeeper	12	30	70
Camp Steward	5	35	60
Canteen Manager	4	35	45
	-----	-----	-----
	79	265	445
<b>3) <u>Tradesmen</u></b>			
Fitter	47	40	75
Carpenter	38	40	45
Blacksmith	6	35	55
Wireman	4	30	40
Painter	1	22	22
Electric Welder	4	30	50
Mason	15	30	40
Cook	14	25	35
Drivers Heavy Plant and M.	4	35	40
	-----	-----	-----
	133	287	402

Description	Approx. Nos.	W a g e s	
		Minimum ID	Maximum ID
<b>4) Laborers</b>			
Driver (transport)	101	25	40
Assistant Fitter	49	20	30
Greaseman	28	20	35
Machine Operator	58	35	60
Assistant Carpenter	19	15	25
Head Watchman	7	22	30
Watchman	120	10	12
Assistant Mason	16	20	25
Camp Inspector	4	25	35
Assistant Cook	14	18	22
Kitchen Helper	10	15	20
Waiter	39	15	18
Messenger	22	9	12
Chainman	34	15	18
Laborer	682	12	15
Iron Man	14	18	25
Laundry Man	14	12	18
Telephon Operator	4	20	27
Quarry Man	20	40	45
Medical Dresser	5	25	45
Steel Erector	2	45	45
	-----	-----	-----
	1262	456	602
<b>TOTAL .....</b>	<b>1355</b>	<b>1468</b>	<b>2284</b>
	=====	=====	=====

**NOTE:** During periods of peak employment (i.e. summer months) tradesmen will increase by approximately 20% and Laborers by approximately 75%.

THE CONTRACTING AND TRADING COMPANYI. SCALE OF SALARIES AND ALLOWANCES FOR ENGINEERING STAFF

Definition: Engineering Staff comprises:

ENGINEERS  
TECHNICAL ASSISTANTS  
FOREMEN  
QUANTITY SURVEYORS  
LAND SURVEYORS  
DRAUGHTSMEN.

ENGINEERS:

Qualifications: Possession of recognised University Engineering Degrees equivalent to B.Sc. including B.A. Engineering from A.U.B. prior to 1941, and/or Membership of Senior Engineering Institutions recognised by the Company.

Grading: Engineers will be graded as follows:

Grade "A": Engineers in charge of Areas or supervising projects of magnitude.

Grade "B": Engineers with no less than five years approved practical experience of engineering works.

Grade "C": Graduates with no previous practical experience.

Basic Salaries:

Grade "A": LL.750.- per mensem and above with special arrangements as regards bonuses based on profits.

Grade "B": LL.500.- x 50 - LL.1000 p.m.

Grade "C": LL.350.- x 50 - LL. 600.- p.m.

TECHNICAL ASSISTANTS:

Qualifications: Persons who have completed their Secondary education and preferably passed a course at a recognised Trade School, and/or who, after no less than five years service with the Company in the lower Grades, have proved their exceptional ability, and/or who, in the opinion of the Management, justify such promotion.

Grading: there will be only one grade of Technical Assistants.

Basic Salary: LL.400.- x 50 - LL.1000.-.

FOREMEN:

Qualifications: Persons who have completed their Secondary or at the least Elementary education, and who, in addition, had no less than five years of practical experience as craftsmen or supervisors on mechanical or civil engineering works. Completion of a course in a technical school will be considered as equivalent to Secondary education.

Grading: Foremen will be graded as follows:

Grade "A": Persons who have completed their Secondary education, and who possess good working knowledge of English language.

Grade "B": Secondary education but no knowledge of English language.

Grade "C": Persons who have completed their Elementary education and have a fair knowledge of English language.

Grade "D": Elementary education but no knowledge of English language.

Basic Salaries:

Grade "A": LL.300.- x 25 - LL.500.-.

Grade "B": LL.250.- x 25 - LL.450.-.

Grade "C": LL.200.- x 25 - LL.400.-.

Grade "D": LL.150.- x 25 - LL.350.-.

N.B. Foremen of exceptional ability may, at the sole discretion of the Management, be promoted after completion of eight years service to the class of Technical Assistants.

QUANTITY SURVEYORS:

Qualifications: Secondary education and practical experience of not less than 3 years of Quantity Surveying.

Grading: Quantity Surveyors will be graded as follows:

- Grade "A": Holders of University Degrees and Chartered Quantity Surveyors with no less than ten years of practical experience.
- Grade "B": Persons who have completed an approved course in Quantity Surveying, and who had no less than five years of previous experience.
- Grade "C": Persons who have no less than three years of previous experience in Quantity Surveying.

Basic Salaries:

- Grade "A": LL.750.- and above.
- Grade "B": LL.300.- x 25 - LL.800.-.
- Grade "C": LL.200.- x 25 - LL.400.-.

LAND SURVEYORS:

Qualifications: Secondary or part-Secondary education and a course in a recognised Surveying school.

Grading: There will be three Grades as follows:

- Grade "A": Chartered or Licensed Land Surveyors.
- Grade "B": Persons who have completed their Secondary education, have passed a course in a Surveying school, and had no less than five years of field work or office experience.
- Grade "C": Persons who have completed part only of their Secondary education, have passed a course in a Surveying school and had some field or office experience.

Basic Salaries:

- Grade "A": LL.750.- and above.
- Grade "B": LL.300.- x 25 - LL.600.-.
- Grade "C": LL.200.- x 25 - LL.400.-.

DRAUGHTSMEN:

Qualifications: Secondary or part-Secondary education or course in a technical school and some practical experience.

Grading: There will be three Grades of Draughtsmen:

Grade "A": Graduates of technical school with no less than ten years of practical experience.

Grade "B": Graduates of Secondary or technical school with no less than five years of practical experience.

Grade "C": Trainees.

Basic Salaries:

Grade "A": LL.400.- x 25 - LL.600.-.

Grade "B": LL.300.- x 25 - LL.500.-.

Grade "C": LL.200.- x 25 - LL.400.-.

II. SCALE OF SALARIES AND ALLOWANCES FOR STAFF, ACCOUNTS, STORES, AND CLERICAL PERSONNEL.

GRADE "SPECIAL"

Salary : L.L. 2000.00 and up.

Designation: Directors  
Special Duties

GRADE "A"

Basic Salary : From L.L. 750.00 to L.L. 2400.00

Designation : Agents  
Chief Accountants  
Legal Advisors  
Company Secretaries

Qualifications: Candidates for this Grade must be:  
(a) Persons with previous administrative or technical experience, and/or;  
(b) Persons with experience and in possession of recognized University or College degrees and/or;  
(c) Members of accredited Professional Institutes.



GRADE "B"

Basic Salary : From L.L. 500.00 to L.L. 1000.00

Designation : Branch Accountants  
Chief Accounts Inspectors  
Assistant Legal Advisor  
Managers  
Maintenance Superintendents

Qualifications: Candidates for this grade must be persons with College degrees and 7 years experience, or Secondary School education and ten years experience.

GRADE "C"

Basic Salary : From L.L. 300.00 to L.L. 600.00

Designation : Senior Accountants  
Internal Auditors  
Inspectors  
Chief Storekeepers  
Maintenance Superintendents  
Garage Foremen  
Office Assistants  
Sales Managers  
Chief Clerks  
Chief Cashiers  
Secretaries

Qualifications : Candidates for this grade must be persons with College Degrees and 5 years of experience; or Secondary School Graduates with 7 years experience.

GRADE "D"

Basic Salary : From L.L. 250.00 to L.L. 400.00

Designation : Storekeepers  
Bookkeepers  
Accounts Clerks  
Paymasters  
Secretaries Jr.  
Transport Officers  
Cost Clerks

Qualifications : Candidates for this grade must be College Graduates of no experience; or Secondary School Graduates with 3 years experience.

GRADE "E"

Basic Salary : From L.L. 200.00 to L.L. 300.00

Designation : Wardkeepers  
Cashiers  
Shorthand typists  
Time and Wages Clerks  
Local Purchase Clerks  
Camp Bosses  
Salesmen

Qualifications: Candidates for this grade must be persons with Secondary School Education with no experience or Primary School Graduates with 7 years experience.

GRADE "F"

Basic Salary : From L.L. 180.00 to L.L. 250.00

Designation : typists  
Imprest Holders  
Clerks: (transport, Stores, Accounts,  
Filing.)  
Timekeepers  
Stores Issue Clerks  
Stewards

Qualifications : Candidates for this grade must be persons in possession of Primary School Certificates or must have had special training qualifying them for the job they will be required to do.

GRADE "G"

Basic Salary : From L.L. 90.00 to L.L. 200.00

Designation : Telephone Operators  
Junior Clerks  
Junior Timekeepers

Qualifications : Candidates for this grade must be graduates of Primary Schools although no experience is necessary, or people who have had special training qualifying them for the job required of them.

GRADE "H"

Basic Salary : From L.L. 60.00 to L.L. 120.00

Designation : Handymen  
Office Boys  
Trainees  
Apprentices

III. ALLOWANCES

In addition to Basic Salaries payable to staff, the following allowances shall be paid to members of the Engineering Staff working outside Lebanon, provided such allowances are specifically mentioned in the employees' contracts and only when the employee is stationed outside the limits of the country of his normal residence:-

FOOD ALLOWANCE: Payable if at the option of the Company free board is not provided.

25% of Basic Salary.

ACCOMMODATION ALLOWANCE: Payable if at the option of the Company free lodging is not provided.

10% of Basic Salary.

EXPATRIATION ALLOWANCE: Payable to members of the staff stationed outside the limits of the countries of normal residence.

25% of Basic Salary.

CLIMATIC ALLOWANCE:

Payable to officers stationed at the various zones as follows:-

ZONE "A"	- Lebanon	0%
ZONE "B"	- Syria:	
	1) Towns	0%
	2) Desert	10%
ZONE "C"	- Jordan:	
	1) Towns	0%
	2) Desert	10%
ZONE "D"	- Iraq:	
	1) Towns	10%
	2) Desert	15%

CLIMATIC ALLOWANCE (Continued)

ZONE "E"	-	Kuwait	25%
ZONE "F"	-	Bahrain	30%
ZONE "G"	-	Qatar	30%
ZONE "H"	-	Aden	35%
ZONE "I"	-	Pakistan	35%

# EMPLOYMENT AGREEMENT

## PARTIES

**This agreement** made the..... day of....., 19..... entered into between THE CONTRACTING AND TRADING COMPANY..... (hereinafter referred to as 'The Company') and Mr. .... (hereinafter referred to as 'The Employee') witnesseth the following :

## CAPACITY

1. The Company will employ The Employee and The Employee will serve The Company in the Capacity of..... and/or any other capacity as The Company may from time to time require.

## AREA

2. The Employee's area of operation shall be in ..... Arabia, and/or any other country or place as The Company may from time to time require or order.

## TRANSPORT

3. The Company will provide The Employee with the necessary transport and travel expenses on any occasion arising out of or in the course of his employment hereunder.

## SERVICE

4. (a) The Employee shall at all times diligently employ himself in the business of the Company and in accordance with such instructions as he may receive from The Company and he shall not directly or indirectly enter into or engage in any other employment, service, business or speculation whatever nor shall he take any part in local politics except with the consent of the Company. The Employee agrees to abide by the Laws and Customs of the countries where he is engaged for work under this Contract and shall respect the feelings of the peoples of these countries, and shall not participate in any religious or political discussions or meetings which may be construed as either against the interests of the Country or the wishes of its people.

4. (b) The employee shall not, without the knowledge and consent of the Company, solicit or seek any work or employment other than in the Company during the operation of this Agreement.

## INFORMATION

5. (a) The employee shall not at any time whether during or after the termination of the Agreement impart any information as to the business or affairs of the Company (or of any Company associated with or subsidiary of the Company) to anyone except under the direction and with the consent of the Company or in so far as may be required by a Court of competent jurisdiction. The Employee shall uphold the interests and cause of the Company to the best of his ability.

5. (b) The employee is not entitled to sign or issue any recommendation for or on behalf of the Company.

## DETERMINATION

6. This Agreement may be determined in any of the following ways :

a) By The Company giving to The Employee at any time .....calendar month's notice in writing in that behalf or at the option of the Company paying to the Employee .....calendar month's salary in lieu of notice.

- b) By The Employee giving The Company ..... calendar month's notice in writing.
- c) By The Company ( without notice ) if The Employee either through accident or illness contracted during the legitimate pursuit of his duties becomes incapacitated for his work, and if in the opinion of The Company's Medical Adviser it is considered advisable that the Employee should be repatriated to his place of engagement.
- d) By the Company without notice or salary in lieu of notice if the Employee :
- (I) Commits any breach of the obligations on his part herein contained ;
  - (II) Wilfully neglects The Company's interests ;
  - (III) Becomes incapacitated for his duties through drink, drugs, illness or accident due to his own fault or misconduct ;
  - (IV) Is in the opinion of The Company incompetent to perform his duties ;
  - (V) Is discovered to have made or given a false statement or document testifying to his ability or competence, or a false statement to the Company's Medical Officer knowing such statement or document to be false ; or
  - (VI) Misconducts himself in any way whether in relation to the affairs of The Company or otherwise ;
  - (VII) Puts The Company into any liability due to personal debts incurred. ( The Company will always reserve due right to deduct from any salaries or wages or monies due to The Employee any amounts for the payment of this liability ).

The decision of The Company as to whether or not a right to determine this Agreement under this sub-clause ( d ) has arisen shall be conclusive and binding on The Employee.

In the even of this Agreement being determined under this sub-clause ( d ), The Employee shall be entitled to salary up to the date of determination for which purpose all necessary apportionments shall be made but shall have no further or other rights against The Company whatsoever. ( The Company will always keep a sufficient part of The Employee's salary in reserve to cover The Company against travel expenses incurred in sending The Employee to Beirut if the Contract is determined under Clause ( d ) above.

Notwithstanding the provisions of paragraph 3 or 6 ( b ) of this Agreement, The Employee shall pay his own transport expenses to and from the area of work unless he shall have first completed one year in the service of the Company.

## **FACILITIES**

7. Provided that The Employee performs his duties in a competent and efficient manner and in terms of this Agreement he shall be entitled to remuneration at the rate appearing in paragraph 9. In addition to the above remuneration The Employee shall so long as he is resident abroad receive from The Company :

- a) Free quarters in tents on the site of the job.
- b) Messing, at cost/free.



- c) Free medical attendance and treatment by The Company's Medical Officer, provided that the illness of The Employee is not due to any misconduct or preventable cause. Should The Employee elect to consult any other than the Company's Medical Officer the cost of all fees and treatment shall be at his own expense.

**LEAVE**

8. Provided that The Employee executes his duties hereunder to the satisfaction of The Company, The Employee shall be entitled to fifteen (15) days' leave each year, and provided further that the determination, regulation, beginning or end of such leave, may only be determined by The Company or its Director Manager, Superintendent, Representative or Agent, in writing.

**REMUNERATION**

9. The Employee shall be entitled to remuneration in the following manner :

- a) The Company shall pay The Employee a monthly salary of \_\_\_\_\_ during his employment with The Company starting from the date of operation of this Agreement as indicated hereunder.
- b) The Employee will receive a bonus for good services at the completion of his contract. The amount of this bonus and the manner in which it is paid or distributed is up to the sole jurisdiction of The Company. This article cannot be construed to mean a claim against The Company.

**LAWS APPLICABLE**

10. The Employee shall be bound by all the rules, regulations and Laws of \_\_\_\_\_ as applicable in \_\_\_\_\_

11. The only courts of jurisdiction in any matter, dispute and/or controversy arising out of this Agreement and/or Employment shall be the Courts of \_\_\_\_\_.

**COMMENCEMENT**

12. This Agreement is made for the period of \_\_\_\_\_ only as from the date of departure of The Employee from Beirut to \_\_\_\_\_ but shall at the option of The Company be renewable for any further period.

**INTERPRETATION**

13. This Agreement embodies the whole arrangements between the parties with reference to the Contract of Service hereby constituted, and all previous Correspondence and negotiations whether oral or written shall be excluded.

IN WITNESS WHEREOF This Agreement is executed the day, month and year first before written.

As duly authorised to do so on behalf of The Contracting And Trading Company in the presence of —

on behalf of  
**THE CONTRACTING AND TRADING COMPANY**

WITNESS { Signature : \_\_\_\_\_  
 Address : \_\_\_\_\_  
 Occupation : \_\_\_\_\_

SIGNED by The Employee : \_\_\_\_\_  
 In the presence of : \_\_\_\_\_

WITNESS { Signature : \_\_\_\_\_  
 Address : \_\_\_\_\_  
 Occupation : \_\_\_\_\_



C. A. T.



**APPLICATION FORM**

Folio No. \_\_\_\_\_

1 — Family Name \_\_\_\_\_ Name \_\_\_\_\_  
( In Block Letters )

2 — Nationality \_\_\_\_\_ Address \_\_\_\_\_

3 — Place & date of Birth \_\_\_\_\_ Married/Single. No. of Children \_\_\_\_\_

4 — Next of Kin : Name \_\_\_\_\_ Relation \_\_\_\_\_

5 — Primary & Secondary Education ( Schools & Certificates )  
a. — \_\_\_\_\_  
b. — \_\_\_\_\_  
c. — \_\_\_\_\_

6 — Previous Employments & Experience

	<u>Name of Firm</u>	<u>Job Held</u>	<u>Pay</u>	<u>Dates (From - to)</u>
a. —	_____	_____	_____	_____
b. —	_____	_____	_____	_____
c. —	_____	_____	_____	_____
d. —	_____	_____	_____	_____

7 — Reasons for Leaving Last Employer ( Date & Pay on Leaving )  
\_\_\_\_\_

8 — Type of Employment Desired \_\_\_\_\_

9 — Languages spoken & Written \_\_\_\_\_

10 — Can You Type ? \_\_\_\_\_ How Well ? \_\_\_\_\_ English \_\_\_\_\_ Arabic \_\_\_\_\_

11 — Minimum Pay Expected \_\_\_\_\_

12 — References ( Name & Addresses )  
a. — \_\_\_\_\_  
b. — \_\_\_\_\_  
c. — \_\_\_\_\_

I hereby certify, to the best of my knowledge, that the above information is correct and that I am ready to serve the Company, wherever my Services may be required.

\_\_\_\_\_  
Signature of Applicant \_\_\_\_\_



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1. Personal interviews with C.A.T. personnel at all levels of authority throughout the C.A.T. Company, together with the author's own work experiences in both administrative and manual laboring capacities on several C.A.T. construction projects in Iraq, Jordan, and the Arabian Gulf States.
2. Records and statistical data from the files of the Beirut Headquarters and the several Area Branch Offices of the C.A.T. Company.