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WILLIAM TUCKER
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Caltex Oral History Project

William Tucker

Interviewer: Dr. Ronald E. Marcello Place of Interview: New York, New York

Date of Interview: September 25, 1985

Dr. Marcello: This is Ron Marcello interviewing William Tucker for the Caltex Oral History Project. The interview is taking place on September 25, 1985, in New York City. I'm interviewing Mr. Tucker in order to get his reminiscences and experiences from his long-time career with Caltex Petroleum Corporation.

Mr. Tucker, even though this is part of the record, to begin this interview, why don't you give me a brief biographical sketch of yourself. In other words, tell me when you were born, where you were born, your education--things of that nature.

Mr. Tucker: Well, I was born outside of Boston in July, 1918. My father was a lawyer in a Boston firm, and fairly early on in my life, he moved to a New York firm and brought the family with him. So I was really brought up as a suburban New Yorker, in Bronxville. I went to Bronxville High School. I went on to Dartmouth College, which was my father's alma mater as well. I graduated from Dartmouth with a degree in English drama, of all things, in 1939, having in mind, however, that I would either go on and get a law degree and

follow my father's footsteps or go into engineering, which kind of interested me.

As it turns out, when I finished Dartmouth, I went down to MIT (Massachusetts Institute of Technology) in summer school. They admitted me as a junior. I spent one semester as a junior and got into graduate school. In two years I had a master of science degree in chemical engineering. So my background is English on one side and chemical engineering on the other. It turned out to be a fairly good combination.

I joined Standard Oil of California because Standard Oil of California sent several people back to graduate courses at MIT, one individual in Sloan School, the business school, and another one was taking chemical engineering. Although they didn't admit it, they were recruiters, and they interested me in Standard Oil of California. Having applied to the Navy--naval research--I'd been turned down because of my eyes, so I decided to take the job with Standard Oil of California.

Marcello: What year was this?

Tucker: That was 1942. I joined Standard of California in November, 1942.

Marcello: And this was virtually right out of graduate school.

Tucker: This was directly out of graduate school. I worked on the staff of MIT at MIT while I was taking the graduate courses. I took an extra one semester because of that. I worked on

some naval research. Interestingly enough, it involved submarine diesel propulsion. We worked on the exhaust dispersal. We had one "fish" swimming, but we were overtaken by nuclear subs. We would have had a fleet of diesel-powered submarines in the war if the nuclear hadn't been developed. Actually, it would have been after the war; we couldn't have gotten anything into service fast enough in the wartime. But nuclear propulsion was developed, and our system--which did work--was obsolete before it really was practical.

So I started with Standard Oil of California during wartime and worked on the butadiene project, which was synthetic rubber. We designed a plant which was owned by the Defense Plant Corporation and operated in El Segundo in Standard Oil of California. Then fairly early on, I began working on things which were ultimately related to Caltex. One was the Ras Tanura refinery, as a design engineer from California, and then the Bahrain refinery.

Marcello: Which was the first one? I'm sorry, I didn't catch that.

Tucker: Ras Tanura, Saudi Arabia. In those days it was California Arabian Standard Oil Company, which eventually became Aramco. They built a refinery in Ras Tanura. So I worked on that, and I worked on designs of the aviation project at the Bahrain refinery in those early days. In the midst of the work on the Bahrain refinery project, I got shipped back to New York for thirty days and stayed for sixty, and then

ninety, and then gradually began to move my wife back here; and that was the way I stumbled in to a career with Caltex.

Marcello: How did the transfer occur, that is, from Standard Oil of California to Caltex?

Tucker: Well, as I said, I was sent back here to work on the Bahrain aviation project. Fred Dittus came back in the fall of 1944, I guess. There were a number of problems, largely expediting problems, to try to get the various elements of the project together in a timely way. It was behind schedule and stayed that way, as it turned out. Fred didn't want to stay back here. He sent back to California and said, "Send me a young boy." So I got sent back here, and as far as I was concerned, it was a temporary assignment; but as I say, it turned into something longer and longer. Eventually, the Caltex people asked me to transfer--if I would be interested in a transfer--and I said, "Yes," and in 1945 I formally transferred from Standard Oil Company of California to...I'm not sure, but in those days it was probably the Bahrain Petroleum Company.

Marcello: Awhile ago, you were talking about the Bahrain aviation project. Tell me a little bit more about it because I think it was an important phase of the refinery development there in Bahrain.

Tucker: Yes. Well, going back before the war, as I'm sure you know, Standard Oil Company of California, having discovered oil in Bahrain and having no place to sell it, started on a

refinery. It still had no place to sell the products, and that led to Caltex, of course. We can go into that a little more later, if it's interesting. The aviation project was initiated by the U.S. Government, which foresaw a need for aviation products in the Middle East as a part of the grand strategy of fighting the war. So with the Defense Plant Corporation, the Bahrain Petroleum Company set out on a project to build facilities to make aviation gasoline. That involved a number of processes--isomerization of butanes, alkylation, and catalytic cracking. The "cat" cracker is still running in Bahrain; the other plants were shut down many years ago. Actually, no aviation gasoline really was ever made commercially in Bahrain. The war was over before the project was fully completed, and it was not commercially sound to go on and operate these plants. So those which were of interest to the refinery were bought from the Defense Plant Corporation at the end of the war, and that included the catalytic cracker and some other gasoline and light product manufacturing facilities which surrounded that. But the aviation project itself was never operated commercially.

Marcello: You mentioned that it was behind schedule. What were the problems? What were the reasons for that?

Tucker: Principally, delivery project problems from manufacturers who were tied up with other priority work, many of which had higher priorities, and it was a question of fighting

to get your stuff out of Pittsburgh and the steel plants and one place and another. Secondly, I think the whole project was never really going to be useful in the war, if the war ended as quickly as it did. I think the war ended more quickly than they were planning for; at least, they felt they had to plan that it would go on and that they would need supplies in the Middle East to fight up from that direction toward Europe. So that was one of the things that was started with a wartime objective but which wasn't really ultimately needed.

Marcello: Other than procurement problems, were there any other problems involved in setting up the facilities for the manufacture of the aviation gasoline?

Tucker: Well, a few ships were lost carrying materials out to Bahrain, one of which had a lot of beer on it, which was a minor tragedy in Bahrain (laughter). They eventually got their beer from Australia, which is another story, because Australian beer is about twice the potency of American beer. It took the island a while to recover from that.

There were many problems with getting labor to go out there and stay on Bahrain. There are stories about ships arriving with people to come and work on the project--people coming in and taking one look at the place and turning around and going home again. A lot of people you were getting as

casual labor in those days were not too high-caliber people. But eventually, many of these problems were solved by more careful recruiting. The company didn't have too much problem, but the contractors seemed to have problems getting good labor.

Bechtel was the contractor, and I remember there was one story involving Don Hanna, who was a vice-president of Bahrain and Caltex at that time, in charge of refining. He went down to Washington for some discussions down there, and I guess Don took a lot of heat on the aviation project schedule. He came back, and he tried to call Steve Bechtel, who was the contractor. Steve was up in the Sierras on a fishing trip, which made Don kind of mad. So having talked to Steve's secretary, Don sat down and sent him a hot wire about the schedule and how an extraordinary effort was going to be needed. Steve Bechtel wired back, and the specifics I can't remember, but it essentially said, "Fleas take two weeks, humans take nine months, horses take eighteen months, elephants take twenty-four months; and the Bahrain project is going to take thirty months. Regards, Steve." How Steve ever lived through that, I don't know (chuckle).

Marcello: What was your specific role in that Bahrain project?

Tucker: I came out as a design engineer. The engineering department back here in those days consisted of two engineers, and I guess our role was to do whatever needed to be done. The basic design and purchasing was being done from San Francisco

by Standard Oil Company of California, in which I had been involved. They needed some people back here to do some various things and serve as a liaison with the refinery and some of the East Coast suppliers, and that's about as closely as I can define it, I think.

Marcello: So you came back here, and you began working for Caltex in 1945 in the engineering department?

Tucker: That's right, for Fred Dittus.

Marcello: Describe the nature of the Caltex engineering department at that time in terms of its facilities, its personnel, and so on.

Tucker: Well, as I recall, there was one engineer already here when I came back, Dick Meeker, who now lives in Texas. There was a small manufacturing department consisting of a guy by the name of Leo Burns and Marvin Crenshaw. Leo, I guess, had the title of manager of manufacturing. Marvin Crenshaw, I remember, had great, big sheets of columnar paper that covered his whole desk, and it listed every tank in Bahrain on these sheets; and every morning there would be a cable sent out to Bahrain telling them what ships were coming in and what products were to be put in what tanks. They virtually ran the refinery from the New York office, or scheduled it. Dick and I divided up whatever needed to be done. As I say, my chore was principally trying to find out what the bottlenecks were and expediting them. There

was very little creative engineering done back here; the creative engineering was being done in San Francisco. We were sort of "go-fors." I guess that's the best way to describe it.

Marcello: The reason I asked you this was because Fred Dittus described the office in very similar terms when he arrived. What sort of man was Fred Dittus to work for?

Tucker: Fred was a very interesting guy to work for. He believed in fear motivation, I guess. That was his principal tool, and he was pretty good at really raising hell if he didn't like what he saw. Underneath it all, he had a very warm heart and was a kind person. Many people never got to know him well enough to realize that; he was a shouter and a desk-pounder and a banger.

I remember an incident when I worked for him in California before I came back here. He had a lot of things going on, since he was chief designs engineer of Standard Oil of California in those days. He had a lot of projects going, and the projects had a lot of bits and pieces. There was one engineer in charge of each bit or piece or each project. Fred would have a meeting at nine o'clock every morning with one engineer who was in charge of the project. One morning, the guy that I worked for wasn't there, and the guy that he worked for wasn't there (he was the one who was supposed to go in and be interviewed with Fred). So

it eventually got down to me, and I went into Fred's office, and he started asking questions about...I think it was about the gas recovery plan for the "cat" cracker at Bahrain. I was designing heat exchangers, and I had about a hundred heat exchangers in front of me to design. So Fred eventually got down to that fact, and he said, "Well, when are you going to finish this job? We need to get orders placed for these things." I said, "Well, it's going to take me about two months. I can do so many a day, and I've got a hundred in front of me." He said, "What! It's going to take two months?" He said, "Get up! Close the door!" So I got up and closed the door. "Lock it!" So I locked the door. Then he started shouting at me. I said, "Well, if you can find anybody around here who can design them any faster than I can, you'd better get them, because I'm going to unlock this door and leave." So he said, "Wait a minute! Wait a minute!" He picked up the phone and called Steve Bechtel, and the next morning I had three engineers working for me (chuckle). So that was Fred.

Marcello: It seems to me that one of the major projects or items with which the engineering department would have dealing in that post-war period would have been that program of refinery expansion. Is it safe to say that that would have been your number one activity in the post-war period?

Tucker: Yes. Well, the first thing we did after the war, as I recall,

was build a wharf at Bahrain. During the war everybody knew just exactly where they were headed and what their objectives were and the value of time, and things were fairly simple and well-directed. After the war, at least in the level of the company that I found myself at that time, there was a period when there didn't seem to be much direction. We didn't really know what was coming next; we didn't know how things were going to go. There was sort of a slack period.

During that period the first project to come up was the construction of the Number Two Wharf at Bahrain, which is still there. I recall that as the first thing that we started on after the war. I got the assignment to buy a tugboat for Bahrain--that's sort of related to that wharf project--and that was kind of another interesting story. Maybe we're spending a little too much time on this part of the career.

Then very quickly it became evident that there was going to be a lot of petroleum product needed in Europe after the war, in particular, and also in Asia. But I think initially, after the war, things tended to be directed more toward Europe. This is the time when Texaco decided to sell to Caltex its facilities in Europe, including one very badly damaged refinery in France, a refinery site in Holland that had been acquired but never built on before the war, and the markets. The first real flurry of activity was toward

Europe. As I recall, the European facilities of Texaco came into Caltex about 1947. From that followed, really, projects in France to rebuild the Bec d'Ambes refinery, construction of a new refinery in Pernis in the Netherlands on the site that Texaco had obtained before the war. Repesa also came into the picture, and this was a company in which Compania Espanola de Petroleos owned 24 percent, Caltex took 24 percent, and INI (Instituto Nacional de Industria) of Spain took 52 percent. The first objective of that project was to build a refinery in Spain. Actually, that was my first overseas trip for Caltex, was to go to Spain. I think this would be in the summer of 1949.

Marcello: So in that period of refinery expansion in the immediate post-war period, you were most familiar and worked most closely with the Repesa refinery?

Tucker: No, my first job was project engineer for the reconstruction of Bec d'Ambes and the construction of the new refinery in Holland. We hired a contractor to carry out the engineering and do the procurement, and I was project engineer in charge of coordinating and the designing those projects. The European acquisition was around 1947, because the Pernis refinery and the Bec d'Ambes refinery reconstruction in France as I recall were started in 1947. They started manufacturing product and supplying customers in about 1949. Repesa came along about 1949 --the Spanish thing, By that time, I think I had the title of chief designs engineer, so I was involved in more or less

whatever projects we got into, and we were into a lot.

Marcello: What were the special problems involved in refurbishing and repairing the Bec d'Ambes refinery?

Tucker: Well, there were many because the place was a tangled mess of steel. The Royal Air Force had come over very late in the war and had bombed the place from a very low altitude. There were no air defenses at all, and they had just cleaned the place out. The tank farm, I remember, in particular was badly damaged. So what we tried to do in Bec d'Ambes was take the place apart and recover as much as we could. We set up what we called a salvage pool. The people in the field started cutting things apart, and they put aside everything that appeared to be useful--pumps, compressors, steel, and whatever they could find. They looked at which tanks seemed to be repairable and which had to be cut down and discarded. Then we essentially designed new facilities, but we selected bits and pieces out of the salvage pool. When we found a use for something, it would go back into a rehabilitation area and be rebuilt or changed, and then we would add to that new equipment. So it was a rather interesting project,

One of the most interesting parts involved a piece of land in Bec d'Ambes owned by a fellow by the name of Count Oberbeck-Claussen, which was a somewhat unlikely name for a Bordeaux Frenchman. We bought this for crude tankage

expansion. We didn't build the tankage to begin with, and there was a vineyard on it. The refinery manager, Leo Laine, who was over there waiting for us to build a refinery, decided that he was going to become a vintner, so he grew a crop of grapes and produced wine which wasn't very good. I still have a couple of empty bottles in the country. The label was Entre Deux Mers. It was appellation controllee for the Bordeaux region. I think he produced two crops, both of which were barely drinkable, let's put it that way. We used to kid him a lot, and the last crop--when we finally decided to take the vineyards out and put in crude tankage--we called it "dernier cru." You know, the fine wine in France is know as "premier cru," so we called Leo Laine's wine the "derniere cru" (chuckle). That was Caltex's wine, and actually the wine was sold in a Caltex bottle with a Caltex star on the bottle. They used to say that Leo took it off the crude still just below the kerosene cut! That's a bit of history--that Caltex was in the wine business in France for two years, but not too successfully, I'm afraid.

Marcello: Whenever I hear anybody talk about the activities in France in that immediate post-war period at least, the first thing that comes to my mind is the instability of the French government or governments at that time. Did that present any kind of problems relative to the rehabilitation of this refinery?

Tucker: Not really, that I can recall from my particular level. I

can recall subsequently, when de Gaulle came into power, observing that there was tremendous change in what you could accomplish in France in a given period of time. I guess it was the first time that I really realized the subtle motivational power of a government and the way people feel about themselves. De Gaulle, in spite of what many people might want to criticize him for, suddenly enervated and activated that country, and you suddenly could get things done. There were labor problems and other things, but I don't recall that the changes in government were particularly disturbing to undertaking that project because in those days we got projects done pretty quickly. Within two years, we had the place all put back together again, and we were in business. I don't know how many government changes occurred during that particular two-year period, but I don't recall that as a particular problem.

Marcello: We talked about this very briefly during our pre-interview conference, but I want to get it on tape. Let me set you up for this question. What kind of long-range strategies were being developed in the engineering department of Caltex during this period (chuckle)?

Tucker: Well, (laughter) you set me up for that one. I've already said to you that I'm not much of a believer in grand strategy. Our strategies were to find people who could do the work that needed to be done, put them to work, find

out how much responsibility they could take, and give it to them. At one point in time, I guess we had four or five separate refinery projects. We were designing four or five separate grassroots refineries at one time, and as Fred Dittus has told you, when he came back here, there were two engineers, myself and one other guy; and he had the job of building an engineering department while at the same time designing five or six different refineries simultaneously. We were all busy. I guess I shouldered a lot of responsibility in a hurry; I was lucky to be where I was at the time. We were just out there trying to keep the contractors in mortal terror and get work out of them and find people who could supervise the work and be sure they didn't make any bad mistakes and try to set up cost control systems to keep the financial side of the thing under control. I guess our policy and grand strategy was "head down, ass up." (laughter)

Marcello: What kind of guidelines were coming down eventually to the engineering department from either the Caltex board or even the two parent companies at this time?

Tucker: At that point in time, I guess, what the board and the parent companies were busy with was figuring out how the company was going to take advantage of the crude and product supply in the Persian Gulf--as it turned out, principally crude supply--to supply European and Asian markets. A joint venture was put together in Spain. Bill Bramstedt, who

eventually became a chairman, was instrumental, as I recall, in putting the Spanish thing together. As I say, that was owned 24 percent by a Spanish company (Compania Espanolde Petroleum), 24 percent by Caltex, and the Spanish government had 52 percent and was obviously in control.

A joint venture was put together in Italy with Fiat. Fiat had taken as a custodian, I guess, from the Italian government a Russian company called Petrolea. Interestingly enough, they had a red star as a trademark. Fiat took this over, and at the end of the war they were looking for crude supply and somebody that knew something about the oil business. So a 50-50 venture was put together in Italy with Fiat.

The board was busy with these things, and then we were following in and trying to accomplish what had to be accomplished to give them the hardware to go into business, I guess.

Marcello: So the overall objective up at the top is basically to increase market share.

Tucker: It was eeking out market share, trying to, I guess, acquire a piece of the growth that was foreseen and the petroleum products that were going to be needed to rebuild the world's economies.

Marcello: Is Bahrain still the most important source of crude at this point?

Tucker: No. By this point in time, Saudi Arabia was the principal

source of crude. Bahrain really never exported any crude oil. Bahrain had a small oil field. In the early days I'm talking about, Bahrain was probably producing 20,000 to 30,000 barrels of crude oil a day. All that went into the Bahrain refinery and was exported as product. Before these refineries came on stream, Bahrain product was going up toward Europe as well as out to Africa and Australia and the areas that eventually became Caltex areas.

I might say at this point something about Aramco and Caltex's relationship with Saudi Arabia. Of course, we ultimately became the instrument to move a large share of Standard Oil Company of California's and Texaco's crude oil from Saudi Arabia and 100 percent of product from Bahrain. That was kind of Caltex's mission. Aramco grew out of the old California Arabian Standard Oil Company.

When Caltex was formed, Saudi Arabia was thrown into the deal as sort of an added plus. No oil had been discovered there. Standard Oil of California had gotten the Bahrain concession in 1932, and the geologist, Max Steinecke, who located the first Bahrain oil well--the first well was a discovery--is reputed to have stood on the jebel in Bahrain, looked over to Saudi Arabia, which is twenty-five or thirty miles across, seen another structure on the horizon which looked very much like the Bahrain jebel, and said, "If it's here, it's over there." He went back to San Francisco and

somehow or another convinced the Standard Oil Company board that they ought to try and get the Saudi Arabian concession. Through a long story, including hiring some British consultants and one thing or another, they got the concession. It was 100 percent Standard Oil Company of California, and they had the whole Saudi Arabian peninsula.

The story I've heard about the formation of Caltex--I don't know whether you'll hear this one, and I've never been able to verify it--was told to me later by financial people here in New York. James Forrestal, who was an investment banker--eventually became the first U.S. Secretary of Defense--was working for Dillon-Reed. He knew about Socal's discovery of oil in Bahrain and the fact that they were building a refinery for which they had no outlet. He also knew that Texaco had markets, although they were very limited, in Africa, Australia, New Zealand, China principally, and a little bit in India, although I don't think they had developed India very much at that point in time. They'd been supplying from the U.S. Gulf of Mexico, and that was no longer economical. They'd been supplying in the days when oil went down to a penny a gallon, and there were tremendous problems. That was no longer economical. Forrestal is reportedly the guy that got together Mr. Kingsbury of Standard Oil of California, who was chairman at that time, and, I think, Mr. Klein of Texaco, although that would need to be checked out,

to form Caltex. Texaco threw in the markets, and Standard Oil of California threw in the Bahrain concession and the refinery, which was under construction but not, I think, quite completed and operating. They also threw in the Saudi Arabian concession as an added starter.

Marcello: So that's how Texaco got into that concession, then.

Tucker: That's how Texaco got into that concession. At a point in time, at this period when the war was over or about to be over and the growth in Europe was foreseen, someone had the idea that they should build a pipeline across Saudi Arabia. That eventually became the Trans-Arabia pipeline. It was destined for Haifa originally; that was before the formation of Israel. They needed \$100 million, and they went to the Jesse Jones agency in Washington, the Reconstruction Finance Corporation, and they negotiated an arrangement to borrow \$100 million dollars from the U.S. Government. The story, as I know it, is that the documents got up to the highest level for signing. Harold Ickes was Secretary of the Interior at that time, and Harold Ickes apparently let them sit on his desk and eventually said, "No, if we're going to put \$100 million into this business out there, we want to own part of the company. The U.S. Government wants equity in the Saudi Arabian peninsula." By this time, it was becoming evident that there was a lot of oil there. There was not nearly as much as it turned out was finally

there, but it was evident that it was a major oil find. By this time, I think Collier was chairman of Standard Oil of California and Starr Rogers was chairman of Texaco. I may be wrong on some of these individuals and dates. I'm not sure. Anyhow, they said, "The hell with this. We don't need the U.S. Government in our business; we'll look elsewhere for money."

So they went to Chase Bank eventually, and the Chase Bank said, "Well, your credit's not good enough for \$100 million, but if you'll bring two other Rockefeller companies into the deal--Standard Oil Company (New Jersey) and Mobil--then we'll lend the money for the pipeline." It was evident that other very large amounts of capital were going to be needed--larger everyday--as they found more and more oil. So that was the way that Aramco eventually became...first it was Socal, then it was Texaco-Socal, and then it was Standard Oil Company (New Jersey), Mobil, Texaco, and Socal. Interestingly enough, at that point in time, Mobil did not feel they could afford 25 percent, so they took 10 percent; and it ended up 10 percent Mobil, 30 percent Socal, 30 percent Texaco, and 30 percent Standard Oil Company (New Jersey).

So that basically changed Caltex as a purveyor of the major part of what came out of Saudi Arabia. I say Caltex was a purveyor. By that I mean it was a refiner and seller,

which is Caltex's principal mission. It would have been quite a different company if the group had been tighter. Also, the fact that Mobil only took 10 percent of Saudi Arabia was a critical determiner of the future because this meant that the interests of the four partners were not precisely the same. This had some effects later on in Saudi Arabia, which would have happened differently if they'd each had 25 percent. Mobil sort of became the odd man out in the Saudi Arabian concession, and this caused some problems as times went on.

Marcello: Mobil has always been somewhat of a corporate maverick, perhaps, in contrast to the other companies that you have mentioned.

Tucker: Maybe the fact that, as I say, they were 10 percent and the others were 30 percent sort of honed their maverick image. I'm not sure.

There's one other piece of the Caltex history at this point in time which is interesting--and we might skip over if we don't take it up at this point--and this is a part of the pipeline venture, the Trans-Arabia pipeline. The planned, as I mentioned, pipeline was going to terminate in Haifa, and it was planned originally to put a big refinery in Haifa. It was to produce 100,000 barrels a day, and they were going to ship that product across the Mediterranean toward Europe. So a company was formed by the name of

Medreco, and it was formed with a great splash. They moved people out of Caltex's New York office, and they took the top floor of the Lincoln Building on 42nd Street, New York. The company was 50 percent owned by Mobil and 50 percent owned by Caltex. As I say, the objective was to build a 100,000-barrel-a-day refinery on the shores of the Mediterranean to ship product toward Europe. This really preceeded some of the history of the European refining expansion...I think the reconstruction of Pernis and Bec d'Ambes had gone ahead before Medreco, but Medreco came in next. If it had gone on as contemplated, it would have pre-empted some of the European refinery construction that Caltex eventually got involved in. Israel was formed, and the pipeline terminus was moved from Haifa to Sidon because it would not have been practical to terminate a Saudi Arabian pipeline in Israel.

Marcello: That's an understatement (chuckle).

Tucker: The philosophy of refining at places where large quantities of crude oil were available was slowly changing. It was realized that the political risks involved in concentrating refining in the Persian Gulf--with the big refinery at Ras Tanura, a big refinery at Bahrain, and the end of a pipeline at the end of the Mediterranean--were too great; and by this time the individual countries of Europe, for strategic and economic reasons, were demanding that the oil be refined at home. So the concept of the Medreco

refinery was basically changed before the refinery was built. But they were quite far into the project; they must have had thirty people set up over in the Lincoln Building here in New York on 42nd Street. They had a chief engineer, Ray Andresen, who was to be in charge of designing the refinery. Mobil provided the general manager for Medreco. For some reason his name slips me now, although I can see him...Dan Mello or Dan Miller...something like that. He was a Mobil man. Mobil seconded a number of people into the company. At any rate, that project was aborted and eventually ended up in Caltex's and Mobil's Medroco, which is a small, 3,000-barrel-a-day refinery built at Sidon, where the pipeline eventually terminated. It started out as a very grandiose scheme and actually progressed quite a ways before the political events overtook it. It's an interesting sidelight on Caltex's development.

I started to mention Italy, where Fiat had taken over this Russian company called Petrolea. Caltex made a joint venture with Fiat, called Petrolcaltex. They had the markets in Italy--it was a 50-50 venture--and it was decided to build a refinery in the Po Valley--San Martino to Trecate. This would be...I don't know...by now we're into 1950, perhaps. We've ticked off quite a few refining projects. Meanwhile, we're expanding Bahrain. I didn't

mention that. It was being expanded all this time. A pipeline was built up from the Mediterranean into the Po Valley. San Martino was about halfway between Milan and Turin. The pipeline was owned by Petrolcaltex, I guess; the refining company was different. It was Sarpom, but it had the same ownership, half-Fiat and half-Caltex. Sarpom... I've forgotten what those letters signify. That project was completed.

About the time the refinery was finished, gas was discovered in the Po Valley, and there's still quite a prolific gas field in the Po Valley. That preempted the fuel oil market. We had an inland refinery producing from crude oil a distillation yield, which meant that there was about 60 percent fuel oil left behind and 40 percent light products of various kinds. So we had to go in, just about the time that the refinery was finished, and change our strategy. You'll begin to see why I don't believe in grand strategy. We changed the design of the refinery and put in a catalytic cracker to chew up the heavier products into light products.

Caltex and Fiat, as it turned out, had quite different objectives. Fiat wanted to make a lot of money on the refining and marketing facilities; Caltex wanted to make money on its crude oil. So there was a definite conflict of interest. In a one-day transaction, as I recall...you

asked what the board and the top management of Caltex were doing these days. Fiat's equity in Petrolcaltex--that means the marketing company, the pipeline, and the refinery--was bought and resold to Esso. So what started out as a 50-50 Fiat-Caltex venture became 60 percent Esso and 40 percent Caltex, as I recall. Then when Caltex eventually sold out in 1967 to the two owners, the equity changed a little bit. Standard Oil of California, I think, had less equity...I don't recall. Anyhow, it became Texaco, Socal, and Esso, each with different equity percentages. That was a good lesson, I guess, to be learned--that if you go into a partnership where a lot of money is invested, you'd better see that you have fairly common objectives.

Marcello: You've more or less preempted my next question. I'm not sure that you were in a position to see it at the time about which we're talking, but what are the advantages and the disadvantages of these joint ventures?

Tucker: Caltex had grown to a large extent through joint ventures, except for those places such as Bahrain, where the crude oil discovery and the refinery were Caltex essentially (Socal originally). Many of our expansions into new markets have been joint ventures. In the case of Italy, the advantage was that Fiat had a small marketing company that they'd taken over as a spoil of war, so a joint venture gave you somewhat of a head start. In the case of Spain,

there was a government monopoly marketing product in Spain --Campsas--and the construction of the refinery was financed by Spanish government capital to a large extent. The Instituto Nacional de Industria had 52 percent. We had kind of an automatic entré as the result of entering it as a joint venture partner. We could not have gone in 100 percent. The market was monopolized, and we wouldn't have been allowed to go in and build a refinery. So basically, by entering the joint venture, we got a crude oil outlet. That was the primary thing that was wanted there. The Spanish thing has another interesting sidelight. There's a document somewhere which I had at one point in time, and if you could inquire around Caltex, if you could find it, it would be a very interesting thing to incorporate into the history, although it's not oral history, I guess. Maybe it's out of your realm.

Marcello: It certainly would supplement the interview.

Tucker: We had a man in Spain by the name of Jose Alvarez. I'll have to go back a little farther. Before the war, Texaco sold product out of Port Arthur into Spain.

Marcello: This is an interesting story, too. Is this where we get into Gus Rieber and so on?

Tucker: "Cap" Rieber. Well, maybe Jack Fosque might have told you this story.

Marcello: Well, I'd still like to hear another side of it.

Tucker: I don't know who you might have heard it from, but Jack

would be a likely prospect, I guess. Anyhow, they used to sell product into Spain by the shipload from Port Arthur. I guess Spain was buying from a number of other sources. But they had some cargoes refused when they arrived in Spain; the Spanish claimed they were off the specifications. "Cap" Rieber went over there to find out what was going on, and he said, "Look, we're not going to stand for any of this foolishness. You send an inspector to Port Arthur, and he's going to look at every cargo before it leaves Port Arthur, and you're going to accept it when it has left Port Arthur. We're not going to ship over here and find out that the cargo is not acceptable." So they sent a young fellow by the name of Jose Alvarez.

There are many stories about Jose and "Cap" Rieber. Anyhow, Rieber took an interest in Jose. Jose was a very unusual person. This must have been evident even as a young man, because in his very early days "Cap" Rieber took him out to an API convention in Los Angeles. He was a young boy, and he and Rieber became quite close. To shorten a long story, he went back to Spain, and about this time the war intervened.

Jose was a Phalangist--he was on the side of Franco--and having had some experience in the petroleum industry, he was involved in petroleum supply. He went up to Paris during the Spanish Revolution and called on a man by the

name of Bill Brewster, who came from the family that built Brewster Bodies. He was the head of Texaco's Paris office, maybe all of Europe. Alvarez went up and talked to him about possibly getting some petroleum products to support Franco in the revolution. He convinced Bill Brewster that there wasn't any question that Franco was going to survive, that the Republicans would be put down; but they needed petroleum, and petroleum was a key element in their being able to consolidate the gains that had already been made and to win the revolution.

Rieber agreed to provide the cargoes, I believe, on credit. He sent in one or two shiploads of gasoline and accepted their promise to pay. The relationship between Alvarez and Rieber and Alvarez's persuasive powers and Rieber's foresight--not everybody might have agreed with this particular decision at the time--were important to Caltex's future operations in Spain.

At the time Repesa was formed, I went to Spain. As I mentioned to you, it was my first business trip overseas. I flew to Madrid, and I think it was in the summer of 1949. I was over there for about eight or ten weeks, and what we found was a refinery that had been started by the Spanish with the help of the Germans. There was a big office building, including an apartment on the top floor for Franco to stay in when they dedicated it. It had a marine port (pretty

well built); it had some pipelines down to the marine port; it had tankage. It had no process plants. All the surrounding facilities for the refinery were there--the power plant and the other things it would need--but the guts of the refinery weren't there. The Germans had agreed to supply the crude unit and whatever else the refinery was going to consist of, but they got in trouble as the war went on, and the stuff never showed up. So the Spanish had the beginnings of a refinery without the real technical heart of the refinery. So I went over to take a look at what was there and try to be the liaison between the people back here that would design the refinery.

We found Foster-Wheeler already there, building a small crude still, when we got into the act. Foster-Wheeler had done the same thing. They came into Spain and agreed to... there was a man in Vienna, I think, who went down and made this deal, and they agreed to start work on credit. The Spanish had no money at all these days--very, very poor. Cartagena, where the refinery was located, had been pretty well destroyed by shelling from the sea. I remember going there, and the conditions were just terrible.

At any rate, Caltex had 40 percent of the Spanish market automatically as a result of this deal that Rieber had made, and they held onto that for a long, long time; and Foster-Wheeler enjoyed the same kind of a special favored position

because of the fact that they had shown faith in the government in the very early days. I remember later on as having the responsibility for contractor selection on expansions of the Escombreras refinery, which eventually became a very complex and large refinery, including fertilizer plants and so on. It was almost impossible to award a contract to anybody but Foster-Wheeler. You'd get down to the final blows, and the Spanish always saw to it, somehow or another, that Foster-Wheeler had a second look; and if they wanted it, the job was given to them. That was about the way it was because they'd shown faith in the government in the early days.

Mr. Canelas, who was the managing director of Repesa, was one of my mentors. I can't imitate his accent in English very well, but he used to tell me in the early days, "Business is mind and heart, and you must never forget that." That was his philosophy. He also had a philosophy that life should be divided into three parts: one part for preparing, one part for producing, and one part for enjoying the cultural things. He was well into the third part and still producing (chuckle).

Marcello: You mentioned that you considered this man to be one of your mentors. Could you expand upon that?

Tucker: I don't know. I always felt that I learned a lot from him from just watching him and seeing the way he approached things.

which was quite different from the way many American businessmen approach things. I learned something. I think he had some of the characteristics, maybe, that Rieber had. Rieber was a strong believer of heart in business--that you have to temper the pure, cold results of figures with sort of a human element and the importance of relationships. I would say that was one of the things attracted me to him.

Fred Dittus, of course, was also a very important mentor of mine in the early days, as an engineer and as a human person in the business.

Anyway, we were talking about joint ventures. We couldn't have gotten into Spain without a joint venture; we got a head start getting into Italy with a joint venture with Fiat.

In France, it worked in the reverse. We got into a joint venture in France, having had 100 percent of a small market; I think we had two-and-a-half percent of the market. There came a point in time when the French went down into Algeria and discovered oil there; they discovered oil in Equatorial Africa. Caltex's original objective was to sell crude oil to France, and they could see that they were losing their crude oil market to French national crude oils. At the same time, the discoverers of the French oil were wanting a home market, so Caltex made a deal with...well, really, they

made a deal which eventually resulted in the formation of Elf, although Elf is a 100 percent French company. They made the owners of Elf enter a joint venture with Caltex, in which the French had 60 percent and Caltex 40 percent. The French had the objective of increasing the 2 ½ percent of the market share to 15 percent, so rather than struggle along with an uncompetitive 2 ½ percent, the joint venture with the eventual owners of Elf gave Caltex a larger share from its crude oil outlet. It's actually a little complicated to explain. As I recall, Compagnie Industriale Des Petroles was the joint venture. It owned the Bec d'Ambes refinery eventually. It was a 60 percent French government-owned company and 40 percent Caltex. They bought the existing service station chain, and I think that belonged to Compagnie Industriale Des Petroles. Then the French had the right to expand their own market directly, and they expanded that on a 100 percent basis. They built another refinery, and they owned that. I guess at one point in time we did have some equity in one other refinery through Compagnie Industriale Des Petroles, but that was another joint venture that came about for reverse reasons. I don't know when that was formed. I believe it was in the early or middle 1950's. That was the beginning of divestiture. I mentioned bringing in Esso in Italy. We began to find situations where, having built things up, we were now beginning to divest ourselves

in certain aspects.

Marcello: What would be some situations that would call for a divestiture?

Tucker: Well, here was a case where we didn't get along with a partner, and another company came in, and they had a larger market and wanted a larger share and wanted to expand the new joint venture; therefore, we sold a piece of our share of the business to them. What other reasons for divestiture were there?

We haven't mentioned Turkey (chuckle). Turkey is another market where Caltex had a favored position because of supply during the war. The Turkish market was supplied virtually 100 percent from the Bahrain refinery during the war. We had a representative in Turkey who had been an old railroad engineer and had come down from Germany--Oswald Bruckner. I don't know if his name has come up anywhere. He's another interesting entrepreneurial-type character in Caltex's history. Oswald was an Austrian. He was born in Austria. I guess he was a Jew, although I'm not sure. He was sent down by the German railroads to build railroads in Turkey. As a young engineer, he met the people that were involved in the building of Turkish National Railways, and eventually many of those people rose to quite high positions, some in the petroleum business, which was a monopoly in Turkey, and some in politics, going all the way to the top.

Turkey decided they wanted a refinery. This would be

1955 or 1956. Again, Caltex and Mobil went together with perhaps one other partner. It was planned to build a refinery down in the corner of the Mediterranean, where Turkey and Syria come together, just into Turkey. Caltex's market was to Petrolofisi, which was the Turkish government company. I say the market was monopolized; it wasn't actually. Mobil was in the market, and Shell was in the market. They were the other partners in this refinery project.

In the midst of that, there was some political maneuvering, and Petrolofisi decided that they would no longer take their product from Caltex. Caltex was involved in 20 percent or 30 percent of a refinery project that was underway, and suddenly it saw that it was going to have no market outlet for the product. So there was a lot of scurrying around, including a lot of wheeling-and-dealing by Oswald Bruckner. Caltex eventually ended up as a 49 percent owner with T.P.A.O., which was a Turkish government company. They owned an oil concession out in eastern Turkey, and they also owned a refinery out there. Caltex and T.P.A.O. came together to build a refinery in Izmit, on the Gulf of Izmit, just east of Istanbul. It's eighty miles east of Istanbul or something like that. This was another joint venture which the company was virtually forced into to hold a market. That was a very interesting project.

Marcello: So in other words, relative to some joint ventures, you

get into them against your better judgment.

Tucker: I don't know that I would say that we got into this against our better judgment, but it's a defensive maneuver to hold a market. This was purely a defensive maneuver. We had to pull out on the other two partners; they were very angry at us. We pulled out. We entered this joint venture with the Turkish petroleum company. They were very hard businessmen. We were scurrying to hold on by our fingernails, so we couldn't be all that particular. They made a deal with us where we guaranteed to build a refinery on a fixed budget and a given time schedule. I think it was thirty months from the date of conception, if you will, which means that the corporate organization and a lot of other preliminaries have to go on, with a penalty if we failed to have the refinery completed on a given date. I say a fixed price--if it cost more money, it was 100 percent for us, with a guarantee on the product specifications and the yields of products from the crude oil.

I remember very well that we had been asked on kind of a hurried basis...at this point in time, I think I was vice-president of refining and technical services. I don't remember the title, but, anyway, I had charge of both the refining and the engineering and the purchasing at that point in time. We'd made an estimate of what this refinery was going to cost from afar--from here in New York.

None of us had been to Turkey, and we said, "Well, it's going to cost you \$23 million or \$34 million," whatever it was. I think it was around the mid-twenties. So Bill Schwartz, who was the manager of refining...I guess I must have still been in charge of the engineering; I don't think I had refining at that point because Bill didn't work for me. He was in Turkey. He called up--got me on the phone--and said, "You know, you estimated what it was going to cost. What would it take for us to guarantee it? Could we freeze that estimate and guarantee that we'll build it for that?" So I said, "Well, I don't know. You know, what's a refinery? Can I control what I put in? How rigid are the specifications going to be? If the specifications are rigid, that's kind of dangerous; but if the specifications aren't too rigid, maybe we'd want to add 10 percent to it or something like that, and we could freeze it." So Bill said, "You'd better get over here because if we're going to hold this deal together, we're going to have to freeze it, and we're going to have to guarantee a lot of other things. So you'd better come over and have a look."

So I recall going to Turkey. The thing I remember best about the trip was my trip out to Batman in eastern Turkey, which was very interesting. I remember coming on the train down toward a city by the name of Diyarbakir. Maybe you know about the U.S. military and its air bases out

there--way in eastern Turkey, east of the Tigris River. I remember seeing this old Roman aqueduct across the river valley down below where the train tracks were. Behind was a walled city with the minarets of mosques coming up. It was an old walled city--the most romantic view I can recall.

At any rate, we went ahead and made this deal. We completed the refinery on time. Another aspect of the deal was that at the end of ten years--this must have been from 1949 to 1959--the Turkish company had the option to buy our 49 percent at book value, which they eventually did, and we were out of business in Turkey. That was my lesson that ten years go by in a hell of a hurry (laughter). So actually, we were completely gone from Turkey.

So many things sort of push in on this tale at the same time, and there are a lot of things going on in the residual Caltex area at this point in time. But let's finish up with Europe. When the shareholders decided, after some arguments about things European, that they wanted to buy Caltex out, three countries were left out of the buy-out. One was Spain, where the relationship with the government... I think that in the meantime CEBSA had gotten out of Repesa, but Caltex and INI were still very much involved there. It was just too complicated to take apart; it couldn't be easily divided up. So Spain was left in as a part of Caltex. Turkey was left in, again, because of

the government involvement and the fact that there were rather complex contracts that defined the relationship. The Turkish government would have had to have given their permission to move Caltex; they would not have so agreed. The refinery in Germany...the markets were split, but the refinery...that's another refinery we had built, which I had forgotten all about. I'll go into that one.

Marcello: Dittus mentioned quite a bit about the German refinery.

Tucker: (Chuckle) Yes, well, I gave him a lot of problems on that one, I guess. Anyhow, Fred was interested in Germany. Did he tell you about his early days--purchasing for the Bahrain refinery in Germany?

Marcello: Yes.

Tucker: The German refinery and France...France was left out, again because of the joint venture with the French government companies; it would have been too complicated. So France, Spain, Turkey and the refinery in Germany were left out.

Marcello: Now just for the record, what you have reference to is the reorganization or the split that occurred in 1967, when Socal and Texaco decided to reenter the European market.

Tucker: That's exactly right. What we did was to review all the assets with shareholder collaboration, and we assigned each asset to one company or the other. Then at a point in time, we formed "S" companies and "T" companies. When

the crystal was all scored to divide it up, it was hit with a hammer and split apart into separate pieces. I recall that there were personnel problems of all kinds--who would stay with Caltex, who would go to the shareholder companies, who would stay with what business.

Marcello: Let's back up just a bit. What do you know about the decision to split or to reorganize or whatever you want to call it?

Tucker: Well, a fair amount. We had a company in the United Kingdom called Regent Oil Company, which had been formed. It was owned partly by Caltex and partly by Trinidad Leaseholds. Trinidad Leaseholds had an oil concession in the island of Trinidad, and it had a refinery in Trinidad. Caltex bought into Regent. I think it was maybe 50 percent Trinidad Leaseholds and 50 percent Caltex originally. It got part of its product from the Carribbean, from Trinidad, and got part of its product from Bahrain. Texaco, under Gus Long, bought Trinidad Leaseholds. So we ended up with a major marketing operation in the United Kingdom. Incidentally, by that time we'd been looking at refinery sites; we'd bought a refinery site in Southampton, and we were going to build a refinery in the United Kingdom. Texaco suddenly, unbeknownst to Standard Oil of California, without any discussion, without giving them any opportunity to do so, bought Trinidad Leaseholds, so they owned indirectly 75 percent of

Regent, and Socal owned 25 percent. It was still 50-50, but Texaco, through its 50 percent in Caltex and its 100 percent of Trinidad Leaseholds, had 75 percent control of the Regent Oil Company, and Socal had 25 percent.

Socal was hopping mad about this. They felt it was not ethical conduct, I'm sure. Probably--I'm putting thoughts into Mr. Long's mind--Mr. Long did it because he was wishing to go into business for himself in Europe, at least in the United Kingdom. He really felt that Caltex had served its purpose and that Texaco was big enough and strong enough to compete in the market on its own; so the first step was to buy Trinidad, and this created a lot of friction that went on for a number of years. The sores, I guess, became so sensitive and so open that eventually Socal agreed to the split-up.

There was a tremendous amount of trauma in getting the thing split up, not only people trauma but clashes between the shareowners and fights in the Caltex board over various and sundry things because the shareowners weren't getting along. All this occurred before I was on the board, so my knowledge is very secondhand. I didn't go on the board until 1968 and we had spun off in 1967. But interestingly enough, I was invited to stay with residual Caltex and chose to stay. As you can see from my recital of early history, my career had been primarily involved with

the development of business in Europe up until the date of the split-off. That's not quite true. I really ran the project to build the refinery in Australia. I guess it was in the mid-fifties or early fifties that I went out to Australia.

Marcello: I think that refinery came on the line sometime between 1949 and 1952.

Tucker: Well, I had my fingers in a lot of pies in those days, as you can see, and I don't know how the hell I did it, now that I think back on it.

Marcello: Was this basically because the Engineering Department was still so small? I'm sure it was growing, but there still wasn't very much personnel.

Tucker: No, by this time the Engineering Department obviously had to be quite large. I became the chief design engineer in the 1940's; I became the chief engineer sometime in the early 1950's. So I had charge of all the project work, and I was administering a large department by that time. I don't know, but we probably had a 150 people--fifty people in London (we'd formed an engineering department in London, and we had fifty people there) and a hundred-odd people here in New York. We also hired contractors. We had all the contractors working for us. So we were really doing a lot of things at once in those days.

I'll go back to Australia. I went out to Australia

in probably the fall of 1951, maybe 1952, but I think it was in 1951, with the task of picking the refinery site somewhere on the east coast of Australia. It had been narrowed down to somewhere along Australia's east coast. I picked the Kurnell refinery site after some soul-searching. There wasn't a road out there, and it was right next to Captain Cook's landing spot, where he shot the first aborigine. It was a sand dune. Somebody had seen it before. There's a coastal cliff that comes up from the Pacific, and then there was kind of a flat rocky area on the top of that cliff, and one of the marketing folks had seen it and thought it would be a good place to put a refinery. It was not a good place to put a refinery, but the cliffs came down on the bay side into an area of swamp and sand dunes. It was a fairly good marine location. There are many better in the world, but it wasn't too bad. I visualized that we could take these sand dunes and push them down into the swamp and create an artificial site, and that was what we did, and we built the refinery there. That was probably 1950 or 1951. I don't recall.

The Japanese refineries, which we had started rebuilding about this time, and the refinery in the Philippines were all going on. We had things going on in Australia, the Philippines, and the two refineries in Japan. In Japan we were undertaking the rehabilitation of the Yokohama refinery

and the rehabilitation of the Kudamatsu as two different joint ventures in Japan, one with the Nippon Oil Company and the other with Koa Oil Company. Those were all going on at the same time, and strategically the plan was that they were going to be outlets for Indonesian crude oil-- for the Sumatran crude from the Minas field, which is another story (laughter).

Standard Oil of California geologists were paddling up the Siak River in 1922 because there were reported oil seeps up the Siak. The Siak River flows east and west. Sumatra runs, we'll say, north and south; the Siak River runs east and west, opposite and a little north of Singapore. They were out there in 1922. I don't know anything about the history of getting the concession from the old Dutch East Indies, but they did have a concession. They set up a company in Holland, which was a necessity to get that concession. They spotted the first oil well in the...I'm not sure whether it was Duri or Minas. I guess it must have been the Minas field. The war came along--the Japanese occupation--and everybody had to leave Sumatra.

The Japanese drilled the first well. You probably know that; you probably heard it from someone else. It was a producer. The rig and everything was there, and all the Japanese did was turn the rig on and finish the well. They produced the first oil.

If there is an interest in the history of Caltex Pacific (Indonesia), a man by the name of Dick Hopper could be of assistance. Dick lives up in New Milford, Connecticut. He is a raconteur. He was out in Sumatra before the war, left it in front of the Japanese, and eventually went back after the war and found the Japanese who drilled the well. There's a story in one of the old Caltex Oil Progresses about Dick's finding the Japanese engineer who had drilled the well.

Anyhow, the Japanese built a four-inch pipeline from the oil well down to the shore. Interestingly enough, they built it just about to the point that we eventually picked as the port for the large export port of Indonesian oil, Dumai. At the time the refining system for Minas crude oil was being conceived and built; the oil was coming out down the Siak River, when the oil fields first started to produce.

So they went from 1922 to 1952 before they turned the first commercial dollar on that oil discovery. That's a story about taking the long view and the risks and what it takes to really get into the oil business. They weren't sure that they had enough oil to justify building a pipeline down to the shore, and from an engineering point of view, it was a very, very difficult project because it's through a primeval rain forest and across swamps where you find yourself up to your neck in water. In order to get into

the forest, really, the natives build walkways up along these big rain forest trees, and that's the way they get through the swamps.

So the original system that we built, the Engineering Department did this as well. We had nothing to do with oil production, but we built the towns and the camps and the facilities to get the oil out. We went in, and we built the camp at Rumbai in the 1950's; we built a pipeline system out to the Siak River. We also bought some small Italian tankers. The oil came out to a place called Perawang, where it was put into storage tanks. They loaded these small shuttle tankers, and they sailed down the Siak River. There was a deep water terminal built at the mouth of the Siak River to receive T-2 tankers, as I recall. That was a deep water vessel and a big ship in those days. They were to carry the oil to Australia, to the Philippines, and up to Japan; and those three refineries were all built to handle this special, particular minas crude oil, which was very waxy, some 70 percent wax. It had a pour point of about...it solidified in the low nineties, as I recall. In fact, the Japanese put it in baskets to carry it back to Japan. At the end of the pipeline, they dumped the oil into baskets and carried it on the deck of ships. They couldn't figure out what to do with it. It's a thixotropic gel as it comes out of the ground. A thixotropic

gel is one that, when it's agitated or under sheer stress, remains a liquid; but when it's quiescent, it solidifies. So at its pour point or solidification point, it can be either a liquid or a solid, depending on the state of agitation.

This led to a lot of argument and discussion about the design of the pipeline, and this was an argument that I was very much involved in. The conventional thought was that we should take some crude oil out of the pipeline every few miles, put it into a boiler, and pass the pipeline oil through the boiler and heat the line. I guess Fred Dittus and I, as I recall, decided that we should exploit the thixotropic properties of the oil. It would have been tremendously expensive, both in terms of energy and physical cost of the hardware, to heat the oil. What we would do is cut the rain forest back a little farther so the sun was on the line most of the day, and we would count on keeping the line agitated, figuring that if we got into trouble--if the pumps shut down and if the line stood quiescent and solidified--that we got enough sun in it in one day in that climate so that we'd warm it up and be able to pump it again. It took a hell of a lot of arguing, but that eventually prevailed, and that system was installed, and it's been that way ever since. It works fine. Mobil, incidentally, had a field south of the Siak River called the Lirik Field, and they heated their oil to bring it up.

Maybe their characteristics were a little different, but they went the other way. We chose nature, and nature worked very well for us.

At any rate, we were involved in designing those facilities. I can remember sailing up the Siak River, and those were the good old days. You could go over from Singapore by boat, sail up the Siak River to Rumbai, and it was a typical romantic paradise to the eye. I'm sure it wasn't that way to live there. It was beautiful, unspoiled rain forest for miles and miles and miles.

At any rate, these refineries were built for Minas crude. They had large catalytic crackers to crack the wax and convert it to gasoline fractions. Meanwhile, however, the cost of Indonesian crude, under the arrangements that shareowners of Caltex Pacific (Indonesia) were making with the Indonesian government, rather priced it out of the market, and none of these refineries ever operated on a hundred percent Minas crude. They operated on mixtures of Minas and Saudi Arabian crude for economic reasons. Saudi crude became cheaper, and it was more economical. Although the refineries were originally designed for 100 percent Minas, they were altered to be able to run mixtures.

Marcello: By this time you probably have some political problems in Indonesia, also, do you not, with Sukarno and that crew?

Tucker: Well, I have given a couple of recent talks on Southeast

Asia in order to emphasize the need to take a long view if you're going to venture into this market. As I said, Social geologists were on the Siak in 1922; they didn't turn their first dollar until 1951. They lived through a civil war in Sumatra. Back about 1958, as I recall, by that time there was enough oil to justify a pipeline down to a new port that we were building at Dumai, and we were building a road and a pipeline from Minas to Duri to Dumai. That completed the first trans-Sumatra road.

Before that highway was completed--I guess it was passable, but there was still some construction--the Nationalist Army, who were fighting for the liberation of Sumatra, came down the highway and commandeered our trucks. I guess Bechtel was the contractor, but the trucks belonged to us, and Bechtel was operating them. They commandeered the trucks for use in the civil war. It only lasted a couple weeks, as I recall, if that long. So we lived through a civil war in Sumatra, and then toward the end of the Sukarno regime, there were many political problems. It appeared that Indonesia was on the verge of going Communist. Sukarno was flirting with the Chinese.

There were many who wanted Caltex to get out of Indonesia at that point in time, and there was quite a strong argument in favor of staying. I don't think we were ever on the verge of leaving, but there were some people on the board

who said that we should go, that there was no future there. At the time of the Suharto coup--they took over from Sukarno--we found that many, many of our people were on lists to be executed on the day following the coup. There were several different lists--who was to be gotten first, then the second wave and the third wave--and these documents were taken after the coup was aborted. So there was a giant political problem, but all this was before we came to the relative calm of the Suharto regime, although there were many people who had been involved in negotiating the terms under which the oil was taken out of Sumatra that wouldn't characterize the Suharto regime as serene by any means, I'm sure.

One other refinery was built at this point in time that was also originally built as an outlet for Indonesian crude, but it really never was used for that. That was the "vizag" (Vizagapatam) on the east coast of India. That was a little later than the Japanese, Batangas, and Australian refineries, which all came to completion and were in operation in the early part of 1951 or 1952, as I recall--somewhere in there. India followed by two or three years. Initially it was designed for Minas crude. But before it was completed, it was recognized it wouldn't be economical, so it was fixed up to run Arabian crude. The India refinery was interesting. Caltex had a good market in India. Shell and Esso had both built refineries in Bombay, and the Indian government was

pressing to have a third refinery built by Caltex and threatening that they wouldn't allow the marketing to go on unless Caltex went into the refining business.

Marcello: At this point I would assume that the refined products going into India came from Bahrain?

Tucker: They came from Bahrain, and they would have had to come from the competitors' refineries if we had dragged our feet much longer. At any rate, we finally agreed, and it was agreed, at the behest of the Indian government, to go on to the Bay of Bengal and to "vizag." For socio-economic reasons, they wanted development there. It made a certain amount of sense from a point of view of distribution and supply, the other two having already preempted the refineries close to the major market for Caltex to go. So we went halfway between Calcutta and Madras, and that was sort of the supply area, from Madras in the south to Calcutta in the north.

I remember going out there in the very early days to take a look at the site that had been picked out and sort of assess what was involved in accomplishing this project and getting organized for it. The first night I was there, I was invited to a cocktail party in Bombay, and I met a man by the name of Nelson Stork, who eventually became the president of Opel in Germany. He worked for General Motors. He said, "I understand you're out here because Caltex is

going to spend a lot of money here and build a refinery." He said, "I'd like to give you some advice. Get on the airplane tomorrow morning and go home." (laughter) He had spent two or three years negotiating the extrication of General Motors from India because the government had insisted that they manufacture cars in India, which they were doing. The government was insisting on more and more Indianization of that. They had an assembly operation, where they brought in parts from Europe or the States to assemble cars, and the government was insisting that they have a line of trucks and a line of pick-up trucks and several vehicles--a completely uneconomic operation. General Motors refused to go along, and their competitor, who, I guess, was Chrysler at that time and maybe one European, folded to the demands of the Indians, and General Motors decided to pull out. Then they began to run into all kinds of trouble. Auditors descended on the company, and they looked at every import document to find one that wasn't signed on the right line or what-have-you. They spent two years of absolute hell taking their Indian operation apart.

We eventually went through the same thing, but enough years later that the refinery--I think from Caltex's point of view--could be termed a success. We had enough years. I don't recall, actually, the year. I think we probably pulled out of India in 1970, and this was fifteen years prior

to that time, probably. So the refinery ran as a Caltex refinery supplying a Caltex market for fifteen years.

Meanwhile, the Indian government had decided that the oil industry was to be for the public sector. They decided that certain things were going to be nationalized and be in the public sector, and certain things would be left to the private sector. The oil business fell in the public sector, so what the Indian government did was, they formed their own oil company--Indian Oil Company--and they pre-empted the growth in the market. Initially, they forbade all the private companies, which was Shell, Esso, and Caltex, from expanding. So they took all the growth, and then eventually they negotiated a buyout of Exxon first, I guess. Exxon usually seems to be the first to respond to these things.

Caltex usually, characteristically, would be the last, I guess, because Caltex's management saw that Caltex's area was proscribed by its owners. There were only certain areas where Caltex could do business. If it left one area, there was really no other place for it to go. So we were always very reluctant to give up any parts of our business, and we preferred to look for ways to make the business viable. Exxon, as I say, was much more prone to go. They would go first, Shell second, and Caltex was always kicking and screaming--the last. And that was the case in India. We got out of India with a reasonably good deal. I think we

collected all but maybe the last payment. Maybe the last payment was finally made. I've forgotten now; I'm not sure. Maybe that was after I left. We did fairly well in getting out, and as I say, we had fifteen reasonable years in the business, although it's not very nice to get told that you can't expand. That's not the way businesses thrive and prosper. So that was the India story. Eventually, the refinery was taken over by the Indian government, and the market was taken over.

Most of our people were left behind, although a few surfaced here and there and the other place. A number surfaced in the Middle East. We were not allowed to hire them or to really pull anybody out to take them somewhere else. But one by one they would show up. We had several show up in Dubai. One guy who's now the regional director in Dallas showed up in Egypt--Sahay--a very, very capable person in India, and it was too bad. None of them wanted to go to work for the government. It was too bad to see this happen.

It's just one of these things. These countries have to go through these eras of economic nationalism. Many of them are pulling back from those feelings at the moment. I see it in Southeast Asia, where the smart word in government circles now is privatization. Singaporeans are privatizing their telecommunications system; Malaysia, I guess, is privatizing telecommunications. Probably both Singapore

Airlines and Malaysian Airlines are probably for sale. The government wants to get out. But in the days when economic nationalism was the smart thing, well, the government wanted to be there and control everything. They wanted to force private companies into taking local equity, and that's another subject in the history of Caltex. The only place, outside of joint venturing, where we really voluntarily offered equity was in Australia. We offered 25 percent of the company to the Australian public.

Marcello: Why was that done there?

Tucker: Why was it done? For a number of years, I think many people in the company--not all, but some of those who had spent a long time overseas--felt that in order to survive as a foreign company, one really had to have local equity. You had to offer ownership. As countries where we'd gone and which might have been quite underdeveloped or in the early stages of their development became more and more mature and the sources of financing and local markets became available, the correct strategy for long-term survival was to become known as a local company. There was a lot of pressure in the Philippines in this direction. The Philippines adopted a policy of...I can't recall...40-60. Many other countries were adopting policies requiring a certain percentage of local ownership, except for those who were already there. There came to be a feeling that you would be better off in

government relations and be allowed to do things that you would otherwise not be allowed to do; whereas you might, as a completely foreign company, be excluded from areas where, if you had local ownership, you would not be excluded. For one reason or another, it's always very difficult, if you've been in business for a long time, to visualize how you can get a fair value for your ownership in a going business. Therefore, there was a lot of talk about local equity, but really no action.

In the case of Australia, we came to pretty heady times. The price of oil was going up; we were making very, very large profits in Caltex worldwide; Caltex (Australia) was a very profitable company. In the early days, when I first went to Australia, we had a group of companies known as the Bahrain Group, and that included H.C. Sleigh and Company, Caltex, and Ampol. H.C. Sleigh was an independent marketer, Ampol was an independent marketer. Both were Australian-owned, and Caltex was a foreign company. When we built the refinery there, the refinery was separately incorporated and built as Australian Oil Refining Proprietary, Limited as a refinery in Australia to supply these three marketers--to supply the Bahrain Group--in lieu of product imported from Bahrain.

Ampol eventually went into their own refinery, but Sleigh continued to be involved 100 percent with Caltex.

We continued to supply Ampol out of A.O.R. refinery, and we took product from them up in Brisbane from their refinery. We had various relationships, but they were really independent once they built their refinery, and any arrangements we had with them were purely short-term commercial ventures that were attractive to both sides.

In the case of Sleigh, Sleigh was tied to Caltex, and he began to suffer and feel that somehow or other he wasn't really being allowed to compete; that Caltex, as a competitor, had certain advantages in being the 100 percent owner of the refinery; and that his interests weren't being protected. We tried to lean over backwards to see that that wasn't the case, but he continued to feel that way. Meanwhile, he made several forays of his own in trying to develop a refinery of his own or get in with another partner. None of these were successful. So there came a time when it became evident that the only solution to the Sleigh problem was for Caltex to buy Sleigh's oil business.

We felt that the Australian government wouldn't countenance an increase in foreign ownership of the Australian market, so that was a driving force leading us toward this idea: "Well, we'll sell some equity. We'll go to the government with a package deal, which involves the purchase of Sleigh's market, the sale of equity to the public, and the foreign ownership won't be increased." At the same

time, we were in the days of oil shortage and substitute energy, and we began to feel we ought to be in the coal business. Every oil company suddenly saw itself as an energy purveyor. In the intermediate term, that turned out to be not all that wise, but every oil company felt they ought to have some resources other than petroleum to protect them as energy suppliers. We had an opportunity to buy a coal mine called Bayswater Coal Company.

Marcello: This was in 1981, was it not?

Tucker: Yes, around 1981 Well, it started...I'm trying to remember ...I guess it was 1981. It may have started in 1980. Anyhow, we did a lot of economic studies of the coal business and decided, yes, we could afford to go into the coal business; that was interesting to us.

We thought we could come to a deal with Sleigh, and we'd been talking about Australian equity for other reasons, more political reasons, so we thought, "Well, we'll put this thing all together as one package and go to the government with it." We worked up the deal, and we were going to need capital to buy Sleigh and buy the coal company. So it all seemed to fit together, plus the fact that the business was very prosperous, and we thought we could float it at a good price.

So to make a long story short, we rearranged the corporate setup a little bit and formed a holding company

and sold shares. Twenty-five percent of the holding company got cash in, and then we bought the coal mine and bought Sleigh. We had an outside board. We put a couple of directors on the board--I think there were three directors put on the board--to represent the local Australian shareowners, and we had 25 percent-owned local company. From our point of view, you could say this was an extremely timely move because we sold at the top, when the oil companies were really earning a lot of money. We got a good value. Unfortunately for the Australian shareowners, the shares plunged when it became evident that the oil shortage wasn't going to go on forever, and the refining business got pretty tough to make a buck in. The price of crude was still high, and the market became extremely competitive, so I think that you'll find that the Australian shareowner is not too happy with his acquisition of Caltex shares.

But those were the reasons that led to it, and we raised the capital to expand our market. We went from...oh, I don't know what it would be...18 percent of the market to 26 percent of the market with the acquisition of Sleigh. We went into a chain of convenience stores that are service stations in a joint venture with a guy down in Atlanta somewhere; and we went into the coal business. The coal business ran on to rather hard times, but I think, aside from the initial equity purchase, we haven't put anymore

money into it. I think it's earning a little money. I don't think we would do it again if we were asked to do it today. Again, it was one of those things when you saw the market a certain way, and I guess I can quote it as another reason why I'm not a believer in the grand strategy. In this business no one--and that includes the best and the worst--has really been able to predict the marketplace adequately.

Marcello: From everything I've read in doing my background research, these were some of the very first ventures of Caltex into areas other than oil.

Tucker: Yes. Caltex has always been an oil company, and it was constrained from other ventures because of the fundamental agreements under which it was formed by Socal and Texaco, which not only spelled out the regions of the world in which Caltex could operate, but also essentially defined Caltex as a business related to products which could be refined from petroleum. At an early point in time, the shareholders interpreted this to exclude petrochemicals, in which they both had aspirations of their own, and therefore Caltex was sort of left to the oil business as a matter of policy.

There were a few exceptions to that. We became involved in ethylene in Germany. The German refinery was built as the supply unit for Hoechst. We built a pipeline from the North Sea, known as the Rotterdam-Rhine pipeline. I say "we" built it. Actually, we were very much involved in the

construction. There were other equity owners; it was a joint industry venture. The refinery was at the end of that pipeline. Hoechst was expanding very rapidly in the petrochemical business, and the refinery was built with a dual objective of supplying petrochemicals to Hoechst and supplying products to that inland market, which was then Caltex's. It eventually became Chevron's and Texaco's market. Hoechst, as you know, was one of the three allowed survivors of the old I.G. Farben after the war. It was Bayer, Badische Soda-Fabrik, and Hoechst. Hoechst is a very large supplier of all kinds of basic chemicals and pharmaceuticals, and they needed ethylene and a very high-quality grade of propylene as raw materials for their supplies, polypropylene and polyethylene both being high-volume petrochemicals.

The location of their plant is across the river from Frankfurt, and Hoechst was pretty much the top of the watershed, you might say, as far as the petroleum supply is concerned. If you came up from the Mediterranean and there's the trans-Alpine pipeline, about the farthest supply point on that pipeline would be a few miles south of Frankfurt, and Frankfurt is pretty much up the mountain from the North Sea. So Hoechst was having a difficulty competing, and they had the idea that if a refinery supplied by pipeline was built in the area and part of the cost of the refinery could be borne by supplying a petroleum market, then they could negotiate

at reasonable cost a petrochemical supply.

That kind of a deal was made, and Hoechst found some land down the Main River from their plant, and the refinery was built. It was built with a crude distillation unit, a hydro-cracker for releasing additional gas, oil, and light products. I say a hydro-caracker. It was a hydrogenation plant, actually. And relative to the size of the refinery, there was a very large ethylene plant. Shortly after the refinery was completed, Hoechst's requirements for ethylene and propylene increased, and a second, even larger, ethylene plant was built, and I think it had at that point the largest fractionating tower in the world to make 99.9 percent pure propylene, which one of Hoechst's scientists thought made a fundamental difference in the quality of the polypropylene and the product.

The refinery, from an engineer's point of view, had a rather rocky road down the line.

Marcello: Dittus seemed to have some unpleasant memories about this refinery.

Tucker: Oh, Dittus's memories were unpleasant? He should have been on the firing line like I was. The first thing that happened was that we had, as I recall, a safety valve failure. I think there was a crack in the nipple between the safety valve and the vessel. We had a release of hydrogen; and hydrogen, mixed in almost any quantities with air, has the widest

explosive range of any gas, so almost any mixture of hydrogen and air is explosive. We found a source of ignition somewhere, and had an explosion that did a reasonable amount of damage and shut the plant down.

I recall I'd been in South and East Africa at the time, and I guess it must have been at the time we were building the Capetown refinery, to bring one more refinery into this long tale of refineries. I'd gotten up to Nairobi, and someone said, "Tomorrow is Saturday. Why don't you go out to Treetops?" So that sounded like a fine idea to me. The routine for Treetops is that you drive about two hours out of Nairobi to a place called Nyari and go to the Outspan Hotel. You have a very nice lunch, and then you get up on a land rover with a white hunter with a gun to protect you from the attacking animals, and you drive out into the bush. I've always thought they probably drive in circles; you're probably not more than ten minutes from the hotel (chuckle). But you go through this charade, and you go to Treetops to watch the animals. Well, I'd finished this very nice lunch and climbed up onto the jeep, and out comes a little boy with a black face in a turban and a blackboard and a bell on the top; and he's ringing the bell by jouncing this blackboard up and down that says "Tucker." It was a phone call. So I got down off the jeep and went in to the Outspan Hotel, and there was a telegram from New York telling

me to immediately get to Frankfurt, that the refinery had had an explosion and had stopped operating, and that the customer, Hoechst, was suing for failure to supply under the contract. I said, "What's the first plane out?" "Well, it's at midnight on Saturday night." "Where will that get me?" "Well, you'll be in Athens at four o'clock, and you can be in Frankfurt Sunday morning about eight." So I'm saying to myself, "Who am I going to get to pay any attention to me at eight o'clock in the morning in Frankfurt?" (chuckle) So I got back on the jeep and went out. I said, "Book me on Sunday night." I went back out on the jeep and watched the animals overnight and went out the next day.

The next thing that happened in the refinery was a very serious ethylene plant explosion, which we never really fully got to the bottom of. It appeared that probably there was some kind of a misoperation, and either propane gas or ethylene or ethane had gotten into a vent system and spilled over the top of a vent stack and spread around the refinery and found a source of ignition. This time it was a real source of ignition. It appeared that the hydrogen probably ignited itself from the static electricity of the discharge.

There was a tremendous explosion. The gas cloud was over a very large area, and it virtually destroyed the ethylene plant. There in the refinery there were one or two

lives lost. It was about the worst accident that I'd ever been involved in, although the refining business is a business of handling hazardous materials and safety is always very much on your mind.

In that case, I remember a phone call at five o'clock in the morning here in New York, then coming downtown and taking a helicopter from the top of the Pan-Am Building and going to the airport and arriving in Frankfurt at ten or eleven o'clock the same evening. The refinery was still burning, but in a controlled way. The gases were simply being allowed to burn off. This was in the middle of winter, and there was water frozen all over the equipment, and it was the worst mess you can imagine. The state was looking for somebody to put in jail for manslaughter, and the customer was up in arms and asking us to make alternate arrangements to supply the ethylene. So we had to launch a public relations campaign, a project to rebuild the refinery and redesign it so what had happened could not happen when we weren't 100 percent sure of what really had happened, and deal with the public authorities.

As I say, if Dittus has unhappy memories of Frankfurt, I'll tell you, I do and so do a lot of other people. I guess the sythe of life is honed on adversity, and this was one of the adverse situations (chuckle). There seemed to be a general loss of confidence in the operators of the

plant, and somehow or another we had to take hold of the situation psychologically and get things wound up and get people wound up to think that they could recover from this and that we could get the customer back on side again and that we could get past the local authorities to rebuild the plant and so forth. It was one of the more difficult but interesting experiences of my career.

Marcello: I guess initially that the decision to move into Germany was made because this country was more or less a wide-open market. There was a great deal of potential here.

Tucker: Yes. I'm not sure who you would have heard about that from. McMillan, I guess, was in Germany at the time. He probably told you what a mess I'd made of the German refinery (laughter). He was chief executive in Hanover at the time, I guess, although it seems to me that part of the time "Mac" was there, and part of the time it was Jan Smits. I think Jan Smits was chief executive of the German company at the time the really major explosion occurred in Germany. But "Mac" had been there before, and "Mac" was there at the time that it was finally decided to go into Germany. I'll say "finally," because Caltex has wanted to go into Germany for years, and somehow or another they had never been able to get through the board.

I think a part of this had to do with the brewing problem between the two shareowners. Probably Social would

have been quite willing, and were willing, to have Caltex go into the German market, but Texaco, maybe in the back of their minds, had other things in their mind and therefore were dragging their feet in the board and finding one way or another to delay their entry into the market. Germany was growing; they were rebuilding after the war. The longer we waited, the harder it was going to be to carve out a market share. It was difficult, and Caltex always struggles in Germany from a relatively small market share. I can't really tell you too much about the politics of Caltex going into Germany, except that it did take a long time, and I always supposed that it had to do with Texaco's somewhat different attitude toward Caltex's expansion in Europe than Socal had at that time.

The Southampton refinery was another story with the same kind of a history. We were ready to go; we built a tidal model at the University of Southampton of The Solent to determine what the effect of dredging for the ships at the refinery site that we'd chosen. Then there were some people who didn't think Southampton was a very good place to go, that there was too much public outcry and that we might have a major public relations problem. I remember chartering a plane and flying all around the British Isles looking for alternate refinery sites and finding some others that looked as though they might be viable, and all this, I'm

sure, were delaying tactics in the boardroom to prevent that happening. Texaco eventually built on one of the sites that we picked. At any rate, the refinery in the United Kingdom never was built before the 1967 split-up.

The one other refining project that we haven't talked about and that I think...well, we've missed a few joint ventures that we were involved in--Pakistan, which was a joint venture with Exxon and Shell; an industry refinery in East Africa, which a similar joint venture built in Mombasa. Both of our competitors had built in Durban to supply up to Johannesburg, and Caltex built in Capetown with the idea of supplying the Cape (taking product from the two competitive refineries in Johannesburg and supplying the competitive markets in Capetown from our refinery). This must have been well into the sixties by the time we made the decision to build the refinery in Capetown. That about completed the refining system.

Meanwhile, Japan had expanded from the initial two refineries by building a refinery in Negishi. It was a very large and modern refinery. They went up to Hokkaido... Koa Oil Company built a second refinery. By this time, the Japanese became independent as far as their ability to do their own work, so Caltex was involved from a financial aspect and by the necessity to pick up the equity costs of the refinery system. The Japanese very quickly picked

up their own ability to design the refineries, although we always had refining people and engineers involved with them in really assessing the economics and helping them develop the refining system. But they quickly became very independent.

Marcello: You know, in hearing you talk about the construction and building of these refineries, it seems to corroborate what you say in here about long-term strategies. There may possibly be long-term strategies, but it seems to me as if there is a series of improvising with each refinery construction. In many cases you are surprised by the events that transpire.

Tucker: Well, I don't know that I would buy that evaluation entirely. The long-term strategy was to hold market share in those markets where we already were existing--were already involved--and to acquire markets in the Caltex area where we were not yet involved. In the case of Japan, one of Caltex's first places, at the end of the war, we ended up with two very good partners--Koa Oil Company as a refining partner and Nippon Oil Company as the marketer and also as a refining partner. Our philosophy, as far as that joint venture arrangement, or those joint ventures, was to use the accumulated capital to expand the refining system as fast as the market expanded. For years we preached to our Japanese partners that we did not want them to take profits

out of the refining system; we wanted the money plowed back into the business so we could continue to have a refining system to supply Nippon Oil Company's full market share. The Japanese market was growing at a tremendous rate. If you're in business for fifteen or twenty years and the market is growing at 10 to 12 percent a year, that's really something to keep up with, particularly when you start out with a respectable 20-odd percent of a market like Japan, which grew very quickly. So we preached that the money should be poured back into the refining system and that they should keep up with the market; and this gave us the tremendous outlet for Arabian crude oil and a steady, good outlet for Sumatran crude oil. That was the strategy; that was Caltex's business.

So in talking about the refining system, every major investment in the refineries had its own rationale in terms of the grand strategy of maintaining market share or finding pieces of new markets, which was somewhat like picking teeth because in the Caltex area there weren't that many places where the market had the potential to be big enough to justify going into.

Korea's a good example. Caltex had been involved in Korea as the operator of a consortium that built storage facilities and distributed product in Korea. There came an opportunity, as the military backed away from Korea, to

go into the refining business. A choice was made--I think it was a choice of Caltex's board--not to invest money in Korea at that particular time. Gulf built the first refinery in Korea and consolidated a piece of market by doing that. As the Korean economy continued to expand, there was an opportunity for another refinery, and by that time the future in Korea looked a little more secure, I guess, to the board and to Caltex management. I was on the board by this time, and Caltex management promoted very aggressively our trying to make some kind of an arrangement in Korea and committing ourselves for an investment.

Again, the only way it could be done was in a joint venture. The Korean government--Park Chung-hee, who was the president at that time--chose a partner, a Korean company that was to be allowed to come into the refining business. We negotiated our way into a 50-50 joint venture. Caltex, I guess, is basically a believer in 50-50 joint ventures. Forty-nine percent is certainly the most uncomfortable equity percentage to own, and 51 percent, although you may have control, I think, is a rather dangerous percentage to hold. We always felt that you'd better have a partner you could get along with, you'd better line up your objectives so that you and your partner can see a reasonable congruity of objectives, and you'd better learn to get along with him. We believed in 50-50

joint ventures. Many others who don't believe in them at all have had very unhappy experiences with them.

Anyhow, in Korea we negotiated a joint venture with the Lucky Group, who are now the Lucky-Goldstar Group. At the time I first went to Korea, Lucky was a very, very small chemical operation. They'd taken some capital from the textile business in the old days, I think. They were a very small but aggressive and bright group. They have expanded that into one of the largest chemical operations in the world, and not only chemicals but electronics. They're making television sets in Huntsville, Alabama, and they're in business with the Germans in making cable in Korea. We formed Honam Oil Company, Honam being the name for the southern provinces--a regional name--in Korea. Park Chung-hee again wanted the refinery to go south into Cholla Namdo, which is the southern state, for socio-economic reasons as a development project. He chose the partner for us, and we were very lucky because they turned out to be aggressive, bright people. They were not always easy to get along with, but they were able business people. They appointed a very good executive to the joint venture, P.H. Koo, who was the younger brother of the real entrepreneur that founded the group, I.H. Koo.

We sent Lyle Stone, who's now dead, out to Korea to

negotiate the first arrangements with F.H. Koo, and they tell the story that Lyle Stone and F.H. Koo sat across the desk for twenty minutes staring at each other before the first word was uttered in this negotiation. But they eventually got along very well, indeed.

I went out to Korea sometime in the mid-sixties, I suppose, or maybe it was the early seventies, I guess, by this time. I went down to a groundbreaking ceremony and made a speech--represented Caltex at a groundbreaking ceremony to which President Park came. I recall that he had rounded up...I don't know...I don't assess crowds very well, but the Yale Bowl holds 80,000 people. It looked to me like as many people as will fit in the Yale Bowl were out there in the field listening to Park Chung-hee make a speech. We owned no ground. The land was being farmed, and there was a school where the refinery eventually went. We broke ground by pushing buttons to detonate some explosives planted out in the harbor under water. So that was the groundbreaking ceremony.

Again, once the Koreans decided to go into this, they were in a very great hurry, and I think the refinery was accomplished in about twenty-four months. It got harder to do things in a short period of time as time developed. You couldn't cut as many corners, and there were many more environmental problems to be dealt with, and other things.

So it got a little more difficult to accomplish these things in a short period of time.

Korea, I guess, was an example of how the refinery enabled us to get a market. That was where we started on this thing. Honam was a joint company for both refining and marketing, and we built a chain of service stations, built the marine facilities, built a distribution terminal, bought ships to carry the product from the refinery up to the market, which was mostly near Seoul, and bought eventually ships to carry part of the crude oil from the Persian Gulf into Korea. The principal investment went into the refinery; marketing investment was relatively small. It was first pushed off mostly to dealers. The real commitment of capital was in the refinery.

I've always looked at the refining investment as kind of, you would say, a defensive investment. If you could supply a market by importing product from the Persian Gulf-- from the Bahrain refinery--I think you could always prove it was more economical to do that than having a refinery. But the market was never secured. If you were importing, you were always vulnerable to someone who would come along and agree with the government that they would build a refinery, and they would then take the market from you. If you look at return on capital in the Caltex system, you'll find that those regions where the return on capital is the highest

are those markets that somehow or another we've been able to hang in on without refining investment because the business built itself. We didn't really ever have to pour capital into the business; the business earned enough to spend on the things it took to maintain the service station chain and the distribution facilities and the trucks. But when you got into the refining business, you got into major investments to develop ports, large numbers of employees who had to be housed and so forth and so on. The return on investment after the construction of the refinery was always lower than it had been before. I might get some arguments about this, but I'm fairly sure that the figures will show that this is the case.

So the refinery was a defensive investment to secure the market. South Africa was the same way. We had the market; we had to build the refinery, or we would have been slowly pushed out of the market. In India we had to build a refinery to hold the market. In Korea we had to build a refinery to get into the market. That was our ticket of access. Australia and all of them were the same way.

The refinery was always the defensive investment to give you security. Once you invested the money, you could argue with government that you had a commitment to their economy down the line, and you'd made a long term commitment; you had confidence in their future. So once you had the

refinery your market was secure. Until you had the refinery, you were always in danger of being pushed out.

There were a few places, really, where we managed to survive without getting involved in this kind of defensive investment. In Thailand we eventually bought a small share of a joint industry refinery, but we operated a long time without even that. I say a small share. I think we had less than 5 percent of the Thai Oil Refining Company, which is a project that was promoted by Shell. We stayed in Malaysia. In Malaysia we've never invested in a refinery, although we were on the verge. We bought a refining site. We were ready to go with a refinery and committed to do it, and the government suddenly changed its policies as far as local ownership and other things. The government wasn't so sure they wanted us in the refining business by that time, and we were able to pull out of it. So Malaysia is one market which is supplied by exchange or by import from Singapore. In Thailand we still supply a little bit by import. In New Zealand we got involved in a joint refinery to secure the market. In Australia we built a very large...we had a couple of hundred million dollars of capital, I guess, tied up in the refinery in Australia. We used to have two refineries in Australia. The first refinery we built outside of Bahrain, in fact, was built in 1946. It was a company called Boral-- Bitumen and Oil Refineries Australia, Limited. It built

a refinery on the Sydney side of Botany Bay. The Kurnell refinery is south of Botany Bay; the Boral refinery was built on the north side of Botany Bay.

I have an interesting recollection about Boral. This goes back to 1946; this was in my early years. I remember there was a phone call from Howard Herron, who was chairman of Caltex at that time, and he said that a gentleman by the name of David Craig was coming in to see him. They were going to have lunch together, and he needed by lunch-time an estimate of how much it would cost to build a refinery on the shores of Botany Bay which would take the heaviest possible residuum that could be made in the Bahrain refinery mixed with the smallest amount of gasoline, which would enable the residuum to be loaded on a ship, carried to Australia, unloaded, the gasoline separated out, and the residuum converted to asphalt and the gasoline sold to Caltex to supply its markets. I said, "Well, where is it going to go? Can we build a wharf?" "No, no. Don't worry about those details. Just give me a figure by lunchtime as to what it will cost." So we produced a figure, and Boral was formed.

This refinery was built. It took heavy residuum from Bahrain, and we put about 25 percent gasoline in. We then separated the gasoline, and we built an air-blower for the residuum. The idea for this was that after the war there

was going to be a tremendous expansion of the road system in Australia, and there would be a ready-made market, and this thing would be a money maker.

David Craig was a promoter; he pulled out. I guess Boral was 40 percent Caltex and 60 percent local Australian capital, which David Craig organized. They found a guy by the name of Elton Griffin, who was the son-in-law of one of the entrepreneurs involved in the project. Griffin became managing director; ultimately, he became Sir Elton. This was another case where Caltex's objectives and those of the local people were somewhat different, and we fought tooth-and-nail with Griffin for years, but somehow or another we managed to hold the thing together.

From the day it came on stream, it was not economical to do what David Craig had had in mind to start with. So the first thing was to fix the refinery up so it could take some other products--diesel oil and middle distillates mixed in with the gasoline--to have fuller range of products so the refinery could service its capital. Then eventually we had to fix it up to run crude oil because we couldn't sell the feedstocks out of Bahrain at a price that made it attractive. So we backed into a crude still and fixed it up to run Arabian crude oil. We had, incidentally, a submarine pipeline that went out into Botany Bay and a five-buoy mooring, so when the ship came in, it moored

at this five-buoy mooring, picked up the end of a hose onto the deck, and pumped the crude oil ashore.

Boral is now one of the most successful diversified building materials companies in Australia. It's completely publicly held. Caltex sold its equity during...I don't know...1982 or 1983. I've forgotten exactly when. It must have been 1982, I guess, that we sold our equity in Boral. Meanwhile, as I say, they've become extremely successful. They've gotten eventually out of the refining business entirely and are now into sand and gravel and chain-link fences and reinforcing rod and the ready mix concrete--a diversified building service company--and have done extremely well. It's extremely well-managed. Griffin was entrepreneurial and really saw where the opportunities were and picked them up. They had a very, very able chairman, Sir John O'Neill. Griffin was the managing director, I guess. Maybe there was a sequence from "Griff's" chairmanship to Sir John O'Neill and then to Peter Finley with Eric Neal as managing director. At any rate, they're a fully Australian, publicly-owned company and are extremely successful. The origin of that company was this phone call that I remember having at my desk in about 1945-1946. It was right after I'd come back to Caltex. That was the first refining venture outside of Bahrain that Caltex went into.

Then we eventually went south of Botany Bay. There was no way that Boral could be converted, really, to a

major petroleum refinery. It was too close to the city, there wasn't enough land, and the marine facilities weren't right. So we built the second refinery across the bay from Boral.

I've lost the thread. We were talking about refining as a defensive investment. You were asking about joint ventures. I guess we've said enough to suggest why Caltex became a joint venture in most of these areas. There was always an advantage to have a local partner that knew how things worked locally and could take responsibility for local political relations and so forth and so on while Caltex ran the oil business. That's how most of them worked.

Marcello: You mentioned this several times in previous statements, and I'd like to follow it up here. I've asked some others about this. How important are these people that I call middlemen? It goes along with what you were talking about. You mentioned Alvarez in Spain. Fish had a similar person in Japan. How important are those kinds of people to the overall success of the operation?

Tucker: That would be Shun Nomura that Fish was talking about.

Marcello: This is correct.

Tucker: Well, they're extremely important. I guess that without Alvarez Caltex would not have had the Spanish experience; without Shun Nomura I don't think Caltex would have found the partnership with Nippon Oil Company, which was the key

to the Japanese venture. I think they're extremely important. Sometimes they're not middlemen. In Turkey Oswald Bruckner had his relationships with people who came to important positions in the oil business--Petrolofisi and in the Turkish government. The old markets, which would be Caltex (Australia), Caltex (New Zealand), Caltex (South Africa), Caltex (East Africa), Caltex (India)--where Caltex went out as a venturing oil company from the American oil discoveries--we were secured and had been in the market a long time. By the time the war came along, and after the war, when it became necessary to have a refinery to supply a market, in those places we were well enough established that those relationships weren't necessary. After the war, I would say almost every venture overseas--and there might be exceptions; if there were, I don't think of them--depended on some such relationship. How they came about, I don't really know. I think Shun Nomura had had a relationship with Standard Oil Company of California before the war as a middleman. In the case of Korea, the government chose the partner. In all these businesses the middle person...well, even Forrestal, you might say, played a middleman role, if my story's correct, and I think it is.

Marcello: In 1968 you were named executive vice-president, director, and also a member of the Executive Committee. In essence, you were moving out of the engineering, manufacturing, and design end.

Tucker: Yes. Previous to that the sequence of my career had been to be involved in this "rabbit warren" of refineries that we were developing around the world, which is a part of the effort to hold our markets and achieve them.

We had a great reorganization by McKenzie and Company. We used to say in those days that any oil company that had not been reorganized by McKenzie was exploiting an unfair advantage. Caltex was reorganized by McKenzie and divided up into Caltex West, which, I guess, was Jack Fosque's... I'm trying to remember...I think Jack was named president of Caltex West. I must have forgotten who was president of Caltex East. Was Ferguson president of Caltex East? I don't think so. Anyhow, we had a president of Caltex East, a president of Caltex West, and a president of Caltex Service Company. Caltex Service Company was headed up by Andy Neilson, who was the guy that first put the fleet together--taking over the old T-2's, which were bought from the U.S. Maritime Services or whoever ran transportation during the war. They bought this fleet of T-2's--twenty-six of them, if my memory is right. Andy ran the fleet; he was known as "The Admiral." When McKenzie conceived this Caltex East and Caltex West and the Service Company, Andy became the president of the Service Company.

I eventually became vice-president of the Service Company. I was in charge of services to the refining, which

was a general management of the refining as a service to the operating companies and the engineering and purchasing and product engineering quality and the laboratory. We had in the meantime founded and built a research laboratory in Holland, called Caltex Central Laboratory. That's another chapter which I haven't gotten to. At that time, I was a director of Associated Octel Company, which was making tetra-ethyl lead in the United Kingdom and supplying our system worldwide. That was a joint venture with Shell, BP, Mobil, I guess, and Caltex. I've forgotten the equity relationships. We probably had a share equivalent to our market share. I think Shell probably had a third, we had less, and then the rest of it was divided between Mobil and BP.

Marcello: This is Octel?

Tucker: Associated Octel Company. The tetra-ethyl lead increases the octane rating of the gasoline, so this was "Oc" for octane and "tel" for tetra-ethyl lead--Associated Octel. It was a British company; it still exists. It had large tetra-ethyl lead manufacturing facilities in the United Kingdom, and Caltex had an equity in it. I say I was on the board, I was involved in all the technical side of the business in the Caltex Service Company days. Maybe the Service Company concept was abandoned before 1967, but I don't think so. I guess at the time the European properties were spun off, Caltex West ceased to exist because most of

It went off to the shareowners, and Caltex East became Caltex. I think maybe Jim Voss succeeded someone as...I think in Jim's career he was president of Caltex East at some point in time, succeeding the guy who took it originally. I don't recall who the hell it was over there. I was more Europe-oriented in those days. Caltex Service Company ceased to exist in 1967. The whole thing was swept together into one company at that point in time.

Marcello: How did that initial reorganization work out?

Tucker: I think we probably had 1,800 employees in Caltex at the height of that reorganization. It was a very inefficient kind of a thing, really. I don't think it ever made sense. When Alex Singleton succeeded Bill Bramstedt as chairman of Caltex, I think we may have peaked at about 1,800 employees in the New York central office. When we moved to Texas in 1981 or 1982, we moved 560 people. I guess we moved in the fall of 1981. We were down to about 500 and doing six or seven times as much business as we'd done in those days. I think it was a nice, clean concept on paper, but it was quite inefficient and involved a lot of duplication. So I would say that was not our most successful venture. That was McKenzie's idea.

In those days we were making a lot of money on the crude oil when it came out of the ground, and I think we tended to pay less attention to efficiency, more to being

able to scramble to keep up with market share. Business was expanding at a rate that you just can't imagine in those days. Maybe this reciting the development of the refining system gives you an idea of how rapidly we were expanding. We were expanding at a hell of a rate. It wasn't only the refining system that was expanding; the tankship company was also expanding. In the Japanese venture, we had the Tokyo Tanker Company, which owned the largest ship in the world at one point in time-- 147,000 dead weight tons. We had three of those ships: the Globtik Tokyo, the Nissel Maru, and the Globtik London. All were all up in the 150,000 dead weight ton category. Along the way we built the Kiire terminal, which is the largest oil storage terminal in the world. These big ships were carrying 3,000,000-odd barrels of oil on one voyage. They were picking it up at Ras Tanura and Karg Island in the Gulf and dropping it off south of the archipelago. Supertankers were then carrying it up to the refining system around Japan. We were expanding at one hell of a rate in those days, and with it we were hiring people at a very rapid rate. Starting in about 1946 or 1947, we began to hire people and build a very large organization in all aspects, and we were sending people out around the world. We were a very rapidly growing business.

Then it became more competitive, and it became evident

that we had to consolidate. I guess the real telling factor was that the whole nature of the business changed. The nature of the concessions, which were no longer concessions, changed. "Participation" came in, and the governments were successful in negotiating and acquiring a larger and larger share of the profit that was made when the oil was extracted from the ground. I can remember--it must have been 1969 or 1970, sort of at the end of this tremendous growth period --that the price of crude oil had gone to a dollar a barrel. I think at the time Jim Voss was president, and I was executive vice-president. I can remember sitting in his office and discussing what in the hell could possibly be done to prevent this continuing erosion of the crude oil price. There was no profit left in the crude oil business, and that suddenly threw into question our whole basic strategy in operating a refining system where, you know, we just plowed all the cash back into expanding the refining system and finding ways to hold markets. You've now got to reverse the philosophy and tell the partners we didn't mean what we told you before. Now we mean that the refining system, which has got all this capital tied up, had got to earn profits on its own because we're not earning it on the crude oil anymore. Theoretically, the partner had the profits on selling the oil in the retail market, and we had the profits on the crude oil, and the refining system

was a service to both of us.

Marcello: As I look upon your career with Caltex, your promotions into the overall executive end occurred at a time when, like you point out, the industry was undergoing all kinds of rather dramatic and drastic changes.

Tucker: Exactly. It was undergoing a very, very fundamental change. We realized that we had capital tied up in various kinds of equipment--the refining system, the markets, etc., and that if we were going to survive, we had to find a way to make each unit of the business earn a return on capital independently of the other units. The refining system should earn enough profits to justify the capital investment that was there, or basically the replacement value of that investment. Ultimately the investment has to be replaced gradually, so you have to get the earnings up to the point where the replacement value of the asset can be supported by its revenue. This was a very fundamental change because for various reasons the industry had grown up to make the money at the oil well. The reason for that was that the tax structures had developed in a way that made money earned at the oil well taxed at a substantially lower rate than money made through manufacturing or marketing, etc.

I started to say that Jim and I sat around bemoaning the fact that crude oil had gone down to a dollar a barrel, but we never got quite that low in our market. We were

selling to Japan at about \$1.35 a barrel, as I recall, and I think it was Spain that negotiated a crude purchase at a dollar per barrel. We were under tremendous pressure from our Japanese associates to get our price down to what they'd heard some of the Europeans were getting on crude oil, which was a buck a barrel. It probably went below a dollar a barrel.

Why did this come about? This came about because concessions had been developed and exploited in North Africa, closer to the European market, and there was more oil available. Saudi Arabian oil was in those days viewed as almost limitless, and in relative terms it still is. The oil in Algeria and the oil in Libya--Caltex went into Libya and was very successful in Libya before nationalization--was adjacent to the refineries that had been built in Europe, and in order to compete Saudi oil prices were dropped and dropped. And there were some other bad boys involved in Libya who were more or less independent, and they had to sell their oil to survive. They put money in, and they didn't have outlets. I don't know who all was involved. Occidental was involved--Armand Hammer--and the Hunt boys. They had the oil, but they didn't have any market. The only way for them to survive was to be able to plug their oil somehow, so they started forcing the price down.

As the price got forced down, the governments began to

feel the pressure. I guess Libya was the first break. I remember it was in about 1970 when this poker game started to be played--the major oil companies and the independents of Libya against the Libyan government. At the same time, the Iranians came into the picture. There was a negotiation going on there, and there was a negotiation going on in Saudi Arabia. The Saudis lagged a little bit behind the Iranians and the Libyans, but the Iranians and Libyans started playing a game where each one would leapfrog. A settlement would be made in Libya, and that settlement originally was forced by Occidental--Armand Hammer--and the other independents. That was followed by a settlement in Iran. So then the Iranians would demand that they get better terms than had been agreed to. So the thing began to leapfrog, and the Saudis came into it. There were a number of different agreements, all technical ways to give the government a larger take and to force the price up. So the price of oil in the marketplace bottomed out as the cost to the majors, who were really offtakers and contractors in the producing countries. By now all the concessions had really been nationalized. The governments exerted the right to their national wealth and their natural resources, so the oil companies became, in one way or another, contractors to the governments, and their ability to attract cash at the wellhead began to get pushed down

and down. So they had to push the price in the end markets up, or they would have been squeezed out of business.

So various concepts were developed, such as government take clauses in contracts, where every increase in government take enabled you to increase the price of your product, crude oil or whatever you were selling. Various devices of this kind were introduced to try to keep up with this thing. I can remember thinking in about 1971 or 1972, when the first precipitous increases came along, that I didn't see just how we were going to survive it and how we could get our prices up fast enough to keep up with what was going on. The oil went from a dollar to two dollars to four dollars to six dollars to ten dollars before it got up into the thirties and forties range ten years later.

Somehow or other, we managed to find devices to stay ahead of this as crude oil procurers, refiners, and product sellers, and actually we found that somehow or another it was easier to make money when the price was going up than it had been when the price was going down. So Caltex, as a refiner and a marketer, did quite well in these years. The refiner finds out that in a declining market he has a very hard time. He's got inventory that was supplied by expensive crude oil; and the market's declining, so he sells his inventory later at a lower price and so forth. It just becomes much harder to exist in a declining market than it

was in a rising market. So every oil man hopes, again, to see a rising oil market.

Marcello: All of this, of course, was originally leading up to the formation of OPEC.

Tucker: Well, the Venezuelans, I guess, were the principal driving force in the formation of OPEC, and this preceded the dollar-a-barrel crude oil of 1969 or 1970. Maybe 1970 was the bottom of the market. I can remember when the Saudis and the other Middle East producers really came into OPEC in the middle to early sixties, I guess. I'd have to go back to be sure. Then OAPEC was formed, which is the Organization of Arabian Oil Exporting Countries, and I remember the sense of alarm that existed in Caltex in general when the Bahrainis decided to join OAPEC. But we always managed to manage our affairs with the Bahrain government. I haven't mentioned Bahrain, which in sort of the later middle years in the midst of my career was really a very important part. I got handed the task of negotiating the participation arrangements with the Bahrain government.

Marcello: Why don't we go into that? I think that's a very important part not only in your career but in the development of Caltex.

Tucker: Well, I'm fuzzy on dates, and I'm relying entirely on a rather poor memory for this recitation.

Marcello: Well, the dates are part of the record, anyway, so I don't think you need to worry about that.

Tucker: Anyway, in the 1970's the arrangement in Bahrain...the Bahrainis were producing...I think they peaked at about 60,000 barrels a day, and then their crude production topped out. It went down into the forties. The balance of the oil refined in Bahrain...the Bahrain refinery was nominally about 250,000 barrels a day. Let's say, for simplicity's sake, 50,000 barrels a day came from the Bahrain oil field, and 200,000 barrels a day came in over what we called the "A-B" pipeline, which came across this little strait between the island of Bahrain and Arabia. That's another story that we skipped over in the early history. Bapco had an arrangement with the Bahrain government where they were paid under what was called the mining lease, which was negotiated in 1932. The Bahrain government got a certain number of gold sovereigns or something per barrel of production as a royalty on the crude oil, and they got a tax on the refining profit. Well, the refining profit depended on what price the product was sold for to the next guy in the chain of ownership. The Bahrain refinery sold to a trading company, and the trading company sold to the Caltex affiliate. So the transfer price is a very important element. Depending on what transfer price was set, the refinery would earn a certain amount of money, and the Bahrain government taxed the refining profit. There

were various arrangements.

The Bahrain government was always short of cash, and it never could understand why Bahrain didn't have as much oil as Saudi Arabia. So the government of necessity declared their own independence, and they joined the United Nations and opened up embassies and consulates in the United States, an embassy in the United Kingdom, an embassy in France, and their government expenses were burgeoning.

Caltex was their principal source of revenue, so they were always pressing to improve the arrangements. We were flexible and always found ways to improve the arrangements. One interesting thing is that they came to us at one point in time in the mid-sixties and said, "We recognize that our oil field is declining, and we need to diversify our economy. So we would like for you to undertake a study for us as to what we might do to diversify the economy." Without help, from us, they'd gone into the offshore banking business, which in the days of recycling Arab money was a very profitable business. They had forty or fifty offshore banks formed in Bahrain.

I'm trying to think of what we found for them. We found a shipyard business. They built a drydock--that was one of the things that was in this study. They have very, very good shrimp, and we suggested they go into the shrimp fishing and freezing business, which they did quite successfully

until they overfished their reserves and had to go out of the shrimp business. We suggested that aluminum smelting probably would be a viable venture for them from their gas field. Bahrain has a nonassociated gas field of worldwide proportions in terms reserve, called the Khuff Field, which exists under the oil field. The Khuff is a geologic structure that exists in Saudi Arabia. I don't remember the figures, but Bahrain has a couple trillion cubic feet of gas reserves --1.8 trillion or 2 trillion. I used to know. I think the Groningen Field in Holland, which is one of the largest in the world, had four or five trillion or something like that. Bahrain had very substantial gas reserves which we had never developed. We drilled into and produced the gas for the local power consumption and so forth. We thought the aluminum industry would be a possibility where they could take this cheap gas, use it for the very energy intensive process of reducing aluminum. They could buy the bauxite, ship it to Bahrain, take the energy out of the ground, produce the aluminum ingots, and sell them back to a market somewhere. Eventually, the Bahrain government did that, but we never took any equity in it. All we did was the basic economic viability studies. They went to people like Kaiser and some consortium of European companies and eventually started a business in which Kaiser was a partner. It has gone through various and sundry times, some rocky and some good. During

the rocky times, the Bahrain government gradually bought out all the partners, and it's now a national venture. They've managed to operate it, and I think on the whole they consider it a good venture. It employs a certain number of people, and it uses their resources.

So we helped them find other sources of revenue as well as tried to find ways to accommodate them. My involvement in the renegotiation of the concessions was that the old mining lease was obviously out-of-date. As Saudi Arabia negotiated participation by the Saudis in the Aramco concession--that started at 25 percent, as I recall, and went to 50 percent or maybe 75 percent and eventually 100 percent participation--Bahrain saw that happening when it began to happen, and they had to have similar arrangements. For a while we sort of followed in Bahrain what was going on in Saudi Arabia. Eventually, the oil field and the gas production became a 100 percent national enterprise. We negotiated service contracts to operate it for them or to assist them to develop it themselves to where they could operate it.

When we got to the refinery, though, we had kind of a unique animal because the refinery was refining foreign crude oil brought over from Saudi Arabia as well as their own crude oil. There was no pattern for this. In the meantime, the price of products was dragging the crude

price up.

We talked about OPEC, and I'll divert for a moment. In my opinion, OPEC never was a cartel in the classic sense. It never really had control of the market; it never really had control of prices, except for a very short time after the closure of the Suez Canal and the Arab-Israeli war, when there was a political situation that enabled OPEC to seize the initiative and break this downward spiral of prices by suddenly pushing the price up by severalfold.

After that, there was a genuine shortage of petroleum products in the world. The developed countries had been growing so damn fast that their thirst for oil was tremendous. They had been growing at 7 to 10 percent a year, 7 percent even in Europe. There was a real shortage. The shortage was more in physical facilities at the height of the shortage than it was in availability of crude oil. There was plenty of oil in Saudi Arabia that could have been produced and shipped, but the physical facilities weren't there to do it. The ships weren't there; the port facilities weren't there; the storage wasn't there; and the gas recovery facilities weren't there.

I remember going to Japan in 1973, perhaps, and for the first time telling the Japanese that it looked to us as though we weren't going to have sufficient oil to be able to supply all their market requirements in the next

year. At that point in time, Caltex in a short period--I don't think we ever did this for a year--had exceeded two millions barrels a day through our own system. We're now selling less than a million barrels a day, I would say. But we were up over two million barrels a day at that point, and it looked as though we weren't going to be able to meet Japan's requirements for the forthcoming year. This was a terrible shock to them because up until that time the one thing we never had to worry about any time we entered a venture--a market, a refinery, whatever--was that there was always plenty of crude oil. We always sort of rested assured that the crude oil would be there and could be developed in time. It took us longer to do whatever we had to do than it took them, Aramco, to supply the crude oil. So there was always a more or less unlimited supply of crude oil, it seemed.

By 1973 we were, indeed, in a real short supply situation, so what happened, as in any short supply situation, the price of products began to go up. The price of crude oil really followed the product prices up. All these OPEC increases that were negotiated were always after the fact and following the product market up. Everyone blamed OPEC, and they said that OPEC is a cartel and they're controlling prices. They weren't controlling. There was a genuine shortage. The price was going up because it was a short

commodity, and OPEC was pushing the price up behind the rise in product prices. This is why the refining business was a pretty good business in those days.

With the Bahrainis, what we did eventually, in a negotiation, we agreed on a flexible formula to establish the refining profit. The Bahrain government could then apply whatever it was--I've forgotten what it was, but let's say a 45 percent tax rate--to the earnings of the refinery, whereas previously we had had, I think, ten cents a barrel flat refining fee, which the Bahrain refinery was always allowed to earn and which the government took sixty percent of. It was eleven cents, and they took six cents a barrel. We suddenly found ourselves with extremely high trading profits because we were buying relatively cheap crude oil from Saudi Arabia; we were reselling; and the trading companies were reselling the product at a very high price. The Bahrain government really wasn't participating in this profit growth. I remember being frightened to death of how do you change this age-old formula without having something to tie to. If you just start negotiating a split on the refining profit, you know, you get lost.

I finally hit on the idea, in an airplane between New York and San Francisco, that I would say to the government, "Look, we will develop the formula based on our realization for the product--what we get for the product

when we resell it. We'll take the difference between that and the crude oil, we'll subtract our refining expenses, and we'll come up with a margin. We'll agree on a percentage split of that margin." I remember sitting with the minister, and he said, "Yes, that's fine. I think that's a good idea, but how are we going to agree on the percentage split?" I said, "Well, you say that our take now is too much and that you're not getting a fair break, but when we negotiated the present arrangement that we have in 1970, you thought it was a fair arrangement. So let's go back to 1970, and we'll apply that formula." In those days we were barely making out in the refinery; business wasn't very good. I said, "We'll apply that same formula to 1970. Whatever the percentage comes out, that's what we'll use now that the margin is ten times what it was then." That turned out to be 13.99 percent or something like that. I didn't know what it was going to turn out to be when I proposed it.

Really, with that central idea, somehow or other we ground our way through all of the other elements of the Bahrain arrangements which had to be renegotiated. We threw away the mining lease; we came up with a series of contracts that covered our service to the producing field, a fee on each barrel of oil produced to pay us our services, a split of the refining profit, and various and sundry ventures having to do with

gas. That worked very well for a long time. Since that time, my successors have had to renegotiate again as the market has changed, and the refinery has a very difficult time operating. Its product markets are drying up. It has the competition of very large refineries having been built in Saudi Arabia, one on the Red Sea and one by Shell in Jubail on the Gulf.

As you can see by the story I've been telling, the product outlets from an international refinery were drying up all the time, as refineries were built in each individual country. Originally, the Bahrain refinery supplied all the product to the whole Caltex system. Slowly, we began taking those markets away. The Bahrain refinery didn't expand very much. It grew to 250,000 barrels a day very quickly, and after that it stayed there. Some improvements in modernization were made to adjust product yields and so forth. As an international flywheel for the system, Bahrain refinery was always useful, and its product always found a market, although every grand strategic study that you made would always show that there was going to be no outlet for the Bahrain product. There was always a refinery shutdown, a strike, a mechanical failure, a market that grew faster than it was expected to and the refining capacity wasn't there; so there was always an available outlet for Bahrain product and sufficient outlet to convince us that we ought

to get into the refining business in Singapore. That's another story where we took a small refinery that had been built by Chinese Petroleum--George Hargens has told you this story, I'm sure, so I don't need to repeat it--and British Petroleum and ourselves came into that and expanded that refinery. That was done in anticipation of an international market that supplanted some of Bahrain's market, but still there was sufficient product requirement there to support both refineries.

Marcello: Going back just a moment, did Caltex ever foresee the time to any extent when all these things were going to be happening, that is, were any plans being made or any studies being made relative to how Caltex would adjust or adapt to nationalization, expropriation, and organizations such as OPEC or anything of that nature? In the back of anybody's mind, was there ever a suspicion that this sort of thing might happen somewhere down the line?

Tucker: Oh, I think always. There were millions of strategic studies made--a new one every year virtually--and special studies of this area and that and how was the market going to be impacted by the refineries that were talked about in Saudi Arabia. There were thousands of studies made, I'm sure, literally. Every year we would roll out the Caltex plan that looked in detail at the next three years and in less detail ten years down the line.

I would say we evolved to the changing international scene. At one point in time, the strategic study was, "How are we ever going to be able to meet the growth of the Japanese market? How are we going to be able to find the resources to supply Japan five years from now, when they're growing at 10 percent a year, from a basis of five million barrels a day for the total Japanese market?" Extrapolate that ten years at 12 percent a year...I don't know what 12 percent comes out to, but it might be four times or something like that. Then gradually it would become evident that that wasn't going to be the problem, and we'd start off on another set of strategic studies.

As far as OPEC is concerned, I don't know. I think all of us knew, going back maybe to the early sixties, when the producing countries were beginning to feel their economic nationalism and demand the right to their natural resources and their national wealth, that it was going to be a long negotiation during which the basic advantages that we had as a result of the early crude oil discoveries were slowly going to disappear and that the refining and marketing facilities were going to have to be made competitive and able to earn the return on capital to justify the money that was involved in them. I think this was always there, and part of the strategy was to make a lot of this happen, namely, the reaction to the gradual nationalization of the

oilfields, as well as the need for a very large capital inputs into the markets happen as slowly as possible, while still scrambling to hold on to market share. There was kind of a grand strategy behind it all, but the environment to which you were reacting was changing in a way that no one ever predicted.

You know, the lesson of what happened in the oil business from 1973 to 1983, to bring it up to the end of my active career, is the tremendous power of the marketplace. No one understood it, really. I say no one understood--the governments never understood it. They thought, in reaction to OPEC and the rise in prices, that they had to move in and take control. No one would have predicted, even after the first oil crisis in 1973 and the second one in 1977, that in another five years we would be in an oversupplied market. No one had adequate faith in the workings of the marketplace.

I remember in 1973, when the first price increase occurred--I don't know how far it went up; I think it went up to about ten bucks a barrel in a few years, from a dollar--I remember telling our people, and thinking, that all of our manufacturing plant--that meant the whole refining system--was obsolete because it was designed for two dollar-a-barrel energy. And if ours is obsolete, the whole manufacturing system of the world is obsolete, and it's got to be retrofitted. Suddenly energy costs, which had been a very

small part of refining costs, was a very major part. The cost of buying the crude oil and shipping it out to wherever the refinery was had come up to be a major element, whereas previously capital and labor had been the two principal elements in refining costs. Energy costs became a very major item.

You know, as a young engineer, we would go out for quotations on a compressor for an air blower for a "cat" cracker to burn all the carbon off the catalyst. We would need, say, one of 5,000 horsepower as a typical size. You'd buy a compressor from Ingersoll-Rand and a turbine maybe from Siemens in Germany, and you would analyze quotations. The most expensive turbine was the most efficient turbine--that might be a multi-stage turbine--and it would cost you--I don't know--\$20,000 more than another one that was less efficient. So you'd take the price of crude oil at a dollar a barrel and how much it would cost you to build a boiler plant to generate the steam; you'd derive a cost for the steam, you'd balance that against the efficiency of the turbine, and you'd buy a turbine. You weren't buying a very efficient turbine because energy was cheap. There were many of those decisions being made, not only in the refining business but in every chemical plant, every steel mill--everybody.

So it took fifteen years for all that to take place,

and that's where we find ourselves today, not because the government decreed that everybody had to save oil, but because everybody looked at his balance sheet and did the things to conserve and switch to cheaper fuels if they were available. The one thing that all this should have taught all of us is that the power of the free market is a tremendous power.

Marcello: Going back to about 1968 and right on up through your retirement, how would you describe the evolving relationship between Caltex and the two parents? What changes did you see and what kind of an evolving relationship did you see over that period of time?

Tucker: Well, once we got over the trauma of the years that preceded the 1967 breakup in Europe, by and large Caltex's relationship with its shareowners, while not tranquil, was basically very good, I think. We went through a number of phases, I suppose, and you would get into differences of opinion as to how Caltex should be managed from the point of view of Caltex's management and what I always referred to as the owners. Some people didn't believe in this philosophy, but I figured that when it got right down to it, you had to understand that they owned the business; and if they were ganging up against you, you were lost. You had to convince them it was in their interests to do something, or it wouldn't be done.

Frequently, Texaco and Socal did not see eye-to-eye on many things that Caltex management wanted to do and felt were right for the business. Frequently, you can't prove it with arithmetic; you get down to a point in a decision where it's a business judgement. When you got to decisions that were business judgements, frequently you would find yourself at odds with one or the other shareowner or both. In that case you might as well argue long enough to be sure you'd exhausted all arguments and that time wasn't going to change things. When both were against you, well, you were beat. Frequently, one would generally sort of feel that the management was on the right track, but not strongly enough, perhaps, to go against the other shareowner or to convince him. In those cases, eventually, Caltex won out. Frequently, it took a long time, and possibly things weren't done that might have been done.

I think Caltex is probably the largest joint venture in the world, and it may have suffered some from the fact that some decisions came very slowly because of the relationships involved. On the other hand, one of the strengths of Caltex's management, perhaps, was that it was insulated to some extent, and it had a certain independence that as a subsidiary of either Standard of California or Texaco it would not have had. This gave the management the flexibility to manage the business more independently of the shareowners

than they otherwise would have had. I think being in business in the parts of the world where we were, which, you might say, are high risk areas of the world--they're a long way from home; they're subject to different cultural values and different ways of doing business--this independence to some extent explains some of Caltex's success.

I've watched Chevron and Texaco individually take over some parts of the business that we had been involved in in Europe and eventually sell out and get out. One always likes to "Monday morning quarterback," so I frequently believe that if they'd managed the affairs the way Caltex would have, we might have hung in there. We always seemed to handle our relationships with partners. We seemed to be able to manage a 50-50 venture, even a minority venture, and work it around in doing the things that made it attractive for Caltex in our own way, whereas the shareowners tended to be more hard-bitten, balance sheet oriented.

I don't know...you asked how did the relationships evolve. Well, they went from very bad to, in my opinion, quite reasonable. I can name some mistakes that Caltex management would have made on its own, and did make, with the approval of the board, and I can't really mention any real opportunities, that I think of, that were missed because of the joint venture arrangement. There may be some. I think that when you interview Voss, you might get

a little different view of the shareowners than I'll give you. I felt that on balance we benefitted in many ways from the shareowners' organizations, and we were able to develop sophisticated, analytical methods maybe sooner than we would have on our own because we got input and help from them.

And they learned much from us in many ways. I think we have one of the best financial control systems anywhere in the world in our business, and I think both our shareowners realize that our cash management and financial control was in many ways superior to their own. They might not admit that to you. I always felt that the secret to shareowner relations was the continuing profitability of Caltex.

After the 1967 breakup, everybody said, "Well, when's it going to happen to Caltex? They've broken you up in Europe, so when are you going to get broken up in Asia and in your own markets?" I felt that the antitrust excuses for a breakup in Asia, that were present in Europe, were not there. Both Texaco and Socal were operating under certain consent decrees in Europe that enabled Caltex to operate. This was used to some extent, I think, in the breakup.

In Asia, those things didn't exist. Asia was a more exotic market, if you will--different from the markets in the developed countries--and I felt that as long as Caltex

was profitable, our objective should be always to earn at least as high a return on our total asset value and our shareowners' equity as our shareowners were able to earn in their own areas in total. Then Caltex would be allowed to exist, and the management would be able to maintain control in spite of the realities of the boardroom. The realities of the boardroom were that in spite of the fact that Caltex had three directors, and Texaco and Chevron with two each, anytime Caltex management tried to outvote either shareowner, the next day there would be a shareowners' meeting at which Caltex management would not be present, and there would be a new management. So you'd might as well take that as a fundamental reality of the way we were organized, but we would not come to that situation as long as we could manage to be a profitable business. We were fortunate that the markets we were given were good markets, growing markets, faster growing markets in Asia, than the markets the shareowners took over from us; and we knew how to operate there. We had developed this ability to operate successfully through joint ventures. With minor exceptions here and there, which we always got called to task for and had to wrestle with the problems, we maintained a consistently profitable and viable operation. If we hadn't, the shareowners would have moved in on us.

Marcello: After that 1967 split, obviously Caltex was concentrating

in East Africa, South Africa, Australasia and so on. What special problems arose in East Africa? Again, I would assume you were getting into more or less virgin markets there.

Tucker: Well, no. East Africa's a pretty old market. Caltex has been in the East African market for at least fifty years, I'd say, and Texaco was there before it. Texaco was there when, I think, it became one of the early outlets for product from the Bahrain refinery. Particular problems of East Africa...well, to forget the specifics of trying to live through Uganda, for example--Idi Amin and what has followed--we're still there. I don't know how we find the people to stay there and deal with the business, but we managed to do so. The main problem with East Africa is that the countries are poor, they're poorly managed, and they have no foreign exchange; and we're involved in a business where we're trying to convert crude oil into dollars to bring home to our shareowners. We manage quite profitable operations in most of the East African countries, including Uganda.

When it comes to getting the cash home, there's always a problem. We always have a very long pipeline of dividend applications that are held up. Maybe they're approved as being bona fide remittances for dividends or whatever you might be trying to get it exchanged for. You don't bring

the crude oil until you've got the exchange; you're protected in the cost of the raw material. But the earnings on your local investment have to be submitted as dividends, and if the foreign exchange isn't there, you can't get the remittance. So a principal problem with East Africa--and it's not only East Africa because there are other countries where it's a problem, but East Africa's foremost among them--is getting the cash home. I would say that's a particular problem. Tanzania has been on the verge of bankruptcy for years. You make money, and you tie the money back up in the business, but it's very difficult to get the cash out. Cash is not only the profits; it's depreciation and so forth and so on.

Marcello: I know that it has always been a Caltex policy to try and bring in nationals to various managerial positions in operations. Would this be a problem in East Africa?

Tucker: Oh, I guess it's a matter of degree. Certainly, we have competent East Africans in high-level positions. We have finance managers and managers in the operations end of the business. We haven't talked much about people in our conversation. I guess I tend to orient more toward the physical expansion of the company than the people expansion. We have always, of necessity and desire, wanted to promote nationals. We've brought them into the central organization for training periods. We have an orientation class that's two

or three times a year, and it's always filled with black and yellow and tan faces and a few white ones, but I would say the whites are in the great minority. We put them into technical or management positions in the headquarters as a part of the orientation and then send them back into the business. Some have developed well; some haven't.

We've always had a problem in East Africa with finding the quality of talent. We have audit problems, sometimes, from the fact that the accounting hasn't been too carefully carried out and so forth and so on. These are problems of training and holding the right people. It's a problem, perhaps, in East Africa that's more severe than it is most other parts of the world. The education level is pretty low. They're newly independent, and therefore there aren't very many people who have yet emerged that have good, sound technical or accounting or general educations that are needed for business. So that has been a problem, but from a money point of view, the foreign exchange is the principal East African problem.

Marcello: We haven't talked about South Africa, and, of course, one of the things I'd like to have your comments on would be this whole business of apartheid and how the company viewed it over the years.

Tucker: No sensible person believes in apartheid, I don't think, these days. I think probably it's fair to say that when

it was first promulgated, the ultimate results of that promulgation were not realized by many people. But certainly, for many, many years all of us have felt that it was an unviable system and that it was ultimately going to come to a bad end.

The effect of that attitude has evolved over the years. Originally, we took a rather neutral attitude, if you will, that we're in business in many countries; we do business in accordance with the laws and the rules of that country. We're there at the forbearance of the local government, and it's our job to be a good petroleum supply company and run a good business and try to make some money at it and let the government run the government. That's no business of ours. Slowly it became evident through a number of different sources that we weren't going to be able to stay in business unless we took a more aggressive stand on apartheid. Generally in South Africa you find that the far right--the rednecks, if you will--are the Afrikaners. The English tend to be somewhat more liberal, and the English, I think, have opposed the government on apartheid--most of them--from the very early days.

Our top management down there by and large has been of English heritage. Bill Marshall-Smith, who was the first South African chairman we had, and Dennis Fletcher, who's the present chairman, are both from English backgrounds,

and although they're rather cautious about protecting their position in Africa, they have always been against the government on apartheid; in more recent years, openly so. They recognized very early that South Africa could not exist without the blacks, that it couldn't develop and grow without the input of the blacks at all levels. This was true from the point of view of numbers, certainly as laborers, and it was also true at all other levels, such as drivers, refinery operators, instrumentation mechanics, bookkeepers, computer operators. These people were needed, and our business couldn't exist without the business of the blacks. The black communities were the most rapidly growing communities there; the growth places for petroleum marketing were in black communities.

We exploited that. When we looked for an opportunity to build a new marketing outlet, it was generally where it could enjoy the business of the black community. We became very active with the Black African Chamber of Commerce, which represents independent black businessmen in policy affairs. This organization was supported by Caltex and many other companies in South Africa.

We joined the Sullivan Principles, as you know, when it was formed. Was it twelve founder companies? I don't remember how many there were, but we were a founder company with Sullivan Principles. We pursued what we committed

to in adopting the Sullivan Principles, conscientiously and honestly. We've always had the highest rating in equal pay for equal jobs and in trying to develop blacks and bring them up in the management structure and trying to improve the standard of their lives outside the business environment. We contributed to educational institutions, to housing, cultural things. As I say, we've always gotten the highest rating under the Sullivan Principles. As you perhaps read in the paper last week, we are among the twelve who've signed a pledge to openly lobby against apartheid in South Africa.

On the other hand, we believe--I'm talking as though I'm making Caltex policy now; I don't but I'm sure my thoughts are parallel with those of Mr. Yergin--that our presence in South Africa is a positive influence as far as the quality of lives of the blacks there, and that the American involvement in the pressuring South Africa and in pressing for divestiture--a movement of American companies out--is American politics and has no relationship to what's good for South Africa or what's good for South African blacks. The government, at their own speed, will have to dismantle apartheid. We might not see it in quite such a positive sense at the moment, but they will. If American companies were to be pulled out at this time, it would remove a very strong influence toward liberalizing

the economy and developing a more active and positive place for the blacks in South African affairs. I tend to feel what goes on in Washington is more American politics than it is South African politics, although there are a lot of people who have honest, ethical, or religious standards who, I'm sure, are taking an honest position and maybe honestly believe that being a part of the business there supports the establishment and delays the rate at which conditions will be improved for the blacks. I don't think that's a fact.

Marcello: I don't know how important this question is, but it is one that I've kind of been observing, having done these interviews. It may be nostalgia on their part, but I get the impression that some of the old-timers that maybe started with Caltex in India or Japan or on the ground floor in some other country kind of were unhappy, in a sense, to be promoted to come back and work for New York and work for the company. Is that a standard sort of thing?

Tucker: I think a lot of people felt that New York was the least desirable "foreign assignment" they'd ever had, and there may be people who feel the same way about Dallas (chuckle). I'm not sure. I've been away from Dallas for a long time. Certainly, Fosque was one who was never very happy here. You know, it's like the Army. You're a military historian, so you must know that the same thing exists in the Army.

A guy's out as a field commander somewhere--I think it's probably more true than it is in the military--and he has an ability to run a business on his own, particularly if he was Jack Fosque in the days when it took six weeks by boat to get out and see what he was doing. He had a degree of independence that he could not have in the headquarters.

Marcello: There was obviously more entrepreneurship, if we may use that word, out in the field than there was back in New York.

Tucker: Sure. No question about it. I'm sure that feeling existed among many. There were real problems. Fosque was not a problem because he was given a very good job when he was brought in from the field. He just plain didn't like it here, and I guess his wife didn't like it, either. Wrigley was another. In the case of many people who came back from responsible field assignments because they'd been out long enough or the management feels it's time to make a change in the field or a change at the top, sometimes the company really can't find a job for him. He's got to hang around doing something or other that he doesn't quite think is appropriate until a real need is found. Sometimes it's never found, or he's brought into a job that he feels is much too much part of the bureaucracy than what he was used to. I'm sure that exists, and I don't think it's unique to Caltex, and I don't

think it's unique to business. I think many people find getting brought back by the State Department and pushed into the bureaucracy is pretty damn difficult.

Marcello: I guess the situation that the military refers to is "localitis."

Tucker: There are two points of view. One is that people need to be brought back to face the realities of a business once in a while.

Marcello: I have one last question, Mr. Tucker. From time to time in my interviews, I've heard people talk about the so-called Caltex family. Do you feel that that's an accurate description of the company; and how did this come about?

Tucker: I think Caltex is a unique chattel to some extent in that a unique relationship among its people exists. I've described days of tremendous growth, when everybody had a bit and piece to do and the thing was pretty well organized; and everybody had his own little bit, and his own little bit was fitting well into the piece; and the piece was producing a substantial profit for the shareowners. There's a lot of satisfaction in being in that kind of a situation.

The environment has changed now. It's not growing the way it was; in fact, it's quite the opposite. I could have gone into a lot of divestiture situations that we've been through over the years. We've mentioned India; we've mentioned Turkey; we've mentioned France. Ultimately, the

shareowners really got out of France finally. We left it to them in the early seventies, I guess, and they finally got out. We're out of Spain.

There's still a certain feeling of solidarity, to use a misused word these days, in being a part of Caltex. Yes, I felt that the "Caltex family" describes a real corporate culture that's somewhat unique. Caltex, by and large--I suppose you might find exceptions here and there, as you would among any large group of people--has treated its people well. It has been a successful venture, in my opinion the most successful joint venture in the world. People have managed to find a way to balance the interests of the two shareowners so it could be held together. Yes, there's a Caltex family, and there's a Caltex corporate culture that has made Caltex a very, very good place for most of us to spend a career, and, I think, in ways that neither shareowner has been able to duplicate. Shareowners often refer to Caltex--the bureaucrats down the line--as "country club." We had a better life than most of them did. But we were successful,

Marcello: I was simply going to mention that financial success aside, there was this corporate culture that you spoke about.

Tucker: Which contributed to and made the financial success possible. It's kind of a complex thing all the way around. You know, we're out in the world competing with the Shell Oil Companies

of this world. I'm not sure what the market share percentages are now, but in the countries in which Caltex does business, we were competing very well with Shell and probably have at least equal or more market share, particularly when you throw in Japan, where we had 20 percent of the oil coming into all of Japan as the crude supply arrangement in our joint refineries.

I think the personal relationships involved and the... somehow or other it was well-managed and well-organized, and everybody had his piece that interested him and that he could do, within constraints, to his satisfaction as long as he was producing. The whole thing fitted together. It fitted together all way through and up to produce a given result. Yes, there's a Caltex family.

Marcello: Well, I think that's a pretty good place to end this interview, unless you have any comments you would like to make.

Tucker: Oh, I don't know. I'm sure we've missed a million things that one could think about, but I think that somehow or other we've touched on most of it. So there it is. I certainly feel that I was fortunate to have come into the business when I did, I had two years with Standard Oil of California and thirty-nine-and-a-half, I guess, with Caltex during the period when Caltex was growing and evolving and changing. I was lucky to be in the right place at the right time and have some people that helped me along

the way. I worked as president under Jim Voss for ten years, and I enjoyed that. I was glad to be given the opportunity to have the helm for a little while. It didn't last very long; I got too old too fast.

So I think most people you would talk to, certainly those that were in the company in my era, would say that it was a great experience. We started out being rather unknown and eventually became very visible after 1973. We found out that we were conducting a very, very important business.

Marcello: I think that's a pretty good place to end this interview. On behalf of Caltex, and Mr. Allen and Mr. Monroe, I want to thank you very much for having participated.

Tucker: It's my pleasure. I'm getting to the age where I enjoy reminiscing, I guess.