



VISAKHAPATNAM REVISITED

Fertilizers, petrochemicals and pressure vessel fabrication are but three of the industries spawned by Caltex's Visakhapatnam Refinery.

Ten years ago, reporting that the new Caltex refinery in Visakhapatnam, India, had gone on stream, *Oil Progress* said: "Certainly not every segment of India's economy will feel the impact of the industrial activity generated by the new refinery, nor will Visakhapatnam and its more than 100,000 inhabitants realize from it unbounded prosperity. But in helping to establish an awakened industrial spirit in one part of India, and providing the fuels to power the extension of that spirit to other areas, Coril (Caltex Oil Refining India Limited) will contribute substantially to the fulfillment of India's economic dreams."

How does life in Visakhapatnam today measure up to that forecast made a decade ago?

To better appreciate the answer to that question, revisit for a moment Visakhapatnam as it was before 1955, when construction of the refinery began. Located on the Bay of Bengal in the state of Andhra Pradesh the city had for many years served India's east coast as a commercial port. Railroads connected it to inland farms and industrial towns, and over its quays passed manganese ore, tobacco, fish, oilseeds, jute, cloth, sugar cane and coconuts. Here was launched in 1948 the first steamship made entirely by Indian hands in the Hindustan Shipyard, the only shipbuilding center in the country.

In 1955, with a population of 100,000, Visakhapatnam obviously was not a sleepy hamlet. But with an economy oriented primarily toward handling and forwarding the goods of other areas, rather than producing its own, the city just as obviously could not be classified as a booming metropolis. It therefore required considerable boldness and faith on the part of Caltex to commit a major capital investment to the erection of a new refinery here, an area largely underdeveloped and offering no ready market for petroleum products.

But the faith and boldness have been vindicated: Coril and Visakhapatnam have thrived together. Like many Coril employees, area foreman N. Suryanarayana has been with the refinery since

the ground-breaking ceremonies. "Before we came on the scene," he says, "there was practically no life in Visakhapatnam except for Hindustan Shipyard, then in its infancy, and the Naval School. Of course there was the university, but no industry worth speaking of. Today, all you have to do is look around and you can see industries of all kinds. And new ones are still coming in."

Changes in the city's mood flourished even as construction got under way. Oil, and the benefits it would bring, was everybody's favorite topic as truckloads of cement and structural steel rumbled past creaking bullock carts on the city's streets. At the peak of construction more than 9,000 local residents were on the job, and those who arrived with no skills left as accomplished welders, pipe-fitters, painters, brick-layers, heavy machinery operators—trades that would serve them well for the rest of their lives. Caught up by the excitement, merchants and businessmen inaugurated new enterprises ranging from engineering workshops to hotels.

After the refinery came on stream in 1957, at

N. Suryanarayana, area foreman for Coril, climbs to the top of a storage tank to check the vents. Behind him the towers of the Visakhapatnam Refinery complex parade past mazes of pipelines.



Graceful Visakhapatnam matrons, returning from market, need no shopping carts to carry their purchases.

13,500 barrels a day, the steady growth of its operations served as a catalyst for further industrial and social change. Coril today accounts for some 10 per cent of India's total petroleum requirements, supplying gasoline, naphtha, kerosene, automotive and industrial diesel oils, fuel oil, mineral turpentine, aviation turbine fuel, and liquid petroleum gas. The increasing demand for these products illustrates graphically the development of a new way of life in the region. LPG, for example, bearing the trade name "Calgas," has lightened the cooking chores of many an East Coast housewife, and provides instant fuel and power for industrial use, as well. And in answer to the urgent need for road development in Andhra Pradesh, the refinery recently added asphalt to its product line.

Since industry cannot operate without power or raw materials, the availability of petroleum prod-

New vessel construction and repair work at Hindustan Shipyards have helped to make Visakhapatnam one of India's major shipbuilding centers.



Growth of heavy industry in Visakhapatnam has stimulated the development of many satellite enterprises. Here an employee of Surya Industries readies spools of electrical cable for shipment.

ucts has attracted manufacturing facilities of many types to the area. Just last year a giant fertilizer plant, Coromandel Fertilizers Ltd., opened up at Visakhapatnam. The new plant, owned by E.I.D. Parry of India, International Minerals and Chemicals Corp. and California Chemical Co., is using naphtha and other refinery products to turn out 365,000 metric tons of ammonium phosphates and 16,500 tons of prilled urea a year. In India, where feeding millions of people is a daily problem, the establishment of fertilizer facilities which will serve to boost agricultural production is an event of paramount importance.

A new polymer plant, Hindustan Polymers, will, after expansion is completed in the near future, use refinery feed stock to produce styrene, polystyrene, chlorides, polyethylene, polymers and hydrocarbon gas. Construction has begun on a \$24 million public sector plant which will manufacture pressure vessels and special types of boilers and containers to be used in the fertilizer and other heavy industries. Several new industrial operations have sprung into existence to serve the myriad needs of the refinery itself.

A prime industrial firm, Birlas, operates an electrical equipment plant manufacturing transformers and switchgears, needed to fulfill the National Plans for industrialization and extension of power to rural areas. A steel rolling mill and foundry and a large flour mill are other major industries set up in the last decade. Among smaller scale industries are some 40 manufacturers producing engineering and consumer goods. These range from ferrous and non-ferrous castings, agricultural pump sets, pipes, tubular structures, machine screws, graphite crucibles, wire nails, pneumatic machinery parts and spares, and cables and

THE AVAILABILITY OF PETROLEUM PRODUCTS



As mother and friend chat, a young Indian boy eyes the service station attendant. In a situation such as this, would a small boy be dreaming of washing the vehicle's windshield, or of owning a car himself?



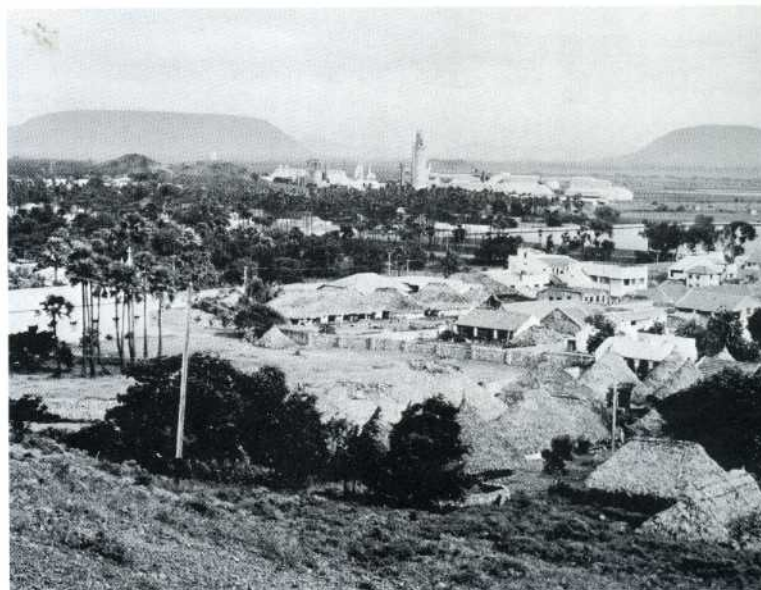
Loading hoses snake over the side of the coastal tanker "Desh Deep," under contract to Caltex to transport refined products to such major cities as Calcutta and Madras. Use of Indian-flag tankers by Caltex saves much-needed foreign exchange.

HAS ATTRACTED MANUFACTURING FACILITIES OF MANY TO THE AREA

conductors to consumer goods such as rolling shutters, hardware, architectural fittings, steel furniture, radios, transistors, fruit juices, food derivatives, hospital equipment, building material, perfumery compounds, aromatic chemicals and aerated sweet drinks.

As the establishment of new industries means new job opportunities for local residents, so an increase in the number of industries and gainfully employed citizens means added revenues through taxes and duties for local and federal governments. Since the commissioning of the refinery in 1957, the income of Visakhapatnam has shot up dramatically, and revenues received by the city's port have doubled—with much of the increase attributable to the regular arrival of oil tankers laden with Caltex crude. The port has further expanded in recent years with the establishment of a new mechanical ore handling plant for shipment of iron ore and additional berths to handle increased traffic.

The refinery also has injected a considerable tax transfusion into the bloodstreams of the state and federal governments. In addition, it has materially



Beyond palm groves and village roofs rise the processing units and warehouses of Coromandel Fertilisers Ltd. The new plant, a prime consumer of naphtha from Caltex's refinery, is one of the largest manufacturers of fertilizer in India.

aided India's foreign exchange position through the export of gasoline, and in recent years, of naphtha—approximately \$4 million since 1964 through the naphtha trade alone.

The processing of crude oil into finished products by Indian employees also means a considerable savings in foreign exchange. Plans to Indianize the refinery staff were implemented as early as 1956, when a group of trainees was sent to refineries in the United States and the Philippines for intensive training. Within two years after the refinery went on stream, Indian foremen were in charge of shift operations. And from a 1957 peak of 88 expatriate personnel, today only two remain.

Exchanging experiences within the Caltex group of companies is a basic part of the refinery personnel policy. During 1957, a group of eight Filipino operators was assigned to Coril to train their Indian counterparts on the job. In 1966, twelve of the trained Indian operators worked at a former Caltex refinery in the Netherlands for eight months to relieve Dutch personnel deputed to help start-up of a new Caltex refinery elsewhere. To help technical and university graduates obtain industrial skills, Coril has given refinery training to a number of students from engineering colleges and technical institutes in the area. Government-sponsored apprentices are trained in the refinery maintenance shops as electricians, instrument technicians, welders, fitters, auto mechanics and machinists. This program is of particular value to the country, for it helps to relieve the critical shortage of skilled hands needed for the expansion of industry.

Employee training has paid handsome dividends to Coril, too, by contributing to good employer-employee relations, better production, and an enviable safety record that has won for the refinery

national or international awards year after year.

Many of the growth factors resulting from the refinery's operation are intangible, visible only in statistics or submerged in government reports. But there are other benefits, many of them direct donations by Caltex, more readily apparent in Visakhapatnam. These include the X-ray equipment in the local tuberculosis hospital; medical equipment in St. Joseph's Hospital; bus transportation for students at St. Aloysius High School; technical equipment and books at Andhra University; awards for scholastic achievement in local schools; two new residential colonies built by refinery employees; and a vastly improved water-supply system developed by the municipality to meet the needs of both industry and residents.

Leaping from 100,000 to 250,000 in ten years, Visakhapatnam's burgeoning population is proof enough of the city's astonishing growth. Most residents could undoubtedly point to some way in which the refinery has touched them or their families, if only by quickening the tempo of life in the area.

But what has happened in Visakhapatnam is perhaps best summarized by this testimony from a downtown textile merchant: "I have done more business in the past five years than my father and grandfather did in their entire lifetimes. Before the refinery my business was just like theirs, meeting the limited local requirements and hoping for better days. Now those better days have arrived. I stock fabrics my father and grandfather never knew existed. It sometimes seems unbelievable, but it's also very exciting. The coming of the refinery will certainly be remembered as a turning point in the history of this place."

The refinery, the people of Visakhapatnam, and the forecast by *Oil Progress* have all measured up.



Workers at the filling plant of the East Coast Gas Company in Visakhapatnam, distributor of liquid petroleum gas, load cylinders of "Calgas," the refinery's brand of LPG.



At the filling yard of the refinery terminal, gasoline and other fuels are loaded into railway tank cars. Visakhapatnam is connected by rail to industrial centers in the interior of India.



At dozens of Australia's beaches the surfboat crew—tanned, brawny, and so dedicated to the great humanitarian work they perform that they volunteer their services—is a colorful and well-loved element of summer's aquatic scene. Story of important recent mineral discoveries and their great promise for Australia's economic development begins on Page 2.

Oil LIFESTREAM OF Progress

published by Caltex & volume 18, no. 3
third quarter 1968

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Returning to India's east coast port ten years after Caltex refinery went into operation, the visitor finds new roads built, new industries flourishing, and the port itself nearly tripled in size.



Triple-armed mechanical loading unit at Caltex Pacific Indonesia's ocean terminal in Dumai, Sumatra, assumes a space-age aspect when seen through a photographer's 180-degree fisheye lens. CPI's role—past, present and future—in the development of Indonesia's prime industry is told in the story beginning on Page 10.

CREDITS: Front Cover: David Moore/Black Star. Inside Front Cover: Joe Brignolo for Caltex. Pages 2 & 3: Norman L. Danvers/Sydney. Page 4 (top): Australian News & Information Bureau. Page 4 (bottom), 6, 7 & 9 (top, left & right): David Moore/Black Star. Page 8: Australian Oil Refining Pty. Limited. Page 9 (bottom): David Forbert for Caltex. Pages 10, 12 (bottom) & 13-15: Joe Brignolo for Caltex. Page 12 (top): Fokker Aircraft Co. Pages 16-19: Seiko/Japan. Pages 20-24 & Inside Back Cover: Joe Brignolo for Caltex.

Design and layout by Ross Art Studio/New York