



After a colorful career in the kitchenware business, Solar turned to airplane exhaust manifolds. Today a Solar manifold is considered among the best obtainable.

POTS AND PANS but NO AIRPLANES

by FRANK CUNNINGHAM

Solar's excellent exhaust manifold business came about more by coincidence than anything else. It was decided to "try" the manifold originally made for its own airplane.



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Most airplane companies make airplanes. But here is a firm that does so well at not producing aircraft that it's in the black—and will stay there.

★

"I suppose your boss, Ned Price, could put wings on *that* thing and make it fly," rings out the sarcastic voice of a housewife as she cracks an egg in a new skillet. Her husband, slouched in a kitchen chair reading the San Diego paper, answers a bit wearily, "Well, hon, pounding out skillets isn't what you'd call a swell accomplishment for an airplane builder, but Ned Price sees that we're still eating—and that's something in these days."

Several miles away from the domestic scene, the bakers at the Naval Training Station in San Diego are unloading a set of new pans. "Plenty nice for a bunch of gobs," one of the bakers remarks as he inspects the utensils. A fellow baker turns from an oven, looks at the pans, comments, "Sure are. These pans are built by the same outfit that knocks out the collapsible water tanks for the Army."

The first baker shrugs his shoulders, "That's a laugh, mates. My pal at the tavern says he got some beer barrels made there. Some company—frying pans, water tanks, beer barrels and baking dishes—everything but airplanes!"

"What's so funny about that?" an on-looker remarks, "Why should they build airplanes?"

The baker who has been doing most of the talking fixes a very superior look on his face, tilts the white hat on his head to a cocky angle, speaks firmly, "Because the outfit that makes all this stuff—and doesn't make airplanes—is the Solar Aircraft Company. Get it, fellow? The Solar Aircraft Company!"

Today Edmund T. Price, president of the Solar Company, can also laugh at the days of the early thirties when his airplane company built "everything but airplanes." Yet the people who scoffed at an aircraft company which was that in name only, can still snicker, although it won't be heard over the noise of business orders piling up. Solar, and its predecessor company, has been in business since 1927 and today is one of the best known names in aviation circles. Nevertheless, the total production of Solar planes has reached the staggering total of one (1)!

Yes, one airplane and the company now has about 350 employees, a backlog running well into six figures, sales of some half a million dollars last year, and has been "in the black" for the past seven years! And the Solar worker, who was ragged by his wife back in the early days of the depression, is working with an organization that is an important part of the aviation industry.

Solar, originators of the corrosion-resistant streamlined exhaust manifold, today has sold more manifolds (over 6,000) than any company in the world and its products have compassed the globe on foreign built, as well as American planes. It is the same company that in 1931 had a payroll of four men and then frequently couldn't meet the payroll. It is the same outfit that was thousands of dollars behind in rent; that didn't know each time a knock came on Ned Price's door whether it was a brush salesman or the sheriff to close the factory. Fortunately it was always the brush salesman.

Recently we sat in Mr. Price's office on the second floor of the Solar plant, which is on the San Diego waterfront, and listened to a youngish looking, bespectacled man in his middle forties relate how a struggle of 12 years has finally been crowned with success. On his desk was a picture of a trim all-metal airplane labeled "MS-1, Solar Aircraft Company."

"That was our production as an airplane builder," Mr. Price said as he took off his glasses, put them on the desk. "We made a great airplane and we almost ruined ourselves doing it. Let me tell you about it."

In 1928 (Price said) I came out to the west coast, after a career in business investments in the east, looking for an industry in which to put some money and go to work. After a lengthy search I decided on the Prudden-San Diego Company in San Diego, joined it as general manager. This company had been launched in 1927 with \$60,000 backing raised in San Diego.

The first two years the company had built two experimental all-metal airplanes. Ships of this type were a radical departure for that day. Of the nearly 300 companies in the field only the Ford Motor company, the Northrop company and the Prudden-San Diego company were building all-metal planes. The first two ships were experimental models which took all of the original investment and some more besides.

In 1929 the business was reorganized, renamed Solar and I was elected president, a somewhat dubious honor as we had over \$75,000 in liabilities and assets which, if sold wouldn't have exceeded \$25,000. But we had a knowledge of all-metal plane construction which over-balanced that condition. In June of that year we planned to fly our new ship, an eight-place cabin job. We did fly it, but not until January, 1930. In the meantime the stock market had done a tailspin and gloom abounded. Not enough gloom to discourage us, though, as this time the ship performed beyond our expectations. At least 10 companies were immediately interested in placing orders and the men who had struggled since 1927 would have joined hands and danced around a May Pole, if we had a May Pole.

The postman put an end to our joy. Notification came in one right after another with the notation: "Sorry, it's a grand plane, but business is rapidly on the decline and we can't buy any new ships." Every one of the 10 hopes vanished. Then we got a great publicity break when the MS-1 was ordered for a Pacific hop to Tokyo. The hop never materialized and neither did the money for the ship.

For a year we bolstered our spirits with
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This is the Solar "flying nursery." Left to right are Mrs. Price and their children, Ned Price, Mechanic Al Lacey and Pilot C. W. Seaton. They flew 6,500 miles.



Solar was the first manufacturer to apply the drop hammer method in shaping corrosion-resistant metal into exhaust manifolds for use on high-powered plane engines.



Pots and Pans

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dreams of orders that didn't come, with promises for planes never kept. In August, 1931, I had to fly back to my home in New Bedford, Massachusetts and decided to take my family with me. I loaded Mrs. Price, Mitzi, aged 9; Charles, 7; and Joan, 3, into the plane and under the piloting of capable Bill Scaton, well-known western flyer, headed eastward. The newspapermen got wind of the flight and the Solar MS-1 became the "Flying Nursery." At every airport the press met us. We were written up all over the nation. The "Flying Nursery," a ship so safe that the manufacturer made a transcontinental tour in it with his entire family, became a by-word of the time. We even had poems written about us and kindergarten magazines took up the story.

I didn't need poetry, I needed orders. Finally I got a break. The purchasing agent of an important airline, won over by Solar's merits, decided to buck the depression, buy six ships. This order would put us on our feet. The morning of the day the order was to be signed I went cheerfully to the agent's office envisioning the resultant celebration that would be held in San Diego. When I got there I was informed that the order couldn't be signed, the purchasing agent the night before had dropped dead of heart failure! There was almost another victim of heart trouble right at that moment!

Mr. Price stopped in his narration to offer me a cigarette. After I had lighted it he was silent a moment. I spoke up, "And the new purchasing agent wouldn't give you an order?"

"Exactly. He said the manager had changed his mind and that business didn't warrant expenditures for new planes."

"The 'Flying Nursery' landed at San Diego with hundreds of publicity clippings, a family that had flown 7,000 miles, covered 25 states and 50 airports; landed at home port with an empty order book to find the ledger showed total debts were five times total assets. Some outlook!"

"Some outlook," I echoed.

"We finally sold the MS-1 to a Mexican rancher for use in transporting coffee from Tabasco to the coast, decided to sidetrack the manufacture of planes. We had what was admittedly one of the best ships in the industry, but we couldn't eat compliments. At a directors' meeting we voted to carry on, make whatever we could with supplies on hand. To have stopped work at this point would have meant a complete loss to investors as well as trusting creditors. So it was then we commenced making frying pans, baking utensils, hook coils and beer barrels, even if our thoughts sometimes wandered to a metal plane loaded with coffee, flying over the countryside in Mexico."

I learned later that Mr. Price hadn't told me everything about the directors' meeting and also things Mr. Price hadn't told me about Mr. Price. He hadn't said that the vote was deadlocked on a motion

to remain in business and that his vote had broken the tie and kept Solar in business. He hadn't told me he comes from old whaling stock in New England that had roamed "the seven seas" through storms that were physical as well as financial. He hadn't said he was manager of the Haverford College football team back before the United States entered the World war which had beaten bitter rival Swarthmore 10-7 for the first time in two decades.

Some of what he did tell me was this. The main consideration was to begin work on a product that required very little capital and had a rapid turn-over with a satisfactory margin of profit. The kitchen ware and beer barrels were partially an answer to that need. But the company officials were still air-minded even if beaten—but not to a punch drunk degree—by the depression. They recalled that one of the new developments on the MS-1 was its exhaust manifold, especially designed by Solar engineers.

Up to that time manifolds had been a hit or miss proposition. Those being built were heavy, increased the weight of the plane, were of ordinary steel and had a short life. A midwestern company turned them out as a sideline, because no group thought them worth development. No company except Solar which found there was a need for an advanced manifold right in its own backyard at Naval Air Station, North Island.

This need was for Navy ships flying at night as the fire from the exhaust often

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all went payless and the fortunate ones would lend a couple of dollars to the less fortunate to tide them over until we had some cash. If my men had failed me I would have been helpless and I want them to get the share of Solar's success that is certainly due them."

Ned Price, always in contact with "big business" from the time in 1919 when he achieved a youthful ambition by going with the Guaranty Trust Company in New York, is proud that Solar has never had any labor trouble. He wants his men to feel a part of the business. Paid good wages and salaries, Solar employees are encouraged and helped to buy stock in the company. They are given free legal advice by the Company's attorney on wills and minor legal matters. On the waiting list for jobs at Solar are thousands of names, but choice promotions are the reward for men within the company whenever possible. Any man is free—and is urged—to come to Ned Price's office for discussion of any bothersome problem, company or personal.

The president of Solar wants his men to realize they are important cogs in the success of the company, not robots with a number. He wants them to feel the thrill of advancing aviation's future, not merely to do a job because of a pay check.

"To an outsider, building man-of-ice might seem devoid of the business romance attached to aviation," comments Mr. Price. "The romance to the public is constructing ships that span the oceans, fast planes that win air trophies, tiny ships that get the man on the streets to go into the clouds. But there is a thrill to the work we are doing. Don't you imagine there is a thrill to finding a bunch of men who will work as a team to create something out of nothing during a decade of depression; to make a product that has been specified to fly over both the great oceans, on every continent, on round-the-world flights and for service at both North and South Poles? This we have done through faith in ourselves and each other in spite of some handicaps, but what of it?"

"My advice to men in business—aviation or otherwise—is to remember that you always have at least two pencils. With these pencils you can commence trading and this trading can go on and on and the trader can build up his capital as long as he trades wisely. I said he had at least two pencils but actually he doesn't have to have even that. Solar didn't have them when we were a failure at selling planes. We were in debt enough to buy pencils for all the writers and newspaper people the world over, all we had was an idea. It's ideas that make us what we are—and remember another thing. If you can't scale the distant mountain with your present strength you can always go around it. Solar found that way around in the aviation business."

And with the picture of Ned Price's success in mind, and the fact that Solar aviation sales have risen steadily from \$500 a year to \$500,000, in tough times, it looks as if the mountain trails will soon be filled with people skirting the peaks and carrying in their hands two pencils.

Polish Air Force

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ski, chief of the air force. He holds the highest rank in the aviation division of the Polish army and is in charge of directing the air corps against the German air units.

There is a certain ironic parallel between the predicament in which Rayski finds himself and the Polish air force today and that of the Communist Russian air commanders in the recent Spanish war. Rayski has under his command a number of aviation squadrons that, in quality of men and equipment, are the peers of anything in Europe. The same situation was true in Spain where, in combat, the Russian airmen and their planes were proved to be among the best in the skies. But the Russians were in the minority—much the same as are the Poles. While their units were of high quality they were badly outnumbered by German and Italian aviation squadrons. Although the Russian units won most of the air battles in which they were involved, they did not represent a real bulwark for the Spanish Republican forces against Franco's aerial raiders because they could not cover sufficient territory. While they would be chasing one group of potential raiders, half a dozen other units would be at work bombing Republican cities and cooperating with Franco's ground forces to bomb and staff Republican trenches. Ultimately this preponderance of numbers became so overwhelmingly great against the Russians that they were virtually withdrawn from front line conflict. They finally were used only as defenders of Republican cities and before the end of the war were ordered home.

In Poland the Polish units were in the minority. Against them the Nazis have probably the largest and strongest single air force in the world. Consequently the Polish efforts at striking German targets are ineffectual. Rayski uses that measurement of all air force commanders: "Is the target offered worth the certain loss of men and machines?" in considering such plans as those calling for bombardment of Berlin and other German interior cities.

Just as certainly as he asks himself that question, the answer is returned, "No." And so the Polish bombers stayed at home while the bombardment pilots were pressed into service in the hot little single seat fighters to give battle to the German bombers.

It is peculiarly true of combat flying that while fighter groups may win a majority of their own aerial battles, their side may be losing the aerial war. Frank Tinker Jr., the late aviation adventurer who fought with the Spanish Loyalists and afterward wrote of his experiences, showed just such a picture in Spain in his magazine accounts in *POPULAR AVIATION* and other magazines. Tinker finally was transferred to a Russian squadron where he flew with the best of the Russian units. His accounts of

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