OptronLabFoundingDaytonDailyNews5July1942

[Story scanned from 5 July 1942 issue of the *Dayton Daily News*, p. 9 of the "Main News Section"; this story has been cut into pieces and reassembled in the interest of legibility; pictures placed first; Mohn's first name is misspelled throughout—it was "Olof," not "Olaf" – GNL {= Torpia and Anna Lapenas' elder son, **G**eorge **N**orman **L**}]

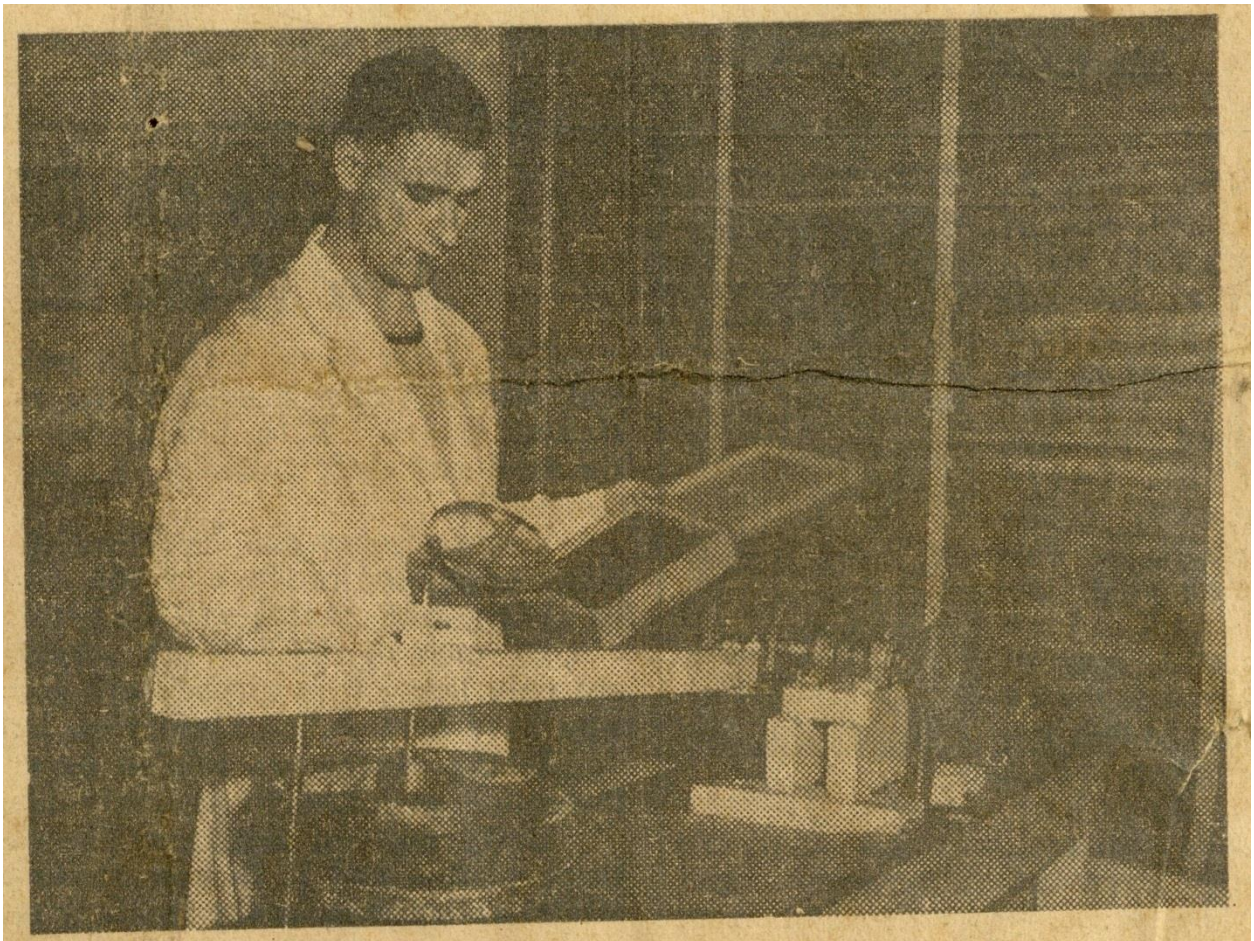
JULY 5, 1942 THE DAYTON DAILY NEWS MAIN NEWS SECTION 9

Three Daytonians With An Idea And Little Capital Overcome Many Obstacles To Start Important Aircraft Instrument Plant

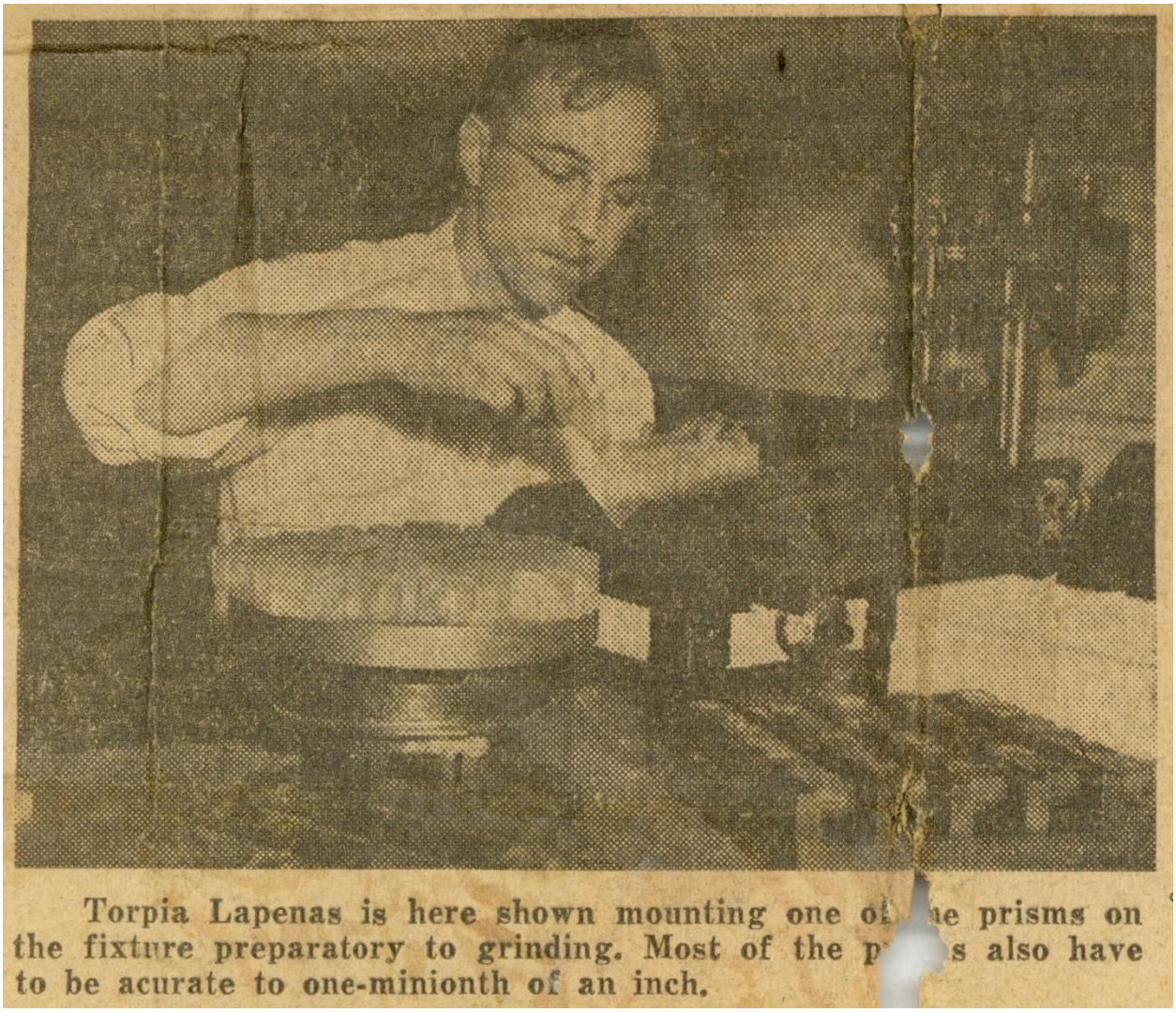


Olaf Mohn is inspecting some of the prisms whic[illegible] soon find their way into the delicate precision instruments o[illegible]erican war planes.

"Olaf [sic; should read "Olof" - GNL] Mohn is inspecting some of the prisms which will soon find their way into the delicate precision instruments on American war planes."

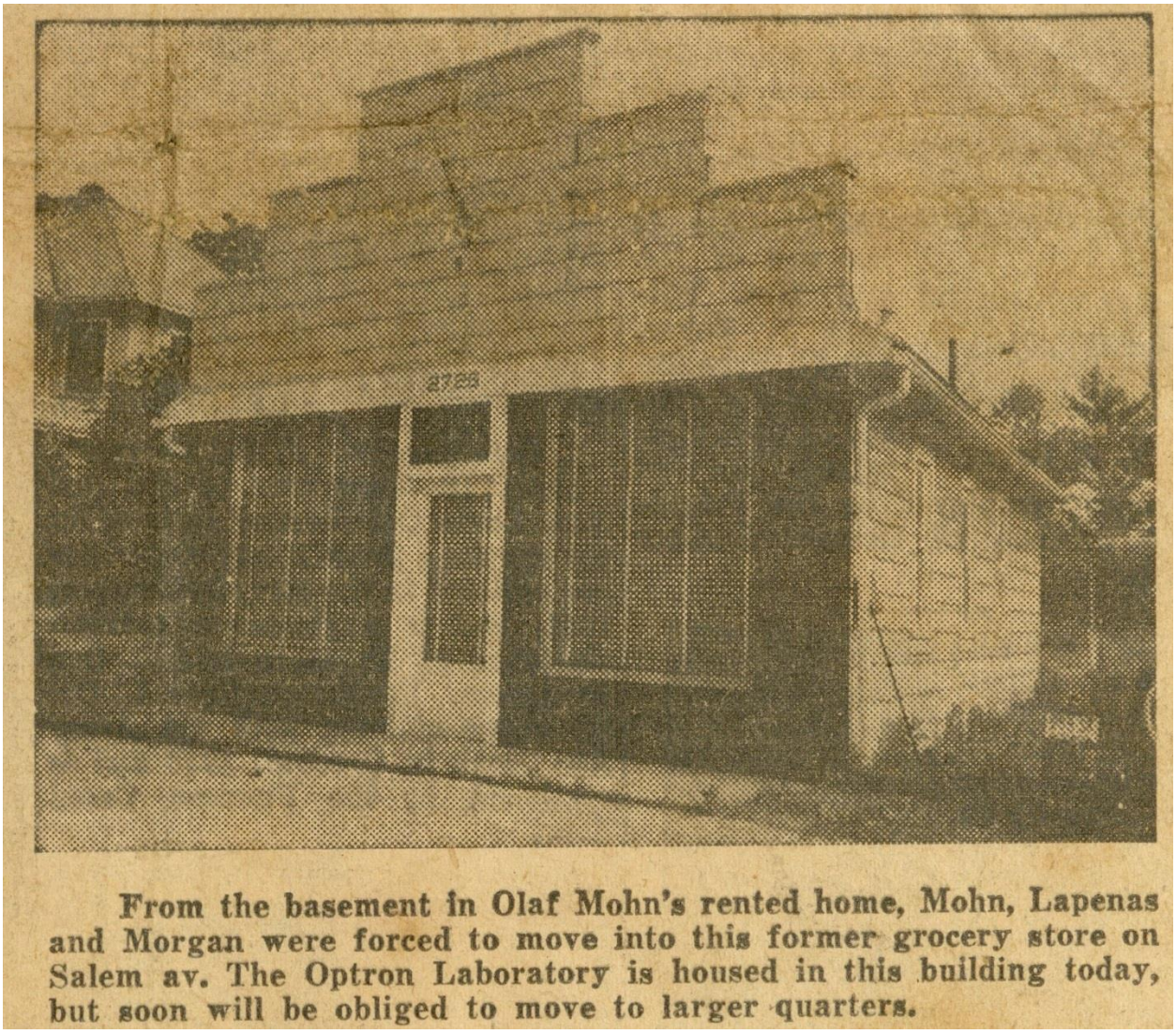


Harry Morgan is shown with the Optical Flat Lapenas made at Michigan State university. It is a piece of quartz six inches across which is flat within one millionth of an inch. There are very few of these in existence.



Torpia Lapenas is here shown mounting one of the prisms on the fixture preparatory to grinding. Most of the prisms also have to be acurate to one-minionth of an inch.

"Torpia Lapenas is here shown mounting one of the prisms on the fixture preparatory to grinding. Most of the prisms also have to be acurate [sic] to one-minionth [sic] of an inch." [Note the similarity of the "fixture" to Figure 6 of Lapennas' and Mohn's 1949 {application}/1955 {award} patent # 2,699,633, on a method for "Precision Supporting of Articles" – GNL]



From the basement in Olaf Mohn's rented home, Mohn, Lapenas and Morgan were forced to move into this former grocery store on Salem av. The Optron Laboratory is housed in this building today, but soon will be obliged to move to larger quarters.

[Note: Optron did indeed rent or purchase another building somewhere in Dayton, which they referred to as "the lab." I don't know what its address was. Optron continued to occupy the building on Salem Ave. throughout the business' existence, even after they had moved out of "the lab." – GNL]

BY JAMES McCONNAUGHEY
Daily News Staff Writer

One year ago, July 4, 1941, to be exact, a young man with an idea, two potential partners and a broom, began cleaning a cellar. The idea was considered fantastic by experts, particularly since the potential partners lacked the one essential these experts all agreed was needed: $50,000 capital.

True, the three did not have anything like $50,000; they had about $200. But they also had faith in their idea and in themselves, and a conviction that what they were attempting to do was desperately needed by their war-threatened country.

Today, the experts who laughed at the three young men have swallowed their laughs and now look on with amazed admiration. The manufacturers who did not take the men seriously when they first solicited their orders are begging them to reconsider, and the United States government sees that the year-old company gets not only top priorities, but immediate delivery on any scarce materials they want.

The company is called Optron Laboratory (which is a briefed combination of optics and electronics). It is located at 2725 Salem av., and it is making prisms and other optical glass products for aircraft instruments.

Nobody but one familiar with the optical industry can realize what a truly astounding achievement this bare record of the facts represents. The optical industry in the first place is more an art than an industry. It is surrounded by closely guarded secrets. There is practically no literature on the technical details of procedure, and no text book can tell you how to become an expert craftsman. Even the large glass companies fail time after time when they invade this highly technical, extremely difficult field.

Yet Olaf Mohn, of 2412 Malvern av., "old man" of the organization at 34, and his two partners, Torpia Lapenas, of 602 W. Fairview av., and Harry Morgan, of 1381 Kumler av., both 25, thought they could lick the problems that had floored many older and more experienced men and corporations.

The three were brought together originally by their interest in telescopes, in making telescopes, that is. Lapenas, while a student at Michigan State college, had made an optical flat, which was tested by the bureau of standards at Washington and found to be flat within one one-millionth of an inch over six inches.

Translating this into understandable figures, it would mean that if the optical flat could be expanded to a disk 250 miles across, there would be not more than one-inch deviation from the level over the entire surface. The number of men in this country who are capable of such precise work can probably be counted on the fingers of two hands.

That was what bothered young Lapenas. He saw that the United States was approaching war, and that in the past we had relied too much for this kind of work on the craftsmen in Germany and Sweden. Yet precision optical glass products are vital war necessities, and this country, Tapenas knew, would

be in desperate straits if it could not produce these products.

Lapenas went to work for the Gaertner Scientific Corp., in Chicago, as a prism maker. He stayed for three months. Then the revolutionary ideas about prism making, seething in his brain, demanded expression. He had been in correspondence with Harry Morgan, whom he had known at Michigan State, and Morgan advised him to come to Dayton. Morgan and Olaf Mohn were working at the Moraine Products Corp., at the time.

The three—two physicists and an engineer—got together and talked and planned. They knew what they wanted to do, but the problems confronting them were formidable, if not insurmountable. In the first place, the machinery used to make optical equipment was and is very expensive. In the second place, they had no more chance of getting such

equipment, even they had had the money, than layboy does of getting a set of white sidewall tires from cal rationing board.

But they had a that maybe they could vise, that with bailing imagination and work they could construct a few of the essential tools they needed. So Lapenas began cleaning the basement in Mohn's house. The basement was to be their shop.

Then the three, getting this chunk of metal from one friend and that piece of rough machining from another, began fashioning a turntable. Morgan and Mohn devoted their nights, Saturdays and Sundays to the basement shop, but they continued at their salaried jobs during the da

This was imp ve—those weekly pay che represented practically their re capital. Finally the turnta was completed. From Wrig ield the men found out what anufacturers wanted what. They rote letters, asking for permissi to submit samples. Most of t plants replied very politely tha they would keep the young company in mind. Two were more encouraging. The first one asked for samples and, after receiving them, promised them an order, instructing the men to reserve so much "plant space" for the job. Would that be the laundry room or the coal bin, they wondered. The second concern replied that the samples were not quite right, and sent two more blanks. Then appeared a representative of the first company, the one which had promised them an order. When he found that the Optron Laboratories were set up in the basement of a private dwelling, he was extremely sympathetic but left —without an order. The second-chance samples went out to the other company and a long silence ensued.

It was a silence packed full of drama and potential tragedy. For Lapenas, the only full-time employe, was 1-A in the draft, and his number was up. He went to Michigan to see his draft board, explaining the situation. The draft board knew something of his abil-, and gave him a two-month ex-nsion. At the end of two months he was either to produce an order or else.

Fifty-eight days passed, and so did the mail man. Desperate, Lapenas went to Indiana to plead personally for an order. But optical glass was not only expensive but rare as precious stones. The company did not feel like taking a chance. While he was in Indiana his grace time ran out with his draft board. He returned mournfully to Dayton. And there was an order for 600 prisms.

On the heels of this order came a representative of the firm which had placed it. His face fell, his jaw dropped when he saw the "plant." But his company was so frantically in need of the prisms they could not get elsewhere that they were all but forced to take a chance.

And now the men had their precious order, but they still didn't have the equipment they needed to execute the order. Or the money to buy the equipment. Again they resorted to ingenuity, sweat and perseverance. The fixture they needed would have cost $400 to make if they had followed the traditional methods. They had an idea it could be done differently, and far more cheaply. Older heads in the business advised that the method they had in mind had been tried, but had not succeeded. The trio nevertheless went ahead with their plans, because they had to. They didn't have $400.

When they finished the piece, they found it had cost them $60 for the materials and outside labor needed. They had saved $340 and, even more important, months of time by their method. They had evolved a method whereby they could take an order and make the plate for that order in two weeks.

This was such a revolutionary development in the industry that their bigger and older competitors would not credit their ears. They had to see before they were convinced.

But now they faced further problems. They had to get into production for the job, and they had neither the necessary equipment nor man power for production work. And Mohn and Morgan were still holding their daytime jobs; they still needed the money for operating expenses. So Lapenas worked all day struggling with the problem and Morgan and Mohn worked half the night. The neighbors got suspicious; the landlady heard a rumor that they were making bombs and came quickly to investigate. Mohn's wife had a job on her hands, coping with the neighbors, looking after her baby and feeding the three basement dwellers.

It took the three several months to iron out the kinks in their "production line," and almost as long to arrive at the correct formula for their casts. On this secret they could get very little help; they had to arrive at the right answer through trial and error. On a tip, they began using dental plaster as a base, and finally worked out the proper formula.

Eventually the job was completed. The doubtful aircraft company which had placed the order was delighted with the quality and speed of the work, and responded by placing an

order for several thousand more. The rejections on the first order had been less than one-half of 1 per cent. Twenty-five to 50 per cent rejections are common in the industry.

Now they had to move, and finally, Mohn and Morgan felt justified in giving up their daytime jobs. They found new quarters in an abandoned grocery store on Salem av. and went to work on the new order. Suddenly they found themselves swamped with orders. Companies which, a few months ago, had laughed at them, now were pleading with them to take their orders and name their own price. Others offered to buy them out, lock, stock and barrel, at any price. The trio modestly refused and went on with their work. The country was at war, and they wanted to continue working with their own methods, convinced that these were the right methods.

They now have orders that will tax their capacity for the next two years, and they will have to expand, will have to train new employes.

In the meantime, this combination that draws from the heritage of Sweden, Lithuania and America is continuing to work nights, Saturdays, Sundays and holidays. They know how important their work is, and they are awed and humbled by their success. They feel that giving up all social life, all outside activities, was a small price to pay for their contribution to the war effort. How great that contribution is they will not tell you—you have to find that out from other sources. It is almost enough to say that other companies, with practically unlimited capital, have tried to do this work and have failed, with millions of dollars worth of orders rejected. When it is remembered that optical glass is almost as rare as helium, the difference between success and failure in this field becomes enormously important.

The end of this success story cannot yet be written. The men consider their present position merely a step toward their eventual goal. They want to probe into even bigger and more occult spheres of the optical and electronics fields. And those who know them and have followed their brief careers predict that some day, perhaps not too far in the future, they will be the acknowledged American leaders in those fields.