

# Builds Television Set for Science Meet

## Experimenter Explains How His Outfit Works

### Radio Repair Work Pays for Research in New Field.

Building a television demonstration set was as easy for Lawrence Friedman, 15, as making a model airplane would be for many another boy.

The set won a scientific award and a trip to Schenectady, N. Y. for Lawrence and his assistant, Bruno Alter, Jr., 17, of 102 Ridgewood avenue, Brooklyn, N. Y.

Lawrence didn't start his radio career with this set, however. At his home, 444 Jamaica avenue, Brooklyn, he had previously built telegraph sending and receiving sets, crystal and all-electric radios, radio testing equipment, a public address system. He did research toward construction of a short-wave heat machine. Radio repair work paid for his experiments.

Time Is Short. "Through my high school engineer club I became a member of the American Science Institute," Lawrence writes.

"Each year Institute members from 250 schools in this area have a congress in New York City. I determined to make an operating demonstration model of television for the congress.

"Time was short and I asked another club member, Bruno Alter, to assist me. We did not even get to test our apparatus until we demonstrated it before the congress.

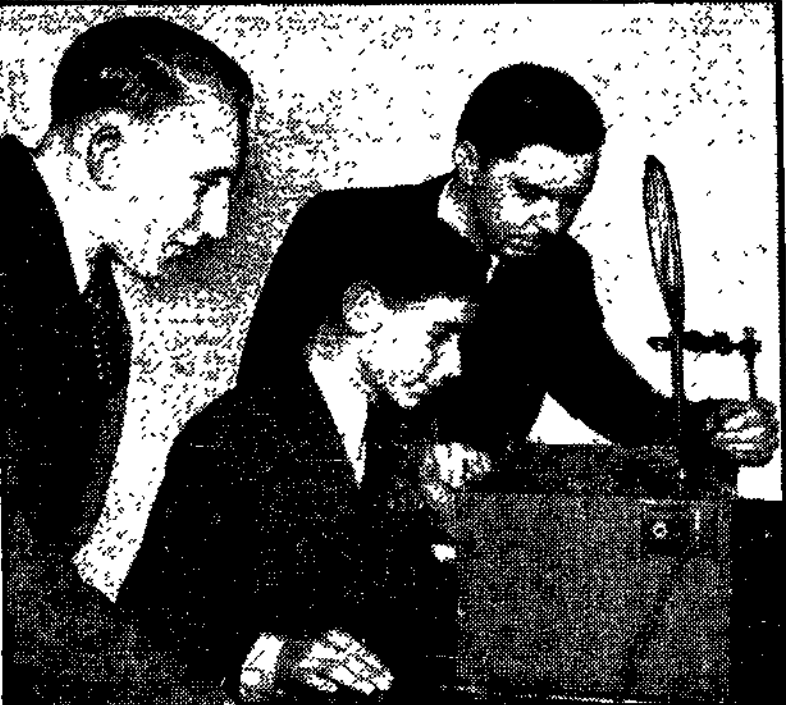
"It consisted of a framework, 7 feet long, 2 feet high and 2 feet wide, with large revolving metal disks on each end, driven simultaneously by an electric motor, a photo-electric cell, a powerful electric lamp; an amplifier and a neon bulb.

"Let Me Explain." "The best way to explain television is to give a comparison. Suppose we want to send a simple design to another person at the end of a telephone line. We would divide our design into uniform squares and provide a duplicate squared screen at the other end. To locate a square we would give its distance from the top and side in squares and then tell the intensity of color in that particular square.

"To make it more like television, we would go across each row of squares and tell the color of each square in turn. If this is carried out with great rapidity by electrical or mechanical means, or both, the image received would appear as a solid unit to the human eye. This is called scanning.

"In our apparatus the scanning was done by revolving disks which were drilled with a series of holes in the form of a spiral. As the disk makes one revolution, the holes in it pass the screen, one at a time, in the form of parallel lines, progressing from top to bottom.

"If an object is placed behind the sending disk, the design gets broken into lines from top to bottom and these lines vary in intensity at different points along their length. When the disk is going slowly, these variations do not produce a visible image on the screen, but when the



Bruno Alter (Left) and Lawrence Friedman—Being Shaun Exhibits of Electrical Company in Schenectady.

## Seen' Things

### Prize Winners Visit Laboratories.

motor is speeded up, we get the illusion of seeing the entire image at once. This illusion is known as persistence of vision.

"To send the picture we need four more things: the photo-electric cell, amplifier, neon lamp and a duplicate scanning disk running at the same speed as the transmitting disk.

"The photo-electric cell is to light as a microphone is to sound. When more light strikes it, more current can flow through, thus creating an electrical impulse. This impulse is too feeble to use, so it is sent to the amplifier to strengthen it. The amplifier in our set took the place of both the transmitter and receiver in regular practice.

#### Neon Lamp Used.

"Since some source of light obviously had to be used at the receiving end, a neon lamp is provided. It is more sensitive to small changes in current than the filament type.

"Synchronization is accomplished in practice by using two motors made to run at the same speed. In our apparatus we used a single belt and motor to drive the two disks.

"This is what happens. A ray of light passes through a hole in the transmitting disk, activates the photo-electric cell and thus creates an impulse. The impulse is amplified and proceeds to flash the neon. Since the disks are synchronized, the light from the neon can only pass through the hole in the receiving disk which is in the exact position of the corresponding hole in the sending disk. In this manner an image is formed on the receiving screen similar to the object scanned by the sending disk.

#### A Rare Thrill.

"It was a rare thrill to learn I had won the trip to Schenectady to view the exhibition rooms of a large electrical company, and that I was to broadcast on an international hook-up on the science forum hour.

"I am now working on an electrical spectro-photometer, a device to determine the amount of light of each color which a substance reflects. With it I hope to be able to net a sufficient sum to buy a cathode ray tube.

"My ambition, of course, is to attend a first-class college, take up electrical engineering and then specialize in electronics." Bruno entered television after amateur radio work.

## Linotype Is Operated by 11-Year-Old

One of the youngest linotype operators in the country is Frank Blake 3d, of Santa Clara, Calif.

Frank, 11, spends Saturday mornings and vacations practicing on the machine. "I want him to know newspaper work, mechanically and otherwise," his father says. Frank, of 930 Bellomy street, comes from a newspaper family. Frank's father and uncle, F. J. and



Frank Blake 3d—Vacations and Saturdays at Machine.

L. J. Blake, own, publish and edit the Santa Clara Journal.

But Frank isn't the youngest linotype operator in the country. In the same State, at Westminster, is Jimmie Banninger, 5, who is an accomplished operator, considering age.

(Story by Parade Reporter Joseph Vienna, 300 Postoffice avenue, Palo Alto, Calif.) Newsfacts—Linotype machines have 90 keys, and according to International Typographical Union standards take from 2 1/2 to 3 years to really master. Wages of operators range from \$18 to \$50 a week, but a conservative average is \$38. A good operator is expected to set more than 8,000 words a day.

# STARR of the CLARION



Illustrated by Robert Pilgrim.

### SYNOPSIS.

SEEKING a story for the neighborhood newspaper they publish, 16-year-old Rod Starr and his chums, Bomby Bell and Trigger Tubbs, uncover a plot. Jared Quarles and his gang of crooks are planning to buy the long-deserted and supposedly worthless Barbara coal mine. The mine, owned by a group headed by Rod's father, had gone into disuse when the coal apparently gave out. Quarles was left a message by his dead brother, a former mine employe, revealing that a map to a new seam of coal is written on the boards of a shack in the mining

thing that dashed with mad fury through the startled men in the mine gallery.

"GOSH!" Pete said. Another of those darned rats! He threw his flashlight beam full on Rod's face!

"Hey!" The wild cry of surprise swept from Quarles' thick lips. His hand darted to his gun. The other men stepped forward.

"Steady!" Rod warned, voice ominous. Then quickly: "Before you make a move you'd better notice what I've got in my hand! Point a flash at the box where I'm standing and you'll see what it is. Make a false move and I'll blow the lot of you to pieces!" A beam of light stabbed at Rod's feet, finally settling on the box marked "Dynamite." Quarles and his men gasped, fell back in wild confusion.

"Don't throw it, kid!" Quarles begged. "You—your'll blow up the whole mine! Gosh, Rod, put that stuff down. If you drop it we'll all be killed!"

"Back to the pool," Rod snapped. "Don't try to climb that ladder or I'll blow it to bits and you along with it. Remember, one of you may shoot, but not before I slam these sticks of dynamite against the tunnel wall!"

"We—we ain't shooting, Rod," Pete said quickly. "O-o-o-o we're mighty careful with that dy-dynamite." Long minutes passed. Rod was getting cold now after the excitement. Quarles and his men stood huddled at the edge of the pool, silent and alert. Rod ordered them to throw their guns in a pile at his feet. The fat promoter, face pasty white under the beam of Rod's flash, was biting his lips in defeat, quivering with rage.

THEN a welcome sound echoed in Rod's ears. It was a shout, hoarse with anxiety, from above. And Rod's heart leaped for he recognized the voice of his father!

"Hallooo — halloooco below! Rod-d-dddd!" "Dad!" "Are you all right?" "Yes, Dad I'm sending some men up the ladder; watch 'em!"

Rod turned to Quarles. "All right, you! Up that ladder and make it snappy. No fooling!" Muttering angrily, cursing their luck, Quarles and his men climbed the shaky ladder. They were pounced upon by Rod's father and the group of officers he had brought back with him.

Ten minutes later, the story told, Rod, Bomby and Trigger were in Mr. Starr's car bound for Warwick and a hot dinner.

"I tell you, son," Mr. Starr said proudly, "it's wonderful! Just think, the mine will reopen, and if that seam of coal is anything like you say it is, we'll all make a lot of money. I'm going to set aside a few shares for each of you boys!"

"I've got to get to Ted Waring, at the Trumpet," Rod said. "Too bad our own newspaper was published yesterday. We haven't another edition until next Saturday. But Mr. Waring'll give the Clarion a credit line, and that'll help. The next Saturday we'll have a full account with pictures. Boy, won't that be an issue!" Rod grinned happily.

"YES!" Mr. Starr said, "and the Barbara Mining Company will announce their reopening with a full-page ad: 'I'll take the place—Rod says you want to be careful with that dynamite in your hand! That stuff is tricky, might explode, and—'"

Rod laughed. He held up one of the sticks he had taken from the dynamite box.

"Don't worry, Dad, it isn't dynamite! Those long sticks in the empty dynamite box were—candle!" He was bluffing Quarles and his gang all along!

(The End)



Quarles Came Into View, His Light Beam Darting Down the Tunnel Toward Rod's Hiding Place.

## Virginian Steps on Alligator

### Brings It Back Alive; Experience Is Thrilling.

How would you like to go wading and step on a live alligator? David Lee Payne did.

And it happened in Virginia. Imagine, an alligator in Virginia! "Brother and I were hunting crawfish in a small creek near home," writes the 16-year-old from Route 6, Box 5 B, Richmond.

"We were about to return home when I stepped on the head of the animal.

"I put it in a bucket which was lying nearby. The alligator died within a few days, however. But I have never had a more thrilling experience."

How the gator got up to Virginia is a mystery. It was thought it escaped from a zoo.

Newsfacts—Farthest north alligators have been known to live in the southeastern coast of North Carolina, a good 200 miles from David's home. Thence, they are found along the United States coast all the way south to Mexico, and nowhere else except China. \* \* Often confused with crocodiles, alligators have broader jaws, are seldom man-eaters \* \* Though fearing man, gators relish dogs, even pursuing them on land \* \* So much do they need heat that gators in a Chicago zoo now have the sand in their cages electrically warmed.

Ash Too Bad! "Poor papa," moaned the office boy. "He's allus in the dumps."

"Oh," sympathized our luscious stenog, Lotta Kerves, "a pessimist, huh?"

"No," wailed the office boy. "A junkman!"

## Stew Auto Be Ashamed.

Seems Stew Pidd had tough luck with his car.

So recently he sent two empty tin cans to the factory with this sweet note attached: "Make me one of your marvelous cars with these."

"Y'oughtn't seen his face when, the next week, a new car was delivered. The note attached read: "What shall we do with the other can?"

## 'I Aim to Be—' by Jack Winder

An aviator.

Why? Because I am most interested in aviation. I have read many books and articles on law, medicine and other careers, but somehow aviation has more appeal. Though I wish to know the mechanics of airplanes, too, I want to really fly in the air and feel as free as a bird.

I first became interested in aviation ten years ago—I was 7 years old, then.

We were living in Fort Worth, Tex. I met the manager of the local airport and became friendly with his son, a boy my age. We spent many hours at the field, and I heard many facts about aviation which I still remember. I used to play in an old "Jenny" near the field and pretend I was flying.

From Fort Worth my family moved to California. There I visited large airports, saw air races and watched Army and Navy air maneuvers. I learned all the types of Army planes and the part each played. I also visited an aviation school and learned much of airplane construction. Meanwhile, I

read as many books on aviation as I could get hold of. I have studied navigation, meteorology and learned of other fliers' experiences by reading.

I have visited every airport within 200 miles of Washington, D. C. where I now live at 7215 B-air road northwest. I always ask all the questions I can think of about aviation of people who know the answers. Men in aviation, I have found, are more than willing to tell you all they know about a topic.

I am now trying to get an appointment to West Point. From here I hope to go to the Army Training School at Randolph Field, San Antonio, Tex. I keep in mind the success of such men as Lindy, Byrd, Post and Merrill as a goal to achieve.

## 30,000 Mice Never Fed Cheese

### Woman Breeds Rodents of Every Color for Show.

Thirty thousand mice—but not a crumb of cheese. The mice belong to Mrs. E. D. Blowers, owner of an English mouse "farm." And Mrs. Blowers absolutely will not feed them cheese.

"It's very bad for them," she explains. "It gives them spots." Mrs. Blowers raises only plain-coated mice at her farm.

"I have mice of nearly every color—red, black, white, blue, silver, chocolate, to name a few. I feed them oats, special mouse foods and milk. Some of my mice are valued at 150 pounds—about \$750.

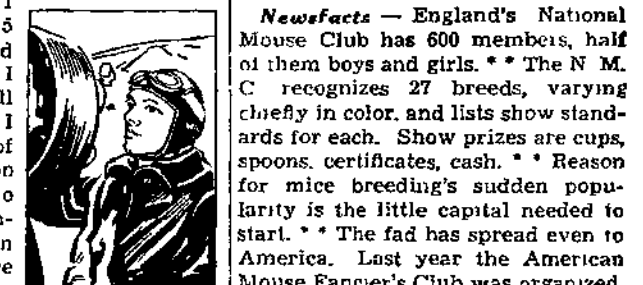
"The farm is a colony of sheds, each shed stacked high with cages. At feeding time there is a noise like rain as the mice scramble at the wires of their cages." The farm is at Wood Lane End, Hemel Hempstead, Hertfordshire.

Newsfacts—England's National Mouse Club has 600 members, half of them boys and girls. \* \* The N. M. C. recognizes 27 breeds, varying chiefly in color, and lists show standards for each. Show prizes are cups, spoons, certificates, cash. \* \* Reason for mice breeding's sudden popularity is the little capital needed to America. Last year the American Mouse fancier's Club was organized, made plans for shows.

Barberous. For some moments the two small boys had watched the barber sing a customer's hair. "What'd you suppose he's doin'?" one asked finally. "Don't be so dumb," answered the other. "He's lookin' for 'em with a light."



Jack Winder.



Editor's Note: This is another in a series of articles by individual Paradees on future careers. Succeeding ones on different careers will follow weekly. These are written, not by oldsters who have already "arrived," but by boys and girls who are now in the process of "heaving out careers."