In this issue:

PRINTED CIRCUIT REPAIR
MEN WHO MAKE AMERICA GREAT
BOOK SHOP

Here are useful additions to your library of technical material. This department will regularly offer suggestions for new books you may wish to acquire. Any reference books, whether or not here listed, photographic or otherwise, will be located for you and may be purchased through the NCRS Supply Department.

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By C. E. Niblette
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PHOTOGRAPHIC LENS MANUAL
Cloth bound
3.50

THE CAMER A CRAFTSMAN

VOLUME 6
NUMBER 3
JULY-AUGUST 1960

The Periodical of Photo Technology for Camera Repairmen

NOTE: NO MAY-JUNE ISSUE PUBLISHED

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THIS MONTH'S COVER

SHUTTERMOUNT and FILM TRACK ASSEMBLY for ARGUS SUPER 75 CAMERA

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Clair H. Schmitt
Editor
Jerry D. Peterson
Assistant Editor
Anne Peck
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Art Director
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A Point to Ponder

By SAMUEL L. LOVE

What symbol of our times is more significant than CHANGE? Thirty years ago, had you stepped on a rusty nail, had a pain in your stomach or broken your arm, you probably would have immediately called the family doctor. One can count on that fine general practitioner to either give you a tetanus shot, remove your appendix or set a splintered bone.

What a change has taken place in these intervening years!

Today, the general practitioner is more of an "internist" or diagnostician. He would not likely call on the same surgeon for a tonsillectomy as he would for a gall bladder removal. One radiologist might make the X-rays of a broken bone or the site of ulcers, but the anesthesia during the operation would be handled by another expert and either a bone specialist or an abdominal surgeon would do the surgery.

No one questions the fact that we live in an age of specialization. That's a fact, regardless of the field being discussed - be it space medicine or missile instrumentation. There is little question, either, about how this has evolved. The sum of many factors is responsible. For instance - volume begets specialization. When enough automobiles are being built, there is no doubt about the efficiency of training a left-rear-fender "bolt'er on'er." Speed can be improved with experience; repeating the same operation or thinking daily.

As overall knowledge grows, specialization becomes vital. With a continuing increase in information about a particular subject, the time soon arrives when no one person can cope with all the facts available.

There are advantages and disadvantages to specialization, of course. For example, a production-line assembler capable of mounting left-rear wheels at a fantastic rate might require months to build up the same speed when mounting right-hand wheels! Nevertheless, a new mechanical operation can be learned, with relative ease, given time and practice at the job. On the other hand, a top-notch pediatrician might never have reached the same standing had he chosen to specialize in brain surgery.

Cont. page 4
NEW FEATURES

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Point to Ponder cont. from page 3

But observe this important difference: anyone with dexterity and mechanical ability can be taught to bolt cylinder heads in place and given enough practice and experience, be expected to do it at great speed. One needn’t know the function of the accelerator pump in order to mount a cylinder head in 23 seconds. On the other hand, you might be somewhat skeptical of a surgeon about to perform a lobectomy were he to greet a question about the thyroid gland with a blank stare.

It is quite evident that the more complex the field, the more important it is that the specialist doing the work be also capable of being a general practitioner!

Concentrate on being a camera repair “internist” - be a diagnostician. Then, with the passage of time and with the rise of a need, it will be possible to specialize intelligently. You must be aware of the broad field before you can properly pick a small area in which your own skills and interests will be used with the greatest reward.

Certainly a camera repairman does not need the years of study, training and experience that is required of a doctor. Granted that his skills and knowledge fall somewhere between the extremes of complexity that have been described. But camera repair is non-the-less affected by the idea of specialization. Today, camera repair is a growing field. Because of the increase in volume, knowledge, information and complexity, the age of specialization in photographic technology is inevitable. And, it is just as important for a phototechnologist to be a general practitioner before he can specialize as it is that a doctor be an intern before he can be a dermatologist.

Is there any doubt that camera repair will pass through the same changes that have been and will take place in other services? The small trading area - medium sized towns and communities - will always be able to support a “general practitioner.” In larger communities, the circumstances that lead to specialization will develop partnerships or even teams of specialists who will work together to fulfill a common good. Isn’t it logical that an optical specialist, an electronics specialist (even a sound or flash specialist), a shutter and/or wind mechanism specialist plus perhaps a “Gizzmo 35” specialist will be part of a team that, together, can handle all the work more efficiently than can an all-around craftsman working in his one-man shop?

Yes, today camera repair is in its adolescence. As individuals, we are all adolescents in our field. Now is the time to learn to be good adults.
As you know, the 1960 Winter Olympics were held in Squaw Valley just 80 miles from here and the camera repair shop where I am working was selected to do the camera repair. The work kept all of us just snowed under night and day. It took us a month to get back to normal. I might add that I am the only National Camera student working in this shop and the training that I have received so far from the School cannot be measured in dollars and cents.

I went to work in this shop to gain a little experience from what I have learned from my lessons and the first thing I knew I was working right along with the best of the repairmen with 10 or 12 experience in camera repair work.

The Motion Analyzer was an answer from above. I sure saved time and money up at the Pics. I am counting on buying another Analyzer at a later date if business continues like it is right now it's getting to be quite a hassle to use the one that I have.

John F. Newton
Sacramento, Cali

I thought some of your other readers might be interested in what I do with the Camera Guide. I cut out the informative articles like the Zenza Bronica, which incidentally I am using as a guide on a current job, and I will use the one that I have.

Jan S. Paul
Bakersfield, Cali

I just thought I'd drop you a line and know that my repair business is steadily increasing all of the time. I have four accounts keeping me well supplied with work. I don't advertise or try to get any more accounts at the present time because I would not be able to handle it all.

Jerry E. Guyton
Reno, Nevada
At a year ago, Mr. Martin Shedd of Eugene, sent us a story about a collimator he con-
ducted. Since Camera Craftsman readers are in-
terested in original design projects, these items
were considered for publication.

Recently, Mr. Shedd has been working with the
problem of light distribution when making photo-
copies. He solved the problem with an
original project.

The result of his efforts is this copying light
which projects into the area where the camera is
mounted so the camera can be set on the front surface with no interference
from the light source. The interior is painted flat
white and illumination is provided by four West-
D 75-watt "EYE SAVING" lamps (Ini-
50) mounted, one in each corner.

A reflecting frame is weight balanced for ver-
satility with relation to the camera open-
ning and is shown reversed for handling
negatives. The other side of the frame is
mounted with an SVE slide holder for production
smothes from positive slides. This is held in
position about 2-1/2" forward from a ground glass
plate and uses a strobe light operated from the shut-
sers. The light stand is 18-1/2" square x
7-1/2" deep. The lens opening is 7-1/2" square.

It is entirely portable and Mr. Shedd reports
it adapts itself to setting up in almost any
location.
do the very
best I know how-
the very best
I can; and I
mean to keep doing
so...

Elected in business '31
Defeated for Legislature '32
Again failed in business '33
Elected to Legislature '34
Nervous breakdown '35
Had nervous breakdown '36
Defeated for Speaker '38
Defeated for Elector '40
Defeated for Congress '43
Elected to Congress '46
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THE CAMERA CRAFTSMAN JULY-AUGUST 1960 7
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3/8 oz. bottle $0.75

BILL McHENRY SHOWS OFF HIS ANALYZER

NCRS student Bill McHenry recently had a chance to make a new acquaintance and demonstrate his ServiShops Analyzer to Mr. Walter Meck, camera repairman at the Signal Maintenance Shop in Walter Reed Army Medical Center in Washington, D.C.

Mr. McHenry works in the Operations Research Office of the Johns Hopkins University. He received a telephone call from Mr. Meck who noticed Bill's picture in the Camera Craftsman and wanted to know if he knew anything about the Motion Analyzer. Mr. Meck said he inquired about it from NCRS and would appreciate the opportunity to see the instrument.

The photo shows Bill and Mr. Meck when they got together at Bill's office at the University. Bill is using the Analyzer for a typical shutter speed test. Mr. Meck was evidently favorably impressed with the performance because he said he is looking forward to one of his own for his shop at Walter Reed.

A man paid a dollar to a miser for a look at his money. He stared at the piles of gold, then said, "Now I am as rich as you. All the fun you get from your money is looking at it. You don't spend it or use it. Of its real or intrinsic value you're really not aware."

J. Gustav White
"Are We Aware?"
Toastmaster, 12/59
study shots
HERE IS WHERE NCRS STUDENTS LEARN

These are pictures of students in the shops they have set up for their training in camera repair.

H. E. Howell
Shafter, California

Henry Bruins
Brandon, Wisconsin

Curtis C. Matzke
Madison, Wisconsin

John Korovilas
Fraser, Michigan

Gary K. Kobayashi
Honolulu, Hawaii

K. K. Johnson
Bellingham, Washington

Charles W. Hughes
San Francisco, California

Robert Johnson
Grand Rapids, Michigan

Henry Weisenburger

Sherwood Holland
Lincoln Park, Michigan

THE CAMERA CRAFTSMAN JULY-AUGUST 1960
Definitions

eutectic - lowest point at which solder combination will melt.
dip side of the printed circuit chassis is that side which has been dipped into the soldering pot; circuit conductors and eyelets are coated with solder.
The component-side conductors have the original solder-plated surface and the eyelets on this side are coated with solder which has risen up through the eyelet during dip soldering.
The eyelet pad is that circular portion of conductor which surrounds each eyelet.

This is the first in a series of three articles which will appear in the Camera Craftsman about the repair of printed circuits as developed by DuMont - a pioneer in the field. In this issue is the history of the development of printed wiring. Next issue will continue with a discussion of repair problems that arose with the printed circuits system and the manufacturers' concern with field maintenance and the final article will continue with the perfected procedure for repairing printed wiring.

These articles are the result of extensive research and experimentation in the field of printed wiring manufacture and repair by DuMont.

ORIGINAL METHOD

One of the first basic systems employed in printed wiring is commonly called "Pin Type Printed Wiring." In essence, through connections between the front and back of the printed wiring panels were made by brass bead chain pins similar to the part illustrated in Figure 1. These pins and the surfaces of the printed wiring conductors were solder coated.

In the process of assembly, the pins were staked into the board as shown in Figure 1 in a manner very similar to that employed in eyeletting. Components were loaded on to the board on the side opposite to the pin extension with leads inserted into the pins and generally protruding slightly beyond the end of the pin. With loading complete, the boards were fluxed and dipped into a solder pot operating at a relatively high temperature (550 F) with control of immersion set so that the ends of the pins entered the solder pot to within 1/8" of the bottom board surface. The board itself was never in contact with the melted solder. The purpose of this method of solder dipping was to avoid possible damage to the phenolic board or to the printed wiring bond by the high temperature involved. An additional intent was to keep the components themselves from high temperature exposure.

PROBLEMS ENCOUNTERED

Since the only fresh solder brought to the interfaces of the pin and printed wiring conductors was

Cont. page 11
that brought to the top side by capillary action through the center of the pin (an uncertain method at best), the condition of the solder coated surfaces of both pin and board was of exceptional importance. Absolute cleanliness was essential, and it was necessary that solder composition be controlled accurately and as close to the eutectic as possible in order to maintain the lowest practical melting point. This requirement was imposed because all heat brought to these junctions had to be carried through the pin which, being of brass, was a relatively poor conductor.

As a matter of interest, the problem of heat conduction is one of the basic weaknesses of this system. Too little heat results in lack of fusion in the solder connections; too much is likely to damage the lower surface of the board and the tolerance range between these two extremes is far too narrow. As a result, manufacturing control is extremely difficult.

In addition to the difficulty in producing good joints was added the subsequent difficulty in determining whether or not these joints were satisfactory. Inspection by visual means could only be carried out, with any degree of certainty, by microscopic examination.

Cont. page 18
Harry Ashley

MEN Who Make America Great

We hear it quite often these days.
"Keep your head down. Don't offer ideas on how to do a better job. Come in from 9-5 and that's all that's expected of you. Play it safe. After all, the chances for a young man succeeding in business these days are so slim that the smart thing to do is just take it easy and wait for your pension."

Harry R. Ashley is president of the Electronic Instrument Company (EICO) which produces a wide variety of electronic equipment in kit form, all of which, incidentally, are available from your NCRS Supply Department! He has one answer to this advice: "Not so!"

"Since the time of the Continental Congress, there have always been some people who say that the doors of opportunity are shut here in America, that young people are doomed to a life of deadly routing -- doing some unimportant menial jobs all their lives. That's nonsense. There is as much opportunity for young people today as there ever was. Probably more, what with the pushing back of the frontiers of space. I think we are on the verge of an age of discovery not equaled since the time of Columbus. And success is waiting there for the young man or woman willing to dedicate himself to hard work."

Harry Ashley knows whereof he speaks. He combined a brilliant idea and a back-breaking capacity for work into one of the most successful firms to arrive on the American scene in the past decade.

From a 10 x 20 foot store in Brooklyn, the Electronic Instrument Company has grown in the past 15 years to the point where its office now occupies over an acre of space (and they need more). Over 2 million electronic products (marketed under the trade name of EICO) are now in use throughout the free world.

Ashley's idea was electronics in kit form. Roughly, these are professional disassembled electronic units which any ordinary layman can put together himself, without previous experience.

His first product manufactured in the Brooklyn store was a Vacuum Tube Volt Meter used by radio-electronics repair men to check out voltages, currents and resistances in circuits. Since then he has produced, in kit and wired form, high fidelity equipment, transistor radios, citizen band radios and amateur gear.

Harry R. Ashley's greatest pleasure is in meeting a challenge. Rather than go into something "safe" he seeks the difficult -- if not the impossible -- to conquer.

Before he started EICO, he was one of the early pioneers in the country to write aircraft insurance. Always interested in flying, he took the most direct way possible to collect premiums. He flew his own plane up and down the Northeast Coast "puddle hopping" from airport to airport.

It was during World War II when he first realized that electronics had a market. He started the preliminary work and then in 1945 he began the Electronic Instrument Company.

By selling a product which the buyer puts together, Ashley accepted his greatest challenge.

"When people build your equipment themselves, they know the "insides" as well as you. There is no fooling them. You have to give them top quality," Ashley maintains a close watch on his products to be sure they measure up to the EICO name. "Our reputation for quality is too important for us to treat it lightly. You can't design an electronic kit and then worry about the layman's
ability to put it together right. The design has to be engineered so that the kit will be put together easily and put together right."

Needless to say, only the best material can be put into a kit and production is carefully checked to insure that each item leaving the factory is free of defects.

One of the aides of his competitor has said: "I think Ashley, more than anyone else, has brought 'respectability' to the kit field. He came into the field when there was doubt about the reliability of a kit and almost singlehandedly he raised its reputation so that now most people are sure that they will be getting extra value by buying a kit."

Brooklyn-born Harry Ashley looks like a college fullback with a moustache. Though only 47, his tanned unlined face and solid muscular body make him look years younger: "Mr. Ashley is the boss," one of his workers said, "but still he's a heck of a nice guy." Ashley has a quiet, friendly voice which puts a person at ease almost immediately. He also makes it a point to listen to anyone who wants to talk to him. "Sure, there are some cranks who take up time, but there are also a lot of other people who really have something to contribute." One of his favorite expressions is: "You never know where you are going to get an idea from."

Married for the past 22 years to an attractive blonde-haired woman, Ashley is the father of 3 young girls. He credits his wife with much of his success.

"When I started EICO, she kept us eating by continuing the airplane business till we got going with EICO."

When not hopping about the country visiting jobbers, Ashley drives to work in an old Chevvy. (Once asked why he didn't have a chauffeur, he looked at his questioner quizzically and said: "Why? I have a driver's license."). His major relaxation: you guessed it -- building kits. To date, he has outfitted his Long Island home with a complete stereo system, a "ham" rig, and a citizen's band radio. "It's really a lot of fun working with kits. It gives you a creative feeling to know that you've done it yourself." When he puts down the soldering iron, he relaxes on his boat fishing ("cut above a tyro"). He also uses his boat -- the "Miss EICO II" as a floating laboratory in which to test out new EICO electronic products like Citizens Band Transceivers, amateur radio equipment, etc.

Harry Ashley started working at the age of 15 for $10 a week as a hangar boy at an airport in New York. Now, 32 years later, he often reflects on what has happened to him in those years.

"You know," he says, leaning back in his chair, "everybody hears things like 'work hard', 'do your best in everything you do' and all those other cliches and they all nod their heads and say 'yes, that's true.' But I really think that the difference between a successful person and one who didn't quite make it is that these are more than just generalities with which we should agree. They actually have to be done. You have to sometimes work 12 or 14 hours a day if you want to succeed. You have to use your ingenuity to overcome situations before they overcome you."

As an example, Ashley tells the story about his first trip to Chicago to sell his electronic kits. It was shortly after the war, in 1947 -- and new cars still hadn't been produced in quantity. The only thing on wheels which he could buy was an old taxi cab. He loaded the cab with some of his products, kissed his wife goodbye and took off in a cloud of dust. He got as far as the corner before the car conked out.

Standing there on a cold winter night with the success of his business riding -- or not riding -- on an old taxi cab, he did the only thing there was to do. He took off his coat, opened the hood and started working. Three hours and a fixed carburetor later, he was on his way. He got to Chicago without any other trouble and closed one of the largest sales he ever made.

What of a look into the future for Harry Ashley and EICO?

"With the emphasis being placed on science, more and more young people will be attracted by the electronics field. I think we are on the threshold of a great and expanding America. No longer will we be limited as to what we can do. For those who cry that the future is dim, I can only say wait and see. There is a future for us which will far out-run the best of today. The changes in the past decade will be dwarfed by the changes yet to come."

And you can be sure that Harry Ashley, pipe in mouth and jacket off, will be peering over plans of some future EICO product to guarantee that "the best will be none too good, God willing."
**BOOK REVIEW**

In each issue of the Camera Craftsman, we'll try to review a classic or new text that is of value to camera repairmen. If you have some particular book which you'd like to see here, please ask for it.

How to Service Tape Recorders, by C. A. Tuthill explains the basic principles of magnetic recording as well as presenting practical service information on many popular tape machines. The theoretical discussion in the first three chapters has been kept free of involved mathematics in an attempt to present a simple but adequate account of magnetic recording principles and applications. Many graphs and simplified illustrations help to further clarify the material.

Tape recording mechanisms are discussed in Chapter 4, while the electronic requirements of tape recorders and their accessories are described in Chapter 5. In both chapters a number of widely differing commercial recorders are discussed in detail.

Chapter 6 supplements the practical and mechanical information presented in Chapters 4 and 5 with detailed maintenance and repair data on a number of popular tape-recording machines. Chapter 6 also gives a logical step-by-step procedure for systematic troubleshooting and repair of tape recorders, using representative models to show frequently occurring troubles and preventive maintenance requirements.

As well as being an convenient reference manual for servicemen, the book also proves useful to the layman interested in the principles, operation, and maintenance of magnetic tape-recording machines. In addition, the appendix lists technical information and features of a wide cross-section of commercial recorders and tapes.

A thorough study of this text with its many charts and pictures should enable you to tackle just about any recorder that needs repair. We think you'll like the book.

Soft Cover, 160 pp., 5-1/2 x 8-1/2, $2.90

All books reviewed are available from the National Camera ServiShops Supply, Box 174CC, Englewood, Colorado

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**YOUR VOTE ISN'T ENOUGH!**

Your candidate needs more than your vote to get elected! He needs your money and time too. Contribute a "buck" and offer your help at your local campaign headquarters - they'll welcome you with open arms.

If you're willing to let George do it, don't gripe about the candidate he elects!
What type of instrument is needed to check light meters?

Edward J. Findaley

Here is a way to make an inexpensive master light source that can be used for routine checking of light meters. Build a small box to contain a standard incandescent light bulb socket, with one end covered with opal or ground glass to give an even distribution of light. Obtain several light meters that are known to be operating correctly and check the reading of each meter as it is held close to the ground glass with various wattage bulbs. Select a bulb size that will give an average light value reading on the meters. The readings may vary from meter to meter but with 6 or more meters a good average light intensity can be obtained. This can be a master light source to use in checking other meters. The amount of light may vary from time to time and the reading should be checked with a good meter periodically. A rheostat installed in the light bulb circuit will allow variations in the light source to be corrected and/or various settings can be calibrated to produce varied amount or light in order to check meters at more than one reading. The problem of course is in having a definite standard with which to calibrate the light source. The ServiShops Motion Analyzer offers a very good standard that can be used in checking a master light source of this kind. There are instruments made specifically for testing light meters that are available from the ServiShops Supply.

How do I remove the wind lever from a Contina camera?

N. F. Lundstrom

To remove the wind lever from the Contina cameras the shutter release button must be removed. This button is threaded with a right hand thread. Some means of unscrewing the button must be used that will not damage the chrome plated surface. If a collet is available in the proper size this is usually the best method. Once the release button is removed you should be able to make the rest of the disassembly with little trouble.

Cont'd. page 22
This colorful sign will tell your customers that you want their camera repair work. The sign is done in eye-catching yellow, blue and black on white background. The size is 11” by 14”.

A sign for every purpose. Standard heavy board, standard heavy board with easel, and paper that can be taped to any window.

Price each in quantity

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What’s everyone been up to anyway? You’ve all been so busy, keeping us busy, that you haven’t clued us in on all the happenings lately. See how ya are?

You know Bill Caldwell don’t you? He’s our Supply Dept. Manager. Well, he finally said the vows a few weeks back, after being a confirmed bachelor, and mercy me is that boy getting hefty. This is real fine and he is looking good. His wife should be complimented cause he is a very particular eater.

Had a few students here recently too. I thought I drank a lot of coffee, you should have seen them! Let’s see now – Calvin Fehrenbach from New York, W. T. Tate, New Mexico, Ray Moxham, Ohio, Jim McGovern, Washington, C. L. (Lyn) Wilson, Texas, Newton Armstrong, New Jersey, Donald Clark, Connecticut, Bill Glasgow, Arizona and Howard Kootz from Ohio. Really a grand bunch of characters. Incidentally, Ray Moxham has received fine recognition for his accomplishments in completing his camera repair training. Ray is working for the Vanadium Corporation of America in the Central Engineering Department at Cambridge as a Professional Engineer. He started the course chiefly as a hobby with the idea of converting it to a full time activity at a later date.

When they heard about what he was doing, they wrote an article about him and published his picture in the Vancoram Vista, the company’s quarterly magazine. They said “We think he’s quite prudent.” We agree.

I bet you didn’t know we have a real war hero here at NCRS! I didn’t either till the other day. I can’t mention his name, he’s too modest about the whole thing. He puts his time in in the Advertising Dept. though. It was all I could do to get him to let me tell of his experience in the U.S. Marines. Everyone around here became interested the other day when he referred to his old war wounds – seems he fell on a fork one day while waiting in chow line. Must be great to have led such an exciting and dangerous life.

I’d better go now while the getting is good. The more I write the more trouble I’m gonna get into. See ya later

Delphine
Our Students Speak

The lesson on "Development of the Escape-ment Retard Shutter" I found very interesting. All in all, this lesson was simple for me, and well understood. One more step in my learning to be a Camera Craftsman.

Jimmie L. Luth
Visalia, California

I have learned a lot from your School which helped me in my work as an Army photographer. I think the lessons were well presented.

Ralph E. Harvey
Torrance, California

Funny thing about this course. Instead of palling on you, it seems to get more interesting as you go along. I'm anxious to get some of the coming lessons. They sure look interesting.

Eric A. Petri
Winnipeg, Man. Canada

Dear Mr. Love:

Congratulations on your book "The ABC's of Camera Repair." I find it very helpful and valuable in my studies and I am quite sure that as time goes on it will be even more valuable in my camera repair business.

Floyd M. Poor
Miami, Florida

The course is very interesting and well prepared. In addition, the instructor's comments on my test papers have been most enlightening and to the point.

Bob Cooper
East Syracuse, New York

Since completing the course, I have been spending an hour or more on each lesson in review and I am amazed how much I have learned or refreshed in my memory in the process. This review would be very profitable to every student who graduates.

G. L. Wilson
Mercedes, Texas
THESE WRENCHES are very effective tools for removing Lens and Retaining Rings that do not have built-in Spanner Slots. You will not mar fine finishes or damage delicate lens mounts when you have a set of these wrenches in your kit. Available for any size diameter job.

SIZES IN STOCK to fit:
- EASTMAN KODAK LENS CELLS
- POLAROID LENS CELLS
- LEICA View and Rangefinder caps

OTHER sizes available on request. PLEASE state size or purpose required when ordering.

Popular sizes: 7/16, 1/2, 21/32, 3/4, 1-1/8, 1-1/4, 1-1/2, 1-3/4

George Bernard Shaw was once reported to have said his words were worth a dollar apiece. Hearing this, someone wrote him a letter saying "I have heard that your words are worth a dollar apiece. Here is a dollar. Would you please send me one of your words?"

Shaw replied with a one word answer, "Thanks!"
Kits
Kits
Kits

You’ve asked for them and here they are!

* RIVET ASSORTMENT .......................... $7.50

* WIND ASSEMBLY ASSORTMENTS
  For Box Camera .................................. $6.95
  For Popular Priced Folding Camera .......... $6.95

* SYNCH INSTALLATION KITS
  External (Connectors, Insulators, etc.) .... $9.75
  Internal (Replacement Parts,
  contact material, etc.) ..................... $15.50

* SHUTTER BLADE ASSORTMENT ............... $6.95

FLASHCORD ASSORTMENT (6 cords) .......... $9.90

SPRING WIRE KIT
  3' each of sizes .011, .012, .018,
  .020, .022
  6' each of sizes .040 and .050 .......... $1.00

  METRIC SCREW ASSORTMENT
  (400 pieces) .................................. $7.50

  MIRROR ASSORTMENT (6) ..................... $5.95

1/4 PRICE! YOUR TRANS-RAK, SHOWN ABOVE,
COSTS YOU ONLY $1.00 WITH ANY ServiShops
KIT ORDER TOTALING $20.00 OR MORE.

THE CAMERA CRAFTSMAN JULY-AUGUST 1960 19
STUDENT MODIFIES MOTION ANALYZER

William B. Pomeroy of Traverse City, Michigan, built a special lamp and photo tube stand for his Motion Analyzer. By using a steel rod for support, he is able to clamp the stand either in the regular position or at a 90 degree angle. He reports that he finds this convenient for checking movie cameras and projectors.

REPAIRMAN NEEDS HELP

Mr. R. T. Kanemori, in Hilo, Hawaii, had ten years hard work wiped out in minutes. His camera business was completely destroyed, building and all, by the tidal wave which struck Hilo in May. He lost his inventory, records, and all his repair tools, none of which were insured.

Mr. Kanemori has appealed to National Camera for help in supplying him with used tools so he might be able, at least, to continue his camera repair business until he could start his complete business again. We promised to help him and pass his appeal on to you. If you have any surplus tools he could use, contact Mr. R. T. Kanemori, Modern Camera Center, 476 Kamehameha Avenue, Hilo Hawaii.

It would be an understatement to say he would appreciate any help you could offer.

The rental bill just for storing our surplus wheat has now hit the $1 million per day point. Your individual share of the 1,234,603,803 bushel surplus... seven bushels... enough for 470 loaves of bread... more than the average person eats in 4 years! That's certainly plenty of food for the thought that should be given to this situation which grows worse every day.
I assume the enclosed lesson sheet is the last one of the course so now you can send me a diploma and get me out of your hair. I appreciate the patience and courtesy that the School has extended to me and if it had not been for unavoidable circumstances I would have finished long ago. Even though I have stretched the course over a considerable period of time, a great deal of the information in the lessons has been retained, due to their excellence. I have been offered three jobs, at different times, as a full fledged repairman, and have made a good name for myself locally as an honest, conscientious and reliable repairman.

Mark D. Furtado
San Lorenzo, Calif.

I received the first shipment of lessons yesterday and am real pleased. The contents were in fine condition and all intact. In spite of the fact that the shipping carton looked as if the Chicago Bears had used it in their last game as a football.

C. Don Crowder
Peoria Heights, Illinois

This course becomes more and more interesting with each lesson I receive, and find it very educational with the completion of each lesson and always look forward to receiving my graded lessons and the lesson units. This course has also added considerable knowledge to me on my pet subject, photography.

Jim Luth
Visalia, California

This lesson about winds up my camera repair course and I sort of regret that I am finishing. I look forward to the supervised instruction I will receive when I visit the School again. I wish to thank all members of your staff for their fine cooperation and understanding.

D. F. Reed
Skokie, Illinois
### Lindstrom Pliers

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### ServiShops

One of my dealer customers, in another town, has owed me a repair bill for several months. I just received another repair from him but I don't want to do it without getting paid. Is there any way that I can collect from him. It is just a small amount and I don't want to turn it over to a collection agency because he might get mad and not send me any more work.

L.C.V.

No matter what you do you may cause some hard feelings but you might try this. Call, or write to him and explain that you can't add the cost of the present job to his account unless he pays the past due amount. This may do the trick, or if he still does not send a check, complete the repair you have and then ship the camera to him parcel post, C.O.D. for the full amount that he owes. This way he can't get the camera you have for his customer without paying the bill. Then of course his account should be on a C.O.D. basis until he can come to some agreement about paying his account on time.

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"Friendship," Woodrow Wilson once said, "is the only cement that will ever hold the world together."

Highways of Happiness.