

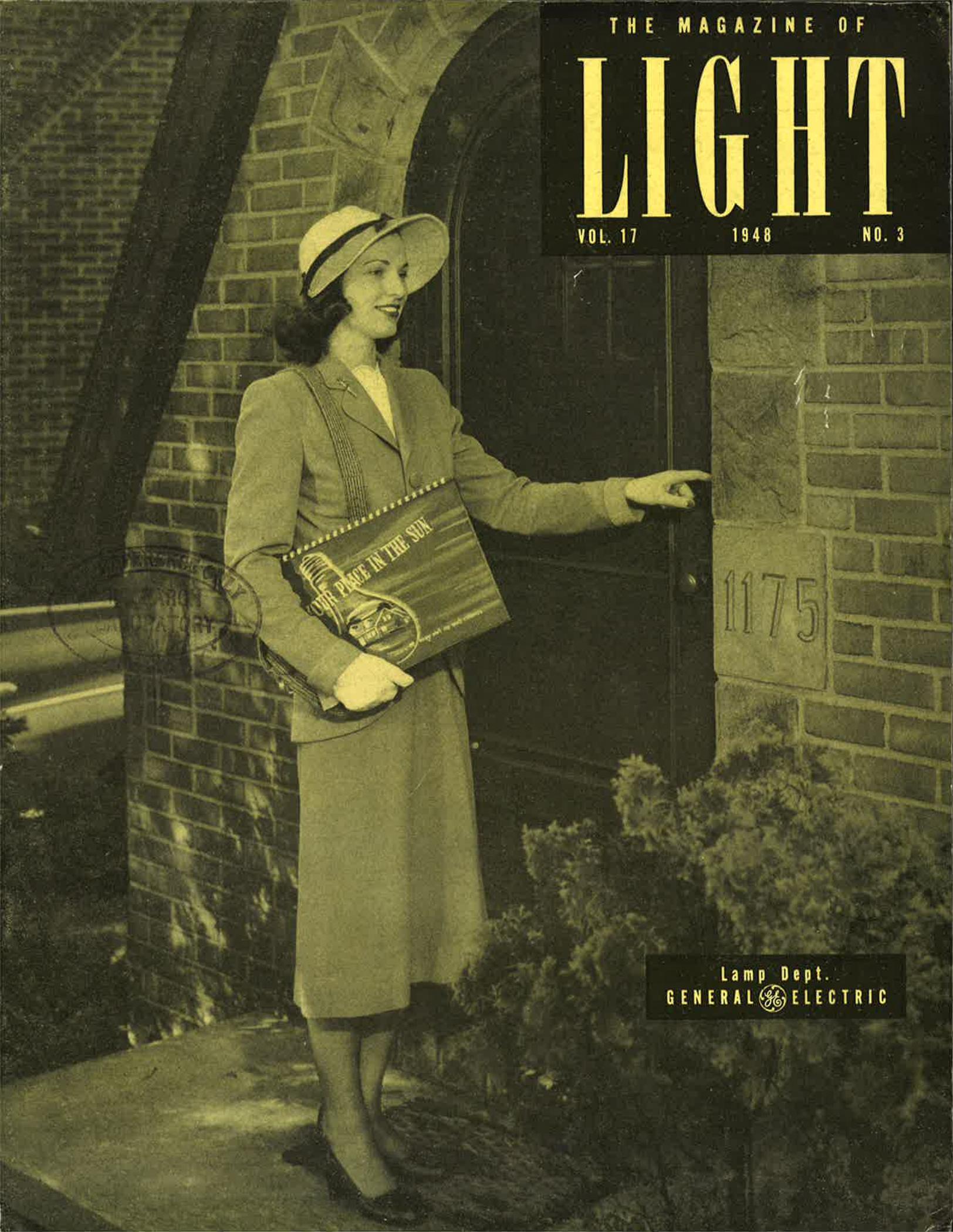
THE MAGAZINE OF

LIGHT

VOL. 17

1948

NO. 3



Lamp Dept.
GENERAL  ELECTRIC

IN THIS ISSUE

The years of residential lighting development work carried on at Nela Park and through utility companies throughout the country are beginning to pay off. The objective has always been to inspire the user as to the many possibilities, without attempting to dictate a "one and only" lighting method which would ban any original thinking or application on the part of the homemaker herself.

That the seeds of inspiration have been well sown is evident in the article "Sunshine Home" starting on page 5. This is the story in detail of one homemaker's version of re-lighting in conjunction with redecorating her home.

The article treats the matter of cost frankly. Too often the homemaker spends a large amount on redecorating and nothing on new lighting to make the decorating "live."

Mrs. Green, whose home is featured in our story, is the first to point out that, had the lighting remained as it was, the new lovely colors of her furnishings would have faded into the dim background.

Although there will be great numbers of "Sunshine Homes" throughout the country, no two need be exactly alike. Each will be different because each homemaker will want her own interpretation. Light is hers to paint with and to achieve her very own "Sunshine Home."

The Residential Lighting Committee of the Edison Electric Institute is studying the possibility of a national Sunshine Home activity. Several utilities already have agreed to encourage examples of Sunshine Homes in their territories.

THE MAGAZINE OF

LIGHT

Vol. XVII

1948 — No. 3

Editor

L. W. O'Brien

Editorial board

{ Willard C. Brown
W. H. Robinson, Jr.

CONTENTS

NEWS PAGES	3-4
SUNSHINE HOME	5-15
By Margaret L. Uhl	
BRINGING THE SUN INDOORS TO HELP THE PHOTOGRAPHER	16-17
By Earl Lee Auld	
RELIGHTING A SMALL APARTMENT	18-19
By Mary E. Webber	
SMALL NEW HOMES— BIG FLUORESCENT MARKET	20
BACK AGAIN—SILVERED BOWL HOME LIGHTING EQUIPMENT	21-22
By C. E. Weitz	

Published by the Lamp Department of the General Electric Company at Nela Park, Cleveland, Ohio in the interest of the progress of sound lighting practice. Distribution through General Electric Lamp Department District Sales Offices. Copyright 1948 by the General Electric Co.



COVER PHOTO. A ring of the doorbell turned on the light for Mrs. Green. See story starting on page 5.

DR. WARD HARRISON RESIGNS; W. C. BROWN HEADS ENGINEERING

Dr. Ward Harrison, international authority on lighting, and director of engineering for General Electric's Lamp Department at Nela Park, resigned his position September 1 at age 60, under the provisions of the company's pension plan. Dr. Harrison has been with the Lamp Department for 39 years.

He is succeeded by Willard C. Brown, who during his 28 years with the company has headed its activities in many fields, and has become widely known throughout the electrical industry. He has been assistant to Dr. Harrison since 1945.

Dr. Harrison has been a director of the American Coach & Body Company of Cleveland, whose business is principally in the utility field, and as of September 1 he became a consultant for and director of a company manufacturing fixtures. For a time he will carry on a special assignment for the G-E Lamp Department, and also will be associated with the Thompson Electric Company of Cleveland. Dr. Harrison announced he expects to continue active in Illuminating Engineering Society and other engineering society affairs.

Through his work in illumination design, Dr. Harrison has made many contributions to lighting practice in the fields of general illumination and street lighting. He designed the "RLM Standard Reflector," and the "Glass-steel Diffuser," as well as the first Clear-top semi-indirect unit, and the first street lanterns incorporating prismatic refractors. He pioneered with the first continuous-row fluorescent installation in the industrial field. In recent years he has been concentrating on the elimination of objectionable glare in lighting installations.

A Fellow and former president of the I.E.S., Dr. Harrison has held many other offices and committee appointments in that organization. He served two terms as vice president of the Ohio Good Roads Federation, and one as vice president of the Cleveland Engi-

(Continued on page 23)



DR. WARD HARRISON (left) turns over to Willard C. Brown the managership of the Engineering Division of General Electric Company's Lamp Department at Nela Park, Cleveland, Ohio.

NELA SPEAKERS AT PARIS MEETING

DR. HARRISON:

PARIS—The increasingly higher levels of illumination being used in modern lighting systems make necessary the elimination of objectionable glare, the world's lighting authorities attending the annual meeting of the International Commission on Illumination were told here.

Dr. Ward Harrison, director of engineering at General Electric's Lamp Department, Nela Park, Cleveland, Ohio, who presented a paper on "Comfortable Lighting," told the group that 40 footcandles of light today cost no more than 4 footcandles in 1914. As a result, he said, light is being used more liberally.

(Continued on page 23)

DR. LUCKIESH:

PARIS—The ideal brightness-level for best seeing conditions appears to be that of "a green grass lawn at noon on an average day."

This was reported in a scientific paper presented by Dr. Matthew Luckiesh, director of General Electric's Lighting Research Laboratory at Cleveland, Ohio, before the annual meeting of the International Commission on Illumination, held here June 29 to July 7.

Discussing the "Fundamental Concepts Underlying Lighting for Prolonged Critical Seeing," Dr. Luckiesh stressed the importance of brightness in its relation to the task to be done,

(Continued on page 23)

G-E NOW LISTS 5 WHITE FLUORESCENT LAMPS IN ITS STANDARD PRICE SCHEDULE

New Soft White and Warm Tint Increase Range of Application

General Electric now lists five general lighting fluorescent lamps in its Standard Price Schedule—all of which look exactly alike unlighted, but which give five different qualities of white light. This range makes it possible to select fluorescent lamps for any lighting application. The following comments are offered to help you in making recommendations and selections. These, of course, will be subject to wide personal preferences and the effects desired.

4500 White

This color was developed in response to public demand for a color between the daylight fluorescent and the standard white fluorescent lamps. The majority of applications to date have



been in the more modern stores, offices and other interiors with lighting levels of 50 footcandles or more. Under these conditions one color is not accentuated more than another in merchandise and decoration.

* * *

White

"White" (3500°) has been the standard for years for general lighting. Like



4500 white it gives interiors a clean, modern, fresh looking appearance. At present this lamp and the 4500 white comprise over 2/3 of the customer demand.

* * *

Daylight

This is the coolest appearing fluorescent white in the line—one of the reasons why it is so popular in the south



for general use. Regardless of geographical location it is often selected

for industrial lighting where more accurate control of color is desired, comparable to the effect of illumination outdoors.

The three lamps above, 4500 white, white, and daylight, have made possible the modern high level general lighting installations.

* * *

Soft White

This is a new soft white—the latest in fluorescent lamps, developed after years of research. It is particularly



complimentary to the appearance of complexions, rendition of foods, and gives surroundings a pleasant atmosphere.

* * *

Warm Tint

The new G-E warm tint gives the color impression of filament lighting with the modern appearance, economy and high efficiency of fluorescent. It



provides the familiar quality of filament lamps and emphasizes the warmer colors and decorative schemes just as they do.

The new soft white and warm tint, together with 4500 white, white and daylight lamps create new opportunities for lighting installations where fluorescent lamps have not been applied in the past.

FORMER 100-WATT FLUORESCENT LAMP NOW USES 85 WATTS

Electric lighting costs will be reduced for many industrial and commercial concerns as a result of a "major" fluorescent lamp improvement announced by General Electric's Lamp Department.

Consumers who have been employing 100-watt fluorescent lamps henceforth will use about 14 per cent less electricity to supply the same amount of light, according to G-E illuminating engineers.

The saving will be possible as a result of the development of an 85-watt fluorescent lamp which produces the same high light output, maintains the same long life, and has the same over-all dimensions as the 100-watt lamp, engineers said. It will replace the 100-watt size in present lighting installations, they said.

The new 85-watt lamps, because of their greater efficiency, are expected by G-E lighting authorities to result in higher levels of illumination in new installations, and to find even wider use in industrial, commercial, and office lighting applications, than did their predecessors.

Employs Krypton Gas

Engineers said the increased efficiency of the new lamps was a result of the development of a successful method of employing krypton, a rare gas occurring in the air to the extent of about one part in a million, instead of argon as a fluorescent lamp filling gas. They explained that electrons lose only half as much energy in collisions with gas atoms in the case of krypton as they do in the case of the lighter argon, with which fluorescent and germicidal lamps have been filled in the past.

Research is being conducted into the possibility of increasing the efficiency of fluorescent lamps of other sizes through the use of krypton, according to the G-E lighting experts.

If the wattage of the new lamp has been increased to 100, a complete new line of accessory equipment would have been required, and no significant increase in lamp efficiency would have resulted, engineers said.

THIS IS Mrs. Ruth Green, the lady of the house. Now she enjoys her own version of a Sunshine Home because in answering the doorbell she opened the way to a grand new experience.



Sunshine Home

how a ring of the doorbell turned on the Light

By MARGARET L. UHL



MRS. BERNICE SMITH, utility lighting adviser who called upon Mrs. Green.

IT was Mrs. Smith calling to ask if she could talk to Mrs. Green about lighting.

Since Mrs. Bernice Smith was a member of the efficient home lighting staff under Will T. Clark's management at the Electrical League of Cleveland, you can guess the rest that happened. A complete lighting survey was made with rec-

AT RIGHT: F. Bookman, Jr. who made the valances.



ommendations for changing this already charming home into a Sunshine Home. New portable lamps and ceiling fixtures were ordered through Herringshaw's Hardware . . . the retail outlet which was Mrs. Smith's headquarters, as a representative of the Electrical League. Forrest Bookman, Jr., moved in to make valances.

That, in a breath, was what happened to the Green house . . . *literally* not a greenhouse, for no windows were added, but like one because the cheerful atmosphere of sunshine was brought indoors. B.L. (before lighting), the charm of early American furnishings was deftly achieved by Ruth Green's artistic hand. But these possessions which blended so smoothly in daylight needed a lift at night . . . for then they seemed to rest heavily against their background. They begged to be born again.

And as the result of a ring of the doorbell, they came to life, for what gave them daytime freshness, was applied at night . . . Light! Light in quantity, light in decorative form, light in color. Light was the magic that touched these rooms to a new enchantment.

Mrs. Green feels that she has, in effect, a new home, and she was amazed to learn that the transforma-



MRS. GREEN'S HOUSE looks the same from the outside, but a world of difference inside is portrayed on the following pages.

W. W. and W. G. HERRINGSHAW, lamp dealers, sold the lamps, wiring, paint.

tion required only 5994.5 additional connected watts for the whole house. Before Mrs. Smith rang the doorbell, Mrs. Green's lovely home was laboring under the dullness of 3240 watts of unimaginative light. Today the Greenhouse is aglow with 9234.5 watts of nighttime "sunlight."

That ring of the doorbell, rang the bell, too, on the equipment merchants' cash register to the tune of \$759.64. It made usable old equipment whose estimated replacement cost is \$211.50. It sold \$93 worth of G-E Lamp bulbs for a G-E Lamp dealer.

What other expense could so benefit a house and all of its occupants and guests? Lighting is not a unit unto itself . . . like a refrigerator, a dishwasher, or a range . . . usable only for one purpose. Lighting suits every purpose, every room . . . and it benefits all of its surroundings. For the cost of electrical equipment for only one room—the kitchen, the laundry—a whole house can become awakened into a Sunshine Home. How often a homemaker spares no expense in re-decorating her home without a thought of renovating her lighting. She will

get her money's worth out of her decorating dollars only when she lets it shine in light.

For Mrs. Green that ring of the doorbell made a home that was more livable. It gave her eyesight-protecting light which was important since she and her husband are avid readers. The old lighting equipment she had was renovated and put to better use. The new decorating that was done amounted to \$789.93. But it, too, would have faded into the background had the lighting remained the same.



Living Room

BEFORE

Here was lighting equipment that did nothing but supply a few units of light at two necessary spots and look awkward. The end of the room fell away unwanted, even though it had much to offer in potential interest. As it stood—there were two lamps. The one at the desk was a bridge type with diffusing bowl. In it was a 100-watt bulb giving 15 to 20 units of light on the desk area.

Behind the davenport was a floor lamp which, like many in homes today, was doing a poor job of lighting due to the fact that the original diffusing bowl had been broken, and the replacement bowl transmitted far less light than it should. Even with the lamp turned on "high," the person seated beneath it, reading, had less than 20 units of light on his book. And the end of the room with its attractive niche? It just was "also there."



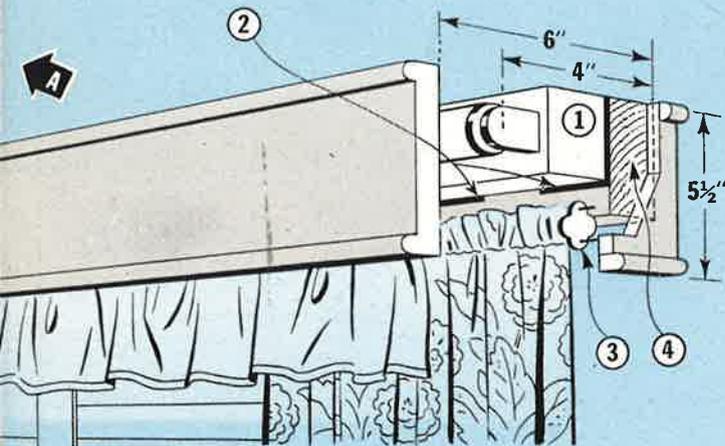
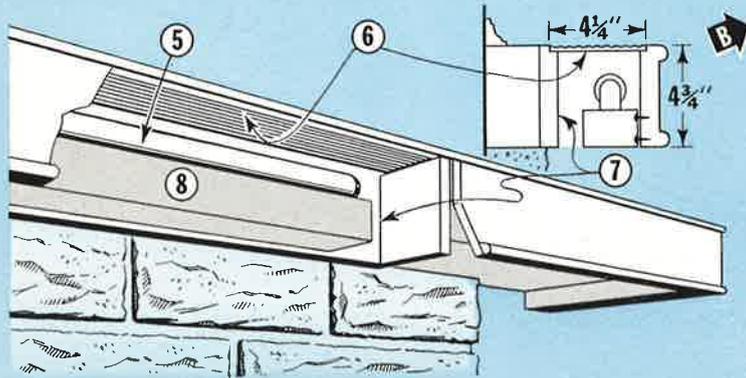
AFTER

On the invitation of the lighted valance the forgotten wall came into the picture. Draperies, books and decorative ornaments were born again under the spell of fluorescent lighting. One 20-watt and two 40-watt fluorescent lamps are used behind the wooden cornice. The fresh "aliveness" of the room is attributable to the clearness of lighting color from the 3500° white fluorescent lamps. Spring herself lives here.

The trimness of a 20-watt fluorescent lamp is added to the desk resulting in over 40 footcandles of shadow-free light on the writing area. Behind the sofa is the newest and most efficient in lighting equipment for the home—a Certified Lamp with a 100-200-300-watt bulb and 32-watt circline. This lamp produces 45 units of light for reading. Lower in height than old style lamps, it is more compatible to the furniture it serves.

BELOW: Details of fireplace lighting:

5. 40-watt fluorescent lamp.
6. Fluted frosted glass.
7. Cavity painted white.
8. Metal channel strip for wiring, ballasts, and radio interference filter.



ABOVE: Details of typical window valance construction in Mrs. Green's Sunshine Home.

1. Channel strip for wiring, ballasts, and radio interference filter.
2. Sponge rubber pads.
3. Curtain fixture fastened to end return.
4. Wood filler strip mounted on plaster.

NOTE: This valance, like the one across the living room window (see page 8) employs one 20- and two 40-watt fluorescent lamps. Both living room valances are approximately 125 inches long.



LIVING ROOM layout.
Light sources indicated in blue.

LIVING ROOM STATISTICS

New Equipment

2 Valances	\$ 84.50
Built-in Mantel	34.00
Built-in desk	6.75
2 Unlighted Valances	12.00
CLM Table Lamp	43.25
CLM Floor Lamp	50.00
CLM Floor Lamp	54.25
G-E Lamp bulbs	12.18
TOTAL NEW LIGHTING COST.	\$296.93

Wattage: Before 840; after 1138*, (298* added)

* Wattage consumed by fluorescent lamp ballasts is included in all room statistics totals.



Living Room (cont'd.)

AFTER

It is light and its glorious effect that brought this part of the living room out of its shell. A valance of the same length as over the niche end of the room extends over the bay window. Mrs. Green plans to change the 3500 degree white lamps to warm tint in the valances as the fall season approaches. A Certified Lamp with polished brass base so suited to the furnishings has taken over on the table. Like the floor model (page 6), it, too, has a reflector bowl, of different proportions, however, under the shade. A 50-100-150-watt bulb together with a circline fluorescent tube make reading a joy in either of the two chairs which have been drawn together in a more cozy formation. About 50 units of light, soft clear lighting that seems to bathe the pages of the book, encourages reading, not sleeping.

The magic of light is in the mantel. A 40-watt fluorescent tube tucked in, with frosted glass on top is the simple trick that puts realism into the artist's brush, a blueness of nature into the painted delphinium. The painting has come into its own!

To the right of the fireplace (see photo on page 7) is a Certified floor lamp, similar in performance to the lamp behind the davenport, described on page 6.



BEFORE

A room that is so filled with color and the charm of an early American atmosphere need not shrink so into its own drab corners as this one did. The little lamp on the table was struggling along to uphold its end in contributing to the decor of the furnishings. But lighting-wise it failed miserably to make either of the chairs beside it usable for an evening's reading. As they were, they were perfect after-dinner napping spots. The little pool of light between them wouldn't bother even an insomnia victim. The lamp behind the love-seat (100-200-300 watts) was of such garden variety that nothing distinguished it for this room alone—it would be as adequate in the recreation room which is exactly where it ended, as you will see.

Dining Room

BEFORE

The dining hour is a restful and relaxing, satisfying and stimulating time. Here the background was set for just such a scene—delightful in its appointments—and lighted with a most appropriate fixture—yet so much more could be done to add glamour. Let's set aside this fixture for use in the dinette.

AFTER

Let the background glow in yellow sunshine. Let *it* direct the feeling of a room, relaxing yet stimulating and above all most satisfying. The room is painted in a yellow mellowness. Centered in the room is a fixture which spots the table in a white light that blends well with the yellow fluorescent light from the valances. Two 40-watt gold fluorescent tubes over the doorway with 20-watt gold fluorescent tubes continuing the sunshine illusion, over the windows. The ceiling fixture is lighted by a 150-watt projector flood lamp, just half the wattage of the former fixture but twice the effect in dramatizing a centerpiece.

DINING ROOM STATISTICS

New Equipment

Ceiling Fixture	\$ 17.00
3 Valances	62.80
G-E Lamp bulbs	6.25

TOTAL NEW LIGHTING COST. . . . \$ 86.05

Wattage: Before 150; after 294.5; (144.5 added)



Dinette

Dinette Statistics

New Equipment

G-E Lamp bulb \$ 0.55

TOTAL NEW LIGHTING

COST \$ 0.55

Wattage: Before 100; after 300; (200 added)

BEFORE (Photo at left)

A most "fittin'" fixture in its day and in its right place, but neither of those is now or here. The glare it gave made diners want to wear bookkeeper's shields.

AFTER (Photo below)

The dining room fixture (see "before" photo on page 9) stripped of its crystal glitter and painted a deep red to match the curtains finds its perfect setting in the dinette. The three lite bulb being in a larger bowl and surrounded by a wider, deeper shade, makes the lighting soft and more pleasing. The 50 units of light that it gives on the table have made the dinette a place for the family to fight over even *after* eating hours. Mother likes it for cutting out patterns and copying recipes, the kids find it wonderful for study, and here the "man of the house" does his accounts and income tax figuring when he gets a chance at the place.



Kitchen

BEFORE (Photo above)

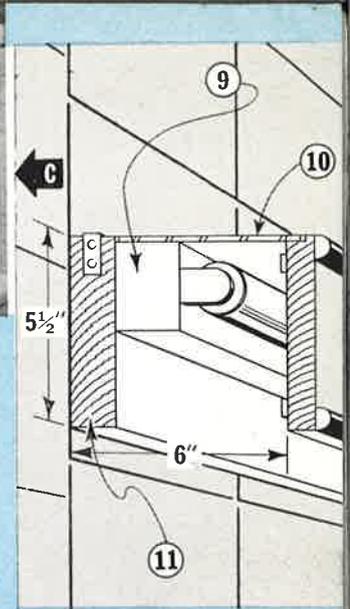
Efficient to be sure was the make-shift socket and bulb under the range hood. The silvered bowl center fixture gave some spread of light over the general area. The 60-watt shaded bulb over the range gave about 15 footcandles of light and plenty of shadows when the cook was in the way.

BEFORE (Small photo at right)

Doing dishes in the shade of her own body was what made the cook irritable. Digging the eyes out of potatoes practically dug her eyes straining to see. The sink had only 5 footcandles.

AFTER (Large photo at right)

Nothing can make work at the sink *fun*, but a 150-watt projector flood lamp behind the shielding valance, makes it easier and adds sparkle. Chores of cleaning vegetables go more quickly because there is less time spent in trying to see. And why shouldn't it be so with 100 footcandles!



AT RIGHT: Details of lighting in condiment shelf over range.

- 9. Channel strip for wiring, ballast, and radio interference filter.
- 10. Clear glass panel.
- 11. Wood filler strip mounted on tile.

BELOW: Sketch shows installation details of valance and 150-watt projector flood lamp over sink.



AFTER

But even a kitchen is deserving of a bit of charm all its own. Efficiency alone is a drab word. There are many workshop places in a home where efficient lighting is necessary, but it need not be without its decorative flair. An even spread of lighting is assured with the fluorescent ceiling fixture which houses five 20-watt fluorescent tubes. It lights the kitchen with light that's cool in feeling, cool to touch . . . and to it all contributes an atmosphere of modern proficiency to the cook's domain. Surely cooking takes on new zest when blessed by this lighted shelf. It is the 40-watt fluorescent lamp that puts 30 to 80 units of light into the pots and pans cooking on top of the range. And what but a lighted shelf could put glamour into an ordinary spice can!

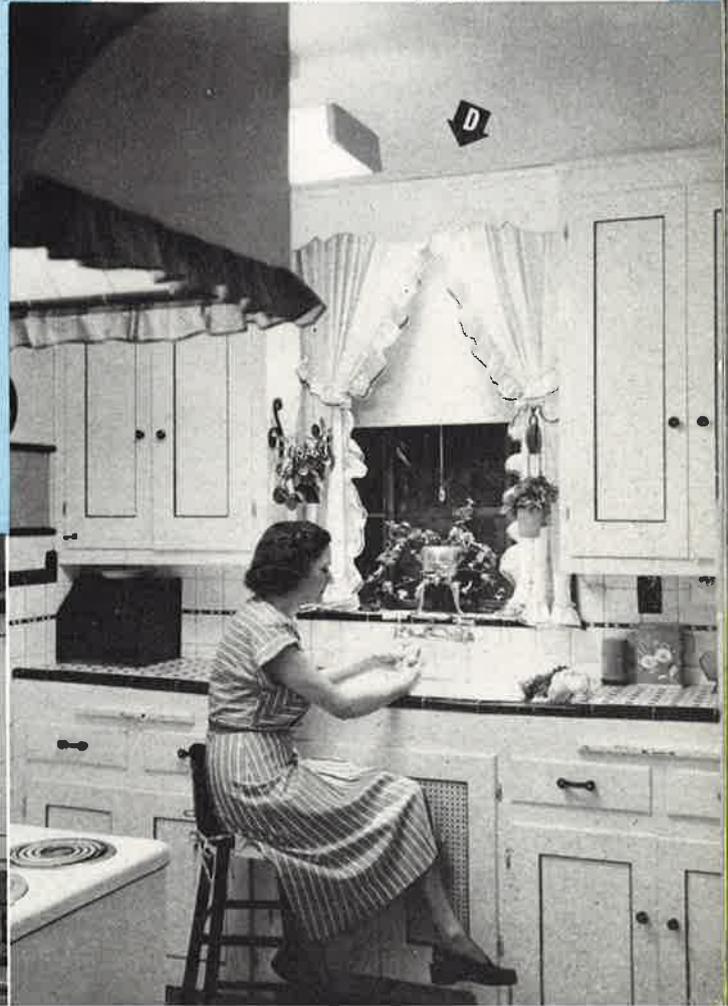
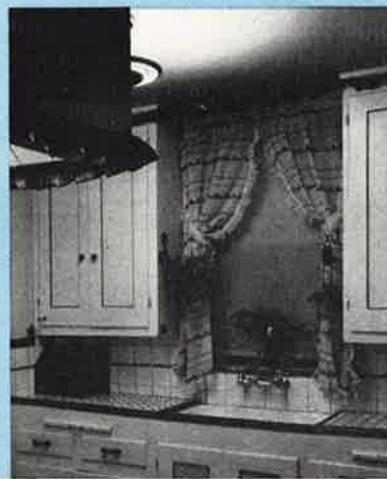
Kitchen Statistics

New Equipment

Sink Valance	\$ 13.00.
Range Shelf Light	24.00
Ceiling Fixture	28.75
G-E Lamp bulbs	6.30

TOTAL NEW LIGHTING COST \$ 72.05

Wattage: Before 160; after 322; (162 added)



BEFORE

The only light in the basement laundry area came from a 100-watt silvered bowl lamp in an RLM reflector that had become dingy and dirty. Mrs. Green could see fairly well if she didn't leave the laundry tubs.

AFTER

Two reflectors with two 40-watt fluorescent lamps each banished the gloom. Now it is easier to "spot" the spots, easier to avoid scorching with 65 footcandles to guide the laundress. Adequate light over the laundry tubs, and over the ironing board as well, did the trick.

Laundry Room



LAUNDRY STATISTICS

New Equipment

2 RLM-type Reflectors . . .	\$ 46.00
G-E Lamp bulbs . . .	4.00
TOTAL NEW LIGHTING COST . . .	\$ 50.00

Wattage: Before 100; after 191;
(91 added)



Recreation Room

BEFORE

A bar without atmosphere is like a cracker without cheese . . . no zip. It was a bar that served its purpose, but contributed nothing to the feeling of camaraderie.

AFTER

Light refreshment . . . the mellowness of light blended with mellow moods. Golden fluorescent lighting shaded into red under the glass shelf puts glow into bottles, a shine in glassware. Five 20-watt tubes are used.

AFTER (Photo below)

What a difference two lamps can make. The two floor lamps discarded from the living room are now at home in the recreation room.



Recreation Room Statistics

New Equipment

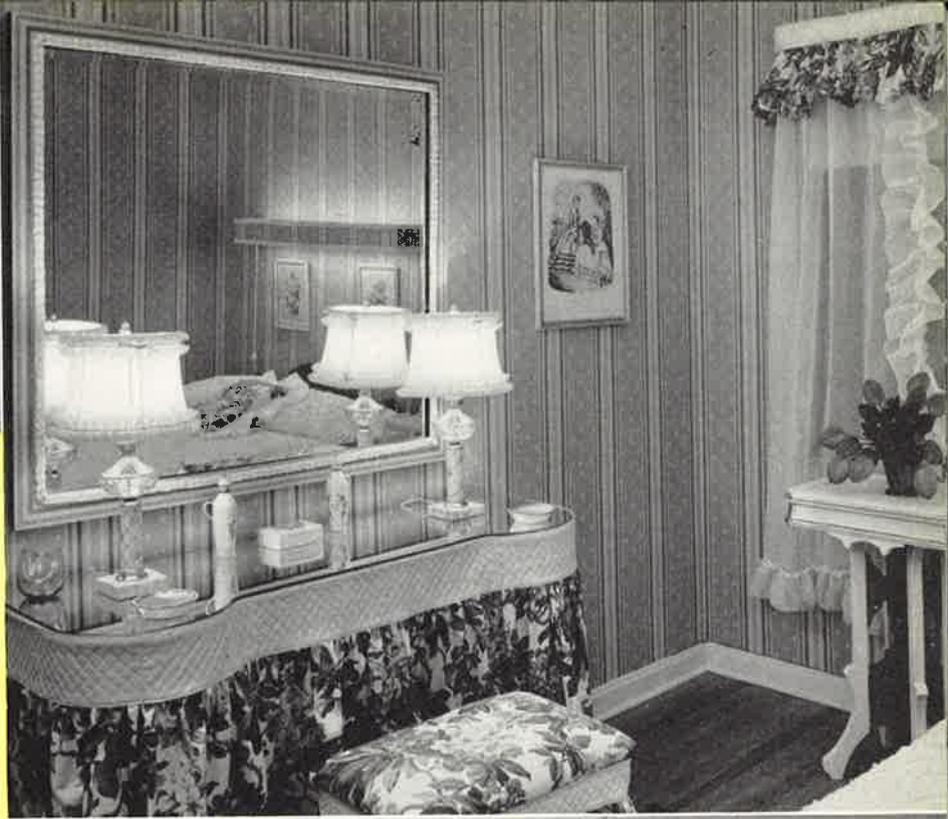
Bar Shelf Light	\$ 45.00
G-E Lamp bulbs	7.31

(Including replacements for all existing sockets)

NEW LIGHTING COST . . . \$ 52.31

Wattage: Before 200; after 1382.5;
(1182.5 added)





Guest Room

BEFORE

Light at a dressing table should be aimed at the face. Milady seated at this mirror got light from above her face level. She was able to see the bright bowl under the shades of the pin-to-wall lamps (60 watts each). This was both annoying and distracting. When a woman makes up her face she wants no distractions from the important task of making herself lovely. In the mirror, notice, too, the pin-to-wall lamp (100 watts) over the bed, placed too high to be effective for good reading-in-bed light. Giving only 12 footcandles, the ceiling fixture had only two 40-watt bulbs and an empty socket.

AFTER

Our whole room had a lift and an injection of sophistication with a green and red color scheme added to the lighting. Here now milady can see herself as she would have others see her. Certified dressing table lamps, just the right height to reach face level of the average person . . . white shades to let the light shine through without distorting color (the reason for avoiding pink or orchid boudoir shades). Around the base of the bulb shielding it from reflecting its bare brightness in the mirror top is a glass saucer-like construction. The 30-70-100-watt bulb gives 20 units on the face for make-up and when turned low our lamps become good guest room lighting when entertaining.

The newest look in bed lighting is this wooden cornice covered to look like the continuation of the wallpaper. A 40-watt fluorescent tube is neatly hidden and makes reading in bed a pleasure for your eyes with almost 30 units of light.



GUEST BEDROOM STATISTICS

New Equipment

CLM Dressing Table Lamps	\$ 39.00
Valance	21.50
G-E Lamp bulbs	1.87
TOTAL NEW LIGHTING COST	\$ 62.37

Wattage: Before 300, after 429.5; (129.5 added)

MASTER BEDROOM STATISTICS

New Equipment

CLM Dresser Lamps	\$ 50.00
CLM Pin-to-wall Lamps	29.90
Underbed Fixture (for heat and sun lamps)	20.00
G-E Lamp bulbs	14.43

TOTAL LIGHTING COST \$114.33

Wattage: Before 440; after 1205; (765 added)

Master Bedroom



BEFORE

For two who enjoyed the luxury of reading in bed, these pin-to-wall lamps measured about 20 units of light. That wasn't as much light as eyes like to have when they read for hours at a time. The ceiling fixture housed three 40-watt bulbs.

AFTER

The new Certified pin-to-wall lamps are the answer to a bed-reader's prayer. The special reflector-bowl under the shade directs the light downward with an adequate spill of light upward to lighten the rest of the room. The 50-100-150-watt three-lite bulb when turned on at the top level gives 40 units of lighting measured for long periods of reading. Luxury lighting at low cost for luxuriating evenings of reading in bed. And what a change the green ivy walls made with red appliqued quilts to give the flavor of quaintness with modern freshness.

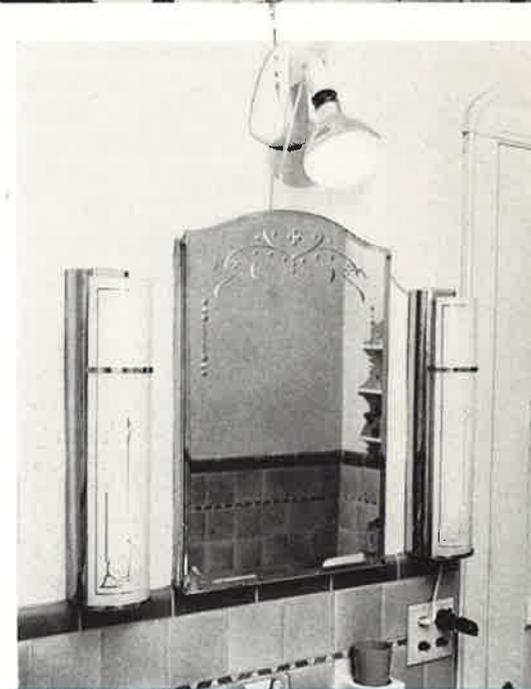


BEFORE

Opaque shades are not for dresser lamps, for they do not permit the light to shine through onto the face. The lamps were hung above face level and too high even to be attractive. They just didn't *do* anything for the room . . . nor did their meager 60-watt bulbs.

AFTER

Femininity enters and so does make-up light that should produce impeccable results. There are new Certified dresser lamps with white shades that let the light shine through. They are on bases that bring them to just the right face height of the average person. The glass disk around the bulb is the same type as that used on the dressing table lamps. The bulbs used are 30-70-100 watts, and faces are "washed" in 20 units of creamy white light.



Bath Room

Sunlamp and night light added. New 15-watt fluorescent lamps replaced old ones in wall fixtures.

Bathroom Statistics

New Equipment

Sunlamp holder	\$ 2.98
G-E Lamp bulbs	11.58

NEW LIGHTING . . . \$ 14.56

Wattage: Before 30; after 312; (282 added)





Boy's Room

BEFORE (Photo above)

It was a growing boy's room that didn't keep up with the growing boy . . . a room that didn't know which direction it should go, for it was pulled in all directions. It was expecting too much of the 60-watt bulb in the pin-to-wall lamp which couldn't provide recommended reading light at the bed and chair, especially when it was placed so high on the wall. Ten footcandles of light were the best to be had.

BEFORE (Small photo below)

The other side of the boy's room was lightless, lifeless . . . and sightless. Many short-sighted parents give every other advantage to their children and then let their precious eyesight suffer at poorly lighted study places. A 100-watt bulb in the ceiling fixture was not adequate to give sight-protecting light at this desk. Footcandles dwindled down to a bare 5.



AFTER

The room now keeps pace with its master . . . for today "it becomes a man." Black and white plaid with fine maroon and yellow stripes and matching draperies . . . the furniture painted a dull black . . . the bedspread and chair maroon. What could be more masculine?

AFTER (Photo at lower left)

A move of the desk, gives our student boy added daylight on sunny days. On dark days and at night, a new Certified Lamp assures him light that is measured to provide 50 units of light well distributed over the desk area. The pin-to-wall lamps (100 watts in each) from the master bedroom have been reshaded and placed at face height on either side of the dresser mirror.



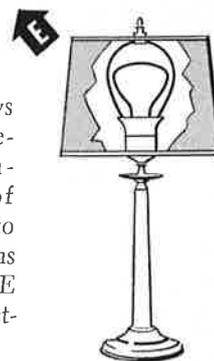
Boy's Room Statistics

New Equipment

Sunlamp Holder.	\$ 2.98
CLM Desk Lamp	9.95
Lamp at bedside	14.95
3 Shades, Cords .	4.50
G-E Lamp bulbs	12.08

NEW LIGHTING \$ 44.46

Wattage: Before 260; after 925; (665 added)



Sketch shows under-the-shade construction of lamp in photo above. It has a 150-watt G-E white indirect-lite bulb.

TOTALS □

Total New Lighting	
Equipment Cost . . .	\$ 759.64
G-E Lamp bulbs (96†*) .	93.60
(New bulbs for old and new equipment alike)	
TOTAL NEW LIGHTING COST . . .	853.24
Total Old Equipment Value	211.50
TOTAL LIGHTING COST . . .	1,064.74
Total Decorating Cost . . .	789.93
A SUNSHINE HOME . . .	\$1,854.67
Wattage: Before 3240; after 9234.5**;	(5994.5 added)

** Includes 191.5 watts consumed by fluorescent lamp ballasts.

† Wattage of these 96 lamps totals 9043. Specialty (heat and sun) lamps total 1575 watts. Lamps for lighting include 6507 watts of filament, 961 watts of fluorescent.

* Grand total does not include lamps in refrigerator, range, vacuum cleaner, two clocks, two radios, or 50 lamps used for holiday lighting. These would bring the total to approximately 152 G-E Lamps.

□ Miscellaneous re-lighting of attic, closets, and exterior (not listed in detail) are included in the totals given here.

Bringing the Sun Indoors... to help the photographer

WARSAW and Company, one of New York's leading studios specializing in fashion and merchandising photography, is now lighting large sets for color illustrations and black and white photos with tremendous flashes of light from General Electric No. 623 flashtubes. The power is produced through one of the largest commercial installations of speedlight equipment to date.

Thus the flashtube which enabled United States planes to photograph enemy territory at night from an altitude of one mile, now comes indoors to help make the professional photographer independent of the weather on some of his shots.

Flashtube Advantages

Photos on this page, taken by Warsaw's for the Magazine of LIGHT, show how a fashion picture is made indoors, and how effectively a sunshine effect is produced in color reproduction.

By EARL LEE AULD

*Eastern photolamp representative
for General Electric*

With the introduction of the giant flashtube to large color sets, the model's job has been made much more pleasant through the elimination of the hot, glaring lights previously used. Pleasant facial expressions are much easier to attain and to capture.

Before the advent of flashtubes, movement was a source of considerable waste of film, time and choice poses. Now the short duration of the light (from 1/200 second to 1/5000 second) effectively stops such movement.

The high power flashtube and the entire equipment used to operate it consumes less current than a 2000-watt floodlight light. At this writing, more than 5000 exposures had been made at Warsaw's without a flashtube failure.

In discussing his studio's use of the flashtube, Jack Warsaw emphasizes that the speedlight is not the solution to all lighting problems, but that it is in many cases, the most desirable light source, providing his photographers with new operating freedom. Much of the success of the flashtube, Mr. Warsaw believes, is in the advanced techniques achieved by his technicians, photographers and stylists in flashtube application.

How It Works

The 623 is one of many sizes and types of gaseous discharge tubes now available for varied applications. Much of the early work in applying these sources was done by Dr. Harold E. Edgerton and his associates. In these tubes, the enclosed inert gas is excited to luminescence by the discharge of electrical energy previously stored in condensers. After considerable experimenting with various gases, it was found that Xenon gas produced a brilliant flash of daylight quality.

The early applications of speedlight

to large set commercial photography were made with relatively low powered equipments, practical only with black and white film. With the increasing demand for the achievement of outdoor effects inside the studio, the need for more light and higher powered equipment became acute. The giant flashtube, used in military aerial photography, was available, but it needed specially designed equipment for studio use. To meet this need, high powered equipments designed specifically with the flexibility necessary for commercial studio application were developed.

Auxiliary Equipment

At Warsaw's, the flashtubes operate as part of a Fotolux, "Sunlight," designed by American Speedlight Corporation (formerly Parker and Young), to convert 20,000 watt-seconds of electrical energy into a high intensity, short duration flash. The light output is proportional to the electrical energy consumed in the flash, the limit being the power-handling ability of the particular tube. As an example of the range of power limitations, the large 623 flashtube is capable of safely dissipating more than 100 times the maximum power rating of the popular Sealed Beam FT220 flashtube.

The color photograph shown here is representative of the quality of photograph now being produced with this equipment. The behind-the-scenes photo at upper right corner shows the equipment in use. All the photos on these two pages were taken with the speedlight.

As with any type of light source, the reflector curvature and efficiency is important for proper light control. To produce a sunlight effect, the reflector and light housing were designed to provide a small, effective light source giving sharp shadows, broad coverage, and a large amount of fill, which is controllable through the use of reflecting surfaces around the set, but outside the picture area.

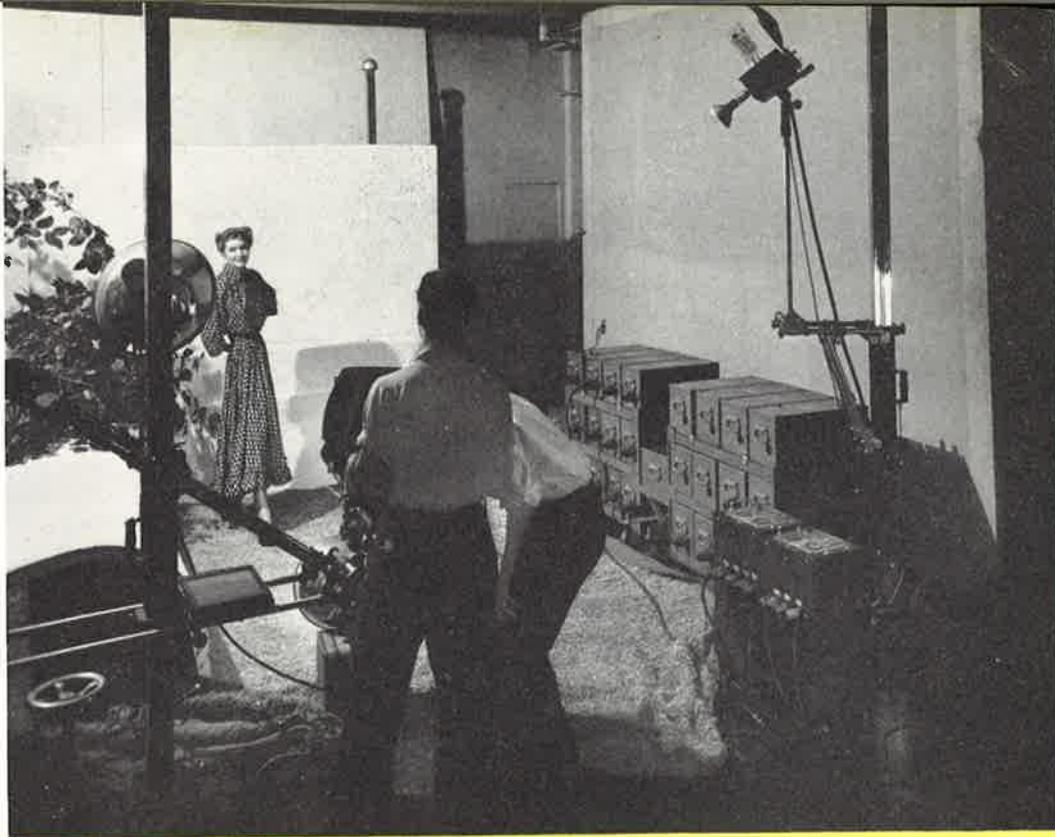


Left to right: Harry L. Parker, president, American Speedlight Corp.; Walter Sinn, Warsaw Studios; Earl Lee Auld of G-E. In foreground are condenser units.

Taking the Picture

The main light for the accompanying color illustration was created by the giant 623 flashtube operating at the full capacity of the power supply. Local "fills" were provided by three speedlights using FT403 Flashtubes powered by two Fotolux Model 3S360 consoles. The illustration was made on 8 x 10 Ektachrome daylight film at an effective aperture of f/18 with the main light 15 feet from the subject. The length of exposure (duration of the flash) was approximately 1/200 second. Duration of flash depends upon design of the power supply and amount of energy consumed.

The equipment delivering 20,000 watt-seconds of energy, consists of a power unit and 24 condenser units, each containing two 50 microfarad special heavy duty General Electric capacitors. Since the light output is proportional to the total capacity, the "unit design" makes possible 24 equal steps in the control of light output. Adjustable control of the input AC voltage enables the operator to com-



HERE'S HOW the color picture was made. Scene lighted from left by 623 flashtube like the one standing idle at right. Speedlight equipment along wall provided 20,000 watt-seconds of energy for flash. "Fill" lights near camera.



pensate for variations in line voltages. Actual light output available in the flash is indicated on a light output meter. This meter helps to maintain consistent exposures.

When the condensers are fully charged, a "ready" light flashes on. The number of flashtubes that can be connected to the equipment is limited only by the number of condenser units. Each unit includes a light outlet. A modeling light (reflector flood lamp) on the giant flashtube housing enables the photographer to properly place the light. The entire equipment is so interlocked with safety circuits to protect the operator from contact with high voltages. At Warsaw Studios, the "Sunlight" is triggered by a remote phototube control.



HERE'S THE RESULT. A fashion shot in color, taken indoors but having the quality and sunshine effect of outdoor color photography.



BEFORE. ▲

▼ AFTER.

Relighting

THE "FIRESIDE" GROUPING below banishes the dreary "before" first view as one enters. It is given glow by two 30-watt lumiline lamps attached to bookcase back. The figurine collection comes to life with two 6-watt fluorescent tubes tucked into a slot cut in the cabinet top, the "works" hidden behind the top rail. The old ceiling light (60-watt) bows out for a trim new one (under \$18, 150-watt) with downlight for card table or ironing board.



a Small Apartment

By MARY E. WEBBER

FROM drabness to drama is the transformation shown here of a one-room bachelor girl apartment. The "before" is typical of rented rooms in family hotels that many career girls are challenged to call "home." Heaven forbid they remain long just a place to hang the hat and sleep! Not so with my friend whose room this is.

She watched her budget, the magazine decorating pages, and when she was ready to "go" called me for help. So lighting took its rightful, many-sided role for function and fancy—nay even romance!—for evenings of busy chores or of fun alone or with friends.

Many rooms in one is this; its lighting must keep in pace, close knit to its living activities and its decorative scheme. It took a total of 1186 watts, replacing the original 595, to fill our bill.

Improved furniture grouping; new fabrics of bright colors keyed to her Royal Doulton collection; growing plants; all are blended and set off by a flattering and flexible lighting plan to spell "Home Sweet Home."

WE SAID GOOD-BYE to the old style lamps in favor of four new Certified ones, each under \$30 and guaranteeing eye-pleasing light either for close work or for conversation. Matching floor lamps (100/300-watt each) complete the balance of the opposite wall. The swing arm model is more suited to the small chair, and the 28" table model (50/100-watt each) serves desk and bed—now in suitable living room attire!



Before
After



A FINE CHERRY CHEST separated closet and bath doors. Now a new Huldah print deserves the room prominence it receives from its own lighting—two 30-watt lumiline lamps in a box, finished to "belong" to the chest.



SMALL NEW HOMES—BIG FLUORESCENT MARKET

When One Owner of a Small New House Shows What Can be Done, the Idea Spreads Throughout the Neighborhood

There is an interesting phase of the trend toward fluorescent lighting in homes, which national averages as estimated by surveys, fail to reveal. It is the tendency for families, once they "discover" what charm fluorescent lighting can help to create, to accept it with an enthusiasm that leaves "national averages" far behind*.

The photo below was taken in such a home. Mrs. Carolyn Ohart didn't think she was going to like her hus-

band's idea of fluorescent lighting in the living room, bedrooms, and den. "Too cold and commercial-looking," she told him.

But now this small, new six-room house, located in Cleveland, has 25 fluorescent lamps supplementing 30 filament lamps, and the resulting contribution to the charm of the home is so well demonstrated that at least half a dozen neighbors are planning to add fluorescent lamps in similar manner. Significantly, Mrs. Ohart is one who sold the neighborhood women on the idea.

The Ohart home is 23' x 28' plus a room over the garage.

The 25 fluorescent lamps in the

Ohart home are distributed as follows: living room, two 30- and two 20-watt lamps in valances and five circlines in C.L.M. floor and table lamps; dining room, two 20-watt lamps in collector's cabinet and one 72-inch slimline in valance; kitchen, one 20-watt over sink, two 40-watt in center fixture; bathroom, two 20 watts at mirror; basement, two 30 watts in indirect fixture; den, one circline in table lamp, one 20-watt over desk; powder room, two 15-watt at mirror; bedroom, two 15-watt lamps at dressing table.

The addition of warm tint lamps to the G-E line gives the homemaker one more choice from which to select her favorite fluorescent.

* Estimates based on surveys by the Marketing Research Division of the Lamp Department indicate that 20 per cent of the wired homes in the U. S. had some fluorescent lamps at the beginning of 1948. The average number of fluorescent lamps per home was estimated at 1.88.



FLUORESCENT lamps in window valance and collector's cabinet firmly established the real value of lighting. Though it "came with the house," the hanging center fixture shown in photo is now regarded by the Oharts as obsolete, glary, and inadequate. They are shopping for a center fixture combining circline with a filament downlight.



EVERYTHING THE SAME in the two views of this sun-porch except the lighting. The old-fashioned glass globe—stark and glaring—gives way to soft, environmental indirect lighting from a silvered bowl adaptor unit—list price \$3.95—5-minutes conversion time. Fits in with the needed table lamps. Home-lighter Kaye Leighton herself brightens up the corner.

BACK AGAIN—SILVERED BOWL HOME LIGHTING EQUIPMENT

Adaptors and Fixtures, Long Absent from Market, Are Available in a Variety of Designs to Fit Every Room

By C. E. WEITZ

SEVEN years ago, 2500 Utility Home Lighting advisers were eagerly and earnestly calling on homes to chase gloom and glare. Handiest, cheapest and most functional was the line of modern design—silvered bowl adaptors, and ceiling units. These provided low-cost, indirect lighting applicable to nearly every room in the home. Handy for the home lighting adviser because in many instances the conversion could be made from harsh, glaring bare lamps to soft indirect lighting at the first call. Utility companies throughout the land were really doing a light-conditioning job.

* * *

But these silvered bowl light conditioners were not just a utility cam-

paign item. As we look back over the sales literature of seven years ago we find—the Waldorf-Astoria, New York's finest hotel had "installed 500 units and were adding more every month"—the William Penn in Pittsburgh "recently installed 737 silvered bowl units"—the Chanin Real Estate Management "are equipping 1700 homes in Green Acres, Long Island and as soon as these homes are completed they are being fitted with silvered bowl fixtures throughout"—750 units in an apartment house in Elizabeth, New Jersey.

* * *

Department stores found these automatic lighting conditioners hot merchandise items—"Gimbels sold more

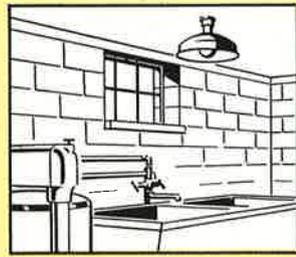
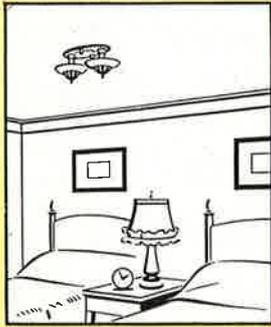
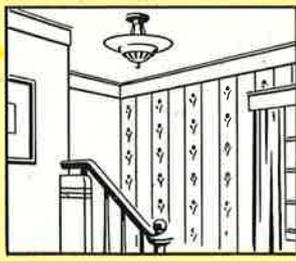
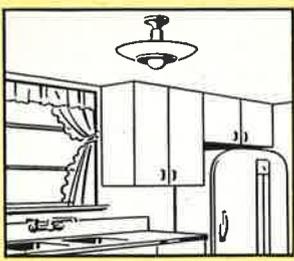
than 100 units in the Pittsburgh store the first day"—"Abraham and Straus, Brooklyn sold more than 400 fixtures after their first ad"—"Bloomingdale's, 700 fixtures in a few days"—"Walgreen's Drug were merchandising them."

* * *

Several million silvered bowl home lighting fixtures were sold, but market-wise, it was estimated that there were "over 160 million home lighting sockets in which silvered bowl lamps could be used to advantage."

* * *

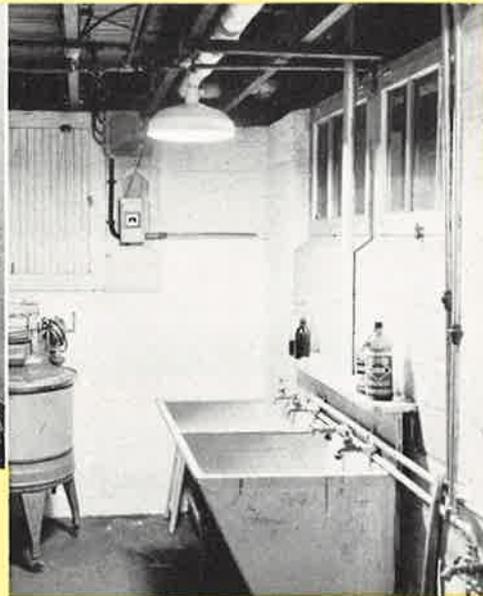
Then wham! The whole business disappeared with the war-edict—no



ABOVE: A few silvered bowl adaptor styles and applications.



BARE BONES basement lighting — common to let's say 20 million homes is transformed by the SB adaptor—list \$2.35—into comfortable illumination that puts discerning footcandles to work—to add cheer—if such a thing is possible in this drudgery corner.



GOOD ILLUSTRATION of what \$5.95 invested in a silvered bowl adaptor will do to a room — soft, diffused indirect lighting brightens up the entire room — no shadows — and no glare.



more home lighting fixtures. But the market remained and has grown with the millions of new homes added in the last few years—homes where bare lamp ceiling rosettes and pan type fixtures are doing duty as the general lighting of homes—perpetuating the conditions that the home lighting advisers had set out so courageously to correct.

* * *

“Ready to Go—But When,” says Mary E. Dodds, long time home lighting supervisor of Toledo Edison Co., in the July 31 *Electrical World* . . . “We are still limited by the lack of home lighting equipment.” “Merchandise for improving lighting in the home simply is not available in the necessary quantity, quality and variety.” . . . “production hampered and restricted . . . prices higher . . . distribution . . . spotty and undependable.”

* * *

With no silvered bowl equipment on the market for the past seven years, the demand for 100- and 150-watt silvered bowl lamps has naturally fallen off, slightly but not to the extent one might expect. On the other hand, the demand for silvered bowl lamps, 500 watts and above, has increased to an all-time high in spite of the fact that some people might think fluorescent lighting for general commercial and industrial would dry up the demand for such equipment.

* * *

So back again on the market are a dozen or more modern designs of silvered bowl home lighting fixtures. Screw-in adaptors for simple conversion of glaring ceiling sockets and drop cords to glare-free indirect lighting. This line of adaptors is paralleled by a line of completely wired ceiling suspension units for new installations or for replacement of outmoded and obsolete ceiling fixtures.

* * *

By now there should be a market potential of 200 million home lighting sockets which could use silvered bowl lamps to advantage. Particularly for the great mass market of homes, who have had little or no counsel on good lighting for the last seven years.

HARRISON RESIGNS

(Continued from page 3)

neering Society. He is a Fellow in the American Institute of Electrical Engineers, a member of Tau Beta Pi and Sigma Xi fraternities.

He is a member of three international illumination societies: The U. S. National Committee of the International Commission on Illumination, the Association Francaise des Eclairagistes, and the British Illuminating Engineering Society.

A native of East Orange, N. J., he was graduated in 1909 from Stevens Institute of Technology with the degree of Mechanical Engineer. The honorary degree of Doctor of Illuminating Engineering was conferred upon him in 1940 by the Case Institute of Technology.

Joining the engineering staff of the G-E Lamp Department here in 1909, he early distinguished himself in lighting design work. The principles and methods expounded by Dr. Harrison were forerunners of modern lighting practice, and the method of lighting calculation which he and Earl A. Anderson devised in 1919 is almost universally employed today.

In 1930, Dr. Harrison was elevated to the top engineering post in the Lamp Department, and since that time has directed the activities of a staff of approximately 100 illuminating engineers, having responsibility for the application aspects of illuminating engineering. He is author of several books on lighting as well as many technical papers and articles.

Dr. Harrison and his wife, Dorothy Fuller Harrison, reside at Shaker Heights, Ohio. They have three children: Mrs. Dorothy Harrison Van Aken; Mrs. Cornelia Harrison Schlesinger; and John Ward Harrison.

Willard C. Brown, the new manager of the G-E Lamp Department's Engineering Division joined the division in 1920, and since has been active in lighting for the automotive, advertising, theatre, farm, school, industrial, and other fields. He is the author of bulletins and technical papers on lighting applications in these fields.

In automotive lighting, Mr. Brown was co-patentee of the widely-used method of obtaining headlight beam

depression by optical means from two-filament headlamps.

Mr. Brown has served as consultant on large theatre-lighting projects, and directed the development of equipment now standard for stage lighting service. He was first chairman of the lighting committee of the American Society of Agricultural Engineers.

While in charge of school lighting activities at Nela Park, he served as secretary of the committees of the I.E.S. and the American Standards Association which developed the current "American Recommended Practice of School lighting." Later he was in charge of General Electric's industrial lighting activities, and directed the development of continuous-row fluorescent lighting, which became standard for war plants during World War II. He was secretary of the I.E.S.—A.S.A. committee which developed the 1942 "American Recommended Practice of Industrial Lighting," which became the Canadian "Recommended Practice" and was endorsed by the U. S. Department of Labor. He is now chairman of the I.E.S. committee which is revising that publication.

Mr. Brown was called to active duty in the Naval Reserve in 1942 with the rank of Commander in the Supply Corps. In Washington he was in charge of the Commodity Purchase Division of the Bureau of Supplies and Accounts, and was a member of the Navy's Patent Royalty Revision Board. In 1945, he was promoted to Captain and took charge of the Navy Purchasing Office, Chicago, until his return to General Electric at the end of the war.

A past-president and Fellow of the Illuminating Engineering Society, Mr. Brown in 1939 was director of the Secretariat on Lighting Practice at a meeting of the International Commission on Illumination at Scheveningen, Holland. For the 1948 meeting at Paris he was again director of the Secretariat on Lighting Practice.

Born at Glens Falls, N. Y., Mr. Brown was educated at Virginia Military Institute, the Massachusetts Institute of Technology, and Harvard University. During World War I, he served as a commissioned officer in the U. S. Navy and was stationed in France more than two years.

LUCKIESH IN PARIS

(Continued from page 3)

to its surroundings, and to the entire visual field. He explained that in practice when one reads a book the page is a hundred times as bright as its background, such as a carpet or desk top.

"This may be described as a very poor seeing condition," the lighting authority stated. "Insofar as a glare-source is an undesirable distraction which causes an undesirable seeing condition, the dark surroundings of a task are also a 'glaring' distraction."

"Light and lighting can contribute much after the eyesight specialist has provided eyeglasses or otherwise has taken care of the visual sense as a tool," he said. "By increasing the brightness-level of the task, the visibility-level is elevated and, in effect, the visual efficiency of those performing such tasks is increased.

An international authority on lighting and its effects on human beings, Dr. Luckiesh has also pioneered in color lighting, and in the application of radiant energy in health fields.

HARRISON IN PARIS

(Continued from page 3)

"It is the general experience that as lighting levels are raised to 40, 50, or perhaps 100 footcandles, without correspondingly increased regard for the quality of the illumination, there is a tendency on the part of the user to be dissatisfied with certain aspects of the lighting," he said.

"The necessity for avoiding the negative effects of glare in the lighting of offices, schools, and other work places has always been with us, but it becomes more and more urgent as higher levels of lighting are used," Dr. Harrison said. He described "discomfort glare" as being present "in any situation in which either immediately or after a time one becomes unpleasantly conscious of one or more light sources within the visual field."

He proposed rating systems for different types of luminaires, so that the degree of freedom from direct glare to be expected from their use in rooms of different proportions might be evaluated in advance.

Announcing two new colors in G-E fluorescent lamps!



1. New G-E "Soft White"

The latest in fluorescent, the most flattering light of all! Here's a new, soft light that is fresh and clear—that does wonders for homes, restaurants, stores, and theaters. Tests with thousands of people prove it ideal for complexions. And it's complimentary to foods and surroundings. Developed after years of research with hundreds of color combinations, it's the newest thing in fluorescent.

2. New G-E "Warm Tint"

Gives you color values similar to incandescent! Provides a warm, rich light that creates a friendly, intimate atmosphere and softens many colors and decorative schemes. G-E warm tint combines the warmth of incandescent lighting with the modern appearance, softness, and high efficiency of fluorescent. Blends perfectly with incandescent lights used in floor lamps and other fixtures.

These two new lamps are important additions to General Electric's fluorescent lamp line, which now gives you a wide choice of "whites" (daylight, 4500 white, white and the new soft white and warm tint) as well as the standard colors.

For all the benefits of General Electric lamp research, insist on lamps with this mark of quality



G-E LAMPS
GENERAL  ELECTRIC