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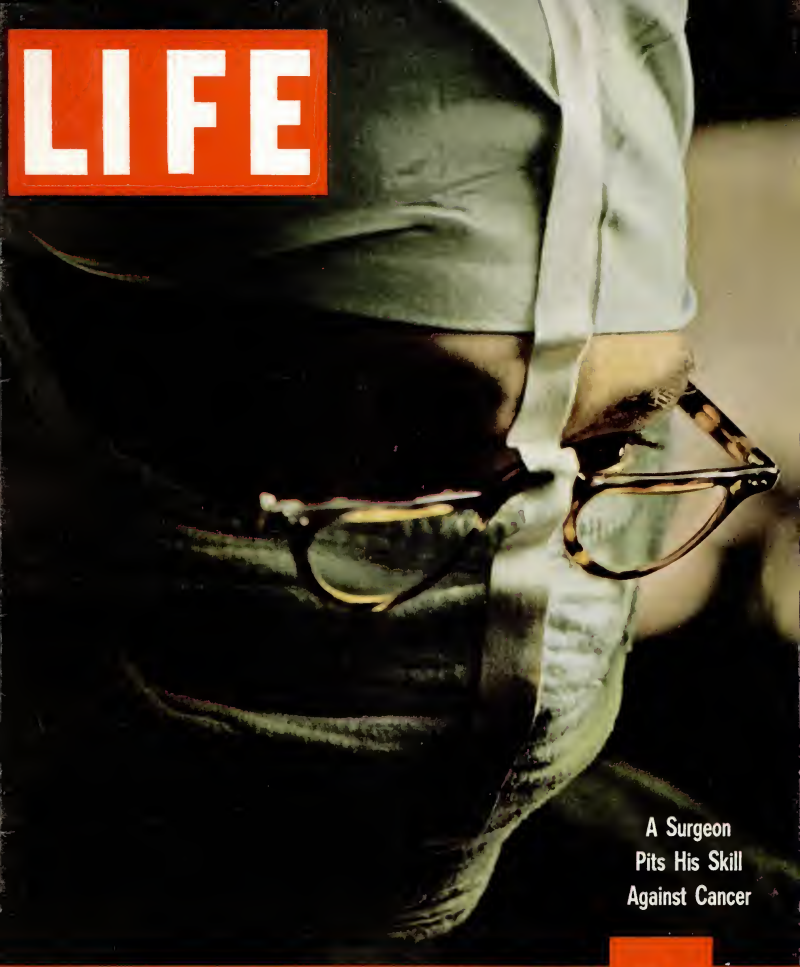

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Against Cancer

JANUARY 20, 1961

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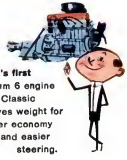

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Vol. 50, No. 3 LIFE Jenuery 20, 1961

REG.U.S.PAT.OFF.

THINGS THAT COUNT—MEMORY, IMAGINATION

When a camera records scenes, it is performing many functions—and a principal one is the function of memory. But sometimes memory must take over the camera's job. In the second installment of our Civil War series (*pp. 38-64*) the 16 pages of specially commissioned battle paintings are each as camera-accurate as the artist and man's memory—in records, maps, plans and stories—can make them.

BULL RUN HORSE

Before he even started to sketch, each artist visited and studied his assigned battlefield. To draw uniforms correctly, each used the actual Quartermaster Corps specifications of the time. To add detail, some went to greater lengths. Artist Stanley Meltzoff searched for a month for a dead horse to model for his Bull Run scene (*pp. 38, 39*), finally sketched one in an abattoir. Isa Barnett, who did Antietam (*pp. 40, 41*), filled his studio with shattered stalks of corn—planted, in those days, not in rows but in hills grouped for the sickle. Tom Lovell (Vicksburg, *pp. 47-49*) made some scale models of Porter's fleet and sailed them for hours on a paper map in his studio.

INFORMAL KENNEDYS

In all their search for accuracy and detail the artists were greatly helped and encouraged by the superintendents of the national military parks, especially Mr. Rock Comstock at Chickamauga; Robert L. Lagemann at Antietam; and Mr. Edwin C. Bearess, research historian at Vicksburg. For wise advice on ordnance and uniforms, LIFE thanks Historian-Artist George Woodbridge. And for their expert advice and criticism, LIFE is especially grateful to Lieut. Colonel John Elting and Colonel Frederick Todd of the U.S. Military Academy.

The camera also performs notably. In the photographs accompanying William Heinz's story of a cancer surgeon (*pp. 70-78*), operating-room scenes become symbols of the art of healing. They were photographed by Elliott Erwitt and, in a highly imaginative concept of story presentation, projected upon our pages by Associate Art Director Bernard Quint.

Further on we present some fascinating snapshots, along with some shop talk about how we deal with pictures. You have often gone over pictures from the family Brownie and looked aghast at the odd expressions you assumed while trying to look dignified. So you may guess how the most photographed man in the world (this week at least) might have felt when he went over the pictures on pages 88, 89 to choose his official inauguration portrait.

SURGEON'S HAND AT WORK

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JANUARY 20, 1961 VOLUME 50, NUMBER 3
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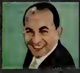

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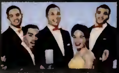

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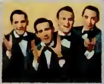

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LETTERS TO THE EDITORS

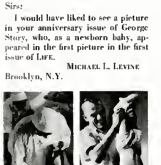
25TH ANNIVERSARY

Sirs:

I would have liked to see a picture in your anniversary issue of George Story, who, as a newborn baby, appeared in the first picture in the first issue of LIFE.

MICHAEL L. LEVINE

Brooklyn, N.Y.



1936 1960

● George Story is a reporter on the San Diego *Union*. He and his wife were married in their last year at Stanford where both majored in journalism. Their daughter, whom Mr. Story is holding (*above*), was born June 14, 1959.—ED.

Sirs:

The most wonderful issue of any periodical I have ever read . . . from the heights of joyous amusement to the depths of despair and grief. How you can capture such startling scenes at the moment and on the spot will remain a mystery to me.

ARTHUR ALLEN FREIBERGER

Longville, Minn.

Sirs:

As a charter subscriber, I congratulate you on your nostalgic issue and hope to do the same 25 years hence. I am 82, but I can hope, can't I?

W. H. CONNERS

Philadelphia, Pa.

Sirs:

I did not fully appreciate the expression "the mountain labored and brought forth a mouse" until I looked at the anniversary issue.

T. J. SHIREY

Osgood, Ind.

Sirs:

Congratulations on an important contribution to added understanding and perspective of history.

WILLIAM E. HINES

Los Angeles, Calif.

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Sirs:

As I prepared to write you a reproachful letter for a recent exhibition of bad taste, you sent the magnificent double issue, a nostalgic reminder of the years we've shared.

MAYNETTE R. STEPHENSON

Ft. Lauderdale, Fla.

Sirs:

As I turned the last page, I flipped back and started all over again. Nostalgia, pathos, comedy and promise, the chronicle of our generation. I intend to keep it in my box of memories along with my husband's letters, a piece of wedding cake, a baby tooth, report cards and angels from six kindergarten years.

CONNIE U. TONJES

Tampa, Fla.

LIFE'S EDITORIAL

Sirs:

May I suggest that the difficulty in understanding the relationship between art and science as set forth in your editorial "In a Second Revolution the New Role for Culture" (LIFE, Dec. 26) is in the lack of knowledge of *science* inherent in the humanist, not the reverse.

It is apparent that today's art is of an entirely new variety. The engineer, working with pure science to invent a fuller life for mankind, must certainly be a new kind of artist, if creativity is any criterion.

Everything we touch has seen his creativeness. The problem is that few can appreciate the beautiful symphony represented in the aerodynamic and structural design of a jet plane wing.

THOMAS W. PHILLIPS

Littleton, Colo.

Sirs:

Your editorial closes with this noble statement: "In our own next quarter century, LIFE will endeavor to do its part in spreading an approved appreciation and thereby, we hope, stimulating creation as well."

So I turn the page to an abundance of beauties and get a belly laugh. Just what kind of creation have you in mind?

BASIL E. HARRIS

Galeton, Pa.

BEAUTIES

Sirs:

How dare you have an issue depicting 25 Years of LIFE without even one picture of Lana Turner (An Abundance of Beauties, LIFE, Dec. 26). You need a refresher course.

ANNE DE LAPP

Fullerton, Calif.

Sirs:

To align Mrs. Kennedy's beauty alongside the *Police Gazette* type photographs of Lollobrigida and Hayworth is repugnant to common decency.

THOMAS H. STABEL

Greenwood, Miss.

Sirs:

The inclusion of Jacqueline Kennedy in your bevy of femininity must surely be taken as an attempt at humor; nevertheless it remains a distasteful addition, cradled by a lame reference to Grace Kelly who becomes the all-important "cool and aristocratic" link between the Hollywood circuit and the first-lady-to-be.

EUGENE SANTOMASSO

New Haven, Conn.

25,000 YEARS OF ART

Sirs:

Imagine my surprise and pleasure upon looking through your anniversary issue to find a generous full color section, "25,000 Years of Art" (LIFE, Dec. 26). As a reader of many years, I found this story one of the best gifts LIFE has given me.

DR. JOHN LEMBACH

College Park, Md.

GIFT OF WAR ART

Sirs:

May I extend my gratitude, as a citizen, for the magnificent gift you have given to the government ("Rich Gift of War Art," LIFE, Dec. 26). Having seen many of these works, I can testify to their outstanding artistic quality and emotional impact. They are superb supplements to history.

MORT SLOTNICK

New Rochelle, N.Y.

LIFE'S ANIMALS

Sirs:

As an antidote to your frustrated animals whose pictures you repented in "Mimes of the Times" (LIFE, Dec. 26), please reprint my favorite, which I kept posted on the wall for a long time because it cheered everyone to see it—the debonair dog nonchalantly stepping over the fence. Your other animals may go psycho, but not that dog!

MRS. W. PETTER

Camden, Ark.

DEBONAIR DOG

PRIVATE TEED

Sirs:

I was touched by "War and Peace for Private Teed" (LIFE, Dec. 26).

If anyone deserved the honor of being in your fine magazine, Mr. Teed certainly did. Leonard McCombe is to be highly praised for his excellent photography.

MRS. J. R. WEBBER

Plainfield, Ind.

U.S. LABOR

Sirs:

I am thankful for the manner in which "Rugged Ascent of U.S. Unionism" (LIFE, Dec. 26) was presented. We of labor know that the history of our house is not spotless, but industry's reputation is not so good either.

THOMAS R. LEE

Cheyenne, Wyo.

THE HARD WAY

Sirs:

The article by Charles Murphy, "The Hazards of Being Late Too Often" (LIFE, Dec. 26), was most prejudiced. The same slanderous charges about F.D.R. and President Truman were evident throughout the article yet Mr. Murphy offers no proof behind his thinking.

He proceeds to praise President Eisenhower and terms his administration exciting and creative—listing two recessions, the U-2 flight, and nuclear weapons and the testing of them. This is excitement and creativity? The article ruined for me what could have been a very enjoyable issue.

DAVID BARSAMIAN

New York, N.Y.

Sirs:

I was absolutely frustrated when I read the following line in Charles J. V. Murphy's article: "Nevertheless, it is possible [after the past 25 years] to be an optimist."

Other than this, Murphy's article and LIFE's double-dip was one of the most refreshing and stimulating pieces of literature—and pictures—I've come across in a long time.

STEPHEN J. BRICKNER

Philadelphia, Pa.

THE LIVING LEGENDS

Sirs:

It was rather disappointing to see Bill Mauldin called a "wry spokesman" and then not be able to read the very caption on the cartoon on his drawing board "The Living Legends" (LIFE, Dec. 26).

It looks as if the unfinished cartoon consisted of Nixon trying to explain election results to Ike. Could you tell me what is being said?

CHARLES MILLIKEN

La Puente, Calif.

● Nixon is saying, "Let's face it . . . we're surrounded by Democrats and Eisenhower Republicans."—ED.

Sirs:

"Living Legends Then, Now" brings to mind Emerson's statement: "A man passes for what he is worth; what he is engraves itself on his face in letters of light." The photographs of Nehru and Norman Thomas reflect an enrichment which stems from a continued growth in understanding and an effective integration of ideal and reality.

The features of MRS. Roosevelt and Marian Anderson reveal the power of a developed inner life.

As for the Duke and the Duchess of Windsor, I can see strength and intelligence in the features of the Duchess whereas the Duke has preserved the kindly puzzlement of an elderly Peter Pan.

DR. ALFRED REISS

New York, N.Y.

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In the world of make-up the most beautiful illusion of all has remained the most elusive: how to add just the right finish to your skin (neither too shiny nor too powdery) with only one make-up.

Now, after years of experimentation, Max Factor has introduced Sheer Genius. It is a complete make-up that gives you the ideal balance of lustre, and what cosmeticians call a soft matte finish. Because it is so different, Sheer Genius has recently revolutionized the make-up habits of women from coast to coast.

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Sheer Genius is make-up in a totally new form—*soft liquid drops in a tube.* Combining several make-up steps into one, Sheer Genius is a complete make-up within itself. Put it on, *and that's it.* All you need is Sheer Genius. Cosmetically speaking, it smooths easily onto your skin, without streaking or unevenness. You use only a few drops. And it is virtually impossible to apply Sheer Genius incorrectly.

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Your New Look In Sheer Genius

It is a completely natural look in every way, in every light. Sheer Genius adds a sheer fresh clarity to your skin, and a soft tone of color. In one unique step, Sheer Genius gives your skin a fresh new finish that combines all the flattery of liquid make-up with the gentle softness of powder. All you can see is the beautiful difference.

The Feel Of Sheer Genius

From the moment you apply Sheer Genius to your face, you will notice its delightful buoyancy. It actually *feels* beautiful…fresh and light—like floating on air. And even hours later, your skin *still* feels flower-fresh—because Sheer Genius keeps on pampering your skin.

A Word About The Sheer Genius Tube

Because Sheer Genius comes in a tube, it is much easier to use. You can always measure out just the few drops you need. The tube is unbreakable, non-collapsible, it cannot leak or spill—so Sheer Genius is absolutely safe to carry in your purse or luggage.

And An Apology…

Because women have responded so excitedly to the beauty of Sheer Genius, some stores may be sold out of particular shades. Please be patient. More Sheer Genius is now on the way. It comes in ten complexion-balanced shades. $1.50 the tube.

MAX FACTOR

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Before it hit the market, Tempest had 3,000,000 miles of testing by engineers, pro drivers and a team of teenagers. Its reliability checked out 100%. Owners have rolled up millions more. The only kick is the one it puts back in driving. Try it!

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LIQUOR

MAKING ITS DEBUT, JACKIE MANNEQUIN, A STANDARD SIZE 10, STANDS AT JOHN FREDERICS SHOP IN NEW YORK WHERE PILLBOX HAT SELLS FOR $35 TO $70

YOU DON'T HAVE TO LOOK HARD...

TO SEE ANOTHER JACKIE

The spectacle of the First Lady and her husband being carried about the streets at inauguration time was a sign that something was stirring in fashion. These figures were, of course, mannequins. But Jackie Kennedy, even in fashion sculpture, is a remarkably recognizable version of Jackie in the flesh. Her look and style are setting a national pace.

College girls copy it casually, suburban matrons faithfully. Millinery shops are being fortified with the largest collections of pillboxes in history. Fashion ads twinkle more mischievously with Jackie's unmistakable wide eyes. Her bouffant hairdo is becoming a by-word in beauty salons. All in all, the shy, beautiful First Lady's fashion followers are building up quite a bandwagon.

Jackie's smoothly simple look in clothes is achieved by an almost deliberate plainness. It is an elegant and expensive style from pillbox to pumps and it can be inexpensively copied (*p. 22*).

The Jackie bandwagon started before the Wisconsin primary, as American women began to look admiringly at Mrs. Kennedy's sophisticated simplicity. It hit a new high last week when 217 fashion editors were exposed in New York to a flurry of mannequins, ads and style shows. The First Lady's newly appointed designer, Oleg Cassini (*p. 20*), announced he would keep up the Jacqueline look in a continuing series of designs.

Ironically, the problems of being a fashion leader are the least of Mrs. Kennedy's worries. But she wears her clothes with such effortless grace that, despite herself, she is becoming the nation's No. 1 fashion influence —a deserved compliment to a very young and very poised First Lady.

◀— ON NEW YORK SIDEWALK FULL-SIZE KENNEDY MANNEQUINS DRAW STARES ON THEIR WAY TO STORE WINDOWS

NEW WARDROBE for Jackie was designed by Cassini. Shown in his own sketches, from top, are coat with sable collar, high-waisted dress and white satin evening gown. She bought coat and gown, dress was a Cassini proposal.

AN OFFICIAL PUSH FROM DESIGNER OLEG AND A BOOM IN NEW MODELS

APPOINTED DESIGNER, Oleg Cassini, who will do all Jackie's clothes including her hats and bags, announces his plans to the nation. Many fashion experts were surprised by the choice of Cassini, known for his tight-fitting, seductive styles. Although he is a personal friend of the Kennedys, Cassini insisted that his selection was due solely to the sketches he submitted to Jackie.

QUARTET OF "JACKIES," all of them models, virtually unknown until recently, now find business brisk because of their resemblance to Jackie. Posing in New York are *(left to right)* Jeani Kitchens, Joanne Hilem, Dorothea McCarthy and Eugenia McLin. "Since the election my business has certainly picked up," says Eugenia, "and I hope it continues for another four years."

CONTINUED 19

AN OUTBURST OF LOOK-ALIKES

BOSTON: Walking down Constitution Stairway in Faneuil Hall is Georgia McGurl, an assistant buyer in Filene's. Strangers sometimes congratulate Mrs. McGurl on becoming First Lady.

FORT WORTH: Wearing a Jackie-style sleeveless dress and pillbox, June Jenkins visits the River Crest Country Club. Mrs. Jenkins has recently taken up the bouffant hairdo.

FAIR LAWN, N.J.: Wearing dress she will wear to Inaugural Ball, Mrs. Sigmund Westerman jokes with daughter Laura, 9. She was invited after sending Jackie flowers.

DENVER: Wife of the French consul general, Mrs. Claude Batault is the mother of two young children. Photographed in her home, she wears a Paris suit with the easy fit favored by Jackie.

CHICAGO: Mary McKay helps Ellen Crane try on pillboxes at Stevens store. Mary changed her hair during campaign to look more like Jackie and Ellen began wearing the style last month.

DETROIT: Mrs. Barbara Sales, who here wears pillbox on her way to go shopping, says she has always worn Kennedy-style clothes. She used to wear her hair long with a blond streak.

CONTINUED

YOUNG IMITATORS AND A BUDGET VERSION

SCHOOL GIRLS from University High School in Los Angeles have the Jackie look. Pat Swiney (*left*) and Jean Drumm, both 17, wear sleeveless sheaths, full hair. Jean wears pearls, an extra Jackie touch.

HOW TO GET THE LOOK FOR $68.68

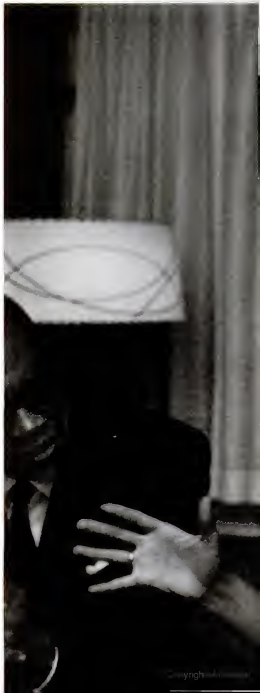
BUDGET WARDROBE is shown on roommates Eugenia McLin and Jeani Kitchens. Eugenia (*left*) wears sleeveless and collarless two-piece dress in a textured fabric. She carries an imitation alligator handbag and cotton gloves, wears a two-strand pearl necklace. Her shoes are plain pumps. Jeani's loose-fitting beige coat has a neat stand-away collar and is worn with a matching pillbox. The dress comes from Bloomingdale's in New York, all other items from Ohrbach's.

PRESS SECRETARY for Jackie, Pamela Turnure, has marked resemblance to her boss. Here at work in Palm Beach, Pamela, who is only 23 years old, wears a "Jackie" dress, sleeveless and collarless.

STUDENTS AT VASSAR, where Jackie went to college, sport bouffant hairdos and bulky sweaters, a favorite Hyannis Port outfit for Jackie. They are, from the left, Susan Koelle, Stephany Warick, Ellen Jennings and Jane DuPont, who resembles sister-in-law Eunice.

DANGLING A DOLL, a University of Georgia student grinningly shows off home-made Negro puppet hanging on a string. A dean chased him, made him drop the doll and berated him for his crude prank.

EMBATTLED CAMPUS still shows signs of riot after students have left. Cloud of tear gas which



PRANK, RIOT AND SHOCK ON GEORGIA CAMPUS

The unfunny joke of a college boy at the University of Georgia in Athens last week helped to fan the flames of a riot. It was a riot that brought consternation and anguish to the two Negroes at whom it was aimed—Charlayne Hunter, 18, and Hamilton Holmes, 19.

Charlayne and Hamilton were the very first Negroes ever admitted to the University of Georgia. Their admission had been ordered by a federal court. Governor S. Ernest Vandiver made only a token protest against the decree. Many at the university were ready to accept the Negroes. In class their first day passed calmly.

But on the campus, jeering and joking students stirred trouble. That night the impact of student bigots and the influx of Klansmen into the campus brought an eruption. A student mob threw bricks at Charlayne's dormitory and yelled vulgarities up at her window. Dean of Men William Tate worked heroically to restrain the rioters, and town police, acting chiefly in self-defense, dispersed them with tear gas. State police arrived two hours and 20 minutes after they were called. Then they drove Charlayne and Hamilton home to Atlanta. Governor Vandiver's secretary commended the rioters on their "character and courage."

The university suspended the two Negroes "for their own safety." A majority of the faculty petitioned for their return and a federal court promptly ordered their reinstatement. Then everybody braced for the next round.

dispersed rioters hangs in front of Charlayne's lit-up dormitory and scattered bonfires burn at right.

THE PERSECUTED, Charlayne and Hamilton show the effects of ordeal at her home in Atlanta where they were taken after the riots. She is studying journalism, he enrolled in arts and sciences.

MYSTERY IN BRITAIN: 'THE FIVE'

The Yard moves in on a big league spy case

Patient and relentless as ever, the unobtrusive men of Scotland Yard closed in on five people last week and exposed what may be the biggest British spy case since that of Klaus Fuchs in 1950.

Their equally unobtrusive quarry was fished out of anonymity—a world of pubs and quiet hotel rooms—and held without bail for violation of Britain's Official Secrets Act. For months investigators had watched two of them, civil servants employed at the top-secret Portland naval base—a convivial payroll clerk named Henry Frederick Houghton and his quiet spinster friend, Elizabeth Gee. At a pub 120 miles away in London, men of special intelligence agency M.I.5 had taken a room overlooking the office of Gordon Arnold Lonsdale, Canadian businessman. In suburban Ruislip, others had watched Peter John Kroger, a retired bookseller, and his wife Helen, neighborly people who spoke of a Canadian background.

Significantly, the case was handled by a pair of Britain's top spychasers, W. J. Skardon of M.I.5 and George Smith of Scotland Yard's Special Branch (*below*). It appeared that Communist Poland, for one thing, has shown keen interest in British-U.S. antisubmarine research at Portland. It was also known that certain foreigners have been entering Britain illegally on forged Canadian passports.

M.I.5'S SKARDON

YARD'S SMITH

TOP SLEUTHS were Skardon, whose M.I.5 agents watched from pub, and Smith, who made arrests.

HEADQUARTERS at Scotland Yard where spy hunt was tightened glows with late-night activity.

STAKE-OUT for Skardon and other investigators was pub window facing office used by Lonsdale.

HOUGHTON, 55

MISS GEE, 46

LONSDALE, 37

MRS. KROGER, 47

KROGER, 50

Houghton, Miss Gee and Lonsdale were arrested on Waterloo Road in London by Scotland Yard Detective Superintendent Smith (see scene re-enactment, without any of the principals, on next page). Krogers were arrested later the same day at their home in Ruislip by group of Yard men headed by Smith.

CONTINUED

HOW THE TRAP CLOSED: RE-ENACTING OF SURVEILLANCE AND ARREST

WATCHED, stand-ins representing Houghton and Miss Gee arrive by train at Waterloo Station.

CONTACTED, they stroll casually past a waiting Lonsdale (*left*) outside the Old Vic Theatre.

CAUGHT after Lonsdale takes the incriminating basket, they are arrested by Smith (*foreground*).

WELL-GUARDED BASE at Portland where the suspects worked is center for antisub research.

SILENT CORRIDOR outside Lonsdale's hotel room came under sharp eye of intelligence agents.

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Campbell's Beef Noodle Soup – that's a husky soup, a hearty soup, a satisfying soup to feed a hungry crowd. There's tender lean beef in every bowlful . . . with golden enriched egg noodles, delicious, beefy broth. Soup makes almost any meal a better meal. It smells good. It tastes good. And it gives you the wholesome nourishment of good natural foods to make you feel good, too. It's hot and ready in 4 minutes – Sunday, or any day! Have you had your soup today? *Campbell's* (M'm! M'm! Good!)

IT'S YOUR YEAR TO CHEER

AMERICA'S GROWING NEW INTERSTATE HIGHWAY SYSTEM!

Whatever became of traffic jams? They're disappearing fast as these new superhighways begin to crisscross every state, linking 86% of all cities of 50,000 people or more. The Interstate System's 41,000 miles will be "go" driving all the way with practically no traffic signals or slow zones.

State Highway Officials run their own test! In a special $27,000,000 test, loaded trucks have pounded pavements 18 hours a day, 6 days a week, since November, 1956. The knowledge gained is helping engineers to make your new Interstate highways the finest ever built.

A chance to save 4,000 lives each year is promised by the Interstate's design, including controlled entries and exits, no cross traffic, and the uniform skid-resistance of concrete. Reduced accidents also save dollars—in 5 years, an estimated 9% of the System's cost.

Those "lonesome" bridges save you dollars! Built ahead of time on Interstate rights of way, they show far-sighted planning that makes best use of men, money and material. They speed the link-up of new routes as paving progresses. They're some of 375,000 bridges needed!

Follow the red-white-and-blue signs for the greatest driving comfort, smoothness and safety you've ever known!

Already a third of your new 41,000-mile Interstate Highway System—15,000 miles—is in use.

Over 50 billion miles of driving will be done on these highways this year.

Reduced traffic deaths prove these roads are 2 to 3 times safer than the average of all streets and highways.

In spite of inflation, construction costs on the Interstate System since 1956 have actually decreased $1.24 per $100, while the cost of living has risen $8.86 per $100.

Never before in history was a road system planned and built with the scope and importance of America's new National System of Interstate and Defense Highways. It will eventually carry 20 to 25% of the total traffic of the nation! One day, you'll scarcely make a trip of more than a few hours' duration without traveling on the Interstate System. And that day is not too distant.

Tremendous progress has already been made. In your own area you may see the evidence. Similar work is underway throughout the country. And these are not ordinary roads as we have known them. By actual legislation, they are keyed to a new concept of American highway needs—to scientific appraisal of what the traffic will be in 1975.

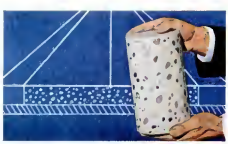
Highway engineers are determined to bring you the best, safest, most comfortable-driving highways ever known. Behind the Interstate System are the best engineering brains, the greatest pool of scientific knowledge and resources, the most modern equipment ever brought to bear on a highway project. So vital is it to the nation to bring this dream to reality, a full 90% of the cost is being underwritten by the Federal Government.

Naturally, the preferred pavement for the Interstate System is new-type concrete. The way engineers can design it today, you get a smooth-riding surface that will last for 50 years and more. That means low upkeep and big savings of your tax dollars. You go first class on new-type concrete! (For free road map of Interstate System, write Portland Cement Association, Dept. 99, 33 W. Grand Ave., Chicago 10, Illinois.)

PORTLAND CEMENT ASSOCIATION

A national organization to improve and extend the uses of concrete

Every minute—6 more feet of 2-lane concrete pavement! That's average for a crew using new techniques and machines. Such efficiency has helped highway builders to cut costs almost 1¼% since 1956. In the same period, costs for all other construction have climbed 17½%.



New-type concrete grows stronger with age. "Reconstituted rock," it gains up to 20% in strength in the first 5 years—up to 100% in 20 years! Tires can't rut it. Heat, freezing, de-icers cause no damage. So upkeep costs stay low—as much as 60% lower than for asphalt.

George Washington landing in New York City for his first inauguration, 1789. Painting by F. C. Yohn

"All your strength is in your union. All your danger is in discord."

HENRY WADSWORTH LONGFELLOW

The choice is made — we close our ranks. Now as then, the road ahead may be stony as well as smooth. Where it will lead depends upon our unity and national purpose.

But if our way of life is to be preserved, the cornerstone of that purpose will be the unshakable conviction in each of us that the exercise of free and reflective CHOICE — of a President, a career or an idea — is the thing that divides us from bondage.

America Fore Loyalty Group

The Continental Insurance Company • Firemen's Insurance Company of Newark, New Jersey • Fidelity-Phenix Insurance Company
Niagara Fire Insurance Company • The Fidelity and Casualty Company of New York • National-Ben Franklin Insurance Company of Pittsburgh, Pa.
Milwaukee Insurance Company of Milwaukee, Wis. • Commercial Insurance Company of Newark, N. J. • The Yorkshire Insurance Company of New York
Seaboard Fire & Marine Insurance Company • Niagara Insurance Company (Bermuda) Limited • Royal General Insurance Company of Canada

EDITORIAL

'FROM THE HEART OF AMERICA'

In his final State of the Union message to Congress last week, President Eisenhower stuck mainly to the achievements of his Administration, a proud tally of the eight years in which America reached "unprecedented heights." Some Democrats found it boastful and too rosy. Nevertheless it omitted all mention of one of the outgoing Administration's most signal glories: Ike himself.

The late Henry N. Taylor wrote last year from Chile: "It's easy for a Washington reporter to become cynical about President Eisenhower's smile. But travel along with it for weeks through foreign lands and you begin to realize what a national asset we will be losing next January." The personal magic that made him America's most beloved hero works with foreigners too. He is the most popular individual in the world today.

He did not seek this singular distinction. What has he been seeking, then? The Eisenhower character is a more rewarding study than that "leaping and effortless smile." There are two main clues to it. One is his strong sense of duty, the West Point virtue. The other is his lifelong habit of making the most of all his opportunities.

He represents what Americans have traditionally been supposed to admire. In the phrase John Gunther used to describe Ike's boyhood, he is an "almost abnormally normal" American. "I come from the very heart of America," said Ike in his great London Guildhall speech after V-E Day. Abilene, Kan., whither his grandfather had led a colony of pacifist Mennonite pioneers from Pennsylvania, was a frontier town where people could be very poor without realizing it. When Ike's father failed as a storekeeper, his mother just worked all the harder. "If you want an education, go out and get it," she told Ike at 10. He and his brothers did so without questioning the necessity. Later, when complimented on six successful sons, Ike's mother said, "I tried to raise my boys dependable."

Ike was older than his classmates at West Point. During the tedious years as a captain and major, he worked hardest when a chance came for higher training (as at Leavenworth). Many of his fellow officers regarded him as unduly ambitious. Thirsty for knowledge, he developed a special power of intent and purposeful listening. He has remained highly briefable all his life.

•

When he was picked to lead the Allied armies in Europe, Ike muttered, "Somebody must have told General Marshall I was a hot shot." His briefability did not diminish his power to make command decisions. The most soul-racking was his choice of D-Day, in the face of bad weather and a host of well-argued doubts. "It was a hard decision," he said later. "Hell, they're all hard." The loneliness of the process is why he feels so drawn to Lincoln and keeps dipping into the set of Lincoln's works on his White House office shelves.

As a strategist he was responsible for the most classic double envelopment in modern military history (the Ruhr). Soldiers rate him a greater strategist than tactician. That may throw light on why he thinks and writes more lucidly than he talks. Yet he loves to talk ("I've listened to him for 27 years," said Mamie once, "and he still fascinates me"). Like exercise, talk is a necessity to him, a way of making up his mind.

It was duty that put him back in uniform to arm NATO in 1950. He delegated the technical job and took on himself what he believes to be the most important factor of military strength: morale. By listening and talking to Europe's politicians, he personally licked the prevalent defeatism. At SHAEF, by turning the wartime alliance into a working coalition, he had proved himself a great political general; at SHAPE he proved it again. Every tour of duty, as it happened, turned out to be the ideal preparation for the next. Said his old friend Harold Macmillan last week, "I cannot think of any man who so grew in stature with the tasks laid on him." Ike has never stopped growing. The prospect of retirement, he said recently, is "sometimes almost frightening."

His last tour of duty was to conquer the political heart of America and set a new style for the mid-20th Century presidency. It was a style of dignity, honesty, simplicity. His policies rescued and put in modern dress the old-fashioned virtues of individual effort he was raised to trust. The "Eisenhower equilibrium" created in this country a more nearly national consensus than we had known for years.

If Ike's speeches assay high in clichés (and tortured syntax), you always know what he means and never doubt he means it. He is innocent of techniques for manipulating crowds; instead he warms (and is warmed by) them. "I only say what I believe." That fact, guided by natural tact, is the key to his superb sense of propriety and of occasion. At SHAEF he called Churchill "Prime Minister" (no Mr.), figuring it struck the right balance between ease and respect. Grace and magnanimity marked the gesture at Chicago after his nomination in '52, when he walked across the street from the Blackstone to the Hilton to salute the defeated Bob Taft. He is at his best ad-libbing directly to small groups—mailmen, Boy Scouts, Republican women, whatever—with the right sentiment always, the right word often.

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The simple but gregarious Kansan long ago became a cosmopolite, with friends in every country (though no command of languages) and an enormous personal correspondence. His mind moves like his bridge game—fast. At 70 he is alert, pink, springy; he rises from a chair or paces the floor like an athlete, not an old man. He dresses well, lives well, cooks well ("a walking recipe book"), paints happily. Once a consumer of 70 cigarets a day, he looked one day in disgust at a full ashtray and stopped. You are not forbidden to smoke in his near presence; you don't quite want to. His famous temper, a visible wave of red that wells from his collar to his pate, has in recent years come under better control.

"The worst mistake we could make would be to get out of character," he once told his fellow Republicans. He himself seldom has. No Democrat has ever questioned his motives. It was transparent sincerity that enabled him, in a few short years, to break the Communist strangle hold on the word "peace-loving" and convince a tortured world that this general and his well-armed nation hates war. Peace has been the theme of his most dramatic high spots in these eight years:

▸ At the U.N., in December '53, he unveiled his well-reasoned and eloquent "atoms for peace" proposal. He pleaded that "the miraculous inventiveness of man shall not be dedicated to his death but consecrated to his life." Even the Communist delegates applauded.

▸ At Geneva in 1955, the first Summit, he electrified his immediate audience, including Khrushchev, with his surprise "open skies" proposal for an experiment in mutual inspection. Its timing, spontaneous with Ike, was almost too perfect: his 300 careful words were immediately followed by a thunderclap and a short circuit in the Palais des Nations. "I didn't mean to turn the lights out," laughed Ike. Said France's Premier Faure, "This conference has scored its first victory over scepticism."

▸ At New Delhi, in December '59, more than a million Indians swarmed along Ike's welcome route. "Welcome Prince of Peace," said a huge sign. This scene was merely the most stupefying in Ike's triumphal tour of two continents.

Crowds do not make a man great, and we need not hurry to assign Ike his exact rank among American presidents. But he has been in these years the superb embodiment of what this pluralistic, semiarticulate country stands for and is trying to say. Dwight Eisenhower has convinced millions of non-Americans that even a nuclear superpower can be decent, nonpredatory and morally responsible. He has also reminded his fellow Americans of how we became what we are, and of what a man can do if he tries.

Thank you, Mr. President.

NEW HORIZONS IN

The Bell System will spend 2½ billion dollars for new equipment, new services and new ideas this year to grow with America

That's a lot of money.

But the Bell System has been investing in additional plant at a high rate for the past five years.

With those dollars, during that time, we've opened up some far-reaching frontiers.

For example:

We put nearly 15 million *more* telephones into service. We added facilities for a billion more Long Distance calls a year.

We bounced telephone calls off the moon and Echo I as a prelude to a world-wide satellite communication system.

We developed Data-Phone service so that electronic business machines can "talk" to each other over regular telephone lines. (Some day, machines will do more talking than people!)

We extended Direct Distance Dialing so that more than half our customers can dial their own Long Distance calls quickly and easily.

We introduced the lovely little Princess phone that lights up for easy dialing—and the Call Director telephone that gives business a versatile, efficient intercom system in one compact instrument.

More Advances Ahead

We're testing pushbutton phones that are faster than dialing—and an Electronic Central

COMMUNICATIONS

Office that provides telephone services never known before.

We're launching Bellboy—a small pocket receiver that tells you when someone wants to reach you on the phone.

These are only a few of the notable new products and services from Bell Telephone Laboratories being made available for nation-wide use.

Our job is BIG—and growing at a fantastic rate. In the midst of America's population explosion, *telephones have been multiplying faster than people!*

More Capital Needed

To meet this demand . . . to improve and extend your service . . . takes dollars by the billions. And investors will continue to put up the billions only if they expect to be reasonably well paid for the use of their money.

Only with continued adequate earnings can we conduct the research and plan the orderly expansion that keep the quality of your telephone service going *up*—while holding the price of it *down*. All these things benefit the telephone user, of course.

But, in addition, those dollars generate local jobs and opportunities—add to national progress and prosperity—and further advance the finest, fastest telephone service in the world.

Fr Kappel

FREDERICK R. KAPPEL, PRESIDENT
AMERICAN TELEPHONE AND TELEGRAPH COMPANY

A CLUB REBUKED FOR BIGOTRY

RECTOR WHO PROTESTED, the Reverend George F. Kempsell Jr. (*right*), is praised by Episcopal Bishop J. Stuart Wetmore for his "wisdom and courage."

In the New York suburb of Scarsdale last week the country-club set was caught in the act of bigotry by an Episcopal priest, the Reverend George F. Kempsell Jr., rector of the fashionable church of St. James the Less. He decried as "morally reprehensible" the Scarsdale Golf Club's refusal to accept an Episcopal youth as escort for a debutante at its annual Holly Ball. The club's reason: the boy's father is Jewish.

The debutante and her rejected escort, Pamela Nottage and Michael Hernstadt, are Episcopal communicants—as are many members of the club. The rector barred from Holy Communion all who had acquiesced in excluding the boy. Pamela had canceled her debut. While the club declined to comment on Father Kempsell's stand, several of its members told him that they now regretted the club's action. Said the rector: "If our Lord Jesus Christ had come back to earth in Scarsdale in time for the Holly Ball, He would not have been allowed to escort a young lady of this parish to that dance."

PAMELA

MICHAEL

DEBUTANTES WHO CAME OUT line up, minus Pamela, for their group picture at the Scarsdale Golf Club, all of them carrying identical sprays of holly.

Fish in your pocket
for a lil ol' nickel!

The candy with the hole ...still only 5¢

CIVIL WAR
PART II

NOW HISTORY, THE BATTLES

BULL RUN BEGAN CONFLICT WITH A BLUNDER

The Civil War was fought with suicidal courage and inflamed by a brother-against-brother savagery unknown in wars between strangers. It began with singular ineptness, for no nation—now split into two nations—had ever plunged into conflict with greener soldiers or generals more untried. In this, the second of LIFE's centennial series on the war (the first appeared two issues ago), climactic moments of those fierce clashes are re-created in paintings by distinguished American artists. These scenes, portrayed with historical accuracy, are fitted into the war's grand progress in a summary at the end of this story.

Union error invested the first clash. Driven by public outcry to try to take Richmond and end the war, Brig. General Irvin McDowell threw his unblooded men against the Rebels at Bull Run. Hundreds of civilians went along with picnic hampers to watch. The Federals fought stoutly at first but, made panicky by rumors of "masked batteries," "Black Horse Cavalry" and the fearsome reality of bullets, they retreated and the retreat became a rout.

This painting looks upon the scene from a hill west of Centreville, Va., 24 miles from Washington. The retreat is bottlenecked on the Warrenton turnpike at Cub Run bridge (*left, center*). Fleeing Federals dot the shelled fields (*background*). The foreground portrays personages who were actually there, though not all may have been together at one time. Drawn up at left is Colonel Dixon Miles's reserve division. Alfred Waud, a noted war artist, works at a sketch pad. A vivandière holds a pistol and another mourns a dead soldier. William Howard Russell, London *Times* correspondent, peers through his field glasses. Photographer Mathew Brady, who has lost his cameras but found a sword, walks between two Zouaves. A drunken officer, seen that day to be wearing two hats, flourishes his sword above a bewildered boy picnicker. At far right, Judge Daniel McCook (*in wagon*) carries the body of his son Charles, one of the war's first slain.

CONTINUED

PEACH BLOSSOMS OVER SHILOH

The Battle of Shiloh on April 6–7, 1862, might have been a Union disaster but for men like those who fought in the Peach Orchard. On the Tennessee River just above the Mississippi line, southern General Albert Sydney Johnston fell upon the unready Major General Ulysses S. Grant. The Federals reeled and began to break. But then they stiffened in, among others, a spot held by Brig. General Stephen Hurlbut's 4th Division among blooming peach trees. For almost seven hours, the Rebels attacked. Finally the Federals were driven out of the northern end of the orchard and peach petals covered the dead (*above*). These men had helped save the North. But the cost was fearful. Grant later recalled a field "so covered with dead that it would have been possible to walk across the clearing . . . stepping on dead bodies without a foot touching the ground."

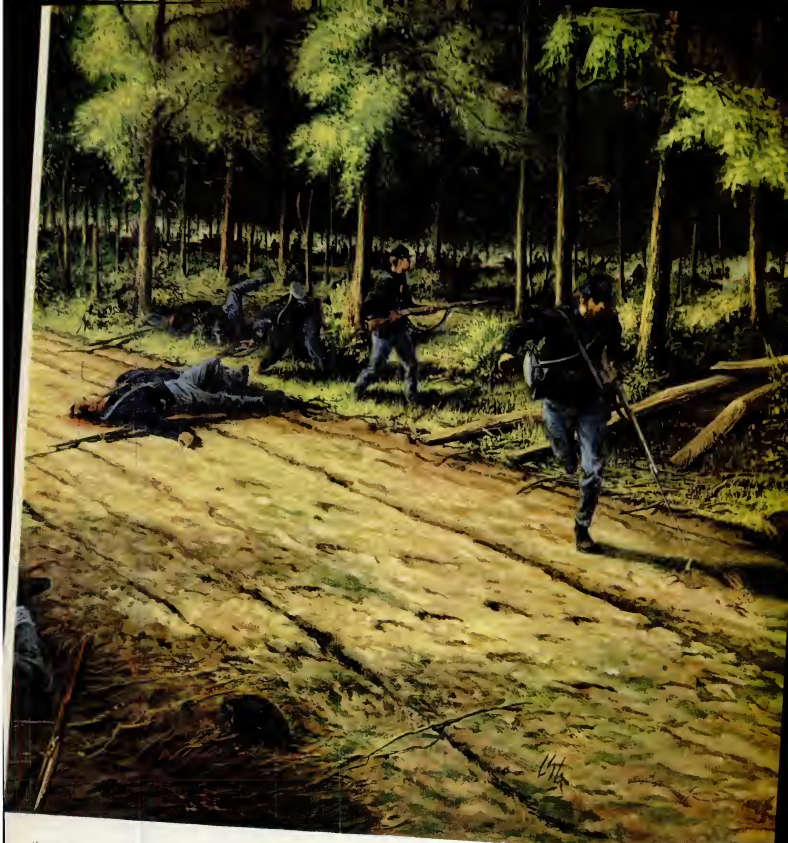
IN THE CORNFIELD AT ANTIETAM

Antietam Creek, before Sharpsburg, Md., ended General Robert E. Lee's first great attempt to invade the North. It also ended the lives of more men than any other day of the war. Many dead of Sept. 17, 1862 fell in this cornfield. As the battle began, the field was held by Louisiana and Georgia brigades of Major General Stonewall Jackson's command. Against them, Union Major General Joseph Hooker threw his First Army Corps and slowly, in hand-to-hand fighting, the Rebels yielded. Then the field was carried the other way by Confederate Brig. General John Hood's division. In this painting, firing as they move, the 1st Texas Regiment is backing up before a new Union assault by Brig. General George Meade's Pennsylvanians, under Union colors. Of about 12,350 Union and 13,700 southern casualties at Antietam, the Texans suffered worst—82.3%.

A BOLD SURPRISE ON A ROAD AT CHANCELLORSVILLE

A powerful disposition to disbelieve visible facts cost Union Major General Joseph Hooker a heaven-sent opportunity to smash Robert E. Lee's Army of Northern Virginia in the spring of '63. With a force of 113,000, more than double Lee's, Hooker had been sent south to dislodge Lee from positions along the Rappahannock River near Fredericksburg, Va. But after some preliminary skirmishing at the end of April, Hooker chose to entrench in defensive positions around the crossroads of Chancellorsville.

Lee, aggressive by nature, reluctantly decided that Hooker's position was too tough for frontal assault. But scouting reports indicated weakness on Hooker's right flank. Boldly Lee split his army and sent Lieut. General



Stonewall Jackson marching to the west to hit the Federals from flank and rear. It was then that Hooker's fatal trait of skepticism betrayed him. Although Jackson's march of 26,000 men took all day and was observed by the Federals through a gap in the Wilderness forest, the Union command-er refused to accept anything but that Lee's army was in retreat. He stuck to this belief even against the insistent reports of scouts.

The wily Jackson was thus able to march 14 miles past the Federal forces, turn and spend three hours assembling his force for assault astride the Turnpike to Chancellorsville and less than a mile from the Federals. He launched the attack at 6 p.m. on May 2. This picture shows the moment of panic in northern Major General Oliver O. Howard's XI Corps when Jackson's men burst upon them out of the sunset. To the left, with supper fires still burning and playing cards dropped, are the dumfounded men of the 55th Ohio Regiment. Out of the woods and across the road sprint surprised men from Colonel Leopold von Gilsa's brigade, some already fallen. All across the woods muzzle flashes flare from the muskets of southern Brig. General Robert E. Rode's division, whose battle flags unarch up the road. Subsequently the Federals rallied but, though still numerically stronger than Lee's divided army, Hooker never made up his mind to attack. Instead he withdrew ignominiously to the north.

CONTINUED

FABLED CHARGE AT GETTYSBURG

As so often happened in the war, the place and time of this battle—
most important of all—resulted from accident rather than design. Hav
whipped the hesitant Hooker at Chancellorsville, Lee now took his num
ically inferior army smashing up into Pennsylvania. The new Union c
mander, Major General George Meade, moved north to meet Lee's th
A few miles over the Maryland border both armies went into defen

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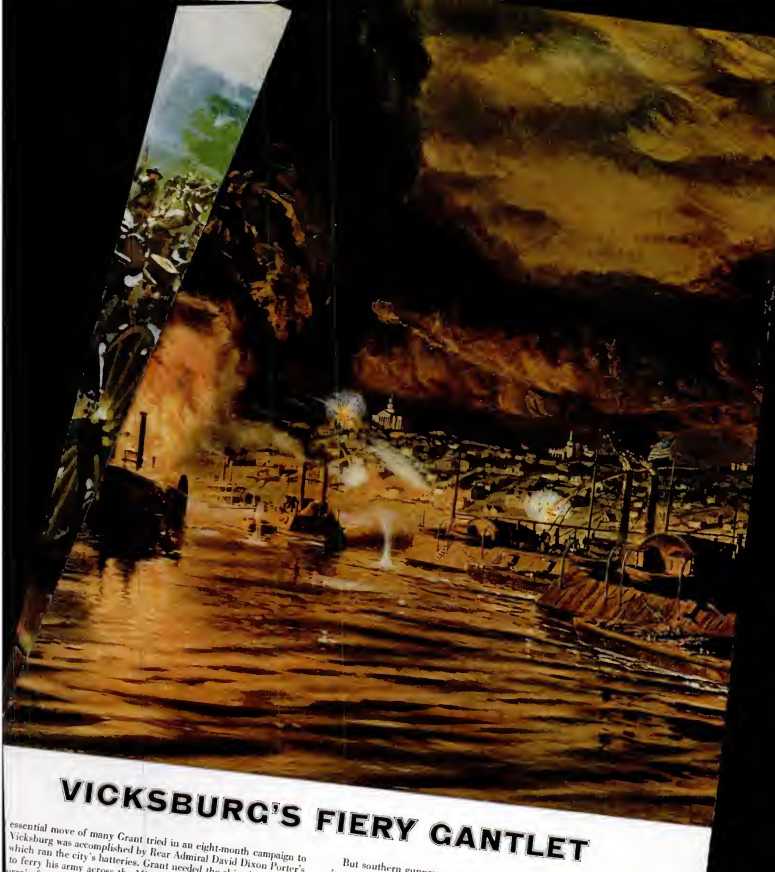

VICKSBURG'S FIERY GANTLET

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But southern gunners quickly discovered the attempt and this painting accurately readers the running of the gantlet. At the extreme right is the prow of the ironclad *Lafayette*, with the older, wood-built *General Price* lashed to starboard. Alongside *Price* and aft is *Louisville*, attempting to avoid a collision with *Price*. In foreground, *Mound City* has just narrowly missed being hit, followed by *Pittsburg*, *Carondelet* and *Forest Queen*. Turning away from Vicksburg's guns is *Henry Clay*, afire and sinking after one successful round from shore. Her crew is abandoning ship. Upriver at the left, *Tuscumbia* closes up the formation. All ships but *Clay* got by the Water. Wyman's Hill and Marine Hospital batteries, and 79 days later Vicksburg surrendered, cutting the Confederacy in two.

Courtesy of National

artillery. But Lee had come north to fight and, at about 3 o'clock in the afternoon, he threw the best he had, a fresh division commanded by Major General George Pickett, against Cemetery Ridge.

The assault moved on in precise, carefully dressed ranks and, coming under Federal fire, men died as neatly as they marched. This painting—with the windrowed dead in the distance—depicts the high moment of the charge. The swarming Confederates have reached a Union li emplaced in the angle of a stone wall. In the Rebel vanguard is General Lewis Armistead, swinging his hat on his sword, before killed him. His men gained the bloody angle but only briefly. The the only success of the assault. The scant survivors of Pickett's fell back. The battle and his greatest opportunity lost, Lee ret

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On July 1, 1863 the Union forces were driven back through the town. On the second day of fighting they were in position on Cemetery Ridge and, though forced to give ground elsewhere, held this height. On the third day the two armies were about a mile apart, Meade on the strongly defended ridge, Lee across a sweep of open fields dominated by Union

UNION AGONY IN THE CRATER

In 1864, baffled in his efforts to take Petersburg, Va., the key to seizing Richmond and linking up with Sherman's march to the sea, Grant accepted a Pennsylvania mining engineer's doubtful scheme to breach the town's fortifications. Accordingly a 511-foot tunnel was dug and a 75-foot cross shaft directly under Confederate positions was packed with four tons of black powder. It took two attempts to detonate the charge, which finally went off at 4:40 a.m., July 30.

Four divisions were poised to dash through the gap and into the city. But when the blast came, heaving earth, guns and Rebel soldiers up "like a waterspout," the sight paralyzed them. They simply spilled into the crater, division after division. And there, for an incredible two hours, they stayed. When the Confederates rallied, the men in the crater were trapped. What followed was a slaughter. Rebel artillery poured into the hole—about 200 feet long and 25 deep—and Confederates encircled the trap as Northerners clung to its sides with knee and elbow and fired back.

The painting at right portrays the last of the Battle of the Crater about eight hours after the explosion. In the left foreground southern Major General William Mahone's men have gained the lip of the crater and are driving down on the Federals in hand-to-hand engagement. Deep in the hole, surrounded by death and exhausted by a broiling sun, Union soldiers are milling in confusion, firing, dying. The North lost 4,400 men and Grant called it "the saddest affair I have ever witnessed in the war."

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CONTINUED

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TOM
LOVELL

BEYOND THE CALL OF DUTY AT MISSIONARY RIDGE

The taking of Missionary Ridge at Chattanooga was as astonishing a feat of arms as the war produced—and it came about almost by accident. In the effort to lift southern General Braxton Bragg's siege of Union forces in the Tennessee city, Major General William T. Sherman assaulted a Confederate stronghold on the north end of the ridge on Nov. 25, 1863. This would cut off Bragg's supplies and thus relieve pressure on Grant.

The Confederates, deeply entrenched along the face and crest of the five-mile, 500-foot-high ridge, seemed to hold impregnable positions and Sherman was soon in trouble. To divert Rebel attention, Grant ordered Major General George Thomas to launch a diversionary attack against

the first line of Bragg's trenches. Twenty thousand men in four divisions moved out and there was a short sharp fight at the foot of the hill. Grant saw the blue Union wave overrun its objective and then, in astonishment, watched it start up the steep face of the slope. When he irritably demanded who had ordered this foolhardy assault, one of his generals answered helplessly, "When those fellows get started all hell can't stop them."

Nor could it. In this painting, about 45 minutes after the assault was launched, the Federals are scrambling upward in waves of inverted Vs, led on by their battle flags. In the left foreground the 11th Ohio Volunteer Infantry is struggling up the slope past dead Confederate soldiers. The defenders are rolling down boulders and artillery shells and even one of their fieldpieces, now useless because it can no longer be depressed to bear on the assault. At lower right is the second line of Confederate rifle pits, already bypassed. In the middle foreground a desperate hand-to-hand struggle is going on for possession of a Confederate battle flag. Baird's troops are nearing the top in the foreground and in the middle distance Wood's and Sheridan's men are already on the crest tossing caps and haversacks aloft in triumph. In the farther distance on the higher slopes to the right, Sheridan's and Johnson's men are approaching the peak where Bragg was nearly overtaken in his own headquarters.

CONTINUED

WEAPONS STACKED AT APPOMATTOX, A SOMBER FINALE

The end was almost anticlimactic: after the agony, the glory, the heroism and the vast bloodletting in hate and love, defeat came in weariness and frustration. Lee's dwindling army lay entrenched eastward of Petersburg, pinned by Grant and almost out of supplies. Grant's line was slowly creeping south and west, threatening to encircle the Confederacy's last stand. Lee launched a desperate attack at Fort Stedman on the Union's northern flank but was foiled and lost 5,000 men. Grant sent Generals Phil Sheridan and Gouverneur Warren to the west and captured the Five Forks road junction from General George Pickett. The threat to his rear had weakened Lee's front. It broke and, at last, the Union seized Petersburg.

Desperately, lunging first one way then another in search of supplies, Lee floundered. Rations due at Amelia Court House never arrived. He made an all-night march and at Sailor's Creek the Federals attacked the rear of the column and took 8,000 men and most of his wagon trains. Four ration trains were waiting at Appomattox Station, but when Lee's weary and starving army arrived, Sheridan was there ahead and had already captured the trains. Lee attacked, but Sheridan counterattacked and trapped Lee's remnants in a valley. Then the South's great general asked to meet his enemy.

They met in a house in the village of Appomattox and Lee accepted Grant's terms, as he knew he must. The generals parted, Lee to see his invalid wife in Richmond, Grant to see Lincoln for the last time in Washington. At daybreak on April 12, 1865, the armies went through the surrender ceremony depicted in this painting. Gravely, respectfully, bearing their bayoneted muskets at the carry, the victorious Federals stood in the gray dawn. Regiment by regiment, the tattered, hungry, battle-worn Confederates marched into position, fixed bayonets, stacked their arms, took off their cartridge boxes and laid them down. Then, as related by Union General Joshua Chamberlain, "they tenderly fold their flags, battle-worn and torn, blood-stained, heart-holding colors, and lay them down. . . ."

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CONTINUED FROM P. 53

A CAPSULE HISTORY OF THE WAR

To put the battles shown on the preceding pages into their proper historical perspective, LIFE presents a brief chronological account of the whole Civil War.

THE Charleston batteries fired on Fort Sumter on April 12, 1861. By July, 11 states of the republic had joined the southern Confederacy: South Carolina, Alabama, Florida, Georgia, Louisiana, Texas, Mississippi, Virginia, Arkansas, North Carolina and Tennessee. Three border states remained loyal: Kentucky, Missouri and Maryland.

The war's first fights were for the control of the border states. Federal victories at Philippi, Rich Mountain and Carrick's Ford helped hold western Virginia for the Union. A skirmish at Boonville, Mo. brought Union control of the Missouri River Valley. In Virginia a Confederate army under General Joseph E. Johnston occupied the Shenandoah Valley, while a second, led by General Pierre G. T. Beauregard, moved to Manassas Junction. The Union general in chief, General Winfield Scott, wanted to finish training his men before attacking these advanced southern forces. But in mid-July Lincoln and his Cabinet, under heavy public pressure, forced Scott to change his mind.

BULL RUN (MANASSAS) JULY 21, 1861
Northeastern Virginia, 25 miles west of Washington. Brig. General Irvin McDowell (30,000 men) vs. Beauregard and Johnston (32,000 men).

Scott sent McDowell to attack Beauregard while a second force held Johnston in the Valley. The Confederates learned of Scott's plan. Johnston hurried to Beauregard's aid in time to stop an initially successful but haphazard Union attack, turn it into defeat and rout. **Casualties:** Union 2,900; Confederate 2,000. (Note: all casualty figures for the war are approximate.) **Outcome:** McDowell's army fell back to Washington.

•

AFTER the Bull Run disaster, McDowell was replaced by Major General George B. McClellan. A Union blockade began to tighten around the Confederate coast. A Union amphibious expedition sealed Hatteras Inlet, N.C. Another captured Port Royal Sound, S.C. A Federal defeat at Wilson's Creek, Mo. on Aug. 10 led to the Confederate capture of Lexington, Mo. and threatened Union control of Missouri.

The first big campaigns of 1862 came in the west. On Jan. 19 a Union victory at Mill Springs, Ky. helped hold eastern Kentucky. A larger Union offensive struck at a southern defense line across the three great rivers that cut into the Confederacy. Southern fortifications blocked the

TEXT CONTINUED ON NEXT PAGE

IN MAPS, THE COURSE OF THE GREAT CONFLICT

Destruction of Confederacy is traced by campaign maps outlining three stages of war. The individual campaigns and battles are described in the text on this and the following pages. During the first stage of war (*top map*) Federal land assaults failed in east, but Union moved into border states and secured control of important western rivers. In second stage (*center map*) Confederate invasions in the east failed while Federal armies squeezed Mississippi Valley. This stage ended with Union victories at Gettysburg and Vicksburg, most important of war. In third stage (*bottom*) Union cut South in half along Mississippi and drove east across Georgia to the sea. War ended when Union offensives through Virginia and Carolinas forced Confederate surrender.

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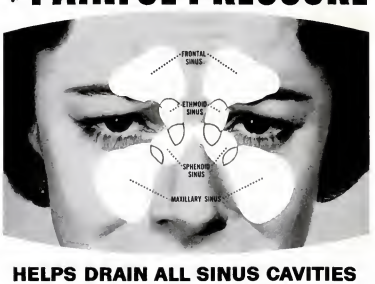

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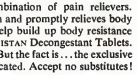

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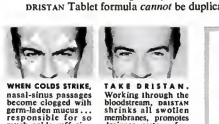

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CIVIL WAR CONTINUED

Tennessee at Fort Henry, the Cumberland at Fort Donelson and the Mississippi at Island No. 10. In February 1862, Major General Henry W. Halleck, commanding the area, ordered Brig. General Ulysses S. Grant to move up the Tennessee.

FORTS HENRY, DONELSON February, 1862
Tennessee, 70 miles northwest of Nashville. Grant (25,000 men, seven gunboats) vs. Brig. General Lloyd Tilghman (5,000 men) and Brig. General John B. Floyd (12,000).

Grant steamed up the river supported by the gunboats. Fort Henry, vulnerable to shellfire from the water, surrendered on Feb. 6. Grant marched overland to Donelson and forced it to surrender on the 16th. **Casualties:** Union 2,800; Confederate 2,000 plus 11,500 prisoners. **Outcome:** Confederacy's hold on two important rivers had been broken.

•

THE Confederate river line continued to crumble. On March 8, Union victory at Pea Ridge, Ark. ended large-scale Confederate efforts directed at Missouri. On March 14 a Union force under Brig. General John Pope occupied New Madrid, Ill., key to Island No. 10. Grant continued south along the Tennessee while Brig. General Don Carlos Buell, with a second Federal army, occupied Nashville. General Albert S. Johnston, Confederate commander in the west, moved to attack Grant.

SHILOH April 6, 7, 1862
West bank, Tennessee River, 90 miles east of Memphis. Grant (41,500) and Buell (20,000) vs. Johnston and Beauregard (40,000).

Grant, waiting for Buell, was camped on the river at Pittsburg Landing in a wooded area surroundiug the Shiloh Meeting House. Johnston struck north from Corinth, Miss., caught Grant's troops in their tents. The Federals, fighting desperately, were thrown back. Union cannon and a last-ditch defense line stopped the Confederates. Buell's troops arrived in force on the 7th and helped beat back the exhausted Southerners. Johnston was killed. **Casualties:** Union 13,700; Confederate, 10,700. **Outcome:** Confederates retreated south, permitting Grant to resume river campaign.

•

ON April 8, Island No. 10 fell. On April 25, New Orleans surrendered to a bold attack from the sea led by Admiral David G. Farragut. Corinth, Miss. fell on May 30. Memphis fell on June 6 after a gunboat fight ("The Battle of the Rams"). By the summer the Confederacy had been pinched in the middle by Union invasions from both ends of the Mississippi Valley.

In the east the blockade tightened with the Union occupation of Roanoke Island, New Bern and Fort Macon, N.C. and the capture of Fort Pulaski at Savannah, Ga. McClellan planned to move his army by water to Fort Monroe, Va., then march up the Yorktown Peninsula toward Richmond, the Confederate capital. On March 8 his plan was threatened by a Confederate assault on the Union fleet near Fort Monroe. The ironclad *Virginia*, once the *Merrimack*, sank two blockaders. The next day she was met in inconclusive battle by a new Union ironclad, the *Monitor*, and forced to retreat upriver to Norfolk. She was later scuttled. McClellan's planned operation was also hampered by Major General Thomas J. ("Stonewall") Jackson's Valley Campaign. Jackson's 16,000 men raided up and down the Shenandoah Valley from March 23 to June 9. They won sharp battles at McDowell, Front Royal, Winchester, Cross Keys and Port Republic and tied up 40,000 Union troops McClellan wanted.

PENINSULAR CAMPAIGN April 4–July 1, 1862
Yorktown Peninsula, southeast of Richmond between James and York rivers. McClellan (105,000) vs. J. E. Johnston and R. E. Lee (90,000).

McClellan marched cautiously up the peninsula, took a month to prepare a siege of Yorktown. It fell without a fight on May 3. McClellan captured Williamsburg on May 5. On May 31 McClellan was caught astride a flooded river by a Confederate attack at Seven Pines (Fair Oaks) which he repulsed. Johnston was wounded and General Robert E. Lee took command. He sent Brig. General J. E. B. Stuart in a remarkable raid right around McClellan ("Stuart's Ride"), recalled Jackson from the valley, and fought McClellan at Mechanicsville (June 26), Gaines's Mill (June 27), Savage's Station (June 29), Frayser's Farm or Glendale (June 30) and Malvern Hill (July 1). His assaults forced McClellan clear back across the peninsula to a new base

on the James. **Casualties:** Union 16,000; Confederate 20,000. **Outcome:** Union failed completely, Lee emerged as great commander.

•

LINCOLN brought Halleck east. Halleck took over command of the Union armies and Major General John Pope took command of a new eastern field army. McClellan's men started north from the peninsula to join it.

SECOND BULL RUN Aug. 29, 30, 1861
Northeastern Virginia, 25 miles west of Washington. Pope (75,000) vs. Lee (55,000).

Jackson defeated a Union force at Cedar Mountain on Aug. 9. After trying unsuccessfully to attack Pope's main army, Lee then sent Jackson behind Pope to burn the big Union supply depot at Manassas Junction. Pope was drawn by Jackson to the old Bull Run battlefield—there was a hot fight at Groveton on Aug. 28. On the 29th Pope failed to dislodge Jackson. Longstreet, in a surprise attack, struck and routed the Federal flank on Aug. 30, Pope's army retreated to Washington. **Casualties:** Union 14,500; Confederate 9,500. **Outcome:** The South gained a lopsided victory and threatened Washington.

•

McCLELLAN was restored to favor and told to save the capital. Lee moved into western Maryland, hoping to recruit men and supplies in the border state. He also hoped an invasion of the North would bring European recognition of the Confederacy and aid from abroad. But he had trouble organizing a major offensive and supplying his army.

ANTIETAM (SHARPSBURG) Sept. 17, 1862
Fourteen miles south of Hagerstown, Maryland. McClellan (70,000) vs. Lee (39,000).

McClellan learned about Lee's battle plans from a captured order. He marched west and confronted Lee's main army strung out along Antietam Creek and backed against the Potomac. At first McClellan thought he faced 120,000 men—Lee had 19,000 at the time. He had sent Jackson on an expedition against the Federal garrison at Harpers Ferry which it captured on Sept. 15. McClellan's delays allowed the Confederates to unite their army. McClellan finally attacked Lee's weak line piecemeal on the 17th, forcing the Confederates back. He failed to press the fight and Lee escaped across the Potomac. **Casualties:** Union 12,350; Confederate 13,700. **Outcome:** A narrow escape for Lee after the bloodiest 12 hours in U.S. history.

•

McCLELLAN was relieved on Nov. 7 and replaced with Major General Ambrose Burnside. Burnside planned to move on Richmond by way of Fredericksburg, a key railroad town.

FREDERICKSBURG Dec. 13, 1862
45 miles north of Richmond. Burnside (106,000) vs. Lee (72,300).

Burnside scored some success against one wing of the Confederate line. But the uphill approach to the left of the Confederate line on Marye's Heights was under constant fire. Burnside nevertheless sent his men against this position for an entire day. Its defenders never budged and the Union forces crossed back over the river at night. **Casualties:** Union 12,000; Confederates 5,300. **Outcome:** The Union suffered a costly defeat.

•

MAJOR General Joseph Hooker replaced Burnside. He split his army, sending Major General John Sedgwick to demonstrate against Fredericksburg, while he led the rest of his troops to ford the Rappahannock and Rapidan, threatening Lee's rear. Outnumbered and in a bad position, Lee left a rear guard to hold off Sedgwick, and wheeled around to attack Hooker.

CHANCELLORSVILLE May 1–4, 1863
Ten miles west of Fredericksburg, Va. Hooker (73,000) vs. Lee (43,000).

As the pressure on his front increased, Hooker dug in around the crossroads of Chancellorsville. Stuart's cavalry brought news to Lee that the right end of the Union front ended abruptly in the woods. Lee daringly split his army and sent Jackson around the end of the Federal line. Jackson surprised and drove in the weak flank, but was fatally wounded. At Fredericksburg Sedgwick attacked and carried Marye's Heights on May 3rd. But when Lee turned to attack Sedgwick at Salem

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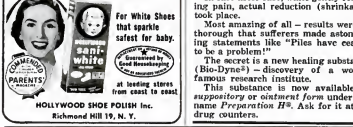

CIVIL WAR CONTINUED

Church on May 4, the Union armies retreated. **Casualties:** Union 17,000; Confederate 13,000. **Outcome:** Lee, who had overcome big odds, won a spectacular victory.

•

IN all the months that the armies of the east were fighting over the same few miles of Virginia and Maryland, a very different kind of war was being fought in the west. It thrust far, and sometimes fast, along the rivers and the new network of railroads.

Admiral Farragut steamed up the Mississippi twice to attack Vicksburg. But he had no soldiers to land there and the city held out. Meanwhile two Confederate offensives were pressing the Federal armies in the west. One was a two-pronged invasion of Kentucky led by General Braxton Bragg and Major General E. Kirby Smith. It captured Lexington, Ky. and threatened Louisville and Cincinnati. Buell's army was forced to move northeast to counter it. Buell missed a good chance to beat Bragg at Perryville, Ky. on Oct. 8. He was replaced by Major General William S. Rosecrans, who had fought off the other southern drive in northeastern Mississippi with victories at Iuka and Corinth.

STONES RIVER DEC. 31, 1862–JAN. 2, 1863
30 miles southeast of Nashville, Tenn. Rosecrans (47,000) vs. Bragg (38,000).

Rosecrans caught Bragg in the last days of 1862 and fought a close battle at the west fork of the Stones River. The Federals, initially beaten back, held. **Casualties:** Union 12,000; Confederate 12,000. **Outcome:** The Confederates were forced to retire southward.

•

GRANT moved against Vicksburg. After an abortive land campaign, he floated down the Mississippi on a fleet of transports and gunboats. By January his men were mired in the swamps which bordered Vicksburg. They made four unsuccessful attempts to cut off the city. In April 1863, Grant tried a fifth time.

VICKSBURG APRIL 16–JULY 4, 1863
Mississippi-Arkansas border. Grant (71,000) vs. Johnston (31,000) and Pemberton (20,000).

On the night of April 16 Rear Admiral David D. Porter successfully ran past the Vicksburg batteries. The next day Federal Colonel Benjamin Grierson and 1,000 cavalrymen started a raid ("Grierson's Raid") which sucked Confederate cavalry from Vicksburg's defenses. Grant began ferrying his troops across the Mississippi south of Vicksburg. He struck inland, living off the land. He defeated Confederate detachments at Port Gibson and Jackson. Lieut. General John C. Pemberton came out of his Vicksburg forts, lost a battle at Champion's Hill on May 16, and returned to the city where Grant besieged him. Joseph E. Johnston, now Confederate commander in the west, tried to relieve the Vicksburg garrison but he was held off by a Federal corps under Major General William T. Sherman. On July 4, 1863, after 42 days of siege, Pemberton surrendered his starving city. **Casualties:** Union, 9,300; Confederate, 10,000, plus 20,000 prisoners. **Outcome:** Union won a major victory, which, coupled with General Banks's successful siege of Port Hudson, La. cut the Confederacy in two. The Union could now use the whole Mississippi.

•

DURING the Vicksburg campaign, the South had faced a decision: should it ship troops west to try to hold open the rivers or should it fight in the east? Lee chose the east. In June 1863 he set out north again, driving for the resources of Pennsylvania.

The move was initially screened by Stuart's cavalry, which on June 9 at Brandy Station fought Union horsemen in the war's biggest cavalry battle. As Hooker moved north to counter, he was replaced by Major General George G. Meade. By the end of June, Lee's army was in southern Pennsylvania.

GETTYSBURG JULY 1–3, 1863
35 miles southwest of Harrisburg, Pa. Meade (88,000) vs. Lee (75,000).

Neither army knew exactly where the other was. Federal cavalry made the first contact when it ran into a Confederate detachment foraging toward the town of Gettysburg, Pa. On June 30 the Federal horsemen formed a line to the northwest of town and sent for help. As more Confederates came up, on July 1, the Federals fell back, fighting through the town to hills and Cemetery Ridge to the south. There were four unsuccessful Confederate attacks on the 2nd. On one, Longstreet almost captured Little Round Top, a small hill which dominated

CONTINUED ON PAGE 63

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greens-blues	natural	ivory	pink	blushing
browns-black	pink	ivory	blushing	tawny
white neutrals	natural	tawny	blushing	tan or deep tan

the Union line. But he was beaten back. On the 3rd Lee sent 15,000 men, including his only fresh troops under Major General George Pickett, in a head-on assault ("Pickett's Charge"), against the center of the Union line on Cemetery Ridge. Federal fire broke the charge and the Confederates retreated. Meade failed to pursue and Lee evacuated his badly mauled army on the night of July 4. **Casualties:** Union 23,000; Confederate 28,000. **Outcome:** The Union victory, especially significant because of Lee's heavy losses, was a turning point in the war. But Meade failed to exploit his success.

•

BY July 1863 the Union blockade was tight. The Federals held all the important Atlantic ports and inlets except Charleston, S.C. and Wilmington, N.C., and these were blocked by Federal warships. A Union amphibious expedition was pressing on Charleston. The South was short of men, equipment and food. The southern armies in the west were in danger of being pushed into Georgia. The Confederates decided to reinforce them. Longstreet's corps was sent to Tennessee to help Bragg.

After Stones River, Bragg had fallen back under pressure from Rosecrans across the Tennessee River into Chattanooga. Rosecrans split his army into three parts and marched south to outflank Chattanooga.

CHICKAMAUGA SEPT. 19, 20, 1863
Northwest Georgia, 15 miles south of Chattanooga, Tenn. Rosecrans (61,000) vs. Bragg (62,000).

Bragg failed twice in attacks on Rosecrans' army while it was still trisected. Rosecrans closed up his army on high ground near West Chickamauga Creek, where Bragg attacked on the 19th. On the 20th a heavy attack by Longstreet's newly arrived brigades undermined one side of the Union line and the Federals retreated into Chattanooga. One corps under Major General George Thomas ("The Rock of Chickamauga") held on until night. Bragg all but encircled Chattanooga. **Casualties:** Union 16,000; Confederate 18,000. **Outcome:** Bragg won, but he failed to exploit his success.

•

GRANT, made commander in the west, replaced Rosecrans with Thomas who opened a safe supply line to the hungry city. Grant went to Chattanooga himself. On Nov. 24 he sent Hooker's corps against the foggy face of Lookout Mountain, one of the two big heights commanding Chattanooga. Hooker forced the mountain's evacuation and the next day Grant attacked the second key height, Missionary Ridge.

MISSIONARY RIDGE NOV. 25, 1863
23 miles east of Chattanooga, Tenn. Grant (56,000) vs. Bragg (46,000).

Grant planned to envelop both ends of Bragg's position on top of the long, straight ridge. But his attack went awry and he ordered Thomas to charge trenches at the foot of the ridge. Thomas' men did, then—without orders—kept going up and cleared the Confederates from the crest. **Casualties:** Union 5,800; Confederate 6,600. **Outcome:** Badly defeated, Bragg was forced to retreat into Georgia.

LINCOLN now gave Grant command of all the Union armies. Grant turned his western army over to Sherman. There were five major Union armies now: two big ones, Meade's and Sherman's; and three smaller ones, Major General Franz Sigel's in the Shenandoah; Major General Benjamin Butler's, in a James River bridgehead south of Richmond; Major General Nathaniel P. Banks's, on an ill-fated campaign up the Red River.

Grant, running all the armies but accompanying Meade's, sent Meade after Lee and Sherman into Georgia against Bragg's old army, now commanded by J. E. Johnston. In May 1864, Sherman started down the railroad from Chattanooga to Atlanta and Meade crossed the Rapidan west of Chancellorsville.

THE WILDERNESS MAY 3–7, 1864
Northeastern Virginia, 15 miles west of Fredericksburg. Grant (119,000) vs. Lee (64,000).

On May 4 two Union corps bogged down in the thickets of The Wilderness to the east of Lee's camp. On May 6, after a day of blind fighting, Longstreet came up to wreck a Federal attack. Lee turned both Federal flanks. On May 7, Grant took his men out of their line, marched them south toward open country and Richmond. **Casualties:** Union 15,000; Confederate 8,000. **Outcome:** Tactical victory for Lee, but Grant's refusal to retreat pressed Lee's weakening army southward.

•

THE next strong point south was a crossroads at Spotsylvania Court House. Lee won a race to get there and by May 9 his army was entrenched.

SPOTSYLVANIA MAY 9–19, 1864
Northeastern Virginia, 40 miles north of Richmond. Grant (90,000) vs. Lee (50,000).

Grant struck at points in Lee's Spotsylvania line for more than a week. The southern line swung to repel the assaults. On the 20th, Grant broke off the action and once again moved south around Lee's army. **Casualties:** Union 17,000; Confederate 9,000. **Outcome:** Again weaker Confedcrates had inflicted heavier losses, but Grant retained the initiative.

•

ON the 23rd, the Federals reached an elbow of the North Anna River where Lee had dug in. There was a day of hard fighting followed by two of skirmishing. Then Grant broke off his attack for a third move south, marching toward Mechanicsville. Grant found Lee's main line too strong and moved south a fourth time to find the adroit Lee's detachments dug in again at Old Cold Harbor.

COLD HARBOR JUNE 1–12, 1864
10 miles northeast of Richmond. Grant (108,000) vs. Lee (59,000).

After inadequate reconnaissance, three Union corps charged Lee's strong fieldworks straight on. Their attack collapsed in an hour, although trench warfare continued there for nine more days. **Casualties:** Union 7,000; Confederate 1,500. **Outcome:** A bloody defeat for Grant.

CONTINUED

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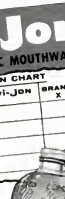

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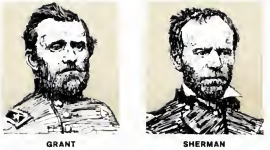

GRANT SHERMAN LEE JACKSON

On June 12, Grant marched the entire Union army south to a pontoon bridge over the James. He crossed to join Butler's dormant army on the outskirts of Petersburg, at the hub of the railway net south of Richmond. The maneuver fooled Lee. But uncoordinated Federal assaults on the outnumbered Confederates at Petersburg failed. By June 22 Lee had rushed the rest of his army there.

Tedious trench warfare followed. In the Shenandoah Valley, Sigel, beaten at New Market, was replaced by Major General David Hunter. He marched toward the rear of Richmond. At Lynchburg, Major General Jubal Early beat Hunter, forced him into West Virginia, then rampaged down the valley into Maryland. Early then reached the defenses of Washington. He was too weak to penetrate them but Grant had to send Sheridan and a new army after him. Sheridan won battles at Winchester and Fishers Hill. But Early was not checked finally until Oct. 19.

At Petersburg on July 30 Federal miners set off a great explosive charge under the Confederate works. Union troops swarmed into the crater and, in the colossal confusion, 4,400 were killed and wounded by Confederate counterattacks. For the rest of the year Grant reached southward for Lee's supply lines. Lee had to stretch his defense thinner to meet the threat. By winter there was only one railroad open to Petersburg.

In Georgia, Sherman beat Johnston at Resaca and New Hope Church, suffered a setback at Kennesaw Mountain. Then he pushed Johnston into the outskirts of Atlanta itself. Johnston was replaced by Lieut. General John B. Hood.

BATTLES FOR ATLANTA July 20–Sept. 2, 1864
Sherman (100,000) vs. Hood (49,000).

Sherman moved against Hood's supply lines south and east of the city. He defeated Hood three times in nine days—at Peachtree Creek, in the so-called Battle of Atlanta itself, and at Ezra Church. In the last days of August, Sherman took his whole army south of the city, cutting its supply lines. Hood was forced to get out or starve. He got out. and Sherman occupied the city on Sept. 2. **Casualties:** Union 6,000; Confederate 5,000. **Outcome:** The capture of one of the South's most important cities was a severe blow to Confederate economy and morale.

●

ATLANTA'S fall came hard on the heels of Farragut's victory at Mobile Bay, last big Confederate seaport on the Gulf. Hood now proposed to strike north and west into Tennessee and Kentucky, recruit new soldiers and then come east to help Lee. Sherman prepared a counterplan. He would leave enough forces to contain Hood and march east. Hood headed north to the Tennessee border raiding Sherman's rear, but ran westward when Sherman's army came up. Sherman left Thomas to deal with Hood, then struck east with 62,000 men toward Savannah ("Sherman's March to the Sea").

Hood moved on Nashville. Thomas fortified the town and sent Major General John Schofield to check Hood's advance. Schofield escaped from an uneven fight at Columbia and a trap at Spring Hill to Franklin.

FRANKLIN Nov. 30, 1864
15 miles south of Nashville, Tenn. Schofield (32,000) vs. Hood (38,000).

The Confederates charged across a half mile of open ground at hastily built Union fieldworks. They broke the Union line but a reserve brigade plugged the hole. That night Schofield was able to withdraw to Nashville. **Casualties:** Union 2,300; Confederate 6,250. **Outcome:** The Union army retreated but Hood lost 12 generals.

●

HIS army demoralized by its losses, Hood moved north to a vulnerable position on hills outside Nashville.

NASHVILLE Dec. 15, 16, 1864
Thomas (49,000) vs. Hood (31,000).

Thomas swung wide around Hood's weak line, flattened half of it, then came back the next day to finish the job. Hood was forced to pull out. **Casualties:** Union 3,100; Confederate 1,500 killed and wounded and 4,400 captured. **Outcome:** This was the effective end of Hood's army.

●

ON Dec. 12, Sherman captured Savannah. He had crossed Georgia in 28 devastating days, foraging off the farmlands and burning public property, methodically destroying anything which might help the Confederacy. In early 1865, he started north through the Carolinas to join Grant.

Lee still lay in the Petersburg trenches, hungry and immobile. He pooled some of Hood's survivors and a few cavalry under Johnston to face Sherman. On March 19, Johnston attacked Sherman at Bentonville, N.C. and was repulsed. On March 25 Lee himself lost 5,000 men in a desperate assault on Federal Fort Stedman at the north end of the Petersburg siege line. Sheridan now returned from beating Early in the valley. Two days later Grant swept west around Lee's line.

FIVE FORKS March 31–April 1, 1865
Sheridan and Warren (28,000) vs. Pickett (19,000).

Five Forks was an important road junction on Lee's last supply line to Petersburg. Sheridan circled west. At first he was repulsed by Pickett, but Major General Gouverneur K. Warren attacked the Confederate rear. Pickett was routed and Petersburg was nearly encircled. **Casualties:** Union 1,000; Confederate 4,500 captured. **Outcome:** Lee's defense line was finally turned.

●

THE fight at Five Forks had brought the Confederates out of their trenches in a vain attempt to hold their last supply line. At first light on April 2, Grant struck all along the weakened Petersburg defenses. They broke. By night Lee's men were out of the city. The Confederate government evacuated Richmond and the capital surrendered the next morning.

Lee marched west with 30,000 hungry, exhausted men. He had ordered rations sent to Amelia Court House but they never reached there. He tried to turn south along the railroad toward Jetersville but Union troops blocked it. He marched all night past Sailor's Creek where Federal forces captured most of his wagons and 8,000 men from his rear guard. Four more ration trains were supposed to be waiting at Appomattox Station. Sheridan was there before Lee and on April 9 Lee's last brigades struck hard at the Union horsemen. Union troops counterattacked to the top of a low ridge and Lee's army was trapped. On April 9 Lee surrendered. On April 26 Johnston surrendered to Sherman at Durham, N.C. After another month of diehard resistance in the remote remnants of the Confederacy, the war was all over.

NEXT, IN FEB. 3 ISSUE: WHAT A SOLDIER'S LIFE WAS LIKE—LETTERS HOME BY TWO YOUNG ENEMIES

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SPORTS

A Graceful Test of Rivals

The troupe of hard-muscled Russian girls touring the U.S. had proved themselves the best gymnasts in the world at last summer's Rome Olympics. Now American audiences, who had watched their Rome performances on television, found that they were even more stunning in the flesh—not so much for their perfectionist acrobatics as for their supple beauty and airy charm.

The Russians themselves were treated to a stunning American performance. At West Chester, Pa., in their first U.S. appearance, a 20-year-old, Muriel Grossfeld of Urbana, Ill., tied for first place in the free standing exercise event with Larisa Latynina, the best gymnast in the world. Muriel had been on the last two U.S. Olympic gymnastic teams but her best was an unformful five-way tie for ninth place. "Imagine me tying their Olympic champion," exclaimed Muriel. "It's just too silly to be true." But the Russians were so impressed that they asked her to appear with them at an exhibition the next night, just about the highest honor they could give a sister gymnast.

← **RHYTHMIC SKILL** in floor exercises won Muriel Grossfeld near-perfect score and tie for first place.

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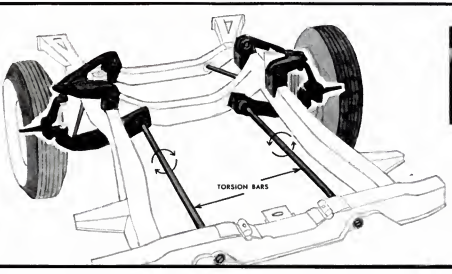

The principle of the torsion bar twist

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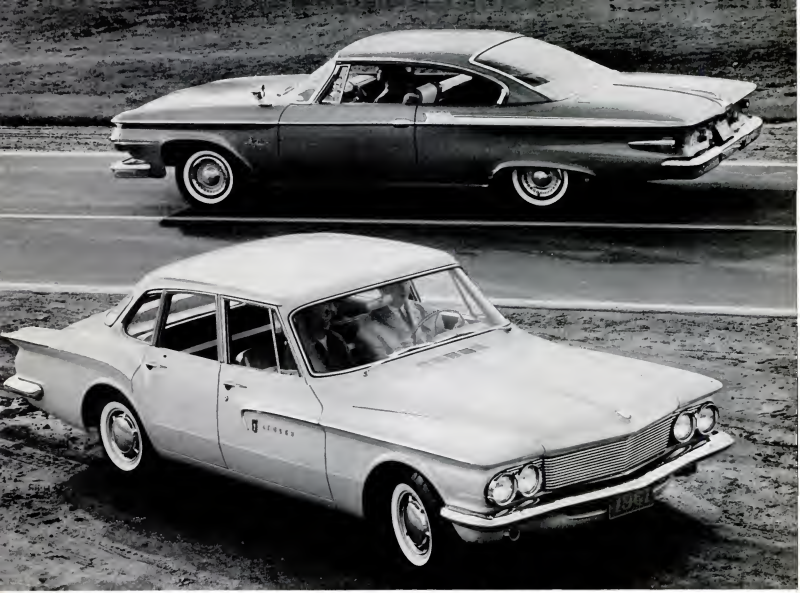

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When these torsion bars are combined in just the right way with fast-acting "Levelizer" leaf springs in the rear—then you have the beginning of Torsion-Aire Ride, the finest ride on the road today. The ride that prompted a well-known test driver to write: "Chrysler products with their torsion bar suspension are the most outstanding road cars ever built in America, bar none."

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THE MAN WITH A LIFE IN

In the drama of an operating room a great surgeon pits

Because of the nature of this article, the names of all doctors and hospitals have been disguised. However "Dr. Matthews" is a real person, an outstanding cancer surgeon, and this operation took place exactly as described.

by W. C. HEINZ

Photographed for LIFE by ELLIOTT ERWITT

GOOD morning, Doctor Matthews," the voice of the woman on the phone said, "It is now 6:45." He had been lying there in the gray darkness, half awake, half waiting for the phone to ring. "At 8 o'clock," the woman's voice said, "you're at University Hospital for a lobectomy. At 11:30 you're at Mercy for a conference. At 1 o'clock you have a mitral stenosis there. At 4 you're at your office to see patients until 7. At 8:30 you're at the Academy for a meeting of the medical society. That's all."

"Will you be home for dinner?" his wife said after he had hung up.

"About 7:30," he said, "but I have a meeting at 8:30."

His mother was the one who had started it all. She was a thin, wiry woman with high cheekbones and her black hair drawn back straight, and she was deeply religious. While she was cleaning the house in Colorado

HIS HANDS

his skill against cancer and makes the ultimate decision

or scrubbing the kitchen table until the wood was bleached almost white, she would be casting out her philosophy. "Be a healer," she would say. "Jesus was a healer, but if you can't be a minister and heal the soul, be a doctor and heal the body."

Now he was walking out through the small lobby of his apartment building, and the doorman gave him the keys to the car. He drove downtown, looked the ear and walked aeross the street into the hospital.

"Excuse me, Doctor Matthews," the receptionist said, "but your patient's wife and son would like to talk with you."

A woman in her late 50s wearing a green dress, and a broad-shouldered man in his 30s were standing there. He was trying to recall the woman when she put out her hand to him.

"We just want to wish you luck, doctor," she said, almost apologetically. She was trying to force a small smile across the fear in her face.

"Look," he said, "please try not to worry. We'll take good care of him."

"I know you will," the man said.

"Now remember," he said to both of them, "I'm not worried, so there's no point in you two worrying."

"Bless you, doctor," the woman said, still trying to smile.

It was the truth. When he was much younger and still insecure, every

The surgeon goes through the ritual of dressing for the operation, while outside the patient's wife and son anxiously wait

CONTINUED

The surgeon holds the X ray up and, looking through it, studies the shadow on the lung that seems to indicate a cancerous growth

SURGEON CONTINUED

operation was prefaced by anticipation and tension. He would lie in bed the night before and play it over and over, trying to imagine everything he could possibly run into. Now he was 53 and had opened 5,000 chests and he had it all so beautifully systematized that each move was almost a reflex. Now, in most of them, all the tension was gone, and so was almost all the exhilaration. Now he just refined and refined and refined.

Walking into the doctors' lounge, he flipped the light button by his name and signed the registry. In the elevator he pushed the button marked O.R., and when he got out he walked down the hall to the doctors' locker room.

"Why!" he said, from the doorway. "Look at all these great surgeons."

"Good morning, Matt," Tomkins said.

"Hello, Tom," he said.

There were a half dozen of them in the room. A couple of them were undressing in front of their lockers. The others were sitting around in the two-piece, washed-green pajamas and the caps, the masks hanging from their necks.

"I've been wanting to ask you about that story in the papers about the Russians," Allerton said.

"What story?" he said, hanging his jacket in the locker.

"You see?" Allerton said, telling it to the room. "The Russians have him beaten and he doesn't want to admit it."

"Beaten?"

"Sure," said Allerton. "The story in the *Times* said they do that operation you do—that pneumonectomy—under a local anesthesia and they do it in 12 minutes. How come it takes you three hours?"

"Look, damn it," he said. "Don't tell me about the Russians. That thing was done 19 years ago in Toronto with the patient awake but under a spinal, and it was awful even to see. All of a sudden the patient loses his voice and then he turns blue. Don't tell me about that stupid procedure."

"Well, don't get sore at me," Allerton said, still kidding him.

"I'm not sore at you," he said, smiling.

"Didn't you sleep last night?"

"I slept fine," he said, "but how can the Russians sleep?"

He had stripped to his shorts and socks. He took the money out of his wallet and slipped the bills down inside his left sock and flattened them around the ankle. Then he took off his wrist watch and slid it down inside the other sock. He got into the pajamas and put on the green cap. He shook out the mask and tied the bottom strings around his neck and then he put on his half-glasses. Finally he slid his feet into the open-backed, white leather operating shoes.

"Well," he said, shutting the door of the locker and looking around at them, "you successful doctors can sit around and talk about taxes and golf and girls, but I have to work."

Tomkins followed him out into the hall. As they were about to pass the elevator, the door opened and two orderlies pushed a bed out. On it was a gray-haired man.

"Is that our patient?" he said.

"No," Tomkins said. "Ours'll be down in a few minutes. You'll remember him when you see the X rays."

He used to remember them all. At first their faces and the way they handled their fear and their struggles to make a living and their hopes for their families were all a part of it. Then it came to him that he could no longer carry all this, day after day.

One of them had been that white-haired man whose son had brought him from Ireland. The old man had never spent a night away from his wife since they had been married. He had never been out of his own country before and it was the spring of the year. When he had lost him that morning, he had walked the son down to the end of the seventh floor there at Riverside Hospital and they had stood, each with one foot up on that radiator by that low window with the rod across it, and he had tried to explain it. The son had taken it with his face set and nodding, and then they had shaken hands and the son had left. Alone, he had stood there for a long time, looking up the river, alive in the sunlight. Across the avenue the trees were just coming to bud, and he had thought of how green they say Ireland is in the spring and then, perhaps for the last time, he had felt tears in his eyes.

Now it is better just to hear what he has to know and not let them tell him about themselves at all.

"Matt," Tomkins said now, "here are the pictures."

They had walked into the operating room and said hello to the anesthetist and the scrub nurse and the floating nurse. He went over to where Tomkins was standing in front of the two X rays clipped to the lighted panels on the side wall. He saw the shadow in the upper lobe of the left lung, almost the size of an orange and partially hidden by the heart shadow.

"Yes," he said. "I remember him now. He's that house painter."

'Let me do the worrying'

It had been late one day about two weeks before, and he had just finished with a patient when Tomkins had walked in and snapped the films up under the clips.

so many. They come in scared, and you have to get them believing in you so that they don't quit on you when you need them the most.

"I just want to listen to you," he had said then. He had put the stethoscope on him, listening first to the left chest and then to the right.

"You smoke?" he had said.

"Maybe a pack and a half a day."

"How long have you been smoking?"

"Oh, I don't know. Forty years."

"Well, there's nothing wrong with you that we can't fix."

"When must I go to the hospital?"

"In a few days."

They had walked into Tomkins' office then and he had met the wife.

"He's going to be all right," he had said.

"I hope so," she had said. "He's very important to us."

"Why," he had said, trying to brighten her, "his kind are three for a dollar on any corner."

"Maybe," she had said, "but I never found another one."

"You won't have to," he had said. When they left, Tomkins had followed him back into his office.

"Well?" Tomkins had said.

"It's cancer."

"I'm afraid so."

"Sure. When I put the stethoscope on him I could hear a distinct wheeze right by that lesion."

He had heard it, all right. A healthy lung sounds like leaves rustling in a tree. This one was like a door squeaking or a broken reed on a saxophone, and then there were the symptoms and the history.

Now he walked across the operating room to the tape rack on the wall and tore off a strip of half-inch about four inches long. One end he stuck high on his forehead, then he ran it across the bridge of his glasses and down onto his nose to hold the glasses firm. He walked out into the hall.

"Good morning," he said.

The patient was lying on the bed outside the door, the sheet tucked up almost to his neck.

"Oh, hello, doctor," he said, turning his head.

"You waiting for someone?"

"Yes," the man said, trying to smile. "I guess I'm waiting for you."

Talking to him he had taken his left wrist and was counting the pulse. Even without a watch you won't be off more than five beats, but more important you can get the regularity and the strength of the pulsation.

"There's something I want to tell you, doctor."

I'd rather not hear it, he thought, but I must. If they want to at this time, you must let them speak.

"I've never been very religious."

"Oh?"

"But I trust in you."

They would be surprised how often you hear this, but maybe that was what you wanted once. You wanted to be somebody. Away back when you were sitting around in the Beta house and the rest of them were going into General Electric or into banks or bond houses and you said you were going to medical school, it separated you immediately. The rest of them looked at you as if you were already a hero.

"I appreciate your trust," he said now, taking the man's right hand in both of his and looking down at him. "Now, in a minute or two they're going to stick your arm with a needle. That's all you'll feel, and the next thing you know you'll be back in your room waiting to kid the nurses."

He put the hand down and picked up the large manila envelope from the foot of the bed. He walked to the window and, taking out the reports, he checked the hemoglobin and urinalysis, the liver test and the electrocardiogram, and saw that all the organs were functioning normally. When he turned back they were pushing the bed into the operating room. He handed the envelope to the nurse who was holding the door open, and he walked to the next door and went in. He peeled the tape from his nose, and pulled the mask up across the lower half of his face. He pressed the tape down over it, knotted the two strings above his cap and walked to the sink next to Tomkins. He took a brush out of the holder and, with the foot pedal, squirted the Septisol into his hands and started to scrub, first the hands, then the forearms—five minutes in all.

When you have been scrubbing two and three times a day for a quarter of a century, you don't have to set the timer any more. Then, because you scrub so often and for so long, and work always in rubber gloves, your hands become so soft that it is actually embarrassing to shake hands with other men.

When he finished the scrubbing, he rinsed his forearms and hands, pushed the door of the operating room open with his right shoulder and, his hands up in front of him and palms toward himself, walked across to the table with the sterile gowns and folded towels on it. He picked up a towel and dried his hands and arms. As he did, the scrub nurse came over and shook out a gown. He slipped into it, and the floating nurse tied it in back. Then he opened a towel, ripped open the packet of powder, powdered his hands and snapped on the gloves.

Once he did not know even how to get into a gown or a pair of gloves. That first day he assisted at the thyroid at Mercy, he couldn't get the hemostats to open and he was shaking all over. It was that short, German surgeon with the silver-rimmed eyeglasses and the fat hands and he was shouting: "Off, off, off!" And then "No, doctor! No, no, no! It's not difficult: hold them like this!"

As he turned back to the room now he saw the patient, the upper half of his body uncovered, thin and pale-skinned on his back on the table under the lights. They already had him under the sodium pentothal. The intratracheal tube was down his windpipe, and the anesthetist was taping it to the left cheek.

"Well, Susie Q," he said to her, "how are you doing?"

"Fine, doctor," she said, looking at him with those big eyes over the mask. "We're doing fine."

"Good morning, doctor," he said to the interne.

"Good morning, sir."

Standing there, his gloved hands folded in front of him, priestlike, he watched Tomkins and the interne while they turned the patient onto his right side with the right arm, the intravenous tubing rising from it, out along the arm board. The left arm was folded across but up high and out of the way. The right leg was bent for stability and the left out straight. He watched them put the pillow under the head, on its side, and the pillow up between the legs. Then Tomkins and the interne anchored the body, pulling the wide adhesive tapes tight across the hip, crossing them there and sticking them to the sides of the table. When the interne started to soap the left chest and back, he walked over and took another look at the pictures, at the shadow lying up there in the lung field and adjacent to the heart.

They had looked at them together.

"What's the history?" he had said.

"He's 59 years old," Tomkins had said, looking at the papers in his hand, "and a house painter. About eight months ago he coughed up some blood, and then about two months ago he started again. About a week later he had a pain in the left chest and more blood in the sputum. He says he feels fine now, but his wife says his appetite is poor and he's short of breath. I thought you might come in and talk with him. He's scared."

The man had been standing, with his shirt off, by the table in the examination room. He was about six feet tall, lean, with his hair graying and thin on top.

"Hello, doctor," the man had said, shaking hands.

"Hello," he had said. "What do you think your trouble is?"

"I don't know," the man had said, because very few of them even dare mention it. "I hope nothing much."

"Are you scared?" he had said then, looking right at him.

"No, I'm not scared. But I'm a little nervous."

"A big guy like you? Let me do the worrying. You don't suppose I'd have anything to do with you if I didn't think I could help you. Do you?"

"I guess not."

"Of course not. I not only have you but also my reputation to think of. I have to get you well."

It is something you have to do with

'I think you can paint him now'

DOCTOR," he said to the interne when he walked back, "you're not trying to scrub my patient away are you? You wouldn't want me to have to go out on the street and find a new one."

"No, sir," the interne said, stopping and looking at him, embarrassed, the swab arrested in mid-air.

"That's fine. I think you can paint him now."

"Yes, sir."

He watched the interne painting. He watched him dip into the pan of disinfectant and swab the whole area with the orange-pink Merthiolate.

"Good," he said, walking up. He saw that the table was at just the right height so that, at the end of the day, he would not feel it across his shoulders. At his left, the scrub nurse had swung the instrument tray across on its stand. He put out his left hand and she pressed the scalpel into it,

CONTINUED

The doctors spread the sheet over the patient, placing the opening through which they will work around his chest

and he turned it in his hand. With the back of the scalpel he made the scratch, just marking the skin, starting under the left breast and bringing it up in the big C and shifting to his right hand and finishing behind the shoulder blade. Then he made two small marks, intersecting it, about 12 inches apart.

"So when we put him back together," he said to the interne, "we'll know exactly where the skin edges go."

"Yes, sir," the interne said.

No, he thought, taking the first towel, I wouldn't want to be young like that and starting out over again. He doesn't see it yet, but now that the aging ugliness of this body is about to be draped away, I know that I will find beauty here in the miraculous, clean, functional, always-in-the-same-place orderliness of everything.

He placed the first towel and the three others, as a frame around the scratch. Then, over the whole body, he, Tomkins and the interne spread the green thoracotomy sheet with its white-trimmed opening.

The reason he won't find that beauty, he was thinking, is that he remembers that under this sheet lies a man, and he thinks of pain. Only Tomkins and I really know that we are doing all that can be done for this man.

'Okay, let's go. . . . Knife'

HE and Tomkins clamped of it rose above the patient's head, hiding the anesthetist from his view. He leaned over the drape and looked down at her, sitting on her stool next to the respirator and the gas tank.

"Goodby, Susie Q," he said. "I'll see you later."

"Goodby, doctor," she said, looking up at him.

"Is everybody ready?" he said.

"Right, Matt," Tomkins said.

"Yes, sir," said the interne.

"Yes, doctor," the scrub nurse said.

"What time is it?" he said to the floating nurse.

"It's 8:26, doctor," the "float" said.

"Okay, let's go," he said, and he reached across with his right hand. "Knife."

The first knife he had ever used was a bone-handled pocket knife that his father gave him. He was about 8, and for a long time he wore it on a chain and his father showed him how to skin rabbits with it until he became very good at it.

Now he felt the handle of the scalpel press into his hand and he closed on it. With one long, easy, I-have-done-this-5,000-times motion following the pink-on-pink line of the scratch, he made the long curved cut. He saw the pink-painted skin pull back and the yellow of the fat layer follow it, and the tough white tissue, lying there over the muscles.

One day, when he must have been about 10 or 11, he was walking in the canyon east of town with his single-shot .22. It was about 3 in the afternoon when he saw the cottontail in the shadow of the gray volcanic rocks and he got it with the first shot. When he started to skin it, he found the four young inside, and as he opened each sac there was a gasp. He didn't know then that these were the last breaths of life, so he carried the unborn rabbits back the four miles, carefully wrapped in the skin and cradled in his hands. He put them on the warm asbestos covering on the top of the furnace in the basement where his father found them the next day and explained to him what he had done.

"You see, doctor?" he said to the interne now. "The bigger the incision you make, the more money you can charge. Do you believe that?"

"No, sir."

I'll have to loosen him up, he was thinking. During this early routine you have to keep them loose, these internes and Susie Q and the scrub nurse. You don't want them tired when you get to the critical part of the problem.

"You see," he said, "this patient has been very considerate of us. He has kept himself thin."

On the other side of the table Tomkins was starting to clamp the stockinet onto one edge of the wound. He reached out and the scrub nurse handed him his stockinet. He clamped it to the edge of the cut and folded it back to cover the skin. In the old days they all used linen skin towels, but on Okinawa when they ran out of them, he borrowed the knitted stockinet that the orthopedic boys used. Now, because it is so elastic that it molds itself over the chest wall, a lot of them use it.

"Where did you go to school, doctor?" he said, smoothing down the stockinet.

"At Harvard."

"Then you think a good deal of Doctor Churchill."

"Yes, sir."

At Massachusetts General in those early days when Churchill was going to do a lobe, the word would spread on the grapevine and they would be standing in the halls trying to get a look. Even if he wasn't assisting he'd still be there somewhere, every time he could get free and knew Churchill was going to operate.

"There's a bleeder," he said, spotting the small spurt where the vessel had been severed. "He thinks he can hide, but I recognize him."

After he had sponged, he saw that they had clamped all the bleeders. There would be perhaps a hundred more of these small veins and arteries. He and Tomkins started to tie the first of the 300 or more knots. Going in, really, is just three cycles of cutting and clamping and tying off—first down to the muscles, then to the ribs and finally into the chest. He held the first clamp for Tomkins while Tomkins passed the black silk thread behind it, tied it and knotted it twice more. Then Tomkins held for him.

"No, doctor," he said as the interne cut the thread. "You're holding those scissors like a woman. Here."

You have to learn to pick up scissors all over again. The scrub nurse handed him a pair, and he showed the interne how to hold them, with the thumb and ring finger in the eyes of the scissors, the middle finger to the side and the index finger down the length of them as a pointer.

"Now you're ready for anything," he said. "Knife."

He started at that triangle where the back and the shoulder muscles join. When he had cut the tough, white tissue there, he turned his left hand palm up and slid his first two fingers into the opening. Spreading them, he cut the first set of muscles forehanded and saw them snap back cleanly, released by the cut. Then he came back and did the second set of muscles the same way, but backhanded. With each cut, certain of himself, he went all the way through to the periosteum, which is the tissue covering the ribs. This was something that at the start he had lacked the assurance to do and so, like all beginners, he had tended to be a scratcher, making those shallow ineffectual cuts because he was afraid to go deep.

"Sponge," Tomkins said.

"Did you ever play football, doctor?" he said.

"No, sir," the interne said. "But I enjoy watching it."

The trouble with scratching is that you are never quite in full command. You're like a water bug, always hovering on the surface. You don't seem to be able to get down in and run the operation and so it runs you until, with experience, you lick it.

"This is just like football," he said, holding a clamp while Tomkins tied behind it. "Say you're a halfback going wide. You have to have two speeds. That's what we have. These chest openings are automatic, so we just go along one-two-three at top speed."

"I understand," the interne said.

"Then when we get inside and see what the problem is, we slow down," he said, sponging. "But there's one difference. We start fast, but when you're the halfback on that wide play you start out at three-quarter speed. Then when the defensive man commits himself, you go into high. You give him that reserve burst and you're around him. See?"

"Yes, sir."

The metal retractors would be going in now to enlarge the chest opening. The scrub nurse was wringing saline solution out of a hot pack, and Tomkins took it and placed the wet gauze over and around the exposed wall of the cut to protect it from the metal of the retractors. He placed the next one, and Tomkins hooked the curved end of the first retractor over the hot pack and around and under the shoulder blade. The second retractor he placed next to Tomkins' and he handed it to the interne. As Tomkins and the interne pulled, the opening began to widen.

"Oh come on, you guys, lift," he said. "You two should go to gym more often. Let's pull that up there."

As they pulled harder, he reached up and under the shoulder blade and felt the muscle attached to the second rib. It is always conspicuous there so that you know at once where you are. Moving his fingers down over the ribs, he counted them slowly.

"Two, three, four, five," he counted and he reached over and pulled the retractor for Tomkins while Tomkins reached up and counted.

"Right," Tomkins said.

"How are you, Susie Q?" he said.

Under the operating room lights, the surgeon shows the interne how to hold the scissors: thumb and ring finger through the eyes, middle finger to the side, index finger as a pointer

"We're all right, doctor," she said, her voice coming up over the drape. "His pulse is 86, and his pressure is 130 over 85."

"Knife."

He made the cut through the periosteum, the tough, adherent covering of the rib. When he dropped the scalpel onto the towel, the scrub nurse handed him the periosteal elevator. It looks like a blunt-ended dinner knife, and it is used to scrape the rib covering out of the way.

"Good girl," he said. "You can scrub on my Olympic team any time."

If you know exactly how to use the elevator, you can do it with just two moves. With the first move he pushed the periosteum back across the upper half of the rib. With the second move he scraped it down across the lower half and, as he did, they saw the clean, almost bloodless, gray-white arch of the rib emerge.

'You know it's as easy as shelling peas'

"VERY nice, Matt," Tomkins said. "You must have done this before."

"Don't flatter me," he said. "You know it's just as easy as shelling peas. Rib cutter."

With the double-action cutter he severed the rib at one side and then at the other. He handed the cutter back and, with the other hand, gave the severed eight-inch portion of the rib to the interne.

"If you need another rib you can have this," he said. "Our man here will grow a new one in three months."

"No, thank you," the interne said, turning the rib over, looking at it. He handed it to the scrub nurse and she placed it in a sterile towel.

"Sponge count?"

"The sponge count is correct, doctor."

"Now, Susie Q," he said, "you're going to have to work. You're going to have to breathe for this man, because I'm going to open the pleura."

"I'm ready, doctor."

He knew she would be turning on the automatic respirator. He reached in and, with the scissors, severed the inner periosteum and then the pleura, the soft, almost latexlike lining of the chest cavity. When he did, he heard the air rushing in and destroying the chest vacuum, but it was unable to collapse the lung because Susie Q, sitting there below the drape and watching her dials and feeling the pressure in the anesthetic bag with her hand, was maintaining the patient's normal breathing. He could hear the tick-hiss-tick of the respirator.

"Rib spreader."

When he took the rib spreader and started to place it, he had the feeling that something was loose. He turned the spreader over.

"Hey!" he said. "Where's the wing nut? There's no wing nut here."

"Oh," the scrub nurse said. "Oh, it's all right. It's right here."

"I'm glad you're not fixing my car," he said.

She handed him the nut and he put it on. He placed the spreader between the fourth and sixth ribs and set it. Tomkins gave the handle four turns and the opening started to enlarge.

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"Fine," he said, "Scissors."

He reached in and, just pushing with the open scissors, he split the muscle between the fourth and what was left of the fifth rib. Now the ribs would not break. Although it doesn't make much difference medically, it is a nice little touch to avoid the break if you can. "Now you can crank him," he said to Tomkins.

As Tomkins turned the handle, the sides of the spreader moved out and the area opened, five inches by 11, the rectangle framed by the steel of the spreader. There within it lay the lung, the pink and purple and black marbleized whole of it rising and almost filling the opening, then receding, the ebb and flow controlled by the machine as Susie Q maintained the rhythmic breathing.

"What time is it?" he said.

"It's 8:47, doctor," the float said.

Twenty-one minutes, he thought. Sometimes you can open in 12 minutes, if he's real skinny and everyone is loose and doing his job. Now Susie Q wants to continue normal breathing but that lung is in our way.

"Can you drop your pressure just a little, Susie Q?" he said. "I want you to collapse him a little so we can see what's wrong with him."

"Yes, doctor."

This, now, was the moment. He reached in and, with the rest of them watching in silence and even Susie Q half-standing and looking down over the end of the drape but still reaching down and feeling the pressure bag, he moved his right hand slowly up toward what, until this moment, had been first just a succession of symptoms and then a shadow on an X ray.

He felt the lung, normal and pliable. Then, through the thinness of the gloves, he felt his fingers come to the edges of it, the beginning of the hardness, the spreading patch. Slowly he followed it to the root of the lung, and the root was hard too. From the root he went to the heart and felt the leatherlike spread of the hardness on the pericardium itself, the thin covering over the heart. Then he went down and felt the spleen and the left lobe of the liver through the thinness of the diaphragm and they both felt normal.

It has spread so far now, he was thinking, that if I do anything at all I will have to take the whole lung and the lymph nodes and that hard portion of the pericardium and then denude all the adjacent structures that can't be removed. If I do this he may die right here on this table or in those first few days. If I don't, and if I just close this chest and send him back to that wife and son, the only hope will be in nitrogen mustard and those new chemicals or cobalt or radium. That is the decision, just as plain as that.

Still the only sound in the room was the tick-hiss-tick of the respirator. Manipulating the lung, he turned it enough to expose the yellow-gray waxy growth. When he looked up, Tomkins was looking at him.

"This is a patient," he said, slowly withdrawing his hand, "who was afraid he had cancer of the lung, so for six months he tried to forget it. Now he not only has cancer of the lung but it has extended into his mediastinal structures, Tom?"

He waited, his hands clasped priest-like in front of him again, while Tomkins reached in. So he's not yet 60, he was thinking. If we take the whole lung, his heart will stand it and, except for the heavy smoking and the normal city smog, his right lung has had only routine abuse. That right lung performs 55% of the breathing function anyway, so if we do get away with it, we won't be leaving him a wheelchair cripple.

"Well," he said, when he saw Tomkins waiting for him, "can he stand a pneumonectomy?"

"I say yes," Tomkins said.

At times like this, he had often thought, the only thing to do is to see yourself as the patient. If I'm ever like this, I hope to heaven they don't just sew me up again and send me back. If they lose me, all they have to lose is a little off their reputations, but I lose my life. I want that chance.

"I say yes, too," he said.

He had known he would say it, but you need to think it all out and take that last breather. Besides, if you just do nice, clean cases all the time and never get into the tough ones, you lose not only your touch but your courage. After all these years, it's only from the tough ones, anyhow, that

The anesthetist sits behind the draped sheet. She forces air into the patient's lungs—"breathing" for him—by rhythmically squeezing the anesthetic bag near his limp hand

you feel any real reward. Now the key to this one is whether we can get that pulmonary artery free of disease.

"If we can get a clean artery," he said, "we can get this out."

So he would leave the bronchus, the tube bringing air into the lung, until later. He would go for the pulmonary artery first and, without telling Susie Q, free it and tie it off. Then if she didn't say anything after about five minutes, he would know for sure that the patient hadn't deteriorated and that he could live with only one lung. If it didn't work, he would just have to close him, but until you know where you stand, you don't want to burn that bridge by dividing that artery.

"You haven't got a heavy rubber band," he said to the scrub nurse, "have you?"

"Like this?" she said, holding it out to him on her hand.

"Good girl," he said, taking it. He cut it and put it around the vagus nerve, clamping the other end to the towel drape at Tomkins' side of the opening. This would keep the vagus and laryngeal nerves out of the way.

"So we won't abuse them," he said to the interne.

He started to isolate the pulmonary artery, dissecting the weblike tissue around it. He felt around it and motioned to Tomkins. Tomkins reached in and felt it.

"It looks like we're going to get it," he said.

"Forceps and heavy silk ties," Tomkins said.

"Right-angle," he said.

He put the right-angle under the artery and Tomkins passed the tie to it with the forceps. He brought the end of the suture up and discarded the right-angle. Taking the two ends of the suture and being careful to tie on a straight line so as not to tear, he slid the first knot down around the artery. When he put in the second knot he felt it give and knew that the first had been ineffective, and then he put in a third.

"Good," he said. "What's his heart doing now, Susie Q?"

While you are in there, you are almost one with the patient. You are so much a part of a man who is really a stranger to you that, like the beat of a musician's foot, your head moves a little with the rhythm of the patient's heart, and he had felt it miss just that once.

"His pulse is 100, doctor. His pressure is 120 over 80."

"Good."

Now he could get back to work again. He worked for about five minutes, exposing the veins and preparing them for division. Still he had not heard from Susie Q.

"How are you, Susie Q?" he said finally.

"His pulse is 96, doctor, and his pressure is 110 over 80."

Now he knew he could do it. The patient was holding his own. Because he had done so many like this, he knew he could remove this lung and that this patient would live.

"Good," he said. He severed the artery about a half-inch beyond the tie and watched the end retract and open. He finished isolating the veins and tied them and divided them.

"Oh, come on," he said. "How about a little light down in here? I suppose I can do this in the dark, but I don't have to. That's better."

"Shall we notify pathology, doctor?" the scrub nurse said.

"Yes," he said, "but it'll be about 15 minutes."

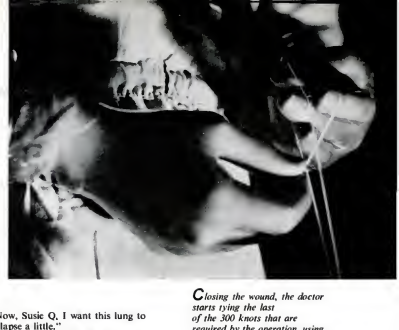
If this one wasn't so obvious, he was thinking, I'd have waited for pathology, but what I'll really want them to put their microscopes on will be those lymph nodes, when I can get to them.

"A bronchial clamp," he said. "Now, Susie Q, I want this lung to collapse a little."

With Tomkins holding the lung up with the three forceps, he put the first clamp on the bronchus, cutting off the air, and then the second one. He cut through the hard whiteness between the clamps. Then he took the three lung forceps from Tomkins and passed them to the interne.

"Hold these in both hands, doctor," he said. "Now: lift."

The lung came out. The interne stood there holding it, looking at it and then at him.



Closing the wound, the doctor starts tying the last of the 300 knots that are required by the operation, using strong silk sutures

'We're running into a little luck here'

YOU see, doctor?" he said.

"You came here wanting to be a surgeon, and you've just performed a pneumonectomy. You've removed a lung."

"Thank you, doctor," the interne said, looser now, passing the lung to the scrub nurse who placed it in a pan. It was 10:29.

"We lost a little blood there."

"Tonsil sucker," Tomkins said, and the scrub nurse handed him the metal suction tube used in tonsillectomies.

He waited while Tomkins drained the area, then started to remove the first of the chain of lymph nodes. When a cancer spreads through the lymphatic channels, the nodes are the depots at which it stops. But as he took them, almost round and the size of small marbles, he saw that the pigmentation was a normal black and not patched with white.

"We're running into a little luck here," he said. "They look fine."

"Do you want these to go to pathology, doctor?" the scrub nurse said.

"Yes," he said, passing her another, "and I want this one marked subaortic node and put in a separate bottle."

"Now look at that," he heard someone say behind him. "I wonder if he knows what he's doing."

"Who's that?" he said, recognizing Joe Martin's voice. "Joseph?"

"Yes, sir," Martin said. "I guess he knows what he's doing."

"Listen," he said. "I'd be out of here by now, but I have a patient who didn't want to believe he had carcinoma. How come you always get the easy ones?"

"I've got good contacts," Martin said.

"Call my office, will you, Joe?" he said. "Say I can't get free for that conference at Mercy, but I'll make the heart on time."

He asked for a knife, looking over the top of his half-glasses at the scrub nurse. "Have your fine sutures ready with those long slender forceps. This is a bad bronchus to close because the cartilage of the wall has almost turned to bone. Susie Q?"

"Yes, doctor."

"I'll give you 10 breaths and then stop."

"All right."

"Stop."

He cut a half-inch off the satin-white toughness of the tubelike bronchus to get beyond where the clamp had crushed the tissue. Then he forced the curved needle and the first suture through the tube and pulled the end partly closed. He drew the stitch up tight, knotted it three times and let Susie Q take the 10 breaths for the patient. Then, the same way, he put in the eight other sutures, spacing them so that each would carry the same load, stopping after each for Susie Q.

"The bronchus is closed," he said finally. "Saline wash, please."

Now he would test it. He would see if he had really closed it so that no contaminated air could possibly get into this chest. He took the pan of saline from the scrub nurse and, tipping the pan, he poured the solution into the open chest until it covered the stub of the severed bronchus.

"Now see if you can make it leak, Susie Q," he said. "I want you to push hard on your bag. You ready?"

"Yes, doctor."

"All right, push. Push hard. Are you pushing, Susie?"

He watched the surface of the saline solution above the stump of the bronchus. There were no bubbles.

"I'm pushing hard, doctor," he heard her say.

"Okay," he said. "You can stop. Good girl."

Now for that patch that had spread onto the heart. With the tonsil suckers Tomkins and the interne drained

CONTINUED

the saline from the area. When they had finished he took the scissors and, staying at least an inch outside the leathery edge of the gray-yellow lesion on the covering of the heart and working right against the heart itself, he cut away the cancerous area, all of it contained in a severed rectangle about two inches by three and a half. The heart beat bare in the new opening.

He would have to patch this opening. He reached with his index finger between the chest wall and the pleura adhering to it. Freeing the pleura, smooth and more fragile than the heart's own natural covering, he cut a rectangle to match the size of the opening. This patch, translucent and not unlike the latex of his gloves, he spread on the towel to his left.

"A wipe for Doctor Matthews, please," Tomkins said.

He waited, aware for the first time that he was sweating, while the float wiped his brow with the gauze.

"Thank you," he said. "How's he doing, Susie Q?"

"All right, doctor, we're keeping his pressure up. He's 11 over 80."

"We'll be about a half hour closing," he said.

He looped a silk thread into each of the four corners of the patch of pleura. Holding up the patch by the top threads, the bottom threads dangling, he laid it over the opening, right against the heart.

"Keep a little tension on," he said, passing Tomkins the two threads. Then he took the bottom threads and adjusted the patch. He sewed the four corners, then stitched the bottom and the other three sides. Any good tailor would be appalled by the crudeness of it, but it would keep the heart from popping out through the opening like that one he lost that way about 10 years ago. In 10 days the patch would grow right into place.

"Matt?" he heard Bradley from pathology saying from the door. "The frozen section shows your patient has carcinoma of the lung."

"Thanks, Brad," he said. "But we couldn't mistake this one."

"Also a couple of the nodes are suspicious, but we'll have to wait for final microscopic examination."

"I got them all anyway," he said. "There's a bleeder, Tom."

"I'll get it," Tomkins said.

"Now, doctor," he said to the interne, but holding the clamp while Tomkins tied, "you're familiar with the symptomology in this case?"

"Yes, sir."

"And you know that cancer of the lung is a great mimic?"

"Yes, sir," the interne said, cutting the tie.

"Then what other diseases cause the symptoms this patient had: pain in the chest, blood in the sputum and loss of appetite?"

"Well, TB and pneumonia."

"That's right. So you'll remember that in this case the patient was fortunate because his cancer didn't masquerade as bursitis or arthritis or gall bladder or heart disease. But then he abused that good luck by ignoring it for six months."

"Yes, sir."

He syringed the area with saline, then poured in the rest of the saline from the pan. He saw there were no air bubbles, waited for the suckers to empty the chest again and shook in the antibiotic powder. Next he put in the drainage tube between the second and third ribs.

"Crank him down," he said to Tomkins, and Tomkins turned the handle of the rib spreader and took it out. "Now we can go back to our one-two-three."

"Approximator," Tomkins said.

Setting the fingers of the rib approximator along the slide, Tomkins pulled the ribs back into position. He restored the muscles to their normal state, and then he sewed through the tough fascia, just catching a piece of each muscle.

"You see how easy it is, doctor?" he said to the interne.

"Well," the interne said, hesitating, "I don't know."

"Now you've scrubbed with a lot of different doctors in this hospital," he said, "so you've seen cancer in a variety of organs."

"That's right, sir."

"In the male over 40, what's the most frequent cancer of any organ?"

"Well," the interne said, "I was going to say cancer of the prostate or of the stomach."

"They're both close," he said, "but the answer is cancer of the lung."

"Yes, sir."

"How are you now, Susie Q?"

"All right, doctor. His pulse is 82. His blood pressure is 120 over 80."

Tomkins took off the skin snaps and discarded the stockinet on one side while he did the other. Then, with a straight needle, matching the cross marks he had made across the first scratch, he put in the first stitch and pulled the Merthiolate-painted skin together. Tomkins matched the other marks, then he started from one end and Tomkins from the other, sewing, tying at half-inch intervals, closing the wound.

"No," he said to the interne, who had reached in and cut the threads of the first tie close to the knot. "We cut all the ties at once and about a half inch from the knots so there's no chance of them coming undone."

When they had finished and the interne had cut the ties, he laid a doubled strip of gauze over the closed wound. He held it there while Tomkins stretched the four-inch elastic tape over it and pressed it down.

'You've made me look good all morning'

TOM," he said, "you're a gentleman. You've made me look good all morning."

"Any time, Matt," Tomkins said.

"How about finishing up for me right now?" he said. Looking at the wall clock he saw it was 11:40. "I want to get over to Mercy."

"Sure, Matt."

"Thank you, all," he said.

"You're welcome, doctor."

The float untied his gown and he slipped out of it and left it in her hands. He tossed the rubber gloves to her and pushed the door open. In the hall he slipped his mask down and pulled the tape off his forehead and his glasses.

The locker room was empty. He stripped out of his pajamas and threw them with the cap and the mask into the canvas hamper. He took his money out of his left sock and put it in his wallet and took his watch out of the other sock and put it on his wrist.

He dressed, aware for the first time of a slight fatigue. But when you really feel the all-over tiredness is not on cases like this when you've won but when you've worked for three or four hours and lost. Then it all seems so pointless. When you get home your wife knows it the moment you walk through the door.

He walked to the elevator, pressed the button and rode down. In the lounge he signed out and flipped off the light button next to his name.

When he walked out of the lounge, he saw the broad-shouldered young man waiting for him right there and looking right at him.

"I'm sorry, doctor," the man said, "but I couldn't wait. I . . ."

"That's all right," he said smiling. "Your father's doing fine."

"God bless you, doctor," the man said, the tears coming into his eyes. The man smiled and shook his head. "God bless you always."

"That's all right."

"Will you tell my mother now? It's been a long wait for her."

"Certainly."

The man walked, hurrying, ahead of him to the waiting room. The woman in the green dress was standing there. There were tears in her eyes, too, as she looked into his face.

"The doctor says he's fine, Mom," the man said. "He says he's all right."

"That's right," he said, smiling and taking the woman's hand. "We got it all out, and he's in the recovery room now. Pretty soon they'll be taking him back to his own room."

"My God bless you, doctor," she was saying.

"You'll be able to see him for a few minutes tonight," he said.

"God bless you, again," she said, still crying and still holding his hand.

"That's all right," he said.

Well, he was thinking as he left them, this is what it is all about and what he had wanted to be.

As he drove west on Washington Street he was aware, starting to unwind, that he had only two cups of coffee at the apartment and that he was hungry. With the heart at Mercy and then the office, he would not get another chance to eat until 7:30, so he would stop at the hot dog cart down at the corner. He swung his car across the street and up onto the apron next to the cart. He turned off the motor and waited while another customer was served.

"So what's yours, Mac?" the man said.

The floating nurse stands holding the surgeon's gown and his rubber gloves, which he tossed to her as he left the operating room

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A Spree for Shipwrecked Actors

To any children who dream of excitement on earth instead of in a spaceship, there are still thrills galore in the old shipwreck tale, *The Swiss Family Robinson*. Even the young actors, who went recently to a tropical island to enact the story for a movie, got in the spirit of the famous 140-year-old yarn and kept on playing their parts between scenes. They waged mock battles with pirates, cavorted with giant turtles and baby elephants, not to mention pigs and zebras. The lush isle of Tobago, with its special zoo imported just for the show, became a kids' heaven on earth.

The movie, made by Walt Disney, hews closely to the adventures of three children and their resourceful parents, played with charm by Dorothy McGuire and John Mills. Stranded on a deserted crumb of land, the do-it-yourself Robinsons make a cooling system out of a waterfall, dig a trap to catch lions and live luxuriously in a split-level treehouse with a picture window in the ceiling. Disney added a few things—pirates and a pretty girl—but the movie is so permeated with the book's spirit of family fun that it broke holiday attendance records all across the country.

AFTER BUMMING A RIDE ON A TREMENDOUS TURTLE FOR FILM SCENE ON THE BEACH AT TOBAGO, KEVIN TUMBLES OFF AND NEARLY TURNS TURTLE HIMSELF

CIRCUSY STUNT on baby elephant is performed just for kicks by young Actor James MacArthur.

SPLASHY RIDE on zebra and donkey cools off a horse handler and Janet Munro. She is an English actress introduced into film as pretty castaway to provide romantic interest for older Robinson boys.

CONTINUED

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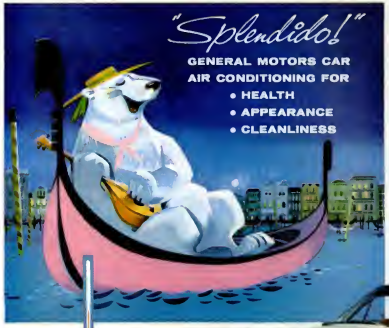
FLOATING PIG buoyed up by two kegs is about the only member of the *Swiss Family Robinson* cast who does not share the spirit of adventure. The pig, named Grunt, is part of the herd of livestock which, after the shipwreck, is roped together and pulled ashore to serve the Robinson family either as pets or provender.



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LIFE

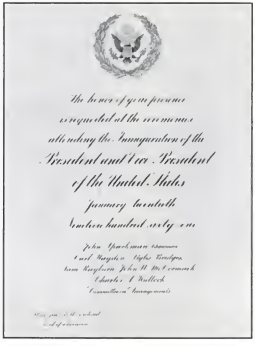
J.F.K. Picks a Picture for a Great Occasion

The most festive event of the year, inevitably, will be the inauguration with all its formal balls and ceremonies. For the occasion the President-elect was asked to choose an official portrait. Thinking back to the tens of thousands of photographs that were taken of him during the campaign, Mr. Kennedy remembered best a shot

made for LIFE by Alfred Eisenstaedt (LIFE, Aug. 22, 1960) and asked to see more pictures from the set.

At LIFE, film is always printed first on "contact" sheets like that below, a quick and economical way of seeing all the pictures from a single roll of film. The term contact comes from the fact that the negative film is put directly on a sheet of photographic paper and the image is printed same size as the film itself. From the contact sheet, the best photographs are chosen and marked for enlargement, often with a red circle. The sheet below is of a roll of 35 millimeter film, somewhat enlarged. Each shot on it is called a frame and is numbered. Enlargements of several frames from this sheet were sent to Mr. Kennedy. He picked Frame 29 (encircled), which now becomes a historic document. It will appear in the inauguration program, on the wall of the President's suite at the ball and on posters across the nation.

PORTRAIT AND PROGRAM appear above and below. Program cover is in the form of an invitation. In official photo, background of original was painted out.



RECORD OF A SITTING can be traced by numbers in margins of film beginning at No. 2 (*top right*) and ending at 36 (*bottom left*). Pictures were made in Kennedy's home in Hyannis Port. The first two frames get film started. At frame 8, Caroline Kennedy wandered in. In frames 16 through 30, while Kennedy tried to assume a serious pose, Caroline crawled under the table and said, "Daddy, I'm putting chewing gum on your pants," to which he replied calmly, "Don't do that, Caroline." In frames 31 through 33 he tried to get Caroline to eat. In frames 34 through 36 he signs an autograph for LIFE Reporter Barbara Cummiskey.

ORAL FREE DELIVERY

Although dog owners have trained their pets to fetch the paper between their teeth, few people have been able to get that kind of service from their children. But on a recent trip to the Ellsworth, Maine post office 10-year-old Philip Laffin was left with little choice. By the time the postal clerk had loaded him down at the package window with a large bundle under each arm, the only way he could carry the family's letters was to open wide while the clerk thrust his hand through the mailbox and placed them between his teeth. The lad's father was on the scene but took the picture above before taking a hand.

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