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THE NATIONAL GEOGRAPHIC MAGAZINE

San Francisco: Gibraltar of the West Coast

BY LA VERNE BRADLEY

THE impact of San Francisco at war comes like the kick of a big gun to anyone who hasn't seen it since Pearl Harbor.

Fighting men have taken over the city as did the Vigilantes of old. They have geared its life, colored its streets, inspired its people.

Troops, guns, bayonets, motor units, ships, supplies—on the move. Soldiers, marines, mines, nets, bayonets, barrages, barbed wire—on guard. "It is absolutely forbidden to cross this line." "No cameras or field glasses, please." "Men in uniform—welcome!"

If for a moment you lose yourself in old smells, sounds, memories, fighter planes come screaming down the skyline and, lifting you right up on your toes, almost clip off the top of the old Ferry Building to remind you that this is 1943—and a *city at war!*

Helmeted, bullet-belted patrols guard every bridgehead, river mouth, slip landing, seemingly harmless road entrances, tunnels, railroad crossings, barren hills.

I picked up my camera to catch a barrage balloon rolling drunkenly down a slope, and, at a click, looked up into the nose of a gun pointed down from a ridge that two seconds before had been plain brown scrub.

You feel the electric thrill of an area charged with action.

You hear the rivet guns and hammer presses of shipyards; the screech of braked wheels grating on steel rails as oil moves in thousands of tank cars from refineries; the roar of blast furnaces; the thunder of Army trucks speeding by under guard—10, 20, 30—filled with soldiers.

You see hills being leveled as giant shovels slap at their sides like fly swatters. You see new towns rising from reclaimed swamps and dust holes.

You look across fields of barrage balloons suspended awkwardly in midair like tail-heavy sausages.

Finally, you look across to the Golden Gate where, against a low sun, a line of blue, heavily burdened ships is slowly steaming out.

Threshold of Pacific Theater of War

San Francisco is the administrative headquarters for the Army's Western Defense Command and 4th Army, and the Navy's Western Sea Frontier and 12th Naval District. From here command extends to the whole Western Theater of War.

The city's magnificent, wave-washed Golden Gate is the most strongly fortified spot in America (page 281).

The Navy has here the Mare Island Navy Yard, the new Alameda Naval Air Station, a blimp base, supply depots, drydocks, and training centers.

All other activities are subordinated to the moving of troops and supplies, defending the harbor, maintaining port facilities, and supporting new war industries. During the early months of the war San Francisco cleared more military supplies than all other United States ports combined.

In peacetime 25,000 replacement troops cleared this port every year to relieve men garrisoned overseas. Today, figures withheld, one can only watch and wonder at their numbers as soldiers in full kit swing onto rows of dark blue ships.

Laughing, sweating, swearing, shoving, they pour over gangways and packing boxes.

The fog brushes by like wisps of steam. The low basses of the fog horns repeat their monotones on the Bay. The smell of fish and sea rises from the water front.

Some of these soldiers have had a few days

or hours in town. Others, fresh from staging areas, have just pulled off a blacked-out train.

Only a few familiar objects tell them where they are. Nothing tells them where they are going.

For the thousands of men who pass through that Golden Gate, it is their last glimpse of America for many months; it holds all their parting memories.

For these men, and the thousands of families, sweethearts, and friends who are here because of them, San Francisco has a tradition to maintain, and she knows her job.

Some of the greatest names in Army history have passed this way. Generals Phil Sheridan, William Tecumseh Sherman, Winfield Scott, Albert Sidney Johnston, and John J. Pershing have commanded here.

Today, under the able General John L. DeWitt, San Francisco's military background takes on new national significance.

To the West Lies the Enemy

Here as strongly as in any other place in America people are aware of what defeat by Japan could mean and they are ready for any emergency.

You get the sense of this, and of the confidence behind it, as you travel from the big guns of the coastal defense, across the tallest bridge in the world, and drop down over old Fort Point into the Presidio, largest military post in the United States built entirely within the limits of a city.

In normal times the Presidio lies in quiet, parklike detachment, with the Pacific curling in great white waves at its feet. But now it bristles with war activity.

On a bouncing, bounding jeep we drove from one barricaded extremity to the other. On every parade ground, in every available clearing, clusters of men were drilling, exercising, holding bayonet practice on rows of stuffed dummies, or running over Commando obstacle courses.

We roared down to the "Old Fort," or Fort Point, sequestered beneath the massive girders of the bridge. Here, looking out from Civil War casemates which once mounted 10-inch columbiads (and never fired a hostile shot), we watched the return of the busy fishing fleet which each day comes and goes grandly under naval escort (page 288).

We went by hospital buildings, once a bright yellow. Up and down hills past historic guns and live ones.

At each crossing sentries appeared out of the mist to ask for identification.

Through shady eucalyptus and cypress and along green parade grounds today there is a constant thunder of trucks, troop lorries, armored scout cars, jeeps, and prime-movers; an endless coming and going of more soldiers than the Presidio has ever seen at one time in all its long, romantic history.

Coast Artillery on Guard

The security of San Francisco lies in the hands of the Coast Artillery, whose Harbor Defense headquarters are at Fort Winfield Scott, on the bluff overlooking the Golden Gate. The defenses themselves are distributed about the Bay among Forts Scott, Barry, Baker, Funston, Miley, and Cronkhite—and stretch for miles up and down the coastline.

The solid San Franciscans who weather the foggy season to live out over the Pacific today see only sand dunes, sleeping brown hills, and quiet cypressed coves. Clumps of brush that used to fire 12-inch batteries in routine maneuvers sway in an afternoon breeze. Rocks that belched flame and smoke lie peaceful under a warm sun. Silent ridges, empty beaches, and bleak cliffs show no life but a few white gulls floating lazily to and fro.

They watch the fog roll in, night fall. The coast turns black and silent. Combers break over the shore, but no other sound is heard as barren hills and shorelines settle in for a lonely watch. As huge guns point out to sea, night stations are manned, and men fall back to watching and waiting!

One black, moonless night Coast Artillery officers took me to a coastal gun emplacement where I could stand on an unnamed bluff in some near-by rolling hills and sense the magnitude of San Francisco's Harbor Defenses.

We drove in an Army staff car to an unfamiliar turnoff and headed down a deserted road. At a given point the driver snapped off the headlights, and we began to wind over miles of dark, silent hills.

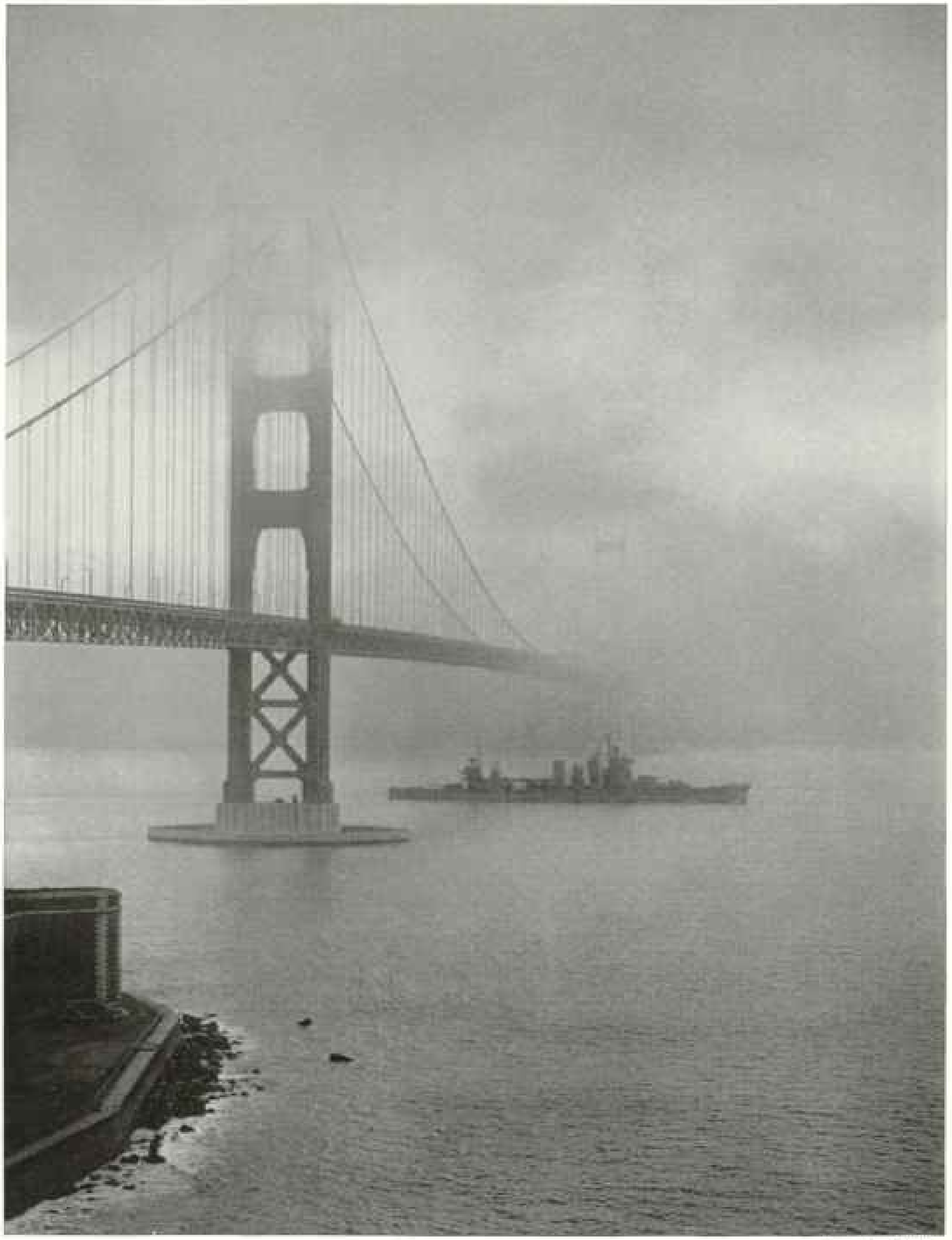
It was like a spy film. Or like spiraling slowly down the black insides of a gun barrel. Not a movement, not a sound in all those vast reaches of gloom. A light would flicker for a second away off, then go out. Suddenly, from out of the blackness a voice would ring out:

"*Halt! Who's there?* . . . Advance and be recognized!"

In the darkness ahead I could barely make out soldiers in great-coats and heavy helmets with their guns leveled at us. An officer would jump out of the car, take a certain number of steps, and a soldier would bark, "Halt!" He halted. (Three men didn't once.)

The password was given—"Holy Bible" or something (it is changed every few hours)—and identification was established.

"Proceed, sir!"



U. S. Navy, official

Out of Pacific Fog Steams the *San Francisco*, Victor in a David and Goliath Naval Battle

Thousands of San Franciscans assembled on hills and other vantage points to cheer her as she passed under Golden Gate Bridge and was warped into her home-town pier. Her dash between two heavy Jap columns on the night of November 12-13, 1942, won immortality for the gallant cruiser. Just before he was killed, Rear Admiral Daniel J. Callaghan instructed her gunnery officer to "get the big ones first." In answer, the ship performed an outstanding feat—silenced a 14-inch-gun battleship, blew up a cruiser, and sank a destroyer.

AP from Press Association

On Board *San Francisco*, Commander-in-Chief of U. S. Fleet, Admiral Ernest J. King, Presents the Congressional Medal of Honor to Commander McCandless

Comdr. Bruce McCandless, 31, took command of the flagship after Admiral Callaghan, Capt. Cassin Young, and other senior officers were killed, and brought her victoriously through the Battle of Savo Island in the Solomons. "Superb initiativv," "distinguished service above and beyond the call of duty," "great seamanship and great courage" were phrases of the citation. The youthful officer is the son of Capt. Byron McCandless, co-author of "Flags Famous in American History," NATIONAL GEOGRAPHIC MAGAZINE, October, 1917, who said, after this ceremony, "Bruce used to be known as my son; now I am *his* father."

We would go on for a bit, and then go through the whole thing again.

A Strange Life Underground

Eventually we reached a blacked-out headquarters and dismounted. Through the face of rocks we entered a strange troglodyte world of life underground. Past storerooms, barracks, offices, kitchens, refrigerators, guns; through countless passages we made our way. Suddenly we were out again in the night air.

It was blacker than ever now. We began to work single file up the hill. We climbed over narrow catwalks between camouflaged nets, up steps cut in the side of the hill, through brush, over paths that I'm sure did not exist. Field mice scattered from underfoot, rustling off as if through straw.

I clung to the coat ahead of me and prayed I wouldn't slip and fall through a net and set off an alarm that would put the whole harbor defense in action.

We crawled through damp 3-foot-square tunnels revetted and lined with burlap. I was handed a phone and told to report that "All was secure." Way off I heard an amused, "Very good, sir—a—ma'am!"

Finally we reached a lookout station which, after all that climb, you had to drop down into. There was the choice of swinging down by rope or using a hatch ladder. I used the ladder!

Here in a dugout no bigger than a dinette we found officers and men, desks and bunks, a complicated communications board, and powerful telescopic equipment.

AP from Press Association

Commander Herbert E. Schonland, Damage Control Officer of *San Francisco,* Receives the Congressional Medal of Honor from President Roosevelt

While the Commander looks into the admiring eyes of his daughter, his wife places the decoration about his neck. The President's citation read in part: "In water waist-deep, he carried on in darkness illuminated only by hand lanterns until flooded compartments had been pumped off and water-tight integrity restored. His great personal valor and gallant devotion to duty were instrumental in bringing his ship back to port under her own power."

The guard was being changed. The quarters were small, and there were several of us, but there was no confusion. Everything had a place, and movement seemed easy as men swung up the ladder and out into the night.

Back in the underground city, we explored more channels and more quarters. Soldiers would look up and smile as we walked over the concrete floors. An officer glanced at my heels and said, "That's a sound we don't often hear around here."

We went along from room to room watching the soldiers playing cards, listening to the radio, reading magazines. These men were trained regulars. Some of them had had no furlough in two and three years.

The boy who drove us through the blacked-out hills had been in the Hawaiian Islands for two years and, starting home for leave, had reached the mainland just as war was declared. Another who had not seen his family in four years requested three days to meet them in Sacramento, where they had just arrived from the Midwest.

When asked why he hadn't applied for any before, he said, "I haven't needed it, sir."

Surrounding gun batteries and antiaircraft units of the Coast Artillery are giant searchlights of 800,000,000 candlepower. These are familiar sights to shore dwellers in San Francisco. Many times we watched coastal searchlights play back and forth, but only for split seconds at a time.

Once, from out of the huge girders of the bridge, a beam flashed on, shot out to sea, past Mile Rocks, picked up a small craft, held it a second, snapped off. A blimp on reconnaissance had made identification.

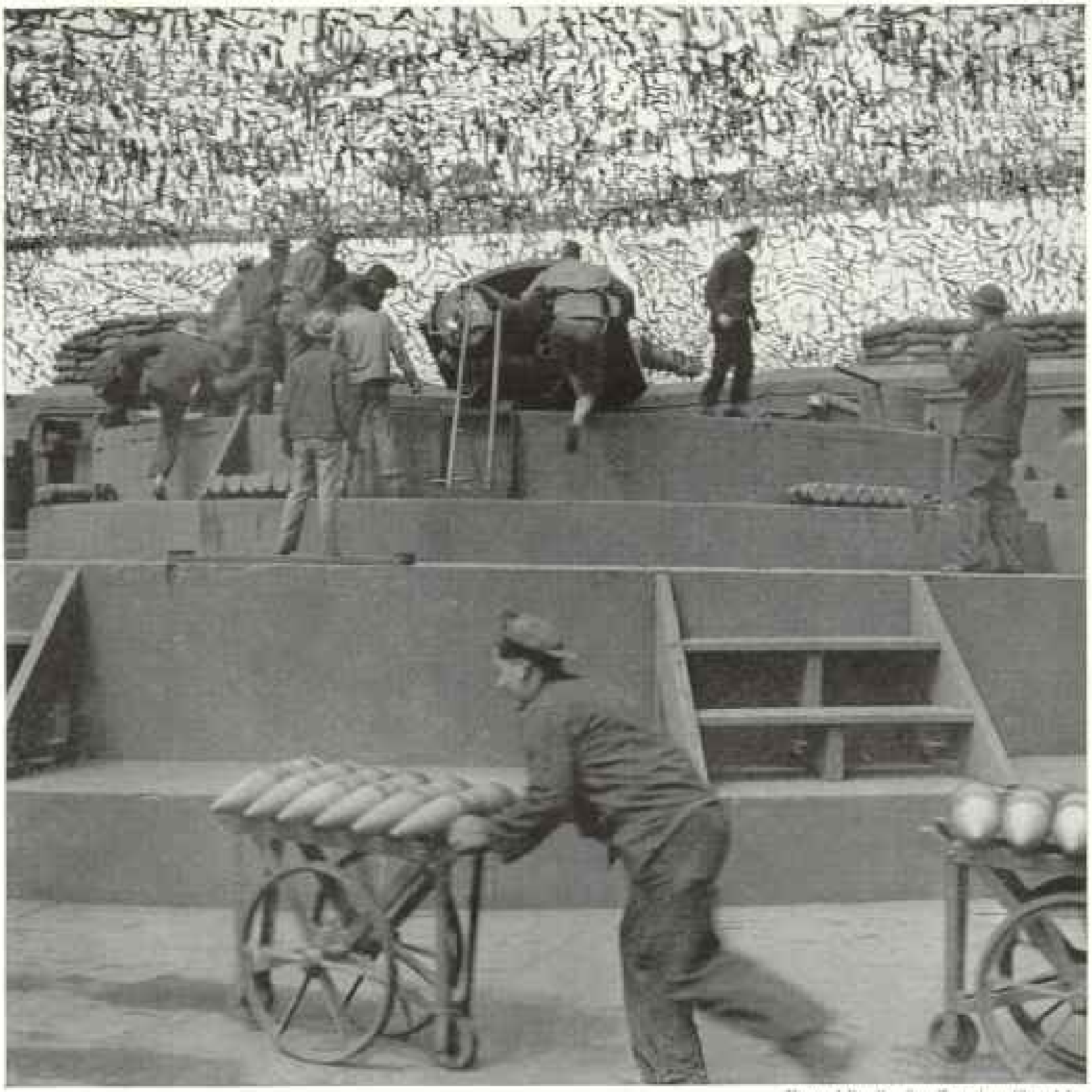
Tommy McDonough, Oakland Tribune

Hidden Along the Coast not Far from the Golden Gate, a Monster Rifle Lets Go with Ear-splitting Slam and Blinding Flash

It was firing at a towed target 14 miles away. Of 14 rounds, 12 were direct hits; two near misses. San Franciscans know the guns are near, but never see them.

Friendly San Francisco Holds Open House in Civic Auditorium for 10,000 Men in Uniform and Invited Girls

Governor Culbert L. Olson greets the party on the first birthday of Hospitality House, the city's own service club, built months before Pearl Harbor when the first thousands of new soldiers and sailors began to pour through the area. Here a serviceman may write a letter, read a GEOGRAPHIC, leave a message, wash up for a date, or make a recording of his voice to send home. More than a million men passed through its doors in its first year.



Howard Brodie, San Francisco Chronicle

"Details—Post!" Coast Artillerymen Snap to Stations at a Gun Emplacement

Shells are trundled up and men leap to their positions in this practice action at a San Francisco Harbor Defense point. The crazy-quilt camouflage, strips of burlap laid over chicken wire, screens the post from aerial observation.

Fanned out from antiaircraft positions are ground observers who, in covering a battery of, say, four guns may throw out 100 miles of telephone wire. The work of these men has been augmented by the civilian volunteers of the Aircraft Warning Service, which operates under the Army Air Forces.

The Utility of "Pips"

"What are those?"

"Pips."

I looked down again at the tiny rocket-shaped markers on the table below. A girl tossed one up to the balcony where we stood behind a row of telephones in the "filter" room at an Air Forces interception headquarters.

As an officer of the 4th Fighter Command caught it, he explained, "Pips. They give preliminary information on a flight as it is reported in from a civilian observation post.

"When it proves to be more than just a local flight, say in training practice, the information is filtered through to the main operations room."

In the "Ops" room a larger table, laid out as a sectional grid map, was surrounded by soldiers and women with long wooden sticks. Like croupiers at a gaming table, they pushed in or raked out small "target stands" covered with plastic flags (page 289).

AP from Press Association

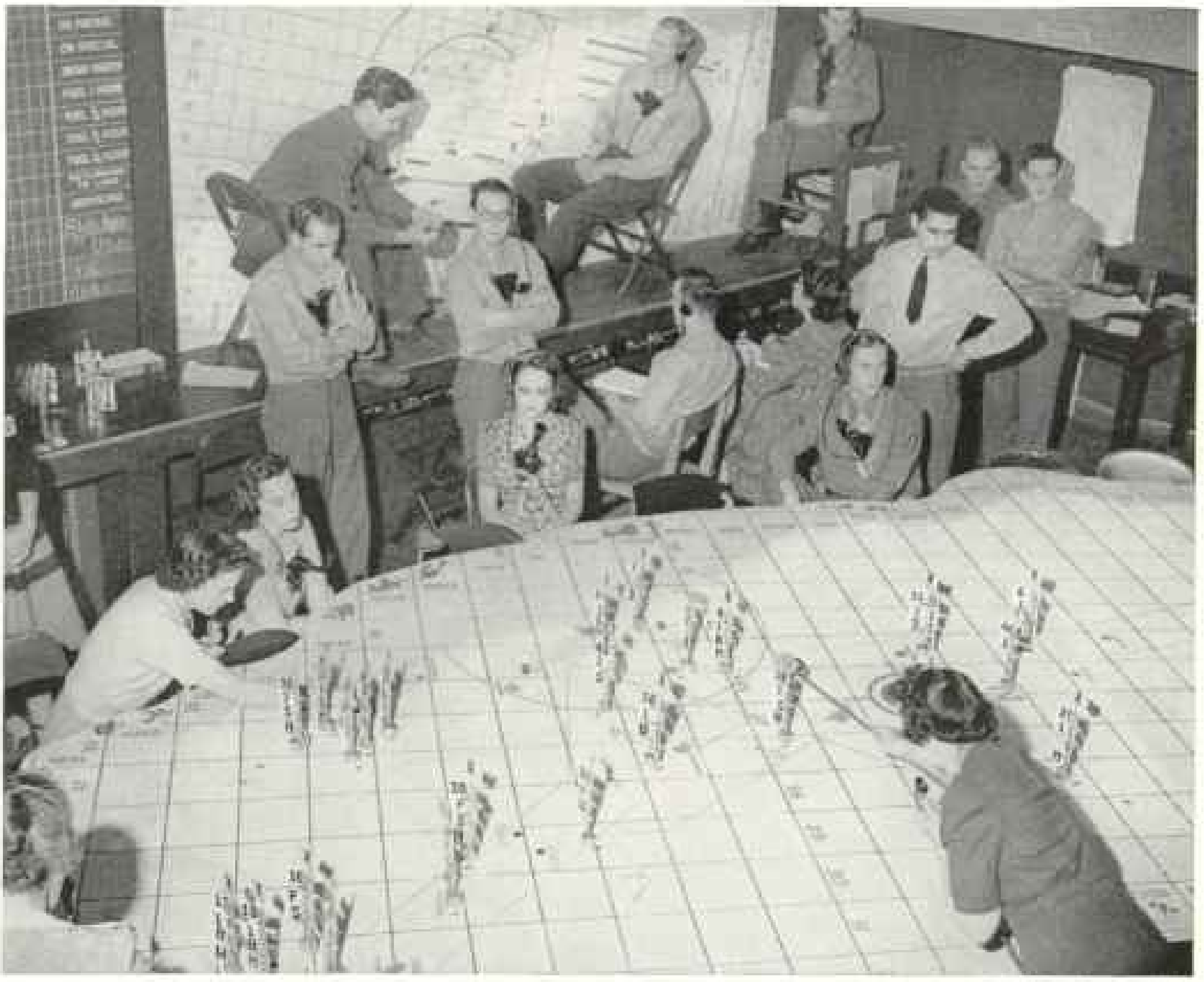
Abandon Ship! Some Grab Their Noses and Jump; Others Slide Down Ropes and Nets

Here Merchant Marine cadets from the training school at Coyote Point, San Mateo, learn how to leave a sinking ship. From platforms built to scale and simulating a ship's side, cadets spider down "scramble nets" or jump with kicking feet into oil burning on the surface, a tanker's worst dread. They are taught to swim beneath the flaming surface, pop straight up for air, and resubmerge in split seconds.

Gabriel Moulin

Day's Work Done, the "Crab Fleet" Returns under Naval Escort!

Lacking nothing but a 21-gun salute, the little fishing squadron puts to sea each morning with the tide and returns in mid-afternoon. When the "waterbug" fleet rushes under the Golden Gate Bridge, hungry San Franciscans gather at Fisherman's Wharf to acquire its squirming haul. Some 70 or 80 small boats still remain in service. Larger ones of the "sardine" and "bottom fish" fleets have been taken over by the Navy for patrol duty.



San Francisco Chronicle

"What Are the Gadgets?" "Target Stands! They Show Planes over the Countryside"

This San Francisco filter station is the eyes and ears of the 4th Fighter Command, Northern California Region. When a report comes in from a civilian spotter, a post is put on the map spot. Flags indicate the number of planes, type, altitude, and whether they were seen or heard. Flights are followed until they reach their destination or check in at some other base. Soldiers in rear are seated before the "seaward board" plotting flights approaching from the ocean. Next to this is the "status board" showing interceptor ships available. It is estimated that one plane ready for interception is worth 16 on patrol.

In a glassed-in balcony sat liaison officers of the Army, Navy, and Civil Aeronautics Administration. They identify all scheduled flights and get clearance for everything reported in the air.

Here, too, sits the commanding officer, or "controller," who, upon receipt of the flash, "Unidentified Planes," may order up an interceptor squadron and put the 4th Fighter Command in action.

"And those others?" I indicated the group seated on the far end of the balcony.

"Liaison officers of the Antiaircraft Artillery, Federal Communications Commission, and Civilian Defense. When the alert is given, the AA prepares for action. The C.A.A. may ground all commercial flights in the area. The F.C.C. orders radio stations off the air. The Civilian Defense officer alerts CD headquarters. Then they stand by for further news.

"By this time an interceptor force is probably up there, and identification made. If not, the alert goes to an alarm. Traffic is stopped on the bridges, certain industries are halted, Civilian Defense swings into action, and more planes take the air.

"When the unidentified aircraft reach 50 miles offshore, that means the warning—and blackout. The signals have gone through yellow, blue, and are now flashing red in every information or control center of every branch of the combined military and civilian services."

There are no practice blackouts in San Francisco. When the sirens wail, it means *"Unidentified Planes!"*—and business.

"All Clear" drops things back to routine, and an explanation goes out. News releases

Gabriel Moulin

San Francisco's Old Union Square Gets an Operation, a Facial, and a New Toupee

Beneath the monument commemorating Dewey's victory at Manila Bay, engineers have dug a four-story parking garage which in emergency can serve as a bomb shelter. During construction, people left grain and water near by so pigeons would not go away. St. Francis Hotel (left), with entrances at different levels, is typical of the city's hillside architecture.

from Army headquarters here are sent out over a single line which connects directly with the metropolitan newspapers, the wire services, and the radio networks. One ring on an old-fashioned wall phone automatically plugs them all in so that they receive a report simultaneously.

Figures may not be given on the numbers of civilians in the Aircraft Warning Service, but of the spotters alone there are well over a million in the United States. California has tens of thousands and a big percentage of these are stationed in the Bay area.

Mare Island Remembers Farragut—and Pearl Harbor!

The Service was organized in this area in August, 1941, and was to be tried out in the war games scheduled for December 11-14. For the first time in American military history civilians were to become cooperating participants in U. S. Army war maneuvers.

When the war broke, the whole thing went into actual operation, and has been functioning without a hitch ever since.

But the San Francisco Bay area doesn't belong entirely to the Army.

Mare Island was the first spot in America to get the news about Pearl Harbor. With its powerful radio station it intercepted Kimmel's historic message to the Pacific Fleet which ended with "This is no drill." The news was flashed to Washington and read to President Roosevelt by Secretary Knox before an official communiqué reached the Navy Department.

When the U. S. S. *Shaw* limped home from the attack, Mare Island gave it a new nose and sent it back to fight (page 296).

When from 500 to 600 Pearl Harbor wounded arrived on Christmas Day, 1941, Mare Island went to work patching up their hurts and has already discharged 99 percent

of them. It is still mending ships and men, and turning out new ships besides.

The first commandant of the Mare Island Navy Yard was Admiral David G. Farragut who damned the torpedoes. More than 38,000 men and women at Mare Island are at this moment passing his words down the line.

A medley of unholy discords rises from the shipyards, machine shops, drydocks, warehouses, and other centers of shipbuilding and ship-repair activity on this small Manhattan-like island in the north end of the Bay. Shipfitters, pattern makers, molders, painters, flange turners, electricians mill about in purposeful confusion, eventually losing themselves in the crushing crowds of a changing shift.

Sprinkled throughout the thousands of civilian workers are the white caps of sailors passing from barracks to headquarters, hospital to recreation center, destroyer to corvette, ship to shore.

Ordinarily about seven or eight thousand people are employed here. It is the largest naval construction yard in the West. The extra 30,000 or so have charted a production curve which is almost vertical.

Besides the construction and repair of naval vessels, merchant ships are being converted to war use—cargoes to refrigerator ships, and liners to cargoes.

We drove up to a channel dock and stepped out to look at a damaged submarine in from the sea. It lay there like a wounded lizard baking in the sun. Rust and camouflage were practically indistinguishable. Dirt and scrap lay over her topside. There was a gaping hole in the stern which looked sickening, but they said it had been shut off by compartmentation and the ship returned under her own steam.

Lined up in wooden cradles in another section were the half-formed shapes of escort vessels for both the United States and Great Britain. In other precise rows were corvettes, tenders, destroyers, subs.

No part of Mare Island looks familiar any more. What construction hasn't done, camouflage has. Bomb shelters cover the island, and on every turn you see the poison-gas attack warning signals—iron-bar triangles to be rung like the dinner gongs used in old mining and lumber camps.

The shipfitter's shop with a crew of 10,000 is the largest in the United States. Here and in the machine shops we found girls and gray-haired women in bluejeans and handannas bending over lathes of all sizes.

Men were picking up hot slabs of steel with long pincers and tossing them across a passageway for cooling. Huge blocks of red-hot metal were being smashed with 2,000-ton drop hammers and taking new shape as if they were wax.

The screaming of giant planers followed by the rattling of rivet guns sounded like fighter planes pulling out of power dives with all machine guns hammering. The noise was deafening—but its vibrating strength was magnificent.

In their overalls and goggles the shipyard women look rough, but they are doing a job. Their talk has tang, too. To them "pickling" means washing steel plates with acid to eliminate rust and scale; "counterbore" is a form of drilling, not something you do over a bridge table; and they don't eat a "rabbet," they calk it.

Three hundred special buses carry thousands of Mare Island workers to and from the mainland and neighboring Bay cities. Workers commute from as far away as Sacramento and San Jose. Noncommuters are housed in barracks and emergency dwellings sprawled all over the dusty hills surrounding Vallejo. Rows and rows of new buildings file up and down the undulating landscape. They look like cookie boxes with holes punched in them.

On sidings, in special clearings, behind billboards—wherever room can be found—trailers are bunched together like frightened beetles.

Vallejo, "The Naval City," and Richmond, with its petroleum industry and shipyards, have caught the main overflow of new war worker residents. Normal suburban towns before the emergency, they now operate on a stepped-up 24-hour schedule. Rippling rayon banners around movie houses announce, "Open all night." Workers give parties by the shift. Bands frequently begin to play at five and six o'clock in the morning.

Old sections of Vallejo's main street, usually quiet at night, now twinkle with lights and entertainment. Jeeps piled high with sailors and soldiers go roaring up the street, as civilians crowd and cheer—and try to get on, too. New restaurants and hot-dog stands along the highway advertise the boom. We passed the "Hunk-a-dory" somewhere along the way.

Berth of the "Flying Navy"

In 1938 the United States had seven naval air stations handling the maintenance and overhaul of our Navy's heavier-than-air craft. Today there are many more than 20.

One of the largest of these new bases is the Alameda Naval Air Station, directly across the Bay from San Francisco. Called the "shore hope" of many Navy officers, it spreads out like an architect's dream with stream-

Keith Dennison, Oakland Tribune

Hiding in a Fogbank that Moves with It, a Convoy Slips into San Francisco Bay

The crew of a Coast Guard cutter on offshore patrol watch the ship glide out of the mist. Their captain will hail the visitor, report weather conditions inshore, and give instructions as to pennants or lights it must hoist to enter the harbor. If the ship fails to identify herself or obey signals, the gun on the forecastle will speak.

lined barracks, mess halls, theater, recreation centers, and dispensary. Here, too, is located one of the largest airfields in the world, with shining new runways, hangars, machine shops, and training schools (page 297).

We saw endless lines of boys in work blues and sailor dinks marching along with notebooks. Winging off over the breakwater was a magnificent Sikorsky amphibian which had just left its wake in a burst of foam.

Aircraft of all types were in constant motion here. And along one hangar alley we saw also some planes from Pearl Harbor which had been returned for scrap. They looked like broken butterflies raked up on a garden path.

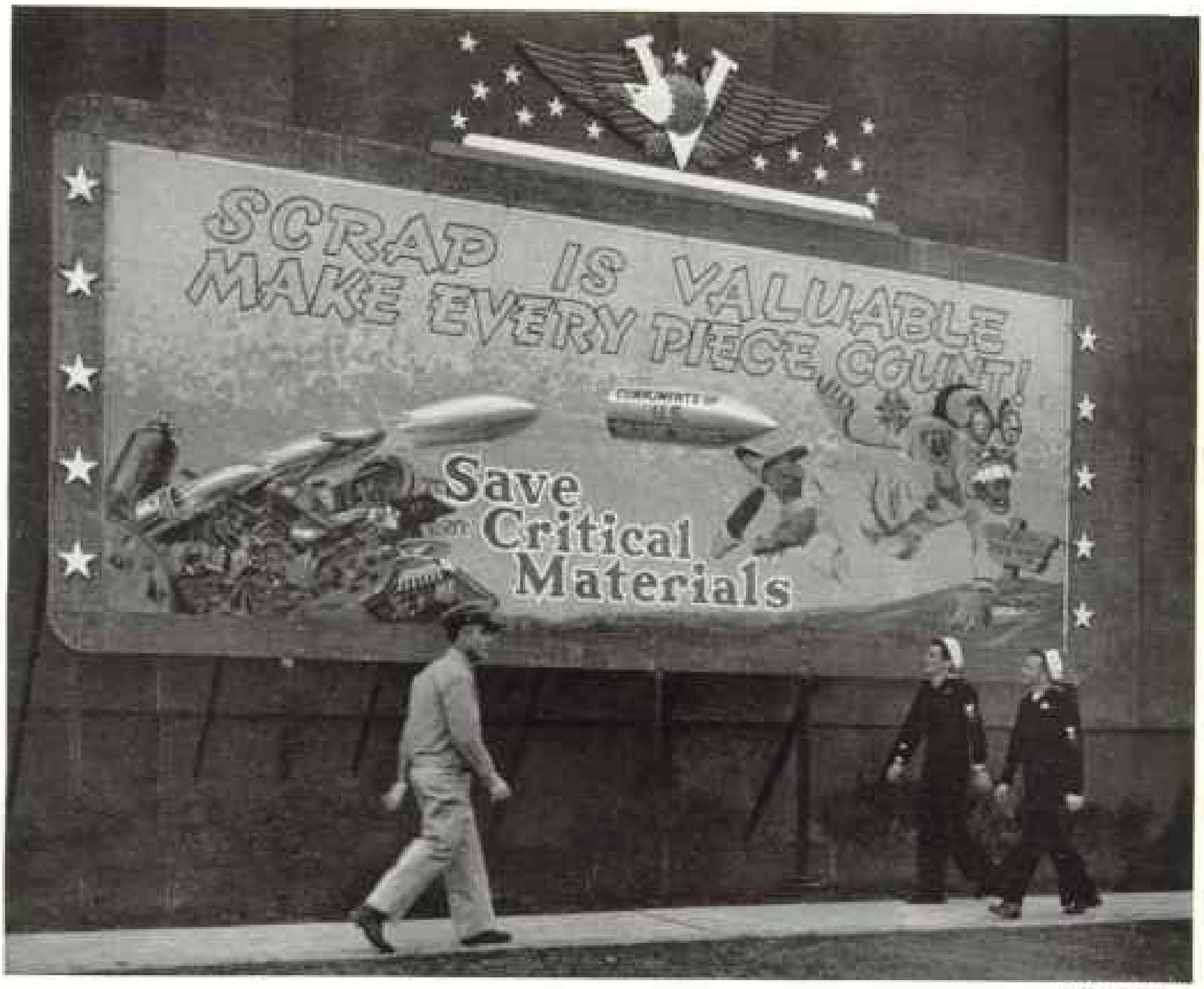
Farther on was the control tower in its green-glassed, war-painted modernism. Regulation, too, were weather instruments and radio units. Naval aircraft support the most powerful radio equipment yet devised.

Naval aviation radio operators used to be trained aboard ship. Today the Alameda, San Diego, Seattle, and Jacksonville Air Stations all include aircraft radio study in their training schools. Students who graduate from these schools and complete their indoctrination training are called "qualair."

Following a marching line of sailors to the mess hall, we skirted one company and entered the galley. Steaming hot, twenty 80-gallon soup coppers were lined up along the center of the room; a chef was stirring one with an oar.

"Court of Pacifica" Seems Ironic Now

Huge refrigerator rooms held mountains of vegetables, fruits, and dairy products. In the bakery, which also is a training school, we saw part of the 750 pies and 1,500 loaves of bread turned out daily. In the Navy, incidentally, bread is not eaten fresh and warm



Gabriel Moulin

A Scrappy New Year for the Son of Heaven, This Sign Reminds Navy Yard Workers

Mare Island's landscape has a number of these fancy billboards. The big one near the main entrance says, "Mare Island Doesn't Mean Horse Play—Mare Island Means Work!" Hanging in the machine shop is a big banner, "If You Don't Tell Him—He Can't Repeat It!"

the first day; it is put in closets for 24 hours.

Across Treasure Island's "Court of Pacifica," where lights once played on a dancing fountain and melody drifted from a screen of stars, bluejackets now march to gunnery practice or patrol duty. "Pacifica," raised in tribute to the peace and comity of Pacific nations, looks down on strange goings-on these days, for Treasure Island is today an active unit of the Navy's war program.

Based here are naval patrol forces, a large boot camp for raw naval recruits, and the West Coast Armed Guard, which, while awaiting assignment to merchant ships, devotes its time to signal study and gunnery tactics.

In the former Science Building of the Fair we found sailors straddling small two-man benches taking code.

The original Administration Building houses Naval Headquarters and the offices of Pan American Airways; the Hall of Air Transportation is Pan Am's hangar; and the Palace of Fine Arts is the Navy machine shop.

The mess hall here is now the biggest in the Navy. An average of 6,000 men can be fed in 40 minutes. They get all the milk they can drink, and that week it was 25,000 gallons.

Besides mine sweepers, patrol boats, and other business units, we discovered two famous craft lying off Treasure Island.

On one side, swarming with sailors hard at work putting her in shape for a naval training ship, was the schooner *Zaca*, Templeton Crocker's handsome two-master on which Dr. William Beebe made his two scientific expeditions along the American Pacific coast in tropical zoological research.

And on the other side was the *Philippine Clipper*, first Purple Heart ship of Pan American Airways.

She was wearing her wound stripe, won in the escape from Midway, December 7, 1941, proudly over her port bow (page 302).

Schedules are secret these days, but the

Keith Dennison, Oakland Tribune

Skipper Takes the Wheel as a Spitkit Heads for Sea

This squatty little mine sweeper, formerly a purse seiner, is about to pass under the Golden Gate Bridge, Lime Point to starboard. Guarding the paths of convoy is no small job when hundreds of ships and thousands of men must clear this gateway to battle.

thrill of watching for the Pacific Clippers is still in the heart of everyone in the Bay area. There is always traffic confusion on the Bay Bridge when one of the big ships comes winging over the towers, or another guns for one of its magnificent take-offs just below.

These main naval bases form only a part of the Navy's story out here. There remain all the things which make up the spirit of San Francisco's naval tradition: the movement of warships on the Bay and along "Battleship Row," the blimps on their coastal beats, the flights of naval aircraft, the numbers of men on duty here, and the *stories*—those tall, fantastic tales which come straight from the Pacific front as men reach the mainland for the first time with accounts of battle experiences.

Finally, there is the legend of the naval hospitals which can be told only in very small measure at present.

At one base hospital we saw men who had gone through a few of the less glorious phases of battle. These were ones whose stories are not told because there is nothing to tell. They simply fought until they fell or were thrown into a sea of burning oil (page 299).

We walked down the long wards, stopping here and there to ask a man his name and home town. We saw men from all parts of the Pacific—the battles of Java, the Coral Sea, Australia, Midway. The stories we have read of their exploits have seemed so incredible and distant, that meeting them here was like coming face to face with characters you had grown to know in fiction.

One of the men was from the U. S. S. *Pearv*, the destroyer which escaped the Philippines, hid by day under green branches near tropical isles, reached the Java Sea just in time for battle, made for Australia, hiding again by day, contracted malaria on board, and finally reached Darwin, where it was bombed in a raid.

The seaman showed us his hands where new skin had been grafted over the burns he had received while sliding down a rope to safety.

We stood by the bed of a boy named Bannowsky from Ballinger, Texas, who was still a little groggy from an operation earlier in the day. He was a chief aviation pilot shot down off Soerabaja in the battle of Java. When his ship crashed, the Japs bombed him

in the water and he was hit by shrapnel. A Netherlands doctor operated on him, then sent him home for special treatment.

The Navy doctors told also of the tail gunner who went down 40 miles off Australia. He stayed in the water eight hours with a broken leg before he was picked up by an ammunition ship.

When that was bombed he got on a rubber raft and waited for 30 more hours until a destroyer picked him up and put him off on an island while it went elsewhere on business. He waited a week, and it finally returned to take him to Australia. There he was put in a plaster cast and started for home.

For 70 days his ship zigzagged along a strange route without sight of another ship of any kind. When he arrived at the base hospital here, he was completely healed. After a week's rest, he started back.

Boys from the *Yorktown* had just come in, bringing the story of her fight for life. They talked proudly but with heavy hearts. They had loved that ship, as only men of the sea know how.

AP from Press Association

Vineyards Rush to Keep Pace with Shipyards

Bottles of California champagne, decked in streamers of red, white, and blue, here stand on their own assembly line waiting for the smashings that will launch Liberty ships to meet the Axis challenge.

Chinatown Since Pearl Harbor

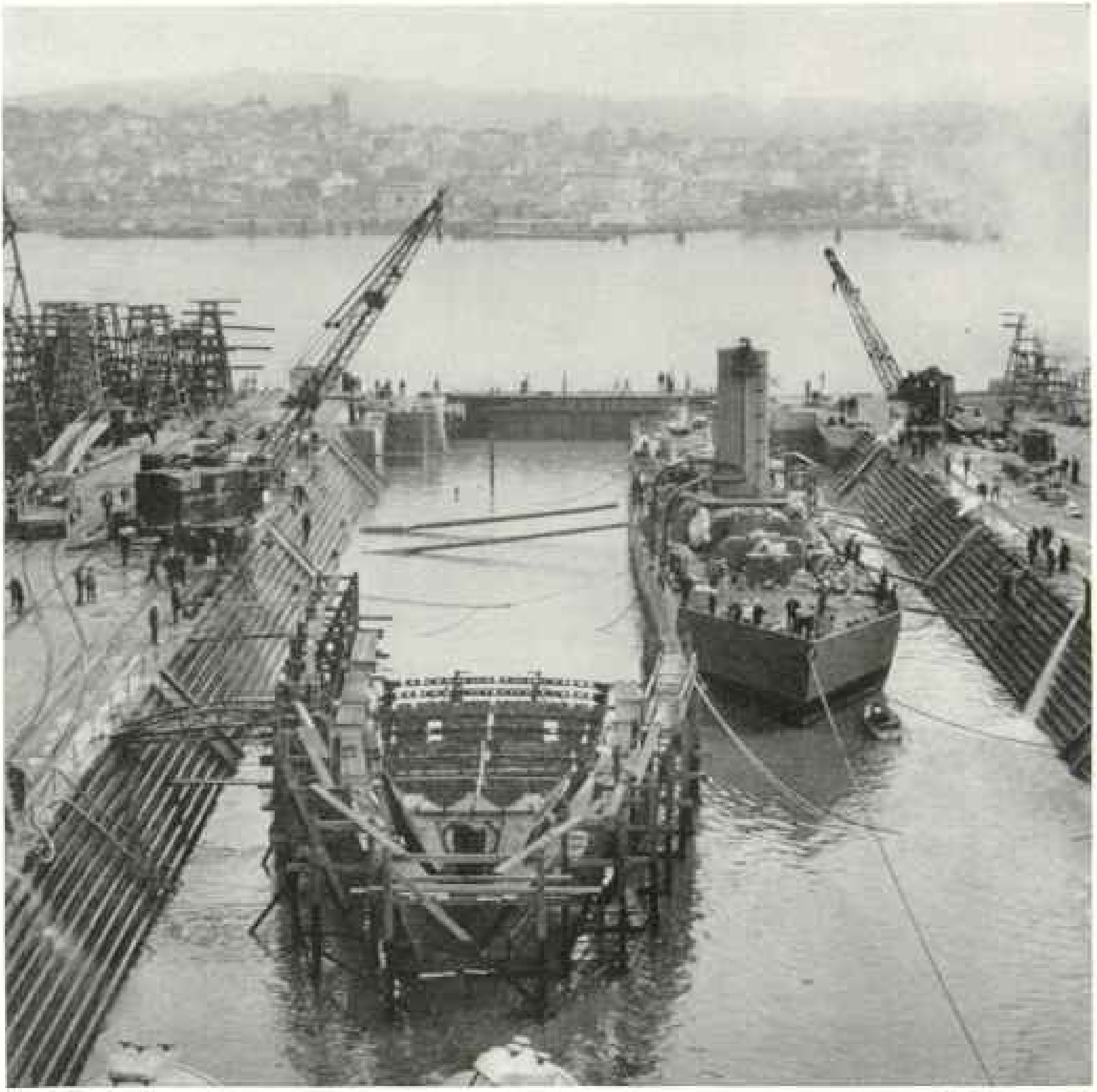
San Francisco's crowded Chinatown has changed since Pearl Harbor. On the surface this is hardly noticeable, except for the empty stores of the Japanese who had "infiltrated." The same old scents of musty sandalwood and potent perfume still waft from ornate, lacquered doors.

The clacking of the abacus where accounts are being added; the windows filled with carved teak and ivory, silks and jade, candied ginger, coconut shreds, and lichee nuts; fish shops of incredible variety and aroma; little Chinese women in black trousers and soft slippers; old men in skullcaps and long coats —all these remain.

But underneath the old familiar scenes there have been far-reaching changes. Traditions have gone overboard with the rise of a new wartime generation.

Some six thousand men have left their old jobs in Chinatown to go into shipyards. Being a race of craftsmen with small agile hands, they have taken to precision-tool work as ducks to water.

As for the armed services, more than three thousand boys from Chinatown have either been called up or have enlisted, and about three-fourths of the colony's doctors and dentists are on their way.



U. S. Navy, Official

A New Bow Awaits the U. S. S. *Shaw* in the Drydock at Mare Island

This destroyer, victim of a direct hit which smashed her forward section, was listed as a total loss in the first Pearl Harbor tally. Later, furnished with a false bow, she reached the mainland under her own steam. Naval plastic surgeons will fit the new bow, building at left, into place. Today, with a score to settle, she is back in the fight.

In the crypt of Grace Cathedral, the loud-speaking and electrical systems were contributed and installed by Chinese volunteers.

Yet of all the war workers in Chinatown none is more colorful than Dr. Margaret Chung, the colony's most famous woman physician and first doctor for the Grace Cathedral unit.

An aviation enthusiast, Dr. Chung is the founder of a noted San Francisco organization, the 560, or as she calls them, her "Fair-haired Bastards."

It may be 561 by now. Some flyer may have gone through San Francisco, been recognized by "Mom," received his green jade Buddha, and gone off to fly for freedom.

The 560 represent all the air services of the United States—Army Air Forces, Navy Air Arm, and the big commercial lines. Dr. Chung gives them numbers as she adopts them—No. 408, No. 409, etc.

"Where are they?" repeats Dr. Chung. "They are wherever men are flying and fighting for freedom."

From all over the world come souvenirs for "Mom's" Trophy Room, just off her red-lacquered office (page 301).

A wing tip, a strip of fuselage, a huge prop

Gabriel Moulin

A Streamlined Barrack Entrance of the Alameda Naval Air Base

Air stations are vital units of a flying Navy. No aircraft is self-dependent except when air borne. And no carrier is more than a floating runway and temporary base to the temperamental brood it mothers. Periodically, all planes must return to land-based stations for complete overhaul. When our Navy spread its wings in emergency expansion, the Alameda base was raised from about nine-tenths swampland (page 291).

shaft, photographs from far corners of the earth where "Fair-haired Sons" are stationed for the duration—all are placed here in a confusion of wreckage.

Over in the corner is the control column from a German plane shot down by one of her boys over the English Channel; next to it some trophy from an A. V. G.

Flags, pennants, insignia cover the walls. Here is a piece of shrapnel from a Jap plane which landed on the U. S. S. *Astoria* in the Coral Sea battle and was sent in by Rear Admiral W. W. Smith, Bastard No. 52, who watched it fall.

When Lt. Comdr. "Red" Gill, No. 4, slid off the *Lexington* just before it went down in the Coral Sea, he automatically grabbed a couple of things that happened to be handy to stuff in his pockets. When he reached land, he sent them on to "Mom."

"Mom" had already read about them. They were the now famous cans of Spam and Planters Peanuts. Dented and battered from concussion, they look very much at home among the tattered trophies of the Bastard Room.

Most thrilling of all recent souvenirs, however, is a flimsy piece of red tin, which doesn't

San Francisco Chronicle

San Francisco Honors Sun Yat-sen, Founder of the Chinese Republic

This monument, by Beniamino Bufano, who worked in stainless steel and composition rose granite, is a dazzling thing to see on a sunny day. Here, on August 9, 1942, Koreans and Chinese of San Francisco paid tribute to the principles of humanity laid down by the "George Washington of his country."

look like much until you read the tag that came with it:

> "The setting of the Rising Sun, emblem from the first Jap plane shot down at Pearl Harbor on the morning of December 7, 1941. Sent in by Capt. L. W. Ashwell, Bastard 509, U. S. Marine Corps, Unit #506. Officer of the day, December 7, 1941, at Pearl Harbor."

One day recently a message came through from a boy of hers in the Far East who had avenged a few of the losses in her ranks. It said simply, "7 for them. 7 for you."

Most colorful corner in Chinatown today is at California and Grant, where the large three-story establishment of S. Matsumoto, famous Japanese importer, long stood empty and gaunt.

Directly to the rear is tiny, quarterblock St. Mary's Park with its shining statue of Dr. Sun Yat-sen.

Diagonally across from the old Matsumoto store is busy Cathay House, where, in a glassed-in kitchen, you may watch Chinese wizards dream up *Hop To Gai Kow* (boneless chicken and walnut halves), *Yeen Wo Bok Opp* (squab with select bird's nest), or delectable *Or Doong Goo Opp* (steamed duck with orange peel).

Then directly across from both institutions rises fire-scarred St. Mary's Cathedral, where Americans and Chinese move in unending little clusters through its huge doors. The gold inscription on the Cathedral façade which looks down on this crossroads of many thoughts and peoples reads, "Son, observe the time and fly from evil."

Before their evacuation the Japanese in the San Francisco area were found mainly in the big shipping lines, in banking, in the export-import business.

They had nurseries, truck farms, goldfish and marine-plant aquariums. They were merchants, photographers, gardeners, house servants.

U. S. Navy, Official

Pacific Navy Heroes Are Greeted by the First Lady

These wounded sailors, convalescing at the Mare Island Naval Hospital, met the President two weeks before. Now they are visited by Mrs. Roosevelt. They represent nearly every Pacific engagement of World War II. Common remarks were, "It was a good show!" and "I can't wait to get back in the scrap."

They played an extravagant role in the business of shipping out an annual $16,000,000 worth of cut flowers.

But they did not fish! This is one of the strangest circumstances in their relations with the city, and nobody seems to know the answer.

The larger fishing craft down along the water front were owned by Slavs; the smaller ones by Italians. No Japanese owned fishing boats, and few, if any, were employed on them.

Italians Loyal to U. S. A.

International colonies have been part of San Francisco since the first windjammers raked in through the Golden Gate. It does not surprise a San Franciscan even now to turn his radio to an Italian program and hear men of an enemy tongue selling bonds for American defense.

Now that alien restrictions have been lifted, the Italian colony goes on its normal Italo-Americano way, hoping the war will end as soon as possible so it can get on with its fishing—and send money home to the "poor ones who have been so misled."

The impassioned loyalty of many local Italian leaders to the war cause has made a good impression on the city. They have worked unsparingly to see that there would be no doubt as to the sympathies of their people.

War work, hospitality work, volunteer service work, and a wartime city at play have made changes in San Francisco's old way of life. Business is not going on as usual.

The Government in its decentralization plan has sent many important war boards and agencies to this area. Bring in 250,000 people as a resident war population, and watch the natives warm up for action. Tell the tourist to "See California AFTER the War!" and notice the transformation in a land which in

Gabriel Moulin

A Conductorette Collects Fares from Shipyard Workers on a Market Street Trolley

Hundreds of girls are filling jobs of motormen and conductors on San Francisco streetcars. The city's veteran conductors are famous for their disregard of rank or high station. "Climb on, kids," said one to two gray-haired Navy captains, "let's keep this war moving."

one year absorbed $200,000,000 in transient trade.

The problem now is to keep everyone away from San Francisco who hasn't a direct connection with the war effort. Railroads plead with people not to waste space, not to expect the usual service, not to come at all unless they have to.

Change and no change. San Francisco is the same enchanting thing it ever was.

Panorama from Telegraph Hill

Stand on Telegraph Hill, from where, when the city was young, men used to semaphore the approach of a ship through the Golden Gate. Feel the clean coolness of the sea breezes salting your face, racing your heart. Catch the scents of a thousand things, for this is a city of intoxicating smells. The pungent burned-cookie odor of roasting coffee from under the west end of the Bay Bridge; the vinous scents from the wineries of the North Beach section; the yeasty tang of French and Italian bakeries; the heavy smell of chocolate from the Ghirardelli plant.

The water front sends up its full aroma of steaming lobsters and frying bass or sole. A hundred corner stands waft the fragrance of gardenias. The salty draughts of sea air mix with the scent of eucalyptus from the hills.

Here is the same tradition of things well done. Excellent food exquisitely served; symphony, concert, and opera beautifully produced; museums and art galleries unchanged by war measures, only more crowded, more alive.

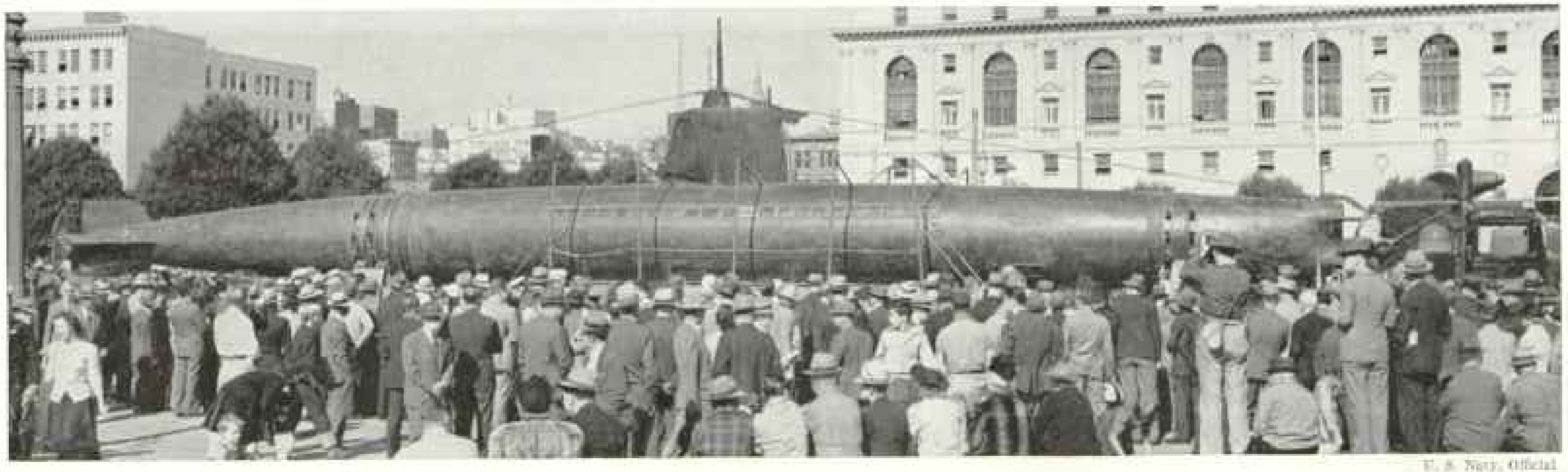
Physical changes tell mainly of military restrictions.

No more Embarcadero for the civilian; no more the disorganized congress of freight trains, trucks, vans, taxies whirling in confusion along the water front. No more Kodachroming red lobsters, pink shrimps, and bronzed fisherfolk along Fisherman's Wharf.

Gabriel Moulin

Mother Chung Shows Jap Flags to Capt. Stevens Bancroft, No. 1 "Fair-haired Son"

When the first group of American aviators volunteered to fight for China some years ago, San Francisco's much loved Chinese-American surgeon, Dr. Margaret Chung, entertained them with a 14-course Oriental banquet. In appreciation, they organized as "The Fair-haired Sons of Mother Chung." During the years she has added to the brotherhood, giving each flyer a number. Lt. Comdr. James Flately, son No. 525, writes that his squadron of "Grim Reapers" has shot down 55 Jap planes for her. Dr. Chung holds a Jap flag, captured on Guadalcanal, sent by Lt. Col. Richard Mangrum, No. 416. From all over the world come souvenirs for "Mom's Trophy Room."



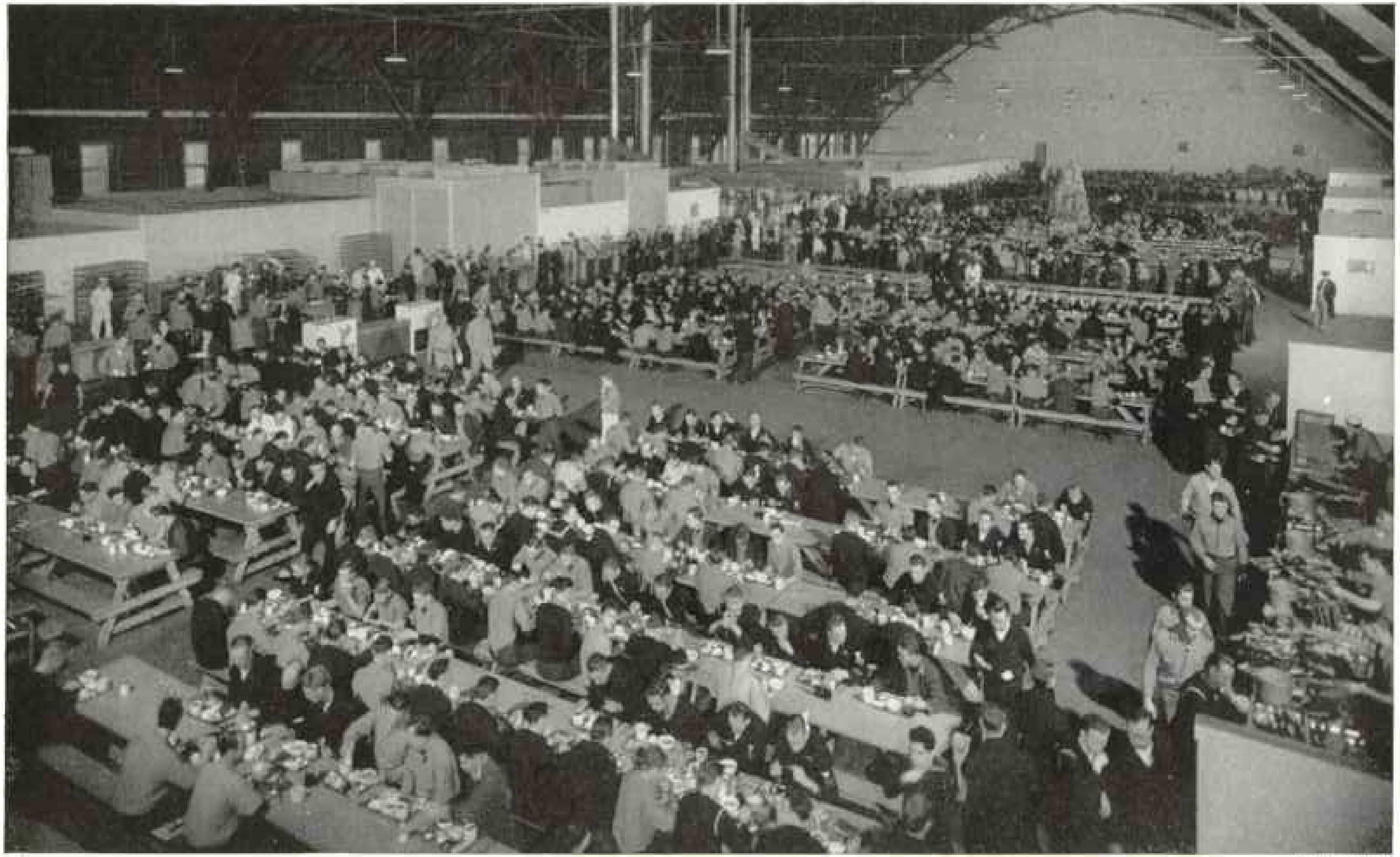
U. S. Navy, Official

Like a Sailfish Trophy, a Jap Suicide Submarine Captured at Pearl Harbor Comes to San Francisco for Navy Day

Clyde H. Sunderland

The *Philippine Clipper*, Proudly Wearing a Golden "V" Wound Stripe, Takes Off from the Bay for Distant Allied Outposts

Since the big Clipper's escape from Midway on December 7, 1941, Pan American ships have flown more than 40 million miles. Not until the war is over will the whole story be told—of the many military missions performed, valuable men and papers carried, the times Clippers have been fired upon, the people they have rescued at sea, the new routes tracked and the records broken.



Gabriel Moulin

Six Thousand Men Can Be Fed in 40 Minutes in Treasure Island's Mess Hall, Now the Biggest in the Navy

On this island, created for the World's Fair of 1939-40, naval recruits are trained, armed guards for merchant ships study gunnery tactics, small boats such as mine sweepers and patrol boats are based, and Pan Am Clippers take off for the far Pacific. The original Administration Building houses Naval Headquarters and offices of Pan American Airways, the Hall of Air Transportation is now Pan Am's hangar, and the Palace of Fine Arts is the Navy's machine shop. In the former Science Building sailors straddle two-man benches taking code. Across the Court of the Moon, sailors wigwag in semaphore drill.

W. A. Bechtel Co.

Where 32 Sausalito Homes Stood a Year Ago, Liberty Ships and Tankers Now Are Building

A triumph of construction, Marinship has one of the fastest-moving ship assembly lines in the country. Keels were laid while the yard was still in construction. Prefabricated sections, such as bulkheads, ship sides, splinter shields for guns, and even two afterpeaks or stern sections, are piled before the shipways. Marinship, newest yard on the Bay, had difficulty finding skilled workers. It recruited men from nonessential jobs and trained them. Artists, attorneys, optometrists, and hairdressers have become welders, shipfitters, and riggers. Classes in acetylene burning are half women, in welding three-fourths, but shipfitting still belongs to men.

General Mosaic

Up the Slopes not Far from the Old Mission District Climbs the Potrero Housing Project for War Workers

Many of the 250,000 new residents live in such low-cost units. Hastily constructed, they rise on hills, reclaimed swamps, and dust bowls, fringing virtually every Bay city. The dome of City Hall stands above buildings of the Civic Center (background). In upper right is Nob Hill where bonanza millions built lavish homes.

Gabriel Moulin

"Shooting" Jap Zeros and Ships Is the Favorite Amusement of Servicemen on Liberty

Here, in the old Bank of America on Market Street, thousands of soldiers, sailors, marines, and war workers find amusement in the "Fun Center" (opposite page). In the far right corner a soldier takes a bead on a small tin Hitler scurrying about a tiny Bois de Boulogne.

No pictures of bridges, buildings, skylines, communications, military movements, ships, supplies, natural resources.

No driving out through the Presidio along El Camino del Mar to the Palace of the Legion of Honor: you go by way of town now, perhaps past Sea Cliff with its beautiful homes boarded up or blacked-out, or frequently "For Sale." No sitting in a window at the Cliff House watching the moonlight play on huge waves breaking against Seal Rocks.

By Army proclamation everything visible from the sea has been totally blacked out and every bright light for 150 miles inland has been dimmed.

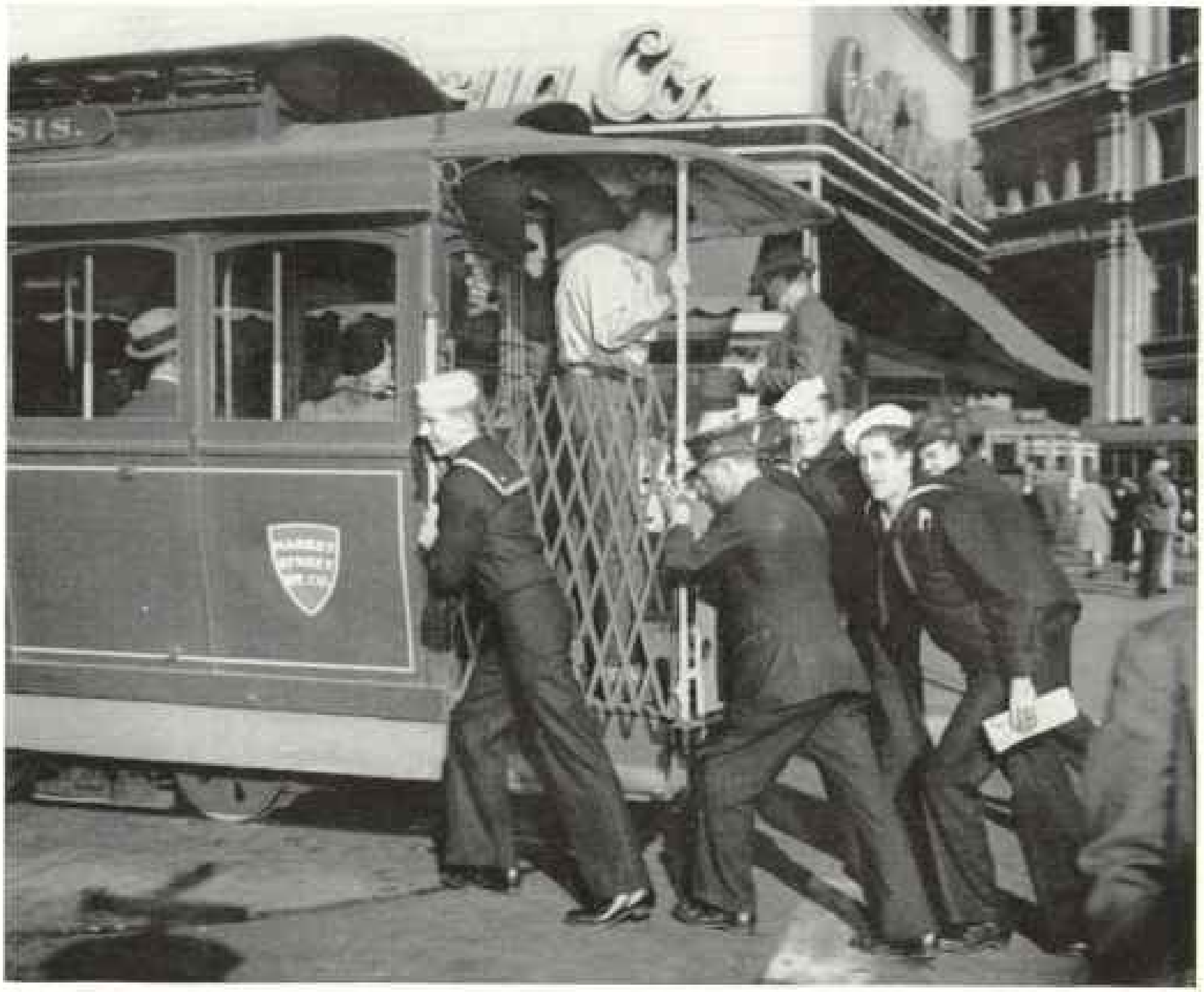
Street lights are painted black on the top and seaward sides. From San Francisco you can scarcely make out where the city of Berkeley lies across the Bay. Crescents of metal shield the orange sodium-vapor lights strung like amber beads above the bridges.

Beach concessions look ghostly in their abandonment, and still worse, the huge Ferris wheel moves around silently without lights! At night barely a handful of cars, their lights dimmed to less than an eightieth of their normal strength, fumbles along that magnificent shore highway.

You will be chilled by the dimout gloom of Market Street, unless you join the spirited crowds and forget the past. In a city famous for its luminous fog-banked brilliance, the Army dimout has worked some eerie changes.

"Let's Keep This War Moving!"

Take a trolley out Market Street. Hang on, because there are lots of them, and four abreast, and they have a job to do. The conductor may be a girl; there are dozens of them and hundreds more in training for these jobs. If it isn't a girl, it will be one of the old crew whose disregard of rank or station is a San Francisco fable.



U. S. Navy, Official

Sailors Lend a Hand in Easing a Cable Car Around Its Turntable

Devised by a San Franciscan especially for the city's hilly streets, these cars are a romantic inheritance which no emergency has been able to scuttle. Traffic still waits good-naturedly as conductor and gripman get out to turn the car and start it careening back up the hill.

"Climb on, kids," said one to two gray-haired Navy captains, "let's keep this war moving."

Look for the old Bank of America Building on the way. It has been converted into a penny arcade.

"Fun Center" says the large sign swinging out from its classic, pillared front. You'll catch a glimpse of soldiers, marines, New Zealand flying cadets, and cavalrymen in campaign hats and polished boots milling through the concessions; British and American sailors, arm in arm, having their picture snapped in front of a cardboard battlewagon with a cardboard girl in a hula skirt.

A New Barbary Coast

The old Barbary Coast has come back to life. But now it is the "International Settlement." Ray and Bee Goman's "Gay Nineties," with its *East Lynne* atmosphere of red plush and gilt, plays to packed houses.

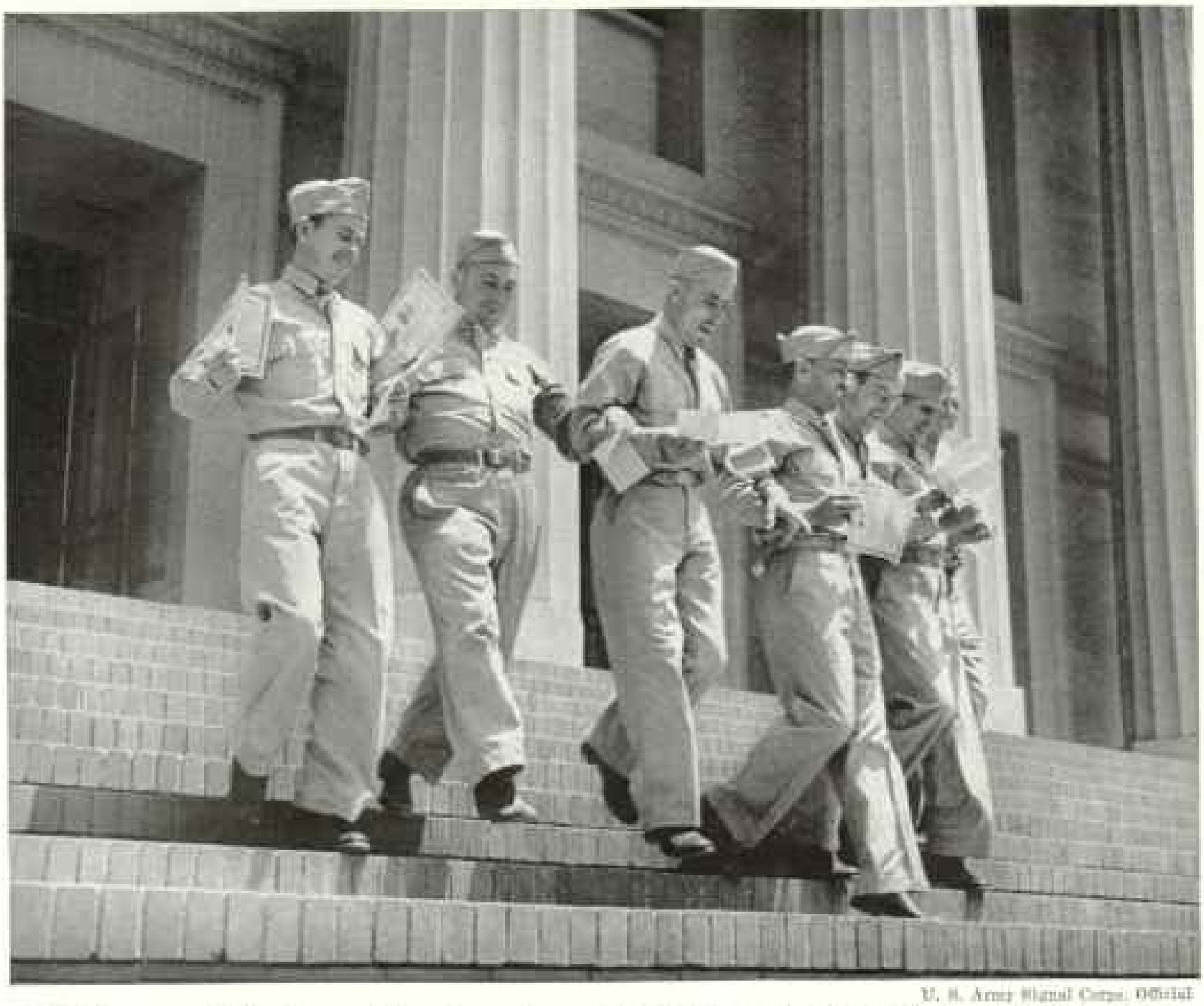
In the same row, one club is an old mining-town saloon, one is prewar Paris, and one is "The Hurricane."

South Seas and Hawaiian themes are always the favorites out here. You can't pass many blocks without seeing bamboo and coconut trees behind a city door.

The San Franciscan is at heart a Bohemian. Though engrossed in his wartime work, he will seize every opportunity to enjoy the savor of life—to watch the passing show.

He can, and does, still dine in the tradition of almost any country. As whim dictates, he may stop for a cocktail of tiny shrimps at Fisherman's Wharf, then cross the Bay to Trader Vic's for a *Tiare Tahiti* and sweet-and-sour spareribs served in a Polynesian bamboo garden.

He may stand on a quiet street and listen to the familiar whir of cables running under his feet—or travel by one of them to the top of a steep hill just to watch the rippling pano-



U. S. Army Signal Corps Official

Walking on Air! Seven New Americans Dash Out of the Hall of Records, Martinez

Under the new speeded-up naturalization process, men in military service may obtain their certificates of citizenship three months after induction. Left to right: Pvts. Francis Welsh, English; Daniel Hainey Boyle, Scot; Viljem Schauer, Yugoslav; Emilio Blanco, Venezuelan; Gerard Robichaud, Canadian; Joseph Lotowski, Polish; and Meyer Ehrlich, Russian.

rama of the city swaying under its myriad banners.

Here flags fly from the tops of buildings more often than from the fronts. The land of constant breezes keeps them always unfurled.

The San Franciscan who knows and loves these things may still listen for the evening Angelus or the noon bells from St. Patrick's; but now the chimes which once played only religious hymns ring out with "From the Halls of Montezuma."

A Water Front Geared to War

He may drive out to Coit Tower for the exhilarating view of sea and bay. But instead of looking down on a yacht basin preparing for a regatta, he sees a water front charged with the complicated activities of war.

He watches heavy, self-possessed ships plying a bay that is restless, fitful, wary of the strange things that have been done to her, the strange nets strung over her, the strange craft that ride her.

He looks up to see a sharp, startling skyline suddenly fade into the softness of a tulled fog, a shaft of sunlight break through the white bank and strike down to great blue warships lying motionless on a gray bay. He sees the contrast of peace and war.

Yet these are but the froth and sparkle and battle raiment of San Francisco at war. It is the deeper spirit of the city which defies definition and is the real birthright of her sons.

It is the very greatness of her that has caused the West and the Far East, perhaps the whole world, to look this way and wonder what will happen to Frémont's beautiful "Chrysopylae"—to this Golden Gate which has always been the symbol of the Setting Sun.

Bolivia—Tin Roof of the Andes

By Henry Albert Phillips

INTO landlocked Bolivia I came by water, on board the S. S. *Ollanta*, an iron vessel of 750 tons burden, 265 feet in length, sailing along the top of the Andes, 12,500 feet above sea level.

My steamboat in the clouds plied back and forth virtually the full length of Lake Titicaca, about 120 miles, from Puno, Peru, to Guaqui, Bolivia.

I had just been lifted to this top of the world from the seacoast in a 48-hour climb aboard a tiny 4-car train drawn by an overworked locomotive.

"Where did this iron ship come from, and how did she get up here?" I asked the first officer as I emerged from one of the 66 commodious cabins for first-class passengers.

"The *Ollanta* was made in Scotland," he explained. "Her dimensions are all on miniature scale, even the berths, tables, and other furnishings. She was shipped from Hull, and brought up from the sea to Lake Titicaca in pieces. The first ships of our fleet were carried up on the backs of mules and Indians."

As we sailed out of sight of land with the evening mountain mists rising all around us, I had the sensation of drifting along on banks of clouds. Swarms of balsa-wood fishing boats, bobbing like corks in the fog, strengthened the illusion (Plate VI).

Next morning the fog had disappeared, and the 3,400 square miles of the largest sea on the continent, the highest navigable body of water in the world, lay in the clear air like a giant aquarium clasped by the prongs of Andean mountain tops.

We entered Guaqui, Bolivia's only remaining "seaport" of any consequence, by way of a tenuous channel, made by a dredge heaping mud on either side.

"The lake is slowly shrinking," the first officer told me. "We have a harder time every year reaching harbor."

Guaqui is a sleepy little town saturated with *mañana*. On shore, we were bundled into an antiquated American-built railroad train.

Nothing happened for nearly an hour. Then a little yard engine named *Tunari* came hissing along, took us off, and dumped us into the town's railroad backyard. We were seemingly forgotten until around noon, when tiny *Tunari* remembered us.

The monotony was broken by the appearance of a crowd of Indian women. Men seemed scarce. Each woman wore a soft brown derby, a voluminous, many-hued shawl from which a baby usually peered, and an orange skirt and blue apron, with layers of red-tinted underskirts peeping out.

Squatting like brood hens in the dusty road, these prospective passengers waited contentedly to come aboard. At last a big locomotive came along and carried us off.

Our first halt was at Tiahuanaco, notable for a sprawling Romanesque church built in the earliest colonial period from the ruins of a pre-Inca city near by (Plate V). Crews of ragged urchins sold me several heads of images they had excavated from the graves of a race which mysteriously vanished centuries ago.*

As the train climbed beyond the town, the broad pampas of grain gradually dwindled until there remained only patches of brown grass (Plate XII). Sheep corrals began to spot the perpendicular fields. Grazing with the sheep were often llamas and alpacas.

Even the Train Gets out of Breath

As if short of breath, like all the passengers except the Indians, our train stopped frequently, as we continued to climb to 3-mile altitudes. At even small stations there were groups of squatting women, with knitted and woven articles and food for sale. I could buy a carcass of lamb for half a dollar!

Our Indian passengers ate continually, bundling in and out of the train. In the second class, four bench seats ran the length of the carriage. The passengers were packed in solid, all feeding, mothers from earthen pots, babies from the mothers' breasts.

With the boliviano unit of currency depressed to a cent and a half U. S. money, an excellent luncheon cost me only 24 cents.

After that I settled down as best I could, under the pressure of impending mountain sickness, to enjoy an extraordinary scenic panorama. Mount Illimani, one of the highest peaks in the world (Plate VIII), and other snow-covered sisters, exceeding 21,000 feet, filled both horizon and sky. No wonder the temperature had dropped below freezing!

Suddenly an American outdoor signboard diverted my eyes from the beauty of Nature. "La Paz Golf Club," it read. Later I had the rare experience of playing there—some 14,000 feet up!

We soon pulled into the small station of El Alto, poised on the rim of a vast crater-

*See "Heart of Aymará Land," by Stewart E. McMillin, National Geographic Magazine, February, 1927.

like arena. Some 1,500 feet diagonally below us lay La Paz, the City of the Peace of Ayacucho, one of the two capitals of Bolivia. It is scattered over the bottom of a red-clay bowl like a mass of building blocks.

An electric locomotive replaced our stout-hearted steam engine, and we went curlicuing in broad loops down the sides of the sharp declivity. It took almost an hour to reach the main railway station on the city's edge.

Because of the influx of refugees, lodgings were scarce. My porter took me to a decrepit hotel. There for the U. S. equivalent of 45 cents a day I engaged a salon on a rickety balcony which hung precariously over a patio in use as a chicken and turkey yard.

Meals were included in the charge for the room. Indian boys served me in relays day and night, one of them always lying behind the front door after it was locked at 10 p. m.

La Paz Life Seen from the Hotel Door

Every morning I would stand for a while at the hotel entrance, just looking on at the continuous procession of colorful humanity. The passers-by were mainly Indian families, who trudged along in the gutter single file. In the lead walked the husband, empty-handed. The derbied wife followed with the children, carrying in a shawl on her back a miscellaneous load which usually included a baby.

La Paz is built like a pyramid layer cake on the sides of a steep hill. Short up-and-down cross streets connect the main thoroughfares. In my daily walks I would gasp my way up streets often too steep for a streetcar or a taxi to climb. All the while Indian burden bearers would push past me as if to shorten the distance by hurrying.

Near the center of town many blocks of houses had been razed, in preparation for a building boom which the war had brought to a standstill.

One building completed before the boom died was a modern hotel, the Sucre Palace, now taken over by refugees. Its air was vibrant with soft-spoken Viennese German.

Commercial and official La Paz rose in the background, with the spectacle of Illimani towering above everything (Plate III).

On a 4-way avenue, El Prado, I watched the May Day Parade, with 10,000 marching members of more than 50 organized labor groups.

In the spacious hillside Plaza Murillo beats the heart of this city of 287,000 people (Plate II). The four sides of the plaza are lined with monumental edifices, one of them the huge Greco-Roman New Cathedral, which will accommodate 12,000 worshipers. It took so long to build that artisans inherited their jobs from one generation to another.

Next the Cathedral stands the equally impressive Presidential Palace, where I watched the Mounting of the Guard, Buckingham Palace style. It was a grand gesture by trained soldiers in red uniforms.

One angle of the plaza is occupied by the Capitol. In its two chambers the branches of the National Congress meet (page 331).

Several times I ran into the big market day, when certain sidewalks and alleyways are thrown open to the free use of rural merchants. Caravans with their stately llamas trek in from distant valleys, bringing rice, coca leaves, chirimoyas, bananas, nuts, peppers, and sugar cane. The most-sought-after produce was potatoes, especially the shrunken *chuño*, dehydrated by the ancient native method of first freezing and then drying.

Through a newspaper friend, I was invited to dinner at the home of a well-to-do Chola woman who lived "up the hill" in the mixed-blood colony.

First came chicken soup with most of the chicken left in it, and seasoned with Indian herbs. Followed a plate heaped high with strange vegetables from the *yungas*, covered with a pungent cream sauce which smothered several slices of roasted hindquarter of kid. Then came the chuño, so ornately disguised I should never have guessed it was only dried potato! Dessert consisted of fresh-picked chirimoyas and papayas, and baked plantain.

Hot Valleys below Frigid Heights

I could not understand how the tropical fruits I enjoyed at the banquet or saw in the markets could have been grown within a day's journey of cold, barren La Paz. My newspaper friend soon enlightened me. Next week end we set out on a jaunt in the direction of the Bolivian *yungas*, hot, lush valleys which stretch eastward until they are lost in the steaming jungles of Brazil. They comprise the lowlands and mountain valleys up to 5,000 feet.

"The Altiplano, or high plateau, is only 500 miles long by 80 wide! It is hardly 10 percent of the entire area of Bolivia," my friend explained.

We followed a modern paved highway northward till we reached Coroico, near the terminus of the La Paz-Yungas Railway. Here we drew up under the shade of a clump of eucalyptus trees, on the very edge of the shoulder of a mountain.

"You can see why the railway hesitated," said my friend. He pointed off into the endless valleys rich with vegetation.

 Kodachrome by Carl S. Bell

Wearing Spanish Shawl and Felt "Derby," She Displays an Indian Good-luck Doll Made of Clay and Laden with Bundles

Kodachrome by Frank Zarnke from Three Lions

World's Loftiest Capital, La Paz Reveals Its Gleaming Heart, the Plaza Murillo, Girded with American Cars

Timed by the clock in the Capitol, Bolivians bask in the 11:30 sun, which is cool though tropic. Red tile lines the President's Palace. The unfinished Cathedral, begun at least a century ago, stands at right. Murillo, a revolutionary hero, occupies the pedestal. Eroded walls of the Altiplano, or high plateau, hem the city.

Reproduction by Carl H. Bell

Nine Thousand Feet above La Paz's Red-tile Roofs and Modern White Buildings Towers 21,184-foot Illimani, the "Great Mother"

Some travelers suffer from mountain sickness here. They may reach sea level over railroads branching from the station (foreground) to three non-Bolivian Pacific ports. Twin spires mark a church built by the Spaniards, who founded the city in 1548. Staircase streets carry expanding La Paz into the walls of the Altiplano 1,500 feet above.

A Dozen Petticoats Enfolding Indian Dancers Bulge like Old-fashioned Hoop Skirts

Two women veiled for a fiesta at Sorata carry wardrobes on their persons. Spare skirts, peeping from hems, ward off cold and accentuate natural stockiness. Old silver coins decorate headdresses and money bags.

Kodachromes by Carl S. Bell

Dyed Plumes and Feather Flowers Crown Ear-muffed Youths Playing Flutes at Sorata

Other headdress styles include ostrich sprays six feet wide or five feet high. (See "Bolivia, Land of Fiestas," by Alicia O'Reardon Overbeck, in THE GEOGRAPHIC for November, 1934.)

Gateway of the Sun, Mysterious Ancient Ruin, Frames a Dance under Bolivia's Flag

Here at Tiahuanaco, the Sun God, bearing a double scepter and ruling an array of 48 lesser figures, was adored by a vanished pre-Inca race. Earthquake or lightning has cracked the relic.

Kodachromes by Carl S. Bell

Indian Eyes Drink in a Feast of Color Outside a Sorata Clothing Store

Striped, hand-spun woolen blankets are similar to the ones on the women's shoulders. Centuries-old style dictates Indian women's felt "derbies" (Plate 1).

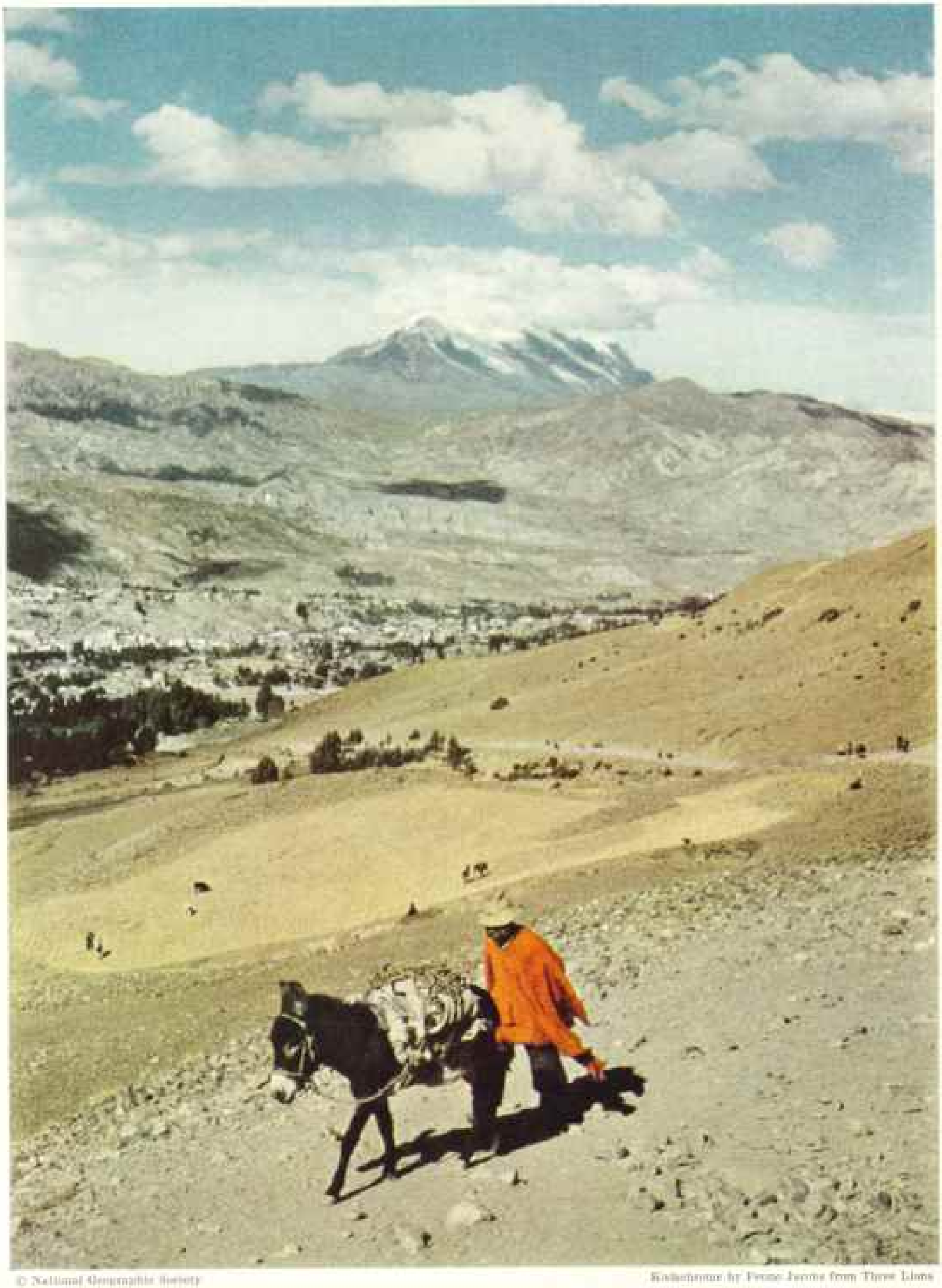
Kodachrome by Carl R. Bell

Indian Wives Meeting Home-bound Fishermen Wade into Ultra-blue Titicaca, the Incas' Sacred Lake, 12,500 Feet Up

Balsas, unsinkable bundles of reeds driven by reed sails, rest beside the world's highest steamship route. Titicaca's waters are so cold that few Indians learn to swim; so deep that anchors seldom find bottom. Stone fences crease the hills. Beyond the rushes grows *quinua*, a high-altitude grain used in making gruel.

Fiesta Musicians, Playing Cane Pipes with One Hand while Beating Drums with the Other, Circle Crouching Dancers

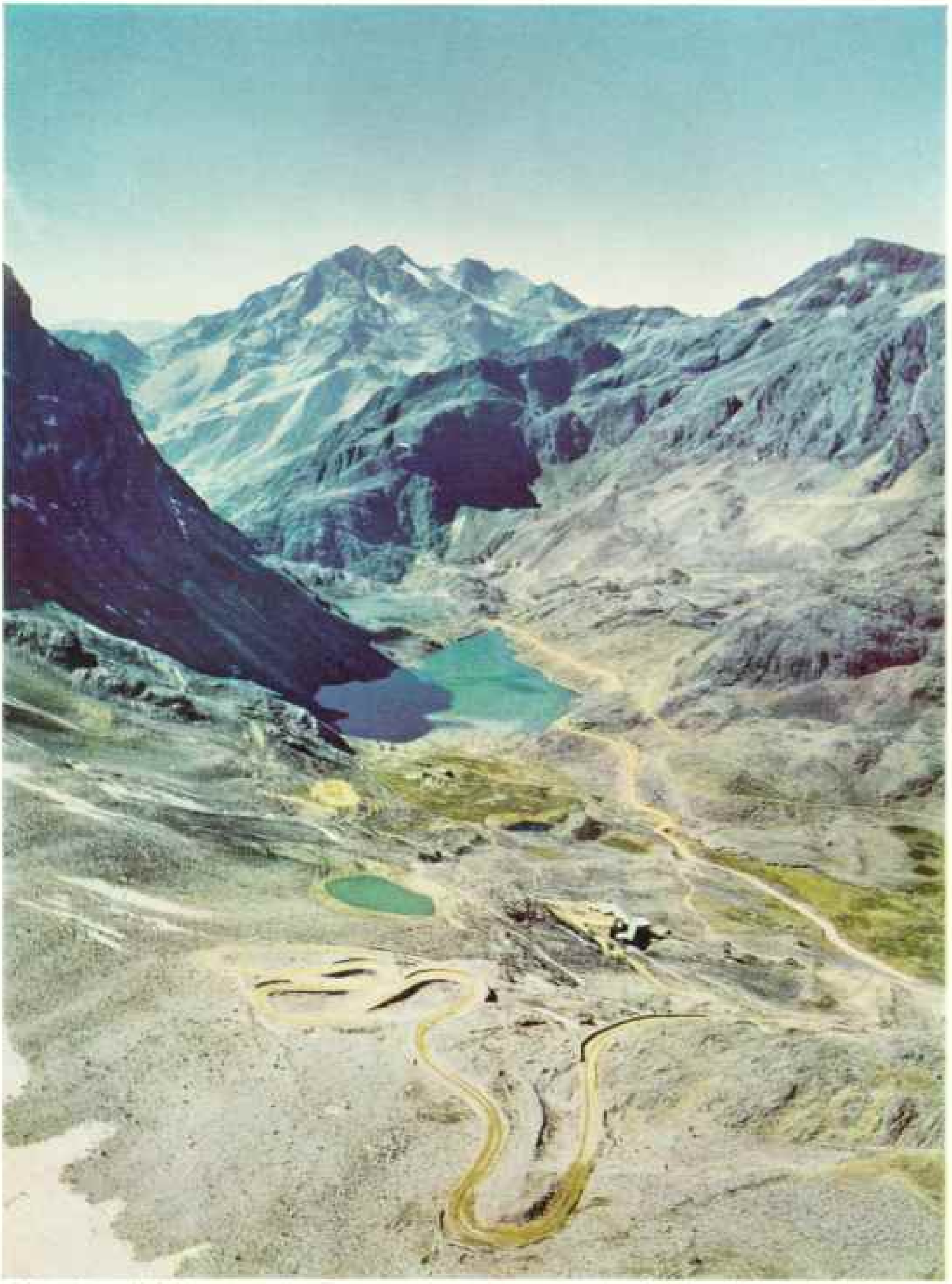
This band at Sorata may be a company of strolling professional players. To North American ears their music sounds monotonous, plaintive, oriental. But to its strains Indians dance joyfully day after day until they are exhausted. The umbrella strikes a jarring note; it doesn't belong.



Kodachrome by Franz Jaxon from Three Lions

Homeward Plod Indian and Burro without a Backward Glance at Andean Splendors

The red poncho conceals extraordinary chest development, Nature's gift to skytop dwellers. Beardless and broad-faced, he and his Aymará brothers resemble Mongols. He has just sold a load of fuel in La Paz, nestling at the foot of the rocky trail. Others follow him. Livestock glean a harvested field. Illimani's glaciers glisten.



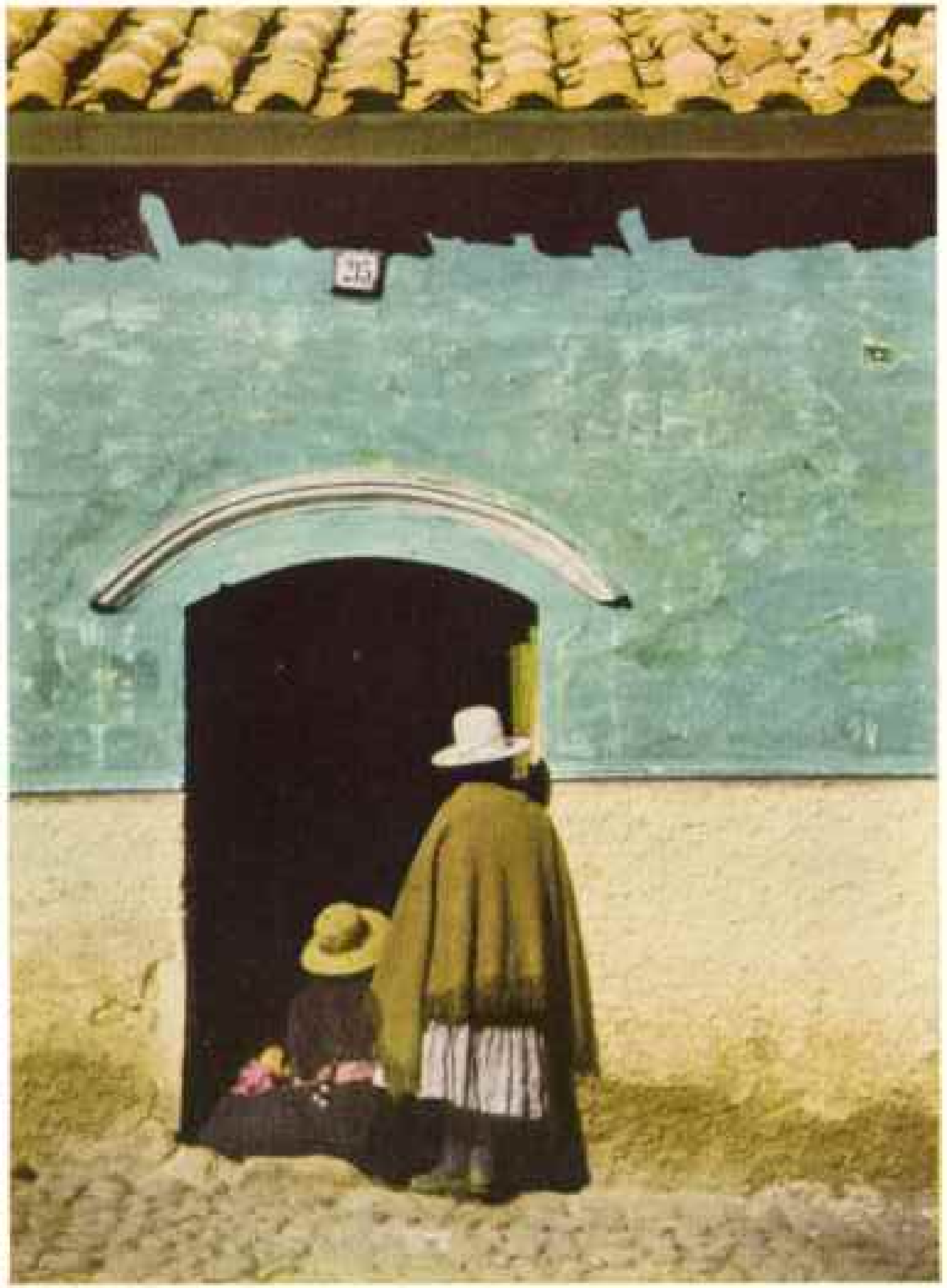
World Demand for Tinned Food Built This Road, Writhing Like a Golden Serpent

Since the fall of Malaya, Bolivia has become the tin arsenal of Democracy. United States capital developed this highway to connect the Caracoles tin mines with rail at Eucaliptus. Here it skirts a small mine and rides the shore of a lake dammed for power. Bolivia lacks good motor roads. Indians still use Inca trails.

Kodachrome by Franz Jantzen from Three Lions

Potosí's Silver Mountain Yielded Two Billion Dollars, Crammed Spain's Treasure Galleons; Now It Yields Tin

Bleak, 15,380-foot Cerro Rico today produces the "precious" metal only as a by-product of "base" tin. It was discovered in 1545 by a poor Indian herder. Thousands of mine pits scar its face. Colonial Potosí's homes bulged with riches; now they crumble. One of its famous old churches remains (left).



In Cobbled Potosí Two *Cholas* Pause Below an Adobe Wall

In 1611, before New York City existed, Potosí was a roaring town of 160,000. After the silver boom collapsed, its population shrank.

Kodachromes by Frans Jacobi from Three Lions

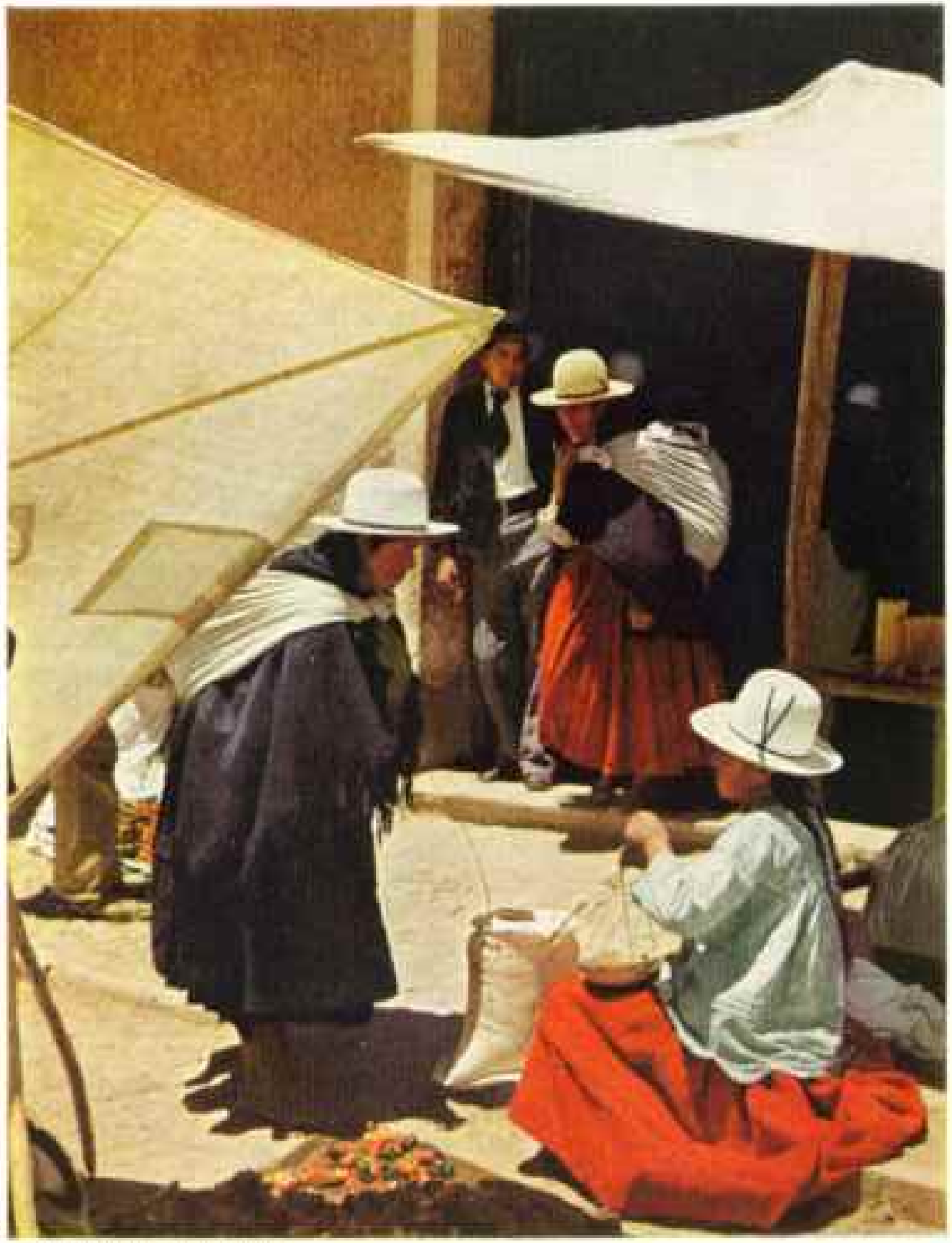
A Driver and Her Team Cross a One-way Street in La Paz

Note the direction arrow. Indian quarter's lanes are generally too narrow for opposing traffic streams. Sidewalks are few; houses abut the roads.

Kodachrome by Peter Jacobi from Three Lions

Pigtailed Indian Women, Harvesting Barley on the High Plateau, Cut Straight, Neat Swaths with Their Sickles

Probably they are wives of tenants housed below the barren hills. Under Bolivia's *finca* system, inherited from the Spaniards, tenants are permitted to farm small plots of their own for doing the landlords' work. Labor is by hand; North America's big combines are unknown. Barley straw thatches many a roof.



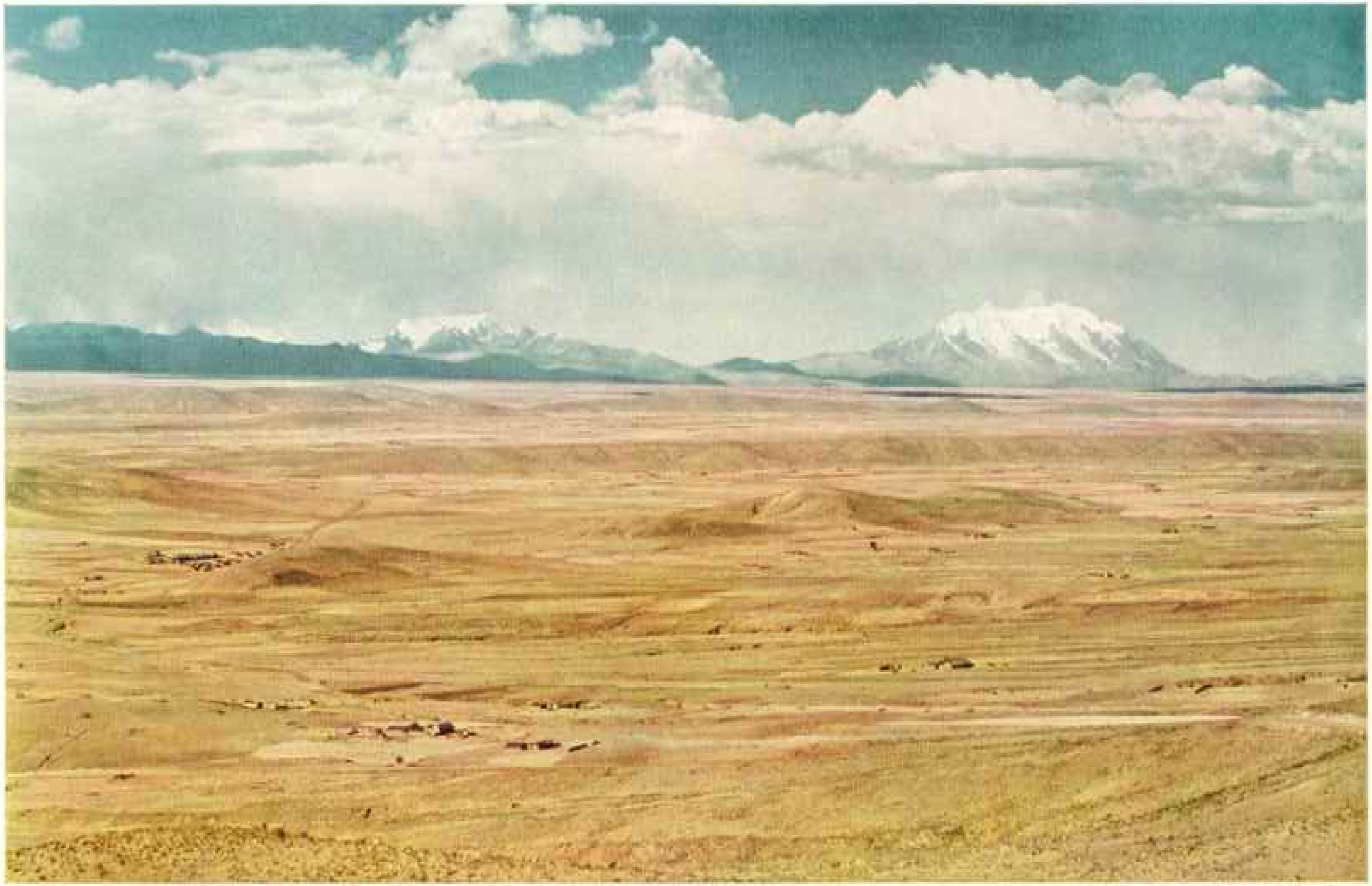
Awnings Shade Hucksters in a Cochabamba Market

They wear the V-marked straws distinguishing this valley's *Cholas*. One selling peppers uses a scale. Many barter by the pile, letting eye and hand judge measure. Whatever the method, women are the markets' sales force.

Kodachrome by Frans Lanting from Three Lions

Mother Rocks Baby as She Launders in the Indian Quarter

Her La Paz neighbors clean clothes in roadside streams. This young wife, using a small tub, has spread a blanket to dry. In it she will carry the child wherever she goes, along with groceries, needlework, and miscellany.



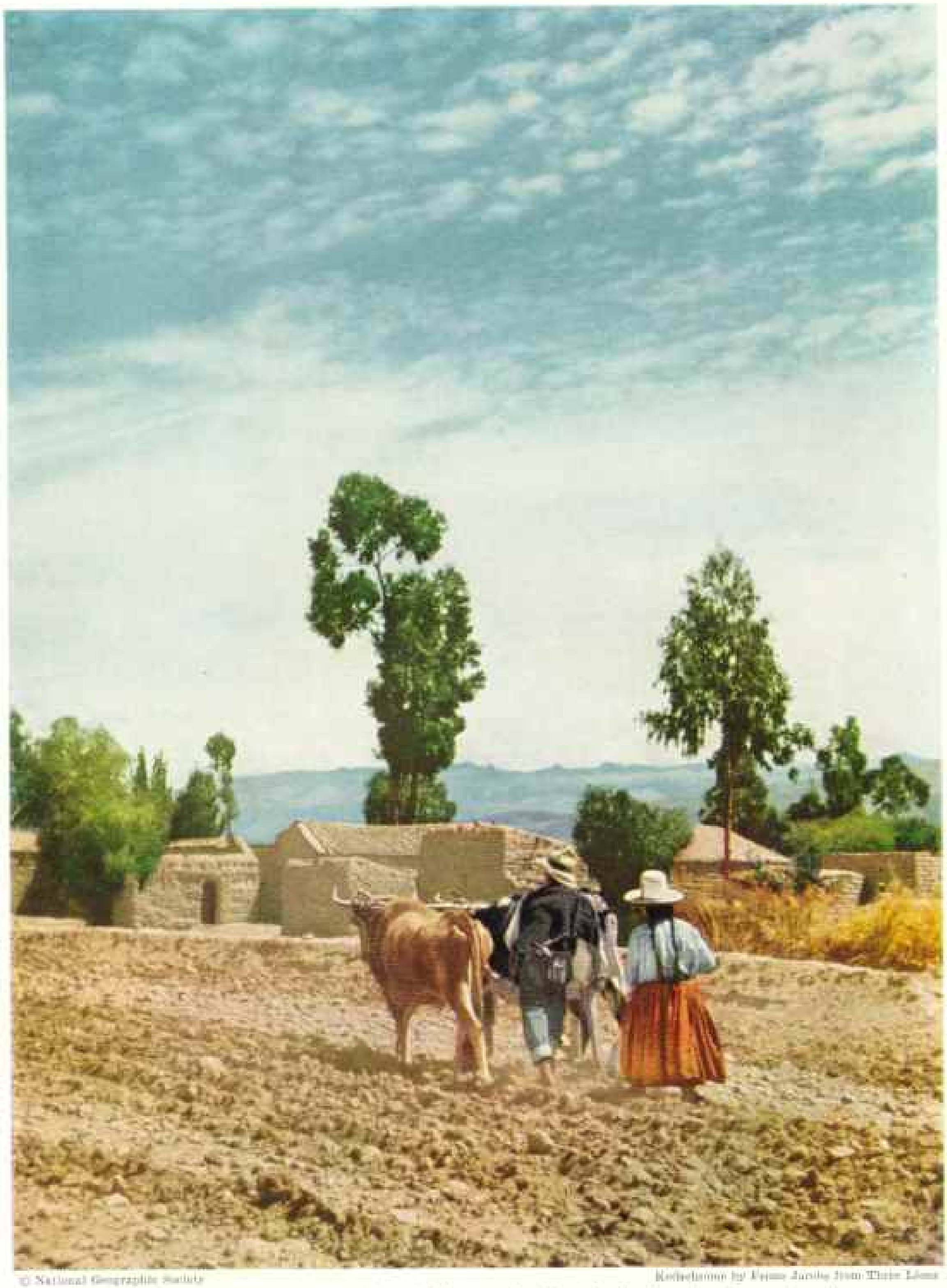
Bolivia's Lofty Altiplano, Cold and Treeless, Stretches like a Lunar Landscape beneath Twin Giants of Eternal Snow

Flat-top Mururata (left) lost its head, Indians say, by a blow from neighboring Illimani. These mountains will rob the gathering storm of its vapor. La Paz lies hidden in its valley. Indian homes, indicating farm or pasture lands, show the plateau is not as barren as it seems. Long ago the 500-mile-long Altiplano was a lake bed.

Kodachrome by Fenno Jacobs from Three Lions

Potatoes, Here Sold in a Cochabamba Market, Are Still the Staff of Life Among the Andean People Who First Cultivated Them

The Peruvian-Bolivian highlands gave this vegetable treasure to the world, along with many other plants. Wild tubers still grow here. Hardy potatoes flourish in altitudes above 14,000 feet. By repeated soaking, freezing, and drying them, natives make *chuño*. Thus preserved, they are kept indefinitely for stews and soups.



Reproduction by Frank Smith from Three Lions

Farmer and Wife Plow with a Stick, as the Spaniards Taught Centuries Ago

The light instrument, probably iron-tipped, penetrates only a few inches, but this Cochabamba Valley soil is so rich that a good crop will not fail. American steel plows have been introduced. Oxen are descendants of imported European stock. Houses are of adobe.

"These yungas form the most highly cultivable agricultural district in the whole of Bolivia. All the produce you saw in the markets is raised down yonder. Keep on going and you'll find yourself in the jungle where Bolivia's rubber comes from. Bolivia has considerable wild rubber. But the going gets tougher every additional mile. That means we don't get much farther by auto."

We were now sliding rapidly off the Altiplano. Patches of bananas, coffee, and even sugar cane grew wild. We had traveled from icicles to orange blossoms in a few hours!

The Roof of the Bolivian World

It was another story when we went on horseback from La Paz off into the Altiplano. We got completely off the beaten track of the railway lines, where even the wheels of wagons were unknown, and transport by motorcar was impossible. On that dismal Roof of the World we met no one but tireless Indians sharing heavy loads with llamas, burros, and mules (Plate XIV).

The loneliest sight I ever saw was a shepherd in the wilderness, sitting on a high rock and staring at a distant primeval glacier while knitting a multicolored cap with eartabs.

"These shepherds have huts as high up as 17,000 feet," commented my companion.

It was more surprising still to find bare-acre farms up there as high as 13,000 feet. The Indians had terraced the steep mountain sides and kept them nourished by the type of irrigation used by the ancient Incas.

I saw barefoot children and grownups pattering back and forth ankle-deep in snow.

"No wonder," I commented, "that these Indians try to lessen their discomforts by chewing tons of coca leaves every year, and that they fall ready victims to alcoholic drink."

"For all that, they seem to enjoy having a miserable time up here on top of the Andes," added my friend. "White men followed the Indian up to these dizzy heights. Eighty percent of Bolivia's 3,457,000 population lives at an altitude above 10,000 feet!

"From Pizarro to Patiño, the settlers all passed up the tropical lowlands for the freezing highlands in search of treasure."

When at length I left La Paz for good, I took the twice-a-week train for Oruro, 150 rail miles south of the capital. Oruro is the pivot for nearly all Bolivian transportation, the junction of three important railways.

The Bolivia Railway, which had brought me from La Paz, maintained a branch line out of Oruro to Cochabamba. The Antofagasta and Bolivia Railway was eventually destined to carry me on a two-day journey out of the country into Chile. Or I could take the La Paz-Buenos Aires International line and veer off into Argentina. Oruro was the place to change to reach Potosi, the highest and farthest inland rail point in my Bolivian circuit (page 332).

I flew to Sucre the day after my arrival in Oruro, over one of the highest screens of mountains I have tackled by plane.

Sucre proved refreshingly different. For one thing, it is only 9,300 feet, or about three-fourths as high as the Altiplano towns. I gradually thawed out. This charming colonial city of about 31,000 has changed little throughout the four centuries since its birth. Most of its inhabitants are Indians and Cholos.

Sucre is still the legal capital of Bolivia. Though the President and his Congress hold forth in La Paz, Sucre remains the seat of the Judiciary, a seat of learning with a famous university, and the seat of the Church with the Archbishop and his palace.

I flew back to my base at Oruro and registered at a hotel facing the pleasant plaza.

Having set out to visit the principal tin mines of Bolivia, I went first to the Patiño Mines and Enterprises Consolidated, Inc. (page 330).*

We got off the main line at Machacamarca, about 15 miles southeast of Oruro, where a private train on the Patiño railroad was waiting to carry us to Catavi, the Enterprises center, 50 miles farther in the interior.

"A mine had been located here since 1880," the staff man told me, "but it had been worked without success until the Patiño people took it over in 1924, when all the tin workings of the region were consolidated under one head. Now this and other Patiño mines together produce about half of Bolivia's tin."

I visited three Patiño mining communities, numbering in all 25,000 persons, but the only real tin I saw in the whole of Bolivia was the coating of the "tin" cans in which food is shipped from the United States.

Ore 11,000 Miles from Being Tin!

I was brought to a realization of this absence of "pure tin" for the first time as I stood with the superintendent of another mine. We were waiting for a long trainload of ore to pass.

"That's tin, isn't it?" I asked innocently.

"Tin!" exclaimed the superintendent. "That's just 11,000 miles from being tin! That's only barrilla, ore mechanically concentrated to yield from 55 to 70 percent tin.

* See "Tin, the Cinderella Metal," by Alicia O'Reardon Overbeck, NATIONAL GEOGRAPHIC MAGAZINE, November, 1940.

By Fenno Jacobs from Three Lions

Indian Women Sort Tungsten Ore—Its Magic Keeps Cutting Tools Sharp

Resisting heat and acid, tungsten is the heart of the ordinary spark plug, electric lamp, or radio tube. Tungsten steels go into armor plate and shells to pierce it. Isolated China normally produces 46 percent of the supply. Here at the Chjolla mines, women work on a picking belt.

It has to go to the coast, halfway through the Pacific, across the Caribbean, over the Atlantic. In Britain they'll smelt it and get maybe 60 percent of tin out of it."*

We were already hitting 15,000 feet, and the additional thousand-foot climb had me gasping. The effect of the altitude was well-nigh intolerable to me when I was taken inside the mine. However, Indian miners were toiling there with heavy hydraulic drills and loading cars with huge chunks of ore.

"This kind of work couldn't be done at all if it wasn't for these fellows, born and bred on top of the Andes and provided with bellows for lungs," said the boss.

We climbed over several high mounds of crushed rock. Everywhere women were sorting and sifting it into piles.

We entered a long inclosure covered with muslin, like a cold-frame hothouse. Here a hundred Indian women, each sitting in the center of a six-foot bin, many with babies suckling, hammered chunks of ore into smaller pieces the size of a goose egg.

"This is the final sorting," the superintendent went on. "They've never invented a machine that can do this kind of work! The brightest bits are worthless quartz and pyrites. The dullest are silver. The in-betweens are mixed lead and tin."

A few days later I left Oruro by train, bound for Potosi. We labored up the sides of precipitous peaks, teetered along thin-edged summits, and shot at breakneck speed down declivities. Our engine devoured an enormous quantity of coal and dust briquettes brought all the way from England.

Route of the Conquistadores

An elderly Englishman I met on the train had had a hand 50 years ago in building this Potosi spur of the Bolivia Railway.

"We followed the only straggling trail there was through these freezing Andes," he said. "Over the same roads the Conquistadores trailed the Indians to the Cerro Rico, or famous Treasure Mountain at Potosi.

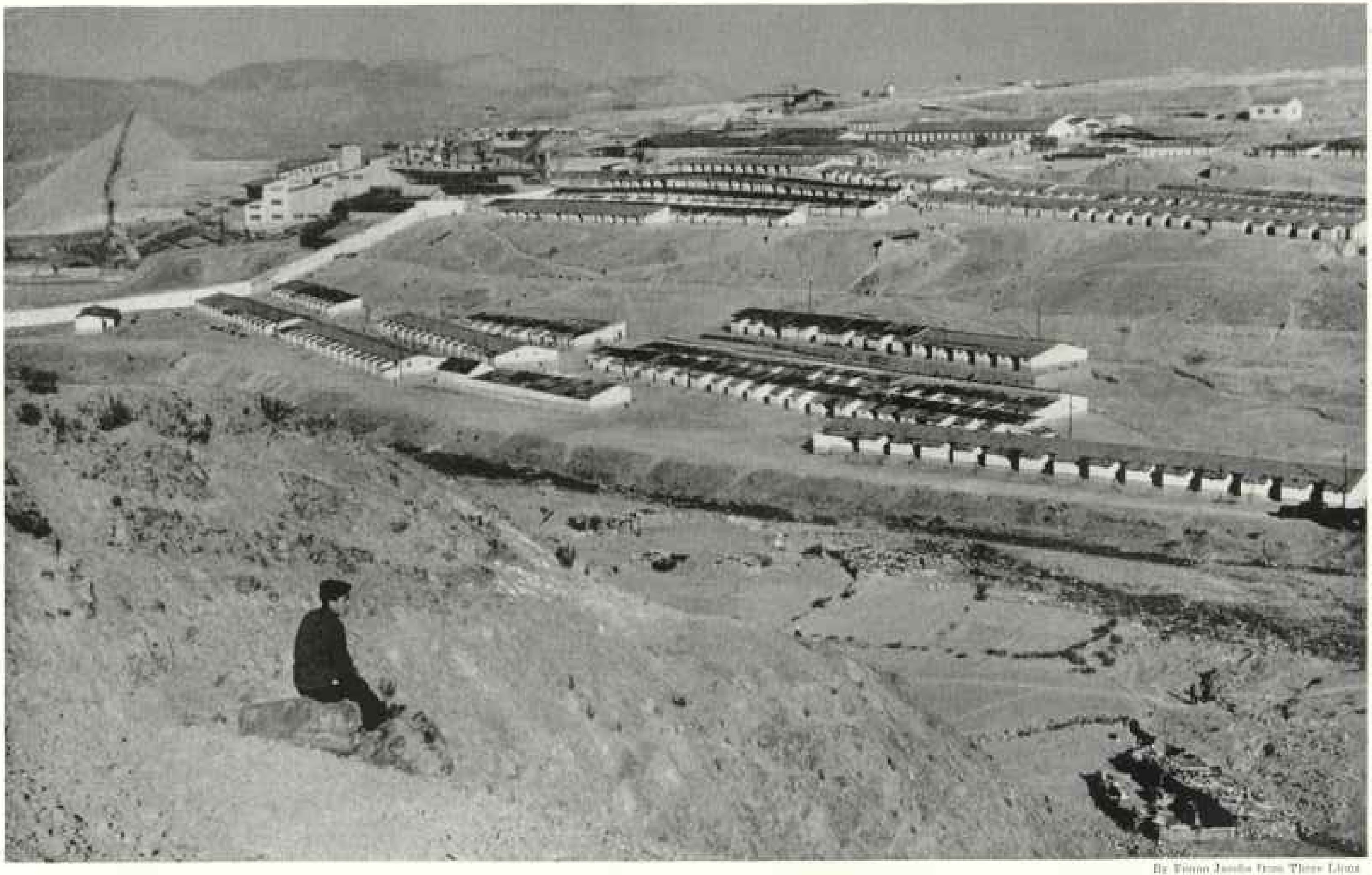
"We found the railroad right-of-way over which we are now traveling literally paved with the bones of tens of thousands of men and beasts on whose shoulders millions of ounces of silver were once carried nearly a thousand miserable miles to the sea!"

* Some of Bolivia's tin-ore concentrates are now being sent to the United States, to the new smelter at Texas City, near Galveston.

By Fiorini Jacobi from Three Lions

On Sale in La Paz, a Rooster Crows in Mistaken Triumph—He'll Be in the Stew Soon

"Any eggs or cheese today?" asks the saleswoman, displaying her wares. Sunday is market day in La Paz. To curbside stands come hundreds of Indian families leading burros laden with produce of farms as much as 50 miles away. Costumes rivaling those of Oriental bazaars dazzle the eye with a dozen hues.



By Vilmos Jambo from Three Lions

High in the Andes, Bolivia's Richest Tin Mine Builds an Artificial Mountain by Dumping Waste (Upper Left)

War-stimulated Llallagua is booming again. In 1918 it paid a 475 percent dividend. Workers' quarters line the hill to right of the mill. The mine is an enterprise of Simón Patiño, multimillionaire "tin king," who in his youth was a store clerk. In Bolivia, peacetime's third producer, the author saw no pure tin; the ore is smelted overseas (page 327). The noncorrosive metal lines rationed food cans; goes into solder, babbitt, and bronze.

By Pedro Zarate from Three Lions

In Session at La Paz, the Chamber of Deputies Exemplifies the Spanish Stock Dominating Bolivia

Together with the Senate, the Chamber occupies the magnificent Capitol (Plate II). The presiding officer is Rafael de Ugarte (hand to head). Deputies must be native Bolivians, at least 25 years old, who have completed compulsory army service. They are elected to four-year terms.

By Fenno Jacobs from Three Lions

Santa Cruz Presents Four Smiling Daughters of Spanish Lineage

Not all Bolivia is high, cold, and treeless plateau. Santa Cruz, 1,575 feet above sea level, offers palms and other tropical plants. Most of the 27,000 Santa Cruz residents are whites.

The train finally pulled into the Potosí station at 6 a. m., in a drizzle of rain that was only a couple of degrees from being snow. I fought for a place in the single taxi that took me a mile and a half uphill to the center of town. The chauffeur deposited me at the door of a hotel which he insisted was the only inn in town fit for *Yanquis*.

Here I fell in with a mild-mannered "professor of human geography" from the University of Mexico, a fellow-lodger. He told me he was planning a book on Potosí, historical Mecca for Latin Americans.

Going about with the professor, I found the Old Town coming to life. We passed most of our time in the 16th-century part of Potosí. It began back in 1545, when a simple Indian found silver beneath an uprooted bush. Later, Indians guided the Spanish treasure seekers to the already famous Cerro Rico.

Potosí, Onetime Metropolis of America

"Despite the fact, still true," said the professor, "that Potosí was both the most inaccessible and one of the highest towns in all the world, it continued to flourish to such a degree for two centuries that it promised to become the metropolis of the New World. For long it was the largest city in both North and South America, perhaps as big as La Paz is today! The King of Spain bestowed on it the title of 'Royal Imperial City of Potosí'!"

Cerro Rico, it seems, was a major source of the silver treasure sent to Spain to build the Invincible Armada, designed to destroy the power of Britain. Today, this hill is a source of tin, supplying this strategic metal to keep afloat the British Armada in the most critical moment in its history!

A profound change has taken place since the sumptuous days of the Silver Hoard. The fabulous silver deposits of the Treasure Mountain petered out a century ago and left in their bed only ignominious tin. The vaunted 160,000, or more, prosperous inhabitants have shrunk to about 40,000.

Those tall bell towers of the Jesuit church were but mute reminders. At their base was a ruined nave turned into a movie theater, with flaming posters announcing the current offering, "Kisses of Fire."

I turned to the other side of the plaza. The Treasure Mountain rose grimly, two thousand feet above "the highest town in the world." Once the symbol of New World riches, its treasure of silver had turned to tin. Now Bolivia's tin has become more precious than her silver ever was.

Norway, an Active Ally

By Wilhelm Morgenstierne

NORWAY, overrun by the Germans in the spring of 1940, bounced right back to become one of Germany's most tormenting enemies.

It has become customary to regard Norway as one of the conquered countries and consequently to consider her opposition to the Nazis to be chiefly of the "underground" variety. This is not so.

Although there is no less underground activity in Norway than in other occupied countries, Norway's chief fight against the oppressors has been waged aboveground and in the open, both within the country and from abroad.

The population of Norway is about three million, roughly equal to that of the State of Tennessee, but dispersed over an area three times as great.

What can a group as small as that, and as scattered as that, accomplish against a ruthless and all-powerful foe? Especially when that foe has firmly entrenched himself in the homeland of that people, seized control of their national and local administration, of their resources and industries, of their press and radio, of their transportation and communication systems.

The picture is almost that of a Lilliputian tied down by a whole gang of Gullivers.

Parts of Norway Have Eluded Hitler

First of all, consider those parts of Norway which eluded Hitler's grasping fingers.

Foremost of these are King Haakon VII and the Royal Norwegian Government (pages 334, 339). After directing open war against the oncoming Germans for two months in Norway, the King and all members of the Government, acting on express instructions given them by the last free Norwegian Storting (parliament), removed to England, there to carry on the fight against the enemy from abroad.

The King quickly became, and continues to be, the living symbol of all that Norway hopes and strives for—in a word, the return to her free, democratic way of life. Around him all Norwegians have rallied in spirit, and with him they have taken up the many tasks related to Norway's ceaseless fight for freedom.

Naturally, the leadership of Norway's far-flung war efforts rests with Prime Minister Johan Nygaardsvold and the members of his Government. It is inspiring to note that, thanks to their foresight and enterprise, Norway is today able to strike back at the enemy, from abroad, with an Air Force, a Navy, and an Army. Nor is that all.

A second, but highly important, part of Norway that eluded Hitler's grasp in 1940 was the Norwegian merchant marine, or at least more than 80 percent of it. That figure represents every Norwegian ship on the high seas and outside Axis-controlled ports when Hitler loosed his blow against Norway on April 9, 1940.

Norway's merchant marine was the fourth largest in the world. Its gross tonnage in 1939 was 4,835,000, as compared with 21,215,000 for Great Britain, 12,003,000 for the United States, and 5,630,000 for Japan.

In quality, forty-five percent of its ships were less than ten years old. Sixty-four percent were fast, modern motor vessels. Forty percent were tankers, the finest, fastest in the world.

Norway's merchant fleet had not been built up by the aid of government subsidies, but purely by private enterprise on the part of scores of large and small shipowners scattered among the country's coastal towns.

One of the first acts of the Royal Norwegian Government after the Germans had launched their invasion was the requisitioning of Norway's privately owned merchant fleet for war use. By means of London radio, and through the Norwegian Embassy in Washington, D. C., orders were sent out to the more than 1,000 ships then on the high seas that they should report immediately to British or Allied ports.

The ships' masters received that order just a few minutes after the receipt of contradictory orders sent out by Oslo radio, which by then had fallen into Nazi hands. It fell to each individual master to choose which order he was to obey, and without a single exception they elected to follow the directions received from London.

Norway's Fleet Aided Battle of Britain

Certainly Hitler's snorts of fury must have singed his meager mustache when he learned of this development, because it was obvious that one of his chief purposes in attacking Norway was to strengthen himself with the Norwegian merchant fleet.

Instead of joining Hitler the 1,000 Norwegian merchant ships, and the 25,000 Norwegian seamen manning them, immediately turned against him in a most telling manner.

British Combine

Norway's King Attends an Air-raid Rehearsal in a British War Factory

After a successful demonstration in which a thousand employees sought shelters and pump, rescue, and first-aid parties from surrounding districts went into action, a Norwegian girl worker presented her sovereign with a gold watch on behalf of her fellows. Admiral Sir Edward Evans looks on as King Haakon VII shakes the young lady's hand.

During the long months of the Battle of Britain which followed France's collapse, the ships of the Norwegian merchant marine carried to England 50 percent of that nation's supply of oil and gasoline, lifeblood of the heroic R. A. F., and a third or more of the foodstuffs and war matériel being brought in from abroad.

The Norwegian merchant fleet thus became an important steadying influence for Britain during the twelve months she was left to stand off the Nazi attack virtually alone. Britain realized this and appreciated it.

In December, 1940, Sir Ronald Cross, British Minister of Shipping, declared: "Norway's contribution to the Allied merchant fleet has been of decisive importance." A month later London declared that the Norwegian merchant fleet was worth more to England "than an army of a million men."

Her vast merchant marine continues to comprise Norway's chief contribution to the United Nations' combined war effort. Daily these ships and seamen brave the danger of torpedoes, mines, bombs, and shells.

The British Minister of Shipping rightly declared that "the men who man these ships stand in the front line of battle." Whereas front-line soldiers ordinarily risk only their own lives, these Norwegian front-line soldiers of the sea daily risk bringing the avenging wrath of the Germans down upon their families in Norway—upon wives, children, and parents from whom they have been entirely cut off since the invasion.

For many years before the invasion it had been customary for men and officers employed on Norwegian ships to have part of their wages paid directly to their families in Norway. Shipowners, assured by the Norwegian Government in London that they would be reimbursed after the war, continued to make

British Combine

An Unarmed Sailor Shows How to Avoid a Bayonet Thrust

Members of the Norwegian Navy are being trained in modern tactics, for the merchant ships now must be armed for defense.

these payments to the seamen's families for many months after the German conquest until the Nazis stepped in and called a halt.

By this move the Nazis hoped to "scare" Norwegian seamen into deserting their ships and returning home, there to enter the employ of Germany, which has been sorely in need of seamen.

The German plot did not work. Norwegian seamen's anxiety over the welfare of their families in Norway was quickly allayed by the Norwegian home front itself. Instead of the regular monthly checks, which shipowners were prevented from sending, the seamen's wives began receiving anonymous gifts of money, in the mail or on the doorstep, placed there by "friends."

That is one of the ways in which the Norwegian home front patterns its activities to bolster the open fight being waged from abroad. The men on Norwegian merchant ships have complete assurance that, for the time being, at least, their loved ones in Norway are not suffering any greater privations than those of their neighbors.

Norway's Seamen Scorn Nazi Bribes

Norwegian seamen have steadfastly turned a deaf ear to all Nazi attempts to lure them away from their jobs by promises, threats, and even bribery. Last summer the London Times reported:

"When Japan entered the war, huge bribes were offered via radio to sailors in Norwegian ships in the Pacific to return to Japanese ports, and these bribes were later extended to all Norwegian sailors outside Norwegian waters, but still without any effect.

"Some weeks ago another campaign was launched through the German-controlled Norwegian wireless stations to induce sailors to return to Norway. Every night reports were sent out about the sinking of Norwegian ships employed on 'British death journeys' and about the 'cruel way' in which sailors 'who wished to return home' were being treated.

precious oil and gasoline to all corners of the earth where United Nations' forces are fighting or preparing to fight.

All of these vessels, requisitioned from private shipowners, are under the management of the Norwegian Shipping and Trade Mission which was created for that purpose by the Royal Government in the early summer of 1940. The Mission, commonly referred to as "Nortraship," has its headquarters in London.

Mr. Oivind Lorentzen, director of Nortraship, recently pointed out that of the total tonnage, 60 percent is trading at freight rates which were agreed upon between the Norwegian shipowners and British Ministry of War Transport as far back as November, 1939.

The rest of the fleet, he added, is sailing at rates stipulated by the United States Maritime Commission.

Aside from income taxes levied on Norwegian citizens outside Norway's boundaries, the merchant fleet is today the Royal Norwegian Government's only source of revenue.

Money derived from it is used to meet administrative expenses, to make interest and amortization payments on foreign bonded indebtedness from prewar years, to finance a far-reaching health and recreational program for Norwegian seamen, and to meet numerous other miscellaneous expenses imposed upon the

"These reports were mixed up with personal greetings and messages from wives asking sailors by their names to return. The broadcasts often included descriptions of how favorable conditions in Norway were compared with conditions under which the sailors were 'forced' to work. All these pleadings have also fallen on deaf ears."

So the Norwegian merchant ships with their loyal Norwegian crews sail on, carrying guns, tanks, planes and ammunition, foodstuffs, and

Government by conditions due to the war.

One example is the maintenance of Norwegian schools in Great Britain for children who have escaped from Norway with their parents.

But the most spectacular use to which these funds have been put has been for the organization, training, and equipping of Norway's new Air Force, her new Navy, and her new Army.

Heavy Loss of Ships and Men

The Norwegian merchant fleet has served the United Nations' cause at great cost to itself, both in ships and men. In an address delivered last August 18, Mr. Arne Sunde, Minister of Shipping and Supply in the Royal Norwegian Government, declared:

"Since April, 1940, when Germany invaded Norway, some 300 ships totaling about two million deadweight tons have been sunk by the enemy and about 2,000 seamen have perished. Prior to the invasion we had already lost 54 ships totaling 190,000 deadweight tons.

"The last attack of the German U-boats on our supply lines, especially off the east coast of America, has also hit our fleet hard. In the first six months of this year we have lost about 100 ships totaling over half a million tons."

These losses will be felt severely long after the war, because Norway has relied on her enterprising merchant fleet to produce the national income needed to offset the country's unescapable unfavorable balance of trade.

Great Britain, understanding this situation, has already granted Norway several cargo ships of new construction to replace losses. Others have been promised by the United States under terms of the Lend-Lease agreement between the two countries.

Ships of the Norwegian merchant marine have proved their worth again and again in this war, often in a sensational manner. They aided in the evacuations from Dunkirk (Dunkerque) and Crete, and they continue to carry valuable cargo through seas infested with mines and submarines. In November, 1942, Norwegian naval and merchant marine ships were among the armada carrying the war to North Africa.

As mentioned above, many of the Norwegian craft are modern motorships, and because they are so speedy they are

Norway Mans the New *King Haakon VII*

After the United States flag was slowly lowered to the strains of the *Star-Spangled Banner*, the Norwegian colors were raised. The band played the Norwegian National Anthem, *Yes, We Love This Land of Ours*, and the Norwegian crew of three officers and 55 men stood at attention. The ceremony took place at the Washington, D. C., Navy Yard in September, 1942 (page 338).

Acme

Crown Princess Martha, Accompanied by Ambassador Morgenstierne, Accepts a Subchaser from President Roosevelt

She steps ashore at the Navy Yard in Washington after raising her country's colors on the new war vessel, the *King Haakon VII*, presented by the United States to the Royal Norwegian Navy in tribute to Norway's valiant resistance to the "treachery and brute force" of the Axis (page 337).

British Combine

To King Haakon VII in London on His 70th Birthday Anniversary, the Norwegian Flag Dips in Salute

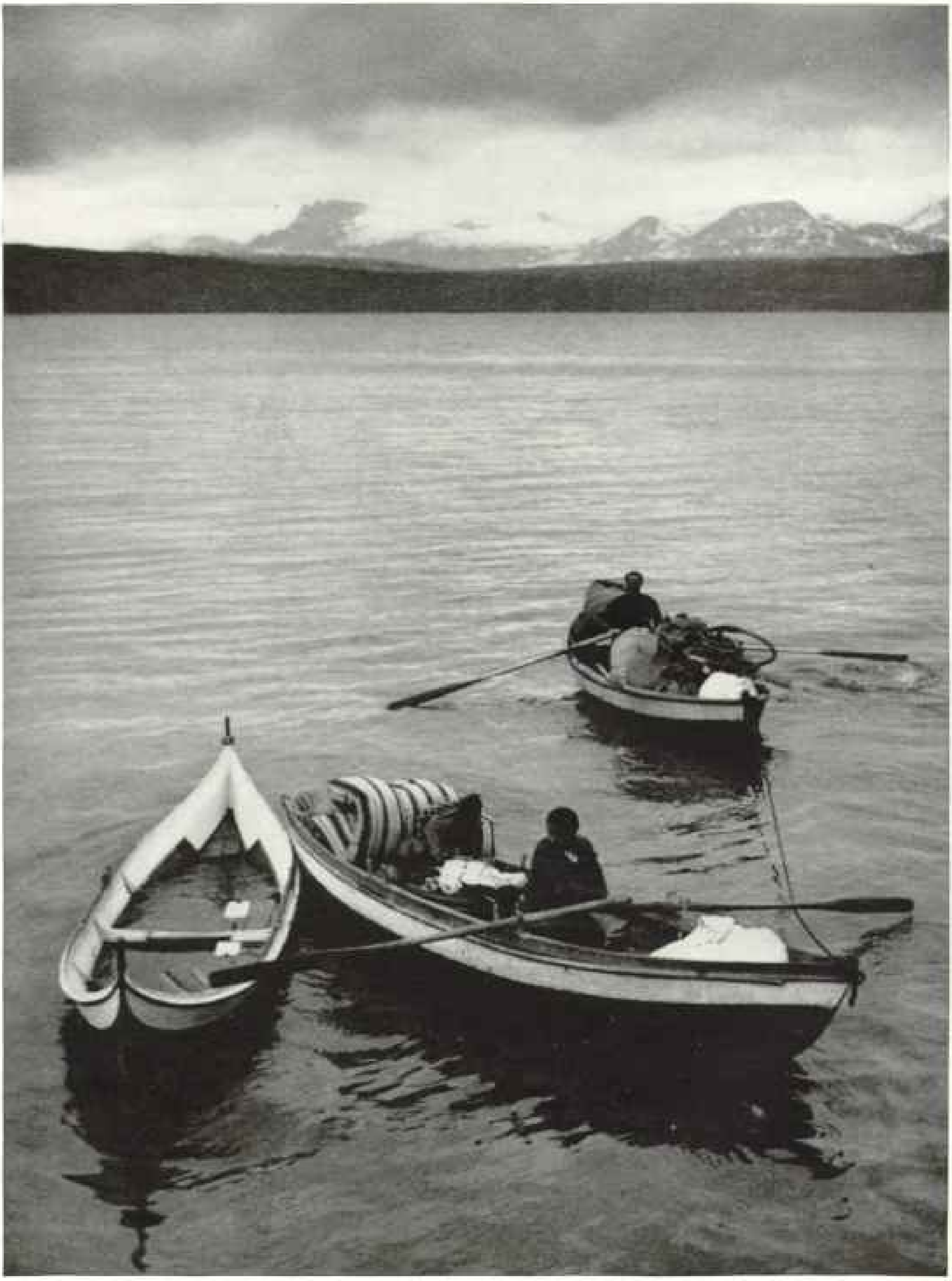
The Norwegian ruler responds as a military parade and procession of his people pass in Hyde Park. With him are Crown Prince Olav and Crown Princess Martha. Norwegian children, escaped with their parents from Norway or brought back in Commando raids, stand in front of the dais.

A Picture Taken at Risk of Life and Smuggled out of Norway Shows How Nazis Get the Cold Shoulder in Drōbak

Owing no allegiance save to their rightful King, Norwegians turn their backs on the invader troops. Courageous resistance of this sort torments the Germans constantly, but they have been unable to put a stop to it. For more active opposition they have made brutal reprisals; yet the vast majority of the people remain defiant (page 349).

Admiral Corneliussen, Commander in Chief of the Norwegian Navy, Goes Aboard a New Destroyer Just Received from the British

Now fourth in strength among the Allied navies, his command includes, besides ships of this type, mine sweepers, corvettes, and fast, armed whale catchers used for patrol work. All are manned by Norse sailors, many of whom escaped from their invaded country by perilous voyages in small craft (page 345).



Small Fishing Boats Played a Major Part in the Evacuation of Narvik

Daring young men are constantly escaping from the invaded country in such craft. In April, 1940, the Germans captured this iron-shipping port. Later, Norwegian and Allied forces regained it for a time in the first land victory won by any of the United Nations over the Nazis.

Somewhere in Scotland Norwegian Troops Stand for Inspection

Determined to avenge the betrayal and invasion of their homeland, these young men eagerly go into Commando training. The Norwegian regulation uniform, changed somewhat since the invasion of Norway, now resembles that of the British.

seldom dependent on convoys. They run it alone, thereby gaining valuable time, making a round trip in less time than it takes a convoy to make a single crossing.

The men of the Norwegian merchant marine have also proved their mettle. Mr. Lorentzen pays them this tribute:

"Despite the hard work and the extraordinary strain under which the seamen are living, there has been no breakdown of morale. Messages have come through telling them that slackers need expect no welcome in the homeland after the war. But there was no real need, because every Norwegian sailor is at the front himself.

"It is a Norwegian front as well as a united front of the free nations, for he is working and fighting under the Norwegian flag, under Norwegian management, and with a Government and a Sailor King of his own choosing.

"This spirit of independence has made it possible for Norway's sons to withstand U-boat attacks; to bear the brunt of hundreds of bombing attacks in the Mediterranean and elsewhere, and to maintain discipline in orderly relations with their authorities through their own unions and institutions."

"Little Norway" in Canada Trains Airmen

The Royal Norwegian Air Force in England in 1940, following the cessation of the war in Norway, consisted of only 120 officers and men, and a few battered and antiquated planes with which some of the men had made their getaway.

The others had escaped across the North Sea in fishing smacks or open boats. All of them were determined to keep on fighting, and together they formed the nucleus for a new and mightier Royal Norwegian Air Force.

That same year a training center was set up at Toronto, Canada, named "Little Norway." It was not long before Norwegians all over the world learned what it was doing.

British Combine

A Norwegian Bren Gunner Ready to Help Repel Nazi Invasion of England

Like thousands of other young Norsemen, he has escaped the clutches of the invaders of his own land and awaits his chance to hit back. Norway has many such soldiers training side by side with British, Dominion, and United States forces (346, 348, 357).

From Such Underground Offices 300 Anti-Nazi Newspapers Are Circulated in Norway

Information is obtained through local organizations and short-wave radio. This scene is a reproduction at a Norwegian exhibit in London.

Prince Harald Tries His Ability as a Flyer in Little Norway

He is five years old, and lives with his mother, Crown Princess Martha, and two sisters, Ragnhild and Astrid, near Bethesda, Maryland. Since he is the only son of the Crown Prince, he may one day become King of Norway.

A vastly superior enemy air power was commonly regarded as the chief cause of Norway's downfall; Norwegians grimly set their jaws and vowed they would never again be caught without an efficient and properly equipped Air Force of their own.

And Little Norway has done the job. The original 120 quickly expanded to thousands. To the camp came recruits from all over the world, Norwegians all. Included were many who had been outside Norway when the German blow fell. Mainly, however, the growing personnel was made up of brave young men from back home, who had heard about the new Little Norway and risked their lives to escape from occupied territory to join up (pages 347, 349, 350, 352, 353).

Some fled across the German-patrolled Norwegian border into Sweden, and from there into Finland and Russia, and from there, by devious routes, three-quarters of the way around the globe to reach Toronto.

The overwhelming majority of them, however, chose to take the shorter but more perilous route across the North Sea to England. For this they used any vessel they could lay hands on—fishing boats, sailboats, in some cases even rowboats. There is at least one case of young Norwegians "kidnapping" a sizable coastwise steamer from its captain and steering it safely to an English port.

By the thousands they came, and invariably their first act upon reaching free soil was to report to Norwegian authorities there and to volunteer for service. "Preferably in the Air Force," was their usual request, "but place me wherever I am most needed."

A mere boy wrote to the commander of the Royal Norwegian Air Force in Great Britain:

"I want to be trained as a pilot here in England in the shortest time possible. After that, I ask that you give me a plane which is loaded with explosives, and I will plunge it onto one of the German battleships.

British Combine

Norwegian Soldiers Drive Bren Gun Carriers in Britain

While their sailor countrymen deliver gasoline and oil to the war zones, these men train with the Allied forces preparing to repel invasion. This platoon is on its way to take part in field maneuvers.

"This is cruel; I am still very young and I have not seen much of life, but I have learned to hate those who attacked us. I have seen how they treat women and children. It is the coming generations that we are fighting for. I gladly offer my life if I know I can do something that will protect them."

It has been Little Norway's task to mold such fervor into sober and efficient pilots, gunners, telegraphers, radio engineers, mechanics, and technicians.

Today fully equipped, fully manned squadrons of the Royal Norwegian Air Force, composed entirely of Little Norway graduates, ground crews as well as plane crews, operate from bases in Iceland, England, and Scotland.

Already they are making a name for themselves. In the Dieppe raid of last August, for example, the lone Norwegian squadron that participated in that venture accounted for 15 percent of the enemy aircraft destroyed.

Scores of pilots trained at Little Norway have been placed in the ferrying service, bringing bombers from America to fighting fronts across the seas.

It took only three months from the time it was started to get Little Norway into full operation. Barracks, mess halls, school buildings, and a hospital had to be built; instructors, technical experts, doctors, dentists, cooks had to be recruited. Because of the determination to make Little Norway an all-Norwegian community, this was not always easy, but it was done.

In a little over two years Little Norway has given Norway an Air Force far excelling that which was on hand to meet the Germans in 1940. And it continues to augment that Air Force at the rate of well over a thousand graduates a year. It continues to make possible the realization of such almost legendary feats as that of Bjarne B—, who, only a little over a year ago in Alesund, saw the Gestapo carry his brother off to prison.

Word came not long ago that Bjarne has reaped part of his revenge by shooting down

Wartime Information Board

Under Their Country's Coat of Arms Young Norsemen Relax at Little Norway

The officers' mess at the camp on Centre Island in Toronto is popular with the flyers of the Royal Norwegian Air Force after a hard day of training. To the right of the royal banner hangs a portrait of Queen Maude. The two pilots in the doorway are looking out on Toronto Bay (pages 343, 349, 350, 352, 353).

a Dornier and a Focke-Wulf in a fight over northern France.

The story of the rebirth of the Royal Norwegian Navy parallels that of the Air Force. Admiral William D. Leahy, U. S. N., summed it up in his Navy Day address when he declared:

"We Salute the Navy of Norway"

"We salute the Navy of Norway, the country that won't give up. The Norwegian homeland lies under the heel of the Nazi conqueror, but free Norway fights on.

"The Norwegian Navy was largely destroyed in April, 1940, taking a third of the attacking German vessels to the bottom with it. Yes, the Norwegian Navy was destroyed; but it did not die! As I speak here tonight, a new Norwegian Navy fights *our* fight—a Navy that has been built up to four times the size of the force Hitler destroyed two and a half years ago!"

Here, too, a small group of determined men enjoyed the complete confidence of their King and Government. Others joined them, including many from the steady stream of volunteers escaping from Norway.

Young men of the merchant marine sought transfer to the Navy, and those who could be spared were allowed to make the change. But a Navy must have ships, and, as Admiral Leahy pointed out, Norway's Navy was left with scarcely any ships after the German invasion.

Norway's whaling fleet, largest in the world, partly solved the problem. When the Germans attacked Norway, the whaling season in the Antarctic had just ended. Ships were starting northward. These included several floating whale-oil factories and numerous small auxiliary vessels, called "whale catchers" because they go out and get the whales for the floating factory.

As soon as the floating factories had disposed of the valuable cargoes of oil at British or other United Nations ports, they were converted for use as tankers and added to the merchant fleet.

The whale catchers, on the other hand, were assigned to the Royal Norwegian Navy. Small, fast, and highly maneuverable, they make excellent subchasers, once they are properly armed. They have been extensively used for convoy and patrol duty.

But the whale catchers alone did not fulfill the Norwegian Navy's need for ships. Among the strange mixture of small vessels arriving in Great Britain with volunteers from Norway were many regarded as "serviceable." These were requisitioned and converted into mine sweepers.

Finally, the British Government lent a helping hand by making it possible for the Norwegian Navy to procure vessels of new construction—for example, corvettes—as well as some that had already seen service. Five of the famous overage destroyers, which the United States transferred to Great Britain early in the war, were later turned over to the Norwegian Navy.

All these ships, in addition to the few destroyers, submarines, and auxiliary craft which were retained after the German onslaught, comprise the fighting Norwegian Navy of today—a Navy which President Roosevelt described as "the fourth largest of the United Nations" (pp. 335, 337, 338, 341, 350).

To be sure, Norway's Navy boasts no battleships, cruisers, or aircraft carriers. It includes only the smaller-type vessels, but these, as the Germans know by now, have proved themselves highly effective.

The size of her ships has had no limiting effect on the Norwegian Navy's sphere of action. Today there are Norwegian naval bases in Canada, Australia, South Africa, and in the Caribbean, as well as in England and Scotland. In convoy duty Norwegian naval vessels venture into all corners of the earth.

Norway's Navy could use still more ships. In fact, if all the Norwegian volunteers now serving in Britain's Royal Navy were recalled for service under their own flag, Norway could man once again as many additional fighting ships as she now has in service.

Norwegian Army Reorganized

The Royal Norwegian Army has also been reorganized. The source of its recruits has been the same as that of the Air Force and the Navy. These men, several thousands of them now, are training in Scotland and England, where they also perform their stint as part of the British coastal patrol (pages 344, 346, 357).

The entire Army is being schooled in Commando tactics in preparation for the day when the countries trampled by the Nazis are to be reëntered and liberated. It has been equipped with modern weapons of war, and it eagerly awaits an opportunity to use them.

The Government selected to serve as commander in chief of all of Norway's fighting forces General Wilhelm Hansteen, a 46-year-old veteran of the campaign in Norway. His headquarters are in London.

The "volunteers" crossing the North Sea from Norway to England are, for the most part, young, able-bodied men. But they also include older men as well as women and children. Those not suited for military service get other types of war jobs.

"How Are They Getting Along at Home?"

A bulletin newspaper, News of Norway, published by the Royal Norwegian Information Service, is eagerly read by the Air Force trainees at Little Norway, Canada.

Women and girls find positions in government offices, or as nurses, cooks, and factory hands. Many of the older men have taken jobs on the water front, particularly as longshoremen. Scores of fishermen who brought their boats from Norway have now established themselves along the Scottish coast where they are again working their nets and bringing in the daily catch.

People at Home Fight, Too

Norway is proud of the open fight she is making against the enemy on so many fronts outside her borders, but she is no less proud of the fight against the oppressor carried on by the people at home. That fight, too, is essentially an open fight.

Norway is a nation of strongly individualistic people steeped in the tradition of democracy and motivated by a profound sense of justice. When the Germans make new demands or threaten new encroachments, the Norwegians judge the moves in the light of their own training in democracy and justice.

To yield meekly would, to their way of thinking, be the equivalent of becoming party to the crime. So they rise and face the tyrant with an emphatic "No!" that reverberates from mountain to mountain, fjord to fjord.

As the Germans scrabbled northward through Norway in the conquest of 1940, they always took care to strip the native population of the occupied area of guns and ammunition. When the whole country had been overrun, the Germans felt confident the people had been rendered harmless. They had no guns; therefore they had nothing to fight with. So thought the Germans.

But the Norwegians had on hand a whole arsenal of weapons—secret weapons against which the Germans knew no defense. These weapons were the direct heritage of the traditional Norwegian democratic way of living.

Germany sought to impose the "new order" upon Norway—complete with its "fuehrer system" and all its regimentation of men, institutions, and industries. Germany even tried to impose upon Norway a new government headed by Vidkun Quisling.

This was a stupid way of attempting to win the good will of a people who had selected

At Little Norway the Boys Welcome the News

Papers are snatched out of the hands of newsboys by budding Norwegian airmen who eagerly follow war developments. Their families overseas stoutly urge them to fight hard and forget danger of Nazi reprisals.

British Combine

Norway's Tankers Bring Precious Oil to Britain

Before the war, this country, with a population of less than three millions, had the fourth largest merchant fleet in the world. At the first sign of German aggression against Norway her fleet, scattered over the seven seas, immediately joined the United Nations. Today nearly half the oil brought to England and the other war zones comes in Norwegian tankers.

From New York, Traveling Libraries Are Sent to Norwegian Ships

The Social Welfare Committee for Norwegian Seamen provides the literature. Norwegian reading rooms and seamen's churches take care of the distribution and exchange in the vessels.

their own form of government, king and all, by popular vote back in 1905, and whose present Government, properly and legally elected, was still in power.

For Norwegians the situation did not even present a choice. The idea of a new government headed by the traitorous buffoon Quisling was as obnoxious as it was ridiculous.

Norway has given Hitler and the whole world absolute proof that democracy is not weak, not decadent. Norway has demonstrated that democracy is full of hidden powers for self-preservation and for attack if need be: that democracy, like a modern insurance policy, builds up year by year a reserve of strength and energy that will see it through dire crises.

Numerous incidents could be presented to prove that the Norwegian home front's fight is in the main open and active (page 340).

By employing democratic processes, somewhat "adapted" to wartime conditions, the Norwegians have virtually been voting down Nazism month after month for the past two and a half years, and in so doing they have gradually molded themselves into a firm and unshakable home front.

In the early fall of 1940, shortly after the mechanical phases of the occupation had been completed, the Nazis turned a longing look toward the 300,000 young men and boys affiliated with the hundreds of local sports clubs throughout the country. All of these were federated in a national organization.

Here, thought the German and Quisling leaders, was excellent material for "the cause." If these 300,000 youths could be enlisted under the swastika, the complete Nazification of Norway would be assured. So leaders of the national association were dismissed from their positions and replaced by Nazis.

A "Sit-down Strike" in Sports

District sports leaders consulted local club leaders who, in turn, placed the matter before the rank and file of the membership. There they got their answer, and it was relayed back. Meanwhile, the Nazis, gloating over what they believed an easy victory, had gone ahead with their plans. One of them, Charles Hoff, had called a meeting of sports stars and leaders and was explaining these plans to them.

Norway, he said, was to be a land of golden opportunity for everyone interested in sports. The new government was to provide buildings, equipment, and privileges for people interested in sports. And every branch of sports or recreation, he added, was to have its own

To Norwegian Airmen, Who "Grew Up on Skis," Snow Maneuvers in Canada Are Like a Frolic at Home

At Little Norway in Toronto the training of new pilots, bombardiers, mechanics, radio operators, and gunners continues without interruption. Young men newly escaped from Norway are arriving almost daily, ready to take the places of those ordered to war zones.

Wartime Information Board

The Royal Norwegian Air Force Flies U. S.-made Fairchild Training Planes over the Toronto Water Front

With light-blue bodies and yellow wings, and the red, white, and blue flag of Norway on both wings and rudder, the ships make a striking appearance. The Air Force, largest in the country's history, is maintained by revenue from the Norwegian merchant marine (page 336).

Somehow a Dog Keeps a Man Happy

This Norwegian sailor on patrol duty somewhere in the Atlantic has brought a little friend along.

"fuehrer," with himself as top fuehrer. He turned to Birger Ruud, famous Olympic ski-jumping champion.

"And as for you, Birger," said Hoff, "I've planned that you should be fuehrer of the skiing sport."

Birger Ruud—he's only a little fellow—leaped to his feet, his face flushed.

"And as for you, Charles Hoff," he exploded, "I've planned that you can go jump in the lake!"

Only Birger used somewhat stronger language!

But that was the answer sent back to the Nazis by the 300,000 members of sports clubs throughout Norway. There was nothing "underground" about that, nor about these sports lovers' subsequent point-blank refusal to have anything to do with any Nazi-sponsored sports activities of any kind whatsoever.

The effect was that the sports lovers of Norway went on strike—open strike. With trumpet blasts of publicity the Nazis would announce big contests and championship tournaments. But no entries appeared.

By refusing to participate, the athletes demonstrated unmistakably where their sympathies lay, and they did it squarely in the face of a hostile occupying power. But each athlete was strengthened by the knowledge that there stood 300,000 fellow athletes behind him, and that behind them stood a whole nation.

This sports strike continues to this very day.

Supreme Court Resigns

The resignation of the Norwegian Supreme Court in a body in December, 1940, was tremendously important to the home front and disastrous to the Nazis. It, too, was an overt action, with no concealment about it.

The Supreme Court had been placed in power by a government chosen by the people; it had to uphold the law, and was directly responsible to the people. When the Supreme Court justices realized that there was no longer any hope of fulfilling that duty, they removed themselves from the picture rather than comply with Nazi wishes that they become Hitler's or Quisling's stooges.

Their resignation served notice that, with the coming of the Germans, lawlessness and arbitrary rule had succeeded law and order.

A few months later the bishops of the Norwegian State Church directly charged officials of the Nazi Government with failure to maintain order and justice in the country, citing

specific instances to prove their point.

Aside from a wholly unsatisfactory exchange of letters, the move brought no result, so the bishops placed the entire matter before the people in a "pastoral letter" which was read from every State Church pulpit in Norway. Thus the people were again forcibly reminded of the immoral character of the occupying power and of its Quisling hangers-on.

This also had a solidifying effect on the home front, which was by then beginning to feel its hidden strength and to see how effectively Nazism could be combatted, even in occupied Norway, by open, democratic action.

But all this proved to be only preliminary to the great showdown which began in February, 1942, when Vidkun Quisling was elevated to the position of Minister-President by his German masters.

Quisling wanted to establish a government of the Fascist pattern. He planned a corporate parliament composed not of elected representatives of political parties but of delegates from the various trades and professions.

Wartime Information Board

In the Little Norway Hospital a Nurse from Home Cheers a Patient

The fever-thermometer reading waits till the laugh is finished. Not only thousands of young men but many girls have escaped to carry on the fight from the Toronto camp.

To get this he had first to reorganize and Nazify the trades and professions. He was stupid enough to believe he could do this by fiat.

Teachers Risk Jobs and Lives

Early in February he proclaimed that all teachers in Norway were automatically members of a new teachers' association, called the *Lærersamband*, and that as such they would be expected to bring all their teaching into harmony with the "new order."

The result was that virtually all of the teachers rose up in rebellion. They flooded the mails with their curt letters of resignation from the *samband*.

Even when they were told this stand would cost them their jobs, and when they realized they were risking imprisonment, torture, labor camps, and probably death itself, they did not falter.

Each of those letters of resignation carried the name and address of the sender—a challenge to "come and get me if you dare!"

About 2,000 teachers were arrested and thrown into concentration camps. Some of them were subjected to severe cruelty and hardships.

But they did not yield.

Wartime Information Board

To Keep Up Spirits There Is Nothing Like "Close Harmony"

Young members of the Royal Norwegian Air Force gather around the camp cook in their quarters at Little Norway, Toronto, for a bit of old home music.

To make good his threat to deprive all non-Nazi teachers of their jobs, Quisling suspended school throughout Norway for several weeks. He made a frantic effort to enlist substitutes; anyone and everyone was declared acceptable as long as he or she was of the "Nazi frame of mind." But the search yielded only a scant handful.

In the end Quisling had to consent to the reopening of schools with the old teachers in charge—that is, those who were not under arrest. The first act of these teachers upon resuming work was to read to their pupils, in every classroom, a pledge in which they affirmed they were not members of the *Lærersamband*, no matter what the Nazis might say.

The Historic Teachers' Pledge

That pledge closed with the following solemn assurance to the pupils:

"I will not call upon you to do anything which I regard as wrong. Nor will I teach you anything which I regard as not conforming with the truth.

"I will, as I have done heretofore, let my conscience be my guide, and I am confident that I shall then be in step with the great majority of the people who have entrusted to me the duties of an educator."

Gradually Quisling's Nazification scheme reached around to all trades and professions, and everywhere it was rejected in exactly the same way as the teachers had rejected it. One after the other, the Nation's publishers, artists, doctors, dentists, lawyers, shipowners, industrialists, and many more, took their stand, and it was always the same—point-blank refusal.

Quisling was busy proclaiming new "organizations" and appointing Nazis to head them, but always he was left with nothing but a high-sounding name and his own hand-picked staff of officers. The membership had slipped through his fingers.

That's how it went with the labor unions, too, when Quisling, as a final step before bringing his corporate parliament into being, sought to ensnare the Nation's working men. They, like others, wrote letters of resignation; over their signatures they told Quisling and Hitler and the whole world that they wanted no part of the "new order."

British Combine

Fine Types of Norwegian Troops Help in the Defense of Britain

At their action stations they constantly practice modern warfare. Many of them have taken part in Commando raids on Norway and France. They wear Norwegian uniforms and insignia.

That was the knockout punch: Quisling was forced to "postpone indefinitely" the creation of his corporate parliament. That was in September, 1942.

One could prepare an almost endless list of heart-rending events in Norway during the more than two and a half years of German occupation.

There have been arrests, concentration camps, labor camps, the torture of Gestapo prisons, and scores of executions by German firing squads. There have been plunder and violence. There have been severe shortages of food, clothing, fuel, and shelter. There have been humiliation and sacrifice. Blood has been spilled. There has been bottomless grief.

Democracy's Hidden Strength

But the great thing that has happened in Norway during this period is the discovery of this hidden strength of democracy—the secret weapons which make even a small nation of only three million souls unconquerable, even though it has been overrun by the hordes of a nation many times its size.

Not only have these weapons made Norway unconquerable, but they have enabled Norway to carry on the fight both at home and from abroad.

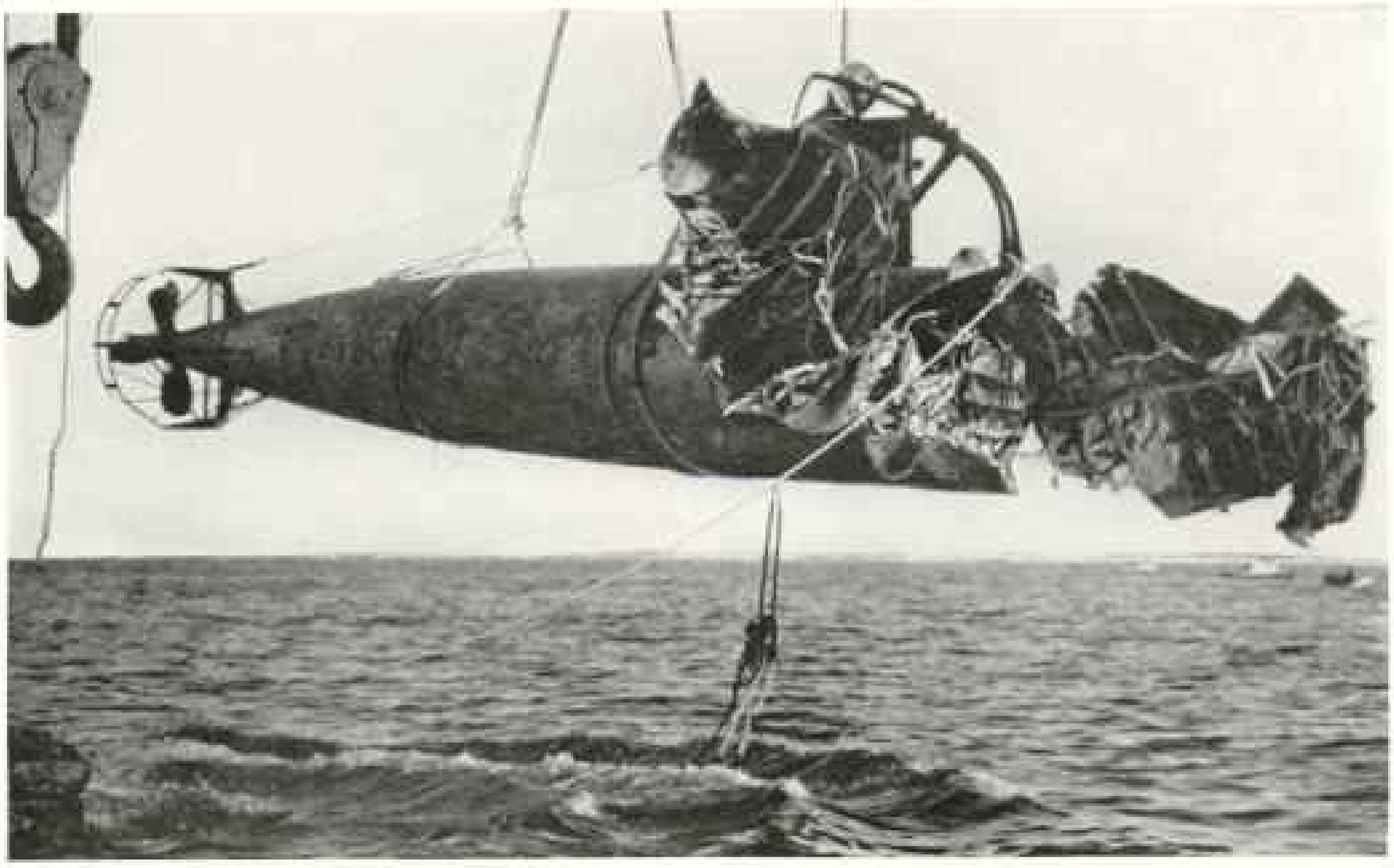
These are weapons of the spirit, forged by the fires and hammers of democracy, and once a man or nation has acquired them, no one can take them away.

How well Norway has preserved and employed this democratic heritage was attested last fall by President Roosevelt, who declared that the assistance of the Norwegians to the United Nations' cause "has been out of all proportion to their small numbers." The President said:

"If there is anyone who still wonders why this war is being fought, let him look to Norway.

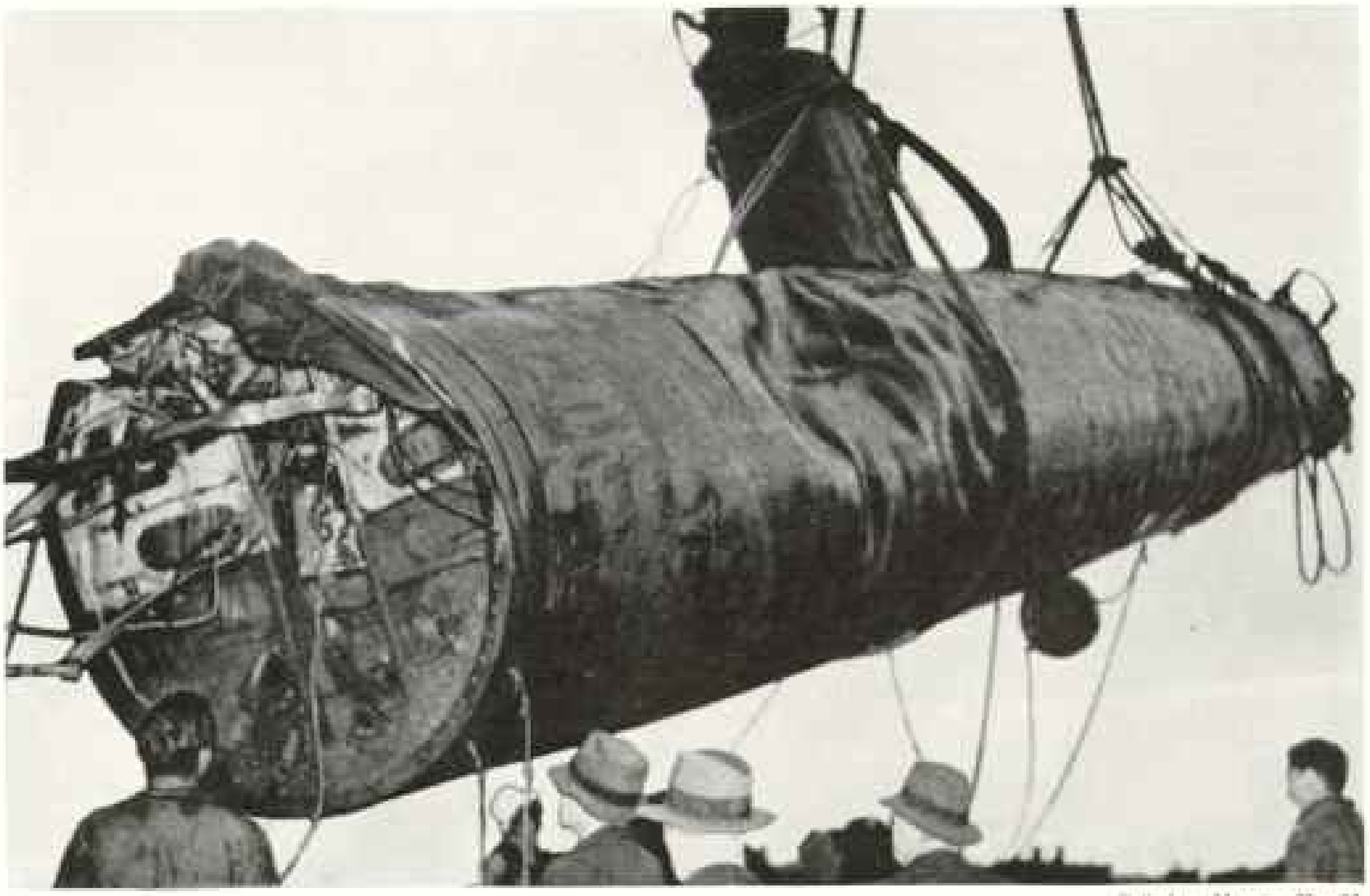
"If there is anyone who has any delusions that this war could have been averted, let him look to Norway.

"And if there is anyone who doubts the democratic will to win, again I say, let him look to Norway. He will find in Norway, at once conquered and unconquerable, the answer to his questioning."



Depth Charges Put an End to This Jap Marauder

On June 1, 1942, four tiny submarines attacked Sydney Harbour, but succeeded in sinking only an old ferry, used as a naval depot ship, before they were blasted to the bottom (Plate IV). From undamaged parts of two salvaged midgets, naval experts can reconstruct the craft for study.



© Sydney Morning Herald

A Japanese Sub "Surfaces" at the End of a Stout Crane

Because of their short range, small submarines must be towed or carried to destination. The ones found at Sydney were some 57 feet long and 6 feet in beam, and were similar to those which attacked Pearl Harbor. They launch only two torpedoes. The commander can explode a huge bomb inside if capture threatens.

Sydney Faces the War Front Down Under

By Howell Walker

SYDNEY flashed fighting spirit as war exploded the Pacific harbor. Never before had an enemy rocked this cradle of the continent.

Sneaking along the darkened water front of Australia's largest city, Japanese suicide squads of the deep approached objectives like stealthy sharks. Alert harbor patrols bore down and blasted them. Four midget submarines from Nippon submerged for the last time (opposite page).

A torpedo fired from one of the invading craft sank a naval depot ship. Houses on the battle front shook; windows were shattered. Searchlights and tracer bullets split the sinister backdrop of night. With crashing suddenness detonations from depth charges and guns roared war to Sydney.

To me, and to thousands of others who first heard explosions booming up from the harbor and saw frantic flashes of high-powered lights, it all meant simply "practicing again." Few of us had really felt that a hostile attack so far south was imminent.

Sydney Harbour a Focus of Pacific Strategy

Sydney Harbour has a strategic position on the Pacific coast, with all natural facilities for handling shipping on an enormous scale, plus naval dockyards. Also, it is the focal point of a wide-reaching railway network.

Already a leading world haven for sea and aircraft in peacetime, Sydney seethed with increasing wartime traffic to and from the United Nations. Its central location in an area of vast, heavy industries stimulated its own manufactures. Commercially and financially, Sydney was to the cities what sheep were to the country.

Yet, until recently, its growing population of more than a million and a quarter, including refugees from China and the Philippines, Malaya, the Netherlands Indies, and north Australia, thought of Sydney as the "Pleasure City of the South Seas."

Twice by steamship and half a dozen times by train have I arrived in the capital of New South Wales. It always excited me the way New York did. It was big; it was busy; it was expensive. I last returned four months after Pearl Harbor. Driving from station to hotel, I found myself saying, "Same old Sydney; you wouldn't know there's a war on."

Some characteristics of Sydney the playground could never change. But with Japanese war birds hovering in the near north, swooping on Darwin, and fluttering over Townsville in the next State, the fun-loving metropolis began a transformation.*

The middle-aged assistant manager of the hotel paused before leaving the room. "If there is anything I can do for you in the next two days before I must report to a military camp . . ." and he closed the door quietly behind him.

Under the glass top of my bureau glared brown-out notices, how-to-act-in-air-raid advice, and a statement that night shoe-cleaning service was discontinued because of shortage of staff. Many of the hotel employees had gone to camp.

Giant Australia Grew Up in 150 Years

Little more than 150 years ago Australia was virtually unknown territory. In 1788 Capt. Arthur Phillip, R.N., with eleven sailing ships landed at Sydney Cove—one of many bays and baylets in Port Jackson—to found the first permanent settlement in the "Great South Land." He wrote to Lord Sydney, the British Home Secretary, for whom he named the cove, "I have had the satisfaction of finding the finest harbour in the world."

Actually, Capt. James Cook arrived in Australia 18 years ahead of Phillip, but he did not linger. He sailed into Botany Bay, ten miles south of Sydney Cove, in April, 1770, and took possession of the eastern part of the continent.

Sighting the bay which is now Sydney Harbour, but not pausing to explore it, he called it "Port Jackson" in honor of the then Secretary to the Admiralty. Today this name means little save to cartographers and nautical-chart readers.

Since Governor Phillip's early settlement, his diminutive group of huts has grown into a modern metropolis, second in size only to London among the "white" Imperial cities; and, even before the war, fifth port of the British Empire.

Circular Quay, fringing Sydney Cove where Phillip landed, is the heart of the port, the home base of about ten different ferry services which ply the harbor's 22 square miles or skirt nearly all of its 188 miles of shore line.

Harbour Bridge, the world's heaviest and widest of the arch type, was opened to traffic in 1932 (Plate IV). It accommodates four lines

* See "Capital Cities of Australia," by W. Robert Moore, National Geographic Magazine, December, 1935.

Australian News and Information Bureau

Off to War, Hard-hitting Aussies of the Sixth Division March through the Streets of Sydney

Enlisted for overseas service, they took part in all the early Middle East campaigns—the first thrust through Libia, then Greece, Crete, and Syria. Later they returned to Australia to fight on the home front. Now they are in action in New Guinea. Here the salute was taken by the Governor General, Lord Gowrie, V.C. With him was Lieut. Gen. Sir Thomas Blamey, commanding the Sixth Division, and seven generals who led Anzacs in World War I.

Staff Photographer Russell Walker

Boy Workers at a Munitions Factory Make Fuses for Shells

Like most factories in Australia this peacetime commercial plant has been converted to war production. Today 68 percent of the total population is in full-time war work or serving with the armed forces.

Staff Photographer Russell Walker

Busy Australians Assemble Another 3.7-inch Antiaircraft Gun

Such big cannon have made Japanese raids on Darwin and other Australian strong points expensive in planes and pilots. The Commonwealth's production of steel for Bren gun carriers, bombs, and heavy armored units is increasing.

of electric railway, six lanes for vehicles, and two footways. The colossal causeway, which resembles a gigantic coat hanger, can handle 138 trains, 6,000 automobiles (from moving vans to baby Austins), and 40,000 pedestrians in one hour.

To understand the growth of Sydney, imagine in the beginning large land grants on the city's borders. With the increase in population, these grants, subdivided and sold, became villages. They, in turn, grew into municipalities, eventually suburbs, and finally parts of Sydney.

The metropolis occupies an area of approximately 120,000 acres—nearly three times that of the District of Columbia.

In gangling youth, growth sometimes takes a crazy course. Looking at Sydney's twisted, narrow streets, the practical observer would deplore a lack of planning.

The reason for the crooked streets is that bullock carts hauling building stone could not take grades head on, and home and business-house construction was too urgently needed to wait upon straight-line transportation.

Up from the very harbor water rise private homes and apartment houses, interspersing peaceful parks and just plain "bush." Except for necessary wharfage to accommodate an endless cavalcade of world-wide shipping, much of the populated waterside is residential.

Even in wartime it seemed to me natural for 30,000 Sydneyites to gather at a race track, swamp the bookmakers, and storm the totalizator. Over week ends I have watched fleets of trim, bright pleasure yachts, full sails gleaming in the sun, breeze past dull-toned destroyers, camouflaged cruisers, and troopships ghostly as fog.

So common were football matches in the parks that on a walk I passed them by to watch elderly men at bowls.

And, despite the approach of winter, I met youths swinging bathing suits and towels, bound for one of several magnificent beaches close by. Families were having afternoon tea under the trees in the Botanic Gardens, or lounging in the sun.

At the hotel I marveled at the throngs gathered merely for congeniality. Aside from men and women in uniform, the only reminder that Australia was at war came with an air-raid test; and that seemed not to interfere noticeably with life in this city of pleasure.

The change from untroubled ease to intense war awareness came overnight, affecting people, factories, and transport; small shops, big department stores, and homes; leisure, labor, and living conditions; even university education.

Most telling, yet quietest, was the swing of many industries from wholly commercial enterprise to all-out war production. Through a high officer of the Chamber of Manufactures I received entrées into factories working for war.

"What industries, if any, would you call peculiar to Sydney?" I asked.

"None that I know of," he replied. "The city's industries are generally like its population—cosmopolitan."

Until this war Australia had been concerned principally with the export of raw materials, mainly to Great Britain. For her finished goods she relied to a great extent on England.

The Commonwealth now has her own airplane factories, and plants for turning out guns and ammunition. She makes Bren gun carriers, Army trucks, and other vehicles for armored units. Shipyards are busy. Some factories specialize in the manufacture of precision parts and the assembly of delicate detectors used for defense against sea or air invasion. Sydney stays in step (page 361).

Falling into military line, a manufacturer of tennis rackets, tennis balls, and golf clubs switched to stock butts and all the woodwork that goes into standard service rifles and Bren guns. The tennis-ball rubber was diverted to civilian gas masks, and the former golf department followed through with sturdy wooden cases for Bren guns.

I have seen the same turnover from commercial to war production in numerous other businesses. A factory formerly concerned with meters, electric refrigerators, fans, etc., now makes airplane predictors of 20,000 parts each, cartridge-gauging machines, primers, parts for Beaufort bombers, and 25-pounder guns; dynamo exploders for demolition, shell exploders, metal elements for training planes, and a dozen other little things like carburetors, magnetos, and genometers.

The plant has also taken over an annex for the manufacture of a new type of armor-piercing bullet.

Sydney Cloth for Yankee Uniforms

Using the clip of half a million sheep in one year, woolen mills I visited produced 750,000 yards of cloth for military, naval, and Air Force requirements.

Each week this firm furnished thousands of pounds of yarn for Army sweaters, socks, underwear, puttees, bunting for naval flags, and fingering wool for Red Cross use only. I even watched men sort fleece specifically for American soldiers.

At a hat factory I appreciated for the first time that rabbits were, after all, of some value

to the country in which they have created such a national problem for graziers. The real "Digger" hat (the Australian soldier is nicknamed "Digger"), most distinguished feature of the Aussie's uniform, is made of rabbit fur.

It takes eight skins to make one Digger hat; yet the hat sells for only 10 shillings. For a peacetime hat fewer skins are needed. War has turned profit into loss (page 365).

I had a morning in a boot factory which had ceased altogether stitching and heeling for civilians. It concentrated on 4,000 pairs of marching models a week for Imperial forces in India alone.

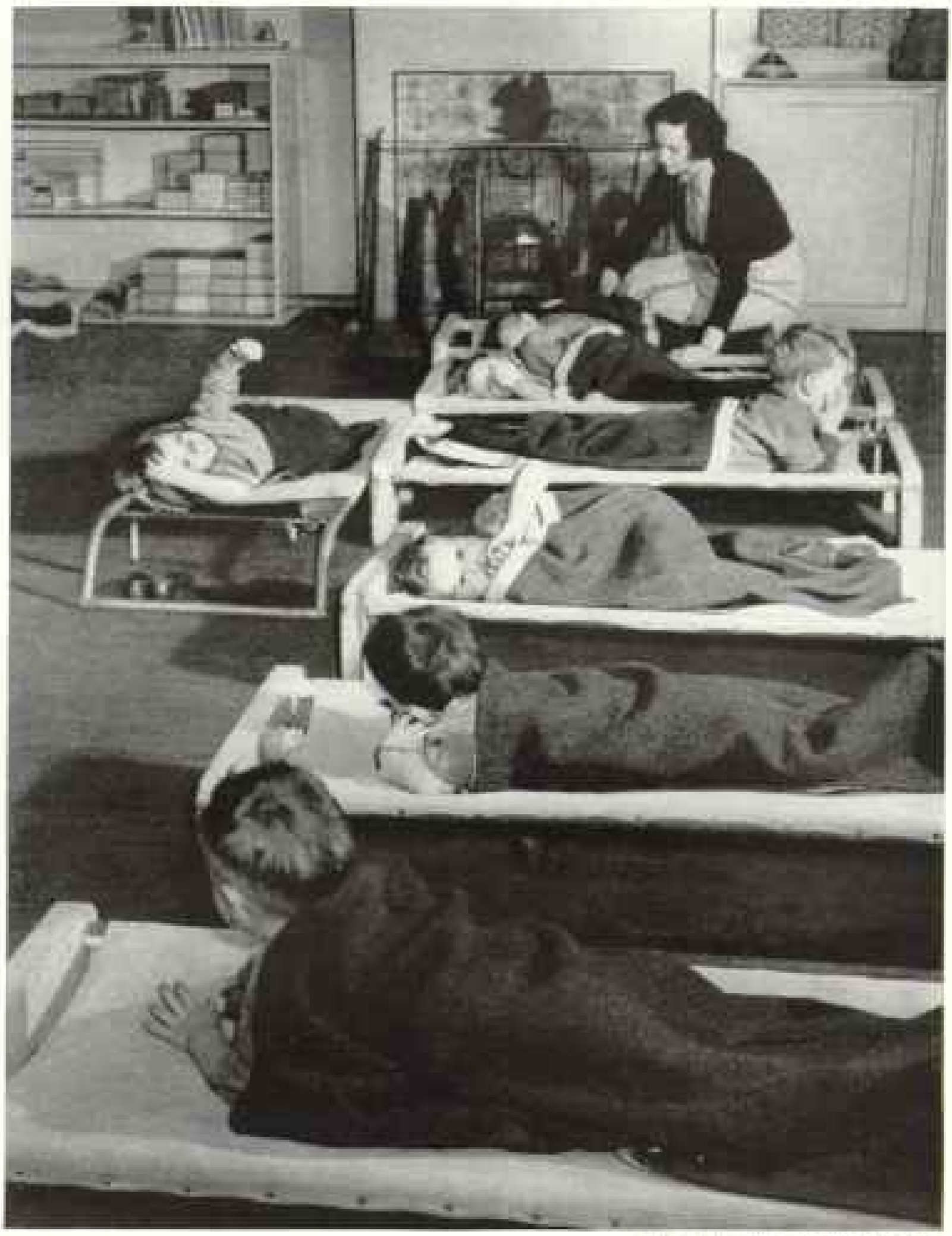
I happened to be at an auto-assembly plant when Mr. William S. Wasserman, leader of the Lend-Lease delegation to Australia, arrived. Turning to me, the firm's manager of war production excused himself.

Hurriedly he left the office where we had been talking in terms of 25-pounder guns and the 110 military vehicles that rolled off the assembly line every day. In his haste he forgot, I thought, to put on his suit coat.

When the manager returned, I asked whether he had intended to go down in his shirt sleeves to meet the distinguished visitor.

"Why, certainly," he said simply. "There's not enough time these days to be putting on and taking off a coat."

The work that 5,000 employees were accomplishing at another factory which supplied all fighting services with radio transmitting and receiving equipment was impressive enough in itself. To think that the company had absolutely eliminated civilian commercial enterprise since the outbreak of hostilities reveals even more. And to know that some of Sydney's best air-raid trenches and shelters on the premises could accommodate a complete shift—4,000-odd workers—shows how seriously industrialists were taking this war.



Staff Photographer Howell Wyllie

"Can I Get up Now?" Nap Time in a Sydney Nursery

War-working mothers may bring their children to the Woolloomooloo Day Nursery where they are capably cared for from seven in the morning until six in the evening. A hundred children up to the age of six years are looked after by a staff of nurses, a doctor, and a dentist. Children sleep on homemade canvas cots. Board for the youngsters costs about ten cents a day (page 364).

Women Do Their Part

But how did Sydney people react generally?

An ever-increasing number of men in uniform was to be expected. The situation struck home to me when I was summoned to report for military medical examination at an Australian depot. I learned that I was of little use with a broken leg.

To keep abreast of mobilized manpower,

Staff Photographer Howell Walker

A Diplomat Must Be Diplomatic When Feeding Potato Chips to Kangaroos!

Mr. Nelson T. Johnson, retiring U. S. Minister to Australia (right), is joined by Mrs. Johnson (left center), their children, and members of the Legation and Consular staffs in passing out titbits to the animals. If teased, 'roos cuff with their front feet or strike with their tails. Mr. Johnson came to Australia after years of outstanding service as Ambassador to China.

women have volunteered magnificently. Apart from enlisting in the W. A. N. S.* or W. A. A. A. F.,† becoming military nurses, working for the Red Cross, or joining the land armies, they established canteens and clubs all over the city for the pleasure and pouches of service men.

Down near Circular Quay women operated a Navy Club wholly on a voluntary basis. From 11 o'clock in the morning to 11 at night the building welcomed any Allied sailors. A restaurant on the ground floor was open to the public as well as seamen; but Navy men paid less, and only they could take advantage of recreation rooms upstairs.

Looking around one of their club restaurants, I saw American, Australian, English, and Dutch, Free French, Indian, and Javanese sailors and soldiers. Civilians were there also.

When dishes, dining room, and kitchen were in order, the women moved upstairs to entertain the sailors, who often liked to speed things along by assisting with the general clean-up below. Singing, playing cards, or dancing, all nationalities passed the evening together.

Once a month the club staged a grand party; the girls in fragile frocks danced with anyone in a briny blouse—dark Hindus or fair-headed Dutch.

In a poorer section of the city I passed an afternoon at a day nursery. While they worked in factories and shops, mothers entrusted children, aged one month to 6 years, to a permanent staff of 20 women, plus a variable number of volunteers.

Nursery attendants supervised rest and play periods; instructed in such simple occupations as drawing, painting, cutting out, weaving; fed and washed as many as 100 infants a day between 7 a. m. and 6 p. m. (page 363).

As ever greater numbers of men vacated civilian jobs to serve the military, women filled their places.

Everybody Eager to Do His Bit

Recently, newspapers have printed articles about the requests of women to take on jobs of railway porters and streetcar conductors. And I have seen uniformed messenger girls on motorcycles, looking as much at home in their saddles as they would in party frocks.

* Women's Australian National Service
† Women's Australian Auxiliary Air Force

Staff Photographer Howell Walker

Long a Nuisance, Rabbits Now Supply Fur for Australian "Digger" Hats

Fabulous sums have been spent for fences and for trapping and poisoning to curb the rabbit pest in Australia. "Bunny" skins now cost one shilling and sixpence (24 cents) each. Fur from eight skins is needed to make one of the celebrated tilt-brimmed Army hats (page 363).

I did not have to follow bread carts through factory districts, or motorcycles up and down heavily trafficked Pitt and George Streets to appreciate the transformation of Sydney. At Government House Mr. Peter Lubbock welcomed me into the First Family of the State. He acted as a private secretary to Lord Wakehurst, Governor of New South Wales. Lady Wakehurst was Peter's sister.

As official air-spotter for Government House, Peter passed hours each day on the crenelated roof of the Tudor-style mansion, his binoculars alert for enemy planes. In the event of a raid, he had to stick to his post with telephone at hand to advise ground forces where fires broke out, etc.

He told me he didn't at all mind the job; but he did object to not being issued a steel helmet. When he was on the verge of searching the viceregal kitchen for a sturdy basin to serve the purpose, a friendly American Army officer stationed in Sydney arranged with a U. S. quartermaster to provide a tin hat. The British nobleman is thus under American "protection."

At the University of Sydney I found a group of premedicos digging slit trenches in front of the main administrative building.

"Just about every student—man and woman—is an active member of our Air Raid Precaution unit," said the president of the Students' Representative Council.

"And most of the women," he continued, "are doing some sort of war work within the University—Voluntary Aid Detachment, Red Cross, first aid in general, fire fighting, camouflage netting, and knitting."

"So far this year," said Sir Robert Wallace, Vice Chancellor of the University, "more than one-third of the men have dropped out to enter military services; and they are still dropping. Even some of the women abandoned university careers for war work. In normal times we have 4,000 students, 3,000 of them men."

Even a Macquarie Street masseuse, after arranging my injured leg for a phase of short-wave induction, settled down to the weaving of a camouflage net.

Those crowds I first saw on returning to Sydney would no longer reflect in unprotected shop windows. Virtually all stores, large or small, have thrown up board fronts, removed glass altogether, or applied nonshatterable-glass coatings or tape stripping (Plate V).

Walls of sandbags have made mazes of

many entrances, and some banks and office buildings have barricaded their doors and lower windows with solid brick.

Barbed wire on beaches snarls at the breakers; rocky headlands bristle with pickets. Piers on the coast have been blown skyward and seaward to eliminate stepping stones to invasion. Tank-trapping thoroughfares thoughtfully display "Road Closed" signs.

The yachts with full sails still gleam in the harbor; but now they are sailed by members of the Air Force going through routine training. The boats have been volunteered by private persons for the purpose.

Double-decker buses big as bungalows and fuel-tank trucks long as locomotives have shed bright red paint for coats of camouflage like that on military vehicles.

The bridge at night hangs over the harbor like a threatening storm. I approached it by ferry; could not see the structure until almost directly beneath. Like thunder in black clouds, traffic roared overhead. And lights on crossing trains, trams, and autos were dim as distant flicks of lightning.

Sydney Can Feed Itself

In the suburbs posy-loving folk uprooted roses to plant potatoes; scrapped camellias for cabbages (Plate VII). The American Consul General replaced his terraced flower garden with vegetable patches.

No starving in Sydney, but chain smokers suffered enough missing links to seem almost abstemious. You just couldn't buy tobacco unless you had a friend who was the friend of a friend who . . . etc.

Petrol petered out for civilians at the crack of the gun; it remained the favorite lament of wartime rationing. Two-car tycoons took to trams. Austin owners pushed or coasted wherever possible, despite the little engine's reputed 40 miles to the gallon.

Most delivery trucks did not deliver. Taxis, if at all, taxed the gentlest patience; you stalked the rare and furtive things like wild game, whistling matey calls as you'd bugle to a moose; and other hackney hunters shared the kill with a triumphant, "I'm going Double Bay way, too—do you mind?"

To give an impartial cross section, I have divided cab fares with an M.P., American and Australian soldiers, a trained nurse, a salesman, dowagers, sailors, a camouflage worker, U. S. marines, and Dutch refugees.

Australia Misses Its Tea

Counting out tea leaves to ration one ounce a week to a person perpetrated depression dismal as drought. After all, liquidating a national beverage "soaks" many. But the majority coped with the curtailment with humor, and even switched to drinking coffee!

In one shop I stood behind customers three rows deep at the counter. A large sign dryly declared, "Tea completely sold out." Tea-thirsty Australians waited patiently for coffee.

Patience turned to panic when clothes rationing became imminent. A local impression pictured two shopgirls crouching behind a counter as a mob of material-maddists stormed the already ransacked ramparts.

"Wave a white rag," suggested one of the besieged in desperation.

"Oh, no," said the other. "Someone would buy it!"

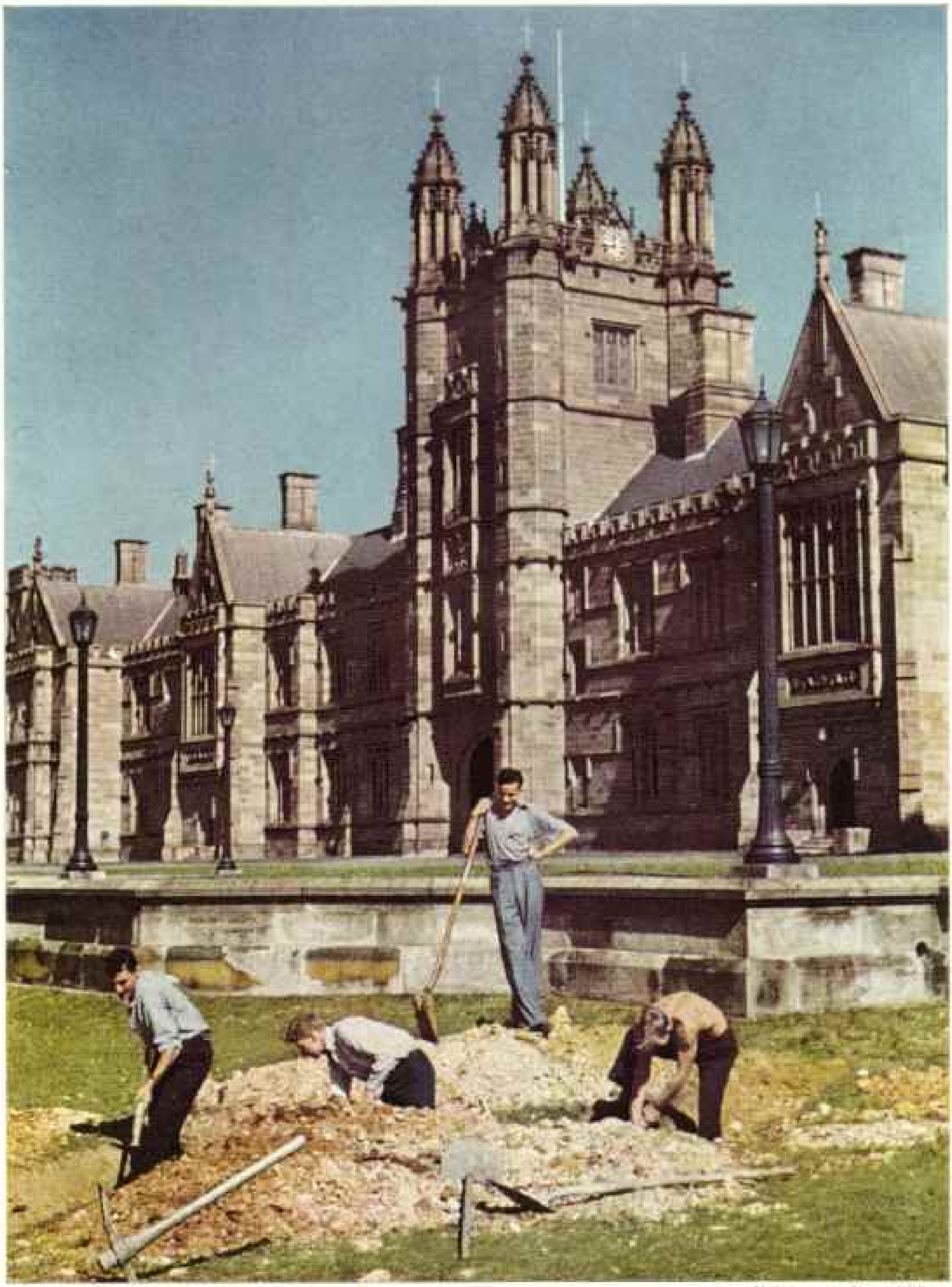
Exactly one week after the submarine attack in the harbor, enemy U-boats offshore shelled Sydney at midnight. In man-made setting of thunder and lightning I heard Sydney's coastal guns split the Japanese challenge wide open.

Like veteran wardens of London, National Emergency Service personnel jumped to their jobs. The people kept calm as deadly explosives whistled overhead to fall on houses in the suburbs. This was not a case of "practicing again," and most people knew it without the warning wail of a siren.

The enemy shells did slight damage, but they tore open a new chapter in local history. To Sydney Harbour the preceding raid had brought war; the second onslaught carried the conflict into the very homes. For the first time in its life, Australia's oldest city was on the receiving end of enemy gunfire.

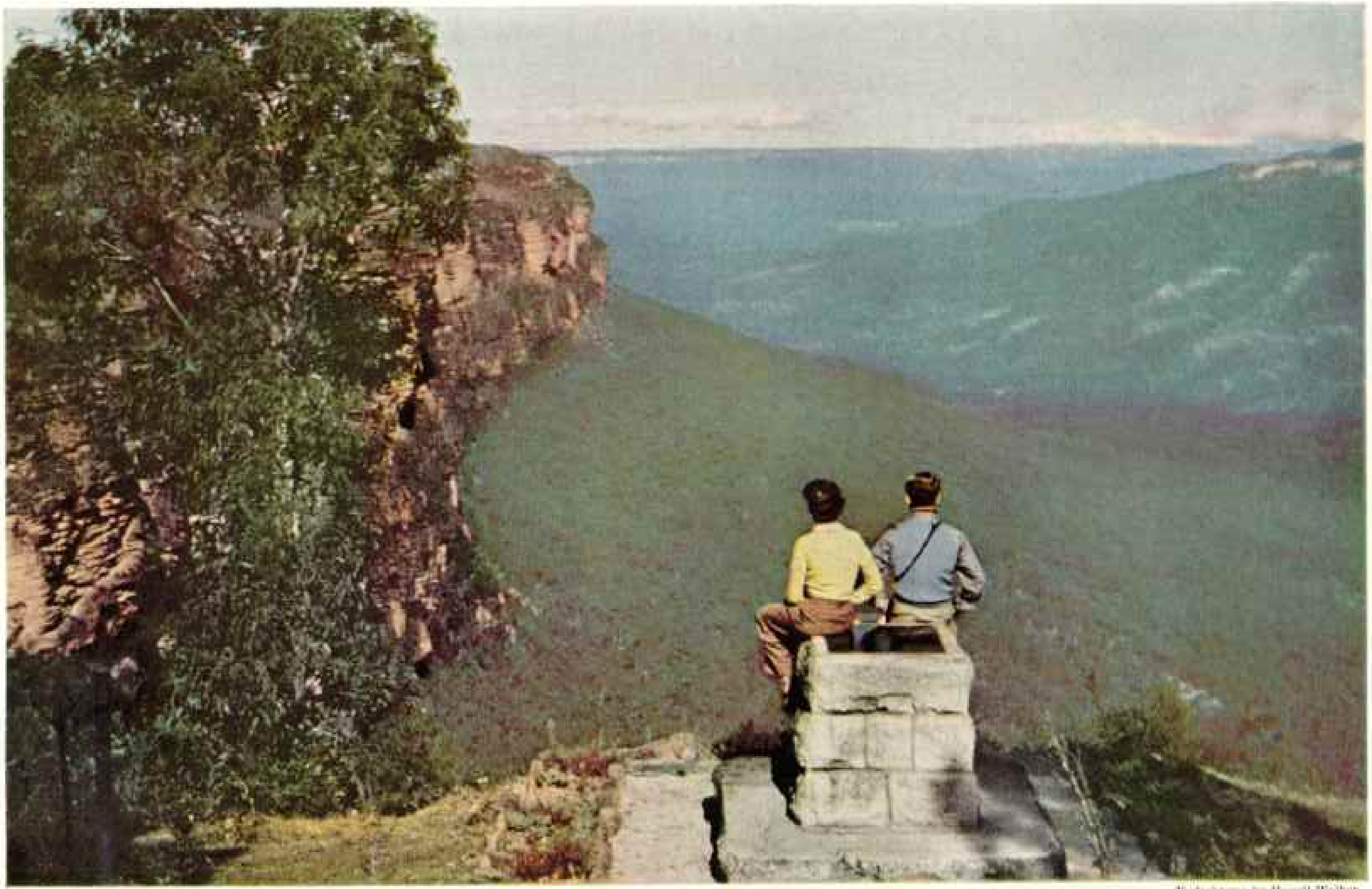
Sydney stood its initial test of tangible, active warfare; it could take the shelling, and return it, too. More significant than battery barrages, however, boomed the fighting spirit of a sporting people born to healthful pleasure in a natural playground—but a playground which had worked for the time when it should burst forth a battle station.

Notice of change of address for your National Geographic Magazine *should be received in the offices of the National Geographic Society by the first of the month to affect the following month's issue. For instance, if you desire the address changed for your May number, The Society should be notified of your new address not later than April first.*



Hands that Train for Surgery Also Wield Picks and Shovels

Medical students at the University of Sydney dig slit trenches in front of the main Administration building. Faculty and students alike perform Air Raid Precaution duties. Women weave camouflage nets, knit, or do Red Cross, first-aid, and fire-fighting tasks. Australia has been converted virtually 100 percent to war work.



Kodachrome by Howell Walker

A Pleasureland in Peacetime, the Blue Mountains Become a Haven in War

Many Sydney families have moved into this region to seek safety from possible air raids on the city. Here, at Govett's Leap near Blackheath, a waterfall drops sheer from the cliffs for nearly 600 feet. For many years these mountains barred the path of explorers into the interior of Australia.

Nelson Might Almost Typify a Plane Spotter Now!

The figurehead of the old H.M.S. *Nelson*, which served from 1814 to 1891, looks incongruous against a modern apartment. The present 33,950-ton battleship H.M.S. *Nelson* is the third British ship to bear the name.

Kodachromes by Hewell Walker

"Alert," Say His Shoe-button Eyes and Tuftlike Ears!

Actually, this young Koala bear prefers to sleep during the day and feed at night on eucalyptus leaves, his only food. The government protects these soft-furred animals.

Kodachrome by Russell Walker

Birthplace of Australia's First White Settlement, Sydney Has Become the Home of 1,310,000 People

The tiny colony, established in 1788, was located in a cove near the left pylon of the bridge. This 1,650-foot span is one of the longest single-arch bridges in the world. On June 1, 1942, four midget Japanese submarines penetrated the harbor, torpedoing a naval depot ship. All were destroyed.

Kodachrome by Howell Walker

As Caution against Air Attack, this Large Department Store's Windows Are Boarded Up

Sydney shopkeepers also cover big windows with tape or remove huge panes of plate glass. A few buildings were damaged and some windows broken when Japanese submarines offshore shelled the city.

Kodachrome by Howell Walker

Flanked by Business Blocks and St. Mary's Cathedral Is Sydney's Hyde Park

In its center is the Archibald Memorial Fountain, erected in memory of the comradeship in arms of Australia and France during World War I. Near by is The Domain, a vast park area in the heart of the city. Air-raid trenches and shelters have been dug in many of these open spaces.

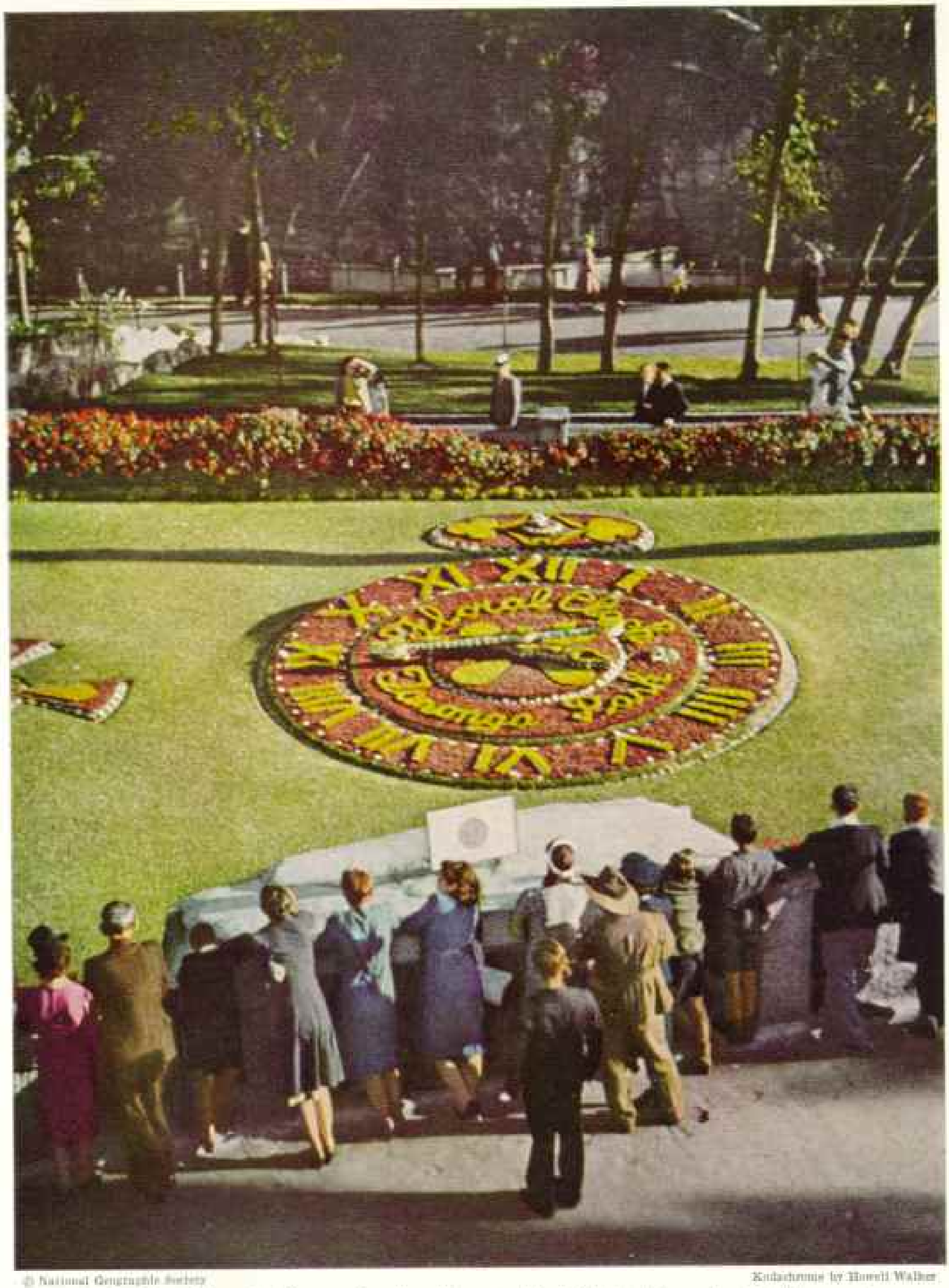
Victory Vegetables Now Grow in Sydney Flower Beds

The wife of the manager of Sydney's largest department store gathers carrots, turnips, and other vegetables from former delphinium beds. In this way Australia has become self-sufficient for food.

Kodachrome by Howell Walker

As Her War Task a Young Bride Delivers Bread

She uses a cart, not a car, as gasoline is scarce. Women serve as porters, conductors, and motorcycle messengers. Many have also joined the Women's Australian Auxiliary Air Force and Women's Australian National Services.



Kodachrome by Bowell Walker

The War Hour Is Tense, But the Taronga Park Clock "Says it with Flowers"

This huge floral timepiece is made of 100,000 plants. It keeps accurate time and announces the quarter hours by cuckoo. Here, Sydney maintains a fine zoo of native birds and animals. An excellent aquarium also displays tropical fishes and the fascinating life of the Great Barrier Reef, off Queensland.

Malta Invicta

By Bartimeus

(A Captain in the Royal Navy)

THE first air raid on Malta was on June 11, 1940. As I write this on June 11, 1942, another alert has just ended. It is the 2,532d!*

This little island must have seemed to Mussolini what American slang calls a "soft touch." Italian agents in Malta had been busy for years keeping up a steady anti-British, pro-Italian ferment. It was only 58 miles from Sicily and the Italian bomber airfields.

With the little neighboring island of Gozo, its 120 square miles carried an extraordinarily dense population of 270,000. As Mussolini saw them, people were so thick on the ground a bombardier couldn't miss them if he dropped a bomb from 30,000 feet with his eyes shut.

Mussolini Guessed Wrong Again

It would not be necessary to fight to conquer Malta, Mussolini thought. A few sticks of bombs would make its volatile, excitable people rise to demand peace.

Why did the Maltese not crack under the shock of those first outrageous assaults? Why did they not heed Italian radio warnings to cast off the "hated British yoke," and "demand the right to live"? I do not know. These are the things of the spirit which are a mystery, and the answer is symbolized by the George Cross, shared by every man, woman, and child in Malta today (page 376).

There were eight raids that eleventh day of June two years ago. There were 50 during the month. Alerts have averaged 103 a month ever since—between three and four every day, year in, year out.

Since January, 1941, when the Italians called in the Germans to help them, the alerts have averaged 261 a month—between eight and nine a day. The record was 17 in one day. The longest continuous raid lasted 13½ hours, and out of one day and night 21 hours were passed under alerts.

In the first shock of the 1940 onslaught the Maltese dived for shelter into forgotten tombs and tunnels and catacombs, old dry wells—anything that would put solid rock between them and the bombs. But there were not enough such shelters to harbor more than a fraction of the population. They started to burrow into the soft limestone of the ramps and fortified ditches.

Born miners and quarrymen, even the children armed themselves with little picks and chipped alongside fathers and brothers. These practical people love life and they had no intention of dying if, by digging themselves in, they could go on living (pages 381, 386, 390, 391).

Before the German dive bombers appeared in the Mediterranean in January, 1941, the Italians had succeeded in killing and wounding about 200 Maltese and destroying 350 houses. The Germans killed half as many again and demolished 2,000 homes in the next four and a half months.

The Russian offensive then claimed the German flyers, and the Italians were left to get on with their war by themselves. Doing their best for nearly seven months, they wrecked 300 dwellings and killed nearly a hundred civilians.

Back came the Germans. Between December 21, 1941, and early May, 1942, in about five months they killed more than 800 and injured nearly a thousand Maltese. They reduced to heaps of rubble 4,000 buildings.

The Maltese Hate German Cruelty—Deride Italians

The Maltese hate the Germans for their ruthless cruelty. They have a contempt for the Italians. To the Maltese, Italian bombers are *maccu* (small fry netted and eaten grilled like whitebait). It is considered a disgrace to be killed by such derided foes.

For centuries one of the charms of Valletta and Fort St. Angelo was their likeness to picture-book fortresses. The intricacies of strongholds built by Grand Master Jean Parisot de la Valette reared about the Grand Harbour a bewilderment of bastions and ramparts with little loopholed watchtowers projecting at all angles, and moats spanned by airy bridges (page 381).

Sloping approaches tunneled under dim archways into the streets of Valletta, and here the Order of the Knights of St. John of Jerusalem, which came to Malta in 1530, built their churches, palaces, and *auberges* (inns), with pillared doorways surmounted by pomp and heraldry graven in the stone.†

* By January 9, 1943, the grand total had risen to 3,176 alerts; 1,192 actual raids.—Editor.

† See, in the National Geographic Magazine, "Malta: The Halting Place of Nations," by William Arthur Griffiths, May, 1920; "Maltese Islands: Cicero's Land of 'Honey and Roses,' and Stronghold of the Knights, Again Is Focus of Naval Strategy," by Sir Harry Luke, November, 1935; and "Wanderers Awheel in Malta," by Richard Walter, August, 1940.

British Information Services

To the People of Malta, Heroes All, Is Awarded the George Cross

Two islanders smile happily as they read the King's citation of all Malta's 270,000 people "to bear witness to a heroism and devotion that will long be famous in history." Never before has a whole people received such an award for gallant endurance and heroism from a British king.

Each Langue, or nationality, had its auberge—Provence, Auvergne, France, Castile, Italy, Aragon, Germany, and Bavaria—each its separate chapel in the Cathedral of St. John. The Grand Master lived apart in his own palace.

The narrow streets dived steeply to the moats with glimpses of the Mediterranean beyond, like panels of lapis lazuli; or the steepest of them went hop, skip, and jump in a series of broad steps. On either side, the three-storied houses drowsed honey-colored in the sunlight.

It was all built of the soft limestone of the island, blocks that harden as they weather; there was very little wood in their construction.

The Germans poured bombs on all this historic loveliness as a coal heaver tips sacks of coal into a cellar.

Church after church, auberge after auberge, street after street, were blasted into a heap of crumbling rubble. The narrow thoroughfares were choked with masonry (pages 379 and 387). The Palace went—and the Opera House, the Law Courts, and the Library. The burial place of the Knights was a shell heaped with débris.

In the lovely Cathedral of St. John, with its rich gilded stucco, Mattia Preti's miracle of a ceiling, and the floor paved with the marble escutcheons of the nobility of Europe, Mass was in progress during one of the worst raids. Neither priest nor worshipers faltered in their devotions, although the blast of bursting bombs swayed them where they knelt.

British Information Services

Under Historic Guns Heroic Defenders of Malta Are Decorated

Viscount Gort, Governor and Commander in Chief, pins the Military Medal on Bombardier G. Howarth of the Royal Artillery for "exemplary coolness and courage under heavy bombing." Many others, including members of the Royal Malta Artillery, received medals and decorations for gallantry at this public investiture.

Drawn by H. E. Raeywood

The "Island Fortress of Malta" Has Deep Harbors, Hidden Airports, and Refuge Tunnels

A quick glance at the Map of Africa supplement with the February, 1943, NATIONAL GEOGRAPHIC MAGAZINE shows how lonely Malta, surrounded by enemies, is a British key to the Mediterranean. Ever since Mussolini's "stab in the back" on June 10, 1940, Malta has been a thorn in the side of the Axis and a United Nations' base for bombing Italy and Sicily, and now Tunisia.

One bomb that exploded outside the chapel of the Langue of Germany penetrated the wall and smashed its altar to powder.

Spirit Unbroken, the Maltese Live Underground

The inhabitants, whose spirit all this savagery is intended to break, live in tunnels hewn both by themselves and by the hands of forgotten slaves.

Many have lost all they possessed; some have salvaged a few possessions. Families who had menfolk able to swing a pick quarried into the sides of the tunnels and dug out tiny square chambers where they made their homes.

I was taken vertically downward by narrow circular steps for 60 feet into the pitch darkness of one of the slave-cut tunnels in which the electric power had been cut off. It was during a lull between raids, and most of the occupants had snatched the opportunity to collect their ration of bread.

My guide and I groped our way toward a glimmer of light where a girl stood in the doorway of one of the chambers. By the glow of a little lamp made out of a pepper tin with a cotton wick she showed us her home and its equipment—a deck chair, a tiny shrine, an alcove in the rock for a cooking stove, a wooden box containing some tin utensils (page 390).

Eight people lived in the chamber, which contained all they possessed. During the night they took turns in the deck chair, two hours each. The mother gave up her two hours to the eldest son because he had to work the hardest. She passed the night sitting on the box. She was away just then, standing in a queue among the rubble waiting for the week's ration of paraffin.

The girl, a dark, slim creature in her teens,

British Information Services

A Maltese Family Builds a New Shelter from Blocks of Fallen Homes

More than 18,000 houses, churches, and schools have been either blasted to bits or damaged in the mass raids. Senglea, one of the "Three Cities" (Vittoriosa, Cospicua, and Senglea) lying on the opposite side of Grand Harbour from Valletta, is one of the most blitzed spots on the island (pages 387, 392).

offered to lend us her little lamp to explore the tunnel. Smiling bravely, she said she was used to sitting in the dark and did not mind it. The tunnel, one of scores, was about half a mile long, and there were these little chambers all the way along it and the others —thousands of homes of the homeless.

In more spacious shelters there are bunks in tiers, and life is more communal (page 388). Outside, drying clothing flaps in the wind, and canaries sing in cages against the rock. The center of the family is the bunk, and the cooking is done on stoves near by. There is a wireless and the refugees gossip endlessly. Some rarely leave the shelter.

Prayer Is the Island Solace

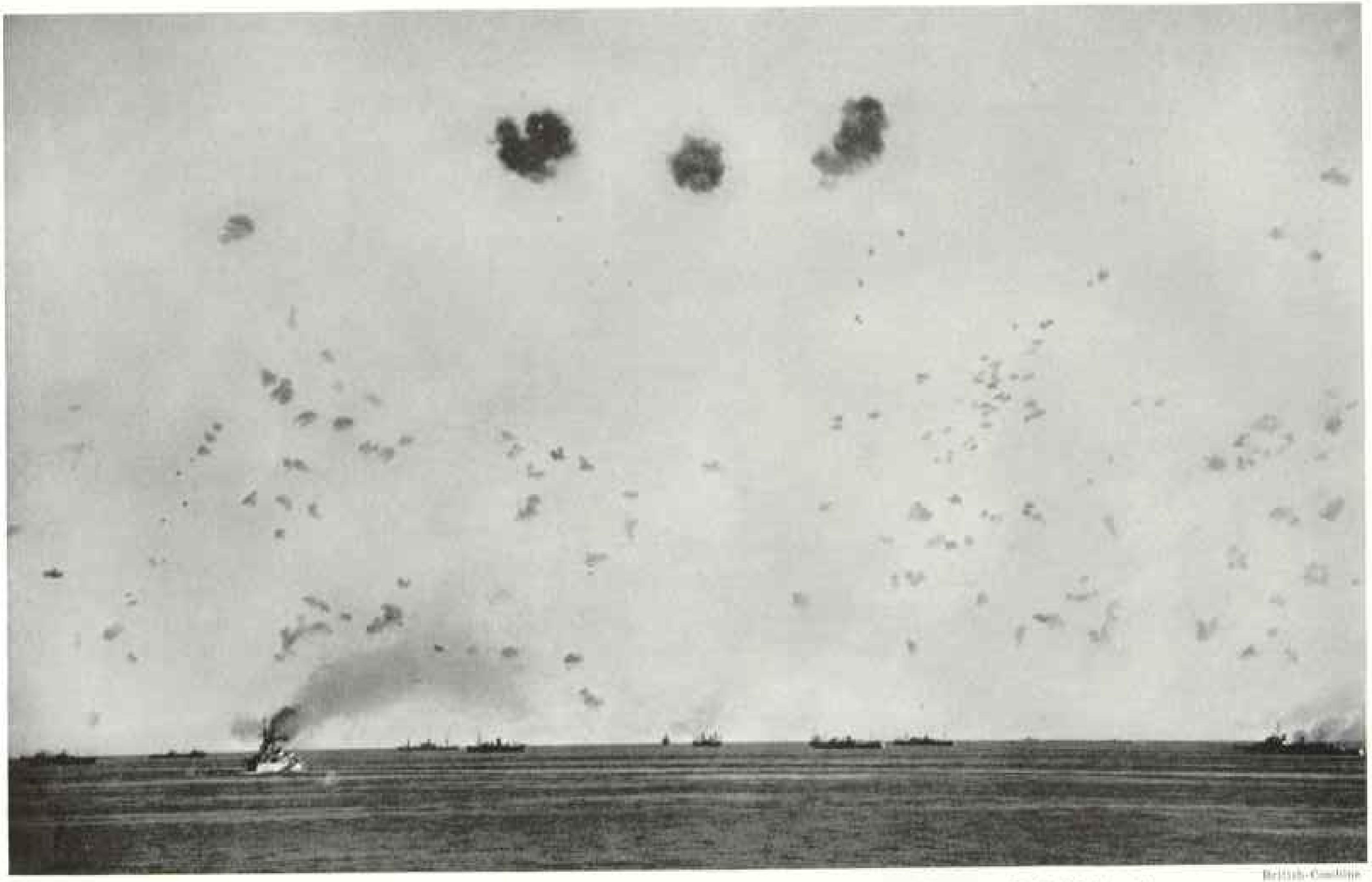
I asked one of the women what she did all day when she was not cooking or washing clothes.

"Me, I sing all de day," she said.

There are no amusements, no canteens, no children's nurse, no books. But in every shelter is a little chapel with a lamp before it and a picture of Our Lady, candles on the altar, a bunch of flowers, paper Victory emblems pasted on the wall, the portrait perhaps of a fighter-pilot cut from the local paper.

Here during the raids, the people pray. If there is a priest available, he recites the office; if not, one of the shelterers intones the Rosary. They pray not for themselves but for the men at the guns, the pilots of the Spitfires, the crews of the convoys battling to reach them.

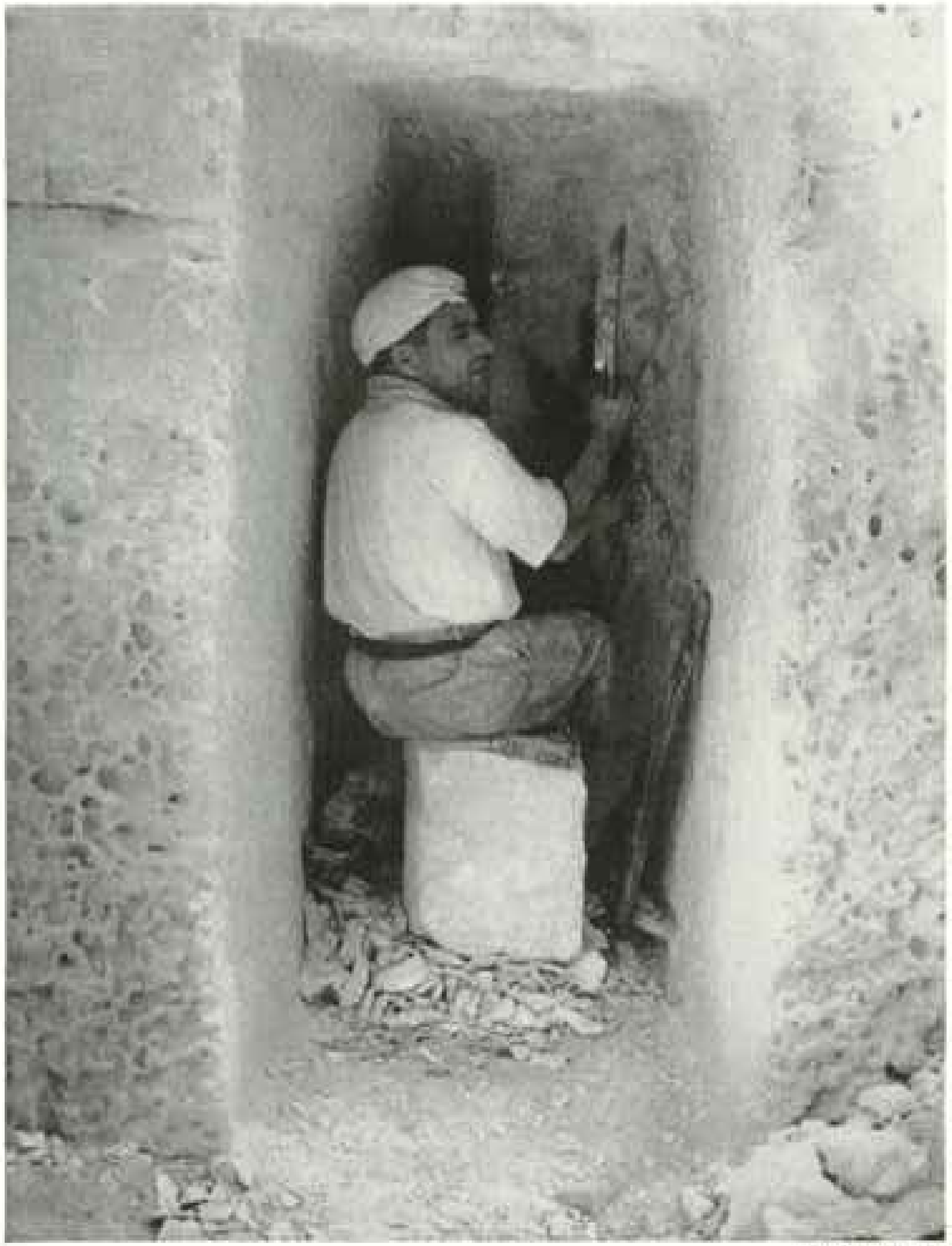
The blast of the bombs sweeps through the shelter, and the choking white dust veils everything. Women lay wet handkerchiefs over their babies' faces so they may breathe. The roar of the barrage, the concussion of bursting bombs, and crash of falling masonry drown the tinkle of the altar bell and the



British Combine

Allied Airplanes Operating from New North African Bases Now Give Air Cover to Such Malta Convoys

For the first time in nearly two years, late last November a convoy sailed into battered Valletta without having fired a shot or having seen a hostile airplane. But here the sky is filled with black puffs of bursting shells as warships and merchantmen "shoot it out" with the Axis in August, 1942. While passing through the "bottleneck" of the Mediterranean, southwest of Sicily, the ships were continually pounded, but the convoy got through.



British Combine

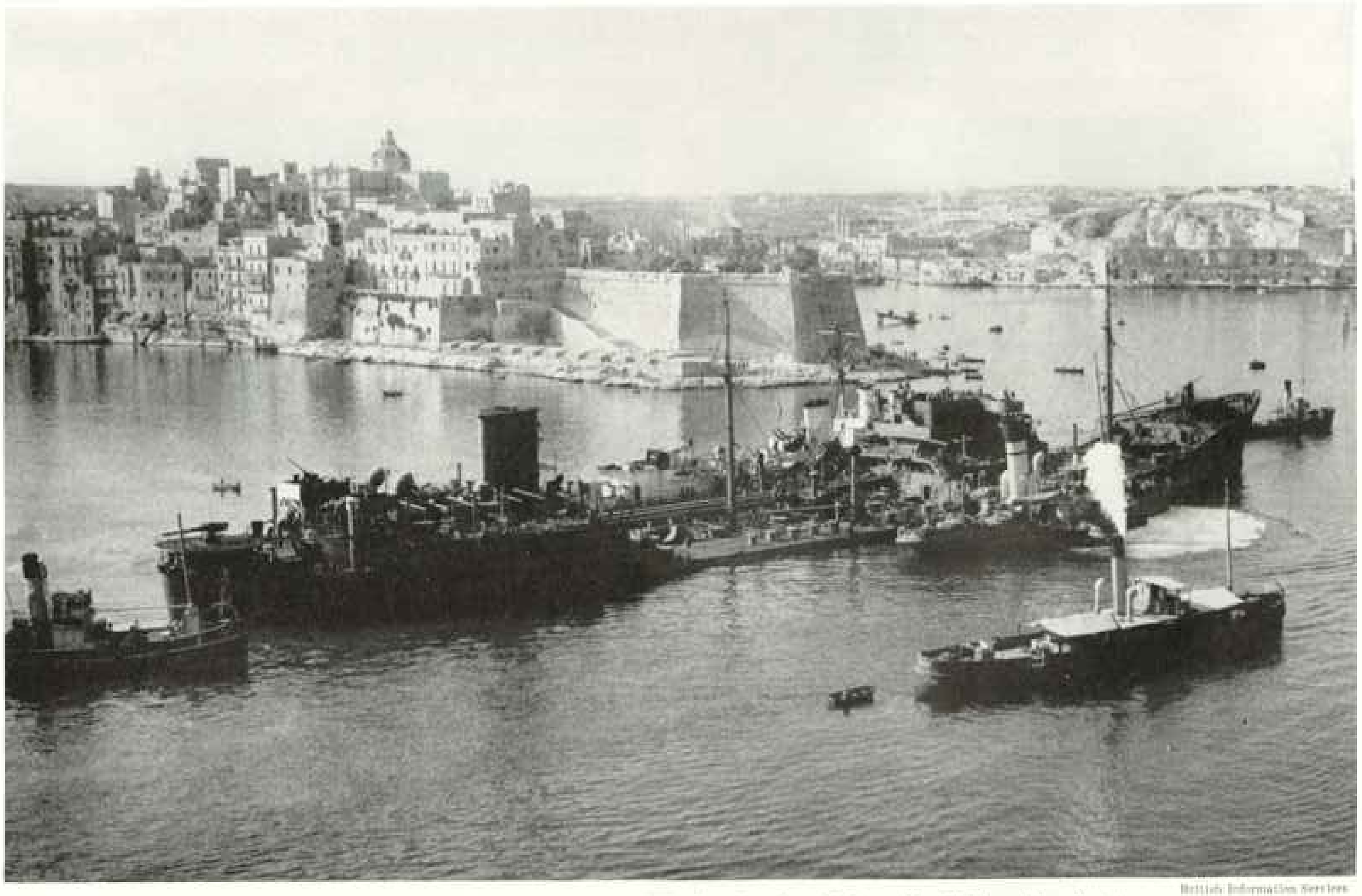
Deep in Malta's Limestone He Hews a New Home

In a month, working by himself, he can cut the entrance tunnel and a family living room, safe from enemy bombs. The limestone is soft enough to cut easily, but hardens upon exposure to the air (page 386).

Paul from Three Lions

La Valette (Vallette) Defended Malta Centuries Ago

Master of the Maltese Order, he organized island defenses against the Turks in 1565. With 600 Knights and a few thousand islanders, he held off the invaders for several months during the Great Siege. Valletta is named after him.



British Information Services

Half Sunk but Still Carrying On, a Battered Tanker Reaches Malta with Lifeblood for Spitfires

Despite desperate attempts by the Axis to prevent supplies from reaching the island, convoys have gone through continually. Many supply vessels and escorting ships were lost, but the enemy paid a heavy price in planes and warships in vain attempts to starve out "the most bombed spot in the world."

British Information Services

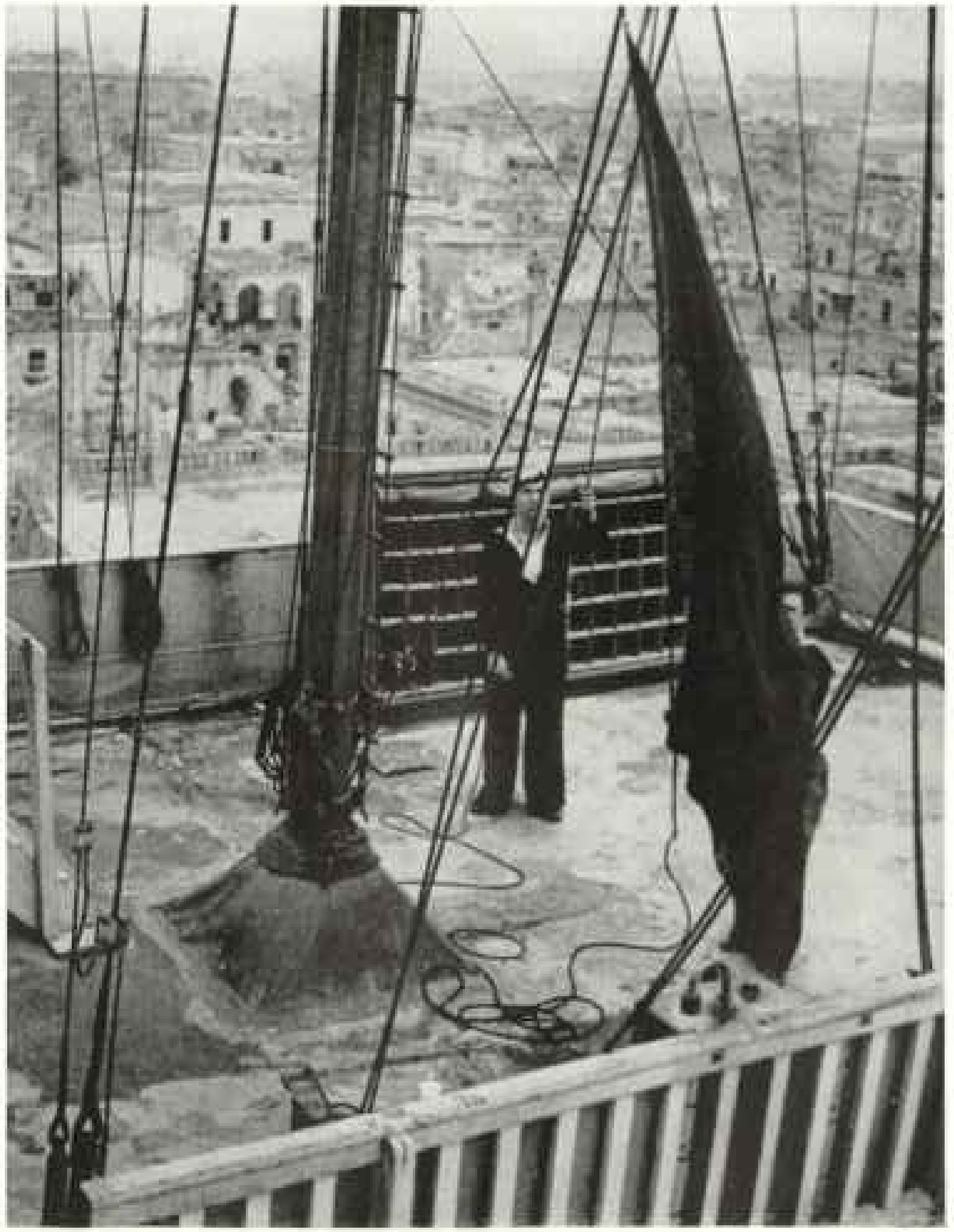
Maltese Gather before an Air-raid Shelter as Sirens Sound and the Red Flags Go Up

Valletta's streets look more like rock quarries than thoroughfares. The author describes the avalanches of stone that cascaded down steep streets to the harbor's edge after massed bombings (page 393). While Royal Engineers and local workers pile rocks out of the way, families search ruins for personal possessions.

British Information Services

Maltese Youngsters Carry Precious Water to Their Homes

Without rivers, Malta gets its water supply from collected rainfall. Air raids have destroyed or damaged many reservoirs and polluted the water. Children here seem to have lost their fear of bombs; some even take charge of hoisting the warning flags.



Acme

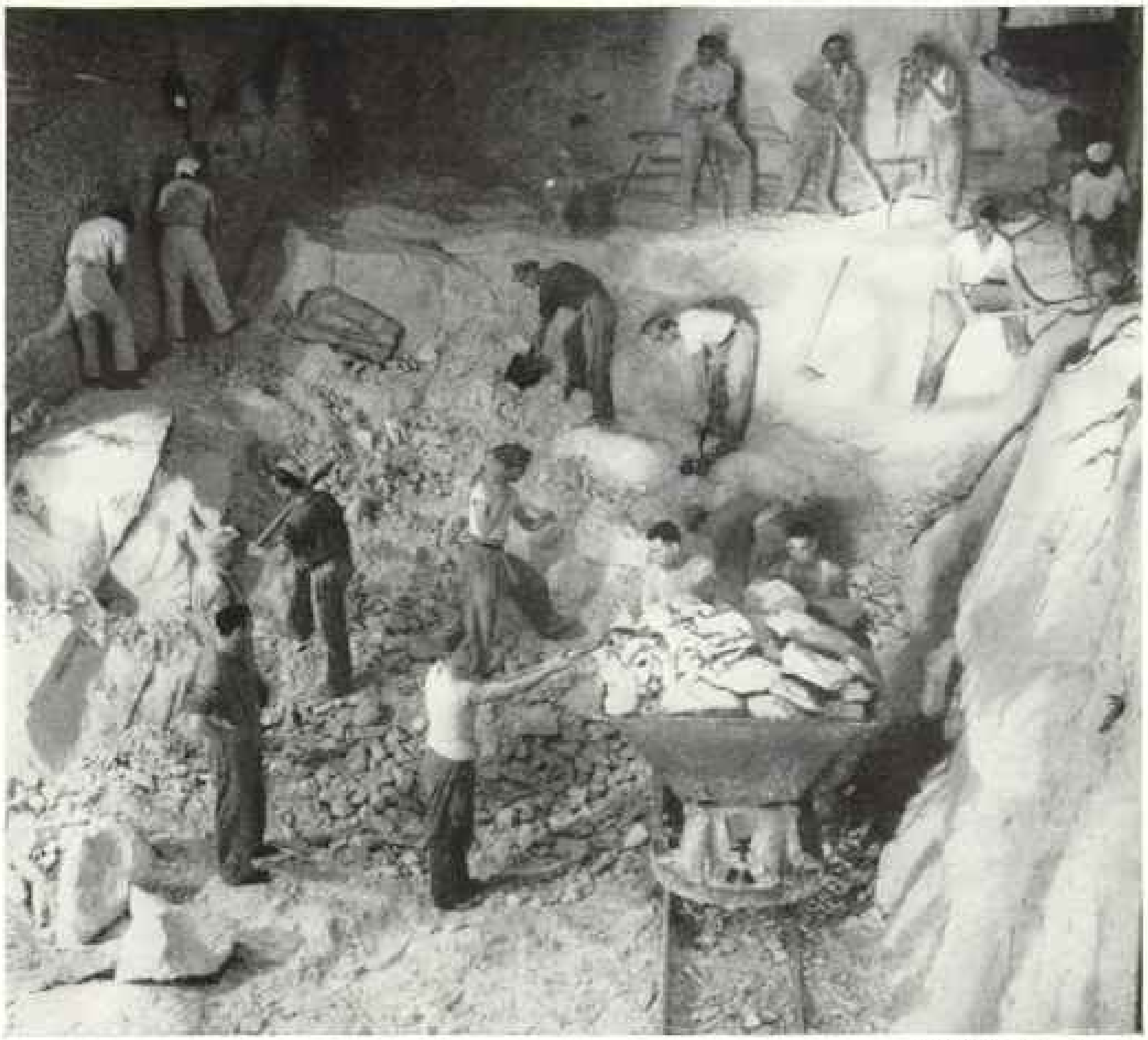
The Red Flag Goes Up, Bombers Are on the Way

A yellow flag is a caution alert, but red ones and the wail of sirens announce that raiders are near (page 386). This British outpost has had more than 3,000 alerts, to date. Malta has staunchly met them all with a withering barrage of "ack-ack" fire and a screen of R. A. F. fighters.

British Information Services

Instead of Patronizing Goat Milkmen, These Young Maltese Line Up for Pasteurized Milk at a Mobile Canteen

Normally goats, not cows, are the principal source of milk in the Maltese Islands, where pasturage for cattle is limited. Herds are driven from door to door and milked on demand of the housewife. Sometimes goats and cows acquire an infection which transmits to humans through milk a dread disease known as Malta, or undulant, fever.



British Information Services

Once They Mined Black Diamonds; Now They Dig Malta Limestone

Many of these Royal Engineer tunnelers worked in British coal mines before war came. Here they cut out shelters, supply chambers, and passageways. One company quarried 70 tons of rock in a day. Without its elaborate system of bombproof shelters Malta would be untenable (page 375).

murmur of voices that pray on unwaveringly.

Two years of this, off and on, these people have endured—five months of it almost continuously, night and day.

Between raids children are everywhere in the ruined streets, where the débris is piled in neat stacks to leave pathways down the center. They play about the bastions and the mouths of the shelters, in the doorways of such houses as remain, and among the ruins of such as do not. They have no toys; but neither have they any fears (page 384). They have been dispossessed of both by two years of bombing.

They ignore the wail of the siren which is the general warning to the island of an impending raid. But at the near approach of hostile aircraft a signal flies from a vantage point in Valletta to warn the harbor. Immediately duplicates of the warning flag are hoisted on little staffs which fly the Union Jack above the rubble heaps all over the town.

These unofficial signal stations are manned by little boys. When the red flag goes up, everybody except the little boys goes to earth. They stay by their posts.

Finding two crouching beside their mast during a raid, I urged them to take cover, but they refused, scornfully:

"It is for the community we stay here," explained the smaller of the two.

Children Go Out to Play between Raids

However small, the children of Malta seem to have lost not only the child's natural dread of violent noise and of the dark, but also the

British Information Services

Out of the Rubble, Men Rise to Fight

Ancient buildings of lovely architecture have been shattered to bits, such as this portion of Victory Street in Senglea. But Malta's people stand undaunted. Of all the bombed towns on the island, Senglea has been hardest hit (pages 379, 392).

fear of violence. The roar of batteries and bursting bombs upsets them no more than the bellowing of a cow does a farm-bred child.

In all the weeks I was in Malta I never saw a child cry. The all-clear brings them capering out of the shelters, cheering shrilly in the sunlight and the blue sky.

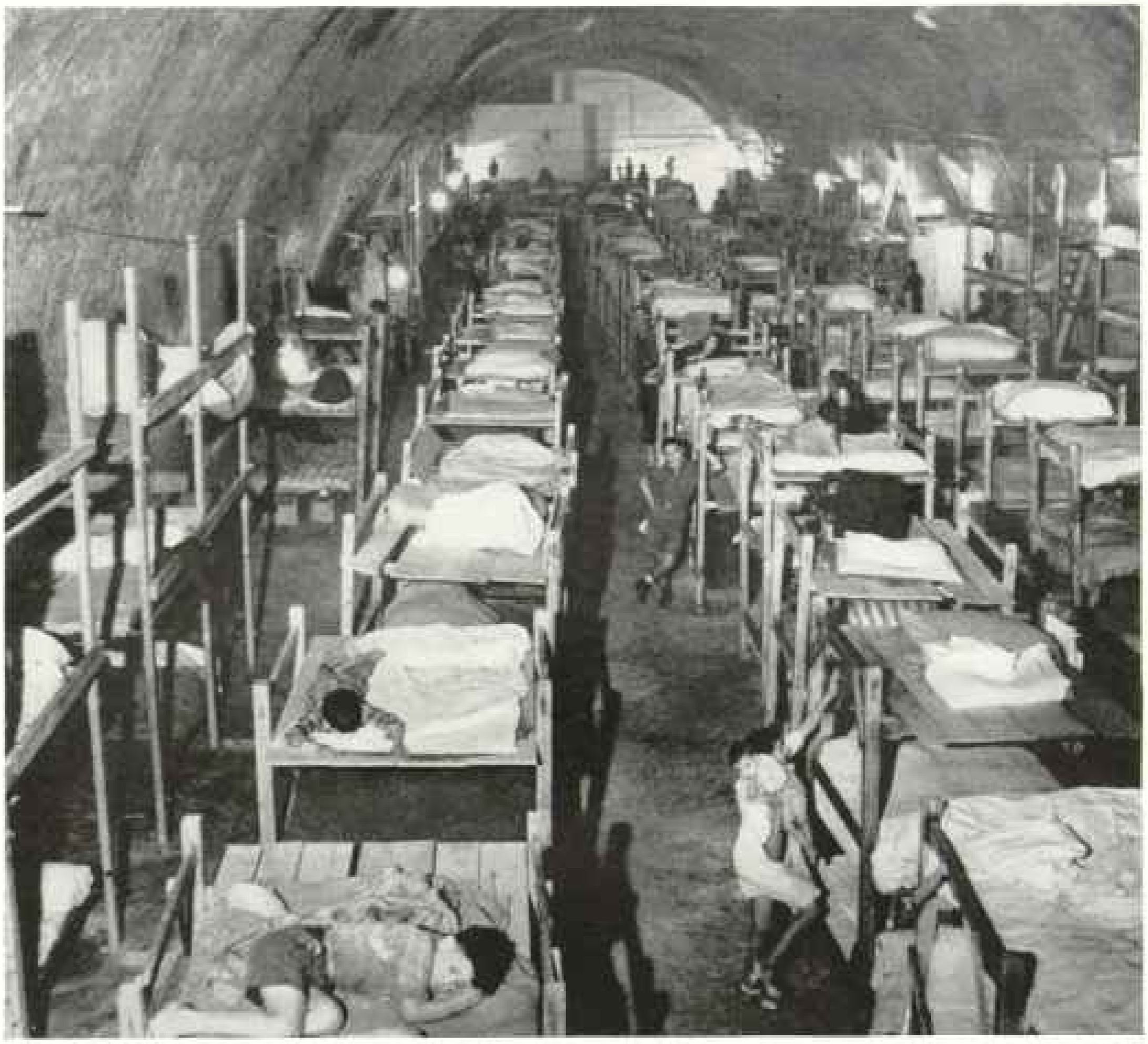
From the parapet of the road that runs across the top of the King's Gate (Porta Reale) I was looking down one rare, quiet day on the traffic in the main street, when I received a violent blow from behind. The object which hit me turned out to be a small handcart "borrowed" by a hazel-eyed nine-year-old lady in a faded pink-cotton frock to take her family for a ride. She had lost control of the vehicle.

At the moment of my mishap, the boy owner of the cart appeared, breathless and indignant, and began to beat the lady. I rescued her from probably well-merited chastisement and transferred the family, three tiny boys and a baby girl, to the top of the parapet.

They taught me such Maltese as seemed to them to matter, and one of the little boys showed me an aching tooth which was also something of a preoccupation.

"Are you married?" asked the lady in the cotton frock, and "Are you Catholic?"

I said untruthfully that I was both, and thus pleased her so that she exhibited me to passers-by with shrill proprietary cries. We were joined by a friend of hers, I judged about the same age, who was carrying home the family rations for the day.



Arms

Ancient Underground Galleries Become Dormitories and Living Quarters

Many such tunnels honeycomb the rock of historic Malta. Not all shelters are equipped with double- and triple-decker beds. One group of catacombs and passageways was closed some years ago when a number of school children became lost in them. Now Malta puts its tunnels to good use.

The newcomer laid the small loaves on the parapet. There were five in her family. She indicated with a practiced forefinger the share of each in the loaf. It was little enough. The other family craned their heads hungrily, like a row of fledgling jackdaws.

Then the siren wailed, and the loaves were swept back into the bag. The four-year-old boy shrilled a warning in Maltese, pointing to the nearest red flag. The lady with the hazel eyes snatched the baby to her skinny ribs while I swung the others to the ground.

A Night in a Shelter

"*Sahha*," they bade me goodbye in soft unison and trotted off, hand in hand, to their accustomed shelter.

That night I went down a steep defile between piles of débris and ruined houses to visit a shelter. Moonlight silvered the heaped cubes of limestone, and the rest was profound shadow.

An old man was cooking something in a tin on embers between two stones. The wood, perhaps Lebanon cedar from a shattered palace, smoldered with a scentlike incense. Near by in the darkness sat an old woman, a shadow in the shadows: her attitude was one of patient acceptance of all things inevitable, the inexhaustible patience of the aged poor.

The shelter was a tunnel that descended in a series of wide steps to unknown depths. Tiers of bunks ranged along the walls, and halfway down candles burned upon an altar. Upon the steps and on the bunks were clustered hundreds of people in little family

British Information Services

Imperturbable Queen Victoria Looks upon a Scene of Desolation in Valletta

Curiously, the statue itself has escaped damage despite the shattered structures all about. Hardly a building in Valletta and other towns around Grand Harbour has escaped damage or demolition. Because most houses are built of limestone blocks, fires are less feared here than in other bombed cities.

groups, men and women of all ages, and many children. Two or three paraffin lamps hanging from the roof at intervals and the candles on the altar gave all the illumination.

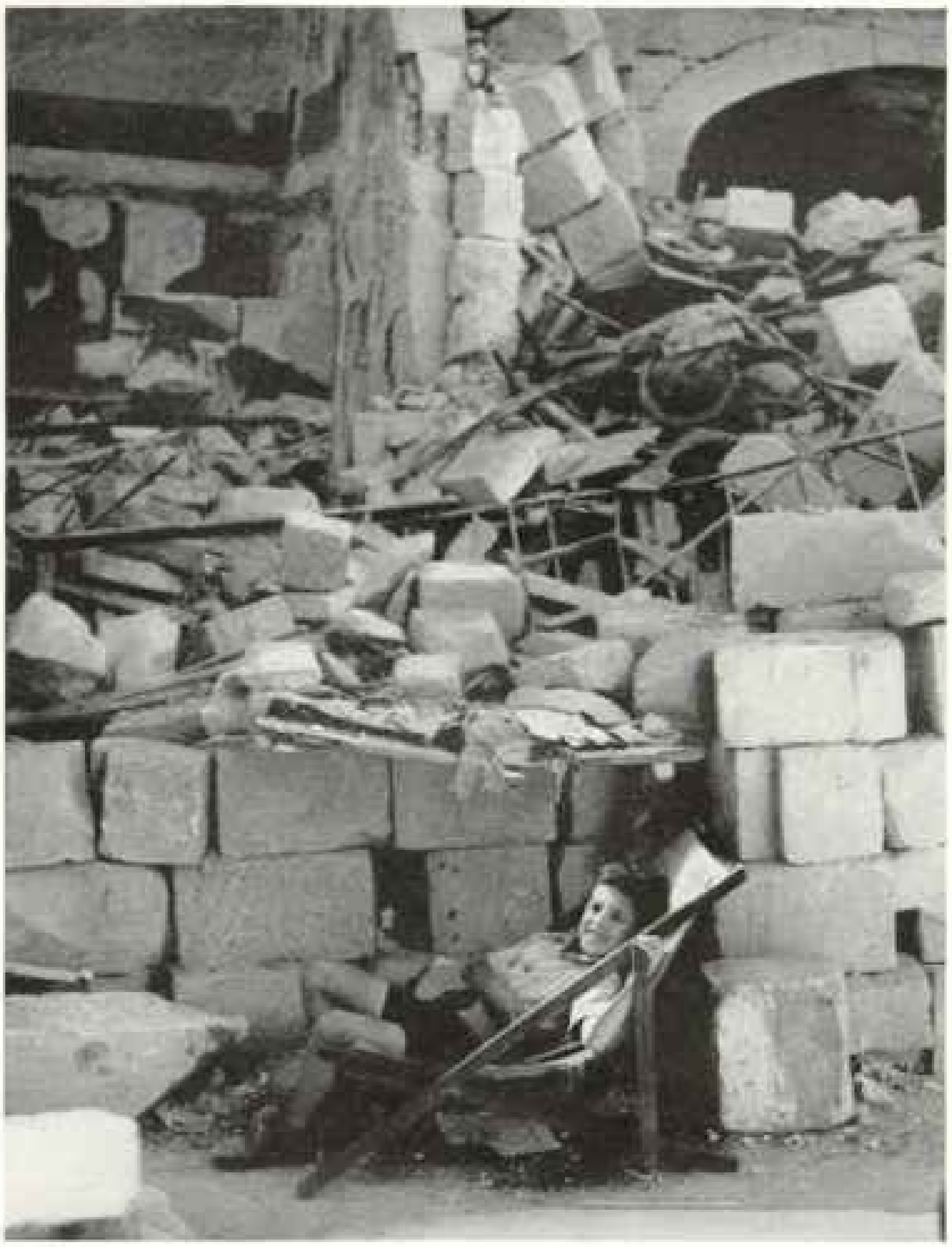
Forty or fifty of the children sat around the altar on the bare stone steps. A girl of about twelve appeared out of the shadows and, facing the altar with folded hands, began to recite the Rosary. Her shrill nasal voice penetrated to the farthest confines of the shelter. At each period the children intoned the response; not only from around the altar but from every quarter came the burst of treble cadence.

The motionless adults sat listening, the lamplight just touching perhaps a profile that might have been classic Greek, or a pair of dark, brooding eyes, or worn hands clasped on a threadbare lap. Here was a vast canvas of Rembrandtesque impressions stretching into the darkness.

On and on went the children's voices in measured rhythm, varying slightly at the tinkle of a bell rung by the little priestess. As I watched the shadowed faces, I became aware of a slightly hypnotic influence.

An old man rose and stood before the altar, knee-deep in children, clasping his cap before him, contemplating the Mysteries. As if at a great distance, I could hear the hard staccato bursts of gunfire.

The child prayed on, her jet-black eyes, the only part of her that moved, wandering over her congregation. Back came the shrill responses, back and back again, flowing like a broken river, soothing, unquestioning.



British Information Services

No Haven, But Still Home!

Just a deck chair and rubble remain. The author visited one family living in an ancient slave-cut tunnel, whose only bed was a deck chair. All took two-hour turns sleeping on it at night except the mother. She gave up her time to the eldest son, whose work was hardest (page 378).

Two girls unrolled a blanket on the stone beside me and lay down to sleep. The gunfire died away. A tiny girl of about three, suddenly surfeited with *Ayes*, set off alone up a high ladder to the third tier of bunks, reached it unaided, and curled up like a tired kitten to sleep.

The Corn and the Vine

The children's voices stopped; the priestess replaced the bell on the altar and stepped back, smoothing her threadbare frock. There was a shuffling of little rumps on the hard cold stone and a clearing of throats. Then in English they sang a children's hymn, and outside in the moonlight, as they finished, the all-clear sounded.

Outside the towns every inch of soil in Malta is producing food. Trees are few, and the precious fields of arable earth are enclosed by neat stone walls, which also border the roads. Buttressed with stone, the hillsides are terraced. The green-splashed landscape of scattered farms and whitewashed chapels reminded me of the stonier parts of Galway (page 391).

A Maltese architect friend drove me around the country and took me to see two churches, built by the local villagers with their own hands in their spare time. That of Musta has the third largest dome in the world. The other is a more modest affair, but I judged the village to muster not more than a couple of thousand inhabitants of all ages.

An Italian bomb had penetrated the dome of one of these churches, struck the marble floor, and bounced about like a football till it came to rest without exploding. Headed by the priest, the defiant villagers had removed the bomb. I asked its weight, and my companion said it was a thousand-pounder. An old man interrupted his devotions to correct this figure to a thousand and twelve pounds.

The architect took me a long way across the country to see where another bomb had struck. It was a sunny sheltered valley of red earth where the fields were wider, bordered by pomegranate trees, oranges, figs, and peaches, with clumps of bananas and a couple of date palms, potatoes, cabbages, and vines covering the ground, each with its own shade of green.

The farmhouse that had contemplated this valley for centuries had been hit and demolished. The farmer's name was José of the Bees. Only two of his family had been killed,

European

Homes Blasted, They Live in Rock-hewn Shelters; But They Smile!

These limestone refuges are cold and damp, but they make effective bomb-proofs. Malta defenders, with fighters and antiaircraft, have shot down more than 1,000 enemy planes.

British Information Services

Between Bombings, Maltese Farm Folk Plant, Hoe, and Harvest

People such as this farmer and his two daughters have carried on gallantly to raise as much food as possible on the arid soil. Soldiers and sailors, too, lend a helping hand in garnering Malta's bumper harvest.

British Information Services

Bombs Blast a Senglea Church, but the Crucifix Remains Untouched

This rubble-strewn oratory is all that stands of a historic structure erected by the Knights of Malta. With most of its churches destroyed, religious Malta holds services in air-raid shelters (page 379).

a little girl, one of his daughters, and his old father.

The child had been killed outright, but the 85-year-old father had lingered for a few days, then crept away quietly, as one of his own beasts would have done, and died without being a trouble to anybody. He had never revealed the terrible injury he had suffered.

The rest of the family retreated up the hillside where in a labyrinth of ancient rock tombs the inhabitants of the neighboring farms have made their homes secure from falling bombs. Some of the tombs have been enlarged with picks to house livestock, and in one I found a cow and a mule accepting Stygian darkness as part of the strange new order of things.

The Dead Cities

José of the Bees took us to his cavern home where the family had collected such few belongings as the blast spared. Since it was noon and we were guests, they broke bread and gave it to us.

Valletta stands on the right of the Grand Harbour as one enters it. On the left are two promontories separated by a creek where the galleys used to berth and the dockyard now lies. On the first point stands Fort St. Angelo with the city of Vittoriosa behind it; on the second is Fort St. Michael with Senglea piled up in its rear; on the high ground at the head of the creek, linking them, is Cospicua.

At the beginning of the war the Government prepared an evacuation scheme for the inhabitants and allocated them to safer areas. The Maltese are a conservative and independent people. They contemplated the addresses to which they were destined by parental authority and they gibed to a man—or probably more correctly—to a woman. The scheme collapsed.

However, in June, 1940, when the bomb-

British Information Services

Maltese Bring Up Grain Stored before the War in Underground Granaries

Compare this wartime photograph of Floriana's central square with a similar picture published on page 268 in the article "Wanderers Awheel in Malta," in the NATIONAL GEOGRAPHIC MAGAZINE for August, 1940. Though the stone-paved park is shattered in places and the Cathedral of St. Josiah has lost its roof, hoarded grain is intact. More than 100 churches, schools, and hospitals have been wrecked by bombs on the island.

ers appeared, the inhabitants of the Three Cities decided things were getting too hot, and proceeded to evacuate themselves. They did it in a perfectly orderly manner in 48 hours without any panic, twenty-odd thousand of them; they provided their own transport and went to live with relatives in the country, some in cabs, some in carts, some on foot wheeling their possessions.

When the ferocity of the assault dwindled, some of them filtered back, driven by love of their homes and by overcrowding in the tiny country cottages. Then at the beginning of 1942 came a savagery of bombing beside which the previous ones were "nuisance" raids. Again they left their homes, this time forever, because they no longer have homes to return to. The place is, as a young aircraftsman said on the morning of my arrival in Malta, a shambles.

It is difficult to describe the precise effect of mass bombing over many months on cities built of square blocks of limestone and little else. Down the precipitous streets have poured the ruins of houses in avalanches of white stone to the edge of the harbor. These streets now resemble glaciers, bordered by the walls and shells of shattered homes.

I landed at Senglea from one of the few *dghaisas* left—those gondolalike boats which once plied in hundreds about the Grand Harbour—and reached the main street. The whole place appeared completely uninhabited. Not a cat or a dog stirred. Nothing was to be seen but white ruins in a blinding sunlight and, halfway up the street, a statue of the Madonna, unharmed.

Tranquil stillness, like that of the dead, brooded over the place; yet the devastation everywhere lacked the squalid desolation one has learned to associate with bombed areas. There were no traces of fire, no charred wood-

British Information Services

The Army Helps Groom R.A.F. Spitfires for the Next Round

Everyone lends a hand in refueling and reloading operations on a Malta airdrome, for at any moment German or Italian planes may be overhead. When raids began in June, 1940, Malta had only three Gloster-Gladiators, the now famous "Faith," "Hope," and "Charity," which fought daily against heavy odds.

work or twisted skeletons of metal, no flapping wallpaper, no débris of personal belongings —nothing but heaped cubes of limestone and cracked walls, doorless and windowless, and powdered rubble, all dazzling white in the afternoon glare (pages 379, 387).

Parish Priest Carries On amid Ruins

Suddenly in the midst of that silent devastation, an almost startling figure in his black cassock, the parish priest came walking toward me.

He took me to the ruins of his historic church, Our Lady of Victory, which La Valette built to commemorate the defeat of the Turks in 1565. He showed me where among the piled masonry he had made a little chapel in which he said Mass for the few hundreds who still clung to the place, living in caves and tunnels under the old fortifications at the water's edge (page 392).

Cospicua is just a repetition of Senglea. Vittoriosa, the oldest of the Three Cities, is surrounded by a wide ditch, on either side of which the fortifications soar upwards for 60 feet to break the skyline with battlements and towers.

In the sides of this canyon, which in prewar days was a public garden, are the cave dwellings of such of the inhabitants of Vittoriosa as remain. The people are somewhat darker than the type one sees across the harbor in Valletta, and many of the children are lovely, with a cameo perfection of feature.

British Information Services

Into a Beaufort's Belly Goes a Souvenir for the Italian Fleet

Soldiers, sailors, and airmen work together loading the torpedo. Such deadly presents and the expert gunnery of the Royal Navy have taught the Italian Fleet to be shy. The United States carrier *Wasp* ferried desperately needed Spitfires to Malta a few months before she was sunk in the Solomon Islands, September 15, 1942.

From a bridge spanning the moat little boys were dropping parachute mines, made of paper and thread and a stone, on the heads of their elders and betters, who sat about the entrances to their caves, gossiping, cooking, and washing clothes.

The town far above behind the battlements was the same desolation of ruin as Senglea. By a singular freak of chance the only building untouched by bombs is the Palace of the Grand Inquisitor. It towers in the midst of ruin, with its barred windows and high, dark walls, like something dedicated to nameless evil that cannot die.

Malta is said to stand on four legs; the Civil Administration, the Navy, the Army, and the Royal Air Force.

On the declaration of war by Italy, Malta became a besieged fortress and has been one ever since. Its defense was the affair of the fighting services, which include the Royal Malta Artillery, the King's Own Malta Regiment, and the Home Guard. But the Civil Administration was confronted with the problem of feeding and maintaining the 270,000 inhabitants under siege conditions, probably the greatest civil commitment an island has ever had to undertake in war.

Women and Children Prove Malta's Strength

The usual reaction of a military commander faced by siege conditions is to get rid of the women and children. But in the case of

British Information Services

Troops Step Ashore, More Food Comes—Malta Gets Renewed Aid

Malta this was out of the question; there was nowhere for the refugees to go. As things turned out, it is to the women of Malta that the island owes much of the stoical endurance and the grim courage which are carrying it through an ordeal that has no parallel in past history.

At the time of writing, nearly 5,000 houses have simply ceased to exist, a similar number are ruins awaiting demolition, a like number are unfit for habitation until repaired, 13,000 are damaged by blast.

When all this is translated into terms of human suffering among an unprepared population largely of the laborer, artisan, and peasant class, it can be realized what the devoted men and women of the Passive Defense and Welfare Organizations have been confronted with.

A Dispassionate Account of Tragedy

The head of the organizations happens to be an Englishman; with the exception of two instructors, all his helpers are Maltese. As nearly as I can recall his words, this is the story he told in his little bare office, with the map of Malta filling all the wall behind him:

"We started this show on June 1, 1940. Before that there was a Reserve—just the rudiments of first aid. . . . They had no uniform and they didn't know the men who would be their comrades in the centers to which they were posted. They came from all classes of the population. Some are shopkeepers, business men; some are just illiterate peasants. The island is divided up into ten districts, a 'superintendent' in charge of each; six of them are old Scouts.

"On the night of June 11, 1940, we had our first taste of what was coming. D'you want horrors? No. Well, they bombed a densely populated district. You've seen it? We had our center in a school that got a direct hit—everything blown to smithereens.

"The superintendent and the doctor managed to salvage some medical stores and rigged a dressing station in a lorry. All night they worked there, the wounded coming along

Publishers' Photo Service

Valletta Boatmen Cross Their Long Oars to Get Added Leverage

Maltese tell a story about one of these boatmen who rowed calmly about the harbor during a heavy raid. He was following the paths of bomb geysers in the water and gathering fish killed by the explosions!

With World from Press Association

Amid the Ruins of a Newly Bombed House, a Priest Joins the Search for Survivors

The author met a parish priest who had walked calmly through the streets during the first German raids, to speak encouraging words to his people.

British Information Services

Modern "Knights of Malta" Operate Bell-muzzle Bofors

Coats of sun tan substitute for chain mail and heavy armor on these Scottish gunners! Axis pilots, forced to bail out over Malta, say they have never seen such thick air barrage anywhere.

or being brought by my people in an endless stream. Bombs falling all the time . . . children all broken up . . . What d'you think they ought to *do* to Mussolini——?

"At dawn they established the center in two holes in the city bastion. They operated from there for a week—raids all the time—casualties and refugees pouring in all the time. Getting food through to them was difficult; they just carried on as cheerfully and willingly as if it wasn't in the power of Death to touch them. Flying glass, splinters, débris, falling masonry, uproar, dust . . . they'd never *seen* it before, and you'd think they'd never done anything else in all their lives.

"Same everywhere, all over the island. They looked Death square in the face and they found they weren't afraid. It was all right after that. Trouble was, they were too unafraid. They'd go rushing out to investigate the result of a falling bomb, with others whistling down like hail.

"Here at headquarters when a party is wanted for a special bit of rescue work, it isn't a question of persuading men to go; we have to watch them to see that other squads don't try to get in on it on the quiet.

"It's the same with the women; they are attendants in some of the surgeries—Maltese ladies, calm, efficient, every bit as good as the men.

"You hear a lot about Londoners taking it. Well, the Maltese have had two years of it; and for the last five months there's been practically no letup—raid after raid, day and night . . . I only know I am proud to have worked with them. It gets boring if you go on talking about it. . . ."

I sat for a while in the office of the district commissioner of an area, watching while he worked. Ancient beldames skilled in dialectic arrived prepared to devote the morning to an exhilarating tourney of complaint and argument.

The sense of it, the discussions being conducted in Maltese, was of course lost on me. But as a display of histrionics, despair, invocation to the saints, and impassioned gesticulation on the part of the women, it was a sufficient education.

One of these outbursts, after ten minutes of a whirlwind performance which registered every recognizable human emotion, during which there was scarcely a pause for breath,

ended in the suppliant's drawing her *faldetta* (hood-and-cape combination) about her and being suddenly transformed from a priestess of Hecate into a pleasant old lady. She went away apparently completely satisfied.

The district commissioner lit a cigarette. I begged for enlightenment.

"Oh, she did not want to pay her water rate; that was all."

"So you let her off?"

"No. I told her she'd have to pay it."

"Ack-Ack"

In the hour before sunset Malta is transformed by the soft rose light into an unreality. I rode in this hour between stone walls across a plateau of high ground that commands the harbor, past dusty patches of stubble and ambling goat flocks being driven homeward by girls and old men. It was difficult to associate it with war and siege, but the road brought me to a little town, and, on its outskirts, the headquarters of a battery of the Royal Malta Artillery.

Konstantin J. Koerber

His Gay Plumage Whisks Flies Away

A pheasant-tail feather waves jauntily from his bridle. Gaudy tassels hanging beside his legs are made of horsehair. Brass on the harness is spick-and-span.

I found myself among the men, or rather some of the men, who had defended Malta from the beginning with their guns. They laughed at those early days as men laugh at the memories of childhood. They went on to the 1942 Armageddon when they had 450 enemy bombers and 300 fighters over Malta at one time, and in 18 days they were 170 hours under alerts, and in the harbor area alone the Germans dropped 1,870 tons of bombs.

Roads were so blasted and communication so difficult that they had to resort to sending inter-battery messages by a volunteer who swam the harbor under hailstorms of shrapnel.

They recalled the bravery of the gunpost sentry whose rifle was shattered in his grasp by a bomb splinter. A Gozo farmer lad, he remained at his post, white and shaken but still grasping the stock of his broken rifle, until he was relieved.

Another lad was engulfed by débris, but was still firing his Lewis gun as he disappeared. When dug out, he begged his major's pardon for not having shot down the plane whose bombs buried him.

They told of the glorious 10th of May when the newly arrived Spitfires arose and smote the unsuspecting Boche, and Spitfires and gunners between them disposed of 75 per-cent of the attacking force.

The telephone interrupted the brave talk, and a moment later the sirens wailed over the

island. I went out with the major to an adjoining gun position. I had passed quite close to it on my way there and had not seen it, so well was it camouflaged.

The men in the gunpit were around the gun, whose barrel suggested a black pencil poised against the stars. The telephonist spoke occasionally and the gun moved slightly, as if the dark hand that held the pencil wrote something inscrutable in the dust. Far away across the island a gun spoke and then another. A heavy battery awoke. The searchlights began to concentrate, trembling slightly.

"It is nothing," said the major, at the telephone. "Two fighters. They are just making a nuisance. . . ."

The guns fell silent. The searchlights wavered and were extinguished. All the land was hushed in the ghostly moonlight. And then from the little town came a low murmur of voices. The giant pencil wrote afresh.

"Raiders passed," said the major, and jerked his head toward the town. "*They* know. Funny, isn't it?"

"Their prayer has been answered by the guns," said a gunner; "now they will go to sleep."

"Embattled Farmers" Man the Guns

Next day in the hot blue noon I went around some of the batteries that were as effectively hidden in their emplacements as scorpions under the stones.

The guns' crews were all about their weapons, mostly youngsters bronzed as pennies and all deadly keen, with the faint delightful touch of swagger about them that all crack soldiers have. They were once farming lads, cab drivers, tailors, gardeners, *dghaisa*-men, vegetable sellers. Many were from the little neighboring island of Gozo, which is so far almost unscathed by war but whose manhood has rallied with the rest to the defense of Malta.

I walked over a battery site where for acres there was hardly a square yard of ground that had not been blasted by the explosion of a bomb or was not part of a bomb crater. The men had fought their guns here, cheering to hearten themselves.

One crew, blown like leaves in all directions, had picked themselves up and scrambled back to their gun, to find it buried at the bottom of a crater. Nearly all had been wounded: but their immediate consideration had not been the first-aid post; they had set to like badgers to dig their gun out again.

They stood in a semicircle around the gun, grinning like bashful children while their commanding officer recounted the story. The lad who had been buried with his Lewis gun was one of them—a dark, proud, beautiful face like David going out against the Philistine, as pictured in a child's Bible.

An Epic of Human Valor

Suddenly I felt that I had seen it all—all that the bombs can do to Malta. Through the whole circle of cause and effect I had traveled and come back to where I started, because in the story of human valor there is no beginning and no end.

I had seen blasted cities and children at play among the ruins; visited dark, airless caves and heard a woman singing there; watched pitiful funeral processions and nuns comforting the mourners; watched boys in their best wooing pretty girls in a bravery of silks and organdies up and down the shattered main streets in the brief peace of a Sunday afternoon.

I had sat with worshipers in dim incense-smelling churches; I had cowered at the whistle and crash of bombs and once (without realizing where I was being taken) found myself in a series of little tunnels in a cliff that was the only maternity home they had in the neighborhood.

Such is the way of things in Malta, as I saw them. Death and birth, terror and laughter, love and undying hatred—with these are interwoven the endurance, the piety, the loyalty, and the self-forgetfulness of brave, brave hearts.

NATIONAL GEOGRAPHIC SOCIETY

GEOGRAPHIC ADMINISTRATION BUILDINGS

SIXTEENTH AND M STREETS NORTHWEST, WASHINGTON, D. C.

ORGANIZED FOR "THE INCREASE AND DIFFUSION OF GEOGRAPHIC KNOWLEDGE"

To carry out the purposes for which it was founded fifty-five years ago, the National Geographic Society publishes this Magazine monthly. All receipts are invested in The Magazine itself or expended directly to promote geographic knowledge.

Articles and photographs are desired. For material The Magazine uses, generous remuneration is made.

In addition to the editorial and photographic surveys constantly being made, The Society has sponsored more than 100 scientific expeditions, some of which required years of field work to achieve their objectives.

The Society's notable expeditions have pushed back the historic horizons of the southwestern United States to a period nearly eight centuries before Columbus crossed the Atlantic. By digging the ruins of the vast communal dwellings in that region, The Society's researches solved secrets that had puzzled historians for three hundred years.

In Mexico, The Society and the Smithsonian Institution, January 16, 1930, discovered the oldest work of man in the Americas for which we have a date. This slab of stone is engraved in Mayan characters with a date which means November 4, 291 B. C. (Spinden Correlation). It antedates by 200 years anything heretofore dated in America, and reveals a great center of early American culture, previously unknown.

On November 11, 1935, in a flight sponsored jointly by the National Geographic Society and the U. S. Army Air Corps, the world's largest balloon, *Explorer II*, ascended to the world altitude record of 72,395 feet. Capt. Albert W. Stevens and Capt. Orvil A. Anderson took aloft in the gondola nearly a ton of scientific instruments, and obtained results of extraordinary value.

The National Geographic Society–U. S. Navy Expedition camped on desert Canton Island in mid-Pacific and successfully photographed and observed the solar eclipse of 1937. The Society has taken part in many projects to increase knowledge of the sun.

The Society cooperated with Dr. William Beebe in deep-sea explorations off Bermuda, during which a world record depth of 3,028 feet was attained.

The Society granted $25,000, and in addition $75,000 was given by individual members, to the Government when the congressional appropriation for the purpose was insufficient, and the finest of the giant sequoia trees in the Giant Forest of Sequoia National Park of California were thereby saved for the American people.

One of the world's largest icefields and glacial systems outside the polar regions was discovered in Alaska and Yukon by Bradford Washburn while exploring for The Society and the Harvard Institute of Exploration, 1938.

This "Carrot" means healthy metals

YOU CAN SEE why metalworkers call this lump of calcium metal a "carrot." This is the way it looks when it comes from an electrolytic cell in which it is made.

Calcium is a soft, silvery-looking metal. Although it is abundantly present in such common materials as chalk and limestone, its recovery as a pure metal is extremely difficult. Yet it is vitally essential to this country.

In the making of stainless or high-alloy steels, calcium drives out impurities, giving cleaner, better steel for casting or rolling. In magnesium casting, small amounts of calcium improve the finish of the surface and minimize scaling. Calcium is an essential in the making of many metals.

This hitherto rare metal has been made in this country only during the past few years. Before Europe exploded, the United States was dependent upon France as a source of supply.

But back as far as 1935, thinking that this country should have a domestic source, ELECTRO METALLURGICAL COMPANY, a unit of UCC, started a major research program. After four years of work . . . as French supplies dwindled . . . a plant was put into operation for the manufacture of the gray metal. Today, ELECTRO METALLURGICAL COMPANY produces many times as much calcium metal as this country ever imported . . . and production is increasing.

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On the screen, *It Started with Eve*
A Universal Production

Look at them and be proud of them! As tough a bunch of hard-fighting marines and soldiers as ever outslugged the Japs. But now in a moment of leisure in a jungle setting, a screen goes up and a Bell & Howell Filmosound gives them the latest smash hit from Hollywood. Tired bodies are refreshed, taut nerves are relaxed, and they go back to their job of fighting—*fit to fight.*

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She doesn't wear sweaters, or pose for glamour photographs. . . . She's never seen at night clubs. . . . And though her autograph is well-known in certain French and German cities, nobody has ever *asked* her for it.

Yet Mary Ann—star of Warner Brothers' new picture, "Air Force"—passed every screen test with flying colors. And that's no more than you'd expect from a Boeing Flying Fortress!*

"Air Force" is the story of a Boeing B-17, and the gallant hell-for-leather crew that flew her to glory . . . *via* Pearl Harbor, Wake Island, Manila, the Coral Sea and Australia. Made in collaboration with the Army Air Forces, it's a picture to make your heart skip a beat . . . then beat faster.

What the camera *doesn't* show is an invisible supporting cast: the Boeing designers and engineers, the technicians and researchers, the laboratory men and the craftsmen and workmen who originated the Flying Fortress and now keep a steady stream of B-17's and other war planes flowing from Boeing plants—in Seattle, Wichita, Canada.

More than twenty-five different *kinds* of engineering know-how are represented by several thousand Boeing engineers. Daily they challenge the word "impossible," in a 'round-the-clock effort to do the job *better* in *less time*.

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Some day this effort will be applied to making life richer and happier, in a peaceful world. For Boeing engineering talent and experience, while devoted primarily to the continued advancement of aeronautics, also encompass resources which are relevant to almost every phase of civilized life.

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YOU HAVE before you one of the greatest experiences a man can know. It is a joyful experience—and a sobering one. It brings a lifetime of satisfaction, affection, love . . . and a continuing responsibility.

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That's why rubber is so precious; why you must *save your tires.*

But, as General's technicians discover new materials, new compounds, new methods to make rubber *fight better* . . . they are discovering also how to make an even finer tire for your car.

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The General Tire of the future is well worth dreaming about! Imagine for yourself what new materials and processes may mean. Think of mileage that may outlast your car. Think of much less air pressure; no blowouts; lighter weight, yet more strength; the heat problem ended. *True? You'll have to wait to see!* But, you can count on this: General will continue to give you the best things first, just as it has for 25 years.

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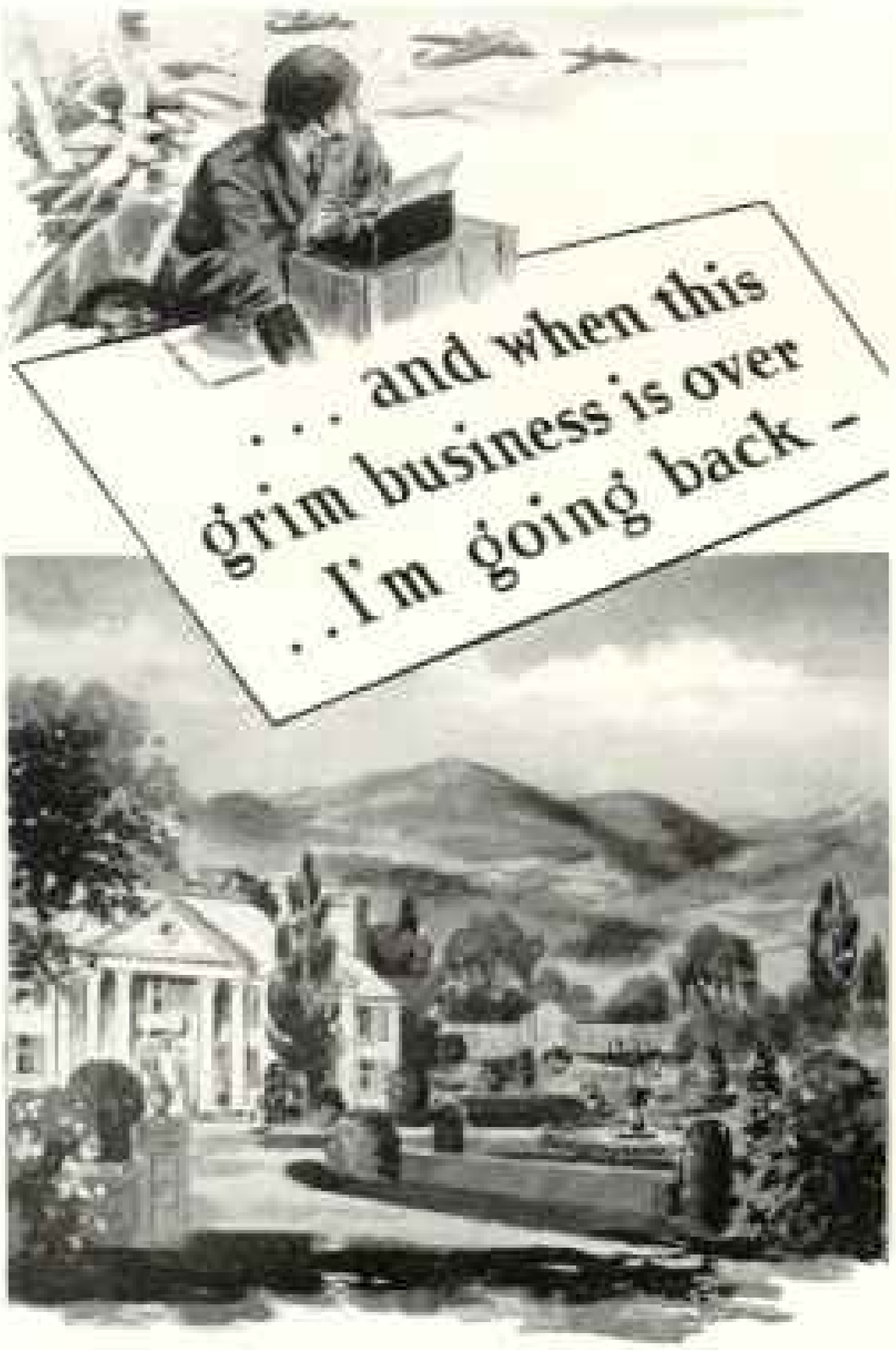

. . to the Peace and Quiet –

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So wrote one of our great Generals from the battlefront recently. How many more must be thinking the same thought!

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In past years, thousands of people made their yearly pilgrimage to Virginia's picturesque resorts, natural wonders, historical restorations and famous battlefields. No doubt many of you are longing for the time when you may return to the Old Dominion for another glorious vacation. When this time comes, you can be sure that a cordial welcome awaits you.

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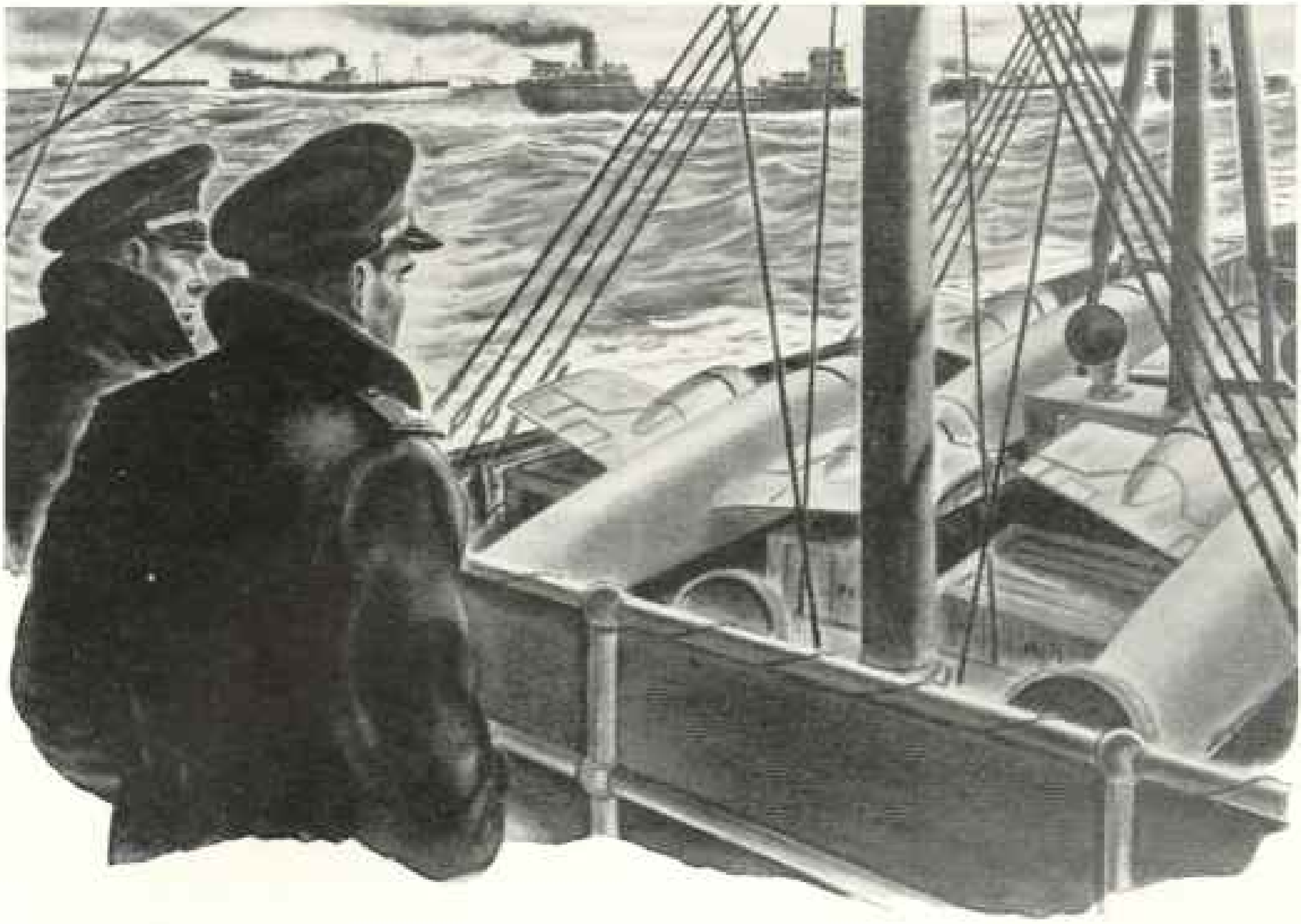

This is the way to win a battle in the desert

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In 1918, an American soldier could be equipped and maintained on 5 tons of supplies each year.

But today, for every soldier sent abroad, *10½ tons* of shipping space must be provided for *equipment alone*. And it takes an additional *18 tons of shipping to supply a single soldier for a year!*

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And ships need electricity.

Vast quantities of electric power, for a thousand vital tasks that must be done to take a convoy safely across the seas . . .

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Electricity to detect the approach of enemy subs and planes, to sound the alarm, to organize the defense.

Electricity to power great cargo winches, and delicate navigating instruments.

Electricity to make magnetic mines harmless, to provide invisible "black light" for reading charts at night. Electricity to keep food fresh, to cook it, to ventilate the ships, to provide comfort for the crews.

Electricity in every freighter, every tanker, every Navy escort vessel—to help win the war of supply!

We of Westinghouse take tremendous pride in building so much of the electrical equipment, so many of the great turbines and gears and electric drives, for the ships of America's Navy and Merchant Marine.

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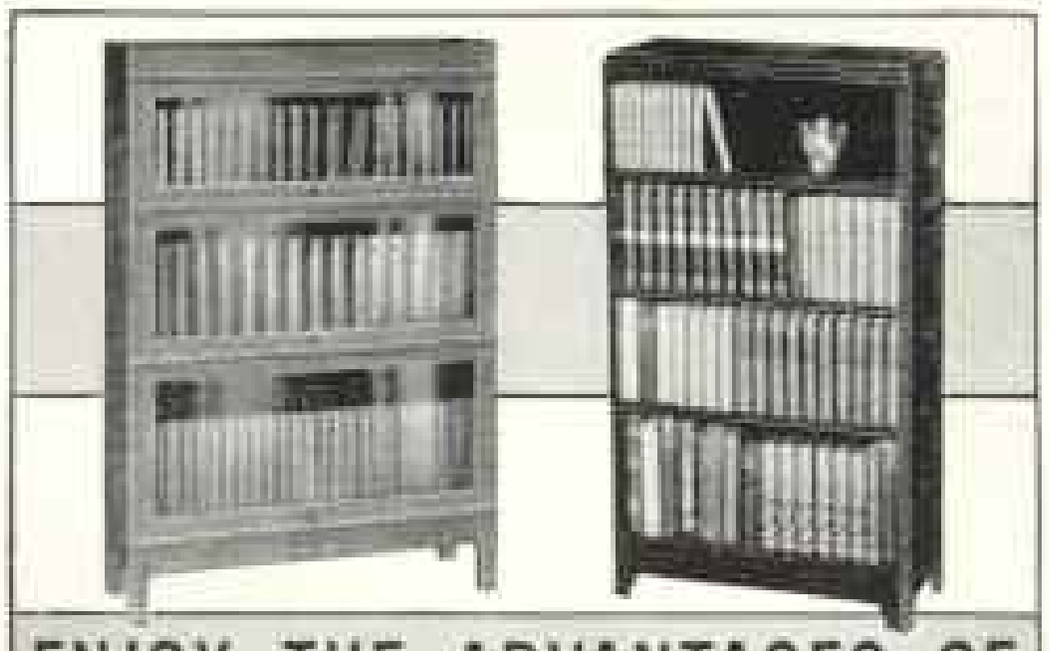

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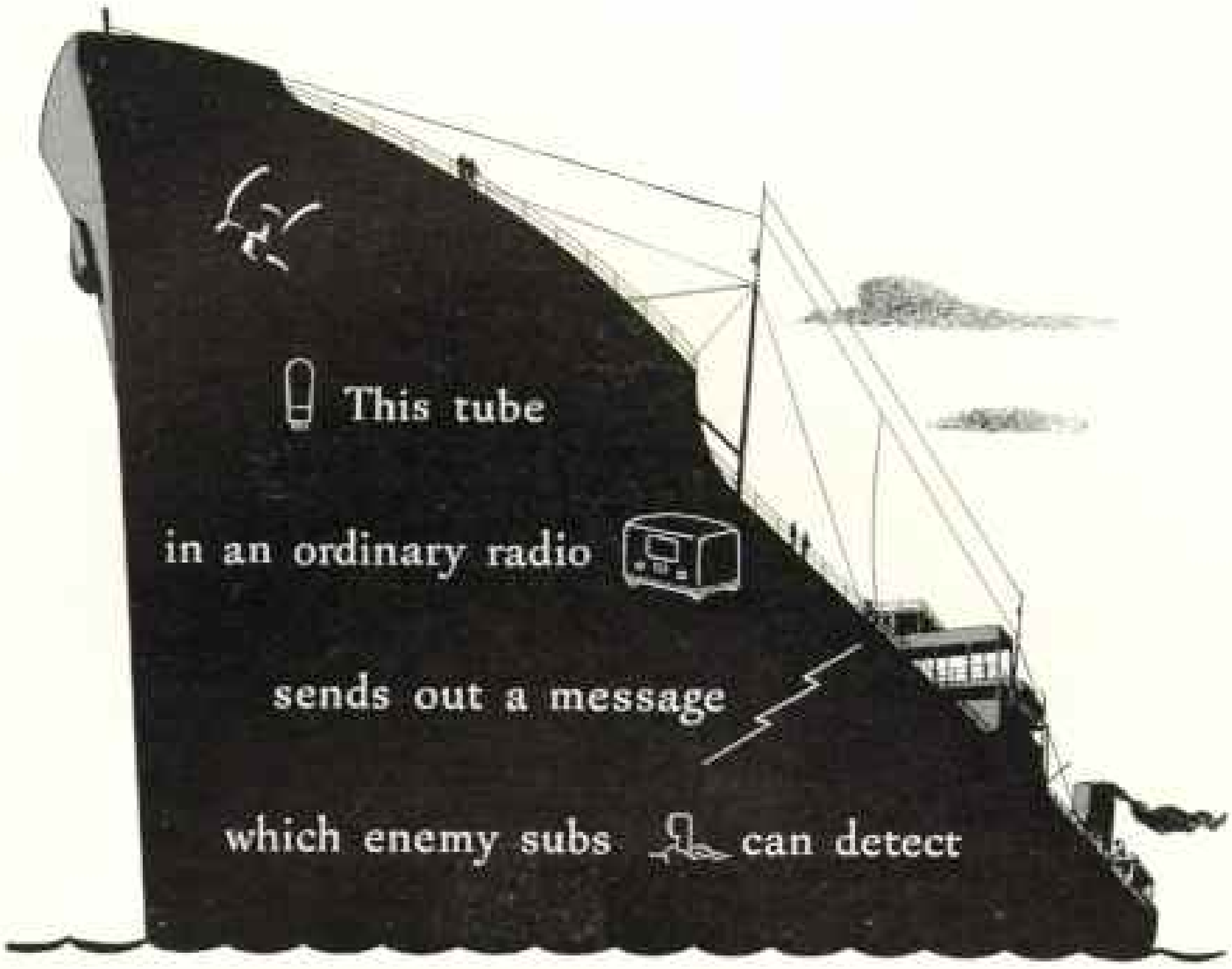

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the Scott Marine Model Radio is mum to the enemy

What nobody was concerned about, until torpedoes taught us, is that a radio set *re-broadcasts* a signal while it is *receiving*. Sensitive range finders picking up this signal could spot our vessels 100 miles away.

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The Scott Low-Radiation Receiver is the *first* radio that can be operated with complete safety on both the broadcast and shortwave bands essential to good reception far from land under difficult shipboard conditions. You'll find Scotts on tankers, on merchantmen, on American ships of every kind . . . as fast as we can get them there . . . giving men at sea the programs, the news from home, the relaxation they need and deserve, *in safety*.

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A. A. Allen

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National Geographic Society
Dept. B-Z, Washington, D. C. _____1943

Enclosed please find $_____for which send me _____sets of "The Book of Birds" in two volumes.

Name_____

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Man power plus!

QUIETLY, modestly, over the past years medical science has been producing virtual miracles—miracles which are paying our country increasingly handsome dividends as time goes on . . .

Dividends in man power.

Today, literally millions of people who are lending their services to Uncle Sam would not be alive but for these discoveries of medical science.

In the 75 years since March 24, 1868, when the Metropolitan Life Insurance Company was founded, the average length of life of Americans has increased from about 40 years to more than 60 years. Figures indicate that about 2½ million men of military age owe their existence today to improvement in mortality since the turn of the century.

Throughout its 75 years of life, Metropolitan has been glad of the opportunity to take an increasingly active part in this drama of conserving human lives.

As far back as 1871, the Company issued "Health Hints," the first of more than a *billion* booklets on health subjects which are distributed at the rate of one every fifteen seconds.

In 1892 it began its co-operative work with the public health forces of the country by joining government officials in a campaign against cholera. This was the forerunner of numerous campaigns against such diseases as tuberculosis, typhoid fever, diphtheria, pneumonia and others.

In 1909, the Company set up a special department to place its rapidly expanding public health work on an organized basis. Among its many activities, for example, is a Nursing Service, started in 1909, which has since expanded to cover the United States and Canada. Last year nearly three million visits were made to eligible Metropolitan policyholders.

Today Metropolitan works closely with health agencies, both private and public, and carries out or assists important health research. Through its health booklets, its far-flung nursing service, its health advertising, and similar activities, Metropolitan consistently pursues its policy of passing life-saving knowledge of medical science on to the people in words they can understand.

On this, our 75th Anniversary, our eyes are on the future, rather than the past. For there is so much more to be done. As new triumphs of medical science are unfolded, Metropolitan will play its part in carrying life-giving knowledge to the people.

75th ANNIVERSARY—1868-1943

Metropolitan Life Insurance Company

(A MUTUAL COMPANY)

Frederick H. Ecker,
CHAIRMAN OF THE BOARD

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"Flying Tiger" in Quaker gray

THE KINGBIRD (Tyrannus tyrannus) isn't as large as a robin, and there's nothing regal about his appearance. His breast is white and his back is Quaker gray.

It isn't until the approach of a hawk, a crow, or some other enemy of bird life that you see why the kingbird is called king. The minute he sights such a foe, the kingbird attacks with a ferocity that even eagles have been known to flee.

He swoops on his larger, clumsier foes like a small, feathered pursuit plane, and continues the attack until the intruder flies away.

By nipping trouble in the bud this way, the kingbird keeps many accidents from happening to his furred and feathered neighbors.

This method of preventing accidents may seem like exceptionally hard work for the kingbird, but it's actually easy compared to the task that business faces in preventing industrial accidents.

The causes of industrial accidents aren't obvious things that anybody can spot immediately. It takes a trained man to find and correct them.

Such a man is the Travelers Safety Engineer.

This man must be trained by years of experience to reduce accidents by seeking out their causes and correcting careless working habits long before an accident ever occurs. He knows what to look for and, accidents are avoided by following his advice.

For example, in one day, a Travelers Engineer, inspecting a big construction job in the South, discovered 28 separate careless practices that could have caused accidents. They ranged from leaving exposed nails in boards to smoking in a dynamite house.

Today, when skilled hands are scarce and every man laid up by an avoidable accident tends to slow down our war effort, the Safety Engineer's services are more valuable than ever before.

If high accident rates are slowing down production at your plant, the chances are that a Traveler's Safety Engineer can help you. He's trained to get results.

You can arrange for his services through a Travelers insurance agent or your own broker.

MORAL: Insure in The Travelers. All forms of insurance and fidelity and surety bonds. The Travelers Insurance Company, The Travelers Indemnity Company, The Travelers Fire Insurance Company, Hartford, Connecticut.

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SHEAFFER'S

"TRIUMPH"

Tuckaway

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Letters WRITTEN BY HAND....

DICTATED BY HEART

When you write a letter by your own hand, your heart tells the hand what to say. You put your own personality into that letter—your smile, your voice, your loyalty, your love. Do it often—for this, truly, is the richest gift you can send: a bit of yourself.

Note: Your dealer is doing his best to provide you with Sheaffer writing instruments under a rationing program to conform with curtailed production. Sheaffer hopes that those available will perform useful functions in vital war work on the Home and Battle Fronts. The facilities, resources, and personnel of the Sheaffer organization have been, and are being, converted largely to the war effort.

Above: "TRIUMPH" TUCKAWAY *Lifetime** pen, $12.50—for men or women, without clip, carries safely *in all positions* in purse or pocket. Matching pencil, $4.

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SHEAFFER'S

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Sergei Rachmaninoff

This informal portrait of the celebrated pianist-composer by Boris Chaliapin, son of the famous basso, is part of the Magnavox series of great contemporary musicians.

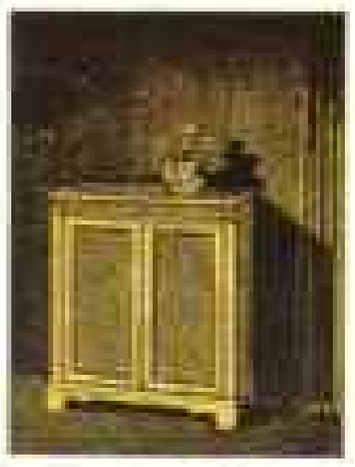
This great Russian-born pianist-composer confesses that he began as a "lazy and mischievous boy" who shirked his practicing. Under a great teacher, the young Rachmaninoff worked to such advantage that at nineteen he composed his first opera, "Aleko".

During the Russian revolution, Sergei Rachmaninoff escaped to America to become one of this country's most distinguished citizens. He has contributed to the world's storehouse of great music for half a century, and today is at the peak of his achievement and popularity.

Like all musicians, Rachmaninoff has always received his greatest relaxation from music.

For his own home, he has chosen a Magnavox radio-phonograph. For in Magnavox, he finds an incomparable clarity and trueness of tone which alone can do justice to the great music of the world.

Music Goes to War. For men in the armed forces music is relaxation — comfort — and a tie to home. See your Magnavox dealer for a wide selection of records to send to YOUR soldier or sailor.



The fine craftsmanship which won for Magnavox the first Navy "E" award (and White Star Renewal Citation) among instrument manufacturers has made these radio-phonographs the first choice of discriminating buyers.

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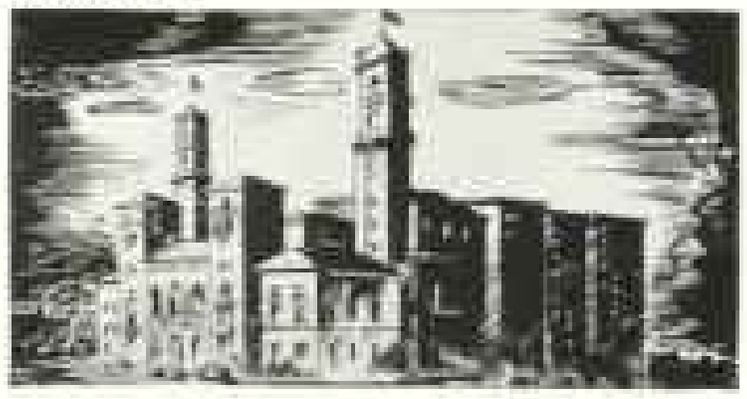
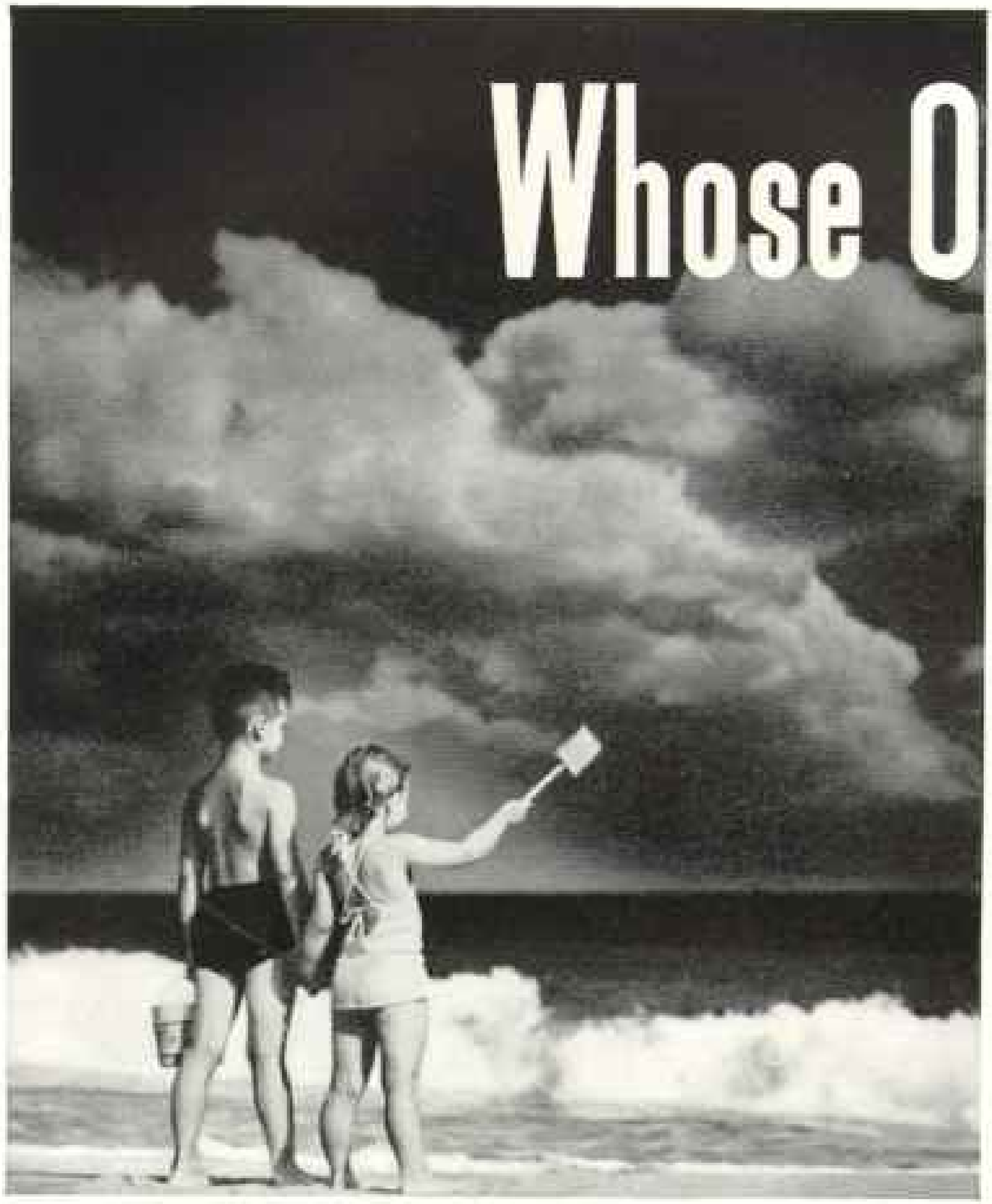
VIRGINIA

Richmond



The Jefferson Hotel

Located in historic Richmond, the capital of the Confederacy. Nearby are such fascinating places as Colonial Williamsburg, Jamestown and Yorktown. At the Jefferson, famous for many years for its hospitality and excellent accommodations, you will find gracious living at its best. Rooms from $3.00 up. For reservations, address A. Gerald Bush, Mgr.



On all the coasts of Europe today there's scarcely a square foot of sand where free children can play in peace.

On every sea of the Seven Seas ships and men are being sent to the bottom by torpedo and gunfire.

In a dozen conquered countries people are starving. American soldiers—*our* soldiers—American women and children—*our own people*, are in concentration camps taking orders from the brutal Japs.

***Better drop those rose-colored glasses** and look at the facts!*

A desperate struggle is ahead of us. We must outmatch our enemies, plane for plane, ship for ship, and gun for gun, otherwise our own country will take its place on the long list of defeated nations.

Our choice is a simple one. *Fight*—or help those who *are* fighting. *Man* a gun or *pay* for that gun. *Drop* a bomb or *pay* for the bomb. With War Bonds. With every single nickel, dime or dollar we can.

Join the Pay Roll Savings Plan, whoever you are, wherever you work. Let your employer set aside 10% of your pay every payday. Each time your savings amount to $18.75, you get a bond worth $25.00 in ten years.

That's the way we *Americans* will do it. We won't sit back indifferent.

We won't "wait and see" until there's nothing left to see.

"Do it now" is a good American slogan. So let's *do* it!

It's later than you think!

EVERYBODY
EVERY PAY DAY **10% in War Bonds**

This space is a contribution to America's all-out war effort by National Geographic Society

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"The Voice with the Smile" has always been a part of the telephone business and we want to keep it that way.

Even under the stress of war, the men and women of the Bell System are as anxious as ever to see that you get friendly, courteous service. And they are anxious, too, to give the fastest possible service — especially to those who need speed to help win the war.

You can help them by not using Long Distance to war-busy centers unless it is absolutely necessary. For all your patience and understanding so far, many thanks.

WAR CALLS COME FIRST

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The little girl who never was sick

You do not know this little girl. But for a thousand years she has lived as a dream in the minds and hearts of mankind . . . symbol of a time when science shall have won its long battle against disease.

Today that dream has come a long step nearer reality with the development of the General Electric electron microscope . . . a super-microscope with which man can see many things that he has never been able to see before.

After the war, General Electric and other manufacturers will produce electron microscopes in quantity. The advantages of simplicity and portability, offered for the first time in the new General Electric instrument, will make the electron microscope available to thousands, instead of to only a few.

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