PRELUDE TO VICTORY

This booklet has been planned for your careful reading, to assist you in getting into the right kind of training—training that will best *fit you* for *your best job*. In the classification period everything humanly and scientifically possible will be done to ensure this result. Careful arrangements have been made for your reception and processing at the Santa Ana Army Air Base. Only with your fullest cooperation can these plans come to speedy and successful fruition.

You are now beginning intensive training to fulfill your burning ambition: to become a bombardier, a navigator or a pilot. You will not find the next few months easy. This is a professional war, and professionally trained fighters are required.

When you read these pages carefully you should find that many of your natural questions have been anticipated, and that specific answers have been given. You will learn how the training at SAAAB ties in with your whole course, and that it is especially geared to get you headed in the right direction.

You must train with every ounce of your energy, both here and in the schools to which, subsequently, most of you will go. You must work until you feel ready to drop. This is a tough war. To win it, and to win it as quickly as possible, we need men who are "long on heart and guts."

There is a focused objective: that YOU survive and that our foe does not . . . Good luck to each and all of you!

W. A. Robertson

. . . "at 'em boys, give 'er the gun!"

In a few months from the time you open this booklet you may be winging your way over Tokyo or Berlin. You may have brought down your first enemy plane. You may have demolished a vital enemy war plant with a blockbuster. You may have laid an egg on Tojo's headquarters or on Hitler's Berchtesgaden.

From this day on your one objective is absolute and lasting victory over our enemies. Unconditional surrender. This will happen if you do your part. Your contribution to the final victory begins HERE AND NOW.

From the moment you knew you were coming to Santa Ana Army Air Base you have been wondering what lies ahead. Let's not throw the guff, men. You are facing the hardest, toughest year of training that you can imagine. This is a tough war and we have tough foes. In a period of a few months you must be transformed from raw recruits into hardened fighters who can take it as well as dish it out.

Speed counts! Speed means everything in this war. For example: Prior to Pearl Harbor this great air base was bean patches, arid waste and swamps. In less than a year it was transformed into essentially what you see today.

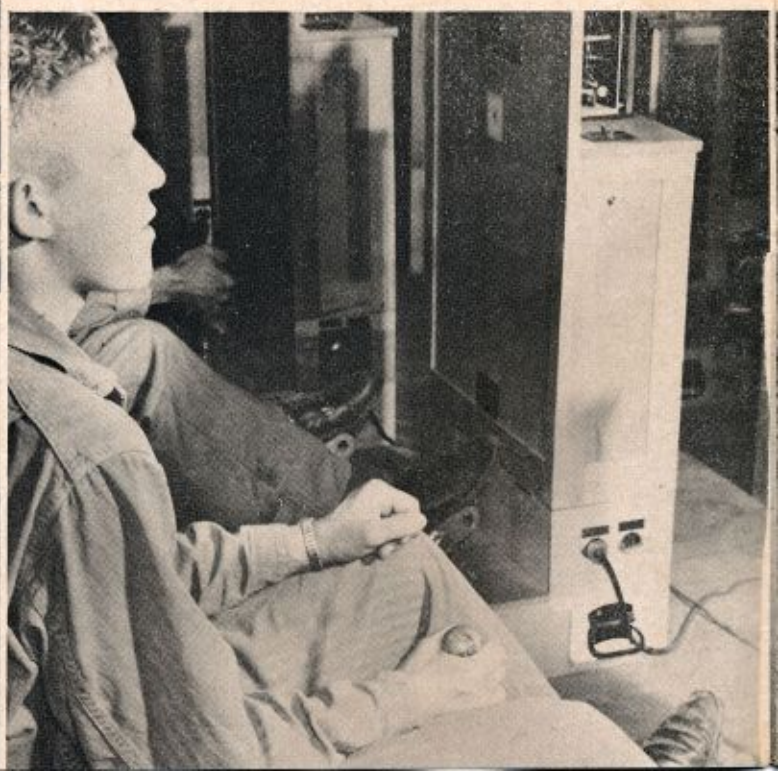
THE AVIATION CADET is given psychological tests for mental ability, finger dexterity, divided attention, written examinations, "square pegs in round holes," Rotor Pursuit, "Mashburn Complex," and coordination tests in order to properly classify him for his place in Air Crew training. Coordination of all faculties cannot be stressed too highly in the qualifications of successful pilots, bombardiers and navigators.

It took "hearts and guts" to do that job. Hearts and guts are what it will take to make yourselves fighting men of the Army Air Forces. Are you ready?

The illusion that our near-sighted enemies of Nippon couldn't hit a billboard with a shotgun, and that our Nazi foes were a bunch of mechanical robots who couldn't think for themselves, has been pretty well dispelled by the realities of modern warfare. Our enemies are killers —cool, hard and ruthless killers—and your object is to get them before they get you. In this kind of warfare, Mister, there is only one paramount law: KILL OR BE KILLED!

You must work hard and you must work fast. You have been selected, and you will be classified and trained, to become an important national asset. You must be fit to fight. You must fight to survive. You must get to your objective and YOU MUST GET BACK. Success in this endeavor depends on six things:

1—An aptitude for Air Crew, which includes the right temperamental approach and adjustment.
2—An alert mind, trained to meet every emergency.
3—A sound body, built up for speed, endurance and quick response.
4—Singleness of purpose, a concentration of your objective to the exclusion of everything else.
5—Discipline, the habit of doing things the way you are taught to do them, and no other way.
6—Teamwork, the ability to work with other men.



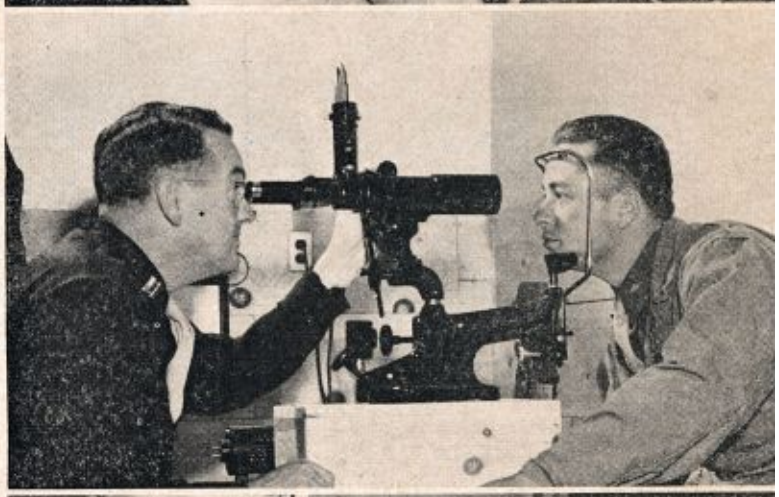
AIR CREW

There are two words that you have heard and will hear many times during your training: AIR CREW. Two words but one idea. What does this phrase imply?

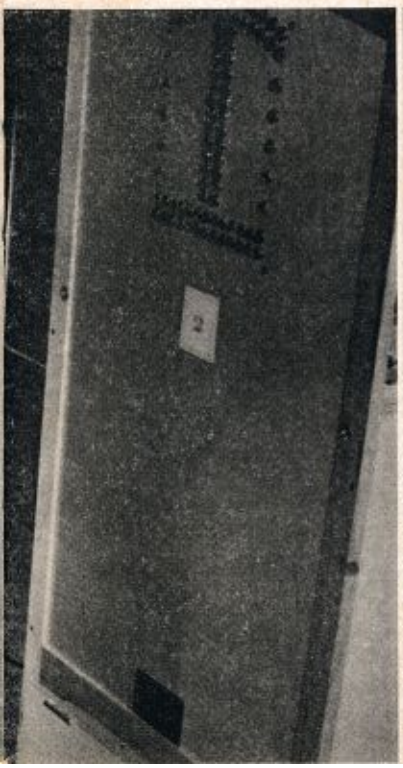
It means four officers in a heavy bomber—bombardier, navigator, pilot, and co-pilot—and it also includes the aerial crew—aerial engineer, radio operator, gunners, and ground crew. In the air, no matter what your specialized training, you must know your gunnery. On the ground, you want a keen, trained crew in whom you have pride and trust, and whose whole aim in life is to keep you, who fly, in the air. Air Crew means every individual working in unison to achieve the common objective. It means teamwork. Every man has his function to preform. The loss or lapse of any Air Crew member jeopardizes the success of the mission.

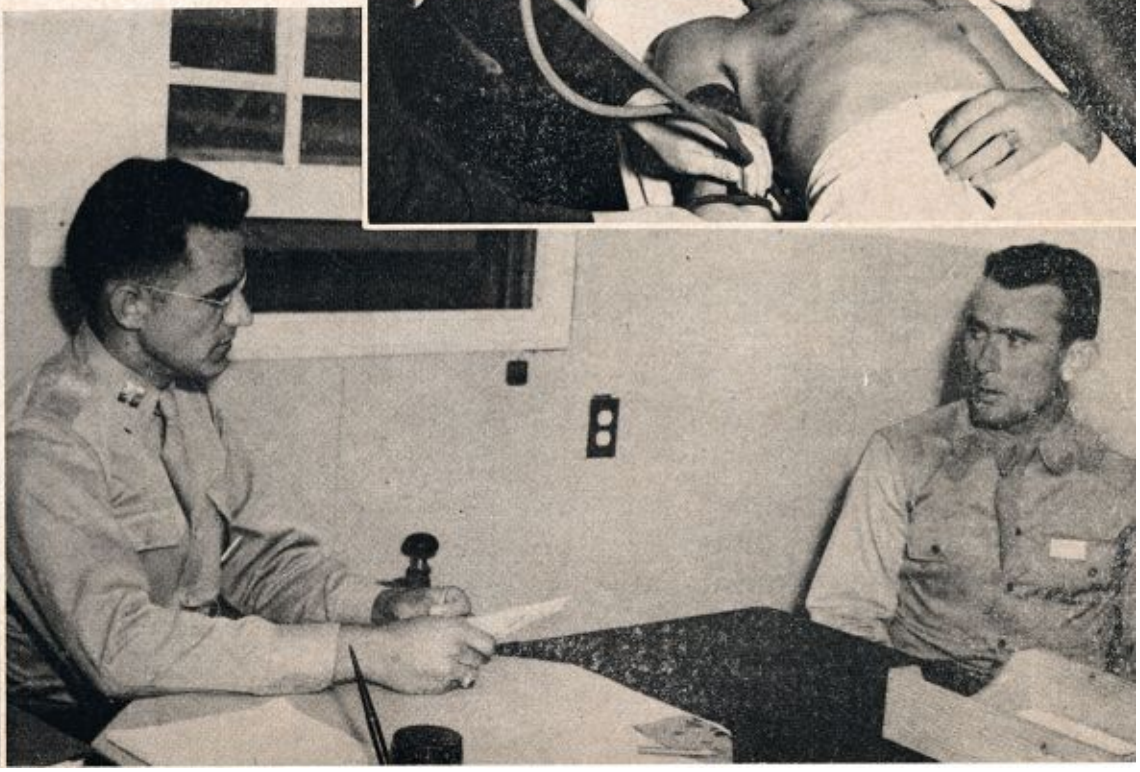
The bombardier, navigator, and pilot are "the three musketeers" of the air, each man a highly trained individual capable of acting individually, but never a grandstander.

The navigator might be considered the quarterback of the team. He figures out where the play is going.



IN ADDITION TO THE NUMEROUS psychological, coordination and mental tests the cadet is given, a rigid "64" physical examination, plus an ARMA interview, Adaptability Rating for Military Aeronautics, which determines the cadet's physical and emotional aptitude for Air Crew training.





A GOOD CADET is first a good soldier. In order to become a good soldier, a cadet must have absorbed thorough training in the daily routine of barracks life, squadron duties and discipline. A cadet who has learned to maintain an orderly barracks, neatness in uniform and discipline in formations has cultivated a background for academic training, the next step on the road to becoming a pilot, bombardier or navigator.

The pilot leads the interference straight through the opposing lines. The bombardier carries the ball. The touchdown depends on the perfect timing of all.

"In the air you're all out on the same party," says a B-17 pilot back from a sortie over Occupied France. "You have to know what each member of a crew will do under any situation, of the thousand and one, that may come up without warning."

In that plane with him were nine men—bombardier, navigator, co-pilot, aerial engineer, armorer gunner, mechanic gunners, and a radio operator gunner. They had run into enemy flak and pursuit ships. Here, in brief, is the pilot's story:

"I began to realize things were getting tough. There was an explosion behind me as a 20-mm cannon shell banged into us just behind the upper turret and exploded. Then I looked out at the right wing and saw it was shot to hell. There were holes everywhere. A lot of them were 20-mm cannon holes. They tear a hole in the skin you could shove a sheep through. The entire wing was just a damn bunch of holes.

"I looked at the co-pilot. That was a treat. There he was with his wheel shoved clear over to the right in a desparate-looking right-hand turn which seemed, at the time, very funny because my control wheel was centered.

I started to laugh and then decided there wasn't anything to laugh about. The position of his wheel meant that his aileron control cables had been shot away. That wasn't funny at all.

"About this time several other unpleasant things happened all at once. First, the waist gunner yelled through the interphone: 'Lieutenant, there's a bunch of control wires slapping me in the puss,' which meant that the tail surface controls were being shot up. Second, the right-hand outboard engine 'run away' and the engine controls were messed up so we couldn't shut it off. Third, the left inboard engine quit. And, fourth, the ship went into a steep climb which I couldn't control.

"I forgot to say that the whole left-hand oxygen system had gone out with the first burst of flak, and that I was trying to get the ship down to 20,000 feet to keep half my crew from passing out. I finally managed to put the ship into a steep dive and level out."

Once, the pilot said, he thought the jig was up and yelled into the interphone, "Prepare to abandon ship." But one of the men was in no condition to bail out. No one jumped. Ultimately, they made a wheels-up landing at the first airdrome they saw in England.

That's the gist of the story, and here's the point, in the words of the pilot:

RECREATIONAL HOURS are filled as the cadet so desires. Jam sessions for the musically talented, varied reading matter, band concerts, community sings, drama, games and other forms of diversion are provided at the Service Club. The Service Club has become the center of the cadet's social life and is one of the most popular and attractive buildings at the SAAAB. Refreshments for Sunday visitors are available at the Service Club.

"I might say right here that it was the finest bomber crew that ever took off. The whole gang was right on the beam. Everyone did his job every inch of the way. That Fortress had it all right; but so did her gang."

That is what Air Crew means, Mister; all for one and one for all.

DISCIPLINE

Yet, Air Crew means little without discipline—the habits by which men instinctively do things the way they have been taught to do them. Air Crew discipline begins here at Santa Ana. It begins with learning to take orders.

It means rendering a snappy military salute. It means shoulders back, eyes front, chin and belly in. It means military bearing, impeccable neatness and exemplary conduct. To be a top flyer, you must first be a top soldier.

It will not be easy to break from the habits of civilian life, but discipline is the first requirement in the army. This will not be your first contact with military life. You may have had it in R.O.T.C., or in any one of several score colleges which have placed certain of their facilities at the disposal of the Army Air Forces. For periods of from one to five months you have been learning the rudiments of many things, but especially about discipline.

Discipline builds strong and hard fighters. The going is tough. You are starting on a rigorous physical training program. You will develop more charley-horses than you have muscles. You may feel, for a time, like a broken-down prize fighter after his last fight. In Air Corps terms, your wings will be limp and your empennage dragging.

But it's a hundred to one that you'll come out of it fit as a bull terrier and ready to lick twice your weight in Japs. You'll be able to bounce off a fast-moving truck, turn a somersault and land on your feet. You'll be able to disarm that big fellow with a twist of the wrist. Remember, the "impossible" stunts that men of the Eighth Army did in the documentary film, *Desert Victory?* Those stunts helped to clear the Axis out of North Africa.

You'll be trained to save yourself in the water, too, by blowing up your shirt and pants and converting them to waterwings, or leaping from heights with a life preserver without breaking your neck. You'll be taught to shoot—and shoot straight—with rifle, pistol, and Tommy gun.

When you get through, you should be one of our top fighting men, ready to do a job, To Kill and NOT be Killed.

You want to make Air Crew. Your purpose, your ambition, your goal is to "stay on the team." To achieve this objective you will have a powerful motivation within you. This might be described as *singleness of purpose* from which you dare let nothing deflect you.

This may tag you in some circles as an "Eager Beaver." If you haven't encountered that term yet, you will. Occasionally, Eager Beavers do get in your hair. But a well-focused eagerness is a commendable attribute; and a beaver is a singularly industrious animal which cannot be turned aside from the main end in view. Sure, go ahead, be the right kind of Eager Beaver. You want something? All right, go ahead and get it, and don't let anything distract you.

You may think you are getting it the hard way. You are. What you are expected to accomplish in nine months took eighteen months in Peace time. Remember, wars have to be won the hard way. The faster we achieve our common objective, the faster we can lick the Axis, cut down casualties and get back to those peacetime pursuits which Hitler and Tojo so ruthlessly interrupted.

These accomplishments require one thing more—sound mental training. So, Mister, you are going to school and you are going to learn faster than you have ever been called on to learn in your life.

EVERY EFFORT IS MADE to insure prompt and efficient delivery of the cadet's mail. The same amount of care is given to both incoming and outgoing correspondence. "Letters from home" are recognized as the greatest single factor in building morale. The importance of morale cannot be underestimated. Morale is, in reality, a state of mind. A cadet who is not anxious about home conditions has his mind free to concentrate wholly on his training. He is therefore eager and willing to perform all duties diligently and to successfully absorb instruction.

Because of the press of military duties, you will be under pressures that you didn't experience in high school or college, but you will have compensating advantages. You will find here at Santa Ana one of the finest "faculties" in the United States. These instructors, in fact, were picked from the best colleges, universities and junior colleges in the country and commissioned in the Army to do specific teaching jobs.

They are here to teach you and you are here to learn. The result depends largely on you.

All right, Mister, where do you begin?

CLASSIFICATION

During the next fifteen days you will follow an M-day schedule, filled to the last waking hour with tasks and experiences of importance to you. Right at this moment you probably have your Classification Folder in front of you. THIS IS IMPORTANT. It is important that you consider every question on the folder, and ponder our questions and your answers with the utmost care. We want to know, in detail, about your desires, civilian interests, military background, education, hobbies and sports. Don't neglect anything. Use the extra space on the cover if necessary. Even from what you may consider insignificant clues we are able to make deductions which may be, and frequently are, mutually advantageous.

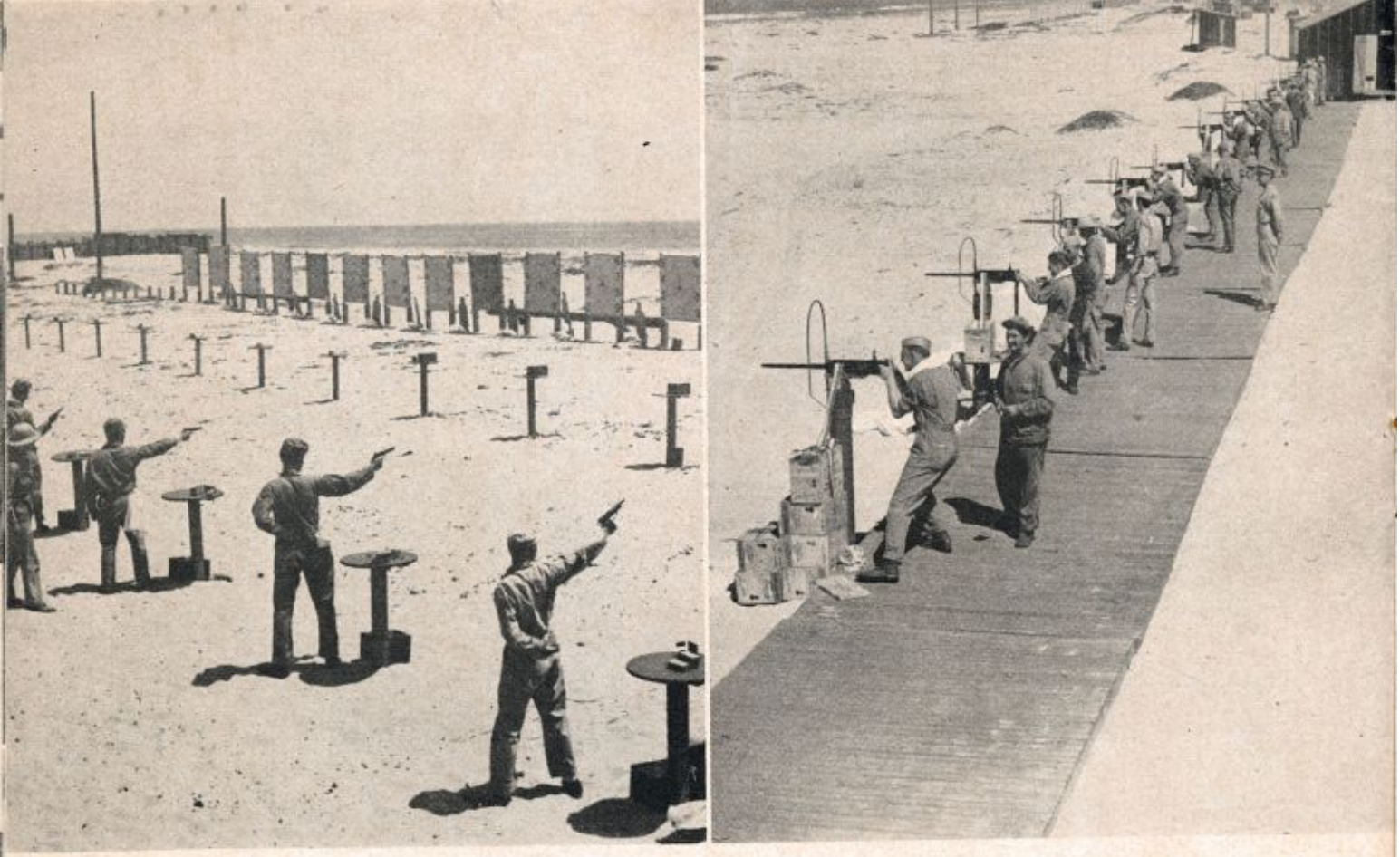
During M-days you'll be busy and we'll be busy too. It is our responsibility to find out by every means at our disposal how well fitted you are to fly and what position you should hold in the Air Crew. In the next few days we—and you—must ascertain whether you are temperamentally and physically suited to fly in combat. If you are not, we want to find out now instead of when you crack up in a P-38 in your Operational Training Unit or get lost navigating the Atlantic.

From the information obtained from the answers in your classification folder, and from other accumulated test answers, we speedily find out a great deal about you.

We want accurate replies to two principal questions:

1—Have you the inherent temperamental, mental and physical aptitudes for the making of a good flying officer?

2—For which one of three intricate jobs—bombardiering, navigating or piloting—are you best suited?



THROUGHOUT THE CADET'S TRAINING, instruction in gunnery is emphasized. Flying training becomes wasted time, money, planes and lives unless the cadet knows how to shoot accurately. More than ever before, training in gunnery is an insurance against the warning "Kill or Be Killed." This phase is stressed throughout Air Crew training and has its beginning at SAAAB.

Through experimentation and research, experienced classification officers, world-famed psychologists and Flight Surgeons, have worked out methods for getting the answers to a multitude of questions—and getting them now instead of after your neck is broken. Results have shown that there is a very high correlation between your evaluation at SAAAB and your probability of later successful achievement.

Standards in Air Crew are high. Some of your companions have already been eliminated, by failing to pass the first physical and screening tests. Others will flunk their academic subjects in Preflight. Still more will be eliminated in Primary, Basic or Advanced. Our study of the causes of later failures has enabled us to eliminate most Air Crew unadaptables at the classification level.

While all this is going on in an orderly sequence, there will be many other things in which you will participate. You will be immediately assigned to a squadron and a barracks. You will be worked over with haircuts and innoculations. You will be confined for two weeks in "open" quarantine, which means that you must not leave the squadron area except in formation.

You will carry on a physical training program designed to toughen you—and it will! You will be toughened up to battle conditions, and you will begin the routine which will eventually give you the precision of a disciplined soldier.

You will stand inspection, you will parade at Retreat, you will drill—and then drill some more. You will attend lectures and films on everything from military correspondence to sex hygiene. You will spend some time in a gas chamber and also in an altitude training unit. Most important of all, you will be classified.

Experience in classification enables us to place flying failures in some twenty categories, the specific items of which involve everything from poor landings to an incurable tendency to black-out in a dive. One officer is here on the base instead of flying in a theater of operations because he discovered—in advance—that he blacked-out for a longer period than was considered normal—or safe.

Among reasons for failure are those listed under *Judgment and Intelligence*, such as "inability to follow traffic

"SWIM AND LIVE" has become S.O.P. in the cadet's training. With more and more missions over water, in this global war, swimming instruction becomes increasingly important. Some place, some time, knowledge of how to stay afloat by utilizing one's pants will mean the return of an Air Crew member, instead of a notice to "Next of Kin."

pattern;" under *Alertness* and *Ability*, such as "inability to judge distance or estimate speed;" and those under *Sustentation*, such as "stalling both when taking off and landing." One cadet was eliminated some months ago near the end of his training. He was a competent pilot in every way except one; once he was out of sight of his home field he showed a dangerous tendency to lose his bearings. Instead of landing at Bakersfield, he would turn up at Modesto or Taft, and ask, "Where am I, brother?" Today this weakness would be uncovered in classification. You must understand that more is known today about your potentialities than was known a year ago. We are perfecting and checking our tests every day, proving their validity in the light of actual flying experience.

Classification has a positive as well as a negative (or protective) purpose. It reveals whether you are best suited to be a bombardier, a navigator or a pilot. You will soon be taking tests which will show whether you have the alertness and dexterity to use the Norden bombsight; whether you have the patience, concentration, imagination and calculating ability to steer by the stars; or whether you are best suited to fly a Thunderbolt in single combat. It cannot be repeated too often that classification will endeavor to place you in the job you can do best.

In a day or two you will take a series of psychological tests. First off the bat, you will have a day of group tests. These tests call for alertness and judgment, their purpose being to ascertain if you have the quickness and endurance indispensable to Air Crew members. This is paper work. You will do the paper work as a group, although each man will work in a cubicle especially designed for this kind of testing.

These are not I. Q. tests. Your formal education will only indirectly bear on this work. These are aptitude tests, designed by scientists and experienced flyers to measure such things as ability to comprehend and follow directions, knowledge of or facility for mechanics, and soundness of judgment. These questions will have a direct bearing on your aptitudes for identifying different types of aircraft, for locating objectives from aerial photographs, and for reading instruments. All are multiple choice questions; you choose the correct answer from several possibilities.

Even though as many as 300 men may be taking these paper-work tests at the same time, papers are graded almost as fast as they are completed. While you are working on the second, the first is being graded by an electric scorer. Later the same machine makes composite scores, profiles and breakdowns for research.

Then you arrive at the stage where you will be tested individually. You will be introduced to those mechanical "ouija" board gadgets that you have heard so much about. These psychomotor tests are designed to measure your co-ordination and test your excitability at the same time. In one called Discrimination Reaction Time, you try to flash the right light by pushing the right button at the right time. In the Mashburn, or Complex Coordination, you operate a joy stick and rudder bar that are connected with what looks like an elaborate pinball game. Even a ground loop is safe here.

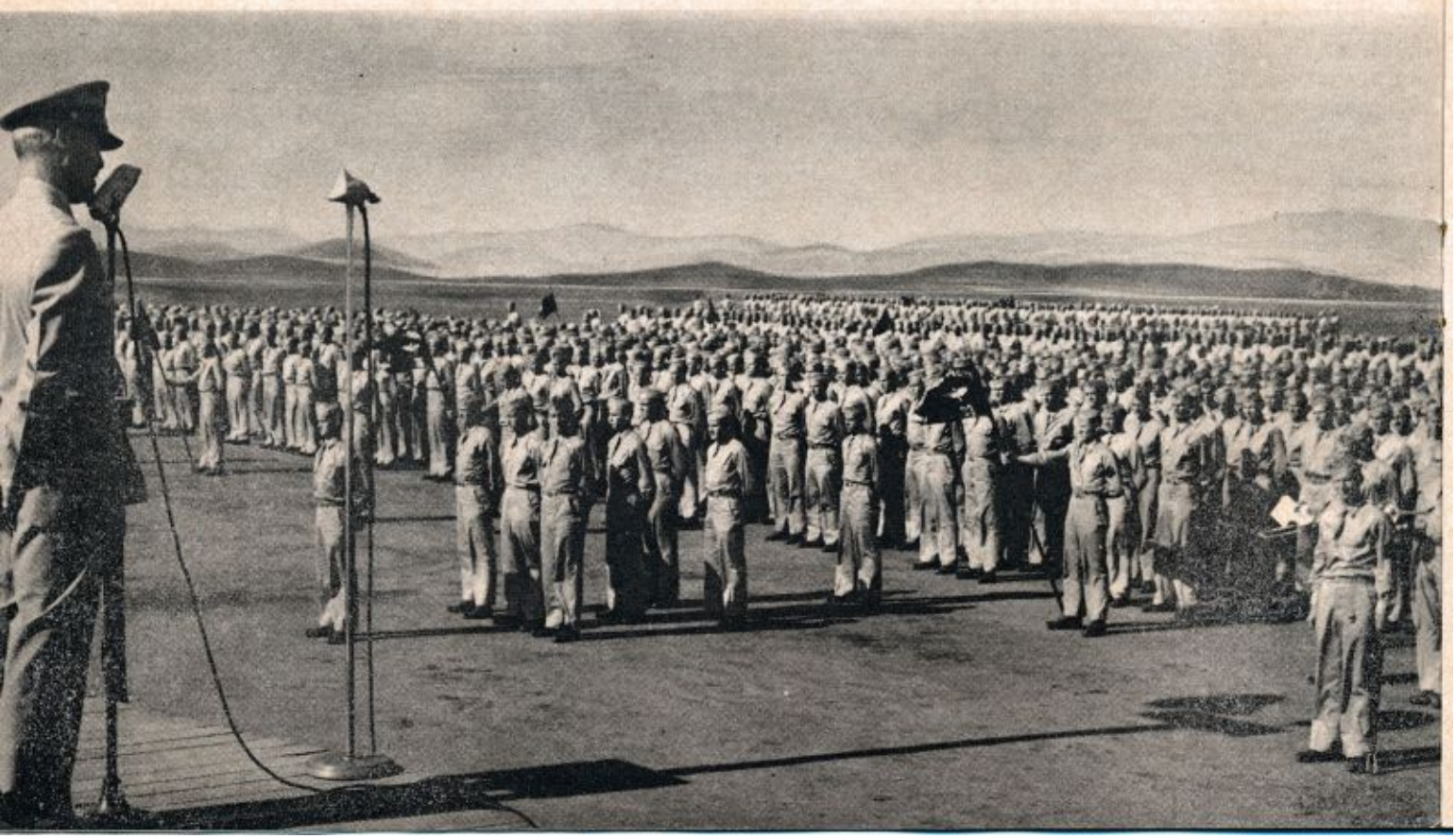
In the Rotor Pursuit you try to keep a stylus in the center of a disc while the disc is revolving eccentrically on the turntable. The Two-Hand Coordinator provides a version of the old "pat your head and rub your stomach" game. In Finger Dexterity, you turn square pegs in round holes, while in the Aiming Stress, you hold a stylus at arm's length with its end projecting into a small hole and try to keep it from touching the sides of the hole.

You have a good time with "psychomotors" and the results tell a great deal about your aptitude for Air Crew. In both paper work and gadgets you'll have a sneaking suspicion that you did your worst, whereas probably you will be doing a pretty fair job. No single test will make or ruin you. Don't make the serious mistake of thinking you can "weight" your score by slighting tests which do not seem to lead to your preference. If you do you are likely to find yourself grounded.

After you make the round of psychological tests you will proceed to get acquainted with the Flight Surgeons, and they with you. The Flight Surgeons use modern methods which have time and again proved their worth. You will sit down with one of the Flight Surgeons for an individual interview, the ARMA, or Adaptability Rating for Military Aeronautics. Aided by the findings in your aptitude tests, he will ascertain whether you are temperamentally suited for Air Crew.

"Yes, Mister," one Flight Surgeon explained to a cadet, "I certainly am interested to find out whether you have any nervous blind spots. Some day I may have to fly

COMMENCEMENT DAY AT SAAAB is the first milestone passed in the cadet's progress toward those coveted wings. On this day, with mixed feelings, he looks forward to further training, and back to pleasant memories of Preflight.



UNFORTUNATELY NOT EVERY CADET has the necessary qualifications for Air Crew. Before being eliminated, he is given all possible opportunities to further his case before the Faculty Board. The findings of this board are used to assist in placing the cadet into his proper field. This procedure saves the lives of those not suited for Air Crew.

with you and I want to go on living. Just as definitely, I want *you* to go on living. You aren't the kind of pilot the Air Force wants if you have guts enough to pull out of a bad spin, but then go soft and land in the first peat bog you see."

The form number on the physical examination which follows the ARMA is the 64. It is very much like the exam you took when you entered the army, except that it concerns itself more with flying problems. For one thing a dive bomber must have a good heart. Your lungs will be X-rayed and any defect shown up in stereoscopic vividness.

Your eyes, of course, are all-important. Not only will you be examined for acuteness of vision, color blindness and muscle balance, but you will be tested for depth perception and night blindness with new divices invented for those purposes.

It is a part of the Flight Surgeon's responsibility to save good men for Air Crew. If you are reported as one who has a high aptitude for flying but have certain muscle imbalances, you may be hospitalized until an operation corrects that handicap. Recently one cadet gleefully reported for Preflight, his eye muscle imbalance corrected after some skillful eye surgery. On the other hand, a man with a low aptitude rating would not be eligible for the medical treatment which would be required to make him physically acceptable.

These glimpses of the various tests that you will encounter while going through classification may have given you the impression that it is a complex and nerve-shaking series of experiences. Of course, to one who is not acquainted with the process, it must seem complicated. If you find it unduly nerve-shaking, you will realize that it is a good thing to find out, now, that your nerves can be shaken a bit by unusual experiences. Your whole life in Air Crew is altogether likely to be replete with "unusual" experiences.

In a nutshell, in classification we attempt to discover whether you will do well in Air Crew and, further, in which of the three capacities, bombardier, navigator or pilot.

The men who pass their tests are now classified. The reports of all those with whom you have come into contact pass to the Faculty Board in the Classification Section. What the psychologist and the Flight Surgeon have to say about your qualifications and aptitudes is correlated with all other information about you; and, if your qualifications agree with your preference, there is no problem. If they do not agree, but are close, you are usually assigned to your preference. In cases where there is doubt, you will be interviewed by a classification officer.

STUDENT OFFICERS

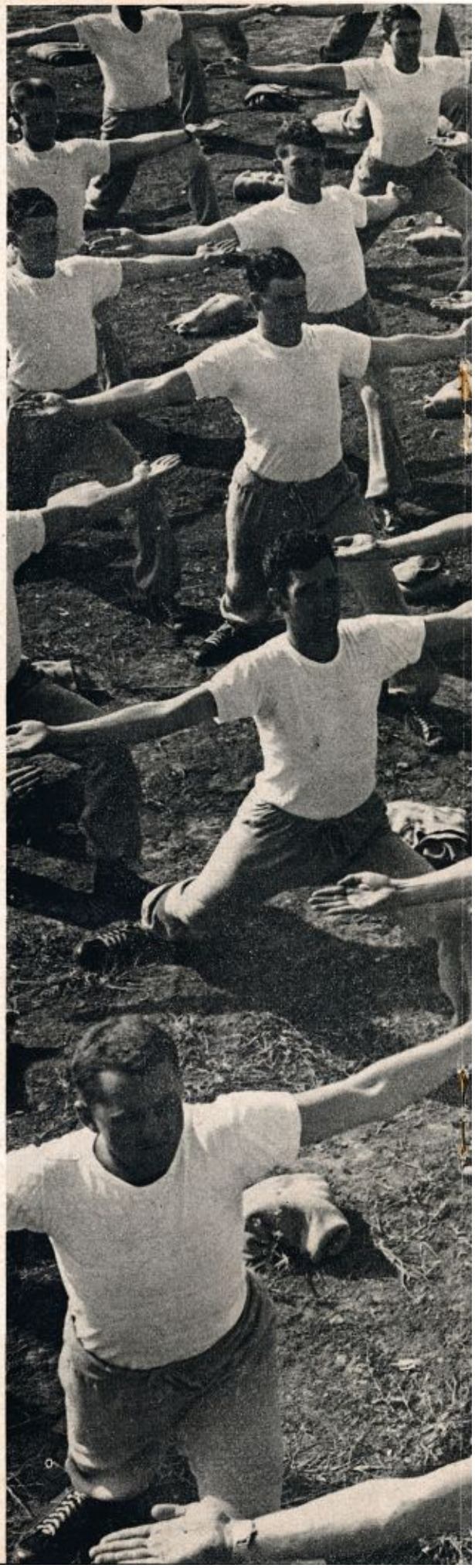
Student Officers follow procedures of classification which are exactly the same as those prescribed for other candidates for Air Crew. They are not immune from the various regulations and tests. If passed for Air Crew, Student Officers may, however, be given a concentrated Preflight course which will tax them to the utmost.

COMMENCEMENT DAY

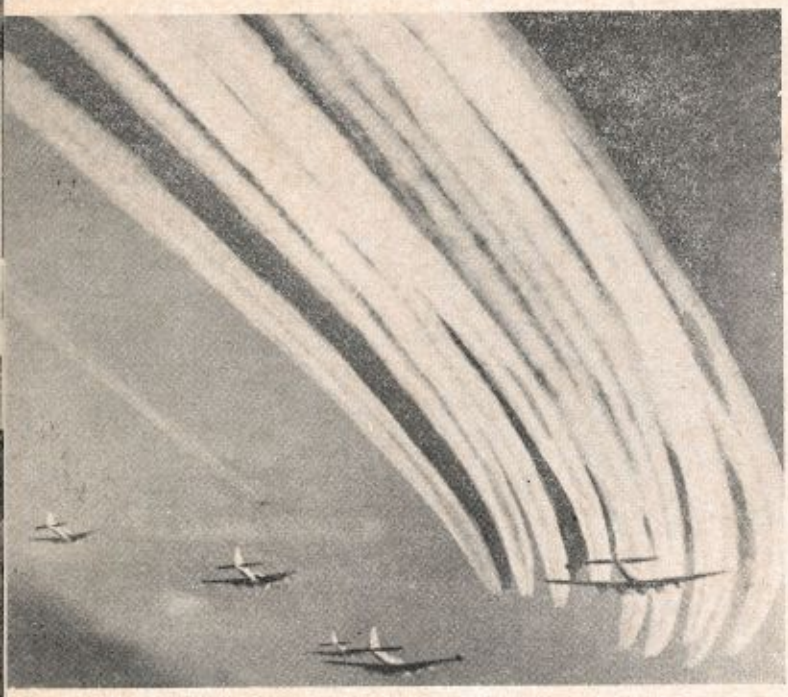
The day you potential cadets receive word of the Air Crew niche to which you have been assigned is a big day in your lives. This is Commencement Day, a formal occasion conducted with military precision. On this occasion, if your aptitude is markedly at variance with your choice, and yet you are adjudged suitable material for Air Crew training, you may find that you do not "draw" the particular assignment you had hoped for. If you wish to appeal the decision, you may appear before the Faculty Board or a classification officer and present your point of view. They will listen to you with understanding and render a final decision on the evidence in your record, which will be carefully reviewed. Their decision is final—if you wish to go on with Air Crew training.

At the Commencement Day ceremonies, when you accept your assigned Air Crew position, you will also designate the status desired while taking Air Crew training; i.e., Aviation Cadet or Aviation Student.

NOT LEAST IN IMPORTANCE in the curriculum is physical training. Daily instruction is given under the supervision of trained, commissioned officers. Physical health and a well-developed body are absolutely essential in the cadet training program. Statistics have been compiled which show that pilot fatigue makes itself manifest far more quickly in the body which has not been kept at its physical peak. A full athletic program is provided for cadets. In addition to the usual calisthenics, competitive games, such as football, basketball, softball, speedball, track and bowling, stimulate interest in physical training and help to maintain physical fitness.



In the event that a cadet is eliminated from one of the training schools along the line, after completing Preflight, and returns to SAAAB, he may still be eligible for another Air Crew chance—in a different category. Say he is eliminated as a pilot. If his record is good and his rating high, he may be permitted to go out for bombardier or navigator training. In this event he will normally by-pass a second sojurn in Preflight. He will be given a quick refresher course, perhaps a special examination, and usually be ready to move out with the next eligible group in his category.



B-17s, Queens of the Sky, Pride of the Army Air Forces, fly steadily on and on.

M-DAY ELIMINEES

If, in our judgment, certain trainees lack some of the qualifications for Air Crew—and this will happen to some of you—then you will appear before the Faculty Board and be so informed. There are other interesting and responsible positions in the Air Forces eager for your particular talents.

For those with Air Crew classification, what comes next?

ACADEMIC COURSES

You have now been classified, Mister, as a bombardier, navigator or pilot. As soon as the next class starts, you will begin a nine weeks' course in Preflight School. In the intermediate period, before this schooling commences, you will be kept plenty busy with P. T., drill and qualifying lecture courses. You are still a trainee until the order comes through that transfers you to Preflight School. Then you become a full-fledged Aviation Cadet or Aviation Student. The schools are here on the Santa Ana Army Air Base, and your orders assign you to a squadron in your particular school.

From there on it's sweat, study and discipline. You're still a soldier, Mister, so you are going to drill, stand inspection and take part in reviews, parades and ceremonies. You are going to continue with one hour a day of rigid physical training that tortures muscles for a while, but that gets you up—or down—to fighting weight.

Above all, you are going to study. There will be several classes every day with tests coming thick and fast. Whether you are classified as bombardier, navigator or pilot, you will have to study as never before, study harder than you dreamed you could ever drive that brain of yours. For all three of you are being trained for—Air Crew.

The curriculum will be intensive and varied. Some of the subjects which you must assimilate will be mathematics, physics, code, airplane identification, naval identification, maps, charts and aerial photography, medical aid, chemical warfare and military subjects.

Santa Ana Preflight Schools, Mister, run on a six-day-a-week schedule, and each day includes from ten to twelve hours of concentrated physical training, drill, class room instruction, study and incidental duties connected with military life. It leaves little time, if any, for extra-curricular activities, for the objective is to put you in a plane over enemy territory at the earliest possible moment.

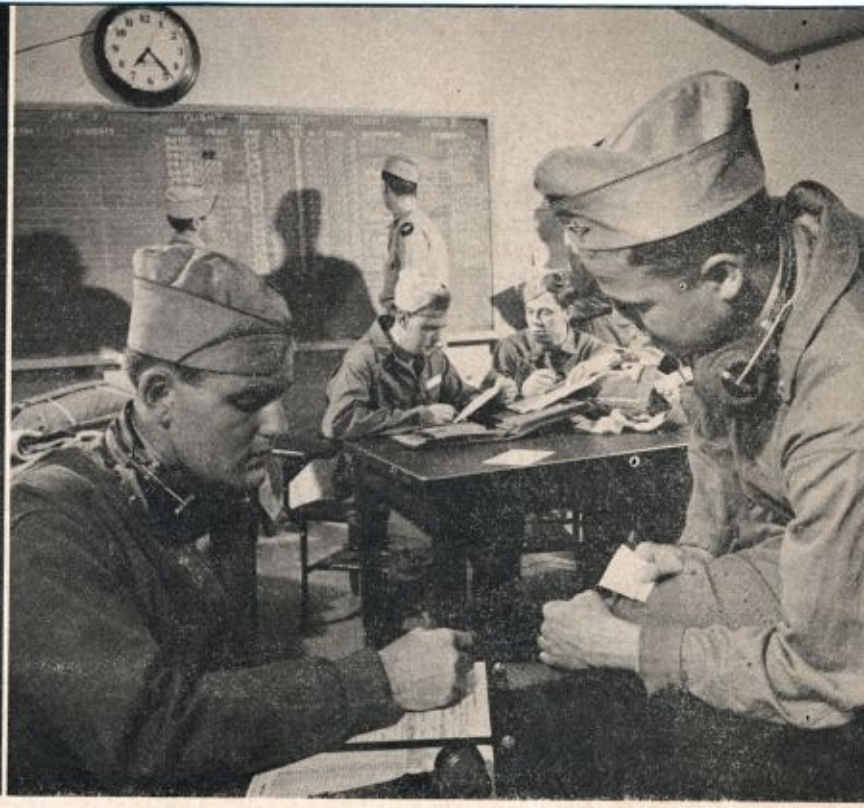
Time is of the essence.

From Santa Ana, bombardiers, pilots and navigators move on to their respective schools, where they continue their ground training and get plenty of actual experience in flying ships. Let us follow each one.

BOMBARDIER

"Bombs Away" echoes and re-echoes around the world today as United Nations' bombardiers lay their eggs straight and true on enemy shipping, airdromes and war plants. The bombardier has been called "the deadliest man in the Air Corps," and he believes it. He thinks he's the guy who's winning the war. Maybe he is.

From the moment that the cadet bombardier points for



THE BOMBARDIER PRACTICES with the synthetic, traveling trainer many hours before he enters a plane and begins his actual flight training. Throughout the cadet training program flying instruction is closely combined with both ground school and classroom instruction.

Bombardier Training, he begins to feel the importance of his future job.

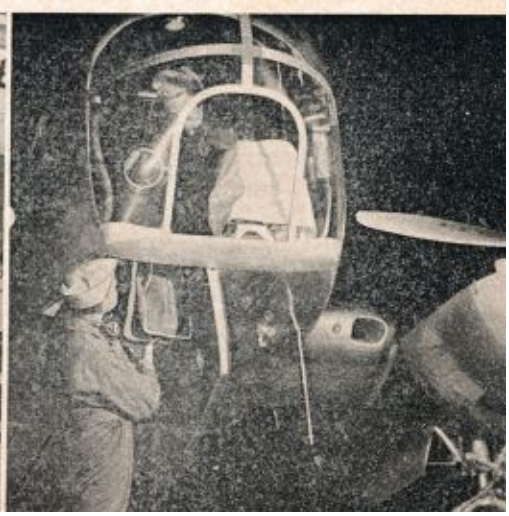
He learns the theory of bombing from classroom instructors and numerous training films. He climbs aboard a high, moving platform and takes his first sight on a target through a bombsight. He is only a few feet off the floor but his target is small and he must be accurate.

Beside him at all times is an officer instructor who acts as coach, who points out his mistakes in mental calculation and in physical reactions. He must practice diligently until he can hit the target squarely on each try.

The competitive spirit develops rapidly. Each cadet vies with his fellows to make the best score. At the same time, there is a growing feeling of pride in each man that he is connected with the bombardiering fraternity.

"I could have been a pilot, navigator, or gunner," said one cadet at Victorville, taking time out for a cigarette, "but the bombardier is the guy who gives 'em the business."

FINALLY THE CADET is handed the famous bombsight. This instrument, coupled with unexcelled training given the American bombardier, has taught Hitler, Tojo and company, to fear high altitude, precision bombing. Witness: Wewak, Rabaul, Hamburg, and other bombed installations.



OFF INTO THE NIGHT goes the cadet to practice his bombing. The ever lessening "C-E" or "Circular Error" tells him he is on the beam and soon will be off to pay nocturnal visits to Hirohito or Hitler.

Although he must learn how a bombsight operates and how to use computers, arming, wires, fuses, bomb racks and a dozen other devices, the cadet soon discovers that dropping a bomb right is not a purely mechanical function. It takes steady nerves, quick reactions, and physical dexterity.

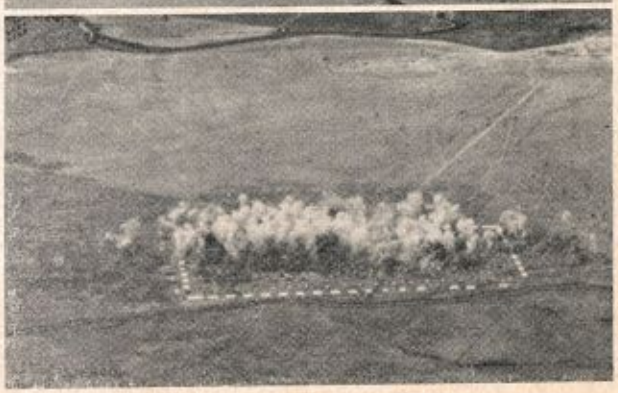
The bombsight is necessary as an aid to determine the correct point of release, but it must be handled with the utmost of human skill. The United States Air Forces have chosen precision bombing as their principal air weapon. As an air chief puts it: "We must bomb by precision methods. We cannot annoy the enemy to death. We must make it impossible for him to carry on the war against us."

The cadet bombardier begins his actual flying on "dry run" trips in which he goes through all the motions of bombing without dropping the bombs. These first few flights are to give him air familiarization.

Now he is ready for his fire bombing mission. He watches the ground crew servicing the plane and loading the bombs in the racks. His instructor is ready to climb in beside him, and his bombing partner or an enlisted man in the rear of the fuselage armed with a movie camera.

The instructor guides his every move, but one day the instructor fails to show up. The pilot grins at him and he knows then that he is to go on his first solo mission. As

WITH BOMB BAYS OPEN the AT-11 drops its eggs on the target. After practice bombs, demolition bombs are used to blast the enemy. While the cadet is in training, the target is only a simulated ship or installation. Following the training period, the quest for the target in actual combat becomes a grim reality.



the big trainer plane leaves the ground and heads toward the bombing range, the bombardier does his utmost to suppress a mixed feeling of ecstacy and doubt. He experiences the thrill of shouting "Bombs Away" into the interphone, and he may wonder whether he has missed his timing and the 100 pound practice bomb has overshot the mark. He soon knows.

As the days go on, he finds his "C. E.," or "Circular Error," decreasing (the distance his bombs fall from the "shack" or "bulls eye"). His goal is to keep his score down. The movie camera is the scorer.

Near the end of his training, the cadet is allowed to drop real demolition bombs in which T.N.T. is substituted for the usual sand. As in earlier missions the cadet draws from his commanding officer the "objective folder" containing pertinent instructions. Acting now as his own navigator, the bombardier plots the course and uses his knowledge to direct the pilot over the target.

The thrill of his initial flight is repeated, for this time the ground below rocks as the high explosives strike and demolish the objective.

He is ready for his wings. He is commissioned a second lieutenant or flight officer on graduation day, and is ready for his next assignment, probably with a tactical squadron where he will receive operational instruction in large four-motored heavy bombers.

Here he meets the other members of his "team" or Air Crew, the men with whom he will work and live for the remaining period of his service.

"Bombs Away" shouts bombardier to pilot and a blockbuster descends on the center of Berlin. Next stop, Tokyo!

NAVIGATOR

When a Liberator sets out to night-bomb the Skoda works in Pilsen, a member of the Air Crew who gets them there and gets them back is the navigator. He charts the course before the flight, avoiding that low pressure area over Rotterdam and by-passing the ack-ack batteries and interceptor bases in the Ruhr. In flight, it is his responsibility to know where the

IT IS VERY IMPORTANT that accurate courses be computed both to and from the target. The cadet navigator checks his calculations by spotting the target on the ground and chalks up another problem as "solved—on the nose."

ship is every moment, even though all German-run radios are off the air and the few ground lights he can see may be set by enemy camouflage to deceive him. He's the "Little Tin Guy," the man who makes no mistakes.

It is the navigator who gets the plane to the objective, where the bombardier lays his eggs. And if the pilot runs into soupy weather or an unexpected covey of Focke Wulf 190's on the way home, it is the navigator who keeps the plane from being lost, even though it has to fly hundreds of miles off its charted course. Then, since he is good, he brings his plane back to a small field in eastern England. He has to be good, or he might sit down on a very wet spot in the North Sea, instead.

It takes plenty of brains to be a navigator. A few years ago they were rare mathematical geniuses who did overtime study before accompanying the longer pioneer flights; new good schools, precision instruments, and keen students have changed things. In his compass, driftmeter, aerial dead reckoning computer and sextant, the navigator carries a round trip ticket to any place on earth. He learns methods in California that may some day guide him from Iceland to Norway.

"Have I the stuff to make a good navigator?" the cadet asks the classification officer. "I'm no mathematical genius."

"Yes, Mister, if you have an aptitude for math; and the will to learn. You must have a systematic and orderly way of doing things, and a lot of common sense. You should be able to keep cool and make decisions rapidly under pressure. And you should have a knack for handling precision instruments.

INSTRUMENT FLYING STARTS almost immediately when the cadet takes to the air and is stressed continually. Visibility unlimited is not always ready-made. Instrument flying is necessary in take-offs and landings when everything is practically "closed in."

"For the rest, if you have the gray matter between the ears, we'll teach you all the trig you'll need. It's a modern miracle to see how much math and physics and geography you'll absorb in nine weeks at Preflight. You'll learn more than you would in a year at college during peace time."

It will take eighteen weeks of hard work to make you into an expert navigator after you leave Santa Ana and go to navigation school. At first things will look tough. Navigation looks so complicated to the beginner that new cadets often say, "If you get there zero-zero" (to the exact point at the exact time planned) "the drift-meter will play the *Star Spangled Banner* and hand you a cigar."

But before the course is over, every navigator is getting there zero-zero. He has to for no mistakes can be made when raising Tokyo as a land mark.

Like a bombardier, you'll spend the first few weeks on the ground. You'll study ground courses such as Radio, Weather, and Navigation, and practice what you learn in a navi-trainer (blood brother to a Link trainer). You'll learn how to navigate that blind craft, by instruments, half way across the Pacific and step out without getting your feet wet, even though you miss Samoa on the first trial.

Later on you'll get a good deal of flying. You'll fly with a pilot, an instructor, and other navigation students. You'll have a desk, a driftmeter, a compass, an inter-crew phone, and, if it's a high altitude mission, an oxygen mask.

During the flight you'll figure your course while your companions constantly check you.

You may also be trained in bombardiering and will be trained in gunnery before you go into action. An Air Crew with interchangeable parts is a goal worth working for.

There are four kinds of navigation: pilotage, dead reckoning, radio, and celestial. They supplement each other. If there is no radio beam and you can't see the ground because of the overcast, you'll have to travel by instrument (dead reckoning) and check your location by the stars. Celestial navigation is particularly valuable in long flights over water.

When you complete navigation school, you'll be certified as a graduate navigator, you'll get your wings, and you'll be appointed flight officer or commissioned second lieutenant. You'll be paid the same as a bombardier or pilot and you'll be able to show them their way around. And that's just what you will do when you join the members of your Air Crew at an Operation Training Unit, learn to get used to a Fortress or a Marauder, and get set to take off for Shangri-la.

PILOT

The United States is giving its military pilots the best training in the world. The results are apparent in our scores in China, in the Solomons, in Tunis. Our specialties are precision fighting and precision bombing. The nine months ahead of the student classified as pilot are tough and arduous; any false turn, any weakness will mean "elimination." Better be eliminated in Primary than over Kobi.

A successful pilot in the Army Air Forces must have more than a desire to fly. Flying in war time is a different job from peace time flying. The "stunts" of Lincoln Beachey are routine maneuvers for the man who flies the Mustang. The Air Crew in a Fortress must be able to remain for hours at 35,000 feet without getting the bends. The man who rides the Vengeance must not black out at the end of his dive.

Cooperation in the air is the keynote. The members of Air Crew must work togther; there is no room for a prima donna in a bomber. And formation flying, where death hovers just beyond each wing tip, is a product of precision and discipline. Four hundred Yank planes bombed Palermo in less than an hour; each was a cog in a machine, moving smoothly and efficiently in its place.

To qualify as a pilot you must have brains, aptitude, concentration, a keen mind, a strong body and *perfect* coordination. Above all, you must have the temperament of a fighter—not a hysterical scrapper but a cool, determined, efficient, calculating killer. When you take an Airacobra into action, you are a flying trigger harnessed to a cannon. Your task is to see that the cannon does its job.

Only the best men who are classified as "pilots" will get their wings. To survive you will have to pass *all* of your academic courses in Preflight, you will have to solo in a reasonable time in Primary, and at sixty hours be better than most civilian pilots. In Basic you'll have to fly planes in bad weather, at night, and in formation; and in Advanced you may have to pull out of a spin at 300 miles an hour.

The pilot's training is broken into four parts, like a college course. The freshman takes nine weeks of Preflight, the sophomore nine of Primary, and the junior and senior nine each of Basic and Advanced. When you graduate at the end of Advanced, you get your wings and become a flight officer or second lieutenant. Then you have a few weeks in an Operational Training Unit before you are sent to a theater of operations.

"This is an airplane," says the cadet's first flying instructor at Primary School.

He points to a blue-and-yellow two-seater bi-plane of very moderate horsepower.

"When you push this stick forward, it goes down. When you pull it back, it goes up."

It has been said that "Life begins in Primary." At any rate, the cadet begins flying, probably in a Stearman PT-17 or in a Ryan PT-2. All Primary Schools are operated by

Awarding those silver wings on that great day.

civilian contractors who are under AAF supervision and are expert in teaching men to fly. Practical psychologists and efficiency experts, they overcome a student's fears and anticipate his weaknesses.

While he is getting his sixty hours of flight training, the cadet continues with Primary ground school, studying the theory of flight, elementary meteorology, navigation and the airplane engine. He is not expected to become an engine mechanic but he must understand how his plane is powered.

Advancement from Primary to Basic continues to call on every aptitude the cadet possesses. The Pratt and Whitney and Wright engines in Basic trainers, have improved characteristics over the lower-powered engines used in Primary ships. The cadet's first impression is customarily that he is not flying the airplane but that it is flying him. He may feel like a man on a runaway horse.

His army instructor teaches him the use of the many instruments on the panels of the Vultee BT-B. He gives him pointers on night flying, cross-country flying, formation work, instrument flying, navigation, acrobatics, Link Trainer, and many other valuable aids.

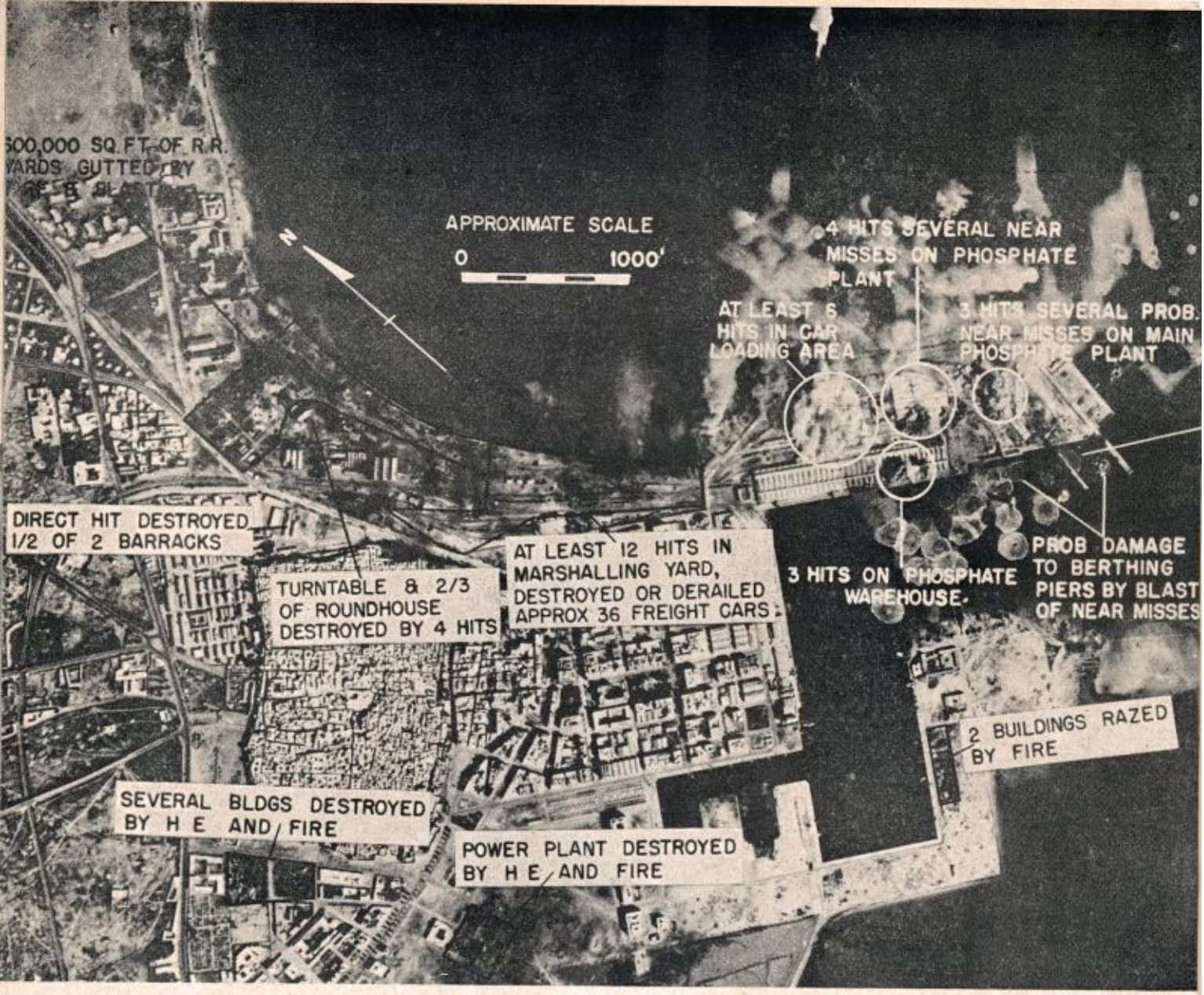
Experiences pile up as training grows more and more intensive. Military discipline becomes inexorable rather than relaxed. Physical training is deliberately more complicated. The difficult "coordinating" exercises, designed to make him supple as Nijinski, have been supplemented with training to make him "swivel-necked like an owl," so that he will quickly spot the pursuit ship on his tail; and firm as a drum in the abdomen so that he will be able to dive without discomfort.

In ground school the cadet becomes an expert in reading weather maps and teletype reports, and learns why everything breaks loose when a cold air mass moves in under a warm one. He learns how to navigate with compass and driftmeter and perfects his skill in reading code. He masters the intricacies of the radio telephone and learns about visual airdrome signals.

Shortly before the cadet leaves Basic his instructor and his squadron commander discuss with him what type of advanced training he may have open for him. His size, his psychological make-up, his age and his performance at Preflight, in the Altitude Training Unit, will all be factors in the decision.

During the period of the intensive nine weeks' advanced training, cadets handle ships that are heavier and more powerful than any he has known, and which are much closer in design and performance to

Receiving his wings from his "best gal"—mother.



FLYING THE FINEST EQUIPMENT, our Air Crews, with their training par excellence, never fail to make their mark on targets such as this. The importance of precision bombing in modern warfare cannot possibly be overestimated. Bombed factories and objectives not only are unable to manufacture equipment for Axis use, but serve effectively also to lower enemy morale.

combat aircraft. In the AT-6a, he will learn to use the airplane as a weapon. He will learn the actual difference between fair flying and perfect flying.

In ground school Single-Engine pilots and a small percentage of Twin-Engine pilots are trained in fixed gunnery so that they will be instinctive masters of their armament. Also, they study restricted and confidential intelligence reports on technical problems and combat flying. By the time they leave Advanced, these pilots feel that they are blood brothers of the boys who have fought in the South Pacific and in Africa. They are on the inside.

TRANSITIONAL TRAINING

After the pilot receives his wings and is graduated from the advanced school, he must spend nine weeks in transitional flying, which is exactly what its name implies.

The pilot is taken through the necessary procedure to teach him to fly combat aircraft. Those desiring four-engine transitional training are sent to Roswell or Hobbs, New Mexico for B-17s and to Albuquerque for B-24s. There they receive ground school instruction in all phases of the maintenance and operation of four-engine aircraft. At the same time, the pilot is given courses in Radio Code,

both visual and audible, Navigation, Meteorology, and Oxygen equipment.

One of the interesting phases of the flight training is the instruction in the actual practice of handling aircraft in all types of emergencies with one or more engines "dead."

Toward the end of the course the new pilot dons mechanic's coveralls and actually spends time on the line, learning how to "crew" aircraft. He learns all types of inspections, maintenance, and repair so that when he lands on that lonely island in the South Pacific he doesn't have to sit hopelessly by while awaiting the arrival of his crew.

The total time spent in flying during the transitional period is better than one hundred hours and includes day and night flights, instrument flights, cross country flights, high altitude formation flights, and calibration instruction.

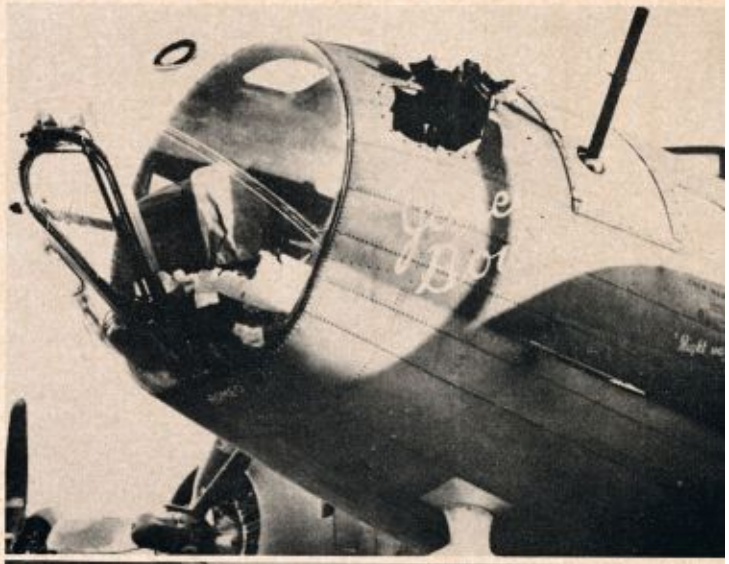
Upon completion of the course the pilot is rated as a qualified first pilot for four-engine aircraft. From here the pilot goes to his operational training unit where he teams up with his buddies and becomes a member of the greatest non-stop team in the Air Forces. The next stop is Belfast or Cairo, or the islands of the sinking sun.

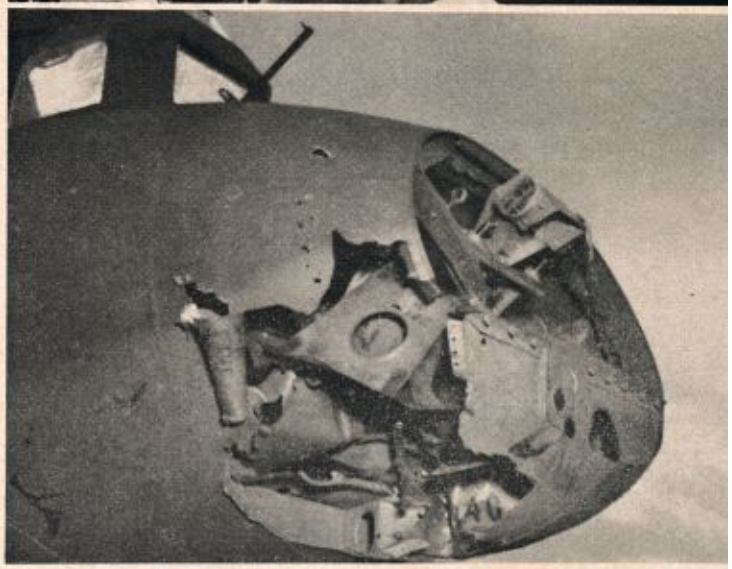
Off we go into the wild blue yonder,
Climbing high into the sun;
Here they come, zooming to meet our thunder,
At 'em boys, Give 'er the gun!

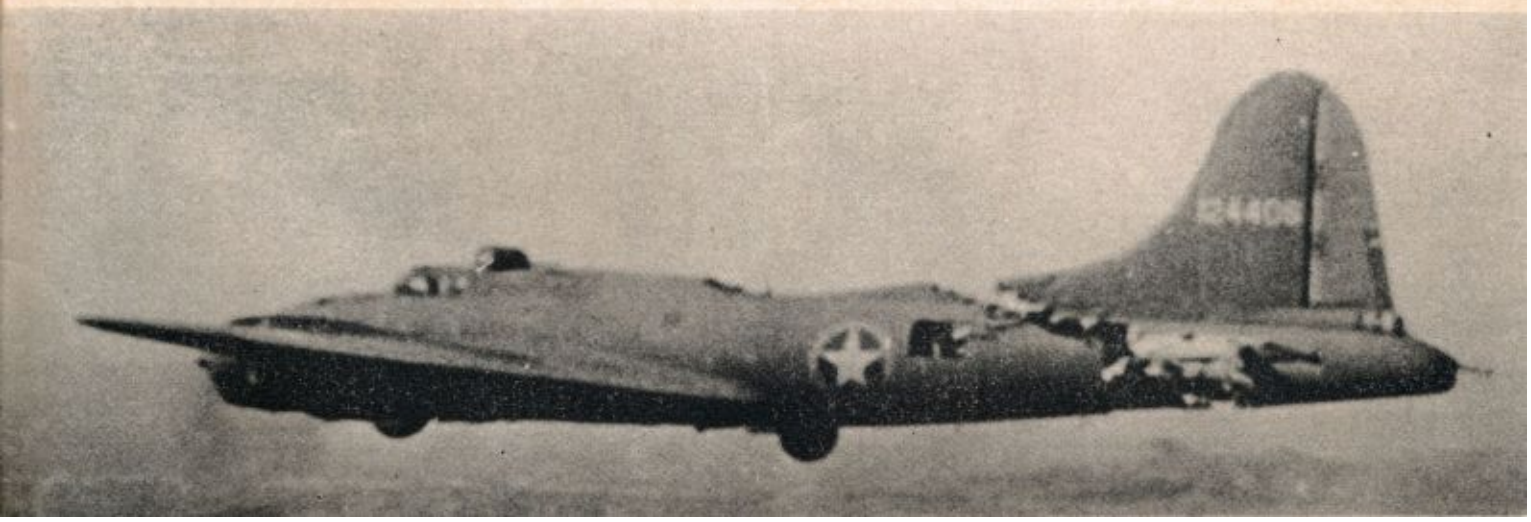
* * * *

Flying men, guarding the nation's border,
We'll be there, followed by more!
In echelon we carry on.
Nothing'll stop the Army Air Corps!

AMERICAN AIR CREWS and equipment are the best in the world. These B-17s after being subjected to heavy shell fire return safely to their base. Well-constructed planes give assurance as well as protection to the brave men who fly them, and will spell defeat for Japan and Germany.



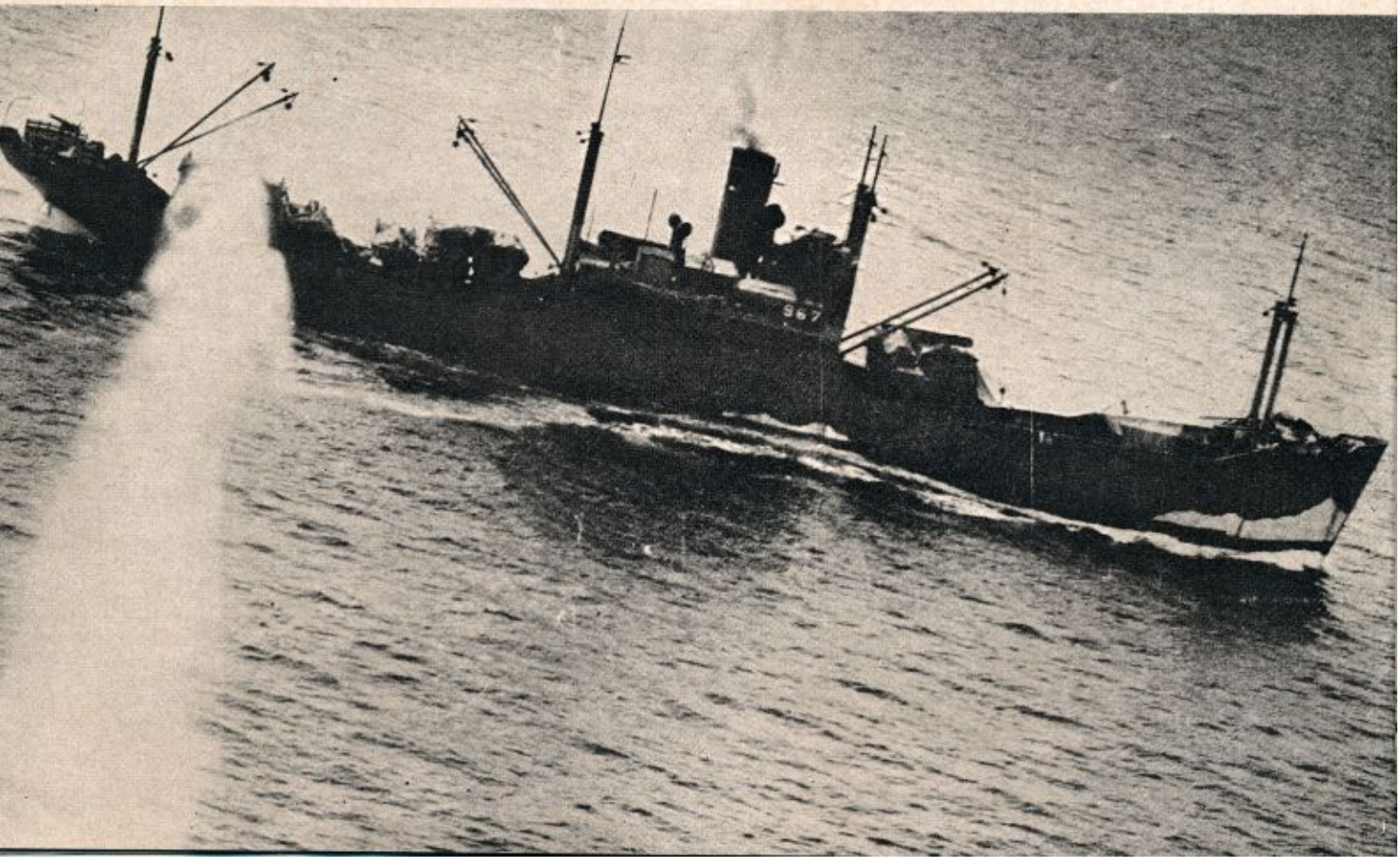


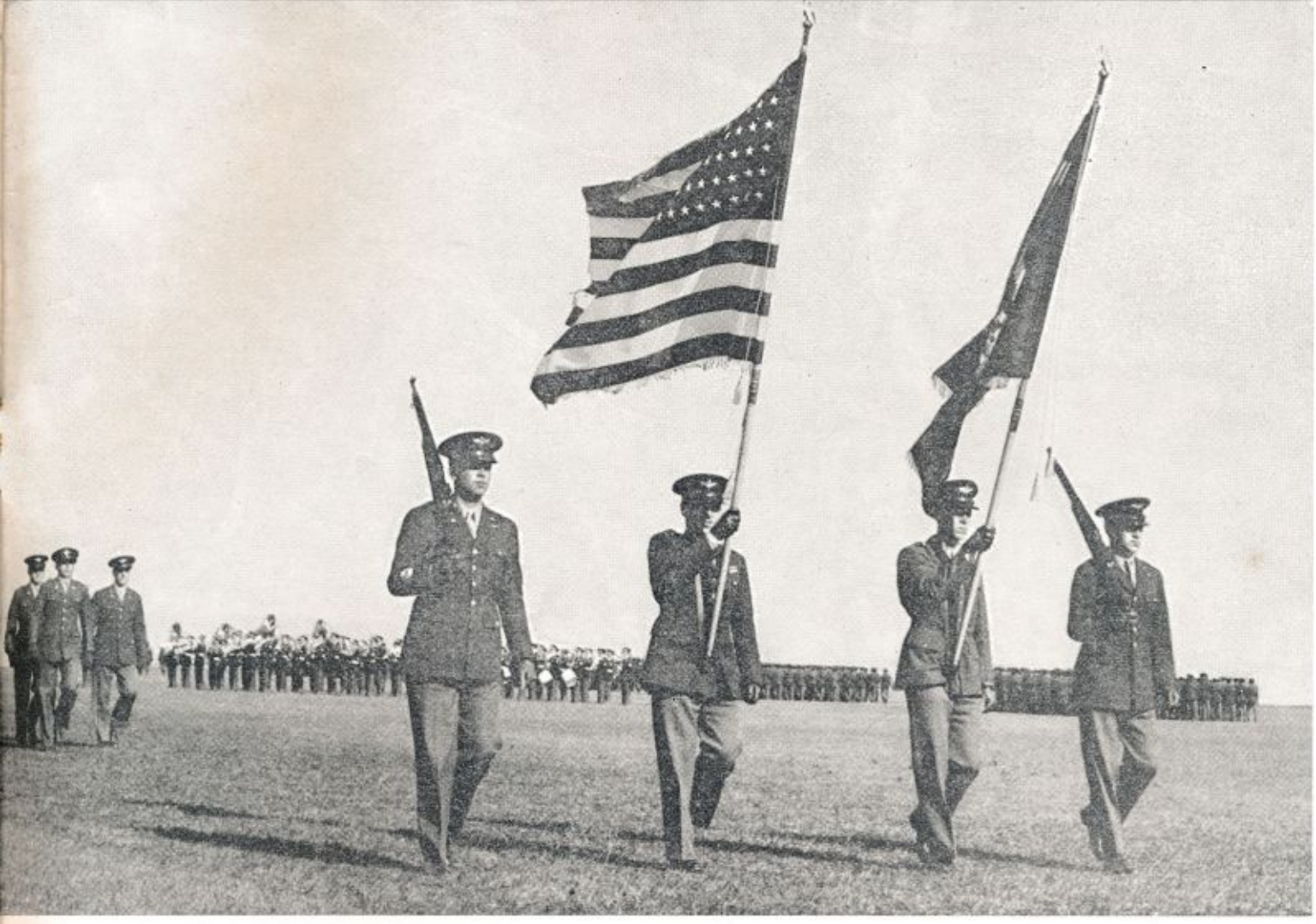


Together We Fly

The words of enduring songs are not mere emptiness and vapor. Almost every line of the official song of the United States Army Air Forces has a message and significance. These are stirring lines. The song is a stirring, daring song. It connotes high adventure, a promise and a threat. Look again at the lines just quoted. Read each separately, and pause. Read them, and sing them, with pride and faith. The enemy should know this song. If he grasped the implications he would realize what "unconditional surrender" means, and that he cannot escape his doom. . . . Above all, it is a song of comradeship; TOGETHER WE FLY. . . . "At 'em boys, Give 'er the Gun!"

DURING ADVANCED TRAINING, the bombardier has as a target the outline of a battleship marked on the desert floor in Arizona or New Mexico. When released for combat, the bombardier's ability to hit the target consistently and precisely is unfailing. The practice bombs might be said to foretell the fate of enemy ships found in the bombsight.





THE WEEKLY CADET REVIEW at Santa Ana Army Air Base is important in the training program. At this time individual awards for outstanding service are presented and the "E" flag is awarded the squadron excelling in marching and good conduct.

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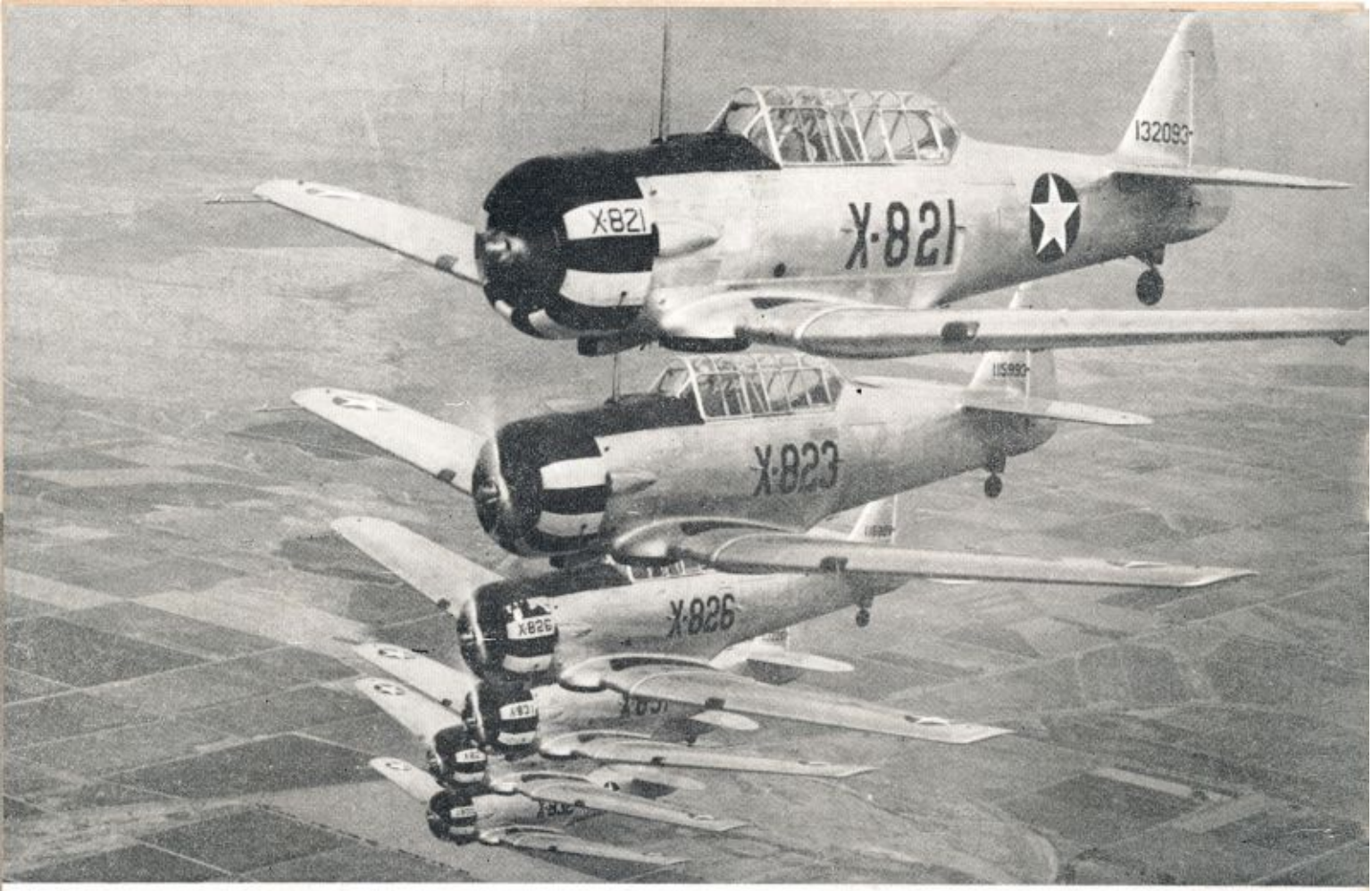

"OFF WE GO into the wild blue yonder, climbing high into the sun. Here they come, zooming to meet our thunder. At 'em boys, give 'er the gun! Down we dive, spouting our flame from under, off with one helluva roar! We live in fame or go down in flame; nothing'll stop the Army Air Corps!"