

625 TECHNICAL SCHOOL SQUADRON

MISSION

LINEAGE

625 Technical School Squadron

STATIONS

Amarillo AAF, TX

ASSIGNMENTS

31 Technical School Group

COMMANDERS

Cpt Walter L. Cole, #1943

HONORS

Service Streamers

Campaign Streamers

Armed Forces Expeditionary Streamers

Decorations

EMBLEM

MOTTO

NICKNAME

OPERATIONS

Probably no course of study could be more thorough than that given students at the schools of the Amarillo Army Air Field. The new student spends no few hours in the beginning getting

acquainted with the tools and machines he will use. The majority of the students have had no mechanical training whatever, and the techniques he develops in the use of tools and machines will greatly influence his ultimate ability as an airplane mechanic and maintenance man.

In the great building labeled "Mechanics' Tools" are numerous rooms which accommodate from 12 to 25 students in each class, and the classes are in session around the clock! There is not one hour in any twenty-four during which students are not in classes, at drill, at rest, or sleeping. They have one day a week to themselves.

During this familiarizing period students are shown motion pictures of various processes, take part in chalk-talks, and are under the constant supervision of instructors, both civilian and military. It is during these classes that they "get the feel" of hacksaws, files, vices, drills, threading machines, aircraft plumbing tools, riveting tools, soldering, wrenches, and many special tools for various makes and designs of aircraft engines.

AIRPLANE STRUCTURE:

This is the third branch in the school system deals with the structural units of an airplane. Students have, up to this point, dealt with the various parts of aircraft. In "Structures" they begin to work on airplanes as a whole, starting from the bottom on wheel assemblies and nomenclature of all parts, working through to sheet metal and flight, controls Here is their first contact with empennage the assembly, and other large assemblies which up now have been studied in mock-ups. "Structures" is something of a milestone in the lives of students it is here that they begin to "roam" all over a real Fortress and really discover what makes it tick. I said that this branch of training is so thorough that more than one experienced pilot who has come for a looksee has lingered to discover parts he never seen before.

One complete cutaway of an entire B-17 is the source of never-ending interest for even the most advanced students. Another Fortress which is more often than not the center of interest is one that is made from at least five other airplanes of the same make and design that have been scraped or wrecked!

It is here that the student begins to really get his teeth into the enormous task of maintaining an airplane. He is finished with taking some part of an engine apart in the daylight and putting it back together again in total darkness to gain confidence in handling his tools. It now becomes his job to learn cable maintenance, electrical contacts, splicing, fundamentals of electricity, induction and electro magnets, parallel circuits and magnetism, trouble shooting such as finding direct and cross short circuits, tracing circuits, turnbuckles and lock-washers.

Safety in all its many ramifications is stressed in "Fundamentals." Instructors begin here the most important task of impressing upon the students the responsibility that is theirs. Pilots, gunners, bombardiers, navigators—whole crews will have to rely on the safety-mindedness of today's student and tomorrow's expert mechanic.

While in "Fundamentals" the student is also introduced to "Technical Orders," Reams and reams

of information and instruction are on file in the library of this department, and the student must familiarize himself with their contents. Supply forms, correct procedures and many others are kept religiously and up to date. Every airplane has a maintenance sheet that tells its whole life history at a glance. Not even a rivet may be removed without the fact being noted. An accurate record of every airplane that leaves the factory for duty with the armed forces is kept from this time to the day its junked parts are disposed of. Even pilots relieving one another while in the clouds must note these relief's—so that every hour of life in any airplane is recorded as to not only how many hours it flies, but who is piloting it! Besides, every last nut and bolt has its own history. There is probably no machine on earth, the intimate details of which are more fully known, than a military airplane!

The now world-famous B-17, the "Flying Fortress," is the special concern of Amarillo Army Air Field Training Schools. Many others are studied and handled with the same precision, patience and thoroughness, but the Fortress is THE airplane as far as students are concerned!

Breathes there a man with soul so dead—that he would not like to tinker with an engine—any engine? It is probably safe to state that a student who completes "Aircraft Engines" successfully will be a match for any kind of internal combustion engine thereafter. For in this department, through the medium of the ever-present instructor, motion pictures, slides, books and technical orders, the student learns the principles of aircraft engine construction—disassembly, assembly, pistons, cylinders, nose section accessories, lubrication, induction and exhaust systems, timing, clearance, firing and ignition, and hundreds of other parts of the power plants that keep them up there. As in the other departments, inspection and maintenance procedures are studied intensively and at the close of this course of study he is ready for the intricacies of any type aircraft.

Probably every student has fixed some kind of electrical gadget during his civilian life, and in "Electrical Systems," he is in his glory. There 'is no end to "things to fix," but the great difference here is precision, no margin for error, and safety.

The student first learns electrical system symbols, and then proceeds to aircraft storage batteries and lighting systems. Giant models, and cut-aways of the real thing, give him every opportunity to delve indefinitely into the mysteries of electricity. This department probably calls for more blueprint reading than any other, a condition which like many others, teaches a student not only the work at hand, but innumerable other crafts and sciences.

During his class periods in "Electrical Systems" the student studies, besides those mentioned, fluorescent lighting, condenser testing, starter systems, operating details, portable power plant maintenance, magnetos, construction, timing, ignition, spark plug, boosters, harness testing, switches, generators, methods of regulation, wiring—and trouble-shooting in all branches.

Many have been the inventions for flying an airplane without the standard propellers as we know them, but none have approached the power and drive of the modern "blade." The Flying Fortress, with twelve of them cutting into the air, be it normal or rarified, is probably the queen of them

all.

Students learn the hydromatic and Curtis electric systems, removal and installation, construction and operation, and why the propeller is shaped the way it is.

Finis! Shops are left behind, and students who have successfully reached Field Test are on the last lap before graduation! Sandwiched in between the many classes of the past weeks has been an almost daily routine of military drill, calisthenics (Amarillo Army Air Field has been judged to have the best physical fitness program in the entire district), medical examinations, shots in the arm, dental examination, and the many other routines in the life of any soldier. Now, even barracks are left behind, and the students move into the Field Test Area—an area of regulation tents, pup tents, dugouts, and camouflaged hangars! Here is the atmosphere of the battle area! Our student now lives, works and plays as he would under actual battle conditions. He walks his post during his trick at guard duty with the thought that an enemy may be lurking just over the hill; he repairs and overhauls B-17's, clad always in helmet and gas mask! An enemy observer MIGHT discover his skillfully camouflaged field hangar

All his studying of the past is now put to test in the field, and the chances are that, having made the grade to this point, he will graduate. Graduation is also in the field—in front of a dugout! The grind is over. It has not been easy at any time, and tough many times. There has been little liberty; few trips to town; the individual student has been one of thousands; he's virtually lived in fatigue clothes; he has worked at one time or other on all three shifts, which go around the clock! Yes, it was a grind. But now—on Graduation Day—will any student say the result is not worth it? Probably not, for the student, now an expert airplane mechanic, has been privileged to learn, at first hand, the mightiest weapon of war—the airplane

Air Force Lineage and Honors
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Sources

Air Force Historical Research Agency. U.S. Air Force. Maxwell AFB, AL.
Unit yearbook. *Amarillo AAF, 625th Technical School Squadron, 1943.*