

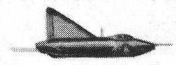
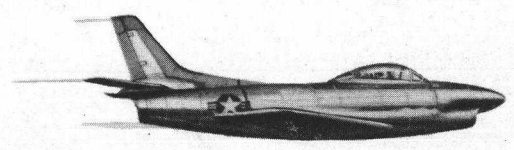
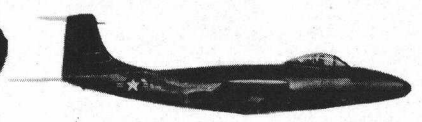
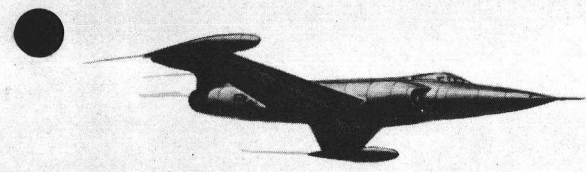


Ground Observers' Guide

DEPARTMENT OF THE AIR FORCE

750

Ground Observers' Guide



Foreword

1. **Purpose and Scope.** This manual is published for the information and guidance of the civilian Ground Observers in the Air Defense System. It provides a complete description of their duties and responsibilities.

2. **Contents.** The first part of this manual explains the operation of the Air Defense System and specifies the reporting procedures to be followed by Ground Observers. The second part of this manual includes the illustrations and other data required for aircraft identification.

3. **Changes to Manual.** Changes in reporting procedures of aircraft identification data will be promulgated by new pages which will be published and distributed as required. When such new pages are received, they should be inserted in the manual in addition to or as replacements for the existing pages as directed.

BY ORDER OF THE SECRETARY OF THE AIR FORCE:

HOYT S. VANDENBERG
Chief of Staff, United States Air Force

OFFICIAL:

K. E. THIEBAUD
Colonel, USAF
Air Adjutant General

DISTRIBUTION:

ZONE OF INTERIOR

Headquarters USAF..... 50
Major Air Commands..... 10
 Except Air Defense Command (for dis-
 tribution of one copy to each Ground
 Observer)..... 795,000
Subordinate Air Commands..... 10

Services — MATS & AMC..... 10
Bases..... 10

OVERSEAS

Major Air Commands..... 10
Subordinate Air Commands..... 10
Bases..... 10

This manual contains no copyright material.

Contents

PAGE ONE
THE ROLE YOU PLAY

PAGE THREE
THE AIR DEFENSE SYSTEM

PAGE FIVE
THE ORGANIZATIONAL SET-UP

PAGE NINE
ADMINISTRATION
OF THE OBSERVATION POST

PAGE ELEVEN
OPERATIONAL INSTRUCTIONS

PAGE TWENTY THREE
AIRCRAFT IDENTIFICATION

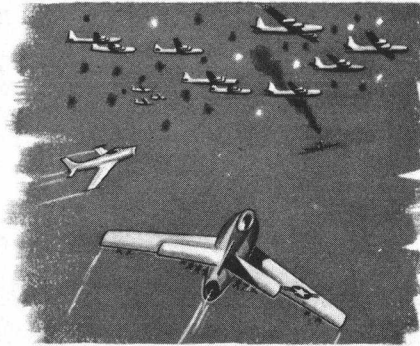
- **Single-Motored Aircraft**
- **Bi-Motored Aircraft**
- **Multi-Motored Aircraft**
- **Single-Jet Aircraft**
- **Multi-Jet Aircraft**
- **Recognition Features**



. . . . *the role you play*

We are in a dangerous position. In a period of international strife and lawlessness, we stand as the bulwark of freedom. Every would-be aggressor knows that he can't get by unless he defeats us first, for twice already—in two world wars—the tide of aggression has been turned by the weight of our industrial production. The next time, an aggressor will certainly try to eliminate us first. He will strike first at our production plants and at the people who man them. What's worse, he can do it!

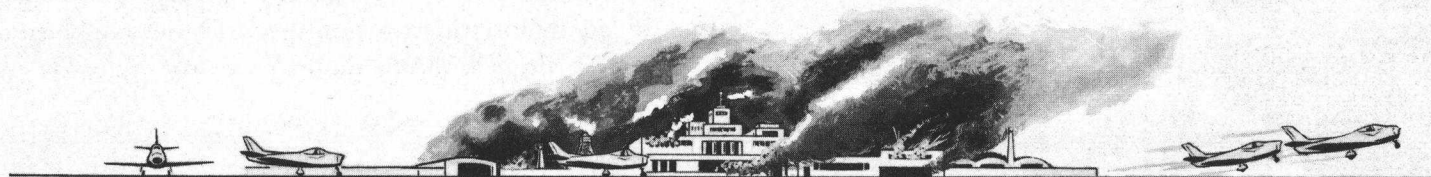
For the first time in our history, a potential enemy has the power to make sudden, devastating attacks on any part of our country. The broad seas which have protected us up to now have been cancelled out by fast, long range planes; and the huge forces formerly required for significant damage have been made unnecessary by the atomic bomb. A single plane carrying an atomic bomb can now wipe out an entire city. It is a dangerous situation.



Of course, the fact that we can hit him far harder than he can hit us should stop any enemy. We have far more atomic bombs; we have great fleets of mighty bombers; we have fast, efficient fighters; and every day we are producing more and better planes and bombs. Yet the enemy might decide to make the desperate gamble. If he does, he will try to catch us unprepared and strike such a devastating first blow that we cannot recuperate in time. We must make sure, therefore, that we can ward off his blow and come back immediately with terrific power. How can we do it?

There is little probability of turning back an enemy air attack completely. However, if we have adequate warning, we can destroy or turn back a large number of his bombers and reduce considerably the losses that the rest might cause. The big problem is adequate warning.

To provide such warning, we have set up many radar stations and are continually enlarging and improving our radar





warning system. Still, radar has a limited range, and we cannot have complete radar coverage. There are bound to be many gaps in our radar networks through which whole flights of enemy aircraft could enter undetected and strike unexpectedly. To stand constant guard at those cracks in our armor, we must have alert, conscientious, and capable look-outs. That is where you come in.

You and hundreds of thousands of other Ground Observers throughout the country will be the eyes of the country. Your reports may constitute the first warning of an enemy

approach. The Aircraft Flash message you send in may put into motion forces that will save a whole city from destruction. At the very least, your reports will help keep track of the enemy's planes so that the attack against them can be started and the targets in their path can be warned.

This will not prevent completely the destruction and death that an enemy might cause, but it can help reduce our losses tremendously. With sufficient warning, we might be able to reduce our possible losses by as much as 50 percent. Even a 10 percent difference in losses may spell the difference between defeat and victory. Your reports, therefore, and those of the other Ground Observers throughout the country, will play a vital role in our security.

You will get no pay for the job. It might often be tiresome and seemingly useless. You can take pride, though, in the fact that you are an important part of our air defense forces, and you will have great satisfaction in knowing that you are contributing significantly to the safety of the country.

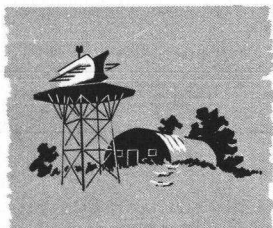
In preparing for your job, study this manual carefully. It explains every aspect of your job and will help you be a more efficient member of your country's defense team. Keep it up to date by inserting revision sheets as they are given to you. Carry it along with you, and refer to it frequently.

Observer on Duty



. . . . the air defense system

The Observation Post of which you are a member is one of the basic units of our air defense system. The other basic units are:



The Early Warning Radar stations, which are also on the lookout for enemy planes, but search by electrical rather than by visual means;



The Ground Controlled Intercept (GCI) radar stations, which follow the course of enemy aircraft by radar and direct our fighter airplanes to the proper position and altitude to attack enemy aircraft; and



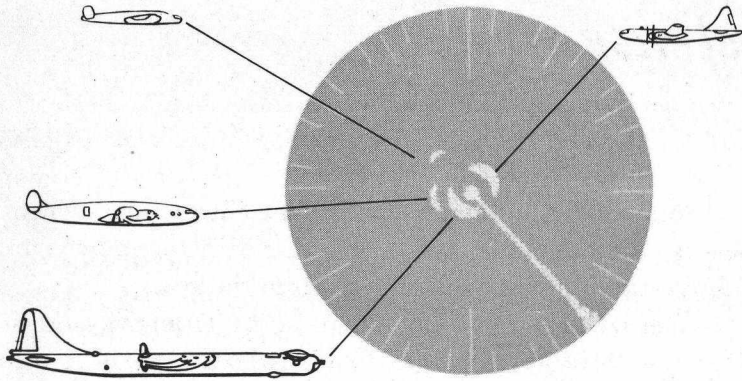
The Fighter Intercept Aircraft bases, where our fighter planes stand ready to take off and attack approaching enemy aircraft.

Another basic unit in the system is the Filter Center, which acts as a clearing house for the information reported by your Observation Post and the others within the area.

In general, here is how the system works: From the various Observation Posts, reports of enemy aircraft come in to the Filter Center. There, the information is put together, and the course and position of the enemy aircraft are determined. These are plotted on a map and followed up as more reports come in. In this way, the number, type, course, altitude, and position of the enemy aircraft are kept track of constantly

Filter Center Plotting Board





and their probable targets are determined. Meanwhile, the Filter Center notifies the appropriate Ground Controlled Intercept radar station of the type, number, and location of the enemy aircraft in its area. At the same time, the Early Warning Radar stations are scanning the skies; locating and tracking any enemy aircraft within the range of their radar beams; and sending appropriate information to the Ground Controlled Intercept radar station. Thus, information on hostile planes flows into the GCI radar station through two parallel pipe lines — from the Observation Posts via the Filter Centers and from the Early Warning radar stations. On the basis of this information, the appropriate Fighter Intercept Aircraft bases are called into action, and they send up their fighter planes to attack the enemy. These fighter planes are controlled by the GCI radar station, which follows both our own and the enemy aircraft by radar and

directs our fighter planes to the best position for attack on the enemy aircraft.

It is a proved and tested system. In one form or another it was used in China, Great Britain, and the United States during the last war. In the United States, of course, the system did not have to cope with enemy aircraft, and its effectiveness was not really tested. In Great Britain, and China, however, the system certainly was given a trial by fire, and it worked.

Of course, their problems were a little different from ours. In China, they had only a fragmentary communication system and had to use many primitive facilities. Thus, their warnings were transmitted by a variety of means, ranging from paper balloons and smoke signals to telephone and radio equipment. In England, the communication was entirely by private telephone, for the area to be defended was small. Therefore, while our air defense system is basically of the same type as those previously used, it is different in detail. We know, though, that it is good.

It was tested in September 1949 in a trial run known as Operation Lookout. This test showed that a Ground Observer Corps, using the experience we and our allies have gained, is capable of tracking modern planes for intercept purposes and of furnishing adequate information for identification. The few weaknesses which this trial revealed have been corrected in the present system. We can feel confident, therefore, that if we put our system completely into effect, we will have good protection.