HANDBOOK
for
AIR INTELLIGENCE
OFFICERS

DEPARTMENT OF THE AIR FORCE

AIR FORCE MANUAL
NUMBER 200-5

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FOREWORD

1. PURPOSE AND SCOPE. This Manual is intended for the information and guidance of air intelligence officers, and other personnel concerned. It is recommended for self-study and as a reference for Air Force intelligence personnel.

2. CONTENTS. The text provides basic coverage of all aspects of air intelligence in brief form, and is designed to enable air intelligence officers and other personnel concerned to check themselves in the performance of their duties.

3. RECOMMENDATIONS. Recommendations for the improvement of this Manual are invited. Such recommendations should be forwarded to Director of Training, Headquarters USAF, Washington 25, D.C.

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

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chapter 9

Air Technical Intelligence

Mission of air technical intelligence · application of air technical intelligence · continuing air intelligence · collection and evaluation · the unfinished task

Air technical intelligence may be defined as the knowledge of scientific and technological developments of foreign powers as these developments affect the enemy's ability to conduct both offensive and defensive air warfare.

Ever since aircraft and air weapons were first introduced as implements of war, there has been an inherent need for such knowledge to insure our national security. As military aviation has developed, the need for air technical intelligence has grown in direct proportion.

If this requirement was not recognized widely before World War II, it was demonstrated most clearly in that conflict when the enemy began to use new air weapons against the United States and our allies with the crippling impact of technological surprise.

At the end of World War II, the United States Strategic Bombing Survey recorded some of the lessons that had been learned with bitter experience since 1941, and restated, as follows, the mandatory requirement for air technical intelligence:

"The air war in Europe was marked by continuous development and evolution. This process did not stop with VE Day, great strides have been made since in machines, weapons, and techniques. No greater or more dangerous mistake could be made than to assume that the same policies and practices that won the war in Europe will be sufficient to win the next one."

MISSION OF AIR TECHNICAL INTELLIGENCE

The Strategic Bombing Survey also recommended "continuous and active scientific research and technical development on a national scale," accompanied by "a more adequate and integrated system for the collection and evaluation of intelligence information." In this way the United States could keep pace with the evaluation of military aviation throughout the world.

Today the intelligence organization in the United States Air Force and Navy is based on a recognition of the needs cited by this survey. The over-all intelligence mission of the Air Force, as set forth in Air Force Regulation 200-5, includes the prevention of "strategic, tactical, or technological surprise from any source." In other words, the mission of air technical intelligence is to guard this nation against such surprises as those encountered in World War II.

The responsibility for prevention of technological surprise has been assigned to the Air Technical Intelligence Center, within the Directorate of Intelligence, Headquarters, USAF; and to the Office of Naval Intelligence, U. S. Navy. Other components of USAF and USN Intelligence are responsible for security against strategic and tactical surprise, with all of the above components working together in an attempt to fulfill the over-all mission.

Success in this attempt depends in large measure on our discovery of reliable information concerning the technical capabilities of all weapons or weapons systems which have been produced or are under development in foreign countries. We need all the technical information that we can obtain on all the equipment that any potential enemy may be able to use against us or against our own air power in the event of war.

For example, consider this hypothetical bombing mission in wartime: one of our bombers is ordered to attack a target in enemy territory. The bomber flies across the border into the territory of the enemy, reaches the initial point, turns there and heads straight for the target, reaches the aiming point, drops the bombs, and then tries to get back to the safety of friendly territory again.

From the moment it approaches the border on the way over to the time it crosses the same border on the way back, the bomber is a target for every air weapon or weapons system that the enemy can use against it. Such weapons include:

(1) early-warning radar by which the enemy is informed of the approach of our bombers.

(2) radar countermeasures by which the enemy attempts to neutralize the radar equipment that our bomber carries.

(3) interceptor aircraft.

(4) guided missiles.

(5) antiaircraft artillery.

(6) interception control radar.

Therefore, if this mission has been planned without knowledge of the enemy's equipment, the crew of our bomber is probably in for a serious technological surprise — a surprise which is likely to bring them down in enemy territory before they arrive at their target. If, on the other hand, our planning has been done in the light of reliable infor-

The Air Technical Intelligence center [illegible] for the prevention of technological surprise

mation concerning the technical capabilities and limitations of enemy equipment, and if our bomber has been designed and constructed to cope with this enemy equipment, then the chances for the successful completion of the mission are materially increased.

APPLICATIONS OF AIR TECHNICAL INTELLIGENCE IN WARTIME OPERATIONS AND IN RESEARCH AND DEVELOPMENT

Because interception by the enemy will hurt our chances of accomplishing our mission, we need accurate information on the equipment that a potential enemy has in operation or under development. We need information on how this equipment is made, how effective it is, what its strength is, and what its weaknesses are.

We need this information for two different yet closely related efforts: 1) the planning of wartime operations similar to the hypothetical bombing mission just described, and 2) the design and construction of USAF and USN equipment which can be used effectively against enemy equipment in combat. It is the responsibility of the U S research and development program to give to the USAF and USN the equipment which can be so used. To meet this responsibility the people who are engaged in our research and development program must know what the requirements are — the requirements imposed by a potential enemy's continuing development of new aircraft and new weapons. Before our research and development people can design a bomber which the USAF or USN will be able to use effectively in such an operation as, for example, our hypothetical bombing mission, they must have the answers to such questions as these:

What is the relative effectiveness of the potential enemy's early-warning radar at different altitudes?

What is the flying ceiling of maneuverability of his interceptors?

What is the effectiveness of his antiaircraft artillery at varying altitudes?

What is the altitude and range of his guided missiles?

What are the altitude limitations of his ground-control intercept radar?

How does the effectiveness of his countermeasures vary with altitude?

How are all these equipments integrated and used to provide an effective air-defense weapons system?

These questions and many others regarding the technical capabilities and limitations of foreign equipment must be answered before our research and development personnel can begin to design the equipment that will meet and surpass the aircraft and air weapons systems of an enemy. Finding the answers and making those answers available for use, both in the research and development program and in the planning of wartime operations, is the job of air technical intelligence.

CONTINUING AIR INTELLIGENCE

The job of air technical intelligence does not end, however, with the discovery and reporting of facts about the technical capabilities and limitations of specific pieces of foreign equipment. Air technical intelligence must discover and report facts about

continuing development in foreign theory and practice in all scientific and industrial fields which are related to the foreign potential for waging air warfare. Air technical intelligence must gather these facts together and use them to fill in, bit by bit, the whole picture of foreign capabilities in this field. The job can be described as follows:

"Creating continuing air intelligence appraising the effect of foreign manufacturing methods, and of technical advancements, particularly in aircraft, air weapons, counterair weapons, guided missiles, and aviation medicine, upon the offensive and defensive capabilities of foreign powers."

COLLECTION AND EVALUATION OF AIR TECHNICAL INTELLIGENCE INFORMATION

The bits of information used in piecing together the whole picture of foreign air warfare potentials are collected by air technical liaison officers (ATLOs), who work overseas on the staffs of major commands or in the offices of Air and Naval Attaches. Information is also collected by air technical intelligence (ATI) teams, who are trained to collect items of enemy equipment in theaters of war. Other valuable sources of information are military observers, agents, overt and covert sources in foreign countries, industrial representatives, aerial reconnaissance units, and military combat units.

To assist in the collection of the required medical intelligence, flight surgeons have been placed in the field as assistant air attaches (medical) at strategically important posts. The number of flight surgeons serving in this capacity is small, but the background and training of these officers have made them keenly aware of the information and intelligence that is required to preserve our national safety.

ATI operations date back to the days of World War II, when the United States, lacking detailed information about the enemy's aircraft and air weapons, sent collection teams out into the battlefields to pick up crashed aircraft and other pieces of abandoned enemy equipment. From a study of these samples, air technical intelligence analysts discovered valuable facts about the equipment, how it was made, and how it worked. In some cases they even found out where it was made. This information on enemy aircraft and equipment, incidentally, furnished new strategic bombing targets for the allied air forces and thus contributed materially to the neutralization of the sources of the weapons that were being used against us.

ATI teams of World War II made a substantial contribution to the winning of the war, and there is no intention to permit in the future the loss of the lessons that have been learned from the experience of ATI collectors on the fields of battle.

Air technical liaison officers study continuing peacetime developments in the science and technology of foreign air power. These officers, trained to spot significant facts in such developments, report the information through official channels to air technical intelligence analysts. These analysts, who receive bits of information from ATLOs throughout the world, compare, examine, and evaluate the information in the light of growing files of technical data and in consideration of the findings of specific investigations, including laboratory tests. From this fund of evaluated data, the ana-

lysts produce the over all picture of foreign capabilities to wage air warfare.

THE UNFINISHED TASK

There is no pretense that the picture of these current capabilities — nor to mention the future capabilities of any potential army — is now complete. There is no pretense that air technical intelligence now has all the information that is required for the prevention of technological surprise, today or tomorrow. Much of the information that is required for this purpose is closely guarded by foreign powers, just as military information about our own developments is closely guarded by our own military establishment. Much of the information that is needed for the completion of the picture of foreign capabilities must be deduced from the scattered bits of data that are obtained from various sources, i.e., from the analysis of specific pieces of foreign equipment and from the air technical liaison officers' continuing exploitation of source materials which they can discover and develop.

Because of the difficulties of collection and because of the difficulties which are obviously involved in this required process of deduction, there are, admittedly, gaps in the total picture of foreign capabilities. These gaps must be filled in as quickly and as carefully as possible to provide adequate safeguards for this nation against sudden, devastating technological surprise.

The job of air technical intelligence is far from completion, and it will remain an unfinished task as long as there are new developments in military aviation and in related fields. The point is recognized in the official statement of the mission of the Air Technical Intelligence organization: "Creating *continuing* air intelligence."