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FILE TITLE: Background Paper on Enlisted Aircrew Cryptologists

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THE PROFESSION OF ARMS

Many sociologists consider officers as professionals while the enlisted force are just temporary hired help. I will compare the enlisted aircrew member's education/training, mission, and pay incentives to a pilot in the Air Force. Enlisted cryptologic airborne crewmembers are well-trained and dedicated to the profession of arms. Finally, I interviewed an officer to give use his idea of a professional and what he considered the enlisted aircrew member. First, a brief history of enlisted cryptologists.

HISTORY

The art of cryptology has been around for centuries. Inception of enlisted cryptology began with the United States Air Force Security Service in 1948. The purpose of cryptologic science is to analyze, design, and implement strategy to protect vital national information resources. (6:-) The role of the enlisted force is to identify, secure, monitor, and maintain communication systems to eradicate communication security threats. Officers, on the other hand, are responsible for overall management of resources and control. (7:-) Women were allowed to fly Air Force missions beginning in 1984 after the cryptologic aircraft were not considered in a combat role. Other government agencies establish targets and parameters to protect our interests. The future role of cryptology will become an increasing concern to the Air Force as our weapons and information systems become more sophisticated requiring more security protection from exploitation.

THE SELECTION PROCESS

Aircrew members are selected for cryptologic training depending on their capability, first identified through the Air Force Qualification Evaluation (AFQE) tests. Airborne Maintenance Technicians (AMTs) require a minimum of 80 which displays a capability to absorb the technical data required. An operators AFQE score needs to be 85 or higher to considered eligible.

The average educational level for Airborne Maintenance Technicians are at the thirteen year level with a minimum reading level of 12 years. An operator has between 12 and 14 years of education. Maintenance technicians have usually 4 to 6 years of service while operators have 3 to 5 years.

TRAINING/EDUCATION

The Airborne Maintenance Technician

The maintenance technician is responsible for ensuring the airborne weapon system is fully operational. Through diagnostic testing he ensures system calibrations are within parameters. If

a problem arises, the technician must utilize all the test facilities, spares, and technical manuals to isolate and correct any malfunction. An AMT's technical training is intense because he has to isolate a problem and correct it within 5 to 15 minutes. A technician's basic electronic warfare course awards between 58 and 61 semester hours after one year of technical training. The second level of the technical training awards 28 to 36 semester hours. (4:-) Once the technician arrives in the field, an aggressive on-the-job training program commences.

There are three levels of training/qualifications called categories (CAT) used to provide the desired training. CAT I is an apprentice which is responsible for understanding the aircraft's overall system operation, learning test equipment, system functions/procedures, and equipment locations. CAT II initiates the apprentice to more in-depth system operations and troubleshooting. Usually, a CAT II is able to handle the majority of system. CAT III is the fully-qualified technician, responsible for the entire system operation, diagnostics, and training future technicians. The technician must achieve proficiency within 16 months from the start of training. The AMT must maintain proficiency as long as they are on flying status. This is tested on a regular basis to ensure proficiency. AMTs will average between 14,000 and 16,000 hours flying over their entire career.

The Operator

The average operator, after completing technical school training, will have between 32 and 68 accredited semester hours. (4:-) The airborne operator has similar categories for upgrade training as the maintenance technician, but with several differences. First, we need to start with their technical training. An operator begins training at the Defense Language Institute (DLI) located at Monterey, California. They receive in-depth training by native instructors in a variety of languages where they can read, write, and speak fluently. The school averages from six months to one year, depending on the language. After DLI operators complete basic language skills, they continue at Goodfellow Air Force Base, Texas to receive cryptologic training. (7:-)

Operators attend Goodfellow from 4 to 8 months for airborne familiarization and language proficiency. (2:-) They learn techniques in signal identification, direction finding, analysis, etc. specific to military applications. After successfully completing training they go to their first duty assignment.

The operator has a similar type of training as the maintenance technician, using categories. Before they are permitted to fly, operators have to work at a ground position from 6 to 8 months for further language proficiency and honing their cryptologic skills. If they successfully complete training, they'll become eligible for flying duty.

A CAT I flies 15 to 20 missions and/or 4 to 6 months as an apprentice. The operator is required to learn equipment

familiarization and watch the trainer's operating techniques. When the operator moves to the CAT II level, he/she is capable of handling the majority of mission processes. They are still honing techniques and getting the "feel" of their position. CAT II again lasts from 4 to 6 months with 15 to 20 missions. (1:-) At this point, the trainer is an advisor if a problem arises. For the most part, the CAT II makes their own decisions. If the operator is successful, he/she will be awarded CAT III.

The Airborne Mission Supervisor

The Airborne Mission Supervisor (AMS) is responsible for overall mission effectiveness. (1:-) He controls all weapon functions and guides mission resources. The AMS has the same training as the operator, but with several additional requirements. He/she must be highly qualified, have strong leadership skills, and confidence. Especially important is the ability to work under stress. These are skills which are acquired over a long period of time, not through a college education.

Besides the extensive training as an operator, the AMS must have an additional 15 missions. The AMS must be able to function at any operation position, conduct recovery procedures, handle air to ground and air to air communications, etc. In comparison, a pilot receives approximately 43 hours of technical qualification training and approximately 1,600 hours of flight time on a multi-engine aircraft such as the KC-135 Stratotanker.

AIRCREW COST

Many times professionalism is explained as a person who is dedicated to his or her profession by extensive education, training, and then dedication beyond the need for monetary reward. It has been stated the enlisted force works only for monetary gain without the slightest concern for the mission. The government invests approximately \$185,000 between technical training, specialty schools, and clearances. Enlisted aircrew members receive anywhere from 100 to 200 dollars per month in "hazardous duty" pay. (5:-) This is in comparison to paying a "professional" pilot or doctor up to \$10,000 per year to keep him in the Air Force. This is above the average two for one difference in pay between officer and enlisted with similar times in service.

AN OFFICER'S PERSPECTIVE

Many people have asked the question of why we should allow a Technical Sergeant to supervise an entire mission. In fact, officers were used several times, but could not handle the mission. The reason is that the AMS is more than a supervisor, he's an operator too. Officers were unsuccessful due to lack of experience and time in the field. Operators are trained within a specific geographic area, requiring many hours of using his

cryptologic training. This training produces intangible as well as tangible results. A person begins to have a "feeling" about a specific area. An officer would require 6 to 10 years of experience to accomplish similar results.

Lt Col Barnie Gavin gave his perception of enlisted aircrew members which he had been working with for over 20 years. Not only did he think they were professionals, but he gave one account of their dedication.

The AMS, pilot, and maintenance technician worked closely to prevent a fatal flight during an in-flight emergency. During a refueling mission, a tanker's fuel nozzle punched a hole through the top of the fuselage and started pumping JP-4 fuel directly into the maintenance compartment. The fuel was pouring onto powered equipment and covering the technicians. Within seconds, one technician was pulling circuit breakers to prevent ignition while the second technician made an emergency call to the AMS. He then grabbed the fire extinguisher and sprayed the equipment. The AMS ordered all transmitting power pulled, contacted the pilot, and directed operators to assist the maintenance technicians. He called the tanker and ordered it to stop pumping. By the time the tanker shut down refueling, there were several inches of fuel in the maintenance compartment. The fuel had to be quickly cleaned up to prevent leaking into the lower compartment as well as an increasing danger of highly flammable fumes. After cleaning and storing the spillage, the aircraft had to fly for one and one-half hours to ensure vapors were cleared, then we were given permission to land. The pilot landed aircraft without "hot breaks", which would have been disastrous. Without the quick thinking and action of enlisted aircrew members, a dangerous situation would have ended in disaster.

These men worked together as a team, one professional working with another. The pilot didn't look down upon the AMS as a Technical Sergeant, but as a professional that knew what to do. It was not for money nor lack of education. Just experience, dedication, and perseverance to succeed.

As far as Col Gavin said, "This is one example of many where the enlisted aircrew handled a serious situation and called the shots, preventing a potentially fatal predicament. What else could be said about these folks other than being nothing but professionals." (3:-)

SUMMARY

If a professional is determined by the amount of education one receives, then it is apparent that the enlisted aircrew member has the equivalent technical training of an officer. If money is a factor, then why does an officer receive close to three times the monetary compensation than an enlisted member. With the amount of money coming in monthly, the enlisted crewmember would have little to worry about and would be able to focus on higher expectations.

Professionalism should not be based on education or monetary reward, but on one's dedication to whatever he or she pursues. Its in the heart of every technician and operator to complete the mission, sometimes at great cost to oneself.

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Seminar V

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