Marine Corps Air Bases Eastern Area
Air Traffic Control Quality Assurance Office

Air Traffic Control Quarterly Newsletter

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Foreward:

Some Of you may have been wondering what happened to the Newsletter, Well here it is! Got a lot of good intell in this issue. Many of you have wanted information on Free Flight and GPS so I went out and got the information on those subjects by the pound. Also we have a Phoenix 20 update, and some really dark humor (with photos) concerning our customers not listening to ATC. Please also read the ATREP's article it is quite sobering. Remember if you are sick often page long TERPS stories, then send me some other stuff and I will print it instead.

GySgt Bryan M. Strong

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AIR BASE CONTROLLERS of the QUARTER

MCAS Beaufort

Sergeant Christopher Diaz is the MCAS Beaufort Controller of the Quarter for 4th quarter 1999. Sergeant Diaz has performed his duties in a noteworthy manner since arriving at MCAS Beaufort. During this quarter he continued his efforts at cross training in the tower and added ground control to his list of qualifications. He is presently training on local control and his qualification is imminent. Many of the senior controllers in the facility have commented on the drive and dedication that Sergeant Diaz constantly displayed throughout this time period. In addition to attaining his own qualifications he has been instrumental in training many of the controllers on his crew. Sergeant Diaz is a shining example of what a Marine Air Traffic Controller should be.

The MCAS Beaufort Controller of the Year for 1999 was Sergeant Christopher Diaz. Sergeant Diaz has consistently performed his duties at a superior level throughout this year and his entire time at this facility resulting in many major accomplishments. Currently Sergeant Diaz is one position away from being facility rated. During August of 1999 he began cross training and has attained both ground and cab coordinator qualifications in record time. Now the senior student on local control, he will soon round out his experience at MCAS Beaufort by becoming the second Marine and the only NCO to achieve a facility rating in more than four years.

Although Sergeant Diaz invests considerable time and effort in learning and instructing air traffic control, he manages to balance his efforts at being both tactically and technically proficient. Sergeant Diaz is an outstanding Marine NCO. He sets the example for junior and senior alike by striving to do his best at everything he does. He is an expert with the service rifle. Sergeant Diaz has maintain a first class PFT for his entire time in the Corps, even though this year was particularly challenging due to a tear in his anterior crucial ligament, which required surgery this past summer. His last PFT he scored a 244.

***Editor's note**: Sgt Diaz was selected as the MCABE Air Traffic Controller of the year. He will compete with other Controllers for the Admiral Robert B. Pirie Naval Air Traffic Controller of the Year award.*

MCAS Cherry Point

Corporal Brandon H. Koon was selected as Controller of the Quarter, 4th Quarter, 1999 for MCAS Cherry Point. During this period, Corporal Koon achieved qualification on Approach West in only 63% of the allotted training time. Addtionally, Corporal Koon devoted over 310 training hours and 64 classroom hours for 14 Marines on Radar Flight Data and Radar Final Control. Corporal Koon also monitored over 240 Radar Approaches conducted by these students.

Corporal Koon was instrumental in developing and implementing porcedures to utilize the15G33 Radar Simulator. He provided the facility invaluable information on the operation of the simulators and devoted numerous hours to assisting with voice recognition and simulations.

MCAS New River

Sergeant Timothy B. Holt enlisted in the Marine Corps out of Florida in 1992. Upon successful completion of recruit training at MCRD Parris Island and NAS Memphis Air Traffic Control School, he was assigned to MCAS Cherry Point in 1993. After achieving an RFC Rating at Cherry Point, he was transferred to MCAS New River where he quickly achieved his qualifications. Sgt Holt participated in a MEU as well as becoming a Crew Chief on the C-12 at MCAS New River. In 1997, Sgt Holt transferred to MCAS Kaneohe Bay, Hi for a few years before his recent return to MCAS New River.

Sgt Holt has quickly re-achieved his Approach Control Rating and is currently working on qualifications in the Tower towards achieving a Facility Rating.

In addition to his qualifications, Sgt Hold has completed the MCABE OJTI course, as well as the aforementioned qualification as a C-12 crew chief. In his short time back at New River, he has achieved his Approach rating, while vigorously training other Marines on his crew and serves as a positive leadership example for those marines to emulate. His quick wit, and enthusiastic approach to training students warrants his nomination for this award.

Sgt Holt's creativity, dependability and esprit-de-corps are a result of the high standards to which he holds himself, are a credit to himself, the Marine Air Traffic Control community, and the United States Marine Corps.

MCAF Quantico

Lance Corporal Charles W. Manning joined the Marine Corps in July 1998. He reported aboard MCAF Quantico on 12 April 1999, after successfully completing school at NAS Pensacola.

Since joining this command, Lance Corporal Manning has devoted numerous hours of study and OJT to achieve qualification on ground and tower flight data. His can do attitude and demonstrated study habits have propelled him into being one of the top local control students in the facility.

Lance Corporal Manning is married to Lance Corporal Dara Manning, an avionics technician for HMX-1.

AIR BASE TECHNICIANS of the QUARTER

MCAS Beaufort

Corporal James S. Davis has been selected as the Technician of the Quarter, 4th quarter 1999 for ATC Maintenance at MCAS Beaufort. Since arriving at ATC Maintenance in October 1998, Corporal Davis has proven to be a stellar Marine and technician. Upon reporting aboard, he was assigned to the Communications/Navaids section to train for qualification. Highly intelligent and a self starter, he qualified as a crew stander in less than three months. Promoted to his present rank in May 1999, he has taken the reigns and run with them. He has exemplified the rank of Corporal and achieved a superior level of technical proficiency. Corporal Davis is now the senior Marine in the Communications/Navaids section and also the Safety NCO, both of which he has done an outstanding job.

Corporal Davis is responsible for the turn-ups and maintenance of the Communications/Navaids equipment and communications maintenance training. Corporal Davis recently graduated from the Corporals Course with an average of 89.6 and was 6th of 34 in his class. He also ran a 270 PFT. It is with great pleasure that we select him as the Technician of the Quarter.

MCAS Cherry Point

CORPORAL JAMES D. WOOD HAS BEEN SELECTED AS THE MCAS Cherry Pt ATC MAINTENANCE TECHNICIAN OF THE QUARTER 4th 1999. CORPORAL WOOD ENLISTED IN SEP 1996 FROM ST. JOSEPH, MI. FOLLOWING RECRUIT TRAINING, HE COMPLETED BASIC ELECTRONICS, RADIO FUNDAMENTALS COURSE AND MULTI-CHANNEL EQUIPMENT REPAIR AT COMM-ELECT SCHOOL BN. MCAGCC 29 PALMS, CA. HE WAS THEN STATIONED AT 7th COMM BN, III MEF, OKINAWA JAPAN. HE WAS MERITORIOUSLY PROMOTED TO CORPORAL ON 2 DEC 1998. CPL WOOD REPORTED TO ATC MAINTENANCE DURING APRIL 1999 FOR DUTY. CPL WOOD QUICKLY ATTAINED LEVEL II CERTIFICATION ON THE MW-518 MICROWAVE LINK SYSTEM. HAVING NO FORMAL TRAINING, HE HAS SPENT MANY OF HIS OFF-DUTY HOURS STUDYING TECHNICAL MANUALS AND PUBLICATIONS TO BECOME KNOWLEDGEABLE ON THE EQUIPMENT. HIS INITIATIVE AND ATTENTION TO DUTY HAVE

PROVIDED A VITAL RADAR LINK BETWEEN MCAS New River AND MCAS Cherry Pt, THEREBY IMPROVING SAFETY OF FLIGHT AT BOTH STATIONS. CPL WOOD IS ACTIVE IN OFF-DUTY EDUCATION AND MCI's. HE HAS AN EXCELLENT MILITARY APPEARANCE, IS VERY MOTIVATED AND REQUIRES MINIMAL SUPERVISION WITH ANY TASK.

CORPORAL WOOD AND HIS WIFE KARRI HAVE A SON XAVIER AND A DAUGHTER ASHTON.

***Editor's Note**: It seems to be a tradition at MCAS Cherry Point ATCM to type just about everything with the cap lock on. It warms the heart in this day of kinder and gentler Marine Corps that we can keep up such a fine hoary old tradition alive, so in keeping with that I have retained the original font and type of their submission.*

MCAS New River

Mr. Dan Hernandez is the Technician of the quarter. His exceptional dedication in developing new computer database for tracking MAF data. Mr. Hernandez continually puts the mission first and the welfare of GEMD Equipment and Personal.

MCAF Quantico

Sergeant Chartrand is enthusiastically nominated as Marine Corps Air Facility Quantico Technician of the Quarter. Sergeant Chartrand combines top-notch technical skills with outstanding physical fitness and a high rifle expert score of 48.

Throughout the last quarter, Sergeant Chartrand has served brilliantly as morning crew chief and Preventive Maintenance Coordinator. During this time, he implemented the semiannual force revision and developed updated preventive maintenance charts. Sergeant Chartrand has also developed and implemented certification standards for all radar watch standers. Additionally, he serves as the technical expert on the ASR-8 airport surveillance radar system. His timely preventive and corrective maintenance has resulted in 100% operability of the ASR-8 during scheduled field hours.

This NCO is a highly disciplined, take charge, leader of Marines. He requires no supervision and little guidance. It is with great enthusiasm that Sergeant Chartrand is nominated as Marine Corps Air Facility Quantico Technician of the Quarter.

FEATURED ARTICLE: WHAT IS FREE FLIGHT

Over the last couple of months many people have asked about this concept, so I went to the FAA Web site. The below article is from that site.

Free Flight is an innovative concept designed to enhance the safety and efficiency of the National Airspace System (NAS). The concept moves the NAS from a centralized command-and-control system between pilots and air traffic controllers to a distributed system that allows pilots, whenever practical, to choose their own route and file a flight plan that follows the most efficient and economical route.
Free Flight calls for limiting pilot flexibility in certain situations, such as, to ensure separation at high-traffic airports and in congested airspace, to prevent unauthorized entry into special use airspace, and for any safety reason.

In essence, any activity that removes restrictions represents a move toward Free Flight. From pre-flight planning to destination parking, Free Flight provides the aviation community with enhanced safety and more flexibility. Free Flight is being developed, tested, and implemented incrementally by the Federal Aviation Administration (FAA) and the aviation community. Safety remains the highest priority throughout the transition to full Free Flight.

Why Free Flight?

The annual air traffic rate is expected to grow by 3 to 5 percent for at least the next 15 years, and the current airspace architecture and management will not be able to efficiently handle this increase. Implementation of Free Flight, which offers benefits in system safety, capacity, and efficiency, is key to advancing aviation by accommodating the nation's growing airspace needs

What's Required for Free Flight?

Full implementation of Free Flight requires use of current and new ground- and air-based communications, navigation, and surveillance equipment, avionics, and decision support systems (automation). These, coupled with supporting procedures and systems, enable easy and accurate coordination between system users and the FAA's air traffic control facilities. New and improved technology and supporting procedures are also required to give users and service providers real-time, accurate, and detailed information for improved situation awareness, communications, and coordination. Clear-cut lines of authority and responsibility between pilots and air traffic controllers will continue, with better tools and information to help their decision-making. Government and industry program funding is a crucial factor for Free Flight implementation. Only with a total aviation community commitment to research, development, and capital investment can Free Flight deliver its wide-ranging benefits.

How Does Free Flight Work?

Central to the Free Flight concept is the principle of maintaining safe airborne separation. This principle is based on two airspace zones, protected and alert, the sizes of which are based on the aircraft's speed, performance characteristics, and communications, navigation, and surveillance equipment. The protected zone, the one closest to the aircraft, can never meet the protected zone of another aircraft. The alert zone extends well beyond the protected zone, and aircraft can maneuver freely until alert zones touch. If alert zones do touch, a controller may provide one or both pilots with course corrections or restrictions to ensure separation. Eventually, most commands will be sent via data link, an integrated network of air, ground, and airborne communications systems. Additionally, onboard computers and Global Positioning System satellites will allow pilots, with the concurrence of controllers, to use airborne traffic displays to choose solutions.

Airborne Free Flight. The protected zone, the one closest to the aircraft, can never meet the protected zone of another aircraft. The alert zone extends well beyond the protected zone and, upon contact with another aircraft's alert zone, signals that action may be required.

What are the Benefits of Free Flight?

Free Flight is designed to provide the user community with the flexibility to better manage its operations and the capability to benefit from advanced avionics. The requirement for users to receive benefits from the implementation of Free Flight is essential. By providing for more efficient routes, Free Flight will reduce user operating costs. Free Flight will allow the user's aircraft to reach its destination at the prescribed time. These improvements will result in air quality benefits through reductions in fuel burn. Free Flight will also enable air traffic controllers to accommodate future air traffic growth through a decision support system at an affordable cost to users. By providing the user with incentives to modernize their equipment, the FAA will move to a modern infrastructure, reducing the FAA operations and maintenance burdens while increasing safety.

Who's Involved with Free Flight?

Free Flight is a joint initiative of the global aviation industry and the FAA. The planning has been done principally through RTCA, Inc., an organization that serves in an advisory capacity to the FAA. In 1994, RTCA formed a government and industry select committee to study Free Flight. The committee's report defined the Free Flight concept and the first steps for its implementation. In 1995, at the request of the FAA Administrator, RTCA formed Task Force 3 to further define the procedures, system architecture, and transition recommendations. This 250-member group included representatives from general and business aviation, the airline industry, pilot and controller unions, industry suppliers, academia, and Government.

The group published its recommendations in October 1995. In 1996, the FAA Administrator confirmed the agency's commitment to Free Flight and a seamless global air traffic management system. The FAA, working with aviation leaders from around the world, developed a Free Flight action plan, responding to the RTCA Task Force recommendations. Also in 1996, a Government/industry Free Flight Steering Committee was formed to establish an implementation strategy and milestones; to periodically review Government and industry progress in meeting implementation commitments; to identify new Free Flight implementation opportunities; and to increase public awareness and understanding of Free Flight. The challenge before the Government/industry group is to implement a plan that is technically feasible, affordable, and operationally sound.

How is Free Flight Coordinated Internationally?

International coordination is being accomplished through the RTCA Government/industry Free Flight Steering Committee which contains international representation, the FAA's membership in the International Civil Aviation Organization (ICAO), and the FAA's close working relationship with Eurocontrol. The phased approach for Free Flight, along with international aviation participation, contributes to building a seamless global airspace system.

When Will Free Flight be Implemented?

Free Flight is already underway, and the plan for full implementation will occur as procedures are modified and technologies become available and are acquired by users and service providers. This incremental approach balances the needs of the aviation community and the expected resources of both the FAA and the users.

Near-term improvements will focus on reducing air traffic restrictions, implementing procedures that increase user flexibility and system capacity, and fielding technologies for the NAS and user systems. Two current Free Flight programs are the expanded National Route Program (NRP) and the Central Pacific Oceanic Program. The NRP uses procedural changes to allow pilots flying at or above predetermined flight levels to choose their own flight paths. Current estimates indicate that the NRP saves the aviation industry over $40 million annually. In the airspace over the Central Pacific, advanced satellite voice and data communications are being used to provide faster and more reliable transmission to enable reductions in vertical, lateral, and longitudinal separation, more direct flights and tracks, and faster altitude clearances. By 2005, advances in communications, navigation, and air traffic management are expected to save U.S. users in the Oakland Flight Information Region $35 million annually in aircraft direct operating costs and another $45 million in increased payload capability. This represents a savings of 9,000 hours in flight and ground time and 25 million gallons of fuel.

The FAA is currently evaluating and acquiring new technologies, such as, standard terminal automation replacement system, global positioning system, wide area augmentation system, traffic alert and collision avoidance system, digital communications, dependent cooperative surveillance, and decision support systems including final approach spacing, enhanced traffic flow management, conflict probe/resolution, and surface management advisor.

In the **long term**, additional technologies to improve conflict identification and resolution, data transmission and display, and direct data exchange among aircraft, operation centers, controllers, and pilots are needed. Such improvements are in conceptual development or require investment analyses and funding decisions.

ARTICLE UPDATE: PHOENIX CONTROLLER-20

Here is a little intell update for those of you interested in the Phoenix Controller 20 Program.

On Friday, 11 Feb 00, the FAA advised me that "The Employment of Retired Military Air Traffic Controllers Program" has been implemented.
As you recall, the FAA gained authority to modify it's age policy back in Sep 99...but it took several months to build a program that would ultimately result in the hiring of retired controllers. The program is finally here. More Information is available on the FAA web site.

FROM THE TERPS GUY: THE PLAN FOR GPS

Below you will find just about everything you ever wanted to know about GPS and the plan for making GPS the sole source of Navigation in the next decade.

The Federal Aviation Administration (FAA) has embarked on an aggressive program to make satellite-based navigation technology available for use throughout the National Airspace System (NAS). Satellite-based navigation services will provide significant economic and safety benefits to the entire aviation community. The FAA is working with the aviation industry to augment the Global Positioning System (GPS), developed by the Department of Defense (DOD), to provide navigation services adequate for all phases of flight. Together with improved computer-based decision aids for controllers, these services will improve the safety of flight operations, accommodate user-preferred flight profiles, and increase airport and airspace capacity to meet future air traffic demands.

The transition to satellite navigation will permit the use of a single type of navigation receiver onboard all aircraft rather than the current requirement for a number of unique receivers to support different phases of flight. New navigation, landing, and surveillance services will be possible that are not currently economically feasible. In addition, there will be significant reduction in the cost of equipage both to the aircraft operator and to the ground service provider. It will be possible to phase out both the ground equipment and the associated avionics for a large number of ground-based systems such as VHF omnidirectional range (VOR), distance measuring equipment (DME), instrument landing system (ILS), nondirectional beacon (NDB), Omega, Loran-C, and marker beacons.

This Article reviews briefly the plan for implementing GPS-based navigation and landing guidance and discusses in greater detail the plan for transitioning to the use of these services and phasing out the existing ground-based systems. A subsequent effort will develop detailed decommissioning criteria and a site-by-site decommissioning schedule. This transition plan is based on the expectation that augmented GPS will fully meet the requirements of a sole-means aircraft navigation and landing guidance system, thereby allowing the phase out of existing ground-based systems. The planned transition includes an extended period of overlap, during which both augmented GPS and the existing systems will be available. This overlap period will give both the FAA and aircraft operators the opportunity to become comfortable that augmented GPS meets the performance requirements before the existing sole-means systems are decommissioned. If augmented GPS fails to meet the performance requirements fully, the timetable for the phase out of the existing systems will be modified as necessary to ensure continuity of navigation and landing guidance services.

What is GPS?

GPS is a satellite-based system used for navigation, position determination, and time-transfer applications. The system consists of a 24-satellite constellation (Figure 1-1), plus associated ground-based monitoring and control facilities; it is operated and maintained by the DOD. The satellites radiate precisely timed signals coded so that a receiver on or near the surface of the earth can determine both the transmission time delay (or equivalently, distance) from the satellite to the receiver and the precise satellite position. By simultaneously receiving such signals from at least four satellites, the receiver can determine its position and time.

GPS provides two levels of service: a precise positioning service (PPS), available only to DOD and other authorized users, and a standard positioning service (SPS), available free of charge to civil users worldwide. SPS provides a lower level of position and time accuracy than PPS. Through a technique termed selective availability, the accuracy of SPS is controlled to protect U.S. national security interests. The DOD has committed to operating the system so that it provides a positioning accuracy of better than 100 meters horizontal (150 meters vertical) 95 percent of the time, and better than 300 meters horizontal (450 meters vertical) 99.99 percent of the time. Time accuracy is within 340 nanoseconds of Coordinated Universal Time (UTC).

The first of a series of research and development GPS satellites was launched in February 1978. In February 1989, the DOD launched the first of the operational GPS satellites. The GPS reached initial

operational capability (IOC) on December 8, 1993, and full operational capability (FOC) on July 17, 1995; FOC means that the system fully meets its specified performance requirements.
To encourage both national and international civil use of GPS, the United States has committed to maintain the system for the foreseeable future and to provide a minimum of 6 years prior notice of any intent to discontinue the system. Replacement satellites (Block IIR) for the current constellation are in production, and the DOD is already initiating procurement of the Block IIF satellites as the follow-on to the Block IIR satellites. Together, the Block IIR and IIF satellites should provide for maintenance of the constellation to 2010 and beyond.

Benefits of GPS
The advent of satellite-based navigation will have a profound effect upon aviation. For the first time, aircraft will be able to determine their precise position anywhere in the world's airspace or on the surface. Using line-of-sight or long-range digital communications, aircraft will be able to communicate this satellite-derived position to nearby aircraft and to nearby or distant control centers. This will provide better situational awareness to pilots and will permit extending surveillance-based air traffic control to areas where it is not now technically or economically feasible, e.g., oceanic and remote airspace. Decommissioning some of the current en route radar-based surveillance systems may also be possible. These capabilities will provide significant benefits to both aircraft operators and to the air traffic control systems which support their operations. Some of these benefits are:
· Precise 4-D (3 dimensions, plus time) navigation
· User-preferred flight paths
· Reduced separation standards for more efficient use of the airspace
· Precision approach capability at all runways
· Cost saving due to phasing out of ground-based systems (for example, VOR, DME, ILS, NDB, Omega, Loran-C)
· Lower avionics equipment cost (single type of avionics equipment supports all phases of flight)
· Reduced training costs, because ultimately pilots will only have to be trained to fly GPS-based procedures
· New procedures and navigation techniques

These benefits fall into two categories: those due to the greater operational efficiency which GPS permits, and those resulting from the phasing out of the current ground-based systems which GPS functionally replaces. Benefits in the first category accrue primarily to aircraft operators and are available as soon as GPS-based services are available. Benefits in the second group accrue primarily to the service provider (the FAA), but also to a lesser extent the aircraft operator; these benefits occur later, when equipage with GPS avionics has progressed to the point that the conventional systems can be decommissioned.

The Need for GPS Augmentation
GPS SPS, while suitable for many applications, including use as a supplemental means of aircraft navigation, fails to provide the accuracy, integrity, availability, and continuity of service which are currently required for service as a primary-means or sole-means system in the NAS for aircraft navigation and landing guidance.

What is WAAS?
WAAS is an augmentation of GPS which includes integrity broadcasts, differential corrections, and additional ranging signals. It is being developed to provide the accuracy, integrity, availability, and continuity required to support all phases of flight through Category I precision approach.

WAAS comprises a network of wide-area reference stations which receive and monitor the GPS signals. Data from these reference stations are transmitted to master stations, where the validity of the signals from each satellite is assessed and wide-area corrections are computed. These validity (integrity) messages and

wide-area corrections are transmitted to aircraft via geo-stationary communications satellites, which by serving as additional sources of GPS ranging
signals thereby increase the number of satellites available to the system's users. The WAAS signal will be transmitted on the same frequency and with the same type of code-division multiplex modulation as the GPS SPS signal, so that the same receiver can acquire and process both the GPS and WAAS broadcasts. The integrity message provided by WAAS, termed
a ground-based integrity broadcast (GBIB), provides the user with a direct verification of the integrity of the signal from each satellite in view. The user does not require the extra satellites which are required for RAIM; in fact, since the WAAS satellite itself provides a ranging signal, generally only three GPS satellites will be required to compute position. With this reduced requirement for the number of satellites in view, GPS/WAAS will meet the availability and continuity requirements for all phases of flight.

The basic concept and operational feasibility of WAAS has been demonstrated, and a contract for the development of the operational system was signed in August 1995. The system is scheduled to reach its initial operational capability termed Initial WAAS (IWAAS) in early 1998. The IWAAS will provide dual coverage by geo-stationary satellites of the eastern and western parts of the continental United States, with an area in the center of the country having only single coverage.

The wide-area correction signals transmitted by WAAS allow the aircraft's GPS/WAAS receiver to correct for the timing and ephemeris (satellite position) errors in the signals from each GPS or WAAS satellite and the signal delay due to the Earth's ionosphere. With these corrections, GPS/WAAS is expected to meet the accuracy requirements of Category I precision approach. Although the IWAAS will have the capability for supporting navigation and Category I precision approach, it will not have the level of internal redundancy, and thus guaranteed availability in the event of failure of elements of the system, required of a sole-means system.

The WAAS contract contains several options for the expansion of the system of both the number of ground stations and the number of satellites. These options will be exercised in the years following IWAAS, with the goal that by 2001 WAAS will have achieved a sufficient level of robustness to enable it to serve as a sole-means system for air navigation and landing guidance.
In parallel with the development of WAAS, the avionics industry will be developing the requisite aircraft equipment. The basic WAAS minimum operational performance standard (MOPS), which includes the full specification of the navigation modes, was completed on January 16, 1996 [4].
Later in 1996, the WAAS MOPS will be updated to include definition of the precision approach modes. This will allow time for avionics to be developed by IWAAS.

As soon as they are available, GPS/WAAS avionics are expected to supplant technical standard order (TSO)-C129-based GPS avionics. The latter will continue to be useful for supplemental navigation and TSO-C129-based NPA's, but unless they are upgraded to meet the GPS/WAAS TSO they will not be useable for primary/sole-means navigation nor for GPS/WAAS nonprecision or precision approaches. The only foreseeable exception to the diminished value of TSO-C129 avionics will be for TSO-C129 equipment meeting the capabilities of FAA Notice 8110.60 and used for primary-means navigation in oceanic or remote areas.

What is LAAS?
The accuracy provided by the WAAS will be adequate to support precision approaches to Category I minimums but not to Category II/III minimums. Meeting the more stringent requirements of Category II/III precision approaches will require a LAAS. As illustrated in Figure 2-4, under this concept the corrections to the GPS (and WAAS) signals are broadcast to aircraft within line of sight of a ground reference station. The range of this service will typically be 25-30 nautical miles (nm). In addition to providing a Category II/III capability, LAAS may be used at some high-capacity airports to increase service availability beyond that ensured by WAAS alone. LAAS may also be needed to support Category I approaches at a small number of airports whose specific locations make it difficult to use GPS/WAAS because of inadequate visibility of WAAS satellites. LAAS can also provide terminal navigation, airport surface

navigation, and guided missed approach and departure procedures. The FAA is working with U.S. industry and universities to determine the technical feasibility of using satellite-based systems for Category II and III precision approaches. Several cooperative projects have already demonstrated the ability of both advanced code and automatic carrier phase differential techniques to meet the accuracy requirements of Category III automatic approaches. Several satisfactory integrity techniques have also been demonstrated, but must be validated. The work in this area is being closely coordinated with the development of local area differential GPS (LADGPS) systems for Special Category I (SCAT-I) precision approaches,

Domestic Navigation and Non-precision Approach

Following issuance of TSO-C129 for GPS receivers, GPS was approved in June 1993 for use as a supplemental system for navigation and NPA. Its status as a supplemental system means that a primary- or sole-means system must be onboard and operational in case GPS is not useable. However, it allows the aircraft to realize some of the operational benefits of GPS, e.g., direct, off-airways navigation. The overlay initiative, which permits the use of GPS to fly most existing NPA procedures, has been of particular significance in achieving early operational benefits from GPS. The convenience of GPS for executing the thousands of existing VOR- and NDB-based NPA's was made immediately available to suitably equipped aircraft. In addition to the "overlay" NPA's, the FAA is moving aggressively to produce and publish GPS-based NPA's for runways for which approaches do not previously exist, as well as improved approaches (lower minimums) for runways with existing NPA's. The FAA developed more than 500 such approaches in 1995 (of which more than 100 have since been published) and plans to develop an additional 500 in 1996. Both non-precision and precision approaches produced after 1996 will be designed for GPS/WAAS avionics and will not be useable by unmodified TSO-C129 GPS avionics. Both overlay and stand-alone approaches designed for TSO-C129 avionics will continue to be supported until at least 2005. The increased navigational accuracy which GPS provides, and the ability to define routes in three dimensions, will lead to much more efficient use of the airspace. Climbing and descending terminal arrival and departure routes can be precisely defined and flown, improving the efficiency of terminal area traffic flow and better allowing the avoidance of noise-sensitive areas. Separation standards may be reduced. Realizing full advantage of these capabilities will require improved, data-link-based air-ground communications and advanced automation-based controller aids, such as automated en route air traffic control
(AERA) and center TRACON automation system (CTAS). Airspace efficiencies will thus be paced by the availability of the new hardware and software required for these systems. The goal is to provide the aircraft operator with increasing flexibility, evolving through easily changeable
user-preferred routing with optimized climb and descent profiles to a nearly free-flight environment.

In true free-flight, the operator will be able to choose and vary his/her route at will, subject only to the constraints of conflict with other aircraft and restricted airspace. As an early initiative in providing more efficient routing for aircraft, the FAA is gradually reducing the altitude above which direct routing will be routinely approved for suitably equipped (i.e., area navigation capable) aircraft; the goal is to reduce this altitude to flight level 290 (29,000 feet). Flight management system (FMS)-equipped aircraft with scanning-DME area navigation (RNAV) capability can already take advantage of these direct routes; however, many older aircraft
are not so equipped. A GPS navigator is a cost-effective means to achieve the RNAV capability, much lower in cost than equipping with FMS/scanning-DME. FAA Order 7100.10, "Air Traffic Implementation Plan For The Use Of The Global Positioning System," sets forth a number of specific steps the FAA is considering to provide benefits to the airspace user. Among these are:

En route

*Restructure existing airway system to accommodate direct routings.
*Use GPS capabilities to reduce separation standards in the domestic en route environment.
*Develop a flexible offset route capability and procedures that will relieve saturation on high-density routes.
*Restructure special-use airspace to accommodate a GPS-based en route system
*Establish an altitude stratum in domestic airspace designated for GPS-equipped aircraft.

Terminal
*Establish a GPS-based terminal route structure.
*Use GPS capabilities to reduce terminal separation standards.
*Use GPS to identify, track, and control aircraft and vehicles on an airport surface to an accuracy of 1 to 3 meters.

While some operational benefits can be realized as soon as a single aircraft equips with GPS, many of the more significant benefits depend on a high degree of equipage and/or providing segregated airspace for GPS-equipped aircraft. The FAA will implement these services in a way which encourages equipage by maximizing benefits for the equipped user, while minimizing the operational penalty to the unequipped user.

Introduction of WAAS

As soon as IWAAS is achieved, WAAS will increase the availability of navigation and NPA's throughout its coverage volume. The combination of additional ranging signals and ground integrity broadcast will allow GPS/WAAS to be used as the primary radio navigation system. In parallel with the operational use of WAAS for navigation, intensive testing will be carried out to verify that the accuracy of the WAAS-provided differential corrections is adequate for precision approach. It is currently expected that within 3 to 6 months after IWAAS, the use of WAAS will be approved for precision approach. Initially, minimums may be somewhat higher than normal ILS minimums while both the FAA and aircraft operators gain additional experience in its use. The use of WAAS for precision approach requires not only the availability of the signal, but also the production and flight testing of WAAS-based approach procedures. Producing these procedures requires the acquisition of new, high-precision data bases of the approach way points. Production of procedures will be initiated in 1997, with the goal that by the year 2000 procedures will be available for at least all runways currently equipped with ILS.

In parallel with the development and certification of GPS/WAAS-based Category I approaches where ILS approaches currently exist, approaches will be developed and certified for runways and heliports which do not currently have precision approaches. The technical capability will exist to provide a precision approach to essentially all qualifying runways and heliports. The development of procedures will become the pacing item in meeting the demand for new approaches, and the current FAA resources and systems available for building such procedures may become quickly overwhelmed with the demand. To satisfy these new requirements in a timely fashion, and to take full advantage of the accuracy and other capabilities obtainable with satellite-based systems, instrument approach procedure development time must be reduced to keep pace and to be responsive to the demand. That places a high priority on the new instrument approach procedures automation upgrade currently underway. The upgrade offers significant potential for developing faster terminal instrument approach procedures; the program will be aggressively pursued to achieve full operational utility from GPS/WAAS in a timely manner, while maintaining the highest level of safety.

Phaseout of VOR and DME
Maintaining the current VOR/DME system is expensive. To provide the current level of service, the equipment costs are estimated at $139 million over the next 10 years, and the operations and maintenance costs are estimated at $80 million per year. Thus, there is considerable financial incentive to reduce the number and ultimately phase out VOR/DME. However, until GPS/WAAS is approved as a primary means of navigation in the NAS (estimated to occur by 1998/99), all aircraft which wish to operate under IFR will have to be equipped with the avionics for VOR navigation. This in general requires at least two VOR receivers and frequently one or more associated DME's. The aircraft operator will want to be able to use this equipment for a reasonable service life before being forced to re-equip.

As soon as GPS/WAAS avionics are available, operators are anticipated to begin equipping with it to achieve the associated operational benefits and convenience. Because of its accuracy and flexibility, GPS/WAAS will be the navigation aid of choice. An operator who equips or re-equips an aircraft during this period is likely to equip with one GPS/WAAS system in addition to retaining one or two conventional VOR system(s). The latter will allow completing a flight in the event of a temporary unavailability of

GPS/WAAS, albeit with less convenience. But to do this, the VOR ground environment must still be in place. The conventional system is now relegated to the role of backup. Even when GPS/WAAS becomes certified as sole-means, decommissioning of the VOR ground environment would require the aircraft to have dual GPS/WAAS equipage to maintain avionics redundancy. The basic phase-out strategy will be to gain, as quickly as possible, the cost savings from reducing the number of VOR facilities while at the same time minimizing adverse financial impact on aircraft operators. A transition period of approximately 10 years during which both VOR and GPS/WAAS can be used as a sole means of navigation is viewed as a reasonable compromise between the FAA's desire to minimize its cost for maintaining and replacing VOR and the aircraft operators' desire to get maximum utilization from their investment in conventional avionics. For the first 5 years of this 10-year period, the VOR/DME system will be maintained at its full capability. In the second 5 years, VOR/DME facilities will be selectively phased out in such a way that aircraft operators will still be able to complete their flight using VOR-based navigation, but with some efficiency penalty. This will incentivize the frequent operator to equip with GPS/WAAS, while minimizing the financial penalty to the occasional system user. For example, the removal of selected VOR's in terminal or en route environments would mean that the VOR-only-equipped aircraft would need to follow more circuitous routes than the GPS/WAAS RNAV-equipped aircraft, but the former would still be able to get from origin to destination.

Some VOR's which are still in relatively good condition when decommissioned could be used to replace critical stations which have reached the end of their service life and are no longer maintainable. At the end of the transition period (nominally 2010), remaining VOR/DME facilities will be rapidly phased out. Since it is expected that there will be few or no new installations of VOR/DME avionics following the time when GPS/WAAS is declared sole-means, all such avionics will by that time have had a service life of at least 10 years. Throughout the decommissioning period, the FAA will work closely with aircraft and airport operators to minimize financial impact. The impact on individual operators will be balanced against the financial cost to the system as a whole, recognizing that the aviation system is ultimately paid for primarily by its users.

Phaseout of TACAN

The TACAN equipment at the FAA-operated VORTAC's (especially the rotating antenna) is expensive to operate and maintain. The FAA is working with the DOD to decommission the TACAN azimuth component of as many VORTAC's as possible while still supporting the DOD's operational requirements. The remaining VORTAC's will be operated until 2005, by which time all DOD aircraft are expected to be GPS-equipped.

Nondirectional Beacons

NDB's serve two principal functions in the NAS: first, as a stand-alone NPA aid at small airports; and second, as a compass locator, generally collocated with the outer marker of an ILS to assist pilots in getting on the ILS course in a non-radar environment. Currently there are 232 NDB's in the first category and 493 in the second. Almost all of the approximately 1,000 non-FAA NDB's are in the first category, i.e., they are stand-alone facilities to support NPA's.

In addition to these uses of NDB's, a few are used in Alaska to define low frequency airways. Because of this heavy reliance on NDB's in Alaska, a separate transition plan will be developed for Alaskan airspace which considers its unique operating environment. To make use of an NDB for en route navigation or NPA guidance requires an automatic direction finder (ADF) in the aircraft. NDB's are a relatively low-cost navigation aid. The typical cost for an FAA-installed NDB used as an approach aid at a small airport is $100,000. In many cases, NDB's have been purchased and installed by a community and then turned over to the FAA for maintenance. The annual sustainment cost of the existing system is estimated to be approximately $9 million.

The bottom line: 5 to 10 years from now the National Airspace System as we know it will be a greatly changed place. You need to be ready.

FROM THE FAA ATREP: HOW NOT TO ISSUE AN APPROACH CLEARANCE

This article is a exept from FAA Notice N7110.213. This notice required mandatory briefings be provided to all regional and field supervisors, air traffic managers, and air traffic controllers describing the circumstances associated with the Korean Airlines Flight 901 accident. Additionally, it is intended to reinforce the importance of following air traffic control (ATC) procedures.

On Aug 6,1997, at approximately 0142:26 Guam local time, Korean Air Flight 801, a Boeing 747-3B5B (747-300) operated by Korean Air Company, Ltd.. crashed in Nimitz Hill, Guam. Korean Air Flight 801 departed from Kimpo International Airport in Seoul, Korea. The airplane had been cleared to land on Runway 6L at Won Guam International Airport in Agana, Guam, and crashed into high terrain about 3 miles southwest of the airport. The airplane was destroyed by impact forces and a postcrash fire. Korean Air Flight 801was operating in United States airspace as a regulatly scheduled international passenger service flight under the Convention on International Civil Aviation and the provisions of 14 Code of Federal Regulations, Part 129, and was on an instrument flight rules flight plan.

The National Transportation Safety Board concluded that the following was not accomplished:

a. ATC did not provide the flight crew with a position advisory when cleared for the approach.

b. ATC did not inform the flight crew or the Agana ATCT (GUM) air traffic controller that a rain shower was observed on the final approach path.

c. ATC did not monitor the flight from the Guam Combined Center/Radar Approach Control Facility after the frequency change to the GUM ATCT.

The circumstances surrounding the accident illustrate the importance of always following ATC procedure. Enough Said!!

Dan Walczak
FAA ATREP

FEATURED ARTICLE: MCAS Cherry Point, The Quest For Quality

This article was submitted by Mr. Joe Hendrickson, ATC Training Support Specialist, MCAS Cherry Point

Introduction
Before the beginning there was much gnashing of teeth and the facility was without form or direction.

1994 - The Tale Begins
The facility was overburdened by the arrival of 58 students from ATC school in the previous two years and facility management had been so involved in union matters that what remained of a training program was running on autopilot. Throughout 1994, only 7 students arrived at Cherry Point and two of them were terminated. This drastic reduction in students was seen as a relief from the huge classes that we were still training, but this gap would eventually result in the Marine Corps wide manning shortages of 1997-1998.

1994	OJT Hours	OJT GCAs	Position Quals	MOS Quals
	6,191.00	Not Available	80	11

1995 - Analysis

Capt Muhlenberg began to concentrate her efforts on MCABE issues rather than just Cherry Point and in March held the first MCABE ATC conference. The intent was to consolidate the items to be presented at the annual Navy/Marine ATC conference. The Training Department continued to compile data in order to determine what areas could be improved to handle the large number of entry level students that were still training on junior positions. Manpower peaked at 78 enlisted Marines until July when the classes of '92 and '93 began leaving.

Training of Marines on approach control increased to 17 but the result was only 5 qualifications (3 initial/2 subsequent) and with half of the Marines less than 12 months to EAS, the prospects weren't very good. On the positive side, seven of the 20 MOS qualifications for the year were Marine Local Controllers. The final analysis was that 1996 was not shaping up to be a great year for training.

1995	OJT Hours	OJT GCAs	Position Quals	MOS Quals
	6,011.75	2,370	67	20

1996 - QA to the Rescue

1996 brought Quality Assurance (QA) to Marine ATC beginning in February with a C-12 making contact with a tree while receiving a PAR at MCAS New River. The COMNAVAIRLANT QA team was brought in to introduce us to the Navy program. The official cancellation of MCO P3500.10A meant that we had no direction from HQMC on how to train our Marines. The Training & Readiness (T&R) Manual was still ambiguous and manpower was heading downhill at an alarming rate.

During our QA evaluation in June 1996, the current edition of NAVAIR 00-80T-114 (ATC NATOPS) was delivered. It outlined a training program based on Lesson Topic Guides (LTGs) and Local Qualification Standards (LQSs). At the time, we had no choice but to accept the NAVAIR program as our standard, so the three branch chiefs translated old syllabi into LTGs and LQSs. A QMB, completed the construction of an all new Facility Manual on 30 May 96. With the addition of the QA evaluation findings, the manual was published on 5 Aug 96.

1996	OJT Hours	OJT GCAs	Position Quals	MOS Quals
	4,580.50	1633	61	11

1997 - Transition

1997 became the year of transition. The AOM and Facility Manual were complete and the three branch chiefs formed the nucleus of a MCABE QA team, but the facility was still losing manpower at a rate that would continue throughout the year and half of 1998. Just about every SNCO at Cherry Point retired or transferred, and the Warrant Officers were forced to retire. Major Muhlenberg, who was the squeaky wheel behind QA, was replaced in July by Major Smith. Between the total lack of experience in the tower and direct hiring by the FAA, we needed to replace and train 10 civilians. Despite the fact that a training program existed, there was no one to implement it.

QA took on a different look on 15 May 97 when the Director of Operations decided to keep Jeff Knipple on as a civilian QA Specialist. His efforts to supplement the ATC NATOPS and replace what was lost from MCO P3500.10A became the MCABE ATC Order. Although the directive was completed by the end of 1997 it would take nine months to get through the administrative labyrinth of becoming an Air Bases Order.

For years, the ATC NATOPS Manual has stated that OJT Instructors shall be designated through some type of qualification process but the only requirements implied were "qualified and experienced". MCABE QA suggested that we learn the FAA standard and see how it fits into our concept. In September 1997, Training Chiefs from Cherry Point, Beaufort and Quantico met at New River to receive the FAA OJT Instructor Course. At the conclusion of the week long classes, the training representatives voted to adopt the course as a prerequisite for all OJT Instructors. This evolutionary change would establish OJT teams that would be both responsible and accountable for an individual's training. All of the air stations in MCABE had also agreed to do away with LTGs and LQSs.

Statistically, the number of position qualifications more than doubled from 1996 to 1997 but the Marine quals declined to 57. The student population on the junior positions was very low and the emphasis

was on getting the recently hired civilians their facility and/or branch ratings as quickly as possible (76 position quals).

1997	OJT Hours	OJT GCAs	Position Quals	MOS Quals
	8,872.92	1,126	133	14

1998 - Rebound

1998 started off with a Process Action Team (PAT) hammering out the final structure of a standardized training plan and the newly adopted OJT Instructor Course was being taught to all Marine and civilian controllers. With instructors certified, an updated Facility Manual and a standardized training plan, we launched our current program on 11 May 98 by virtually shutting down training and starting nearly every trainee from scratch. We were still rebuilding the civilian workforce since four more facility rated civilians went to the FAA in January. In fact, during May 98 there were 8 civilians training on 12 positions.

Major Smith was replaced by Major Kevin McCray on 27 May 98 after only 10 months. Positive indicators began to show immediately after his arrival. More SNCOs started arriving and the student population out of Pensacola picked up. Manpower was on the rise for the first time in 3 years and the training of an individual began showing signs of structure.

MCABE representatives got together on 8 Dec 98 to discuss current training and personnel problems. The main topic concerned the number of months that it was taking to get specific levels of qualification. The expected training progression that was decided on became our goal: Qualify a Marine on two junior positions within seven months; then by 18 months that Marine should have either a major qualification (Local Control or Approach Control) or two more junior quals. At the time, this goal did not seem very realistic because statistically we had hardly ever been able to meet it.

Again, the number of position qualifications was slightly deceptive because almost half were still our civilians finishing up their required certifications. Marine quals were back up to 67. With manpower on the rise and the civilian workforce strengthening, training Marine approach controllers under a viable OJT program became our next priority.

1998	OJT Hours	OJT GCAs	Position Quals	MOS Quals
	8,969.80	3226	125	19

1999 - Quantum Leap

I knew that it would take about a year before we could say whether this new program would show any real improvement over previous attempts, especially in the areas of Local Control and Approach Control qualifications. The new 7 and 18 month goals were barely a month old.

We started the year off with the QA team evaluating our progress since their previous visit. We knew that we had already climbed out of the hole and were on our way up the mountain but QA was not convinced. They were impatience for results and misinformed on the use of available training hours under our current crew schedule. To us it seemed that the evaluation results had been written before they arrived. Here are just a few of their findings:

- ATC Training Program is inconsistent, inadequate and not standard.
- ATCF OJTI Program is inadequate and non-compliant.
- Crosstraining within the ATCF is almost non-existent.

By March we reached 1,000 hours of monthly OJT and although this was a new record, it would end up being broken 7 times. Our program no longer included tracking just OJT hours, we were now documenting:

OJF	Simulation Hours	Skill Checks
OJT	Simulation Approaches	Lesson/Test Hours
Self Study	OJT Approaches	Training Team Meetings
Annual Proficiency	OJTI Course	Skill Check Approaches

The shift from the old way to the new way happened around 25 Jun 99 when it became obvious that we weren't just accumulating thousands of hours to impress our neighbors, we were cranking out

position quals faster than one every other day. I believe that the designation of three permanent Facility Watch Supervisors and three Branch Chiefs caused our pliable program to set solidly.

We had already begun crosstraining and approach control training for Marines prior to QA's "non-existent" claim, and by the end of the year had crosstrained on 63 positions, qualified Marines on 34 of those positions, qualified 12 Marines on Approach Control and 13 Marines on Local Control. Out of 213 position qualifications, 173 were Marines, that's nearly as many as this facility produced for 1996, 1997 and 1998 combined. We averaged nearly 1,100 hours of OJT and logged an additional 1,100 hours per month for training other than OJT.

The seven month training progression was almost perfect. Of the 34 Marines checking in during 1999, only one exceeded seven months, many of them received their MOS in less than five months.

1999	OJT Hours	OJT GCAs	Position Quals	MOS Quals
	13,003.27	4033	213	44

2000 - The Future

It is difficult to predict anything for the coming years since the number of Marines cycling in and out of this facility cannot be foretold. I can say with confidence that the Marines that join this facility will be afforded the opportunity to reach their greatest potential and that it will be done in a safe, orderly and expeditious manner. The Quest for Quality never ends.

FROM MCAS BEAUFORT ATC

This has been a busy quarter for us at MCAS Beaufort. With the new fiscal year and new "money" came an increase in the operational tempo. In addition to the MAG 31 aircraft and our usual P3 and C141 transient ops, we had a couple of visits from Cntra, the Navy trainers out of Texas. Apparently they liked it so much they are planning several return trips early in 2000. After the Navy trainers left in early December operations slowed and we sent most of our Marines on a hard earned leave. Those that stayed in the area gathered for our annual Christmas party that was complete with a visit from Old Saint Nick, himself.

We have had several Marines check in and have had to say farewell to a few seasoned controllers. Our new OIC and NCOIC have settled in and are preparing to lead us into the 21st century. We had three new controllers attain MOS qualification and unfortunately had to process two others for MOS revocation.

The following Marines checked into the facility for duty:

Cpl Myers, J. K. NAS Willow Grove
LCpl Bradley, D .R Pensacola
LCpl Kilmurray, J. S. Pensacola
PFC McKnight, B. M. Pensacola
PFC Romero R. P. Pensacola

The following Marines checked out of the facility:

Sgt Hand, C. A. EAS Home
Cpl Arce, B. PCS Okinawa

Supervisor designation:
GySgt Scott, D. B. TWS
SSgt Blaske, T. TWS, Facility Rated

New Assignments:
GySgt Scott, D. B. TSS
SSgt Blaske, T. Crew Chief

FROM MCAS BEAUFORT ATCM

Significant Events
Provided 9 public address systems to include ARFF rodeo, Marine Corps Ball, MCAS Cake cutting ceremony, and C.M.C. visit. Transient Voltage Surge Suppressors were installed on all equipment. Mr. Bill Williford completed the Frequency Manager Course . LCpl P.J. Watkins completed the GPN-27 course of instruction at NAS Pensacola. MSgt Rettberg completed the Maintenance Managers course at NAS Pensacola. Succesfully moved from 1999 into the year 2000 without a hitch. That's about it, take care til next quarter.

Check Ins:
None

Check Outs:
GySgt Cothran to Station Pendleton
Cpl Alvarez home to Arizona
LCpl Blunt home to Virginia

Promotions:
Cpl Watkins K.M. to her present rank.

FROM MCAS CHERRY POINT ATC

Cherry Point has completed an awesome year of training. The timing couldn't have been better to have 34 Marines check in from Pensacola. Our training program had worked out most of its bugs and the civilians that had been hired to replace those lost to the FAA were completing their training. We were ready to test the potential of this facility and prove that sending a Marine to Cherry Point wasn't a death sentence.

As was mentioned last quarter, our attention has shifted from new students and junior quals, to senior positions and moving MOS qualified Marines to the FMF. On 2 Dec 99, Cherry Point transferred 13 Marines to the 2nd Marine Aircraft Wing. Seven of these were assigned to the ATC Detachments at MACS-2 and six were returned to the air station under the Fleet Assistance Program (FAP) to maintain their proficiency and continue their training on senior positions.

By the end of the year we had qualified 13 Marines on Local Control, 12 Marines on Approach Control and were training 24 more Marines on those positions.

The totals for Oct-Dec and 1999 are:

	Oct-Dec	1999
OJT	3,135.85 Hours	13,003.27 Hours
OJF	577.58 Hours	1,361.13 Hours
Skill Checks	327.98 Hours	1,161.83 Hours
Annual Proficiency Classes	292.5 Hours	1,756.50 Hours
Training Team Meetings	64.5 Hours	295.16 Hours
Training Manual Lessons	1,586.34 Hours	7,383.46 Hours
15G33 Training	127.97 Hours	570.60 Hours
Simulated Approaches	386	1,682
Radar Approaches	1,872	7,983
Position Qualifications	67	213

New Personnel

PFC Jason A. Humphreys	School
PFC Christopher N. Hearn	School
PFC Jonathan T. Spaulding	School

LCpl Hector Ortiz Jr.	School
Pvt Carlos D. Howard	School
LCpl Gabriel A. Cuesta	School
Capt Lorin D. Bodily	School

Checked Out

Sgt M. L. Korbini	EAS
Cpl C. E. Roach	FMF
Sgt D. W. Arthur	FMF
Cpl P. T. Wooley	FMF
LCpl L. A. Stroud	FMF
LCpl W. M. Damron	FMF
Cpl J. W. Young	FMF
LCpl J. E. Merkel	FMF
Sgt R. L. Sparks	PCS MCAS Beaufort

Received MOS

Cpl Almonte	7257*
LCpl Barnes	7257/53
LCpl Buell	7257*
LCpl Blinderman	7257*
LCpl Geivelis	7257*
LCpl Hines	7257*
LCpl Lebourgeois	7257*
LCpl Somma	7257*
LCpl Wooley	7257*
LCpl Mathis	7257/53
LCpl Geivelis	7257/52
LCpl Stroud	7257/53
LCpl Wooley	7257/52
LCpl Edwards	7257*
Cpl Clark J.	7257/54
LCpl Trowbridge	7257/53
LCpl Williams, S.	7257*
LCpl Moore	7257/54
Cpl Koon	7257/54
LCpl Tims	7257*
Cpl Olivas	7257*
LCpl Bicer	7257/54
Sgt Robinett	7257/52/53
LCpl Zobel	7257/53
PFC Lam (Reservist)	7257/53
LCpl Setzer	7257/53
LCpl Lebourgeois	7257/52

* New MOS beginning 1 Oct 99

FROM MCAS CHERRY POINT ATCM

NEW JOINS
LCPL JOHNSTON, M.A. 5954
LCPL LAMPKIN, C.R. 5952
LCPL NELSON, C.A. 2831

DEPARTURES
SGT HAM, S.D. 6672 PCS TO MALS 14
LCPL HERNANDEZ, G. 2831 EAS TO TEXAS

CERTIFICATION TRAINING
LCPL MAUST, M.R. 5952
LCPL LAMPKIN, C.R. 5952
LCPL JOHNSTON, M.A. 5954
LCPL NELSON, C.A. 2831

SGT BUSKEY AND SGT EAGLE COMPLETED THE AN/GPN-27 RADAR COURSE AT NAS PENSACOLA.

MR TIM FORREST AND GYSGT JOE KEMBLE ATTENDED AN ASOS CONFERENCE IN CHARLESTON, SC.

THE ANTEON CORPORATION INSTALLED THE TRANSIENT VOLTAGE SURGE SUPPRESSORS AT MOST OF THE EQUIPMENT SITES ABOARD MCAS Cherry Pt AND SOME OF THE REMOTE SITES.

Cap Locks strike again

FROM MCAS NEW RIVER ATC

The constant thump of rotor blades continues at MCAS New River, where we continue to train Marines in the fine art of Air Traffic Control.

The Par for RWY 1/19 is finally up and working. RWY 1 gets abused on a regular basis, much to the chagrin of the hoof and stomp bubba's across the river who have to cease and desist shooting every time we use it. We are not able to fly RWY 19 just yet. The approaches had to be shut down for a couple little ol' 200' cranes floating at varying heights and positions off the approach end of the runway. We are looking forward to receiving the first permanent MV-22 in the first two weeks of March. In a recent brief, we were told that 60% of their training syllabus was to be done in the simulators and only 40% in the aircraft, so we are still guessing at the impact of the new squadron on our traffic count.

Station and the MACS Detachment continue to have a wonderful working relationship. Recently, the MACS sponsored an MMT Class taught by Capt Ross and GySgt Lee from MAWTS-1. Station and MACS Marines alike were introduced to the world of the MMT, earned many T&R checkpoints, and are standing by for whatever missions may come up in the future. Lt Hicks and Sgt Wentling are still with the 22nd MEU. Sgt Perrino is chopped to the 24th MEU. The 26th MEU has acquired Sgt Mallia and Sgt Hayes just returned from a wonderfully warm trip to Sunny 29 Palms for CAX.

Speaking of T&R, Mrs. Hoxie has finished implementing the new Training Jackets into our training program, and the new Syllabi will be introduced the first week of March.

SSgt Holcomb is attending the Approach School in Pensacola.

The RATCF is undergoing some cosmetic changes. We are adding a wall where a curtain once fell. And SSgt Marshall will be getting his very own office so that he may TERP away to his little heart's desire.

Congratulations go out to the new quals at NCA. SSgt Wagner, Sgt's Thacker, and Frantz, and LCpl Pittman received their CTO. Sgt's Godfrey and Holt received their Approach qualifications. Cpl Galcik received an FWS rating, and last, but not least, SSgt Wagner was assigned a TWS. In addition to the major quals, we have had too many of the smaller qualifications to list but a hearty congratulations goes out to all of those Devil Dogs that received them. Additionally, we have had Air Force SSG Fox from the 21st STS

training with us in the Tower. He received his Ground and Tower Data quals in minimal time, and was recommended on Local before the Air Force called him back to duty. Apparently we are doing a pretty good job in training these guys, because we already have another one, Sgt Hu, enroute in the next few months.

New joins include SSgt Cardwell, SSgt Tennyson, and Sgt Pash from the FMF. Also, 2ndLt Martin, LCpl's Pena, Pardo, Bell, Slater, Hall, Saltzman, Justice, and Ortiz from Pensacola.

GySgt Sinclair is receiving pass-down from SSgt Marshall in the TERPS room. SSgt Cardwell is working toward taking over as the training Chief. SSgt Reppond has assumed position as Tower Branch Chief, and SSgt Tennyson is under the direct tutelage of SSgt Kidd in his upcoming role as Radar Branch Chief.

And last but not least, we say farewell to SSgt Waters who decided to be a teacher in the 1st CivDiv. We also bid Fair Winds and Following Seas to Sgt's Bufkin, Medina, Ornales, White, and Tabolt as well as Cpl Kraemer and LCpl Coon.

FROM MCAS NEW RIVER ATCM

Short sweet and too the point:

1. PAR for rnwys 1/19 passed flight check on 04 Jan 00.
2. Sgt Perez detaches from MCAS New River to report to Meridian Ms.
3. GySgt Mettler checked in 21 Jan. 00 as NCOIC.

FROM MCAF QUANTICO ATC

MCAF Quantico ATC, like most of the Marine Corps, nation, and world moved into the new millennium without any major Y2K glitches. We are certain, however, that our Y2K contingency plan and ATC standby crews could have alleviated any problems that may have arisen. Many thanks to the Marines of ATC and the rest of the Air Facility for their efforts throughout the New Year holiday.

The New Year brings with it the promise of new and exciting opportunities for the Air Facility and ATC. We have hired a former Marine Staff Sergeant, Mike Bernat, to fill our Training and Standardization billet and are extremely pleased with his rapid progress. Unfortunately, we lost Chad Wendt to Indianapolis Center and are currently looking for his replacement. We recently had the pleasure of hosting the 26th MEU ACE during their pre-deployment training exercises. The controllers were thrilled to have the extra traffic and hope that future MEUs look to MCAF Quantico for support. Additionally, the Marines and civilians of ATC have been diligently preparing for the MCABE Quality Assurance inspection and are looking forward to the opportunity to "show their stuff."

Recent weather has had a major impact on operations here at MCAF Quantico. An unexpected snowstorm punished the entire eastern seaboard, forcing MCB Quantico to close and MCAF to temporarily suspend operations. Indeed, for several days Quantico resembled a winter paradise. Fortunately, exceptional snow removal operations by the Marines of the Air Facility had us up and conducting helicopter operations within a few hours. A second blast by Mother Nature forced the postponement of our Quality Assurance Evaluation until early March.

We would like to take the opportunity to wish the following Marines "FAIR WINDS AND FOLLOWING SEAS:"

SSgt Minsk	PCS	NAS Pensacola, FL
Sgt Pash	PCS	MCAS New River, NC
Cpl Gary	PCS	MCAS Futenma, Okinawa
Cpl Nieves	PCS	MACS-4, Okinawa

Cpl Stemen	PCS	MACS-4, Okinawa
Cpl Schierburg	EAS	Denver, CO

Thank you for a job well done and good luck in your future endeavors!

We welcome LCpl Coon from MCAS New River, PFC Barra from the schoolhouse, and our new DOD controller, Mr. Bernat, who was "stolen away" from a contract tower in New England.

We extend a hearty congratulations to our most recently promoted Marines:

SSgt Crawford
SSgt Iyer
Sgt Montanez
LCpl Mellman
PFC Barra

FROM MCAF QUANTICO ATCM

Sgt Chartrand completed AN/GPN-27 school at NAS Pensacola on 3 December.

Cpl Holley completed AN/TPX-42 Type 5 school at NAS Pensacola on 18 October.

Y2K was quietly met by CWO3 Taninecz, Cpl Holley, Cpl Simon, and LCpl Devoe as New Year's eve was spent checking systems at the RATCF. It wasn't all work and no play however. In fact, once all systems were checked to ensure compliancy, Cpl Simon was promoted to his present rank.

GySgt Chestnut departed MCAF Quantico on 10 December for the warmer winds of Okinawa Japan. GySgt Chestnut will be missed, but, not for long. Once her 1 year tour is complete, she will report back for duty at MCAF Quantico.

ON THE LIGHTER SIDE

Here is an actual humorous pilot/controller exchange that occurred right here at good ol' NKT. You can put it in the humorous pilot/controller exchange section.

App: November two tango papa, say again the 3-letter ID of your destination.

N2TP: "Z" as in zebra, "E" as in elephant, and "R" as in...uhh..."R".

App: Rhinocerous, thank you.

NEWS FROM THE WORLD OF ATC/AIR SAFETY

Why to listen to Controllers!!

Why is it that intentional ditchings are seldom very successful, but unintentional ones float?

In north-western Tanzania at the lower end of Lake Victoria is Mwanza, a small port city, with a long but narrow runway. A few years back a DC-8 crashed trying to land here and the remains are scattered in various places around the airport. But that's another story. Last week, at about 2000 Hrs.,(in the dark), an Arabian registered B707 cargo aircraft was landing to pick up a load of fish. On the first approach the airport lost power & lost all its lights (a routine experience here), so the pilot had to go-around until the back-up generators got the lights on. On the second approach he was much too far to the right & almost took out the small terminal and control tower. Missed approach #2.

On the third final (approaching from over the lake with no visual reference)the control tower called to him "you are too low, pull up" to which the Captain replied "don't worry, I know what I am doing".
About 5 KM short of the runway, he hit the water, tore off all 4 engines and gear, but didn't puncture the fuselage. With battery power & the taxi light on, they were picked up by a fishing boat (no injuries). The following day, it was still afloat, so a tug towed it to shallow water near the airport, where it will probably be a beacon for many years. (Maybe the pilot misunderstood when he was supposed to pick up the load of fish.)

Here a couple of photos just to give you an idea.