

## KUDOS and CONGRATS

### Congrats to our new SSgt Selects

4612

Sgt Bothie D. P.  
Sgt Eastman A. A.  
Sgt Edouasie J.  
Sgt McMann T. C.  
Sgt Pena C. J.

4671

Sgt Bitselly Jr. W. L.  
Sgt Lowery B. J.  
Sgt Smith M. J.



4641

Sgt Ash S. N.  
Sgt Reed B. P.  
Sgt Surber C. D.

### **BRAVO ZULU** submitted by Sgt Paull, Commandant's Photographer

I would like to send a Bravo Zulu to a fellow Marine Photographer.

Recently, The Commandant hosted an Executive Offsite in Kansas City, Missouri. I had the pleasure of meeting LCpl AlexQuijano, The Photographer for Marine Corps Support Command, there. Immediately, I was impressed by this young Marines performance. During a Barbeque Luncheon held for the EOS Guest, SgtMaj Kinney, I MEF SgtMaj, challenged the Marines from the four local commands to run the obstacle course to see who was the best. Out of the twelve hard-charging Marines that ran, LCpl AlexQuijano finished second overall. In addition to the events held at the facilities on base, the CMC hosted a formal dinner at an exclusive club in downtown Kansas City. During the dinner, LCpl AlexQuijano, sat at LtGen Hagee's table and displayed maturity well beyond his years. In my travels with the Commandant, I have met many of my photographer counterparts, few have impressed me the way LCpl AlexQuijano does. His physical ability, eagerness to excel, and resourcefulness, represents the visual information field very well. He stands as an example for others in the field to emulate.

## News From The Fleet

### **Visual Information Management Realigns to Technology Division**

Effective 1 October 2002, the Visual Information Management Office realigned under the TECOM Technology Division. The Technology Division is headed up by Dr. Michael Bailey. His biography is provided for your information. VIM's new office code for all official correspondence is **C468VIM**.



### Senior Executive Service

Michael P. Bailey  
Technical Director, Training and Education Command

Dr. Michael Page Bailey currently serves as the Technical Director for the Technology Division, Training and Education Command, Marine Corps Combat and Development Command, Quantico, Virginia. He graduated from the University of North Carolina at Chapel Hill with a Ph.D in Operations Research in 1988, and became an Assistant Professor of Operations Research at the Naval Postgraduate School in Monterey, California. He was promoted to Associate Professor in 1993 and tenured in 1994.

In 1995, he sabbaticaled at the Office of the Chief of Naval Operations, Assessments Division, OPNAV-N81 as a visiting scholar. There he served as operations analyst in support of the Quadrennial Defense Review until 1997, whereupon he joined the Marine Corps as Principal Analyst, Modeling and Simulation. In December 1999, he joined the Marine Corps' Training and Education Command as Technical Director. In December 2000, the Marine Corps formed the Training and Education Technology Division, with Dr. Bailey as its head. Technology Division is responsible for requirements, policies, and sponsorship of all technology applicable to Marine Corps individual training, unit training, exercises, and ranges. These technologies include interactive multimedia distance learning, weapon system and crew training simulators, simulation, interactive gaming, instrumentation, and classroom technology.

### Cartoon world motivates Marine to excel **Story by SSgt Dolloson FORT MEADE, Md.**



**(October 1, 2002)** -- The United States Marine Corps thrives on the ethos of honor, courage and commitment, and Staff Sgt. Charles F. Wolf epitomizes that ethos through art.

He's a stocky 5 feet, 5 inches tall, 160 pounds-from weight he gained during his years of bodybuilding. His face, chiseled like stone, doesn't look mean. Wolf, a graphics instructor at the Defense Information School here, is a very easy-going person who believes in thinking outside

the box to which most people limit themselves. Through his perseverance he has managed to apply his artistic creativity to other aspects of his life.

Growing up, he never believed his interest in art would develop the following it has, he

said. Like most kids, he enjoyed doodling on scratch sheets of paper as something to pass the time. His first formal graphic design education was at a vocational school the year before he graduated high school.

"I just believe that everyone doodles or draws in their free time," said Wolf. "Some of us try, and then there are people who have a natural talent for it and excel from an early age."

He joined the Marine Corps in 1987 and started his career as an anti-tank assault man, or dragon gunner. For nine years his artistic creativity remained dormant, except for small requests to draw things like range flags, random sketches, or cartoons during his off-duty time.

"Initially I saw it as an opportunity to boost morale," said the Ashtabula, Ohio, native. "And I never lost that fire for seeing something come to life in front of me-that's the essence of art."

While stationed aboard the USS Blue Ridge in Yokosuka, Japan, he began drawing cartoons, which would soon be referred to as Sempertoons. This assignment fueled Wolf with a plethora of ideas for cartoons. "It was endless, and I saw how my cartoons made people laugh," he said.

Wolf's love for art began to equate to his love for the Corps, but he thought he had to keep the two worlds separate.

"I knew that art was going to take me somewhere, I just had to figure out how to connect the two worlds," he said. "It all came together in one moment, and it was like a big tidal wave hitting me."

As an enlisted instructor at Marine Corps Base Quantico, Va., the instructor group tasked him with drawing a sketch of the range. His sketch was sent to the graphics department to be drawn on a larger scale, and subsequently, he was sent to graphics to ensure they were duplicating his work correctly.

"I didn't even know that graphics existed," he said. "I walked through that building completely astounded, and that's where the desire to change my (military occupational specialty) evolved."

After the seed was planted, he was sent to his new duty station in Camp Pendleton, Calif., assigned to 2nd Battalion, 1st Marines, which deployed with the 4th Marine Expeditionary Brigade. This provided another opportunity for him to gather material for his cartoons.

Even though Wolf had done several drawings during his Marine Corps career, he still did not realize the full capability of his talent.

"To be honest, the full impact of art did not hit me until I started doing Sempertoons," said Wolf. "In fact, the first few drawings weren't even that great."

When he returned from deployment, he met with MOS monitors and requested a lateral move to the 4611 MOS, or graphic illustrator.

His request was eventually approved and he reported for duty at the Quantico graphics center for three years, to include six months of on-the-job-training. He then served as the chief of graphics on Marine Corps Base Kaneohe Bay, Hawaii, and two-and-a-half years later he was selected to be an instructor at DINFOS.

He now has the opportunity to pass on to younger Marines his talent and knowledge as a graphics illustrator.

Yet, his graphics knowledge is not the only thing Wolf passes on to DINFOS students, and students aren't the only ones affected by his presence. Instructors and students alike are inspired by the enthusiasm he brings to everything he does.

"If I could say one word to sum up when I first met him-motivation," said Air Force Master Sgt. Brian Nickey, noncommissioned officer-in-charge of the Media Production Department. "He's like a steam train running full-speed ahead at anything he does. It could be the simplest of tasks. He's the first to volunteer for anything, and probably one of the most motivated people I've ever met in my life.

"In the short time that he has been here, he has already taken the media production team to a new level," said Nickey. "I even feel a little more motivated."

Wolf continuously pushes himself, and that has an affect on everybody, said Nickey.

The motivation Wolf gains from his cartoon also helps him stay ahead of the game and has helped him become the first instructor in about three or four years to be certified in all three functions of the media department, said John Thomas, academic director, Media Productions Department.

"He accomplished that within his first 60 days here, whereas in the past, instructors made that accomplishment within a year," said Thomas.

Thomas has been a member of the DINFOS staff since 1989 as active-duty enlisted and now as a civilian. "I've seen a lot of Marines come and go," he said. "Staff Sgt. Wolf embodies the Marine Corps ethos, and he has managed to take off running since he's been here."

Wolf obtained his teacher's certification in 30 days, when most instructors take the full 90 days they're allotted after completing the Instructor's Training Course, according to Thomas.

"The sole emphasis is to inspire the artistic talent in young Marines everywhere," said Wolf. "There's an artist in every platoon, or unit, who is not using his or her talent to it's fullest potential. If I can inspire just one of them to take their talent to the next level, then it's all worth it."

His ability to inspire saved DINFOS student, Pfc. Michael Molinski, from a lack of motivation when he failed the Basic Journalism Course.

"When I failed BJC, I was very demotivated, and I didn't know what I was going to do," said the Hudson, N.Y., native. Wolf helped Molinski put a portfolio together, and get re-assigned as a graphics student.

"I've been drawing my whole life, but I didn't know this MOS existed until I got to this school," Molinski said. "When I wake up in the morning, I don't feel like I'm going to work, it's something I love doing. That's the best part about the job."

Wolf said the creation of Sempertoons has allowed his creativity to flourish, not only in art, but also in music and physical fitness.

He has friends because of Sempertoons who have inspired him to play the guitar and compete in bodybuilding. He and a friend recorded a compact disc and hope to go public with their musical talents someday.

Another friend he artistically encouraged convinced him to try his talents at bodybuilding. He took the same motivation that he applies to Sempertoons and focused it on bodybuilding and placed in a few competitions. He displays his awards on a table in his home office.

In fact, his home office is full of items that reflect his accomplishments. The walls of the office are covered in cartoons and pictures of famous people who appreciate him and all he does for the Corps. One of his cartoons was included in the Navy Times 1998 Year in Review. One of his first full page articles in a military publication is laminated and hangs next to cartoons signed by military dignitaries, encased coins - including a pair of presidential cufflinks-and a license plate that reads "SMPR2NS."

The office is very neat and organized with a computer on a desk at one side of the room and a large box of markers on a drawing table at the other side of the room.

"I still have the pencils in a Ziploc bag like I used when I first started drawing, but I also have a huge box of pencils and this collection of markers," said Wolf. "It helps to add color to the cartoon."

The Ziploc bag is new, but it still has the same things that were in it in 1995, when it all started - drawing pencils with more colors than the rainbow, three pennies, a poker chip, a wrist watch without the band, and an assortment of other odds and ends.

With all that Wolf maintains as a full-time Marine and a cartoonist, it's hard to imagine how he can stay organized, but his wife explains it easily.

"I do it," said Amy, his wife of 13 years. "And I'll admit when he first said to me that he wanted to market the cartoons, I laughed at him. I didn't think anyone would be interested in drawings on paper."

But one day around Christmas 1996, they sold more calendars than Amy could have ever imagined at the time.

"I came back to the exchange and saw this crowd of people around something and I said 'it must be a sale' so I wanted to get in on it, too," she said. "When I got there, I saw it was Charles, I couldn't believe it. He was signing, selling and bagging all at once. I jumped in to help."

After that, Amy realized this was going to go further than she anticipated, so she started

calling suppliers to avoid paying retail prices for their resources.

Now, they market mouse pads, calendars, matted prints, and Wolf even sits for print and calendar signing sessions. Most recently, he completed his first book, "Welcome To The Real World, Devildog," which will soon be available for sale.

Wolf has taken his creativity and exposed it for the entire Marine Corps and world to see.

"As a Marine you're always trying to convey certain situations and moments to family members, and it's sometimes hard to do without a visual aid," he said. "So that's the most magical thing for me now, is that I get to bring those moments home for so many Marine families."

In an article published in "Marines" February 1996, Wolf made a statement that encapsulates his whole motivation.

"Marines spend their whole lives surrounded by stories and adventures. I key in on that fact and put them into my cartoons," said Wolf. "I think it makes Marines feel better when they have a cartoon to go with their story, or their particular adventure."

## **KOSOVO-OPERATION RAPID GUARDIAN** Submitted by LCpl Carl Atherton 2d Marine Division Combat Camera



I recently had the chance to go with Golf Company, 2D Battalion, 25th Marine Regiment to Kosovo. There, we worked as part of Operation Rapid Guardian, a joint operation with the Army. Together the Army and the Marine Corps made up Task Force Falcon. Our mission was to work with NATO and KFOR to provide safety and security for the people of Kosovo by patrolling for smugglers of weapons, drugs, and other contraband.

While in Kosovo I stayed in three different camps; Camp Bondsteel, Camp Devil Dog, and Camp Diablo. In Camp Devil Dog, I photographed Medivac training, helicopter inserts and extracts, and perimeter guard duties. In the local town of Drenova Glava I was able to take pictures of the Medical Civilian Aid Program (Med C.A.P.). While in Leskovica, I was able to take part in a cordon and search operation.

The operation I enjoyed the most was Operation Bright Skies, which took place



on a hillside outside Leskovica. During this operation, the Marines shot illumination rounds from mortars at night to light up the valleys and their avenues of approach to detour the smugglers. The night shoot allowed me to utilize the Astroscope night vision attachment. The night vision gear creates interesting

imagery and gave me a chance to sharpen my night-shooting skills.

Going to Kosovo was an opportunity of a lifetime. Because this was my first overseas deployment and I was working independently, it helped me to hone my problem-solving skills and gain confidence in my work. It also allowed me to work with Marines I would normally not have had the chance to work with. I received two medals, the Kosovo NATO medal and the Kosovo Campaign Medal, as well as many experiences that will follow me through my Marine Corps career.

## **Update from the Orient** submitted by Sgt Benn Barr Video NCOIC Consolidated Combat Visual Information Center / III MEF Combat Camera Unit Okinawa, Japan

The video section was busy as usual in September. We had to pick up the pace to keep



up with the mission as Marines deployed and departed. Sgt Melissa Vreeland flew to Florida to attend the Marine Corps Combat Correspondents Association conference. She was awarded first place in the Television Information Program category for her coverage of Exercise Winter Front II, which she documented while stationed with 1st Marine Division. Sgt Benn Barr deployed with VMGR-152 for Exercise Bengal Tiger. This was a combined exercise with elements of the Bengali Air Force. The Marines shared techniques and training including a demonstration

of the Marine Corps Martial Arts program. Cpl Jose Hernandez, our motivated reactivated reservist, documented Arson Investigation Training for the Naval Criminal Investigation Section and the Marine Corps Bases Japan Fire Department. The training will help both departments to be better prepared to assist one another in the future. LCpl Tessa Condon returned from Yausubetsu, Japan where she documented an artillery relocation exercise with 3D Battalion/12th Marine Regiment. LCpl Daevid Brown did his part in protecting us by serving on the Security Augmentation Force. LCpl Izzel Sanchez and LCpl Troy Worden departed for MCAS Miramar and MCB Camp Lejeune, respectively. During all of this - in between the exercises, briefs, and ceremonies - Cpl Tim Brumley and PFC Travis Paschall found time to qualify on the Rifle Range. It's always exciting here in Okinawa. In September alone, we had Marines in four different countries. Still, we supported Marine Corps Bases Japan, 3D Marine Division, 1<sup>st</sup> Marine Aircraft Wing, 3D Force Service Support Group, and III Marine Expeditionary Force, as well as NCIS.

## **Kaneohe Bay CVIC finishing a productive and busy summer** submitted by Cpl S. D. Martin, Photographer MCBH Kaneohe Bay

This summer was an awesome experience for the Marines and Sailor of the Combat Visual Information Center at Kaneohe Bay, Marine Corps Base Hawaii. From renovating the building, to aggressively planning to get end of year funds, the personnel here all stepped up their performance to make the center a better place.

The plan started by identifying areas of the building we wanted to make more appealing to our customers. By working through the Base Self Help Program, the center

was able to get spackling, paint, and baseboards. Once the gear was received, the section went to work. After the whole process of spackling, sanding, and painting was completed, the Center was able to renovate 40% of the building. The Marines and Sailor accomplished this while not missing any hours for customer support. The CVIC also had new carpet installed in the customer service area, and other spaces that will become the Multi-Media section for the CVIC.

The Marines also spent numerous hours researching new equipment and vendors for a detailed plan for end of year funds. Technology is constantly improving and being updated, so the Marines have to take on the responsibility of knowing what equipment is best and most cost efficient. The plan was for shortfalls in consumables and equipment that were needed to provide quality support to our customers. Items in the plan were studio cameras, camera kits, and lenses for the photographers. New software and workstations were requested for the Multi-Media section. Equipment for the Video Section includes new studio cameras, camera kits, video decks, and AVID editing systems. Also, a new Laminator, and projector bulbs for general customer support. The whole plan resulted in 100% of this years deficiencies being funded for total of over \$130, 000.

The busy summer is already showing its benefits with the new gear, and positive customer feedback. The personnel are still pushing forward with the plan to ensure all areas are renovated in the near future. The actions of the Marines and Sailor this summer is going to benefit personnel for years to come.



## **How to inspect/repair your Astroscope 9350 BRAC-VX for use with a Sony PD-150**

The 31st MEU experienced the same problem with the Astroscope 9350 Night Vision System as was experienced by the Marines at Yuma. Working with the PD-150 it is easy to identify the problem. You will be able to zoom the camera in and get a full screen image, but the incorrect installation of the inside lens assembly will prevent you from correctly focusing the image in the viewfinder/LCD screen. I would recommend that all units possessing the Astroscope 9350 check their system. It takes approximately 5 minutes to perform the check on the system. If you do not have a BRAC-VX bracket from Astrophysics then you will not need to check your gear. This problem is not with the actual Astroscope, but an incorrect lens installation in the bracket adapter. The solution below is not ours, but the "fix: being recommended by Astrophysics.

To check/repair your bracket follow this procedure:

1. Remove the AstroScope from the Sony PD-150 camera lens.
2. Remove the same black metal "tube" that is threaded into the AstroScope BBAC (back body adapter that holds the AAA batteries).
3. On the side of the black metal "tube" is an allen head screw. You will need size 3/32 allen head wrench.
4. Loosen the screw. ONLY loosen it, there is no need to remove it.
5. After loosening the screw, remove the inside lens assembly. Compare the lens assembly to the photos below and reverse it in the metal tube if it is installed incorrectly. **(This is the key to the whole process)**
6. Tighten the allen head screw and re-install it on the AstroScope, then install the AstroScope assembly on the Sony PD-150.
7. Use the cameras zoom control to eliminate the circular image so that you will have a full frame image.
8. The system is now correctly installed.

## **Marine Enlisted Commissioning Education Program Preparatory Class**

Marine Corps Recruit Depot, San Diego, California hosts and supports this ten week program of intense instruction in English, History, Mathematics, and Science as well as a very intensive Physical fitness program.

The program reads: "As prescribed by the MECEP program directives, these Marines will complete their undergraduate education with baccalaureate degrees and receive commissions as Second Lieutenants in the United States Marine Corps Reserve".

The MECEP class of 2002 included two of our very own 4600 Marines which graduated at 10:00, on 07 August at the Base theatre.

Sergeant Helen Searcy, 4641, selected to attend from the CVIC, MCB Camp Pendleton will attend Miami University in Ohio where she will pursue a degree in Education and Sergeant Cyrus Patterman, 4611, selected from Graphics Division, MCI, Washington, D.C. will attend University of North Florida and pursue a degree in Building Construction Management.

Both Marines will be missed from the 4600 community but the Marine Corps will reap great rewards with the Marines contribution as Marine Corps Officers. We bid them congratulations and the best of luck.

## **Streamlining Passport Photography submitted by SSgt Picklo, Photo Chief, Yuma**

Yuma Marines and family members now have "one stop shopping" when required to get a no-fee passport. Streamlining this once tedious task took the combined efforts of the CVIC and TMO and has resulted in every individual feeling relieved by not having to make several stops to get one service.

We took the idea of consolidation and it applied it to the existing TMO passport process. Marines and family members simply visit the Traffic Management Office with a copy of their orders, receive their DD form 1056 and take their photograph. The days of running back and fourth from TMO and the photo lab are over.

When selecting the equipment for TMO a user friendly approach was a high priority. Polaroid cameras being one of the long-standing systems were chosen for its ease of use, quality and immediate result. The system we purchased was the Studio Express digital SPd360. It is an all-digital, self-contained photographic system, designed specifically for passport and official document photography applications. It provides 1 million (1360 x 1024) pixel resolution, a manual zoom lens, and automated iris control feature providing clear previews while keeping exposure settings intact. It can be used with a professional studio lighting set up or on-board flash like the standard camera flash.

The new passport application process has proven to provide better support for Marines and their family members.

## **29 Palms--the place to be** submitted by PFC M. A. Flores, MAGTFTC CVIC

When I heard that I was going to be stationed at 29palms I thought to my self, "I must have done something really bad, there isn't any graphic artist in the desert." I know I requested west coast but I meant MCRD San Diego near the beach, not in the middle of no where excluded from the civilization. Being here for 3 months now has made me see how graphics is a vital asset for this base. 29 Palms which is MAGTFTC (Marine Air Ground Task Force Training Command) the biggest training base in conus requires a variety of posters, graphics aides, countless other items. Here at CVIC we work hand in hand with all the rest of the multimedia staff including, photography, and videoagraphy. Needless to say I'm glad I received orders here where I work with a group of true professionals.

## **DVD Conference Info** submitted by Mr. Ricardo Nelson, Marine Corps Video Production Manager, VIM

Mr. Ramiro Sanchez and I had recently attended the Department of Defense (DOD) DVD Conference, which was conducted at Scranton, Pennsylvania. There were numerous issues addressed at the conference; however, the primary focus was concentrated on the ever-changing technology within DOD. Initially, all agree that the advancement to DVD was inevitable. We discussed how the DOD structure may be able to keep-up with and adapt to these changes. These inevitable changes further catapulted us into further and deeper discussions concerning equipment, guidelines, and customer needs. One obvious concern was the pattern of changes occurring within the society. Our customer's requirements are also changing. Changes, such as the increased requirement for DVD based products and playback capability; recording and playback levels of DVD; and the customer's demanding level of technological expectations. We all agreed that this was due to the availability of technology. In essence, our consumers expect more from us in providing better service. Our customers are also expecting more capabilities from us in terms of support. Primarily, customer's needs had drastically changed in terms of wanting their product in an expeditious matter. In addition, they demand product compactness.

Beyond all of the above, I sensed from our sister services during the meeting with the minds, that everyone was well aware of all the issues encountered. However, focusing on how we can meet our customer's demands and expectations were only a

small portion of the group dilemma. Besides an increase in customer's request for DVD support; we were also concerned with equipment standardization and procedural guidelines. Further considerations were debated on issues, in such areas as the on-going contract agreements with various vendors; impact on the already available contracts on hand; the need for detailed consideration pertaining to the enforcement of the current requirements of contracts from within the various services; attempting to predict the possible legal ramification if any changes occurs; and the necessity to review and scrutinized the current and future contracts prior to implementing any changes on equipment and procedures.

In essence, DOD has a long way to go before guidelines for DVD are finalized. Regrettably, I can only speculate and assure everyone that temporary remedy for these various issues will not be the best course of action.

Further discussions careened into issues of ongoing administrative changes needed within our VI's various provisions. It seems that provisions are on constant revisions. The information I'm providing below should give you a general idea of the upcoming changes. Please keep in mind that the following information below, is merely for your informational purposes:

- (1) DOD 5040.2 which is strictly policy in content is being updated.
- (2) DOD 5040.3 will be deleted once 5040.2 is completely updated.
- (3) DOD 5040.6 is currently awaiting signature.
- (4) DOD 5040.7 (Considered VI Bible) will be replaced with content consisting of about half of the information from 5040.7 and half from 5040.8. Its content will include the long awaited 508 Guidelines. As you're all aware of, deals with disabilities compliance.
- (5) DOD 5040.9 VIAM-which deals with management, is waiting for DOD management's approval.
- (6) DODI 1322.20-which deals with Training and Management's interpretation; is also being updated.

Finally, for those concerned with the DOD DVD guidelines; I'm afraid that it will take some time before that transpires. As soon as I receive additional information, I will gladly turn it over to everyone.

**Notes from the OccFld 46 Specialist Capt R. D. Smith**

## **Warrant Officer Program**

As of this edition of the FLASH we "project" one vacancy this year. Most of you may know, last year we begin the year with zero "projections". As it turned out we had three vacancies when the board convened, of which two were last minute additions. The due date for packages to reach CMC is 1 March, and since the board does not convene until 1 June, leaves three months that "any thing can happen". As I have recommended in the past, if you desire to apply for the WO Program, **SUBMIT A PACKAGE** regardless of projections. The MARADMIN will be released in Dec soliciting applications. I will cut and paste the MARADMIN into an email and send it out.

**Marine Corps Combat Development Command  
Materiel Requirements Division**

**CWO2 John Crone  
Audiovisual Requirements Officer**

**DOTMLPF Working Group DWG**

The last DWG or DOTMLPF Working Group, which is a panel that discusses courses of action on all new incoming UNS's, was held on 10 October.

A total of 15 urgent Universal Needs Statements were received the prior week, all concerning Enduring Freedom and all from I MEF. One of the UNS's was for a Tactical Reproduction Capability Suite to consolidate all combat camera tactical imagery production into one system. I had the opportunity to brief the DWG on this request that came from 1<sup>st</sup> MarDiv. This was the first time that we actually had a 4602 as a requirements officer briefing the DWG. The UNS was well received and had 100% backing from the CE advocate. After the brief and entertaining several questions from the panel, the need was validated and courses of action were discussed. CWO4 Golwitzer and his team at MARCORSYSCOM have already developed a system to answer this validated requirement and should have a prototype by mid November. The advocates were very interested in Combat Camera capabilities and our Occ Field gained much visibility across the pillars of DOTMLPF yesterday during the DWG.

If you are developing a UNS and haven't informed me please let me know so that I can assist in any way I can and keep track of its progression. I can also give the advocates a pre-brief so that they know it's on the way.

**Equipment & Systems Procurement** CWO4 Wayne Golwitzer  
VI Project Officer, Marine Corps Systems Command

**Bandwidth Blues** submitted by SSgt Mark Maynard, *Marine Corps Systems Command*

At some point in your career, the bandwidth bug is going to get you. We have all been perplexed during a file transfer from a computer hard drive to a network drive for back-up, or sending a file FTP from one location to another. Most of us have had major delays while downloading a file from the Internet via a dial-up modem. It seems like new compression codecs emerge everyday, making it nearly impossible to keep up with this volatile and constantly changing technology, not to mention having to deal with the addition of the existing Department of Defense standards for still imagery and the new video imagery standard which will be coming soon from Defense Visual Information (DVI).

I am going to try and simplify this as best I can, so that all of you have a basic understanding of how available bandwidth and file size directly affect how much time it will take you to transmit or transfer an image or compressed movie from Point A to Point B.

Data File Architecture. In order to understand how transmission takes place, we need to look at how a data file is formed. The first thing to know is that the number eight is key to understanding data files. Very simply put, the rule here is that eight bits make one byte, sixteen bits make two bytes, and so on. Keep in mind that data is created in multiples of eight, so one kilobyte is actually 1024 bytes of information or 8192 bits.

Bandwidth Connections. Now that I have discussed file architecture, let's look at transmission bandwidth. We are all familiar with dial-up modems either in our past or our current personal computers. Modems are based on analog technology and they must perform a "handshake" with the computer or network that they are attempting to contact. Dial-up modems originally started with speeds known as baud rates. Early speeds were as slow as 1200 bits per second, but connection speeds have steadily increased over the years and reach their threshold of 56 kilobits per second (kbps). Current analog phone lines cannot accommodate speeds higher than 53kbps.

Connection speeds are normally measured in one of three units of measure: kilobits per second (kbps); megabits per second (mbps); or gigabits per second (gbps). This number refers to the total number of bits of information that the connection is capable of receiving in one second. For example, 56kbps means that the connection is capable of receiving 56,000 bits of information in a second. Eight bits make a byte, so this connection will allow you to receive 7000 bytes or roughly 7 kilobytes of information per second.

Table 1 illustrates both connection speeds and bandwidth capabilities and the amount of information each connection type can transfer in a single second, minute, and an hour. Keep in mind that these figures represent the transfer capabilities in an optimal situation.

### Information Transfer Capabilities by Connection Type

Connection Type	Max. Bandwidth	Transfer Capability 1 Second	Transfer Capability 1 Minute	Transfer Capability 1 Hour
Dial-up Modem	56kbps	7Kb	420Kb	25.2Mb
DSL	500kbps	62.5Kb	3.75Mb	225Mb
Cable Modem	1.1mbps	137.5Mb	8.25Mb	495Mb

Table 1

More Bandwidth Connections. Information Technology (IT) has advanced so much over the past few years. Increased use of the Internet, e-mail, and file transfer methodologies has brought our society into the information age. Connectivity from computer to computer utilizing Local Area Networks (LAN) or Wide Area Networks (WAN) gives us the ability to communicate with each other without even lifting the phone or writing a letter.

It is important to understand these network connections for their bandwidth capabilities. Table 2 illustrates the four most common to us as Marines. Again, data transfers are based on optimal conditions.

### Network Data Transfer Rates by Connection Type

Connection Type	Max. Bandwidth	Transfer Capability 1 Second	Transfer Capability 1 Minute	Transfer Capability 1 Hour
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<b>Token Ring</b>	16mbps	2Mb	120Mb	7.2Gb
<b>Thin-Net</b>	10mbps	1.25Mb	75Mb	4.5Gb
<b>Ethernet</b>	100mbps	12.5Mb	750Mb	45Gb
<b>Gigabit Ethernet</b>	1000mbps	125Mb	7.5Gb	450Gb

Table 2

Portable Bandwidth. In the past we have used INMARSAT “A” and INMARSAT “B” coupled with STU-III phones for encryption. For those of you who have had to use this antiquated equipment, you know how labor intensive and slow this system was to use. The best case scenario included 56kbps if you were sending information un-encrypted and an extremely slow 9600bps (that’s bit per second) if you were sending encrypted files back to your Combat Operations Center (COC) or back to the continental Unites States (CONUS).

Current Marine Corps technology focuses on using the Tactical Data Network (TDN) and Tactical Communications for data file transfer or transmission. Several systems including the Joint Task Force Enabler (JTF Enabler), STAR-T, SMART-T, and Trojan Spirit have been created to improve area of operations (AO) communication and secure communication.

The Marine Corps is currently in the process of replacing its STU phones with STE (Secure Telephone Equipment) phones. Unlike the low bandwidth capabilities of the STU phone, the STE phone is capable of 128kbps, or roughly fourteen times the speed of a STU phone.

There are two versions of the INMARSAT that have been fielded in the past: a 64kbps version; and a 128kbps version. The 128kbps version, when coupled with the new STE phone, gives commands a secure ISDN capability from anywhere in the world.

Keep in mind that the Defense Information Systems Agency (DISA), the National Security Agency (NSA), and the Department of Defense (DoD) can affect policy to turn off INMARSAT satellites for security reasons because it is one of the preferred methods of communication among our enemies.

Tactical field radios are improving every year and we must look at this technology as a viable alternative to using INMARSAT for imagery transmission. The AN/PRC-119 radio, commonly referred to as SINCGARS, has imbedded satellite communications (SATCOM) capability as well as Line-of-Sight (LOS) data capability. Harris now produces the AN/PRC-117F field radio that can transmit data at 115kbps in asynchronous (information packets) mode, and 48/64kbps via SATCOM. It has imbedded encryption, and can also transfer secure data at these speeds. These radios allow us to move imagery files around the battlefield as well as back to CONUS.

Table 3 provides data rates of the field radios and INMARSAT. As stated before, the data rates shown here are under optimal conditions.

### Portable Transmission Systems

<b>Connection Type</b>	<b>Max. Bandwidth</b>	<b>Transfer Capability 1 Second</b>	<b>Transfer Capability 1 Minute</b>	<b>Transfer Capability 1 Hour</b>
<b>AN/PRC-119 LOS</b>	16kbps	2Kb	120Kb	7.2Mb
<b>AN/PRC-119 LOS Secure</b>	9.6kbps	1.2Kb	72Kb	4.32Mb
<b>AN/PRC-119 SATCOM</b>	16kbps	2Kb	120Kb	7.2Mb

<b>AN/PRC-119 SATCOM Secure</b>	9.6kbps	1.2Kb	72Kb	4.32Mb
<b>AN/PRC-117F LOS</b>	115.2kbps	14.4Kb	864Kb	51.84Mb
<b>AN/PRC-117F LOS Secure</b>	115.2kbps	14.4Kb	864Kb	51.84Mb
<b>AN/PRC-117F SATCOM</b>	64kbps	8Kb	480Kb	28.8Mb
<b>AN/PRC-117F SATCOM Secure</b>	64kbps	8Kb	480Kb	28.8Mb
<b>INMARSAT 64kbps</b>	64kbps	8Kb	480Kb	28.8Mb
<b>INMARSAT 64kbps Secure</b>	64kbps	8Kb	480Kb	28.8Mb
<b>INMARSAT 128kbps</b>	128kbps	16Kb	960Kb	56.6Mb
<b>INMARSAT 128kbps Secure</b>	128kbps	16Kb	960Kb	56.6Mb

Table3

After reviewing all of the information listed in the tables, you can begin to understand how mathematically complicated file transmission and transfer can become. If you just remember that eight bits make a byte, and that you have to convert the data file size into bits to figure out how long it will take to transmit a file, then you're on your way to escaping from the bandwidth blues.

This last table provides transmission times based on connections and some example files sizes. All times are estimates and are based on optimal conditions.

### Transmission Time Table

<b>Connection Speed</b>	<b>256Kb File</b>	<b>512Kb File</b>	<b>1Mb File</b>	<b>2Mb File</b>	<b>5Mb File</b>
<b>9.6kbps</b>	213.3	426.6	853.3	1706.6	4266.5
<b>16kbps</b>	128	256	512	1024	2560
<b>56kbps</b>	36.6	73.2	146.4	292.8	732
<b>64kbps</b>	32	64	128	256	640
<b>115.2kbps</b>	17.8	35.6	71.2	142.4	356
<b>128kbps</b>	16	32	64	128	320

\*Times are listed in seconds

Table 4

Formulas. I will leave you with two formulas and examples that will help you when you are trying to figure out transmission time and transfer time for imagery files. Both formulas are based on optimal conditions.

The first formula will illustrate how to determine the maximum transfer capability of a connection based on the available bandwidth.

Formula: Connection Speed Divided by 8 (bits) = Total Bytes Transferred per second

Example: 56kbps divided by 8 = (?)  
56,000 divided by 8 = 7000 bytes or 7Kb/second

The second formula will illustrate how to estimate transmission time based on file size and available bandwidth.

Formula: File Size (in bits) divided by Available Bandwidth = Time to Transmit in Seconds

Example:  $256\text{Kb} \div 56\text{kbps} = (?)$   
 $256000\text{B} \div 56000\text{bps} = (?)$   
 $256000\text{B} \times 8 \div 56000\text{bps} = (?)$   
 $2,048,000 \div 56000 = 36.57$  seconds

Point of Contact. If you have any questions regarding bandwidth, file transmission or file transfer, please call me at DSN 378-3260 or commercial (703) 432-3260. You can also e-mail your comments to me maynardma@mcsc.usmc.mil.

**Training CWO3 Joe Sanders**  
**OccFld 46 Training Officer, Defense Information School**

### **ALMAR 045/02, Training Assessment**

I will attempt to explain why it is important and how it applies to VI/COMCAM.

The Commandant published this ALMAR reemphasizing our commitment to **“Fight as we train”** with the focus on helping commanders fulfill their responsibilities outlined in Doctrine -- MCRP 3-0A, The Unit Training Management (UTM) Guide. Additionally, he announced the transition from the Marine Corps Combat Readiness Evaluation System (MCCRES) to the Training & Readiness (T&R) Manual. The MCCRES and ITS are used by commanders to establish Unit Training. They did not provide the commander with a tool to initially and continuously assess the training program. Therefore, TECOM is tasked to transition from the document based MCCRES to the Mission Essential Task (MET) based assessment training using the T&R.

What is MET?

- ? Every Command has a T/O Mission. Total Force Structure publishes this with the T/O based on Doctrine.
- ? Every command has a Combatant or Title 10 mission. The supported Unified Combatant Command outlines the combatant mission, while Title 10 outlines service responsibilities.
- ? The command takes these two missions and builds a Mission Essential Task List (METL) that identifies what tasks must be performed to be mission capable & ready.
- ? With the METL, a command can set up a training program to ensure readiness.

Why is MET better?

- ? It uses Tasks, Conditions and Standards (like ITS).
- ? Allows for initial and continuous assessment.
- ? Focuses on continued readiness.

How does it affect you?”

- ? As stated in the ALMAR, every commander will establish a METL for his or her command.
- ? The command will establish (reestablish) the Unit Training Plan (UTP).
- ? Every OCCFLD has sustainment level tasks that are trained regularly (see our ITS).
- ? These are included in the UTP for your part of the mission.
- ? You will be a part of the command plan in a support role providing VI/COMAM services. Additionally, you are trainees meeting the ITS requirements for each MOS.

What is the future of our ITS?

- ? Even before this ALMAR, we concluded that a T&R is needed to replace due to our move to the Op Forces.
- ? As soon as the new T/O is published, I plan to initiate the proper paperwork to make the change.
- ? A T&R will give you the ability to fall into the command's MET based plan.
- ? It will also allow for readiness evaluations from higher to ensure VI/COMCAM are combat ready. Example: MARFORPAC can evaluate all subordinate commands for readiness using the T&R. This helps you maintain 4600 training readiness, not just BST type training.

I hope I've helped. Read the ALMAR and MCRP 3-0A. If you want an example of a VI/COMCAM UTP I can provide you a copy of the one we did at 1st MARDIV. It was based on MCRP 3-0A and the Divisions MET Based training plan. It was approved by the command.

Semper Fidelis!

***"You are either in contact, moving to contact or training"***, LtCol Chips Catalone, MCRP 3-0A