AWS Observer

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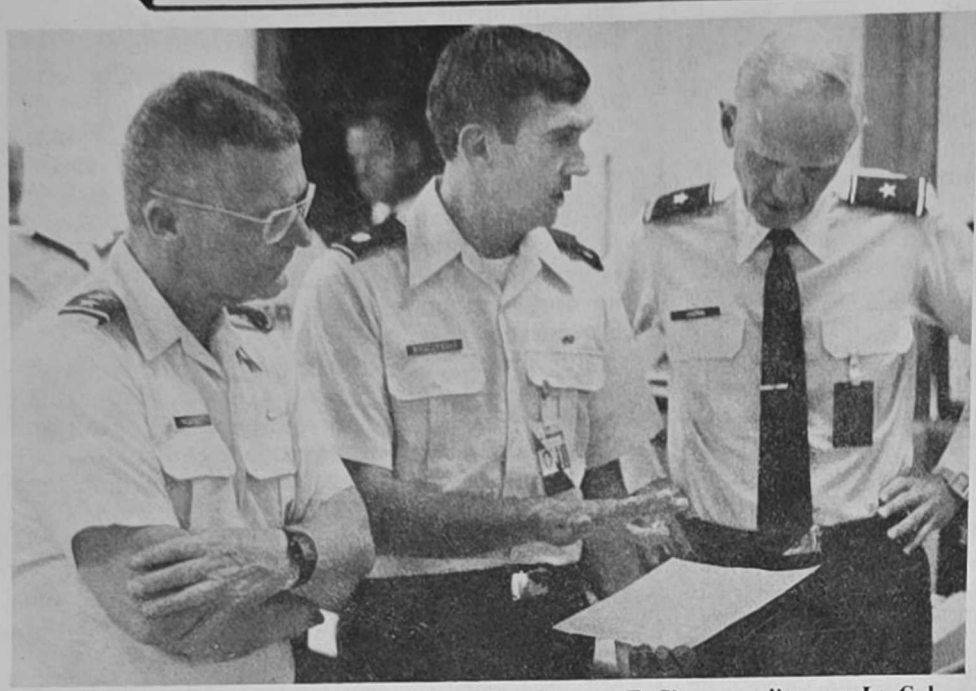
"There are risks and costs to a program of action. But they are far less than the long-range risks and costs of comfortable inaction."
—John F. Kennedy



Lt. Gen. Forrest S. McCartney and Brig. Gen. George E. Chapman listen as Lt. Col. Edward Kolczynski, Det. 11, 2WS commander, explains the operation of equipment in the CCFF. (USAF Photo by SSgt. Steve Hicks.)

New weather facility draws rave reviews

by SSgt. Steve Hicks
Eastern Test Range Public Affairs

A weather station that employs the latest in space age weather display equipment was opened at Det. 11, 2WS at Cape Canaveral AFS, Fla., Sept. 30.

To mark the occasion, a ribbon cutting ceremony was held to celebrate the culmination of three years of intense teamwork by NASA and the Air Force.

Lt. Gen. Forrest S. McCartney, Space Division commander, Brig. Gen. George E. Chapman, AWS Commander, and Col. Nathan J. Lindsay, Eastern Space and Missile Center commander, spoke during the proceedings.

"Weather is the one element we can't control in our efforts to ensure the safest possible launch environment, but with a facility such as this, we can to some degree predict what our weather conditions will be well before a launch," said General McCartney.

"The opening of this facility marks the beginning of a new era of advanced weather support to the nation's space program and provides a milestone in the Air Force and the Air Weather Service commitment to the space shuttle program," General Chapman said.

The information gathered by the equipment in the facility is used to support the Eastern Test Range, launches of Poseidon, Chevaline, air-launched cruise-missile strategic systems and systems projected to be launched from Cape Canaveral in the future.

The Air Force and NASA invested more than $2 million for the Cape Canaveral Forecast Facility's Meteorological Interactive Data Display System. MIDDS is one of the most advanced weather display systems in the world. It gives CCFF forecasters a capability few other weather forecasters in the world have according to 2nd Lt. Mike Pagliuca.

"We receive weather information feed-ins from about six different sources, so our data are consistent with weather agencies. The MIDDS gives us a much greater capability than most weather stations because it offers a three-dimensional color display and a full-color overlay of computer-enhanced images received from satellites," Lieutenant Pagliuca said.

In addition, the facility has improved lightning location equipment and a WSR-74C storm-detection radar for severe weather forecasting. The radar can detect low levels of precipitation (as small as .01 inch per hour) that would damage the shuttle's thermal-protection tiles during launch and landing operations. Upgrades of the facility are planned for the early 1990s according to weather officials.

Other dignitaries present at the opening ceremony included Mr. Richard Smith, Kennedy Space Center director; Mr. Robert Sieck, director of Space Shuttle Launch and Landing Operations at Kennedy Space Center; Col. John N. Shults, director of the Department of Defense Managers Space Transportation System Contingency Support Office; and Mr. Robert Buckley, NASA Liaison Officer for the ESMC.

"The new hardware can give us the worldwide weather status as well as a phenomenal description of conditions at the Cape and Kennedy Space Center," said Colonel Lindsay. (Reprinted from the "The Missileer.")

Into the 21st Century

by TSgt. Mike Devine

In order to keep pace with the support requirements of the Air Force's newest weapons systems, AWS plans to improve methods and equipment, and move into the 21st century on the crest of a technological revolution.

It won't be long before base weather stations will be as talked about as "in the old days, we had to use teletypes, facsimile machines, grease pencils and mountains of paper products. Why, we had to plot skew-Ts by hand and what's more..."

For those who think technology is great, but a modern base weather station with distributed data bases for more responsive weather support is a long way off, think again. What may be the weather station of tomorrow is operational at Cape Canaveral, Fla., today.

The Cape Canaveral Forecast Facility, or CCFF, uses the Meteorological Interactive Data Display System, or MIDDS, to provide the rapid data integration, display and analysis capabilities needed to provide high quality forecasts to Space Shuttle and Eastern Test Range space and missile launches.

Although the CCFF was designed specifically to support Space Shuttle and other launches from the Eastern Space and Missile Center, the technology and techniques used there will soon be common to base weather stations.

When asked to briefly describe what the MIDDS does, SSgt. James H. Gallagher, a range weather forecaster answered with a chuckle, "You can't describe it briefly. I'd have to say, 'name it, and it'll do it.' It'll grid or plot any parameter that you want. It's got satellite looping capability, you can expand or contract the shot, do IR or visible overlays, three-dimensional loops, use any data available ..."

The CCFF duty forecaster sits at a console with access to information from many sources. Realtime data (satellite data, surface and upper air observations) are available. With MIDDS, any parameter that is reported and listed on a regular weather report can be selected for analysis. For example, cloud heights, visibility, pressure, temperature and dew points can be plotted and analyzed.

With the satellite loop, things like outflow boundries can be seen and used to key in on severe weather. A few keystrokes and maps appear, lines are overlayed, colors added. MIDDS can overlay surface streamlines indicating low level convergence zones to determine where maximum thunderstorm activity will be.

Sound too good to be true? It isn't. Think it'll take years until anything like this is available to AWS. Think again.

MIDDS could be thought of as an early look at the Automated Weather Distribution System, or AWDS. Current plans will have more than 160 AWDS sites activated by 1992. Continental U.S. and Alaska installations are set for 1990, 44 European locations should see AWDS in 1991 and 14 Pacific sites will be added by 1992.

While AWDS is a few years away, the Satellite Data Handling System, or SDHS, is a reality.

SDHS is a man-machine interactive weather graphics and imagery system and some SDHS work stations are already installed at AFGWC. SDHS software and hardware is now being integrated into AFGWC's data automation and production system. Links have been established between SDHS and the Sperry mainframe computers as well as other hardware at AFGWC.

Forecasters will use SDHS, and the Advanced Weather Analysis and Prediction System, better known as AWAPS, to produce better meteorological products.

AWAPS includes a CRAY X-MP "supercomputer," the fastest general purpose computer system commercially available. The instruction issue rate of more than 200 million per second combined with the capability to execute more than 400 million floating point operations per second make it 50 times faster than the fastest computer currently in operation at AFGWC. That means analysis and forecast products are available much faster than current systems.

And there's more. The Battlefield Weather Observation and Forecast System will combine information gathering systems with specialized forecasting techniques to get some pretty important information into the hands of operational decision makers.

NEXRAD, the Next Generation Weather Radar, will analyze severe weather in real time and double the operator's ability to detect severe weather while reducing the false alarm rate to one third of what it is today.

It has been a long time coming, but the wait is almost over. In this issue of the "Observer" are articles on the kind of hi-tech AWS will be using to improve customer support. Please see pages 4 and 5 for more information about MIDDS and SDHS.

Command Line 'A New Commitment'

Brig. Gen. George E. Chapman
Commander

Here at Scott we've just entered the Holiday Season with Thanksgiving 1985 a memory of a few days. We were talking about that here the other day during a pinning-on ceremony for two members of the staff as they moved up to the ranks of Major and Chief Master Sergeant. Thanksgiving had a special meaning for them, as it was also the beginning of a new commitment.

As I've traveled over the last two months to more than 90 of our units, I have seen again the tremendous pride that our people have in serving their country; it's reflected in the ways they wear their uniform, ask questions, and show pride and interest in their career field and the Air Force. After I finished this long swing through Europe, the Mediterranean, Alaska, the Pacific region, and Australia, I reflected back on this surge in pride and patriotism and thought of a period back in 1969 when I was attending graduate school through AFIT on the East Coast — and we were prohibited from wearing our uniform on the campus due to the strong sentiment against members of the military establishment in this country. That may be tough for some of our younger members to believe — but it happened, and that's why it gives one such a surge of pride to see the feeling of patriotism the young people entering our profession have today.

I thought of that as we engaged in the pinning-on ceremony the other day, as I asked both the officer and NCO to repeat the Oath as if each were enlisting or being commissioned for the first time — noting that an officer normally may only do it once during his/her career, and an enlisted member each time he/she reenlists.

But promotions are made on the basis of potential — potential for greater leadership and service. We're sometimes guilty of taking things like that for granted — and that's one more reason for recapturing the spirit in the Oath of Commission/Enlistment — it's a commitment to a new level of rank and responsibility — and of service to our Nation.

We have a great thing going in our profession today, outstanding, patriotic people looking for dedicated leadership — let's dust off that Oath and renew our commitment — publicly and with pride.

Chief's Comments Hurrah '85 — Hurrah '86

It's always nice to end on a pleasant note; it leaves a good feeling. Even better, is for that pleasant note to be continued into the future.

1985 was an outstanding year. Our manning reached a level that allowed us to take advantage of opportunities which had been hard to come by before.

Vacations could be planned in advance, bootstrap slowly started to enter the picture, and time-off appeared on a more regular basis. Consecutive Overseas Tours and overseas extensions increased along with the level of experience throughout our units.

Other enlisted initiatives included 10 quotas for the Airmen Education and Commissioning Program, for the first year since the late 70's. The Selective Reenlistment Bonus was extended into 1986, and the extra five percent promotion opportunity rate, under the Chronically Critical Skills, was extended through September 1986.

Many new equipment initiatives have been funded and will soon be showing up in base weather stations. In the next two years, there will be 10 new pieces of equipment brought into AWS. This doesn't include AWDS or NEXRAD. There are still some minor problems in this area, but they are being worked — hard.

Why are these initiatives, new equipment and good manning so important? Because they help lay the foundation for high morale. During my three years as AWS Senior Enlisted Advisor, I've watched our morale grow to the highest I've seen during my 25 years in the Air Force. The credit goes to the people with can-do attitudes and the strong leadership we have throughout Air Weather Service. Both are tops!!!

The "HURRAH '86" is for the continuation of 1985's pleasant notes throughout the new year. There will be more challenges for 1986 and I guarantee you, together we will meet them head-on. Like '84 setting the stage for '85, next year will set the stage for an even better '87.

While you're meeting the challenges, give some consideration to your own career. Take the time to sit back and look at your goals. Be sure the direction you're headed is where you want to go.

Talking about goals and changing them a speaker said, "If you don't have today what you want, then you are going to have to change. If you don't change, then what you have today you will have tomorrow and what you have tomorrow will be the same as you have today."

Take the time to check your goals, adjust as needed and press on. Keep yourself competitive. The opportunities are available to make 1986 a really great year.

CMSgt. Charles T. Melson
Senior Enlisted Advisor

"...A Very Special Time"

Throughout the world, this holiday season is a very special time. It is a time of family, a time of warmth and sharing, a time of renewal, and a time of peace.

As Americans, we are especially fortunate to be citizens of a prosperous, peaceful nation, a place where each of us can observe this time according to our own traditions. For this, you, the members of the Military Airlift Command, deserve great credit.

You can be proud that your helping hand reaches around the globe. Each day of the year, MAC people can be found on life-saving or life-giving missions, or protecting the freedoms and peace for people everywhere. The dedication that MAC people and their families display in their acceptance of demanding missions anytime and anywhere is not a quality that I — or anyone — can order up on demand. It is inherent in each of you who selflessly serve our nation.

Mrs. Cassidy and I offer our sincere thanks for your contributions to peace and good will around the world. Our best wishes to you and your families for a joyous holiday season.

Gen. Duane H. Cassidy
Commander in Chief, Military Airlift Command

A lesson from history

Vietnam: Weather and Naval Air

by John Fuller

After the Navy installed its first Defense Meteorological Satellite Program (DMSP) readout equipment aboard the aircraft carrier Constellation in 1971, an AWS officer experienced in DMSP went along for part of the shakedown.

Being on station with a carrier during a combat patrol in the South China Sea offered AWS a rare glimpse of the role weather support played in naval air operations.

In early 1965, President Lyndon B. Johnson approved a sustained air campaign against North Vietnam. Codenamed Rolling Thunder, it involved not only Air Force aircraft, but the U.S. Marine Corps and Navy aircraft of Carrier Task Force (CTF) 77 in the Gulf of Tonkin.

CTF-77 usually operated two carriers at Yankee Station, a point roughly abeam of the demilitarized zone at the 17th parallel dividing the two Vietnams.

On station about 30 days at a time, one carrier launched attack aircraft while the other flew fighter cover and flak suppression while rearming and refueling strike aircraft. The next day, the roles might be reversed.

During standby periods, one carrier might fly nights and its companion days, giving ship crews a modicum of rest and ship maintenance time. It was a grueling pace. During the good weather of June 1965 for instance, CTF-77 launched 5,665 attack sorties, 3,078 of which were against North Vietnam and the world's deadliest air defenses. As with the Air Force, adverse monsoon weather heavily favored the enemy.

"With the centralized control of the war from afar," wrote Vice Admiral David C. Richardson CTF-77 commander in 1966-67, "Washington could *not keep in touch with the ever changing weather, which often required on-the-scene changes in* target and weapon assignments."

Missions cancelled due to weather were dangerous in their own right. For example, on Oct. 26, 1966, the aircraft carrier Oriskany's assigned morning strike was scrubbed due to unfavorable weather over North Vietnam. While magnesium parachute flares were removed from the readied aircraft, one ignited and set off 700 more flares in the storage locker. Once the terrifying fire was out, 44 officers and men were dead, including 25 hard-to-come-by pilots.

During the northeast monsoon, carrier aerologists at Yankee Station needed to be adept at forecasting the passage of true frontal systems and diffuse cold air surges out of China. Otherwise, from October through March, they played a waiting game as the weather typically consisted of multilayered, striform cloud decks from near the surface to 10,000 feet.

Although there were sometimes stretches of many days without suitable strike conditions, carrier flight personnel remained at the ready on the slight chance the aerologists could be wrong and an unpredicted weather window appeared at both the target area and the carrier.

With the southwest monsoon dominating Yankee Station from April through August, the weather was largely convective clouds and showers. Tropical waves and storms, plus typhoons, were merely imposed on that pattern. Normally, winds would be very light, even calm, during late evening and morning hours, but would pick up during the afternoon.

Alert carrier skippers could handle that form of weather and had their aerologists diligently searching for the best conditions. On the synoptic chart the weather might appear to be the same day by day, but actually each day was different locally. The gradient wind might be slightly weaker or stronger, more southerly or more westerly, depending on the migration of the Intertropical Convergence Zone.

One of the most critical forecasts aerologists had to make was where the carrier should be at the start of its 12-hour period of flight operations, and how strong the winds would be.

Strong winds translated into larger ordinance and/or fuel loads. If the load remained constant, the carrier would need less speed through the water. If the ship needed less speed, skippers might operate with six or less of the carrier's eight boilers on the line. That was extremely valuable to the ship's maintenance force, for work on the boilers could only be performed after 12-hours of cooling.

Inaccurate wind forecasts caused other difficulties, because generally, CTF-77 strikes were coordinated with Air Force strikes. Aircraft too heavy to launch, even with the carrier at maximum speed, required downloading, that might lead to lethal consequences. A delayed offshore launch or an aircraft that had to refuel aloft before penetrating enemy airspace meant that instead of Navy and Air Force aircraft hitting the enemy simultaneously from different directions and obtaining an element of surprise and confusion, Navy aircraft would strike when the North Vietnamese were fully alert and waiting.

The area held another meteorological trap, the directional variability of Tonkin Gulf winds caused by showers and by Hainan Island. Nevertheless, carriers, while launching or recovering aircraft, had to be steered into the wind. If that meant approaching Hainan, the carrier had to be brought around quickly to avoid exposing airborne aircraft to Chinese antiaircraft fire or even placing the ship under attack.

Although it was embarrassing, the aerologist could interrupt a launch, but a recovery interruption was unforgivable. Not only were the aircraft short of fuel, but often they had battle damage and perhaps wounded pilots or crewmembers.

Compounding the problem was the possibility of reduced visibility and ceilings, as well as certain seas conditions that, by synchronization, magnified the motion of the carrier's flight deck.

Naval forecasters at Yankee Station had another way to generate nervous tension. When tropical storms originated within or were tracked into the South China Sea, the question quickly became whether the storm would continue westward toward Vietnam or recurve northward.

If the storm did approach the Asiatic mainland, it might pull clear, dry air from China over the target area. If so, it afforded perfect bombing weather until the storm drew close to Tonkin Gulf. The aerologists hoped that such a storm would move westerly, then recurve just northeast of Hainan Island. In such a situation, CTF-77 could slip to the south of Yankee Station as the weather worsened, but then quickly return when conditions improved.

If the storm moved steadily westward, the task force could be trapped between Hainan and North Vietnam with no place to run and no place to hide. Leave Yankee Station too soon or unnecessarily and superb bombing weather could be missed. wait too long and disaster was courted. Of such events were carrier skippers and aerologists headaches made. DMSP data was a welcome antidote.

Although the DMSP readout van took an entire aircraft parking space, the ship's skipper considered the trade-off more than justified. The aircraft carrier's receiver was not a parabolic dish. Instead, the Constellation's DMSP antenna system ran just below the flight deck and on at least two occasions acted as an arresting barrier for fighters swerving out of control after landing.

A U.S. aircraft carrier in the South China Sea ready to launch helicopters in support of Frequent Wind.

Brig. Gen. George E. Chapman
AWS Commander

TSgt. Michael T. Devine
Editor

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First live data transfer to SDHS

OFFUTT AFB, Neb. — The first live gridded data transfers to the Air Force Global Weather Central's Satellite Data Handling System, took place here Aug. 16 through a joint effort by the Harris Corporation, Air Force Systems Command's Space Division and AFGWC.

The Satellite Data Handling System is a man-machine interactive weather graphics and imagery system. This operational system is the culmination of many years of effort that started in the early 70s with a prototype system called the Weather Analysis System.

It was followed in the mid-70s by an extensive Production Analysis Project. This was a study of the forecasting tasks to be automated and the potential savings available. This was followed by a competitive contract award by Space Division to the Harris Corporation in 1979.

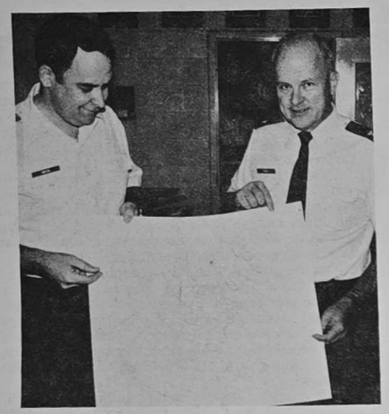
SDHS software and hardware are now being integrated into AFGWC's data automation and production system. Links have been established between SDHS and the Sperry mainframes, as well as other hardware at AFGWC.

The basic SDHS hardware and software will become operational in February. At that time, AFGWC will take operational control and responsibility for the SDHS.

The Programs Acquisition Branch of the Operations Division has been the AFGWC single manager of the project. They have responsibility for configuration management for this system. They also advise the AFGWC Configuration Management Board on major system modifications.

For about two years, AFGWC's Forecasting Services Division and Special Support Division will be developing the operational tasks that will make production of weather graphics and bulletins operational on SDHS. Operational Tasks are lists of commands strings activated by menu choices. They will also be used in training personnel in the practical use of SDHS and converting production operations to the SDHS environment.

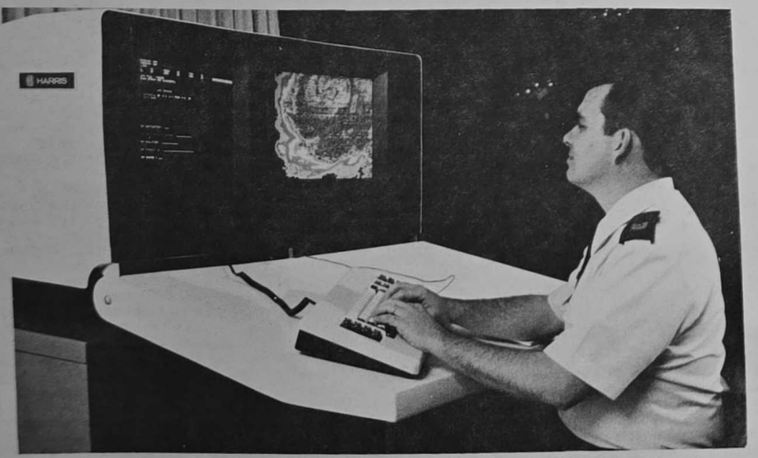
Enhancements scheduled between 1986 and 1988 will bring the SDHS up to date with developments at AFGWC since the late 70s, when SDHS was designed. These enhancements will take full advantage of recent upgrades in AFGWC systems, such as the Advanced Weather Analysis and Prediction System. In addition, these enhancements will introduce later technology into the SDHS design (using digitizing tablets instead of "joysticks" for drawing "manual" weather charts). Enhancements will improve upon the original SDHS design by adding data to support severe weather forecasting and other mesoscale weather support operations.



Using fields from forecast models (that run on the AFGWC Sperry mainframe computers) transmitted to SDHS, AFGWC's Forecasting Services Division prepared a contoured weather graphics product and plotted that product on an SDHS printer/plotter. Products were prepared using the SDHS Forecaster Console Subsystem. Lt. Col. Roger Whiton, Chief of the Forecasting Services Division's Data Base Management Branch presents Col. David L. Donley, AFGWC commander the weather graphics product plotted from the first "live gridded data" transfer to SDHS.

When the system is in full production use, some of its products will be: weather graphics for the Air Force Digital Graphics Systems; graphics and text products for the Automated Weather Distribution System; and text products for the Automated Weather Network.

Several officers have served as the project manager for SDHS, they were: Maj. Yates (Joe) Canipe, Lt. Col. James L. Hatch, Maj. Frank Routhier and Lt. Col. Chris Olsen. The current project manager is Maj. Michael Mader.



MSgt. Jack Justice sits at a weather technician console of the AWDS Product Driver Subsystem, that part of the Satellite Data Handling System (SDHS) that feeds AWDS.

Tomorrow's technology today

by TSgt. Mike Devine

There's been a revolution in meteorological technology and AWS is in the process of acquiring some of this state-of-the-art equipment. An example of advanced weather technology can be seen at the Cape Canaveral Forecast Facility, or CCFF, part of Det. 11, 2WS, Patrick AFB, Fla.

The Meteorological Interactive Data Display System, or MIDDS, at the CCFF provides the rapid data integration, display and analysis capabilities needed to provide high quality forecasts to Space Shuttle and Eastern Test Range space and missile launches.

The duty forecaster sits at a MIDDS console with access to information from many sources. Realtime data (satellite data, surface and upper air observations) are available. With this, the duty forecaster can contour, plot and analyze any parameter selected.

With the satellite loop, things like outflow boundaries can be seen and used to key in on severe weather. A few keystrokes and maps appear, lines are overlayed, colors added. MIDDS can overlay surface streamlines indicating low level convergence zones to determine where maximum thunderstorm activity will be.

Satellite data arriving in near realtime from the CCFF's GOES earth station mean faster receipt of data than the previous method of receiving 20-30 minute old data via land-line sources. The in-house antenna system also adds the capability to receive rapid-scan (five minute interval) weather satellite imagery during launch and landing operations.

Moving a few feet, the forecaster can access data from a network of 28 meteorological wind towers scattered throughout the area to identify small scale wind features. This network continuously measures wind speed, direction, temperature, dew point and relative humidity.

The network of towers (30, 54, 204 and one 500 foot tall) aids in plotting surface streamlines to be displayed to find the strength of low level convergence (winds). Wind tower data are used by CCFF forecasters and by Range Safety officials plotting toxic diffusion corridors.

Range safety ties the WIND, or Weather Information Network Display, system upper air and other data to an acoustical modeling system. This is done to determine if the blast wave from a catastrophic launch failure could be focused by atmospheric conditions to a point where it would cause human injury due to windows being broken by the blast shock wave. If a certain level of danger is reached, the launch can be delayed or cancelled.

The REEDM, or Rocket Exhaust Effluent Diffusion Model, terminals in the CCFF can plot the dispersion of the acidic cloud that forms from the space shuttle solid rocket booster engine exhaust. Data from the rawinsonde and WIND system are used to plot upward trajectory and to determine condensation and fallout from the cloud.

Across the room, another console has a display output from the lightning location system that can detect and pinpoint cloud-to-ground lightning strikes with an accuracy as close as 300 feet.

"One of the most important elements to CCFF customers is lightning, so a lot of work is being done in the area of lightning research," said Mr. John Weems, Range Weather Forecaster.

Two systems are used to predict lightning potential and cloud-to-ground strike location.

"The Lightning Location and Protection System is a lightning positioning system and a graphic display device," explained 2nd Lt. Mike Pagliuca, Range Weather Officer. This system uses triangulation from three antennas to pinpoint cloud-to-ground strike locations.

The Lightning Location and Protection System, or LLPS, also has a remote data processor that will store up to 27,000 lightning strike locations. The data can then be recalled in any number of ways for study. There are plans to interface LLPS data right into the MIDDS.

"The Launch Pad Lightning Warning System uses 34 electric field mills scattered throughout the Cape area to measure the static electric potential of the atmosphere," said Lieutenant Pagliuca. "It shows charge center location (where the potential exists for lightning strikes)," he added.

At the same console, a forecaster can do a three-dimensional analysis of weather systems by using visual and infrared meteorological satellite imagery. There's more equipment in other rooms. A five centimeter weather radar (WSR-74C) can detect precipitation rates as low as .01 inch per hour.

Next year a processor will be added to the CCFF's weather radar. The processor will let the radar scan, actually doing a spiral, and then plot vertical and horizontal cross sections of the amtosphere along the flight path of the space shuttle.

Before Space Shuttle operations begin in Florida, the CCFF had been geared towards pad safety and upper air wind shears to support missile launches from the Eastern Space and Missile Center.

Supporting the Shuttle added the problems of short range and microscale requirements including forecasting safe conditions for launches and emergency landings immediately following a launch attempt.

The CCFF would also have to forecast for the solid rocket booster recovery area, the offshore crew recovery area, range safety (for tracking and blast damage), normal end of mission landings at the Kennedy Space Center and shuttle ferry flights back from Edwards AFB, Calif.

This support couldn't be met with inplace technology. To deal with the support capability shortfall, NASA, Det. 11, 2WS, and the Eastern Space and Missile Center initiated a Meteorological Systems Modernization Program in 1982. The group was co-chaired by the Technology Project Office of the Kennedy Space Center and Det. 11, 2WS.

The modernization program was aimed at minimizing the impacts of the environment on the Shuttle by providing the most accurate forecast advice possible to support managers during processing, launch and recovery operations.

Many of the most advanced meteorological systems were investigated as the primary technology for the needed upgrade. Among those considered were the Satellite Data Handling System at the Air Force Global Weather Central, Offutt AFB, Neb.; the Integrated Meteorological Processing System (IMPS) at the Western Test Range, Vandenberg AFB, Calif.; the Automated Forecast and Observing System (AFOS) of the National Weather Service; the Prototype Regional Observing and Forecasting Service (PROFS) being developed by National Oceanic and Atmospheric Administration, Boulder, Colo.; and the Man-computer Interactive Data Access System (McIDAS) of the Space and Science Engineering Center at the University of Wisconsin.

One of the primary projects looked at was the Centralized Storms Information System (CSIS) used by the National Severe Storms Forecast Center. Based on McIDAS, CSIS documented, in an operational environment, the potential savings and enhancement possibilities with no additional data or technology, except displaying data in a more user friendly format.

Review of these systems led to a contract with the Space and Science Engineering Center. The Air Force and NASA invested more than $2.7 million for the CCFF's Meteorological Interactive Data Display System, one of the most advanced weather display systems in the world, and core of the CCFF's meteorological support system.

MIDDS could be looked at as the kind of technology that will be available through the Automated Weather Distribution System, or AWDS. AWDS will improve base weather station operations by automatically receiving, storing, displaying and disseminating weather data. It will provide forecasters with the ability to rapidly manipulate weather data to produce customer oriented products.

SSgt. James H. Gallagher explains some of the capabilities of the MIDDS console in the Cape Canaveral Forecast Facility.

More than Shuttle support

Detachment 11, 2WS, is one of AWS' largest detachments. Located on Patrick AFB, Fla., the 50 people of Det. 11 support many different organizations on and around Patrick AFB. This support comes from the base weather station, the Cape Canaveral Forecast Facility or CCFF, the staff meteorology office and a special projects section that supports the Air Force Technical Applications Center.

Detachment 11's most visible customer is the Eastern Space and Missile Center and the Eastern Test Range. The CCFF supports all launches from the Cape associated with the Eastern Test Range. This includes DOD launches, sea launches and launches of missiles in the Air Force inventory.

Photo by TSgt James Pearson, USAF

Other launches supported by the CCFF include Pershing II, Poseidon, Chevaline and air-launched cruise missile strategic systems. The CCFF will also support future systems projected to be launched from Cape Canaveral.

But, Cape Canaveral is just the launch location. The range itself extends far into the Southern Atlantic Ocean and the CCFF has responsibility for the entire area. For example, a submarine launch may extend 6,000 miles down into the South Atlantic using products from Air Force Global Weather Central, Offutt AFB, Neb.

Along with launch support the CCFF also provides forecasts for Space Shuttle contingency landing sites in Europe, Africa or anywhere in the world.

Activities in the CCFF pick-up about three days before a Shuttle launch with an influx of people to man all the stations. Depending on launch operations, between 10 and 15 people work in the CCFF, instead of the regular crew of four.

During this pre-launch time, one person is manning the radar, another is dedicated to the computer system and someone else handles support aircraft. They support the Launch Weather Officer who is on another console, and does most of the launch briefings.

"We handle the launch activities, but once it's in orbit, the control for the decision process goes over to the Johnson Space Center. That doesn't mean we stop working, we still monitor conditions at all the landing sites throughout the world," said Mr. John Weems, a CCFF range weather forecaster.

In addition to the Air Force active duty and civilian personnel in the CCFF, the range support contractor (PAN AM World Services) has about 55 weather people directly supporting (Shuttle) launch weather activities. They man and maintain a 24-hour remote observing site near the Shuttle landing facility as well as run the rocketsonde and rawinsonde units that gather upper air data.

PAM AM is the current contractor for all weather equipment in the CCFF. Much of the software for their (PAN AM) equipment was developed by PAN AM programmers. All the equipment is maintained by a service contact with PAN AM World Services. All the communication lines on the Cape are handled under a contract with RCA.

First live data transfer to SDHS

OFFUTT AFB, Neb. — The first live gridded data transfers to the Air Force Global Weather Central's Satellite Data Handling System, took place here Aug. 16 through a joint effort by the Harris Corporation, Air Force Systems Command's Space Division and AFGWC.

The Satellite Data Handling System is a man-machine interactive weather graphics and imagery system. This operational system is the culmination of many years of effort that started in the early 70s with a prototype system called the Weather Analysis System.

It was followed in the mid-70s by an extensive Production Analysis Project. This was a study of the forecasting tasks to be automated and the potential savings available. This was followed by a competitive contract award by Space Division to the Harris Corporation in 1979.

SDHS software and hardware are now being integrated into AFGWC's data automation and production system. Links have been established between SDHS and the Sperry mainframes, as well as other hardware at AFGWC.

The basic SDHS hardware and software will become operational in February. At that time, AFGWC will take operational control and responsibility for the SDHS.

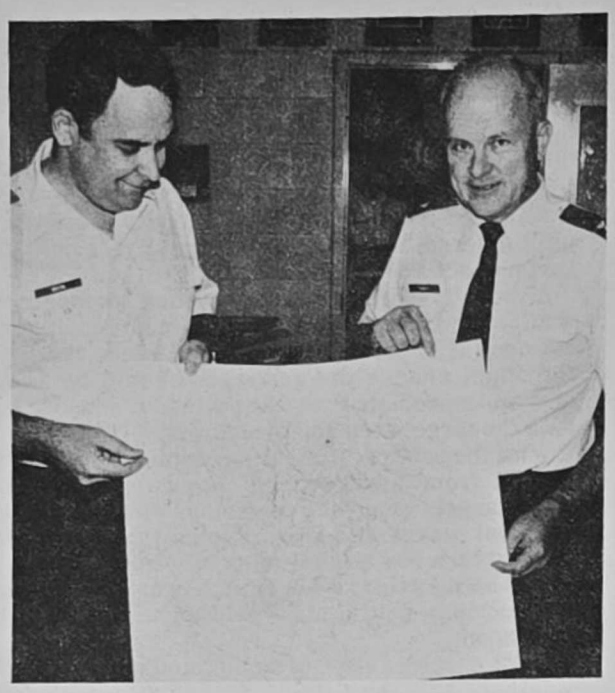
The Programs Acquisition Branch of the Operations Division has been the AFGWC single manager of the project. They have responsibility for configuration management for this system. They also advise the AFGWC Configuration Management Board on major system modifications.

For about two years, AFGWC's Forecasting Services Division and Special Support Division will be developing the operational tasks that will make production of weather graphics and bulletins operational on SDHS. Operational Tasks are lists of command strings activated by menu choices. They will also be used in training personnel in the practical use of SDHS and converting production operations to the SDHS environment.

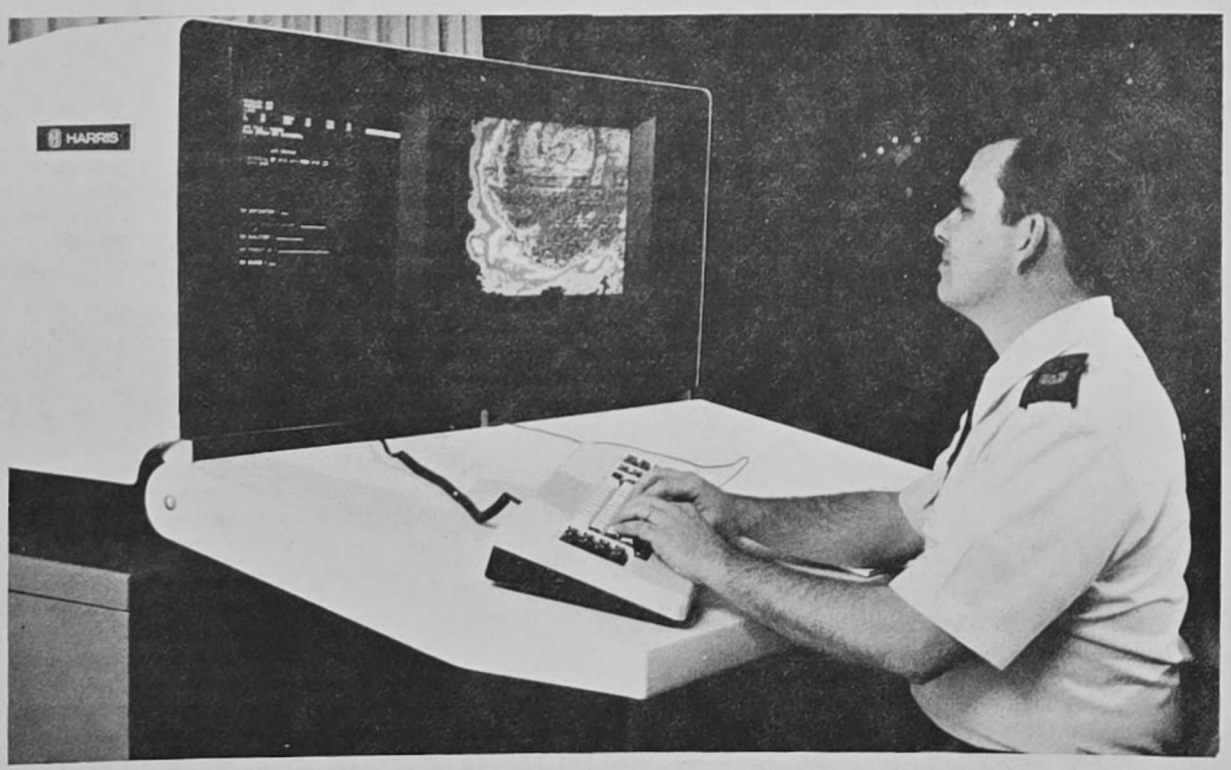
Enhancements scheduled between 1986 and 1988 will bring the SDHS up to date with developments at AFGWC since the late 70s, when SDHS was designed. These enhancements will take full advantage of recent upgrades in AFGWC systems, such as the Advanced Weather Analysis and Prediction System. In addition, these enhancements will introduce later technology into the SDHS design (using digitizing tablets instead of "joysticks" for drawing "manual" weather charts). Enhancements will improve upon the original SDHS design by adding data to support severe weather forecasting and other mesoscale weather support operations.

When the system is in full production use, some of its products will be: weather graphics for the Air Force Digital Graphics Systems; graphics and text products for the Automated Weather Distribution System; and text products for the Automated Weather Network.

Several officers have served as the project manager for SDHS, they were: Maj. Yates (Joe) Canipe, Lt. Col. James L. Hatch, Maj. Frank Routhier and Lt. Col. Chris Olsen. The current project manager is Maj. Michael Mader.



Using fields from forecast models (that run on the AFGWC Sperry mainframe computers) transmitted to SDHS, AFGWC's Forecasting Services Division prepared a contoured weather graphics product and plotted that product on an SDHS printer/plotter. Products were prepared using the SDHS Forecaster Console Subsystem. Lt. Col. Roger Whiton, Chief of the Forecasting Services Division's Data Base Management Branch presents Col. David L. Donley, AFGWC commander the weather graphics product plotted from the first "live gridded data" transfer to SDHS.



MSgt. Jack Justice sits at a weather technician console of the AWDS Product Driver Subsystem, that part of the Satellite Data Handling System (SDHS) that feeds AWDS.

Tomorrow's tech

by TSgt. Mike Devine

There's been a revolution in meteorological technology and AWS is in the process of acquiring some of this state-of-the-art equipment. An example of advanced weather technology can be seen at the Cape Canaveral Forecast Facility, or CCFF, part of Det. 11, 2WS, Patrick AFB, Fla.

The Meteorological Interactive Data Display System, or MIDDS, at the CCFF provides the rapid data integration, display and analysis capabilities needed to provide high quality forecasts to Space Shuttle and Eastern Test Range space and missile launches.

The duty forecaster sits at a MIDDS console with access to information from many sources. Realtime data (satellite data, surface and upper air observations) are available. With this, the duty forecaster can contour, plot and analyze any parameter selected.

With the satellite loop, things like outflow boundaries can be seen and used to key in on severe weather. A few keystrokes and maps appear, lines are overlayed, colors added. MIDDS can overlay surface streamlines indicating low level convergence zones to determine where maximum thunderstorm activity will be.

Satellite data arriving in near realtime from the CCFF's GOES earth station mean faster receipt of data than the previous method of receiving 20-30 minute old data via land-line sources. The in-house antenna system also adds the capability to receive rapid-scan (five minute interval) weather satellite imagery during launch and landing operations.

Moving a few feet, the forecaster can access data from a network of 28 meteorological wind towers scattered throughout the area to identify small scale wind features. This network continuously measures wind speed, direction, temperature, dew point and relative humidity.

The network of towers (30, 54, 204 and one 500 foot tall) aids in plotting surface streamlines to be displayed to find the strength of low level convergence (winds). Wind tower data are used by CCFF forecasters and by Range Safety officials plotting toxic diffusion corridors.

Range safety ties the WIND, or Weather Information Network Display, system upper air and other data to an acoustical modeling system. This is done to determine if the blast wave from a catastrophic launch failure could be focused by atmospheric conditions to a point where it would cause human injury due to windows being broken by the blast shock wave. If a certain level of danger is reached, the launch can be delayed or cancelled.

The REEDM, or Rocket Exhaust Effluent Diffusion Model, terminals in the CCFF can plot the dispersion of the acidic cloud that forms from the space shuttle solid rocket booster engine exhaust. Data from the rawinsonde and WIND system are used to plot upward trajectory and to determine condensation and fallout from the cloud.

Across the room, another console has a display output from the lightning location system that can detect and pinpoint cloud-to-ground lightning strikes with an accuracy as close as 300 feet.

"One of the most important elements to CCFF customers is lightning, so a lot of work is being done in the area of lightning research," said Mr. John Weems, Range Weather Forecaster.

Two systems are used to predict lightning potential and cloud-to-ground strike location.

"The Lightning Location and Protection System is a lightning positioning system and a graphic display device," explained 2nd Lt. Mike Pagliuca, Range Weather Officer. This system uses triangulation from three antennas to pinpoint cloud-to-ground strike locations.

The Lightning Location and Protection System, or LLPS, also has a remote data processor that will store up to 27,000 lightning strike locations. The data can then be recalled in any number of ways for study. There are plans to interface LLPS data right into the MIDDS.

"The Launch Pad Lightning Warning System

nology today

uses 34 electric field mills scattered throughout the Cape area to measure the static electric potential of the atmosphere," said Lieutenant Pagliuca. "It shows charge center location (where the potential exists for lightning strikes)," he added.

At the same console, a forecaster can do a three-dimensional analysis of weather systems by using visual and infrared meteorological satellite imagery. There's more equipment in other rooms. A five centimeter weather radar (WSR-74C) can detect precipitation rates as low as .01 inch per hour.

Next year a processor will be added to the CCFF's weather radar. The processor will let the radar scan, actually doing a spiral, and then plot vertical and horizontal cross sections of the am-tosphere along the flight path of the space shuttle.

Before Space Shuttle operations begin in Florida, the CCFF had been geared towards pad safety and upper air wind shears to support missile launches from the Eastern Space and Missile Center.

Supporting the Shuttle added the problems of short range and microscale requirements in-cluding forecasting safe conditions for launches and emergency landings immediately following a launch attempt.

The CCFF would also have to forecast for the solid rocket booster recovery area, the offshore crew recovery area, range safety (for tracking and blast damage), normal end of mission landings at the Kennedy Space Center and shuttle ferry flights back from Edwards AFB, Calif.

This support couldn't be met with inplace technology. To deal with the support capability shortfall, NASA, Det. 11, 2WS, and the Eastern Space and Missile Center initiated a Meteorological Systems Modernization Program in 1982. The group was co-chaired by the Technology Project Office of the Kennedy Space Center and Det. 11, 2WS.

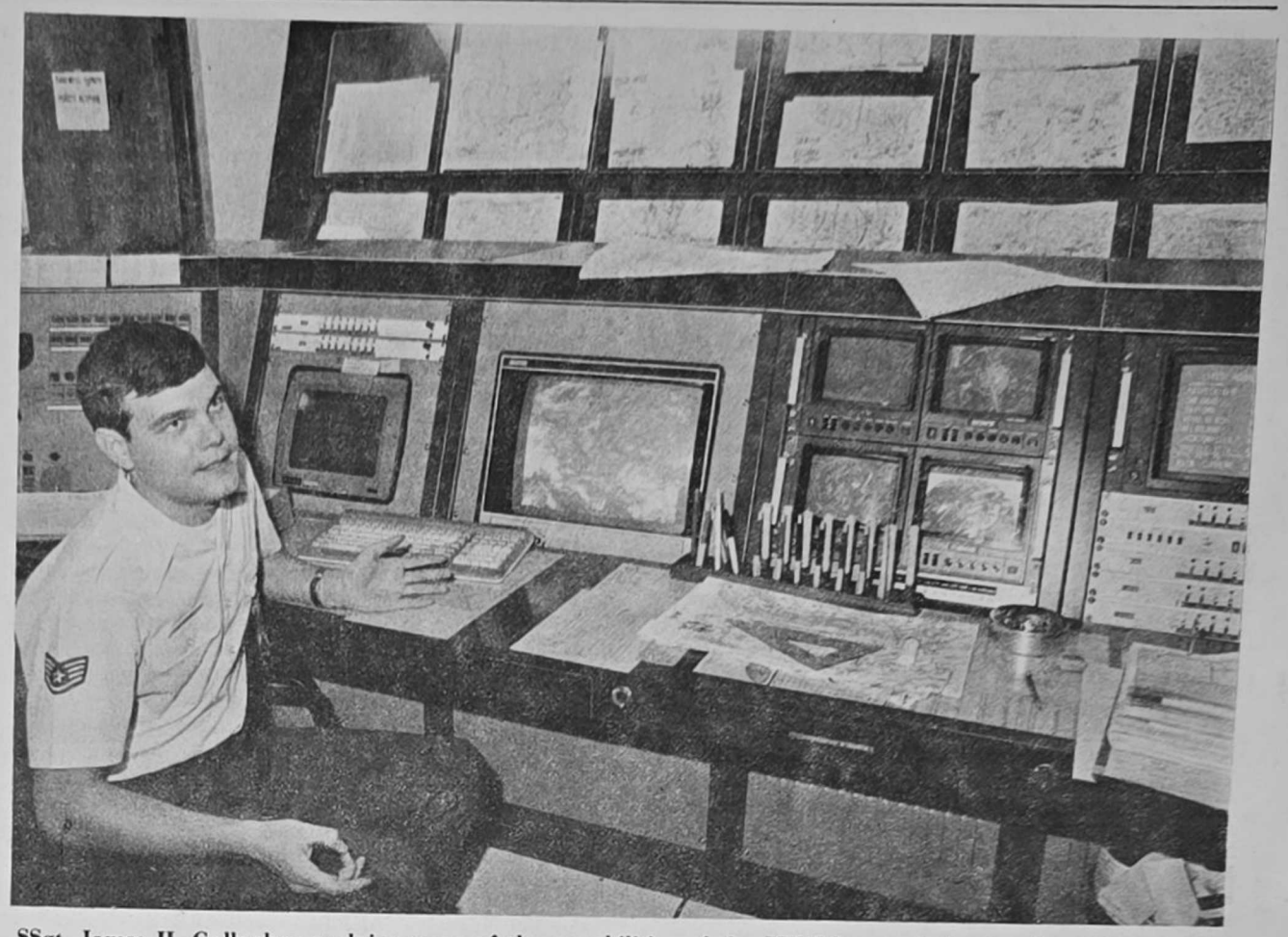
The modernization program was aimed at minimizing the impacts of the environment on the Shuttle by providing the most accurate forecast advice possible to support managers during processing, launch and recovery operations.

Many of the most advanced meteorological systems were investigated as the primary technology for the needed upgrade. Among those considered were the Satellite Data Handling System at the Air Force Global Weather Central, Offutt AFB, Neb.; the Integrated Meteorological Processing System (IMPS) at the Western Test Range, Vandenberg AFB, Calif.; the Automated Forecast and Observing System (AFOS) of the National Weather Service; the Prototype Regional Observing and Forecasting Service (PROFS) being developed by National Oceanic and At-mospheric Administration, Boulder, Colo.; and the Man-computer Interactive Data Access System (McIDAS) of the Space and Science Engineering Center at the University of Wisconsin.

One of the primary projects looked at was the Centralized Storms Information System (CSIS) used by the National Severe Storms Forecast Center. Based on McIDAS, CSIS documented, in an operational environment, the potential savings and enhancement possibilities with no additional data or technology, except displaying data in a more user friendly format.

Review of these systems led to a contract with the Space and Science Engineering Center. The Air Force and NASA invested more than $2.7 million for the CCFF's Meteorological Interactive Data Display System, one of the most advanced weather display systems in the world, and core of the CCFF's meteorological support system.

MIDDS could be looked at as the kind of technology that will be available through the Automated Weather Distribution System, or AWDS. AWDS will improve base weather station operations by automatically receiving, storing, displaying and disseminating weather data. It will provide forecasters with the ability to rapidly manipulate weather data to produce customer oriented products.



SSgt. James H. Gallagher explains some of the capabilities of the MIDDS console in the Cape Canaveral Forecast Facility.

More than Shuttle support

Detachment 11, 2WS, is one of AWS' largest detachments. Located on Patrick AFB, Fla., the 50 people of Det. 11 support many different organizations on and around Patrick AFB. This support comes from the base weather station, the Cape Canaveral Forecast Facility or CCFF, the staff meteorology office and a special projects section that supports the Air Force Technical Applications Center.

Detachment 11's most visible customer is the Eastern Space and Missile Center and the Eastern Test Range. The CCFF supports all launches from the Cape associated with the Eastern Test Range. This includes DOD launches, sea launches and launches of missiles in the Air Force inventory.

Photo by TSgt James Pearson, USAF

Other launches supported by the CCFF include Pershing II, Poseidon, Chevaline and air-launched cruise missile strategic systems. The CCFF will also support future systems projected to be launched from Cape Canaveral.

But, Cape Canaveral is just the launch location. The range itself extends far into the Southern Atlantic Ocean and the CCFF has responsibility for the entire area. For example, a submarine launch may extend 6,000 miles down into the South Atlantic using products from Air Force Global Weather Central, Offutt AFB, Neb.

Along with launch support the CCFF also provides forecasts for Space Shuttle contingency landing sites in Europe, Africa or anywhere in the world.

Activities in the CCFF pick-up about three days before a Shuttle launch with an influx of people to man all the stations. Depending on launch operations, between 10 and 15 people work in the CCFF, instead of the regular crew of four.

During this pre-launch time, one person is manning the radar, another is dedicated to the computer system and someone else handles sup-port aircraft. They support the Launch Weather Officer who is on another console, and does most of the launch briefings.

"We handle the launch activities, but once it's in orbit, the control for the decision process goes over to the Johnson Space Center. That doesn't mean we stop working, we still monitor conditions at all the landing sites throughout the world," said Mr. John Weems, a CCFF range weather forecaster.

In addition to the Air Force active duty and civilian personnel in the CCFF, the range support contractor (PAN AM World Services) has about 55 weather people directly supporting (Shuttle) launch weather activities. They man and maintain a 24-hour remote observing site near the Shuttle landing facility as well as run the rocketsonde and rawinsonde units that gather upper air data.

PAM AM is the current contractor for all weather equipment in the CCFF. Much of the software for their (PAN AM) equipment was developed by PAN AM programmers. All the equipment is maintained by a service contact with PAN AM World Services. All the communication lines on the Cape are handled under a contract with RCA.

AWS SALUTES

Medals

Defense Meritorious Service Medal to:
SMSgt. Edwin B. Kindelan, AFGWC, Offutt AFB, Neb.

Meritorious Service Medal to:
Lt. Col. Patrick J. Larkin (3 OLC), HQ AWS/DOD, Scott AFB, Ill; Maj. Edwin W. Marston (3 OLC), 30WS, Yongsan, Korea; Maj. William C. Smith (2 OLC), HQ 31WS, Sembach AB, Germany; Maj. George D. Hull (2 OLC), HQ AWS/DOJA, Scott AFB, Ill.; Col. Jerry E. Albrecht (2 OLC), AFGWC, Offutt AFB, Neb.; Lt. Col. John P. Cipriano (2 OLC), Chief Regular Programs Div, AFIT/CIR; Maj. Thomas D. Accola (1 OLC), 25WS, Bergstrom AFB, Texas; Maj. David G. Whitford (1 OLC), HQ AWS/DOR, Scott AFB, Ill.; Maj. Cranston B. Coleman (1 OLC), AFGWC, Offutt AFB, Neb.; Capt. David S. Ladwig (1 OLC), HQ AWS/DNTS, Scott AFB, Ill.; SMSgt. Rufus D. Grizzle (1 OLC), Det. 13, 5WS, Ft. Eustis, Va.; CMSgt. John J. Hewitt (1 OLC), 25WS, Bergstrom AFB, Texas; SMSgt. Bert E. Calentine (1 OLC), Det. 19, 30WS, Camp Humphreys, Korea; 1st Lt. Michael E. Weaver (1 OLC), AFGWC, Offutt AFB, Neb.; Maj. Kay T. Perry (1 OLC), Det. 20, 30 WS, Camp Casey, Korea; Col. John H. Wylie, Jr., HQ 1WW, Hickam AFB, Hawaii; Maj. Judson E. Stailey, HQ AWS/SYX, Scott AFB, Ill.; MSgt. Franklin O. H. Benton, Det. 5, 20WS, Clark AB, the Philippines; Maj. John L. Hayes, HQ AWS/DNX, Scott AFB, Ill.; MSgt. Richard A. Larsen, Det. 14, 5WS, Ft. Hood, Texas; MSgt. Jerry K. Kaminaga, AFGWC, Offutt AFB, Neb.; Capt. Randolph D. Garvin, HQ AWS/DOJR, Scott AFB, Ill.; CMSgt. Jerry D. Farley, HQ 1WW, Hickam AFB, Hawaii; 2nd Lt. Mike Josias, USAFETAC, Scott AFB, Ill.; Capt. Ricky C. Savage, HQ 1WW, Hickam AFB, Hawaii; TSgt. Michael E. Warrell, Det. 5, 15WS, Dover AFB, Del.

Air Force Commendation Medal to:
SMSgt. Charles W. R. Peterson (3 OLC), Det. 5, 11WS, Ft. Wainwright, Alaska; SMSgt. Jimmie W. Troutman (3 OLC), 24WS, Randolph AFB, Texas; Maj. Reinold W. [illegible] (2 OLC), AFGWC, Offutt AFB, Neb.; SSgt. Thomas L. Lees (1 OLC), Det. 5, 11WS, Ft. Wainwright, Alaska; Sgt. Broderick Long (1 OLC), Det. 20, 30WS, Camp Casey, Korea; TSgt. James L. Byrd, AFGWC, Offutt AFB, Neb.; TSgt. Randolph A. Morgan, Det. 5, 20WS, Clark AB, the Philippines; Capt. Michael J. Baker, HQ 1WW, Hickam AFB, Hawaii; SSgt. Donald J. Garske Jr., AFGWC, Offutt AFB, Neb.; TSgt. Melvin W. Bradley, Det. 5, 5WS, Ft. Knox, Ky.; SrA. Marvin A. Million, Det. 20, 30WS, Camp Casey, Korea; SSgt. James C. Minyon, Det. 6, 5WS, Ft. Lewis, Wash.; SSgt. Jesus A. Amill III, AFGWC, Offutt AFB, Neb.; Capt. Marilyn Clouden, Det. 25, 31WS, Rhein Main AB, Germany; SSgt. Stephen R. Bressie, Det. 9, 5WS, Ft. Rucker, Ala.; TSgt. Robert Neil, Det. 19, 31WS, Incirlik AB, Turkey; Maj. Roger G. Buckman (IMA), Det. 15, 25WS, Luke AFB, Ariz.; A1C Roger Wendland, HQ 31WS, Sembach AB, Germany; Maj. James R. Barry Jr., Det. 15, 25WS, Luke AFB, Ariz.; 1st Lt. Keith H. North, OL-A, Det. 2, HQ AWS, Ft. Ritchie, Md.; Sgt. Randall F. Sullins, Det. 14, 26WS, Blytheville AFB, Ark.; SSgt. Roger G. Buracker, Det. 9, 5WS, Ft. Rucker, Ala.; Capt. Tim Gump, USAFETAC, Scott AFB, Ill.; SrA. Eddie P. LaCroix Jr., Det. 2, 7WS, Hanau, Germany; SSgt. Mark L. Showell, Det. 14, 26WS, Blytheville AFB, Ark.;

Army Commendation Medal to:
Maj. Paul H. Harris, HQ AWS/DOJ, Scott AFB, Ill.; Sgt. Steven E. Forbes, Det. 13, 15WS, Robins AFB, Ga.

Air Force Achievement Medal to:
Sgt. Kim A. Sorrell, AFGWC, Offutt AFB, Neb.; Sgt. Scott A. Bawek, Det. 19, 30WS, Camp Humphreys, Korea; TSgt. Leonard A. Wells, AFGWC, Offutt AFB, Neb.; SrA. John W. Vaughan, Det. 2, 20WS, Andersen AFB, Guam; MSgt. Thomas R. Lonsdale, Det. 20, 30WS, Camp Casey, Korea; SSgt. Kathy Jaramillo, Det. 19, 31WS, Incirlik AB, Turkey; SSgt. Barry L. Crain, Det. 9, 5WS, Ft. Rucker, Ala.; SSgt. Clifton E. Butler, 11WS/WS, Elmendorf AFB, Alaska; SrA. William G. Milem, OL-I, 11WS, King Salmon Island, Alaska.

Army Achievement Medal to:
TSgt. Billy R. Kitchen, Det. 9, 5WS, Ft. Rucker, Ala.

PROMOTIONS

To Lieutenant Colonel:
Dale S. Ambos, Det. 16, 25WS, Nellis AFB, Nev.; Stephen M. Horn, 20WS, Yokota AB, Japan; Ray E. Townsend, Det. 3, HQ AWS, Sunnyvale AFS, Calif.

To Major:
David E. Howell, Det. 2, 20WS, Andersen AFB, Guam.

To Captain:
Wayne C. Strang, AFGWC, Offutt AFB, Neb.; Kenneth J. DeMoyse, Det. 2, 7WS, Hanau, Germany; Rich Weitz, USAFETAC, Scott AFB, Ill.

To First Lieutenant:
Jeffrey Kapolka, Det. 3, 11WS, Shemya AFB, Alaska;
Rand C. Huso, AFGWC, Offutt AFB, Neb.
Bob Haase, USAFETAC, Scott AFB, Ill.

To Second Lieutenant:
Mike Josias (from TSgt.), USAFETAC, Scott AFB, Ill.
Ken Boyd (from SSgt.), USAFETAC, Scott AFB, Ill.

To Chief Master Sergeant:
John C. Mullins, HQ AWS/DOT, Scott AFB, Ill.
Finis R. Harron, 5WS, Ft. McPherson, Ga.

To Senior Master Sergeant:
Charlie Travers, USAFETAC, Scott AFB, Ill.

To Master Sergeant;
Robert M. Benson, Det. 10, 25WS, Bergstrom AFB, Texas.
Denis Bertrand, USAFETAC, Scott AFB, Ill.
Robert E. Redinger, AFGWC, Offutt AFB, Neb.
Bob Van Veghel, USAFETAC, Scott AFB, Ill.
Cecil I. Smith Jr., Det. 2, 7WS, Hanau, Germany.
Dennis J. Francis, Det. 2, 11WS, Eielson AFB, Alaska.
George A. Bernath, Det. 9, HQ AWS, Las Vegas, Nev.
Andrew A. Gordon Jr., 15WS, McGuire AFB, NJ.

To Technical Sergeant:
Benito R. Chavarria, Det. 11, 25WS, Cannon AFB, NM; Ruben Maya, Det. 12, 31WS, Torrejon AB, Spain; William J. Sanders, Det. 6, 5 WS, Ft. Lewis, Wash.; Michael D. Dougherty, Det. 7, 20WS, Schofield Brks, Hawaii; Paul Moore, Det. 7, 7WS, Grafenwoehr, Germany; Sandra J. Emery, Det. 14, 5WS, Ft. Hood, Texas; Paula J. Reeves, Det. 3, 15WS, Charleston AFB, SC.

To Staff Sergeant:
Lawrence G. Myers, Det. 2, 6WS, Hanau, Germany; Thomas Simon, Det. 1, 31WS, Bitburg AB, Germany; Jeff Hardin, Det. 21, 5WS, Hunter Army Airfield, Ga.; Garth L. Getgen, Det. 10, 15WS, McGuire AFB, NJ; Geri L. Swanson, Det. 2, 17WS, Travis AFB, Calif.; Raymond Secession, Det. 22, 24WS, Keesler AFB, Miss.

Appointed to Sergeant:
James R. Byron, Det. 10, 25WS, Bergstrom AFB, Texas; Larry J. Emmett, AFGWC, Offutt AFB, Neb.; Frederick E. Reynolds III, Det. 13, 15WS, Robins AFB, Ga.; Deborah A. Hensel, AFGWC, Offutt AFB, Neb.; Lee G. Ellingsworth, Det. 40, 2WW, RAF Croughton, England; Eva M. Perkins, AFGWC, Offutt AFB, Neb.; Michael A. Zenner, Det. 40, 2WW, RAF Croughton, England; Mark A. Webb, AFGWC, Offutt AFB, Neb.; Billy C. Fritz, Det. 29, 17WS, Buckley ANGB, Colo.; Kevin M. Brady, 164th Weather Flight, Ohio ANG; James A. Franc, Det. 7, 20WS, Schofield Brks, Hawaii; Pauline A. Brand, 11WS/WS, Elmendorf AFB, Alaska.

To Senior Airman:
Michael G. Vogel (BTZ), Det. 2, 7WS, Hanau, Germany; Joseph P. Quitaro (BTZ), HQ 1WW, Hickam AFB, Hawaii; Robert H. Lehrman (BTZ), OL-D, 11WS, Galena, Alaska; Brian K. Boddy, Det. 2, 20WS, Andersen AFB, Guam; Mark Everson, AFGWC, Offutt AFB, Neb.; Timothy F. Joy, Det. 3, 11WS, Shemya, Alaska; Keith A. Sharrow, Det. 2, 7WS, Hanau, Germany; Michael E. Wright, Det. 2, 11WS, Eielson AFB, Alaska; Robert M. Easley, 11WS/WS, Elmendorf AFB, Alaska; Tonia N. McCoy, 5WS, Ft. McPherson, Ga.; Terry A. Daniels, 20WS, Yokota AB, Japan; Philip D. Poyner, Det. 29, 17WS, Buckley ANGB, Colo.; Bernard F. Stanton, Det. 5, 15WS, Dover AFB, Del.; Kevin Sollenberger, Det. 1, 11WS, Elmendorf AFG, Alaska; James J. Lavin Jr., Det. 4, 11WS, Ft. Richardson, Alaska.

To Airman First Class:
Jeffrey A. Beck, AFGWC, Offutt AFB, Neb.; Carlos S. Coronado, Det. 5, 5WS, Ft. Knox, Ky.; Kelley L. McGee, AFGWC, Offutt AFB, Neb.; Gary Brown, Det. 26, 26WS, Grissom AFB, Ind.; Eric W. Knudsen, Det. 2, 7WS, Hanau, Germany; Frank M. Hirsch, Det. 14, 5WS, Ft. Hood, Texas; Stephen E. Sines, Det. 1, 11WS, Elmendorf AFB, Alaska.

To Airman:
Rodney Yurista, AFGWC, Offutt AFB, Neb.; David W. Strohschein, Det. 29, 17WS, Buckley ANGB, Colo.; Timothy D. Pease, AFGWC, Offutt AFB, Neb.; John R. Michael, Det. 29, 17WS, Buckley ANGB, Colo.; Kenneth W. Iverson, AFGWC, Offutt AFB, Neb.; Michael J. Stratton, Det. 13, 15WS, Robins AFB, Ga.; Jack C. Sauerbrey, AFGWC, Offutt AFB, Neb.; Cornell N. Berry, Det. 10, 2WS, Eglin AFB, Fla.; William T. Allen, 5WW/DA, Langley AFB, Va.

Unit Honors

Junior Officer of the Year for:
7WW — 2nd Lt. Mark Spitzer, Det. 21, 15WS, Pope AFB, NC.

Senior NCO of the Year for:
4WW — MSgt. David W. Hall, HQ 4WW/DO, Peterson AFB, Colo.
7WW — MSgt. Randy L. Peterson, Det. 21, 15WS, Pope AFB, NC
11WS — MSgt. James H. Smith, Det. 2, Eielson AFB, Alaska.

NCO of the Year for:
4WW — TSgt. Bradford D. Butler, Det. 6, 4WW
7WW — TSgt. David V. Jenkins, Det. 31, 15WS, Dobbins AFB, Ga.
AFGWC — TSgt. Mariano De La Ossa, Jr., AFGWC, Offutt AFB, Neb.

Airman of the Year for:
4WW — SrA. Donovan N. Williams, Det. 10, 2WS.
7WW — SrA. Robert G. Hauser, Det. 15, 15WS, Wright-Patterson AFB, Ohio.
AFGWC — A1C Dwight E. Andersen, AFGWC, Offutt AFB, Neb.

Civilian of the Year for:
24WS — Mrs. Carolyn Brown, Det. 22, Keesler AFB, Miss.

Safety NCO of the Year for:
3WW — SSgt. Timothy A. Kalb, Det. 12, 24WS, Sheppard AFB, Texas.

Junior Officer of the Quarter for:
AFGWC — 1st Lt. Michael L. McKito, AFGWC, Offutt AFB, Neb.
20WS — 1st Lt. Jean M. Bross, Det. 17, Yokota AB, Japan.

Senior NCO of the Quarter for:
7WW — MSgt. Robert W. Yates, Det. 13, 15WS, Robins AFB, Ga.
11WS — MSgt. John R. Poudrier, Det. 3, Shemya, Alaska.
20WS — MSgt. Rocco Calaci, Det. 13, Misawa AB, Japan.
24WS — MSgt. Johnny W. Kicklighter, Det. 20, Laughlin AFB, Texas.

NCO of the Quarter for:
MAC Pacific — SSgt. Kenneth J. Harris, Det. 5, 20WS, Clark AB, the Philippines;
11WS — TSgt. David Cramblet, Det. 4, Ft. Richardson, Alaska.
20WS — SSgt. Kenneth J. Harris, Det. 5, Clark AB, the Philippines.
24WS — SSgt. Mark A. Frankum, Det. 20, Laughlin AFB, Texas.

Airman of the Quarter for:
3WW — SrA. Theodore K. Junge, Det. 3, 11WS, Shemya, Alaska.
5WW — SrA. Scott A. Appleby, Det. 14, 5WS, Ft. Hood, Texas.
20WS — A1C Grace L. Snyder, Det. 13, Misawa AB, Japan.
24WS — Amn. Stephen W. Greene, Det. 1, Randolph AFB, Texas.
31WS — SrA. John Turnbull, Det. 11, Spangdahlem AB, Germany.

Administrator of the Quarter for:
25WS — Sgt. Hector Sandoval, 25WS, Bergstrom AFB, Texas.

Education

Squadron Officer School:
Capt. Angelo A. Giusti, Det. 3, HQ AWS, Sunnyvale AFB, Calif.

NCO Academy:
TSgt. Currey R. Buchanan (Dist. Grad), Det. 9, HQ AWS, Las Vegas, Nev.; TSgt. Lance S. Jensen, Det. 14, 5WS, Ft. Hood, Texas.

NCO Leadership School:
SSgt. Warren F. Weritz (Levitow Award), Det. 1, 7WW, Kessler AFB, Miss.; SSgt. Cynthia Wallace (Commandant's Award), Det. 26, 26WS, Grissom AFB, Ind.; SSgt. Gordon K. Chapman (World Affairs Award), Det. 22, 24WS, Keesler AFB, Miss.; Sgt. Hector Sandoval, 25WS, Bergstrom AFB, Texas; SSgt. Keith D. Anderson, Det. 14, 17WS, Norton AFB, Calif.; SSgt. Gregory Bates, Det. 10, 15WS, McGuire AFB, N.J.; SSgt. Tony B. Southerland, 6WS, Hurlburt Field, Fla.; SSgt. Gary W. Kimsey, Det. 14, 5WS, Ft. Hood, Texas; SSgt. Carl J. Johnson, Det. 14, 26WS, Blytheville AFB, Ark.

NCO Preparatory Course:
SrA Curtis P. Cote (Levitow Award), Det. 17, 20WS; SrA. Michael G. Vogel (levitow Award), Det. 2, 7WS, Hanau, Germany; SrA. Daniel B. Ertz, AFGWC, Offutt AFB, Neb.; SrA. Wyan Dunn, Det. 16, 31WS, Zaragoza AB, Spain; SrA. Jody Rogers, Det. 8, 31WS, Zweibrucken AB, Germany; A1C Kenneth P. Alarie, Det. 2, 11WS, Eielson AFB, Alaska; SrA. Marvin A. Million, Det. 20, 30WS, Camp Casey, Korea; A1C Joe Holmes, USAFETAC, Scott AFB, Ill.; SrA. John W. Vaughn, Det. 2, 20WS, Andersen AFB, Guam.

Weather Satellite System and Photo Interpretation Course:
SSgt. Stephen R. Bressie, Det. 9, 5WS, Ft. Rucker, Ala.

Electro-Optics Course:
MSgt. Joseph J. Cline, Det. 1, 5WS, Ft. Campbell, Ky.

Weather Radar Course:
SSgt. Marsha F. Baxter, Det. 7, 17WS, Kelly AFB, Texas.

Weather Technician Course:
SSgt. Patrick J. Aldrich, Det. 15, 25WS, Luke AFB, Ariz.; SSgt. Charles D. May, AFGWC, Offutt AFB, Neb.; Sgt. George R. Pilkington, Det. 16, 9WS, Dyess AFB, Texas; Sgt. Shepard N. Plowden, AFGWC, Offutt AFB, Neb.; SSgt. Danny H. Smith, Det. 4, 20WS, Hickam AFB, Hawaii; SSgt. Marsha F. Baxter, Det. 7, 17WS, Kelly AFB, Texas; A1C Mathew J. Cornell, Det. 21, 15WS, Pope AFB, NC; A1C Christopher Cacosta, Det. 7, 17WS, Kelly AFB, Texas.

Observer School:
SSgt. Jacqueline M. Crepeau, Det. 9, 24WS, Maxwell AFB, Ala.; A1C Christopher Dacosta, Det. 7, 17WS, Kelly AFB, Texas; SrA. Jonathan R. Milam, Det. 9, 24WS, Maxwell AFB, Ala.

Master's Degree to:
1st Lt. Michael G. Wright, Det. 3, HQ AWS, Sunnyvale AFS, Calif., in Public Administration from Golden Gate University.

Bachelor's Degree
SSgt. Cory W. Knowles, Det. 3, 5WS, Ft. Bragg, NC, graduated cum laude from Embry Riddle University with a BS in Aviation Weather Technology.

Associate Degree to:
SMSgt. Jurgen Verhunc, 20WS, Yokota AB, Japan, in Applied Sciences from CCAF; SSgt. Jeffrey P. Cunningham, Det. 13, 15WS, Robins AFB, Ga., in Applied Science from CCAF; Sgt. Nancy Chandler, Det. 14, 26WS, Blytheville AFB, Ark., in Avionic Systems Technology from CCAF; MSgt. George T. Gilligan, 5WW/DNC, Langley AFB, Va., in Applied Sciences from CCAF.

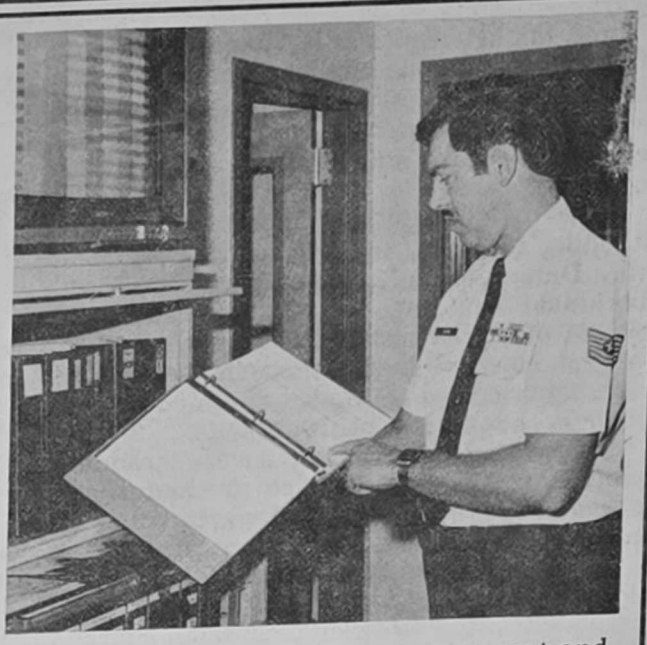
Heir Force

Erik Gordon to Lt. Bruce and Pamela Mitchell, Det. 1, 2WS, Wright-Patterson AFB, Ohio; Samantha Brooke to TSgt. Sue and SSgt. George Lawrence, Det. 1, 31WS, Bitburg AB, Germany; Joshua to SSgt. and Mrs. Steve Moleski, Det. 2, 31WS, Ramstein AB, Germany; Alan to A1C Debbie and SrA. Tim Sheppard, Det. 2, 31WS, Ramstein AB, Germany; Matthew to 2nd Lt. Martin and Natalie Martino, AFGWC, Offutt AFB, Neb.; Zachariah to TSgt. Henry and SSgt. Virginia Long, AFGWC, Offutt AFB, Neb.; Danielle to SSgt. Ron and Laurie Newman, AFGWC, Offutt AFB, Neb.; Kristy Dian to TSgt. and Mrs. Frank L. Curtis, Det. 5, 20WS, Clark AB, the Philippines; Fletcher Martin to SSgt. and Mrs. John V. Werner, Det. 5, 9WS, Malmstrom AFB, Mont.; Michael to 1st Lt. and Mrs. Ronald L. Breninger, Det. 16, 9WS, Dyess AFB, Texas; Pamela to Sgt. and Mrs. Timothy A. Ayers, Det. 16, 9WS, Dyess AFB, Texas; Tiffany Lynn to SSgt. and Mrs. Michael P. Blomquist, Det. 15, 25WS, Luke AFB, Ariz.; Derrick Dean to SrA. Deanne and Randy Quinto, Det. 15, 15WS, Wright-Patterson AFB, Ohio; Michelle Maria to SSgt. Joe F. and Evangeline Sousa, Det. 21, 2WS, Edwards AFB, Calif.; James Kim to TSgt. Bradley A. and Myong Rarick, Det. 21, 2WS, Edwards AFB, Calif.; Ivan Y to SSgt. Theo and InSon Hayward, Det. 58, 5WS, Ft. Carson, Colo.; Brittany Paige to Sgt. Keith A. and A1C Lorraine Forcinito, Det. 58, 5WS, Ft. Carson, Colo.; Jonathan Thomas to Lt. Gregory and Colleen Engel, Det. 19, 26WS, Whiteman AFB, Mo.; Jason Marko to SSgt. Christopher and Donna Boczek, Det. 6, 26WS, Pease AFB, NH; Kristine Choe to SSgt. Robert J. and Yun Cha Born, Det. 10, 2WS, Eglin AFB, Fla.; Amanda Lee to Sgt. Dennis W. and Mary Lee Fitzgerald, Det. 10, 2WS, Eglin AFB, Fla.; Teresa Miki to TSgt. Rudolph and Akiko Williams, 20WS/DA, Yokota AB, Japan; Nicole Christine to 1st Lt. Nelson L. and Cheryl Smith, Det. 3, HQ AWS, Sunnyvale AFB, Calif.; James Alexander to SrA. and Mrs. Barry Watts, Det. 16, 31WS, Zaragoza AB, Spain; Michael to 2nd Lt. Wayne and Eileen Cohen, AFGWC, Offutt AFB, Neb.; Abigail to Mr. Kim and Marcia Runk, AFGWC, Offutt AFB, Neb.; Katelyn Tara to SSgt. Patrick L. and Linda Ashton, Det. 13, 15WS, Robins AFB, Ga.; Richard James to A1C and Mrs. James M. Moffitt, Det. 10, 5WS, Ft. Benning, Ga.; Megan Michelle, to A1C Thomas R. and Jodie Meckes, Det. 31, 5WS, Ft. Polk, La.; Ivan to SSgt. Theo and InSon Hayward, Det. 58, 5WS, Ft. Carson, Colo.

Retirements

Lt. Col. Joseph E. Sims, 25WS, Bergstrom AFB, Texas; MSgt. Theodore Lippnik, HQ AWS/DNTS, Scott AFB, Ill.; MSgt. Dave Pigors, USAFETAC, Scott AFB, Ill.; Lt. Col. Joseph A. Zak, HQ 5WW, Langley AFB, Va.; CMSgt. Frank W. Vlcek, 5WW/CMS, Langley AFB, Va.; MSgt. Jeffrey M. Wilson, Det. 6, 5WS, Ft. Lewis, Wash.

Spotlight on Performers



WHO: TSgt. Michael C. Lemons
WHAT: Identified as an outstanding performer by the MAC/IG during a recent inspection.
WHERE: Det. 17, 24WS, Williams AFB, Ariz.
HOW AND WHY: He is a cross-trainee who, through self-study and initiative, has advanced his knowledge level far above what his experience indicates.

His safety program resulted in a laudatory finding. He used an excellent AFOSH standards checklist specifically tailored to the unit to indoctrinate unit members. He implemented an aggressive motorycycle safety program based on National Safety Council information. His on-the-spot and monthly safety checklists were comprehensive and tailored to the work center.

As additional duty chief observer, he developed a strong, effective Quality Control program, presented timely observing seminars as problems became apparent and managed observer duty and stand-by schedules.

Sergeant Lemons' written guidance (observer SOPs, training guides, training aids) were comprehensive, concise and easy to read.

His involvement in the observing section was directly responsible for a positive rating in observing.

(Editor's Note: This is the first "Spotlight on Performance." It was established by General Chapman to recognize outstanding individual performers identified by the MAC/IG during MEIs. In future issues of the "Observer" more Outstanding Performers will be spotlighted for their hard work and contributions.)

Re-enlistments

TSgt. Sue Lawrence, Det. 1, 31WS, Bitburg AB, Germany; SMSgt. Robert L. Albert, Det. 1, 15WS, Andrews AFB, Md.; MSgt. Anthony Fransca, Det. 31, 15WS, Dobbins AFB, Ga.; SSgt. Harvey L. Hudson, Det. 31, 15WS, Dobbins AFB, Ga.; MSgt. Robert M. Benson, Det. 10, 25WS, Bergstrom AFB, Texas; SSgt. Sharyl M. Shoemaker, Det. 16, 25WS, Nellis AFB, Nev.; Sgt. Regina L. Sacca, Det. 1, 3WS, Shaw AFB, SC; TSgt. Alan M. Rogers, Det. 9, 3WS, Tyndall AFB, Fla.; Sgt. Michael S. Grehan, Det. 23, 3WS, Moody AFB, Ga.; SSgt. Richard E. Covel Jr., Det. 6, 26WS, Pease AFB, NH; Sgt. John H. Parish III, Det. 2, 11WS, Eielson AFB, Alaska.

Weather instructor Chanute's Woman of the Year

Capt. Michele Roissier is Chanute's Woman of the Year. Her selection was announced at a Federal Women's Week breakfast. She is the instructor supervisor for the weather technician course and has been an instructor for two years.

"Captain Roissier is an absolutely outstanding technical training instructor," said Maj. Daniel Sassin, commander of the 3350th Technical Training Group. "She was handpicked to be the instructor supervisor of the largest block of instructions in the weather technician course. She also assumed the role of course supervisor in his absence."

The weather technician course graduates more than 350 interservice graduates each year. It is the Defense Department's sole course for enlisted weather forecasters.

According to Major Sassin, Captain Roissier spearheaded the overhaul of 334 hours of instruction in the weather technician course to incorporate state-of-the-art advancements in weather forecasting.

"Her leadership and expertise kept this massive 18-month project on schedule. She made critical contributions to worldwide weather support by significantly improving the quality of graduates," he said.

Captian Roissier is a member of the Chanute Severe Weather Radar Watch Team, vice president of the Rantoul Toastmaster Club and was an area toastmaster in a district level speech competition. She has served as wing project officer for numerous blood drives and as division project officer for the U.S. Savings Bond drive.

Captain Roissier plans to graduate from the masters of public administration program through Governors State University in December.

In February, she will be heading for the cool side of the world as she assumes command of Det. 3, 11WS, Shemya, Alaska.

"I'm looking forward to the assignment, actually, I kind of volunteered for it," Captain Roissier said. (Reprinted from "The Pacesetter.)

Capt. Michele Roissier addresses the crowd at the Chanute Federal Women's Week breakfast after it was announced that she was Chanute's Woman of the Year for 1985.

Weather support at NASA's 'Mission Control'

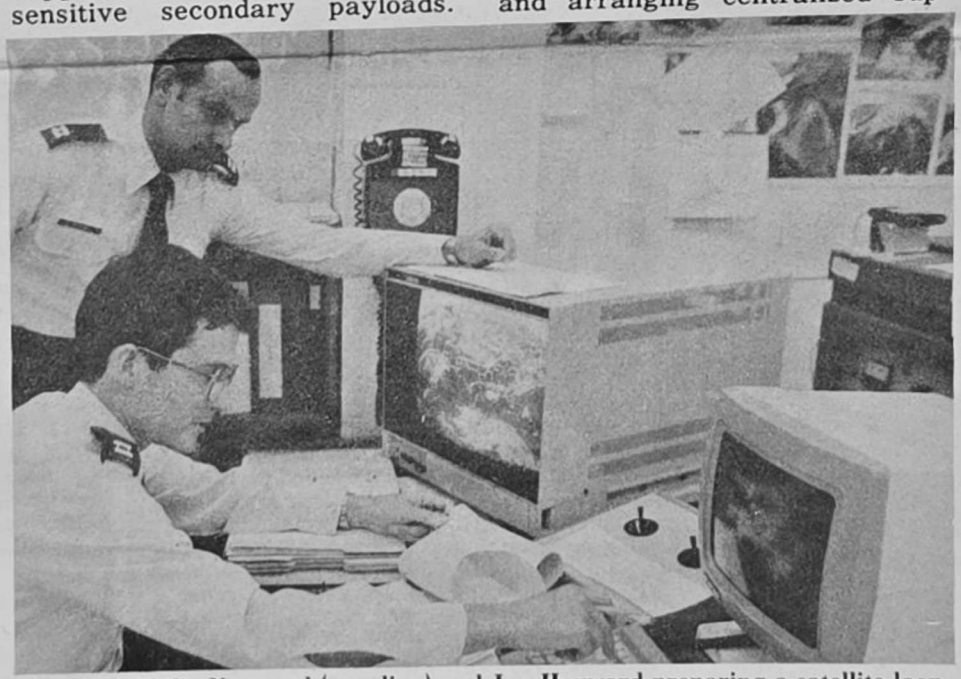
JOHNSON SPACE CENTER, Houston, Texas — Most people know that the National Space Transportation System "Mission Control" is based at the L. B. Johnson Space Center here.

What many people don't know is that OL-A, Det. 50, 2WS has supported all 22 STS missions. OL-A monitors weather around the world and provides one-of-a-kind on-orbit payload assistance.

Lt. Col. Roland Tadd, Det. 50 commander, said, "OL-A is in a unique position to support an important national resource. This unit is the AWS primary representative with the NASA flight control team and payload operators."

One of OL-A's roles is to act as a liaison between the National Weather Service Spaceflight Meteorology Group here and AWS detachments at the launch and landing sites. Since the Spaceflight Meteorology Group has final responsibility for all abort and landing site forecasts, it's important that the predictions are fully coordinated. OL-A also provides daily briefings to the DOD Manager for STS Contingency Operations on forecast weather conditions at the worldwide network of emergency landing sites.

Another special duty for OL-A is supporting environmentally sensitive secondary payloads. This unique function involves pre-flight activities, on-orbit duties and post-mission responsibilities. Pre-flight activities include identifying weather constraints and arranging centralized support from AFGWC, Offutt AFB, Neb. and Det. 7, AFGWC, Carswell AFB, Texas. On-orbit duties, include metwatching and forecasting earth targets or the space environment. Post-mission responsibilities include providing satellite imagery or point-analyses for the principle investigator.



Captains Philip Nostrand (standing) and Jon Hayward preparing a satellite loop on the Meteorological Interactive Data Display System terminal connected to the master MIDDS computer at Det. 11, 2WS, Kennedy Space Center, Fla. Captain Hayward, from Headquarters 4th Weather Wing, was augmenting the one-man operation at OL-A for the recent STS military mission (51-J).

"With the advent of the President's Strategic Defense Initiative, I expect there will be more small payloads which will require weather support from OL-A," said Capt. Philip Nostrand, Officer in Charge of OL-A. An example of a payload requiring OL-A's support was the High Precision Tracking Experiment in which a ground-based laser beam was tracked on the ground after being reflected by a special mirror onboard the shuttle.

"A lot of work goes into getting an experiment onto the shuttle and integrated into the crew activity plan. Since target opportunities may be limited, it is important for the experiment sponsor to have good weather information when making a 'go-no go' decision," added Captain Nostrand.

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