



# Air Weather Reconnaissance Association

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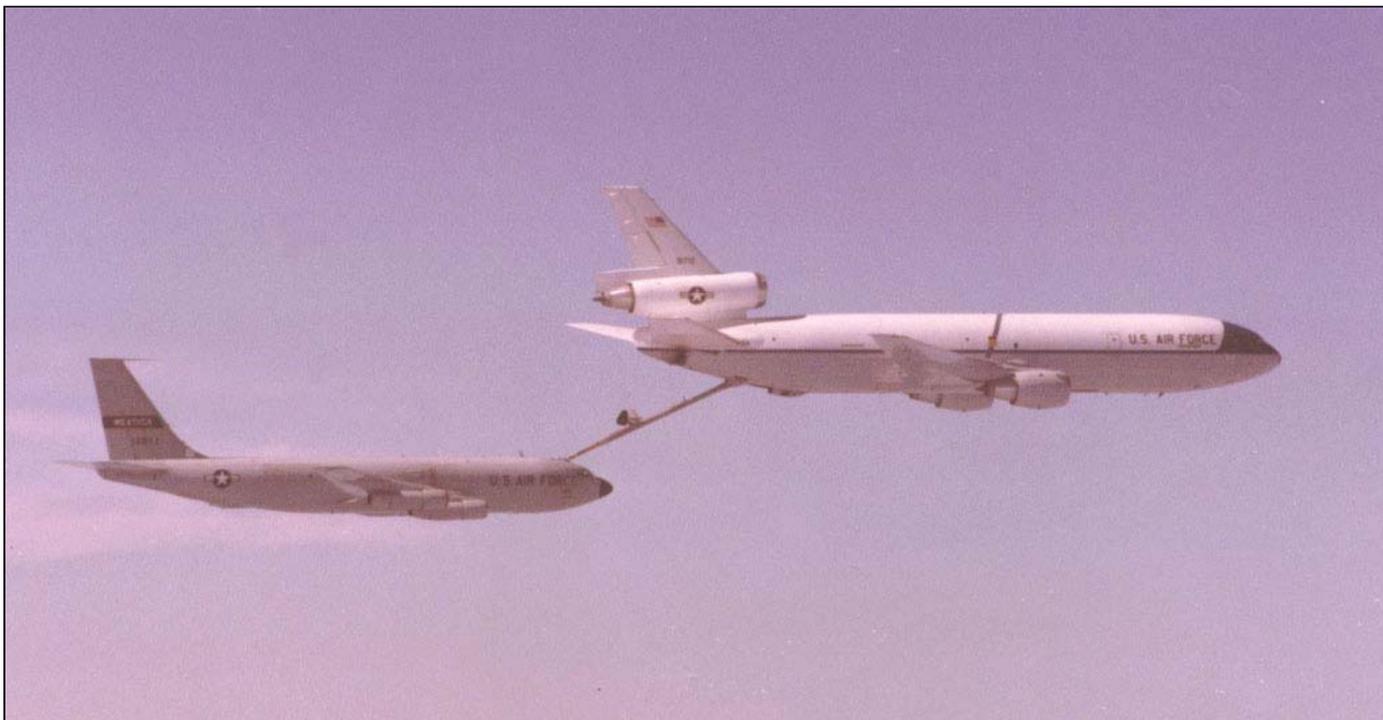


Photo from 1983. WC-135B 61-2672 flying "in contact" with a SAC KC-10A. This was the first KC-10 training mission for the 55th WRS. These trainers were known by the nickname VOLANT PUMP. Photo taken from a second WC-135, courtesy of Chuck Lavoie.

## **WEATHER RECONNAISSANCE and ATMOSPHERIC SAMPLING**

Most of us are all too familiar with the fact that USAF "weather reconnaissance" and "atmospheric sampling" were, for over 4 decades, joined at the hip. At least at the operational (meaning sample collection) level.

Beginning in 1948, AWS aircraft were equipped to collect particulate and whole air samples from the atmosphere. The true nature of this effort was classified to the point that most crew members were never officially briefed on the real purpose. Some publicity was given to sampling that tracked "fallout" from early US testing, but this was not the true goal. The samples taken along the daily weather reconnaissance tracks were really looking for evidence that a foreign nuclear test had occurred.

Our daily WB-29 and WB-50 missions around the globe

were the pointy end of the spear of the Long Range Detection (LRD) system, also known as the US Atomic Energy Detection (AEDS) system. Under the direction of AFMSW-1, AFOAT-1, or (later still) AFTAC, our flights crisscrossed the globe looking for the radioactive signature of a recent nuclear test.

Many different types of weather reconnaissance aircraft participated in this sampling. The previously mentioned WB-29 and WB-50, numerous models of the high flying WB-57, the purpose-built WB-47E, five of the WC-130B, and all six WC-130E were all atmospheric sampling participants.

In this issue we will look at what I think of as the "Queen" of the air sampling world, the WC-135B.

# PRESIDENT'S CORNER

by Bob Tuttle, AWRA President

The 2003 Fort Walton Beach reunion marked the beginning, and this fall marks the end of my eight years as President of AWRA.

Medical issues will keep me from attending reunions located more than 3 or 4 flight hours away from home. These issues unfortunately will prevent me from continuing on as AWRA president. I am sure that the board, along with the search committee, will present a list of qualified candidates to be voted on by the general membership this fall.

I want to thank Ralph and Libby Ruyle for once again volunteering to host this year's reunion. They have consistently given of their precious time and organizational skills to make each of our Florida reunions memorable and fun. I think that we should also consider making the Ramada Plaza Beach Resort the honorary home of the AWRA. Their staff consistently treats us very well, and the rooms are always top notch.

The Portland reunion was quite a success. Those of you who didn't attend missed out on a great tour. The Evergreen Air & Space Museum in McMinnville, Oregon is by far one of the best private flight museums I have ever visited. I highly recommend you stop by for a visit if you're ever in the area. The Portland city tour was also intriguing. The same driver was our guide for both trips and became one of the gang by the end of the city tour.

The Air Weather Assoc. has invited us to join them in Omaha; Neb to celebrate the 75<sup>th</sup> Anniversary of the Air Force Weather Agency (formerly AFGWC) Aug 1-5 2012.

Several members at last year's reunion suggested that we need to stress the point of relaxed dress requirements for the

banquets. With extra luggage costing a small fortune and some of us finding it hard to maneuver with said extra luggage I was asked to mention that our banquet attendees are not required to wear formal/semi formal wear and casual dress is fine. Now here I must caution that casual does not mean shorts, jeans, flip flops or swim suits. Slacks are required for the men, with collared shirts or Polo's, shoes and socks. The ladies can wear slacks or dressier suits. If you still want to dress more formally please feel free to do so, but you may be in the minority.

As always, we need volunteers to sponsor our reunions. Bernie Barris, the Ruyles and I have sponsored the majority of the reunions these past eight years. The ones that I have sponsored I have done over the phone and through the internet. It takes time, but is not all that difficult. Bernie, Ralph and I can put together a list of helpful hints, help with name tags, reservation forms and anything else you may need. So look around and think of things that might be of interest for our members to visit in your area. It seems lately that with our increasing age, tours that don't require a lot of walking are more popular.

A big thank you to those who answered my wife's call for surprise Birthday greetings to mark my 70<sup>th</sup>. I really enjoyed all the emails and especially the conference call. What a hoot!!!

Our prayers and thoughts are with those of you experiencing Mother Nature's severe spring storms; let's hope that the Hurricane season isn't as foreboding. I am looking forward to seeing all of you in Florida this fall.

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## From the AWRA President Search Committee:

Bob's decision to give up the AWRA Presidency hit all of us on the Board of Directors very hard, but we totally understand his reasoning. The BOD appointed a search committee to screen applicants for the position. The only criteria in the By-Laws is that the President be a member in good standing. It is suggested that the President be willing to try and attend all of the annual reunions, so that he can lead the general membership meeting.

To recommend someone (including yourself) please contact Bernie Barris, the Search Committee Chairman, at: [BCBarris@aol.com](mailto:BCBarris@aol.com)

You may also contact one of the other committee members, Stoney Faubus, or John Lein.

Recommendations from the committee will not preclude any member from making a nomination from the floor during the annual membership meeting on 5 Oct 2011.

## **The Venerable WC-135B – Queen of the Fleet**

It always seemed that Air Weather Service reconnaissance units got someone else's castoffs. By the same token, AWS squadrons always made lemonade from the "lemons."

In the late 1950's, MATS needed a quick option to field a jet cargo aircraft. A purpose built, jet-powered, replacement for the piston C-124 was still a few years off. MATS worked with Boeing to initially get 18 C-135A, and later, in 1962, 30 C-135B aircraft. The B-model had the new TF-33 turbofan engines equipped with reverse thrust. These were immediately put into service and did a fine job with small cargo loads. The C-135B had a single cargo door in the side of the fuselage. It could not use standard ground cargo handling gear, nor could it accept oversized cargo. It had great performance, however. One MATS C-135B set a world time to climb (with cargo) record. This aircraft, tail number 61-2666, had a plaque commemorating the record flight placed on a bulkhead.

In 1964, AWS saw an opportunity to substantially upgrade the weather reconnaissance fleet. MATS was now receiving the first C-141A Starlifter cargo planes from Lockheed. The AWS Commander sent a memo to MATS requesting that 10 of the C-135B be transferred to AWS. MATS and HQ USAF agreed. The ten aircraft identified were consecutive tail numbers from 61-2665 through 61-2674.

The aircraft were sent to Hays International Corporation, in Birmingham, Al, beginning in Feb 1965. Hays installed the AN/AMQ-25 weather reconnaissance (MET) system and Lockheed-Marietta installed the Air Research Equipment (ARE) or sampling gear. By the end of 1965, all ten WC-135B had been accepted by AWS. Five went to the 55th at McClellan and five to the 56th at Yokota.

The AN/AMQ-25 was an offshoot of the AN/AMQ-19 that had been developed for the WB-47E. The intent was to field a somewhat autonomous system, that could gather raw horizontal and vertical weather data, process it with an onboard IBM computer, and transmit the data to a waiting ground station for dissemination. The AN/AMQ-25 needed a direct latitude-longitude input. The AN/ASN-6 doppler navigation system was selected. The vertical system had a 9-shot revolver type dispenser in the tail that would discharge AN/AMT-13 dropsondes. On both the WB-47 and WC-135 this proved to be an unreliable method.

The WC-135 fleet was a hit from the very beginning. It had the speed and range to cover priority weather (sampling) tracks out of Japan and Alaska. From 1965 until 1973, the NASA race to the moon had a high priority. WC-135's scouted weather at both launch and recovery areas for the Apollo program. AWRA life member Bruce Ackert flew in

support of both launch and recovery of the ill-fated Apollo 13 mission. As new countries joined the nuclear club, the worldwide capability of the WC-135 proved itself. In 1967, the first 3 aircraft of the 55th WRS received air refueling receiver modification. By 1970, all ten aircraft had been modified. Missions, flown with augmented crews, could now go as long as 24 hours.

Beginning in 1967, a new sampling mission was tasked to the 55th. Called Skindiver, it was identified as Special Southern Hemisphere reconnaissance. The name later changed to Cold Skin, Cold Chuck and Volant Chuck.

The WC-135 had early on shown itself a great platform for both the weather recon and sampling missions. While the AN/AMQ-25 had significant (unresolved) issues, the fact that actual weather officers and dropsonde operators flew onboard meant that valuable data was still processed, albeit manually, and sent out to the waiting world. By 1971, the 9-shot dropsonde system had been replaced by a single manual tube. This greatly improved the reliability of the drops. The operator could verify the sonde as good, and they were no longer limited to 9 drop attempts.

In Jan 1972, the 56th WRS was inactivated at Yokota. For a short time, all 10 WC-135 were assigned to the 55th. Soon, aircraft began to be parceled out to other commands as trainers and VIP haulers. The 55th began covering the tracks previously flown by the 56th. For over 10 years they had 1-2 aircraft and crews continuously TDY to Yokota for periods ranging from 30 to 90 days at a time.

The French and Chinese atmospheric testing resulted in some extremely long missions. One crew left McClellan and flew to an area near French Polynesia. Over 23 hours after takeoff (including two air refuelings) they landed back home with a Code 4 (hot) aircraft.

The end of the Viet Nam War coincided with the last NASA moon missions. All government agencies were hard hit with demands to reduce spending. AWS was faced with a real dilemma. They were pushing for additional satellite coverage, computer upgrades, and a new generation of ground weather radar. All of these initiatives were very expensive. One result was that AFGWC was told not to request dedicated synoptic weather reconnaissance missions.

AFTAC still strongly supported the WC-135 as sampler, but AWS could not afford to allocate limited funds for WC-135 weather reconnaissance. In 1974, all WC-135 funding transferred from normal MAC O&M into a program that was under the same funding as SAC reconnaissance aircraft.

See *Queen* continued on Page 6

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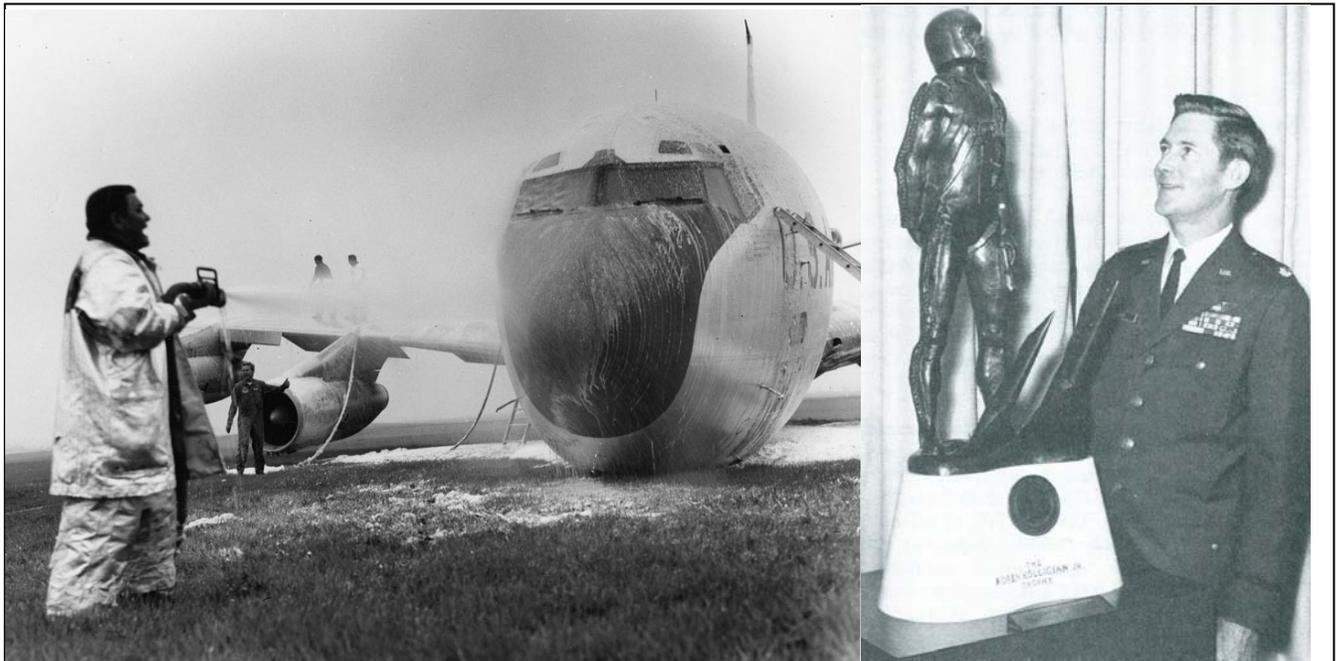
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The AWRA Newsletter is an unofficial publication of the Air Weather Reconnaissance Association. Address questions and comments to Bernard Barris, the Editor, at the address listed above, or E-mail Bernie at: [awra038@aol.com](mailto:awra038@aol.com)



At Left above, Yokota AB Firefighters spray dispersant foam on JP-4 fuel leaking from ruptured fuel tank on aircraft 61-2671. At Right is Maj Henry M. Dykes, Jr., of the 56th WRS, receiving the 1969 Koren Kolligian Trophy for outstanding airmanship in saving the crew and aircraft. Official USAF Photos

## From the Archives



Last year I asked for help with the photo of 44-27343 (top). Several members contacted me with good information. John Lassiter ID'd the photo as being taken at Hickam AFB when the aircraft first arrived at the 57th SRS (Med) Weather. John remembered that the squadron installed the C-1 foil after it arrived. This aircraft is now on display (bottom photo) at the Tinker AFB Air Park, in Oklahoma City. John and Elbert Bishop were honored invitees to the dedication when Air Park reopened.

## TAPS

Sadly, over the past year, AWRA has learned of the deaths of several more members of our weather reconnaissance family. May they Rest in Peace.

|                  |      |                        |
|------------------|------|------------------------|
| Hal Montague     | 1998 |                        |
| Thomas Durdan    | 2006 |                        |
| Virgil Herek     | 2007 |                        |
| Evelyn McKinny   | 2007 | Wife of William (D/00) |
| Jack Reed        | 2007 |                        |
| Harry D McIntyre | 2008 |                        |
| Indulis Plaudis  | 2008 |                        |
| Ralph Steely     | 2008 |                        |
| Ray Brashear     | 2009 |                        |
| Marjorie Eggert  | 2009 | Wife of Russell (D/09) |
| Russell Eggert   | 2009 |                        |
| Charles Massey   | 2009 |                        |
| Gary Walbridge   | 2009 |                        |
| Peggy Williams   | 2009 | Wife of Rodney (D/95)  |
| Howard Lysaker   | 2010 |                        |
| Les Skinner      | 2010 |                        |

## 1969 Major Accident, WC-135B 61-2671

The WC-135 was an extremely safe aircraft with (knock on wood) no fatalities. One rare incident happened in 1969 at the 56th WRS, Yokota AB, Japan. A crew led by AC Maj Henry Dyches was scheduled for a Robin Alpha track. This track went on a sampling leg south to the PI at 700 mb, then climbed to 300 mb to cover B-52 ARC LIGHT refueling areas, and back to Yokota at 300 or 200 mb. With Dyches this foggy morning was Copilot, Capt James P Allenberg; Navigator (Unknown); ARWO, Capt Max Werking; FE, Marrison Stafford; Dropsonde Operators, Charlie Hurst, and Doug Triplett; and Det 407 SEO's, Charlie Penn, and Patrick (Rick) Sutcliff. *BTW - If anyone knows who the navigator was, please contact me.*

After a routine preflight, Maj Dyches advanced the throttles and 671 accelerated normally down the runway.  $V_1$  was reached and called out by Capt Allenberg.  $V_2$  was reached, and Allenberg called out, "Rotate". Dyches attempted to pull the yoke back, but nothing happened. The yoke would not move. Dyches asked Allenberg for assistance, but even with both of them hauling for all they were worth, the yoke would not budge. The end of the runway was coming up fast. Allenberg would later recall that he had recently read of a SAC KC-135 incident where nose down trim had been set instead of nose up. In that case, the tanker crew realized their error, and were able to adjust the correct trim on takeoff roll. He thought maybe this was something similar, and started rolling in nose up trim. Thankfully, the nose started to come up, and the WC-135 started a very slow climb, barely avoiding crashing into the Fussa train "tunnel", really a protective berm.

Dyches then continued to slowly bring the nose up using trim. Once a relatively safe altitude was reached, they declared an emergency and were vectored out over Tokyo Bay. After numerous controllability tests, it was decided that a safe approach and landing at Yokota was possible. The airspace around Yokota was cleared of other traffic, and 671 was cleared to make a series of ever-lower practice approaches. Full USAF crash and fire forces were deployed. Finally, a very flat approach was made, at higher than normal speed, and touchdown occurred somewhat nose low. After touchdown, the pilots chopped the throttles, and held on as the WC-135 bounced several times. The third time the nose wheel hit the runway, the strut failed, and the nose gear collapsed back into the fuselage, causing a break in the fuselage, and a fuel tank to rupture. After the nose gear collapsed, the aircraft almost immediately departed the right side of the runway at high speed. It continued through the grassy landscape along the runway, finally coming to a stop with emergency trucks in hot pursuit.

Thankfully, everyone successfully egressed the aircraft, with SEO Charlie Penn claiming the word record for the 100 yd dash, and barely avoiding being run over by a huge fire truck emerging from the fog. He was still trailing a broken 50 ft interphone cord.

Post mission analysis determined that the cause of the accident was human error. A bolt had been installed incorrectly (backwards) and not properly safety wired. The bolt had backed off a bit, and, under aerodynamic loading, jammed the elevator from moving. With no loads, the elevator appeared to operate normally during preflight checks. A \$2 million error.

On 1 Oct 1975, all of the remaining AWS flying units (53rd WRS at Keesler, 54th WRS on Guam, and the 55th WRS at McClellan) transferred to Rescue Service (ARRS). The 55th WC-130's left McClellan in Dec 1975, leaving the squadron with a strictly sampling mission. AWS did negotiate a small number of hours for WC-135 weather reconnaissance on a not-to-interfere basis. At this same time, the old 9th Weather Wing and the 41st Rescue Wing combined to form the 41st Rescue and Weather Reconnaissance Wing, under ARRS.

By the late 1970's, most of the AMQ-25 components were gone from the fleet. In 1979, the 55th deployed aircraft to Australia, Diego Garcia, and other locations in response to Alert 747. This is sometimes referred to as the Vela incident. An aging Vela satellite picked up a flash in the sky off South Africa that had the classic signature of an atmospheric nuclear test. WC-135 crisscrossed the Indian Ocean without success. One WC-135 flew from Christchurch, NZ, and with the aid of 3 KC-135A tankers, flew over the South Pole. The Soviet Union argued that this flight violated treaties involving Antarctica, and all future missions had to stay north of 70 degrees South. In the end, the (Jimmy Carter)

politicians of the day, over the strenuous objections of AFTAC and the Los Alamos Laboratory, decided to conclude that it was a false hit by the satellite. The Los Alamos scientists now feel vindicated by a 1997 admission that a joint South African, Israeli test did occur.

In 1986, the 55th WRS WC-135 fleet was heavily involved in tracking the debris from the Chernobyl nuclear plant accident. The first aircraft flew direct from McClellan, hit a tanker over Alaska, then over the pole to an area just north of Norway. There, the crew found a visible cloud over 7 miles in diameter and 500 ft thick that gave "in flight positive" readings. Other missions tracked debris at different altitudes that moved south over Italy and into the Med. Debris was also tracked during several eastbound circuits of the Earth.

After the 55th WRS was inactivated in 1993, a limited WC-135 sampling capability has been maintained by the strategic recon folks at Offutt. One of the original WC-135's, and a modified (former) EC-135C, have upgraded ARE equipment and stand ready to support the National Command Authority when the next nuclear event takes place.



The U-1 foil has been the heart of particulate sampling since 1962. At left is foil in WC-135 with cover installed. At right SEO shows what the record changer mechanism looks like. The U-1 is generally loaded pre-flight and unloaded post-flight by MET/ARE. A foil was only opened in flight if something jammed, which thankfully rarely happened. Photos courtesy of Dennis Goens



At left is Pressure Platform, or P-System, in WC-135. The P-System allowed crew to gather whole air samples for laboratory analysis. This photo gives some idea of what made the WC-135 such a great platform – room and more room! At right, 3-man MET/ARE team loads the 9-Shot revolver dropsonde system. Similar system used on the WB-47E. Photos courtesy of Dennis Goens

## PORTLAND REUNION RECAP

The 2010 reunion will always be remembered for the great tours that Bob Tuttle set up. The narrated tour of Portland was very informative and everyone enjoyed seeing the downtown sights without having to fight the traffic ourselves.

The Evergreen Air and Space Museum was totally over the top. What a fantastic facility! The displays centered around Howard Hughes' Spruce Goose would rival any museum, public or private. I can't wait to get back and see the Boeing 747 water park in full swing.

Everyone had a fine time in the Hospitality suite, telling war stories and renewing old friendships while making new ones!

The banquet was excellent as well, and we want to remind everyone that you don't have to bring a coat and tie in your luggage. We just want you there!

## One more time in Ft Walton Beach

Most of you know what a great job that Ralph and Libby Ruyle do hosting us in Ft Walton Beach. The Ramada Beach Resort is just about the best hotel for getting together. Our Hospitality is a cabana in near the pool, with both indoor and outdoor visiting spaces. Ralph is a bit worried that more folks have not yet registered for the reunion or made their hotel reservations.

I promised him a flood of responses as soon as the newsletter hit the street. So don't let us down, make your plans today!

**DON'T DELAY, DO IT TODAY!!!**

## 2011 AWRA Reunion Tentative Agenda

### Sun, 2 Oct 2011

|           |                                       |
|-----------|---------------------------------------|
| 1300-1800 | Registration in Lobby                 |
| 1400-2200 | Hospitality in the Hospitality Suite  |
| 1800-2200 | Registration in the Hospitality Suite |
| All Day   | Personal Activities                   |

### Mon, 3 Oct 2011

|           |                                                   |
|-----------|---------------------------------------------------|
| 0900-2300 | Hospitality/Registration in the Hospitality Suite |
| 1000-1130 | Morning Weather Recon History Presentation        |
| 1330-1500 | Afternoon History Session                         |
| All Day   | Personal Activities                               |

### Tues, 4 Oct 2010

|           |                                      |
|-----------|--------------------------------------|
| 0800-2300 | Hospitality in the Hospitality Suite |
| TBD       | Possible Tour Naval Aviation Museum  |
| All Day   | Personal Activities                  |

### Wed, 5 Oct 2011

|           |                                      |
|-----------|--------------------------------------|
| 0800-1700 | Hospitality in the Hospitality Suite |
| 0900-1030 | AWRA Board of Directors Meeting      |
| 1030-1200 | AWRA General Membership Meeting      |
| 1800-1900 | No-Host Social Hour                  |
| 1845      | Group Photos                         |
| 1900-2200 | Annual AWRA Banquet                  |

### Thurs, 6 Oct 2011

|           |                       |
|-----------|-----------------------|
| 0800-1200 | Departure Hospitality |
|-----------|-----------------------|



At left is Col Vaughn Palmore, former commander of the 55th WRS and McMinnville, OR, resident. It was great that Col Palmore could join us. At right we see John Lein, outgoing AWRA President Bob Tuttle, and Mel Marvel enjoying one of the cafeterias in the Evergreen Air and Space Museum.  
Copyright Photos courtesy of Bernie Barris



**Air Weather Reconnaissance Association**

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Place  
Postage  
Here

***IMPORTANT REUNION REMINDER!***

The 2011 AWRA Reunion of Members  
will be held in Ft Walton Beach, FL  
from 2 - 6 Oct 2011

PLEASE FILL OUT THE ENCLOSED  
REGISTRATION FORM AND  
MAIL IT IN TODAY!

Be sure to make your plans, and reservations, NOW!