

**SOUVENIR ISSUE**  
GERMAN F-4 PHANTOM FAREWELL

**FIGHTER FOCUS**

**Su-27 'Flanker'**



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# COMBAT AIRCRAFT

MONTHLY

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## PHANTOM BOWS OUT

**SPECIAL SOUVENIR ISSUE**

MARKING THE END OF  
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OPERATIONS  
IN GERMANY

**EXCLUSIVE IMAGES**

**THE COD FATHERS**  
KEEPING THE CARRIERS SUPPLIED

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**VENEZUELAN 'VIPERS'**



**ANGEL THUNDER**  
Combat Search and Rescue in action



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# ANGLE



A UH-60L gets down low over the rapids during 'Angel Thunder'. The geography of the exercise area was intended to mirror the diverse operating conditions faced by US forces today.

**T**HE US DEPARTMENT of Defense (DoD) has established how the military executes so-called Personnel Recovery (PR) operations, clearly defining PR as 'One of the highest priorities of the Department of Defense', and a discipline that needs to be rehearsed as an integral part of operational planning, training and exercise programmes.

The success of any given PR is dependent upon rigorous training at all levels, including initial qualification training, mission qualification, currency requirements, upgrade training, proficiency,

specialised mission certification training, threat training and specialised training.

The US Air Force is tasked with establishing policy for a global co-ordinated PR programme, and the Department of the Air Force has the primary responsibility for recovering Air Force personnel who become isolated in an uncertain or hostile environment. Meanwhile, the Operational Concept for Personnel Recovery, signed by the Chief of Staff, not only acknowledges that the sister services routinely call upon the Air Force to recover their personnel, but also expands PR tasks beyond the typical combat search and rescue (CSAR) mission to

include civil and military search and rescue, medical/casualty evacuation, non-combatant evacuation operations, disaster response, mass rescue operations, humanitarian relief operations, theatre security co-operation, specialised air and ground mobility, and re-integration of recovered individuals.

'Angel Thunder' is currently the only DoD exercise to cover the full spectrum of PR training and has grown to become the largest and most complex exercise of its type. 'Angel Thunder' is one of the few elite Joint National Training Capability (JNTC) accredited and certified exercise programmes and is sponsored by Air Combat

Throughout history, America's armed forces have maintained a firm commitment to the safe and rapid recovery of the country's citizens and US government personnel from hostile or uncertain environments and denied areas. In order to keep this national promise, US and allied forces practise their Personnel Recovery (PR) skills during Exercise 'Angel Thunder' at Davis-Monthan AFB, Arizona.

report and photos: **Marnix Sap and Christiaan Sap**

# ANGEL THUNDER

THE WORLD'S PREMIER PERSONNEL RECOVERY EXERCISE



Command (ACC)'s Exercise Division, with execution taking place under the leadership of the USAF's 563rd Rescue Group (RQG) at Davis-Monthan AFB, Arizona. It was first held in July 2006 as a base-specific exercise at Davis-Monthan, where the 563rd RQG is located as a geographically separated unit of the 23rd Wing.

Until 2006, however, no dedicated Air Force CSAR exercise existed to provide realistic CSAR task force or PR training.

Founder of the exercise and current Exercise Director and Technical Manager, Brett Hartnett, explains: 'At that time, Personnel Recovery units were unable to

organise realistic composite-force training on a regular basis due to [their] high ops tempo. When Personnel Recovery units were able to organise events they were limited in scope, not always standardised, and had many notional assets involved.'

Hartnett continues: 'In addition, fighter units were tasked to conduct Personnel Recovery on Air Expeditionary Force (AEF) rotations and contingency deployments but didn't have regularly scheduled opportunities nor standardised training programmes. Due to these factors, the training didn't cover the full spectrum of Personnel Recovery events from notification to recovery, and never

exercised the real-world flow of information through command and control, intelligence, surveillance, and reconnaissance (C2ISR) assets and the C4 structure.'

It was around that time that Air Force Chief of Staff Gen T. Michael Moseley tasked Air Combat Command's exercise division to create a CSAR exercise programme, and what started out as a five-day, local event with barely 200 participants in 2006 became a nationwide exercise when ACC offered official sponsorship in 2007.



## Bottom up

'Angel Thunder 2013' was an exercise of a very different magnitude, involving some 3,017 players and 109 aircraft. This made it by far the largest and most complex personnel recovery exercise in the world.

The latest edition ran from 7-20 April and included personnel from US Southern Command, US Africa Command, the Joint Personnel Recovery Agency, the USAF and Army active duty, Guard and Reserve, Marines, the Navy and Coast Guard, as well as various US Federal inter-agency teams. In total some 1,749 flying hours were logged during 30 scenarios in which approximately 282 people were 'rescued'.

Eighteen other countries took part in the exercise, with forces and hardware from Australia, Brazil, Chile, Colombia, Denmark, the European Air Group (Netherlands), France, Germany, Ireland, Pakistan, Singapore, Sweden and the United Kingdom. All were involved as actual players working alongside American forces throughout each phase of the exercise, while representatives from India, Italy, Kazakhstan, Switzerland and Turkey came to observe.

'The unique part about this particular exercise is that it's planned from the bottom up', said Brett Hartnett. 'Units that had expressed their interest to participate in this year's event got together at the planning conference for the 2013 edition that took place between 15 and 19 October 2012 at Davis-Monthan AFB, where they told us what they wanted to practice. We then translated

this into objectives whereby the leadership did not dictate what the training should be, the participants did. From that point onwards the weapons and tactics officers together with me built the game, translating and integrating the objectives into the scenarios for the participants to accomplish. With the training being tailored to meet the participants' needs, the combat rescue community is doing the planning and execution of the exercise themselves, maximising the joint/combined force integration.

'When the planning was complete, the 'Angel Thunder 2013' exercise scenario was built around the main four objectives: exercise and validate emerging deployment and employment concepts across the joint environment, execute and validate Air Force Personnel Recovery capabilities across the spectrum of conflict, execute and validate Personnel Recovery support functions, and expand global influence through support to Combatant Command (COCOM) Theater Security Co-operation Plan (TSCP) initiatives.'

For the duration of the exercise, an impressive collection of HH-60G Pave Hawks was gathered at Davis-Monthan from across the various active-duty, Air Force Reserve and Air National Guard squadrons, together with an equally impressive number of HC-130P King and HC-130J Combat King II aircraft from the different rescue units across the US. The HC-130 is the premier Personnel Recovery Operation (PRO) fixed-wing platform, its primary role being to extend the operational range of the Pave Hawk helicopters. The depth

of the battlespace and the location of isolated personnel (IP) may require that helicopter refuelling is conducted in a non-permissive environment. Besides aerial refuelling, these Hercules are capable of airdropping or air-landing recovery teams and/or equipment to assist and/or recover isolated personnel. Additionally, the King has an expanded communications capability, making it a natural communications relay platform, and its extended range allows movement of recovered IP over longer distances.

A local resident at Davis-Monthan, the 41st Electronic Combat Squadron provided an EC-130H Compass Call, while the US Army deployed nine AH-64 Apache Longbows from B Company, 1-149th Aviation Regiment, Texas Army National Guard; five CH-47D Chinooks operated by 7-158th Aviation Regiment, Army Reserve from Gardner, Kansas; eight UH-60L Black Hawks from A Company, 2-238 Aviation Regiment, Army Reserve at Joint Forces Training Base Los Alamitos, California and three HH-60M medevac Black Hawks belonging to F Company, 1-214th Aviation Regiment (Air Ambulance).

The Republic of Singapore Air Force sent three of its CH-47Ds attached to the Peace Prairie detachment normally based at Redmond Taylor Army Helipoint near Dallas, Texas.

Further international hardware consisted of a single C-130B 'Super B' operated by the Colombian Air Force's Escuadrón de Transporte 811, as well as one Brazilian C-130M from the Força Aérea Brasileira's 1º/1ªGT at Rio de Janeiro-Galeão.

**AH-64D Longbow Apaches speed into action during 'Angel Thunder'. The exercise was tailored for many units as pre-deployment training, allowing organisers to circumnavigate the sequestration cuts that have hit hard this year.**



Operating out of bases in the US were two E-3 Sentries, two E-8C Joint STARS and five Arizona Air National Guard KC-135 Stratotankers, as well as a single MQ-1 Predator operated by the 163rd Reconnaissance Wing, California Air National Guard. The US Navy (COMNAVAIRPAC) participated for the first time with six MH-60S and three MH-60R Seahawks and a single E-2 Hawkeye operating from NAS North Island, California. Air Force Special Operations Command contributed a single MQ-1 and an AC-130U operated by the 27th Special Operations Wing, flying from their home base at Cannon AFB, New Mexico.

Finally, 10 A-10C Thunderbolt IIs belonging to the 107th Fighter Squadron from Selfridge Air National Guard Base, Michigan deployed to Davis-Monthan for the duration of the exercise to provide airborne rescue escort (RESCORT) to the Pave Hawks. RESCORT is an integral part of the CSAR task force, providing navigation assistance, route sanitisation and armed escort for the recovery. In an increased-threat environment, this assistance improves significantly the chances of a successful recovery. RESCORT aircrews therefore need to be proficient in rendezvous procedures, escort tactics at medium and low altitudes and defence of the rescue vehicles during mission execution.

Apart from providing RESCORT, A-10s also fulfil another critical role during PRO and CSAR missions, known as 'Sandy One'. During the majority of sorties, one of the

A-10s present typically re-roles to become the on-scene Rescue Mission Commander (RMC), taking over command of the mission from the On-Scene Commander (OSC). The OSC is the individual who initiates the rescue efforts in the objective area until rescue forces arrive. Initially, the OSC may be any aircraft in the vicinity, including the wingman of a downed aircraft. The OSC's initial actions are to attempt to establish communication, locate and authenticate the IP, and pass essential information to the RMC. The OSC role will be transferred to the RMC or lead recovery vehicle upon arrival. After transferring OSC duties to the RMC, the original OSC may remain on station in a supporting role.

The RMC is a distinct qualification for airmen specifically trained in CSAR tactics, techniques and procedures. Responsibilities include establishing communications, locating and authenticating the IP, and protecting the IP until recovery assets arrive. They control all assets assigned to the PR effort, including, but not limited to, rescue combat air patrol (RESCAP), suppression of enemy air defences, additional strike aircraft and required aerial refuelling. It comes as no surprise that only the most competent and most capable pilots are selected and trained to perform the 'Sandy' mission.

#### **DM — the obvious choice**

Although 'Angel Thunder' originated at Davis-Monthan, continuing with the exercise out of this base was an obvious choice since

the facility has the required infrastructure and the related costs are favourable. The majority of the primary training audience is based at Davis-Monthan and is therefore able to operate from its home station, utilising local facilities with a minimum impact on deployed ops.

The training area around Davis-Monthan includes the Sells, Ruby, Fuzzy, Jackal and Tombstone Military Operations Areas (MOA), Barry Goldwater Range Training Complex, Camp Navajo, Southern California Offshore Range (SCORE) Naval Complex, White Sands Missile Range, Fort Huachuca, Flagstaff and Bisbee-Douglas International Airports and the Playas Urban Training Facility.

The Playas Urban Training Facility is part of New Mexico Tech's Playas Training and Research Center (PTRC). Playas became a virtual ghost town when the Phelps Dodge copper smelter was shut down in 1999. New Mexico Tech then converted the town into a training and research facility for its first-responders and anti-terrorism programmes, making use of a complete suburban setting in a 640-acre town-site. This realistic combat environment includes a full range of facilities, among them 250 single-family homes and one 25-unit apartment complex, a medical clinic (with helicopter pad), fire station, community centre, grocery store, post office, fitness centre, churches and other infrastructure, as well as a 5,000ft paved runway suitable for light aircraft.

This training environment also includes several replicas of Afghan villages, and for the duration of the exercise it is fully

*'With no budget, we built the world's largest and most dynamic rescue exercise in our spare time. In turn, the Department of Defense recognised our success and made us their official personnel recovery exercise'*

**Brett Hartnett**

HH-60G Pave Hawks from across the various active duty, Air Force Reserve and Air National Guard squadrons gathered for the exercise, with an A-10C here providing top cover.



The Fuerza Aérea Colombiana participated for the first time deploying a single C-130B 'Super B' Hercules with aircrews, paramedics, PJs and command authorities.



Left: Republic of Singapore Air Force CH-47Ds clatter into action, forward-deployed from Redmond Taylor Army Heliport near Dallas, Texas.

stocked with a very robust Opposition Force (OPFOR) including role-players, livestock and markets. An additional 1,200 acres surrounding the town site is also available for a range of activities in support of Homeland Security efforts.

### Scenarios

Personnel recovery operations require a precise mix of ground and air forces to aid in successful rescues. During 'Angel Thunder 2013', combat aircrew forces, Guardian Angel — the USAF's non-aircraft, equipment-based weapon system employed by Combat Rescue Officers (CROs) — plus Pararescuemen (PJs), Survival, Evasion, Resistance and Escape (SERE) specialists, intelligence personnel, Air Battle Managers, and Joint Search and Rescue Center personnel from different organisations and units were integrated to form rescue packages, each contributing their particular assets and skills.

The exercise was designed to facilitate interoperability, and the cross-culture sharing of tactics and procedures to replicate the full spectrum of operational environments common to USAF rescue force employment: CSAR, irregular warfare, contested degraded operations, Air-Sea Battle, disaster response, and a robust non-conventional assisted recovery (NAR) certified programme.

It focused on prioritised PR training for all operational capabilities and included combat air forces (CAF), special operations forces (SOF), US Army Operational Detachment Alpha (ODA) and USAF Special Tactics Squadron (STS) integration, RESCORT/strike integration (A-10/AH-64), Lightning Bolt validation (a CSAR rapid-response concept), international PR engagement and Rescue Operation Center (ROC), as well as command, control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR) concepts.

Contrary to previous editions, this year there was no gradual build-up in complexity, such as might see scenarios progressing from relatively low-key humanitarian to complex tactical operations. Each day three scenarios were exercised, these running either during the daytime or at night and covering a wide range of situations, including high-angle (mountain) rescues, dealing with natural disasters with mass evacuations, transporting wounded patients to a safe haven for further treatment, combat and hostage rescues, and conducting infiltration and exfiltration missions.

To further enhance joint operations, the exercise incorporated the Joint Air-Sea Battle (ASB) concept, which saw the US Navy's first participation.

'This exercise is like putting on an elaborate theatrical production', said Brett Hartnett, a retired combat rescue pilot with more than 4,000 flight hours and 91 lives saved. And the stage is enormous: a 40,000-square-mile swathe of territory encompassing Arizona, New Mexico and southern California all the way to 60 miles off the coast of San Diego. The 'cast members' included Irish SERE specialists, Brazilian pilots, British Medical Emergency Response Team (MERT) personnel, Colombian PJs and US Homeland Security Investigations (HSI) and State Department Diplomatic Security Federal Agents, to name just a few. Those deploying to the exercise were told only to be ready for any contingency. For a week, they ran round-the-clock missions and caught naps in some of the base's two-dozen tan Quonset hut-shaped tents. If personnel forgot to bring a critical piece of equipment or were unfamiliar with the skill sets of the other agencies in their coalition, too bad. Learning how to troubleshoot on the fly is the whole point.

'You know it's going to be a pick-up game', said Col Jason Hanover, commander of the 563rd Rescue Group and commander of the fictional PR task force deployed, 'but you hope it will be a team of guys you've played with before and you're not just standing on the playground looking at each other.'



A CH-47D Chinook operated by the Army Reserve's 7-158th Aviation Regiment from Gardner, Kansas settles onto a tight rocky outcrop to pick up ground forces.

## The future

'Angel Thunder' is surely bound to build on its success and grow even further in size and depth. Ever more sister, inter-agency and international units specialised in PR and CSAR are eager to participate. US national policy and strategy documents indicate clearly that future PR success requires an integrated DoD/inter-agency team, while good co-operation with allied nations has proven vital for joint rescue operations in countries such as Afghanistan.

Brett Hartnett: 'This is a David and Goliath story of an exercise being founded by rescue airmen in the trenches because what we needed was not in the system. Air Combat Command sponsorship and support over the years paved the way for Joint National Training Capability (JNTC) certification on 30 November 2012. With no budget, we built the world's largest and most dynamic rescue exercise in our spare time. In turn, the Department of Defense recognised our success and made us their official personnel recovery exercise'. JNTC credentials affirm that the exercise offers a consistent standard of quality training each cycle and also validate the training areas used.

With no end in sight for overseas security missions and operations, the exercise will

continue to build on the lessons learned in real life. Results documented in the after-action report from the 2013 exercise will influence doctrine, organisation, training, materiel, leadership, education, personnel, facilities and policy requirements to ensure US and allied PR continues to succeed in the current environment. These results will also contribute to development of tactics, techniques and procedures for defeating specific anti-access/area-denial systems, and enabling PR airmen to adapt to the ever-changing operating environment.

One thing is for sure: those able to participate in the exercise will be better prepared when the call comes for them to return isolated personnel to safety. 'Angel Thunder' will continue to be a unique programme, built by the PR and CSAR community from the grass-roots level, incorporating the lessons collectively learned from their experiences, and offering exercise scenarios that are very realistic representations of real-world conflicts and operations. It will remain the only exercise realised by the whole of government across the full spectrum of rescue operations.

US national and defence policies do not stipulate the point at which saving a human life is not worth the cost in terms

of resources expended. However, 'Angel Thunder' provides a low-cost hub in a fiscally limited environment into which other joint, interagency and coalition partners can plug their own individually funded spokes. It therefore provides the biggest 'bang for the buck' when it comes to the spending of training dollars. Costing less than \$2.5 million, 'Angel Thunder' clearly deserves permanent funding to ensure its mission.

As one of the strongest and most outspoken supporters of 'Angel Thunder', retired US Congresswoman Gabrielle Giffords said of the exercise: 'This time, these aid workers were not in distress and these Green Berets were not under fire. But the next time, when an aid worker is in danger or service member under fire, rescue operations are likely to be faster, smoother and safer — because of what has been learned at Exercise 'Angel Thunder'.'

Put simply, 'Angel Thunder' saves lives. ☑

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