

USAF Almanac

■ Records, Trophies, and Competitions

Absolute Aviation World Records

The desirability of a standard procedure to certify air records was recognized early in the history of powered flight. In 1905, representatives of Belgium, Germany, the US, Great Britain, France, Spain, Italy, and Switzerland met in Paris to form the *Fédération Aéronautique Internationale*, the world body of national aeronautic sporting interests. The FAI today comprises the national aero clubs of 77 nations

and certifies national records as world records.

Since 1922, the National Aeronautic Association, based in Arlington, Va., has been the US representative to the FAI. The NAA supervises all attempts at world and world-class records in the United States.

Absolute world records are the supreme achievements of all the records open to

flying machines. Several of these records are more than 10 years old. The NAA notes that, "since the performance of many government-backed airplanes . . . is wrapped in a blanket of national security, the breaking of some of these records will depend as much on political considerations as technical ones."

Record	Pilot(s)	Aircraft	Route/Location	Date(s)
Speed around the world, nonstop, nonrefueled: 115.65 mph (186.11 kph)	Richard G. Rutan and Jeana L. Yeager	<i>Voyager</i> experimental aircraft	Edwards AFB, Calif., to Edwards AFB, Calif.	Dec. 14–23, 1986
Great circle distance without landing: 24,986.727 miles (40,212.139 kilometers)	Richard G. Rutan and Jeana L. Yeager	<i>Voyager</i> experimental aircraft	Edwards AFB, Calif., to Edwards AFB, Calif.	Dec. 14–23, 1986
Distance in a closed circuit without landing: 24,986.727 miles (40,212.139 kilometers)	Richard G. Rutan and Jeana L. Yeager	<i>Voyager</i> experimental aircraft	Edwards AFB, Calif., to Edwards AFB, Calif.	Dec. 14–23, 1986
Altitude: 123,523.58 feet (37,650.00 meters)	Alexander Fedotov	E-266M, a modified MiG-25 "Foxbat"	Podmoskovnoye, USSR	Aug. 31, 1977
Altitude in an aircraft launched from a carrier airplane: 314,750.00 feet (95,935.99 meters)	Maj. Robert M. White, USAF	North American X-15 No. 3 research aircraft	Edwards AFB, Calif.	July 17, 1962
Altitude in horizontal flight: 85,068.997 feet (25,929.031 meters)	Capt. Robert C. Helt (pilot), USAF, and Maj. Larry A. Elliott (RSO), USAF	Lockheed SR-71A Blackbird reconnaissance aircraft	Beale AFB, Calif.	July 28, 1976
Speed over a straight course: 2,193.16 mph (3,529.56 kph)	Capt. Eldon W. Joersz (pilot), USAF, and Maj. George T. Morgan Jr. (RSO), USAF	Lockheed SR-71A Blackbird reconnaissance aircraft	Beale AFB, Calif.	July 28, 1976
Speed over a closed circuit: 2,092.294 mph (3,367.221 kph)	Maj. Adolphus H. Bledsoe Jr. (pilot), USAF, and Maj. John T. Fuller (RSO), USAF	Lockheed SR-71A Blackbird reconnaissance aircraft	Beale AFB, Calif.	July 27, 1976

The Robert J. Collier Trophy

This award, presented by the National Aeronautic Association, is the most prestigious in American aviation. It recognizes the "greatest achievement in aeronautics or astronautics in America, with respect to improving the performance,

efficiency, and safety of air or space vehicles, the value of which has been thoroughly demonstrated by actual use during the preceding year." The award is named for a prominent publisher, sportsman, and aviator. Collier, the first person

to purchase a Wright airplane for personal use, commissioned the trophy and presented it to the Aero Club of America (the forerunner of the NAA) in 1911.

- 1911 **Glenn H. Curtiss.** Hydro-aeroplane.
- 1912 **Glenn H. Curtiss.** Flying boat.
- 1913 **Orville Wright.** Automatic stabilizer.
- 1914 **Elmer A. Sperry.** Gyroscopic control.
- 1915 **W. Sterling Burgess.** Burgess-Dunne hydro-aeroplane.
- 1916 **Elmer A. Sperry.** Drift indicator.
- 1917–20 **No award.** (World War I).
- 1921 **Grover Loening.** Aerial yacht.
- 1922 **US Air Mail Service.** One year without fatality.
- 1923 **US Air Mail Service.** Night flying in commercial transportation.
- 1924 **US Army Air Service.** First aerial flight around world.
- 1925 **S. Albert Reed.** Metal propeller.
- 1926 **Maj. E.L. Hoffman.** Practical parachute.
- 1927 **Charles L. Lawrance.** Radial air-cooled engine.
- 1928 **Commerce Dept., Aeronautics Branch.** Airways, air navigation facilities.
- 1929 **National Advisory Committee for Aeronautics.** Cowling for radial air-cooled engines.
- 1930 **Harold Pitcairn and staff.** Autogiro.
- 1931 **Packard Motor Car Co.** Diesel aircraft engine.
- 1932 **Glenn L. Martin.** Two-engined, high-speed, weight-carrying airplane.
- 1933 **Hamilton Standard Propeller Co., Frank W. Caldwell.** Controllable-pitch propeller.
- 1934 **Maj. Albert F. Hegenberger.** Blind landing experiments.
- 1935 **Donald Douglas and staff.** DC-2.
- 1936 **Pan American Airways.** Transpacific and overwater operations.
- 1937 **Army Air Corps.** Design, flight test of XC-35 first pressurized cabin.
- 1938 **Howard Hughes and crew.** Around-the-world flight.
- 1939 **US airlines.** Air travel safety record.
- 1940 **Dr. Sanford Moss, Army Air Corps.** Turbo-supercharger.
- 1941 **US Army Air Forces and US airlines.** Pioneering world-wide operations.
- 1942 **Gen. H.H. Arnold.** Leadership of US Army Air Forces.
- 1943 **Capt. Luis De Florez, USNR.** Synthetic training devices.
- 1944 **Gen. Carl A. Spaatz.** US air campaign against Germany.
- 1945 **Dr. Luis W. Alvarez.** Ground-control approach radar landing system.
- 1946 **Lewis A. Rodert.** Thermal ice-prevention system.
- 1947 **John Stack, Lawrence D. Bell, Capt. Charles E. Yeager.** Supersonic flight.
- 1948 **Radio Technical Commission for Aeronautics.** All-weather air traffic control system.
- 1949 **William P. Lear.** F-5 automatic pilot, automatic approach control coupler system.
- 1950 **Helicopter industry, military services, Coast Guard.** Rotary-wing aircraft in air rescue.
- 1951 **John Stack, associates at Langley Aeronautical Laboratory, NACA.** Transonic wind tunnel throat.
- 1952 **Leonard S. Hobbs.** J57 jet engine.
- 1953 **James H. Kindelberger, Edward H. Heinemann.** Supersonic airplanes (F-100, F4D).
- 1954 **Richard Travis Whitcomb.** Discovery, verification of area rule, yielding higher speed and greater range.
- 1955 **William M. Allen, Boeing Airplane Co., Gen. Nathan F. Twining, and US Air Force.** B-52 bomber.
- 1956 **Charles J. McCarthy; Chance-Vought Aircraft; Vice Adm. James S. Russell; US Navy Bureau of Aeronautics.** F8U Crusader.
- 1957 **Edward P. Curtis.** "Aviation Facilities Planning" report.
- 1958 **USAF/Lockheed/GE F-104 team.** F-104 interceptor. **Clarence L. Johnson.** F-104 airframe design. **Neil Burgess, Gerhard Neumann.** J79 turbojet engines. **Maj. Howard C. Johnson.** Landplane altitude record. **Capt. Walter W. Irwin.** Straightaway speed record.
- 1959 **USAF, General Dynamics-Convair, Space Technology Laboratories.** Atlas ICBM.
- 1960 **Vice Adm. William F. Raborn.** Polaris ballistic missile system.
- 1961 **Maj. Robert M. White, Joseph A. Walker, A. Scott Crossfield, Cmdr. Forrest Petersen.** X-15 test flights.
- 1962 **Lt. Cmdr. M. Scott Carpenter, Maj. L. Gordon Cooper, Lt. Col. John H. Glenn Jr. (USMC), Maj. Virgil I. Grissom, Cmdr. Walter M. Schirra Jr., Cmdr. Alan B. Shepard Jr., Maj. Donald K. Slayton.** Pioneering US manned space-flight.
- 1963 **Clarence L. Johnson.** A-11 (A-12) Mach 3 aircraft.
- 1964 **Gen. Curtis E. LeMay.** Expanding frontiers of American aeronautics and astronautics.
- 1965 **James E. Webb, Hugh L. Dryden.** Gemini spaceflight program.
- 1966 **James S. McDonnell.** F-4 Phantom and Gemini space vehicles.
- 1967 **Lawrence A. Hyland, Hughes Aircraft Co., Jet Propulsion Laboratory, associated organizations.** Surveyor program.
- 1968 **Col. Frank Borman, Capt. James A. Lovell Jr. (USN), Lt. Col. William A. Anders.** Apollo 8, first manned lunar orbit mission.
- 1969 **Neil A. Armstrong, Col. Edwin E. Aldrin Jr., Col. Michael Collins.** Apollo 11 moon landing.
- 1970 **Boeing with Pratt & Whitney and Pan Am.** Commercial 747 service.
- 1971 **Col. David R. Scott, Col. James B. Irwin, Lt. Col. Alfred M. Worden, Dr. Robert T. Gilruth.** Apollo 15 mission.
- 1972 **Adm. Thomas H. Moorer, USAF 7th and 8th Air Forces, Navy Task Force 77.** Operation Linebacker II.
- 1973 **Skylab Program, William C. Schneider, Skylab astronauts.** Skylab operations.
- 1974 **Dr. John F. Clark, NASA; Daniel J. Fink, GE; RCA; Hughes.** Space technology in resource and environmental management; LANDSAT.
- 1975 **David S. Lewis, General Dynamics, USAF-industry team.** F-16 aviation technologies.
- 1976 **USAF, Rockwell, B-1 industry team.** The B-1 bomber.
- 1977 **Gen. Robert J. Dixon and Tactical Air Command.** Red Flag.
- 1978 **Sam B. Williams, Williams Research Corp.** Turbofan cruise missile engines.
- 1979 **Dr. Paul B. MacCready, Aeroenvironment, Inc., Bryan Allen.** *Gossamer Albatross*.
- 1980 **NASA's Voyager mission team, Dr. Edward Stone.** *Voyager* flyby of Saturn.
- 1981 **NASA, Rockwell, Martin Marietta Corp., Thiokol Corp., government-industry shuttle team, and astronauts John W. Young, Capt. Robert L. Crippen (USN), Col. Joe H. Engle, Capt. Richard H. Truly (USN).** First flights of *Columbia*, first shuttle.
- 1982 **T.A. Wilson, Boeing, supported by FAA, industry, airlines.** 757 and 767 airliners.

The Robert J. Collier Trophy continued

- 1983 **US Army, Hughes Helicopters, industry team.** AH-64A Apache helicopter.
- 1984 **NASA, Martin Marietta, astronaut Capt. Bruce McCandless II (USN), Charles E. Whitsett Jr., Walter W. Bolland.** Manned maneuvering units, satellite rescues.
- 1985 **Russell W. Meyer, Cessna Aircraft, Cessna Citation business jets.** Outstanding safety.
- 1986 **Jeana L. Yeager, Richard G. Rutan, Elbert L. Rutan, Bruce Evans, team of volunteers.** *Voyager* flight.
- 1987 **NASA Lewis Research Center, NASA–industry team.** Advanced turboprop propulsion concepts.
- 1988 **Rear Adm. Richard H. Truly.** Manned space recovery program.
- 1989 **Ben R. Rich, Lockheed–USAF team.** F-117A stealth fighter.
- 1990 **Bell–Boeing team.** V-22 Osprey tiltrotor aircraft.
- 1991 **Northrop–USAF industry team.** B-2 bomber.
- 1992 **Global Positioning System Team: USAF, US Naval Research Lab, Aerospace Corp., Rockwell International, IBM Federal Systems.** Navstar GPS satellite system.
- 1993 **Hubble Space Telescope recovery team.** Successful orbital recovery and repair.
- 1994 **USAF, McDonnell Douglas, US Army, C-17 industry team.** C-17 airlifter.
- 1995 **Boeing 777 team.** Boeing 777.
- 1996 **Cessna Citation X design team.** Cessna Citation X.

The Mackay Trophy

The Mackay Trophy was established by Clarence H. Mackay, an industrialist, philanthropist, communications pioneer, and aviation enthusiast. Presented by the National Aeronautic As-

sociation, the trophy recognizes “the most meritorious flight of the year” by an Air Force member, members, or organization.

- 1912 2d Lt. Henry H. Arnold.
- 1913 2d Lt. Joseph E. Carberry and 2d Lt. Fred Seydel.
- 1914 Capt. Townsend F. Dodd and Lt. S.W. Fitzgerald.
- 1915 Lt. B.Q. Jones.
- 1916–17 Inactive.
- 1918 Capt. Edward V. Rickenbacker.
- 1919 Lt. Belvin N. Maynard, Lt. Alexander Pearson Jr., Lt. R.S. Northington, Capt. John O. Donaldson, Capt. Lowell H. Smith, Lt. Col. Harold E. Hartney, Lt. E.M. Manzelman (posthumously), Lt. B.G. Bagby, Lt. D.B. Gish, and Capt. F. Steinle.
- 1920 Capt. St. Clair Streett, 1st Lt. Clifford C. Nutt, 2d Lt. Eric H. Nelson, 2d Lt. C.H. Crumrine, 2d Lt. Ross C. Kirkpatrick, Sgt. Edmond Henriques, Sgt. Albert T. Vierra, and Sgt. Joe E. English.
- 1921 Lt. John A. Macready.
- 1922 Lt. John A. Macready and Lt. C.G. Kelly.
- 1923 Lt. John A. Macready and Lt. C.G. Kelly.
- 1924 Capt. Lowell H. Smith, 1st Lt. Leigh Wade, 1st Lt. Leslie P. Arnold, 1st Lt. Eric H. Nelson, 2d Lt. John Harding Jr., and 2d Lt. Henry H. Ogden.
- 1925 Lt. Cyrus K. Bettis and Lt. Jimmy Doolittle.
- 1926 Pan American Goodwill Fliers: Maj. H.A. Dargue, Capt. Ira C. Eaker, Capt. A.B. McDaniel, Capt. C.F. Woolsey (posthumously), 1st Lt. J.W. Benton (posthumously), 1st Lt. C.McK. Robinson, 1st Lt. M.S. Fairchild, 1st Lt. B.S. Thompson, 1st Lt. L.D. Weddington, and 1st Lt. E.C. Whitehead.
- 1927 Lt. Albert F. Hegenberger and Lt. Lester J. Maitland.
- 1928 1st Lt. Harry A. Sutton.
- 1929 Capt. A.W. Stevens.
- 1930 Maj. Ralph Royce.
- 1931 Brig. Gen. Benjamin D. Foulois.
- 1932 11th Bombardment Sq., March Field, Calif., 1st Lt. Charles H. Howard.
- 1933 Capt. Westside T. Larson.
- 1934 Brig. Gen. Henry H. Arnold.
- 1935 Capt. A.W. Stevens and Capt. O.A. Anderson.
- 1936 Capt. Richard E. Nugent, 1st Lt. Joseph A. Miller, 1st Lt. Edwin G. Simenson, 2d Lt. William P. Ragsdale Jr., 2d Lt. Burton W. Armstrong, 2d Lt. Herbert Morgan Jr., TSgt. Gilbert W. Olson, SSgt. Howard M. Miller, and Cpl. Air Mechanic 2d Class Frank B. Connor.
- 1937 Capt. Carl J. Crane and Capt. George V. Holloman.
- 1938 2d Bombardment Group, Lt. Col. Robert Olds.
- 1939 Maj. Caleb V. Haynes, Maj. William D. Old, Capt. John A. Samford, 1st Lt. Richard S. Freeman, 1st Lt. Torgils G. Wold, MSgt. Adolph Cattarius, TSgt. Henry L. Hines, TSgt. William J. Heldt, TSgt. David L. Spicer, SSgt. Russell E. Junior, and SSgt. James E. Sands. Earthquake relief mission to Chile.
- 1940–46 Inactive.
- 1947 Capt. Charles E. Yeager. First supersonic flight.
- 1948 Lt. Col. Emil Beaudry. Rescue in Greenland.
- 1949 Capt. James G. Gallagher and crew of *Lucky Lady II*. First around-the-world, nonstop flight.
- 1950 27th Fighter Wing. Transatlantic movement of 180 fighters.
- 1951 Col. Fred J. Ascani. Speed record, 635.686 mph.
- 1952 Maj. Louis H. Carrington Jr., Maj. Frederick W. Shook, and Capt. Wallace D. Yancey. First nonstop, transpacific flight of RB-45 jet bomber.
- 1953 40th Air Division, SAC. Nonstop, refueled transatlantic movement of fighters.
- 1954 308th Bombardment Wing (M) and 38th Air Div., SAC. “Leapfrog” intercontinental maneuver.
- 1955 Col. Horace A. Hanes. Speed record, 822.135 mph.
- 1956 Capt. Iven C. Kincheloe Jr., Air Research and Development Command. Altitude record in Bell X-2.
- 1957 93d Bombardment Wing, SAC. Three B-52s, in first nonstop, around-the-world jet flight.
- 1958 TAC Air Strike Force, X-Ray Tango. Rapid deployment to Far East.
- 1959 US Air Force Thunderbirds. Goodwill tour of Far East.
- 1960 6593d Test Sq., Hickam AFB, Hawaii. Aerial recoveries of space capsules.
- 1961 Lt. Col. William R. Payne, Maj. William L. Polthemus, and Maj. Raymond R. Wagener, 43d Bomb Wing, SAC. Carswell AFB, Texas–Paris nonstop flight, two speed records.
- 1962 Maj. Robert G. Sowers, Capt. Robert MacDonald, and Capt. John T. Walton. Three transcontinental speed records in B-58.
- 1963 Capt. Warren P. Tomsett, Capt. John R. Ordemann, Capt. Donald R. Mack, TSgt. Edsol P. Inlow, SSgt. Jack E. Morgan, and SSgt. Frank C. Barrett. Nighttime, under-fire evacuation of wounded in Vietnam.
- 1964 464th Troop Carrier Wing, TAC. Refugee airlift in Republic of Congo.
- 1965 YF-12A Test Force (Col. Robert L. Stephens, Lt. Col. Daniel Andre, Maj. Walter F. Daniel, Maj. Noel T. Warner, and Capt. James P. Cooney). YF-12A flights that established nine speed and altitude records.
- 1966 Lt. Col. Albert R. Howarth. Courage and airmanship in Southeast Asia.

The Mackay Trophy continued

- 1967** Maj. John H. Casteel, Capt. Dean L. Hoar, Capt. Richard L. Trail, and MSgt. Nathan C. Campbell. First emergency multiple air refuelings.
- 1968** Lt. Col. Daryl D. Cole. Conspicuous gallantry as C-130 pilot in Southeast Asia.
- 1969** 49th Tactical Fighter Wing, TAC. Deployment, with 504 air refuelings, of 72 F-4Ds from West Germany to New Mexico.
- 1970** Capt. Alan D. Milacek and AC-119K crew (Capt. James A. Russell, Capt. Roger E. Clancy, Capt. Ronald C. Jones, Capt. Brent C. O'Brien, TSgt. Albert A. Nash, SSgt. Adolfo Lopez Jr., SSgt. Ronald R. Wilson, Sgt. Kenneth E. Firestone, and A1C Donnell H. Cofer). Destruction of targets with a severely damaged aircraft.
- 1971** Lt. Col. Thomas B. Estes and Maj. Dewain C. Vick. SR-71 record-shattering flights.
- 1972** Capt. Richard S. "Steve" Ritchie, Capt. Charles B. DeBellevue, and Capt. Jeffrey S. Feinstein. USAF's Vietnam War aces.
- 1973** MAC aircrews. Operation Homecoming, POWs' return.
- 1974** Maj. Roger J. Smith, Maj. David W. Peterson, and Maj. Willard R. MacFarlane. Operation Streak Eagle (F-15) test pilots.
- 1975** Maj. Robert W. Undorf. Gallantry in *Mayaguez* incident.
- 1976** Capt. James A. Yule. Gallantry as instructor of B-52D flight.
- 1977** C-5 aircrew (Capt. David M. Sprinkel and crew). US-USSR energy research project.
- 1978** C-5 aircrew (Lt. Col. Robert F. Schultz and crew and Capt. Todd H. Hohberger and crew, 436th Military Airlift Wing). C-5 airlift to Zaire.
- 1979** Maj. James E. McArdle Jr. Rescue of 28 Taiwanese at sea.
- 1980** Crews S-21 and S-31, 644th Bombardment Sq. Nonstop, around-the-world mission to locate Soviet Navy operating in Arabian Sea.
- 1981** Capt. John J. Walters. Air rescue mission in Alaskan waters.
- 1982** B-52 Crew E-21, 19th Bombardment Wing. Successful emergency landing of B-52.
- 1983** Capt. Robert J. Goodman and his crew, 42d Bombardment Wing, SAC. Emergency refueling and towing of an F-4E.
- 1984** Lt. Col. James L. Hobson Jr. MC-130 assault in Grenada.
- 1985** Lt. Col. David E. Faught. Emergency KC-135 landing.
- 1986** KC-10 crew (Capt. M.D. Felman and T.M. Ferguson; MSgts. C. Bridges Jr., P.S. Kennedy, and G.G. Treadwell; TSgts. L.G. Boulter and G.M. Lewis; SSgts. S.S. Flores, S.A. Helms, and G.L. Smith), 68th Air Refueling Group, SAC. Emergency transatlantic refueling of Marine A-4s.
- 1987** Det. 15, USAF Plant Representative Office, and B-1B SPO. Record B-1B flights (72).
- 1988** C-5 crew, 436th Military Airlift Wing. Mission to Semipalatinsk, USSR, as part of INF accord.
- 1989** B-1B crew, 96th Bomb Wing. Emergency landing of B-1B.
- 1990** AC-130 crew, 16th Special Operations Sq. Panama operations.
- 1991** MH-53 crew, 20th Special Operations Sq. Rescue of downed Navy F-14 pilot inside Iraq during Persian Gulf War.
- 1992** C-130 crew, 310th Airlift Sq., ACC, Howard AFB, Panama. Emergency landing of unarmed C-130 after incurring heavy damage from two Peruvian fighters in international airspace.
- 1993** B-52 crew, 668th Bomb Sq., ACC. Successful emergency landing of B-52 after loss of four engines.
- 1994** HH-60G crew of Air Force Rescue 206 and 208, 56th Rescue Sq., ACC, NAS Keflavik, Iceland. Rescue of six Icelandic sailors from foundered merchant vessel *Godinn*.
- 1995** Aircrew BAT-01, Dyess AFB, Texas. Demonstrated the B-1B's endurance and speed by flying 36 hours, 13 minutes, 36 seconds in an around-the-world flight.
- 1996** Aircrew Duke 01, 2d Bomb Wing, Barksdale AFB, La. Conducted first combat sortie and live CALCM launch for the B-52H during Operation Desert Strike against Iraq, September 1996.

The Hughes Achievement Trophy

The Hughes Achievement Trophy is presented annually to the top Air Force squadron with an air defense mission. Hughes Aircraft Co. sponsors the award.

Year	Unit, Base	Aircraft	Year	Unit, Base	Aircraft
1953	58th FIS, Otis AFB, Mass.	F-94C	1975	318th FIS, McChord AFB, Wash.	F-106A/B
1954	96th FIS, New Castle County Airport, Del.	F-94C	1976	57th FIS, NAS Keflavik, Iceland	F-4C
1955	496th FIS, Landstuhl AB, West Germany	F-86D	1977	43d TFS, Elmendorf AFB, Alaska	F-4E
1956	317th FIS, McChord AFB, Wash.	F-86D/F-102A	1978	49th FIS, Griffiss AFB, N.Y.	F-106A/B
1957	512th FIS, RAF Bentwaters, England	F-86D	1979	32d TFS, Soesterberg AB, Netherlands	F-15A/B
1958	31st FIS, Elmendorf AFB, Alaska	F-102A	1980	32d TFS, Soesterberg AB, Netherlands	F-15A/B
1959	54th FIS, Ellsworth AFB, S.D.	F-89J	1981	12th TFS, Kadena AB, Japan	F-15C/D
1960	460th FIS, Portland IAP, Ore.	F-102A	1982	44th TFS, Kadena AB, Japan	F-15C/D
1961	83d FIS, Hamilton AFB, Calif.	F-101B	1983	67th TFS, Kadena AB, Japan	F-15C/D
1962	444th FIS, Charleston AFB, S.C.	F-101B	1984	318th FIS, McChord AFB, Wash.	F-15A/B
1963	497th FIS, Torrejon AB, Spain	F-102A	1985	120th FIG (ANG), Great Falls IAP, Mont.	F-106A/B
1964	329th FIS, George AFB, Calif.	F-106A/B	1986	67th TFS, Kadena AB, Japan	F-15C/D
1965	317th FIS, Elmendorf AFB, Alaska	F-102A	1987	57th FIS, NAS Keflavik, Iceland	F-15C/D
1966	32d FIS, Soesterberg AB, Netherlands	F-102A	1988	22d TFS, Bitburg AB, West Germany	F-15C/D
1967	317th FIS, Elmendorf AFB, Alaska	F-106A/B	1989	67th TFS, Kadena AB, Japan	F-15C/D
1968	64th FIS, Clark AB, Philippines	F-102A	1990	58th TFS, Eglin AFB, Fla.	F-15C/D
1969	71st FIS, Malmstrom AFB, Mont.	F-106A/B	1991	58th TFS, Eglin AFB, Fla.	F-15C/D
1970	57th FIS, NAS Keflavik, Iceland	F-102A	1992	59th FS, Eglin AFB, Fla.	F-15C/D
1971	48th FIS, Langley AFB, Va.	F-106A/B	1993	71st FS, Langley AFB, Va.	F-15C
1972	43d TFS, Elmendorf AFB, Alaska	F-4E	1994	178th FS (ANG), Hector IAP, N.D.	F-16A/B
1973	555th TFS, Udorn RTAB, Thailand	F-4D	1995	27th FS, Langley AFB, Va.	F-15C/D
1974	119th FIG (ANG), Hector Field, N.D.	F-101B	1996	60th FS, Eglin AFB, Fla.	F-15C/D

The Gen. Thomas D. White USAF Space Trophy

The Gen. Thomas D. White USAF Space Trophy is named for the fourth Air Force Chief of Staff, a longtime champion of USAF's role in space. The Air Force selects the recipients among USAF individuals or organizations who made the year's outstanding

progress in the field of aerospace. It was established in 1961 and until 1996, sponsored by the National Geographic Society. It is now an AFA national award sponsored by the Gen. B.A. Schriever Los Angeles Chapter.

- 1961 **Capt. Virgil I. Grissom.** Mercury spacecraft *Liberty Bell 7* suborbital flight into space.
- 1962 **Maj. Robert M. White.** X-15 flight to 59.6 miles and unofficial speed of 4,000 mph.
- 1963 **Maj. L. Gordon Cooper.** Twenty-two Earth orbits in Mercury spacecraft *Faith 7*, manually controlled precision landing.
- 1964 **Air Force Systems Command.** Space technology.
- 1965 **Lt. Col. Edward H. White II.** First US walk in space, Gemini 4.
- 1966 **Alexander H. Flax.** Direction of USAF R&D programs.
- 1967 **Gen. John P. McConnell.** Promotion of use of aerospace vehicles.
- 1968 **Col. Frank Borman, Lt. Col. William A. Anders, Capt. James A. Lovell Jr. (USN).** First manned moon orbit flight, Apollo 8.
- 1969 **Neil A. Armstrong, Col. Edwin E. Aldrin Jr., Col. Michael Collins.** Apollo 11 lunar landing.
- 1970 **Brig. Gen. Robert A. Duffy.** Advanced Ballistic Missile Reentry System program.
- 1971 **Lt. Gen. Samuel C. Phillips.** Space and missile R&D.
- 1972 **Hon. Robert C. Seamans Jr.** Aeronautic and astronautic planning.
- 1973 **Lt. Col. Henry Hartsfield Jr.** Pilot of record breaking 84+-day mission.
- 1974 No presentation.
- 1975 **Maj. Gen. Thomas P. Stafford.** Apollo-Soyuz Test Project.
- 1976 **Gen. William J. Evans.** Aerospace development programs.
- 1977 **Fred W. Haise Jr., Lt. Col. Charles G. Fullerton.** First test flight of space shuttle *Enterprise*.
- 1978 No presentation.
- 1979 **Maj. Gen. John E. Kulpa Jr.** Direction of special projects and satellite programs.
- 1980 **Gen. Lew Allen Jr.** Operational military space support.
- 1981 **Col. Joe Engle and Capt. Richard H. Truly, USN.** Second flight of orbiter *Columbia*.
- 1982 **Lt. Gen. Richard C. Henry.** Leadership and development of new space communications programs.
- 1983 **Gen. James V. Hartinger.** Strengthening national security through space operations.
- 1984 **Lt. Gen. Forrest S. McCartney.** Acquisition of and advances in space systems.
- 1985 **Maj. Gen. Donald W. Henderson.** Support of national space and missile programs.
- 1986 **Gen. Donald J. Kutyna.** Air Staff director of space systems and C³; President's Commission on *Challenger* accident.
- 1987 **Col. Victor W. Whitehead.** Implementing National Space Launch Strategy to restore heavy launch capability after *Challenger* accident.
- 1988 **Dr. Robert R. Barthelemy.** X-30 hypersonic, National Aerospace Plane project.
- 1989 **Launch Systems Directorate, Space Systems Division.** Restoring national expendable launch capability and launching 15 satellites in one year.
- 1990 **Lt. Gen. Donald L. Cromer, Gen. John L. Piotrowski, USAF (Ret.).** Strengthening USAF space systems and forces.
- 1991 **Lt. Gen. Thomas S. Moorman Jr.** Leadership in space support to Desert Storm and space operations.
- 1992 **Maj. Gen. Nathan J. Lindsay, USAF (Ret.).** Successful launch and deployment of highly complex payloads; instrumental in support to combat commanders.
- 1993 **Gen. Merrill A. McPeak.** As Air Force Chief of Staff demonstrated foresight in space issues.
- 1994 **Gen. Charles A. Horner.** Leadership in space issues and operations.
- 1995 **Gen. Joseph W. Ashy.** Expanding space forces in Joint military operations and normalizing space operations.
- 1996 **Lt. Gen. Patrick P. Caruana.** Leadership in prioritizing and normalizing spacelift and improving cooperation with civilian space programs.

Proud Shield

Proud Shield is the Air Force's biennial long-range bombing and navigation competition. Begun by Gen. George C. Kenney, the first commander in chief of SAC, the competition is run by Air Combat Command. The Gen. Muir S. Fairchild Trophy, named for the first commander of Air University, is awarded to the wing with the highest competition effectiveness.

Year	Unit(s)	Aircraft
1948	43d BG, Davis-Monthan AFB, Ariz. ^a	B-29
1949	93d BG, Castle AFB, Calif. ^a	B-29
1950	No competition	
1951	97th BMW, Biggs AFB, Texas	B-50D
1952	93d BMW, Castle AFB, Calif.	B-50D
	97th BMW, Biggs AFB, Texas (tie)	B-50D
1953	92d BMW, Fairchild AFB, Wash.	B-36D
1954	11th BMW, Carswell AFB, Texas	B-36H
1955	320th BMW, March AFB, Calif.	YRB-47B
1956	11th BMW, Carswell AFB, Texas	B-36H
1957	321st BMW, Pinecastle AFB, Fla.	B-47B
1958	306th BMW, MacDill AFB, Fla.	B-47E
1959	307th BMW, Lincoln AFB, Neb.	B-47E
1960	11th BMW, Altus AFB, Okla.	B-52E

1961	4137th SW, Robins AFB, Ga.....	B-52G
1962	No competition	
1963	2d BMW, Barksdale AFB, La. ^b	B-52F
1964	70th BMW, Clinton–Sherman AFB, Okla. ^b	B-52E
1965	454th BMW, Columbus AFB, Miss.	B-52F
1966	19th BMW, Homestead AFB, Fla.	B-52H
1967–68	No competition	
1969	319th BMW, Grand Forks AFB, N.D.	B-52H
1970	93d BMW, Castle AFB, Calif.	B-52F
1971	449th BMW, Kincheloe AFB, Mich.	B-52H
1972–73	No competition	
1974	380th BMW, Plattsburgh AFB, N.Y.	FB-111A
1975	No competition	
1976	380th BMW, Plattsburgh AFB, N.Y.	FB-111A
1977	380th BMW, Plattsburgh AFB, N.Y.	FB-111A
1978	380th BMW, Plattsburgh AFB, N.Y.	FB-111A
1979	509th BMW, Pease AFB, N.H.	FB-111A
1980	320th BMW, Mather AFB, Calif.	B-52G
1981	509th BMW, Pease AFB, N.H.	FB-111A
1982	509th BMW, Pease AFB, N.H.	FB-111A
1983	509th BMW, Pease AFB, N.H.	FB-111A
1984	380th BMW, Plattsburgh AFB, N.Y.	FB-111A
1985	97th BMW, Blytheville AFB, Ark.	B-52G
1986	92d BMW, Fairchild AFB, Wash.	B-52H
1987	379th BMW, Wurtsmith AFB, Mich.	B-52G
1988	5th BMW, Minot AFB, N.D.....	B-52H
1989	28th BMW, Ellsworth AFB, S.D.	B-1B
1990–91	No competition	
1992	92d BW, Fairchild AFB, Wash.	B-52H
1994	27th FW, Cannon AFB, N.M.....	F-111F
1996	No competition	

^aOverall winner; Fairchild Trophy not yet developed.

^bTrophy given for overall annual performance, not for scores in SAC bombing and navigation competition.

Gunsmoke

Gunsmoke, which officially started in 1981, is the USAF world-wide gunnery meet, run by Air Combat Command and held biennially at Nellis AFB, Nev. It tests the conventional air-to-surface

capability of the combat air forces. In 1993, bomber crews participated for the first time. In 1995, Gunsmoke was redesigned—in-dividual trophies were eliminated.

Year	Team	Aircraft	Base
1981	 140th TFW (ANG)		Buckley ANGB, Colo.
	Top Fighter Lt. Col. Wayne Schultz.....	A-7	120th TFS (ANG), Buckley ANGB, Colo.
1983	 50th TFW (USAFE).....		Hahn AB, West Germany
	Top Fighter Lt. Col. Roy Niesz	F-16.....	388th TFW, Hill AFB, Utah
1985	 419th TFW (AFRES).....		Hill AFB, Utah
	Top Fighter Capt. Mark Fredenburgh	F-16.....	50th TFW, Hahn AB, West Germany
1987	 388th TFW (TAC).....		Hill AFB, Utah
	Top Fighter Maj. Danny Hamilton.....	F-16.....	419th TFW, Hill AFB, Utah
1989	 169th TFG (ANG)		McEntire ANGB, S.C.
	Top Fighter Capt. Patrick Shay	F-16.....	944th TFG (AFRES), Luke AFB, Ariz.
1991	 175th TFG (ANG)		Martin State Airport, Md.
	Top Fighter Lt. Col. Roger G. Disrud	A-10	442d TFW (AFRES), Richards–Gebaur AFB, Mo.
1993	 388th FW (ACC)		Hill AFB, Utah
	Top Fighter Maj. Gregory Brewer	F-16.....	140th FW (ANG), Buckley ANGB, Colo.
	Top Bomber Crew..... Capt. Dwayne Stich (commander), Capts. Barry Sebring, Steve Amato, David Conley, and Vernon Moore	B-52	93d BW, Castle AFB, Calif.

Year	Team	Units, Bases
1995	Pacific Air Forces Team	18th FS and 355th FS, Eielson AFB, Alaska; 19th FS, Elmendorf AFB, Alaska; 9th FS, Holloman AFB, N.M.; 23d BS/72d BS, Minot AFB, N.D.; 13th FS/14th FS, Misawa AB, Japan.

The William Tell Weapons Meet

William Tell Winners

The Air Force's William Tell air-to-air weapons meet provides a complete test for a unit in the air-to-air business. Begun in 1954, William Tell is run by Air Combat Command and held triennially at Tyndall AFB, Fla. (It was biennial until 1997.)

Year	Unit, Base	Aircraft
1954	3550th FTW (Interceptor), Moody AFB, Ga.	F-94C
1955	26th Air Division, Duluth MAP, Minn. (Members of the 48th, 96th, and 332d FISs)	F-94C
1956	94th FIS, Selfridge AFB, Mich.	F-86D
1958	465th FIS, Griffiss AFB, N.Y.	F-89J
	326th FIS, Richards-Gebaur AFB, Mo.	F-102A
	125th FIG (ANG), Jacksonville IAP, Fla.	F-86D
1959	319th FIS, Bunker Hill AFB, Ind.	F-89J
	460th FIS, Portland IAP, Ore.	F-102A
	538th FIS, Larson AFB, Wash.	F-104A
1961	445th FIS, Wurtsmith AFB, Mich.	F-101B
	59th FIS, Goose Bay, Labrador, Canada	F-102A
	456th FIS, Castle AFB, Calif.	F-106A
1963	445th FIS, Wurtsmith AFB, Mich.	F-101B
	146th FIS (ANG), Greater Pittsburgh IAP, Pa.	F-102A
	318th FIS, McChord AFB, Wash.	F-106A
1965	62d FIS, K.I. Sawyer AFB, Mich.	F-101B
	32d FIS, Camp New Amsterdam, Netherlands	F-102A
	71st FIS, Selfridge AFB, Mich.	F-106A
	331st FIS, Webb AFB, Texas.	F-104A
1966-69	No competition	
1970	119th TFG (ANG), Hector Field, N.D.	F-101B
	148th TFG (ANG), Duluth IAP, Minneapolis, Minn.	F-102A
	71st FIS, Malmstrom AFB, Mont.	F-106A
1972	119th TFG (ANG), Hector Field, N.D.	F-101B
	115th TFG (ANG), Truax Field, Wis.	F-102A
	460th FIS, Grand Forks AFB, N.D.	F-106A
1974	101st TFG (ANG), Bangor IAP, Maine	F-101B
	124th FIG (ANG), Boise Air Terminal, Idaho.	F-102A
	120th FIG (ANG), Great Falls IAP, Mont.	F-106A
1976	142d FIG (ANG), Portland IAP, Ore.	F-101B
	4th TFW, Seymour Johnson AFB, N.C.	F-4E
	120th FIG (ANG), Great Falls IAP, Mont.	F-106A
1978	147th FIG (ANG), Ellington AFB, Texas.	F-101B
	86th TFW, Ramstein AB, West Germany.	F-4E
	49th FIS, Griffiss AFB, N.Y.	F-106A
1980	147th FIG (ANG), Ellington AFB, Texas.	F-101B
	347th TFW, Moody AFB, Ga.	F-4E
	144th FIW (ANG), Fresno ANGB, Calif. ^a	F-106A
1982	409 Squadron, CFB Comox, British Columbia, Canada	CF-101B
	18th TFW, Kadena AB, Japan ^a	F-15C
	49th FIS, Griffiss AFB, N.Y.	F-106A
	57th FIS, NAS Keflavik, Iceland	F-4E
1984	33d TFW, Eglin AFB, Fla. ^a	F-15C
	142d FIG (ANG), Portland IAP, Ore.	F-4C
	177th FIG (ANG), Atlantic City IAP, N.J.	F-106A
1986	33d TFW, Eglin AFB, Fla. ^a	F-15C
	119th FIG (ANG), Hector Field, N.D.	F-4D
1988	49th TFW, Holloman AFB, N.M. ^a	F-15A
	33d TFW, Eglin AFB, Fla.	F-15C
	18th TFW, Kadena AB, Japan	F-15C
	57th FIS, NAS Keflavik, Iceland	F-15C
1990	No competition	
1992	18th Wing, Kadena AB, Japan	F-15C
1994	119th FG (ANG), Fargo, N.D.	F-16A
1996	Canada.	CF-18

^aOverall competition winner. The naming of an overall winner began with William Tell 1980. Beginning in 1996, teams stopped competing as units and instead represented major commands, ANG, AFRC, or foreign air forces.

William Tell Top Guns

Year	Top Gun	Aircraft
1954	Crew of Capt. Clarence W. Lewis and 1st Lt. James R. Boone, 3550th FTW (Interceptor), Moody AFB, Ga.	F-94C
1955	Crew of Col. B.H. King and Lt. F.S. Goad, 26th Air Division, Duluth MAP, Minn.	F-94C
1956	Crew of Col. Donald W. Graham and 1st Lt. Billy R. Thomson, 66th FIS, Elmendorf AFB, Alaska	F-89D
	1st Lt. Robert B. Long, 94th FIS, Selfridge AFB, Mich.	F-86D
1958	Crew piloted by Col. Frank J. Keller, 465th FIS, Griffiss AFB, N.Y.	F-89J
	Col. Roy B. Caviness, 482d FIS, Seymour Johnson AFB, N.C.	F-102A
	Col. Robert E. Dawson, 125th FIG, Jacksonville IAP, Fla.	F-86D
1959	Crew of Capt. Billy S. Linebaugh and 1st Lt. Donald M. Burke, 319th FIS, Bunker Hill AFB, Ind.	F-89J
	Capt. Frederick H. England, 460th FIS, Portland IAP, Ore.	F-102A
	Maj. John T. Guice, 152d FIS (ANG), Tucson IAP, Ariz.	F-100A
1961	Lt. Col. Frank R. Jones, 59th FIS, Goose Bay, Labrador, Canada	F-102A
1963	Lt. Col. J.W. Rogers, 317th FIS, Elmendorf AFB, Alaska	F-102A
1965	Crew of Capt. D.E. Libby and Capt. L.R. Livingston, 62d FIS, K.I. Sawyer AFB, Mich.	F-101B
	Capt. J. McMichael, 326th FIS, Richards-Gebaur AFB, Mo.	F-102A
	Lt. Col. Glendon P. Dunaway, 71st FIS, Selfridge AFB, Mich.	F-106A
	Capt. J.D. Dunn, 319th FIS, Homestead AFB, Fla.	F-104A
1966–69	No competition	
1970	Crew of Capt. James Reimers and Capt. Arthur Jacobson, 119th TFG (ANG), Hector Field, N.D.	F-101B
1972	Crew of Capt. Lowell Butters and Capt. Douglas Danko, 425th All-Weather Fighter Squadron, Bagotville, Quebec, Canada	CF-101B
1974	Maj. Ralph D. Townsend, 124th FIG (ANG), Boise Air Terminal, Idaho	F-102A
1976	Crew of Maj. Bradford A. Newell and Lt. Col. Donald R. Tonole, 142d FIG (ANG), Portland IAP, Ore.	F-101B
1978	Crew of Earl G. Robertson and Capt. Brian J. Salmon, Canadian Forces Composite Group	CF-101B
1980	Crew of Lt. Col. Maurice Udell and Maj. David S. Miller, 147th FIG (ANG), Ellington AFB, Texas	F-101B
1982	Crew of Maj. Bob Worbets and Capt. Bill Ricketts, 409 Squadron, CFB Comox, British Columbia, Canada	CF-101B
	Lt. Col. Jere Wallace, 18th TFW, Kadena AB, Japan	F-15C
	Lt. Col. Robert Boehringer, 144th FIW, Fresno ANGB, Calif.	F-106A
	Crew of Capt. Tom Watson and Capt. Dave Pfeifer, 57th FIS, NAS Keflavik, Iceland	F-4E
1984	Capt. Scott H. Turner, 32d TFS, Camp New Amsterdam, Netherlands	F-15C
	Maj. Ron M. Moore and Maj. Bill C. Dejager, 142d FIG (ANG), Portland IAP, Ore.	F-4C
	Maj. Lynn Robinson, 177th FIG (ANG), Atlantic City IAP, N.J.	F-106A
1986	Capt. John Reed (USAF Exchange Pilot), 425 Squadron, CFB Bagotville, Quebec, Canada	CF-18A
1988	Capt. Teddy Varwig, 49th TFW, Holloman AFB, N.M.	F-15A
1990	No competition	
1992	Capt. Jeffery Prichard, 18th Wing, Kadena AB, Japan	F-15C
1994	Capt. James Browne, 52d FW, Spangdahlem AB, Germany	F-15C
1996	Capt. Steve Nierlich, 4th Wing, CFB Cold Lake, Canada	CF-18

Rodeo

Rodeo is US Transportation Command's biennial airlift and air refueling competition. Formerly an Air Mobility Command competition, Rodeo is still dominated by AMC teams. The week-long Rodeo '96 at McChord AFB, Wash., showcased the top USAF active duty, Air National Guard, and Air Force Reserve Command

aircraft and teams and those of allied nations. The trophy for the best overall wing is named after Gen. William G. Moore Jr., the eighth commander in chief of Military Airlift Command, an AMC predecessor.

Year	Unit(s)	Year	Unit(s)	Year	Unit(s)
1962	 1502d Air Transport Wing, Hickam AFB, Hawaii	1973–78	 No competition	1987	 West German airlift wing
1963	 62d Air Transport Wing, McChord AFB, Wash.	1979	 443d MAW, Altus AFB, Okla.	1988	 No competition
1964	 1608th Air Transport Wing, Charleston AFB, S.C.	1980	 317th TAW, Pope AFB, N.C.	1989	 Australian airlift wing
1965–68	 No competition	1981	 314th TAW, Little Rock AFB, Ark.	1990	 63d MAW, Norton AFB, Calif.
1969	 21st Air Force (multiwing)	1982	 Italian airlift wing	1991	 No competition
1970	 21st Air Force (multiwing)	1983	 314th TAW, Little Rock AFB, Ark.	1992	 446th AW (AFRC Assoc.), McChord AFB, Wash.
1971	 22d Air Force (multiwing)	1984	 Italian airlift wing	1993	 440th AW (AFRC), General Mitchell IAP, Wisc.
1972	 21st Air Force (multiwing)	1985	 94th TAW (AFRC), Dobbins AFB, Ga.	1994	 19th ARW, Robins AFB, Ga.
		1986	 145th TAG (ANG), Charlotte, N.C.	1996	 19th ARW, Robins AFB, Ga.

Guardian Challenge

Guardian Challenge is the Air Force Space Command competition to determine the best space operations and missile teams in the Air Force. Held at Vandenberg AFB, Calif., it replaces Olympic Arena, the winner of which received a trophy named for former USAF Vice Chief of Staff Gen. William H. Blanchard. Guardian Challenge awards the Blanchard Trophy to the best missile operations crew.

Missiles		
Year	Unit(s)	System
1967	351st SMW, Whiteman AFB, Mo.	Minuteman
1968	No competition	
1969	321st SMW, Grand Forks AFB, N.D.	Minuteman
1970	44th SMW, Ellsworth AFB, S.D.	Minuteman
1971	351st SMW, Whiteman AFB, Mo.	Minuteman
1972	381st SMW, McConnell AFB, Kan.	Titan
1973	90th SMW, F.E. Warren AFB, Wyo.	Minuteman
1974	321st SMW, Grand Forks, N.D.	Minuteman
1975	381st SMW, McConnell AFB, Kan.	Titan
1976	341st SMW, Malmstrom AFB, Mont.	Minuteman
1977	351st SMW, Whiteman AFB, Mo.	Minuteman
1978	91st SMW, Minot AFB, N.D.	Minuteman
1979	390th SMW, Davis–Monthan AFB, Ariz.	Titan
1980	381st SMW, McConnell AFB, Kan.	Titan
1981	351st SMW, Whiteman AFB, Mo.	Minuteman
1982	44th SMW, Ellsworth AFB, S.D.	Minuteman
1983	381st SMW, McConnell AFB, Kan.	Titan
1984	90th SMW, F.E. Warren AFB, Wyo.	Minuteman
1985	308th SMW, Little Rock AFB, Ark.	Titan
1986	341st SMW, Malmstrom AFB, Mont.	Minuteman
1987	321st SMW, Grand Forks AFB, N.D.	Minuteman
1988	91st SMW, Minot AFB, N.D.	Minuteman
1989	351st SMW, Whiteman AFB, Mo.	Minuteman
1990	341st SMW, Malmstrom AFB, Mont.	Minuteman
1991	341st SMW, Malmstrom AFB, Mont.	Minuteman
1992	44th MW, Ellsworth AFB, S.D.	Minuteman
1993	351st MW, Whiteman AFB, Mo.	Minuteman
1994	742d MS, Minot AFB, N.D.	Minuteman
1995	10th MS, Malmstrom AFB, Mont.	Minuteman
1996	319th MS, F.E. Warren AFB, Wyo.	Minuteman
1997	32d MS, F.E. Warren AFB, Wyo.	Minuteman

Space

AFSPC first awarded the Chennault Trophy for best space operations crew (SOC) in 1994 and replaced it in 1995 with the O'Malley, Arnold, Schriever, and Aldridge trophies. The Aldridge Trophy, named for former USAF Secretary Edward C. "Pete" Aldridge, goes to the best satellite operations squadron (SOPS); the Schriever Trophy goes to the best space launch squadron (SLS); the O'Malley Trophy goes to the best space warning squadron (SWS); and the Arnold Trophy goes to the best space surveillance squadron (SPSS).

Year	Category	Unit	System
1994	SOC	3d SLS, Patrick AFB, Fla.	Atlas II
1995	SOPS	6th SOPS, Offutt AFB, Neb.	DMSP
	SPSS	17th SPSS, RAF Edzell, UK.	LASS
	SWS	8th SWS, Eldorado AS, Texas.	Pave Paws
	SLS	1st SLS, Cape Canaveral AS, Fla.	Delta II
1996	SOPS	22d SOPS, Falcon AFB, Colo.	AFSCN
	SPSS	20th SPSS, Eglin AFB, Fla.	AN/FPS-85
	SWS	7th SWS, Beale AFB, Calif.	Pave Paws
	SLS	5th SLS, Cape Canaveral AS, Fla.	Titan IV
1997	SOPS	1st SOPS, Falcon AFB, Colo.	DPS/GPS
	SPSS	20th SPSS, Eglin AFB, Fla.	AN/FPS-85
	SWS	821st SG, Buckley ANGB, Colo.	DSP
	SLS	5th SLS, Cape Canaveral AS, Fla.	Titan IV