

1989 North Dakota Centennial Air Show

Hector International Airport, Fargo ND, August 19-20, 1989

Souvenir Program, The USAF Thunderbirds \$2.00

Greetings! On behalf of all the members of The Centennial Air Show Committee, we want to welcome all of you to this exciting event. Through the outstanding efforts and contributions of our committee members and sponsors, we have organized what we think is the largest and perhaps the best air show in North Dakota's history. We want to thank all the members for their hours of effort, special skills and dedication. We also want to pay special tribute to the North Dakota Air National Guard. Without their help, this air show would not have succeeded. Enjoy yourself at the show!

Darrol Schroeder Co-Chairman & Dick Walstad Co-Chairman

Special thanks to Jim Murray and Bruce Danuser of the North Dakota Air Guard for their special help in producing the Centennial Souvenir Program. Also a big thank-you for a job well done to my talented and lovely Advertising Representative, Donna Muscha. All your efforts are much appreciated.

Brian Quigley, Publisher

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Saturday's Scheduled Events

9:00 Gates Open; 10:00 Flying Starts Demonstrations Include: Gen. Yeager Departure, JU-52, T-6, L-2M, T28C, B-25, N-160, T-34, F4U Corsair, L-4, TBM, PY-17, F6F, P-47, YAK, BT-13, Valley Skydiving Team, Happy Hooligans Flying 4 Ship Demo, F-4D Single Ship Demo, MiG-15, Bud Light Demo, Maroney Demo, KC-135 Fly By, Golden Knights, A-7 Attack, F-4E Demo, F-15 Demo, B-1B Fly By, T-37 Fly By; 4:00 Air Show Flying Ends; 5:00 Gates Close

Sunday's Scheduled Events

9:00 Gates Open; 10:00 Flying Starts Demonstrations Include:, Thunderbird Arrival, L-2M, JU-52, B-25, N-160, F4U Corsair, L-4, PT-17, BT-13, Valley Skydiving Team, Happy Hooligans Flying 4 Ship Demo, F-4D Single Ship Demo, Wing Walker Sampson Demo, Maroney Demo, KC-135, Golden Knights, A-7 Attack, F-4E Demo, F-15 Demo, B-1B Fly By, T-37 Fly By, Thunderbirds Perform

General Chuck Yeager

The first man to fly faster than the speed of sound is participating in the Centennial Air Show at Fargo.

Chuck Yeager, retired Air Force Brigadier General who currently serves on the board of directors of Louisiana Pacific Corporation, the National Fish and Wildlife Foundation and the Air Force Academy Falcon Foundation, appears as featured speaker and honored guest at Friday evening's banquet in the Fargo Civic Center's Centennial Hall.

On October 14, 1947, General Yeager broke the speed of sound. His historic flight in the Bell X-1 aircraft took place at Muroc Dry Lake Air Field (now Edwards Air Force Base in California). During his nine-year assignment as the nation's leading test pilot, he also became the first man to fly more than twice the speed of sound, flying the Bell X-1A on December 12, 1953.

The veteran pilot has flown 183 types of aircraft during his career. He has more than 11,000 hours of flight time, with over 10,300 of these hours in fighter aircraft.

Charles E. Yeager was born February 13, 1923, in Myra, W. Va. He enlisted in the Army Corps in 1941, was accepted for pilot training under the flying sergeant program and received his pilot wings and appointment as a flight officer in March 1943 at Luke Field in Arizona.

During World War II, General Yeager distinguished himself in aerial combat over France and Germany during 1943-1945 by shooting down 13 enemy aircraft, five on one mission, including one of Germany's first jet fighters. On March 5, 1944, he was shot down over German-occupied France but escaped capture when elements of the French Maquis helped him to reach the safety of the Spanish border.

He returned to the United States in 1945 to attend the instructor pilot course and subsequently served as an instructor pilot. In July 1945 he went to Wright Field, Ohio, where he received his first experimental flight test work. His assignment there led to his selection as pilot of the nation's first research rocket aircraft, the Bell X-1.

General Yeager was graduated from the Air War College, Maxwell Air Force Base, Alabama, in June 1951 and became Commandant of the Aerospace Research Pilot School, where all military astronauts are trained, in July 1962.

In 1966 he assumed command of the 405th Fighter Wing at Clark Air Base, Republic of the Philippines. While commander of the 405th Fighter Wing he flew Tactical Fighter Wing at Seymour Johnson Air Force Base, North Carolina, in 1968 and went with the wing to Korea during the Pueblo crisis.

He was promoted to the grade of Brigadier General in 1969. That year he became vice commander of the Seventeenth Air Force with the headquarters at Ramstein Air Base, Germany. In 1971 General Yeager assumed duties as United States Defense Safety Center at Norton Air Force Base, Calif., in 1973. General Yeager retired from active duty in the Air Force on March 1, 1975.

His military decorations and awards include the Distinguished Service Medal with one oak leaf cluster, Silver Star with one oak leaf cluster, Legion of Merit with one Oak leaf cluster, Distinguished Flying Cross we with two oak leaf clusters, Bronze Star with V device, Air Medal with 10 oak leaf clusters, Air Force Commendation Medal, Purple Heart, Distinguished Unit Citation Emblem with one oak leaf cluster and the Air Force Outstanding Unit Award Ribbon. General Yeager was selected one of the "Ten Outstanding Young Men" by the Junior Chamber of Commerce in 1953, elected to the Aviation Hall of Fame in 1973, presented the "Golden Plate Award" by the American Academy of Achievement in 1974 and and the Horatio Alger Award in 1986, awarded a peacetime Congressional Medal of Honor the Congress of the United States, and was awarded the Presidential Medal of Freedom.

USAF Thunderbirds

Nellis Air Force Base, Nevada.

The Thunderbird - Southwest American Indian tribe, believed it to be a powerful deity, controlling the forces of good over evil and light over dark, Thunder rolled from its great wings and lightning flashed from its eyes while ruling over its domain.

Like the legendary Thunderbird, today's Air Force Thunderbirds have the sky as their natural environment - flashing through the air and roaring with the thunder of their namesake.

The 1989 air demonstration schedule marks the 37th year for the Thunderbirds. During those years, the squadron displayed the graceful, intricate maneuvers of precision aerobatics. But the Thunderbird show is much more than an aerial ballet, choreographed purely for spectator entertainment. It also represents a practical demonstration of skills and techniques used by all U.S. Air Force tactical pilots.

From the first salute to the post-performance handshakes, the men and women who are Thunderbirds radiate an inner pride achieved only through self-discipline and the willingness to strive for perfection. In 36 years and more than 2,900 aerial demonstrations flown throughout the world, the team has never cancelled a performance due to maintenance difficulties.

Assigned to Tactical Air Command, the Thunderbirds are officially the Air Force Air Demonstration Squadron. The squadron flies the supersonic General Dynamics F-16 Fighting Falcon, a multi-role combat fighter.

In addition to the pilots at the controls, other Thunderbird officers fill supervisory positions in the squadron, performing activities such as maintenance, supply, executive support, publicity, air demonstration and coordination, and personnel administration.

The remainder of the Thunderbird squadron is composed of nearly 130 highly skilled men and women working in 35 different career fields. These enlisted members are technicians in aircraft maintenance, public affairs, operations, supply, life support, communications, administration, photography and graphic;. It's their job to ensure the planes are ready for each demonstration and the myriad of small details inherent to even performance are complete.

Nearly 47 years ago, American military aviation entered a new era with a sound of thunder. The jet age was born.

While the jet grew in popularity, 22 of America's best set out to prove the safety and reliability of this new breed of aircraft. This group, known as the Thunderbirds, was the Air Force's official aerial demonstration team.

Since their first show of aerial artistry in 1953, the team has grown to approximately 140 people with the growing complexity in aircraft. During that time, the Thunderbirds travelled throughout the United State, and to 52 countries around the world. They've logged 2,913 performances before nearly 224 million people.

Prime ministers, presidents, foreign dignitaries, celebrities and countless fans turn out to meet and catch the team, giving the Thunderbirds the unofficial title of America's "Ambassadors in

Blue."

Naturally, the most visible part of the Thunderbird team is its aircraft. The squadron currently flies the General Dynamics F-16 Fighting Falcon, a multi-role combat fighter.

Beginning in the F-84G Thunderjet, the team performed its first aerial demonstration June 8, 1951. Later, they moved to the swept-wing F-84F Thunderstreak in 1955. The squadron entered the supersonic era when it began flying the F-100C Super Sabre in 1956. The move to the Super Sabre made the Thunderbirds the first supersonic demonstration team in the world.

The F-100C was traded for the F-105B Thunderchief in 1964, but the transition was short-lived as the "Thud" flew only six official air demonstrations. Instead of cancelling the entire 1964 schedule, the squadron quickly returned to the F-100, but this time using the air refuelable "D" model. The Thunderbirds performed in a total of 1,111 shows during the five seasons they flew the two Super Sabre models. It's the most flown in the squadron's history.

In 1969, the squadron adopted the F-4E Phantom II and flew it in its first demonstration during graduation ceremonies at the U.S. Air Force Academy.

The Thunderbirds began flying their first non-combat role aircraft when the team switched to the sleek T-38A Talon in 1974. During the T-38's tenure, the squadron was proclaimed the first official Bicentennial organization in the Air Force. They were the only flying unit so recognized.

In 1983, a third decade of Thunderbird excellence was ushered in with the team's move to America's newest frontline fighter, the F-16 Fighting Falcon. Today, the Falcon helps continue the proud Thunderbird tradition - presenting modern air power around the nation and throughout the world.

USAF Air Demonstration Squadron

Lt Col. Steve Trent, Commander/Leader

Lt. Col. Steve Trent, 40, is in his second year flying the Number One aircraft as commander/leader of the Thunderbirds. Calling Tampa, Fla., home, he graduated from Georgia Tech in 1969 and was commissioned through Officers' Training School in 1970 as a distinguished graduate. Once commissioned, Colonel Trent completed navigator training at Mather AFB, Calif., and served at numerous bases in the Pacific, Europe and throughout the United States. The colonel then moved to the driver's seat with pilot training at Craig AFB, Ala., where he received the Air Training Command Commandant's Trophy. At Langley AFB, Va., he served as an F-15 flight commander and member of the Headquarters, Tactical Air Command Staff before joining the Thunderbirds. Trent has accumulated more than 4,000 hours flying high performance aircraft.

Major Dana Atkins, Left Wing

Flying the Number Two aircraft in his second year is Maj. Dana Atkins, 35, of Portland, Ore. Major Atkins, making up the left wing of the diamond formation, first enlisted in the Air Force as a tactical communications specialist serving at Barksdale AFB, La., in 1972. He left Barksdale with an Air Force Reserve Officers' Training Corps scholarship to the University of Portland and was commissioned in 1977. Major Atkins completed pilot training at Reese AFB, Texas, in 1979. He served there as an instructor pilot until accepting A-10 training at Davis-Monthan AFB, Ariz., in 1983. He has logged more than 3,000 hours flying high performance jet aircraft during his Air Force career.

Captain John Posner, Right Wing

Capt. John Posner, 30, in his first year with the Thunderbirds, flies the Number Three aircraft of the diamond formation. A native of Alexandria, Va., Captain Posner graduated from the Air Force Academy in 1980 and earned his pilot wings at Laughlin AFB, Texas, a year later. He remained at Laughlin as a flight instructor and assistant flight commander until moving to fighter lead-in training in 1985. Following F-15 training at Luke AFB, Ariz., in 1986, Captain Posner became an aircraft commander of an F-15 Eagle at Elmendorf AFB, Alaska. He worked as an assistant flight commander at Elmendorf prior to his selection to the Thunderbirds. Captain Posner has logged nearly 2,300 hours flying high performance jet and training aircraft.

Major John Weida, Slot

Maj. John Weida, 33, is in his first year flying the Number Four aircraft in the Thunderbird diamond formation. Born in Belleville, Ill., but calling Litchfield, Minn., home he graduated with honors from the Air Force Academy in 1978. Major Weida again grabbed top honors during undergraduate pilot training at Williams AFB, Ariz., in 1979. He was subsequently assigned to Williams as a T-37 instructor pilot, standardization/evaluation officer and wing spin pilot. He switched to fighters in 1983, and a year later moved to Kunsan AB, Republic of Korea, where he filled numerous positions, including narrator for Pacific Air Forces F-16 flying demonstrations.

Major Jeff Remington, Lead Solo

Maj. Jeff Remington, 34, flying the Thunderbird lead solo aircraft, is in his second air demonstration season. Remington was born in Northern California, but now calls Portland, Ore., home. He is a 1977 graduate of the Air Force Academy, and completed pilot training at Williams AFB, Ariz. In 1982, Major Remington completed F-16 training at MacDill AFB, Fla., and was assigned to Torrejon AB, Spain. Prior to his selection to the Thunderbirds, he was assigned to Headquarters, USAFE, Ramstein AB, West Germany. During his Air Force career, Major Remington has logged more than 2,900 hours flying high performance jet aircraft,

Major Chuck Greenwood, Opposing Solo

Maj. Chuck Greenwood, 34, is the Thunderbirds' opposing solo pilot, flying the Number Six aircraft in his first aerial demonstration season. Calling Grand Blanc, Mich., home, Major Greenwood graduated from the Air Force Academy in 1978 and immediately entered undergraduate pilot training at Reese AFB, Texas. Once fighter qualified, he began flying F-111Ds at Cannon AFB, N.M. In 1984, Major Greenwood was selected for an ASTRA assignment to the Pentagon, Directorate of Plans/Operations. He again took an operational role in 1985 by transitioning into the F-16 Falcon and was assigned to the 80th Tactical Fighter Squadron at Kunsan AB, Republic of Korea, in 1986. Before his selection to the Thunderbirds, Major Greenwood served as a standardization/evaluation flight examiner for the 401st Tactical Fighter Wing at Torrejon AB, Spain. The pilot has logged more than 1,900 hours flying high performance jet aircraft.

About Your Announcer ...

Jerry Van Kempen has been announcing outdoor events such as auto races and air shows for the past 30 years. Jerry has a thorough knowledge of aerobatics, which is certainly an asset for an air show announcer. He has been flying since 1946 . . . has owned a Ryan PT-22 and a Pitts Special, both capable of aerobatic maneuvers. Jerry flew competition aerobatics for a number of years and is a member of the International Aerobatic Club as well as the International Council of Air Shows. Jerry describes himself as a "total air show entertainer". He says that he not only narrates the acts and makes official announcements, he builds a rapport with the crowd to make the day as much fun as possible! Jerry has narrated for practically every air show act on the circuit today . . . and he comes to Fargo, ND most highly recommended.

High Flight

Oh, I have slipped the surly bonds of earth
And danced the skies on laughter-silvered wings;
Sunward I've climbed, and joined the tumbling mirth
Of sun-split clouds- and done a hundred things
You have not dreamed of - wheeled and soared and swung
High in the sunlit silence. Hovering there, I've chased the shouting wind along,

And flung my eager craft through footless halls of air.
Up, up the long, delirious, burning blue
I've topped the windswept heights with easy grace
Where never lark, or even eagle flew.

And, while with silent, lifting mind I've trod The high untrespassed sanctity of space,
Put out my hand, and touched the face of God.

In December 1941, Pilot Officer John G. Magee Jr., a 19-year-old American serving with the Royal Canadian Air Force in England, was killed when his Spitfire collided with another airplane inside a cloud. Several months before his death, he composed his immortal sonnet "*High Flight*" a copy of which he fortunately mailed to his parents in the U.S.A.

Aircraft Specifications

Vought A-7D Corsair

Manufacturer: LTV Aerospace and Defense Co. (formerly Vought Corp.)

Engine: One Allison TF41-A-1 non-afterburning turbofan engine, 14,500 lbs. thrust

Wingspan: 38 ft. 9 inch

Length: 46 feet 1-1/2 inch

Height: 16 feet 3/4 inch

Weight: Empty 19,781 lbs.; gross 42,000 lbs

Maximum speed: sea level 698 mph

Ferry range: with external tanks 2,871 miles

Crew: Pilot only

Northrop F-5E Tiger II

Nation: USA

Manufacturer: Northrop Corp.

Type: fighter

Year: 1972

Engine: two General Electric J85-GE-21A turbojets, 5,000 lb (2,268 kg) thrust each

Wingspan: 26 ft 8 in (8.13 m)

Length: 48 ft 2 in (14.68 m)

Height: 13 ft 4 in (4.06 m)

Weight: 24,664 lbs (11,187 kg) (loaded)

Maximum speed: 1,060 mph (1,705 km/h)

Ceiling: 51,800 ft (15,790 m)

Range: 1,779 miles (2,863 km)

Armament: 2x20 mm cannon, 7,000 lbs (3,175 kg) of bombs

Crew: 1

General Dynamics EF-111A

Nation: USA

Manufacturer: General Dynamics

Type: Assault

Year: 1973

Engine: two Pratt & Whitney TF30-P-100 Turbofans, 25,100 lbs (11,385 kg) thrust each

Wingspan: 63 ft (19.2 m)

Length: 23 ft 6 in (22.40 m)

Height: 17 ft 1 in (5.21 m)

Weight: 100,000 lbs (45,359 kg) (loaded)

Maximum speed: 1,450 mph (2,335 km/h) at 35,000 ft (10,670 m)

Ceiling: 59,000 ft (18,000 m)

Range: 2,925 miles (4,707 km)

Armament: 1 cannon, 31,500 lbs (14,290 kg) of bombs

Crew: 2

US Air Force C-12

T-28C Trojan

Pilot History

- Greg Fieber - Age 30
- Licensed Pilot since 1976
- Has been flying War Birds for 7 years
- Based at St. Paul, MN
- 3,000 hours as Pilot in Command

Airplane History

- 1957 North American T-28C
- Serviced in VT27 Squadron, Corpus Cristi, TX until 1967
- Went to VT-3 Squadron and served there for 3 year
- Went on to TW-5 Squadron and remained there until retired (Pensacola, FL)
- Used to train Navy aviators to qualify for carrier landings

Performance

- T-28C will cruise at 220 mph using 60 gallons of fuel per hour
 - Service ceiling of 37,000 feet
 - Climb rate - 3,500 feet per minute
-

KC-10A Extender

Primary function: tanker/cargo

Prime contractor: Douglas Aircraft Co., McDonnell Douglas Corp.

Power plant/Manufacturer: three General Electric CF6-50C2 turbofan engines

Thrust: 52,500 lbs each engine

Dimensions: wingspan 165 ft 4 in; length 181 ft 7 in; height 58 ft 1 in

Speed: 528 mph at 42,000 ft

Ceiling: 42,000 ft

Range: 4,373 miles (without in-flight refueling and with 170,000 lb of cargo)

Maximum load: 342,000 lbs

Crew: 4

Maximum takeoff weight: 590,000 lbs

Status: operational

KC-135E Stratotanker

Takeoff weight: 207,000 lb (A model), 322,500 lb (R model), 297,000 lb (E model)

Speed: (max) 600 mph (all models)

Engines: (4) J57-P-59W (A model), F108-CF-100 (R model), TF33-PW-102 (E model)

Thrust per Engine: 13,750 lb (wet) (A model), 22,000 lb (R model), 18,000 lb (E model)

Range: 5,000+ miles (all models)

Unit flyaway cost: \$20.1 million (A model), \$40.7 million (R model), \$23.6 million (E model)

Wingspan: 130 ft 10 in, sweepback: 35 degrees

Length: 136 ft 3 in

Height: 41 ft 8 in

Crew: 4

Grumman EA-6B Intruder

Nation: USA

Manufacturer: Grumman Aircraft Engineering Corp.

Type: assault

Year: 1960

Engine: two Pratt & Whitney J52-P-8A turbojets, 9,300 lbs (4,218 kg) thrust each

Wingspan: 53 ft (16.15 m)

Length: 54 ft 7 in (16.64 m)

Height: 15 ft 7 in (4.75 m)

Weight: 60,626 lb (27,500 kg)

Maximum speed: 685 mph (1,102 km/h) at sea level

Ceiling: 41,660 ft (12,700 m)

Range: 1,920 miles (3,090 km)

Armament: 15,000 lb (6,804 kg) of bombs

Crew: 2

Fairchild Republic A-10A Thunderbolt II

Nation: USA

Manufacturer: Fairchild Republic Co.

Type: assault

Year: 1975

Engine: two General Electric TF34-GE-100 turbofans, 9,275 lbs (4,207 kg) thrust each

Wingspan: 57 ft 6 in (17.53 m)

Length: 53 ft 4 in (16.16 m)

Height: 14 ft 8 in (4.47 m)

Weight: 47,400 lb (21,500 kg) (loaded)

Maximum speed: 449 mph (772 km/h) at sea level

Ceiling:

Range: 620 miles (1,000 km)

Armament: 1x30 mm cannon, 16,000 lbs (7,257 kg) of bombs

Crew: 1

Northrop T-38A Talon

Origin: Northrop Corporation, Hawthorne, California

Type: advanced trainer

Powerplant: two 3,850 lb (1,746 kg) thrust General Electric J85-5A afterburning turbojets

Dimensions: span 25 ft 3 in (7.7 m)

Length: 46 (t 4t/2 in (14.1 m)

Wing area: 170 sq ft (15.79 m)

Weights: empty 7,200 lb (3,266 kg), loaded 11,820 lb (5.361 kg)

Maximum Speed: 858 mph (1,381 km/h, Mach 1.3) at 36,000 (11 km)

Maximum Cruising Speed: 627 mph (1,009 km/h) at same height

Initial climb: 33,600 ft (10.24 km)/min.

Service Ceiling: 53,600 ft (16.34 km)

Range: (max fuel, 20 min loiter at 10,000 ft, 3 km), 1,140 miles (1,835 km)

Armament: none

History: first flight (YT-38) 10 April 1959, (T-38A) May 1960 service delivery 17 March 1961

Grumman F-14A Tomcat

Nation: USA

Manufacturer: Grumman Corp.

Type: multirole fighter

Year: 1972

Engine: Pratt & Whitney TF-30-P-412A turbofans, 20,900 lb (9,480 kg) thrust each

Wingspan: 64 ft 2 in (19.54 m)

Length: 61 ft 10 in (18.96 m)

Height: 16 ft (4.88 m)

Weight: 70,280 lb (31,880 kg) (loaded)

Maximum speed: 1,184 mph (2,548 km/h) at 40,000 ft (12,200 m)

Ceiling: 68,900 ft (21,000 m)

Range: 578 miles (930 km)

Armament: 1x20 mm cannon, 15,985 lb (1,250 kg) of bombs

Crew: 2

General Dynamics F-16A

Nation: USA

Manufacturer: General Dynamics Corp.

Type: multirole fighter

Year: 1976

Engine: Pratt & Whitney F100-PW-100 turbofan, 25,000 lb (10,800 kg) thrust

Wingspan: 31 ft (9.45 m)

Length: 47 ft 8 in (14.52 m)

Height: 16 ft 5 in (5.01 m)

Weight: 33,000 lb (14,968 kg) (loaded)

Maximum speed: 1,310 mph (2,123 km/h) at 39,370 ft (12,000 m)

Ceiling: 50,000 ft (15,420 m)

Range: 575 miles (920 km)

Armament: 1x20 mm cannon 10,500 lb (4,763 kg) of bombs

Crew: 1

Cessna T-41 Mescalero

Primary function: flight screening and indoctrination for Air Force pilot candidates

Prime contractor: Cessna Aircraft Co.

Power plant Manufacturer: T-41A - one Continental O-300-D piston engine, T-41C - one Continental O-360-D piston engine

Dimensions: wingspan 36 ft 2 in, length 26 ft 6 in, height 8 ft 11 in

Thrust: T-41A - 145 horsepower, T-41C - 210 horsepower

Speed: 138 mph

Service Ceiling: 16,000 ft

Optimum Range: T-41A at 10,000 ft - 695 miles, T-41C at 10,000 ft - 690 miles

Crew: two (Student and instructor)

Maximum Takeoff Weight: T-41A - 2,300 lb, T-41C - 2,500 lb

Status: operational

CT-114 Tutor

The CT-114 Tutor is the basic jet trainer used by Canadian Forces. It entered service in 1964 and is used by the internationally famous Snowbird Aerial Demonstration Team. Leading particulars are:

Basic Weight: 5,000 lb (empty)

Maximum take-off Weight: 8,300 lb

Engine: GE J85-CAN-40, 2,700 lb thrust turbo jet

Wingspan: 36.5 ft

Length: 32.0 ft

Height: 9.3 ft

Fuel: 2,012 lbs of JP-4, 2,663 lbs of JP-4 with external tanks.

Lockheed P-3 Orion

Nation: USA

Manufacturer: Lockheed Aircraft Co.

Type: reconnaissance

Year: 1968

Engine: four Allison T56-A-14 turboprops, 4,910 hp each

Wingspan: 99 ft 8 in (30.37 m)

Length: 116 ft 10 in (35.61 m)

Height: 33 ft 8 in (10.39 m)

Weight: 135,000 lb (61,235 kg) (loaded)

Maximum speed: 473 mph (761 km/h) at 15,000 ft (4,750 m)

Ceiling: 28,300 ft (8,625 m)

Range: 2,383 miles (3,835 km)

Armament: 19,250 lbs (8,735 kg) of bombs

Crew: 10

Cessna T-37/A-37

Nation: USA

Manufacturer: Cessna Aircraft Co.

Type: assault

Year: 1967

Engine: two General Electric J85-GE-17A turbojet, 2,850 lb (1,293 kg) thrust

Wingspan: 35 ft 10 in (10.93 m);

Length: 29 ft 3 in (5.93 m)

Height: 8 ft 10 in (2.70 m)

Weight: 14,000 lb (6,350 kg) (loaded)

Maximum speed: 507 mph (816 km/h) at 16,000 ft (4,875 m)

Range: 460 miles (740 km)

Armament: 1 machine gun, 5,400 lb (2,450 kg) of bombs

Crew: 2

Rockwell B-1B Lancer

Prime Contractor: Rockwell International

Engines: 4 F101-GE-102 turbofans

Engine Manufacturer: General Electric

Thrust: 30,000 lb class

Maximum speed: low supersonic (high subsonic for low altitude penetration)

Range: intercontinental unrefueled

Maximum payload: 125,000 lb

Maximum Operating Weight: 477,000 lbs

Crew: 4 (aircraft commander, pilot, offensive systems officer, defensive systems officer)

Length: 146 ft

Height: 34 ft

Wingspan: 137 ft (unswept); 78 ft (swept)

McDonnell F-4E Phantom II

Nation: USA

Manufacturer: McDonnell Aircraft Co.

Type: fighter-bomber

Year: 1967

Engines: two General Electric J-719-GE-15 turbojets, 17,900 lb (9,120 kg) thrust each

Wingspan: 38 ft 5 in (11.70 m)

Length: 62 ft 11 in (19.20 m)

Height: 16 ft 3 in (4.96 m)

Weight: 60,360 lb (27,500 kg) (loaded)

Maximum speed: 1,500 mph (2,413 km/h) at 40,000 ft (12,200 m)

Ceiling: 62,340 ft (19,000 m)

Range: 500 miles (800 km)

Armament: 1x20 mm cannon, 16,000 lb (7,257 kg) of bombs, and missiles

Crew: 2

McDonnell-Douglas F-18 Hornet

Nation: USA

Manufacturer: McDonnell Aircraft Co.

Type: assault

Year: 1978

Engine: two General Electric F404-GE-400 turbofans, 16,000 lb (7,258 kg) thrust each

Wingspan: 37 ft 6 in (11.43 m)

Length: 56 ft (17.07 m)

Height: 15 feet 4 in (4.66 m)

Weight: 44,000 lb (19,960 kg) (loaded)

Maximum speed: 1,320 mph (2,125 km/h)

Ceiling: 50,000 ft (15,240 m)

Range: 460 miles (740 km)

Armament: 13,700 lb (6,214 kg) of bombs

Crew: 1

McDonnell-Douglas F-15A Eagle

Nation: USA

Manufacturer: McDonnell Corp.

Type: multi-role fighter

Year: 1974

Engine: two Pratt & Whitney F100-PW-100 turbofans, 25,000 lbs (10,800 kg) thrust each

Wingspan: 42 ft 10 in (13.05 m)

Length: 63 ft 9 in (19.43 m)

Height: 18 ft 5 in (5.63 m)

Weight: 56,000 lb (25,401 kg) (loaded)

Maximum speed: 1,678 mph (2,701 km/h) at 47,210 ft (14,390 m)

Ceiling: 100,000 ft (30,500 m)

Range: 995 mile, (1,600 km)

Armament: 1x20 mm cannon, 16,800 lbs (7,620 kg) of bombs

Crew: 1

L2M Taylorcraft

Bill Burn's L2M Taylorcraft The 'M' is the latest version of the L-2 Series. 900 of these aircraft were built in 1943-1944.

Features:

Wing spoilers: when the Taylorcraft contract for training gliders was cancelled, the company had 900 sets of glider wings already built. Taylorcraft engineers redesigned the L-2 into the L-2M by adding fuel tanks to the glider wings and used them on the L-2M. All glider wings were fitted with wing spoilers pressure cowling: unique to the L-2M (L-2, L-2A, & L-2B had open cowling); re-designed instrument panel (other L-2 series had civilian instruments); rear seat swivels 180 degrees so observer rode facing to the rear; rear seat plotting desk for observer.

History:

This particular L-2M was built in Nov. 1943 and was sold surplus to Marcellus King of Austin, MN in the spring of 1944. That fall it was sold to the Whalen brothers of St. Thomas, ND. In 1945 it was sold to Leo Dunnigan of Walhalla, ND. In 1946 it was sold to Joe Stratton of Benedict, MN. In 1949 Joe Stratton notified the FAA that the aircraft was being taken permanently out of service.

The FAA record of this aircraft ends with that notice in 1949. Sometime between 1949 and 1982 Ray Helm, an aircraft rebuilder and dealer from Degraff, MN bought the aircraft with the intention of rebuilding it. Parts of the aircraft were stored in three different buildings on the Helm farm. The fuselage was hanging in a barn, the wings, struts and other small parts were stored in a pig house and the seats were in another building.

Mr. Helm never got around to rebuilding it and offered to sell it to Bill Burns of Wadena, MN in 1980. The deal was finally made in 1982.

L4 Piper

During World War II and early in the Korean War the L-4 (Grasshopper) served as a liaison aircraft in combat areas. The front lines were patrolled from the air during daylight hours to monitor enemy activity on a continuous basis. In addition, reconnaissance aircraft were used as forward observers for both artillery units and fighter-bomber bases in locating targets. Early in the conflict liaison planes sustained heavy casualties. The enemy soon learned, however, that firing at these aircraft usually caused bad things to happen, as it revealed their positions and was soon followed by devastating napalm runs from Corsairs and Skyraiders.

The L-4 provided excellent visibility in all directions, with the back seat often turned to the rear with the joystick removed. The L-4J carried basic radio gear for more immediate communication with ground units. The motto of liaison aircraft, "Alone, Unarmed, Unafraid?", adorned the nose of many of these little war-birds, but a number of them departed slightly from their passive roll by mounting bazooka's (a 2.36 rocket launcher with a range up to about 700 yards) from their wings for use against tanks, munition trains and gun emplacements. The T-6 (Texan) even had 50 calibre machine guns mounted, but these were ordered removed when overzealous recon pilots carried out one-man strafing attacks rather than calling in the more heavily-armed warbirds.

2.75 rocket launchers were mounted for use in marking targets with smoke rockets, but this also gave recon's a more hostile appearance which once again drew frequent enemy fire.

The L-4 was eventually replaced during the Korean War by the L-5 (Stinson Sentinel) and L-19 (Cessna Bird-Dog), with many being turned over to friendly countries in need of such aircraft.

Tiger Moth and Chipmunk

Both aircraft made by De Havilland of Canada. Both were basic trainers in the RCAF (Royal Canadian Air Force). Both are Gypsy Moth engines. Both are fully aerobatic. We are affiliated with the Western Canada Aviation Museum in Winnipeg. Aircraft owned and operated by a group of people who call themselves The Red River Tiger Moth Group Ltd.

Beechcraft D175 Staggerwing

One of the private aircraft on display at the air show is a Beechcraft D175 Staggerwing, owned by Arnie and Virginia Widmer of Oakes, N.D.

The plane has a range of 1,400 miles. Its maximum speed is 240 miles an hour; maximum cruising speed is 211 miles an hour at 10,000 feet. Initial climb of the aircraft is 1,400 feet per minute.

Its capacity is four passengers, plus pilot. Gross weight of the aircraft is 4,250 pounds, with fuel capacity 121 gallons.

The aircraft was built in 1943 under a government contract, and was designated a GB-2. It was owned by the Civil Aeronautics Administration and Bureau of Commerce until 1948. The craft's service time has been mostly in the Midwest, and it has been in the possession of its present owners since October 1983.

"Lil Toot" Biplane

Thirty-two-year-old Jim Maroney of Fargo learned to fly when he was a kid, and he's been doing so ever since. "My dad taught me to fly. He was a World War II P-51 pilot and then a crop duster for 23 years," Maroney reveals. Maroney, whose hobby is competitive aerobatics, lists his occupations as Happy Hooligan F-4 pilot, Northwest Airlines pilot and airshow pilot. He has 5,000 hours flying time.

Jim will be performing in his "Lil Toot" biplane. The 200 horsepower plane has a 19-foot wingspan and weighs 800 pounds. His demonstration will include rolls on takeoff, loops, snap rolls, vertical rolls, tailslides, inverted flight, upright and inverted spins and other airshow maneuvers.

Russian MiG-15 Fighter

Air show visitors will be taken back in time Saturday when they have the rare opportunity to observe a MiG-15 fighter plane going through its paces above Fargo's Hector Field.

It's not by accident that the restored MiG is in service at an airshow thousands of miles from its point of origin. Five Russian MiG-15 fighters were acquired in 1986 by the Combat Jet Museum in Chico, Calif., from the People's Republic of China, where they had been in service with the Chinese Navy.

The aircraft were transported by ship to the United States. Upon arrival, the automatic machine guns were removed and turned over to U.S. authorities as required. Once cleared through customs, the task of inspecting, overhauling and modifying was begun.

Radios, instruments and other avionics equipment were replaced to make the jet acceptable and compatible for flight in North America. All systems were tested for proper performance and meticulous renovation and restoration was done. In an effort to retain the authenticity of the aircraft, only essential modifications were made. The cockpit, for example, was restored, painted and marked in English, but Russian markings were preserved wherever possible and duplicate gun barrels were made and installed.

As a finishing touch, the aircraft was painted in the markings of the Russian volunteer group that skillfully fought U.S., Canadian and other pilots over North Korea.

Although aged, the Mig-15 saw action in Vietnam and is still a threat in use by some third world nations today. The pilot's performance includes aerobatic demonstrations displaying the flight characteristics and capabilities of the jet.

Life Flight Helicopter and Beechcraft King Air

An air ambulance service of St. Luke's Hospitals meritCare, Fargo, North Dakota.

The World's Smallest Jet

The Bud Light Micro Jet climbs at a rate of 2,000 feet per minute, all the while cavorting through a series of loops, rolls and tail slides. The aircraft is 12 feet long, weighs 450 pounds and flies at speeds of up to 351 mph. Billed as the world's smallest jet, the Bud Light Micro jet scheduled to appear at air shows throughout the country. The Bud Light Micro jet is piloted by Bill Beardsley. Bud Light distributed by D & S Beverages, Moorhead, MN

North Dakota Air National Guard

North Dakota Air National Guard will be in action both days of the air show with F-4D single and fourship flying demonstrations.

Commonly known as the "Happy Hooligans," the Air Guard was federally recognized on January 16, 1947, after earlier ties with the Army Guard. The organization has grown considerably from its original contingent of 23 officers and 44 airmen. The Happy Hooligans have progressed from the F-51s, which were flown from 1947 to 1954, to the jet age F-94s. In 1960 the Guard converted to the F-89, the unit's first nuclear-equipped weapons system. Conversions were made in 1966 to the supersonic F-102, and in 1969 to F-101. Since 1977 the Happy Hooligans have been flying the F-4D, but the unit is scheduled to convert to the F-16 in April 1990.

The mission of the Air National Guard is two-fold:

A State Mission to support local law enforcement in the preservation of peace and order in the state, under the command of the governor. Examples of this are "Operation Haylift" during the blizzards of the winter of 1948/1949; fire fighting at a tank farm in 1972; diking and sandbagging for numerous springtime floods, and guarding property during weather related and national emergencies. Whether the call to respond from the governor is for numerous people or single individuals, the "Happy Hooligans" have answered the call successfully each time. An outstanding example of single person activation order was two days before Christmas in 1986. At that time Gov. George Sinner ordered Lt. Bob Becklund to deliver a human heart to a waiting child in California, after a civilian aircraft failed to start.

Under the **Federal Mission**, the "Happy Hooligans" are available for mobilization and immediate 24-hour integration into the U.S. Air Force. Prior to mobilization, the unit is required to administer, train and equip personnel in accordance with standards and programs established by the Tactical Air Command and the National Guard Bureau. Additionally, we have air defense alert force of pilots, weapons system officers, and aircraft which have augmented the U.S. Air Force and Canadian Force in the day-to-day air defense of the United States since August 1954. The alert commitment is on duty year-round, 24 hours a day, seven days a week.

The North Dakota Air Guard was mobilized during the Korean conflict, ordered to active duty on April 1, 1951. The main body of the unit was sent to Moody AFB, Valdosta, Ga., and in October of that year was transferred to George AFB, Calif., for training. On January 1, 1951 the Air Guard returned to Fargo and reverted to state control.

In 1984 six F-4s and 120 support people deployed to Keflavik, Iceland. This was the first overseas deployment for the "Happy Hooligans" since the Korean conflict. Then in April 1986, the Air Guard became the first core unit to assume the USAFE Zulu alert mission at Ramstein AB, Germany, referred to as "Creek Klaxon." The North Dakota Air Guard and other Air Defense units stood continuous alert for one year providing air sovereignty in Europe for NATO. The 1st William Tell Competition (an Air Force weapons competition) came during the days of the F-101 aircraft. The "Happy Hooligans" distinguished themselves by winning first place in the 1970 and 1972 competitions. The unit continued to excel by winning the Winston P Wilson Trophy Award in 1971; the coveted "A" Award from the Aerospace Defense Command in 1971, 1973, 1974 and 1979; the USAF Outstanding Unit Award in 1972, 1973 and 1979, the Nuclear Safety Plaque in 1972, the ADCOM Outstanding Security Police Award in 1972 and 1978, the

TAC Flying Plaque annually since 1981, and the Missile Safety Plaque annually since 1983. In 1974 the "Happy Hooligans" won the Hughes Trophy. It was the first time the two awards were presented to the same unit and also the first time either of these trophies had been awarded to a Reserve component unit. In 1981 the unit won first place and the Judges Special Achievement Award in the TAC/NORAD Weapons Loading Competition. And in 1984 the unit won the Weapons Loading Competition in the F-4D category.

(photo caption) Col. Gary Kaiser, Commander, 119 Fighter Interceptor Group

The Golden Knights

Grown men and women, small children and senior citizens all tilt their heads, shade their eyes and stare skyward at the dark specks descending upon them.

Trails of red smoke mark the position of the specks, which by now have begun to take on human shapes. They are parachutists, but not ordinary parachutists. They are members of the U.S. Army Parachute Team, the "Golden Knights," and they are performing in the Centennial Air Show in Fargo.

Since being formed in 1959, the Army Parachute Team has earned the reputation of being the finest precision freefall parachute team in the world, military or civilian. The Golden Knights are the Army's answer to the Air Force's Thunderbirds and the Navy's Blue Angels.

Unlike their counterparts, however, who are mostly officers, Golden Knights are mostly enlisted soldiers - non-commissioned officers - who epitomize the Army's theme of being "all you can be"

A typical Golden.Knight air show begins with a single Knight descending gracefully with the American flag streaming from the suspension lines of his rectangular-shaped black and gold parachute. As he descends, the national anthem echoes in the hearts and ears of spectators; and this is followed by aerial maneuvers developed and performed only by the Golden Knights. These maneuvers include the "Baton Pass" in which two jumpers exchange a 14-inch baton during a freefall; the "Cutaway" in which a jumper intentionally causes his parachute to malfunction, "cuts" or releases it away, then deploys a second main parachute; the "Diamond Track," featuring two jumpers who "track" or fly toward each other at a combined speed of more than 300 miles an hour, missing each other by only a few feet; and, finally the "Diamond Formation."

The Diamond Formation concludes the aerial maneuvers as four jumpers freefalling together in a tight formation separate on signal toward the four corners of the earth, creating a "bomb burst" effect.

Throughout the demonstration, one of the Knights, usually the first one to land, will narrate the entire show. Once the 12 men and women who make up the demonstration team are on the ground, they line up and present the wooden baton previously passed in mid-air to predesignated member of the audience. At this time, members of the audience get an opportunity to meet and talk with the Golden Knights.

As a unit, the Army Parachute Team consist of about 80 men and women who make up six sections: two demonstration teams, the Black Team and Gold Team; two competition teams, the Style & Accuracy Team and Relative Work Team; an aviation section; and a headquarters section.

The Black and Gold demonstration teams perform in as many as 100 air shows each year before an annual audience of more than five million spectators.

Each show is directly supported by the team's aviation section, which consists of six pilots and their supporting crews who maintain a small fleet of two U-21s and two F27 Fokkers. The U21s are used mostly by the competition teams whereas the Fokkers, with their notable black and gold finish, are most familiar to the spectators who have watched the Knights perform in all 50 states and as many as 35 foreign countries.

Valley Skydivers Attempt State Record

The Valley Skydivers, who are representing the state this year as the official North Dakota Centennial Skydiving Team, will be attempting to set a state freefall formation record when they make demonstration appearances in the Saturday and Sunday air show.

Their part of the show will open with a jumper descending with a North Dakota Centennial Flag. As he is landing, another airplane will be completing the climb to 12,500 feet above the ground; the record attempt formation will take place shortly thereafter.

The skydivers will have approximately 60 seconds of freefall time to maneuver toward and dock on the formation as it builds. At about 4,000 feet, the jumpers will separate, deploy their parachutes by 2,000 feet, and steer themselves gracefully toward a soft, on-target landing. At that time, the skydivers will repack their parachutes and are available for questions.

The Valley Skydivers are one of the oldest continually operating civilian skydiving clubs in the nation. It was formed as a nonprofit organization in 1906 by a group of parachutists who mutually shared the thrill and excitement of skydiving as a sport.

At first, club members jumped at Hunter and Kindred, N.D. Now the club is based out of the West Fargo Airport. The club is actively involved in training students, and anyone interested in learning to skydive may contact the club at 231-4561, or talk to any of the team Members.

Every summer the club's exhibition team performs jumps throughout North Dakota and Minnesota. In past years this has included football games at Concordia College and Moorhead State University, centennial celebrations, Fourth of July celebrations, the Prairie Rose State Games and other local and regional events.

Wing Walker

Barnstorming isn't dead. Just ask Bob and Pat Wagner, the husband and wife team from Ohio whose wing-riding act is sure to keep air show visitors on the edge of their seats.

Bob and Pat began their act in 1971, using the 450 Stearman biplane. Pat walks the top wing of the Stearman while Bob flies aerobatics. Their show schedule has taken them throughout the United States and Canada, and as far south as Venezuela. Flying the antique Stearman through the Bahamas and West Indies to get to Venezuela was adventure they won't soon forget.

Active in aviation for more than 25 years, Bob began flying in air shows and aerobatic competitions in 1963. He soloed at age 16 in a 1946 Champ, received his private certificate in 1959, his commercial certificate in 1961, and became a certified flight instructor in 1963.

Bob bought and rebuilt his first airplane in 1961. He then obtained a Waco YMF-5, and three years later flew it to Nevada for the First Reno Nevada National Air Races (the top competition for all U.S. aerobatic pilots. He took fourth in the unlimited competition, and received the Rolly Cole Memorial Trophy for the most outstanding young aerobatic pilot.

Pat started flying in 1966, soloing in November of that year in Citabria. In 1969 she got her first personal aircraft - an early British-designed ultra-light homebuilt Luton Minor. The Luton came equipped with a single seat, no brakes, an open cockpit, and a two-cylinder single ignition engine producing almost 36 horsepower and 50 miles an hour at full throttle.

She has now logged 1,000 hours and holds a commercial pilot certificate in single engine land and sea aircraft and gliders. Pat has logged more than 1,000 hours in Waco biplanes. Although she now owns a clipped-wing J-3 Cub, Pat's favorite airplane is the Great Lakes biplane.

In 1982 Bob and Pat purchased their own airport - a grass strip, 1,900+ feet long from the center of the road to the far fence line. They have two large hangars and a house plus 17 acres. It's known as "Wagner International Airport."

Yes, barnstorming is still alive for this Ohio couple. And they're having fun doing what they do best - performing.

Hector International Airport, and Fargo Tower

Fargo Tower is designated a TRACAB, meaning the radar positions are located in the tower cab. Fargo has been a radar approach control facility since 1974. A new control tower was built in 1980. The old tower on the east side of the airport is no longer used as a control tower.

There are five positions of operation in the tower: Flight Data, Ground Control, Local Control, East Arrival/Departure Control and West Arrival/Departure Control. Three radar scopes are in use, two at the Approach/Departure Control positions and one at the Local Control position. The normal complement of personnel consists of 12 to 14 controllers, three team supervisors, the facility manager and an administrative assistant. There are no military air traffic controllers at Fargo airport.

Fargo's air traffic consists mostly of general aviation aircraft with major airlines providing the large jet traffic and the Air National Guard flying the F-4 Phantom jets, soon to be the F-16 Falcons.

The greatest challenge to the approach controller will occur when the F4s are inbound or flying locally in the radar traffic pattern with other traffic present. Fighter trainers from Grand Forks Air Force Base and Northwest Airlines training flights (Boeing 747s, DC-10s and Boeing 727s) from Minneapolis occasionally make practice approaches at Fargo. The local traffic pattern at Fargo can be, at times, difficult and complex. This is due to converging runways, minimal taxi routes and diverse aircraft activity. Fargo approach control airspace lies within an approximate 35 nautical miles radius of the Fargo airport and to an altitude up to and including 10,000 feet.

Future projects for the control tower include more advanced radar and equipment displays to prepare us for the challenges ahead and enhance our goal of providing the safest and most efficient service possible.

The CAF In Action

The Red River Valley Squadron of the CAF received as a donation from Warren Walkinshaw a BT-13 (the one pictured at left) in the winter of 1984. When the stripped down fuselage was pulled from the woods where it had sat for some 20 years, it looked rather doubtful that the plane would fly again. For those of you who attended the 1986 air show, you will remember the BT as being completely stripped, tube fuselage sandblasted and painted and back on its wheels. We believe the BT will be flying in the near future. Please visit with a CAF member about joining the CAF and the Red River Valley Squadron and be a part of the greatest aerial Museum on earth. Help preserve a precious part of our military history.

The Confederate Air Force ... Its Origin And Objectives

During World War II the United States had 16,112,566 men and women in military service and built the mightiest war machine in the history of the world. The unmatched industrial complex of America built 303,000 aircraft in addition to ships, tanks, guns and other material. This magnificent air armada played an essential role in keeping our nation free and preventing the enslavement of the world by the Axis powers.

In the mid-fifties, a group of ex-service pilots in the Lower Rio Grande Valley of Texas bought a North American P-51 "Mustang" fighter that had been sold as Air Force surplus. The reason - for the pleasure of flying one of the finest flying machines ever built. This powerful American fighter could now be flown just for the pleasure of flying and not under the stress of combat. Other pilots became interested and wanted to take part. As a result of this enthusiasm, another fighter was bought and reconditioned: a surplus U.S. Navy Grumman FSF "Bearcat." This gave the group the last propeller-driven fighters to see service with the U.S. Navy and the U.S. Air Force - the last in a line of pursuit and fighter aircraft that dated back to 1914 and which were developed in service during World War II.

At this point these men decided that **if it were possible**, at least one each of these historic aircraft would be found, restored and preserved in flying condition for future generations of Americans to see. They are valuable reminders that nothing whips America in the air - or anywhere else!

There was only one thing to do! These men became the **Rebels**, and organized the **Confederate Air Force!** Now, with the weighty responsibilities of full Colonels in the Confederate Air Force, they dedicated themselves, their time, money and effort to the following objectives:

1. To preserve, in flying condition, a complete collection of combat aircraft which were flown by all military services of the United States in World War II.
2. To perpetuate the spirit in which these great planes were flown for the defense of our nation, in the memory and hearts of all Americans.
3. To provide Museum buildings for the permanent protection and display of these aircraft and to build the "COMBAT PILOT HALL OF FAME" as a tribute to the thousands

of men and women who built, serviced and flew them.

4. To promote good fellowship among the members of the organization, and the support of patriotic Americans everywhere, in flying and preserving these great aircraft, as symbols of our American heritage.

Colonel Jethro E. Culpeper emerged as the mythical leader of the Confederate Air Force. A General Staff of nine men serve as the Corporate Board of Directors for the CAF and conduct the business of the organization.

War Birds Of Yesterday

North American P-51D Mustang

Nation: USA

Manufacturer: North American Aviation

Type: fighter

Year: 1944

Engine: Packard V1650-7 12-cylinder V liquid-cooled, 1,510 hp

Wingspan: 37 ft (11.28 m)

Length: 32 ft 3 in (9.83 m)

Height: 13 ft 8 in (4.20 m)

Weight: 11,600 lb (5262 kg)

Maximum speed: 437 mph (703 km/h) at 25,000 ft (1,620 m)

Ceiling: 41,900 ft (12,771 m)

Range: 950 miles (1,730 km)

Armament: 6 machine gun, 2,000 lbs (907 kg) of bombs

Crew: 1

North American B-25A Mitchell

Nation: USA

Manufacturer: North American Aviation Inc.

Type: bomber

Year: 1941

Engine: two Wright R-2600-9 Cyclone 14-cylinder radial air-cooled, 1,7100 hp each

Wingspan: 67 ft 7 in (20.60 m)

Length: 54 ft 1 in (16.48 m)

height: 15 ft 10 in (4.80 m)

Weight: 27,000 lb (12,293 kg) (loaded)

Maximum speed: 315 mph (507 km/h) at 15,000 ft (4,510 m)

Ceiling: 27,000 ft (8,230 m)

Range: 1,500 miles (2,170 km)

Armament: 5 machine guns, 3,000 lb (1,360 kg) of bombs

Crew: 5

Vought F4U-1 Corsair

Nation: USA

Manufacturer: United Aircraft Corp.

Type: Fighter

Year: 1943

Engine: Pratt & Whitney R-2800-N Double Wasp 13-cylinder radial air-cooled, 2,000 hp

Wingspan: 41 ft (12.50 m)

Length: 33 ft 4-1/2 in (10.16 m)

Height: 15 ft 1 in (4.60 m)

Weight: 13,120 lb (5,950 kg) (loaded)

Maximum speed: 417 mph (671 km/h) at 19,000 ft (6,065 m)

Ceiling: 36,900 ft (11,250 m)

Range: 1,015 miles (1635 km)

Armament: 6 machine guns

Crew: 1

Republic P-47 Thunderbolt

Nation: USA

Manufacturer: Republic

Engine: One 2,000 hp (2,300 hp w/e) Pratt & Whitney R-2800-50 air-cooled radial engine

Maximum speed: 350 mph at 5,000 ft, 429 mph at 30,000 ft

Initial climb: 2,780 ft/min time to 30,000 ft 14 min

Ceiling: 42,000 ft

Range: (clean) 1,023 miles at 233 mph at 10,000 ft

Weights: 10,000 lb (empty) 14,700 lb (combat) max 19,400 lb

Wingspan: 40 ft 9 in

Length: 36 ft 1 in

Height: 14 ft 2 in

Wing area: 300 sq ft.

Crew: 1

North American Navy SNJ

Nation: USA

Manufacturer: North American Aviation Inc.

Type: Trainer

Year: 1941

Engine: Pratt & Whitney R-1340-49 Wasp, 9-cylinder radial, air-cooled, 600 hp

Wingspan: 42 ft (12.30 m)

Length: 29 ft (8.34 m)

Height: 11 ft 9 in (3.55 m)

Weight: 5,300 lb (2,404 kg) (loaded)

Maximum speed: 208 mph (335 km/h)

Ceiling: 24,200 ft (7,321 m)

Range: 750 miles (1,205 km)

Armament: 2 machine guns

Crew: 2

Boeing-Stearman PT-17 Kaydet

Nation: USA

Manufacturer: Boeing Aircraft Co.

Type: trainer

Year: 1940

Engine: Continental R-670-5 7-cylinder radial air cooled, 220 hp

Wingspan: 32 ft 2 in (9.80 m)

Length: 25 ft (7.63 m)

Height: 9 ft 2 in (2.79 m)

Weight: 2,717 lb (1,232 kg)

Maximum speed: 124 mph (199 km/h)

Ceiling: 11,200 ft (3,415 m)

Range: 505 miles (812 km)

Armament:

Crew: 2

Curtiss P-40B Warhawk

Nation: USA

Manufacturer: Curtiss-Wright Corp.

Type: fighter

Year: 1941

Engine: Allison V-1710-33 12-cylinder V liquid-cooled, 1,040 hp

Wingspan: 37 ft 4 in (11.38 m)

Length: 31 ft 9 in (9.68 m)

Height: 10 ft 7 in (3.13 m)

Weight: 7,600 lb (3,450 kg) (loaded)

Maximum speed: 352 mph (566 km/h) at 15,000 ft (4,572 m)

Ceiling: 32,400 ft (9,875 m)

Range: 940 miles (1,500 km)

Armament: 4 machine guns

Crew: 1

Grumman F6F Hellcat

Manufacturer: Grumman Aircraft Engineering Corporation

Type: single-seat naval fighter, later versions: fighter-bombers and night fighters

Engine: early production, one 2,000 hp Pratt & Whitney R-2800-10 Double wasp 18-cylinder two-row radial; from January 1944 (final F6F-3 batch) two-thirds equipped with 2,200 hp (water injection rating) R-2800-10OW

Dimensions: span 42 ft 10 in (13.05 m)

Length: 33 ft 7 in (10.2 m)

Height: 13 ft 1 in (3.99 m)

Weights: empty (F6F-3) 9,042 lb (4101 kg), loaded (F6F-3) 12,186 lb (5528 kg), clean 13,228 lb (6,000 kg), maximum (F6F-5N) 14,250 lb (6443 kg)

Performance: maximum speed (F6F-3, -5, clean) 376 mph (605 km/h), (-5N) 366 mph (590 km/h)

Initial climb: (typical) 3,240 feet (990 m)/min.

Vultee BT-13A Valiant

Nation: USA

Manufacturer: Vultee Aircraft Inc.

Type: trainer

Year: 1940

Engine: Pratt & Whitney R-985-AN-1 9-cylinder radial air-cooled, 450 hp

Wingspan: 42 ft 2 in (12.86 m)

Length: 28 ft 9 in (8.76 m)

Height: 12 ft 5 in (3.75 m)

Weight: 4,360 lb (1,980 kg)

Maximum speed: 166 mph (295 km/h)

Ceiling: 16,500 feet (5,030 m)

Range: 516 miles (826 km)

Armament: none

Junkers Ju.52/3m g3e

Nation: Germany

Manufacturer: Junkers Flugzeug und Motorenwerke AG

Type: bomber

Year: 1934

Engine: three BMW 132A-3 9-cylinder radial air-cooled, 725 hp each

Wingspan: 95 ft 11-1/2 in (29.25 m)

Length: 62 ft (18.90 m)

Height: 18 ft 2-1/2 in (5.53 m)

Weight: 23,146 lb (10,498 kg) (loaded)

Maximum speed: 172 mph (277 km/h)

Ceiling: 19,360 feet (5,900 m)

Range: 620 miles (1,000 km)

Armament: 2 machine guns, 1,100 lb (498 kg) of bombs

Crew: 4

Russian Yak Fighter

North Dakota Centennial Air Expo

on July 22-23, 1989 Minot International Airport (program) . . .

Bud Light Micro Jet: The World's Smallest Jet

What's 12 feet long, weighs 450 pounds, flies at speeds of up to 350 mph and, yet, could easily fit into a garage? It's the Bud Light Micro Jet, that's what.

The world's smallest jet climbs at a rate of 2,000 feet per minute all the while cavorting through a series of loops, rolls and breathtaking tail slides.

The Bud Light Micro Jet began as a propeller-driven aircraft in the early 1970s. Initially, a Microturbo TRS-18 engine taken from a Caproni jet-powered sailplane was installed in the aircraft. However, the plane lacked the power it needed. As a result, a new, tougher "wet" wing with a different airfoil was added. In 1983, a newer, FAA-certified engine was installed which increased the aircraft's thrust from 202 pounds to 218.

The current engine weighs 75 pounds and measures two feet by one foot. At full throttle, the jet burns 44 gallons of fuel per hour. The Bud Light Micro Jet requires about 2,400 feet of runway to takeoff. To land, it requires approximately 1,800 feet.

Flight controls for the Bud Light Micro Jet are located on the right side of the cockpit, with the throttle, trim and thrust reverser located on the left side. The pilot sits in a semi-reclining position with his feet all the way forward into the nose of the aircraft.

The Bud Light Micro Jet is one of the few BD-5J jets used for tail slides, a challenging and, yet, extremely difficult maneuver. The aircraft is scheduled to appear at numerous air shows throughout the country.

Bill Beardsley Pilots Bud Light Micro Jet

You might say Bill Beardsley was born to fly. His boyhood dream of being a pilot became reality when he joined the U.S. Navy Aviation Cadet program and later gained prominence as a member of the prestigious Blue Angels, a precision military flying team.

Beardsley's two-year tenure with the Blue Angels helped make him the ideal candidate to become pilot of the Bud Light Micro Jet when the opportunity became available in early 1988. The Bud Light Micro Jet is the world's smallest jet which climbs at a rate of 2,000 feet per minute. The jet weighs just 483 pounds and travels at speeds of up to 320 mph.

"The Bud Light Micro Jet is as unique to watch as it is challenging and demanding to fly," said Beardsley, nicknamed "Burner." "You can never let go of the controls, but then you could never find anything else in the world that even comes close to matching the thrills of flying something so small, so fast and so much fun."

Beardsley, 45, was born in Battle Creek, Mich. He studied Aviation Engineering Technology at Western Michigan University, despite the fact he couldn't afford flying lessons. The son of a career Army officer, Beardsley lived in six states as well as Stuttgart, Germany, where he attended high school.

In 1965, Bill entered the Naval Aviation Cadet program, and he received his wings in 1966. After his initial training in the F-4 Phantom with Fighter Squadron 101, Beardsley was eventually deployed to Southeast Asia, where he flew 126 combat missions. He was awarded seven air medals, the Navy Commendation medal with Combat V, the Navy Unit Commendation, the Vietnamese Cross of Gallantry and the Vietnam Service and Campaign medals.

In 1970, Bill reported to the Blue Angels, where he spent two years. Aside from what he termed the "difficult yet rewarding experience" of flying with the Blue Angels, Beardsley struck up friendships with countless aerobatic pilots, promoters, and air show directors.

Beardsley enjoys skydiving, snow and water skiing and scuba diving. He is single and lives in Chattahoochee, FL. Bill Beardsley will be performing in the Bud Light Micro Jet at air shows throughout the country.

July	22-23	Minot, ND
August	09-11	Ida Grove, IA
August	12-13	Sioux Falls, SD
August	19	Bismarck, ND
August	20	Fargo, ND
August	26-27	Amarillo, TX
September	23-24	Virginia Beach, VA
September	30-01	Dallas, TX
October	07-08	Houston, TX
November	11-12	Kissimmee, FL

Craig's Notes

This material was scanned from an old program(s) at The Fargo Air Museum; so there are bound to be all kinds of errors.

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