Model Number : B-1B
Model Name : Lancer
Model Type: Long Range Combat Aircraft (LRCA

President Reagan announced the decision to include the B-1B Long Range Combat Aircraft in his defense package on October 2, 1981. At stake for Vought was a major subcontract whose value had not been announced, because contract negotiations were still in progress. A quantity of 100 bombers, instead of the rumored 50, was included in the President's plans. At that time it was the largest subcontract in the company's history.

After approval of that budget, Rockwell International Corporation received its initial funding for development of the B-1B/LRCA. Vought, a major subcontractor producing the aft fuselage section on the original B-1, was selected by Rockwell to build the aft section and aft intermediate section (the section directly in front of the aft section) of the fuselage for the new Strategic Air Command bomber. Together, the sections constitute the entire fuselage back of the wing except for the tail cone and empennage. The contract, when awarded, covered tooling and production of body sections for the aircraft. The two B-1B subsections measure a total of 60 feet in length and weigh more than 26,000 pounds. Built primarily of aluminum, steel and titanium, they consist of about 19,000 individual parts. The major components were assembled at the Jefferson Avenue and Marshall Drive facilities.

The B-1B is a multipurpose airplane equipped with a variable geometry or swing-wing. It can carry a variety of payloads and is capable of high subsonic speeds. It has the ability to operate at both high and low altitudes and can perform conventional or nuclear missions. It will carry advanced electronic countermeasures.

The aircraft has the General Electric F101-GE-102 turbofan engine, a derivative of the engine developed for the original B-1. The F101 is an advanced-concept, augmented turbofan in the 30,000 pounds thrust class.

Model Number :
Model Name : ASAT
Model Type: Anti Satelite Missile

In the mid 1970's it was estimated that at least three fourths of the satellites in space were being used for military purposes. The Soviet Union was known to have a satellite killer as early as 1971. The United States decided to also develop an anti-satellite capability in the event that it was necessary to control the military space.

The ASAT Missile was developed by LTV Aerospace for the United States Air Force Space Systems Command during the period of 1977 to 1988. The missile was designed to destroy satellites in earth orbit at altitudes of 350 miles or lower. The ASAT Missile was launched from the fuselage centerline of the F-15 aircraft.

The ASAT missile had three stages. The first stage was designed by Boeing as a subcontractor to LTV and was powered by a SRAM solid rocket motor. The second stage was designed by LTV, and carried the inertial guidance package, the third stage, and a liquid helium system to cool the third stages' infrared sensor. A hydrazine attitude control system was used to accurately point the third stage at the targeted satellite.

The third stage, also designed by LTV, was called the miniature kill vehicle (MKV). The MKV consisted of an infrared sensor, a guidance computer, a roll reference sensor, and solid rocket motors for maneuver and attitude control. All of the subsystems of the MKV were very unique miniaturized designs. For example the MKV's computer only weighed 0.8 pounds and had 24,000 bytes of capability. There were 63 maneuver motors located around the circumference of the vehicle. These 0.5 inch diameter 20 inch long tee shaped solid rocket motors were so powerful that each developed 10,000 PSI pressures in their 0.1 second burn time.

Mission planning was performed in the Strategic Air Command's Cheyenne Mountain complex in Colorado. The F-15 was vectored to the correct launch coordinates and launch time. At the correct location and time the missile was launched from the F-15 and the first stage propelled the missile to a precise inertial point in space so as to be on a collision path with the targeted satellite. The second stage pointed the third stage at the satellite so that the infrared image of the satellite could be detected by the MKV sensor even though the satellite was hundreds of miles away. The MKV was spun up to 33 revolutions per second. The spinning MKV used the known spin rate to keep track of it's attitude. The spinning infrared sensor maintained track of the satellite and reported the satellite's position to the guidance computer. The guidance computer calculated the maneuver required to keep the satellite in the cross hairs of the sensor. The MKV solid rocket motors were then commanded to fire at a precise time to accomplish the desired maneuver.

This process was continued repetitively until the MKV collided with the satellite destroying it by virtue of the extremely high kinetic energy. Typical closing velocities for satellite intercept was 15,000 to 25,000 miles per hour. When the 30 pound MKV collided with a 2,000 pound satellite at closing velocity of 15,000 miles per hour complete destruction was assured.

The ASAT system concept required a very accurate sensor, precise computations, and timely maneuver commands. The system was successful in its first flight test against a real satellite on September 13, 1985. This Friday the 13th event was definitely a good luck day for Vought. An active US satellite orbiting at about 290 miles above the earth was selected as the test target. The target was a 6.8 foot diameter, 1,874-pound satellite known as P78-1. The MKV destroyed the satellite, hitting it within 6 inches of the aim point. The Air Force described this test as “flawless”. This test demonstrated the “hit to kill “ technology providing the basis for several future Vought missiles.

Model Number :
Model Name : ERINT
Model Type: Extended Range Interceptor Technology

ERINT began in 1987 and was a follow-on to the successful Flexible Light weight Agile Experiment (FLAGE) program. The missile diameter was increased to 10 inches to extend the range and a small high-energy warhead was added to improve the kill capability against some of the difficult targets. The kinetic kill capability of the Vought missile was proven to be very effective in completely destroying incoming missiles equipped with deadly chemical warheads. The four flight tests had three direct hits and one flight with a very small miss of the target.

Characteristics	
Diameter	10 in
Lenght	17 ft
Weight	
Range	
Wing Span	
Speed	
.	
Warheads	
Kinetic Energy Kill with HE charge	
Propulsion	
Solid Rocket Motor	
Guidance System	
Inertial with Doppler Radar Terminal Seeker	
Quanitity Produced	
4 Flight Tested	

Model Number :
Model Name : Canadair Regional Jet
Model Type: Commercial

LTV Aircraft Products Division received a $36 million contract in September 1989 from Canadair Division of Bombardier, Inc., Montreal, Canada, to produce 106 engine nacelles for 53 Canadair Regional Jet aircraft. The contract covered design and production of two nacelles, or engine housings, for each of the 53 flight test and production aircraft.

The Regional Jet is a 50 passenger derivative of the Challenger 601, which Bombadier announced earlier in 1989 that it would build.

Its use would allow regional airlines to serve low-passenger-volume areas farther away from major hub airports than were served by turboprops. Canadair estimated the size of the market for the new aircraft at 500 to 700 units. Through June 1989, Canadair had commitments for 116 of the new aircraft prior to start of production. The nacelle for the new Regional Jet was redesigned for improved maintainability and accessibility to reduce engine change times and speed routine maintenance.

LTV Aircraft Products had built engine nacelles for the Canadair Challenger 601 since 1982 and had delivered 203 sets of twin nacelles through March of 1993 when Canadair decided to outfit its Challenger 601 with the improved nacelles used on the Regional Jet. Vought built 105 ship sets of nacelles for the Regional Jet with last delivery occurring on April 5, 1995.

Model Number : B-2
Model Name : Spirit
Model Type: Advanced Technology Bomber (ATB)

In 1981, the U.S. Air Force selected the Northrop Corporation as the prime contractor to lead an industry team to develop and produce the B-2 Stealth Bomber. The award of the contract for the B-2, then called the Advanced Technology Bomber (ATB), began one of the most challenging aerospace programs in history. It was a challenge that involved more than 6,000 companies and 40,000 men and women from 46 states, and pressed the limits of technology in more than a dozen disciplines, from integrated three-dimensional, computer-aided design and manufacturing to the production and forming of new composite materials into large-scale aircraft structures.

Almost everything about the B-2 is unique: its revolutionary design; unprecedented use of composite materials; the production processes that enable precise stealth shaping; and a flight management system designed specifically to meet the demands of a flying wing and also be totally responsive to mission needs. These and other requirements have driven the development of more than 900 new materials and processes, expanding America's technology base and resulting in a leap forward for our aerospace industry.

The early years of the B-2 program were conducted under a cloak of near-total secrecy. It was not until 1988 that the major team members were publicly announced – Northrop, Boeing, LTV (Vought), Hughes, and General Electric. In their plants and around the country, major structural sections, components and systems for the B-2 were manufactured, then shipped to USAF Plant 42 in Palmdale, California, for final assembly, engine installation, and checkout. The public first viewed the B-2's extraordinary shape and planform during the rollout on November 2, 1988.

LTV (Vought) was a major subcontractor on the B-2 to Northrop Corporation, designing and producing the intermediate wing section.

LTV also designed the installation of all systems in the intermediate section. Twenty one ship sets of the intermediate wing section were built and shipped by C-5 aircraft to Palmdale, California, for final assembly.

The final intermediate section was delivered to Palmdale on March 17, 1994.

The historic first flight of the B-2, from Palmdale to Edwards Air Force Base, was made on July 17, 1989, with test pilots Bruce Hinds of Northrop and Air Force Col. Rick Couch at the controls.

The first operational aircraft was delivered to Whiteman Air Force Base, Missouri in late 1993. A total of twenty-one aircraft comprises the B-2 operational fleet. The third operational B-2 was named "The Spirit of Texas" during dedication ceremonies at Vought-Dallas in September 1994. The U.S. Air Force/Northrop B-2 bomber is the most technologically advanced aircraft in aviation history. Its stealthiness, long range, and large weapons payload will enable it to reach any target on earth, deliver many thousands of pounds of precision conventional weapons, and return safely with its aircrew. The B-2 is a tribute to American technology and engineering, and to the skill and dedication of the men and women across the nation who made up the B-2 team.

Model Number : Pampa 2000
Model Type: Joint Primary Trainer

In 1990, LTV Aircraft Products made a decision to enter into competition for development and production of a next generation trainer airplane for the Air Force and Navy. The development program was required because both Air Force and Navy trainers were worn out after decades of service in the training of pilots. Announcement of the decision to initiate the program set off high-stakes competition among companies offering to build the trainer. The two services had decided to use the same trainer to replace the Navy's T-34 turboprop and the Air Force's T-37B jet trainer. The replacement program was called the Joint Primary Aircraft Training Program (JPATS).

The services specified they wanted an off-the-shelf aircraft already designed and ready to go. They did not specify that the aircraft had to be turboprop, turbojet or turbofan. After the Pentagon said it was all right for American companies to have an international partner on the project, LTV launched an intensive search before narrowing its list to 38 potential team members. LTV selected Fabrica Militar de Aviones, the Military Factory of Aircraft (FMA), at Cordoba, Argentina, as its partner. FMA had previously developed a high-winged jet trainer labeled as the IA63 with a tandem two-seat cockpit. The IA63 was powered by a Garrett turbofan engine, the TFE 731-2. This aircraft had just recently been placed in service in the Argentine Air Force as a trainer aircraft and had significant flying time.

The IA63 was versatile as both a basic and intermediate trainer. It was designed for basic pilot skills, acrobatics, spin exercises, basic instrument flying, navigation, formation flying and in-flight emergency training exercises such as engine out exercises. On the intermediate end, the airplane could provide instrument training, low-level navigation training, formation flying, simulated tactical employment and tactical maneuvers.

Three IA63 aircraft were shipped to Dallas, Texas, and extensively modified to meet specific Pentagon requirements. Compliance with Military Specifications was investigated and, where necessary, modifications were implemented. A large engineering staff was employed, and the manufacturing factory was used to implement necessary changes to the aircraft. Fuel system modifications were made to meet stringent ground refueling requirements. The cockpit layout was dramatically changed, and additional avionics equipment and displays added. The AirResearch environmental control system was upgraded to meet U.S. specifications and requirements. Landing gear changes were implemented to meet stringent drop requirements. Pilot ejection systems were investigated for compliance. The changes implemented had no deleterious effects on proven flying quality characteristics.

The entry into the competition was labeled the PAMPA 2000. Two of the refurbished aircraft were placed in a comprehensive Flight Test Evaluation Program. Argentine pilots were employed in the flight test program as well as two experienced LTV test pilots. The PAMPA 2000 was declared fully ready and the company committed and ready for submittal of a third Pampa 2000 aircraft which was fully missionized and compliant with all U.S. service requirements. The aircraft was shipped to Wright Patterson Air Force base in Dayton, Ohio, for extensive flight evaluation by Air Force and Navy pilots.

Air Force and Navy pilots evaluated the flying characteristics of Vought's Pampa 2000 jet trainer in August 1994. The flight evaluation encompassed 10 days of rigorous testing. Vought provided a 16-member support team, but evaluation testing was solely accomplished by service personnel. Other government evaluators checked the maintenance aspects of the aircraft and evaluated a hot mockup of the Pampa 2000 cockpit. Fifteen sorties were accomplished in 6 days. The Pampa jet trainer was reported to have performed impressively.

Vought, with the Pampa 2000, was the second competitor to participate in the flight evaluation. Seven contending aircraft were evaluated by Air Force/Navy personnel. These included:

- Vought Pampa 2000 Jet
- Grumman S211A Jet
- Rockwell Ranger 2000 Jet
- Cessna Citation Jet
- Northrop Grumman Super Tucano Turboprop
- Lockheed T-Bird 11 Jet
- Beech PC-9 Turboprop

Vought submitted a 10,000-page proposal to the government for producing the next-generation trainer aircraft for the Air Force and Navy. The proposal was considered to be top-notch, just like the airplane.

Vought's entry in the JPATS competition, however, was not the winning entry.

Dimensions	
Wingspan	31.75 ft
Overall Langth	35.75 ft
Height	14.09 ft
Weights and Capacities	
Empty Weight	
Gross Weight	11038 lb
Useful Load	
Fuel Capacity	
Oil Capacity	

Powerplant Characteristics	
Type: Garrett TFE 731-28 Turbofan	
Rating Thrust	3500 lb
Displacement	
Weight	
Size (length X diameter)	
Performance	
Maximum Speed, Sea Level	460 mph
Landing Speed, Sea Leavel	
Stall Speed, Sea Level	
Initial Rate-of-Climb with afterburner	5400 ft/min
Cruise Speed, Sea Level	
Range at Cruise Speed	930 miles
Service Ceiling	36000 ft
Absolute Ceiling	42300 ft
Crew: 2	
Armament:	

Model Number : C-17
Model Name : Globemaster III
Model Type: Transport

TA Teaming Agreement between DAC and Vought, which defined the Vought effort on the C-17 program, was signed in February of 1983. As a result of the teaming agreement, Vought was given the responsibility for the fabrication of the vertical stabilizer, and horizontal stabilizer, the nacelles and the Universal Aerial Refueling Receptacle Slipway Installation (UARRSI) panel, plus the Engine Buildup Unit (EBU) on the four Pratt & Whitney F117-PW-100 engines.

The Secretary of Defense approved full-scale development of the C-17 in February of 1985, followed by the Defense Acquisition Board first production lot authorization in November of 1987. Prior to that, in February of 1987, DAC awarded a contract to Vought to fabricate the items which were agreed to in the 1983 teaming agreement and assembly of the T-1 aircraft was begun August of 1988.

First flight occurred on September 15, 1991 when the T-1 aircraft flew from the Long Beach Airport to Edwards Air Force Base. In June 1993, the first production aircraft was delivered

Model Number : Panther 800
Model Name :
Model Type: Light Utility Helicopter

The Panther 800 was offered to the Army as a light utility helicopter. It is a variant of the Aerospatiale AS-565 and a sister ship to the Coast Guard HH-65. The Panther 800 had two Army T800 engines and an improved, state-of-the art cockpit.

The helicopter was an off-the-shelf affordable solution to the Army's light utility helicopter needs. Its principal advantages were its speed, agility, maintainability and sustained performance at high elevations in hot temperatures

LTV, as the program leader, would integrate the engine and rotor systems and avionics and airframe. Other team members were:

Aerospatiale Helicopter Corp. for final assembly and flight testing

- IBM for computerized flight control system
- Light helicopter Turbine Engine Co. For the T800 engine

The Panther 800 had a gross weight of 9,400 pounds and could cruse at speeds of 178 mph and dash at speeds up to 195 mph. It could fly for four hours at 178 mph and had a range of more than 550 miles.