Pre-World War I Biplanes to ‘X’ Aircraft, Larry’s Career Spans 43 Years of Aviation

Lawrence D. Bell built his first airplane in 1910. Fashioned from wood, cloth and wire, it was a model of one he had seen the day before at the country’s first aviation meet in Long Beach, Calif.

Under his direction, Bell Aircraft Corporation, the firm he founded in 1935, has turned out more than 13,000 fighters, nearly 700 bombers and more than 1,500 helicopters in its first 20 years.

Two years after he saw his first plane, Larry Bell entered the infant aviation business as a mechanic for his brother, Grover, an exhibition pilot.

When Grover was killed trying to avoid some horses while landing in a pasture the next year, Larry firmly resolved to quit flying, but friends persuaded him to change his mind.

Aviation has gained immeasurably as a result of his decision.

Aircraft of today are flying faster, higher and more efficiently directly and indirectly through his demonstrated ingenuity and leadership.

Larry was employed by Glenn Martin as a mechanic at the time of the tragedy, quit his job and returned a few weeks later.

It was in that same year the ingenuity which was to be demonstrated so consistently later on first was directed to aviation. He helped turn a Martin pusher-type plane into the world’s first bomber for Pancho Villa, Mexico’s revolutionary leader. The bombs were lengths of gas pipe filled with dynamite.

The same year, as the Martin activity expanded, Larry was made shop superintendent at the age of 20, but his job didn’t last long. The Martin firm was merged with the Wright Airplane Company and Glenn Martin moved to Cleveland to start all over again. Larry went with him.

Within a short time he was factory manager and within a few years had directed the building of this country’s first twin-engine bomber.

During this early period, incidentally, the youthful aircraft executive had hired two men who later were to make their own place in the industry.

They were Donald Douglas, who formed his own firm, and J. H. Kindelberger, now chairman of the board of North American Aviation Company. Douglas was the first engineer hired by any aircraft manufacturer.

By 1928, Larry was vice president and general manager of Martin and was ready to move again. He came to Consolidated Aircraft Company, located in Buffalo as sales manager, shortly regaining the title of vice president.

When Major Reuben H. Fleet, then president of Consolidated, elected to take his company to the West Coast, Larry and a few of his associates in Consolidated resolved to remain in Buffalo to form their own firm, employing the experienced aviation tradesmen here.

Financing was hard to come by so, in those days and, despite the fact that only $130,000 was needed to get the four .50 caliber machine guns, all remotely controlled.

Throughout those pre-war years, Larry spent countless nights in Pullman cars moving between his Elmwood Avenue headquarters, Washington, D.C., and Wright Field in an effort to get the needed business to keep the company going.

When the P-39 won a fighter competition, the new firm gathered momentum as it moved into quantity production. Facilities were expanded, thousands of workers were hired. Soon three separate divisions were operating, one on the Niagara Frontier, another in Marietta, Ga., site of B-29 production, and an Ordnance Division in Burlington, Vt.

Thus the president and general manager of the fast-growing company was on the move again, this time adding Marietta and Burlington to his stops, along with Washington and Wright Field.

At war’s end, with the company now back in a single plant at the Niagara Falls airport, Larry once more became the salesman and concentrated on developing a market for the firm’s helicopters and a motorized wheelbarrow called the Prime Mover.

A few years later he was on his way to Europe to stimulate helicopter sales on the continent. Next it was Korea, to see how the helicopters were performing in service there.

On October 2, 1954, Larry resigned as general manager to devote all his attention to the responsibilities of the presidency. He was succeeded by Lenor P. Faneuf, who a few months later was named a vice president.

Airacuda Was First Of Famous ‘Aira’ Family
These Are The Famous Bell ‘FIRSTS’

In its 20-year history Bell Aircraft has established an industry-wide reputation as an aircraft pioneer. These are a few in the imposing list of aviation “firsts” developed by the Company.

- FIRST twin-engine escort fighter (Airacuda).
- FIRST aircraft to mount 37 mm. cannon and flexible gun turrets (Airacuda).
- FIRST modern multi-place fighter, establishing a new type for the Army Air Force (Airacuda).
- FIRST American fighter aircraft designed around its armament (P-39 Airacobra).
- FIRST use of tricycle landing gear on modern military aircraft (P-39).
- FIRST satisfactory .50 caliber machine gun shock damper, which became standard for both Army and Navy.
- FIRST modern all-wood military fighter (XP-77).
- FIRST helicopter with automatic stabilizing control.
- FIRST jet-propelled fighter airplane in the United States (P-59).

- FIRST commercial helicopter.
- FIRST supersonic airplane (X-1).
- FIRST commercial helicopter with 200 hp. engine and skid landing gear.
- FIRST airplane able to vary degree of wing sweepback during flight (X-5).
- FIRST radio-guided bomb (Tarzan).
- FIRST helicopter designed specifically for anti-submarine warfare (MSL-1).
- FIRST airplane able to fly at speeds two and a half times the speed of sound and at altitudes of 90,000 feet (X-1A).
- FIRST turbine-powered helicopter (XH-13F).
- FIRST jet-propelled vertical take-off and landing airplane (VTOL).
- FIRST automatic carrier landing system.
- FIRST convertiplane incorporating tilting-rotor system (XV-3).
Company Celebrates Twentieth Anniversary
Reputation as Industry Pacemaker
Built on Solid Achievement Record

Twenty years of aircraft production, generously sprinkled with aviation "firsts," comes to an end today, July 10, for Bell Aircraft Corporation.

Founded in Buffalo in 1935 by President Lawrence D. Bell and a group of enterprising associates, Bell Aircraft consistently has ranked high in the industry, both as a manufacturer producing airplanes in volume and as a pioneer exploring revolutionary concepts of flight.

There were only 56 employees on the payroll at the end of the first year of operation, but that number had climbed to more than 5,000 five years later.

Geared to wartime production of fighter airplanes, bombers and gun mounts, employment hit an all-time peak in 1944 when 50,000 persons were at work in three divisions.

Bell Aircraft came into being when Consolidated Aircraft Corporation, of which Larry Bell was vice president and general manager, moved from Buffalo to California.

The company began with $150,000 in capital raised through the sale of stock in Buffalo and western New York. Work began with $55,000 worth of second-hand machinery and a miscellaneous collection of used office equipment and work benches.

Just as with any fledgling company, the early days meant looking for business, any business that would keep men on the job while the founders worked on plans for an airplane.

First product of the design boards was the Bell XFM-1 Airacuda, which was flown Sept. 1, 1944, at Buffalo airport.

To meet the growing needs of military aircraft requirements, Bell was asked to take over a new plant in Marietta, Ga., and build B-29s.

A Georgia Division was set up; workers were trained; by war's end the company had turned out 683 of the big bombers, more than one a day from the time the plant was opened.

At its Ordnance Division, moved from Buffalo to Burlington, Vt., Bell also turned out flexible gun mounts for almost every military aircraft and surface vessel.

Simultaneously with its wartime production but at a separate facility in Gardenville, Bell was exploring another unusual aircraft, the helicopter. Started in 1941 with small electricity-powered models, the first Bell helicopter was flown July 29, 1943.

Licensed by the Civil Aeronautics Administration in March 1948, the Bell rotorcraft became the first commercial helicopter in the world. Since then more than 1,500 have been built for military and commercial use and today they are flying in 40 countries throughout the world.

These helicopters made history in Korea where they evacuated more killing pestiferous insects, patrolling power and pipe lines and seeking out minerals, to mention only a few of their everyday assignments.

Before the end of the war, recognition of Bell Aircraft's futuristic thinking came in the form of a contract to design and build an airplane which would penetrate the then mysterious sonic barrier.

On October 14, 1947, the rocket-powered Bell X-1, the first airplane capable of flying faster than the speed of sound.

The original X-1 now is in the Smithsonian Institution on display with the P-59 Airacomet, but its successor, the X-1A, has gone on to attain new aviation marks by flying 1,650 miles an hour and reaching an altitude of 90,000 feet, the fastest and the highest.

Another supersonic research airplane, the Bell X-2, is expected to top these records.

Remote radio control of airplanes, which permitted them to be flown from ground stations or from escort airplanes, and the company's experience with rocket propulsion, naturally led into guided missiles.

Product of this research and development has been the GAM-63 Rascal, which has been described by the U.S. Air Force as a rocket-propelled, air-launched, long-range missile.

Bell also is building rocket engines for the U.S. Army's Nike missile system and the company's electrically constant forward, fly like a conventional fixed-wing airplane.

Bell employment, which dropped sharply to less than 3,000 during the immediate postwar era, started to climb again in 1949 and by 1955 had topped the 15,000 mark.

Continuing research and develop-
A twin-engine piston-type multiplace fighter, the Aircobra embodied a number of revolutionary features which started Bell on its career of presenting the unusual in aircraft design. Despite the interest aroused in military circles, the first Bell airplane didn't get the acceptance its designers had hoped for and only 13 were built.

What the then Army Air Forces did need, however, was a hard-hitting single-place fighter and Bell management immediately went to work to come up with a design in competition with other aircraft firms.

Bell finally submitted two designs and, after all the proposals had been studied, the Bell airplanes placed first and second. Selected for production was the P-39 Airacobra and the end of the war saw more than 10,000 had been manufactured at the Elmwood Avenue plant in Buffalo and assembled at Wheeling.

The Airacobra, which saw action in virtually every war theater, was followed by the larger, more powerful P-63 Kingcobra. More than 3,000 of these were built. Even while these airplanes were rolling off the assembly line, Bell engineers were looking into the future and coming up with even more revolutionary designs. Among them were the P-59 Aircomet, the country's first jet-propelled fighter plane; the XP-77, a small, fast fighter developed for the continental defense of the United States and fabricated entirely of wood, and the RP-63, a heavily-armed version of the fighter which was used to train aerial gunners.

**Community, Customers Lauded**

'What We Have Done, We Have Not Done Alone'

BY PRESIDENT LARRY BELL.

Twenty years isn't very long as time is measured, but to us at Bell Aircraft twenty years represents the life span of our company, for July 10 marks our twentieth birthday.

These past 20 years have covered an unusual era — half a depression, a major war world, a postwar readjustment, another tragic war, although an undoubted one, and now a world-wide 'cold war'.

We hope that over these past 20 years our contributions to national defense and to the national economy have contributed to our country's strength and to our customers a better place in which to live.

What we have done we could not have done merely as a company on our own. Only with the assistance of Bell's customers, both in the armed forces and in commercial circles, and with the understanding and assistance of the whole community we have operated, could we have accomplished what we have done.

For this help and guidance, for the assistance and cooperation Bell Aircraft Corporation has received during our first 20 years, we are taking this opportunity to express publicly our sincere appreciation.

To our friends and neighbors, to our suppliers and customers, and above all to the many thousands of men and women who have been and who are our employees, we say —

THANKS

Throughout the years, we have required help from many sources. Repeatedly, we called upon the manpower (and womanpower) of the Niagara Frontier to help us meet our production schedules.

Some of our working assignments have been carried out under difficult situations and some of our employees have been called upon to serve our products in remote parts of the world and even in zones of combat.

Our vendors and subcontractors, the companies which provide services and materials, have contributed to our products and our growth in an invariable manner.

The banking and financial institutions have advanced credit and huge sums of money which enabled us to purchase materials for our inventories, to secure services for our operations, to build new facilities, to meet the weekly payroll for our employees.

Town, city, county, state and federal governments have cooperated in many respects. Newspapers, television, radio, magazines and other media have readily told the product and personnel side of our company and have helped spread the word of the community's industrial importance to the world.

Without the serious efforts of the thousands who have worked for and with Bell Aircraft, we could not have accomplished what has been done. We are deeply appreciative of the fine team work between our engineers, scientists and technicians, who conceive the designs for our products and our skilled workers who keep production high and on schedule in our factories.

Our many projects have attracted new residents to the community and they have been welcomed with open arms. Our employees are good citizens and they have demonstrated their interest in the community's development in hundreds of ways, civic, charitable and social organizations.

More than generous has been the cooperation of families — of wives and mothers and children — who have given up husbands and fathers and gone for long working hours in emergencies and for extended assignments away from home, in this country and abroad.

Like so many other enterprises, Bell Aircraft had a very modest beginning. In 1931, our first year of operation, we employed 56 persons and did $20,002 in business.

In the nineteen years since then, we have done more than $1,750,000,000 in business, have given employment to more than 100,000 persons, have paid $800,000,000 in wages and salaries and have purchased $850,000,000 in materials and services, much of it right in our own area.

The fighter planes and bombers built by Bell were an important asset in the victory of the Allied Nations in World War II. In Korea, Bell helicopters successfully rescued 20,000 wounded United Nations' troops, a record for which we are both grateful and proud.

Our research and development work has opened new scientific horizons and has created valuable data which has benefitted the entire nation. The achievements of our products, such as the X-1A, the world's fastest and highest flying airplane, and our helicopters have, we hope, brought credit to the community.

In spite of the traditional peaks and valleys of the aircraft industry, we have tried to establish an organization which will offer the maximum of stability to our employees and our business associates.

By diversifying our efforts as much as possible and by emphasizing forward-looking research and high quality production, we can best serve the military and commercial aviation needs of today and tomorrow.

On our twentieth anniversary, we of Bell Aircraft, in humble sincerity, extend our gratitude to all those who have so materially aided us in the past and renew our fervent hopes that the future will bring only the peace and prosperity we all desire.
Company's First Decade Saw Meteoric Growth

1935
June 19 — Lawrence D. Bell begins selling stock in the new Bell Aircraft Corporation.
June 20 — Press announces formation of Bell Aircraft.
July 1 — Lawrence D. Bell and Robert J. Woods move into two small offices at 1807 Elmwood Avenue, Buffalo, start work on airplane designs to be submitted for government inspection.
July 10 — Bell Aircraft incorporated; Lawrence D. Bell elected president, Ray P. Whitman vice-president and treasurer and Charles L. Beard, secretary, and assistant treasurer. Anley W. Sawyer retained as legal counsel. Robert J. Woods is chief design engineer.
Sept. 14 — Bell takes possession of 40,000 square feet of factory space at former Consolidated Aircraft Corporation plant, 2050 Elmwood Avenue.
Sept. 20 — $50,000 worth of equipment installed.
Sept. 22 — Bell receives Army contract to install first Allison engine in twin attack plane.
Dec. 31 — Total employees at end of 1935 — 56.

1936
Feb. 11 — Announcement of Bell Aircraft's $800,000 Navy contract to make wing panels, other parts for Consolidated plane; additional 46,000 square feet of floor space leased; total 80,000 square feet.
May 15 — Bell receives Army contract for $409,007 for construction of one Airacuda.
Aug. 5 — Additional 105,000 square feet of space leased from American Radiator.
Dec. 31 — Total employees at end of 1936 — 152.

1937
April 6 — First flight of the XP-39 at Wright Field.
May 20 — Bell receives Army contract for $3,159,265 for 13 Airacuda airplanes.
Nov. 8 — $245,000 Navy contract received for one Airabonita.
Dec. 31 — Total employees at end of 1937 — 238.

1938
April 6 — First flight of the XP-39 at Wright Field.
May 20 — Bell receives Army contract for $3,159,265 for 13 Airacuda airplanes.
Nov. 8 — $245,000 Navy contract received for one Airabonita.
Dec. 31 — Total employees at end of 1938 — 822.

1939
Feb. 7 — Announcement of the XP-39 Airacobra, new Bell plane capable of 400 miles per hour.
April 15 — P-39 Airacobra accepted by Army after tests at Wright Field.
Sept. 14 — Bell receives Army contract of $2,230,000 for 90 Airacobas.

1940
Oct. 10 — Ground-breaking ceremony held for new $1,050,000 assembly plant at Wheatfield.
Oct. 12 — First production P-39 Airacobra airplane delivered by Bell to U. S. Army Air Corps at Wright Field.
Dec. 31 — Total employees at end of 1940 — 4,339.

1941
Jan. 8 — A Bell Airacobra attains a dive speed of 639 miles an hour, greatest speed ever endured by a human at that time.
March 25 — Lease signed for more floor space at Elmwood; total now 600,000 square feet.
May 19 — First 100 workers on the job at Wheatfield Plant.
July 31 — Bell Aircraft receives contract from Army for rear gun enclosures, elevator and stabilizer assemblies for B-17 bombers.
Aug. 31 — Orders received for $1,050,000 worth of parts.

1942
Nov. 28 — Camp Cataract becomes Camp Bell, moves to new location opposite Falls Airport.
Dec. 7 — First flight of the XP-63.
Dec. 31 — Total employees at end of 1942 — 29,663.

1943
March 1 — Moving-in day at Bell bomber plant, Marietta, Ga. About 100 employees on job.
May 3 — Forty-seven percent of all Bell employees are women.
June 2 — Ground broken for $4,000,000 expansion at Wheatfield.
June 15 — Announcement of three divisions of Bell Aircraft Corporation—Niagara Frontier, Ordnance, and Georgia.
July 9 — First formal flight of Bell helicopter at Gardenville.
July 25 — Ordnance Division opens at Burlington, Vt. after move from Elmwood plant.
Nov. 10 — Bell Ordnance Division

1944
July 24 — Last Airacobra comes off production line at Wheatfield.
Aug. 1 — Army Air Force announces Bell's new high-altitude fighter, the P-63 Kingcobra.
Oct. 20 — "Certificate of Service Award" from the Army Air Force given Camp Bell for training program.
Oct. 31 — Niagara Frontier Division receives fourth Army-Navy award for production.
Dec. 31 — Total employees at end of 1944 — 47,664.

1945
Jan. 10 — Larry Bell presented with Daniel Guggenheim Medal for achievement in the design and construction of military aircraft and for outstanding contributions to the methods of airplane production.
Jan. 29 — Bell Ordnance Division in Burlington awarded new contract to make mortar shells.
Feb. 8 — Bell XP-77 announced by the Army Air Forces; first all-plywood fighter airplane.
Dec. 31 — Total employees at end of 1945 — 2,509.

1946
March 8 — Bell Model 47 helicopter gets first helicopter commercial license granted by Civil Aeronautics Administration.
May 8 — Bell Aircraft receives Helicopter Type Certificate No. 1, first granted by Civil Aeronautics Administration.
July 1 — Bell establishes first flight-training school for commercial helicopter pilots.
Nov. 25 — Sale of 27 Model 47-B helicopters for total of $675,000 announced at National Air Show in Cleveland.
Dec. 31 — Total employees at end of 1946 — 2,929.

1947
Jan. 17 — Stock ticker carries first sale of Bell stock on New York Curb.

July 19 — First Airacuda completed, taken to Buffalo Municipal Airport to be assembled.

Sept. 1 — First flight of the Airacuda.

Oct. 21 — First Airacuda delivered to the Army Air Corps at Wright Field.

Dec. 31 — Total employees at end of 1939 — 1,111.

1940


May 13 — First flight of the Airacobra, developed for Navy.

Dec. 31 — Total employees at end of 1940 — 47,207.

1944

Jan. 7 — Army Air Forces announces revolutionary Bell-built jet-propelled fighter, the P-59 Airacomet.

April 1 — First flight of the new all-plywood fighter airplane, Bell XP-77.

May 1 — Bell helicopter announced.

May 10 — Bell helicopter makes aviation history when it is flown inside 65th Regiment Armory, Buffalo, marking first American indoor flight.

June 15 — First Bell-built B-29, the "Georgia Peach," participates in first Superfortress raid on Japanese mainland.

Dec. 31 — Total employees at end of 1944 — 11,083.

1942

April 14 — Cataract House in Niagara Falls taken over as Camp Cataract to train Air Force mechanics.

May 1 — Building at Union and Losser Roads, Gardenville, leased for Bell helicopter project.

June 7 — Bell leases entire plant of the American Radiator Company, Elmwood Avenue, Buffalo.

June 29 — Army contract received for 2,000 P-39E airplanes. (On September 29, this was supplemented by 1,200 and plane changed from P-39E to P-63.)

Sept. 17 — Bell takes over Modification Center at Falls airport.

Oct. 1 — First flight of Bell-built jet-propelled XP-58A at Murco.

Oct. 2 — First non-stop cross-country flight of a fighter airplane. Jack Woodham flies P-39 with auxiliary fuel tanks from March Field, Calif., to Bolling Field, Washington, D. C.

1945

Feb. 7 — Company makes first flyaway delivery of YH-13 helicopters, two to Wright Field, one to Fort Bragg, N. C.

March 5 — Bell helicopter transports expectant mother from snow-bound home near West Falls, N. Y., to ambulance.

April 11 — Delivery of 13 military helicopters for Army Air Force and Navy represents largest single delivery of rotary-wing aircraft ever made.

April 15 — Air Force announces Bell is building another laboratory airplane, the X-2, made of stainless steel with swept-back wings. Rocket-powered, airplane is to be supersonic.

June 2 — First three of an order of 11 commercial helicopters ordered by TAYR flown to Argentina in C-54.

June 18 — Bell crop dusting helicopter receives first air-mail certificate issued by CAA for aircraft specifically manufactured for agricultural work.

FAMOUS 'CANNON ON WINGS,' Bell's P-39 Airacobra, was turned out by the thousands during World War II. Ship saw action in every major combat theatre.

EARLIEST HELICOPTER WORK was carried out at Bell's Gardenville (N. Y.) facility beginning in 1942. Floyd Carlson, now chief helicopter test pilot, then flew craft like this experimental model.
Second Ten Years Brought 'X' Ships, Missiles

**1952**

- March 10 — Niagara Falls plant is leased for electronic assembly work, becoming Bell's seventh facility in Frontier Division.
- April 11 — First helicopter delivered from Texas plant. Contracts department established to handle foreign licensing for helicopter manufacture.
- Aug. 17 — First Bell-built outboard engine nacelle for B-47 leaves assembly line.
- Sept. 17 — New official world's longest, non-stop record is established as Bell pilot Elton J. Smith flies Model 47D-1 from Fort Worth to Waltham plant, a certified distance of 1,217.373 miles, in 12 hours, 57 minutes.
- Sept. 24 — First on-the-job training contract in aircraft industry is signed with Local 501.
- Nov. 9 — Single Army H-13 helicopter airlifts all supplies to engineering platoon and 100-man infantry group on Hill 1304 during five-day operation in Korea.

**1953**

- March 4 — First flight of XHSL-1 anti-submarine helicopter declared entirely successful by U.S. Navy.
- March 18 — Development of electronic remote control system to land guided missiles is announced.
- March 21 — Development of autopilot for HSL-1 anti-submarine helicopter is announced.
- March 24 — Boeing Airplane Company awards Bell contract to manufacture both the inboard and outboard nacelles for the Boeing B-50 Stratofortress.
- June 15 — Bell announces it has completed preliminary designs for a revolutionary helicopter resembler sister ship to the record-shattering X-1A, providing the Air Force with a double-barreled opportunity to accelerate its investigation of supersonic and high-altitude flights.

**1954**

- March 18 — Development of electronic remote control system to land guided missiles is announced.
- March 21 — Development of autopilot for HSL-1 anti-submarine helicopter is announced.
- March 24 — Boeing Airplane Company awards Bell contract to manufacture both the inboard and outboard nacelles for the Boeing B-50 Stratofortress.
- June 15 — Bell announces it has completed preliminary designs for a revolutionary helicopter resembler sister ship to the record-shattering X-1A, providing the Air Force with a double-barreled opportunity to accelerate its investigation of supersonic and high-altitude flights.
- Nov. 16 — Bell's experimental jet-propelled, vertical-rising airplane, the VTOL, makes its first free flight.
- Nov. 18 — President Eisenhower presents Harmon International Trophy, aviation's highest award, to Major Charles E. Yeager for his record flight in the Bell X-1A.
- Nov. 24 — Bell sponsors special concert for employees at Kleinhans Music Hall, featuring the two company choirs and conducted by Franz Allers, nationally known conductor and composer.

*COLLIER TROPHY*, nation's highest aircraft award, was presented in 1948 for development of X-1, world's first supersonic plane. President Harry Truman awarded trophy jointly to (from left) John Stack, government research scientist with the NACA, Capt. (now Maj.) Charles Yeager and President Larry Bell.

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**1949**

April 1 — Bell announces Model 47-D1 utility helicopter, capable of carrying three persons or 500-pound payload.

April 17 — Consolidated Vultee Aircraft Corp. and Bell announce that Bell has been given subcontract to build twin-engine nacelles for Convair's B-36 bomber.

May 13 — Bell Aircraft Supply Corporation formed to fly helicopter oil surveys in South and service helicopter operations on West Coast.

June 13 — Local 601, UAW-CIO, members go out on strike.

Oct. 17 — Nineteen-week production strike ends.

Dec. 31 — Total employees at end of 1949 — 6,800.

**1950**

March 29 — Company announces more than $20,000,000 backlog.


June 16 — Navy announces that Bell won competition for anti-submarine helicopter. Contract for three experimental models being negotiated.

Sept. 17 — Northland plant, former government-owned facility, is purchased for manufacturing operations.


Dec. 9 — Bell helicopter used by Corps of Engineers to complete first accurate survey of upper Niagara River rapids.

Dec. 31 — Total employees at end of 1950 — 8,800.

**1952**

Jan. 16 — Six Bell 47D helicopters, operated by Helicopter Air Service of Chicago for hauling mail, earn safety award for 70,000 accident-free miles.

Feb. 5 — Secretary-treasurer Loston Fanew is named to newly-created post of assistant general manager.

Feb. 24 — First helicopter (HST-5s) made specifically for U. S. Coast Guard are tested.

June 14 — Flight of jet-propelled X-5, first airplane with variable sweepback, announced. Airplane was one of three "X" models assigned to Bell by Air Force.

Oct. 29 — Establishment of Main St. Laboratory (Tech Pub) with leasing of three floors in Crosby Building, downtown Buffalo.

Dec. 6 — Chandler Street plant leased for manufacture of jet nacelles components.

Dec. 31 — Total employees at end of 1951 — 11,200.

**1955**

Jan. 8 — Company announces commercial helicopter sales for 1954 hit record volume, climbing 20 per cent over the previous year.

January 9 — New 27-month contract with Bell is ratified by the UAW-CIO local units.

**MANPOWER SHORTAGE during war brought women onto production lines. At one time 47 per cent of company employees were women.**
Plane Power Comes in Many Packages; Six Different Propulsion Methods Used

In its twenty years of existence, Bell Aircraft has used every known method of aerial propulsion with the exception of an atom-powered engine.

The company's first experience was with conventional reciprocating engines. These were installed in the propeller-driven XFM Alracuda, P-39 Airacobra, XFL-1 Airabonita, P-53 Kingcobra, P-77 and B-28.

Similarly, the XV-3 convertiplane and all Bell helicopters but one are equipped with reciprocating engines. The exception, the H-13P helicopter, is powered by a gas turbine engine.

When the Armed Forces demanded aircraft capable of faster flight and greater altitude, Bell was given the assignment. The company designed and built the first jet-powered plane to be produced in this country, the P-59 Airacomet.

The P-59 was capable of speeds in excess of 450 miles per hour and could climb to 47,000 feet.

Preliminary studies were made in connection with pulse jets and ram jets. An XQ-1 airplane was equipped with a pulse jet engine for experimental purposes, and ram-jets were installed in a A-26 and a P-83.

The Bell X-1 gave the company an introduction to rocket powered flight. Extremely valuable information was obtained during the testing of this plane, first in the world to fly at speeds greater than that of sound.

Before being put on permanent exhibition in the Smithsonian Institution, the X-1 attained a speed of 978 miles per hour and reached an altitude of 70,140 feet.

Since Bell had acquired very considerable experience with rocket engines, it was understandable that the company was awarded contracts to design and produce rocket engines and rocket-powered guided missiles.

A combination of alcohol-water

Bell's rocket section has increased steadily in size and output, is now one of the top three liquid-propelled rocket producers in the country. Rocket engines have been designed and produced not only for missiles made by the company but for other manufacturers as well.

In the field of supersonic aircraft, Bell attained and has held pre-eminence. The rocket-powered X-1A has flown faster and higher than any piloted airplane. It has flown at a speed of 1,650 miles per hour and has reached an altitude of 90,000 feet.

The Bell X-2 has not yet flown in powered flight but is expected to do so in the near future. At certain speeds and altitudes its engine will develop horsepower comparable to the power output of the liner Bre- men or a modern cruiser.

The Wright Brothers had at their command a total of twelve horsepower in their first engine.

The company also designed and produced a motorized wheelbarrow, the Prime Mover. This vehicle was powered by a three horsepower engine, had a maximum speed of five mph.

BELL X-1, first supersonic plane, was rocket-powered.
Prediction for 1975:

Fixed-Wing Aircraft Discarded Like Biplanes

By ROBERT J. WOODS, Airplane Design Consultant

As we at Bell Aircraft round out our first twenty years it seems logical that some sort of look forward into the next twenty years be taken.

Bell Aircraft's past twenty years has generally seen the company as a leader in the design, construction, and test of aircraft and the extension of the frontiers of aviation science. From my best recollection, one of the wildest dreams for the future in 1955, approached the actual circumstances of the expansion and growth of Bell Aircraft and the industry.

While a direct extrapolation of the past twenty years cannot be made into the next twenty because of the powerful controlling influences of world economic and social conditions and possibly unexpected discoveries and technical advances, it appears almost certain that Bell Aircraft will continue to lead and exploit the most advanced aviation concepts.

The curriculum of national security presents discussion here of actual details of plans, hopes, and dreams, but it would not seem too far from the possibilities to expect to see Bell Aircraft products flying at speeds of 10,000 mph and perhaps 30,000 mph in the next 20 years, in routine military and scientific operations.

The power for their flight may come from fuels and propulsion techniques not now generally known to the public, and in some cases will be developed through continued expansion of Bell's rocket research and development work.

As the traveling public, commercial industry, and the military serv-