

## Chronology of American Optical History - Summary by Dick Whitney

Year	AO Historical Event
1826	William Beecher arrives in Southbridge, Mass and opens a jewelry and watch shop on Main St.
1833	AO's "birth" - William Beecher and 3 apprentices (Cole, Phelps and Farrington) make silver eyeglass frames in rooms above the Beechers business expands to two story building near AO complex of today, call the business "THE OLD SPEC SHOP"- Corner of Main and Chestnut Streets
1839	Main and Chestnut Streets
1840	Ammidown and Putney
1842	Ammidown and Son
1843	The first steel spectacles made in America were produced on machinery invented by Beecher
1843	Beecher made first steel spectacle in America
1848	First gold frames made in Southbridge
1850	Gold frames (14-18K) sell for \$7.50/pair
1850	Ammidown and Cole
1852	Frame sales nationwide total 14,919 pair
1853	Old Spec Shop operation switches from Cohasse brook water power to steam power
1860	Beecher and Cole
1862	R.H.Cole and Company
1864	George and brother Hiram hired by Co. now called R.H.Cole and Co, both are fired short time later
1864	George W. Wells (age 17) arrives in Southbridge with \$100 in his pocket
1865	George Wells rehired by R.H.Cole & Co
1869	American Optical Company formed on February 26 (Gross business of \$50,000)
1869	R.H.Cole offers 22 year old G.W.Wells partnership in business
1871	First 3 story wood building built on present site, 20,700 sq. feet (cost of \$35,000)
1872	G.W.Wells becomes general supervisor of new plant
1874	AO introduces the first rimless spectacles
1883	AO starts plans to make its own lenses in the U.S., to avoid dependency on foreign supply
1883	First Lens plant built
1884	January 18, 1884 first AO spherical lenses of improved quality produced, avoiding 1 year wait for orders from Europe
1884	AO Trial frames
1886	1,304,280 pair of spectacles sold
1888	Tarrifs imposed on foreign eyeglass lenses, AO Celebrates with Fireworks in park in front of Main Plant, begins making lenses in
1891	R.H.Cole retires, G.W.Wells elected President of AO
1891	Automatic Lens edgers installed
1891	Gold filled spectacles introduced
1893	AO begins to manufacture toric lenses and adopts the Dioptric system of Ophthalmic lens power
1893	Printing Dept established
1894	AO's first catalogue published
1894	cylinder Lenses
1895	Eyeglass chains sold
1898	AO Trial set introduced!
1898	U.S. Bureau of standards accepts a et of AO power lenses as the standard for the industry
1900	Toric lenses
1902	AO employed first traveling man
1905	AO London Office
1905	International operations begin with the opening of the London office
1907	Made our own gold filed stock
1907	AO had 2000 employees with a payroll of \$1,000,000
1907	Executives from AO, Baush and Lomb, and Zeiss meet face to face in Southbridge MA, Rochester NY and Jena Germany!!!
1907	AO sells automobile goggles
1909	AO Chicago office opens
1909	J.Cheney Wells founds the AO Research laboratory
1909	First Safety Goggle introduced (Julius King Optical Co- purchased by AO in 1923)
1910	New Lensdale building (2L now building 50) - first to be built entirely out of cement - no wood used
1910	Kryptok Bifocals first manufactured
1910	AO New York Office opens
1911	AO San Francisco Office opens
1912	Death of George W. Wells
1913	AO secured the rights to Crookes glasses, later called Calobar (UV and IR protecting lenses)
1916	Dr. Edgar Tillyer hired as lens designer in the Research Lab.
1916	AO Lensometer made (distributed in Labs), few sold before revision and final introduction in 1921 after WWI

1917	E.D.Tillyer files patent for using common base curve for a range of prescriptions, allowing practical base curve choice for mass produced lenses
1917	Cole's sell final 127 shares of company stock to Wells family for \$1.25 million
1917	AO designs and builds 8 mobile optical units for WWI, self contained eyeglass facilities for field use
1917	Two and one half million lenses furnished to Gov't for War effort
1918	Dr. Estelle Glancy joins American Optical
1918	Oil hardened glass safety lenses sold (product name Antaeus)
1921	Sales drop from \$9 million to \$5,250,000 - distribution system carefully analyzed
1921	The first AO LENSOMETER introduced by Dr. Edgar Tillyer (1st to measure effective lens power)
1923	Establishes 114 National outlets (branches) selling AO products
1923	Industrial Eye protection department established, Purchased Julius King Optical (first safety goggle mfg 1909)
1923	Wise Owl eye safety program established
1924	Progressive Lens Patent #1518405 issued to AO (Dr. Estelle Glancy)
1925	AO acquires De Zeng Instrument Company of America (Ear, Nose and Throat products)
1925	Tillyer lens revolutionizes Industry, 15 yrs in making, lens corrects for astigmatism and power
1926	Tillyer patents ophthalmic lens series where off axis power and astigmatism errors were controlled
1930	High temple Ful-vue spectacles introduced
1930	Laminated safety lenses produced
1931	Ful-vue fused 3/4 segment bifocals were introduced, visual jump and cosmetics improved
1935	Acquires Spencer Lens Co., Expands market into precision optics
1935	I-safe laminated ophthalmic lenses sold
1936	Air hardened glass safety lens introduced (Super Armorplate)
1936	Joel Cheney Wells, retires after 43 years at age 62 (began work as an office boy)
1936	George B.Wells elected President of AO (Son of Albert Wells- past President)
1936	1936-1939, In spite of Depression, sales increased from 16Million to 19 Million, 5,000 to 7000 employees
1936	Albert Wells continues as Chairman of the Board, began work in Lensdale in 1891
1938	Dr.Edgar Tillyer was credited with the development of the additive Power Phoropter for corrective lenses
1938	AO Bureau of visual science was established
1939	The entire Legal and Patent dept. was established for handling scientific advances in AO
1940	Plastic safety lenses mfg (Methyl Methacrylate)
1941	Due to labor shortage in Southbridge, 66,000 sq.ft. Putnam Conn facility opens for Industrial eye protection
1942	Announces Anti- Relection coating process developed, featured in Time Magazine
1942	New Brattleboro Vt plant opens (77,600 sq.ft.)
1942	Began to produce 18 .5 million pairs of lenses for armed services
1943	Brattleboro Vt plant had 380 workers producing 2 million lenses for safety and aviation goggles
1943	AO research war efforts include gunsights, AR glass, new glass for military and instrument applications
1943	AO provided 14 million prescription eyeglasses to Armed Forces and still filled civilian orders
1944	Sales doubled since 1934
1944	Fourty five % of AO sales was in Gov't contracts for war effort
1945	Sight screeners for checking vision
1945	Industrial vision protection plan begun - The American Plan
1945	Glareless glass, one -way mirrors, new artificial eye
1945	Heat absorbing, color transmitting glass for motion picture projection
1945	Monoplex eye division formed
1945	Variable Density Goggles used in Atomic Bomb Blast
1946	R&D begins development of Contact lenses
1947	Contact lens manufacturing begins
1947	Metal spectacle goggles, new 10K and 14K gold alloys for frames
1947	First successful commercial production of curved Polaroid lenses
1947	Metal frame plant in Southbridge was completed
1948	Plastics manufacturing department established to centralize AO's technical knowledge
1948	Lenticular E one piece cataract lens introduced
1948	Microfilm reader, calobar uniform density lens
1950	Plastolite Safety lens introduced
1950	Air hardened streatwear thickness lens introduced (Tempross)
1950	Product diversification - camera lenses, projectors, binoculars, molded items for automobiles
1952	Glass Executive Bifocal introduced
1953	Glass Microscopic Lenses for Low Vision introduced
1954	Student Microscopes introduced
1954	9000 investors buy AO stock, private company now becomes public
1954	Advantages of minus toric surfaces for finished lens series proposed

1955	E.W.Schumacher elected President
1955	Flood in Southbridge from Hurricane devastates AO (Closing of facility considered)
1955	Diamond studded Elsa Schiaparelli frame introduced (valued at \$25,000)
1955	Todd - AO system of wide screen motion picture projection developed in conjunction with movie producer Mike Todd (Oklahoma is first)
1955	AO designs, builds and patents an automatic electronic Lensometer. Device never marketed, but was exhibited at an optical show in
1956	Sunglass sales reach an all time high
1956	Sales reach all time high of \$76 million
1956	Microstar and Cycloptic microscopes and RX master Phoroceptor
1956	Aquisition of British American Optical Industries
1956	AOLITE (then called Plasticor) 56mm FSV lens series - first to recognize the advantages of using minus toric surfaces for FSV
1957	Increased emphasis on fiber optics, television , nuclear energy and military business
1958	AOLITE Aspheric Cataract Lens introduced
1958	New products include RX master phoroceptor and high lift ophthalmic chair
1959	Ultra high speed camera patent and intravenous measurement device of oxygen in human blood
1959	Fiber Optics business developed
1959	R&D developes Sidewinder missile for the military
1960	Polarstar (polarizing) and Flouristar microscopes introduced for cancer research
1960	Ophthalmic division maintains sales, growing acceptance of Tillyer Exec and AOLITE aspheric cataract
1961	Justice Dept.files antitrust with AO / B&L to disolve labs, actual ruling June 1966; results in AO divesting from Rx laboratory's
1961	Optical lasers developed for the air force
1961	Laser Inc. formed to R&D optics, electronics, lasers
1961	Davis, Fernald and Rayner design Masterpiece FSV glass series corrected for off axis performance errors
1961	AO Cardiometer and DC Defibrillator
1962	AOLITE plastic lens market rapidly expands
1962	Record number of new frame styles
1962	AOLITE 62mm Finished Single Vision lenses introduced
1963	Fiber Optics division
1963	Solar powered laser transmitter completed for the Air Force
1964	Noel Roscrow (founder of SOLA) visits the AOLITE CR-39 manufacturing plant operation in Southridge, Mass.
1964	AOLUX laser glass reached market, new endoscope introduced
1964	Dr. Elias Snitzer invents the Fiber Optic Amplifier (recognized in 2012 by IEEE as one of the top 100 inventions of all time)
1965	Medical Division developes implantable pacemaker
1965	Tillyer Masterpiece lens, first new SV lens in 30 years
1965	AOLITE Executive Bifocal introduced
1967	Warner Lambert buys American Optical (becomes publicly owned)
1973	AOLITE 66mm FSV lens series introduced
1975	AO Tumble Abrasion test developed by John Young
1976	Aspheric lens design patent - John Davis
1978	AO's First Progressive lens introduced (Ultravue / AO7 In Europe)
1979	Glass manufacturing plant closed at Southhbridge facility (6 Million Dollars in Platinum sold off)
1980	AO's Permalite tintable hardcoat introduced - worlds first and backed by extensive wearer trials
1980	Fulvue Cataract lens patent - Donald B. Whitney
1980	Fulvue Cataract lens introduced
1980	AOLITE 71mm FSV product line introduced
1981	AO Truvison Progressive Lens Introduced - First Bipolar Design
1982	Close the Frederick, Maryland Frame Plant (Out of Frame Making business)
1982	Photolite, the first plastic photochromic lens introduced
1982	Warner Lambert sells American Optical to M&R (Mo Cunniffe and Rudy Wood)
1983	AO Musuem opens in Southbridge (John Young curator)
1983	AO Brattleboro plant closes, Safety Lens manufacturing moves to relocates to Southbridge
1983	AO Celebrates 150th Anniversary
1985	AO Truvison Progressive Lens Patent - Dr.John Winthrop
1985	Fused Glass Bifocal operation closes in Southbridge
1985-6	AO Soft contact lens division (Framingham) closes, solution sold to Ciba Geigy
1988	AO Omni Progressive Lens introduced- First with automatic Prism thinning
1989	AO Omni Progressive lens Bi-polar patent - Dr.John Winthrop
1990	Technica Progressive lens introduced (designed for computer use)
1990	Polycarbonate OMNI product released
1990	Safety Division sold to Cabot Corporation
1992	AO Pro 15 progressive lens released
1992	ASPHERLITE (aspheric SFSV) product released

1992	Manufacturing completed its move to Tijuana (except for Glass Executives)
1993	Tijuana (AO Lens Mex) plant Flood
1993	Aspheric single vision "Inside out patent" issued - Dr. Winthrop / R. Whitney
1994	AO Pro 16 Polycarbonate product introduced
1994	Fire in glass progressive plant at the AO Lens Mex Tijuana Facility
1995	AO Force 55 Progressive lens introduced in 1.549 Nd index material
1996	Introduce AO 55 SFSV 1.549 index (Nd) aspheric single vision design
1996	SOLA International Inc. purchases AO ophthalmic lens division from AO Corporation (M&R) and renames it AO Lens Co.
1997	AO 55 FSV aspheric lens series released in the U.S.
1997	AO Lens Co. corporate headquarters relocates from Southbridge Mass to San Diego, Ca.
1997	Reunion of Todd - AO researchers occurs / visit Southbridge complex
1998	AO Compact Progressive Lens introduced (Project name= Short Corridor)
1999	AO Lens Mex (Plastic Lens Casting) to Close (June 1999) and consolidate with SOLA OSM plant
1999	AO Compact Progressive Lens awarded Best In Lens Design at OLA Convention
2000	DOD Lease signed on March 31, 2000; Demolition of Main Plant begins in April
2000	AO & SOLA Merge Sales and Marketing (East Coast Southbridge, West Coast Petaluma)
2000	SOLA Buys Oracle Lens for \$17.4 Million
2000	AO b'Active General Purpose Lens released / For Active Lifestyles - Includes Polarized version
2001	AO Southbridge Warehouse closed in June 2001 / Consolidation of AO and SOLA Distribution centers
2002	AO Reunion on May 28, 2002 - First event at the newly opened Southbridge Hotel and Conference Center - ~500 attend from around
2005	AO/SOLA/Carl Zeiss Ophthalmic Merge
2005	AO Glass Executive Lens operation ceases after ~53 years
2006	AO, SOLA and Zeiss Ophthalmic legally become Carl Zeiss Vision (AO Lens Co no longer exists)
2006	Southbridge Building 50 Facility (formerly 2L) closes in Dec; 3 Carl Zeiss / former AO employees remain in Southbridge
2006	AO Compact Ultra 13mm fitting height Short Corridor PAL design / released under SOLA Brand
2007	368 Main Street Southbridge office for 2 open in January- Dick Whitney and Jeanine McElroy
2013	Zeiss funds Optical Heritage Museum, moves to 12 Crane Street
2014	AO Eyewear brings its manufacturing back to Southbridge from China