

Resume

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Career Philosophy

- Improve the safety and enjoyment of General Aviation flying (and other aviation segments) by providing situational awareness and assistance to pilots in innovative ways through software. To this end I have had a long-time focus on Weather for pilots.
- Passion for aviation and its advancement
- Market- and Customer-minded
- Attention to detail
- Constant knowledge growth
- Use of latest platforms and technologies, within limits of aviation certification requirements

Positions (See my *Projects and Screenshots* web site at <https://tedcannaday.com/projects/> for more detail)

- **Logical Drive Inc.** (1991 – present) Senior Software Engineer (C/C++, Obj-C/Obj-C++, Swift, MS C++, PHP, Javascript) and Chief Pilot – My Aviation Software and Consulting company, currently creating iOS apps for pilots and others.
 - o Created pilot weather app in Swift, with my philosophy of easy, interactive access to required weather data. Responsible for all aspects of project.
 - o Created Safety-oriented iOS app to assist pilots after a crash, in Obj-C. Created HyperData™ super-accurate airport database, continually updated for 7 years now. Includes app, Server backend (PHP & SQL) & Javascript web app (full stack) for creating airport data. Responsible for all aspects of project.
 - o Created PocketHorizon Pro, an AHRS-based standby artificial horizon for all iOS devices, with wireless networking of attitude & position info between multiple devices. Responsible for managing and implementing full project, from product idea to design, code implementation to release, graphic design to marketing (incl. website copy and design). Primary challenge was getting the low quality Apple gyro to work as an AHRS sufficient for the design purpose. Many Apple technologies used, incl. Blocks/GCD, Peer-to-peer and client/server networking, Core Data, In-App purchases. Wrote multiple server apps (PHP) to register customers and communicate with them while running the app, through my website.
 - o Created custom iOS Enterprise app for large automobile auction house client (iPhone pictures-to-live auction website, including iOS app and corresponding MS server app). Currently used daily by client, with millions of pictures processed.
 - o Several innovative safety-oriented aviation apps potentially ‘in the queue’, some with much work already accomplished.
 - o Countless smaller software and hardware projects over the years – ask for details
- **ForeFlight LLC** (2013-2014) iOS Software Engineer (Objective-C) – full time consultant employee (remote) through my Aviation Software and Consulting firm Logical Drive Inc. ForeFlight is by far the #1 Electronic Flight Bag app for pilots since the beginning of the app store, and one of the most successful iOS apps of all time. Tens of thousands of pilots rely on it daily.
 - o Designed and implemented the Pack feature that takes the pilot’s route and determines what charts and other data are needed for that route, and downloads them. Primary challenge was integrating this new functionality deeply into an existing software app, with multiple hooks – a very involved process. All up-to-date Apple technologies used.
 - o Implemented the Track Log feature that records flights and exports them to the company website for map display and to other 3rd party services for flight debriefing. Syncing tracks between Apple devices using Simperium service. Sharing tracks using Twitter and Facebook.
- **Avidyne Corporation** (1996-2008) – full time consultant employee (remote). Came on board as 2nd of two software engineers in 1996, significantly contributing to Avidyne’s success. Remained as Avidyne’s longest-term employee (other than the founder) through much of my tenure.
 - o Software engineer, MS C++, with emphasis on Aviation Weather products:

- Avidyne Lightning MFD application for displaying StormScope sensor information, with new patented ‘Contouring’ display of lightning grouping. Responsible for all display software and hardware interfacing. Primary challenges were the Contouring display, qualifying for BFGoodrich’s Approved Display List, and simply getting the first Weather app working for the Avidyne MFD. Eventually awarded patents for Contouring Lightning display.
- Avidyne Radar applications for MFD, displaying airborne radar graphics for 26 different RT/Antenna combinations, analog and digital, including most Bendix/King products from the RT-130/150/160 through the ART-2100, as well as Collins RTA-8xx series doppler digital units. Responsible for all display software and hardware interfacing. Primary challenge was implementation of a large number of RT types in a single app, plus DO-178B Level D & C certification. Awarded two patents for Radar display features.
 - Added a simple moving map radar overlay for SkyWest Airlines, with Level C cert.
 - Included several test/monitor apps, plus a simulator app for several protocols.
 - Described by Avidyne founder Dan Schwinn as “One of the top two radar engineers in the country.”
- Orbcomm Satellite 2-way Datalink Weather System, packet-based: Responsible for design and implementation of all Client/Server data software, including the Transaction Server (handling all transactions between airborne units and ground), Satellite system interfacing, Airborne client software, plus Protocol design. Primary challenges were the very low bandwidth, which required a great deal of data compression (e.g. one radar image = 160 bytes, one METAR station = 12 bytes), mitigating the large and unpredictable latency, and determining exactly what data to send based on the user’s route and location. Awarded one patent for weather imagery transmission and display.
- Iridium Satellite 2-way Datalink Weather System, connection-based: Responsibilities similar to Orbcomm except system has much greater bandwidth and reliability, but a primary challenge was connection management in the system with multiple users.
- Dozens of ancillary apps for the Datalink systems, including WX gatherers, System Monitoring, Simulation, Testing, many more.
- MFD/PFD Software engineer, including work on all Entegra products from the beginning through 2008, including Release 9. Development in MS C++, cross-compiled to Linux for R9. Scenegraph graphics.
- FAA Certification using DO-178x standard, to all cert levels depending on product
- **Archangel Avionics** (1994-1996) – full time consultant employee (remote)
 - Primary software engineer (Borland C++) on Touch and Go EFIS for experimental market. The first practical EFIS on the market, and the progenitor of all others.
 - Initial demo version of MFD moving map, with both scanned sectional and vector charts; shown at Oshkosh ’96.

Areas of Expertise

- iOS development for aviation (13 years), with apps on the App Store
- EFIS Avionics software, certified (12 years), including 1 patent
- Airborne Radar (5 years), including 2 patents
- Sferics (StormScope) (2 years), including 3 patents
- Satellite Datalink Systems (8 years)
- WX Data & Decoding, including Sourcing (10 years)
- Networking apps (wired, wireless & WAN; peer-to-peer; client-server (backoffice); iOS & Windows)
- Digital (software) filtering
- FAA Certification, DO-178B (11 years)
- Protocol Definition (ICDs) (15+ years)
- U.S. and World Navigation Data, including Sourcing (7 years)
- World Terrain Data, including sources (5 years)
- U.S. Airspace System (through piloting experience) (many years)

- Software Test Plans (15+ years)
- Other Technical Writing and publications (many years)

Piloting

- Private Pilot for 30+ years, IFR & Multi rated
- Aircraft owner, flying at least weekly from my private hangar at my home office
- Commercial Drone Pilot

Publications

- Author, March 1985, *Sport Aviation* magazine, "A Computerized Weather Station for \$750", which included sale of self-authored 40 page booklet and 3 software apps for C-64 (BASIC) for easily scripting the desired WX information requests, with hundreds sold.
- Logical Drive/PocketHorizon website, 2012-2013 – design and execution, including creating all graphics and authoring all copy, incl. P.O.H. <http://logical-drive.com>

Patents Summary

Have been an active inventor since the 1980's, with more ideas for new products in progress.

Hold six patents for avionics Weather software:

- 3 for Lightning features (Avidyne)
- 2 for Airborne Radar features (Avidyne)
- 1 for Datalink Weather Imagery Transmission and Display (Avidyne)

Also, hold one patent for Cat Porch pet product (manuf. and sold nationally by my company Progressive Pet Products 1989-1992)

Conferences/Tradeshows

- Attended Apple Worldwide Developer's Conference (WWDC) in 2010, 2011, 2012.
- Attended Oshkosh and Sun 'n Fun aviation trade shows for several decades. Worked booths many years for Avidyne and Archangel.

Education

4 years University of North Carolina at Charlotte, Engineering Analysis and Design, and Music.
Constant self-learning (always my main method of learning).