David C Morrell interview conducted by Anthony G. Potoczniak
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[0:00] David Morrell (DM) is the creator and developer of the pilot scheduling system called HarborLights.

[0:24] DM shares recent success of expanding HarborLights to the Galveston Port Authority, which just approved to adopt the harbor management system. Describes the system components of the software: the order and billing systems.

[01:30] Harborlights (HL) is a scheduling system, which incorporates ship pilot data. The ship pilot is the primary point of service at the POH that engages an incoming vessel. HL helps to optimize port service and increases security by having more eyes on the ship while at the POH.

[03:55] Explains how ship information is displayed in the system. Original database for dispatchers was put together by ship pilot Capt. Lou Vest. The colorization of the dispatch system -- how information is represented -- inspired the name HarborLights. Colors assigned to ease analysis for the dispatcher to understand where the ship is in the process. DM tried to make logic of the colors, i.e., I made the tankers green, because they represented money; red represents emergency or hazardous, so when you take red and green and combine them, that makes a chemical tanker. These schemes were designed within the commercial environment to be able to assess quickly the status of a ship.

[06:45] Describes how and by whom information accessed: determined by function and business -- the pilots, tugs, and mooring companies.

[08:10] Lou Vests prototype database system tracked ship movement. HL expanded this basic idea by adding more data to the system.

[09:10] Describes the optimization of the ordering process, i.e., linking Lloyds shipping database to the HL system; ships still require verification by the pilot, this information also becomes part of the HL database.

[11:05] Shares historical process of how vessels were verified: pilots used paper cards to relay information about the ship, pilots verify the accuracy of the information by checking the ships placard located at the wheelhouse; charge for services is based on accuracy information about the ships tonnage and length of beam.

[13:25] Describes how tracking ships in the Houston Ship Channel has changed over time. The Marine Exchange was a beach house located at Morgans Point -- nearest point of access to the channel, and run 24/7 mostly by retired women, who reported ships going in/out of the port.

[15:02] Explains how ships were being tracked, discovers the problem with the docks, and how this information was important to all constituents involved.
[19:02] DM explains how he joined the Houston Pilots in 1996. First projects were related to data recovery. Overtime, he observed how busy it got in the dispatch area, especially when a lot of ships appeared at the same time: This place can really be a madhouse!

[22:10] Describes how the dispatch area worked when the POH was closed down: The phone never stopped ringing... Agents and dispatchers have to work to re-schedule the delays.

[24:58] Compares pre-Harborlights era with the current system: HL gave the ability to research the vessel to complete an accurate order without the experience needed to be acquired over the years.

[26:57] Shares the experience of observing and learning the day-to-day work of dispatchers: determined a way to optimize the system. The goal was to increase access to information, in a secure way, to all the different stakeholders (agents, tugs, pilots): if the main scheduling services know exactly what’s happening up to the minute as far as changes to the vessel, then it gives them a little more time to utilize their manpower. In most cases, up to 4-hours notice. Describes the earlier HTML version of HL postings: it kept the phone calls down a lot. DM determined that it would been hard to develop Harborlights without this rudimentary system of displaying real-time information.

[32:16] Timeline of HL implementation: initially a lot of reservation in releasing scheduling information: pilots worried about the accuracy, shipping agents were upset, because they did not want competing agents in their business. As a result HL had to be taken down for a brief time. One of the largest shipping companies (Moran Shipping Agencies, Inc.) decided to share their information, convincing others players to share their information.

[35:15] DM describes the automation of the maritime industry based on regional tours of other Ports and their scheduling systems. HL tracks information not found in other port systems: pilot rotation, pilot certification, certified deputies for operating certain vessels.

[38:06] DM describes the eight-year process of creating a patent for Harborlights, and the challenge of completing the process.

[41:01] Discusses the process incorporating Automatic Identification System (AIS) data into HL to create a visualization of the ships. DMs daughter, a gifted mathematician, helps to decode the encrypted data.

[45:00] DM describes the process a programmer learned the intricacies of the shipping industry, and how HL was developed to reflect the work culture of the Houston Pilots: I had the questions, they had the answers.

[50:55] DM shares story of the first days working on the project that would later become Harborlights: When we first got here, there was nothing on a piece of paper that said that this
was a rule or restriction. It just seemed to be in everybody’s head. Without getting that information from a pilot, it was going to be impossible to do. He states: Unless you can make sense of it, you can’t put it to logic. DM describes the interview process working with the pilots. Additional description of how the linemen, tugs, and pilots practices have changed over time.

[55:06] Discusses the Port of Galveston Authority and the prospect of expanding HL to other ports; how the system will become more efficient for billing, scheduling, and verification -- a checks and balance between the figures, which is more accurate for the whole industry.

[59:15] Description of critical historical moments in the past decade, and how they impacted the development or operation of HL: closing the port: 9/11, hurricanes.

[01:01:15] DM shares story about 9/11, when the Port of Houston computers were being hacked, forcing the closure of the entire port. Relates the story of how the FBI and Scotland Yard used computer logs from HL in the prosecution of Aaron Caffrey - the lovesick hacker.

[1:05:04] Further description of the Denial of Service (DOS) attack on the HLs servers. After DM reports this activity to the authorities, the shipping industries were shut down several days.

[1:07:27] DM describes how he got interested in electronics and programming. Influence from his youth, when a good friend of his had a side-job of buying broken stereos and TVs, and fixing them. He thought: that’s a really good career, I think I can make a career out of that. Moved to California, attended a program at Addington Labs for two years. Moved back in Houston in 1979, joined IBM, where he worked in department that maintained mainframes.

[01:13:04] More information about DMs career: married in 1983, worked in an emerging field of digitizing web logs of various oil industries. Worked at several companies that specialized in digitizing seismic and well logs, developed new scanner technologies. Unemployed, DM began to work in the computer service industry.

[1:18:22] DM joined the Court of Appeals, revamping the opinion system, so it could be used on a shared computer network.

[1:20:15] DM discusses Harborlights as the largest project: We put in more effort into HL, because of the sheer need. The industry didn’t have it. Describes other projects with Pipe Sales Inventory, and developing software that improved the companies work flow and accuracy of data.

[1:26:37] Describes his work in the Life Gift Foundation, which keeps track of organ donations.


[1:30:39] Conclusion of interview.