



AIR EVAC LIFETEAM USES WAVE TO EXTEND EMERGENCY COMMUNICATIONS



Critical Communications Software Helps Deliver Faster and More Reliable Critical Care in Rural America

Air Evac Lifeteam is the largest independently owned and member-supported air medical service in the U.S. The physical limitations of their radio network were becoming a liability, with multiple stations, consoles and dispatchers in play, and no inter-service interoperability or system survivability. Big issues were at risk: critical patient care and the organization's financial health. WAVE Work Group Communications helps Air Evac Lifeteam affordably achieve near-unlimited scalability, greater efficiency, extensive communications interoperability and system redundancy.

THE CHALLENGE

Air Evac Lifeteam's existing radio network was no longer up to the task of managing increasing communications demands.

Air Evac Lifeteam has flown more than 140,000 people who were in critical need of care. They primarily service rural areas, where death rates from life-threatening conditions average twice as high as those of urban locations, usually due to the extensive delay in the delivery of proper care.

To provide this vital service, the organization maintains a fleet of more than 100 helicopters stationed over 75 mutually supporting air-medical bases. This massive operation is coordinated by 25 dispatchers from a single emergency dispatch center, with calls coming in from over 600 hospitals, 700 EMS agencies and more than 635,000 members across 12 Midwestern states.

Air Evac Lifeteam's existing radio network was no longer up to the task of managing these

communications demands. Based on bulky and expensive proprietary hardware consoles, the system was inefficient, confusing and operating beyond capacity. There was no survivability to speak of, and no functional interoperability.

Physically accommodating future growth was also out of the question. Even if it were, expanding operations with their current configuration would have actually led to diseconomies of scale, with per-channel and per-seat costs rising with each addition, draining any return on investment.

With each console capable of handling a mere 48 channels, dispatchers had to operate two separate consoles, and two separate microphones, to account for the 76 channels corresponding to the individual

WAVE FEATURES

EXTENSIVE INTEROPERABILITY

Creates a tightly integrated communications environment, supporting interoperability between flight crews, call initiators and emergency services from almost any communications device.

INCREASED FLEXIBILITY

Multiple WAVE systems connected over an IP network maximize deployment flexibility and allow instant failover to back-up services.

COST-EFFECTIVE SCALABILITY

Provides support for 250+ channels with the ability to scale to a virtually unlimited number of users, all from a single console.

"Our 23 years of operations have shown that a patient's chances of survival from a life-threatening injury are greatest if they receive definitive care without delay. Our upgraded dispatch capabilities will ensure the fastest responses possible when patients' lives hang in the balance, plus we'll have a state-of-the-art backup center that will be ready at a moment's notice should it be required."

— DON LOOPER,
COMMUNICATIONS
SYSTEMS MANAGER

bases. With every second vital to patient survival, dispatchers had to remember which console a particular channel was on, and then which microphone was connected to that console. The limited number of channels also meant that telephone lines could not easily be patched into radio channels. Dispatchers, therefore, were forced to pass critical information back and forth between flight crews and the requesting parties or receiving facilities.

Complicating matters further, the expense and size of the hardware meant that Air Evac Lifeteam could not easily afford additional equipment, nor could they physically fit it in the limited desktop space already populated by three monitors. As a result, three to four

individual dispatchers shared each set of consoles, rather than operating their own.

Finally, like most of the 911 dispatch centers in the U.S., Air Evac Lifeteam's single dispatch center had no redundant facility to assume control instantly in the event of a major natural disaster or system failure. The entire communications system was based on a point-to-point architecture, with each radio tower connected to a single corresponding circuit at the dispatch center. This infrastructure made it unfeasible to install a backup dispatch center. It also meant substantial maintenance costs and potentially fatal repair delays in the event of a system disruption.

THE RESULTS

INSTANT DISPATCHER ACCESS

Flight crews use their radios to communicate directly with the initiators of emergency calls and receiving hospitals (on radios, cell phones and analog phones), ensuring the direct transfer of information to improve patient outcomes.

IMPROVED DISPATCH OPERATIONS

Air Evac Lifeteam established a 1:1 ratio of dispatchers to consoles. Every dispatcher can instantly access any helicopter and their radio from a single PC console, improving operations while minimizing costs.

NETWORK SURVIVABILITY

Implementation of a new network architecture allows for a redundant dispatch center that ensures far-reaching continuity of operations.

THE SOLUTION

The exceptional capabilities of WAVE Work Group Communications revitalized Air Evac Lifeteam's communications capabilities and enabled them to continue putting the patient first.

After researching software-based solutions for radio integration with an IP network, Air Evac Lifeteam selected WAVE Work Group Communications.

WAVE presented a unified communications solution that no other technology could match. In an approach proven at numerous installations worldwide, WAVE uses standards-based software to allow disparate devices to communicate seamlessly without requiring any expensive proprietary hardware. In this manner, WAVE builds a system-of-systems to create communications interoperability with unparalleled scalability, flexibility and affordability.

And WAVE's economical capitalization of software means that every dispatcher has their own PC-based console from which they can communicate on any radio channel with only two clicks of a mouse.

Taking advantage of the WAVE Software Development Kit (SDK), Air Evac Lifeteam was able to customize several features of the user interface to facilitate optimal dispatcher performance. Additionally, these WAVE-enabled consoles offered the power to easily expand to more than 250 separate communications channels.

WAVE Work Group Communications

Because every operational environment is unique, we offer WAVE solutions that deliver the capabilities and performance required to match your converged communications needs, network size and sophistication, and IT/engineering resources:

WAVE 3000 is optimized for MOTOTRBO systems with a wireline interface, and offers radio extension to smartphones and tablets using a simple appliance server for ease of deployment, management and support.

WAVE 5000 offers a highly scalable, feature and IT rich, enterprise grade PTT solution, enabling full interoperability between different radio systems and extending their reach using smartphones, tablets, PCs, telephones and select enterprise collaboration tools.

For more information about the WAVE Work Group Communications solution, please contact your Motorola representative or visit motorolasolutions.com/wave.

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