The Stokes basket

Rear Admiral Charles Francis Stokes (1863-1931)

Photo: www.usstranquillity.blogspot.com

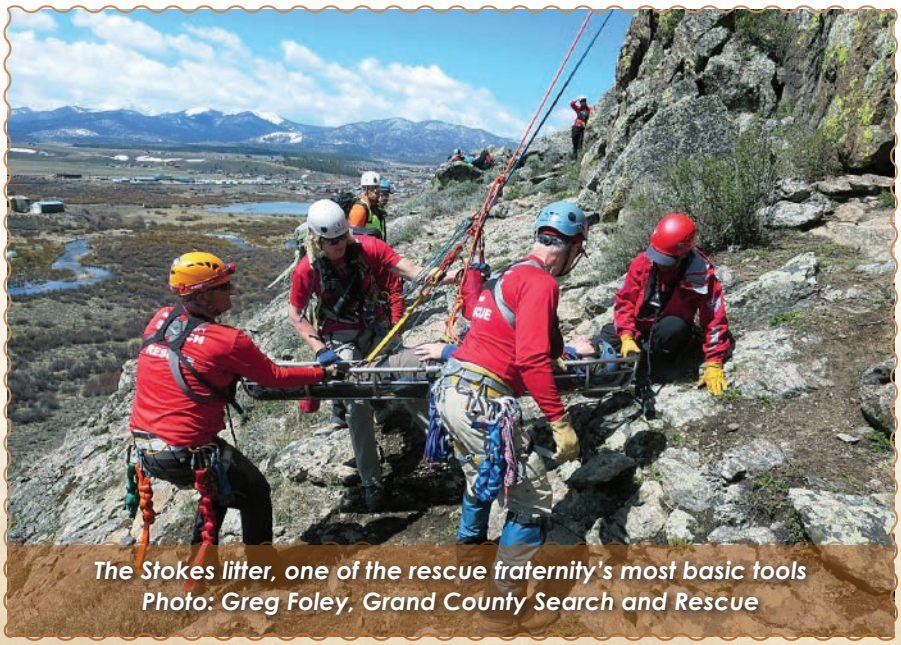
A vintage military medevac litter

The Stokes basket, also called a Stokes stretcher or Stokes litter, is a metal wire or plastic litter widely used in search and rescue. Its key feature is that it can be disassembled for transport in backpacks or by pack horse. First exhibited at the St Louis World's Fair in 1904, the Stokes basket or wire basket stretcher was conceived by the US Navy physician, Charles Francis Stokes (1863-1931) who, in the Spanish-American War, witnessed first-hand the difficulties of transporting wounded through a Navy ship's gauntlet of narrow gangways, ladders and hatches.

The original Stokes litter was basically a basket of wire supported by iron rods. The patient could be secured in the Stokes litter and remain stable no matter the position of the litter. The metal frame allowed for the litter to be handled by multiple persons and also provided a place to attach ropes or straps to assist in moving the litter in confined spaces, on or off ships or on difficult terrain.

A hundred years later, the Stokes basket is still in use by military and civilian search and rescue organisations. Modern Stokes litters are made from modern materials but the form is essentially unchanged. Instead of 'chicken wire', the basket is made of plastic mesh, formed plastic or fibreglass and the frame is tubular metal. Special use litters for search and rescue are collapsible, are outfitted with floats or are designed to slide on ground surface.

Unlike ambulance cots and transferring boards that were commonly used by the Navy at the end of the 19th Century, the Stokes was both stretcher and splint in one. It could immobilise the injured parts, allow for the carrying of a patient with minimum direct handling of extremities and, according to its inventor, offer some "comfort and a sense of security."



The Stokes litter, one of the rescue fraternity's most basic tools
Photo: Greg Foley, Grand County Search and Rescue

Once thought of as a specialised rescue tool, this basket can now be found on rescue engines, ladders and squad companies. The Stokes is traditionally used for carrying, lowering or hauling of a victim either via a rope system or on-scene manpower, depending on the needs of the scene. Either way, it is important to properly secure the victim into the litter so as to minimise movement and provide a safe egress for both the patient and the rescuers.

Many of today's stokes baskets come with preconstructed, commercial

securing devices; these vary by manufacturer, however, most are either clipped or latched into place so as to secure the victim to the basket. Although these are great and easy to use, they provide minimal security for the vertical lifting of the basket. For this it may be necessary to use both the commercial device as well as webbing to effectively secure the patient.

These baskets have been notorious for spinning under the downdraft from the rotating helicopter blades. Design improvements have included using multiple attachment points, separate hold-down cables and powered extension hoists to help save more lives. Recently the US Navy has used the Stokes basket to transport patients through narrow corridors and doorways.

The Stokes basket is arguably one of the oldest medical devices in continuous use by the military. In January 1906, by order of President Theodore Roosevelt, a joint board of Army and Navy medical officers convened to look at "improving the [military] medical departments." Along with the proposal for standardised diagnostic tags and the use of a Hospital Corps pouch (forerunner of the unit bag), the medical officers called for adoption of the Stokes stretcher by the Army and Navy for use aboard hospital ships, transports and at seacoast artillery stations.

Phoenix Fire Department Mountain Rescue stowing the Stokes Basket
Photo: Alan English

Charles Francis Stokes

Charles Francis Stokes (1863-1931) joined the Navy in 1889 as an assistant surgeon. During the Spanish-American War, he served as a surgeon on USS Solace and later was professor of surgery at the Naval Medical School. As commander of the hospital ship USS Relief, the first medical officer ever to do so, he ignited a controversy that shook up the senior Navy leadership. He was appointed Surgeon General in 1910. He is best known for his invention of the Stokes stretcher, which proved of great value used in the close confines of ships. He raised the professional standards of the Medical Corps, instituted prophylaxis, which practically ended typhoid in the Navy, planned and built the naval hospital at Pearl Harbour and initiated planning for two new hospital ships, USS Mercy and USS Relief.

Charles Stokes would go on to serve as the first medical officer to command a Navy hospital ship (USS Relief) sailing it around the globe with Roosevelt's 'Great White Fleet' in 1908. In 1910, Stokes was appointed the Navy's fourteenth surgeon general, holding the office until 1914. He retired from the Navy as a rear admiral in 1917.

Today, his namesake stretcher, still in use throughout the world, is a testament to the staying power of one Navy physician's great ideas.

"In taking up the subject of the transport of disabled persons one is amazed at the enormous energy that has been expended in that direction and is disappointed at the crudeness of the devices that have been evolved," said Rear Admiral Charles Francis Stokes.