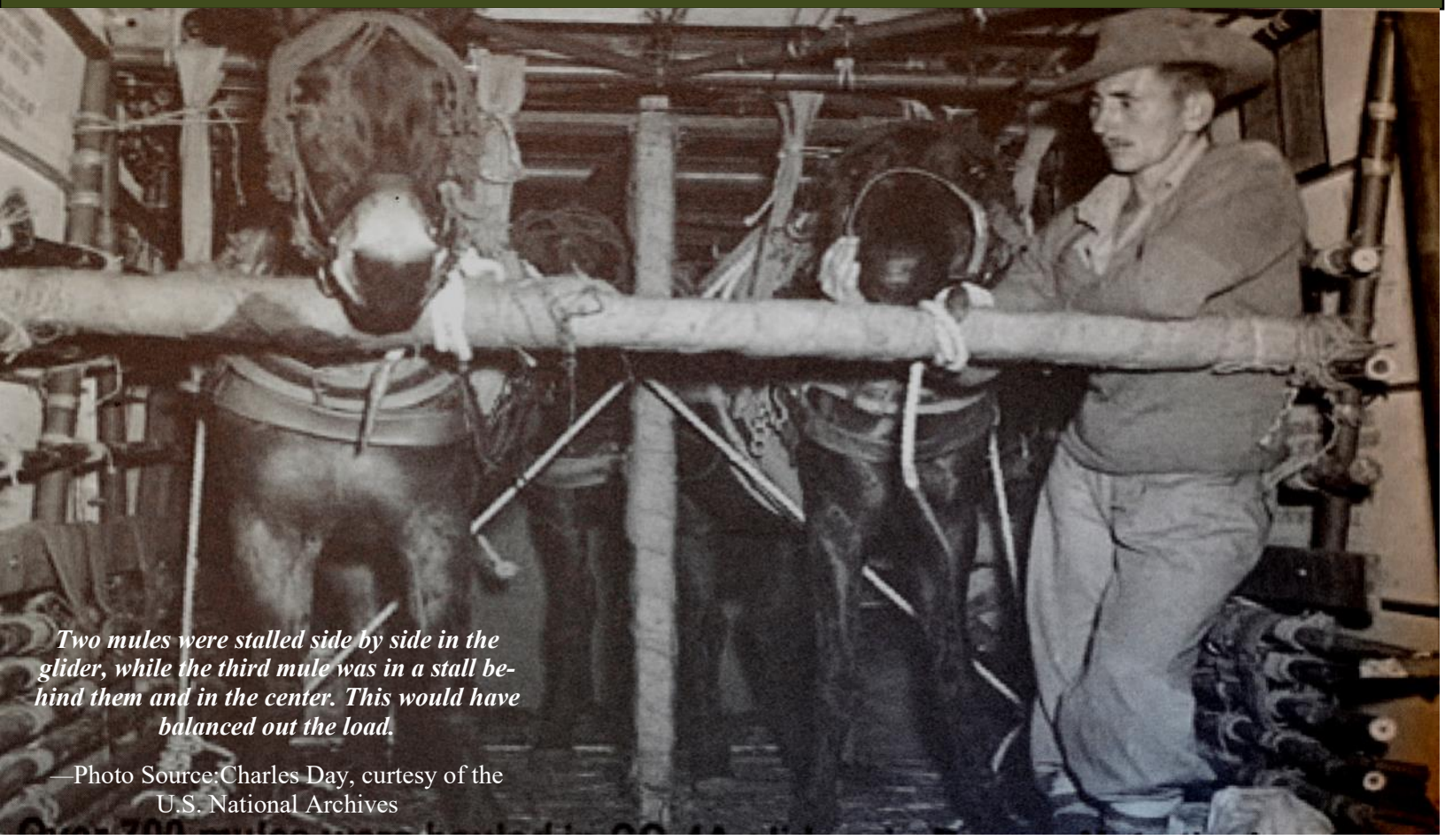
THE FLYING MULES OF THE CBI

by Monique Taylor



Two mules were stalled side by side in the glider, while the third mule was in a stall behind them and in the center. This would have balanced out the load.

—Photo Source:Charles Day, curtesy of the U.S. National Archives

Guerilla style fighting in the jungles of Burma presented special challenges for Generals Orde Wingate, Joseph Stillwell and Frank Merrill and their troops in the China Burma India Theater of WWII. Previous ground troops that operated in the unforgiving terrain of heavy dense vegetative growth, fast-moving rivers, steep inclines and deadly drops had difficulty with supply and movement. Attempts to end Japanese control in Burma had met with multiple losses in battle forcing retreats that left the wounded behind. General Wingate then proposed keeping his troops on the move operating constantly in the jungle and hitting the Japanese repeatedly in unexpected locations. Wingate's novel strategy of repeated surprise attacks against the Japanese could not succeed, however, without total aerial support and resupply. His proposal was initially met with skepticism but on the heels of repeated ground failures of the Allies it was finally approved. A crucial element to Wingate's plan was that troops carried everything they needed to operate and survive with them. This made the use of mules as pack animals their only reliable means of ground transport and supply movement. One Ghurka fighter in the theater explained their value. "*It was difficult enough to carry one's*

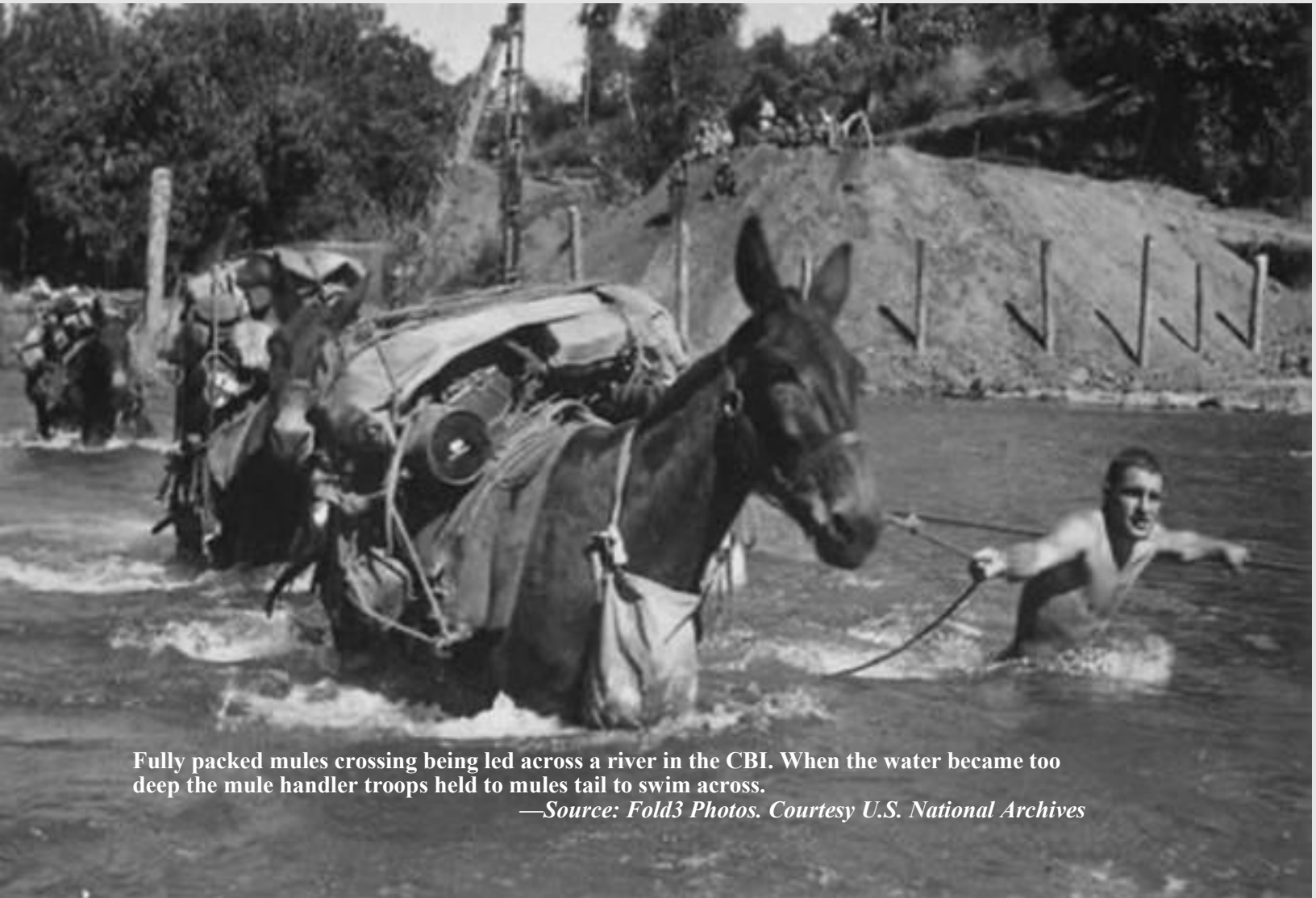
haversack, arms and ammunition; there was no question of carrying other goods. This is why mules were used. Bigger weapons and machine guns could not be carried by human beings, so the mules proved to be a great help."[1] Project 9, later known as the 1st Air Commandos, was formed to provide for Wingate's needs, and was only made possible only because of Allied recently gained air superiority in the region.

Colonel Phillip Cochran and Colonel John Allison
—Photo curtesy of the U.S. National Archives

Colonel Phillip Cochran and Colonel John Allison, both Ace fighter pilots, were placed in command of Project 9. Their requests for the planes they required to build their aerial arsenal were given priority. In the meantime, General Wingate's requested supplies and equipment were also being requisitioned and prepared. Horses, mules and ponies had been used in every war and were at the time currently being used in the European Theater of Operations. The Army Quartermaster now prepared to purchase and send them to the CBI.[2] First, however, the decision had to made on the type of equine required based on the mission, the conditions they faced and the equipment they would be required to carry. Based on these criteria it was determined mules were the primary candidate for Burma. If enough mules could not be located horses and ponies would be sent to fill the gap. Preparations then had to made to prepare the animals for transportation to the CBI. From there these fragile but incredibly powerful animals would have to be transported to small open areas deep in enemy held territory in gliders. Only when runways were built in these locations, almost overnight, could cargo aircraft follow the gliders in with additional supplies and mules/horses.

Indeed, the mules, a cross between a male ass and a mare (female horse), were the perfect choice given the conditions. They are extremely intelligent, brave in the face of predators, have the large hind end and strength of the horse and possess incredible pulling power. They also have the sturdiness of the donkey (ass). The donkey and subsequently the mule is substantially hardier and less fragile than most horses. Mules range in size from 12 to 17 hands high (hh).[3] They require 1.5% of their body weight in forage per day to maintain their condition while horses need to 3.5% - a primary consideration when feed had to be

packaged, air dropped, and carried while on the move.[4] An additional advantage for the troops was the mule's ability to cover long distances in a day. In the west, cargo hauled by mules averaged 6-10 mph while those hauled by mules and horses combined only averaged 3-5 mph.[5] This kind of mileage could not be expected since the terrain in Burma was difficult and treacherous. However, mules, with their strong bones, extremely strong hooves and surefootedness combined with their weight carrying abilities offered a considerable advantage over horses and ponies when moving in the jungle. Conversely, mules, unlike horses and ponies, can render a powerful kick sideways and be incredibly intractable. If they do not trust the situation, the handler, or have simply decided they have had enough, they will refuse to move. This is borne out by stories of the mule handlers in the CBI who had their hands full moving and tending the mules on top of their other duties. They faced incredible challenges in an inhospitable environment so much so that the accompanying exhausted troops felt worse for them than for themselves. The muleskinners hands were burned raw from rope burns by the mules constantly reaching up to eat bamboo leaves or pulling back. They loaded, unloaded and readjusted the packs from the animals, tended to their wounds and fed them. More than once a mule handler expended a lot of energy, having persuaded a mule to swim across a river only to have it continue to swim circles and head back to the original shore.



Fully packed mules crossing being led across a river in the CBI. When the water became too deep the mule handler troops held to mules tail to swim across.

—Source: Fold3 Photos. Courtesy U.S. National Archives

These attributes, the size, strength and sure-footedness accounts for the mule's ability to climb in difficult circumstances like those faced in Burma. Stillwell's men operated in terrain so treacherous, and so steep in places that each step had to be carved out one at a time for the men and mules. At times even the mules could not traverse the terrain with the weight of the packs on their backs. The 200+ pound packs had to be removed and be hand hauled up the same incline and repacked on the animals at the top. While operating in Burma mules as well as horses and ponies often slid or tumbled down mud slick hills and off cliff edges leading to broken legs, necks or they were impaled by sharp broken bamboo stalks in the fall. If they were not mortally injured and they could be retrieved, they were hauled back up to continue.[6] War is hell and the loss of a mule in the middle of the jungle could mean the loss of hundreds of pounds of equipment and weapons which were parted out between animals when necessary. By way of example, it took up to 7 mules to haul one 75 mm Pack Howitzer used by Merrill's Marauders.[7] It was hauled in pieces attached to specially made pack saddles for each part.[8] If one part on a mule was irretrievably lost over a cliff the weapon was useless. Additionally, the men and mules that avoided death endured horrible conditions from sores and cuts from the razor-sharp bamboo stalks cutting the flesh that caused serious bleeding and attracted flies which spread diseases, to suffering multiple bullet wounds, unforgiving heat and torrential rains.

Given this terrain and the packing requirements much consideration had to be given to the size of the mules shipped in. Too tall and it would be difficult to contain them in the gliders and planes and would be difficult to load the packs and equipment on. Yet, to small and they would not be able to carry the loads required for sustained periods of time in difficult conditions. Initially, the first mules that were brought in had been the smaller mules used by the Indian Army. They were quickly replaced by the larger mules imported from Argentina, South Africa or purchased in the United States.[9] Once requisitioned and arriving at the Army Depots in the U.S., the mules were supposed to receive 4 months training to include leading. This did not always happen, and untrained mules were sometimes shipped. As stealth was key to jungle warfare, measures were also taken to silence the mules to avoid them giving away the presence of the Allied troops by braying. To remedy this their vocal cords were removed, or their larynx was cut. The Japanese did not take the same precautions and on at least one occasion a Japanese mule gave the Japanese presence away. Finally, with all the preparations, training and surgeries performed they were loaded into stalls which were lifted onto ships for the three-month voyage to meet up with the gliders and C-47s that would haul them in. Many horses and mules never made it to the CBI due to violent seas that tossed them against their stalls and broke their bones, deadly bouts of colic (deadly digestive issue in equines) and dehydration. Tragically, at least two ships with at least 500 equines aboard each were sunk.[10] Consequently, Merrill's Marauders only received half of the mules they were sup-

posed to receive, the remainder were replaced by horses (340). In this brutal environment survival for both the men and the animals was a fight every moment and when compared to the mules that survived almost none of the horses did.[11]

Estimates vary as to the final number of equines sent into the CBI. One source quoted upwards of 3,000 horses, ponies and mules of which 2,216 were flown in by gliders.[12] In Operation THURSDAY it is reported 2,500 mules and 350 horses were flown in.[13] Regardless of the final number, the height and weight of the animals had to be re-evaluated for the final leg of their journey into the jungle in the gliders. The possible dangers of hauling equines ranged from damage to the structure of the glider from a kicking, rearing or thrashing animage to the plane in loading them. Correct weight calculations, stall configurations and load balances had to be calculated and were paramount when considering the methods of restraint to be used. Reports vary on the final weight of the mules, horses and ponies chosen to be sent to the CBI. One author estimates the mules averaged around 700 pounds and were loaded three to a glider.[14] Other sources state the height range was 5'10" or 14.3 hh with a weight closer to 1000 pounds.[15] A "Memo to the Special Forces" lists the animals as being loaded into the gliders with saddlery but minus the load. The poundage for these animals is listed at 930; 790; 740; 660 and 780 pounds respectively.[16] Generally, we can estimate that three averaged sized mules with packs would comprise a cargo weight of 2700 - 2800 pounds

Mules being loaded into the glider.
Source Fold3, courtesy of the U.S. National Archives

minimum. Twenty-five pounds of feed, enough for a few days also accompanied the mules. It is not clear if additional men other than the one tending the mules or equipment were in the gliders hauling the animals. If so their weights and equipment would have to be calculated.

When first presented with the unusual cargo the gliders of the First Air Commandos were tasked to haul, Colonel Cochran, keeping the above factors in mind, experimented on how to load and fly them in. Cochran's plan was to have special platforms built to tie the mules to and mobilize onto the glider. A vet would be ready to give them the "knock out shot" if they were troublesome. Presumably that was a tranquilizer and not a death shot. Cochran's plans had definite drawbacks. First a horse that is tied to the point of being immobilized will normally panic using every bit of its immense strength to escape. A tranquilized horse or mule is also an extremely unpredictable animal. They startle easily and go into immediate fight or flight mode. A tranquilized animal also has balance issues, and may weave back and forth, be unsteady on their feet or explode suddenly. If this occurred in the glider it would have a domino effect on the other two mules due to their tight quarters and would create a heavily shifting load in flight. Cochran was saved by an airman who had previous experience as a civilian mule skinner. He suggested simply walking the animals up a ramp into the glider.[17] To the amazement of all there the animals simply walked in. With the loading problem successfully solved the next consideration had to be the weight of the animals on the cargo floor.

The CG-4A was reinforced on the sides of the flooring to haul heavy equipment but this would not be enough to haul three mules where only a fraction of the total weight would be on the edges of the flooring. The floor was reinforced, and stalls built. The materials to reinforce the flooring is not clear. Coconut matting covered the surface of the flooring to absorb moisture, prevent slipping and offer some cushioning.[18] A report on general troop carrier operations details how the stalls were built for about 1,400 mules that were hauled in, "For accommodations the mules had individual bamboo stalls in each plane and glider. These stalls were so designed that they gave the mules only a minimum of movement."[19] From photos two mules were stalled side by side in the glider, while the third mule was in a stall behind them and in the center. This would have balanced out the load. Three or four large fabric wrapped bamboo poles were lashed along the sides of the glider to create an outer barrier between the mule or horse and the exterior side. A large, padded bamboo pole was lashed horizontally to form the front of the stalls with the height being just above the chest and below the head. This prevented them from getting a leg over it or their heads under it or from pushing it forward with their chests. This pole was lashed to another large, padded pole that was the vertical support between the two stalls in the front and back.[20] A fabric hammock attached to the tubular frame on the ceiling of the glider dropped down one side of each mule, went under the front of its belly just behind the front legs and emerged on other side of the animal where it went straight back up and attached again to the tubular ceil

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Padded glider (interior) with protective bamboo poles on side and straw matting on floor was used to transport mules in the maneuvers of the 1st Air Commando Force in India. .
—Photo curtesy of the U.S. National Archives

ing support. This would dissipate some of the weight of the animal as well as prevent any extreme side-to-side movement of the front end. It would also prevent the animal from banking too far to one side or the other in tight turns. Finally, a rope was lashed from the ceiling of the glider on the outside interior edge which angled to the ground and then back up behind the mule's knee to the halfway up the center pole where it dropped down again behind the other mule's front legs. From its placement it appears this would have prevented any backwards movement of the animal. In some photos a padded bamboo pole was attached horizontally at the rear of the mules as well. The accommodations for equines transported in the C-47s were the same as those in the glider with a few additional measures taken. Underneath the coconut mats, tarps were draped across the cables and an additional layer of padding - hay - was added on top of the matting.[21] The stalls were constructed in the same manner.

While the mule could be loaded through the front of the gliders, the "Special Operations" report gives us detailed insight on the loading of animals, presumably based on the cargo planes' ramp specifications. First, wooden loading ramps constructed of teak had to be built. They had to be sturdy without any sag that would cause the animals to question the strength of the footing and refuse to load. They should then be covered with straw.[22] This would reduce the possibly of any animals slipping on the ramp. The optimum ramp recommended was 5 feet wide, 12 feet long, and 4 feet 3 inches in height.[23] This was the perfect size - too small and the animals will move off of it to the side to avoid loading, too large and they can turn sideways and too steep they can slip. The report cautioned that sides or wings for the ramp may have to be built to avoid the animals running out (moving to the side) and damaging the tail of the aircraft. When loading ponies, they were to be allowed to place one foot on the ramp to ensure its solidity before being asked to load. In actuality this would hold true for any equine. The memo then moves into specifics between loading mules and ponies further defining the differences in the two and geared towards novice horsemen. Among the suggestions were to walk the equine straight up the ramp without looking back at it, still a rule of thumb for loading horses in trailers today.[24] If one loaded usually the rest would follow. If the mule does not load or has never been loaded it was recommended the rope be rigged from the halter, around the torso in such a way that the pressure was on the hind end with two ends of rope. If all else failed two men could lean against the haunches and push with all their might. I have seen this work with some horses and ponies, , but a mule that determined it is not going to cooperate would take the brute strength of many men to possibly get it to move.

Once the mules, horses or ponies were in their stalls and in flight it was a pleasant surprise for those glider pilots and passengers to find the animals travelled calmly for the most part and banked with the turns. When banking the horses' legs don't move but its torso will swing

like a pendulum to move with motion side to side. They also use their heads and necks for leverage. Colonel Cochran was impressed by the mules during flight with their natural banking ability, their toleration of air turbulence and rough landings.[25] Regardless, a solider was transported with the mules with orders to shoot them if they started causing issues that would endanger the glider. Very few problems were encountered with the equine passengers and only a few were put down. One mule did, how however, go down in history as having the highest ever kick. Based on the way they were loaded front to back the mule most probably used that unique ability to kick sideways and rendered a hole in the glider at 8000 feet. Mules, horses and ponies, as in many other theaters of war throughout history played a major part in the successes in the CBI. However, none of the equines transported ever left the CBI to return home. If wounded, unlike the men, the mules were never evacuated. Very few survived the machine gun fire, starvation, broken bones and diseases. Yet they served valiantly and most, like some of glider pilots who flew them in, gave their lives to the mission.

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[1]Gurkhas on gliders", Nepali Times, Issue #186, March 2004, https://archive.nepalitimes.com/news.php?id=4003.
[2]Christopher Miskimon, "Army Mules: The Beast of Burden in War," Warfare History Network, January 2009, https://warfarehistorynetwork.com/article/army-mules-the-beast-of-burden-in-war/.
[3](One hand = 4 inches). They are measured from the ground to the base of the neck. The additional length from the withers to the head which can raise considerably is not included in this traditional measurement.
[4]Standlee Premium Western Forage, "Feeding Mules and Donkeys," December 3, 2017, https://stablemanagement.com/articles/feeding-mules-and-donkeys/.
[5]Marshall Trimble, "Mules: A mule has better "horse sense" than a horse...," True West History of the American Frontier, July 31, 2020, https://truewestmagazine.com/mules/.
[6]Charlton Ogburn, Jr., *The Marauders*, (New York, N.Y. Harper Row, 1959), 141.
[7]Cherilyn A. Walley, "Of Mules and Men: The 612th and 613th Field Artillery Battalions (Pack) in Burma" From *Veritas,* Vol. 1, No. 2., 2005), https://arsof-history.org/articles/v1n2_mules_and_men_page_1.html.
[8]Walley, "Of Mules and Men."
[9]Gerard M. Devlin, *Silent Wings,* (New York, N.Y., St. Martin's Press, 1985), 140.
[10] Devlin, *Silent Wings,* 140.
[11]Ogburn, Jr., *The Marauders*, 66.
[12]Devlin, *Silent Wings,* 384.
[13]Captain Walker D. Mills, U.S. Marine Corps and Christopher Booth, "Marines Need A Few Good Mules, April 2022, U.S. Naval Institute, https://www.usni.org/magazines/proceedings/2022/april/marines-need-few-good-mules.
[14]Devlin, *Silent Wings,* 140.
[15]Cherilyn A. Walley, "Of Mules and Men: The 612th and 613th Field Artillery Battalions (Pack) in Burma" from *Veritas*, Vol. 1, No. 2, 2005, General Arse of History, https://arsofhistory.org/articles/v1n2_mules_and_men_page_1.html.
[16]Special Force Op Memo No. 4 (Revised British). The memo is a partial revision and therefore is incomplete. The diagram included is of a Hadrian glider. Based on the CG-4A loading of three equines per glider it is a sound assumption these mules and a single pony were transported in multiple gliders.
[17]James E. Mrazek, *The Glider War, (*New York, N.Y.: St Martin's Press, 1975), 112.
[18]Mrazek, *Glider War,* 112.
[19]Current Troop Carrier Operations in South and South-West Pacific and the China-Burma-India Theaters, 8.
[20]Devlin, *Silent Wings,* 140.
[21]R.D. Van Wagner, *Any Place, Any Time, Any Where: The 1st Air Commandos in WWII*, (Atglen, PA, Schiffer Military/ Aviation History, 1998), 109.
[22]"Special Force Op Memo No. 4 (revised British), TP Mov by Air AMET No. 1, 2." The Memo is British and features the layout of a Hadrian glider. It does not specify if loading specifications are for the C-47, or the Hadrian (CG-4A) or both.
[23]"Special Forces Memo.'
[24]Special Forces Memo
[25]Mrazek, Glider Wars, 118.