





Towline on rescue plane is taped to left wing tip from which it is easily ripped away by hook on end of towline on the crippled plane

Wing Talk

EDITED BY FREDERICK R. NEELY

The crippled plane is being towed with engines dead for a landing. Windsocks and weights are used to steady nylon and steel cables

WIN-ENGINED airplanes keep flying when one engine quits. Four-engined giants may lose one engine and barely be aware of it. If two go out, the other two may sustain flight for several hours, depending on the weight of the load, the altitude and winds. But if the port of destination is very far away and there is nothing but water or rough ground beneath, a crash landing is imminent if the two remaining overworked engines falter.

That is what happened to many Superforts on their way back from Japan to the Marianas, with fuel tanks smashed by flak and one or more engines knocked out by cannon fire. They had to ditch in the Pacific and await the merciful Air-Sea Rescue Service of the Army and Navy.

Those long, hazardous, overwater return flights of crippled Superforts fired up research and testing at Wright Field, which finally solved the problem of keeping a crippled plane in flight by making a midair pickup with a towline and hauling it to a safe landing. The war ended before the perfected equipment and technique could be put to use on B-29s in the Pacific, but it is a contribution for peacetime air-transport safety which the Provisional International Civil Aviation Organization, now headquartered at Montreal, may well consider as part of its world-wide accident-prevention and rescue work.

The tests at Wright Field were made with two C-47 transport planes (Douglas DC-3 airliners in war paint). One, designated a "cripple," using just enough power to keep a straight course at a fixed altitude, paid out 250 feet of nylon towline from under its belly. The other, representing the rescue plane, engaged the towline and towed the cripple to a point over an airport where it was cut loose for a dead-stick landing, like a troop-carrying glider.

Three Wright Field equipment engineers who worked on the idea—Lieutenant Colonel W. C. Lazarus, Captain J. B. Rishel and Mr. R. H. Paul—had their worst troubles with stabilizing the towline from the crippled plane. Its free end whipped wildly in the slipstream, sometimes tying itself in knots. Grappling it from the rescue plane was impossible under those conditions.

They tried a lot of things, in the air and in wind tunnels. Finally they attached a

15-foot steel cable to the free end of the nylon line. At each end of the cable they put a small windsock, and at the outer end an 18-pound brass ball and a towing hook. The steadying windsocks and the added weight of the cable, ball and hook did the trick. Thus equipped, the towline trailed smoothly in flight, curving downward so that the cable hung almost vertical. There was no whipping; the cable was as steady as a flagpole.

The rescue plane was equipped with a shorter towline, attached to its tail. The free end, bearing a hook, was carried to the left wing tip and taped securely enough to it to hold in flight.

In the tests, the rescue plane approached the cripple from behind and below, flying about five miles per hour faster. Its left wing nudged the hanging cable, which slid along the leading edge to the wing tip, and passed into the taped-on towing hook.

The cable was drawn upward by the slightly higher speed of the rescue plane, the two hooks engaged, and the taped hook was ripped from the wing tip. The two towlines thus became one, trailing from the tail of the rescuer to the fitting under the belly of the cripple. The rescuer climbed slightly, and this drew the towline taut. The cripple killed its engines, and was towed steadily and easily, behind and a little above the rescuer.

They repeated the tests six times, making minor modifications. Faulty materials and connections broke twice after contacts were made, but in all seven trials, the pickup itself was perfect.

As long as the plane in distress has enough power for sustained flight, the pickup is a cinch. The rescuing pilot can scarcely miss on his first pass, even though he has never made such a pickup before. Weather or darkness, in either pickup or towing, makes little difference unless it be zero-zero, in which event the combination of radar and former night-fighter pilots would probably do the trick.

Lieutenant Colonel Lazarus, Captain Rishel and Mr. Paul are coyly silent on Wright Field rumors that they plan to form "The L-R-P International Airplane Towing Service:

"We pick you up in mid-air
And tow you in from anywhere."

Collier's for October 27, 1945



"SEND THESE, THE HOMELESS, TEMPEST-TOST TO ME,
I LIFT MY LAMP BESIDE THE GOLDEN DOOR!"

Welcome Home!

And now her lifted beacon hand bids welcome to her own. She gazes out to sea upon a mighty fleet of transports of the air, filled with her valiant sons returning from a work well done.

She bestows her benediction alike upon those who are home to stay and those who still have work to do—but whose task will be done more quickly because they will use the highways of the sky.

With compassionate eyes she looks upon the

dawn of brighter days as all men everywhere once more turn to paths of peace and these same transports of the air begin to span the far-flung continents in friendly trade between the nations of the world.

On foreign battlefields our boys have found their wings and henceforth they will fly. They will want this means of travel in their daily lives—in fields of commerce—in leisure hours with days to spend in distant places hitherto beyond the reach of modest means.

-Inscription on the Statue of Liberty

Yes, air transportation which has so ably met the needs of war will play no little part in building a finer and a better land in which these men will find that peace and freedom for which they fought. Welcome home!

When you travel by Air make reservations early; please cancel early if plans change. When you use Air Express speed delivery by dispatching shipments as soon as they're ready. Air Transport Association, 1515 Massachusetts Avenue, N.W., Washington 5, D. C.

This advertisement is sponsored by the nation's airlines and leading manufacturers in the aviation industry

THE AIRLINES OF THE UNITED STATES



Three examples of an excellent idea

THESE HANDSOME gentlemen serve the King of England.

The one on the left is an officer of the Gentlemen at Arms. The other two belong to His Majesty's Bodyguard of Yeomen of the Guard, which Henry VII formed in 1485 from the men who fought for him at Bosworth, and which is today the oldest existing military unit in the world.

All three are members of the Royal Bodyguard, whose functions today are pretty much decorative and ceremonial. But there was a time when these gentlemen performed many very useful and important tasks for their King.

They went with him to the wars, and it was their duty to protect his person on the battlefield.

At home, they were charged with ordering the King's household and in general looking after the safety of their sovereign's person, family, home, and immediate possessions.

Obviously, it would be an excellent idea for every one of us to have someone like that—someone whose special job it was to look after our personal safety and the protection of our possessions.

And today, almost every one of us can. No longer do you have to be royalty, or even rich and powerful, before you can get somebody who is sincerely interested in protecting you.

In a matter of minutes, nowadays, you can find a man who, though perhaps not so colorfully dressed, will expertly and effectively safeguard your interests and your family's.

That man is your Travelers agent.

True, he cannot ordinarily prevent you from suffering bodily harm. But he will fix it so that if you should be hurt, you won't be crippled financially. Your doctor and hospital bills will be paid and you and your family will have money to live on while you're getting well.

He'll fix it so that if you should have an auto accident, you won't have your earning power mortgaged for years by a judgment which might be rendered against you.

He'll fix it so that, if thieves or fire should rob you of your possessions, you will be paid for your loss.

And he'll help you to protect your family against poverty and see that your children get the right kind of education even though you're no longer there.

It would be hard for the most faithful attendant a monarch ever had to do much more.

Moral: Insure in The Travelers. All forms of insurance and surety bonds. The Travelers Insurance Company, The Travelers Indemnity Company, The Travelers Fire Insurance Company, Hartford, Connecticut.



Tremendous problems face the soldier exchanging war for peace. What of his girl? What of his job? What of his future? Will he be content to take up where he left off? In this understanding and perceptive story you learn how two young people faced the practical and emotional problem of readjustment

ILLUSTRATED BY AL MOORE

BUTLER opened the central door of the great house and that struck Peter as just one more of the absurd and unlikely things which made up his life these days. Here he was, in this fall of 1944, entering a place which belonged to some of the headliners of the British nobility, actually and personally invited to spend the week end. The interest always in Peter's eyes deepened as he took a look around the hall, but at the same time he was slightly on guard. He had no previous experience with butlers.

"It's a pity you had to walk from the station, sir," the deferential old fellow said.
"But petrol is very short with us these days,"
"That was all right," Peter answered. "I

enjoyed it. Nice driveway you have here. A

lot of fine trees.'

"That's right."

"Lady Dunn asked me to tell you that she had a meeting in the village which prevented her from being here when you arrived. But she will be back for tea. Shall I show you to your room or would you like to look about for a bit?"

"I suppose I'd better clean up a little first," Peter decided.

The butler picked up the single, worn, stained piece of luggage. He paused for veri-

"I think you're in the Brocade Room, sir, Unless Lady Dunn has made a change. I'll just make sure.'

Isn't that something, thought Peter, stor- a great stone-faced fireplace almost big

"Thank you, sir. It's Major Wymark, ing away the incident for future recital, as the butler opened a small door in the oakpaneled wall and peered at a list tacked on the inside of it. Then he closed the door with no sound and proceeded gravely toward the staircase up which so many thousands of guests had been led. The wide polished treads echoed to the footsteps of this latest visitor in the uniform of the United States Army, and the suits of armor in the embrasures showed how styles for making war had changed.

As he turned on the first landing, Peter could look down over the hall. It made him think of a museum or the lobby of a de luxe hotel, and yet it wasn't quite like that. For obviously people lived here. There was