



**Willie's
victory torch**



Willie the Welder was a live wire. "I used to be a good, self-respecting welder!" he yells to his gang of brand-new apprentice welders, "but being combination nurse and teacher to you guys is killing my confidence. By gosh," he begins to complain, "everyone of you has a fist full of thumbs! I'd rather build this ship myself than watch you guys burn holes in her hull!"

One of the boys speaks up. "Start us in kindergarten, Willie. Six weeks more and you can hand out diplomas." Everybody agrees, so Willie begins his ABC's again.

"Electric welding is what most of you guys will handle. Some will handle gas welding. No matter which, we're working with *high-power heat*. Handle with care!

"A first-class welder is a safety-first welder.



"You Have to Watch Out for Five Dangers—

Electric shock

Burns

Powerful arc light

Bad air

Explosions



"Electric shock is danger number one, especially with direct currents over 200 milliamperes and alternating currents more than 70 milliamperes. Even a harmless jolt can knock you down."

"Do you have to cut off the current every time you change electrodes, Willie?" asks one of the fellows. "Either you cut off the current or the current cuts you off!" Willie tries to joke. But nobody laughs. "If somebody does handle live current and gets knocked out," a tall fellow asks, "what then?"

"First aid until the doctor comes. Whether or not he's breathing, our first-aid crew gives him artificial respiration and keeps him warm. Smelling salts may help him, but only a doctor can give him drugs."

"Burns hurt," continues Willie. "Live current can burn you with or without a shock. A gas flame can burn you bad. Hot metal splashes or taking hold of welded parts before they cool off never helped anybody. And keep those sleeves rolled down, boys!

"Burns should be treated right away, to kill the pain and to stop any future blood poisoning. We have a first-aid kit with special dressing for burns, and our nurse or doctor carries on from there.

"Powerful arc light is the 'Welder's Worry.' First there's brightness, like staring at the sun. Then there's invisible light—ultraviolet and infrared rays. They're the same rays that give you sunburn. They sneak up on you. You go along, feeling fine—until all of a sudden your eyes feel like hot rivets. You don't see those rays but believe me, you can feel 'em!" (No remarks . . . everybody's quiet now.)

"A helmet or a shield will protect you from powerful light on most jobs. Sometimes you'll need goggles, alone or with a shield. No matter what protection you use, you'll be looking at your work through some kind of special glass which cuts out



most of the 'burning' rays, and still lets enough ordinary light through so you can see without eye-strain. If the window on your helmet gets crusted, replace the dirty cover glass with a clean one.

"Another protection against arc light for you and the guy next to you is a kind of portable telephone booth, made out of canvas or metal. This booth, or a table screen, shields you from powerful light. Walls should be painted dark. Cuts down bright reflections which might burn you.

"Protective clothing like gloves—but more especially goggles and helmet—need *cleaning service*. They get dirty on the job, and you know what happens when something dirty keeps rubbing against your skin. Nobody in this crew is gonna lose time and war production because of wearing unwashed or unsterilized helmet or goggles, see?"

"Tough guy. A regular smoke-eater!" one big fellow cracks.

"Smoke-eater is right!" snaps Willie. "That's danger number four—breathing in gas, fumes, and metal dust. Welding operations release all kinds of chemicals into the air. You can see a certain amount of 'smoke' coming off a welding operation, but you *can't* see the pin-point size metal dust and the invisible gases."

"Ventilation beats danger from gases, fumes, and stale air," Willie goes on. "It keeps smoke away from your breathing zone. Some plants like ours ventilate the whole welding shop, and just keep fresh air coming into the room. But more

important, most welding operations also need a suction hood close to the torch, to suck in the smoke before it spreads. In certain jobs, you might need a dust mask. On other jobs, you might have to breathe compressed air through an air mask.



"Explosions and fires? Either you use your head or lose your head. Don't be like a guy I knew who tried to weld a brace inside a big gasoline storage tank. Another thing, acetylene apparatus must be as tight as good valves and cylinder fittings can make it.

"Carelessness is your biggest danger. No welder can daydream and stay healthy. Practice makes perfect, sure, but don't make a mistake twice! Safety is the twin brother of production."

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