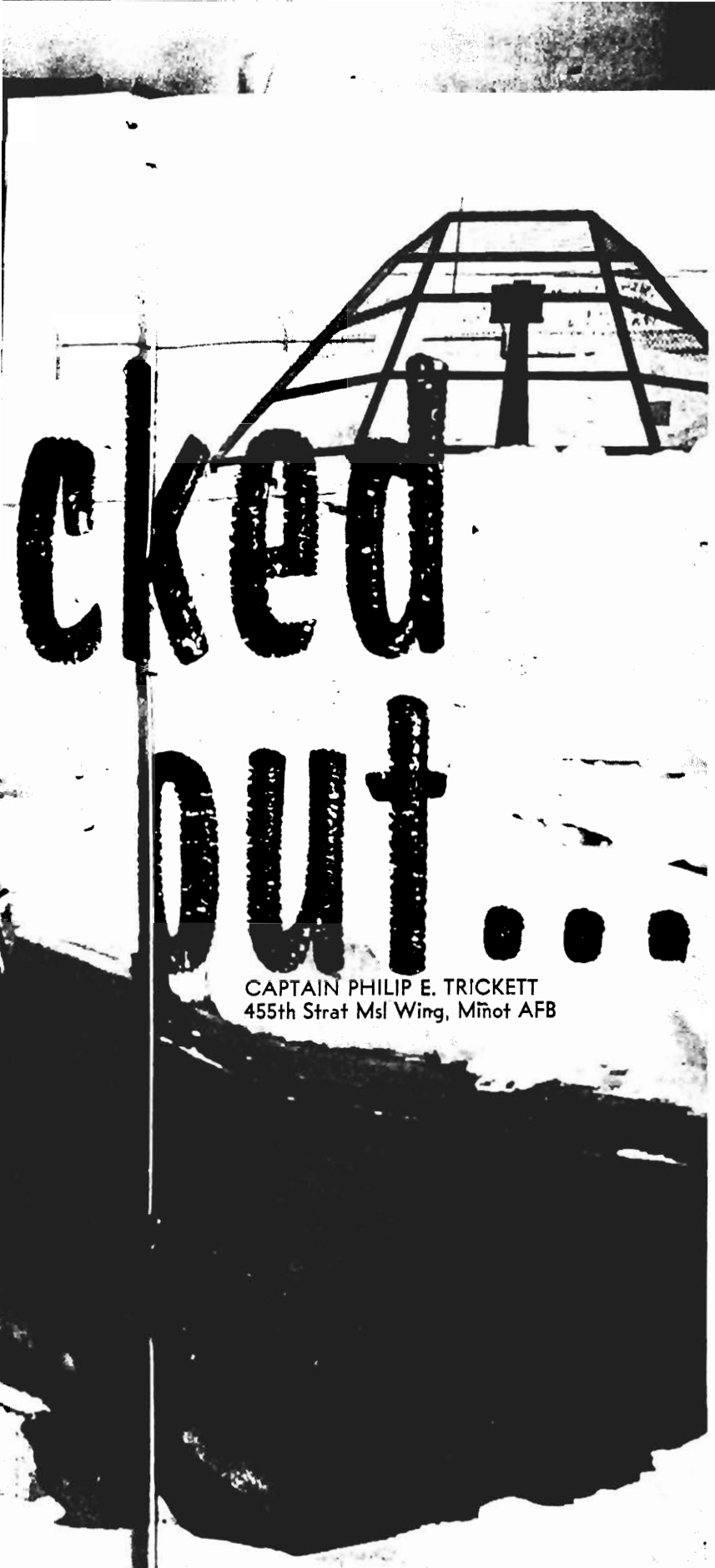
You'll need more than a key at a



cked out . . .

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'll need mo han a key at a Minuteman site!

"• • • THE low tonight is expected to be about 32 below zero with the high tomorrow getting all the way up to 5 below. The wind is out of the northwest at 10, busting to 20 knots. The current chill factor is less than 5 minutes. That concludes the weather briefing, gentlemen. Are there any questions?"

And so the weather officer hands the pointer, symbol of the man on the hot seat, to the job control officer. The maintenance staff shuffles in their seats as the first slide lights up the display board.

"Gentlemen, we have only one OFF alert this morning. L-10 is still shut down and requires a G&C change. When the maintenance team got on site, they were unable to penetrate because the B plug wouldn't lower. We've tried the fish-pole but were unable to turn it. The circuit breaker for the motor has tripped, so we suspect the brake assembly is frozen. We'll drill this afternoon as soon as the civil engineer people can get out there. We've already started dispatching people to the site . . ."

Minuteman missile sites are hardened and dispersed to prevent an aggressor from destroying more than a handful with multiple strikes. Equally important, the sites are unmanned. The only link from the site to SAC Control is the launch control center (LCC) where its status is monitored constantly.

At the LCC, the crew on duty monitors the security of the site and a two-man security team is always on duty to respond to changes in status which might indicate an unexpected intruder was on the site. Additionally, any unexpected visitor must identify himself, utilizing exacting procedures in order to prevent this security team from "stretching him out on the fence."

What restrains tourists from gaining access to the missile and nuclear warhead? Surely not a simple fence, so the answer must be the primary and secondary access systems. An unauthorized person is prevented from quickly entering a launch facility by delay mechanisms. Physical size and intricate timing devices also combine to limit the minimum time to gain entry to the missile, warhead, or associated support equipment.

A simple anology will demonstrate this system. Picture a piece of one-inch diameter water pipe that has a cork in one end with the other end open. In the middle of the pipe is a solid cylinder, one inch long, that is almost touching the wall of the pipe. The object of this game is to get a pea from the corked end of the pipe through the hole in the other end. First you remove the cork, and secondly you push the solid cylinder out the other end. Now the pea will drop from one end to the other, unimpeded.

LOCKED OUT . . .

The "pipe" is a six-foot diameter hole in solid concrete. The "cork" is a massive concrete and steel cover over the hole. The one-inch cylinder is a solid steel plug weighing several tons and suspended from the bottom of the hole on a rather large threaded rod. To hydraulically open the cover, a combination lock is dialed, a vault removed, a locking pin extracted, and a switch set to the raise position after a pump is activated. Once the cover is open, another combination lock is dialed, eight locking pins extracted, and another switch set to lower. The plug takes a minimum of 10 minutes to lower far enough for any human to enter the launch facility; however, a timer can cause the plug to take upwards of an hour to lower.

That, then, is the access system. When the motor fails to lower the B plug, and the normal alternate method of turning the plug down by hand also fails, you are locked out. The only other way into that launch facility is to open the silo closure door—many tons of concrete and steel. This procedure is called "forced entry." (Some maintenance men say the name comes from the fact that you must force people to use the procedure.)

Missile wing maintenance control schedules the teams and equipment necessary to accomplish the task. The base civil engineer furnishes specialists and equipment to jack-hammer concrete, weld and cut steel, and repour the concrete. The missile maintenance squadron personnel open the silo enclosure, analyze the malfunction, and disassemble and replace the faulty component so the B plug can be lowered.

Once the coordination and task assignment has been completed, the teams are dispatched to the site to begin the work. In the middle of winter in North Dakota, this can amount to an all day job in itself. Assuming Lady Luck is with the team from briefing time (0600) until they reach the site (no ground blizzard to eradicate all traces of the sun and highway, they don't have to shovel the road clear of countless drifts, and the heater in the truck is at least keeping the inside of the windows free of ice) the site access road is sure to be drifted over, and the gate blocked by snow. Once the teams are on the site, all hands pitch in to clear the drifts away from the access door and the top of the launcher. Finally, after receiving a warning from the combat crew

about overexposure to sub zero weather reinforced by 30 knot winds, they begin to chip the concrete out of a soft plug, designed for this purpose, in the closure door. Underneath this soft plug in the door is the locking pin. Normal operation of the silo closure causes the pin to be extracted using a gas piston. However, on forced entry, the pin is pushed down to permit the door to be opened using standard equipment.

Now that the closure has been opened, the job of rewelding the reinforcing steel in the soft plug pit begins. While topside workers toil, a technician is lowered by crane on a bosun's chair to a small opening in the launch tube. After loosening several bolts, he can remove a section of steel large enough to let him squeeze through an opening into the launcher equipment room. An arctic parka is simply an added handicap in this situation as are gloves or mittens; consequently the "brave one" quickly turns into a "blue one" unless the crane operator works rapidly and in close harmony with his signal man. As soon as "blue one" clears the bosun's chair, "blue two" is lowered to satisfy the requirements of the SAC two-man policy. After finding the faulty component and repairing it, the B plug can be lowered permitting normal entry.

Once the concrete has been poured and all work done to repair the access system, the task force departs the site. This leaves the maintenance team performing checkout of the system to bring the missile back onto alert status.

The job sounds quite time consuming because of the many specialists involved. The hours on the end of the jack-hammer, the tension of dangling an airman into a very large hole at the end of a very small cable, and finally resolving the malfunction with a few turns of a screwdriver may not seem dramatic. But when you throw in a dash of snow and a pinch of wind (all readily available in at least the quantities stated) plus a half cut of over-the-shoulder evaluation by quality control, and a teaspoon of V.I.P. visits, you have a ready recipe for a long, hard, exciting day. Where else can you achieve instantly frozen concrete while it's still in the mixer even if you are able to find running water? The next time you forget the key to your house and realize it while muttering to yourself, *"Damn, locked out again,"* be glad you don't live in a Minuteman launcher.