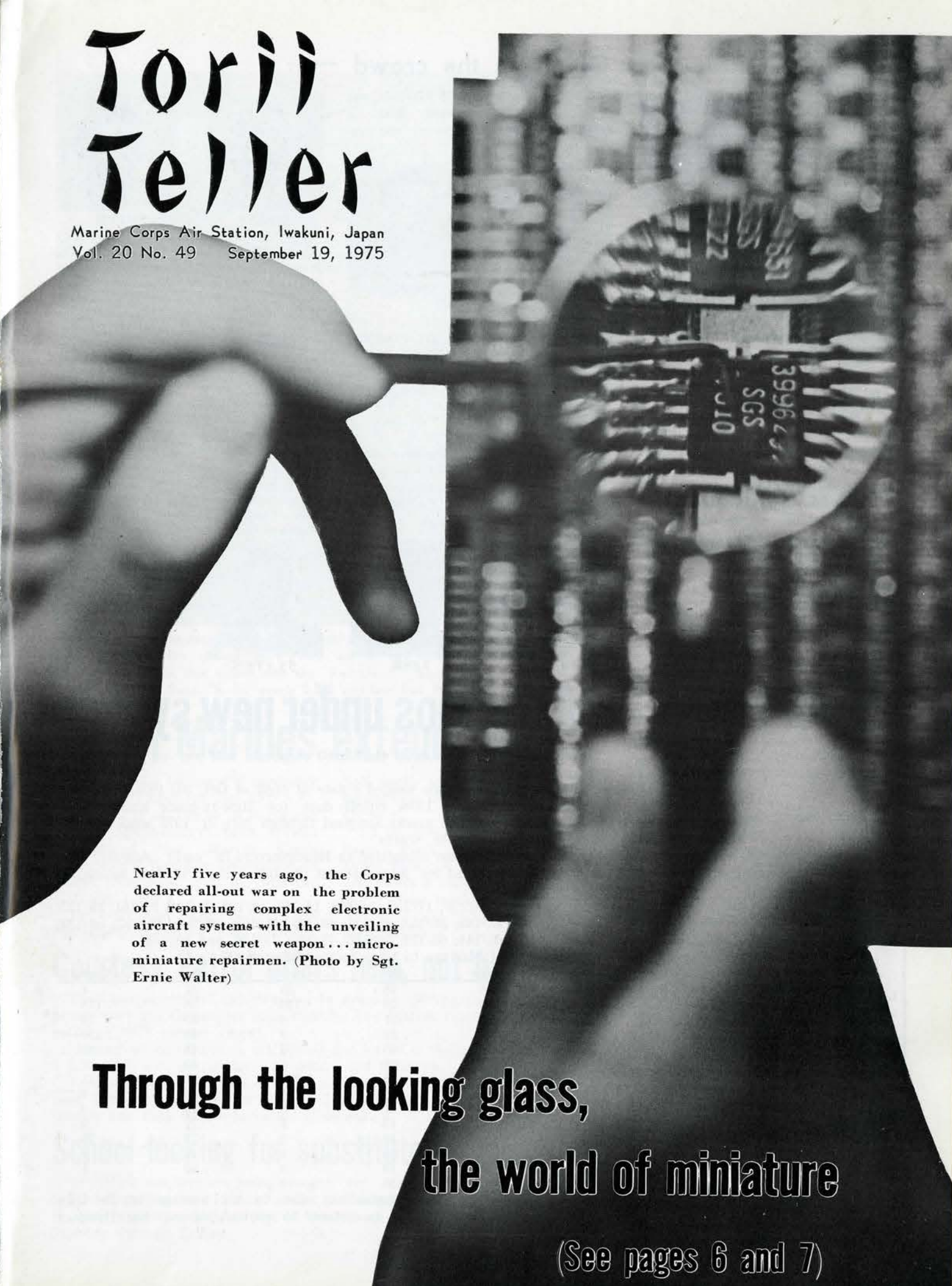


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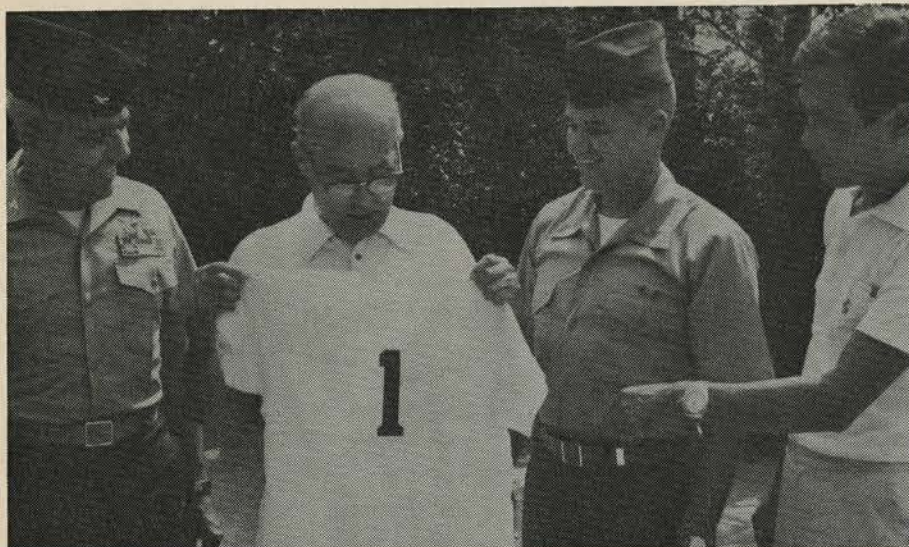
Marine Corps Air Station, Iwakuni, Japan
Vol. 20 No. 49 September 19, 1975

A black and white photograph showing a hand holding a magnifying glass over a complex electronic circuit board. The circuit board is densely packed with components, and the magnifying glass is focused on a specific area, highlighting the intricate details of the miniature components. The background is dark and out of focus, emphasizing the circuit board and the hand.

Nearly five years ago, the Corps declared all-out war on the problem of repairing complex electronic aircraft systems with the unveiling of a new secret weapon... micro-miniature repairmen. (Photo by Sgt. Ernie Walter)

**Through the looking glass,
the world of miniature**

(See pages 6 and 7)



"NUMBER ONE WITH US!"—Quipped Kikuo Yamasaki, assistant Director of the Yawata Gakuen Orphanage in Itsukaichi, as he examines one of the jerseys from several baseball uniforms that were presented to the orphanage by MAG-15 Marines on behalf of the Station Little League. The uniforms were presented to Mr. Hitoshi Murakami (holding jersey), founder and director of the orphanage, by Col. Carl L. Battistone, (left) MAG-15 commanding officer, and Lt. C. Richard Duncan, MAG-15 chaplain.

Home education counts

By Chaplain Joseph Ferraro

It was a small incident, nothing to get excited over, but it provided time for a modest thought. I recently returned from leave on a giant PanAm jet. Seated next to me was a mother with her child. I guessed the child to be about four-years-old. This child, a pretty little girl, kept repeating certain phrases during the trip. I paid no attention until suddenly it all came through to me. Smiling in an innocent and engaging manner, the little girl was repeating over and over obscene phrases which, as I once heard said, would "make a sailor blush" (if that is still possible today.) I realize that this is a good chance to begin moralizing; but, no, I'll save it for another time. However, the incident did provoke a thought on "education and the home".

Like it or not, education does occur in the home. Children are learning constantly from what they hear and observe. And the adults whom they hear and observe most regularly are their parents. For the parent, this can be a disturbing thought. Every parent wants to give his or her child a good example. What sort of "good example" are we talking about? What do parents teach their children about education—the process of learning itself?

Parents might give some thought to this observation. As I see it, parents can be quite conscientious about seeing to it that their children's time is so highly organized: school, clubs lessons, chores—everything set up in well defined patterns which channel the child along through the day. The implicit message here is that time not devoted to "productive" activity is time wasted. But is it really? When is a child going to learn to use his imagination, except in those "idle" moments which many adults deplore? How does a child learn to organize his time for himself? Please do not accept this as an argument for idleness nor a summons for parental irresponsibility. A good balance is needed!

The balance should be between careful organization of the child's time and activities, and a reasonable amount of "free time" when children can learn and grow. The realities of life today make the home the best — and possibly the only—place within which "things can happen".

News briefs

Army general pays visit

Major General O.C. Lynn, Chief of Staff, U.S. Forces Japan, visited Wing and Station units Monday.

During the morning visit, the general and his party toured MAG-12, MAG-15 and MWSG-17 facilities and observed an AV-8A Harrier in flight.

He arrived here at 8:30 a.m. and left the Station at 2 p.m.

Japanese taking census

The Japanese Bureau of Statistics has begun a nation-wide population census and census takers will visit the Iwakuni area Sept. 24-Oct. 15.

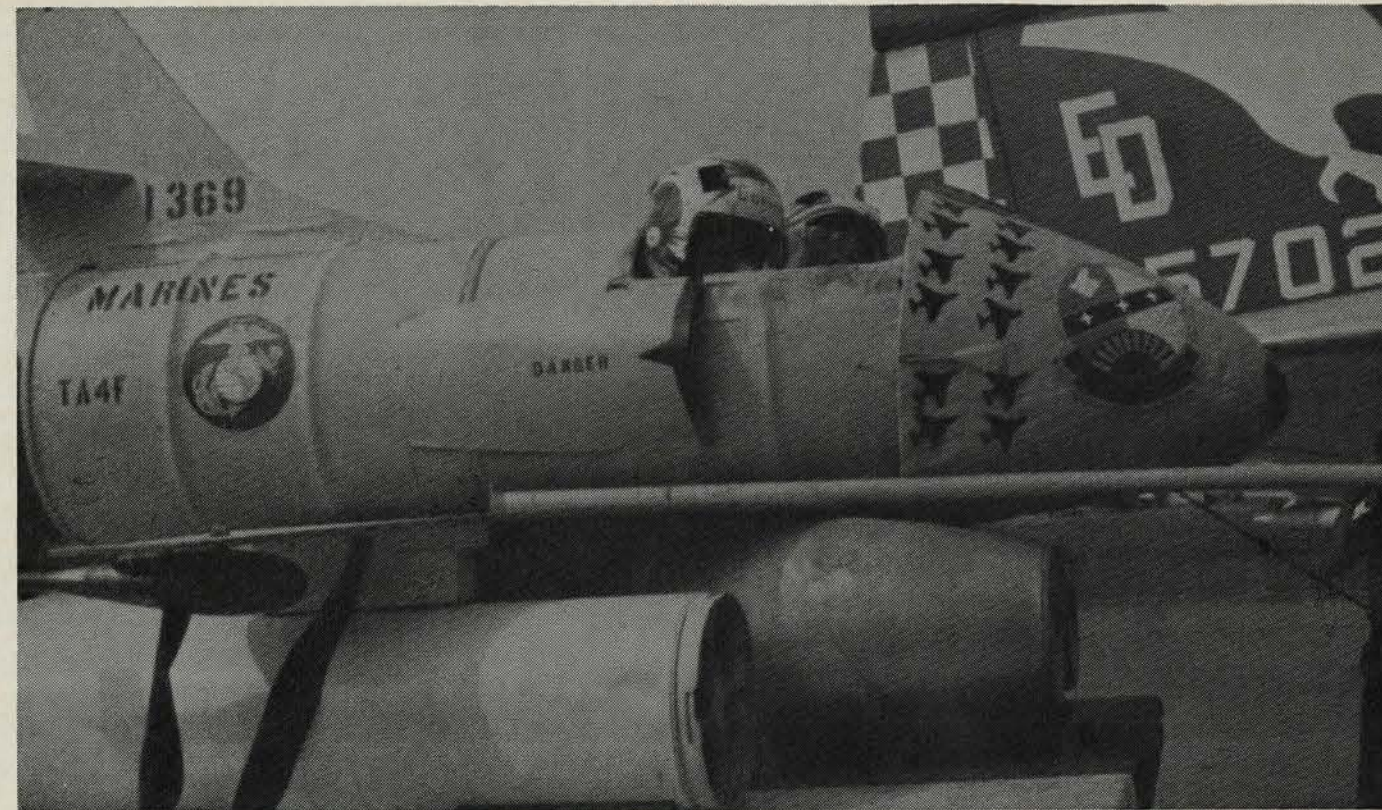
All service members residing off-base are asked to cooperate with the census taker when he calls at their homes.

The census applies only to Japanese citizens and Americans residing in Japan who are not on active duty or covered by the Status of Forces Agreement.

Docs examine patient plane

Five Navy doctors and a corpsman got a look at how the flying Navy does things when they were given a tour of a VP-48 P3C Orion.

The tour had a logical reason as the P3 has been used on several occasions for medical evacuation flights. Although the squadron does not maintain an airplane especially fitted for medical flights, it is ready to fly the missions if an aircraft is available. In the past month and a half, VP-48 has flown two Marines to Atsugi NAF where they were taken by helicopter to Yokosuka Naval Hospital for emergency treatment.



BOY IF MOM COULD SEE US NOW — Shawn and Ann London, children of a H&MS-12 Marine, had the honor of piloting the mini-jet TA-4F Phantom Fighter during the recent H&MS-12 change of command. They landed with no problems.

Mini-jet debut makes aviation history

Story by GySgt. Phil Hartranft
Photos by Sgt. Nick Nicholson

Five H&MS-12 Marines, using initiative, imagination and plenty of sweat during their off-duty hours, shocked the aviation world by designing the original TA-4F Phantom Fighter.

The five, working into the wee hours of the morning for three-and-a-half days, unveiled their original during the recent H&MS-12 change of command.

Sgt. L.S. Nicholson, H&MS-12 Avionics and the father of the creation, explained how the 16-foot long TA-4F Phantom Fighter came to be.



IT'S A WHAT? — Sgt. J.M. Wojtowicz and four other H&MS-12 Marines shocked the aviation world recently when they took a couple of oil drums, plywood and pipe and turned it into a TA-4F Phantom Fighter.

"A captain came to me and said it would be nice if we could come up with something original for the squadron change of command ceremony," started Nick. "He suggested a miniature model of the squadron's TA-4F aircraft."

With that suggestion, Nick was off and running. He solicited the help of four other H&MS-12 Marines to aid in the project. They were Sgt. J.M. Wojtowicz, Cpls. T.G. Green and R.A. Gay and Pvt. C.T. Colon.

Nick explained what the five of them used to make their TA-4F replica.

"We started out with two 55-gallon oil drums for the body and used plywood for the wings and tail. After sanding the drums and cutting the plywood, the two were joined to form the frame of the aircraft."

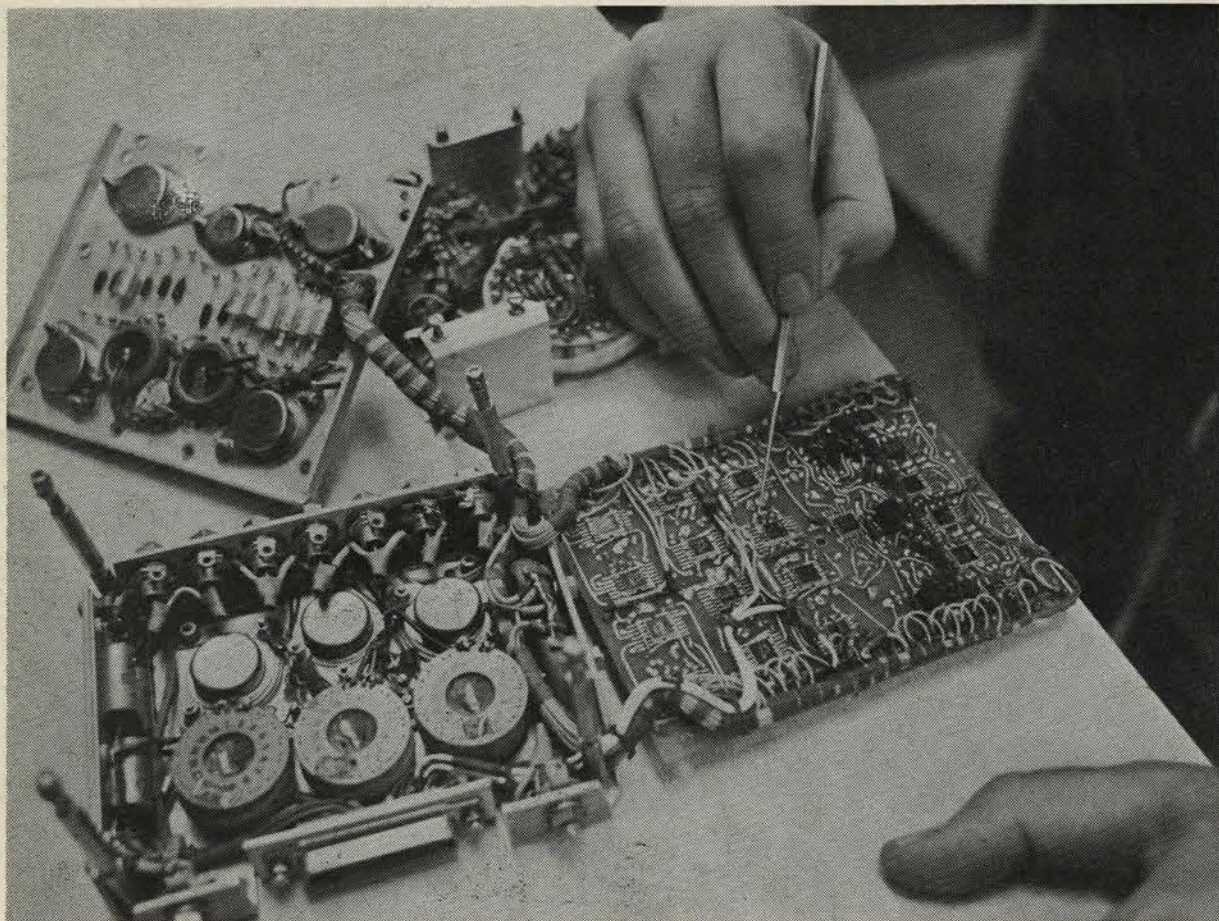
One problem the five encountered in building their masterpiece was what to use for an inflight refueling line and its nozzle. They found an answer.

"We used an eight-foot, two-inch pipe for the actual line and a beer can for the nozzle—painted of course!"

To show what ordnance their aircraft would carry, the five intercepted two rocket launchers headed for salvage and two practice bombs.

Nick explained that the whole idea of the aircraft, which sported a nine-foot wing-span, was to show F-4 Phantom pilots that H&MS-12 TA-4Fs were still around.

It appears the Phantom pilots know and respect the TA-4F mini-jet because not one Phantom challenged it that day.



A preliminary inspection of this "whatchamacallit" revealed that a "dooohicky" shorted out one of the "thingamabobs".

Great big birds need little bitty repairs

Story and photos by Sgt. Ernie Walter

For nearly five years, a select group of Marines have been giving life...to the dead.

Three such specialists perform dozens of successful lifegiving operations here each day.

They are H&MS-12 micro-miniature repairmen and their patients are the spaceage electronic components which give the spark of life to complex systems in MAG-12 aircraft.

In most cases, squadron avionics men prove more than able to locate and repair their own problems. However, when the transistorized world of modern electronics steps in... the micro-miniature repairmen jump in.

Until 1970, electronic parts such as circuit boards, studded with a myriad of tiny wires and condensers, were too small and delicate to be repaired in avionics sections. Parts such as these were forwarded to specially equipped locations in the U.S. If no spare parts were available, it simply meant the birds wouldn't fly until the parts showed up in the supply system.

Now...each maintenance squadron in a group has that capability in the micro-miniature repair section and can provide complete and immediate electrical maintenance support for its aircraft.

"As technical and mysterious as our work

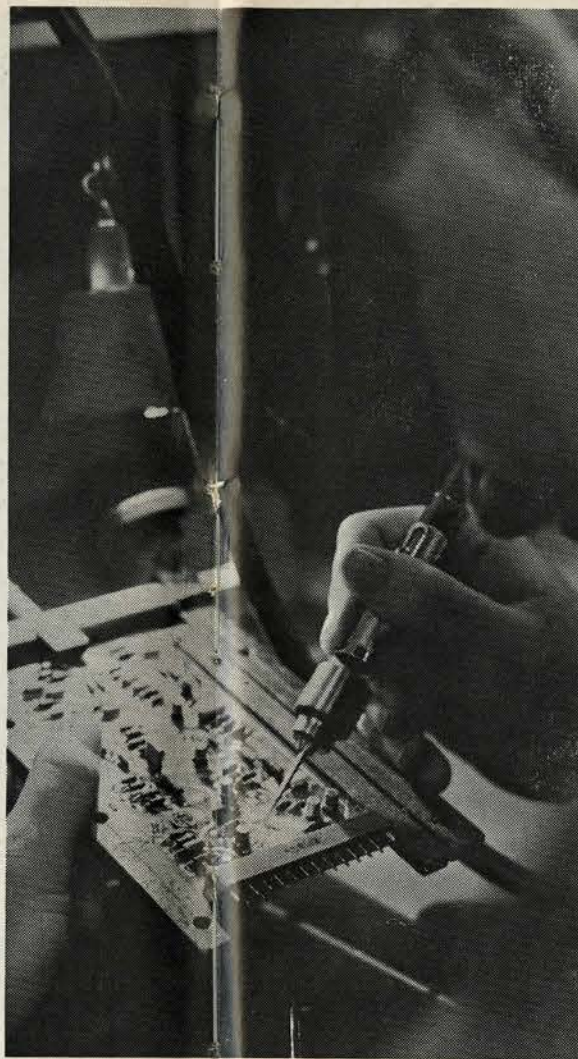
must sound," explained Sgt. Tom Smith, NCOIC of the micro-miniature repair section, "the big difference between us and other aircraft electricians is four additional weeks of training we receive."

Smith's words edge on false modesty for several reasons. Those four extra weeks of training come only to electricians carefully screened for the special qualities required in this type of work. Also noteworthy is the 75 per cent dropout rate of Marines chosen to attend the school, a mandatory annual requalification test and that Marines in the field number only about 100.

The most unique aspect of handling micro-miniature electronics gear involves tools and specially developed techniques used to repair the fragile and expensive components. Wrenches and screwdrivers have been replaced by probing instruments, microscopes and precision soldering equipment.

So delicate and precise are some operations that they resemble such surgery as skin grafting and even organ transplants.

One recurring problem comes from transistors burning out and causing damage to or totally destroying the thin fiberglass slab to which



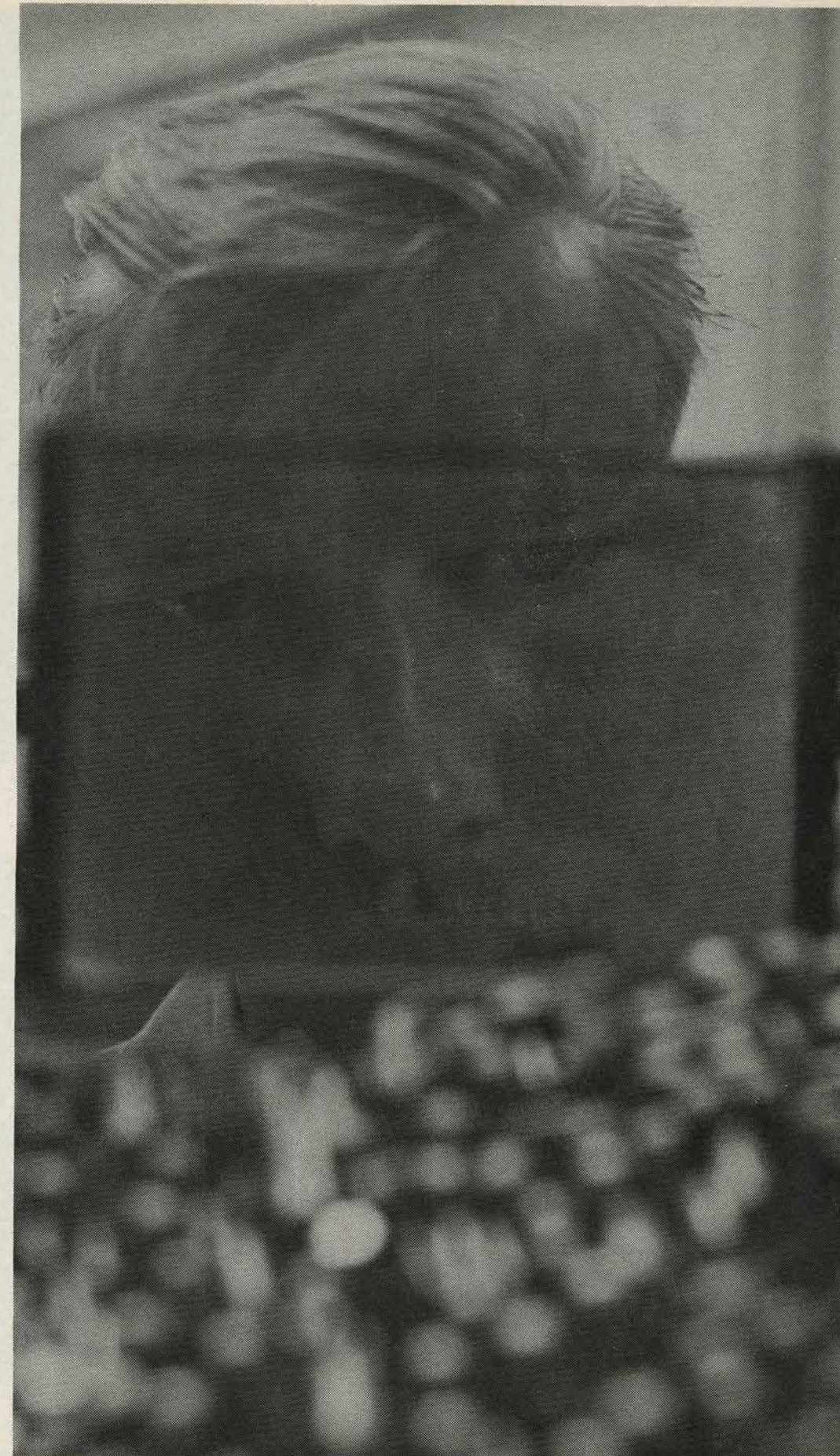
With the precision of a surgeon, LCpl. Mike Richard grinds away a burned out section on this circuit board to be patched and put back into action...good as new.

dozens of these components are attached. As in skin grafting, the micro-mini repairman must first cut away the entire damaged area. This is done with a high speed cutting tool resembling a dentist's drill. He then spreads a new and equally strong layer of fiberglass epoxy on the damaged area.

Once the circuit board is completed and the surface is clean, smooth and looking as though no repairs were performed, the organ transplanting begins. Dozens of near invisible leads, stemming from adjoining components, must be broken so faulty parts can be replaced. Perhaps five or six tiny transistors will be removed from an area about the size of a quarter.

With the easy part finished...the real work begins. Replacing and reconnecting all those tiny wires with the aid of tweezers, solder, microscope and a steady hand, the repairman knows if one wire is misconnected he will have to start again from scratch.

This is just one simple procedure that until five years ago was an impossible task for the conventional electrician. However, with the addition of micro-miniature repairmen, the once open circle of aircraft electronics maintenance is now closed.



Cpl. E.J. Cisler carefully contributes to his section's near zero return rate by systematically inspecting his work for possible defects.