

Most Navy pilots and aircrewmembers may never find themselves in a survival situation where they have had to come down in an unfamiliar, or even hostile, land or water environment. Nonetheless, training in aircraft safety and aircrew survivability go hand in hand with learning to fly. Survivability depends largely on one's knowledge of basic procedures and one's faith in his ability and will to survive. One ex-POW said, "If you know you can do it, the chances are very good that you will." Survival training gives the student the know-how and faith that he can do it.

The survival school is the largest department in the Naval Aviation Schools Command in Pensacola, Fla., in terms of staff personnel. Its syllabus includes swim training, deep water environment survival training (DWEST), land survival and physical training.

Water survival depends largely on knowing what to do when the time comes because you have already done

it. The realistic water survival training not only prepares flight personnel for the sea environment but also alleviates the apprehension that would be encountered in an ejection/bailout situation. It bolsters the individual's confidence in himself and his equipment.

Students begin by learning basic survival strokes and flotation techniques. This builds confidence in the aquatic environment and facilitates later training. In the classroom students receive instruction in cardiopulmonary resuscitation, parachute fundamentals,

# THE ART OF SURVIVING

By Helen Collins



An instructor at DWEST steps off the launch platform as the parasail billows up behind him. The platform is a self-propelled barge which carries students to the practice area and offers a safe launch site.

personal flight gear and its use, single and multiplace rafts, and signal and rescue devices.

Students then move on to training devices which put them through true-to-life scenarios.

The multiplace underwater egress trainer (9D5) provides practice in procedures for underwater escape from ditched multiplace aircraft. The device can be rolled left or right or stopped in any intermediate position. The blindfolded student strapped inside releases himself from his seat and finds his way to the surface.

The single-place underwater egress trainer/Dilbert Dunker (9U44) teaches underwater escape from ditched single-place aircraft. In this device the student rides down the rails in the cockpit, turning over in the water. He then frees himself from the seat, egresses and returns to the surface. This evolution is conducted in full flight gear.

The parachute descent and disentanglement trainer (9F6) teaches the student how to divest himself of his parachute and, if entangled, how to get free.

The parachute drag trainer (9F2) drags students through the water so that they will know what it is like to ditch with parachutes still on and inflated, and be caught by the wind and dragged through the water.

The helicopter hoist simulator with a rotor downwash (9H1) gives students an idea of what it is like to be under a helo blowing wind and spray at them at about 130 knots.

The underwater breathing trainer (9H19) teaches underwater breathing techniques used in aircraft oxygen systems.

DWEST begins with lectures and slides on the use of equipment and procedures, followed by life raft organization. The student is taken out to deep water in Pensacola Bay where he gets some realistic training with his life raft and water survival equipment, and a live helicopter hoist. He also practices parachute landing falls so that he'll know how to hit the ground properly if he comes down over the land.

There is a major and exciting new development in DWEST. The Navy's open-water parachute descent trainer (9F7) gives flight personnel the most realistic overwater training possible in

descent procedures and parachute disentanglement on water entry. It simulates the survival situation after a bailout or ejection more accurately than any training device now in the Navy's inventory, and is designed to make the procedures required for survival second nature.

The trainer uses a parasail, a device similar to a parachute except that when operational its forward motion develops a certain amount of lift which the conventional parachute does not have. The concept was developed by the Air Force at Homestead AFB in Florida and adapted by the Navy to meet the Navy's particular requirements.

Evaluation of the prototype parasail training program has been completed and the program has been approved. Parasail training is now a required part of the DWEST syllabus for all "refreshers" and flight students who are selected to fly in aircraft equipped with ejection seats.

A tow boat, equipped with a winch and tow line, is used in conjunction with a self-propelled launch platform to get the student and his parasail aloft. On the way to the designated launch area, students review the procedures several times prior to parasail hookup. Once in the area, launch operations begin.

The fully equipped student is hooked up to the tow boat with harness on and parachute inflated by the wind. After the final safety check, the launch signal is given and the student is airborne, at the end of the tow rope, to an altitude of approximately 450 feet. On a flag signal from the boat, the student releases himself from the tow rope and begins his descent, during which he accomplishes low altitude descent procedures, which are IRK (Inflate life vest, Raft deployment, Koch fittings). He then releases the parasail upon water entry so that it does not entangle or drag him.

When the procedures are properly performed, entanglement problems are minimal. However, if on water entry the student finds himself in a real life situation, swimmers are in the water nearby, ready to assist. The student, when free of his parasail, boards his life raft and, finally, both he and the parasail are picked up by a utility boat. Students are given two descents to reinforce learning that may have been blurred during the anxiety of the first descent.

Physical training is also an essential part of the survival program and is monitored by both medical and physical training personnel to ensure that there is a correct sequence of the required training. An individual might know all the emergency procedures and yet not be able to summon the strength needed to get out of a ditched plane that is sinking at 12 feet per second. So, the importance of getting into and staying in good physical shape is stressed, and basic physical fitness is required.

Land survival training is an old, well-established program given during the last week of the syllabus. Students learn the rules and techniques for staying alive which are basic for any area. With nothing more than the gear they would normally have with them, students spend two days in the 653,000-acre wilderness at Eglin AFB, Fla. The most important thing they learn is how to find water where seemingly none exists. They learn to fashion traps and snares, build simple shelters, and find and eat food foreign to the palate of the average American.

The students are first grouped in teams, each with an enlisted instructor who teaches them what they need to know to survive. On the last day, the students go it alone, making their way individually to a checkpoint several miles away where they rendezvous for the return trip. During their wilderness phase, they are also taught how to overcome the stress of the survival situation, which under some circumstances on land could be a long-term survival predicament.

Water survival is a different matter. In many actual egress situations, the pilot or aircrewman does not have many seconds from parachute opening to water entry. Combine this with other factors, such as darkness, adverse weather, hostile activity, etc., and the need to know your procedures cold is evident. In the new open-water parasail training, while a parasail descent is a controlled situation, it does give personnel the opportunity to become skilled in descent procedures — and it will help save lives.

The survival school is dedicated to preparing future Naval Aviators for the possibility of an unforeseen air accident and, should one happen, for coping with it. ■

# JET PIPELINE

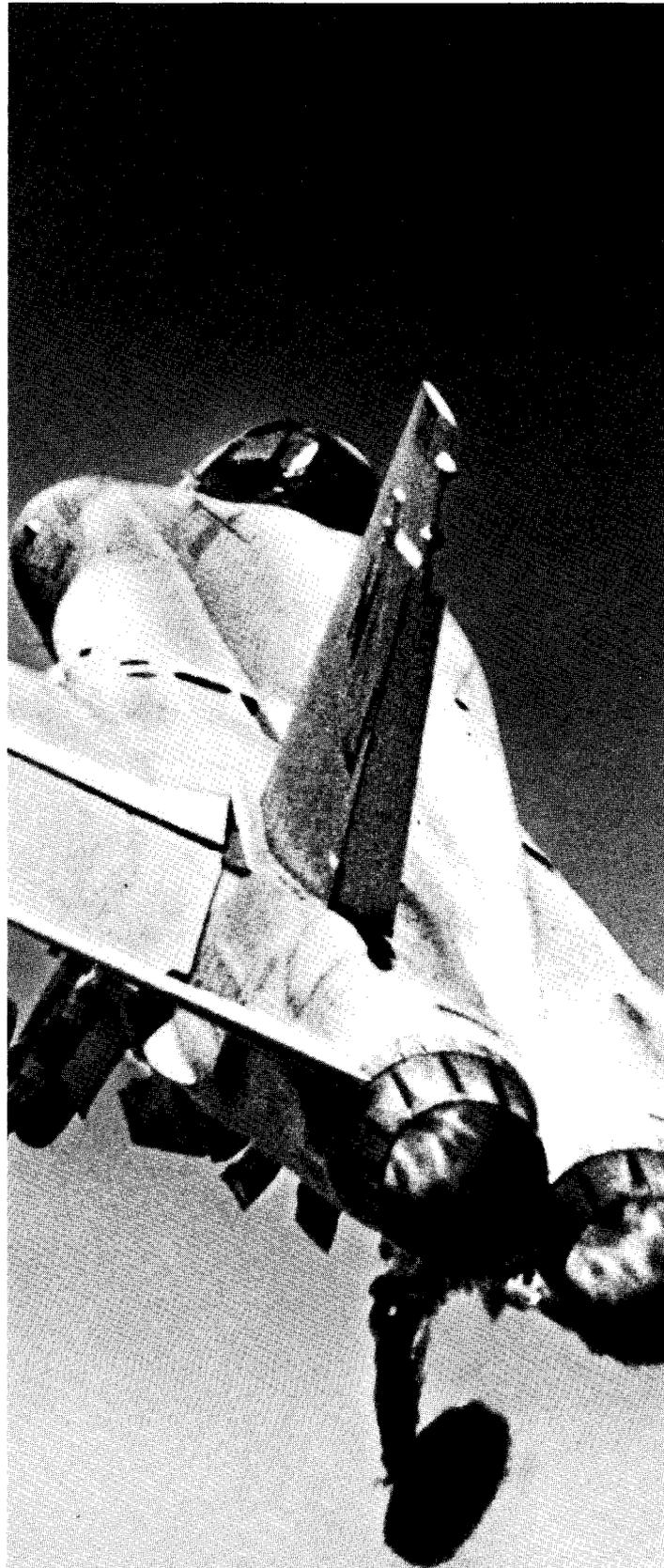
By Ltjg. N. L. Golightly **T**he fundamental lure of the jet pipeline is the sheer physical challenge of handling high-performance, single-piloted aircraft in the tactical carrier environment. But a student Naval Aviator may feel his ultimate choice of a pipeline is a long way off. For the ensign who is struggling with his first S-patterns in T-34s, the relative pros and cons of the helo, prop, E-2/C-2 and jet pipelines can be about as clear as muddy water.

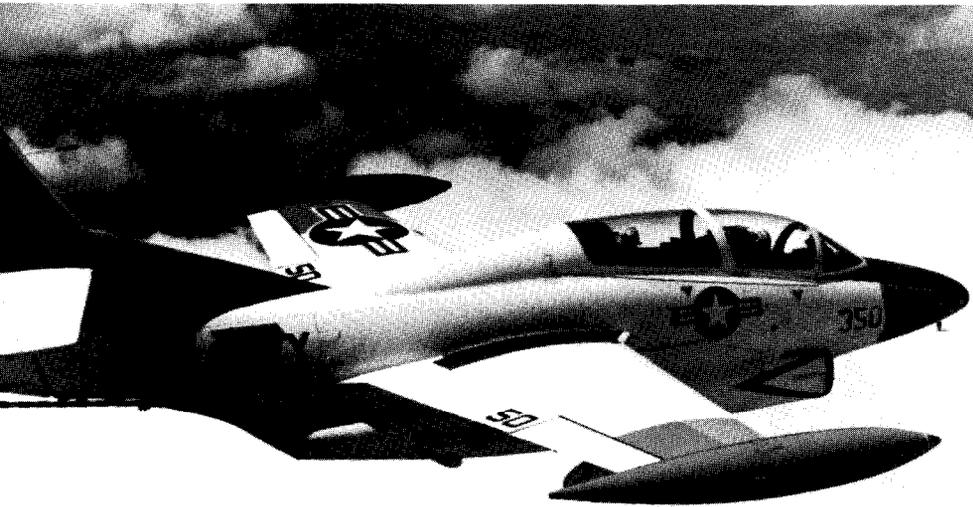
So, what can the potential jet jock expect in the Training Command? He can look forward to at least another year and a few more months of flying orange and white aircraft than his buddies in the other pipelines.

His first stop after finishing the basic flight phase will be with the flight physiology people who will fit him with a new pair of "speed slacks," more commonly known as a G suit, and with the nylon, velcro and steel torso harness he'll be wriggling in and out of for most of his Navy career.

Then, he'll pack his bags and point the nose of his *ensign-mobile* toward one of the enclaves of jet instruction in South Texas — VTs 21, 22 and 23 at NAS Kingsville and VTs 24, 25 and 26 at NAS Chase Field, Beeville, Texas or NAS Meridian, Miss., home of VTs 7, 9 and 19. Intermediate and advanced jet training are taught at all three locations. Normally, a student completes both phases of instruction at the same air wing. VT-4, located at NAS Pensacola, Fla., trains students in both the intermediate and advanced phases and provides jet training for foreign students.

The new jet pipeline student receives two weeks of intermediate strike ground school in air systems, aerodynamics and instrument flight rules and several simulator rides before climbing into the T-2C *Buckeye* for his first familiarization (FAM) and basic instrument hops. His most difficult adjustments will probably be in learning to think at six miles per minute instead of two and one-half and in learning *not* to flare over the approach-end numbers. Landings, in fact, can be particularly traumatic for the student who was impressed throughout





Left, an F/A-18 Hornet in flight. Above, a student from VT-23, with his instructor, practices basic air work in a T-2C Buckeye. Below, a VT-7 TA-4J is about to catch the wire during carrier quals.



PHCS Leon B. Ramage

interspersed with instrument sorties, the student jet jock is turned loose for a solo. Shortly after that, he begins instruction in basic formation, which will be his bread and butter in TacAir, and then air-to-air gunnery, his first exposure to tactical maneuvering. He'll also plan and fly four operational navigation (ONAV) low-level routes, and complete syllabi in basic instruments, radio instruments and airways navigation.

The climax in intermediate strike is carrier qualification — the exotic, demanding, mind-bending act of flying a jet aircraft to a full stop on a moving ship. After 10 field carrier landing practice periods, the student flies his T-2C out to USS *Lexington*, swallows his apprehension and brings his *Buckeye* aboard for two touch and goes, followed by his first arrested landing. He will log four traps, each followed by a catapult shot which, when he describes it to this buddies, will probably exhaust his repertoire of superlatives — incredible, fantastic, awesome.

He's a tailhooker now and ready to begin advanced strike training in the TA-4 *Skyhawk*. He has another two weeks of ground school, logs several more hours of simulator time and completes the entire instrument phase, beginning with a back-seat, under-the-bag takeoff, before moving to the front cockpit. The familiarization and formation stages in the advanced phase are brief because the student has already mastered the basics, and he goes quickly on to the nitty-gritty of the TacAir business.

In the weapons stage, he learns to

place bombs, rockets and bullets on a ground target and in ONAV he learns to navigate at low altitudes and high speeds. Air combat maneuvering instruction expands his personal performance envelope by teaching him to maneuver his airplane through nearly every conceivable attitude in defensive, offensive and multiplane situations. Then it's back to *Lexington* for six more traps and catapult shots.

After some 18 months and approximately 270 flight hours of training, the student jet pilot dusts off a dress uniform and stands before the training air wing commander to receive his hard-earned Wings of Gold. It's a significant milestone that marks a beginning as well as an end, for his name now goes back into the mill for a selection process that might match him up with F/A-18s, S-3s, A-7s or A-6s. He might receive orders to F-14s, F-4s or A-3s, and there are also billets in T-39s, EA-6s and composite squadrons. He might even stay with the Training Command for 18 months as a Selectively Retained Graduate instructor. The opportunities are many and selection is based on individual performance and the needs of the Navy. Once the selection is made, almost every tailhooker will fanatically defend the honor of the aircraft type he flies, no matter what his first choice may have been when he pinned on his wings.

That is the Navy jet pipeline in 1,200 words or less, which does not do justice to the intensity of the work required — the four or five or six hours of preparation for every hour of flight time; the inescapable pressure to perform satisfactorily on every hop; the exacting responsibility in the single-piloted world to be ceaselessly alert; and the standards demanded of student pilots who might, some black night, be approaching the carrier at 1,200 feet in the goo, with one set of controls and one set of eyes.

But there are also the intense rewards: the tremendous pleasure of precision flying with a stick and throttle in airplanes that go fast, take G's and maneuver crisply in any attitude; the exclusive responsibility for several million dollars of airplane; the profound self-satisfaction that comes with bringing 10 tons of jet aircraft aboard a 600-foot deck; and the satisfaction derived from preparations for flying complex tactical missions in complex tactical aircraft. ■

primary training with the importance of gently touching the runway with the landing gear. Now, suddenly, he is being exhorted to collide with the ground by chasing an elusive light around on something they call a "fresnel lens" and, as if that isn't enough, to maintain a precisely calibrated airspeed at the same time.

However, after 10 FAM hops

Harry Gann