

What, twenty years ago, no one would have believed possible has happened: Germans are flying side by side with Western European allies and Americans in defense of Europe. Here's a first hand report on the new Luftwaffe, West Germany's resuscitated air arm, whose dual mission is to provide effective air defense of its national territory and form a significant element of NATO's offensive air forces . . .

THE NEW LUFTWAFFE



A fast-growing enterprise like the new Luftwaffe needs well-trained men like these in the officers' candidate school at Munich. There are also five basic training regiments and various military technical schools, plus a pilot's school for basic and three others for advance pilot training.



The face of the new German Air Force: he is a Luftwaffe first lieutenant.



Celebrating twelfth anniversary of AIRCENT are, from left, Brig. Gen. K. Kuhlmei, Commandant of Air Group South; Lt. Gen. W. Panitzki, German AF Inspector General; Brig. Gen. M. Pilger, Chief, AIRCENT Logistics Division; and Maj. Gen. E. Walter, Commandant, Air Group North.

LUFTWAFFE! The word brings back memories of the Battle of Britain, Schweinfurt, Ploesti, Hanover, and the other big World War II air battles over Europe. But to a German this word means only "Air Force"—the literal translation would be "air weapon."

Since 1956, both the Federal Republic of Germany as well as the German Democratic Republic (Soviet-controlled East Germany) have each again had a Luftwaffe. The differences between these two, however, are considerable.

For one thing, where the West German pilot uses language that would put the Katzenjammer kids to shame ("Roger, Heinz, ich choppe power auf eighty percent und mit den speed boards out droppe ich wie ein elevator"), his East German counterpart flies MIGs and probably uses some kind of similar jargon but tainted with Russian.

The main difference, of course, lies in the fact that Heinz, together with his friends from the other fourteen NATO nations, flies for the West and all it stands for: freedom and democracy. The old independent Luftwaffe does not exist any more. Today the new Luftwaffe is one link in a chain, part of the bulwark guarding Europe against the East.

Largely responsible for the rearmament and the participation of the Federal Republic of Germany in the common defense effort of the free world was the



F-104G is joining the Luftwaffe in ever-increasing numbers. About 1,000 will be built on license in Europe. This TF-104G two-seater is on the ramp at Büchel GAFB while an aerobatic team draws contrail patterns in the sky overhead.

FLIES FOR FREEDOM

By Stefan Geisenheyner

breakdown of the wartime alliance of the western powers and the USSR during the postwar years. After the formation of the United Nations in 1945 in San Francisco, it soon became apparent that the USSR would not adhere to the principles of the organization. The occupation of Northern Iran in 1946, the civil war in Greece, Communist takeovers in Poland, Hungary, Czechoslovakia, and the other satellites of today, the Berlin Blockade, and the Communist adventure in Korea were all milestones in the drifting apart of the former allies.

The first European protective move against the threatening Soviet expansion was the Treaty of Dunkirk, signed by France and Britain in 1947, which provided for a mutual military defense arrangement. A year later, the Treaty of Brussels established a defense pact between Britain and the Central European nations—France, Belgium, the Netherlands, and Luxembourg. This treaty, valid for fifty years, includes an automatic assistance clause, which obliges each state to come to the aid of any other in case of aggression.

Then in 1949 NATO was formed—the North Atlantic Treaty Organization. On April 4, 1949, the twelve governments signing this charter in Washington, D. C., were Belgium, Canada, Denmark, France, Great Britain, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, and the USA. In February 1952, Greece and Turkey joined the pact.

Though Germany was not invited to sign the treaty for the simple reason that it was not a sovereign state but an occupied country, its territory was already protected by the agreement. An attack on Germany would have involved one or more of the forces of occupation, all of whom were signatories of the NATO pact, and that would have committed all of the pact members. This was a fortunate state of affairs for the Germans who at that time could state: "Since we are paying for our occupation anyhow, and this is our protection, we do not have to raise an army and can put all our resources into the reconstruction of our country."

This automatic protection situation did not last too long for the Germans, however, since most NATO nations demanded that Germany carry a bigger share of the common defense effort financially as well as with more concrete contributions such as an army. Economic considerations played a not-too-small role in this line of thinking since economically Germany forged ahead rapidly, whereas the other European nations had to carry a heavy financial burden aside from diverting much of their manpower to the defense effort, stifling their economic growth.

The first steps to incorporate Germany into the NATO pact were conferences that took place in the mid-1950s. These culminated in the Plevan Plan, which proposed a joint European army with a German con-

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tingent. This plan was not realized. New proposals on a fresh basis began in the same year. The plan discussed was the EDC (European Defense Community), which in the end would have led to a federation of European states both politically and militarily.

These talks, which led to the regained sovereignty of Germany several years later, centered around a participation of Germany in the NATO system with approximately twelve divisions. After year-long debates in all the parliaments of the countries concerned, the plan was accepted by all but France, whose parliament said "No" to the plan on August 30, 1954. The date is significant since here the first chance for a United Europe was wrecked. Shortly afterward, an alternate plan was proposed which was signed on October 23, 1954, in Paris, by all concerned.

These so-called Paris Protocols stated that the occupation of Germany was officially ended and that Germany would be accepted as a full member to the Brussels Treaty as well as in the NATO organization. This treaty was ratified by the German parliament in March 1955. On May 5, 1955, Germany became again a sovereign state and at the same time a member of NATO. The Protocols included the clause that Germany would have to raise and equip its own army, navy, and air force to aid in the defense effort of the other European nations in the framework of NATO.

Thus, only ten years after the total collapse of the Third Reich, Germany began to rearm. From the very beginning, strong emphasis was placed on the sound conception of the air arm of this defense contribution. Building on the experiences of World War II, the Luftwaffe, rising like the phoenix from the ashes, was reborn. Expert help came from the USAF without which the new Luftwaffe would not be the effective, full-fledged member of NATO it is today.

The Paris Protocols clearly defined what the mission of the new Luftwaffe would be. In summing up, two main parts emerge:

- Germany was to provide for an effective air de-

fense of its own territory. Several interceptor wings were recommended, which, in close cooperation with anti-aircraft missile units for high-altitude defense and medium- to light-caliber flak units, would cover the central sector of the NATO line along the Iron Curtain.

- The Luftwaffe also was to initiate the training and formation of several tactical fighter-bomber wings which would be deployed together with the offensive—similarly equipped—NATO air forces, some of which would have their bases directly on German territory.

To meet these demands, German military planners, with the help of the other allies, conceived the structure of the new Luftwaffe: The *Führungsstab der Luftwaffe*, comparable to the Office of the Secretary of the Air Force in the United States, is the highest military staff of the Luftwaffe and at the same time a department of the Ministry of Defense. The *Führungsstab* is headed by the Inspector General (*Inspekteur der Luftwaffe*). He is responsible for procurement, planning tactical concepts, organization, training, and logistics, to name a few of his tasks. His direct superior is the Minister of Defense. Six departments make up the *Führungsstab*—

- A—Personnel.
- B—Command.
- C—Organization.
- D—Training.
- E—Logistics.
- F—Communications and electronics.

Department B—Command, heads the two air groups (*Luftwaffengruppen*) of the German Air Force. *Luftwaffengruppe Nord* is located at Münster in Westphalia and comes under the regional control of the Second ATAF (Allied Tactical Air Force), which has its headquarters at nearby München-Gladbach, about fifteen miles west of Düsseldorf, and is under British command. *Luftwaffengruppe Süd* has its headquarters at Karlsruhe, is part of the Fourth ATAF

Luftwaffe F-104Gs.
Though externally similar to the F-104Cs of USAF's Air Defense Command, the "G" is a completely new machine with strengthened airframe and extensive electronic equipment, making it a strike, reconnaissance, or interception aircraft.





Four of the Luftwaffe's little Fiat G.91 fighter-bombers fly through cloud-covered Alps. The subsonic G.91, now obsolescent, resulted from NATO design competition. It can take off from grass fields, is also used for close support.

located at Ramstein, and is under American command. In peacetime, both Luftwaffe commands operate independently. Only in case of war would they be directly commanded by the ATAFs.

Under the command of *Luftwaffengruppe Nord* and *Süd* are four and three air divisions (*Luftwaffendivisionen*) respectively. The fighter-bomber, interceptor, reconnaissance, and transport wings and the anti-aircraft and missile units are called the operations divisions, whereas the supply, communications, and liaison units come under the heading of support divisions. The *Luftwaffengruppen* as well as their divisions have their own air staffs:

- A1—Personnel.
- A2—Intelligence.
- A3—Organization and training.
- A4—Logistics.
- A5—Liaison with civilian governmental agencies.
- A6—Communications and electronics.

The single operations division has flying units, one electronics and communications regiment, anti-aircraft regiments, and, in some cases, training regiments and supply regiments. Since the divisions, aside from the anti-aircraft units, do not have to be mobile, this organizational setup is quite satisfactory at present.

The flying units—the reconnaissance, interceptor, transport, and fighter-bomber wings (*Geschwader*)—consist of two squadrons (*Staffeln*), each with a complement of eighteen to twenty-five aircraft. The

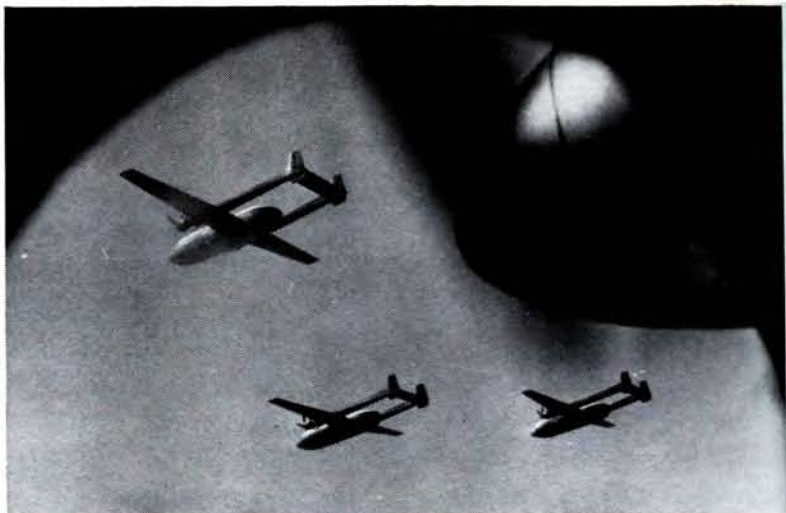
necessary support units, an air base group (*Fliegerhorstgruppe*) consisting of wholly stationary maintenance, and flight operation units are also assigned. The Luftwaffe has at the moment at its disposal eight fighter-bomber, four reconnaissance, four interceptor, and three transport wings deployed on thirty-nine airfields. Most of the wings are operational. One more wing will be added in the near future to bring the total strength up to twenty.

Fighter-bombers are currently the mainstay of the official NATO policy of offensive defense. The eight Luftwaffe wings of this category are an integral part of the tactical NATO air forces and are under the command of the Second and Fourth ATAFs. They are equipped with the light subsonic Fiat G.91 fighter-bomber and the now obsolete Republic F-84F, which is being replaced in ever-growing numbers by the Lockheed F-104G. The Starfighter is being built under license agreements in Europe.

The F-104G, though externally similar to the F-104Cs of the USAF's Air Defense Command, is a completely new aircraft with a strengthened airframe and extensive electronic equipment. These two changes make the aircraft suitable for multiple combat roles such as strike, reconnaissance, and interception. Approximately 1,000 aircraft of this type will be built by Germany, the Netherlands, Belgium, and Italy. The F-104G can carry nuclear weapons and, in case of war, (Continued on following page)



Bell helicopter in wild Alpine country. Luftwaffe uses a variety of copters for liaison and rescue work.



The Luftwaffe's three transport wings use the French Noratlas, which the pilots call the "Norrie." Many were built under license in Germany. The aircraft can be used for paratroops and dropping supplies.



The Transall transport is scheduled to replace the aging Noratlas in 1966. This aircraft is the product of French and German design.

THE NEW LUFTWAFFE

such equipped fighter-bombers might have to fly one-way missions, since in this eventuality, there would probably be no airfields to come back to. The fighter-bomber wings of NATO, together with the F-105s of the USAF, would have to carry the brunt of the first decisive hour of the war. For this reason, equipment and training of these wings have to be of the highest standard.

The long-range reconnaissance wings still fly the RF-84F, soon to be replaced by the F-104G. The remarkable little Fiat G.91 R3/4 that equips the light reconnaissance wings can take off from grass fields and is suitable for both reconnaissance and close-support work. But since the range is limited, it is foreseen to deploy it over the battle zone only.

The interceptor wings are still equipped with the obsolete Canadair Sabre VI, and the all-weather wings fly the Italian-built North American F-86K. All the interceptor wings will reequip this year with the F-104G. Armament consists of Vulcan cannon and Sidewinder missiles, produced under license in Germany for NATO.

The three transport wings use the French Noratlas, a great number of which were built under license in Germany. The transports are responsible for airlifting supplies to the weapon test centers of NATO on

Sardinia, at Istres near Marseilles in France, and at other locations in or out of Europe. They will bring the paratroop units of the German army to their drop zones and are equipped for airdropping supplies.

These obsolescent transports will be replaced in 1966 by another French-German design—the Nord-Weserflug C.160 Transall. A requirement exists for 300 medium helicopters, and presently under discussion are the Sikorsky S61R and the Boeing-Vertol Chinook. It is quite probable that a quantity of both helicopters will be ordered since the Luftwaffe missile wing will be reequipped with the Pershing, which requires the Chinook for air transportation. It is not yet clear who will have jurisdiction over this helicopter force, but it is likely that the transport wings will be given the responsibility for these rotary aircraft.

The liaison and air rescue squadrons and the special group of the air materiel command (*Luftwaffenamt*) are equipped with a variety of aircraft—helicopters made by Bell, Boeing-Vertol, Westland, and Sikorsky; light aircraft from Piper, Dornier, and Piaggio; C-47s, DC-6s, and Lockheed JetStars. These and many more, good and bad, old and new, hand-me-downs, and aircraft for which the Luftwaffe paid hard cash—the approximately sixty different aircraft types the Luftwaffe is flying today can all be found at the *Luftwaffenamt*.



Each Luftwaffe air division has an anti-aircraft regiment, all part of NATO's defense network. Here gunners drill with Swedish-designed Bofors 40-mm.



Luftwaffe pilots learn their flying ABCs in either the Dornier Do-27, like this one, or the familiar Piper L-18.



The French Fouga Magister is used by the Luftwaffe for advanced pilot training of future jet pilots at one of the three advanced schools. This formation is over the Alps.

CONTINUED

Great efforts are being made to standardize the equipment.

The Luftwaffe's only missile wing is attached to the 1st Air Division with headquarters at Karlsruhe. It is equipped with the obsolete Martin Matador, a USAF hand-me-down. Possibly this year the wing will re-equip with the Martin Pershing. Whether this missile will be deployed at hardened bases or kept mobile has not yet been announced.

Each of the Luftwaffe's seven air divisions has one anti-aircraft regiment, of which the combat unit is the battalion. Presently the Luftwaffe has at its disposal ten rocket and eight gun battalions, all closely integrated into the NATO defense network. The gun battalions are equipped with the Swedish-designed Bofors 40-mm L70 gun, which is automatically controlled by the Swiss-developed Contraves "Bat" gunnery radar. The rocket battalions are equipped with the familiar Nike-Ajax and Hercules. An unnamed number of battalions was reequipped with the Raytheon Hawk missile for low-level defense. The Hawk is being manufactured in Europe by a number of firms located in nearly all the central European nations.

Understandably enough, such a fast-growing enterprise as the Luftwaffe needs well-trained men and, therefore, extensive and modern training facilities.

Five training regiments for basic training are now in existence. Two are garrisoned in southern Germany, two in the north, and the other is stationed abroad, in the Netherlands. At Munich are an officers' candidate school and a military technical school, and there is a military academy in Hamburg. At Utersen in northern Germany is the pilots' school for basic training where the fundamentals of flying are taught on the Piper L-18 and the Dornier Do-27.

Three schools for advanced pilot training were set up for training on such aircraft as the French Fouga Magister for future jet pilots or the C-47 for men destined to go to the transport wings. The transition training for the switch to the F-104 Starfighter is done by way of the T-38 in the United States, since there is not enough airspace in Europe for the rigorous training necessary, and the training in the US costs less than the acquisition of a couple of Talons.

The transition from the Fouga Magister to the G.91 is done in Germany at the two weapons schools of the Luftwaffe. There, aside from the transition training, the pilots learn advanced air tactics and how to use their weapons.

Further training under combat conditions is done in Sardinia where NATO has one of its gunnery ranges,
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courtesy of the Italian government. The school system of the Luftwaffe boasts three technical colleges with highly specialized curricula, the completion of which gives an education comparable to a good university degree. One antiaircraft school and one training regiment for communications and electronics round out the training facilities of the Luftwaffe.

There are currently 91,000 officers and men plus 14,000 civilians in the Luftwaffe. These totals will be raised slightly in the future to comply with the requirements of the NATO agreements. There are now about 2,000 trained pilots, and more are leaving the schools this year. This number satisfies all pilot requirements, and, since being a pilot is certainly the most glamorous part of the air force life, there are more than enough volunteers to draw from.

But qualified future noncommissioned officers such as metal workers, radio technicians, plumbers, engine mechanics, and the like, are very hard to come by. The schools are excellent, particularly the technical colleges where the young airman learns trades that many times pave the way for well-paid jobs in civilian life after discharge. As a result the Luftwaffe has difficulty in meeting and keeping its personnel requirements in this category. Or, after spending thousands of marks on their education while in the service, the Luftwaffe too often loses these young men as soon as their military service is over.

The attractions of private industry are considerable in contrast to the rather meager pay of the young airman. In civilian life a skilled metal worker can earn about 800 marks (\$200) a month. The Luftwaffe starts him at only 225 marks (\$54). It is a field where the government simply cannot compete with industry, and, since there is virtually no unemployment in Germany today, the Luftwaffe continues to come out on the short end. Intensive recruiting drives are held periodically to help remedy the situation, since draftees can only partly fill the gap.

The task of the Luftwaffe, which was conceived to fit completely into the NATO framework, is to defend the central sector of the NATO line. This is a difficult task because of the geography of central Europe. Be-

tween the Iron Curtain and the western border of the Federal Republic of Germany it is only 125 miles, about as far as from Washington, D. C., to Philadelphia. This rather narrow belt, which can be crossed by an aerial attacker in minutes, has become the first line of defense for NATO, behind which, in France, Belgium, and the Netherlands, begins the hinterland containing the rear bases and supply depots of the defense system.

This geographical situation was decisive in the choice of the aircraft with which the Luftwaffe was to be equipped and will be equipped in the future, and plays the main role in the unique European requirement for effective supersonic VTOL interceptors and fighter-bombers. The airfields on German territory are in easy reach for the attacker from the East who could render them easily inoperative inside the first moments of a war with missiles followed by fighter-bomber strikes. Thus the trend to disperse and at the same time eliminate vulnerable airfields becomes understandable. The VTOL military aircraft would give the answer to this problem, but since no operational VTOL fighter-bomber exists today, NATO must make do with the equipment that is readily available.

Though it may be very difficult for a non-European to imagine, it is impossible to discuss the Luftwaffe without constantly drawing NATO into the picture. From logistics down to aircraft procurement, in the Luftwaffe as well as in the air forces of the other NATO partners, such strongly intermeshing factors are so evident that it is very hard to find one aircraft or one radar station alone whose operation does not involve some international aspect.

In particular, the NATO radar early-warning network, which has to be of very high quality because of the same difficult geographical factors, is a truly international venture. To gain an acceptable warning time, radars have to be used that reach far across the Iron Curtain. Strategically located stations cover the whole NATO front, and the German stations manned by the communications regiments become part of a chain that starts in Turkey and Italy, leads to Denmark and Norway, Iceland and Greenland, and

As the Fiat G.91, NATO's light fighter-bomber, approaches obsolescence, studies are under way for its replacement. One of four current projects is this Italian G.95, shown here in its model-6 configuration. Designed by Fiat, the G.95 is to be a VTOL aircraft.



merges finally with the early-warning radar lines in the northern regions of the American continent.

All along the line, visual observation and listening posts in conjunction with special units that cover the electronic activities of the Red air forces supplement the chain, whose close net cannot be passed undetected under most circumstances. Strategically located defense centers collect the data to be displayed on plotting boards. Though eight different languages are spoken along the radar chain by the operators, there exists no insurmountable language problem since the commonly used language in the command posts is English, and every man in a responsible position has to master at least the basics of the language.

Many units are kept on constant war footing. The same holds true for the anti-aircraft rocket and gun batteries which require about five minutes' time to be combat ready. In the event of an attack, whether on the Turkish border or in Germany, the warning goes out immediately to the interceptor, fighter-bomber, and missile wings all along the NATO line.

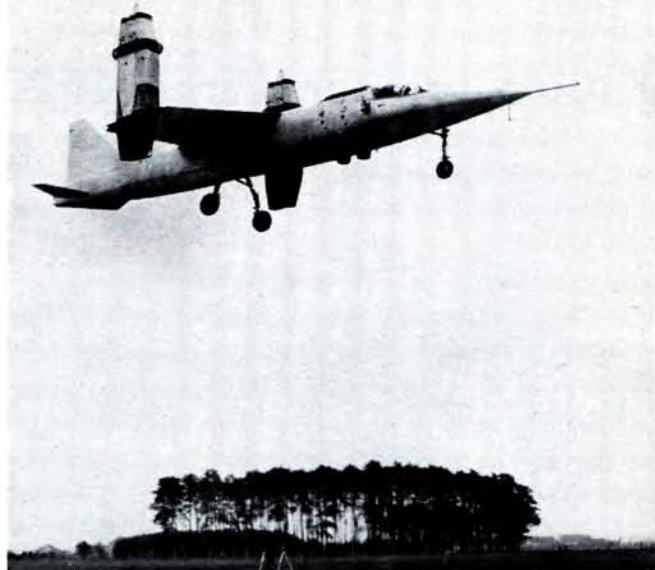
Counterattacks would be flown at once. During all these fighter-bomber strikes atomic weapons might be used. The bombs and warheads are kept in readiness under American supervision and would be issued to the NATO air forces in case of need. The same holds true for the warheads of the tactical missiles and anti-aircraft rockets. The NATO air forces and among them the Luftwaffe have only tactical tasks to fulfill: interception, fighting for air superiority, attack, and reconnaissance. All the strategic tasks are handled by the missile and bomber forces of the USAF and the RAF.

As can be easily seen, all these tasks of the Luftwaffe can be only partly and not very effectively fulfilled with the equipment available at the moment, since aside from the F-104G and the G.91 the aircraft are either obsolescent or obsolete. The F-104G is expected to stay in service until 1970, after which it is rumored that a French supersonic VTOL aircraft, most probably the Dassault VTOL Mirage V, will be bought in small numbers as replacements for the interceptor wings.

The Fiat G.91 is fast on its way to becoming obsolescent. This is the light subsonic fighter-bomber that sprang from a NATO competition in the past decade. The successor to this aircraft will be a true VTOL subsonic close-support fighter in the lightweight class. It is due to go into service in 1968 in far greater numbers than the present G.91. Some of the F-104G fighter-bomber wings, aside from all-G.91-equipped wings, will switch to this new aircraft.

Four projects are being worked on at the present, one of which might result in the replacement aircraft. One is the Italian project G.95/4 which features lift engines and one thrust engine in the fuselage. Two German projects are the Focke-Wulf FW-1262 fitted with swing nozzle and lift engines and the Entwicklungsring Süd VJ 101 (ELR 320) with wingtip tilt engines for lift and thrust. The British contribution is the Hawker 1127 which has swing nozzle engines only. Originally all of the projects were conceived as supersonic aircraft, but the present NATO specifications do not require such a high speed.

Two of these four aircraft are now flying successfully—the Hawker 1127 and the VJ 101. Before an



One of the aircraft in prospect for the new Luftwaffe is the VTOL aircraft VJ 101. The X-1 model of this subsonic experimental plane is shown here with wingtip engines tilted for lift thrust. The X-2 will be supersonic and may be the forerunner of NATO's new light fighter-bomber.

evaluation can be made, much work still has to be done to turn these still completely experimental aircraft into efficient military machines. But it is certain that the deadline for delivery to the combat units at the end of 1968 can be met by all four types. It remains to be seen which design NATO will choose.

The transport wings which fly the obsolete Noratlas will be reequipped with the C.160 Transall, a joint French-German development which can be compared in size and capacity to USAF's C-130 Hercules. Thus far 120 of these transports have been ordered by the Luftwaffe.

An interesting program at a progressed development stage—the aircraft may fly this year—is the Dornier Do-31 light VTOL transport. It will have a range of 1,000 miles with a payload of four tons. Lift and thrust engines in midwing nacelles furnish the power. This aircraft might very well complement the transport wings and helicopter squadrons, should it be accepted by the Luftwaffe and NATO.

It is impossible here to cover all the projects and programs under way at the present time, but it must be noted that each has become a truly European venture, just as the different air forces of NATO have by necessity become a single, united air force.

The Luftwaffe has merged into this big group, and what no one thought possible twenty years ago is now an established fact. German aircraft are flying side by side with their partners from Western Europe and America to guard a common border against a common danger.—END

The author, Stefan Geisenheyner, is Editor in Chief of Flugwelt International, a leading German aerospace-technology magazine. He served in the Luftwaffe during World War II and received his degree in mathematics after the war. He then switched to journalism and has been an editor and writer for ten years. He wrote "How Did the Europeans Size Up Big Lift?" for our December '63 issue.