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Parachuting in the Polish Air Force

General Information

1. In 1955, a new regulation was implemented in the Polish Air Force (PAF) to the effect that all rated personnel must perform a minimum of one parachute jump per year. Prior to this date, jumping had been on a voluntary basis only. Besides rated personnel, there were two additional categories of individuals in the PAF who were compelled to perform parachute jumps: jump instructors and parachute riggers. Instructors, who normally were officers and in a unit carried the title of "chief of parachute duty" (szef sluzby spadochronowej), had to perform a minimum of 10 jumps per year. Riggers were compelled to jump twice a year. As for voluntary parachute jumping, all air force personnel were authorized and encouraged to do so. Of all non-rated enlisted personnel, guards (wartownicy) had priority in attending parachute courses and in executing jumps. This was attributed to the fact that, of all the air force personnel, their duty was considered the least glamorous. Consequently, if allowed to jump, it was felt that their morale would be raised. It was also believed that since guards received infantry-type basic training, they could be converted into paratroops easily if it should become necessary.

Parachute Jump Training

2. There was no official parachute jump school in the PAF. However, the Air Force Officers School in Deblin possessed a parachute branch where future chiefs of parachute duty were trained. The course lasted about six months, during which time they performed 10 jumps utilizing both free-fall and static-line parachutes. Students at the school's parachute branch were generally infantry officers who volunteered for such duty. One jump school did exist in Poland, but it was used exclusively to train army paratroopers. The school was located in the vicinity of Kolobrzeg (N 54-11, E 15-35). Air force personnel received their basic jump training either in their own particular units or while attending specialized schools. Before 1955, jump training at the Deblin Pilot School consisted strictly of ground exercises, unless certain individuals volunteered to perform actual jumps. The training's ground phase included exits from mock-ups, parachute landing falls from a platform, and theoretical studies. After the new regulation was implemented, cadets were required to perform one jump before graduation. The same prevailed for all other rated personnel. However, the parachute jump training conducted in these schools was relatively minor in comparison with that given in units. Furthermore, regardless of an individual's jumping accomplishments in school, he was compelled to complete the unit's basic jump training before being permitted

to jump. In addition, rated personnel were subsequently required to have about two hours of ground training each month.

3. Basic jump training conducted in units lasted approximately 14 days at the rate of two hours per day. The ground phase included both static-line jumping for proficiency purposes, and free-fall technique during emergencies. Only rated personnel received free-fall instructions. Training for proficiency jumps was conducted by the unit chief in charge of parachute duty. It included lectures, ground practice, and actual jumps. During the lectures the various parachutes in use, along with their characteristics, were described. Various other aspects peculiar to parachuting, such as wind velocities, rates of descent, and oscillation were covered also. Ground practice consisted of exits from mock-ups; parachute landing falls from a two-and-one-half meter high platform; riser manipulation from a suspended sling and parachute rigging. All jumpers in the PAF had to be able to pack their own chutes. Except for the parachute landing falls, there was no special physical conditioning during the course. The normal PT and gymnastics given in the unit were considered sufficient. Training for emergency free-fall jumping was conducted partially by the chief of parachute duty, who described the various parachutes used for this purpose, and by the deputy commander for pilotage, who described the actual jump procedures as well as the seat ejection principle if the particular unit was equipped with jet aircraft.

Jump Procedures

4. There were three basic procedures used for parachute jumping in the PAF: static-line, free-fall, and free-fall along with seat-ejection. A detailed description of each procedure is as follows:

a. Static-Line Parachute Jumping. As stated previously, this type of jumping was used for proficiency purposes. These jumps were normally accomplished throughout the PAF from PO-2 type aircraft with PD-6 type parachutes. The entire ground practice given in a unit was geared to jumping from PO-2s only, unless the unit was equipped with some other type of jump airplane. In this case, which was rare, the training was extended to include the other type of aircraft. All units possessed one or more PO-2s; they were economical to operate and besides being transport aircraft, they were the most adaptable for static-line jumping. The majority of proficiency jumps were generally executed from PO-2s at altitudes of from 800 to 1200 meters, and at air speeds of about 80 kilometers per hour. The maximum wind velocity permitted was unrecalled. Since the PO-2 was a two-seater, exit procedures were rather complicated. The jumper had to step out from the front cockpit (the pilot sat in the rear) onto the left lower wing, after having fastened his static-line in the cockpit to a steel bar normally gripped by pilots

to steady themselves during acrobatic maneuvers. Standing on the wing, the jumper remained near the cockpit, facing the wing tip, and holding the wing struts to steady himself. Upon reaching the drop zone, he performed a left face thus facing the tail of the plane. On a hand signal given by the pilot, the jumper straightened his body; brought his left arm down along his side; grabbed with the right hand his reserve parachute ripcord located by his left breast; and leaned forward until swept away by the wind blast. In this manner, when his feet left the aircraft, he was practically in a horizontal position. Moments later he pitched downward head-first, and thus braced himself for the opening shock.

[redacted] occasionally, when a substantial number of rated personnel from a certain unit were in need of their annual jump, the unit could request a larger jump aircraft from another unit. This larger aircraft was normally a twin-engine transport from which mass jumps could be executed. Prior to such an operation, all jumpers had to practice exits in sticks from mock-ups. However, the exit body position itself remained the same as with the PO-2. There was no jumping or diving, but only a forward leaning motion until the jumper was caught by the propeller wash, which resulted actually in a sort of dive. While descending, jumpers made full use of riser slips and twists to control oscillation, lateral speed, and body position in relation to ground winds. The jumpers were instructed to land always with the wind in order to roll forward easily when striking the ground with their feet. There were no provisions in the training program for side or rear parachute landing falls. Since jumping was encouraged for all personnel, and volunteers were many, few non-rated airmen could actually perform more than one single jump because of limitations of fuel and aircraft availability. In an average fighter regiment for example, in addition to the pilots who were compelled to make one jump per year, about 30 non-rated individuals executed one jump during the same year. These were usually personnel who had been outstanding students during the ground training phase. Upon the completion of one jump, they received a jump log and jump badge which qualified them as parachutists and simultaneously ended their jumping career, unless they received their commander's permission to jump again. Such permission was granted only if an individual demonstrated outstanding capabilities, and if he wished to further develop his skill in order to participate in national and international jump competitions. The same applied to rated personnel who could seldom jump more than once a year. Naturally, airmen discharged from active duty, such as draftees, could further their jump career in civilian aero-clubs. Unless an individual was an instructor or an accomplished parachutist, who had a minimum of three static-line parachute jumps to his credit, proficiency jumps always were executed with static-line parachutes, never with free-falls.

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b. Free-Fall Parachute Jumping. Except for instructors, parachute riggers, and experienced parachutists, this method of jumping was strictly limited to times of emergency, and was largely executed by the crew members of conventional type aircraft. Passengers in military transport aircraft were seldom equipped with parachutes. Ground training for free-fall parachuting was identical to that given for static-line proficiency jumps, except that additional lectures were given for their use. At these lectures, the chief of parachute duty described the characteristics of manually activated parachutes and the procedures to be followed in successfully clearing the aircraft and opening the chute.

It was designated "PL" and was available in both back and seat packs. The procedures for bailing out were essentially identical; they varied only slightly with each type of aircraft. A pilot in difficulty was instructed to radio the flight control officer (kierownik lotu), who would then summon the pilot's commander. He would then instruct the pilot on what action to take, whether to bail out or attempt a forced landing. The commander could also summon the unit's chief engineer who would coach the pilot on how to overcome a mechanical defect if this happened to be the trouble. If the aircraft could not be saved, the commander ordered the pilot to bail out. Prior to jumping, the pilot was expected to disarm and drop his bombs, drop the auxiliary fuel tanks, and empty his guns, after having previously assured himself that he was not over a populated area. Then he disconnected the aircraft's electrical circuit and jumped. When jumping, he counted for a minimum period of about three seconds prior to pulling the ripcord. If the pilot felt that there was no time to follow the above procedures, he just bailed out, sometimes without even notifying the airfield. However, pilots were reluctant to do this, for if an investigation proved that no immediate emergency had actually existed they were prosecuted. Consequently, if at all possible, they always attempted to secure permission to bail out. When a pilot encountered an emergency during a cross-country flight, which put him out of radio contact with his airfield, his instructions were to notify the closest airfield. However, because of the length of time necessary to tune in another station, this was seldom adhered to; in fact it was rarely attempted.

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c. Parachute Jumping with Seat Ejection. This type of jumping was used with jet aircraft during emergencies. The characteristics of the parachutes utilized in connection with seat ejections were described to pilots during periodical lectures conducted by the chief of parachute duty. However, the actual ejecting sequence and chute activation procedures were generally described in a unit by the deputy commander for pilotage (zastepca dowodcy to spraw pilotazu) along with

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the armament engineer; the latter was the most knowledgeable of an aircraft's seat ejection system.

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In a MIG, until the time for the actual ejection, all procedures to abandon the aircraft were identical to those for emergencies in conventional type airplanes. Regardless of the type of aircraft, speed, or altitude, basic parachute activation procedures were identical thoughout the PAF. Pilots were instructed to pull their ripcord at the precise moment they reached the ejection's peak altitude. At this altitude they supposedly remained stationary for one and a half seconds between the ejection "up" and the ensuing fall "down". The seat detached itself automatically during the ejection at a height of about 10 meters, with the pilot going up an additional two or three meters; these distances were strictly heights, and not lengths of the trajectory path. The pilots were required to follow the standard operating procedures described above. They were also instructed to reduce their air speed to about 350 kilometers per hour and adjust their altitude to between 2000 and 8000 meters if at all possible. Normally, if all went well, an altitude of 300 meters was presumably sufficient for a safe ejection and parachute deployment. As stated previously, parachuting with ejection was for emergencies only.

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The aircraft used for the demonstration was not a jet but a TU-2 equipped with a MIG ejection seat in the gunner's upper turret. The chute utilized for this demonstration was a regular PL instead of the "Raketa" type ribbon chute worn in jet aircraft. The jump was successfully executed from an altitude of 1200 meters. The jumper was presumably stationed at Deblin/Irena Airfield and was making the rounds of all the airfields in the country to demonstrate the ejection-jumps.

Personnel Parachutes

5. There were four basic types of personnel parachutes in the PAF. They were designated as PD-6, PD, PL, and Raketa. All were of Soviet design and until two or three years ago, when their production was started in Poland, they had been of Soviet manufacture. All were white in color. A detailed description of each type is as follows:

a. Parachute PD-6. A static line activated chute, with a flat-square canopy, utilized in the PAF for proficiency jumps, although actually designed for army paratroop use. The canopy was made of percale (perkal); had a surface of 48

square meters; and was vent free. The static line (length unrecalled) was of cotton fabric and was fastened to the apex of the canopy with a loop which would undo itself during the activation process. The parachute was equipped with 24 suspension lines, each line having a tensile strength of 150 kilograms. The risers, pack, and harness were of cotton fabric. The straps were secured with a quick-release box. The chute, which had a total weight of 12 kilograms, was conventionally deployed. The static line ripped open the pack; pulled out the canopy and the shroud lines; and then detached itself from the canopy upon the completed extension of the shroud lines and canopy. Deployment time was about two seconds. The PD-6 parachute could be jumped safely from an altitude of 150 meters, and its rate of descent was from four to seven meters. [redacted] however, during paratroop drops from Douglas aircraft (C-47), a minimum air speed of about 145 kilometers per hour was utilized. It was the prevailing general opinion that the PD-6 was a good parachute with a safe deployment system and slow rate of descent. However, it was bulky and heavy, measuring about 70 x 35 x 25 centimeters, and it had a tendency to oscillate quite heavily.

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b. Parachute PD. A chest-type, manually activated chute, used exclusively as a reserve parachute for jumps performed with the PD-6. It was prescribed by regulations that all non-emergency jumps had to be executed with both the main and reserve parachutes. The PD was lighter and smaller than the PD-6. Its pack was rectangular in shape and was worn with the length in a vertical position. It was attached to the harness of the PD-6 with two snap fasteners which were hooked to two D-rings. As one faced the jumper, his rip cord was located on his pack's upper right corner. [redacted]

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c. Parachute PI. A manually activated free-fall type chute, with a flat circular canopy. It was used in the PAF primarily for emergency jumps from conventional type aircraft. The canopy was made of percale (perkal); consisted of seven panels; and had a surface of 36 square meters. It was equipped with a vent at the apex. Although it was available with both back and seat packs, the latter model was the more common. The chute was equipped with 28 suspension lines (fabric, length, and tensile strength unknown), a cotton harness, and risers. The pack was of cotton fabric; the chest and leg straps were also made of cotton and were secured to a chest quick-release box. The total weight of the chute was 10 kilograms. The pack of a seat-type measured approximately 55 x 40 x 25 centimeters. It had an average rate of descent of seven meters per second, and it needed about three seconds

to open. It had a conventional type deployment. When the ripcord was pulled breaking the pack open, the pilot chute sprang and pulled out the canopy followed by the suspension lines. Neither the PZ nor the PD-6 were equipped with quick riser release devices.

d. Parachute "Raketa". A manually activated, free-fall type, ribbon parachute, officially designated "Raketa" (rocket), and used in the PAF for emergency jumps from jet aircraft, normally with seat ejection. However, the tail gunner of an IL-28 wore such a chute but was not ejected. This parachute was initially introduced in Poland when the PAF received its first jets from the Soviet Union. The canopy was flat-circular in shape; was equipped with a vent; and consisted of 10 centimeter-wide ribbons made of silk fabric and some other fiber. The total surface of the canopy was 46 square meters, and the total weight of the parachute with a supply of oxygen was 17 kilograms. The "Raketa" was available in seat-pack only. [redacted] The harness, pack, risers, and fastening straps were made of cotton fabric. The straps were secured by a quick release box-type mechanism. The chute's average rate of descent was 12 meters per second. To provide oxygen when jumping at high altitudes, the parachute was equipped with eight small interconnected oxygen containers, each having a capacity of .05 of a liter and an atmospheric pressure of 150. The containers were inserted in the upper section of the pack, between the folded canopy and the individual's posterior. They were covered with a quilted cotton mat which protected them and simultaneously provided comfort for the pilot. The "Raketa" parachute had a sleeve-type deployment. The canopy was completely inserted in a narrow, red silk sleeve, which had the same length as the fully extended canopy. There was no pilot parachute. Instead, the extremity of the sleeve, where the apex of the canopy was located, was extended by about 50 centimeters. The surface of the sleeve extension was covered with a series of ruffles, which were sewed to the extension and were made of the same red silk. The extension remained empty. In other words, the entire sleeve consisted of two sections--a long one which contained the canopy and a short ruffled one. When the ripcord was pulled, the pack was ripped open thus exposing the ruffled section of the sleeve, which would begin to unfold when caught by the air stream. When the sleeve was entirely out of the pack and fully extended, it began pulling out the suspension lines. When the lines were in turn fully extended, the sleeve would start to slip off the canopy, which gradually inflated until completely free of the sleeve. The sleeve then fell separately to the ground. [redacted]

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In 1953, a pilot ejected near Slupsk Airfield (N 54-29, E 17-06) from an altitude of 250 meters, and, although he activated his chute immediately upon ejecting and it functioned normally, he was killed upon striking the ground, because he did not have a full canopy. The general opinion in the PAF was that the "Raketa" was a poor parachute. Besides its weight, its extremely fast rate of descent practically eliminated all chances of landing free of injuries. As a consequence, a new policy was implemented in the PAF in 1957 which authorized pilots to wear a PZ type parachute instead of the "Raketa", if their scheduled training flights were to take place at lower altitudes. However, the ribbon chute was still used for all simulated combat operations.

Automatic Parachute Opening Devices

6. No automatic parachute opening devices were used in the PAF. 50X1-HUM
All emergency type chutes had to be activated manually.

Cargo and Miscellaneous Parachutes

7. to describe cargo parachutes except that they 50X1-HUM
were all white in color and were equipped with cotton canopies.
any of the cargo chutes 50X1-HUM
were larger than the personnel chutes. As for other parachutes,
any aircraft
brake or deceleration brake chutes. they did
not exist. deceleration brake chutes were to be 50X1-HUM
manufactured in the near future, but that they were to be used only with gliders in civilian aeroclubs.

Serviceability, Packing, and Assignment of Parachutes

8. All personnel parachutes in the PAF were serviceable for a period of about five years. In the case of the PD-6 used for proficiency jumps, serviceability was either for a five year period or for a certain number of jumps (number unrecalled), whichever came first. After a parachute exhausted its life span, it was sent to a parachute manufacturing plant where the canopy and deteriorated parts were exchanged. The chute was then assigned a new serial number and was shipped back to a unit. It was not necessarily sent back to the same unit, since upon the turning-in of parachutes a unit received replacements immediately.

9. All personnel parachutes were repacked and inspected every six weeks. There were no additional periodic inspections performed during this six-week period. All rated personnel had one emergency chute permanently assigned to them. This parachute carried the man's name on a paper tag attached to the harness, and it was his responsibility to care for it. Each crew member was required to repack his own chute at the end of six weeks. However, the repacking and logging was generally accomplished by the unit parachute riggers under the supervision of the chief of parachute duty. Nevertheless, rated personnel were required to be present in the parachute shop to observe the repacking of their personal parachute. As for the other chutes, such as the PD-6 and PD, they were not assigned to any one individual, but instead were cared for by the parachute shop personnel.

Jump Pay

10. The following monetary compensations applied to all service personnel who performed parachute jumps, regardless of their rank or status: No extra pay was received for the initial 10 jumps. For the subsequent 20 jumps, a sum of 60 zlotys was paid for each jump. After 30 jumps, the allowance was slightly higher. It was raised again after 50 jumps.

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