Ralph –

Had you heard of this Holtex before?

Do you think this is worth pursuing further?

Walt

Ralph -

The Halter sounds very interesting if it lives up to this description. Price, velocity and mechanical properties sound O.K. Where could we find out explosive composition?

The rifle grenade bit sounds good also, for the type of electrical delay rocket propellant ignition fuse technique employed.

Wally.

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ROUTING AND RECORD SHEET

SUBJECT: (Optional)		

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RID/DISSEMINATION SECTION	
	DATE 17 AUG 1960

TO: (Officer designation, room number, and building)	DATE REC'D	DATE FWD'D	OFFICER'S INITIALS	COMMENTS (Number each comment to show from whom to whom. Draw a line across column after each comment.)
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HEADQUARTERS
DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT CHIEF OF STAFF FOR INTELLIGENCE
WASHINGTON 25, D. C.

INTELLIGENCE TRANSLATION NO. R-6697

INTELLIGENCE DOCUMENT BRANCH NO. 2146504

TRANSLATION REQUESTED BY: OTIA

TRANSLATED (FROM) ~~GER~~ (~~INTG~~) GERMAN

TRANSLATED BY: JPRS (R-935-D)

SUBJECT: (FOREIGN TITLE)

SPRENGSTOFF AUF DER DREHBANK
Neue Wege Im Waffen-Bau Und In Der Entwicklung Von Sprengkorpern

SUBJECT: (ENGLISH TITLE)

EXPLOSIVES ON THE LATHE
New Methods of Weapons Construction And In The Development of Explosive Substances

REFERENCES:

AUTHOR:

TITLE OF PUBLICATION: German article

PARTS TRANSLATED: (Continued from No. 12/59)

PUBLISHER, DATE, AND PLACE OF PUBLICATION:

25X1

This document is part of an integrated file. If separated from the file it must be subjected to individual systematic review.

ACSI FORM 13 9 JULY 59 DISSEMINATION FORM FOR INTELLIGENCE TRANSLATION

EXPLOSIVES ON THE LATHE

NEW METHODS OF WEAPONS CONSTRUCTION AND IN THE DEVELOPMENT OF EXPLOSIVE SUBSTANCES

[Following is a translation of an article in German language.]

(Continued from No. 12/59)

The new explosive agent, which we mentioned in No. 12/59, was also developed by Hispano-Suiza and is called Holtex -- in honor of Dr. von Holt, who, toward the end of the second World War, made a virtue of necessity and phlegmatised Hexogen, Nitropenta, and other superior explosives through mixing them with a four times larger quantity of cheaper explosives and with excellent results. With Dr. von Holt's research as a basis, Holtex was then developed, which is, in every respect, a wonder explosive agent.

Holtex has the consistency of aluminum and is completely fool-proof. Its explosion can be activated only by its own detonator. Holtex can be hot-pressed and cut, it can be drilled, turned or cut with band-saws at 220 rpm's without lubricants, it can be fired at, whereby it merely crumbles (such firing experiments were carried out with the Swiss carbine of caliber 7.5mm at a range of 15 meters), and it can be submerged unpacked in water for weeks without its quality being impaired.

Holtex is completely impervious to pressure and tension. As threads can be cut directly into Holtex, tension tests were conducted in which a steel hook was screwed into a piece of Holtex, and not only a full drum of gasoline was suspended from it, but it even supported, in addition, a man who climbed onto the drum, without the Holtex breaking.

The following comparisons of the qualities of explosives might be of interest:

Explosives	Calories per gram	Velocity of detonation in meters per second
TNT	950	6700
Nitropenta with wax	1180	7950
Holtex	1230	8000

At the present time, Holtex is still in the costly experimental production stage, but, once mass production is begun, this explosive will save much money, for, firstly, a kilogram of Holtex will presumably cost only 5 DM to 6 DM, compared to about 7 DM for Hexogen, and secondly, and that is more significant, the traditional engineer's charge of one kilogram can be replaced by a Holtex charge of only 700 grams. And thirdly -- and this is the sensational thing about this peculiar explosive -- it will be possible to construct anti-tank mines entirely of Holtex without metal casings. concussion effect matters /See Note/. (Note: This is a printing error in the German text, appearing in the same place, and also out of context.) It will be possible to produce anti-aircraft rocket heads without casings if only demolition effects matter, it will be used as a fuse booster, and it will be possible to produce hand grenades made entirely of this explosive without endangering the thrower. (For defense purposes a ring of steel or iron is screwed onto the body of the grenade.)

Another hand grenade, which follows the trend toward greater lightness in weight, substitutes plastic for metal and can be used defensively by attachment of a threaded ring of spring steel, comes from Spain as well and, what is more, from the firm Plasticas

Oramil in San Sebastian. The hand grenade, known in Spain by the name POMI, consists of a bakelite case with a charge of pressed TNT. The bakelite is shock-proof, the hand grenade is provided with a good safety device, and it can be thrown a distance of 30 meters even by average troops and has a very effective detonation. Without a fragmentation jacket it has a maximum effective range of 10 meters, but it is most effective 2 meters from target; with a jacket, it has an effective range of 30 meters, while single fragments can travel up to 100 meters.

This hand grenade requires intelligent or, at least, very well-trained troops who can accurately gauge the effects of a throw, as the grenade has 2 fuses which the soldier must set according to his needs or the conditions of combat. One fuse is a highly sensitive impact fuse which is activated immediately on contact, the other, a delayed-action fuse. By setting the impact fuse, the grenade bursts on contact with branches, window-panes, water, very soft earth, dense vegetation, etc. If thrown with the impact fuse set, the soldier must have no obstacles for at least 15 meters in front of him. During street-fighting, when he might throw into a house through a window, the delayed-action fuse is set.

The cylindrical hand grenade, that almost resembles a small thermos bottle, weighs only 300 grams, has a diameter of 5.5 cm., and a height of 12.5 cm. The charge weighs 115 grams. [Note: Title of illustration reads: The POMI hand grenade of bakelite (attack grenade).]

The POMI becomes armed only after reaching a distance of about 10 meters from the thrower. The delayed-action fuse is armed after 4.5 seconds. In the case of duds, there is no danger of explosion when the time of 4.5 seconds has passed. However, they are to be removed by trained personnel only.

The POMI can even be fired from a rifle by using a grenade cup, a special cartridge, a stabilizing device and a special safety ring. Nevertheless, it will not be able to compete with actual rifle grenades. For here as well, 2 firms have opened new paths: There are already available today

RIFLE GRENADES WITH ROCKET PROPELLANTS

One was built by Hispano-Suiza, the other by Instalaza, and both firms have not only developed high-explosive projectiles, but armor-piercing hollow charges as well, which are very accurate and of high penetrating power. Hispano began its construction by reason of psychological considerations. This firm's excellent rifle grenade had a range of 150 meters, which did not impress Hispano. The firm considered this ballistic performance entirely insufficient. The grenade could have been shot farther only by using a stronger cartridge. This would have increased the recoil so greatly, however, as to cause the rifleman pain and, thereby, a reluctance to use the weapon. The use of a shock-absorbing stand would have made use of the grenade too complicated. The firm found the solution to this problem in a rocket propellant that now easily carries the grenade to distances from 200 to 300 meters.

The most interesting thing about this rifle grenade is the electrical firing. By means of the firing recoil, a magnet is driven through a spool, produces an electrical impulse onto a condenser which is discharged by contact with the primer, whereupon ignition follows. The primer is situated in the back so as not to form a hindrance for the hollow charge blast.

The Instalaza firm has developed a simple rifle grenade device which can be mounted on practically every rifle.

(Note: 4 illustrations follow the preceding paragraph, captions follow.)

4. Instalaza 88.9mm launcher in carrying position.

5. Hollow-charge grenade for the Instalaza launcher.

6. This high-explosive grenade for the Instalaza launcher, with propellant, weighs 5100 grams, the projectile weight alone is 3100 grams, of which 900 grams are explosive. The grenade itself has a caliber of only 88.6mm, is 663mm in length, and has a muzzle velocity of 130 meters per second, with a range of 1350 meters.

*

Instalaza 88.9 launcher in firing position.

*

Until the present time, experiments have been carried out with the Spanish and the German Mauser, with the Garand M-1, and with the submachinegun Cetme and Armalite AR-10. The various calibers of these weapons, 7.62mm and 7.92mm, did not effect the results. With this device, armor-piercing hollow charges, high-precision high-explosive projectiles, rocket-propelled high-explosive projectiles, and tear-gas shells can be fired.

The 64mm hollow-charge anti-tank projectile weighs 625 grams, has an explosive charge of 330 grams, a muzzle velocity of 63 meters per second, can penetrate 26cm of armor-plating and 70cm of concrete, has a range of 300 meters, and is most effective against tanks at a range of 125 meters. The fuse is effective at angles of incidence of at least 20 degrees.

At a range of 125 meters the dispersion pattern is 90cm X 100cm.

The 2 high-explosive projectiles have a caliber of only 50mm. The high-precision high-explosive projectile weighs 625 grams, the effective nose weighs 520 grams, the TNT explosive charge 150 grams, and the maximum range is 750 meters. 10 rounds fired at a vertical target gave a dispersion pattern of 60cm X 80cm.

The rocket-propelled projectile weighs 900 grams, the effective nose weighs 700 grams, the TNT charge 180 grams, and maximum range is 750 meters. Recent firing trials conducted outside of Spain, produced a rectangular dispersion pattern of 30 meters X 24 meters at a range of 750 meters. At a range of 350 meters lateral dispersion was only one meter.

The tear-gas shell of caliber 55mm weighs 520 grams, does not fragmentate on impact, but only gives off its tear-gas content of 148 grams, and has a maximum range of 300 meters. In trials it filled a space of 48,000 cubic meters to a degree of insufferability.

The rocket-propelled projectile is armed only when at least 30 meters from the muzzle. The rifleman is, thus, always out of danger of suffering burns. Special precautions are not necessary.

With its electrical firing, the Hispano-Suiza rocket-propelled rifle grenade is superior to the Spanish grenade in one respect: it bursts at every angle of incidence and is already effective at an angle of incidence of only 3 degrees. At a smaller angle the hollow charge blast is ineffective. The Spanish grenade, on the other hand, has a superior range.

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- END -