



TRB BUILD TO
LAST



AMMUNITION FACTORY AS A TURN-KEY SOLUTION

Technology Transfer and Equipment for Ammunition Production
of Small Calibers (5.56 - 12.7 mm, 200 pcs / min)

ABOUT US



TRB is a defense and security company steeped in history and tradition.

Established in 1955, privatized in 2014 (Government of the Republika Srpska retains a minority stake), expanded to become an Institute specializing in overhaul, refurbishment, remanufacture, production and services.

TRB is licensed and accredited to: Develop, Manufacture & Export (ML1 thru ML22).

TRB quickly established its position as an integrator and producer of comprehensive national defense and security solutions

Products: Ammo line, RS9 / 9mm gun, Radar systems, Biometric Access Node (B.A.N.), Mobile Flex Power, Mobile Protective Guardhouse, Mechanical Demining Machine MH05 / MH17

PRODUCTION LINE

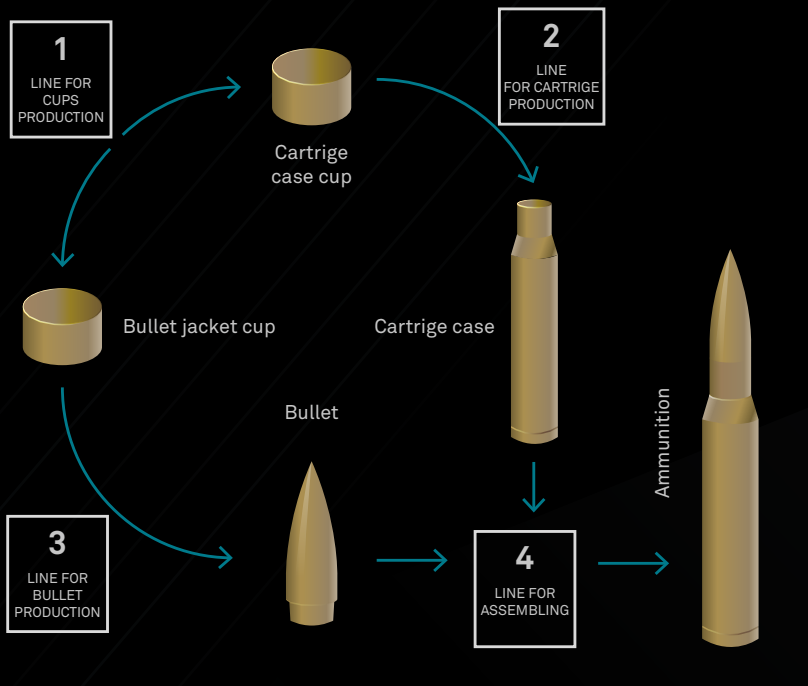
BASIC CHARACTERISTICS:

Production of calibers* from 5.56 to 12.7 (not 12.7)	5.56x45, 7.62x39, 7.62x51, 7.62x54, 5.45x39, 308Win, 338LM, 9x19
Capacity of line	200 pcs /min
Designed annual capacity for one eight-hour working shift	20.000.000 bullets
Material of cartridge case	brass
Material of bullet core	Pb-Sb alloy wire (standard line) or steel (optionally)
Type of bullet	FMJ (standard) or AP / HP (optionally)

* production of each calibers is enabled by appropriate working tolls and transitional parts

PROJECT 1

INSTALLATION OF AMMUNITION LINE



PHASES OF TECHNOLOGICAL PROCESS

1	Production of starting raw materials: cartridge case cup and bullet jacket cup of the strip
2	Production of starting raw materials: lead wire
3	Manufacture of cartridge case
4	Bullet production, and
5	Line for ammunition assembling

WHAT WE OFFER

STANDARD EQUIPMENT

1	Line for cartridge case production;
2	Line for bullet production;
3	Line for assembling;

Optionally

4	Line for cups' production;
5	Line for Pb-Sb wire production;
6	Equipment for ammunition quality testing (shooting range);

STANDARD ENGINEERING SERVICES

1	Equipment installation;
2	Supervision over installation;
3	Commissioning of production line;
4	Trial run and training;

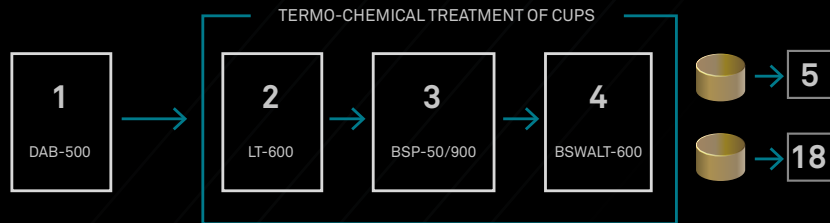
Optionally

5	Maintenance after commissioning;
6	Turnkey solution – ammunition factory

KNOW-HOW DOCUMENTATION

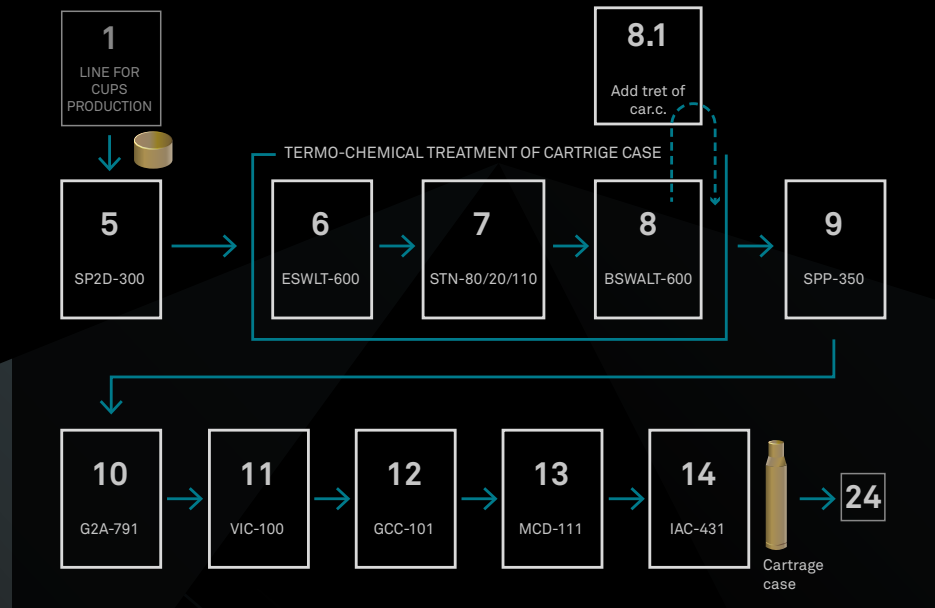
1	Technical and technological documentation for ammunition production;
2	Technical documentation for equipment;

1 LINE FOR CUPS PRODUCTION



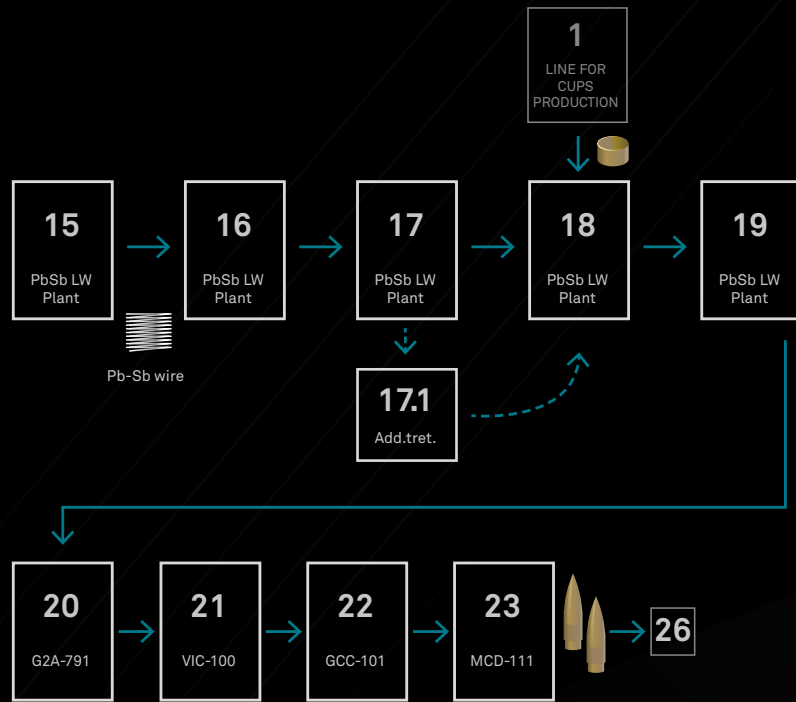
No.	Operation	Machine	Num. of mach.
1	Double action press	DAB-500	1
2	Washing, rinsing and drying before annealing	LT-600	2
3	Cups annealing	BSP-500/900	1
4	Pickling, washing, rinsing after annealing	BSSWALT-600	1

2 LINE FOR CARTRIDGE CASE PRODUCTION



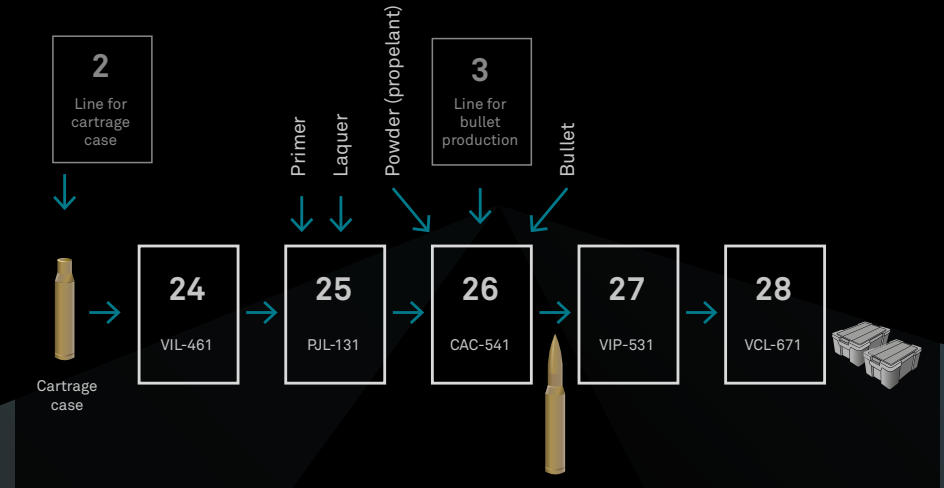
No.	Operation	Machine	No. of mach.
5	Drawing and trimming of cartridge case	SP2D-300	1
6	Rinsing, washing and drying	ESWALT-600	1
7	Flow strip furnace for stress relieving	STN-80/20/110	1
8	Pickling, rinsing, greasing, draining and drying	BSWALT-600	1
9	Flash holes indenting. Cartridge case necking	SPP-350	1
10	Sieving of scraping	G2A-791	1
11	Visual inspection of cartridge case	VIC-100	2
12	Grooving of cartridge case	GCC-101	2
13	Mechanical control of dimensions	MCD-111	2
14	Induction annealing of cartridge case	IAC-431	2

3 LINE FOR BULLET PRODUCTION



No.	Operation	Machine	No. of mach.
15	Lead antimony wire plant	Collin	1
16	Manufacture of lead core	MLC-331	2
17	Scrubing and polishing	STB-50	2
17.1	Additional treatment if necessary		2
18	Manufacture of the bullet	MBA-331	2
19	Grooving of the bullet	GBA-351	2
20	Visual inspection of the bullet	VIB-641	2
21	Scraping (scrubbing) the bullet	SBB-511	2
22	Dimensions control of the bullet	DCB-361	2
23	Weight control of the bullet	WCB-371	2

4 LINE FOR ASSEMBLING



No.	Operation	Machine	No. of mach.
24	Visual inspection and mouth lacquering	VIL-461	2
25	Priming and joint lacquering	PJL-131	3
26	Cartridge assembling	CAC-541	1
27	Visual inspection and packing of the cartridge	VIP-531	2
28	Weight control and labeling	VCL-671	1

PROJECT 2

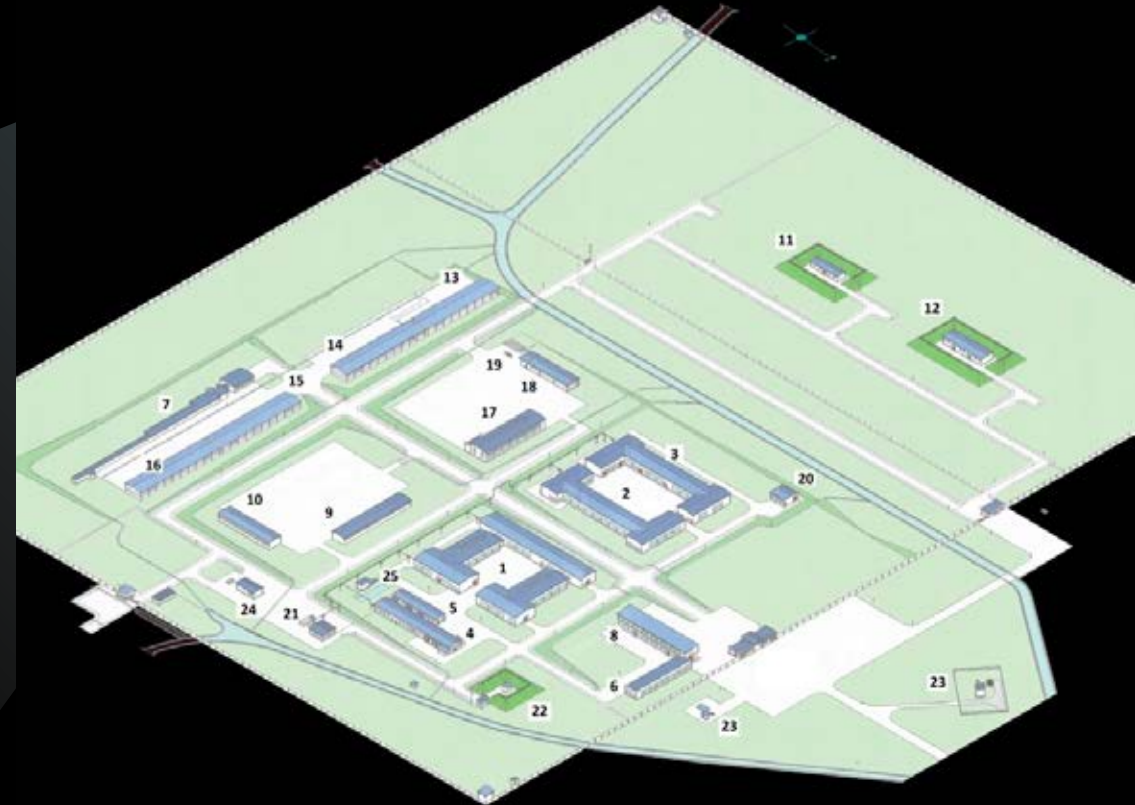
AMMUNITION FACTORY

THE BASIC FACILITIES

1, 2 Production department	11 Raw material storage
4 Department for ammunition assembling and packing (all calibers)	17 Lead-antimony wire production plant
3 Tool and engineering works department	18 Garage for internal and external traffic
6 Metallurgy and chemical laboratory	19 Fuel service station
7 Shooting range	20 Fire station
8 Administration building (offices) with restaurant for employees	21 Heat and cooling station
9 Metal material storage	22 Compressor station
10 Chemical material storage	23 Waste water treatment station
12 Storage of products	24 Electric power station plus diesel generator station (550 KVA, 6 hours of continuous work)

AMMUNITION FACTORY

- 1 - PRODUCTION DEPARTMENT
- 2 - PRODUCTION DEPARTMENT
- 3 - TOOL AND ENGINEERING WORKS DEPARTMENT
- 4 - DEPARTMENT FOR AMMUNITION ASSEMBLING AND PACKING
- 5 - RESTAURANT FOR EMPLOYEES
- 6 - METALLURGY AND CHEMICAL LABORATORY
- 7 - SHOOTING RANGE
- 8 - ADMINISTRATIVE BUILDING
- 9 - METAL MATERIAL STORAGE
- 10 - CHEMICAL MATERIAL STORAGE
- 11 - RAW MATERIAL STORAGE
- 12 - PRODUCT STORAGE
- 13 - CENTRAL STORAGE 1
- 14 - CENTRAL STORAGE 2
- 15 - CENTRAL STORAGE 3
- 16 - CENTRAL STORAGE 4
- 17 - LEAD-ANTIMONY WIRE PRODUCTION PLANT
- 18 - GARAGE
- 19 - FUEL SERVICE STATION
- 20 - FIRE STATION
- 21 - HEAT&COOLING STATION
- 22 - COMPRESOR STATION
- 23 - WASTE WATER TREATMENT STATION
- 24 - TRAFIO / DIESEL GENERATOR STATION
- 25 - WATER COOLING STATION



TURN-KEY SOLUTION

OPTIMAL DESIGN OF PRODUCTION & TESTING DEPARTMENTS

1	Production of cups, cartridge case & bullet
2	Assembling & packing
3	Shooting range (tunnel)



1



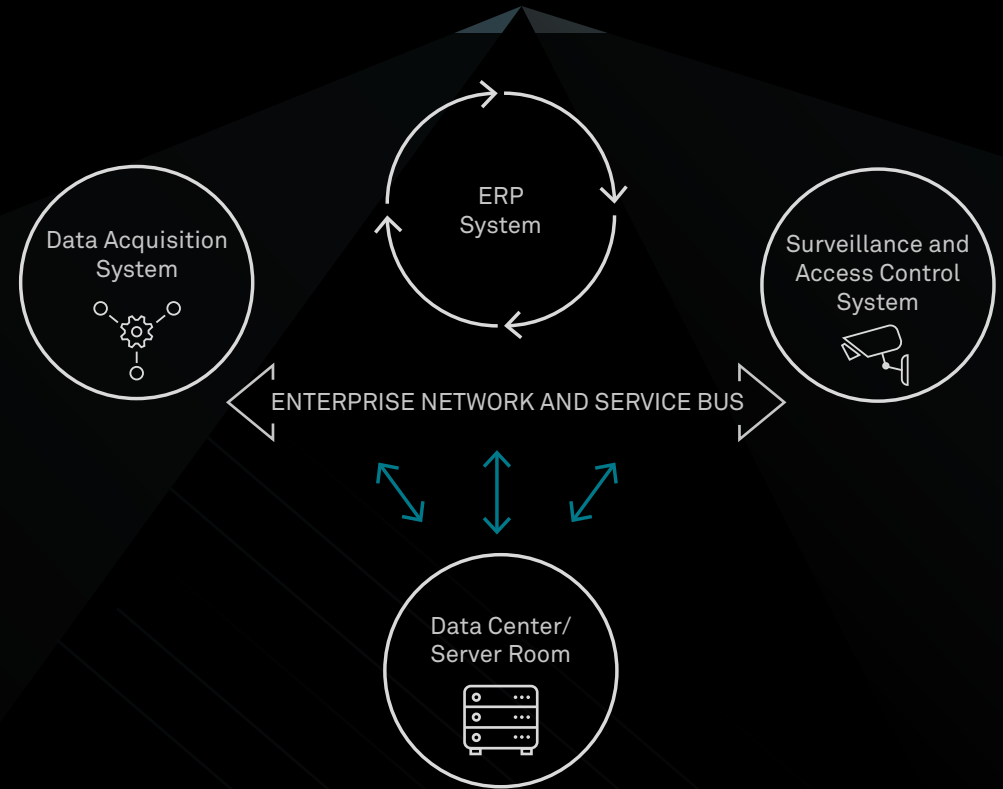
2



3

TURN-KEY SOLUTION

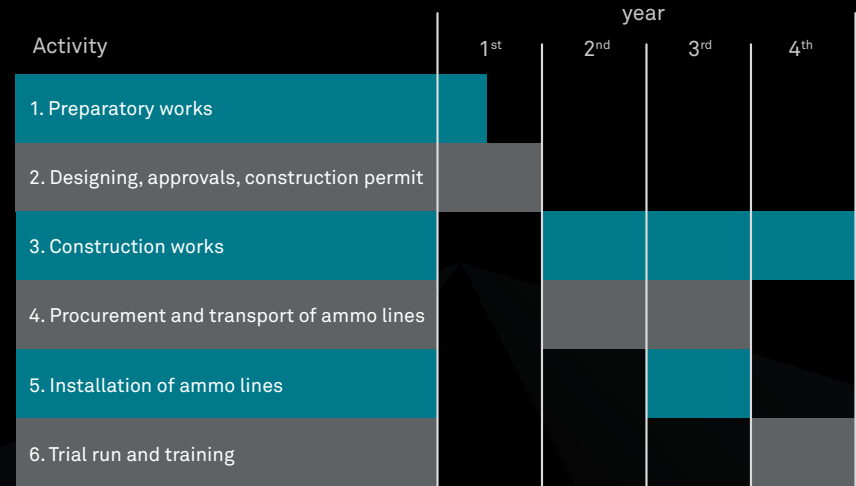
Biometric data acquisition, Access control, Video Surveillance and ERP solution are implemented - all based on centralized data centre and cryptography protected network infrastructure.



NECESSARY FUNDS

#	COSTS	Calculation of Amount
1	Preparatory and site survey activities	0,1-0,5% of 1
2	Provision of technical and technological documentation (future design supervision included)	1-3% of 1
3	Signing and stamping, translation, packing and approval of the main design	0,1-0,5% of 1
4	Obtaining construction approvals and permits	1% of 1
5	Provision of construction works on factory	BENCHMARK No 1
6	Technical supervision	2-5% of 1
7	Procurement of mechanical, electro and automatis equipment and transport	BENCHMARK No 2
8	Installation of equipment from 7.	2% of 2
9	Supervision over installation and commissioning	3% of 2
10	Procurement of ammo lines and transport of equipment	BENCHMARK No 3
11	Installation of production lines and supervision over installation	0,8-1% of 3
12	Costs during trial period and training	0,5-0,7% of 3
13	Costs during warranty period	0,1-0,5% of 3
14	Costs for provision financial security means (bank guarantee etc.) and insurance	0,1-1% of total amount
15	Additional works and unforeseen costs	10,00% of total amount

OPTIMAL TIMEFRAME



TRAINING

Transfer of technical information relating to the design, engineering, manufacture, production	Training, mentoring and educating the clients personnel
Developing, demonstrating, testing and evaluating systems and technologies	Joint-venture production, manufacture and management

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