

Potential Failure Mode (results in a loss of "Function" or realization of a hazard)	Potential Cause of Failure (Prob of Occurrence)	O	Potential Effect of Failure (Severity - Function)	S	Risk Assessment Matrix Level	Recommended Actions	Responsibility	Target Completion Date (MM/DD/YY)	Action Results Action Taken (P320)	O	S	Risk Assessment Matrix Level
Pistol accidentally / unintentional discharges	Accidental trigger pull (Operator error) Finger on trigger	C	Kill person unintentionally	1	High	1) See P320 Actions. 2) Train in accordance with operator's manual and FM 3-23.35	1) Sig Engineering 2) User	1) Complete 2) TBD	1) P320 minimum trigger pull is set to maximize trigger control without adversely effecting accuracy. 2) Adherence to range safety rules will preclude injury in the event of an accidental discharge. There is also a manual safety to further reduce probability of occurrence.	E	1	Medium
Pistol accidentally / unintentional discharges	Accidental trigger pull (Foreign Object)	C	Kill person unintentionally	1	High	1) See P320 Actions. 2) Train in accordance with operator's manual and FM 3-23.35	1) Sig Engineering 2) User	1) Complete 2) TBD	1) The P320 trigger is effectively guarded to prevent snags on uniform, gear, or other objects. Manual safety also further reduces probability of occurrence.	E	1	Medium
Pistol accidentally / unintentional discharges	Improperly clearing before takedown/cleaning & maintenance	C	Kill person unintentionally	1	High	1) See P320 Actions. 2) Train in accordance with operator's manual and FM 3-23.35	1) Sig Engineering 2) User	1) Complete 2) TBD	The P320 takedown process has several attributes that prevent accidental discharge. 1. The slide must be locked to the rear to turn the takedown lever. 2. The magazine must be removed to turn the takedown lever. (This prevent chambering a round inadvertently during disassembly.) 3. The takedown lever safety disengages the trigger and sear from the striker to prevent energizing of the firing pin. A round intentionally inserted in the chamber during disassembly cannot be fired.	F	1	Eliminated
Pistol accidentally / unintentional discharges	Impact to weapon (dropped, bumped, vibration)	C	Kill person unintentionally	1	High	See P320 actions.	1) Sig Engineering	1) Complete	The Firing mechanism of the P320 is designed to prevent release of the striker in a drop or during transportation. In case of a failure of the sear to striker interface, it has a redundant striker safety that blocks striker travel unless the trigger is pulled. The P320 will pass drop safety testing IAW AR-PD-177. It will pass loose cargo testing with the safety on or off. The P320 has passed drop safety testing IAW TOP 3-2-045 and NATO STD AC225 D14 without a manual safety, however failed customer drop testing (notified 2/1).	E	1	Medium
Pistol accidentally / unintentional discharges	Slide ignites primer during closing, firing pin inertia	C	Kill person unintentionally	1	High	1) See P320 Actions. 2) Train in accordance with operator's manual and FM 3-23.35	1) Sig Engineering 2) User	1) Complete 2) TBD	During the cycle of operation, the sear engages the striker preventing forward motion of the striker and contact with the primer. The trigger must be reset and pulled in order to release the striker. In additon, the P320 has been tested with the sear disabled to prove that the striker inertia is not sufficient to cause the primer to ignite.	F	1	Eliminated
Multishot failure	Excessive firing pin inertia	C	Kill person unintentionally	1	High	1) See P320 Actions. 2) Train in accordance with operator's manual and FM 3-23.35	1) Sig Engineering 2) User	1) Complete 2) TBD	During the cycle of operation, the sear engages the striker preventing forward motion of the striker and contact with the primer. The trigger must be reset and pulled in order to release the striker. In additon, the P320 has been tested with the sear disabled to prove that the striker inertia is not sufficient to cause the primer to ignite.	F	1	Eliminated
Multishot failure	Incidental trigger pull due to not enough trigger over travel or trigger reset distance	C	Kill person unintentionally	1	High	See P320 Actions.	1) Sig Engineering	1) Complete	The P320 minimum trigger pull, reset distance, and overtravel are intentional design characteristics intended to provide optimum trigger control and to minimize the likelihood of inadvertant multiple shots due to "bump fire".	E	1	Medium
Pistol accidentally / unintentional discharges	Accidental trigger pull Holstering/unholstering (Operator Error)	D	Injury	2	Medium	Training. Users should develop familiarity with pistol and holster prior to live fire. Proper technique includes keeping finger out of trigger guard except when firing.	1) User	1) TBD	See recommendations.	E	1	Medium
Pistol accidentally / unintentional discharges	Striker mechanical failure	E	Kill person unintentionally	1	Medium	See P320 actions.	1) Sig Engineering	1) Complete	The P320 has a striker safety that prevents striker contact with the primer in the unlikely event of failure of the Striker/Sear interface.	F	1	Eliminated
Pistol accidentally / unintentional discharges	Unsafe hammer decock	D	Kill person unintentionally	1	Serious	See P320 actions.	1) Sig Engineering	1) Complete	The P320 is hammerless and has no decocking operation.	F	1	Eliminated
Pistol accidentally / unintentional discharges	Accidental trigger pull while clearing of stoppage.	D	Kill person unintentionally	1	Serious	Training. Users should develop familiarity with pistol and proper handling procedures per FM 3-23.35. and the user's manual. Proper technique includes keeping finger out of trigger guard except when firing.	1) User	1) TBD	See recommendations.	E	1	Medium
Pistol accidentally / unintentional discharges	Slide ignites primer, during feeding	D	Kill person unintentionally	1	Serious	1) See P320 Actions. 2) Training	1) Sig Engineering 2) User	1) Complete 2) TBD	The P320 has a chamfered hammer ramp. There are no sharp edges capable of igniting a primer. The P320 has a striker return spring that resets the striker position behind the striker safety. In addition, during the action of the slide going into battery, the sear engages the striker. In the event of a striker wedged in the slide bore with tip protruding, the pistol cannot close.	F	1	Eliminated
Pistol accidentally / unintentional discharges	Broken firing pin, stuck in firing position.	D	Kill person unintentionally	1	Serious	See P320 actions.	1) Sig Engineering	1) Complete		E	1	Medium
Multishot failure	Sear fails to retain striker	D	Kill person unintentionally	1	Serious	1) See P320 Actions. 2) Train in accordance with operator's manual and FM 3-23.35	1) Sig Engineering 2) User	1) Complete 2) TBD	The P320 is designed with a negative sear angle and dual sear springs to ensure that once engaged, the sear will not release the striker unless the trigger is reset and pulled.	E	1	Medium
Multishot failure	Incidental trigger pull due to Light trigger pull	D	Kill person unintentionally	1	Serious	1) See P320 Actions. 2) Train in accordance with operator's manual and FM 3-23.35	1) Sig Engineering 2) User	1) Complete 2) TBD	The P320 minimum trigger pull, reset distance, and overtravel are intentional design characteristics intended to provide optimum trigger control and to minimize the likelihood of inadvertant multiple shots due to "bump fire".	E	1	Medium
Weapon fails to contain firing pressure	Damaged or corroded part	D	Injury to shooter or bystander	3	Medium	1) See P320 actions. 2) Maintain pistols IAW with operator's and maintenance manuals. 3) Visually inspect for condition prior to use.	1) Sig Engineering 2) User	1) Complete 2) TBD	The P320 incorporates corrosion resistant materials and coatings in the design. Manuals provide instruction on proper preservation, inspection, and maintenance to prevent loss of integrity through damage or corrosion.	F	3	Eliminated
Weapon fails to contain firing pressure	Barrel obstructed	E	Injury to shooter or bystander	3	Medium	See P320 actions.	1) Sig Engineering	1) Complete	The P320 has been designed and validation tested to withstand firing of ball and special purpose rounds with the barrel is obstructed by a bullet. Pressure was contained and there was no evidence of risk of injury to the user.	F	3	Eliminated
Weapon fails to contain firing pressure	Non-conforming part	E	Injury to shooter or bystander	3	Medium	See P320 actions.	1) Sig Engineering	1) Complete	All P320s have been tested for resistance to high pressure by firing a high pressure test cartridge conforming to SAAMI-Z299.3 with out failure or damage to the pistol. All barrels will be proof tested during production to the same degree.	F	3	Eliminated
Weapon fails to contain firing pressure	Too much pressure	E	Injury to shooter or bystander	3	Medium	See P320 actions.	1) Sig Engineering	1) Complete	All P320s have been tested for resistance to high pressure by firing a high pressure test cartridge conforming to SAAMI-Z299.3 with out failure or damage to the pistol. All barrels will be proof tested during production to the same degree. In addition, bore obstruction testing creates an overpressure condition which did not result in risk of injury to the shooter.	F	3	Eliminated
Weapon fails to contain firing pressure	Not enough barrel strength	E	Injury to shooter or bystander	3	Medium	See P320 actions.	1) Sig Engineering	1) Complete	All P320s have been tested for resistance to high pressure by firing a high pressure test cartridge conforming to SAAMI-Z299.3 with out failure or damage to the pistol. All barrels will be proof tested during production to the same degree.	F	3	Eliminated

Weapon fails to contain firing pressure	Metal fatigue	E	Injury to shooter or bystander	Medium	See P320 actions.	1) Sig Engineering	1) Complete	The P320 has been validation tested to 35,000 rounds with no loss of structural integrity. Tests pistols were still able to withstand firing pressures.	F	3	Eliminated
Weapon fails to contain firing pressure	Case Rupture ,Slide ignites primer	E	Injury to shooter or bystander	Medium	See P320 actions.	1) Sig Engineering	1) Complete	The P320 has a chamfered hammer ramp. There are no sharp edges capable of igniting a primer.	F	3	Eliminated
Weapon fails to contain firing pressure	Case Rupture ,Excessive temperature	E	Injury to shooter or bystander	Medium	See P320 actions.	1) Sig Engineering	1) Complete	The P320 has been tested at 160 deg F without failure of cartridge case or barrel.	F	3	Eliminated
Weapon fails to contain firing pressure	Case Rupture ,Insufficient case support	C	Injury to shooter or bystander	Medium	See P320 actions.	1) Sig Engineering	1) Complete	The P320 provides adequate case support to prevent case failure including HPT cartridges, high temperatures, and obstructed bore conditions. This has been proven through validation testing.	F	3	Eliminated
Weapon fails to contain firing pressure	Case Rupture ,Fires out of battery	D	Injury to shooter or bystander	Medium	See P320 actions.	1) Sig Engineering	1) Complete	The P320 cannot fire out of battery because the striker is not energized enough to ignite a primer until after the slide and barrel have reached a locked position.	F	2	Eliminated
Weapon fails to contain firing pressure	Case Rupture, defective ammunition	C	Injury to shooter or bystander	Medium	1) See P320 actions. 2) Wear safety glasses.	1) Sig Engineering	1) Complete	1) The P320 has been tested with ammunition modified to cause a failure of the cartridge case. The pistol was damaged and the extractor was dislodged. 2) Risk of injury to the shooter is mitigated by use of safety glasses.	E		Medium
Pistol accidentally / unintentional discharges	High heat COOK OFF	E	Kill person unintentionally	Medium	See P320 actions.	1) Sig Engineering	1) Complete	The P320 has been fired 250 rounds in rapid fire without pause to reload magazines and a round left in the chamber. Cook-off did not occur.	F	1	Eliminated
Pistol accidentally / unintentional discharges	High heat ENVIRONMENTAL	E	Kill person unintentionally	Medium	See P320 actions.	1) Sig Engineering	1) Complete	The P320 has been conditioned to 160 deg F without discharge (with pistol and loaded magazines).	F	1	Eliminated
Inherent hazards with firearm	Hot components	B	Burns	Medium	1) See P320 actions. 2) Training and PPE.	1) Sig Engineering 2) User	1) Complete 2) TBD	The P320 cannot reach temperatures that can cause permanent injury due to burns when fired with the basic load of 1 standard and two extended capacity magazines. However, prolonged firing can produce such temperatures. Under such conditions, personnel should be cautioned to touch only the grip and controls or to wear gloves.	C		Low
Inherent hazards with firearm	Hot Casing	B	Burns	Medium	1) See P320 actions. 2) Training and PPE.	1) Sig Engineering 2) User	1) Complete 2) TBD	1)The P320 is designed so casings are ejected away from shooter. 2) Range firing lanes should be seperated and personnel on the firing line should wear eye protection.	C		Low
Inherent hazards with firearm	Loud noise	A	Hearing Loss	Medium	he P320 meets the noise threshold of Ar-PD-177. Personnel should use hearing protection or flencer kit during live fire.	1) Sig Engineering	1) Complete	Standard hearing protection, such as ear plugs with a noise reduction rating (NRR) 32 should be used IAW manufacturer's instructions.	C		Low
Inherent hazards with firearm	Recoil	B	Repetitive motion injuries	Medium	epetitive stress from firing can cause injury. However, this is dependent on the individual and typically will not happen unless frequent, extended live fire training is done.	1) Sig Engineering	1) Complete	The P320's superior ergonomics, including the interchangeable grip sizes, allows a natural grip making the inherent recoil of pistol ammunition more comfortable.	B		Medium
Inherent hazards with firearm	Improper disassembly and re-assembly	B	Improper function of firearm	High	1) Employ takedown lever 2) Training	1) Sig Engineering 2) User	1) Complete 2) TBD	P320 design employs takedown lever screw and tamper resistant extractor pin which prevents disassembly beyond field stripping. Disassembly beyond field strip requires special tools at the armorer level.	D		Medium
Inherent hazards with firearm	Night Sight vials break	D	Tritium gas escapes and is inhaled	Low	1) See P320 actions. 2) Avoid direct inhalation	1) Sig Engineering 2) User	1) Complete 2) Complete	a)Tritium (which itself emits low energy beta radiation) enclosed in borosilicate glass vial, which is then silicone potted in aluminum sleeving, which is then cushioned with the metal body with additional potting. Sights have passed NRC NUREG environmental testing. b) PSDS specifies to avoid inhalation and ventilate area	D	4	Low

PROBABILITY LEVELS / FMEA OCCURRENCE				
Description (Mil-Std-882E)	Level (Mil 882E)	Specific Individual Item (Mil-Std-882E)	Fleet or Inventory (Mil-Std-882E)	Occurrence (MIL-STD-882E SPECIFIC INDIVIDUAL ITEM)
Frequent	A	Likely to occur often in the life of an item	Continuously experienced	Occurrence > .1 10%
Probable	B	Will occur several times in the life of an item	Will occur frequently	>0.01 >1%
Occasional	C	Likely to occur sometimes in the life of an item	Will occur several times	>0.001 >0.1%
Remote	D	Unlikely, but possible to occur sometimes in the life of an item	Unlikely, but can reasonably be expected to occur	>0.000001 >.0001%
Improbable	E	So unlikely, it can be assumed occurrence may not be experienced in the life of an item	Unlikely to occur, but possible	<0.000001 .0001%
Eliminated (882E)	F (882E)	Incapable of occurrence. This level is used when the potential hazards are identified and later eliminated		Failure is Eliminated through preventive control

SEVERITY LEVELS (MIL-STD-882E)		
Description (Mil-Std-882E)	Level (Mil 882E)	Specific Individual Item (Mil-Std-882E)
Catastrophic	1	Could result in one or more of the following: death, permanent total disability, irreversible significant environmental impact, or monetary loss >\$10M
Critical	2	Could result in one or more of the following: permanent partial disability, injuries or occupational illness that may result in hospitalization of at least 3 personnel, reversible significant environmental impact, or monetary loss, (\$1M<loss <\$10M)
Marginal	3	Could result in one or more of the following: injuries or occupational illness that may result in one or more lost work day(s), reversible moderate environmental impact, or monetary loss, (\$100K<loss <\$1M)
Negligible	4	Could result in one or more of the following: injuries or occupational illness not resulting in lost work day, minimal environmental impact, or monetary loss, (<\$100K)
N/A	N/A	N/A

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RISK ASSESSMENT MATRIX				
SEVERITY PROBABILITY	Catastrophic (1)	Critical (2)	Marginal (3)	Negligible (4)
Frequent (A)	High	High	Serious	Medium
Probable (B)	High	High	Serious	Medium
Occasional (C)	High	Serious	Medium	Low
Remote (D)	Serious	Medium	Medium	Low
Improbable (E)	Medium	Medium	Medium	Low
Eliminated (F)	Eliminated			

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