



Aircraft Lockout/Tagout Program
(LOTO)
for
All
NAAS EMPLOYEES

Aircraft Lockout/Tagout (LOTO)

- Rules codified in 29 CFR 1910.147 and 1910.146.
- There are many areas on an aircraft that require positive control of Hazardous Energy:
 - E & E Bays ,
 - Wheel Wells,
 - Flap Wells.
 - Wing Integral Tanks
 - Center Integral Tanks
- Hazardous energy must be dissipated!

Aircraft Lockout/Tagout (LOTO)

- Definitions

- Lock: A device used to positively control or isolate the operation of an energy device.
- Tag: A device used to identify that the component is under maintenance, giving specific instructions not to activate under any circumstances.
- JSA: Job Safety Analysis, a process where a competent, qualified person conducts a thorough inspection and evaluation of the work area and identifies each safety and/or health hazard; with positive corrective actions to minimize or eliminate those safety and/or health hazards. 1910.147(c)(2)(i)

Aircraft Lockout/Tagout (LOTO)

Definitions Continued

Aircraft Unique Non-Permitted Confined Space- Those spaces identified by the customer or air carrier as non-permit required confined spaces. These spaces are typically areas of the aircraft where access is limited and might be impacted by moving flight controls, electrical energy etc.

Aircraft Permitted Required Confined Space- A Confined Space that contains or has the potential to contain a hazardous atmosphere, Contains a material having the potential for engulfing an entrant, Has an internal configuration in which an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross section or any other recognized serious safety or health hazard.

Aircraft Lockout/Tagout (LOTO)

Definitions Continued

- Warning Tag (Red) – Tag to be installed on the aircraft, aircraft circuit barkers or any part of the aircraft systems indicating that a system has been disabled and will remain disabled until such time as the task is completed and the tag is removed.
- Tag Out – The disabling of a system by use of a “Warning Tag” 1910.147(c)(3)(i)

Aircraft Lockout/Tagout (LOTO)

- General Types of Lockout Devices:
 - Locks
 - Gear Safety Pins
 - Tags
 - Circuit Breaker Lockout Collars
 - Chains
 - Hydraulic Line Caps

Aircraft Lockout/Tagout (LOTO)

- General Lockout/Tagout Steps:
 - Know the equipment and types of energy associated with it as well as the maintenance you will be doing.
 - Use the normal shutdown procedures to prepare the equipment for Locking and Tagging. All controls should be in the OFF or Neutral position.
 - Turn off main power switches. Shut all fluid isolation valves.
 - Lock & Tag the Energy Sources. Put a Lock and Tag on all energy isolation devices when it is possible. With aircraft components, it is not always possible to apply an actual "lock" to the system being worked on.

Aircraft Lockout/Tagout (LOTO)

- General Lockout/Tagout Steps (cont):
 - Release all Stored Energy. Cap, vent and drain all fluid lines. Discharge all capacitors. Block all pieces that would be a hazard if they moved. Disconnect pneumatic lines and apply pneumatic or hydraulic line caps.
 - Test to ensure LOTO is effective. Check voltage on all circuits. Check pressure gauges on fluid lines.
 - Attempt to start the equipment in the normal manner. Then return all control devices to the OFF or NEUTRAL position.

Aircraft Lockout/Tagout (LOTO)

- Procedures:

- Identify the type of work to be performed and what equipment will be worked on. The mechanic, mechanic's supervisor or Manager identifies the system by referencing Job Cards, JSA's or Maintenance Manuals.
- The mechanic, mechanics' supervisor or Manager surveys aircraft to determine if affected systems have been locked out.
- Signs are placed around aircraft if required by Customer, Operator or Maintenance Manual.
- Energy is dissipated (if required).

Aircraft Lockout/Tagout (LOTO)

- If the task is NOT completed at the end of your shift and the system is still required to be locked-out for the operation, the tag MUST remain installed until such time as the task or tasks requiring the tagout is completed.

NOTE:

Additional technicians working on same system,
Performing different task are required to install Danger
Tags as well

Aircraft Lockout/Tagout (LOTO)

- Procedures:

- After work is completed, employee or his supervisor removes the tag and files it with the tag control log.
- The mechanic, mechanics' supervisor or Manager must verify that all systems affected by the LOTO are restored to operational status. .

Aircraft Lockout/Tagout (LOTO)

- Procedures:

- Identify the type of work to be performed and what equipment will be worked on. The Lead Mechanic, Supervisor or Manager identifies the system by referencing Job Cards, JSA's or Maintenance Manuals.
- Lead Mechanic, Supervisor or Manager surveys aircraft to determine if affected systems have been locked out.

Aircraft Lockout/Tagout (LOTO)

WARNING TAG SAMPLE

NORTH AMERICAN AIRCRAFT SERVICES INC. 11502 Jones Mallsberger San Antonio, Texas		NAAS Repair Station NSBR694J		NAAS WARNING NAAS QC-104	
WARNING		WARNING		WARNING	
TAG NO. 1		AIRCRAFT REG. NO. 2		TAG NO. 11	
WORK ORDER NO. 3		CARD NO. 4		W/O NO. 13	
LOCATION 5				CARD NO. 14	
REASON 6				LOCATION 15	
INSTALLED BY 7		DATE 8		INST DATE 16	
REMOVED BY 9		DATE 10		INST BY 17	
WARNING		WARNING		WARNING	
THIS TAG MAY ONLY BE REMOVED BY THE INDIVIDUAL WHO INSTALLED IT OR BY THEIR SUPERVISOR OR MANAGER				REM DATE 18	
				REM BY 19	
				WARNING	

Aircraft Lockout/Tagout (LOTO)

WARNING TAG INSTRUCTION

- Block 1. Enter the control number from the warning tag control log.
 - Block 2. Enter the Aircraft Reg. Number.
 - Block 3. Enter the Work order number from the warning tag control log block 1.
 - Block 4. Enter the routine or non-routine card number the warning tag is to be installed against.
 - Block 5. Location. Enter the location the tag is to be installed.
 - Block 6. Enter the reason the tag is installed.
 - Block 7. The name of the individual installing the tag.
 - Block 8. The date the tag is installed.
 - Block 9. The name of the individual removing the tag.
 - NOTE: the warning tag must be removed by the individual who installed it or his/her supervisor or manager.
 - Block 10. The date the tag was removed.
 - Block 11. Enter the control number from the warning tag control log.
 - Block 12. Enter the Aircraft Reg. Number.
 - Block 13. Enter the Work order number from the warning tag control log block 1.
 - Block 14. Enter the routine or non-routine card number the warning tag is to be installed against.
 - Block 15. Location. Enter the location on the aircraft the tag is to be installed.
 - Block 16. Enter the date the tag is installed.
 - Block 17. Enter the name of the individual installing the tag.
 - Block 18. Enter the Date the tag is removed.
 - NOTE: the warning tag must be removed by the individual who installed it or his/her supervisor or manager.
 - Block 19. Enter the name of the individual removing the tag.
- When removed, the warning tag must be attached to the routine or non-routine work card that generated the installation of the tag.

Aircraft Lockout/Tagout (LOTO)

WARNING TAG SAMPLE

NORTH AMERICAN AIRCRAFT SERVICES INC. 11502 Jones Maltzberger San Antonio, Texas		NAAS Repair Station NSBR694J	NAAS WARNING NAAS-QC-104
WARNING		WARNING	WARNING
TAG NO. 001	AIRCRAFT REG. NO. N123MM		A/C REG. N123MM
WORK ORDER NO. B26543		CARD NO. 0123	W/O NO. 26543
LOCATION #1 Boost Pump C/B		CARD NO. 0123	
REASON #1 Pump Removed		LOCATION #1 Boost Pump C/B	
INSTALLED BY J. Jones		DATE 01-15-2006	INST DATE 01-15-2006
REMOVED BY		DATE	INST BY J. Jones
WARNING		WARNING	WARNING
THIS TAG MAY ONLY BE REMOVED BY THE INDIVIDUAL WHO INSTALLED IT OR BY THEIR SUPERVISOR OF MANAGER		REM DATE	
		REM BY	
		WARNING	

When filling out the tag, all blocks on both portions of the tag must be completed and the individual installing the tag must sign and date the tag.

The Warning Tag Control number shall be assigned from the warning tag control Log

Aircraft Lockout/Tagout (LOTO)

WARNING TAG SAMPLE AND INSTRUCTION

NORTH AMERICAN AIRCRAFT SERVICES INC. 11502 Jones Maltzberger San Antonio, Texas		NAAS Repair Station NSBR694J
WARNING		WARNING
TAG NO. 001	AIRCRAFT REG. NO. N123MM	
WORK ORDER NO. B26543		CARD NO. 0123
LOCATION #1 Boost Pump C/B		
REASON #1 Pump Removed		
INSTALLED BY J. Jones		DATE 01-15-2006
REMOVED BY		DATE
WARNING		WARNING
THIS TAG MAY ONLY BE REMOVED BY THE INDIVIDUAL WHO INSTALLED IT OR BY THEIR SUPERVISOR OF MANAGER		

REMOVE THE RIGHT SIDE OF THE TAG AND FILE IT WITH THE WARNING TAG CONTROL LOG.

PUT THE LEFT (LARGE) PORTION OF THE TAG AT THE LOCATION TAGGED OUT

Aircraft Lockout/Tagout (LOTO)

WARNING TAG SAMPLE AND INSTRUCTION

NORTH AMERICAN AIRCRAFT SERVICES INC. 11502 Jones Mallisberger San Antonio, Texas		/445 Repair Station NSBR594J	
WARNING		WARNING	
TAG NO. 001	AIRCRAFT REG. NO. N123MM		
WORK ORDER NO. B26543		CARD NO. 0123	
LOCATION #1 Boost Pump C/B			
REASON #1 Pump Removed			
INSTALLED BY J. Jones		DATE 01-15-2006	
REMOVED BY J. Jones		DATE 01-22-2006	
WARNING		WARNING	
THIS TAG MAY ONLY BE REMOVED BY THE INDIVIDUAL WHO INSTALLED IT OR BY THEIR SUPERVISOR OR MANAGER			

When removing the tag, The mechanic, his supervisor or manager must sign and date the "Removed By" blocks of the tag

The tag may only be removed by the individual who installed it, his supervisor or manager

The tag must be retained with the Warning Tag Control Log.

Aircraft Lockout/Tagout (LOTO)

WARNING CONTROL LOG SAMPLE

North American Aircraft Services, Inc. Repair Station NSBR594J
11502 Jones Mallisberger
San Antonio, Texas Form NAAS-QC-102

WARNING TAG CONTROL LOG

WORK ORDER NO. _____ A/C REG. NO. _____ DATE _____

001	002	003	004	005	006	007	008	009	010
011	012	013	014	015	016	017	018	019	020
021	022	023	024	025	026	027	028	029	030
031	032	033	034	035	036	037	038	039	040
041	042	043	044	045	046	047	048	049	050
051	052	053	054	055	056	057	058	059	060
061	062	063	064	065	066	067	068	069	070
071	072	073	074	075	076	077	078	079	080
081	082	083	084	085	086	087	088	089	090

QUALITY CONTROL AUDIT DATE: _____

QUALITY CONTROL AUDITOR: _____

Aircraft Lockout/Tagout (LOTO)

WARNING CONTROL LOG SAMPLE AND INSTRUCTIONS

North American Aircraft Services, Inc.
11502 Jones Malisberger
San Antonio, Texas

Repair Station NSBR594J
Form NAAS-QU-102

WARNING TAG CONTROL LOG

WORK ORDER NO. _____ A/C REG. NO. _____ DATE _____

001	002	003	004	005	006	007	008	009	010
011	012	013	014	015	016	017	018	019	020
021	022	023	024	025	026	027	028	029	030
031	032	033	034	035	036	037	038	039	040
041	042	043	044	045	046	047	048	049	050
051	052	053	054	055	056	057	058	059	060
061	062	063	064	065	066	067	068	069	070
071	072	073	074	075	076	077	078	079	080
081	082	083	084	085	086	087	088	089	090

QUALITY CONTROL AUDIT DATE: _____

QUALITY CONTROL AUDITOR: _____

Enter the work order number, Aircraft registration number and the date the first tag was issued.

When issuing a Warning Tag Control number, place a diagonal line (/) through the number issued (See Example). This indicates the number has been issued and will not be Duplicated.

Enter the Control Number in Block 1 and block 11 of the Warning Tag.



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WARNING CONTROL LOG SAMPLE AND INSTRUCTIONS

North American Aircraft Services, Inc.
11502 Jones Malisberger
San Antonio, Texas

Repair Station NSBR594J
Form NAAS-QU-102

WARNING TAG CONTROL LOG

WORK ORDER NO. _____ A/C REG. NO. _____ DATE _____

001	002	003	004	005	006	007	008	009	010
011	012	013	014	015	016	017	018	019	020
021	022	023	024	025	026	027	028	029	030
031	032	033	034	035	036	037	038	039	040
041	042	043	044	045	046	047	048	049	050
051	052	053	054	055	056	057	058	059	060
061	062	063	064	065	066	067	068	069	070
071	072	073	074	075	076	077	078	079	080
081	082	083	084	085	086	087	088	089	090

QUALITY CONTROL AUDIT DATE: _____

QUALITY CONTROL AUDITOR: _____

When the task is completed and the Warning tag is removed. Place another diagonal line through the number block. This will form an (X) and indicate the tag has been removed and the control number has been closed.

Retain the large portion of the Warning with the control log and discard the small right hand portion.



Aircraft Lockout/Tagout (LOTO)

WARNING CONTROL LOG SAMPLE AND INSTRUCTIONS

North American Aircraft Services, Inc. Repair Station NSBR5941
11502 Jones Mallisberger
San Antonio, Texas Form NAAS-QC-102

WARNING TAG CONTROL LOG

WORK ORDER NO. B1123RE, A/C REG. NO. N123MM, DATE 01-01-2006

001	002	003	004	005	006	007	008	009	010
011	012	013	014	015	016	017	018	019	020
021	022	023	024	025	026	027	028	029	030
031	032	033	034	035	036	037	038	039	040
041	042	043	044	045	046	047	048	049	050
051	052	053	054	055	056	057	058	059	060
061	062	063	064	065	066	067	068	069	070
071	072	073	074	075	076	077	078	079	080
081	082	083	084	085	086	087	088	089	090

When all the tasks are completed and all the Warning tags have been removed. The Inspector, supervisor or manager must insure all the large portions of the tags are accounted for. The inspector, supervisor or manager will sign and date the bottom of the Warning Tag control log.

The large portion of the tag must be retained with the control log when all task are completed.



QUALITY CONTROL AUDIT DATE: 01-22-2006

QUALITY CONTROL AUDITOR: John Jones