

**FIRE CONTROL OPERATIONS (FIRE BOMBING):** *See TCL AFM Supplement following.*

During fire control operations when approaching the drop target, the speed of the 802A should be reduced to between 125 mph (109 kts) and 130 mph (113 kts). The onboard computer, when properly set, will control the drop according to the desired approach speed.

It is recommended that 10° of flap be used during the approach and load release phase. This tends to make speeds easier to control and creates a very stable approach condition. Note that 10° is the first mark seen on the flap leading edge as the flaps are being lowered.

On approaching the fire target area:

1. Slow the aircraft to 125 to 130 mph (109 to 113 kts) and lower the flaps to 10°.
2. Be sure hydraulic pressure is up, "ARMED" switch is in "up" position and that the "ARMED" light is on. Set computer to control drop amount, coverage level, and ground-speed.
3. Line up the aircraft for the fire retardant drop.
4. Be aware that during the load release there will be a sudden pitch-up of the nose of the aircraft. Begin forward motion on the control stick as soon as the drop button has been activated.
5. Keep the aircraft relatively level and at constant altitude during the drop phase.
6. After the drop is completed, the fire gatebox doors will close automatically.
7. Apply appropriate power smoothly to climb away from the fire and smoke.
8. Retract the flaps and re-trim the aircraft for normal flight.
9. Place "ARMED" switch to the down (off) position to avoid inadvertent delivery.

Turbine Conversions, LTD  
P.O. Box 8  
Nunica, MI 49448

www.turbineconversions.com

(616) 837-9428 \* Fax (616) 837-9556




FAA APPROVED  
AIRPLANE FLIGHT MANUAL SUPPLEMENT  
FOR  
WSK PZ MIELEC M18/M18A/M18B  
AIR TRACTOR AT-502, AT-402, AT-402A, AT-502A, AT-502B  
AT-402B, AT802A, AT802, AT-602  
FIREGATE  
MODIFIED IN ACCORDANCE WITH  
STC SA00961CH

This aircraft must be operated in accordance with the limitations specified in this flight manual

Airplane Serial Number: \_\_\_\_\_  
Registration Number: \_\_\_\_\_

FAA APPROVED

  
Charles L. Smalley, Manager  
Systems & Flight Test Branch  
Chicago Aircraft Certification Office  
FAA Central Region

104 JAN 2007

## SECTION I GENERAL PROCEDURES

The Turbine Conversions, Ltd Firegate is an electro-hydraulically operated dispersal system. It uses a 24 vdc electric motor driven hydraulic system that is independent of the aircraft hydraulic system. The Firegate utilizes two actuators located one at each end of the doors. The actuators drive a gear rack which turn two shaft assemblies and actuate the doors. The linkage between the rotating shafts and doors are designed such that when the doors are closed there is an over center condition requiring positive hydraulic pressure to open the doors. This feature allows the system to be shut off during loading or at any time other than when actuation of the door is desired.

The hydraulic valves used to control the doors consist of two solenoid activated valves and one oil pilot operated valve. In their normal inactivated state these valves are set to supply pressure to the close side of the actuators at all times. When the trigger switch is activated the 2 position 4 way solenoid valve activates and applies pressure to the open side of the actuators. When the trigger switch is released this reverts back to its normal setting and the doors close.

Three proximity switches are mounted to the aft hydraulic cylinder and Level 1-2-3-open are selected on the control panel. Proximity switches will sense the movement which in turn activates a solenoid valve in the return line hydraulically locking the system and the doors stop at that point. When the trigger switch is released a by pass line with a check valve allows pressure to by pass the second solenoid and close the doors.

An emergency system, consisting of a restrictor check valve, accumulator, 3 way ball valve, oil pilot operated 2 position 4 way valve, and shuttle valve, is provided to allow the load to be jettisoned in the event of failure of the normal system. Depending upon the failure, the gate doors may not close in flight.

## SECTION II NORMAL PROCEDURES

In addition to existing procedures the following items are applicable when the TCL Firegate is installed:

### Prior to Takeoff:

- a. Arm system by turning switch on
- b. Select Salvo drop -- level 4
- c. Verify pressure of 1500 psi minimum on emergency gauge.

### After Takeoff:

- a. Once a safe cruising altitude is established turn system off to prevent inadvertent dumping of load

### At Fire Scene:

- a. Select type of drop (ie. Trial, salvo, split)
- b. For trial drop -- verify Level 1,2,3, or 4
- c. For split drop -- verify timer position
- d. Arm system
- e. Press and hold trigger switch to activate doors
- f. When complete, release trigger switch and turn system off.

Turbine Conversions, Ltd  
18155 120<sup>th</sup>, Nunica, MI 49448  
FMS - FIREGATE-WSK PZL MIELEC M18/M18A/M18B  
AIR TRACTOR - AT502, AT-402, AT-402A, AT-502A, AT-502B, AT-402B  
AT-802A, AT-802, AT-602

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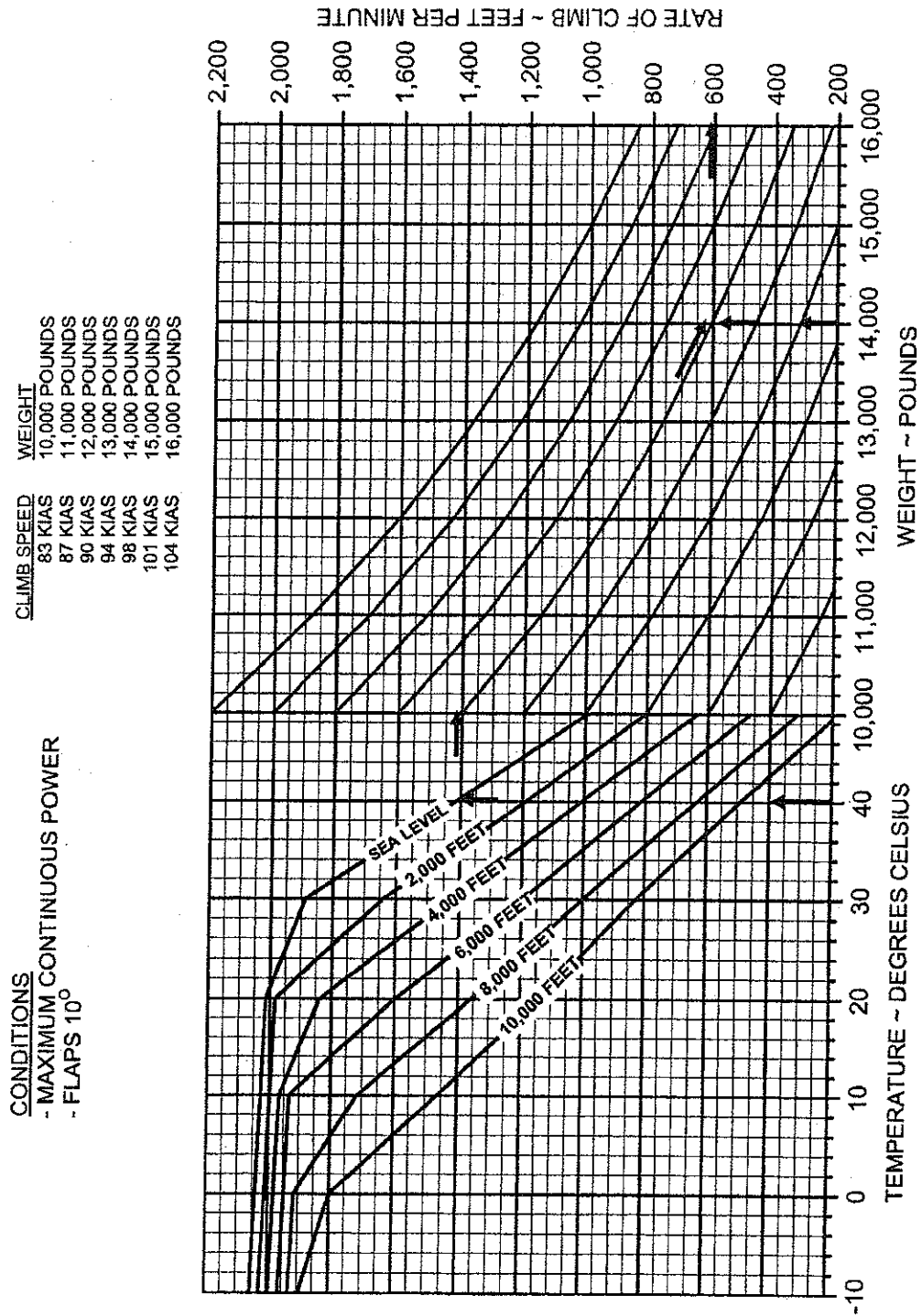
### SECTION III EMERGENCY PROCEDURES

If the situation arises requiring the hopper load to be jettisoned without the use of the electro-hydraulic system, the pilot should activate the ball valve handle marked "Firegate Emergency".

**AIR TRACTOR, INC**  
Olney, Texas

# CLIMB PERFORMANCE

AT-802A WITH PT6A-67AG ENGINE & FIRE FIGHTING EQUIPMENT



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