## BRIEFING

Weather…… SUITABLE
Weight & Balance……COMPUTED AND W/IN LIMITS
Performance ……COMPUTED

## AIRPLANE STATUS

Airplane Documents…….. CHECKED
Compass Deviation Card & Fluid…… CHECKED
VOR Accuracy (every 30 days for IFR)…CHECKED
Hobbes and Tachometer……CHECKED

## CABIN CHECK

Control Lock…… REMOVED
Fire Extinguisher…… PRESSURIZED/CERTIFIED
Carbon Monoxide Detector…….. CHECKED
Alternate Static Source…….. CLOSED
Parking Brake…….. SET
Avionics Master Switch……..OFF
Electrical Switches…… OFF
Landing Gear Handle…… DOWN
Mixture Controls…….. IDLE/CUTOFF
Ignition Switches…… OFF
Master Switch…… ON
Landing Gear Lights …… .3 GREEN
Fuel Quantity…….. ADEQUATE + RESERVE
Master Switch…… OFF
Cowl Flaps…….. OPEN
Trim Indicators…… NEUTRAL
Pitot/Static System…… DRAINED
Flaps……..DOWN
Fuel Selectors …… ON
Crossfeeds…….. DRAINED

V SPEEDS *Memorize*

| | | |
|---|---|---|
| VR ….. 80 | VY……..105 | Vno……190 |
| VSO …. 69 | VYSE…105 | Vne……217 |
| VS1 ….. 76 | Vglide…105 | Va……..146@4200 |
| VMC…. 80 | Vclimb..120 | Va…….133@2743 |
| VSSE .. 84 | Vlo……..125 | |
| VX ….. 90 | Vle……..150 | |
| VXSE .. 93 | Vfe…….125 | |



## RIGHT WING

General Condition…… CHECKED
Flaps…… NO DAMAGE/CHECK HINGES
Aileron Travel …….. NO DAMAGE/CHECK HINGES
Wingtip…… NO DAMAGE
Navigation, strobe, and recog lights……CHECKED
Leading Edge…… NO DAMAGE
Fuel Quantity…….. VISUAL CHECK
Fuel Cap…….. SECURED
Fuel Sump Drains……DRAINED
Fuel Vents…… UNOBSTRUCTED
Fresh Air Inlet…….. UNOBSTRUCTED
Main Gear…… NO EXCESSIVE WEAR
Limit Switches…….. CHECKED-NO DAMAGE
Brakes…… …….. NO EXCESSIVE WEAR
Struts…… ……..3.5 EXPOSED (STATIC LOAD)
Tire Pressure/Wear…… 53PSI/ CHECKED
Mooring Ring/Tie Down…… CHECKED/ UNTIE

## RIGHT NACELLE

General Condition…….. CHECKED
Oil Quantity…….. 6-8 QUARTS (PROPPER GRADE)
Possible Leaks……CHECKED
Prop and Spinner…… NO DAMAGE/ LEAKS
Governor… …….. NO LEAKS
Air Scoops……UNOBSTRUCTED
Gascolator……DRAINED
Cowl Flaps…….. NO DAMAGE/ CHECK HINGES

## NOSE SECTION

General Condition……CHECKED
Nose Gear… ……NO FLUID LEAKS
Strut…….. 2.5 EXPOSED (STATIC LOAD)
Tire Pressure/ Wear……31 PSI/ CHECKED
Battery Drains……..UNOBSTRUCTED
Landing Lights……NO DAMAGE
External Power Source Plug……CHECKED
Brake Fluid (Nose Compartment)…… ADEQUATE LEVEL (MIL-H-5606)
Forward Baggage Door…….. LOCKED
Windshield……NO DAMAGE/ CLEAN


AIRMAN FLIGHT TRAINING

## LEFT NACELLE

General Condition…….. CHECKED
Oil Quantity……..6-8 QUARTS (PROPPER GRADE)
Possible Leaks…… CHECKED
Prop and Spinner…… NO DAMAGE/ LEAKS
Governor…… ……...NO LEAKS
Air Scoops……UNOBSTRUCTED
Gascolator……DRAINED
Cowl Flaps……NO DAMAGE/ CHECK HINGES

## LEFT WING

General Condition…….. CHECKED
Safety Switch…….. OPEN/ NO DAMAGE
Flaps……. NO DAMAGE/CHECK HINGES
Aileron Travel …….NO DAMAGE/CHECK HINGES
Wingtip……. NO DAMAGE
Navigation, strobe, and recog lights…… CHECKED
Leading Edge……. NO DAMAGE
Fuel Quantity…….. VISUAL CHECK
Fuel Cap……..SECURED
Fuel Sump Drains…….. DRAINED
Fuel Vents…… UNOBSTRUCTED
Fresh Air Inlet……. UNOBSTRUCTED
Stall Warning Detectors…… CHECK MOVEMENT/ NO DAMAG
Pitot Tube…… REMOVE COVER/ UNOBSTRUCT
Main Gear…… NO EXCESSIVE WEAR
Limit Switches…… CHECKED-NO DAMAGE
Brakes…… ……. NO EXCESSIVE WEAR
Struts…… …… 3.5 EXPOSED (STATIC LOAD)
Tire Pressure/Wear…….. 53PSI/ CHECKED
Mooring Ring/Tie Down…… CHECKED/ UNTIE

## FUSELAGE

Rear Door…….. LOCKED
Left Static Vents…… UNOBSTRUCTED
Dorsal Fin Air Scoop…… UNOBSTRUCTED
Empennage …….. NO DAMAGE/CHECK HINGES
Tail Tie Down…… UNTIE
Trim Tabs……... NO DAMAGE/ CHECK HINGES
Rotating Beacon/ Nav lights……. NO DAMAGE
Right Static Vent…… UNOBSTRUCTED
Antennas……..CHECKED/ NO DAMAGE

## BEFORE STARTING ENGINES

Seats…… ADJUSTED
Seat Belts and Shoulder Harness…… FASTENED
Parking Brake…… SET
Circuit Breakers …… IN
Radio Master Switch…… OFF
Alternate Air…… OFF
Auto Pilot…… OFF
Alternators……ON
Cowl Flaps……OPEN
Passenger Briefing…….. COMPLETE

## STARTING ENGINES (*repeat for both engines)

Fuel Selectors…… ON
Mixture Controls…… IDLE CUTOFF
Props…… FULL FORWARD
Throttle Controls…… ½" OPEN
Master Switch…… ON
Beacon…… ON
Ignition Switches…… ON
Electric Fuel Pumps……ON
Mixture Control (Priming)…… RICH/CHECK FF/ THEN CUTOFF
*Propeller…… CLEAR (Verbally and Visually)
*Starter……..ENGAGE
*Mixture…….. ADVANCE AS ENGINE ENGAGES
*Throttle…… 1000 RPM
*Oil Pressure…….. RISING WITHIN 30 SECONDS
*Electric Fuel Pump……OFF/ CHECK FUEL PRESSURE
*Alternator…… CHARGING
*Vacuum Gauge…….. 4.5 – 5.2 Hg


AIRMAN FLIGHT TRAINING

## FLOODED ENGINE

Mixture……. IDLE CUTOFF
Props…….. FULL FORWARD
Throttle Controls……. FULL OPEN
Master Switch…… ON
Beacon…… ON
Ignition Switches…… ON
Electric Fuel Pumps……OFF
Mixture Control (Priming)…….. RICH/CHECK FF/ THEN CUTOFF
*Propeller……. CLEAR (Verbally and Visually)
*Starter……..ENGAGE

When engine fires, retard throttle and advance mixture slowly

*Throttle…….. 1000 RPM
*Oil Pressure……RISING WITHIN 30 SECONDS

*Alternator…… CHARGING
*Vacuum Gauge……. 4.5 – 5.2 Hg

## HOT START (*repeat for opposite engines)

Fuel Selectors…… ON
Mixture Controls…… IDLE CUTOFF
Props…….. FULL FORWARD
Throttle Controls…… ½" OPEN
Master Switch…… ON
Beacon…… ON
Ignition Switches…… ON
Electric Fuel Pumps……OFF
Alternators…….. ON
*Propeller…… CLEAR (Verbally and Visually)
*Starter……. ENGAGE
*Mixture…… ADVANCE AS ENGINE ENGAGES
*Throttle…… 1000 RPM
*Oil Pressure……RISING WITHIN 30 SECONDS
*Alternator…… CHARGING
*Vacuum Gauge……. 4.5 – 5.2 Hg

**NOTE : If engine does not start, use the NORMAL STARTING PROCEDURES , including priming

## STARTING ENGINES With External Power

Fuel Selectors……. ON
Alternators……OFF
All Electrical Switches…… OFF
Master Switch…….. OFF
Receptacle Cover……OPEN
External Power Plug…… .. INSERT IN RECEPTACLE
Master Switch……. ON
Proceed with normal starting

After engine starts:

Master Switch……. OFF
External Power Plug…….. REMOVE
Master Switch……..ON
Alternator…… ON/ CHARGING
Vacuum Gauge…….. 4.5 – 5.2 Hg

NOTE: Allow battery to charge for a few minutes before starting the other engine. Do not attempt flight if there is no indication of alternator output.

## BEFORE TAXI CHECK

Left Fuel Selector……. X-FEED
Radio Master……. ON
Auto Pilot……..OFF
Transponder…… STANDBY
ATIS……..CHECK
Altimeter…….. SET
Trim…….. TEST/ SET
External Lights……AS DESIRED
Left Fuel Selector……ON
Right Fuel Selector……X-FEED

## ENGINE RUNUP (LEFT THEN RIGHT)

Parking Brake……. SET
Fuel Selectors……..ON
Mixture Controls……..RICH
Propeller Controls…….. FULL FORWARD
*Throttle Control……. 1500 RPM
*Propeller Control (back th en forward)… MAX DROP 500 RPM
*Throttle Control……. 2000 RPM
GOVERNOR CHECK:
*Prop…… 1800 RPM
*Throttle…….. 25" MP


AIRMAN FLIGHT TRAINING

*Governor…….. RPM STANDBY
*Prop…… FULL FORWARD
*Throttle …… 2000 RPM
*Alternate Air…….. ON/OFF CHECK RPM DROP
*Magnetos (one at a time)…… OFF/ON (norm. 100 drop, max 175, diff. Btwn the two 50)
*Alternator…….. OFF
*Overvoltage Relay Light… ……. PRESS/ ILLUMINATED
*Alternator…… ON/ CHARGING
*Vacuum Gauge…… 4.5: - 5.2" Hg
*Throttle…… IDLE (650-700 rpm)
*Throttle…… 1000 rpm
*Engine Gauges…… IN the GREEN

*REPEAT FOR OPPOSITE ENGINE

## BEFORE TAKEOFF

Flight Instruments…… CHECKED/ SET
Navigation Aids…….. TUNE/ IDENTIFY
Com/Nav/Transponder…… SET
Alternate Air…… OFF
Controls…….. FREE & CORRECT
Trim…… SET for TAKEOFF
Flaps…… ……. SET for TAKEOFF
Fuel Selectors…… ON
Mixtures…….. RICH
Props…… HIGH
Quadrant Friction Lock…… SET
Cowl Flaps…….. OPEN
Fuel Pumps…….. ON
Landing Lights…… ON
Window……CLOSED
Doors…… LOCKED

## LINEUP CHECKLIST

Taxi to Rwy Centerline…….. HOLD BRAKES
Compass (compare to rwy hdg)……CHECKED
Time…….. NOTE TIME OFF
Throttle…… 2000 RPM-CHECK GAUGES
Brakes…….. RELEASE
Throttle Controls…… FULL FORWARD
Rotate (normal takeoff)…… 80
Lift Off (normal takeoff)…… 85
Accelerate…… Vx or Vy (90/105)mph
Gear UP…… No more Runway & Pos. Rate

LINEUP CHECK COMPLETE

## CLIMB CHECK (500' AGL)

Climb Power…… 25"/2500rpm 105/120mph
Gear/Flaps…….. UP
Landing Lights……..OFF
Cowl Flaps…….. AS REQUIRED
Fuel Pumps…… OFF ABOVE 1000 AGL
Engine Instruments…… MONITOR

CLIMB CHECK COMPLETE

## CRUISE CHECK

Power Set (MP/RPM)…… …… ACCORDING TO TABLE
Mixture…….. LEAN AS NECESSARY
Cowl Flaps……AS REQUIRED
Engine Instruments……..MONITOR
DG…… …….. SET TO MAGNETIC COMPASS

CRUISE CHECK COMPLETE

## DESCENT CHECK

Manifold Pressure…… SET (14"MP/Check horn)
Mixture…… RICH
Cowl Flaps…… CLOSED
ATIS…… OBTAIN
Altimeter…… SET

DESCENT CHECK COMPLETE

## APPROACH CHECK

Power…….. SET
Mixture…… RICH
Seatbelts/Backs…… FASTENED & ERECT
Fuel Pumps…… ON
Pitot Heat……..AS REQUIRED
Lights (landing, strobe, recog)…….. ON
Cowl Flaps……AS REQUIRED
Fuel Selectors…… ON
Auto Pilot…… OFF
Flaps…… AS REQUIRED

APPROACH CHECK COMPLETE

## FINAL CHECK (GUMPS)

Gas…… ON
Undercarriage GEAR DOWN…… 3 GREEN, ONE IN THE MIRROR
Mixture…… RICH
Props……HIGH
Switches…….. FUEL PUMPS, LANDING LIGHTS
FINAL CHECK COMPLETE

## GO AROUND

Mixture Props Throttles……..FULL FWD (IN ORDER)
Pitch Up…… VSI Positive RATE
Flaps…… 25 DEG. IMMEDIATELY
Gear…….. UP
Remaining Flaps……..RETRACT PAST OBSTACLE
and POSITIVE RATE
Cowl Flaps……AS NEEDED

## AFTER LANDING CHECK (Past Hold Short Line)

Flaps…… UP
Cowl Flaps……OPEN
Transponder……STANDBY
Fuel Pumps……..OFF
Lights ……OFF (except Beacon)
Pitot Heat…… OFF
Contact Ground or UNICOM
AFTER LANDING CHECK COMPLETE

## ENGINE SHUTDOWN

Parking Brake…… SET
Radios…….. OFF
Throttles…….. IDLE
Mixture…….. IDLE/CUTOFF
Ignition…….. OFF
Beacon……..OFF
Master Switch…….. OFF
Alternators…… OFF
Parking Brake……..OFF
Controls……SECURE
Aircraft…….. TIEDOWN



## DETECTING DEAD ENGINE

LOSS OF THRUST
Nose of Aircraft will yaw in direction of dead engine

## ACTUAL ENGINE FAILURE – IN FLIGHT

MAINTAIN AIRCRAFT CONTROL – AIRSPEED, HEADING & BANK

Mixture…….. RICH
Props…….. FORWARD
Throttles…….. FORWARD
Flaps……UP
Gear…… UP
Fuel Pumps…… ON
Identify…….. DEAD FOOT/ DEAD ENGINE
Verify (Dead Engine no change)…….RETARD THROTTLE
FIX – IF ABOVE TPA -OR-
FEATHER ……PROP DEAD ENG. BACK
Mixture…… DEAD ENGINE CUTOFF

CHECK – AIRSPEED/ ALTITUDE/ HEADING AND BANK

FIND A PLACE TO LAND AND HEAD FOR IT

SAVE THE GOOD ENGINE:
Fuel Pump Operative Engine……OFF
Cowl Flap Operating Engine……OPEN
Electrical Load……..REDUCE
Mixture Prop & Throttle ……ADJUST AS NEEDED
Gauges…… CHECK

SECURE THE DEAD ENGINE:
Trim…….. AS NEEDED
Mixture Inoperative Engine……IDLE CUT OFF
Fuel Pump & Mags Inop Engine…….. OFF
Cowl Flaps ……..CLOSE on INOP
Alternator Inop Engine……OFF
Electrical Load…….. REDUCE
Fuel Selector Inop. Engine……OFF/ CONSIDER XFEED

EMERGENCY RADIO CALL – MAYDAY, MAYDAY
SQUACK 7700
ATTEMPT RESTART – AIR START PROCEDURE NEXT PAGE

## AIR START/ UNFEATHERING PROCEDURE

Radios and Alternator …….. OFF
Fuel Selectors …….. ON
Fuel Pump Inop. Engine…… OFF
Throttle INOP engine…… OPEN ¼"
Propeller INOP engine…….. FWD TO CRUISE (kiss the props)
Mixtures…….. RICH
Magnetos……..ON
Starter…… ……...ENGAGE TILL PROP WINDMILLS
Throttle…….. REDUCE TILL ENGINE IS WARM
Alternator……..ON
NOTE: If engine does not start, prime with the fuel pump for 3 seconds.

## FUEL MANAGEMENT DURING SINGLE ENGINE OPERATION

**When using fuel from the Operating Engines Tank:**

Fuel Selector Operating Engine……ON
Fuel Selector Inop. Engine……...OFF
Fuel Pumps…….. OFF (see note below)

**X-FEED OPERATION -When using fuel from the Dead Engines Tank:**

Fuel Selector Operating Engine…….. X-FEED
Fuel Selector Inop. Engine…….. OFF
Fuel Pumps……...OFF (see note below)

NOTE: In case of engine driven fuel pump failure, electric fuel pump on operating engine side must be ON

**LANDING – do NOT land with fuel on XFEED!!!!**

Fuel Selector Operating Engine……ON
Fuel Selector Inop. Engine…….. OFF
Fuel Pump Operating Engine……ON

### ENGINE FAILURE ON RUNWAY

CLOSE THROTTLES AND STOP STRAINGHT AHEAD
If inadequate runway remains to stop:
Throttles…….. CLOSE
Brakes…….. MAXIMUM
Master Switch…….. OFF
Fuel Selectors…… OFF
Continue straight ahead, turning to avoid obstacles as necessary.

## ENGINE FAILURE AFTER ROTATION (GEAR DOWN)

If adequate runway remains:
CLOSE BOTH IMMEDIATELY LA ND & STOP STRAIGHT AHEAD

If inadequate runway remains:
The decision to abort the take off or to continue must be based on the pilot's judgment considering the following factors:

Maximum Gross Weight……. Density Altitude
Obstructions…… Weather
Pilots Competency

If decision is made to continue:
Maintain Heading and airspeed above BLUE LINE or Vyse 105 if climb is needed. Bank 5 degrees into good engine.

MIXTURE, PROPS, THRO TTLES……FULL FORWARD
FLAPS …… UP
GEAR…….. UP
IDENTIFY…… DEAD FOOT/DEAD ENGINE
VERIFY…… THROTTLE INOP IDLE
FEATHER……INOPERATIVE PROP BACK

DO NOT ATTEMPT TO TROUBLESHOOT BELOW TPA

### SINGLE ENGINE LANDING

Gear…… DOWN
Flaps (MAX 25deg.)…… AS REQUIRED
Final Approach Speed…….. 105 mph

Note: Do not extend gear or flaps until certain of making the field!!!

### SINGLE ENGINE GO AROUND

If a single engine go around cannot be avoided, proceed as follows:
Mixture……..RICH
Prop……FWD
Throttle…… FWD
Flaps…… UP
Gear…… UP
Airspeed……105 mph Vyse
Trim…….. SET
Cowl Flap…… As needed

AIRMAN
FLIGHT TRAINING

## LANDING GEAR UNSAFE WARNINGS

Red light indicates gear is in transit. Recy cle the gear if the r ed light continues to illuminate.
Red light will illuminate when the gear warning horn sounds. The gear warning horn sounds when the manifold pressure drops to 14" hg in either engine or both and the gear is in the up position or when the gear selector is set in the up position when the airplane is on the ground.

## EMERGENCY GEAR EXTENSION

Check the following before extending the gear manually.
Circuit Breakers…….. CHECK IN
Master Switch……..ON
Alternators……CHECK/ON
Navigation Light s……OFF (DAYTIME)

To extend gear:
Airspeed……REDUCE TO 100 mph
Gear Selector Switch……. DOWN and LOCKED
Emergency Extensi on Knob……..PULL OUT
Landing Gear Indicator Lights…….. CHECK 3 GREEN
LEAVE EMERGENCY GEAR EXTENSION KNOB OUT!

## GEAR UP LANDING

Approach……. NORMAL AIRSPEED
Flaps…… UP
Throttles…….. CLOSE BEFORE TOUCHDOWN
Master Switch……. OFF
Magnetos……..OFF
Fuel Selectors……..OFF
Fuel Pumps……..OFF
Ignition……..OFF
CONTACT SURFACE AT MINIMUM AIRSPEED, SLIGHTLY TAIL LOW

## BOTH OVERVOLTAGE LIGHTS ILLUMINATE

Electrical Load……TURN OFF ALL
Master Switch……. ON
Alternators…….. OFF
Alternators……ON, ONE AT A TIME
Determine the alternator with the least output and leave its switch ON
Electrical Equipment…….. MAX 50 AMPS
Resume normal operation

## ONE OVERVOLTAGE LIGHTS ILLUMINATE

Electrical Load……TURN OFF ALL
Master Switch……..ON
Alternator associated with light…… OFF
Alternator associated with light……ON IF MORE THAN 50 AMPS OFF
Electrical Equipment…… . NO MORE THAN 50 AMPS

## ALTERNATOR OFF LINE DUE TO WEAK BATTERY OR EXCESSIVE RESTART CRANKING

Circuit Breakers……. CHECK/RESET IF TRIPPED
Electrical Load…… REDUCE
Alternator Switch (operating one)……ON
Master Switch……. OFF for a SHORT TIME
Master Switch……. ON
If no output indicated on the ammeter
Master Switch (lon ger period)…….. OFF
Master Switch……. ON
If Power is established, reduce electrical load not to exceed 50 amps.

## LOSS OF OUTPUT FROM ONE ALTERNATOR

Electrical Load…… REDUCE TO 50 AMPS
Circuit Breakers…….. CHECK/RESET IF TRIPPED
Cycle Inop. Alternator Switch……OFF/ON
If alternator fails to reset
Alternator……..OFF
Electrical Load……REDUCE
Warning : Compass error may exceed 10 degrees with both alternators inoperative.

## VACUUM SYSTEM FAILURES (lower than 4.5 Hg)

RPM……..INCREASE TO 2700rpm
Altitude……. DESCEND TO MAINTAIN 4.5 Hg

## ENGINE FIRE ON THE GROUND

If engine has not been started:
Mixture……. IDLE CUTOFF
Throttle …… FULL OPEN
Starter……ENGAGE
This is an attempt to pull the fire into the engine

If engine has started, continue operating to try pulling the fire into the engine.

If external fire extingui shing is to be applied.
Fuel Selectors……. OFF
Mixture……..IDLE CUT OFF
EVACUATE

## ENGINE FIRE IN FLIGHT – ENGINE SHUTDOWN

Fuel Selector Affected Engine……. OFF
Throttle affected engine…… CLOSE
Propeller…….. FEATHER
Mixture……. IDLE CUTOFF
Heater……...OFF
Defroster…….. OFF
Cowl Flaps…….. OPEN
Land immediately if terrain permits


AIRMAN FLIGHT TRAINING

## IN FLIGHT – ENGINE SHUTDOWN

Fuel Selector Affected Engine……. CLOSE
Props…… FULL FWD
Mixture…… AS REQUIRED
Gear……. DOWN
Airspeed…….. 150mph
Cowl Flaps…….. CLOSE
Select and aim for landing area if airport unattainable. Declare and emergency, 7700

## PITOT STATIC SYSTEM MALFUNCTION

Pitot Heat……..ON
Alternate Static Source …… OPEN
Static Drain…….. CHECK

## OPEN DOOR

Slow Airspeed …….. 100mph
Cabin Vents…… CLOSE
Storm Window…….OPEN
Upper Latch Open……. LATCH
Side Latch Open…… PULL ARMREST/LATCH
Upper/Side Latch Open…….LATCH SIDE THEN TOP

## ENGINE FAILURE WITH REAR CABIN CARGO DOOR REMOVED

Minimum Control Airspeed 81mph
If an engine failure occurs below 81mph, reduce power as necessary on the operating engine to maintain directional control

## PROPELLER OVERSPEED

Throttle…… CLOSE
Airspeed…….. 105mph
Propeller…….. BACK TO LOW RPM

Slowly increase throttle until propeller governor is engaged.

Slowly increase propeller and throttle to the desired power setting. Continue at reduced speed and power and land ASAP.

NOTE: If throttle is retarded below 15-20 Hg. Of M.P. at speeds above 105 mph, the propeller may overspeed again upon reapplying power. If this occurs follow the same procedure above.

## SPIN RECOVERY

Throttles…….. RETARD BOTH TO IDLE
Rudder…….. FULL OPPOSI TE TO DIRECTION OF SPIN
Yoke…… DECREASE BACK PRESSURE, FULL FWD IF NOSE DOESN'T DROP
Ailerons…… NEUTRAL
Rudder……..NEUTRALIZE WHEN ROTATION STOPS
Yoke…… SMOOTH BACK PRESSURE DURING RECOVERY FROM DIVE

## EMERGENCY DECENT

40 DEGREES FLAPS
GEAR DOWN
COWL FLAPS CLOSEE
125 MPH
PERFORM TURNS 30 DEGREES EACH DIRECTION


AIRMAN FLIGHT TRAINING

# MULTI ENGINE MANUEVERS

## MUST MEMORIZE BEFORE ARRIVAL AT NAFS!!

All maneuvers begin at 4000agl and must be completed prior to 3000agl

## PRE-MANEUVERING CHECKLIST

Fuel Selectors……. ON
Mixtures……RICH
Fuel Pumps…….. ON
Strobe Lights…….. ON
Beacon…… ON
Landing Light…….ON

Clear the area left and right (2 – 90 DEGREE TURNS)

## POST-MANEUVERING CHECKLIST

Mixtures……LEAN as needed
Fuel Pumps……..OFF
Strobe Lights…….. OFF
Beacon……. ON
Landing Light……OFF
Set Cruise Power 21" MP / 2300 RPM

ALTITUDE for ALL MANEUVERS MINIMUM OF 3000 AGL
ABSOLUTELY NO SINGLE ENGINE MANUEVERS UNDER 3000 AGL

## STEEP TURNS

20" MP GUMP (at or below Va)
Cowl Flaps closed
Gear Up
Props 2300 RPM
Roll in bank
Power to 22-23" MP
Lead roll out by 20 degrees
Cruise Power
FOR COMMERCIAL: ROLL IMMEDIATELY INTO OPPOSITE DIRECTION TURN

## SLOW FLIGHT

HOLD HEADING AND ALTITUDE WHILE SETTING UP FOR THE MANUEVER
13" MP GUMP
Gear down, cowl flaps open
2500 RPM, hold hdg and alt
Flaps down below 125 MPH
@ 80 MPH 18" MAP
Recovery:
Full Throttle, flaps 10 gear up
Flaps up, hold hdg and alt
POST MANUEVERING CHECKLIST
IF ENGINE LOSS OCCURS BELOW VMC, REDUCE THROTTLES TO MAINTAIN CONTROL

## APPROACH/ POWER OFF STALLS

HOLD HEADING AND ALTITUDE WHILE SETTING UP FOR THE MANUEVER
13" MP/ RPM FULL FORWARD
GEAR DOWN BELOW 150
FLAPS DOWN BELOW 125
PROPS TO HIGH UNDER 100
POWER IDLE
NOSE DOWN, PITCH FOR 90
MAINTAIN HEADING AND PITCH UP WITH IDLE POWER OR ESTABLISH A 20 DEGREE BANK WITH IDLE POWER UNTIL THE STALL OCCURS

RECOVERY:
LOWER NOSE AND LEVEL WINGS IF IN A TURN
FULL POWER
FLAPS TO 25 DEGREES
CLIMB AT VY 105
POSITIVE RATE OF CLIMB:
GEAR UP
FLAPS OUT SLOWLY
CLIMB BACK TO STARTING ALTITUDE 25"/2500RPM
ACCELERATE TO CRUISE
SET CRUISE POWER 21"/2300RPM
POST MANUEVERING CHECKLIST
IF ENGINE LOSS OCCURS BELOW VMC, REDUCE THROTTLES TO MAINTAIN CONTROL

## DEPARTURE/ POWER ON STALLS

HOLD HEADING AND ALTITUDE WHILE SETTING UP FOR THE MANUEVER

13" MP
GEAR AND FLAPS UP
PROPS HIGH
85MPH – THROTTLE 20" MP
PITCH UP UNTIL STALL

RECOVERY:
AS THE STALL OCCURS
NOSE TO HORIZON
THROTTLE FULL
CLIMB AT VY 105
POST MANUEVERING CHECKLIST
IF ENGINE LOSS OCCURS BELOW VMC, REDUCE THROTTLES TO MAINTAIN CONTROL


AIRMAN FLIGHT TRAINING

## VMC DEMO

13" MP/ FULL FWD RPM
Gear Up, Props High
Left engine idle
At 85 MPH full power on right engine
Bank into good engine
Raise nose to loose 1 MPH/Second
Recover at Vmc, Stall horn, buffet or Full Rudder
Recovery:
Throttle idle
Lower nose to blue line max power on right engine
Climb at vyse 105MPH

## DRAG DEMO (MEI APPLICANTS ONLY)

CRUISE POWER 21/2300
SET BUG TO ENTRY HEADING
POWER 15"MP
3" BCGUMP Gear up, props high
Left engine idle
Right engine power for vyse and level
Flaps 10 note vsi hold vyse
Flaps 25 note vsi hold vyse
Flaps 40 note vsi hold vyse
Gear down note vsi hold vyse
Flaps up to 25 not vsi hold vyse
Flaps 10 note vsi hold vyse
Flaps up note vsi hold vyse
Simulate feather on left engine
Note vsi
Flaps 10 note vsi hold vyse
Flaps 25 note vsi hold vyse
Full flaps note vsi hold vyse
Gear up then raise flaps incrementally
Slowly bring left engine back up to power

MAINTAIN A/S THROUGHOUT MANUEVER

## SHORT FIELD TAKE OFF

NORMAL SHORT FIELD:
0 DEGREES FLAPS
HOLD BRAKES, FULL POWER, CHECK GAUGES, RELEASE BRAKES
ROTATE 80 MPH
CLIMB 90 MPH
PAST OBSTACLES, CLIMB 105 MPH

VERY SHORT FIELD:
25 DEGREES FLAPS
HOLD BRAKES, FULL POWER, CHECK GAUGES, RELEASE BRAKES
ROTATE 70 MPH
THROUGH 50' 80 MPH
INCREASE A/S TO 105 PAST OBSTACLE AND RETRACT FLAPS

NOTE :
THIS PROCEDURE SHOULD ONLY BE USED WHEN THE SHORTEST GROUND ROLL AND CLEARANCE OVER 50' OBSTACLE IS DESIRED. THE A/C WILL BE BELOW VMC MOMENTARILY, SO IF AN ENGINE FAILURE IS ENCOUNTERED ON TAKEOFF – THROTTLE MUST BE RETARDED ON OPERATING ENGINE AND NOSE LOWERED IMMEDIATELY TO MAINTAIN CONTROL. 25 DEGREE SETTING MAY RESULT IN WHEELBARROWING IF A/C IS HELD ON RWY TOO LONG. THIS SHOULD BE AVOIDED.

## SHORT FIELD LANDING

40 DEGREES FLAPS
87 MPH ON FINAL
TOUCHDOWN WITHIN 100' FOR COMMERCIAL, 200' FOR PRIVATE
RETRACT FLAPS UPON TOUCHDOWN
HOLD YOKE FULL AFT
SIMULATE MAX BRAKING


AIRMAN FLIGHT TRAINING