

|   | b | Wing Flaps and Attach Points                                | Inspected    |                    |
|---|---|---|--------------|--------------------|
|   | С | Aileron and Attach Points                                   | Inspected    |                    |
|   | d | Control Links   | Inspected    |                    |
|   | е | Wing Tips Lights and Lens                                   | Unobstructed |                    |
|   | f | Fuel Tank Vent  | Unobstructed |                    |
|   | g | Pitot Tube Se   | ecured       | Unobstructed       |
|   | h | Pitot Tube Heat Element                                     |              | Operative          |
|   | i | Landing and Taxi Lights Lens and E                          | Bulbs        | Inspect            |
|   | j | Stall Switch Vane   |              | Check Operation    |
|   | k | Fuel Tank Check Quantity                                    |              | Secure Cap         |
|   | I | Tiedown Rope / Chain  |              | Removed            |
|   | m | Wheel Chock   |              | Removed            |
|   | n | Left Main Wheel Landing Gear<br>Shock Disks, Tire and Doors |              | Inspect            |
|   | ο | Fuel Tank Sump Drain  |              | Drain              |
|   |   | Free of Water and Contamination                             |              | Confirm 100LL      |
|   | р | Pitot System Drain Push Plunger                             | UP           | Hold 3-5 seconds   |
| - |   |   |              |                    |
| 6 |   | LEFT COWL AREA  |              |                    |
|   | а | Windshield  |              | CLEAN              |
|   | b | Cabin Air Inlet   | Unobstructed |                    |
|   | С | Left Side Engine Cowl Fasteners                             |              | Secured            |
|   | d | Exhaust Pipes   |              | Inspect Secured    |
|   | е | Engine Oil Filler Door                                      |              | Open, Inspect Area |
|   | f | Engine Oil 8 Quarts   |              | Check Quantity     |
|   | g | Engine Oil Filler Door                                      |              | Close and Secure   |
|   | h | Cooling Air Inlet V   | 'erify       | Unobstructed       |
|   |   |   |              |                    |
| 7 |   | Propeller Spinner & Front Cowl                              | l Area       |                    |
|   | а | Prop Deice Boots  |              | Inspect            |
|   | b | Induction Air Inlet Filter                                  |              | Unobstructed       |
|   | С | Left Main Wheel Landing Gear                                |              | Inspect            |
|   | _ | Shock Disks, Tire and Doors                                 |              |                    |
|   | d | Wheel Chock   |              | Removed            |
| - |   |   |              |                    |
| 8 | - | RIGHT COWL AREA   |              |                    |
|   | a | Right Side Engine Cowl Fasteners                            |              | Secured            |
|   | b | Cooling Air Inlet V   | erify        | Unobstructed       |
|   | C | Windshield  |              | CLEAN              |
|   | d | Cabin Air Inlet Ver   | 'ify         | Unobstructed       |

Note: The only valid version is the original checklist in the POH Secn IV - VI

3 CHECKLIST Mooney M20R OEKGG Dec 2014 V1.3 Page 1

# **COCKPIT CHECK**

| 1 |   | Cockpit                                  |                             |
|---|---|--|-----------------------------|
|   | а | Gear Switch                              | DOWN                        |
|   | b | Magneto / Starter Switch                 | OFF                         |
|   | С | All Rocker Switches                      | OFF                         |
|   | d | Master Switch                            | ON                          |
|   | е | All Circuit Breakers                     | IN                          |
|   | f | Battery Selector Switch                  | 1 to 2 or 2 to 1            |
|   |   | Check Voltmeter after each selection     | Set at higher Volts posn    |
|   | g | Internal / External lights check Ammeter | Check                       |
|   | h | Pitot Heat Check                         | Annunciator Blue            |
|   | i | Fuel Quantity                            | Check                       |
|   | j | Oxygen check quantity, masks and hoses   | If installed and to be used |

# OUTSIDE CHECK

| 2 |   | Right Fuselage and Tailcone                                      |                  |
|---|---|--|------------------|
|   | а | Oxygen Filler Access Door and Cap                                | Secured          |
|   | b | Battery #2 Access Panel  | Secured          |
|   | С | Static Pressure Port   | Unobstructed     |
|   | d | General Skin Condition No ice snow frost                         | Checked          |
|   | е | Tailcone / Empennage Access Panel                                | Secured          |
|   | f | Tiedown Rope / Chain   | Removed          |
|   |   |  |                  |
| 3 |   | Empennage  |                  |
|   | а | Elevator Rudder Attach Points and<br>Control Linkage Attachments | Inspected        |
|   | b | Empennage Free Play Vertical / Horizontal                        | Inspected        |
|   | С | General Skin Condition No ice snow frost                         | Checked          |
|   |   |  |                  |
| 4 |   | Left Fuselage and Tailcone                                       |                  |
|   | а | Cabin Fresh Air Vent Dorsal Fin                                  | Unobstructed     |
|   | b | Tailcone / Empennage Access Panel                                | Secured          |
|   | С | Static Pressure Port   | Unobstructed     |
|   | d | Avionics Battery #1 Access Panel                                 | Secured          |
|   | е | Auxiliary Power Plug Access Door                                 | Secured          |
|   | f | Static System Drain Push Plunger UP                              | Hold 3-5 seconds |
|   | g | General Skin Condition No ice snow frost                         | Checked          |
| 5 |   | LEFT WING  |                  |
|   | а | General Skin Condition No ice snow frost                         | Checked          |
| L | - |  |                  |



| р | Parking Brakes                      | SET              |
|---|-------------------------------------|------------------|
| q | Wing Flap Switch                    | Flaps UP         |
| r | Defrost                             | Push OFF         |
| s | Cabin Heat                          | Push OFF         |
| t | Cabin Vent                          | As Desired       |
| u | Fuel Selector                       | Fullest Tank     |
| v | All Rocker Switches                 | OFF              |
| w | Landing Gear Switch                 | DOWN Position    |
| X | RED Emergency Gear Extension Handle | DOWN and LATCHED |
| у | Internal Lights                     | OFF              |
| z | Passenger Briefing                  | Completed        |

When either battery voltage is low, inspection should be conducted to determine condition of battery and / or reason for battery being low. Replacement or servicing of batteries is essential and charging for at least one hour should be done before engine is started. Batteries must be serviceable and IT IS RECOMMENDED THAT BATTERIES BE FULLY CHARGED TO OPERATE AIRCRAFT. Electrical components may also be damaged if aircraft is operated when batteries are low. DO NOT START ENGINE IF BOTH BATTIERIES ARE INCAPABLE OF STARTING ENGINE.

Recharge dead batteries for at least one hour (at 3-4 amps) before starting.

#### **ENGINE START**

| 1  | Before Starting Checklist .           | Completed                      |
|----|---------------------------------------|--------------------------------|
| 2  | Throttle                              | FULL                           |
| 3  | Propeller                             | High RPM                       |
| 4  | Mixture                               | Full Forward (RICH)            |
| 5  | Master Switch                         | ON                             |
| 6  | Alternator Field Switch               | ON                             |
| 7  | Annunciator Lights                    | PRESS TO TEST                  |
|    |                                       | (All lights should illuminate) |
| 8  | Low Fuel Boost Pump Switch            | ON during engine starting      |
|    |                                       | sequence                       |
| 9  | Propeller area                        | CLEAR                          |
| 10 | Magneto / Starter Switch              | TURN & PUSH to START,          |
|    |                                       | release to BOTH when           |
|    |                                       | engine starts.                 |
| 11 | Throttle                              | IDLE POSITION                  |
| 12 | If No 1 Battery will not start engine | SELECT NO.2 battery            |

COLD ENGINE START - Low fuel boost pump ON during 'Start'sequence. Turn low fuel boost pump OFF when engine obtains smooth operation.

"START POWER" warning light should illuminate when Magneto / Starter switch is in "START" position.

Cranking should be limited to 30 seconds, and several minutes allowed between cranking periods to permit the starter to cool

Note: The only valid version is the original checklist in the POH Secn IV - VI

# 2

CHECKLIST Moonev M20R OEKGG Dec 2014 V1.3 Page 3

|   | RIGHT WING   |  |
|---|--|--|
| а | Fuel Tank Sump Drain   | Drain  |
|   | Free of Water and Contamination  | Confirm 100LL  |
| b | Right Main Wheel Landing Gear  | Inspect  |
|   | Shock Disks, Tire and Doors  |  |
| С | Wheel Chock  | Removed  |
| d | General Skin Condition No ice snow frost                                     | Checked  |
| е | Fuel Tank Check Quantity   | Secure Cap   |
| f | Tiedown Rope / Chain   | Removed  |
| g | Fuel Tank Vent   | Unobstructed   |
| h | Landing and Taxi Lights Lens and Bulbs                                       | Inspect  |
| i | Wing Tips Lights and Lens  | Unobstructed   |
| j | Aileron and Attach Points  | Inspected  |
| k | Wing Flaps and Attach Points   | Inspected  |
| I | Control Links  | Inspected  |
|   |  |  |
|   | BAGGAGE DOOR AREA  |  |
| а | Baggage Door Inside Handle   | Properly Secured   |
| b | Baggage Door Outside Handle  | Check Operation  |
|   |  |  |
|   | <b>RETURN TO COCKPIT All Rocker Switches</b>                                 | OFF  |
|   |  |  |
| а | Select Right Tank pull Gascolator Ring                                       | 5 seconds  |
| b | Select Left Tank pull Gascolator Ring  | 5 seconds  |
|   | a<br>b<br>c<br>d<br>e<br>f<br>g<br>h<br>i<br>j<br>k<br>l<br>a<br>b<br>a<br>b | RIGHT WING   a Fuel Tank Sump Drain   Free of Water and Contamination   b Right Main Wheel Landing Gear   Shock Disks, Tire and Doors   c Wheel Chock   d General Skin Condition No ice snow frost   e Fuel Tank Check Quantity   f Tiedown Rope / Chain   g Fuel Tank Vent   h Landing and Taxi Lights Lens and Bulbs   i Wing Tips Lights and Lens   j Aileron and Attach Points   k Wing Flaps and Attach Points   I Control Links   BAGGAGE DOOR AREA Baggage Door Inside Handle   b Baggage Door Outside Handle   a Baggage Door Outside Handle   b Baggage Loor COCKPIT All Rocker Switches   a Select Right Tank pull Gascolator Ring   b Select Left Tank pull Gascolator Ring |

### **BEFORE STARTING CHECK**

| а | Preflight Inspection   | Completed  |
|---|--|--|
| b | Seats, Seat Belts, Shoulder Harnesses                              | Adjust, Secured  |
| С | Magneto / Starter Switch   | OFF  |
| d | Master Switch  | OFF  |
| е | Alternator Field switch  | OFF  |
| f | Radio Master Switch  | OFF  |
| g | Fuel Boost Pump Switches   | OFF  |
| h | Directional Gyro (slave / free switch).                            | SLAVED if installed  |
| i | Circuit Breakers   | Check all IN   |
| j | ELT Switch   | ARMED  |
| k | Rocker Switches  | OFF  |
| I | Alternate Static Source  | Push OFF   |
| m | Throttle   | CLOSED   |
| n | Propeller  | High RPM Full Forward  |
| ο | Mixture  | Idle CUTOFF  |
|   | a<br>b<br>c<br>d<br>f<br>g<br>h<br>i<br>j<br>k<br>l<br>m<br>n<br>o | aPreflight InspectionbSeats, Seat Belts, Shoulder HarnessescMagneto / Starter SwitchdMaster SwitcheAlternator Field switchfRadio Master SwitchgFuel Boost Pump SwitcheshDirectional Gyro (slave / free switch).iCircuit BreakersjELT SwitchkRocker SwitchesIAlternate Static SourcemThrottlenPropelleroMixture |



|                               | 5  | Throttle                 | IDLE  |  |  |
|-------------------------------|--|--------------------------|---|--|--|
|                               | 6  | Mixture                  | Full Forward (RICH)                                       |  |  |
|                               | 7  | Magneto / Starter Switch | TURN & PUSH to START, release to BOTH when engine starts. |  |  |
| 8 Throttle IDLE 600 – 700 RPM |  |                          |   |  |  |
| SE                            | SEE ENGINE START PROCEDURES ABOVE FOR REMAINING SEQUENCES. |                          |   |  |  |

## **BEFORE TAXI**

| 1  | Engine Start List                     | Completed              |
|----|---------------------------------------|------------------------|
| 2  | Radio Master Switch                   | ON                     |
| 3  | Elevator Trim Swrtch                  | ON                     |
| 4  | Internal / Exernal Lights             | As Desired             |
| 5  | Directional Gyro                      | SET or Slave switch ON |
| 6  | Stand-by Vacuum Operational Indicator | Red Button visible     |
| 7  | Stand-by Vacuum Switch                | ON                     |
| 8  | Stand-by Vacuum Operational Indicator | Red Button not visible |
| 9  | Stand-by Vacuum Switch                | OFF                    |
| 10 | Instruments                           | Normal Operation       |
| 11 | Radios                                | Checked and Set        |
| 12 | Altimeter                             | Set                    |
| 13 | FUEL SELECTOR Switch Tanks            | Verify engine running  |
| 14 | Cabin Heat                            | AS DESIRED             |
| 15 | Defroster                             | AS DESIRED             |
| 16 | Cabin Vent                            | AS DESIRED             |
|    |                                       |                        |

# ΤΑΧΙ

|                         | 1      | Before Taxi Start List                              | Completed                       |  |  |
|-------------------------|--------|---|---------------------------------|--|--|
|                         | 2      | Rudder Trim   | AS DESIRED                      |  |  |
| Wit                     | h rud  | der trim in the full right position, the aircraft v | will tend to steer to the right |  |  |
| dur                     | ing ta | axi.  |                                 |  |  |
|                         | 3      | Parking Brake                                       | RELEASE                         |  |  |
|                         | 4      | Brakes  | CHECK during taxi               |  |  |
|                         | 5      | Directional Gyro                                    | Gyro Proper indication          |  |  |
| 6 Turn Coordinator Gyro |        | Turn Coordinator                                    | Gyro Proper indication          |  |  |
|                         | 7      | Artificial Horizon                                  | ERECT during turns              |  |  |
|                         | 8      | Throttle  | MINIMUM POWER                   |  |  |
|                         | 9      | Propeller   | FULL FORWARD High RPM           |  |  |
| To                      | preve  | nt battery depletion in prolonged taxi or hold      | ing position before             |  |  |

takeoff, Increase RPM until AMMETER indicates a positive charge.

Note: The only valid version is the original checklist in the POH Secn IV - VI



CHECKLIST Mooney M20R OEKGG Dec 2014 V1.3 Page 5

| 13   | Throttle   | IDLE 800 - 1000 RPM                  |  |  |  |
|------|--|--------------------------------------|--|--|--|
| 14   | Engine Oil Pressure  | CHECK in GREEN ARC                   |  |  |  |
|      | If minimum oil pressure 10 PSI is not indicated within 30            |                                      |  |  |  |
|      | seconds accomplish engine shutdow                                    | vn procedures                        |  |  |  |
| 15   | Low Fuel Boost Pump Switch   | OFF                                  |  |  |  |
|      | Landing Light ON - Ammeter   | watch negative movement of<br>needle |  |  |  |
| 17   | External / Internal Lights   | As desired                           |  |  |  |
| 18   | Engine Instruments   | CHECKED                              |  |  |  |
| 19   | Fuel Flow Indicator  | Test / Reset if desired              |  |  |  |
| 20   | Throttle   | 900 – 1000 RPM                       |  |  |  |
| 21   | Mixture ADJUST   | For Smooth Operation                 |  |  |  |
| Do   | Do not operate engine above 1000 RPM unless oil temperature is 75º F |                                      |  |  |  |
| (24  | (24 °C) minimum. Operation of engine above 1000 RPM at temperatures  |                                      |  |  |  |
| belo | below 75ºF (24ºC) may damage engine                                  |                                      |  |  |  |

## FLOODED ENGINE START

|  | 1 | Throttle                      |  | 1/2 OPEN                 |                             |                        |
|--|---|-------------------------------|--|--------------------------|-----------------------------|------------------------|
|  | 2 | Mixture I                     |  | IDLE CUTOFF              |                             |                        |
|  | 3 | Low Fuel Boost Pump Switch    |  | ON 8–10 seconds then OFF |                             |                        |
|  | 4 | Magneto / Starter Switch TURN |  | TURN 8                   | & PUSH to START, release to |                        |
|  |   | BOTH                          |  | when engine starts.      |                             |                        |
|  | 5 | Mixture Slowly Advar          |  |                          | e RIC                       | H until engine starts. |
|  | 6 | Throttle                      |  |                          | IDLE                        | 600 – 700 RPM          |
| SEE ENGINE START PROCEDURES ABOVE FOR REMAINING SEQUENCES. |   |                               |  |                          |                             |                        |

## WARM ENGINE START

|   | 1      | Throttle                   |          | 1⁄2 to 1    | inch OPEN            |
|---|--------|----------------------------|----------|-------------|----------------------|
|   | 2      | Mixture                    |          | Full F      | orward (RICH)        |
|   | 3      | Low Fuel Boost Pump Switch | ۱        | ON to       | clear fuel vapors    |
|   | 4      | Low Fuel Boost Pump Switch | ۱        | OFF         |                      |
|   | 5      | Magneto / Starter Switch   | TURN 8   | <b>PUSH</b> | to START, release to |
|   |        | Within 1 – 2 Seconds       | BOTH     | when er     | ngine starts.        |
|   | 6      | Throttle                   |          | IDLE        | 600 – 700 RPM        |
| S | SEE EN | GINE START PROCEDURES ABO  | VE FOR F | REMAIN      | ING SEQUENCES.       |

# HOT ENGINE START

| 1 | Throttle                      | FULL OPEN      |
|---|-------------------------------|----------------|
| 2 | Mixture                       | IDLE CUTOFF    |
| 3 | Boost Pump Switch HIGH 5 secs | LOW 15 seconds |
| 4 | Boost Pump Switch             | OFF            |



## TAKEOFF

Proper engine operation should be checked early in the takeoff roll. Any significant indication of rough or sluggish englne response is reason to discontinue takeoff.

When takeoff must be made over a gravel surface, it is important that the throttle be applied SLOWLY. This will allow the aircraft to start rolling before high RPM is developed, and gravel or loose material will be blown back from the propeller area instead of being pulled into it.

## NORMAL TAKEOFF

|  | 1   | Power                     | F ULL THROTTLE       | 2500 RPM           |  |
|--|---|---------------------------|----------------------|--------------------|--|
|  | 2   | Annunciator               |                      | CHECK              |  |
|  | 3   | <b>Engine Instruments</b> | Check for            | Proper Indications |  |
|  | 4   | Lift off / Climb Spee     | d                    | See Section V      |  |
|  | 5   | Brakes                    |                      | Apply              |  |
|  | 6   | Landing Gear Afte         | r Clearing Obstacles | RETRACT            |  |
|  | 7   | Wing Flaps                |                      | UP                 |  |
| If maximum performance takeoffs are desired obtain full power before brake |   |                           |                      |                    |  |
| rele   | release. Use lift off and climb speed as specified in SECTION VI. |                           |                      |                    |  |

## CLIMB (CRUISE)

| 1 | Power             |                      | 2500 RPM   |
|---|-------------------|----------------------|------------|
| 2 | Manifold pressure |                      | 24 Inches  |
| 3 | Mixture           | (or blue arc on EGT) | FULL RICH  |
| 4 | Rudder Trim       |                      | As Desired |
| 5 | Airspeed          |                      | 120 KIAS   |

## CLIMB (BEST RATE Vv)

|   | •              |                      |            |
|---|----------------|----------------------|------------|
| 1 | Power          |                      | 2500 RPM   |
| 2 | Manifold press | ure                  | 24 Inches  |
| 3 | Mixture        | (or blue arc on EGT) | FULL RICH  |
| 4 | Rudder Trim    |                      | As Desired |
| 5 | Airspeed       |                      | 105 KIAS   |

## CLIMB (BEST ANGLE Vx)

| - |   |                |                      |            |
|---|---|----------------|----------------------|------------|
|   | 1 | Power          |                      | 2500 RPM   |
|   | 2 | Manifold press | sure                 | 24 Inches  |
|   | 3 | Mixture        | (or blue arc on EGT) | FULL RICH  |
|   | 4 | Rudder Trim    |                      | As Desired |
|   | 5 | Airspeed       |                      | 85 KIAS    |

Note: The only valid version is the original checklist in the POH Secn IV - VI



CHECKLIST Moonev M20R OEKGG Dec 2014 V1.3 Page 7

## **BEFORE TAKEOFF**

| 1  | Taxi Checklists                | COMPLETED     |
|----|--------------------------------|---------------|
| 2  | Parking Brake                  | SET           |
| 3  | Fuel Selector                  | Fullest Tank  |
| 4  | Throttle                       | 1000 RPM      |
| 5  | Propeller                      | HIGH RPM      |
| 6  | Mixture                        | FULL FORWARD  |
| 7  | Alternate Air                  | Verify CLOSED |
| 8  | Alternator Field Switch        | Verify ON     |
| 9  | Throttle                       | 2000 RPM      |
| 10 | Magneto Switch CHECK BOTH to L | BOTH to R     |

10 Magneto Switch CHECK BOTH to L, BOTH to R

Verify engine operates smoothly on each magneto separately (150 RPM MAX drop on each magneto, 50 RPM MAX difference)

An absence of RPM drop may be an indication of faulty magneto grounding or improper timing. If there is doubt concerning ignition system operation, RPM check at a leaner mixture setting or higher engine speed will usually confirm whether a deficiency exists.

| 11 | Propeller                              | CYCLE Return to HIGH    |
|----|--|-------------------------|
| 12 | Ammeter Positive Charge Indication     | Check                   |
| 13 | Throttle                               | RETARD to 1000 RPM      |
| 14 | Low Fuel Boost Pump Switch ON          | Verify Blue Annunciator |
| 15 | Low Fuel Boost Pump Switch             | OFF                     |
| 16 | Rudder Trim                            | TAKEOFF SETTING         |
| 17 | Elevator Trim                          | TAKEOFF SETTING         |
| 18 | Wing Flaps CHECK OPERATION             | SET TAKEOFF 10 deg      |
| 19 | Flight Controls Check FREE and         | correct Movement        |
| 20 | Cabin Door                             | CHECK SECURED           |
| 21 | Seats, Seat Belts and Shoulder Harness | SECURED                 |
| 22 | Avionics and Auto Pilot                | CHECK                   |
| 23 | Annunciator Lights                     | CHECK                   |
| 24 | Internal and External Lights           | As Desired              |
| 25 | Strobe Lights / Rotating Beakon        | ON                      |
| 26 | Pilots Window                          | CLOSED                  |
| 27 | Emergency Gear Extension Handle        | DOWN and LATCHED        |
| 28 | Oil Temperature                        | 75º F (24º C) Minimum   |
| 29 | СНТ                                    | 250° F (121° C) Minimum |
| 30 | Parking Brake                          | RELEASE                 |



## NORMAL DESCENT GEAR DOWN

Avoid extended descents at low manifold pressure setting, as engine can cool excessively and may not accelerate satisfactorily when power is re-applied.

|     | 1     | Seats, Seat BeltslShoulde      | er Harness         | ADJUST and SECURE      |
|-----|-------|--------------------------------|--------------------|------------------------|
|     | 2     | Wing Flaps                     |                    | UP                     |
|     | 3     | Airspeed                       |                    | Decelerate to 140 KIAS |
|     | 4     | Landing Gear                   |                    | DOWN                   |
|     | 5     | Throttle                       |                    | Keep CHT in greem arc  |
|     | 6     | Propeller                      |                    | 2400 RPM               |
|     | 7     | Mixture                        |                    | Peak EGT Adjust        |
|     | 8     | CHT M                          | Nonitor            | 250º F (121º C) min    |
|     | 9     | Airspeed                       |                    | 165 KIAS or less       |
| Usi | ng la | nding gear as a descent aid wi | Il result in a ste | eper descent rate      |

Using landing gear as a descent aid will result in a steeper descent rate (greater altitude loss per horizontal distance traveled)

## **APPROACH FOR LANDING**

The airplane must be within allowable weight and balance envelope for landing (REF. SECTION VI). It will require a minimum of one hour of flight before a permissable landing weight is attained when takeoffs are made at maximum gross weight.

If landing at a weight exceeding maximum landing weight (3200 Lbs.) (1452 Kgs.) is required, see OVERWEIGHT LANDING PROCEDURE, SECTION III.

#### **APPROACH FOR LANDING**

| 1           | Seats, Seat Belts/Shoulder Harnes                       | SS      | ADJUST AND         | SECURE       |
|-------------|---|---------|--------------------|--------------|
| 2           | Internal/External lights                                |         | AS DESIRED         |              |
| 3           | Landing Gear  | Chec    | k Gear Down        | Light ON     |
|             | EXTEND below 140 KIAS                                   | Chec    | k visual indic     | ator         |
| 4           | Mixture   |         | FULL RICH          | on final     |
| 5           | Propeller   |         | HIGH RPM           | on final     |
| 6           | Fuel Boost Purnp Switches                               |         | OFF                |              |
| 7           | Fuel Selector   |         | FULLEST TA         | NK           |
| 8           | Wing Flaps first T/0 POSITIC                            | N F     | ULL DOWN be        | low 110 KIAS |
| To n        | ninimize control wheel forces when ente                 | ring la | anding configura   | tion, timely |
| nose        | e-up trimming is recommended to count                   | eract r | nose down pitch    | ing moment   |
| caus        | sed by reduction of power and / or exten                | sion o  | f flaps            |              |
| 9           | Elevator Trim   |         | AS DESIRED         |              |
| 10          | Rudder Trim   |         | <b>AS DESIRED</b>  |              |
| <br>11      | Parking Brake   |         | VERIFY OFF         |              |
| The<br>duri | parking brake should be rechecked to p<br>ng touchdown. | reclud  | le partially appli | ed brakes    |



## CRUISE

| 1   | Airspeed          | ACCELERAT    | Έ    | to cruise air speed   |
|---|-------------------|--------------|------|---|
| 2   | Throttle          | (See SECTION | 5)   | SELECTED SETTING  |
| Prolonged climbs to high cruise altitudes during hot weather operations may result in some fuel flow fluctuations as throttle is reduced. If fluctuations occur, turn Low Boost Pump Switch ON until cooling has alleviated fluctuations. |                   |              |      | ot weather operations may<br>reduced. If fluctuations<br>ing has alleviated |
| 3   | Propeller         |              | Set  | t RPM to selected setting   |
| 4   | Mixture           |              | Lea  | an 50°F RICH of PEAK EGT  |
| 5   | Engine instrument | s            |      | CHECK   |
| 6   | Engine temperatur | es ST        | ГАВ  | ILIZE at cruise condition.  |
| 7   | Rudder Trim       | As           | s De | sired   |

Cruise operation at BEST POWER will result in a substantial increase in fuel flow, greatly decreasing range and endurance; reference charts published in SECTION 5. Careful leaning of mixture control will result in best fuel efficiency. This requires operating at proper EGT. Failure to do so will result in excessive fuel burn. After leveling off at cruise altitude, set RPM for desired power setting per Cruise Power Chart in Section V. Slowly lean Mixture until EGT reaches peak value. Enrichen to 50°F rich of peak EGT for best power (50°F lean of peak is best economy); careful adjustments are necessary for accurate setting. Changes in altitude or power MAY REQUIRE readjustment of EGT. When increasing power, always return mixture to full rich, then increase RPM before increasing manifold pressure; when decreasing power, decrease manifold pressure before reducing RPM. Always stay within the established operating limits, and always operate the controls slowly and smoothly.

#### FUEL TANK SELECTION

| 1 | Low Fuel Boost Pump Switch | ON            |
|---|----------------------------|---------------|
| 2 | Fuel Selector              | Opposite Tank |
| 3 | Low Fuel Boost Pump Switch | OFF           |

## NORMAL DESCENT GEAR UP

Avoid extended descents at low manifold pressure setting, as engine can cool excessively and may not accelerate satisfactorily when power is re-applied.

|   | _ | -                        |            |                       |
|---|---|--------------------------|------------|-----------------------|
|   | 1 | Seats, Seat BeltslShould | er Harness | ADJUST and SECURE     |
|   | 2 | Wing Flaps               |            | UP                    |
|   | 3 | Landing Gear             |            | UP                    |
|   | 4 | Throttle                 |            | Keep CHT in greem arc |
|   | 5 | Propeller                |            | 2400 RPM              |
|   | 6 | Mixture                  |            | Peak EGT Adjust       |
|   | 7 | СНТ                      | Monitor    | 250º F (121º C) min   |
|   | 8 | Airspeed                 |            | 196 KIAS or less      |
|   | 9 | Rudder Trim              |            | As required           |
| - |   |                          |            | -                     |



## SHUTDOWN

| 1  | Parking Brake              | SET             |
|----|----------------------------|-----------------|
| 2  | Throttle                   | IDLE RPM        |
| 3  | Radio Master Switch        | OFF             |
| 4  | Interior / Exterior Lights | OFF             |
| 5  | Pitot Heat                 | OFF             |
| 6  | Magneto / Starter Switch   | GROUNDING CHECK |
| 7  | Mixture                    | IDLE CUT OFF    |
| 8  | Alternator Field Switch    | OFF             |
| 9  | Master Switch              | OFF             |
| 10 | Magneto / Starter Switch   | OFF             |

## SECURING AIRCRAFT

| 1  | Magneto / Starter Switch       | VERIFY OFF Key removed    |
|--|--------------------------------|---------------------------|
| 2  | Master Switch                  | VERIFY OFF                |
| 3  | Radio Master Switch            | VERIFY OFF                |
| 4  | Interior Lights                | VERIFY OFF                |
| 5  | Electrical Switches            | VERIFY OFF                |
| 6  | Parking Brakes                 | RELEASE                   |
|  |                                | Install Chocks            |
| 7  | Extended Parking secure CONTRO | DL WHEEL using seat belts |
|  | Cabin vents clos               | sed                       |
| 8  | Cabin Windows and Doors        | Closed and Locked         |
| TIE DOWN AIRCRAFT at wing and tail points. |                                |                           |

# CHECKLIST Mooney M20R OEKGG Dec 2014 V1.3 Page 11

## GO AROUND

Trimming is recommended to counteract nose up pitching moment as power is increased and / or flaps are retracted.

| 1 | Power   | FUL | L FORWARD 2500 RPM    |
|---|---|-----|-----------------------|
| 2 | Mixture   |     | Verify FULL RICH      |
| 3 | Fuel Boost Pump Switches                            |     | OFF                   |
| 4 | Wing Flaps  |     | TAKE OFF POSITION     |
|   | after positive climb establis                       |     |                       |
| 5 | 5TrimNOSE6Airspeed7Landing Gear8Wing flaps9Airspeed |     | DOWN to reduce forces |
| 6 |   |     | 85 KIAS               |
| 7 |   |     | RETRACT               |
| 8 |   |     | RETRACT               |
| 9 |   |     | 105 KIAS              |

## NORMAL LANDING

| 1 | Approach for Landing Checklist | Approach Airspeed   |
|---|--------------------------------|---------------------|
| 2 | Approach Airspeed              | Specified Section V |
| 3 | Touchdown                      | MAIN WHEELS FIRST   |
| 4 | Landing Roll                   | LOWER NOSE gently   |
| 5 | Brakes                         | MINIMUM required    |

Landing information for reduced flap settings is not available. See SECTION V for Landing Distance tables. If maximum performance landings are desired, use above procedures, except reduce approach airspeed to 70 KIAS (flaps full down) and apply maximum braking (without skidding tires) during rollout. Crosswind landings should be accomplished by using above procedures except maintain approach speed appropriate for wind conditions. Allow aircraft to crab until the landing flare. Accomplish touchdown in a slight wing low sideslip (low wing into wind) and aircraft aligned with runway. During landing roll, position flight controls to counteract crosswind.

CAUTION Landing gear may retract during landing roll if landing gear switch is placed in the UP position.

#### TAXI AFTER LANDING

| 1 | Throttle                   | AS REQUIRED     |
|---|----------------------------|-----------------|
| 2 | Fuel Boost Pump Switches   | OFF             |
| 3 | Wing Flaps                 | RETRACT         |
| 4 | Elevator Trim              | TAKEOFF Setting |
| 5 | Avionics/Radios            | AS REQUIRED     |
| 6 | Interior / Exterior Lights | AS DESIRED      |

2

## LIMITATIONS

| Airspeed                |                           | KIAS      | Rema    | arks           |              |                |
|-------------------------|---------------------------|-----------|---------|----------------|--------------|----------------|
|                         |                           |           |         |                |              |                |
| Va The maximum          |                           |           | speed   | at which app   | lication of  | full available |
|                         | aerody                    | namic co  | ontrol  | will not overs | stress the a | irplane.       |
|                         | 128 KIA                   | AS @ 1    | 528 kg  | S              | 103 KIAS     | @ 1012 kgs     |
| Vb                      | Turbule                   | ent Air P | enetra  | tion Speed     |              |                |
|                         | The ma                    | ximum s   | speed   | flying in turb | uilent air n | ot to          |
|                         | overstr                   | ess the a | airplar | ne.            |              |                |
|                         | 128 KIA                   | AS @ 1    | 528 kg  | S              | 103 KIAS     | @ 1012 kgs     |
| V lo (EXT)              | 140                       | ΜΑΧΙΜ     | JM LAI  | NDING GEAR     | OPERATIN     | NG SPEED       |
|                         |                           | The max   | kimum   | speed at wh    | ich the lan  | ding gear can  |
|                         |                           | be safel  | y exte  | nded           |              |                |
| V lo (RET)              | 106                       | MAXIMU    |         | NDING GEAR     | OPERATIN     | NG SPEED       |
|                         |                           | The max   | kimum   | speed at wh    | ich the lan  | ding gear can  |
|                         |                           | be safel  | y retra | icted.         |              |                |
| Vno                     | 175                       | Maxim     | um S    | tructural C    | uising Sp    | beed           |
| Vne                     | 195                       | Never     | Excee   | ed Speed       |              |                |
|                         |                           | Do not    | exce    | ed this spe    | ed in any    | Operation      |
| Vso Stall Speed         | Dirty                     | 59        | Stall   | Speed in Lan   | ding Confi   | guration       |
| •                       | •                         |           | Gear    | Down and Fu    | ull Flaps    |                |
| Vs Stall Speed Clean 66 |                           |           | Stall   | Speed in Gea   | r UP and F   | laps UP        |
| Demonstrated Crossv     | vind                      | 13        | Demo    | onstrated -    | not a limita | tion           |
|                         |                           |           |         |                |              |                |
|                         |                           |           | r       |                |              |                |
| Maximum Contin          | uous P                    | ower      |         | 280 BHP        |              |                |
| Transient RPM L         | .imit                     |           |         | 2600 RPM m     | nax          |                |
| Mamxium Continuous RPM  |                           |           |         | 2500 RPM       |              |                |
| Idle RPM                |                           |           |         | 1000 – 1200    | RPM          |                |
|                         |                           |           |         |                |              |                |
| Fuel Quantity Tot       | Fuel Quantity Total 359 L |           |         | AVGAS          |              |                |
| Us                      | able                      | 336 L     | iters   | AVGAS          |              |                |
| Oil                     | Oil She                   |           |         | 10W50          |              |                |
|                         |                           |           |         |                |              |                |

CHECKLIST Mooney M20R OEKGG Dec 2014 V1.3 Page 13

# SPEEDS FOR NORMAL OPERATION

Unless otherwise noted, the following speeds are based on a weight of 3388 pounds and may be used for any lesser weight. However, to achieve the performances specified in SECTION V for takeoff distance and climb performance, the speed appropriate to the particular weight must be used.

| TAKEOFF                                |               |
|--|---------------|
| Normal Climb Out                       | 80-90 KIAS    |
| Short Field Takeoff, Speed At 50 Ft    | 75 KIAS       |
|  |               |
| ENROUTE CLIMB, GEAR and FLAPS UP       |               |
| Best Rate of Climb                     | 105 KIAS      |
| Best Angle of Climb                    | 85 KIAS       |
|  |               |
| LANDING APPROACH 3200 lbs              |               |
| Normal Approach, Flaps 10 degrees      | 80 KIAS       |
| Normal Approach, Flaps 33 degrees      | 75 KIAS       |
| Short Field Approach, Flaps 33 degrees | 70 KIAS       |
|  |               |
| BALKED LANDING 3200 lbs                |               |
| Maximum Power, Flaps 10 degrees        | 85 KIAS       |
|  |               |
| MAXIMUM RECOMMENDED TURBULENT AIR PENE | TRATION SPEED |
| 3368 lbs. 1528 Kgs                     | 127 KIAS      |
| 3200 lbs. 1452 Kgs                     | 123 KIAS      |
| 2900 lbs. 1315 Kgs                     | 117 KIAS      |
| 2600 lbs. 1179 Kgs                     | 111 KIAS      |
| 2400 lbs. 1089 Kgs                     | 106 KIAS      |
|  |               |



# ANNUNCIATOR WARNINGS

| warning Light | Fault and Remedy  |
|---------------|---|
|               |   |
| GEAR UNSAFE   | RED light indicates landing gear is not in fully extended or      |
|               | retracted position. Refer to "FAILURE OF LANDING GEAR TO          |
|               | EXTEND ELECTRICALLY" procedure or "FAILURE OF                     |
|               | LANDING GEAR TO RETRACT" procedure.                               |
|               | Red light indicates 6 – 8 gal of usable fuel remain in the        |
| FUEL          |   |
| SPEEDBRAKE    | AMBER light indicates Speed Brakes are activated.                 |
| ALT AIR       | AMBER light indicates alternate induction air door is open        |
| PROP DE-ICE   | BLUE light indicates power applied to De-Ice Boots                |
| PITOT HEAT    | BLUE light indicates power is applied to heater.(Some Foreign     |
|               | AIC - AMBER light indicates power is NOT applied to heater.)      |
|               |   |
| HI/LO VAC     | Suction is below 4.25 in. Hg. (RED)                               |
| (Flashing)    | Turn Stand-by Vacuum pump - ON                                    |
| HI/LO VAC     | Suction is above 5.5 in. Hg. (RED)                                |
| (Steady)      | Turn Stand-by Vacuum pump - ON                                    |
| Note:         | Attitude and Directional Gyros are unreliable when VAC light is   |
|               | illuminated (steady or flashing). Vacuum system should be checked |
|               | and / or adjusted as soon as practicable.                         |
|               | RED light indicates alternator output low.                        |
| (Flashing)    | Refer to "ALTERNATOR OUTPUT LOW"                                  |
| ALT VOLTS     | RED light indicates overvoltage and Alt. field.C/B tripped.       |
| (Steady)      | Refer to "ALTERNATOR OVERVOLTAGE".                                |
| START POWER   | RED light indicates switch or relay is engaged and starter        |
|               | is energized. Flight should be terminated as soon as              |
|               | practicable. Engine damage may result. This is normal             |
|               | indication during engine start.                                   |
| STBY VAC      | AMBER light indicates stand-by vacuum pump is ON.                 |
| REMOTE RNAV   | NOT USED AT THIS TIME   |
| BOOST PUMP    | BLUE light indicates power to auxiliary fuel boost pump.          |



## AIRSPEEDS FOR EMERGENCY OPERATIONS

| CONDITION                     |                  | SPEED     |
|-------------------------------|------------------|-----------|
|                               |                  |           |
| <b>ENGINE FAILURE AFTER T</b> | AKEOFF           |           |
| Wing Flaps UP                 |                  | 85 KIAS   |
| Wing Flaps DOWN               |                  | 80 KIAS   |
|                               |                  | <u>.</u>  |
| BEST GLIDE SPEED              | 3368 lb 1528 kg  | 91,5 KIAS |
|                               | 3200 lb 1452 kg  | 89 KIAS   |
|                               | 2900 lb 1315 kg  | 84,5 KIAS |
|                               | 2600 lb 1179 kg  | 80 KIAS   |
| MANEUVERING SPEED             | 3368 lb 1528 kg  | 127 KIAS  |
|                               | 3300 lb 1497 kg  | 126 KIAS  |
|                               | 2430 lb 1102 kg  | 108 KIAS  |
|                               | 2232 lb 1012 kg  | 103 KIAS  |
| PRECAUTIONARY LANDING         | G WITH ENGINE PO | OWER      |
| Flaps Down                    |                  | 80 KIAS   |
|                               |                  |           |
| <b>EMERGENCY DESCENT (G</b>   | EAR UP)          |           |
| Smooth Air                    |                  | 196 KIAS  |
| Turbulent Air                 | 3368 lb 1528 kg  | 127 KIAS  |
|                               | 3300 lb 1497 kg  | 126 KIAS  |
|                               | 2430 lb 1102 kg  | 108 KIAS  |
|                               | 2232 lb 1012 kg  | 103 KIAS  |
| EMERGENCY DESCENT (G          | EAR DOWN)        |           |
| Smooth Air                    |                  | 165 KIAS  |
| Turbulent Air                 | 3368 lb 1528 kg  | 127 KIAS  |
|                               | 3300 lb 1497 kg  | 126 KIAS  |
|                               | 2430 lb 1102 kg  | 108 KIAS  |
|                               | 2232 lb 1012 kg  | 103 KIAS  |
|                               |                  |           |



| POWER LOSS – IN FLIGHT F                                       | RE – START PROCEDURES                      |  |
|--|--|--|
| Airspeed   | 85 KIAS minimum for windmilling prop       |  |
| Fuel Selector  | SELECT OTHER TANK (Verify fullest tank)    |  |
| Low Boost Pump Switch  | ON - to attempt re-start                   |  |
| Throttle   | FULL FORWARD                               |  |
| Propeller  | FULL FORWARD                               |  |
| Mixture  | AS REQUIRED to restore power               |  |
| Magneto / Starter Switch                                       | VERIFY on BOTH                             |  |
| LOW Boost Pump Switch  | OFF if engine does not start immediately   |  |
| HIGH BOOST Pump  | ON - to attempt re-start                   |  |
| (guarded switch)   |  |  |
| Alternate Air Door   | Manually Open                              |  |
| If engine does not start after                                 | IDLE CUT-OFF (Initially)                   |  |
| initial attempts:  | then advance slowly toward RICH until      |  |
| -  | engine starts.                             |  |
| If engine does not re-start after se                           | everal attempts establish best glide speed |  |
| (Refer to Maximum Glide Distance                               | e Chart) and proceed to                    |  |
| FORCED LANDING EMERGENCY                                       |  |  |
| AFTER ENGI   | NE RE – START                              |  |
| Throttle   | ADJUST as required                         |  |
| Propeller  | ADJUST as required                         |  |
| Mixture  | Re – lean as required for power setting    |  |
| Low Boost Pump Switch  | OFF  |  |
| If engine fails when HIGH BOOST                                | pump is turned OFF, suspect engine driven  |  |
| fuel pump failure. Proceed to ENGINE DRIVEN FUEL PUMP FAILURE. |  |  |
| LAND AS SOON   | AS PRACTICABLE                             |  |
| CORRECT MALFUNCTION  | PRIOR TO NEXT FLIGHT.                      |  |

#### **POWER LOSS - PRIMARY ENGINE INDUCTION AIR SYSTEM BLOCKAGE**

| Alternate Air              | Verify OPEN (annunciator light ON)                    |
|----------------------------|---|
| Manifold Pressure          | 1 -2 inch less than normal, due to warm induction air |
| The alternate air door sh  | ould open automatically when primary induction        |
| system is restricted. If a | Iternate air door has not opened (Annunciator         |
| light - OFF) it can be ope | ened manually by pulling alternate air control        |
| Throttle                   | INCREASE as desired                                   |
| Propeller                  | INCREASE as required to maintain desired cruise       |
|                            | power setting (Ref.SECTION V)                         |
| Mixture                    | RELEAN to desired EGI                                 |
| Flight                     | CONTINUE: request altitude with warmer air, if able.  |



## **POWER LOSS - DURING TAKEOFF ROLL**

| Throttle                 | CLOSED                       |
|--------------------------|------------------------------|
| Brakes                   | AS REQUIRED TO STOP AIRCRAFT |
| Fuel Selector            | OFF                          |
| Magneto / Starter switch | OFF                          |
| Master Switch            | OFF                          |

### **POWER LOSS - AFTER LIFTOFF**

| Airspeed  | 85 KIAS ' (Flaps UP)                    |  |
|---|---|--|
|   | 80 KIAS (Flaps TAKEOFF / DOWN)          |  |
| KEEP THE'AIRCRAFT UNDER CONTROL then                            |   |  |
| Fuel Selector.  | SELECT OTHER TANK                       |  |
| Throttle  | FULL FORWARD                            |  |
| Magneto / Starter Switch  | Verify on BOTH                          |  |
| Mixture   | FULL FORWARD                            |  |
| Propeller   | FULL FORWARD                            |  |
| Low Boost Pump Switch   | ON - to attempt re-start                |  |
| If Engine Quits - then:   | ON - to attempt re-start                |  |
| HIGH BOOST Pump   |   |  |
| (guarded switch)  |   |  |
| LAND AS SOON AS PRACTICABLE CORRECT MALFUNCTION PRIOR           |   |  |
| TO NEXT FLIGHT.   |   |  |
| If engine does not restart, proceed to FORCED LANDING EMERGENCY |   |  |
| Engine may run rough due to over                                | rich mixture. Lean mixture until engine |  |
| operates smoothly.  |   |  |
| If high power is required, mixture r                            | nay require enrichening.                |  |



#### ENGINE FIRE - DURING START ON GROUND

| Magneto / Starter Switch               | CONTINUE cranking or until fire is<br>extinguished. |  |
|--|---|--|
| If engine starts:                      |   |  |
| Power                                  | 1500 RPM for several minutes                        |  |
| Engine                                 | SHUTDOWN; inspect for damage                        |  |
| If engine does NOT start               |   |  |
| Magneto / Starter Switch               | CONTINUE cranking                                   |  |
| Mixture                                | IDLE CUTOFF   |  |
| Low Fuel Boost Pump Switch             | OFF   |  |
| Throttle                               | FULL FORWARD  |  |
| Fuel Selector Valve                    | OFF   |  |
| Magneto / Starter Switch               | OFF   |  |
| Master Switch                          | OFF   |  |
| FIRE EXTINGUISH with fire extinguisher |   |  |

#### **ENGINE FIRE – IN FLIGHT**

| Fuel Selector Valve                  | OFF                          |
|--------------------------------------|------------------------------|
| Throttle                             | CLOSED                       |
| Mixture                              | IDLE CUTOFF                  |
| Engine                               | SHUTDOWN; inspect for damage |
| Magneto / Starter Switch             | OFF                          |
| Cabin Ventilation & Heating Controls | CLOSED                       |

#### **ELECTRICAL FIRE IN FLIGHT (Smoke in Cabin)**

| Master Switch   | OFF                              |  |
|---|----------------------------------|--|
| Stall warning and landing gear warning NOT available with Master Switch OFF                             |                                  |  |
| Alternator Field Switch   | OFF                              |  |
| Cabin Ventilation   | OPEN                             |  |
| Heating Controls  | CLOSED                           |  |
| Circuit Breakers  | CHECK to identify faulty circuit |  |
|   | if possible                      |  |
| If electrical power is essential for flight, attempt to identify and isolate faulty circuit as follows: |                                  |  |
| Master Switch   | ON                               |  |
| Alternator Field Switch   | ON                               |  |
| Select ESSENTIAL switches ON one at a time;   |                                  |  |
| permit a short time to elapse before activating an additional circuit.                                  |                                  |  |



# CHECKLIST Mooney M20R OEKGG Dec 2014 V1.3 Page 19

| In the unlikely event that a to | tal nower loss due to primary engine     |
|---------------------------------|--|
| induction air blockage is ex    | perienced the following checklist should |
| be used:                        |  |
| Airspeed                        | Best Glide Speed 91KIAS – 80 KIAS        |
| Alternate Air                   | Manually OPEN                            |
| LOW Boost Pump Switch           | ON                                       |
| Throttle                        | FULL FORWARD                             |
| Propeller                       | FULL FORWARD                             |
| Mixture                         | AS REQUIRED to restore power             |
| Magneto / Starter Switch        | VERIFY on BOTH                           |
|                                 |  |
| AFTER EN                        | NGINE RE-START                           |
| Throttle                        | ADJUST as required                       |
| Propeller                       | ADJUST as required                       |
| Mixture                         | Re – lean as required for power setting  |

#### HIGH CYLINDER HEAD TEMPERATURE

LOW Boost Pump Switch

|          | -                               |
|----------|---------------------------------|
| Mixture  | ENRICH As Required              |
| Airspeed | INCREASE As Required            |
| Power    | REDUCE if temperature cannot be |
|          | maintained within limits        |

OFF

#### ENGINE DRIVEN FUEL PUMP FAILURE

| HIGH BOOST Pump (guarded switch) | ON                                 |
|----------------------------------|------------------------------------|
| Throttle                         | CRUISE position or as required for |
|                                  | engine operation                   |
| Mixture                          | ADJUST for smooth engine           |
|                                  | operation.                         |
| LAND AS SOON AS PRACTICABLE AN   | ID CORRECT MALFUNCTION.            |

## FUEL VAPOR SUPPRESSION (Fluctuating Fuel Flow)

| Low Fuel Boost Pump Switch | ON                               |
|----------------------------|----------------------------------|
| Engine Operation           | MONITOR                          |
| Low Fuel Boost Pump Switch | OFF repeat if condition persists |



#### PROPELLER OVERSPEED

| Oil Pressure | CHECK                                       |
|--------------|---|
| Propeller    | DECREASE RPM reset if any control available |
| Airspeed     | REDUCE                                      |
| Throttle     | As required to maintain RPM below 2500      |

#### LOW FUEL FLOW

| Check mixture  | ENRICH       |  |
|--|--------------|--|
| Fuel Selector  | SWITCH TANKS |  |
| If condition persists, use Fuel Boost Pump as necessary. |              |  |
| LANDING should be made as soon as PRACTICABLE.           |              |  |

#### ALTERNATOR OVERVOLTAGE

| (Alternator warning light illuminated steady   |  |
|--|--|
| and Alternation Field should be a firm to be a |  |

and Alternator Field circuit breaker tripped.)

Alternator Field Circuit Breaker RESET

If circuit breaker will not reset, the following procedures are required:

1. Reduce electrical load, as required, to maintain essential systems.

2. Continue flight and LAND, when practicable, to correct malfunction. The only source of electrical power is from the selected battery. Monitor battery voltage (min. 18V) and switch to other battery when necessary

#### ALTERNATOR OUTPUT LOW (Alternator warning light flashing)

|                         | <b>`</b>    | 00                        |  |
|-------------------------|-------------|---------------------------|--|
| REDUCE ELECTRICAL LOAD  | If annuncia | ator light still flashes: |  |
| Alternator Field SWITCH |             | OFF                       |  |

If circuit breaker will not reset, the following procedures are required: 1. Reduce electrical load, as required, to maintain essential systems.

2. Continue flight and LAND, when PRACTICABLE, to correct malfunction.

The only source of electrical power is from the selected battery. Monitor battery voltage (min. 18V) and switch to other battery when necessary Battery endurance will depend upon battery condition and electrical load on battery. If one battery becomes depleted switch to other battery.



## CHECKLIST Mooney M20R OEKGG Dec 2014 V1.3 Page 21

#### EMERGENCY DESCENT PROCEDURE

In the event an emergency descent from high Altitude is required, rates of descent of least 3,000 feet per minute can be obtained in two different configurations:

(1) With landing gear and flaps retracted, an airspeed of 196 KIAS will be required for maximum rate of descent.

(2) With the landing gear extended and flaps retracted an airspeed of 165 KIAS will also give approximately the same rate of descent. At 165 KIAS and the gear extended, the angle of descent will be greater, thus resulting in less horizontal distance travel than a descent at 196 KIAS. Additionally, descent at 165 KIAS will provide a smoother ride and less pilot work load.

| Power                    |             | RETARD INITIALLY                      |
|--------------------------|-------------|---------------------------------------|
| Airspeed                 |             | 140 KIAS                              |
| Landing Gear             |             | EXTEND                                |
| Airspeed                 | INCREA      | SE to 165 KIAS after gear is extended |
| Wing Flaps               |             | UP                                    |
| Airspeed                 |             | MAINTAIN 165 KIAS during descent      |
| Speed Brakes (if install | ed)         | Extend                                |
| Altitude                 |             | AS DESIRED                            |
| Power during descent     | AS REQUIRED | to maintain CHT 250°F (121°C) min.    |

| FORCED LANDING EMERGENCY      | GEAR RETRACTED OR EXTENDED |
|-------------------------------|----------------------------|
| Emergency Locator Transmitter | ARMED                      |
| Seat Belts Shoulder Harnesses | SECURE                     |
| Cabin Door                    | UNLATCHED                  |
| Fuel Selector                 | OFF                        |
| Mixture                       | IDLE CUTOFF                |
| Magneto / Starter Switch      | OFF                        |
| Wing Flaps                    | FULL DOWN                  |
| Landing Gear                  | DOWN if conditions permit  |
| Approach Speed                | 80 KIAS                    |
| Master Switch                 | OFF, prior to landing      |
| Wings                         | LEVEL Attitude             |

#### **OVERWEIGHT LANDING PROCEDURE**

In the event it is necessary to land with weight exceeding 3200 Lbs. (1452 Kg.) (max. landing weight) the following procedure is recommended in addition to normal APPROACH FOR LANDING PROCEDURES

80 KIAS

Approach Speed

Use a flatter approach angle than normal, with power as necessary until a smooth touchdown is assured Expect landing distance over a 50 feet obstacle (Ref. SECTION V) to increase at least 600 ft.

Conduct Gear and Tire Servicing inspection as required (Ref. SECTION VIII).

## VACUUM

When "HI / LO VAC annunciator light illuminates (flashing or steady), vacuum operated instruments are considered to be unreliable. Push stand-by vacuum pump switch ON. The flashing Hi / LO VAC annunciator light should extinguish and the STBY VAC annunciator will illuminate. The vacuum operated gyro instruments will be operating on the stand-by vacuum system. The steady RED annunciator light may not extinguish when the stand-by vacuum switch is ON. Continue flight, monitor non-vacuum gauges. Have vacuum system inspected prior to next flight.

## ALTERNATE STATIC SOURCE

The alternate static air source should be used whenever it is suspected that the normal static air sources are blocked. Selecting the alternate static source changes the source of static air for the altimeter, airspeed indicator and rate of climb from outside of the aircraft to the cabin interior.

When alternate static source is in use, adjust indicated airspeed and altimeter readings according to the appropriate alternate static source airspeed and altimeter calibration tables in SECTION V.

The alternate static air source valve is located on the instrument panel below pilot's control wheel shaft.

When using Alternate Static Source,

Pilot's window and air vents MUST BE KEPT CLOSED.

| ALTERNATE STATIC SOURCE         | PULL ON                  |
|---------------------------------|--------------------------|
| Airspeed and Altimeter Readings | CHECK calibration Tables |

## UNLATCHED DOORS IN FLIGHT

#### CABIN DOOR

If cabin door is not properly closed it may come unlatched in tight. This may occur during or just after take-off. The door will trail in a position approximately 3 inches (7.6 cm) open, but the flight characteristics of the airplane will not be affected. There will be considerable wind noise; loose objects, in the vicinity of the open door, may exit the aircraft. Return to the field in a normal manner. If practicable, secure the door in some manner to prevent it from swinging open during the landing. If it is deemed impractical to return and land, the door can be closed in flight, after reaching a safe altitude, by the following procedures:

| Airspeed            | 95 KIAS                                     |
|---------------------|---|
| Pilots Storm Window | OPEN  |
| Aircraft            | Right Side Slip Right Bank with Left Rudder |
| Door                | PULL SHUT & LATCH                           |



# CHECKLIST Mooney M20R OEKGG Dec 2014 V1.3 Page 23

#### FAILURE OF LANDING GEAR TO EXTEND ELECTRICALLY

| Airspeed                                | 140 KIAS or less                    |
|---|-------------------------------------|
| Landing Gear Actuator                   | PULL                                |
| Circuit Breaker                         |                                     |
| Landing Gear Switch                     | DOWN                                |
| Gear Manual Emergency Extension         | LATCH FORWARD / LEVER BACK to       |
| Mechanism                               | engage manual extension mechanism   |
| Slowly pull "T" handle 1 to 2 inch      | es (2.5 to 5.1 cm) to rotate Clutch |
| Mechanism and allow it to enga          | ge drive shaft.                     |
| T-Handle                                | PULL (12 to 20 times) and RETURN    |
|   | until gear is down and locked       |
| GEAR DOWN Light                         | ILLUMINATED:                        |
| _                                       | STOP when resistance is felt.       |
| Visual Gear Down Indicator              | CHECK ALIGNMENT by viewing from     |
|   | directly above indicator            |
| Continuing to pull on T-Handle, after G | FAR DOWN light Illuminates may hind |

Continuing to pull on T-Handle, after GEAR DOWN light Illuminates, may bind actuator;

Electrical retraction MAY NOT be possible until binding is eliminated by ground maintenance. Return lever to normal position and secure with latch. Reset landing gear actuator circuit breaker.

Do not operate landing gear electrically with manual extension system engaged Do not fly craft until maintenance / inspection is done on landing gear system.

#### FAILURE OF LANDING GEAR TO RETRACT

|   | -   |  |  |
|---|---|--|--|
| AIRSPEED  | Below 107 KIAS                                |  |  |
| LANDING GEAR Switch   | UP Position                                   |  |  |
| <b>GEAR FAILS TO RETRACT - GEAR HORN -</b>                                  | GEAR FAILS TO RETRACT - GEAR HORN - SOUNDING; |  |  |
| <b>GEAR ANNUNCIATOR LIGHT &amp; GEAR SAF</b>                                | ETY BYPASS LIGHT ILLUMINATED                  |  |  |
| GEAR SAFETY BY-PASS SWITCH  | DEPRESS HOLD                                  |  |  |
|   | until landing gear is fully retracted         |  |  |
| GEAR UNSAFE & GEAR DOWN Lights  | Extinguished                                  |  |  |
| GEAR RELAY Circuit Breaker  | PULL  |  |  |
| Warning Horn and GEAR BYPASS light will go OFF                              |   |  |  |
| check "Airspeed' Safety Switch or other malfunction as soon as practicable. |   |  |  |
| GEAR RELAY Circuit Breaker  | PUSH IN                                       |  |  |
| WHEN READY TO EXTEND LANDING GEAR   |   |  |  |
| AIRSPEED  | Below 140 KIAS                                |  |  |
| GEAR RELAY Circuit Breaker  | RESET   |  |  |
| LANDING GEAR Switch   | DOWN  |  |  |
| If Gear will not extend electrically this time, refer to FAILURE OF LANDING |   |  |  |
| GEAR TO EXTEND ELECTRICALLY (see above)                                     |   |  |  |
|   |   |  |  |

Note: The only valid version is the original checklist in the POH Secn IV - VI



The defroster may not clear ice from windshield. If necessary open pilot's storm window for visibility in landing approach and touchdown. With ice accumulations of 1 inch or less, use *no* more than 15 degrees wing flaps for approach and landing. For ice accumulation of 1 inch or more, fly approaches and landing with flaps retracted to maintain better pitch control. Fly approach speed at least 15 knots faster than normal, expect a higher stall speed, resulting in higher touchdown speed with longer landing roll. Use normal flare and touchdown technique.

Missed approaches SHOULD BE AVOIDED when ever possible because of severely reduced climb performance. If a go around is mandatory, apply full power, retract landing gear when obstacles are cleared; maintain 90 KIAS and retract wing flaps.

### **EMERGENCY EXIT OF AIRCRAFT**

#### **CABIN DOOR**

Pull latch handle AFT OPEN door and exit aircraft

#### BAGGAGE COMPARTMENT DOOR (Auxiliary Exit)

Release (Pull UP) Rear seat back latches on spar. Fold rear seat backs forward, CLIMB OVER Pull off plastic cover from over inside latch. Pull latch pin. Pull red handle. OPEN door and exit aircraft. To verify re - engagement of baggage door, outside, latch mechanism: Open outside handle fully. Close inside RED handle to engage pin into cam slide of latch mechanism. Place latch pin in shaft hole to hold RED handle DOWN. Replace cover CHECK and operate outside handle in normal manner.

## SPINS

Up to 2000ft. altitude may be lost In a one turn spin and recovery; SPINS AT LOW ALTITUDES ARE EXTREMELY CRITICAL The best spin avoidance technique is to avoid flight conditions conducive to spln entry. Low speed flight near stall should be approached with caution and excessive flight control movements in this flight regime should be avoided. Should an unintentional stall occur, the aircraft should not be allowed to progress into a deep stall. Fast, but smooth stall recovery will minimise the risk at progressing into a spin. If an unusual post stall attitude develops and results in a spin quick application of antispin procedures should shorten the recovery, INTENTIONAL SPINS ARE PROHIBITED

## **BAGGAGE DOOR**

If baggage door is not properly closed, may come unlatched in flight . This may occur during or after takeoff. The door may open to its full open position and then take an intermediate position depending upon speed of aircraft. There will be considerable wind noise; loose objects, in the vicinity of the open door, may exit the aircraft: There is no way to shut and latch door from the inside. Aircraft flight characteristics will not be affected; fly aircraft in normal manner: LAND AS SOON AS POSSIBLE and secure baggage door. Baggage Door latching mechanism VERIFY MECHANISM PROPERLY ENGAGED (inside latching mechanism) then shut from outside aircraft.

## ICING Do not operate in icing conditions

The Model M20R is NOT APPROVED for flight into known icing conditions and operation in that environment is prohibited. However if those conditions are inadvertatively encountered or flight into heavy snow is unavoidable, the following procedures are recommended until further icing conditions can be avoided:

## **INADVERTENT ICING ENCOUNTER**

| Pitot Heat  | ON                                     |
|---|--|
| Propeller Deice   | ON                                     |
| Alternate Static Source   | ON (if required)                       |
| Cabin Heat ans Defroster  | ON                                     |
| Engine Gauges   | Monitor for any engine power reduction |
| Turn back or change attitude to obtain an outside air temperature less        |  |
| conductive to icing. Move propeller control to maximum RPM to minimize ice    |  |
| build-up on propeller blades. If ice builds up or sheds unevenly on           |  |
| propeller, vibration will occur. If excessive vibration is noted, momentarily |  |
| reduce engine encod with propellar control to bettem of CDEEN ADC then        |  |

reduce engine speed with propeller control to bottom of GREEN ARC, then rapidly move control FULL FORWARD Cycling RPM flexes propeller blades and high RPM increases centrifugal force which improves propeller capability to shed ice. As ice builds on the airframe, move elevator control fore and aft slightly to break any ice build-up that may have bridged gap between elevator horn and horizontal stabliliser.

Watch for signs of induction air filter blockage due to ice build-up; increase throttle setting to maintain englne power. If ice blocks induction air filter, Alternate Air system will open automatically. With ice accumulation of 1/4 inch or more on the airframe, be prepared for a significant increase in aircraft weight and drag. This will result in significantly reduced cruise and climb performance and higher stall speeds. Plan for higher approach speeds requiring higher power settings and longer landing rolls.

Stall warning system may be inoperative.



In the event of an inadvertent spin the following recovery procedure should be used:

| Throttle   | Retard to IDLE                                 |
|--|--|
| Ailerons   | NEUTRAL  |
| Rudder   | FULL RUDDER opposite direction of spin         |
| Control Wheel  | FORWARD of NEUTRAL in a brisk motion           |
| ADDITIONAL FORWARD elevator control may be required if rotation does not stop. |  |
| HOLD ANTI - SPIN CONTROLS UNTIL ROTATION STOPS                                 |  |
| Wing flaps (If extended)   | RETRACT as soon as possible                    |
| Rudder   | NEUTRALIZE when spin stops                     |
| Control Wheel  | SMOOTHLY MOVE AFT                              |
|  | to bring the nose up to level flight attitude. |