Federal Aviation Administration, DOT

SPECIAL FEDERAL AVIATION REGULATION

No. 108—Mitsubishi MU–2B Series

SPECIAL TRAINING, EXPERIENCE, AND OPERATING REQUIREMENTS

1. Applicability. After February 5, 2009, this Special Federal Aviation Regulation (SFAR) applies to all persons who operate the Mitsubishi MU–2B series airplane including those who act as pilot-in-command, act as second-in-command, or other persons who manipulate the controls while under the supervision of a pilot-in-command. This SFAR also applies to those persons who provide pilot training for the Mitsubishi MU–2B series airplane. The requirements in this SFAR are in addition to the requirements of 14 CFR parts 61, 91, and 135 of this chapter.

2. Compliance and Eligibility. (a) Except as provided in paragraph (b) of this section, no person may manipulate the controls, act as pilot-in-command, act as second-in-command, or provide pilot training for the Mitsubishi MU–2B series airplane unless that person meets the applicable requirements of this SFAR.

(b) A person, who does not meet the requirements of this SFAR, may manipulate the controls of the Mitsubishi MU–2B series airplane if a pilot-in-command meeting the applicable requirements of this SFAR is occupying a pilot station, and the flight is being conducted for one of the following reasons—

(1) The pilot-in-command is providing pilot training to the manipulator of the controls, and no passengers or cargo are carried on board the airplane;

(2) The pilot-in-command is conducting a maintenance test flight with a second pilot or certificated mechanic, and no passengers or cargo are carried on board the airplane; or

(3) The pilot-in-command is conducting a simulated instrument flight and is using a safety pilot other than the pilot-in-command who manipulates the controls for the purposes of 14 CFR 91.109, and no passengers or cargo are carried on board the airplane.

(c) A person is required to complete Initial/transition training if that person has fewer than—

(1) 50 hours of documented flight time manipulating the controls while serving as pilot-in-command of a Mitsubishi MU–2B series airplane in the preceding 24 months; or

(2) 500 hours of documented flight time manipulating the controls while serving as pilot-in-command of a Mitsubishi MU–2B series airplane.

(d) A person is eligible to receive Requalification training in lieu of Initial/transition training if that person has at least—

(1) 50 hours of documented flight time manipulating the controls while serving as pilot-in-command of a Mitsubishi MU–2B series airplane in the preceding 24 months; or

(e) A person is required to complete Recurrent training within the preceding 12 months. Successful completion of Initial/transition or Requalification training within the preceding 12 months satisfies the requirements of Recurrent training. A person must successfully complete Initial/transition training or Requalification training before being eligible to receive Recurrent training.

(f) Successful completion of Initial/transition training or Requalification training is a one-time requirement. A person may elect to retake Initial/transition training or Requalification training in lieu of Recurrent training.

(g) A person is required to complete Differences training if that person operates more than one MU–2B model. Differences training between the K and M models of the MU–2B airplane, and the J and L models of the MU–2B airplane, may be accomplished with Level A training. All other Differences training must be accomplished with Level B training. Persons that are operating two models of the MU–2B airplane are required to receive 1.5 hours of Differences training. Persons that are operating three or more models of the MU–2B airplane are required to receive 3.0 hours of Differences training. An additional 1.5 hours of Differences training is required for each model added at a later date. Differences Training is not a recurring annual requirement. Once a person has received Differences training between the applicable different models, no additional Differences training between those models is required.

3. Required Pilot Training. (a) Except as provided in section 2 paragraph (b) of this SFAR, no person may manipulate the controls, act as pilot-in-command, or act as second-in-command of a Mitsubishi MU–2B series airplane for the purpose of flight unless—

(1) The applicable requirements for ground and flight training on Initial/transition, Requalification, Recurrent, and Differences training have been completed, as specified in this SFAR, including Appendices A through D of this SFAR; and

(b) That person’s logbook has been endorsed in accordance with paragraph (f) of this section.

(b) No person may manipulate the controls, act as pilot-in-command, or act as second-in-command of a Mitsubishi MU–2B series airplane for the purpose of flight unless—

(1) That person satisfactorily completes, if applicable, annual Recurrent pilot training on the Special Emphasis Items, and all items listed in the Training Course Final Phase Check as specified in Appendix C of this SFAR; and
(2) That person’s logbook has been endorsed in accordance with paragraph (f) of this section.

(c) Satisfactory completion of the competency check required by 14 CFR 135.203 within the preceding 12 calendar months may not be substituted for the Mitsubishi MU–2B series airplane annual recurrent flight training of this section.

(d) Satisfactory completion of a Federal Aviation Administration sponsored pilot proficiency award program, as described in 14 CFR part 122, may not be substituted for the Mitsubishi MU–2B series airplane annual recurrent flight training of this section.

(e) If a person complies with the requirements of paragraph (a) or (b) of this section in the calendar month before or the calendar month after the month in which compliance with these paragraphs are required, that person is considered to have accomplished the training requirement in the month the training is due.

(f) The endorsement required under paragraph (a) and (b) of this section must be made by—

(1) A certificated flight instructor meeting the qualifications of section 5 of this SFAR; or

(2) For persons operating the Mitsubishi MU–2B series airplane for a part 119 certificate holder within the last 12 calendar months, the 14 CFR part 119 certificate holder’s flight instructor if authorized by the FAA and if that flight instructor meets the requirements of section 5 of this SFAR.

(g) All training conducted for the Mitsubishi MU–2B series airplane must meet the currency requirements of paragraph (c) of section 6 of this SFAR before giving flight instruction in the Mitsubishi MU–2B series airplane.

(1) Each flight instructor who provides flight training in the Mitsubishi MU–2B series airplane must meet the requirements of paragraph (a) and (b) of this section before giving flight instruction in the Mitsubishi MU–2B series airplane.

(2) Each flight instructor who provides flight training in the Mitsubishi MU–2B series airplane must meet the currency requirements of paragraphs (a) and (c) of section 6 of this SFAR before giving flight instruction in the Mitsubishi MU–2B series airplane.

(3) Each flight instructor who provides flight training in the Mitsubishi MU–2B series airplane must have a minimum total pilot time of 2,000 pilot-in-command hours, 800 pilot-in-command hours in multi-engine airplanes.

(4) Each flight instructor who provides flight training in the Mitsubishi MU–2B series airplane must have—

(i) 300 pilot-in-command hours in the Mitsubishi MU–2B series airplane, 50 hours of which must have been within the preceding 12 months; or

(ii) 100 pilot-in-command hours in the Mitsubishi MU–2B series airplane, 25 hours of which must have been within the preceding 12 months, and 300 hours providing instruction in a FAA-approved Mitsubishi MU–2B simulator or FAA-approved Mitsubishi MU–2B flight training device, 25 hours of which must have been within the preceding 12 months.

(b) Flight Instructor (Simulator/Flight Training Device). No flight instructor may provide instruction for the Mitsubishi MU–2B series airplane unless that instructor meets the requirements of this paragraph.

(1) Each flight instructor who provides flight training for the Mitsubishi MU–2B series airplane must meet the pilot training and documentation requirements of section 3 of this SFAR before giving flight instruction for the Mitsubishi MU–2B series airplane.

(2) Each flight instructor who provides flight training for the Mitsubishi MU–2B series airplane must meet the currency requirements of paragraph (c) of section 6 of this SFAR before giving flight instruction for the Mitsubishi MU–2B series airplane.

4. Aeronautical Experience. No person may act as pilot-in-command of a Mitsubishi MU–2B series airplane for the purpose of flight unless that person holds an airplane category and multi-engine land class rating, and has logged a minimum of 100 flight hours of pilot-in-command time in multi-engine airplanes.

5. Instruction, Checking and Evaluation. (a) Flight Instructor (Airplane). No flight instructor may provide instruction or conduct a flight review in a Mitsubishi MU–2B series airplane unless that flight instructor meets the requirements of this paragraph.

(b) Flight Instructor (Simulator/Flight Training Device). No flight instructor may provide instruction for the Mitsubishi MU–2B series airplane unless that instructor meets the requirements of this paragraph.

TABLE 1 TO SFAR 108—MU–2B SERIES AIRPLANE MANUFACTURER’S CHECKLISTS

<table>
<thead>
<tr>
<th>Model</th>
<th>Type certificate</th>
<th>Cockpit checklist</th>
<th>Date the checklist was accepted by the FSB</th>
</tr>
</thead>
</table>
(3) Each flight instructor who provides flight training for the Mitsubishi MU–2B series airplane must have—
   (i) A minimum total pilot time of 2000 pilot-in-command hours and 800 pilot-in-command hours in multiengine airplanes; and
   (ii) Within the preceding 12 months, either 50 hours of Mitsubishi MU–2B series airplane pilot-in-command experience or 50 hours providing simulator or flight training device instruction for the Mitsubishi MU–2B.

(c) Checking and Evaluation. No person may provide checking or evaluation for the Mitsubishi MU–2B series airplane unless that person meets the requirements of this paragraph.

   (1) For the purpose of checking, designated pilot examiners, training center evaluators, and check airmen must have completed the appropriate training in the Mitsubishi MU–2B series airplane in accordance with section 3 of this SFAR.

   (2) For checking conducted in the Mitsubishi MU–2B series airplane, each designated pilot examiner and check aircrman must have 100 hours pilot-in-command flight time in the Mitsubishi MU–2B series airplane and maintain currency in accordance with section 6 of this SFAR.


(a) The takeoff and landing currency requirements of 14 CFR 61.57 must be maintained in the Mitsubishi MU–2B series airplane. Takeoff and landings in other multiengine airplanes do not meet the takeoff landing currency requirements for the Mitsubishi MU–2B series airplane. Takeoff and landings in either the short-body or long-body Mitsubishi MU–2B model airplane may be credited toward takeoff and landing currency for both Mitsubishi MU–2B model groups.

(b) Instrument experience obtained in other category and class of aircraft may be used to satisfy the instrument currency requirements of 14 CFR 61.57 for the Mitsubishi MU–2B series airplane.

(c) Satisfactory completion of a flight review to satisfy the requirements of 14 CFR 61.56 is valid for operation of a Mitsubishi MU–2B series airplane only if that flight review is conducted in a Mitsubishi MU–2B series airplane. The flight review for Mitsubishi MU–2B series airplanes must include the Special Emphasis Items, and all items listed in the Training Course Final Phase Check of Appendix C of this SFAR.

(d) A person who successfully completes the Initial/transit–ion, Requalification, or Recurrent training requirements, as described in section 3 of this SFAR, also meets the requirements of 14 CFR 61.56 and need not accomplish a separate flight review provided that at least 1 hour of the flight training was conducted in the Mitsubishi MU–2B series airplane.

7. Operating Requirements. (a) Except as provided in paragraph (b) of this section, no person may operate a Mitsubishi MU–2B airplane in single pilot operations unless that airplane has a functional autopilot.

(b) A person may operate a Mitsubishi MU–2B airplane in single pilot operations without a functional autopilot when—

   (1) Operating under day visual flight rule requirements; or

   (2) Authorized under a FAA approved minimum equipment list for that airplane, operating under instrument flight rule requirements in daytime visual meteorological conditions.

(c) No person may operate a Mitsubishi MU–2B series airplane unless a copy of the appropriate Mitsubishi Heavy Industries MU–2B Airplane Flight Manual is carried on board the airplane and is accessible during each flight at the pilot station.

(d) No person may operate a Mitsubishi MU–2B series airplane unless an MU–2B series airplane checklist, appropriate for the model being operated and accepted by the Federal Aviation Administration MU–2B Flight Standardization Board, is accessible for each flight at the pilot station and is used by the flight crewmembers when operating the airplane.

(e) No person may operate a Mitsubishi MU–2B series airplane contrary to the MU–2B training program in the Appendices of this SFAR.

(f) If there are any differences between the training and operating requirements of this SFAR and the MU–2B Airplane Flight Manual’s procedures sections (Normal, Abnormal, and Emergency) and the MU–2B airplane series checklist specified in section 3(g), table 1, the person operating the airplane must operate the airplane in accordance with the training specified in section 3(g), table 1.

8. Credit for Prior Training. Initial/transit–ion or requalification training conducted between July 27, 2006, and April 7, 2008, using Mitsubishi Heavy Industries MU–2B Training Program, Part number YET 05301, Revision Original, dated July 27, 2006, or Revision 1, dated September 19, 2006, is considered to be compliant with this SFAR. If the student met the eligibility requirements for the applicable category of training and the student’s instructor met the experience requirements of this SFAR.

9. Incorporation by Reference. You must proceed in accordance with the Mitsubishi Heavy Industries MU–2B Checklists as listed in Table 1 of this SFAR which are incorporated by reference. The Director of the Federal Register approved this incorporation by reference in accordance with 5 U.S.C. section 552(a) and 1 CFR part 51. The Mitsubishi Heavy Industries MU–2B Checklists are distributed by Turbine Aircraft Services, Inc. You may obtain a copy from Turbine Aircraft Services Inc., 4500 Jimmy Doolittle
APPENDIX A TO SFAR 108—MU–2B GENERAL TRAINING REQUIREMENTS

(a) The Mitsubishi MU–2B Training Program consists of both ground and flight training. The minimum pilot training requirement hours are shown in Table 1 of this appendix for ground instruction and Table 2 of this appendix for flight instruction. An additional ground training requirement for Differences Training is shown in Table 3.

(b) The MU–2B is certificated by the Federal Aviation Administration (FAA) as a single pilot airplane. No training credit is given for second in command (SIC) training and no credit is given for right seat time under this program. Only the sole manipulator of the controls of the MU–2B airplane, Flight Training Device (FTD), or Level C or D simulator can receive training credit under this program.

(c) The training program references the applicable MU–2B airplane flight manual (AFM) in several sections. There may be differences between sequencing of procedures found in the AFM’s procedures sections and the checklists, procedures, and techniques found within this training program. The FAA’s Mitsubishi MU–2B SFAR requires that if there are any differences between the AFM’s procedures sections (Normal, Abnormal, and Emergency) and the training and operating requirements of the Mitsubishi MU–2B SFAR, the person operating the airplane must operate the airplane in accordance with the training specified in the SFAR and this MU–2B training program.

(d) Minimum Programmed Training Hours

<table>
<thead>
<tr>
<th>TABLE 1 TO APPENDIX A OF SFAR 108</th>
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</thead>
<tbody>
<tr>
<td>Ground instruction</td>
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<tr>
<td>Initial/transition</td>
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<td>20 hours ...............</td>
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</table>

<table>
<thead>
<tr>
<th>TABLE 2 TO APPENDIX A OF SFAR 108</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flight instruction</td>
</tr>
<tr>
<td>Initial/transition</td>
</tr>
<tr>
<td>12 hours with a minimum of 6 hours at Level E.</td>
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</tbody>
</table>

(e) Definitions of Levels of Training as Used in This Appendix

(1) LEVEL A Training—Training that is conducted through self instruction by the pilot.

(2) LEVEL B Training—Training that is conducted in the classroom environment with the aid of a qualified instructor who meets the requirements of this SFAR.

(3) LEVEL C Training—Training that is accomplished in an FAA-approved Level 5, 6, or 7 Flight Training Device (FTD). In addition to the basic FTD requirements, the FTD must be representative of the MU–2B cockpit controls and be specifically approved by the FAA for the MU–2B airplane.

(4) LEVEL E Training—Training that must be accomplished in the MU–2B airplane, Level C simulator, or Level D simulator.

APPENDIX B TO SFAR 108—MU–2B GROUND TRAINING CURRICULUM CONTENTS

All items in the ground training curriculum must be covered. The order of presentation is at the discretion of the instructor. The student must satisfactorily complete a written or oral exam given by the training provider based on this MU–2B Training Program.

1. Aircraft General
   A. Introduction
   B. Airplane (Structures/Aerodynamics/Engines) Overview
      1. Fuselage
      2. Wing
      3. Empennage
      4. Doors
   C. Airplane Systems
      1. Electrical Power
      2. Lighting
      3. Fuel System
      4. Powerplant
      5. Environmental
      6. Fire Protection
   D. Operating Limitations
      1. Weights
      2. Center of Gravity and Loading
      3. Airspeeds
      4. Maneuvering Load Factors

<table>
<thead>
<tr>
<th>TABLE 3 TO APPENDIX A OF SFAR 108</th>
</tr>
</thead>
<tbody>
<tr>
<td>Differences training</td>
</tr>
<tr>
<td>2 models currently ...............</td>
</tr>
<tr>
<td>More than 2 models currently.</td>
</tr>
<tr>
<td>Each additional model added.</td>
</tr>
</tbody>
</table>

19. Expiration. This SFAR will remain in effect until further notice.
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5. Takeoff And Landing Operations
6. Enroute Operations
E. Required Placards
F. Instrument Markings
G. Flight Characteristics
1. Control System
2. Stability and Stall Characteristics
3. Single Engine Operation
4. Maneuvering and Trim
5. Takeoff and Landing

II. Electrical Power
A. General Description
B. DC Electrical System
1. DC Power Generation
2. DC Power Distribution
3. Battery System
4. External Power System
C. AC Electrical System
1. AC Power Generation
2. Controls and Indicators
3. AC Power Distribution
D. Limitations
1. General Limitations
2. Instrument Markings

III. Lighting
A. Exterior Lighting System
1. Navigation Lights
2. Anti-Collision Lights
3. Wing Inspection Lights
4. Taxi Lights
5. Landing Lights
6. Rotating Beacon
7. Operation
B. Interior Lighting System
1. Flight Compartment Lights
2. Passenger Compartment Lights
C. Emergency Lighting System
1. Cockpit Emergency Lighting
2. Aircraft Emergency Lighting
D. Procedures
1. Normal
2. Abnormal
3. Emergency

IV. Master Caution System
A. System Description and Operation
1. Master Caution Light and Reset Switch
2. Annunciator and Indicator Panels
3. Operation Lights
4. System Tests
B. Procedures
V. Fuel System
A. Fuel Storage
1. Refueling/Balancing
2. De-Fueling and Draining
3. Tank Vent System
B. Fuel Distribution
1. Fuel Transfer
2. Fuel Balancing
3. Boost Pump Operation
C. Fuel Indicating
1. Fuel Quantity
2. Low Fuel Warning
D. Fuel System Limitations
1. Approved Fuels
2. Fuel Anti-Icing Additives
3. Fuel Temperature Limitations
4. Fuel Transfer and Fuel Imbalance

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5. Takeoff And Landing Operations
6. Enroute Operations
E. Required Placards
F. Instrument Markings
G. Flight Characteristics
1. Control System
2. Stability and Stall Characteristics
3. Single Engine Operation
4. Maneuvering and Trim
5. Takeoff and Landing

II. Electrical Power
A. General Description
B. DC Electrical System
1. DC Power Generation
2. DC Power Distribution
3. Battery System
4. External Power System
C. AC Electrical System
1. AC Power Generation
2. Controls and Indicators
3. AC Power Distribution
D. Limitations
1. General Limitations
2. Instrument Markings

III. Lighting
A. Exterior Lighting System
1. Navigation Lights
2. Anti-Collision Lights
3. Wing Inspection Lights
4. Taxi Lights
5. Landing Lights
6. Rotating Beacon
7. Operation
B. Interior Lighting System
1. Flight Compartment Lights
2. Passenger Compartment Lights
C. Emergency Lighting System
1. Cockpit Emergency Lighting
2. Aircraft Emergency Lighting
D. Procedures
1. Normal
2. Abnormal
3. Emergency

IV. Master Caution System
A. System Description and Operation
1. Master Caution Light and Reset Switch
2. Annunciator and Indicator Panels
3. Operation Lights
4. System Tests
B. Procedures
V. Fuel System
A. Fuel Storage
1. Refueling/Balancing
2. De-Fueling and Draining
3. Tank Vent System
B. Fuel Distribution
1. Fuel Transfer
2. Fuel Balancing
3. Boost Pump Operation
C. Fuel Indicating
1. Fuel Quantity
2. Low Fuel Warning
D. Fuel System Limitations
1. Approved Fuels
2. Fuel Anti-Icing Additives
3. Fuel Temperature Limitations
4. Fuel Transfer and Fuel Imbalance
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1. System Description
2. Operation
3. Controls and Indications
C. Engine Anti-Ice
1. System Description
2. Operation
3. Controls and Indications
D. Window Defog
1. Controls
2. Operation
E. Tail De-Ice
1. Horizontal Stabilizer De-Ice
2. Vertical Stabilizer De-Ice
F. Pitot Static System Anti-Icing
1. Pitot Tube Heating
2. Static Port Heating
3. AOA Transmitter Heating
G. Windshield De-Ice/Anti-Ice
1. System Description
2. Controls and Indications
H. Windshield Wiper
1. System Description
2. Control and Operation
I. Propeller De-Ice
1. System Description
2. Controls and Indications
J. Ice Detector
1. System Description
2. Controls and Indications
3. Operation
K. Limitations
1. Temperatures
2. Cycling

X. Air Conditioning
A. System Description and Operation
1. Refrigeration Unit (ACM)
2. Air Distribution
3. Ventilation
4. Temperature Control
5. Water Separator
B. Limitations
XI. Pressurization
A. General
B. Component Description
1. Cabin Pressure Controller
2. Altitude Pressure Regulator
3. Ram Air
4. Outflow Safety Valves
5. Air Filters
6. Manual Control Valve
7. Pneumatic Relays
8. Venturi
C. System Operation
1. Ground Operation
2. Takeoff Mode
3. In-Flight Operation
4. Landing Operation
D. Emergency Operation
1. High Altitude
2. Low Altitude
E. Limitations
1. Maximum Differential
2. Landing Limitations

XII. Landing Gear and Brakes
A. General Description
1. Landing Gear Doors
2. Controls and Indicators

3. Warning Systems
4. Emergency Extension
B. Nosewheel Steering
C. Landing Gear/Brakes/Tires
D. Limitations
1. Airspeed (with flaps)
2. Emergency Extension
3. Tire Speed
4. Brake Energy

XIII. Flight Controls
A. Primary Flight Controls (Elevator/Rudder/Spoilers)
1. Description
2. Operations
B. Trim Systems
1. System Description
2. Roll Trim
a. Normal Operation
b. Emergency Operation
3. Rudder Trim
4. Pitch Trim
a. General
b. Operations
c. Trim-in-Motion Alert System
C. Secondary Flight Controls
1. System Description
2. Flaps
D. Limitations
1. Instrument Markings
2. Placards
E. Flight Characteristics
1. Control Systems
2. Stability and Stall Characteristics
3. Single Engine Operation
4. Maneuvering and Trim
5. Takeoff and Landing

XIV. Avionics
A. Pitot-Static System
1. System Description
2. Pilot’s System
3. Co-Pilot’s System
4. Alternate Static
B. Air Data Computer
C. Attitude Instrument Displays (EFIS and Standard)
1. EADI
2. Standard Attitude Gyro
D. AHRS
1. System Description
2. Controls and Indications
E. Navigation
1. Nav Systems Descriptions
2. Compass System Descriptions
3. Display Systems
4. Terrain Awareness System
5. Traffic Avoidance System
F. Communications
1. VHF Communications Systems
2. Audio Control
G. Standby Flight Instruments
1. System Description
2. Controls and Indications
H. Automatic Flight Control System
1. Controls and Indications
2. Yaw Damper
3. Trim-in-Motion Alert System
4. Autopilot Automatic Disconnect
5. Aural Alert System
I. Angle of Attack (AOA) System
1. System Description
2. Controls and Indications
J. Limitations

XV. Oxygen System
A. System Description
B. Crew Oxygen
1. Oxygen Cylinder Assembly
2. Pressure Gauge
3. Outlet Valves
4. Duration
C. Passenger Oxygen
1. System Description
2. Duration
D. Limitations

XVI. Performance and Planning
A. Takeoff Performance Charts
1. Runway Requirements
2. Normal and with One Engine Inoperative
B. Climb Performance
1. Normal and with One Engine Inoperative
2. Obstacle Clearance
3. Power Assurance Charts
C. Cruise Performance
1. Power Charts
2. Maximum Practical Altitude
3. Cruise Speeds/Engine Health
4. Buffet Boundary
D. Landing Performance
1. Runway Requirements
   a. Dry Runway
   b. Wet Runway
2. Go-Around
   a. One Engine Inoperative
   b. All Engines

XVII. Weight and Balance
A. Aircraft Loading Procedures
B. Limitations
1. Weight Limits
2. C.G. Limits
C. Plotter
1. Description
2. Use
D. Calculations
1. AFM Procedures
2. Examples

XVIII. General Subjects
A. Controlled Flight into Terrain Awareness
B. CRM/SPRM
1. Crew Resource Management
2. Single Pilot Resource Management
C. MU–2B Flight Standardization Board Report

APPENDIX C TO SFAR 108—MU–2B FINAL PHASE CHECK AND FLIGHT TRAINING REQUIREMENTS
(I) MU–2B Final Phase Check Requirements
(A) Completion of the MU–2B Training Program in this appendix requires successful completion of a final phase check taken in the MU–2B airplane or a Level C or D simulator for Initial/Transition training. The final phase check for Requalification or Recurrent Training may be taken in the MU–2B airplane, a Level C or D simulator, or in a Level 5, 6, or 7 FAA-approved MU–2B Flight Training Device (FTD). The final phase check must be conducted by a qualified flight instructor who meets the requirements of the MU–2B SFAR. Simultaneous training and checking is not allowed for Initial/Transition training.
(B) For pilots operating under 14 CFR part 135, checking must be done in accordance with applicable regulations. For the purpose of recurrent testing in 14 CFR 135.293(b), the MU–2B is considered a separate type of aircraft.
(C) The final phase check must be conducted using the standards contained in the FAA Commercial Pilot—Airplane Multi-Engine Land, and Instrument Rating—Airplane Practical Test Standards (PTS).
(D) The final phase check portion of the training is comprised of the following tasks for all airmen (instrument rated and non instrument rated). An (*) indicates those maneuvers for Initial/Transition training which must be completed in the MU–2B airplane, or a Level C or D simulator.
   (1) Preflight Check.
   (2) Start and Taxi Procedures.
   (3) * Normal Takeoff (X-Wind) (Two Engine).
   (4) * Takeoff Engine Failure.
   (5) Rejected Takeoff.
   (6) * Steep Turns.
   (7) * Approach to Stalls (3) (must include Accelerated Stalls).
   (8) * Maneuvering with One Engine Inoperative—Loss of Directional Control (V_{mc}).
   (9) Abnormal and Emergency Procedures—To include MU–2B operation in icing conditions without the autopilot or without trim-in-motion or automatic autopilot disconnect.
   (10) * Precision Approach (One Engine Inoperative).
   (11) Go Around/Rejected Landing.
   (12) Normal Landing (X-Wind).
   (13) * Landing with One Engine Inoperative.
   (14) * Landing with Non-Standard Flap Configuration (0 or 5 degrees).
   (15) Postflight Procedures.
(E) The following additional tasks are required for those airmen who possess an instrument rating. An (*) indicates those maneuvers for Initial/Transition training which must be completed in the MU–2B airplane, or a Level C or D simulator.
   (1) Preflight Check.
   (2) Unusual Attitudes.
   (3) Abnormal and Emergency Procedures.
   (4) Basic Instrument Flight Maneuvers.
   (5) Area Arrival and Departure.
   (6) Holding.
   (7) Precision Approach (Two Engine).
(8) * Non-Precision Approaches (2)—Must include a Non-Precision Approach with One Engine Inoperative.

(9) Missed Approach from either Precision or Non Precision Instrument Approach (Two Engine).

(10) Landing from a Straight-In or Circling Approach.

(11) Circling Approach.

(12) Postflight Procedures.

(F) A form titled “Training Course Final Phase Check” has been included in this appendix for use in creating a training and final check record for the student and the training provider.

(II) MU–2B Required Flight Training Tasks

(A) General Flight Training Requirements: All flight training maneuvers must be consistent with this training program and the applicable MU–2B checklist accepted by the FAA. The maneuver profiles shown in Appendix D to this SFAR No. 108 are presented to show the required training scenarios. Profiles conducted in flight require planning and care on the part of both the instructor and student in order to provide the highest level of safety possible. The maneuver profiles shown in Appendix D to this SFAR No. 108 do not account for local geographic and flight conditions. The instructor and student must consider local conditions when performing these maneuvers in flight.

(B) Special Emphasis Items: Certain aspects of pilot knowledge, skills and abilities must be emphasized and evaluated during the training and checking process of the MU–2B Training Program.

(1) Accelerated stall awareness and recovery procedures with emphasis on configuration management. Awareness of the margin to stall in all flight operations and configurations must be emphasized throughout training.

(2) $V_{soa}$ awareness and early recognition must be trained and checked. Minimum airspeeds for one engine inoperative must be emphasized in all configurations.

(3) Airspeed management and recognition of airspeed deterioration below recommended speeds and recovery methods in this training program must be emphasized throughout training and checking.

(4) Knowledge of icing conditions and encounters must be emphasized throughout training and checking including: Equipment requirements, certification standards, minimum airspeeds, and the use of the autopilot and other applicable AFM procedures.

(5) Airplane performance characteristics with all engines operating and with one engine inoperative must be emphasized.

(C) MU–2B Flight Training Program Proficiency Standards:

(1) Each pilot, regardless of the level of pilot certificate held, must be trained to and maintain the proficiency standards described below.

(a) General VFR/IFR.

(i) Bank Angle—± 5 degrees of prescribed bank angle

(ii) Heading—± 10 degrees

(iii) Altitude—± 100 feet

(iv) Airspeed—± 10 knots

(b) Instrument Approach—Final Approach Segment.

(i) Heading—± 10 degrees

(ii) Altitude—± 100 feet

(iii) Airspeed—± 10 knots prior to final

(iv) Airspeed—± 10 knots after established on final

(v) Glide Slope (GS)/Localizer Deviation—Within ½ scale—not below GS

Non-Precision Approach

Straight In

(vi) Initial Approach Altitude—± 100 feet

(vii) Heading—± 10 degrees

(viii) Altitude (MDA)— + 100, – 0 feet

(ix) Airspeed— + 10 knots

(x) Course Deviation Indicator—Within ½ scale or ± 10 degrees on RMI

Circling Approach

(xi) Maximum Bank—30 degrees

(xii) Heading—Within 10 degrees

(xiii) Altitude— +100, – 0 feet

(xiv) Airspeed—Within 10 knots but not less than $V_{soa}$

(c) In all cases, a pilot must show complete mastery of the aircraft with the outcome of each maneuver or procedure never seriously in doubt.

(D) Maneuvers and Procedures. All flight training maneuvers and procedures must be conducted as they are applicable to the MU–2B and each type of operations involved.

Preflight

(1) Preflight Inspection—The pilot must—

(a) Conduct an actual visual inspection of the exterior and interior of the airplane, locating each item and explaining briefly the purpose of inspecting it; and

(b) Demonstrate the use of the appropriate checklist, appropriate control system checks, starting procedures, radio and electronic equipment checks, and the selection of proper navigation and communications radio facilities and frequencies prior to flight.

(2) Taxing—this maneuver includes taxing in compliance with instructions issued by the appropriate ATC facility or by the person conducting the check.

(3) Pre-Takeoff Checks—The pilot must satisfactorily complete all pre-takeoff aircraft systems and powerplant checks before takeoff.
Federal Aviation Administration, DOT
Pt. 91, SFAR No. 108

Takeoff and Departure

(1) Normal—One normal takeoff, which for the purpose of this maneuver, begins when the airplane is taxied into position on the runway to be used.

(2) Instrument Takeoff—Takeoff with simulated instrument conditions at or before reaching an altitude of 200 feet above the airport elevation and visibility of 1800 RVR.

(3) Crosswind—One crosswind takeoff, if practical, under the existing meteorological, airport and traffic conditions.

(4) Powerplant Failure—One takeoff with a simulated failure of the most critical powerplant at a point after Vlof. In the MU-2B airplane, all simulated powerplant failures must only be initiated when the person conducting the training or checking determines that it is safe under the prevailing conditions. The instructor must assure that the power lever does not move beyond the flight idle gate.

(5) Rejected Takeoff—A rejected takeoff performed in an airplane during a normal takeoff run after reaching a reasonable speed determined by giving due consideration to aircraft characteristics, runway length, surface conditions, wind direction and velocity, brake heat energy, and any other pertinent factors that may adversely affect safety or the airplane.

(6) Area departure—Demonstrate adequate knowledge of departure procedures, establishing appropriate ATC communications and following clearances.

Flight Maneuvers and Procedures

(1) Steep bank turns—Each steep turn must involve a bank angle of 50 degrees with a heading change of at least 180 degrees but no more than 360 degrees.

(2) Approaches to stalls—Must be performed in each of the following configurations: takeoff, clean, and landing. One approach to a stall must be performed in either the takeoff, clean, or landing configuration while in a turn with a bank angle between 15 degrees and 30 degrees.

(3) Accelerated stalls—must be done in the flaps 20 and flaps 0 configurations.

(4) Recovery procedures must be initiated at the first indication of a stall.

Normal and Abnormal Procedures and Operations

(1) Runway trim.

(2) Normal and abnormal operations of the following systems:
   (a) Pressurization.
   (b) Pneumatic.
   (c) Air conditioning.
   (d) Fuel.
   (e) Electrical.
   (f) Flight control.
   (g) Anti-icing and de-icing.
   (h) Autopilot.

(3) Stall warning devices, as applicable.

(4) Airborne radar and weather detection devices.

(5) Other systems, devices or aids available.

(6) Electrical, flight control and flight instrument system malfunction or failure.

(7) Landing gear and flap system malfunction or failure.

(8) Failure of navigation or communications equipment.

Flight Emergency Procedures

(1) Powerplant failure.

(2) Powerplant, cabin, flight deck, wing and electrical fires.

(3) Smoke control.

(4) Fuel jettisoning, as applicable.

(5) Any other emergency procedures outlined in the appropriate AFM or FAA-accepted checklist.

Instrument Procedures

(1) Area departure.

(2) Use of navigation systems including adherence to assigned course and/or radial.

(3) Holding procedures.

(4) Aircraft approach category airspeeds.

(5) Approach procedures: Each instrument approach must be performed according to all procedures and limitations approved for that facility. An instrument approach procedure begins when the airplane is over the initial approach fix for the approach procedure being used and ends when the airplane touches down on the runway or when transition to missed approach configuration is completed.

(a) ILS, ILS/DME, approach.

(i) A manually controlled ILS with a powerplant inoperative; occurring before initiating the final approach course and continuing to full stop or through the missed approach procedure.

(ii) A manually controlled ILS utilizing raw data to 200 feet or decision height (DH).

(iii) An ILS with the autopilot coupled.

(b) Non-precision approaches.

(i) NDB, NDB/DME approach, straight in or circle.

(ii) VOR, VOR/DME, straight in or circle.

(iii) LOC, LOC/DME, LOC backcourse.

(iv) GPS approach (If the aircraft/FTD/flight simulator has a GPS installed, the applicant must demonstrate GPS approach proficiency.)

(v) ASR approach.

(c) Missed approach procedure: One missed approach procedure must be a complete approved missed approach procedure as published or as assigned by ATC.

(i) From a precision approach.

(ii) From a non-precision approach.

(iii) With a simulated powerplant failure.

(d) Circling approach.

(i) The circling approach must be made to the authorized MDA and followed by a
change in heading and the necessary maneuvering (by visual reference) to maintain a flight path that permits a normal landing on the runway.

(ii) The circling approach must be performed without excessive maneuvering and without exceeding the normal operating limits of the airplane and the angle of bank must not exceed 30°.

Landings and Approaches to Landings

(1) Airport orientation.
(2) Normal landings with stabilized approach.
(3) Crosswind landings.
(4) From a precision instrument approach.
(5) From a non-precision instrument approach with a powerplant inoperative.
(6) From a non-precision instrument approach with a powerplant inoperative.
(7) From a circling approach or VFR traffic pattern.
(8) From a circling approach or VFR traffic pattern.
(9) From a circling approach or VFR traffic pattern.
(10) Zero flap landing.

(a) Runway requirements.
(b) Airspeeds.
### TRAINING COURSE FINAL PHASE CHECK

<table>
<thead>
<tr>
<th>NAME OF AIRMAN (last, first, middle initial)</th>
<th>GRADE OF CERTIFICATE</th>
<th>CERTIFICATE NUMBER</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>DATE OF CHECK</th>
<th>LOCATION OF CHECK</th>
<th>TYPE OF CHECK</th>
<th>MU-2B MODEL</th>
<th>FTD MODEL</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>SCHOOL NAME</th>
<th>INSTRUCTOR NAME</th>
<th>CFI NUMBER</th>
<th>EXPIRES</th>
</tr>
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</table>

**FLIGHT MANEUVERS GRADE** *(S-Satisfactory U- Unsatisfactory)*

### MANEUVERS REQUIRED FOR ALL AIRMEN

<table>
<thead>
<tr>
<th>A/C</th>
<th>FTD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- PREFLIGHT CHECK
- START AND TAXI PROCEDURES
- *NORMAL TAKEOFF (X WIND) (TWO ENGINE)*
- *TAKEOFF ENGINE FAILURE*
- REJECTED TAKEOFF
- *STEEP TURNS*
- *APPROACH TO STALL (3)*
- *MANEUVERING WITH ONE ENGINE INOP (VMC)*
- ABNORMAL AND EMERGENCY PROCEDURES - TO INCLUDE THE MU-2 OPERATION IN ICING CONDITIONS WITHOUT THE AUTOPILOT OR WITHOUT TRIM-IN-MOTION/AUTOMATIC AUTOPILOT DISCONNECT.
- *PRECISION APPROACH (ONE ENGINE INOPERATIVE)*
- GO AROUND / REJECTED LANDING
- NORMAL LANDING (X WIND)
- *LANDING WITH ONE ENGINE INOPERATIVE*
- *LANDING WITH NON-STANDARD FLAP CONFIG*
- POST FLIGHT PROCEDURES

### ADDITIONAL MANEUVERS REQUIRED FOR INSTRUMENT RATED AIRMEN

<table>
<thead>
<tr>
<th>A/C</th>
<th>FTD</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
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</table>

- PREFLIGHT CHECK
- UNUSUAL ATTITUDES
- ABNORMAL AND EMERGENCY PROCEDURES
- BASIC INSTRUMENT FLIGHT MANEUVERS
- AREA ARRIVAL AND DEPARTURE
- HOLDING
- PRECISION APPROACH (TWO ENGINE)
- *NON-PRECISION APPROACHES (2)*
- MISSED APPROACH FROM EITHER PRECISION OR NON-PRECISION APPROACH (TWO ENGINE) MUST INCLUDE AN APPROACH WITH ONE ENGINE INOP.
- LANDING FROM A STRAIGHT-IN/CIRCLING APPROACH
- CIRCLING APPROACH
- POST FLIGHT PROCEDURES

### RESULTS OF CHECK

<table>
<thead>
<tr>
<th>SATISFACTORY</th>
<th>UNSATISFACTORY</th>
</tr>
</thead>
</table>

<table>
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<tr>
<th>FLIGHT TIMES</th>
<th>AIRCRAFT</th>
<th>FTD</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>INSTRUCTOR SIGNATURE</th>
<th>AIRMAN SIGNATURE</th>
</tr>
</thead>
</table>

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**APPENDIX D TO SFAR 108—MU-2B MANEUVER PROFILES**

(A) The Maneuver Profiles are provided to develop pilot proficiency with the procedures and techniques contained within this MU-2B Flight Training Program.

(B) Though constructed for use in the airplane they may also be used in the Flight Training Device (FTD). When an FTD is
used, a maneuver may be performed at lower altitudes or carried to its completion. When training is conducted in the MU–2B airplane, all maneuvers must be performed in a manner sufficient to evaluate the performance of the student while never jeopardizing the safety of the flight.

(C) The maneuvers profiles are broken down into three sections by similar aircraft model groups. The three sections of this program are:

1. Marquise (–60), Solitaire (–49), N (–36A), P (–26A)—Figures A–1 through A–28
2. J (–35), K (–25), L (–36), M (–26)—Figures B–1 through B–28
3. B, D (–10), F (–20), G (–30)—Figures C–1 through C–28
### Normal Take-Off, 5° or 20° Flaps

#### Take-Off Speeds

<table>
<thead>
<tr>
<th>Flaps</th>
<th>N-Marq</th>
<th>P-SOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.00 LBS</td>
<td>106</td>
<td>106</td>
</tr>
<tr>
<td>10.20 LBS</td>
<td>110</td>
<td>108</td>
</tr>
<tr>
<td>10.00 LBS</td>
<td>101</td>
<td>104</td>
</tr>
<tr>
<td>9.000 LBS</td>
<td>100</td>
<td>104</td>
</tr>
<tr>
<td>8.000 LBS</td>
<td>100</td>
<td>104</td>
</tr>
</tbody>
</table>

**After Gear is Fully Retracted, If Flaps 20° Retract Flaps to 5° Increase Pitch to Approx. 10° 140 KCAS, Then Flaps Up**

**Note:** If runway length or obstacle clearance is critical, set power to either torque or temp maximum, whichever occurs first. Retard power levers as required to maintain maximum allowable torque or temp.
MU-2B MARQUISE (-60), SOLITAIRE (-40), N (-36A), P (-26A)

TAKE-OFF ENGINE FAILURE – FLAPS 5° OR 20°

<table>
<thead>
<tr>
<th>FLAP SETTING</th>
<th>VXSE (KCAS)</th>
<th>VYSE (KCAS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0°</td>
<td>140 / 135 *</td>
<td>150 / 150 *</td>
</tr>
<tr>
<td>5°</td>
<td>130 / 130 *</td>
<td>140 / 140 *</td>
</tr>
<tr>
<td>20°</td>
<td>125 / 125 *</td>
<td>135 / 130 *</td>
</tr>
</tbody>
</table>

*P, SOL

PITCH TO MAINTAIN VXSE MINIMUM APPROX 8° PITCH, FLAPS 20°, APPROX 10-12° PITCH, FLAPS 0°. MAINTAIN DIRECTIONAL CONTROL WITH RUDDER AND MINIMUM SPOILER. FAILED ENGINE – CONDITION LEVER, EMERGENCY STOP; POWER LEVER, TAKE OFF **+, TRIM AIRCRAFT

POS RATE, NO RUNWAY REMAINING FOR LANDING, GEAR UP. IF 20° FLAPS 113 KCAS MINIMUM. IF 5° FLAPS 120 KTS (MARC, N) 125 KTS (SOL, P)

MAKE NORMAL T/O

CAUTION SIMULATED ENGINE FAILURE (NOT LESS THAN 200FT AGL)

** IF SUFFICIENT RUNWAY REMAINS, OR UNABLE TO CLIMB, GEAR DOWN, REDUCE POWER TO LAND STRAIGHT AHEAD USING A/S APPROPRIATE FOR WEIGHT, 100K CASMINIMUM (MARC, N) 100KCAS MINIMUM (SOL, P).

APPROX 300-400 FEET (OBSTRUCTION CLEARANCE). IF FLAPS 20° ADJUST PITCH TO ACCELERATE. 130KCAS, FLAPS TO 5°, PITCH APPROX 10°

A/S 150KCAS COMPLETE AFTER TAKE-OFF AND ENGINE OUT CHECKLIST
MU-2B MARQUISE (-60), SOLITAIRE (-40), N (-36A), P (-26A)
TAKE-OFF ENGINE FAILURE ON RUNWAY

CAUTION
SIMULATED ENGINE FAILURE OR MALFUNCTION IS TO BE GIVEN BY INSTRUCTOR AT NOT MORE THAN 50% OF ROTATE SPEED.

ENGINE FAILS OR MALFUNCTION OCCURS
POWER LEVERS TO GROUND IDLE, BRAKES AS NECESSARY. REVERSE THRUST AS REQUIRED. USE NOSE WHEEL STEERING, BRAKES, AND/OR REVERSE THRUST TO MAINTAIN DIRECTIONAL CONTROL.

POWER SET, BRAKES RELEASED

NOTIFY TOWER OF ABORT

CLEAR RUNWAY OR EVACUATE AIRCRAFT AS NECESSARY *

CAUTION
DO NOT USE SINGLE ENGINE REVERSE THRUST WITH THE SIMULATED FAILED ENGINE POWER LEVER ABOVE FLIGHT IDLE.

* IF EVACUATING AIRCRAFT, BOTH CONDITION LEVERS TO EMERGENCY STOP AND MASTER SWITCH TO EMERGENCY
MU-2B MARQUISE (-60), SOLITAIRE (-40), N (-36A), P (-26A)
TAKE-OFF ENGINE FAILURE - UNABLE TO CLimb
CLASSROOM DISCUSSION OR FTD USE ONLY

WARNING
DO NOT LET AIRSPEED DECELERATE BELOW SINGLE ENGINE AIRSPEED.
105KCAS (MARQUISE, N)
100KCAS (SOLITAIRE, P)

PILOT MAKES DECISION TO EITHER RETURN THE RUNWAY SURFACE OR TO FLY BEYOND AIRPORT BOUNDARY TO SUITABLE LANDING AREA

ENGINE FAILS

POS RATE, NO RUNWAY REMAINING FOR LANDING, GEAR UP.
IF 20° FLAPS 113 KCAS MIN, IF 5° FLAPS 120 KCAS (MARQ, N) 125 KCAS (SOL, P)

POWER SET, RELEASE BRAKES

ROTATE

IF RUNWAY REMAINS OR A LANDING CAN SAFELY BE MADE ON THE AIRPORT SURFACE, CHECK GEAR DOWN. FLAPS REMAIN IN TAKE-OFF POSITION.
POWER ON OPERATING ENGINE AS REQUIRED TO LAND.
LAND USING SINGLE ENGINE AIRSPEED,
105K CAS (MARQUISE, N)
100K CAS (SOLITAIRE, P)

PROPERS BETA, THEN REVERSE AS REQUIRED,
BRAKES AS REQUIRED

CAUTION
ANTICIPATE SWERVE TOWARD OPERATING ENGINE WHEN ENTERING BETA
MU-2B MARQUISE (-60), SOLITAIRE (-40), N (-36A), P (-26A)

SLOW FLIGHT MANEUVERING

MINIMUM CONTROLLABLE AIRSPEED

SLOW FLIGHT MANEUVERING IS CONDUCTED AS FOLLOWS:

CLEAR THE AREA PRIOR TO BEGINNING THE MANEUVER.

START WITH CLEAN CONFIGURATION AND CHANGE AIRCRAFT CONFIGURATION FROM CLEAN TO FULL FLAP AND GEAR IN STAGES. USE A MAXIMUM OF 15° BANK AND PERFORM HEADING CHANGES OF 90° LEFT AND RIGHT. CONSTANT ALTITUDE IS REQUIRED THROUGHOUT. MAINTAIN 115 KCAS IN ALL CONFIGURATIONS.

**APPROXIMATE POWER SETTINGS ARE:

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Torque (35%) Per Engine</th>
<th>Approx Pitch</th>
</tr>
</thead>
<tbody>
<tr>
<td>0° Flap</td>
<td>106/104°</td>
<td>+12</td>
</tr>
<tr>
<td>5° Flap</td>
<td>99°</td>
<td>+8</td>
</tr>
<tr>
<td>20° Flap &amp; Gear</td>
<td>87°/88°/88°/88°</td>
<td>+4</td>
</tr>
</tbody>
</table>

** NOTE: POWER SETTINGS WILL VARY WITH AIRCRAFT WEIGHT AND ALTITUDE.

STALL SPEEDS (APPROXIMATE) AT MAXIMUM GROSS TAKEOFF WEIGHT N, MARQUISE / P, SOLITAIRE

<table>
<thead>
<tr>
<th>Angle of Bank</th>
<th>Clean Flaps</th>
<th>Clean Flaps &amp; Gear</th>
</tr>
</thead>
<tbody>
<tr>
<td>0°</td>
<td>106/104°</td>
<td>99°</td>
</tr>
<tr>
<td>5°</td>
<td>87°/88°</td>
<td>88°</td>
</tr>
<tr>
<td>20°</td>
<td>81°/78°</td>
<td>83°/79°</td>
</tr>
</tbody>
</table>

** CAUTION
STALL WARNING MAY ACTIVATE 4 TO 9 KCAS ABOVE STALL.

MINIMUM CONTROLLABLE AIRSPEED IS CONDUCTED AS FOLLOWS:

CLEAR THE AREA PRIOR TO BEGINNING THE MANEUVER.

THE MANEUVER MAY BE DONE IN ANY COMBINATION OF GEAR OR FLAP CONFIGURATIONS. IF BANK IS TO BE USED, IT SHOULD BE DONE AT BANK OF NOT MORE THAN 15°. BEGIN THE MANEUVER BY CONFIGURING THE AIRCRAFT IN THE DESIRED GEAR AND FLAP CONFIGURATION. SLOW THE AIRCRAFT UNTIL THE STALL WARNING (STICK SHAKER) IS ACTIVATED AND ADD POWER TO MAINTAIN ALTITUDE AND A SPEED JUST ABOVE AERODYNAMIC STALL. DO NOT ALLOW THE AIRCRAFT TO REACH AERODYNAMIC STALL BUFFET.
MU-2B MARQUISE (-60), SOLITAIRE (-40), N (-36A), P (-26A)

ONE ENGINE INOPERATIVE MANEUVERING LOSS OF DIRECTIONAL CONTROL

CLEAR AREA, CONDITION LEVERS T/O AND LAND, SYNC OFF – SET ONE POWER LEVER TO ZERO THRUST TO SIMULATE FAILED ENGINE (VARIES BETWEEN 5% AND 17% TORQUE)

FLAPS 20°, GEAR UP, SET POWER ON SIMULATED OPERATIVE ENGINE FOR LEVEL FLIGHT A/S 125KCAS TRIMMED

CAUTION
GEAR HORN MAY SOUND CONTINUOUSLY, IF INSTRUCTOR ELECTS TO DISABLE GEAR HORN WITH CIRCUIT BREAKER, THEN CIRCUIT BREAKER MUST BE RESET PRIOR TO LANDING

WITH THE FIRST INDICATION OF LOSS OF DIRECTIONAL CONTROL, REDUCE PITCH AND POWER ON SIMULATED OPERATIVE ENGINE TO RECOVER

APPLY TAKEOFF POWER ON SIMULATED OPERATIVE ENGINE WHILE INCREASING PITCH TO DECELERATE 1KT PER SECOND

AT Vmc PLUS 15KCAS, ADD POWER TO SIMULATED OPERATIVE ENGINE AND RECOVER TO STRAIGHT AND LEVEL FLIGHT

A/S 125KCAS TRIMMED FOR STRAIGHT AND LEVEL FLIGHT

INSTRUCTOR CAUTION
ONE ENGINE LOSS OF DIRECTIONAL CONTROL IS BEST TRAINED AND ACCOMPLISHED USING EARLY RECOGNITION AND RECOVERY TECHNIQUES. SEAT POSITION AND RUDDER TRAVEL SHOULD BE EMPHASIZED DURING THIS MANEUVER. RUDDER BLOCKING BY THE INSTRUCTOR IS ENCOURAGED TO PRODUCE LOSS OF DIRECTIONAL CONTROL AT APPROXIMATELY Vmc PLUS 10KCAS, BECAUSE EARLY RECOGNITION AND RECOVERY IS THE PRIMARY OBJECTIVE OF THIS MANEUVER.

20° FLAPS (Vmc 99KCAS MARQUISE, N – 93KCAS SOLITAIRE, P)
5° FLAPS (Vmc 99KCAS MARQUISE, N – 100KCAS SOLITAIRE, P)
Vne 125KCAS

MIN ALT. 5,000 AGL

INSTRUCTOR BLOCKS RUDDER TO CAUSE LOSS OF DIRECTIONAL CONTROL AT Vmc PLUS 10KCAS

WARNING
IF STALL WARNING ACTIVATES, REDUCE PITCH AND POWER ON SIMULATED OPERATIVE ENGINE, AND RECOVER

A-7
MU-2B MARQUISE (-60), SOLITAIRE (-40), N (-36A), P (-26A)

APPROACH TO STALL CLEAN CONFIGURATION / WINGS LEVEL

CLEAR AREA, CONDITION LEVERS TO AND LAND, SYNCH OFF - 120-130K CAS
AIRCRAFT TRIMMED

20% TORQUE

ON STALL RECOGNITION (STICK SHAKER), SIMULTANEOUSLY APPLY
MAX POWER, LEVEL WINGS IF IN A
BANK AND ADJUST PITCH AS
NECESSARY TO MINIMIZE LOSS OF
ALTITUDE.
STALL WARNING MAY ACTIVATE AT
4 TO 9 KCAS ABOVE STALL.

ACCELERATE
TO 140KCAS,
POWER AS
REQUIRED

MAINTAIN LEVEL
FLIGHT

CALL THE
"STALL"

AS A/S INCREASES, CLimb
TO ORIGINAL ALTITUDE

TRIM FOR
120KCAS

STALL SPEEDS

<table>
<thead>
<tr>
<th>FLAPS SET</th>
<th>0</th>
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<tr>
<td>GR. WT.</td>
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</tr>
<tr>
<td>7,000</td>
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<td>11,000</td>
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<tr>
<td>11,575</td>
<td>105</td>
<td>99</td>
<td>87</td>
<td>81</td>
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</tbody>
</table>

* P. SOL.

MIN. ALT.
5,000' AGL
MU-2B MARQUISE (-40), SOLITAIRE (-40), N (-36A), P (-26A)

APPROACH TO STALL
TAKEOFF CONFIGURATION 15-30° BANK

CLEAR AREA, CONDITION LEVERS
T/O AND LAND SYNC OFF – A/S 120-
130KCAS TRIMMED AIRCRAFT

FLAPS 5° OR 20°, GEAR
DOWN, 20° TORSO

ON STALL RECOGNITION (STICK SHAKER),
SIMULTANEOUSLY APPLY MAX POWER, LEVEL WINGS AND
ADJUST PITCH AS NECESSARY TO MINIMIZE LOSS OF ALTITUDE, POSITIVE RATE, GEAR UP, STALL WARNING MAY
ACTIVATE AT 4 TO 9 KCAS ABOVE STALL.

A/S 140KCAS,
FLAPS UP, POWER AS
REQUIRED

A/S 130KCAS,
FLAPS 5° INCREASE PITCH TO APPROX.
10°

AS A/S INCREASES, CLIMB
tO ORIGINAL ALTITUDE

MAINTAIN LEVEL
FLIGHT, TRIM FOR 120K

CALL THE
“STALL”

INITIATE 15-30° BANK
IN LEVEL FLIGHT

STALL SPEEDS (APPROXIMATE)
AT MAXIMUM GROSS TAKEOFF WEIGHT
N. MARQUISE / P. SOLITAIRE

MIN. ALT.
5,000' AGL

ANGLE OF BANK
FLAPS
UP° 10° 20° 30° 40° 50° 60°
107/104° 109/106° 113/112° 120/119° 131/130° 148/146°
9° 98° 102/101° 106/105° 113/112° 123/122° 138/138°
20° 87° 88° 90° 93° 94° 98/102° 108/109° 122/123°
40° 82° 79° 84/ 80° 87° 84° 92° 90° 101/ 98° 113/110°

A.9
MU-2B MARQUISE (-60), SOLITAIRE (-40), N (-36A), P (-26A)

APPROACH TO STALL
GEAR DOWN – FULL FLAPS

CLEAR AREA, CONDITION LEVERS T/O AND LAND, SYNC OFF – A/S 120 – 130KCAS TRIMMED

ON STALL RECOGNITION (STICK SHAKER), SIMULTANEOUSLY APPLY MAX POWER AND ADJUST PITCH AS NECESSARY TO MINIMIZE LOSS OF ALTITUDE. FLAPS 20°, POSITIVE RATE, GEAR UP, CLIMB TO ORIGINAL ALTITUDE. STALL WARNING MAY ACTIVATE AT 4 TO 9 K Above stall.

FLAPS 20°, GEAR DOWN, 20° TORQUE

A/S 120KCAS, FLAPS FULL

20° TORQUE, MAINTAIN LEVEL FLIGHT, TRIM FOR 120KCAS

CALL THE "STALL"

A/S 130KCAS, FLAPS 9° INCREASE PITCH TO APPROX 10° AS AIRSPEED INCREASES CLimb TO ORIGINAL ALTITUDE.

A/S 140KCAS, FLAPS UP

STALL SPEEDS

<table>
<thead>
<tr>
<th>FLAPS SET</th>
<th>UP</th>
<th>5</th>
<th>20</th>
<th>40</th>
</tr>
</thead>
<tbody>
<tr>
<td>GR WT. 7,000</td>
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<td>.80</td>
<td>.72</td>
<td>.64</td>
</tr>
<tr>
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<td>.82</td>
<td>.74</td>
<td>.66</td>
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<td>.88</td>
<td>.78</td>
<td>.70</td>
</tr>
<tr>
<td>9,000</td>
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<td>.87/90</td>
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<td>.70/72</td>
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<td>.79/83</td>
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<tr>
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<td>.92/95</td>
<td>.81/85</td>
<td>.75/76</td>
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<td>.78</td>
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<td>10,500</td>
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<td>94</td>
<td>83</td>
<td>77</td>
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<tr>
<td>11,000</td>
<td>103</td>
<td>96</td>
<td>85</td>
<td>79</td>
</tr>
<tr>
<td>11,575</td>
<td>106</td>
<td>99</td>
<td>87</td>
<td>81</td>
</tr>
</tbody>
</table>

MIN ALT. 5,000’ AGL

A-10
MU-2B MARQUIS (-60), SOLITAIRE (-40), N (-36A), P (-26A)

ACCELERATED STALLS

CLEAR AREA, CONDITION LEVERS TO AND LAND, SYNC OFF

CLEAN, A/S 115KCAS A/C TRIMMED

INITIATE PROGRESSIVE BANK TOWARD A 60° BANK ANGLE, APPLY BACKPRESSURE TO MAINTAIN ALTITUDE

* THIS MANEUVER SHOULD ALSO BE ACCOMPLISHED IN THE LANDING CONFIGURATION WITH GEAR DOWN, FLAPS 20°, A/S 100KCAS TRIMMED

* 140KCAS FLAPS UP

* 125KCAS FLAPS TO 5°

* POSITIVE RATE, GEAR UP

ACCELERATE TO 140KCAS, POWER AS REQUIRED

AS A/S INCREASES, CLIMB TO ORIGINAL ALTITUDE

CALL THE "STALL"

STALL SPEEDS (APPROXIMATE) AT MAXIMUM GROSS TAKEOFF WEIGHT N, MARQUIS / P, SOLITAIRE

ANGLE OF BANK FLAPS UP

10° 20° 30° 40° 50° 60°

107/104° 109/108° 113/112° 120/119° 131/130° 148/146°

5° 99°/ 98° 102/101° 106/105° 113/112° 123/122° 136/138°

20° 87°/ 88° 89°/ 90° 93°/ 94° 98/100° 108/109° 122/123°

40° 82°/ 79° 84°/ 80° 87°/ 84° 92°/ 90° 101°/ 98° 113/110°

ON STALL RECOGNITION (STICK SHAKER) SIMULTANEOUSLY APPLY MAX POWER, ADJUST PITCH AS NECESSARY TO MINIMIZE LOSS OF ALTITUDE, AND ROLL WINGS LEVEL.
MU-2B MARQUISE (-60), SOLITAIRE (-40), N (-36A), P (-26A)
EMERGENCY DESCENT (LOW SPEED)

*CLEAR AREA, CRUISE CONFIGURATION START AT ASSIGNED ALTITUDE. A/S 150KCAS MIN.

POWER LEVERS FI, CONDITION LEVERS T/O AND LAND SYNC OFF. FLAPS 9° AT 175KCAS, & GEAR DOWN (110KCAS SOL, P, 175KCAS MARQ, N) FLAPS 20° AT 155KCAS; FLAPS 40° AT 120KCAS

SIMULATE EXPLOSIVE DECOMPRESSION AT ASSIGNED ALTITUDE. OXYGEN MASKS ON. "DECLARE EMERGENCY"

ESTABLISH DESCENT IN A 30° BANK, 155KCAS MAX. INITIAL NOSE DOWN IS APPROX 20° UNTIL REACHING 155K. THEN NOSE UP TO MAINTAIN SPEED.

*WHILE CLEARING THE AREA, COORDINATE WITH AIR TRAFFIC CONTROL TO CLEAR TRAFFIC AT LOWER ALTITUDES

AFTER ESTABLISHING DESCENT, ROLL WINGS LEVEL. CONTINUE DESCENT ON STEADY HEADING OR AS REQUIRED BY ATC.

CHECK 1000' ABOVE LEVEL OFF ALTITUDE

500' ABOVE, START LEVEL OFF

COMPLETE EXERCISE AT ASSIGNED ALTITUDE. REDUCE TO 120KCAS AND CLEAN UP A/C. **DO NOT RAISE FLAPS UNTIL A/C IS BELOW 120KCAS.
MU-2B MARQUISE (-60), SOLITAIRE (-40), N (-36A), P (-26A)
UNUSUAL ATTITUDE RECOVERY (NOSE HIGH)

Roll toward 60° bank using rudder and spoiler and allow nose to fall through the horizon.

Caution
Do not load wings during banking maneuver to prevent an accelerated stall.

Upon recognition of a nose high unusual attitude, power to takeoff.

*Clear area

While clearing the area, coordinate with air traffic control to clear traffic both above and below your altitude.

Instructor note
The instructor should initiate the unusual attitude and use positive control to transfer control to the student for recovery.

When nose low, roll wings level, reduce power to flight idle, and commence a wings level pull up to a level flight attitude.

Once level, add power to maintain level flight.
MU-2B MARQUISE (-60), SOLITAIRE (-40), N (-36A), P (-26A)
UNUSUAL ATTITUDE RECOVERY (NOSE LOW)

CLEAR AREA

UPON RECOGNITION OF A NOSE LOW UNUSUAL ATTITUDE, REDUCE POWER TO FLIGHT IDLE, ROLL TOWARD WINGS LEVEL IF IN A BANK, AND MAINTAIN NOSE LOW PITCH ATTITUDE WHILE LEVELING WINGS

*WHILE CLEARING THE AREA, COORDINATE WITH AIR TRAFFIC CONTROL THE CLEAR TRAFFIC BOTH ABOVE AND BELOW YOUR ALTITUDE.

INSTRUCTOR NOTE
THE INSTRUCTOR SHOULD INITIATE THE UNUSUAL ATTITUDE AND USE POSITIVE CONTROL TO TRANSFER CONTROL TO THE STUDENT FOR RECOVERY

ONCE WINGS ARE LEVEL IN NOSE LOW ATTITUDE, COMMENCE A WINGS LEVEL PULL UP TO A LEVEL FLIGHT ATTITUDE. CAUTION DO NOT 'G' LOAD AIRCRAFT UNTIL WINGS ARE LEVEL TO PREVENT AN ACCELERATED STALL.

ONCE LEVEL, ADD POWER TO MAINTAIN LEVEL FLIGHT.
MU-2B MARQUIS (-60), SOLITAIRE (-40), N (-36A), P (-26A)
NORMAL LANDING (20° or 40° FLAPS)

POWER LEVERS RETARD TO GROUND IDLE, CHECK BOTH PROPS Beta, THEN REVERSE AS REQUIRED, BRAKING AS REQUIRED.

TOUCHDOWN, POWER LEVERS RETARD TO FLIGHT IDLE STOP.

THRESHOLD 20% TORQUE VREF

LANDING ASSURED, FLAPS 20° 40°. AS SLOWING TO VREF:
CHECK SINK RATE 500-600 FPM

A/S 120 KIAS MINIMUM DESCENT. 500-600 FPM (20-25% TORQUE)

STABILIZED APPROACH BY 300 KIAS

COMPLETE DESCENT CHECKLIST

A/S 150K MINIMUM (25-30% TORQUE)

MAINTAIN TRACK PARALLEL TO RUNWAY

LANDING APPROACH SPEEDS - VREF

<table>
<thead>
<tr>
<th>WEIGHT</th>
<th>1.3 VS1 FLAPS 20°</th>
<th>1.3 VS1 FLAPS 40°</th>
</tr>
</thead>
<tbody>
<tr>
<td>7,500 LBS</td>
<td>96 /</td>
<td>99 /</td>
</tr>
<tr>
<td>8,000 LBS</td>
<td>99 /</td>
<td>102 /</td>
</tr>
<tr>
<td>8,500 LBS</td>
<td>99 /</td>
<td>105 /</td>
</tr>
<tr>
<td>9,000 LBS</td>
<td>100 / 105 /</td>
<td>108 / 109 /</td>
</tr>
<tr>
<td>9,500 LBS</td>
<td>102 / 108 /</td>
<td>111 / 112 /</td>
</tr>
<tr>
<td>9,955 LBS</td>
<td>111 /</td>
<td>115 /</td>
</tr>
<tr>
<td>10,000 LBS</td>
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<td>114 /</td>
</tr>
<tr>
<td>10,500 LBS</td>
<td>108 /</td>
<td>116 /</td>
</tr>
<tr>
<td>11,025 LBS</td>
<td>110 /</td>
<td>119 /</td>
</tr>
</tbody>
</table>

* X, 75K.
MU-2B MARQUIS (-60), SOLITAIRE (-40), N (-36A), P (-26A)
GO AROUND - REJECTED LANDING

AFTER GEAR IS FULLY RETRACTED, A/S 130KCAS, FLAPS 5°, INCREASE PITCH TO 10°

ACCELERATE TO DESIRED CLimb SPEED

COMPLETE AFTER TO AND CLIMB CHECKLIST

WHEN LANDING REJECTED, APPLY MAX POWER, PITCH IN 6° UP AND SELECT FLAPS 20° IF 40° PREVIOUSLY SELECTED

A/S 140KCAS, FLAPS UP

NORMAL APPROACH, STABILIZED AND CONFIGURED FOR LANDING

POSITIVE RATE OF CLimb. GEAR UP, 110KCAS MINIMUM, 120KCAS RECOMMENDED.
MU-2B MARQUISE (-60), SOLITAIRE (-40), N (-36A), P (-26A)
ONE ENGINE INOPERATIVE LANDING

CAUTION
ANTICIPATE STEER TOWARD OPERATING ENGINE WHEN ENTERING BETAM:

OPERATING ENGINE POWER LEVER GROUND IDLE, THEN PROP BETA, REVERSE AS REQUIRED, BRAKES AS REQUIRED.

TOUCHDOWN OPERATING ENGINE POWER LEVER SLOWLY RETARD TO FLIGHT IDLE STOP.

CAUTION
DO NOT USE SINGLE ENGINE REVERSE THRUST WITH THE SIMULATED FAILED ENGINE POWER LEVER ABOVE FLIGHT IDLE.

WARNING
DO NOT ATTEMPT A GO-AROUND WITH GEAR DOWN BELOW 400' AGL OR AFTER 20' FLAPS ARE SELECTED.

MAINTAIN TRACK PARALLEL TO RUNWAY.

COMPLETE DESCENT AND APPROACH CHECKLISTS AND REVIEW SINGLE ENGINE LANDING CHECKLIST.

A/S 150KCAS (140KCAS MIN MARQ, N) (135KCAS MINIMUM SOL, P) (APPROX 50-55% TORQUE)

THRESHOLD, 20% TORQUE VREF 110KCAS MIN (MARQ, N) 100KCAS MIN (SOL, P)

CHECK SINK RATE 300-600 FPM.

WHEN LANDING ASSURED, FLAPS 20', A/S 125KCAS MIN, COMPLETE LANDING CHECKLIST, RUDDER TRIM CENTERED, HOLD BALL IN CENTER WITH RUDDER.

FLAPS 5', A/S 140KCAS (130KCAS MINIMUM)

CHECK SINK RATE 500-500 FEET PER MINUTE.

CHECK GLIDE PATH, IF LANDING ASSURED, GEAR DOWN (APPROX 40% TORQUE)

N, MARQ, SOL

FLAP SETTING

<table>
<thead>
<tr>
<th>FLAP SETTING</th>
<th>VXSE (KIAS)</th>
<th>VXSE (KIAS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UP</td>
<td>140 / 135 *</td>
<td>150 / 150 *</td>
</tr>
<tr>
<td>5°</td>
<td>130 / 130 *</td>
<td>140 / 140 *</td>
</tr>
<tr>
<td>20°</td>
<td>125 / 125 *</td>
<td>135 / 130 *</td>
</tr>
</tbody>
</table>

*P, SOL
MU-2B MARQUISE (-60), SOLITAIRE (-40), N (-36A), P (-26A)
CROSSWIND LANDING

ARICRAFT WILL BE FLOWN DOWN AN EXTENSION OF THE RUNWAY CENTER LINE WITH DRIFT CORRECTION ESTABLISHED SUFFICIENTLY IN ADVANCE TO PERMIT CENTER LINE TO BE FLOWN WITH ONLY MINOR COORDINATED CORRECTIONS

INCREASE Vne FOR CROSSWIND LANDING BY ONE- HALF THE STEADY WIND SPEED PLUS ONE-HALF THE GUST SPEED NOT TO EXCEED Vne PLUS 10 KIAS.

PRIOR TO TOUCHDOWN, THE UPWIND WING IS LOWERED AND SMOOTHLY MODULATED. OPPOSITE RUDDER IS APPLIED SO THAT AIRCRAFT PATH CONTINUES DOWN RUNWAY CENTERLINE. THE AIRCRAFT SHOULD NOT BE ALLOWED TO DEVELOP ANY TENDENCY TO DRIFT DOWNWIND.

**NOTE: RUDDERS CENTERED BEFORE NOSE WHEEL TOUCHDOWN. SPOILERS INTO WIND AS NECESSARY TO KEEP WINGS LEVEL.
MU-2B MARQUESE (-60), SOLITAIRE (-40), N (-36A), P (-26A)

ILS AND MISSED APPROACH

A/S 150K (140K MIN) APPROACH CHECKLIST. REVIEW APPROACH PLATE, RADIOS, TUNE & IDENTIFY, CHECK OM CROSSING ALTITUDE MARKER RECEIVER "ON".

FLAPS 5°, 140K MIN. 25-30% TORQUE, DESCEND 500 FPM.

CHECK GEAR DOWN, FLAPS 20° APPROACHING GLIDE SLOPE (ONE DOT BELOW G/S), A/S 120K MIN.

POWER LEVERS RETARD TO GROUND IDLE, CHECK BOTH PROPS BETA, REVERSE AS REQUIRED, BRAKES AS REQUIRED.

LANDING APPROACH SPEEDS – VREF

<table>
<thead>
<tr>
<th>WEIGHT</th>
<th>1.3 VS1</th>
<th>1.5 VS1</th>
</tr>
</thead>
<tbody>
<tr>
<td>7,500 LBS</td>
<td></td>
<td></td>
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<tr>
<td>8,000 LBS</td>
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</tr>
<tr>
<td>8,500 LBS</td>
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<tr>
<td>9,000 LBS</td>
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<tr>
<td>9,500 LBS</td>
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<tr>
<td>10,000 LBS</td>
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<tr>
<td>10,500 LBS</td>
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</tr>
<tr>
<td>11,025 LBS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* F. NIL.

A/S 140K MIN. 20-25% TORQUE.

MISSED APPROACH CONTINUE WITH ENGINE OUT MISSED APPROACH PROFILE.

A/S 140K MIN. 25-30% TORQUE.

WHEN LANDING ASSURED, FLAPS 20°, (OR 40° BELOW 120K).

THRESHOLD (20% TORQUE) Vref.

TOUCHDOWN, POWER LEVERS RETARD TO FLIGHT IDLE STOP.
MU-2B MARQUIS (-60), SOLITAIRE (-40), H (-36A), P (-26A)
ONE ENGINE INOPERATIVE ILS AND MISSED APPROACH

A/S 150 KCAS (140 KCAS MIN MARQ, N) (135 KCAS MIN SOL, P)
APPROACH CHECKLIST: REVIEW APPROACH PLATE. RADIOS: TUNE & IDENTIFY. CHECK OM CROSSING ALTITUDE MARKER RECEIVER "ON"

FLAPS 5\(^\circ\), 140 KCAS (130 KCAS MIN), 50-60\% TORQUE

A/S 140 KCAS (130 KCAS MIN), 50-60\% TORQUE, FLAPS 5\(^\circ\), DESCEND 500 FPM

CAUTION
DO NOT USE SINGLE ENGINE REVERSE THRUST WITH THE SIMULATED FAILED ENGINE POWER LEVER ABOVE FLIGHT IDLE.

WARNING
DO NOT ATTEMPT A GO-AROUND WITH GEAR DOWN BELOW 400\(^\circ\) AGL OR AFTER 20\(^\circ\) FLAPS ARE SELECTED.

MISSING APPROACH: CONTINUE WITH ENGINE OUT MISSED APPROACH PROFILE

CHECK GEAR DOWN APPROACHING Glide SLOPE (ONE DOT BELOW G/S), A/S 140 KCAS (130 KCAS MIN)

LANDING CHECK (50-55\% TORQUE)

WHEN LANDING ASSURED, FLAPS 20\(^\circ\), SLOWING TO CROSS THRESHOLD AT 110 KCAS (MARQUIS, N), 105 KCAS (SOLITAIRE, P)

OPERATING ENGINE POWER LEVER GROUND IDLE. THEN PROP BETA REVERSE AS REQUIRED. BRAKES AS REQUIRED.

TOUCHDOWN, OPERATING ENGINE POWER LEVER SLOWLY RETARD TO FLIGHT IDLE STOP
MU-2B MARQUISE (-60), SOLITAIRE (-40), N (-36A), P (-26A)
ONE ENGINE INOPERATIVE MISSED APPROACH

COMMENCING MISSED APPROACH, SET MAX POWER, MAINTAIN DIRECTIONAL CONTROL, RUDDER AND SPOILER AS NECESSARY. PITCH TO MAINTAIN A/S 140KIAS, GEAR UP.

"IF TRANSITIONING FROM A DESCENT, MAINTAIN PITCH TO MAINTAIN 140KIAS, RAISE GEAR, THEN 10° PITCH. SOME ALTITUDE LOSS IS TO BE EXPECTED.

A/S 150KIAS, COMPLETE AFTER TAKEOFF CHECKLIST

A/S 140KIAS MINIMUM, FLAPS UP

APPROX 300'-400'
(OBSTRACTION CLEARANCE) ADJUST PITCH TO ACCELERATE

AFTER GEAR IS FULLY RETRACTED, PITCH 10°

WARNING
UNDER CERTAIN COMBINATIONS OF WEIGHT, TEMPERATURE AND PRESSURE ALTITUDE, WITH LANDING GEAR DOWN AND FLAPS 20°, SINGLE ENGINE GO AROUND MAY NOT BE POSSIBLE AT ALTITUDES OF LESS THAN 400 FEET AGL.
MU-2B MARQUISE (-60), SOLITAIRE (-40), N (-36A), P (-26A)
ONE ENGINE INOPERATIVE NON-PRECISION AND MISSED APPROACH

A/S 150KCAS (140KCAS MIN MARQ, N) (135KCAS MIN 50K, P) APPROACH CHECKLIST: REVIEW APPROACH PLATE. RADIOS: TUNE & IDENTIFY. CHECK FIX CROSSING ALTITUDE.

A/S 140KCAS (130KCAS MIN) 50-60% TORQUE, FLAPS 5°. DESCEND 500 FPM

FLAPS 5°, 140KCAS (130KCAS MIN) 50-60% TORQUE

A/S 140KCAS (130 MIN.) 50-60% TORQUE, FLAPS 5°.

A/S 140KCAS (130KCAS MIN) 20-30% TORQUE, 800-1000 FPM DESCENT

MISSING APPROACH: CONTINUE WITH ENGINE OUT MISSED APPROACH PROFILE

A/S140KCAS (130KCAS MIN) 50-60% TORQUE

WARNING
DO NOT ATTEMPT A WITH GEAR DOWN GO-AROUND BELOW 400' AGL OR AFTER 20° FLAPS ARE SELECTED

CAUTION
DO NOT USE SINGLE ENGINE REVERSE THRUST WITH THE SIMULATED FAILED ENGINE POWER LEVER ABOVE FLIGHT IDLE.

WHEN LANDING ASSURED, GEAR DOWN, FLAPS 20°, SLOWING TO CROSS threshold AT 110K (MARQUISE, N), 105K (SOLITAIRE, P). LANDING CHECKLIST COMPLETE CAUTION
GEAR EXTENSION TIME IS APPROXIMATELY 15 SECONDS. CONFIRM GEAR DOWN PRIOR TO LANDING.

TOUCHDOWN, OPERATING ENGINE POWER LEVER SLOWLY RETARD TOFlight IDLE STOP. POWER LEVER GROUND IDLE, THEN PROP BETA, REVERSE AS REQUIRED. BRAKES AS REQUIRED.
MU-2B MARQUIS (-60), SOLITAIRE (-40), N (-36A), P (-26A)

CIRCLING APPROACH AT WEATHER MINIMUMS

FROM APPROACH:
FLAPS 20°, GEAR DOWN, A/S 140KIAS

TOUCHDOWN, RETARD POWER LEVERS TO FLIGHT
IDLE STOP, THEN POWER LEVERS RETARD TO
GROUND IDLE. CHECK BOTH PROPS BETA.
REVERSE AND BRAKES AS REQUIRED.

A/S 140KIAS (130KIAS MIN.)
APPROX 50% TORQUE, NOT
BELOW CIRCLING MINIMUM
DESCENT ALTITUDE

THRESHOLD: 20%
TORQUE, Vref

CHECK SINK RATE
500-600 FPM

FLAPS 20° OR
40° SLOWING
TO Vref!

20-25% TORQUE,
A/S 120KIAS
500-600 FPM
DESCENT

DO NOT DESCEND
UNTIL WITHIN 30 FT OF
RUNWAY CENTERLINE

LANDING APPROACH SPEEDS – VREF

<table>
<thead>
<tr>
<th>WEIGHT (LBS)</th>
<th>1.3 VS1</th>
<th>1.5 VS1</th>
</tr>
</thead>
<tbody>
<tr>
<td>7,500</td>
<td>96°</td>
<td>95°</td>
</tr>
<tr>
<td>8,000</td>
<td>99°</td>
<td>102°</td>
</tr>
<tr>
<td>8,500</td>
<td>99°</td>
<td>102°</td>
</tr>
<tr>
<td>9,000</td>
<td>100°/105°</td>
<td>108°/109°</td>
</tr>
<tr>
<td>9,500</td>
<td>102°/108°</td>
<td>111°/112°</td>
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<tr>
<td>9,555</td>
<td>111°</td>
<td>115°</td>
</tr>
<tr>
<td>10,000</td>
<td>105°</td>
<td>114°</td>
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<tr>
<td>10,500</td>
<td>108°</td>
<td>116°</td>
</tr>
<tr>
<td>11,025</td>
<td>110°</td>
<td>119°</td>
</tr>
</tbody>
</table>

* A/S 140KIAS

* *
MU-2B MARQUIS (60), SOLITAIRE (-40), N (-36A), P (-26A)
ONE ENGINE INOPERATIVE CIRCLING APPROACH AT WEATHER MINIMUMS

CAT C 121 - 140 KCAS 1.7 NM
CAT D 141 - 165 KCAS 2.3 NM

FROM APPROACH: FLAPS 5°, GEAR UP, A/S 140 KCAS
(130 KCAS MIN.)

CAUTION
ANTICIPATE SWERVE TOWARD OPERATING ENGINE WHEN ENTERING BETA

A/S 140 KCAS (130 KCAS MIN.) APPROX 70% TORQUE, NOT BELOW CIRCLING MINIMUM DESCENT ALTITUDE

WARNING
DO NOT USE SINGLE ENGINE REVERSE THRUST WITH THE SIMULATED FAILED ENGINE POWER LEVER ABOVE FLIGHT IDLE.

CHECK FLAPS 5°, DO NOT DESCEND UNTIL WITHIN 30° OF RUNWAY CENTERLINE

** NOTE: ENGINE OUT CIRCLING APPROACH SHOULD BE FLOWN WITH 5° FLAPS AND GEAR UP. WHEN LANDING ASSURED, GEAR DOWN, FLAPS 20°, SLOWING TO A/S 110 KCAS (MARQUIS, N) A/S 105 KCAS (SOLITAIRE, P)

THRESHOLD FLAPS 20°, A/S 110 KCAS (MARQUIS, N), A/S 105 KCAS (SOLITAIRE, P)

CHECK SINK RATE 500-600 FPM

CHECK DESCENT PROFILE, IF LANDING ASSURED, GEAR DOWN, CHECK SINK RATE 500-600 FPM

MAX BANK 30°

THRESHOLD FLAPS 20°, A/S 110 KCAS (MARQUIS, N), A/S 105 KCAS (SOLITAIRE, P)

CHECK SINK RATE 500-600 FPM

LANDING ASSURED: FLAPS 20°, A/S 120 KCAS MIN. COMPLETE LANDING CHECKLIST

CAUTION
DO NOT ATTEMPT A GO-AROUND WITH GEAR DOWN BELOW 400’ AGL OR AFTER 20° FLAPS ARE SELECTED

CHECK DESCENT PROFILE, IF LANDING ASSURED, GEAR DOWN, CHECK SINK RATE 500-600 FPM

MAX BANK 30°

CHECK SINK RATE 500-600 FPM

LANDING ASSURED: FLAPS 20°, A/S 120 KCAS MIN. COMPLETE LANDING CHECKLIST

CAUTION
DO NOT USE SINGLE ENGINE REVERSE THRUST WITH THE SIMULATED FAILED ENGINE POWER LEVER ABOVE FLIGHT IDLE.

CHECK FLAPS 5°, DO NOT DESCEND UNTIL WITHIN 30° OF RUNWAY CENTERLINE

** NOTE: ENGINE OUT CIRCLING APPROACH SHOULD BE FLOWN WITH 5° FLAPS AND GEAR UP. WHEN LANDING ASSURED, GEAR DOWN, FLAPS 20°, SLOWING TO A/S 110 KCAS (MARQUIS, N) A/S 105 KCAS (SOLITAIRE, P)

THRESHOLD FLAPS 20°, A/S 110 KCAS (MARQUIS, N), A/S 105 KCAS (SOLITAIRE, P)

CHECK SINK RATE 500-600 FPM

CHECK DESCENT PROFILE, IF LANDING ASSURED, GEAR DOWN, CHECK SINK RATE 500-600 FPM

MAX BANK 30°

THRESHOLD FLAPS 20°, A/S 110 KCAS (MARQUIS, N), A/S 105 KCAS (SOLITAIRE, P)

CHECK SINK RATE 500-600 FPM

LANDING ASSURED: FLAPS 20°, A/S 120 KCAS MIN. COMPLETE LANDING CHECKLIST

CAUTION
DO NOT ATTEMPT A GO-AROUND WITH GEAR DOWN BELOW 400’ AGL OR AFTER 20° FLAPS ARE SELECTED

CHECK FLAPS 5°, DO NOT DESCEND UNTIL WITHIN 30° OF RUNWAY CENTERLINE

** NOTE: ENGINE OUT CIRCLING APPROACH SHOULD BE FLOWN WITH 5° FLAPS AND GEAR UP. WHEN LANDING ASSURED, GEAR DOWN, FLAPS 20°, SLOWING TO A/S 110 KCAS (MARQUIS, N) A/S 105 KCAS (SOLITAIRE, P)
MU-2B J (-35), K (-25), L (-36), M (-26)
NORMAL TAKE-OFF, 5° OR 20° FLAPS

**TAKE OFF SPEEDS**
FOR ROTATE SPEEDS SEE TABULAR CHART ON REVERSE SIDE OF PROFILE.

**A/S 150KCAS MINIMUM, FLAPS UP**

**NORMAL PITCH**
APPROX 8°, FLAPS 20°;
APPROX 10-12°, FLAPS 5°

**ACCELERATE TO DESIRED CLIMB SPEED**

**POS RATE, NO RUNWAY REMAINING**
FOR LANDING, GEAR UP; IF 20° FLAPS 113 KCAS MIN. IF 0° FLAPS 120 KCAS (J, L); 125 KCAS (K, M)

**VR − ROTATE 13° MAX NOSE UP PITCH**

**NOTE:** IF RUNWAY LENGTH OR OBSTACLE CLEARANCE IS CRITICAL, SET POWER TO TORQUE OR TEMP MAXIMUM, WHICHEVER OCCURS FIRST. RETARD POWER LEVERS AS REQUIRED TO MAINTAIN MAXIMUM ALLOWABLE TORQUE OR TEMP.

*TORQUE 90% OR 600° EGT / 87° ITT, WHICHEVER OCCURS FIRST; BETA LIGHTS OUT, RELEASE BRAKES. RAM RISE WILL CAUSE TORQUE OR TEMP TO RISE TO MAXIMUM TAKEOFF POWER DURING TAKEOFF ROLL.*

**COMPLETE AFTER T/O AND CLIMB CHECKLIST**

**AFTER GEAR IS FULLY RETRACTED, IF FLAPS 20° ADJUST PITCH TO ACCELERATE 130 KCAS (K, MOD SR10K, NOT MOD SR10), 140 KCAS (J, L, M); RETRACT FLAPS TO 5°, INCREASE PITCH TO APPROX. 10°,*
<table>
<thead>
<tr>
<th>FLAPS 25</th>
<th>FLAPS 30</th>
<th>FLAPS 32</th>
<th>TAKE OFF SPRINTS</th>
<th>ROTATE</th>
<th>K</th>
<th>L</th>
<th>M</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>11,000 LBS</td>
<td>11,000 LBS</td>
<td>11,575 LBS</td>
<td>J</td>
<td>109</td>
<td>109</td>
<td></td>
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<tr>
<td>10,470 LBS</td>
<td>10,900 LBS</td>
<td>11,575 LBS</td>
<td>M</td>
<td>103</td>
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<td>11,575 LBS</td>
<td>K</td>
<td>102</td>
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<tr>
<td>9,920 LBS</td>
<td>10,900 LBS</td>
<td>11,575 LBS</td>
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<td>J</td>
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<td>K</td>
<td>99</td>
<td>99</td>
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<td>L</td>
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<td></td>
</tr>
</tbody>
</table>
MU-2B J (-35), K (-25), L (-36), M (-26)

TAKE-OFF ENGINE FAILURE – FLAPS 5° OR 20°

<table>
<thead>
<tr>
<th>J, K, L, M</th>
<th>VXSE (KCAS)</th>
<th>VXSE (KCAS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UP</td>
<td>140 / 130*</td>
<td>150 / 150*</td>
</tr>
<tr>
<td>5°</td>
<td>130 / 130*</td>
<td>140 / 140*</td>
</tr>
<tr>
<td>20°</td>
<td>125 / 125*</td>
<td>135 / 130*</td>
</tr>
</tbody>
</table>

*K, M

APPX 300-400 FEET (OBSTRUCTION CLEARANCE). IF FLAPS 20° ADJUST PITCH TO ACCELERATE. 130 KCAS MIN. FLAPS TO 5° IF FLAPS 5° INSTALLED. PITCH APPROX. 10°. (IF FLAPS 5 NOT INSTALLED, FLAPS UP*). PITCH APPROX. 10° TO 13°.

PITCH TO MAINTAIN VXSE MINIMUM APPROX 8° PITCH, FLAPS 20°, APPRX 10-12° PITCH, FLAPS 5°. MAINTAIN DIRECTIONAL CONTROL WITH RUDDER AND MINIMUMSpoiler. FAILED ENGINE – CONDITION LEVER, EMERGENCY STOP, POWER LEVER, TAKE OFF **, TRIM AIRCRAFT.

POS RATE, NO RUNWAY REMAINING FOR LANDING, GEAR UP. IF 20° FLAPS 113 KCAS MIN. IF 5° FLAPS 120 KCAS (J, L) 125 KCAS (K, M).

MAKE NORMAL T/O

CAUTION SIMULATED ENGINE FAILURE (NOT LESS THAN 200 FT AGL).

** IF SUFFICIENT RUNWAY REMAINS, OR UNABLE TO CLIMB: GEAR DOWN, REDUCE POWER TO LAND STRAIGHT AHEAD USING A/S APPROPRIATE FOR WEIGHT, 109 KCAS MINIMUM (J, L), 100 KCAS MINIMUM (K, M).

A/S 150 KCAS, COMPLETE AFTER TAKE-OFF AND ENGINE OUT CHECKLIST.

A/S 140 KCAS MIN (IF FLAPS 5° INSTALLED) FLAPS UP*.

A/S 150 KCAS, COMPLETE AFTER TAKE-OFF AND ENGINE OUT CHECKLIST.

*IF SR 10 NOT INSTALLED, MAXIMUM FLAP SPEED DURING RETRACTION IS 140 KCAS. DURING RETRACTION, PITCH TO MAINTAIN 140 KCAS UNTIL FLAPS UP.

Pl. 91, SFAR No. 108
MU-2B J (-35), K (-25), L (-36), M (-26)

TAKE-OFF ENGINE FAILURE - UNABLE TO CLimb
CLASSROOM DISCUSSION OR FTD USE ONLY

WARNING
DO NOT LET AIRSPEED DECELERATE BELOW SINGLE ENGINE AIRSPEED.
105KCAS (J, L) 100KCAS (K, M)

PILOT MAKES DECISION TO EITHER RETURN THE RUNWAY SURFACE OR TO FLY BEYOND AIRPORT BOUNDARY TO SUITABLE LANDING AREA

ENGINE FAILS

POS RATE, NO RUNWAY REMAINING FOR LANDING, GEAR UP.
IF 20º FLAPS 113 KCAS MIN, IF 5º FLAPS 120 KCAS (J, L) 125 KCAS (K, M)

POWER SET, RELEASE BRAKES

IF RUNWAY REMAINS OR A LANDING CAN SAFELY BE MADE ON THE AIRPORT SURFACE, CHECK GEAR DOWN, FLAPS REMAIN IN TAKE-OFF POSITION, POWER ON OPERATING ENGINE AS REQUIRED TO LAND. LAND USING SINGLE ENGINE AIRSPEED, 105KCAS (J, L) 100KCAS (K, M)

PROPellers BETA, THEN REVERSE AS REQUIRED, BRAKES AS REQUIRED

CAUTION
ANTICIPATE SWERVE TOWARD OPERATING ENGINE WHEN ENTERING BETA
MU-2B J (-35), K (-25), L (-36), M (-26)

STEEP TURNS

*CLEAR AREA, GEAR UP, FLAPS UP, AVS 180K/CAS, TRIM A/C

SET HEADING BUG TO ROLL OUT HEADING

START NORMAL TURN POWER AS REQUIRED, INCREASE APPROXIMATELY 10% TORQUE

50° BANK ESTABLISHED, PITCH UP APPROXIMATELY 2° TO 3° OR AS NECESSARY TO MAINTAIN ALTITUDE.

*THIS MANEUVER SHOULD BE PERFORMED IN BOTH CLEAN AND LANDING CONFIGURATIONS (USE 130K FLAPS 20, GEAR DOWN, FOR LANDING CONFIGURATION)

**NOTE: TURNS WILL BE DONE THROUGH 360° AS WELL AS 180°

CHECK FOR AVS AND ALTITUDE TRENDS

REDUCE POWER TO MAINTAIN 180K

ROLL OUT ON HEADING ON ALT.

**START ROLL OUT 20° BEFORE ROLL OUT HEADING
SLOW FLIGHT MANEUVERING
MINIMUM CONTROLLABLE AIRSPEED

SLOW FLIGHT MANEUVERING IS CONDUCTED AS FOLLOWS:

CLEAR THE AREA PRIOR TO BEGINNING THE MANEUVER.

START WITH CLEAN CONFIGURATION AND CHANGE AIRCRAFT CONFIGURATION FROM CLEAN TO FULL FLAP AND GEAR IN STAGES. USE A MAXIMUM OF 15° BANK AND PERFORM HEADING CHANGES OF 90° LEFT AND RIGHT. CONSTANT ALTITUDE MUST BE MAINTAINED THROUGHOUT.

**APPROXIMATE POWER SETTINGS ARE:

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Torque (35%) PER ENGINE</th>
<th>APPRX PITCH</th>
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</thead>
<tbody>
<tr>
<td>CLEAN</td>
<td></td>
<td>+12</td>
</tr>
<tr>
<td>5° FLAP</td>
<td>(32%) PER ENGINE</td>
<td>APPRX PITCH +8</td>
</tr>
<tr>
<td>9° FLAP &amp; GEAR</td>
<td>(44%) PER ENGINE</td>
<td>APPRX PITCH +9</td>
</tr>
<tr>
<td>20° FLAP &amp; GEAR</td>
<td>(42%) PER ENGINE</td>
<td>APPRX PITCH +4</td>
</tr>
<tr>
<td>40° FLAP &amp; GEAR</td>
<td>(54%) PER ENGINE</td>
<td>APPRX PITCH 0</td>
</tr>
</tbody>
</table>

**NOTE: POWER SETTINGS WILL VARY WITH AIRCRAFT WEIGHT AND ALTITUDE.

STALL SPEEDS (APPROXIMATE):
AT MAXIMUM GROSS TAKEOFF WEIGHT
J, K, L, M

<table>
<thead>
<tr>
<th>ANGLE OF BANK</th>
<th>J / L / K / M</th>
<th>J / L / K / M</th>
</tr>
</thead>
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<tr>
<td>2°</td>
<td>104/106/101/104</td>
<td>107/106/103/106</td>
</tr>
<tr>
<td>5°</td>
<td>98/ 99/ 98/ 98</td>
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<tr>
<td>20°</td>
<td>85/ 87/ 85/ 87</td>
<td>88/ 89/ 87/ 89</td>
</tr>
<tr>
<td>40°</td>
<td>78/ 81/ 76/ 78</td>
<td>82/ 83/ 78/ 80</td>
</tr>
</tbody>
</table>

**NOTE: FLAPS 9° FLAPCAS (J, L, K, M), FLAPS 20° FLAPCAS (J, K, L, M)

STALL WARNING MAY ACTIVATE 4 TO 9 KTS ABOVE STALL.

MINIMUM CONTROLLABLE AIRSPEED IS CONDUCTED AS FOLLOWS:

CLEAR THE AREA PRIOR TO BEGINNING THE MANEUVER.

THE MANEUVER MAY BE DONE IN ANY COMBINATION OF GEAR OR FLAP CONFIGURATIONS. IF BANK IS TO BE USED, IT SHOULD BE DONE AT BANK OF NOT MORE THAN 10°. BEGIN THE MANEUVER BY CONFIGURING THE AIRCRAFT IN THE DESIRED GEAR AND FLAP CONFIGURATION. SLOW THE AIRCRAFT UNTIL THE STALL WARNING (STICK SHAKER) IS ACTIVATED AND ADD POWER TO MAINTAIN ALTITUDE AND A SPEED JUST ABOVE AERODYNAMIC STALL. DO NOT ALLOW THE AIRCRAFT TO REACH AERODYNAMIC STALL BUFFET.
MU-2B J (-35), K (-25), L (-36), M (-26)

ONE ENGINE INOPERATIVE MANEUVERING
LOSS OF DIRECTIONAL CONTROL

CLEAR AREA, CONDITION LEVERS TO AND LAND, SYNC OFF – SET ONE POWER LEVER TO ZERO THRUST TO SIMULATE FAILED ENGINE (VARIES BETWEEN 5% AND 17% TORQUE)

CAUTION
FLAPS 20°, GEAR UP, SET POWER ON SIMULATED OPERATIVE ENGINE FOR LEVEL FLIGHT A/S 125K/CAS TRIMMED

APPLY TAKEOFF POWER ON SIMULATED OPERATIVE ENGINE WHILE INCREASING PITCH TO DECELERATE 1/CAS PER SECOND

AT Vmc PLUS 15K/CAS, ADD POWER TO SIMULATED OPERATIVE ENGINE AND RECOVER TO STRAIGHT AND LEVEL FLIGHT

A/S 125K/CAS TRIMMED FOR STRAIGHT AND LEVEL FLIGHT

CAUTION
GEAR HORN MAY SOUND CONTINUOUSLY. IF INSTRUCTOR ELECTS TO DISABLE GEAR HORN WITH CIRCUIT BREAKER, THEN CIRCUIT BREAKER MUST BE RESET PRIOR TO LANDING

INSTRUCTOR CAUTION
ONE ENGINE LOSS OF DIRECTIONAL CONTROL IS BEST TRAINED AND ACCOMPLISHED USING EARLY RECOGNITION AND RECOVERY TECHNIQUES. SEAT POSITION AND RUDDER TRAVEL SHOULD BE EMPHASIZED DURING THIS MANEUVER. RUDDER BLOCKING BY THE INSTRUCTOR IS ENCOURAGED TO PRODUCE LOSS OF DIRECTIONAL CONTROL AT APPROXIMATELY Vmc PLUS 10K, BECAUSE EARLY RECOGNITION AND RECOVERY IS THE PRIMARY OBJECTIVE OF THIS MANEUVER.

20° FLAPS (Vmc90K/CAS, J – 99K/CAS, L – 93K/CAS K, M)
5° FLAPS (Vmc 99K/CAS J, L – 100K/CAS K, M)
Vcas 125K

MIN. ALT. 5,000' AGL

WARNING
IF STALL WARNING ACTIVATES, REDUCE PITCH AND POWER ON SIMULATED OPERATIVE ENGINE, AND RECOVER
MU-2 B J (-35), K (-25), L (-36), M (-26)

APPROACH TO STALL CLEAN CONFIGURATION / WINGS LEVEL

CLEAR AREA, CONDITION LEVERS T/O AND LAND, SYNC OFF – 120/K/CAS-130 KCAS
AIRCRAFT TRIMMED

20% TORQUE

MAINTAIN LEVEL FLIGHT

ON STALL RECOGNITION (STICK SHAKE), SIMULTANEOUSLY APPLY MAX POWER, LEVEL WINGS IF IN A BANK AND ADJUST PITCH AS NECESSARY TO MINIMIZE LOSS OF ALTITUDE. STALL WARNING MAY ACTIVATE AT 4 TO 9 K ABOVE STALL.

CALL THE "STALL"

AS A/S INCREASES, CLimb TO ORIGINAL ALTITUDE

ACCELERATE TO 140/K/CAS, POWER AS REQUIRED

MIN. ALT. 5,000' AGL

TRIM FOR 120/K/CAS

STALL SPEEDS
FOR STALL SPEEDS SEE TABULAR CHART ON REVERSE SIDE OF PROFILE.
<table>
<thead>
<tr>
<th>FLAPS SET</th>
<th>0</th>
<th>5</th>
<th>20</th>
<th>40</th>
</tr>
</thead>
<tbody>
<tr>
<td>GR. WT.</td>
<td>K / M / J / L</td>
<td>K / M / J / L</td>
<td>K / M / J / L</td>
<td>K / M / J / L</td>
</tr>
<tr>
<td>7,000</td>
<td>85/ 85/</td>
<td>80/ 80/</td>
<td>72/ 72/</td>
<td>64/ 64/</td>
</tr>
<tr>
<td>7,500</td>
<td>88/ 88/</td>
<td>83/ 83/</td>
<td>74/ 75/</td>
<td>67/ 66/</td>
</tr>
<tr>
<td>8,000</td>
<td>91/ 91/ 90/</td>
<td>86/ 85/ 84/</td>
<td>77/ 77/ 74/</td>
<td>69/ 68/ 69</td>
</tr>
<tr>
<td>8,500</td>
<td>94/ 94/ 93/</td>
<td>89/ 88/ 87/</td>
<td>79/ 79/ 77/</td>
<td>71/ 70/ 71/</td>
</tr>
<tr>
<td>9,000</td>
<td>97/ 96/ 95/ 93</td>
<td>91/ 91/ 89/ 88</td>
<td>82/ 81/ 79/ 77</td>
<td>73/ 72/ 73/ 72</td>
</tr>
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<td>9,500</td>
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<td>93/ 93/ 92/ 90</td>
<td>84/ 83/ 81/ 79</td>
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</tr>
<tr>
<td>9,920</td>
<td>101/</td>
<td>95/</td>
<td>85/</td>
<td>76/</td>
</tr>
<tr>
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<td>/ 96/ 94/ 92</td>
<td>/ 86/ 84/ 81</td>
<td>/ 76/ 77/ 76</td>
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<td>10,470</td>
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<td>/ 98/</td>
<td>/ 88/</td>
<td>/ 78/</td>
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<td>/ 98/</td>
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<td>/ 80/ 78</td>
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<td>11,500</td>
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<td>/ 99</td>
<td>/ 87</td>
<td>/ 81</td>
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</tbody>
</table>
MU-2B J (-35), K (-25), L (-36), M (-26)

APPROACH TO STALL
TAKEOFF CONFIGURATION 15-30° BANK

CLEAR AREA, CONDITION LEVERS TO AND LAND SYNC OFF — A/S 120KCAS-130KCAS TRIMMED AIRCRAFT

FLAPS 5° OR 20°, GEAR DOWN, 20% TORQUE

INITIATE 30° BANK IN LEVEL FLIGHT

FLAPS 5° OR 20°, GEAR DOWN, 20% TORQUE

ON STALL RECOGNITION (STICK SHAKER), SIMULTANEOUSLY APPLY MAX POWER, LEVEL WINGS AND ADJUST PITCH AS NECESSARY TO MINIMIZE LOSS OF ALTITUDE, POSITIVE RATE, GEAR UP. STALL WARNING MAY ACTIVATE AT 4 TO 9 K CAS ABOVE STALL.

A/S 150KCAS MINIMUM, FLAPS UP POWER AS REQUIRED

A/S 150KCAS MINIMUM, FLAPS UP POWER AS REQUIRED

IF FLAPS 20° RETRACT FLAPS TO 5°, INCREASE PITCH TO APPROX. 10°, 130 KCAS (K, MOD SR10), 140KCAS (J, L, M)

STALL SPEEDS
FOR STALL SPEEDS SEE TABULAR CHART ON REVERSE SIDE OF PROFILE.

MIN. ALT. 5,000' AGL

MAINTAIN LEVEL FLIGHT, TRIM FOR 120KCAS

AS A/S INCREASES, CLIMB TO ORIGINAL ALTITUDE

CALL THE 'STALL'

Federal Aviation Administration, DOT
<table>
<thead>
<tr>
<th>BANK ANGLE</th>
<th>FLAPS</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
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<tbody>
<tr>
<td>20°</td>
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<td>100/102/ 96/ 98</td>
<td>112/115/108/110</td>
<td></td>
</tr>
</tbody>
</table>
MU-2B J (-35), K (-25), L (-36), M (-26)

APPROACH TO STALL
GEAR DOWN – FULL FLAPS

CLEAR AREA, CONDITION LEVERS T/O AND LAND, SYNC OFF – A/S 120KTCAS – 130KTCAS TRIMMED

FLAPS 20°, GEAR DOWN, 20% TORQUE

A/S 120KTCAS, FLAPS FULL

20% TORQUE, MAINTAIN LEVEL FLIGHT, TRIM FOR 120KTCAS

CALL THE "STALL"

ON STALL RECOGNITION (STICK SHAKER), SIMULTANEOUSLY APPLY MAX POWER AND ADJUST PITCH AS NECESSARY TO MINIMIZE LOSS OF ALTITUDE, FLAPS 20°, POSITIVE RATE, GEAR UP, CLIMB TO ORIGINAL ALTITUDE. STALL WARNING MAY ACTIVATE AT 4 TO 9 K ABOVE STALL.

A/S 150KTCAS MINIMUM, FLAPS UP, POWER AS REQUIRED

RETRACT FLAPS TO 5°, INCREASE PITCH TO APPROX. 10°. 130 KTCAS (K, MOD SR10)(K, NOT MOD SR10), 140KTCAS (J, L, M)

MIN. ALT. 5,000' AGL

STALL SPEEDS
FOR STALL SPEEDS SEE TABULAR CHART ON REVERSE SIDE OF PROFILE.
<table>
<thead>
<tr>
<th>FLAPS SET</th>
<th>0</th>
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<td>/106/</td>
<td>/99/</td>
<td>/87/</td>
<td>/81/</td>
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</tbody>
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**ACCELERATED STALLS**

**MU-2B J (-35), K (-25), L (-36), M (-26)**

1. CLEAR AREA, CONDITION LEVERS T/O AND LAND, SYNC OFF
2. CLEAN, A/S 115KCAS A/C TRIMMED
3. INITIATE PROGRESSIVE BANK TOWARD A 60° BANK ANGLE, APPLY BACKPRESSURE TO MAINTAIN ALTITUDE
4. * THIS MANEUVER SHOULD ALSO BE ACCOMPLISHED IN THE LANDING CONFIGURATION WITH GEAR DOWN, FLAPS 20°, A/S 100KCAS TRIMMED
5. * 140KCAS FLAPS UP
6. * 130KCAS FLAPS TO 5°
7. * POSITIVE RATE, GEAR UP
8. ACCELERATE TO 140KCAS, POWER AS REQUIRED
9. AS A/S INCREASES, CLIMB TO ORIGINAL ALTITUDE
10. ON STALL RECOGNITION (STICK SHAKER) SIMULTANEOUSLY APPLY MAX POWER, ADJUST PITCH AS NECESSARY TO MINIMIZE LOSS OF ALTITUDE, AND ROLL WINGS LEVEL

**STALL SPEEDS**

FOR STALL SPEEDS SEE TABULAR CHART ON REVERSE SIDE OF PROFILE.
<table>
<thead>
<tr>
<th>BANK ANGLE</th>
<th>FLAPS</th>
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<th>20</th>
<th>30</th>
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<td>87/88/86/88</td>
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<td>92/94/92/94</td>
<td>98/100/97/100</td>
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<tr>
<td></td>
<td>40°</td>
<td>81/82/77/79</td>
<td>83/84/79/81</td>
<td>86/87/82/84</td>
<td>92/93/87/90</td>
<td>100/102/96/98</td>
<td>112/115/108/110</td>
</tr>
</tbody>
</table>
EMERGENCY DESCENT (LOW SPEED)

*CLEAR AREA, CRUISE CONFIGURATION START AT ASSIGNED ALTITUDE A/S 150K MIN

POWER LEVERS F/D, CONDITION LEVERS T/O AND LAND Sync OFF. GEAR AND FLAPS EXTEND AT SPEEDS BASED ON SCHEDULE FOR MODEL AND S N 10 COMPLIANCE UNTIL FULL FLAPS ARE DEPLOYED.

SIMULATE EXPLOSIVE DECOMPRESSION AT ASSIGNED ALTITUDE. OXYGEN MASKS ON. "DECLARE EMERGENCY"

ESTABLISH DESCENT IN A 30° BANK, NOSE DOWN APPROXIMATELY 20' UNTIL REACHING MAXIMUM FULL FLAP SPEED ALLOWED (Vφs). THEN RAISE NOSE TO MAINTAIN SPEED.

*WHILE CLEARING THE AREA, COORDINATE WITH AIR TRAFFIC CONTROL TO CLEAR TRAFFIC AT LOWER ALTITUDES

AFTER ESTABLISHING DESCENT, ROLL WINGS LEVEL. CONTINUE DESCENT ON STEADY HEADING OR AS REQUIRED BY ATC.

CHECK 1000' ABOVE LEVEL OFF ALTITUDE

500' ABOVE, START LEVEL OFF

COMPLETE EXERCISE AT ASSIGNED ALTITUDE. REDUCE TO 120KCAS AND CLEAN UP A/C. **DO NOT RAISE FLAPS UNTIL A/C IS BELOW MAXIMUM ALLOWABLE Vφs SPEED FOR FULL FLAPS.

GEAR/FLAP SPEEDS
FOR GEAR/FLAP SPEEDS SEE TABULAR CHART ON REVERSE SIDE OF PROFILE

Federal Aviation Administration, DOT
Pt. 91, SFAR No. 108
## GEAR AND FLAP EXTEND SCHEDULE
(K+ AND J+ ARE MODIFIED BY S/R10)

<table>
<thead>
<tr>
<th>GEAR</th>
<th>FLAPS</th>
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<td>160KCAS</td>
<td>160KCAS</td>
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<td>L:</td>
<td>S/N 239 – 279 NOT MODIFIED BY S/R10</td>
<td>175KCAS</td>
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<td>120KCAS</td>
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<td>S/N 239 – 279 MODIFIED BY S/R10 AND S/N 280 - 318</td>
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<td>L / M</td>
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<td>175KCAS</td>
<td>155KCAS</td>
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EMERGENCY DESCENT (HIGH SPEED)

- POWER LEVERS M1 TO CUTOFF AND LANDING GEAR OFF.
- CLEAR AREA, CRUISE AT ASIGNED ALTITUDE AS 10000FEET MIN.
- SIMULATE EXPLOSIVE DECREASE IN ALTITUDE, DECLARE EMERGENCY.
- ACCELERATE TO APPROX 250KCAS, INITIAL 15-20 DEGREES OF BANK.
- ESTABLISH DESCENT IN A 30° BANK, INITIAL 15-20 DEGREES OF BANK.
- CHECK 10000 FEET LEVEL OFF.
- COMPLETE DESCENT AT ASSIGNED ALTITUDE.
- REDUCE SPEED TO 200KCAS.
- 700 FEET ABOVE START LEVEL OFF.
- WHILE CLEARING THE AREA, COORDINATE WITH AIR TRAFFIC CONTROL TO CLEAR TRAFFIC AT LOWER ALTITUDES.
- INITIAL HEADING CONTINUES.
- AFTER ESTABLISHING DESCENT, WEST WINDS.
- CONTINUE DESCENT ON STEADY HEADING OR AS INSTRUCTED BY ATC.
- INITIAL LEVELS.
MU-2B J (-35), K (-25), L (-36), M (-26)

UNUSUAL ATTITUDE RECOVERY (NOSE HIGH)

ROLL TOWARD 60° BANK USING RUDDER AND SPOILER AND ALLOW NOSE TO FALL THROUGH THE HORIZON

CAUTION
DO NOT LOAD WINGS DURING BANKING MANEUVER TO PREVENT AN ACCELERATED STALL

UPON RECOGNITION OF A NOSE HIGH UNUSUAL ATTITUDE, POWER TO TAKEOFF

*CLEAR AREA

*WHILE CLEARING THE AREA, COORDINATE WITH AIR TRAFFIC CONTROL TO CLEAR TRAFFIC BOTH ABOVE AND BELOW YOUR ALTITUDE.

INSTRUCTOR NOTE
THE INSTRUCTOR SHOULD INITIATE THE UNUSUAL ATTITUDE AND USE POSITIVE CONTROL TO TRANSFER CONTROL TO THE STUDENT FOR RECOVERY

WHEN NOSE LOW, ROLL WINGS LEVEL, REDUCE POWER TO FLIGHT IDLE, AND COMMENCE A WINGS LEVEL PULL UP TO A LEVEL FLIGHT ATTITUDE.

ONCE LEVEL, ADD POWER TO MAINTAIN LEVEL FLIGHT
UNUSUAL ATTITUDE RECOVERY (NOSE LOW)

**CLEAR AREA**

*WHILE CLEARING THE AREA, COORDINATE WITH AIR TRAFFIC CONTROL THE CLEAR TRAFFIC BOTH ABOVE AND BELOW YOUR ALTITUDE.

UPON RECOGNITION OF A NOSE LOW UNUSUAL ATTITUDE, REDUCE POWER TO FLIGHT IDLE, ROLL TOWARD WINGS LEVEL IF IN A BANK, AND MAINTAIN NOSE LOW PITCH ATTITUDE WHILE LEVELING WINGS.

ONCE WINGS ARE LEVEL IN NOSE LOW ATTITUDE, COMMENCE A WINGS LEVEL PULL UP TO A LEVEL FLIGHT ATTITUDE.

**CAUTION**

DO NOT LOAD AIRCRAFT UNTIL WINGS ARE LEVEL TO PREVENT AN ACCELERATED STALL.

IF AIRSPEED IS AT OR NEAR Vmo, DO NOT USE ABRUPT CONTROL MOVEMENTS DURING RECOVERY.

ONCE LEVEL, ADD POWER TO MAINTAIN LEVEL FLIGHT.

INSTRUCTOR NOTE

THE INSTRUCTOR SHOULD INITIATE THE UNUSUAL ATTITUDE AND USE POSITIVE CONTROL TO TRANSFER CONTROL TO THE STUDENT FOR RECOVERY.
MU-2B J (-35), K (-25), L (-36), M (-28)
NORMAL LANDING (20° or 40° FLAPS)

- PROPS BETA, THEN REVERSE AS REQUIRED, BRAKING AS REQUIRED.
- TOUCHDOWN, POWER LEVERS RETARD TO FLIGHT IDLE STOP.
- THRESHOLD 20% TORQUE VwT
- LANDING ASSURED, FLAPS 20° or 40°, A/S SLOWING TO VwT CHECK SINK RATE 500-600 FPM
- A/S 120KIAS MINIMUM DESCENT, 500-600 FPM (20-25% TORQUE)
- STABILIZED APPROACH BY 500 KIAS
- FLAPS 5°
- FLAPS 20°, A/S 120-130KIAS, 500 FPM SINK RATE (APPROX 25% TORQUE)
- GEAR DOWN, A/S 140KIAS (J, L, M, K+)
- 130KIAS (I) MINIMUM, COMPLETE LANDING CHECKLIST
- A/S 150KIAS MINIMUM (25-30% TORQUE)
- COMPLETE DESCENT CHECKLIST
- MAINTAIN TRACK PARALLEL TO RUNWAY

LANDING APPROACH SPEEDS
FOR LANDING APPROACH SPEEDS SEE TABULAR CHART ON REVERSE SIDE OF PROFILE.
<table>
<thead>
<tr>
<th>WEIGHT</th>
<th>FLAPS 20° (1.3 VS1)</th>
<th>FLAPS 40° (1.5 VS1)</th>
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</table>
MU-2B J (-35), K (-25), L (-36), M (-26)
GO AROUND - REJECTED LANDING

AFTER GEAR IS FULLY RETRACTED, IF FLAPS 20° RETRACT FLAPS TO 5°.
INCREASE PITCH TO APPROX. 10°, 130 KCAS (K, MOD SR10)(K, NOT MOD SR10), 140KCAS (J, L, M)

WHEN LANDING REJECTED, APPLY MAX POWER, PITCH UP AND SELECT FLAPS 20° IF 40° PREVIOUSLY SELECTED

NORMAL APPROACH, STABILIZED AND CONFIGURED FOR LANDING

GEAR UP, IF 20° FLAPS 113 KCAS MIN. IF 5° FLAPS 120 KCAS (J, L) 125 KCAS (K, M)

A/S 140KCAS, FLAPS UP

A/S 150KCAS MINIMUM, FLAPS UP

COMPLETE AFTER T/O AND CLimb CHECKLIST
MU-2B J (-35), K (-25), L (-36), M (-26)

NO FLAP OR 5° FLAP LANDING

CAUTION
DO NOT SELECT REVERSE UNTIL BELOW 90K WITH NOSE WHEEL ON GROUND

CHECK BOTH PROPS BETA. BRAKING AS REQUIRED. NOTE: BETA MAY NOT BE AVAILABLE UNTIL BELOW 90K

TOUCHDOWN - POWER LEVERS SLOWLY RETARD TO FLIGHT IDLE

THRESHOLD 20% TORQUE. NO FLAP VREF. 115KCAS MINIMUM.

A/S SLOWING TO NO FLAP VREF. 115KCAS MINIMUM

A/S 150KCAS MINIMUM (25-30% TORQUE)

GEAR DOWN A/S 140KCAS MINIMUM

COMPLETE LANDING CHECKLIST

FLAPS 0° OR 5° A/S 140KCAS MINIMUM. 500-600 FPM SINK RATE (APPROX 29% TORQUE)

CHECK SINK RATE

COMPLETE DESCENT AND APPROACH CHECKLISTS

MAINTAIN TRACK PARALLEL TO RUNWAY

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<table>
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<tr>
<th>WEIGHT</th>
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<th>FLAPS 5º</th>
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<td>129</td>
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</tbody>
</table>

NO FLAP Vref 1.25 VS1
(BUT NOT BELOW 115 KCAS)
USE FOR FLAP UP OR 5º
J, K, L, M
MU-2B J (-35), K (-25), L (-36), M (-26)
ONE ENGINE INOPERATIVE LANDING

CAUTION
ANTICIPATE SWERVE TOWARD OPERATING ENGINE WHEN ENTERING BETTA

OPERATING ENGINE PROP FLIGHT IDLE, THEN PROP BETA. REVERSE AS REQUIRED. BRAKES AS REQUIRED.

THRESHOLD, 20% TORQUE. VREF:
110K CAS (J, L)
105K CAS (K, M)

CHECK SINK RATE:
300-600 FPM

WHEN LANDING ASSURED, FLAPS 20° A/S 125K CAS MIN. COMPLETE LANDING CHECKLIST, Rudder Trim Centered, Hold Ball in Center with Rudder

CHECK GLIDE PATH IF LANDING ASSURED, GEAR DOWN. APPROX 45-55% TORQUE

FLAPS 5° A/S 140K (130K CAS MINIMUM)

CHECK SINK RATE:
500 - 600 FEET PER MINUTE

J, K, L, M
FLAP SETTING VYSE(KCAS)
UP 140 / 135° *
9° 130 / 130° *
20° 125 / 125° *

*K, M

MIX 1S 150K (140K CAS MINIMUM J, L)
(135K CAS MINIMUM K, M)
(APPROX 60-70% TORQUE)

MAINTAIN TRACK PARALLEL TO RUNWAY

COMPLETE DESCENT AND APPROACH CHECKLISTS AND REVIEW SINGLE ENGINE LANDING CHECKLIST

AS REQUIRED

AS REQUIRED
MU-2B J (-35), K (-25), L (-36), M (-26)
CROSSWIND LANDING

AIRCRAFT WILL BE FLOWN DOWN AN EXTENSION
OF THE RUNWAY CENTER LINE WITH DRIFT
CORRECTION ESTABLISHED SUFFICIENTLY IN
ADVANCE TO PERMIT CENTER LINE TO BE FLOWN
WITH ONLY MINOR COORDINATED CORRECTIONS

INCREASE Vref FOR CROSSWIND LANDING BY ONE-
HALF THE STEADY WIND SPEED PLUS ONE-HALF THE
GUST SPEED NOT TO EXCEED Vref PLUS 10 KCAS.

PRIOR TO TOUCHDOWN, THE UPWIND WING IS
LOWERED AND SMOOTHLY MODULATED. OPPOSITE
RUDDER IS APPLIED SO THAT AIRCRAFT PATH
CONTINUES DOWN RUNWAY CENTERLINE. THE
AIRCRAFT SHOULD NOT BE ALLOWED TO DEVELOP
ANY TENDENCY TO DRIFT DOWNWIND.

** NOTE: RUDDERS CENTERED BEFORE NOSE
WHEEL TOUCHDOWN. SPOILERS INTO WIND AS
NECESSARY TO KEEP WINGS LEVEL
<table>
<thead>
<tr>
<th>WEIGHT</th>
<th>FLAPS 20° (1.3 VS1)</th>
<th>FLAPS 40° (1.5 VS1)</th>
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</table>
MU-235 J (-35), K (-25), L (-36), M (-26)

ONE ENGINE INOPERATIVE ILS AND MISSED APPROACH

A/S 150K (140K CAS MIN J, L) (135K CAS MIN K, M). APPROACH CHECKLIST REVIEW APPROACH PLATE. RADIOS: TUNE & IDENTIFY. CHECK OM CROSSING ALTITUDE MARKER RECEIVER "ON".

WARNING
DO NOT ATTEMPT A GO-AROUND WITH GEAR DOWN BELOW 400' AGL OR AFTER 20° FLAPS ARE SELECTED.

CAUTION
DO NOT USE SINGLE ENGINE REVERSE THRUST WITH THE SIMULATED FAILED ENGINE POWER LEVER ABOVE FLIGHT IDLE.

A/S 140K CAS (130K CAS MIN), 50-60% TORQUE, FLAPS 5°. DESCEND 500 FPM.

FLAPS 5°, 140K CAS (130K CAS MIN) 50-60% TORQUE.

WARNING
MISSING APPROACH: CONTINUE WITH ENGINE OUT MISSED APPROACH PROFILE.

CHECK GEAR DOWN APPROACHING GLIDE SLOPE (ONE DOT BELOW G/S). A/S 140K CAS (130K CAS MIN).

A/S 140K CAS (130K CAS MIN) 50-60% TORQUE, FLAPS 5°.

LANDING CHECK (50-55% TORQUE).

WHEN LANDING ASSURED, FLAPS 20°, SLOWING TO CROSS THRESHOLD AT 110K CAS (J, L), 105K CAS (K, M).

OPERATING ENGINE PROP FLIGHT IDLE, THEN PROP BETA. REVERSE AS REQUIRED. BRAKES AS REQUIRED.
MU-2B J (-35), K (-25), L (-36), M (-26)
ONE ENGINE INOPERATIVE MISSED APPROACH

COMMENCING MISSED APPROACH, SET MAX POWER, MAINTAIN DIRECTIONAL CONTROL, RUDDER AND SPOILER AS NECESSARY. GEAR UP. PITCH TO MAINTAIN A/S 140KCAS.

"IF TRANSITIONING FROM A DESCENT, MAINTAIN PITCH TO MAINTAIN 140KCAS, RAISE GEAR, THEN 10° PITCH. SOME ALTITUDE LOSS IS TO BE EXPECTED.

A/S 140KCAS, MINIMUM FLAPS UP

AFTER GEAR IS FULLY RETRACTED, PITCH 10°

APPROX 300-400 FEET (OBSTRUCTION CLEARANCE). IF FLAPS 20° ADJUST PITCH TO ACCELERATE. 130 KCAS (K, MOD SR10)(K, NOT MOD SR10), 140KCAS (J, L, M)

A/S 150KCAS, COMPLETE AFTER TAKEOFF CHECKLIST

WARNING
UNDER CERTAIN COMBINATIONS OF WEIGHT, TEMPERATURE AND PRESSURE ALTITUDE, WITH LANDING GEAR DOWN AND FLAPS 20°, SINGLE ENGINE GO AROUND MAY NOT BE POSSIBLE AT ALTITUDES OF LESS THAN 400 FEET AGL.
<table>
<thead>
<tr>
<th>WEIGHT</th>
<th>K</th>
<th>M</th>
<th>L</th>
<th>J</th>
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<tr>
<td>11,025</td>
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</tbody>
</table>
MU-2B J (-35), K (-25), L (-36), M (-26)

ONE ENGINE INOPERATIVE CIRCLING APPROACH AT WEATHER MINIMUMS

CAT C 121 - 140K 1.7NM
CAT D 141 - 165K 2.3NM

FROM APPROACH: FLAPS 5°, GEAR UP, A/S 140K CAS (130LCAS) MIN.

** NOTE: ENGINE OUT CIRCLING APPROACH SHOULD BE FLOWN WITH 5° FLAPS AND GEAR UP. WHEN LANDING ASSURED, GEAR DOWN, FLAPS 20°, SLOWING TO A/S 110K CAS (J, L), A/S 105K CAS (K, M)

OPERATING ENGINE PROP FLIGHT IDLE, THEN PROP BETA. REVERSE AS REQUIRED. BRAKES AS REQUIRED.

TOUCHDOWN

THRESHOLD FLAPS 20°, A/S 110K CAS (J, L), A/S 105K CAS (K, M)

CHECK SINK RATE
500-600 FPM

LANDING ASSURED: FLAPS 20°, A/S 120K CAS MIN. COMPLETE LANDING CHECKLIST

CHECK DESCENT PROFILE. IF LANDING ASSURED, GEAR DOWN, CHECK SINK RATE 500-600 FPM

CAUTION
ANTICIPATE SWERVE TOWARD OPERATING ENGINE WHEN ENTERING BET

A/S 140K CAS (130LCAS MIN.) APPROX 70% TORQUE, NOT BELOW CIRCLING MINIMUM DESCENT ALTITUDE

CAUTION
DO NOT USE SINGLE ENGINE REVERSE THRUST WITH THE SIMULATED FAILED ENGINE POWER LEVER ABOVE FLIGHT IDLE.

WARNING
DO NOT ATTEMPT A GO-AROUND WITH GEAR DOWN BELOW 400° AGL OR AFTER 20° FLAPS ARE SELECTED

CHECK FLAPS 5°, DO NOT DESCEND UNTIL WITHIN 30° OF RUNWAY CENTERLINE
MU-2B B, D (-10), F (-20), G (-30)
NORMAL TAKE-OFF, 5° OR 20° FLAPS

TORQUE AND EGt LIMITS
TAKEOFF SPEEDS
FOR TORQUE AND EGt LIMITS
AND TAKEOFF SPEED CHARTS
SEE TABULAR CHARTS ON
REVERSE SIDED OF PROFILE.

AFTER GEAR IS FULLY RETRACTED, IF
FLAPS 20° RETRACT FLAPS TO 5°,
INCREASE PITCH TO APPROX. 10°. 130
KCAS (F, NOT MOD S/R10), 130 KCAS (B, D), 140KCAS (G)

NORMAL PITCH,
APPROX 8°. FLAPS 20°,
APPROX 10-12° FLAPS 5°

POS RATE, NO RUNWAY REMAINING
FOR LANDING, GEAR UP,
IF 20° FLAPS 113 KTS MIN.
IF 5° FLAPS 120 KCAS (G) 125 KCAS (B, D, F)

* TORQUE/PSI OR TEMP
SET AT MAXIMUM LESS
10% WHICHEVER
OCCURS FIRST. BETA
LIGHTS OUT, RELEASE
BRAKES. RAM RISE WILL
CAUSE TORQUE OR
TEMP TO RISE TO
MAXIMUM TAKEOFF
POWER DURING
TAKEOFF ROLL.

VR – ROTATE 13°
MAX NOSE UP
PITCH

* NOTE: IF RUNWAY LENGTH
OR OBSTACLE CLEARANCE IS
CRITICAL, SET POWER TO
TORQUE/PSI OR TEMP
MAXIMUM, WHICHEVER
OCCURS FIRST. RETARD
POWER LEVERS AS REQUIRED
TO MAINTAIN MAXIMUM
ALLOWABLE TORQUE/PSI OR
TEMP.

COMPLETE AFTER T/O
AND CLimb CHECKLIST
ACCELERATE TO
DESIRED CLimb SPEED
### TORQUE LIMITS

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>B, D</td>
<td>64 PSI</td>
<td></td>
</tr>
<tr>
<td>F, G</td>
<td>60 PSI (STATIC)</td>
<td>64 PSI (RAM CONDITIONS 5 MINUTES)</td>
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**EGT LIMITS DEPEND ON OUTSIDE AIR TEMPERATURE, CHECK EGT LIMITS PRIOR TO DEPARTURE.**

### TAKE OFF SPEEDS

#### FLAPS 5°

<table>
<thead>
<tr>
<th>WEIGHT (LBS)</th>
<th>B</th>
<th>B+</th>
<th>D</th>
<th>F</th>
<th>G</th>
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<tbody>
<tr>
<td>10,000</td>
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#### FLAPS 20°

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<th>B+</th>
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<th>F</th>
<th>G</th>
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<td>99</td>
<td>99</td>
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</tr>
</tbody>
</table>

- **B**: NOT MODIFIED BY S/B 036 AND S/B 092
- **B+**: MODIFIED BY S/B 036 AND S/B 092
MU-2B B, D (-10), F (-20), G (-30)
TAKE-OFF ENGINE FAILURE – FLAPS 5° OR 20°

<table>
<thead>
<tr>
<th>FLAP SETTING</th>
<th>VXSE (KIAS)</th>
<th>VYSE (KIAS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UP</td>
<td>130 / 135 / 140</td>
<td>135 / 150 / 150</td>
</tr>
<tr>
<td>5°</td>
<td>115 / 130 / 130</td>
<td>120 / 140 / 140</td>
</tr>
<tr>
<td>20°</td>
<td>100 / 125 / 125</td>
<td>105 / 130 / 135</td>
</tr>
</tbody>
</table>

APPROX 300-400 FEET (OBSTRUCTION CLEARANCE). IF FLAPS 20° ADJUST PITCH TO ACCELERATE, 130 KCAS MIN. FLAPS TO 5° IF FLAPS 5° INSTALLED. PITCH APPROX. 10° (IF FLAPS 5 NOT INSTALLED, FLAPS UP*, PITCH APPROX. 10° TO 13°)

A/S 150KCAS COMPLETE AFTER TAKE-OFF AND ENGINE OUT CHECKLIST

PITCH TO MAINTAIN VXSE MINIMUM APPROX 8° PITCH; FLAPS 20°, APPROX 10-12° PITCH, FLAPS 5°. MAINTAIN DIRECTIONAL CONTROL WITH RUDDER AND MINIMUM SPOILER. FAILED ENGINE – CONDITION LEVER, EMERGENCY STOP; POWER LEVER, TAKE OFF **, TRIM AIRCRAFT

POS RATE, NO RUNWAY REMAINING FOR LANDING, GEAR UP. IF 20° FLAPS 115 KTS MIN. IF 5° FLAPS 120 KCAS (G) 125 KCAS (B, D, F)

MAKE NORMAL T/O

CAUTION SIMULATED ENGINE FAILURE (NOT LESS THAN 200FT AGL)

A/S 140KCAS MIN (IF FLAPS 5° INSTALLED) FLAPS UP*

** IF SR 10 NOT INSTALLED, MAXIMUM FLAP SPEED DURING RETRACTION IS 140KCAS. DURING RETRACTION, PITCH TO MAINTAIN 140KCAS UNTIL FLAPS UP.

** IF SUFFICIENT RUNWAY REMAINS, OR UNABLE TO CLIMB, GEAR DOWN. REDUCE POWER TO LAND STRAIGHT AHEAD USING A/S APPROPRIATE FOR WEIGHT, 105KCAS MINIMUM (G), 100KCAS MINIMUM (B, D, F).
MU-2B B, D (-10), F (-20), G (-30)
TAKE-OFF ENGINE FAILURE ON RUNWAY

**CAUTION**
SIMULATED ENGINE FAILURE OR MALFUNCTION IS TO BE GIVEN BY INSTRUCTOR AT NOT MORE THAN 50% OF ROTATE SPEEDS.

- ENGINE FAILS OR MALFUNCTION OCCURS
  - POWER LEVERS TO GROUND IDLE, BRAKES AS NECESSARY, REVERSE THRUST AS REQUIRED. USE NOSE WHEEL STEERING, BRAKES, AND/OR REVERSE THRUST TO MAINTAIN DIRECTIONAL CONTROL.

- POWER SET, BRAKES RELEASED

- NOTIFY TOWER OF ABORT

- CLEAR RUNWAY OR EVACUATE AIRCRAFT AS NECESSARY *

- IF EVACUATING AIRCRAFT, BOTH CONDITION LEVERS TO EMERGENCY STOP AND MASTER SWITCH TO EMERGENCY

**CAUTION**
DO NOT USE SINGLE ENGINE REVERSE THRUST WITH THE SIMULATED FAILED ENGINE POWER LEVER ABOVE FLIGHT IDLE.
MU-2B B, D (-10), F (-20), G (-30)
TAKE-OFF ENGINE FAILURE - UNABLE TO CLimb
CLASSROOM DISCUSSION OR FTD USE ONLY

**WARNING**
DO NOT LET AIRSPEED DECELERATE BELOW SINGLE ENGINE AIRSPEED
105KCAS (G) 100KCAS (B, D, F)

**PILOT MAKES DECISION TO EITHER**
RETURN THE RUNWAY SURFACE OR TO FLY BEYOND AIRPORT BOUDDARY TO SUITABLE LANDING AREA

**ENGINE FAILS**

**POS RATE, NO RUNWAY REMAINING**
FOR LANDING, GEAR UP IF 20° FLAPS 113 KCAS MIN IF 5° FLAPS 120 KCAS (G) 125 KCAS (B, D, F)

**IF RUNWAY REMAINS OR A LANDING CAN**
SAFE BE MADE ON THE AIRPORT SURFACE, CHECK GEAR DOWN, FLAPS REMAIN IN TAKE-OFF POSITION, POWER ON OPERATING ENGINE AS REQUIRED TO LAND, LAND USING SINGLE ENGINE AIRSPEED, 105K CAS (G) 100K CAS (B, D, F)

**ROTATE**

**PROPELLERS BETA, THEN**
REVERSE AS REQUIRED, BRAKES AS REQUIRED

**CAUTION**
ANTICIPATE SWERVE TOWARD OPERATING ENGINE WHEN ENTERING BETA
MU-2B B, D (-10), F (-20), G (-30)

STEEP TURNS

"CLEAR AREA, GEAR UP, FLAPS UP, A/S 160K, TRIM A/C"

SET HEADING BUG TO ROLL OUT HEADING

START NORMAL TURN POWER AS REQUIRED. INCREASE APPROXIMATELY 10% TORQUE

50° BANK ESTABLISHED. PITCH UP APPROXIMATELY 2° TO 3° OR AS NECESSARY TO MAINTAIN ALTITUDE.

"THIS MANEUVER SHOULD BE PERFORMED IN BOTH CLEAN AND LANDING CONFIGURATIONS (USE 130K FLAPS 20, GEAR DOWN, FOR LANDING CONFIGURATION)

"NOTE: TURNS WILL BE DONE THROUGH 360° AS WELL AS 180°"

CHECK FOR A/S AND ALTITUDE TRENDS

REDUCE POWER TO MAINTAIN 150K

ROLL OUT ON HEADING ON ALT.

"START ROLL OUT 20° BEFORE ROLL OUT HEADING"
MU-2B B, D (-10), F (-20), G (-30)

SLOW FLIGHT MANEUVERING

MINIMUM CONTROLLABLE AIRSPEED

SLOW FLIGHT MANEUVERING IS CONDUCTED AS FOLLOWS:

CLEAR THE AREA PRIOR TO BEGINNING THE MANEUVER.

START WITH CLEAN CONFIGURATION AND CHANGE AIRCRAFT CONFIGURATION FROM CLEAN TO FULL FLAP AND GEAR IN STAGES. USE A MAXIMUM OF 15° BANK AND PERFORM HEADING CHANGES OF 90° LEFT AND RIGHT. CONSTANT ALTITUDE IS REQUIRED THROUGHOUT.

MAINTAIN 115K IN ALL CONFIGURATIONS.

**APPROXIMATE POWER SETTINGS ARE:

<table>
<thead>
<tr>
<th>Clean</th>
<th>Torque (35%) or PSI (23) per engine</th>
<th>APPROX PITCH</th>
<th>+12</th>
</tr>
</thead>
<tbody>
<tr>
<td>5° FLAP</td>
<td>Torque (32%) or PSI (21) per engine</td>
<td>APPROX PITCH</td>
<td>+8</td>
</tr>
<tr>
<td>5° FLAP &amp; GEAR</td>
<td>Torque (44%) per engine</td>
<td>APPROX PITCH</td>
<td>+9</td>
</tr>
<tr>
<td>20° FLAP &amp; GEAR</td>
<td>Torque (42%) or PSI (27) per engine</td>
<td>APPROX PITCH</td>
<td>+4</td>
</tr>
<tr>
<td>40° FLAP &amp; GEAR</td>
<td>Torque (54%) or PSI (36) per engine</td>
<td>APPROX PITCH</td>
<td>0</td>
</tr>
</tbody>
</table>

** NOTE: POWER SETTINGS WILL VARY WITH AIRCRAFT WEIGHT AND ALTITUDE.

STALL SPEEDS (APPROXIMATE)

AT MAXIMUM GROSS TAKEOFF WEIGHT

B, B+ D, F, G

<table>
<thead>
<tr>
<th>ANGLE OF BANK</th>
<th>B/B+ D/F/G</th>
</tr>
</thead>
<tbody>
<tr>
<td>0°</td>
<td>95/ 98/ 98/102/104</td>
</tr>
<tr>
<td>5°</td>
<td>85/ 88/ 88/ 95/ 98</td>
</tr>
<tr>
<td>20°</td>
<td>80/ 81/ 81/ 85/ 88</td>
</tr>
<tr>
<td>40°</td>
<td>72/ 73/ 73/ 77/ 80</td>
</tr>
</tbody>
</table>

Vmc: 20° FLAPS (90KCAS G, 93KCAS F, 89KCAS D, 89/91KCAS B)

5° FLAPS (90KCAS G, 100KCAS F, 95KCAS D, 97/99KCAS B)

FOR B MODEL Vmc SPEED CONSULT SERIAL NUMBER APPLICABILITY IN AFM

CAUTION

STALL WARNING MAY ACTIVATE 4 TO 9 KTS ABOVE STALL

MINIMUM CONTROLLABLE AIRSPEED IS CONDUCTED AS FOLLOWS:

CLEAR THE AREA PRIOR TO BEGINNING THE MANEUVER.

THE MANEUVER MAY BE DONE IN ANY COMBINATION OF GEAR OR FLAP CONFIGURATIONS. IF BANK IS TO BE USED, IT SHOULD BE DONE AT BANK OF NOT MORE THAN 10°. BEGIN THE MANEUVER BY CONFIGURING THE AIRCRAFT IN THE DESIRED GEAR AND FLAP CONFIGURATION. SLOW THE AIRCRAFT UNTIL THE STALL WARNING (STICK SHAKER) IS ACTIVATED AND ADD POWER TO maintaiN ALTITUDE AND A SPEED JUST ABOVE AERODYNAMIC STALL. DO NOT ALLOW THE AIRCRAFT TO REACH AERODYNAMIC STALL BUFFET.
MU-2B B, D (-10), F (-20), G (-30)
ONE ENGINE INOPERATIVE MANEUVERING
LOSS OF DIRECTIONAL CONTROL

CLEAR AREA, CONDITION LEVERS TO AND LAND, SYNC OFF – SET ONE POWER LEVER TO ZERO THRUST TO SIMULATE FAILED ENGINE (VARIES BETWEEN 5% AND 17% TORQUE OR 3 TO 11 PSI)

CAUTION
GEAR HORN MAY SOUND CONTINUOUSLY IF INSTRUCTOR ELECTS TO DISABLE GEAR HORN WITH CIRCUIT BREAKER, THEN CIRCUIT BREAKER MUST BE RESET PRIOR TO LANDING

FLAPS 20°, GEAR UP, SET POWER ON SIMULATED OPERATIVE ENGINE FOR LEVEL FLIGHT A/S 125KCAS TRIMMED

WITH THE FIRST INDICATION OF LOSS OF DIRECTIONAL CONTROL, REDUCE PITCH AND POWER ON SIMULATED OPERATIVE ENGINE TO RECOVER

APPLY TAKEOFF POWER ON SIMULATED OPERATIVE ENGINE WHILE INCREASING PITCH TO DECELERATE 1KCAS PER SECOND

AT VMC PLUS 10KCAS, ADD POWER TO SIMULATED OPERATIVE ENGINE AND RECOVER TO STRAIGHT AND LEVEL FLIGHT

A/S 125KCAS TRIMMED FOR STRAIGHT AND LEVEL FLIGHT

INSTRUCTOR CAUTION
ONE ENGINE LOSS OF DIRECTIONAL CONTROL IS BEST TRAINED AND ACCOMPLISHED USING EARLY RECOGNITION AND RECOVERY TECHNIQUES; SEAT POSITION AND RUDDER TRAVEL SHOULD BE EMPHASIZED DURING THIS MANEUVER. RUDDER BLOCKING BY THE INSTRUCTOR IS ENCOURAGED TO PRODUCE LOSS OF DIRECTIONAL CONTROL AT APPROXIMATELY VMC PLUS 10KCAS, BECAUSE EARLY RECOGNITION AND RECOVERY IS THE PRIMARY OBJECTIVE OF THIS MANEUVER.

Vmc: 20° FLAPS (90KCAS G, 83KCAS F, 89KCAS D, 89/91KCAS B)
0° FLAPS (99KCAS G, 100KCAS F, 87K D, 97/99KCAS B)
(For B model, Vmc speed consult service bulletin number applicability in AFM)
Vsse 125K

MIN ALT: 5,000 AGL

INSTRUCTOR BLOCKS RUDDER TO CAUSE LOSS OF DIRECTIONAL CONTROL AT VMC PLUS 10KCAS

WARNING
IF STALL WARNING ACTIVATES, REDUCE PITCH AND POWER ON SIMULATED OPERATIVE ENGINE, AND RECOVER
<table>
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<th>FLAPS SET</th>
<th>0</th>
<th>5</th>
<th>20</th>
<th>40</th>
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</thead>
<tbody>
<tr>
<td>GR WT.</td>
<td>B/ B+</td>
<td>D/ F/ G</td>
<td>B/ B+</td>
<td>D/ F/ G</td>
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<td>98/</td>
<td>/</td>
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</tbody>
</table>
MU-2B B, D (-10), F (-20), G (-30)

APPROACH TO STALL
TAKEOFF CONFIGURATION 15-30° BANK

CLEAR AREA, CONDITION LEVERS TO AND LAND SYNC OFF – A/S 120KCAS-150KCAS TRIMMED AIRCRAFT

ON STALL RECOGNITION (STICK SHAKER), SIMULTANEOUSLY APPLY MAX POWER, LEVEL WINGS AND ADJUST PITCH AS NECESSARY TO MINIMIZE LOSS OF ALTITUDE, POSITIVE RATE, GEAR UP, STALL WARNING MAY ACTIVATE AT 4 TO 9 K ABOVE STALL.

FLAPS 5° OR 20°, GEAR DOWN, 20% TORQUE OR 10 PSI

INITIATE 30° BANK IN LEVEL FLIGHT

FLUGS 30° BANK IN LEVEL FLIGHT

MAINTAIN LEVEL FLIGHT, TRIM FOR 120KCAS

AS A/S INCREASES, CLIMB TO ORIGINAL ALTITUDE

CALL THE "STALL"

A/S 140KCAS, MINIMUM FLAPS UP, POWER AS REQUIRED

AFTER GEAR IS FULLY RETRACTED, IF FLAPS 20° RETRACT FLAPS TO 5°, INCREASE PITCH TO APPROX 10°, 130 KCAS (F, MOD S/R10), 140 KCAS (F NOT MOD S/R10), 130 KCAS (B, D), 140KCAS (G)

MIN ALT. 5,000' AGL

STALL SPEEDS
FOR STALL SPEEDS SEE TABULAR CHART ON REVERSE SIDE OF PROFILE.
### Stall Speeds (Approximate)

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<thead>
<tr>
<th>Bank Angle</th>
<th>10</th>
<th>20</th>
<th>30</th>
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<tbody>
<tr>
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<td>74/</td>
<td>79/</td>
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</tbody>
</table>

At Maximum Gross Takeoff Weight

B, B+, D, F, G
MU-2B B, D (-10), F (-20), G (-30)

APPROACH TO STALL

GEAR DOWN – FULL FLAPS

CLEAR AREA, CONDITION LEVERS
T/O AND LAND, SYNC OFF – A/S
120KCAS – 130KCAS TRIMMED

FLAPS 20°, GEAR DOWN,
20% TORQUE OR 10 PSI

A/S 120KCAS,
FLAPS FULL

20% TORQUE, MAINTAIN
LEVEL FLIGHT, TRIM FOR
120KCAS

AFTER GEAR IS FULLY
RETRACTED, IF FLAPS 20°
RETRACT FLAPS TO 5°,
INCREASE PITCH TO
APPROX. 10°, 130 KCAS (F,
MOD S/R10)/140 KCAS (F, NOT
MOD S/R10), 130 KCAS (B, D),
140KCAS (G)

ON STALL RECOGNITION (STICK SHAKE),
SIMULTANEOUSLY APPLY MAX POWER AND
ADJUST PITCH AS NECESSARY TO MINIMIZE
LOSS OF ALTITUDE. FLAPS 20°, POSITIVE RATE,
GEAR UP, CLimb TO ORIGINAL ALTITUDE.
STALL WARNING MAY ACTIVATE AT 4 TO 9 K
ABOVE STALL.

CALL THE "STALL"

MIN. ALT.
5,000' AGL

STALL SPEEDS
FOR STALL SPEEDS SEE
TABULAR CHART ON
REVERSE SIDE OF PROFILE.
<table>
<thead>
<tr>
<th>FLAPS SET</th>
<th>0</th>
<th>5</th>
<th>20</th>
<th>40</th>
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</thead>
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<td>B/ B+/ D/ F/ G</td>
<td>B/ B+/ D/ F/ G</td>
<td>B/ B+/ D/ F/ G</td>
<td>B/ B+/ D/ F/ G</td>
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<td>76/ 76/ 80</td>
<td>70/ 70/ 72</td>
<td>63/ 63/ 64</td>
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<td>78/ 78/ 83/</td>
<td>73/ 73/ 74/</td>
<td>66/ 63/ 67/</td>
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<tr>
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<td>81/ 81/ 86/ 84</td>
<td>75/ 75/ 77/ 74</td>
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<td>83/ 83/ 88/ 87</td>
<td>76/ 78/ 79/ 77</td>
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<td>85/</td>
<td>79/</td>
<td>72/</td>
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<td>/ 80/ 81/ 79</td>
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<td>/ 87/</td>
<td>/ 81/</td>
<td>/ 73/</td>
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</tr>
<tr>
<td>FLAPS</td>
<td></td>
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</tr>
<tr>
<td>5°</td>
<td>80/ 82/ 86/ 87</td>
<td>82/ 84/ 88/ 89</td>
<td>86/ 87/ 92/ 93</td>
<td>91/ 93/ 97/ 98</td>
</tr>
<tr>
<td>40°</td>
<td>72/ 74/ 77/ 81</td>
<td>74/ 75/ 79/ 82</td>
<td>77/ 79/ 82/ 86</td>
<td>82/ 83/ 87/ 91</td>
</tr>
</tbody>
</table>
**MU-2B, D (-10), F (-20), G (-30)**

**EMERGENCY DESCENT (LOW SPEED)**

1. **CLEAR AREA, CRUISE CONFIGURATION**
   - Start at assigned altitude.
   - AS 150KCAS MIN.

2. **POWER LEVERS F1, CONDITION LEVERS TO AND LAND SYNC OFF. GEAR AND FLAPS EXTEND AT SPEEDS BASED ON SCHEDULE FOR MODEL AND S/F-10 COMPLIANCE UNTIL FULL FLAPS ARE DEPLOYED.**

3. **SIMULATE EXPLOSIVE DECOMPRESSION AT ASSIGNED ALTITUDE. OXYGEN MASKS ON. "DECLARE EMERGENCY"**

4. **ESTABLISH DESCENT IN A 30° BANK, NOSE DOWN APPROXIMATELY 20° UNTIL REACHING MAXIMUM FULL FLAP SPEED ALLOWED (VFL). THEN RAISE NOSE TO MAINTAIN SPEED.**

5. **WHILE CLEARING THE AREA, COORDINATE WITH AIR TRAFFIC CONTROL TO CLEAR TRAFFIC AT LOWER ALTITUDES**

6. **AFTER ESTABLISHING DESCENT, ROLL WINGS LEVEL. CONTINUE DESCENT ON STEADY HEADING OR AS REQUIRED BY ATC.**

7. **CHECK 1000' ABOVE LEVEL OFF ALTITUDE**

8. **500' ABOVE, START LEVEL OFF**

9. **COMPLETE EXERCISE AT ASSIGNED ALTITUDE. REDUCE TO 120KCAS AND CLEAN UP A/C. "DO NOT RAISE FLAPS UNTIL A/C IS BELOW MAXIMUM ALLOWABLE V6 SPEED FOR FULL FLAPS."**

**GEAR/FLAP SPEEDS**

For gear/flap speeds, see tabular chart on reverse side of profile.
<table>
<thead>
<tr>
<th></th>
<th>5°</th>
<th>20°</th>
<th>40°</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GEAR</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B, D, F, F+:</td>
<td>160KCAS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G, G+:</td>
<td>170KCAS</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FLAPS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G: NOT MODIFIED BY S/R10</td>
<td>146KCAS</td>
<td>146KCAS</td>
<td>120KCAS</td>
</tr>
<tr>
<td>G+: MODIFIED BY S/R10 AND</td>
<td>175KCAS</td>
<td>146KCAS</td>
<td>120KCAS</td>
</tr>
<tr>
<td>F: NOT MODIFIED BY S/R10</td>
<td>140KCAS</td>
<td>140KCAS</td>
<td>120KCAS</td>
</tr>
<tr>
<td>F+: MODIFIED BY S/R10 AND</td>
<td>175KCAS</td>
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<tr>
<td>B, D, F</td>
<td>140KCAS</td>
<td>140KCAS</td>
<td>120KCAS</td>
</tr>
</tbody>
</table>
MU-2B B, D (-10), F (-20), G (-30)
EMERGENCY DESCENT (HIGH SPEED)

CLEAR AREA. CRUISE CONFIGURATION START AT ASSIGNED ALTITUDE. A/S 150KCAS MIN.

SIMULATE EXPLOSIVE DECOMPRESSION AT ASSIGNED ALTITUDE. OXYGEN MASKS ON. DECLARE EMERGENCY.

POWER LEVERS F/I. CONDITION LEVERS TO AND LAND SYNC OFF.

ESTABLISH DESCENT IN A 30° BANK, ACCELERATING TO V mo(250KCAS). INITIAL 15-20° NOSE DOWN, REDUCING TO APPROX. 8° NOSE DOWN AS A/S APPROACHES Vmo (250KCAS).

WHILE CLEARING THE AREA, COORDINATE WITH AIR TRAFFIC CONTROL TO CLEAR TRAFFIC AT LOWER ALTITUDES.

AFTER ESTABLISHING DESCENT, KEEP WINGS LEVEL, CONTINUE DESCENT ON STEADY HEADINGS OR AS REQ'D BY A/C.

CHECK 1000 FEET ABOVE LEVEL OFF ALTITUDE.

700 FEET ABOVE START LEVEL OFF.

COMPLETE EXERCISE AT ASSIGNED ALTITUDE. REDUCE SPEED TO 200KCAS.
MU-2B B, D (-10), F (-20), G (-30)

UNUSUAL ATTITUDE RECOVERY (NOSE HIGH)

ROLL TOWARD 60° BANK USING RUDDER AND SPOILER AND ALLOW NOSE TO FALL THROUGH THE HORIZON

CAUTION
DO NOT G LOAD WINGS DURING BANKING MANEUVER TO PREVENT AN ACCELERATED STALL

UPON RECOGNITION OF A NOSE HIGH UNUSUAL ATTITUDE, POWER TO TAKEOFF

*CLEAR AREA

WHILE CLEARING THE AREA, COORDINATE WITH AIR TRAFFIC CONTROL TO CLEAR TRAFFIC BOTH ABOVE AND BELOW YOUR ALTITUDE.

INSTRUCTOR NOTE
THE INSTRUCTOR SHOULD INITIATE THE UNUSUAL ATTITUDE AND USE POSITIVE CONTROL TO TRANSFER CONTROL TO THE STUDENT FOR RECOVERY

WHEN NOSE LOW, ROLL WINGS LEVEL, REDUCE POWER TO FLIGHT IDLE, AND COMMENCE A WINGS LEVEL PULL UP TO A LEVEL FLIGHT ATTITUDE

ONCE LEVEL, ADD POWER TO MAINTAIN LEVEL FLIGHT
<table>
<thead>
<tr>
<th>WEIGHT</th>
<th>B</th>
<th>B+D</th>
<th>F</th>
<th>G</th>
<th>B</th>
<th>B+D</th>
<th>F</th>
<th>G</th>
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<tr>
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<td>93</td>
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<td>117</td>
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</tbody>
</table>
MU-2B B, D (-10), F (-20), G (-30)
GO AROUND - REJECTED LANDING

AFTER GEAR IS FULLY RETRACTED, IF FLAPS 20° RETRACT FLAPS TO 5°. INCREASE PITCH TO APPROX. 10°, 130 KCAS (F, MOD SR10)/(140 KCAS (F, NOT MOD SR10), 130 KCAS (B, D), 140 KCAS (G))

WHEN LANDING REJECTED, APPLY MAX POWER, PITCH 8° UP AND SELECT FLAPS 20° IF 40° PREVIOUSLY SELECTED.

NORMAL APPROACH, STABILIZED AND CONFIGURED FOR LANDING

POSITIVE RATE OF CLIMB; GEAR UP, IF 20° FLAPS 113 KTS MIN. IF 5° FLAPS 120 KCAS (G)/125 KCAS (B, D, F)

ACCELERATE TO DESIRED CLIMB SPEED

COMPLETE AFTER TO AND CLIMB CHECKLIST

A/S 140K FLAPS UP.
NOTE
Landing distance will increase approximately 20%.

CHECK BOTH PROPS BETA, BRAKING AS REQUIRED, NOTE BETA MAY NOT BE AVAILABLE DUE TO WINDS.

Threshold, 30% torque, 12 knots.

Power levers slowly retarding to flight idle.

As slowing to 7 or 9 flaps VREF, 110/115 CAS minimum (see chart).

As 150 CAS minimum, 25-30% torque, 1000/1150 PSI.

Gear down, complete landing checklist.

Complete descent checklist.

No flaps or flaps landing speeds.

Flaps w/normal, 600/650 PSI sink rate.

Approx, 1000 PSI.
<table>
<thead>
<tr>
<th>WEIGHT</th>
<th>B</th>
<th>B+</th>
<th>D</th>
<th>F</th>
<th>G</th>
<th>B</th>
<th>B+</th>
<th>D</th>
<th>F</th>
<th>G</th>
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<tbody>
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<td></td>
<td>120</td>
<td></td>
</tr>
</tbody>
</table>

NO FLAP \( V_{ref} = 1.25 \) \( V_{S1} \)
(BUT NOT BELOW 110 KCAS (B, B+, D, F) 115 KCAS (G))

USE FOR FLAP UP OR 5°

B, B+, D, F, G

FLAPS UP
FLAPS 5°
MU-2B B, D (-10), F (-20), G (-30)
CROSSWIND LANDING

AIRCRAFT WILL BE FLOWN DOWN AN EXTENSION OF THE RUNWAY CENTER LINE WITH DRIFT CORRECTION ESTABLISHED SUFFICIENTLY IN ADVANCE TO PERMIT CENTER LINE TO BE FLOWN WITH ONLY MINOR COORDINATED CORRECTIONS.

INCREASE Vref FOR CROSSWIND LANDING BY ONE-HALF THE STEADY WIND SPEED PLUS ONE-HALF THE GUST SPEED NOT TO EXCEED Vref PLUS 10 KCAS.

PRIOR TO TOUCHDOWN, THE UPWIND WING IS LOWERED AND SMOOTHLY MODULATED. OPPOSITE RUDDER IS APPLIED SO THAT AIRCRAFT PATH CONTINUES DOWN RUNWAY CENTERLINE. THE AIRCRAFT SHOULD NOT BE ALLOWED TO DEVELOP ANY TENDENCY TO DRIFT DOWNWIND.

** NOTE: RUDDERS CENTERED BEFORE NOSE WHEEL TOUCHDOWN. SPOILERS INTO WIND AS NECESSARY TO KEEP WINGS LEVEL.
<table>
<thead>
<tr>
<th>WEIGHT</th>
<th>FLAPS 20° (1.3 VSI)</th>
<th>FLAPS 40° (1.5 VSI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>B+ D</td>
</tr>
<tr>
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<td>92</td>
<td>92</td>
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<td>8,930</td>
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<tr>
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<td>9,435</td>
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<td>10,000</td>
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<td>108</td>
</tr>
<tr>
<td>10,260</td>
<td></td>
<td>109</td>
</tr>
</tbody>
</table>
MU-2B B, D (-10), F (-20), G (-30)

ONE ENGINE INOPERATIVE MISSED APPROACH

COMMENCING MISSED APPROACH, SET MAX POWER. MAINTAIN DIRECTIONAL CONTROL, RUDDER AND SPOILER AS NECESSARY. GEAR UP. PITCH TO MAINTAIN A/S 140KCAS.

APPROX 300-400 FEET (OBSTRUCTION CLEARANCE). IF FLAPS 20° ADJUST PITCH TO ACCELERATE 130 KCAS (F, MOD B/R10); 140 KCAS (F, NOT MOD B/R10), 130 KCAS (B, D), 140KCAS (G) FLAPS TO 5°, PITCH APPROX 10°

A/S 150KCAS, COMPLETE AFTER TAKEOFF CHECKLIST

A/S 140KCAS: MINIMUM FLAPS UP

AFTER GEAR IS FULLY RETRACTED, PITCH 10°

IF TRANSITIONING FROM A DESCENT, MAINTAIN PITCH TO MAINTAIN 140K. RAISE GEAR, THEN 10° PITCH. SOME ALTITUDE LOSS IS TO BE EXPECTED.

WARNING
UNDER CERTAIN COMBINATIONS OF WEIGHT, TEMPERATURE AND PRESSURE ALTITUDE, WITH LANDING GEAR DOWN AND FLAPS 20°, SINGLE ENGINE GO AROUND MAY NOT BE POSSIBLE AT ALTITUDES OF LESS THAN 400 FEET AGL.
MU-2B B, D (-10), F (-20), G (-30)
NON-PRECISION AND MISSED APPROACH

A/S 150K (140K MIN) APPROACH CHECKLIST. REVIEW APPROACH PLATE. RADIOS: TUNE & IDENTIFY. CHECK FIX CROSSING ALTITUDE

FLAPS 5° A/S (130K CAS F, G) (115K CAS B, D) MINIMUM 40-50% TORQUE, 25-32 PSI

20-25% TORQUE, 13-16 PSI DESCEND 500 FPM

A/S 120K MIN. APPROX 50% TORQUE, 32 PSI

25-30% TORQUE, 16-20 PSI

A/S 120K MIN. 25-30% TORQUE, 16-20 PSI 800-1000 FPM DESCENT

GEAR DOWN, FLAPS 20° APPROACHING FIX INBOUND, LANDING CHECKLIST COMPLETE A/S 120K MIN.

MISSING APPROACH GO-AROUND. MAX POWER, ROTATE TO 8°. CONTINUE WITH TWO ENGINE MISSED APPROACH PROFILE

TOUCHDOWN: POWER LEVERS RETARD TO FLIGHT IDLE STOP, THEN PROPS BETA, REVERSE AS REQUIRED. BRAKES AS REQUIRED.

LANDING APPROACH SPEEDS
FOR LANDING APPROACH SPEEDS SEE TABULAR CHART ON REVERSE SIDE OF PROFILE.
<table>
<thead>
<tr>
<th>WEIGHT</th>
<th>FLAPS 20° (1.3 VSI)</th>
<th>FLAPS 40° (1.5 VSI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>B+</td>
</tr>
<tr>
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<tr>
<td>10,260</td>
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<td>109</td>
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</tbody>
</table>
(D) Each MU-2B profile in its respective section follows the outline below.

(1) Normal Takeoff (5- and 20-degrees flaps).

(2) Takeoff Engine Failure (5- and 20-degrees flaps).

(3) Takeoff Engine Failure on Runway or Rejected Takeoff.

(4) Takeoff Engine Failure after Liftoff—Unable to Climb (Classroom or PTD only).

(5) Steep Turns.

(6) Slow Flight Maneuvers.

(7) One Engine Inoperative Maneuvering/Loss of Directional Control.

(8) Approach to Stall (clean configuration/wings level).
Federal Aviation Administration, DOT  Pt. 91, SFAR No. 108

In Flight Maneuvering

(A) Maneuvers conducted at altitude such as stalls and steep turns must always be preceded by clearing turns and at least one crew member must continually clear the flying area during the maneuver. The instructor must emphasize the importance of clearing the area, even if the maneuvers are being done in an FTD or simulator. This will create the habit pattern in the pilot to clear the area before practicing maneuvers.

(B) During stalling maneuvers and upon recognition of the indication of a stall, the pilot must call the “stall” to the instructor and then proceed with the recovery. In addition, during training, the pilot must announce the completion of the stall recovery maneuver. Instructors must exercise caution when conducting stall maneuvers and be prepared to take the controls if the safe outcome of the maneuver is in doubt.

(C) During accelerated stall maneuvers, it is important that the instructor pay close attention to the position of the ball throughout the maneuver and recovery so as to maintain coordinated flight. Stall recognition and recovery is the completion criteria, and it is not necessary to continue the stall beyond the stick shaker to aerodynamic buffet.

(D) When demonstrating a loss of directional control with one engine inoperative, the engine failure must only be simulated. During the slowing of the aircraft to demonstrate loss of directional control, the instructor should use the rudder block method to allow the student to experience the loss of directional control associated with VMC, at a speed of approximately 10 knots above actual VMC.

Note: To accurately simulate single engine operations, zero thrust must be established. The zero thrust torque setting will vary greatly from model to model. It is important to establish zero thrust torque setting for your aircraft. This requires that the aircraft be flown on one engine to establish the zero thrust setting. This is accomplished by establishing single engine flight with one propeller feathered and noting the performance with the operating engine at maximum torque or temperature. It is suggested that two airspeeds be established for zero thrust power settings. They are 120 kts, flaps 20, gear up for takeoff and 140 knots, flaps 5, gear up for in-flight and approach maneuvering. Once performance has been established and recorded for each airspeed, restart the other engine and find the torque setting that duplicates the performance (climb or descent rate, airspeed) as was recorded with that propeller feathered. This torque setting will be zero thrust for the simulated inoperative engine. The student/pilot should note that the performance experienced with one engine operating at flight idle, may produce

(9) Approach to Stall (takeoff configuration/15- to 30-degrees bank).
(10) Approach to Stall (landing configuration/gear down/40-degrees flaps).
(11) Accelerated Stall (no flaps).
(12) Emergency Descent (low speed).
(13) Emergency Descent (high speed).
(14) Unusual Altitude Recovery (nose high).
(15) Unusual Altitude Recovery (nose low).
(17) Go Around/Rejected Landing.
(18) No Flap or 3-degrees flaps Landing.
(19) One Engine Inoperative Landing (5- and 20-degrees flaps).
(20) Crosswind Landing.
(21) ILS and Missed Approach.
(22) Two Engine Missed Approach.
(23) One Engine Inoperative ILS and Missed Approach.
(24) One Engine Inoperative Missed Approach.
(25) Non-Precision and Missed Approach.
(26) One Engine Inoperative Non-Precision and Missed Approach.
(27) Circling Approach at Weather Minimums.
(28) One Engine Inoperative Circling Approach at Weather Minimums.

Engine Performance

(A) The following should be considered in reference to power settings and airspeeds:

1. Power settings shown in italics are provided as guidance only during training and are not referenced in the AFM. Power setting guidance is provided to show the approximate power setting that will produce the desired airspeed or flight condition. Actual power settings may be different from those stated and should be noted by the instructor and student for reference during other maneuvers. Power settings in the profiles are stated in torque or PSI and will vary with aircraft model, engine model, weight, and density altitude. Power settings are based on standard atmospheric conditions.

2. Some pilots prefer to set power initially using fuel flow, because the fuel flow system is not field adjustable. Fuel flow settings refer to engine operations only. If fuel flow is used to set power for takeoff, check torque and temperature after setting fuel flow and adjust torque or temperature, whichever is limiting, for maximum takeoff power prior to liftoff.

3. Improperly adjusted torque or improperly calibrated temperatures are a safety of flight issue and must be checked and corrected prior to conducting flight training.

4. The pilot should refer to the performance section of the airplane flight manual to determine actual speeds required for his/her particular model and specific weight for any given operation.
greater performance than if the engine were stopped and the propeller feathered.
Pre-maneuver briefings for any maneuver that requires either an actual engine shutdown or a simulated engine failure must be undertaken when using an aircraft. In the case of an actual engine shutdown, a minimum altitude of 3,000 ft above ground level (agl) must be used and done in a position where a safe landing can be made at an airport in the event of difficulty.

Takeoff and Landing

(A) When using the profiles to establish the procedure for configuring the aircraft for takeoff or landing, it is important to understand that each task for the procedure, as noted on the procedure diagram, establishes the point at which each task should have been completed and not the exact point at which the task should be accomplished unless otherwise stated in the task box. Numbers which represent performance such as decent rates or other maneuvering information that is not contained in the aircraft flight manual are shown in italics.

(B) In all takeoff profiles the prompt for the gear to be retracted is “No Runway Remaining, Gear Up”. This should set the decision point for making a landback after an engine failure and should normally be reached at altitudes of less than 100 ft AGL. It is impractical to attempt a landback from above 100 ft AGL, because it can require distances up to 10,000 ft from the beginning of the takeoff run to bring the aircraft to a stop. But, even on very long runways, landback will not be necessary above 100 ft AGL and above Vyse for the flap configuration, if the single engine climb capability found in the POM charts, with the gear up, is positive (250 fpm or better) and obstacles clearance is not an issue.

(C) The manufacturers FAA-accepted checklists and checklist in Appendix C to this SFAR No. 108 describe a procedure for the discontinuance of flight following an engine failure after takeoff and the realization that the aircraft cannot climb. The corresponding flight profile in this training program is “Takeoff Engine Failure, Unable to Climb”. This maneuver must not be attempted in the aircraft, but must be the subject of a classroom discussion or be demonstrated in the FTD.

(D) The focus of all landing procedures, whether two engine or engine out, is on a stabilized approach from an altitude of 500 feet. This will not be possible for all approach procedure maneuvering, especially during non-precision or circle to land approaches. Approach procedures for these two approaches should be stabilized from the point at which the pilot leaves the Minimum Descent Altitude for the landing.

(E) When performing one engine inoperative approaches, landings or missed approach procedures, the instructor must be prepared to add power to the simulated failed engine at the first sign of deteriorating airspeed or other situation that indicates the student’s inability to correctly perform the maneuver.

(F) While maneuvering in the pattern or during instrument approach procedures with one engine inoperative, a 30° bank angle must not be exceeded. This will become especially important when executing non-precision and circle to land approaches.

Emergency and Abnormal Procedures

(A) During training, either in the FTD or in the aircraft, the performance of emergency and abnormal procedures is critical to the completion of the training program. All emergency and abnormal procedures should be simulated when training in the MU-2B airplane.

(B) When presenting emergency scenarios to the student, the instructor must not introduce multiple emergencies concurrently.

Scenario Based Training (SBT)

SBT flight training creates an environment of realism. The SBT programs utilize a highly structured flight operation scenario to simulate the overall flight environment. The pilot is required to plan a routine, point-to-point flight and initiate the flight. During the conduct of the flight, “reality-based” abnormal or emergency events are introduced without warning. Because the pilot is constantly operating in the world of unknowns, this type of training also builds in the “startle factor”, and just as in the real-world, the consequences of the pilot’s actions (decisions, judgment, airmanship, tactile skills, etc.) will continue to escalate and affect the outcome of the planned flight. Although flying skills are an integral part of this type of training, SBT enables the pilot to gain experience in dealing with unexpected events and more importantly further enhances the development of good judgment and decisionmaking.


Subpart A—General

§ 91.1

Source: Docket No. 18334, 54 FR 34292, Aug. 18, 1989, unless otherwise noted.

§ 91.1 Applicability.

(a) Except as provided in paragraphs (b) and (c) of this section and §§91.701 and 91.703, this part prescribes rules governing the operation of aircraft (other than moored balloons, kites, unmanned rockets, and unmanned free