

**BY ORDER OF THE
SECRETARY OF THE AIR FORCE**

**AIR FORCE INSTRUCTION 11-246,
VOLUME 5**



23 OCTOBER 2014

Flying Operations

**AIR FORCE AIRCRAFT
DEMONSTRATIONS, AC-130, MC-130, EC-
130J, CV-22**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements guidance in Air Force Policy Directive (AFPD) 11-2, *Aircrew Operations*; Air Force Instruction (AFI) 11-200, *Aircrew Training, Standardization/Evaluation, and General Operations Structure*, and AFI 11-209, *Air Force Aerial Events*. It provides guidance and procedures for Air Force performance of specific model design series (MDS) single-ship aircraft demonstrations and mission capabilities demonstrations. It designates Headquarters (HQ) Air Force Special Operations Command (AFSOC) as lead command for aircraft demonstrations conducted by the following MDS aircraft: AC-130; MC-130; EC-130J and CV-22. Major Command (MAJCOM), field operating agencies (FOAs), and direct reporting units (DRUs) may supplement this instruction. MAJCOMs, FOAs, and DRUs will coordinate their supplements with HQ AFSOC, Director of Operations, prior to publishing and forward one copy to HQ USAF/A3O-AO after publication. This instruction applies to the Air National Guard (ANG). This instruction does not apply to Air Force Reserves Command (AFRC). See **Attachment 1** for a glossary of references and terms. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363 Management of Records, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located in the Air Force Records Information Management System (AFRIMS). Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the Air Force (AF) Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate functional's chain of command.

SUMMARY OF CHANGES

This publication was revised and must be completely reviewed. This version implements new guidelines identifying AFSOC as the lead MAJCOM for the CV-22 aircraft for Aircraft Demonstrations. AFI 11-246, Vol 3, dated 13 December 2002, which identified HQ Air Force Material Command (AFMC) as lead MAJCOM for CV-22, while in the test phase has been rescinded. This version also incorporates the EC-130 into the Standard Profiles in **Attachment 3**, and removed the MC130E. Tier level requirements have been annotated.

Chapter 1

OPERATIONAL PROCEDURES

1.1. General Guidance. At the direction of United States Air Force Vice Commander (USAF/CV), HQ AFSOC is the lead MAJCOM for the standardized flying procedures applicable to aircraft capabilities demonstrations for the following MDS aircraft: AC-130, MC-130, EC130J, and CV-22.

1.2. Standardized procedures for flyovers, funeral or memorial flyovers, and aerial reviews are not required. However, if one of these events is to be performed, written procedures must be established and approved by the MAJCOM/A3 prior to demonstration. (T-2).

1.3. For aircraft where another MAJCOM has been designated the “lead” use the guidance provided by that MAJCOM. However, the HQ AFSOC/A3 must approve any AFSOC demonstrations. (T-2).

1.4. The terminology “aircraft capabilities demonstration” as used in this AFI, is used interchangeably with aircraft exercise (CAPEX). See [Attachment 1](#) for definitions. Applicable tier requirement levels are defined below.

1.4.1. “Tier 1” (T-1) requirements are may only be waived by the MAJCOM/CC or delegate. When multiple MAJCOMs are affected, then T-1 is appropriate.

1.4.2. “Tier 2” (T-2) requirements may only be waived by the MAJCOM/CC or delegate.

1.5. Flying procedures and guidance within this AFI do not constitute authority to deviate from AFI 11-209, *Air Force Aerial Events*, AFI 11-2MDS, Vol 1, *MDS Aircrew Training*, AFI 112MDS, Vol 3, *MDS Operations Procedures*, and AFI 11-202, Vol 3, *General Flight Rules*.

Chapter 2

AIRCRAFT CAPABILITIES DEMONSTRATION

2.1. General. Aircraft capabilities demonstrations include the following: Assault Landing, Assault Takeoff, Personnel Airdrop, High-Altitude Low-Opening (HALO) Personnel Airdrop, Heavy Equipment Airdrop, Containerized Delivery System (CDS) Airdrop, Alternate Insertion/Extraction (AIE), Close Air Support (CAS), Helicopter Air-to-Air Refueling/Tilt-rotor Air-to-Air Refueling (HAAR/TAAR) and the performance maneuvering of an aircraft in a runway environment.

2.2. Capabilities demonstrations will be performed using established procedures in MDS Operating Instructions. Sample profiles are shown in attachments to this AFI, however, procedures established in aircraft MDS Operating Instructions and Technical Orders have precedence.

2.3. The MAJCOM, in a supplement to this AFI, must establish an approval process and authority for all Capabilities Demonstrations. Approval documentation must include sufficient information with the proposed profile to permit evaluation by the established approval authority. The required information includes a brief synopsis of what will take place and will, at a minimum, address the following:

2.3.1. Airspeeds and altitudes to be flown.

2.3.2. Holding patterns.

2.3.3. Ground tracks to be flown.

2.3.4. Type of aircraft capabilities demonstration to be flown. If requesting an airdrop, include intended point of impact relative to the crowd line and show line. If a demonstration includes use of munitions, include intended point of impact/detonation point and safety zone relative to the crowd line and show line.

2.3.5. Aircrew qualifications.

2.3.6. On-scene ground supervisor and on-scene communications and control procedures.

2.3.7. If a rehearsal/practice run is planned, include date, time, location and participants.

2.4. If a planned demonstration must deviate from established procedures this must be addressed in the approval documents provided to the MAJCOM approval authority. When multiple MAJCOMs are affected, (T-1), for single MAJCOM (T-2).

2.5. The AC-130 and CV-22 do not have standard demonstration profiles established in this AFI. Profiles will be planned on an as needed basis as the requirement occurs.

Chapter 3

AIRCREW QUALIFICATIONS AND CERTIFICATION PROCESS

3.1. General. Aircrews that are scheduled to fly capabilities demonstrations must be qualified and certified in the demonstration to be performed. Qualification is accomplished at each wing and group in accordance with (IAW) applicable Air Force and MAJCOM Instructions, and wing/group training and evaluation procedures.

Chapter 4

CRITIQUE AND REVIEW PROCESS

4.1. General. Each MAJCOM will implement procedures to critique airshow/aircraft capabilities demonstrations and review results at the headquarters level. When an Aerial Control Team (ACT) is required by AFI 11-209, the ACT chief will critique the performance and forward results through channels to the appropriate MAJCOM Director of Operations. When the presence of the ACT chief is not required, the on-scene ground supervisor will task the aircraft commander to conduct the critique. The critique may also be accomplished by an additional airborne pilot or navigator. See [Attachment 2](#) for suggested critique format.

Chapter 5

APPROVAL PROCESS FOR PARTICIPATION IN AERIAL EVENTS

5.1. General. AFI 11-209 and MAJCOM supplements describe the approval process for Air Force participation in military and civilian events, such as, military base open houses, civilian sponsored airshows, international air and trade shows, etc.

BURTON M. FIELD, Lt Gen, USAF
DCS, Operations, Plans and Requirements

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

North Atlantic Treaty Organization (*NATO*) Standardization Agreement (*STANAG*) 3533
AFPD 10-9, *Lead Command Designation and Responsibilities for Weapon Systems*, 8 Mar 2007
AFPD 11-2, *Aircrew Operations*, 19 January 2012
AFI 11-2, MDS, Vol 1, "*MDS*" *Aircrew Training*
AFI 11-2, MDS, Vol3, "*MDS*" *Operations Procedures*
AFI 11-200, *Aircrew Training, Standardization/Evaluation and General Operations Structure*, 19 January 2012
AFI 11-202, Vol 3, *General Flight Rules*, 22 October 2010
AFI 11-209, *Aerial Event Policy and Procedures*, 4 May 2006
AFI 11-401, *Aviation Management*, 10 December 2010
AFMAN 33-363, *Management of Records*, 1 Mar 2008
AFI 34-242, *Mortuary Affairs Program*, 2 Apr 2008
AFI 35-101, *Public Affairs Policies and Procedures*, 18 August 2010

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

Abbreviations and Acronyms

AIE—Alternate Insertion/Extraction
ACT—Aerial Control Team
AF—Air Force
AFI—Air Force Instruction
AFMAN—Air Force Manual
AFMC—Air Force Material Command
AFPD—Air Force Policy Directive
AFRC—Air Force Reserve Command
AFSOC—Air Force Special Operations Command
AFPD—Air Force Policy Directive
AFRIMS—Air Force Records Information Management System
AGL—Above Ground Level
AIE—Alternate Insertion/Extraction

ANG—Air National Guard

CAPEX—Aircraft Capabilities Demonstration”, is used interchangeably with Aircraft Exercise

CAS—Close Air Support

CDS—Containerized Delivery System

DRU—Direct Reporting Units

FOA—Field Operating Agency

HAAR—Helicopter Air-to-Air Refueling

HALO—High-Altitude Low-Opening

HQ—Headquarters

IAW—In Accordance With

MAJCOM—Major Command

MDS—Model Design Series

OPR—Office of Primary Responsibility

RDS—Records Disposition Schedule

TAAR—Tilt-rotor Air-to-Air Refueling

USAF—United States Air Force

USAF/CV—United States Air Force Vice Commander

Terms

Aerial Demonstration—A generic phase that includes virtually every type of aerial participation in military or civilian events (except for static display, aerial review and flyover): aerobatics, aircraft capabilities demonstration, assault landing/takeoff, aircraft weapons or tactics demonstration, in-flight refueling demonstration, and airdrop demonstrations of personnel or equipment. Used interchangeably with the phrases “aircraft demonstration” and “aircraft capabilities demonstration.”

Aerial Event—A military, or civilian event such as a civilian air show, an air fair, a military open house, or an Air and Trade Show, featuring aerial participation by the Air Force, or by other flying organizations, whether military or civilian.

Aerial Review—A formal, aerial presentation of aircraft “passing in review”. In essence, an aerial review consists of a number of flyovers over a specific point on the ground-e.g., over a reviewing stand, in conjunction with a formal ceremony, such as a parade, a retirement ceremony for an authorized individual, etc. Participating aircraft are of multiple types and many come from the same Service, from more than one Service, or from other nations as well as the US. The flyover consists of single ships and/or formation, with elements in trail formation and do not involve precision maneuvers. Spacing between elements is less than one minute.

Aircraft Demonstration—See Aircraft Capabilities Demonstration.

Aircraft Capabilities Demonstration—An aerial demonstration in which an aircraft conducts maneuvers usually associated with its employment and which are common to the airframe being shown. The purpose is to illustrate the unique flying capabilities of the aircraft. Also called a Capabilities Exercise (CAPEX). Includes Aerobatics, Assault Landing/Takeoff, Aircraft Tactics Demonstration, In-flight Refueling Demonstration, and Airdrop Demonstrations. Also referred to as, simply, an “aircraft demonstration.”

Aircraft Weapons or Tactics Demonstration—An aerial demonstration of aircraft employing or simulating the employment of munitions, weapons, or combat tactics. May include use of ground-based pyrotechnics for effect.

Alternate Insertion/Extraction (AIE)—Infiltration or exfiltration via a method (helicopter only) not requiring landing the aircraft. Some examples include fast rope, rope ladder, and rappel.

Assault Landing Demonstration—An aerial demonstration, and more specifically, an aircraft capabilities demonstration, illustrating a technique used for landing on short runways. The aircraft is flown at a speed slightly above aircraft stall speed at a steeper than normal approach path. After touchdown, maximum engine reverse thrust and braking are applied to stop the aircraft. Also known as Maximum Performance Landing or Max Effort Landing.

Assault Takeoff Demonstration—An aerial demonstration, and more specifically, an aircraft capabilities demonstration, illustrating a takeoff technique used for departing short runways employing maximum takeoff power and climb rate for the aircraft. Also referred to as “Maximum Performance Takeoff” or “Maximum Effort Takeoff.”

Container Delivery System (CDS) Demonstration—An aerial demonstration involving the air drop of supplies or equipment packaged in individual web containers of canvas and nylon. The containers, numbering up to 16 and weighing up to 2,200 lbs. each, are mounted on skid boards. Gravity is used to extract the load from the aircraft at approximately 600 feet AGL over the intended target.

Equipment Airdrop Demonstration—An aerial demonstration, and more specifically, an aircraft capabilities demonstration, illustrating the airdrop of equipment on platforms rigged with parachutes, in individual containers rigged with parachutes, or in small door bundles rigged with parachutes.

Exfiltration—The removal of personnel or units from areas under enemy control by stealth, deception, surprise or clandestine means.

Fast Rope—AIE method of infiltration from a hover using a thick braided nylon rope (fast rope) on which personnel slide down on from the helicopter.

Flyover—A straight and level flight by a single aircraft or by a single formation (up to four aircraft of the same type and Service) over a fixed point. Flyovers do not involve aerobatics or aerial demonstrations; however, bank angles of up to 45 degrees may be used to maneuver to, or from, the flyover ground track to improve the visibility of the aircraft to the spectators. A flyover can be performed with the aircraft in a clean configuration or with the aircraft configured (e.g., partially configured or fully configured). An example of a partial configuration is a KC135 with only the boom deployed; full configuration would be the same aircraft with the gear, flaps and boom all deployed.

Funeral Flyover—A single-pass flyover at a funeral service by a single aircraft or by a single formation (up to four aircraft). The formation may be flown as a missing-man formation.

Helicopter Air Refueling Demonstration—A formation of aircraft demonstrating helicopter air refueling in the pre-contact position.

High-Altitude Low-Opening (HALO) Airdrop Demonstration—A demonstration involving the airdrop of a precision parachute demonstration team, such as the Air Force STARS, the Wings of Blue or the Golden Knights, from an altitude of 3,000 feet AGL or higher. The parachutists free fall to a predetermined altitude before deploying their parachutes to complete the descent.

Hoist—Extraction of an individual(s) using a rescue hoist from a hover. Attachment devices vary; stokes litter and forest penetrator, are the most common.

Infiltration—The insertion of personnel or units into areas under enemy control by stealth, deception, surprise, or clandestine means.

Jump Platform—An aircraft used to airdrop personnel in support of a military or civilian event is referred to as a jump platform.

Memorial Flyover—A single-pass flyover at a memorial service by a single aircraft or by a single formation (up to four aircraft). The formation may be flown as a missing-man formation.

Rope Ladder—An alternate insertion/extraction method, usually for exfiltration, using a flexible caving ladder hanging from the helicopter.

Tilt-Rotor Air-to-Air Refueling Demonstration—A formation of aircraft demonstrating tilt-rotor air refueling in the pre-contact position.

Attachment 2

AERIAL DEMONSTRATION CRITIQUE

Figure A2.1. Aerial Demonstration Critique.

AERIAL DEMONSTRATION CRITIQUE

SHOW LOCATION: _____

ESTIMATED ATTENDANCE EACH DAY: _____ / _____ / _____

DATE OF DEMONSTRATION: _____ TYPE OF AIRCRAFT: _____

CAPABILITIES DEMONSTRATED: _____

AIRCRAFT COMMANDER: _____ UNIT ASSIGNED: _____

FAA ISSUES: UNSAT / SAT PRESHOW ISSUES: UNSAT / SAT

AIRSHOW SUPPORT: UNSAT / SAT RECOMMEND ATTEND IN FUTURE: YES / NO

REMARKS (explain above responses, UNSAT or NO answers require comments):

OBSERVERS SIGNATURE_____
OBS PRINTED NAME / UNIT / DUTY PHONE #

AFTER ACTION COORDINATION:

AIRCRAFT UNIT CC REVIEW

INITIALS_____
DATE

WING/GROUP CC REVIEW

INITIALS_____
DATE

MAJCOM/A3 REVIEW

INITIALS_____
DATE

Attachment 3

MC-130 AND EC-130J STANDARD PROFILES 1 THRU 4

A3.1. Profile 1 Synopsis: This airdrop profile is an aircraft capabilities demonstration beginning with an aircraft already airborne. The aircrew approaches the airfield at drop altitude for a single-ship airdrop. Over the airfield Drop Zone, paratroopers are released in a static line jump. The paratroopers land and gather up their gear while the MC/EC-130 climbs to 4,500' above ground level (AGL) to set up for a random steep approach. A random steep approach is then flown and terminated in an assault landing to demonstrate short field landing capability. The MC/EC-130 then maneuvers to a designated point, giving consideration to the demonstration of the reverse capability of the C-130, and the paratroopers board via the ramp. The aircraft then performs a maximum effort takeoff, departing the air show area. The procedures in this profile are general guidelines and the aircrew may adjust them, for cause, to accommodate the requirements of the jump team or paratroopers, to accommodate the kind of equipment (material) to be airdropped (heavy equipment or CDS), or to accommodate the unique requirements of the event or site at which the event takes place. In no circumstances will aircrews deviate from applicable AFI 11-2MDS, Vol 3.

A3.2. Profile 2 Synopsis: This ground-to-ground profile is an aircraft capabilities demonstration and begins with a single MC/EC-130 executing an Assault Takeoff followed by a climb to 500' AGL over the runway. The MC/EC-130 then maneuvers back toward the airfield, setting up for a random shallow approach. A random shallow approach is then flown and terminated in an assault landing, demonstrating short field landing capability. After landing the MC-130 backs to a designated point to demonstrate reverse taxi capability, (engine running) offloads a Humvee and driver (if applicable) and then exits the runway. The procedures in this profile are general guidelines and the aircrew may adjust them, for cause, to accommodate the requirements of the event or of the site at which the event takes place. In no circumstances will aircrews deviate from applicable AFI 11-2MDS, Vol 3.

A3.3. Profile 3 Synopsis: This air-to-ground profile is an aircraft capabilities demonstration and begins with a MC-130 already airborne. As the MC-130 approaches the airfield, the aircrew executes a random shallow approach to an assault landing. The aircrew then conducts a reverse taxi maneuver on the runway and (engine running) offloads a Humvee and driver (if applicable). Finally, the aircrew executes an assault takeoff and departs. The procedures in this profile are general guidelines and the aircrew may adjust them, for cause, to accommodate the requirements of the event or of the site at which the event takes place. In no circumstances will aircrews deviate from applicable AFI 11-2MDS, Vol 3.

A3.4. Profile 4 Synopsis: Note: Profile 4 Synopsis not applicable for EC-130. Recommended MC-130 Tanker Air Refueling Demonstration Profile. This is a helicopter/tilt-rotor air refueling capabilities demonstration and begins with all aircraft involved already airborne and in formation. If simultaneous air refueling demonstration is planned, both helicopters should be in the observation position with all air refueling checklists completed (**Note:** simultaneous TAAR operations are not permitted). The MC-130 will begin the demonstration flyover at the pre-briefed airspeed and altitude IAW directives and local limitations. The MC-130 will direct, via radio or light signals, for receiver to move into pre-contact position no later than 2 minutes from the demonstration location. Receiver will remain in pre-contact position throughout the demonstration. Under no circumstances will receiver make contact, wet or dry, during the

demonstration. After passing the demonstration area, the MC-130 will direct the receiver to the observation position via radio or light signals. Formation break up after the demonstration will be as briefed.

Figure A3.1. MC-130 and EC-130J Standard Profile 1 Aircraft Capabilities Demonstrations Airdrop/Random Steep/Assault Takeoff.

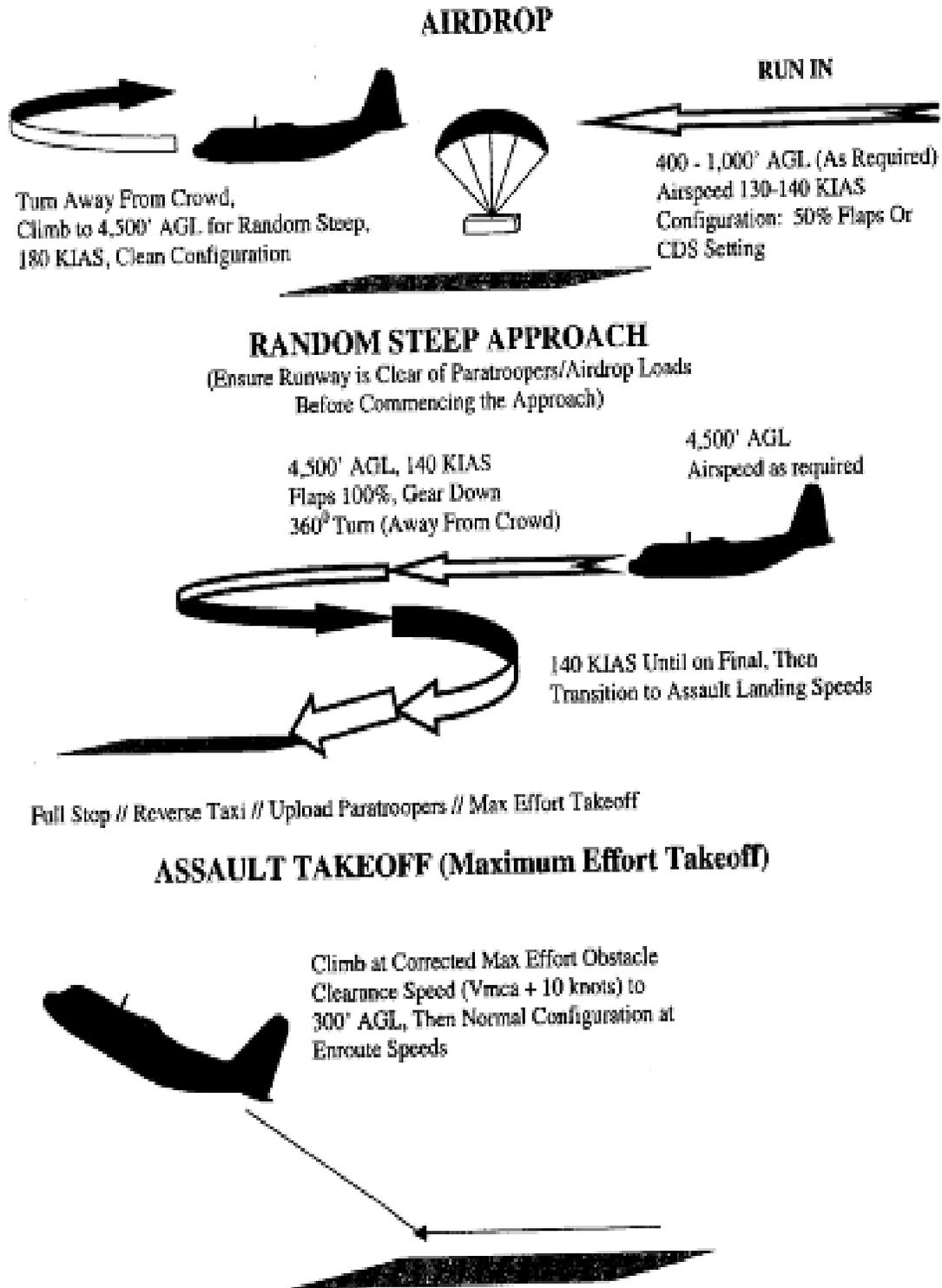
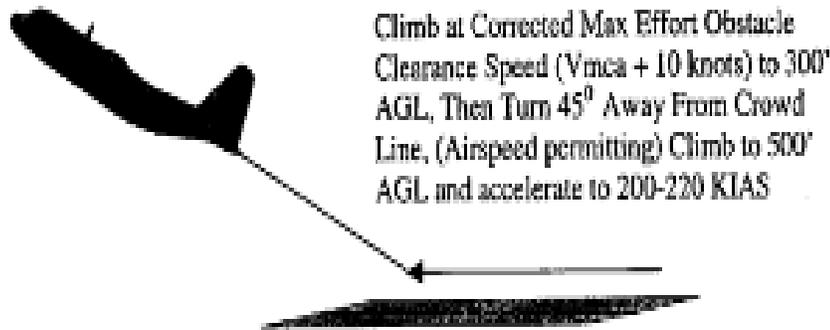


Figure A3.2. MC-130 and EC-130J Standard Profile 2 Aircraft Capabilities Demonstrations Assault Takeoff/Random Shallow Approach/Full Stop or Depart the Area.

ASSAULT TAKEOFF (Maximum Effort Takeoff)



RANDOM SHALLOW APPROACH

