U.S. Department
of Transportation
Federal Aviation
Administration

Advisory Circular

Subject: Aircraft Arresting Systems on Civil Airports

Date: Draft

AC No: 150/5220-9B

Initiated By: AAS-300

1 PURPOSE.

This Advisory Circular (AC) contains the Federal Aviation Administration (FAA) standards and recommendations for the installations of aircraft arresting systems on civil airports not owned or operated by the U.S. Department of Defense (DoD).

2 CANCELLATION.

This AC cancels AC 150/5220-9A, *Aircraft Arresting Systems on Civil Airports,* dated 12/20/2006.

3 APPLICATION.

The Federal Aviation Administration (FAA) recommends the guidance and specifications in this advisory circular for the installations of aircraft arresting systems on civil airports not owned or operated by the U.S. Department of Defense. This AC does not constitute a regulation, is not mandatory, and is not legally binding in its own right. It will not be relied upon as a separate basis by the FAA for affirmative enforcement action or other administrative penalty. Conformity with this AC is voluntary, and nonconformity will not affect rights and obligations under existing statutes and regulations, except as follows:

1. The standards contained in this AC are specifications the FAA considers essential to maintain an acceptable level of safety, performance, and operation of aircraft arresting systems on civil airports.
2. Use of the standards and guidance in this AC is mandatory for airports that receive funding under Federal grant assistance programs, including the Airport Improvement Program (AIP). See Grant Assurance #34.
3. Use of the standards and guidance in this AC is mandatory for projects funded by the Passenger Facility Charge program. See PFC Assurance #9.

This AC provides one, but not the only, acceptable means of meeting the requirements of 14 CFR part 139, Certification of Airports.

This AC does not describe Engineered Materials Arresting Systems (EMAS). For guidance on EMAS, see AC 150/5220-22, *Engineered Materials Arresting Systems (EMAS) for Aircraft Overruns.*

4 PRINCIPAL CHANGES.

Changes to this AC include the following:

1. Addresses new and updated guidance for aircraft arresting systems
2. Adds new arresting gear to the inventory for use on civil airports
3. Numerous changes to format and content throughout the document

5 PURPOSE OF AIRCRAFT ARRESTING SYSTEMS.

The military installs and maintains aircraft arresting systems when certain military operations are authorized at civil airports. Aircraft arresting systems serve primarily to save lives by preventing aircraft from overrunning runways in cases where the pilot is unable to stop the aircraft during landing or aborted takeoff operations. They also serve to save aircraft and prevent major damage.

6 INSTALLATION OF ARRESTING SYSTEMS.

6.1 Aircraft arresting systems must be installed according to the latest official criteria of the applicable military aircraft branch or component. In most cases, the criteria can be found in Facilities Criteria (FC) 3-260-18F Air Force Arresting Systems (AAS) Installation, Operation, and Maintenance (IO&M), Air Force Instruction (AFI) 32-1043, *Managing, Operating, and Maintaining Aircraft Arresting Systems.* Naval Air Systems (NAVAIR) 51-5FAA-1, M31 Marine Corps Expeditionary Arresting Gear System.

6.2 The airport operator/management makes the decision to allow an arresting system on the airport. The airport operator/management should request an FAA determination on the effect, the location, and use that the arresting system will have on the operation of the airport, including the navigational aids serving the airport. At the request of airport operator/management, the applicable military component should submit plans in sufficient detail to the appropriate FAA Airports Regional or Airports District Office for review.

6.3 The arresting system should not be installed unless the FAA determines that the location and use of the system will not have an adverse effect on the safe operation of the airport and the navigational aids serving the airport. In addition, the FAA's determination will state that the criteria in this AC and AC 150/5300-13, *Airport Design,* are satisfied to the extent practicable. FAA will provide its determination to both the military and airport operator/management.

6.4 Airport operator/management must provide written permission to the DoD service component or major command headquarters to install the aircraft arresting system at the agreed-upon location.

6.5 Inspection, general maintenance, certification, and operation of the aircraft arresting system should be detailed in a Letter of Agreement (LOA) between the military component and airport operator/management. The LOA should also include provisions to change/upgrade the system based on any change to the military mission or operating requirements. In addition, the LOA should outline any requirements for decommissioning and removing the system, including restoration of the area to current runway safety area standards. There is no specified format for this LOA between the military and airport operator/management. At Part 139-certificated airports, this LOA will be included in the Airport Certification Manual (ACM).

7 GENERAL INFORMATION.

7.1 The location of the aircraft arresting system on a civil airport is considered fixed by its function. To the extent practicable, the frangibility requirements found in Part 139 will be satisfied. In situations where some components of the aircraft arresting system cannot satisfy frangibility requirements, the safe and proper operation of these components, and only these components, will take precedence over the frangibility requirements. When the arresting system is installed according to U.S. Military criteria, it will not be considered to be a violation of Part 139.

7.2 The airport design criteria found in AC 150/5300-13 should be followed to the extent practicable. Grading and site layout criteria in the immediate area of the arresting system will follow the guidance in AFI 32-1043, FC 3-260-18F or NAVAIR 51-5FAA-1 as applicable. For example, a 1-vertical to 30-horizontal ground gradient can be used for the backfill area around the fairlead beam of a BAK-12 Aircraft Arresting System, as described in AFI 32-1043, FC 3-260-18F, and UFC 3-260-01.

8 PERMANENT INSTALLATIONS.

Permanently installed arresting systems should only be allowed when there is a valid military requirement (normally based on the type of military aircraft assigned at the airport). This requirement should be documented in an LOA between the DoD service component or major command headquarters and the airport owner. At a Part 139-certificated airport, the LOA must be included in the ACM and address updating the RSA determination. When the arresting system is no longer needed at an airport, it should be removed, and the runway safety area should be restored to the current FAA airport design standards. FC 3-260-18F and UFGS 32 01 18.71 prohibit runway grooving to improve surface drainage within 10 feet of an arresting system. UFGS 32 01 18.71 further requires grooves to be terminated 3 to 9 inches before the runway centerline joint. UFC 3-535-01 allows up to 5 centerline runway lights to be omitted in the vicinity of the aircraft arresting systems and replaced with blank cover plates to avoid hook-skip problems.

9 TEMPORARY ARRESTING GEAR INSTALLATION.

9.1 In a Runway Safety Area (RSA).

The threshold needs to be moved or relocated to provide the required safety area between the arresting gear and the threshold if the runway is to remain open to civil aircraft for the amount of time the temporary installation is in place. During this period, the new threshold will need to be marked and lighted in the following manner:

1. Mark the threshold bar with a painted white bar in the grass on each side of the new or relocated threshold. (This can be made from plywood sheets or equivalent materials on each side of the runway to provide an 8-foot by 24-foot threshold bar to satisfy this requirement.)
2. Install yellow chevron(s) before the threshold bars on each side of the runway centerline. (These can be made from plywood sheets, plastic snow fence, or other similar materials. Each chevron can consist of three 4- foot by 8-foot sheets of plywood with one sheet cut diagonally in half to form the point of the chevron.
3. Cover the Runway Distance Remaining Signs (DRSs) for the opposite direction from the relocated threshold.
4. Place any Precision Approach Path Indicators (PAPIs), Visual Approach Slope Indicators (VASIs), Runway End Identification Lights (REILs), or approach lights systems for the relocated runway threshold end out of service.
5. If night operations will be conducted on the runway, install threshold/runway end lights at the relocated threshold.
6. Adjust the yellow caution zone runway edge lights for the opposite direction to accommodate the new threshold (if applicable).
7. Place runway centerline lights for the opposite direction out of service.
8. Cover or disconnect the runway edge lights and threshold/ lights in the relocated area. If the relocated area will be used for taxiing operations at night, taxiway reflectors will need to be installed.
9. Airport Operator/management should coordinate with the FAA offices (Air Traffic, Flight Standards, and Airports District Office) to determine the effect the temporary arresting equipment will have on civil aircraft operations.

9.2 Exception.

The runway threshold does not need to be relocated if a Mobile Aircraft Arresting System (MAAS, M-31 or a BAK-12) is installed in accordance with the following:

1. An installation on runways that service small (e.g., single engine), commuter-type air carrier aircraft infrequently. The aircraft arresting cable must be removed from that runway and laid parallel to the runway on the shoulder when not required for military operations.
2. The Fairlead Beam or Mobile Runway Edge Sheave is used, and the Mobile Aircraft Arresting System (MAAS) energy absorbers are located outside the RSA. The

aircraft arresting cable must be removed from the runway and laid parallel to the runway on the shoulder when not required for military operations.

3. To the extent practicable, all arresting system components within the RSA are below grade and covered. At minimum, the Mobile Runway Edge sheaves or fairlead beams are covered, ramped, and compacted with a maximum 30 to 1 (horizontal to vertical) slope ratio. The aircraft arresting cable must be removed from the runway and laid parallel to the runway on the shoulder when not required for military operations. Nothing in this subparagraph is intended to compromise the safe use or proper maintenance of any arresting system component located in the RSA.

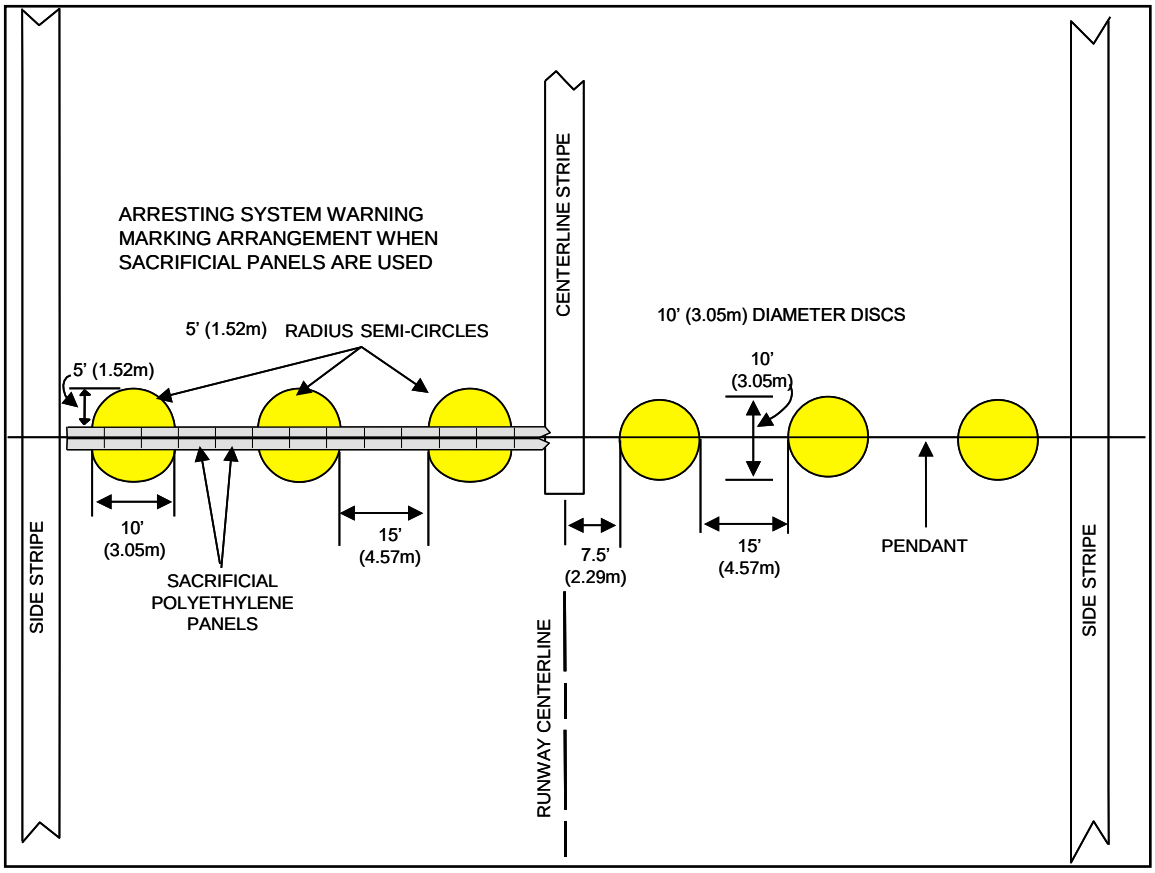
10 NOTICE REQUIREMENT FOR ALL INSTALLATIONS.

Airports where aircraft arresting systems are installed should include the type, number, and location of arresting system(s) in the Airport Data System [Chart Supplement or Flight Information Publications through the FAA Form 5010-1, Airport Master Record, and/or Notice to Airmen (NOTAM) systems].

11 RUNWAY PAVEMENT MARKING.

The location of a permanent aircraft arresting system that crosses operational runway pavement will be identified by a series of reflective circles 10 feet (3.05 meters) in diameter and painted solid yellow (striated marking will not be allowed) on the runway. The circles will be 15 feet (4.57 meters) apart from edge to edge and extend the full width of the runway. The middle two circles will straddle the runway centerline. See Figure 1. When interference occurs with any runway markings, except for runway designation markings, the runway markings may be interrupted with a clearance of 1 foot (0.30 meters) to the edge of the discs. If possible, the aircraft arresting system should be located to avoid any runway marking interference see AFI 32-1042 Standards for Marking Airfields. All other runway markings are to be in compliance with AC 150/5340-1, *Standards for Airport Markings.*

Figure 1. Arresting System Runway Pavement Marking

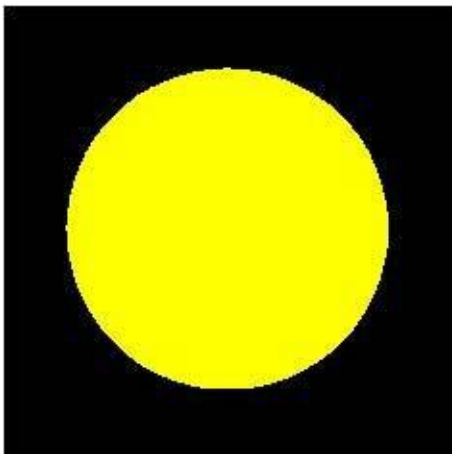


12 ARRESTING SYSTEM SIGNAGE.

12.1 Purpose.

Arresting Gear Markers (AGMs) identify arresting gear pendant cables or systems on the operational runway surface. See Figure 2.

Figure 2. Arresting Gear Marker (AGM). AGMs have characteristics of Runway Distance Remaining Signs but with a yellow circle 39 inches (1 meter) in diameter on a black background.



12.2 Installation.

Arresting system cables (pendants) should be identified by AGMs on both sides of the runway. The AGMs are located in line with the cable +/-10 feet (3 meters) and equidistant from the runway edge. Where Runway Distance Remaining signs (RDRs) (Figure 3) are installed along a runway, locate the AGMs in line with the RDRs, except where the cable is within 20 feet (6 meters) of an RDR. In this case, relocate RDRs to be in a perpendicular line with the AGM but 5 feet (1.5 meters) outboard of the AGM. The distance indicated is to the inside edge of the marker. If the arresting gear is

in the stop way, signs are not allowed but obstruction lights are installed as required by Part 77. (This is a common requirement for the BAK-15.) Markers are oriented perpendicular to the runway centerline. Typical installation of an AGM is shown in Figure 4.

12.3 **Message.**

The AGM has a yellow translucent circle approximately 39 inches (1 meter) in diameter facing both runway directions.

12.4 **Characteristics and Dimensions.**

The AGMs are double faced, with internally lighted message faces. Where authorized, a retroreflective sign face that meets the color and reflectivity requirements of ASTM D 4956, *Type I Sheeting* may be substituted. AGMs are Size 4 Runway Distance Remaining Signs, as described in AC 150/5345-44, *Specifications for Runway and Taxiway Signs.* A Size 4 sign has a marker panel height of 48 inches (1220 millimeters) and overall mounting height of 54 to 60 inches (1370 to 1520 millimeters). As with an RDR, the AGM should provide at least 12 inches (305 mm) of clearance between the top of the sign and any part of the most critical aircraft expected to use the runway when the aircraft wheels are at the pavement edge. Additionally, the AGM should meet the wind-load and frangibility requirements of an L-858B sign.

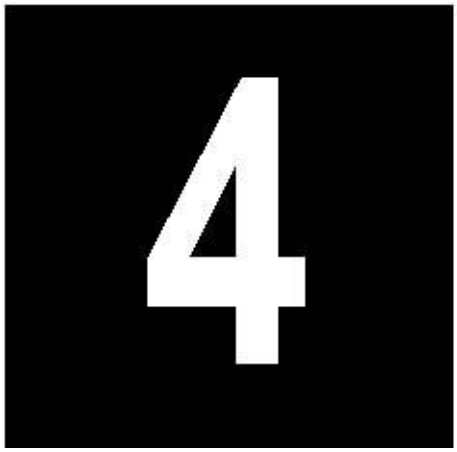
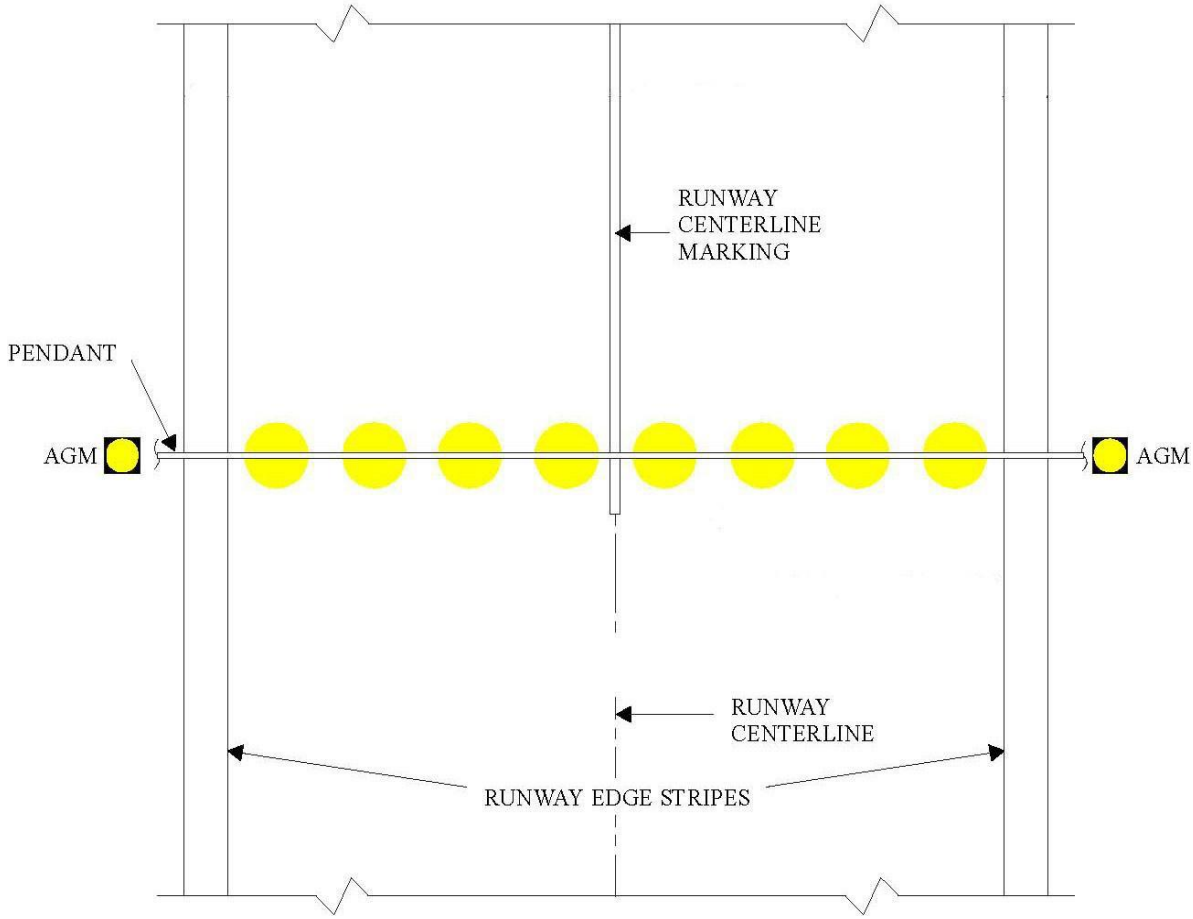


Figure 3. Runway Distance Remaining Sign (DRS). A DRS is Type L-858B, with a white legend on a black background and conforming to AC 150/5345-44, Size 4, Style 2 or 3.

12.5 **Electrical.**

The AGM installation must be compatible with the existing airfield electrical system. The AGMs should be powered from the same source and circuit as DRSs.

Figure 4. Arresting Gear Marker (AGM) Configuration. Install the AGM the same distance from the runway centerline as the RDRs. If an RDR is within 20 feet (6 meters) of an AGM, relocate the RDR to be laterally in-line with the AGM 5 feet (1.5 meters) outboard of the RDR. (Refer to Paragraph 12.2.)



13 **REFERENCES.**

Please refer to the current versions of the following documents. FAA ACs are available at **https://www.faa.gov/airports/resources/advisory_circulars/**. Air Force Instructions are available at **http://www.e-publishing.af.mil/**.

1. Title 14, Code of Federal Regulations (CFR), Part 139, *Certification of Airports* (http:// www.ecfr.gov).
2. Air Force Manual 32-1040, *Civil Engineer Airfield Infrastructure Systems.*

3. Facilities Criteria 3-260-18F, Air Force Arresting Systems (AAS) Installation, Operation, and Maintenance (IO&M)
4. UFC 3-260-01, Airfield and Heliport Planning and Design.
5. Naval Air Systems (NAVAIR) 51-5FAA-1, M31 Marine Corps Expeditionary Arresting Gear System.
6. Advisory Circular 150/5300-13, *Airport Design.*
7. Advisory Circular 150/5340-1, *Standards for Airport Markings.*
8. Advisory Circular 150/5340-18, *Standards for Airport Sign Systems.*
9. Advisory Circular 150/5345-44, *Specification for Taxiway and Runway Signs.*

14 FEEDBACK ON THIS AC.

If you have suggestions for improving this AC, you may use the Advisory Circular Feedback form at the end of this AC.

John R. Dermody
Director of Airport Safety and Standards

Appendix A. Types of Aircraft Arresting Systems

This Appendix is provided for informational purposes only.

(Refer to FC 3-260-18F, Chapter 5, for additional detailed information.)

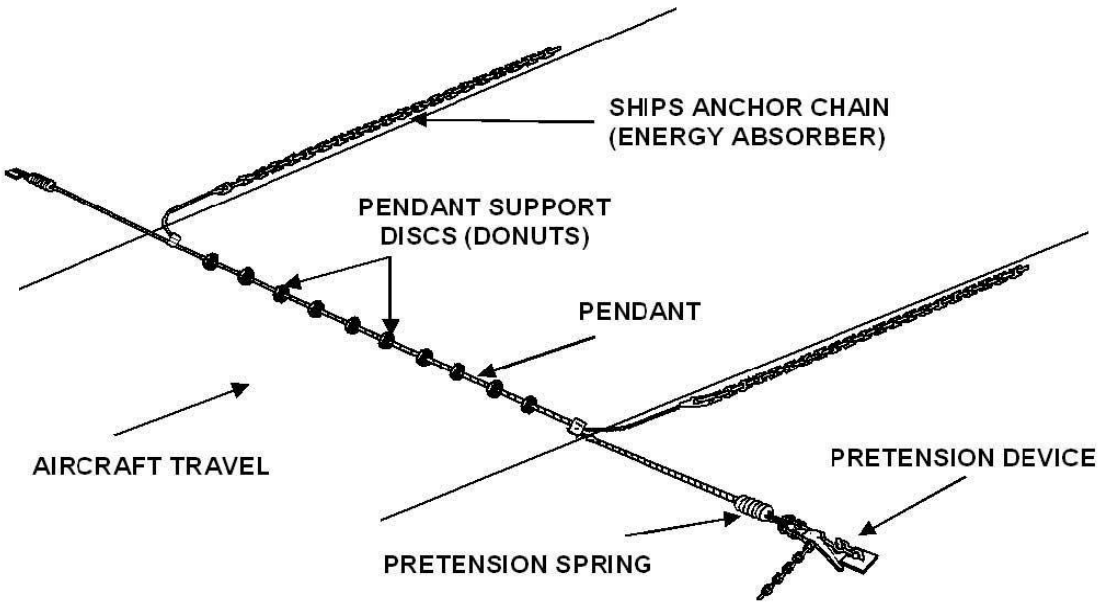
A.1 GENERAL INFORMATION.

Aircraft arresting systems consist of engaging devices and energy absorbers**.** Engaging devices are net systems, such as BAK-15; disc-supported pendants (hook cables); and cable support systems, such as BAK-14 and the Type H, that raise the pendant to the battery position or retract it below the runway surface. Energy absorbing devices are ships' anchor chains, rotary friction brakes (such as BAK-12), rotary hydraulic systems, or textile brake systems.

A.2 E-5 HOOK CABLE ARRESTING SYSTEM.

This unidirectional emergency arresting system is a U.S. Navy design and designation (Figure A-1). This system uses several shots of ships' anchor chain as the energy absorber, but these systems are never connected with a barrier (net). For the Navy or Marine Corps, these systems can have from 1 to 4 disc-supported hook cables, with designations of E-5 and E-5 Mod 1 through E-5 Mod 3. Obtain further technical information on the Navy configuration of this system from the Naval Air Warfare Center, Lakehurst, NJ. The location of the E-5 system can be either on the runway or on the blast pad depending on mission requirements.

Figure A-1. E-5 Hook Cable Arresting System.



A.3 **BAK-12.**

The BAK-12 (Figure A-2) is the standard USAF operational aircraft arresting system. This bidirectional system employs two energy absorbers. Each absorber consists of two multi-disc rotary friction brakes mounted on either side of the purchase-tape reel on a common shaft. The energy absorbers are located on opposite sides of the runway, connected to a 1.25-inch (32-millimeter) disc-supported pendant by the purchase tape. Ideally, the energy absorbers should be in a below-grade pit with a minimum split distance of 50 feet (15.24 meters). (Split distance is a measurement taken between the lead-on sheave of the fairlead beam or deck sheave and the energy absorber.) Split distances of up to 300 feet (91 meters) are acceptable for all BAK-12 installations.

A.3.1 Originally, BAK-12 energy absorbers were fitted with a 60-inch purchase-tape storage reel. This design allowed the maximum energy expected to be imparted during an aircraft engagement to dissipate within a runout of 950 feet (290 meters) plus the length of the aircraft. Designers have since improved the BAK-12 to meet the demands of heavier and faster aircraft.

A.3.2 The standard BAK-12 is configured for cross-runway separations of up to 200 feet (61 meters) (distance between fairlead beams or sheaves). Dual BAK-12 systems are special-purpose installations configured to accommodate high-energy engagements of aircraft ranging from 60,000 to 140,000 pounds (27,200 to 63,500 kilograms). These configurations consist of four BAK-12 energy absorbers arranged in pairs on either side of the runway.

A.3.3 A BAK-12 can be located anywhere on the runway or in the safety area depending upon the military mission requirements. The BAK-12 could be stand alone or installed in conjunction with either the BAK-14 or Type H systems discussed below.

A.4 **CABLE SUPPORT SYSTEMS.**

A.4.1 The BAK-14 hook cable support system (Figure A-3) is a bidirectional hook cable (pendant) support system used in conjunction with the BAK-12, or a comparable arresting system, to engage and safely stop a hook-equipped aircraft. It provides the means to support the pendant at least 2 inches above the runway surface while giving air traffic control (ATC) the means to lower the pendant below the surface of the runway to prevent damage to low-undercarriage aircraft, the pendant, and the pavement below the pendant during trampling. These systems can accommodate runway widths of 150, 200, and 300 feet (46, 60, and 90 meters). The control side BAK-12 pit or protective shelter and foundation must be expanded to house the compressed air and control systems needed to operate this supplemental system. A radio remote control system provides ATC the means to operate the system and to monitor its operational status.

A.4.2 The Type H hook cable support system (Figure A-4) is a bidirectional hook cable support system that can be used in conjunction with any type of energy-absorbing

device. It provides a means to raise a cable at least 2 inches above a runway surface or lower it below the runway surface. It can be supplied to accommodate runway widths of 150, 200, and 300 feet (46, 60, and 90 meters). A radio remote control system provides ATC the means to operate the system and to monitor its operational status.

A.4.3 Note that both retractable systems (BAK-14 and Type H) require 200 feet of PCC (Portland cement concrete) on either side of the cable.

Figure A-2. BAK-12 Aircraft Arresting System.

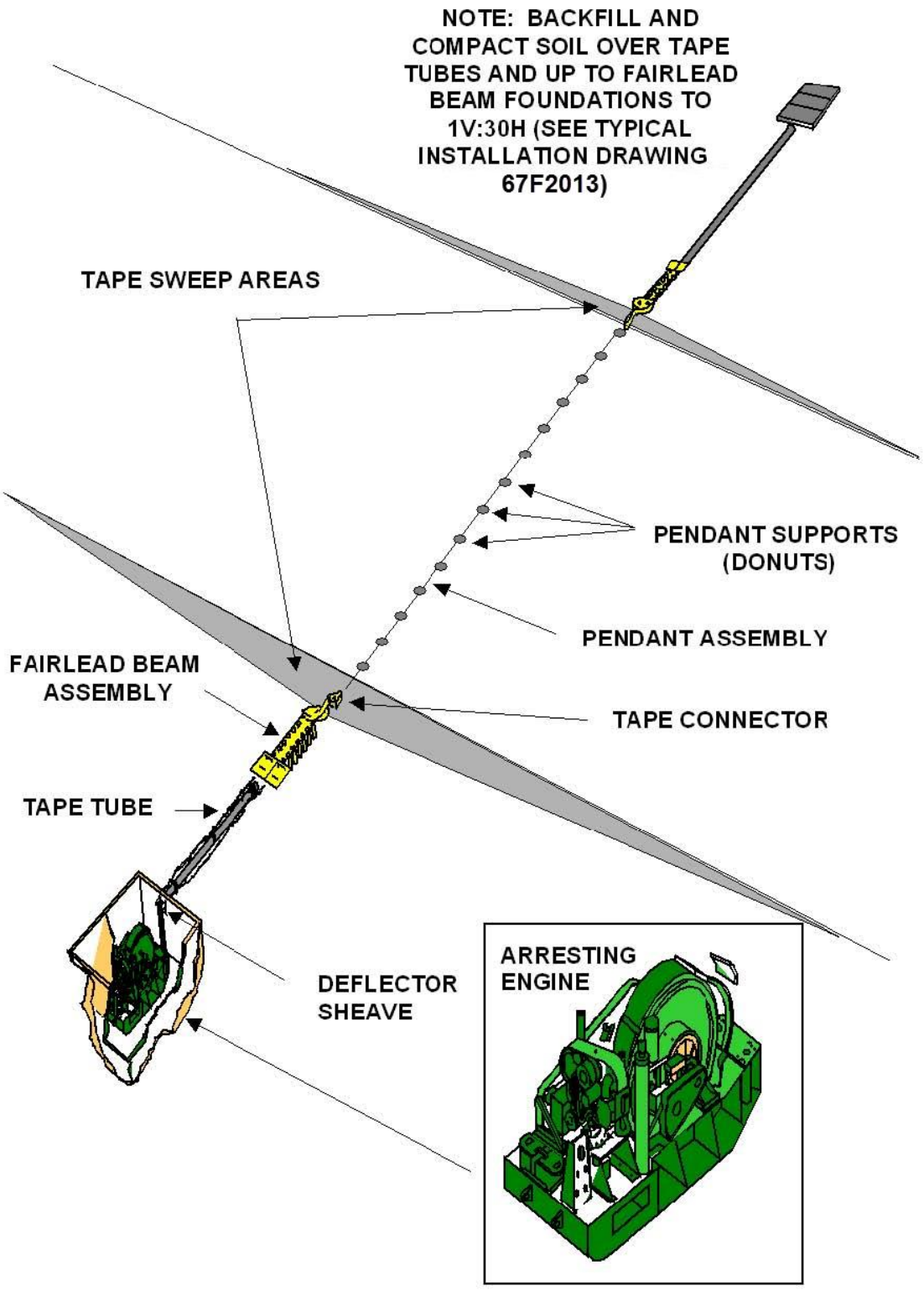


Figure A-3. BAK-14 Cable Support System.
(Shown with BAK-12 energy absorber within pit).

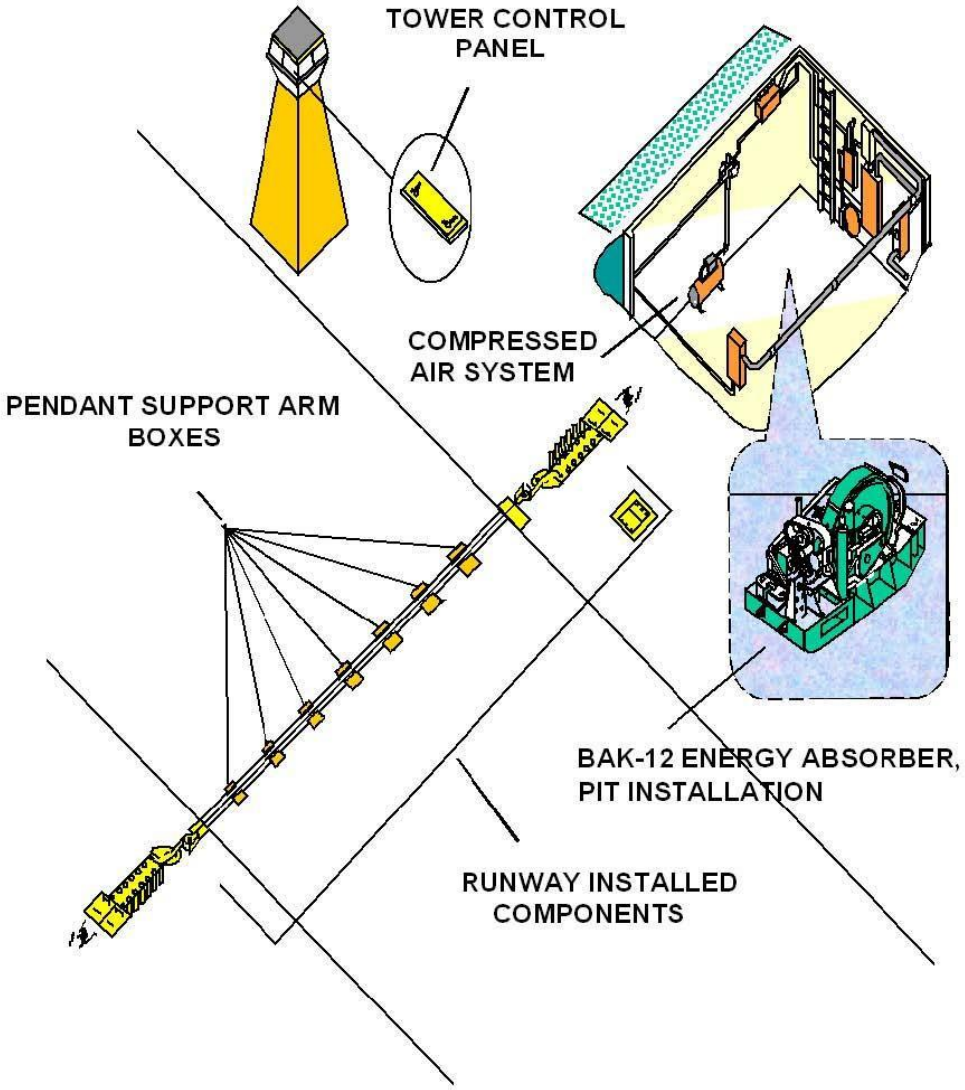
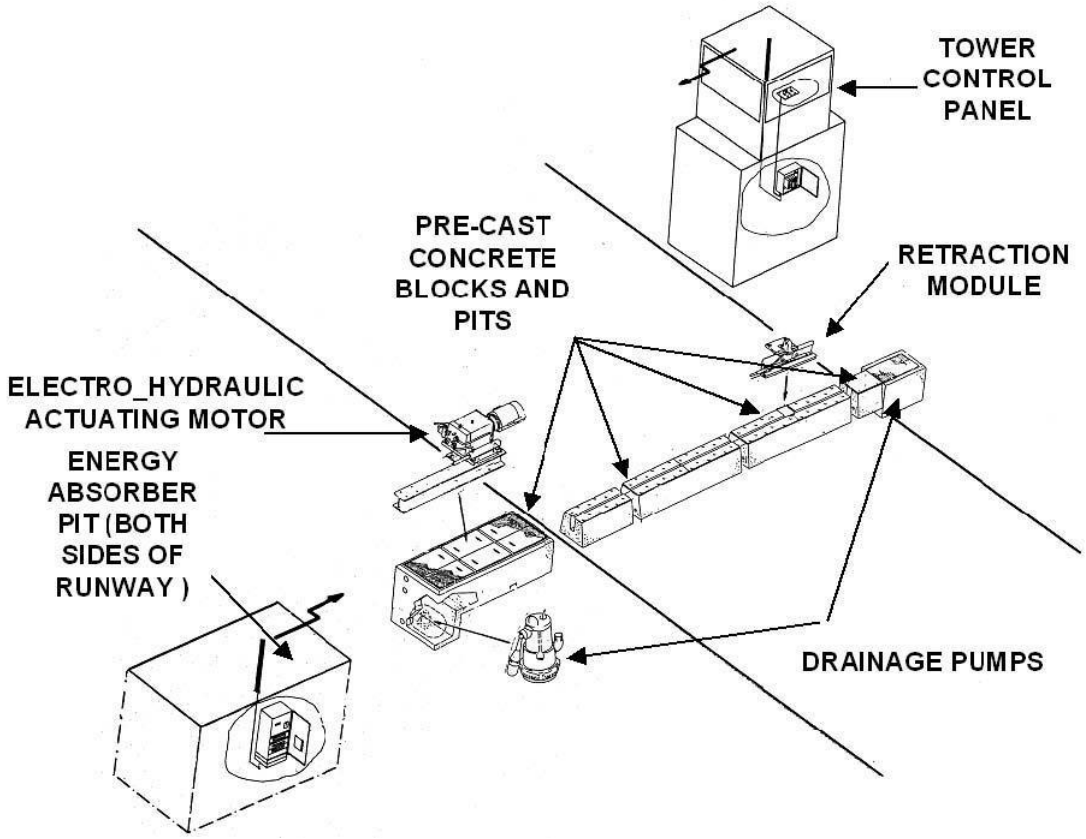


Figure A-4. Type H Hook Cable Support System
(Shown with BAK-12 energy absorber within pit but
fairlead beams not shown)

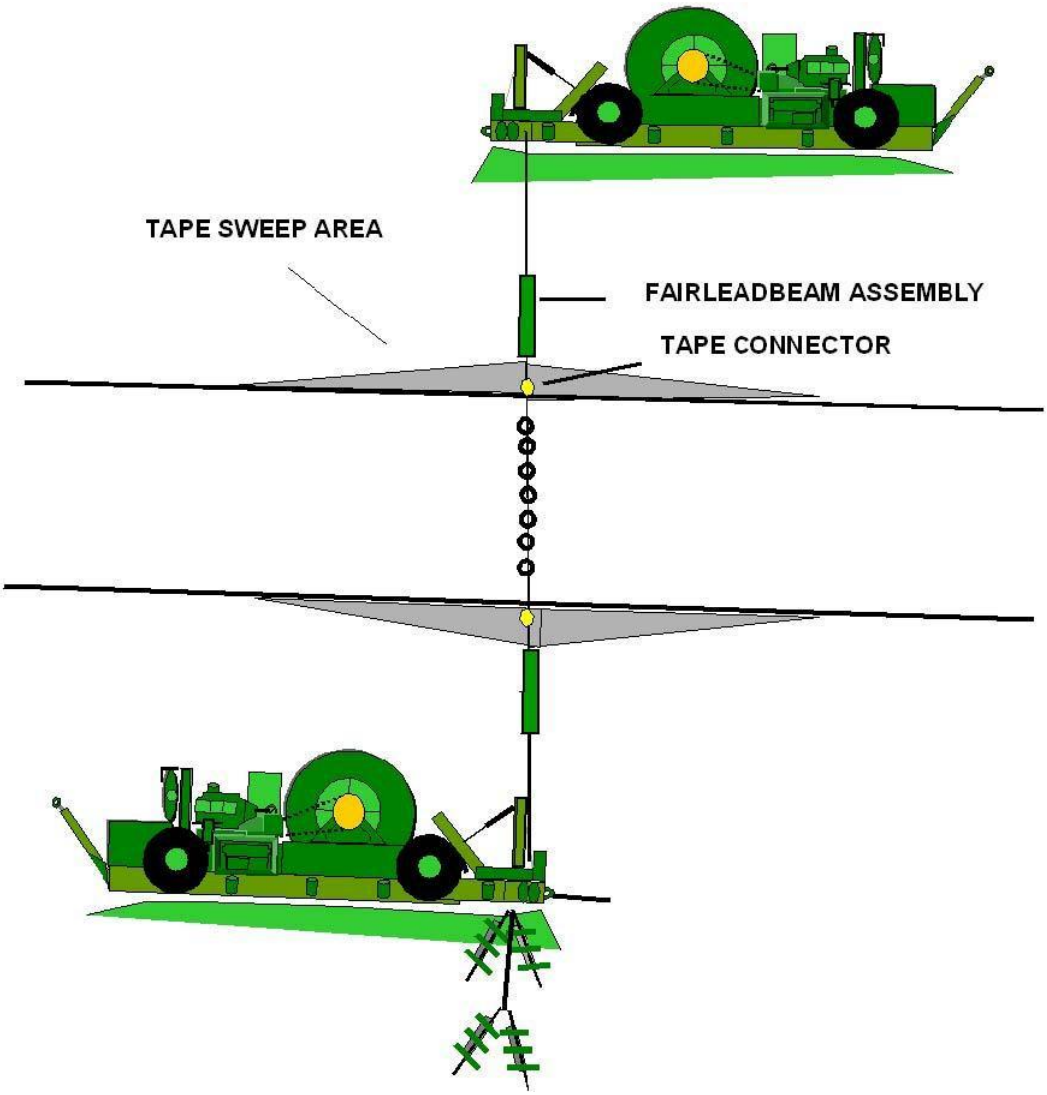


A.5 MOBILE AIRCRAFT ARRESTING SYSTEM (MAAS).

A.5.1 The MAAS (Figure A-5) is essentially a BAK-12 aircraft arresting system mobilized through installation on a specially developed trailer. It is configured for a maximum aircraft runout of 990 feet (302 meters). This system was initially developed and tested to accommodate recovery of fighter aircraft returning to a battle-damaged airfield.

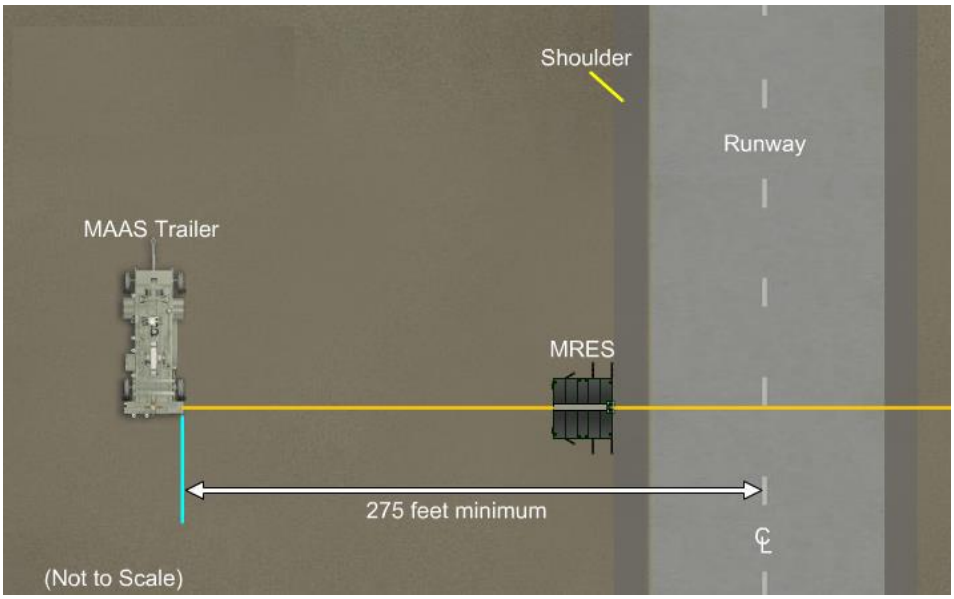
A.5.2 Such cases require rapid deployment and installation and may require that only the minimum essential anchoring hardware be installed to accommodate the above scenario. When installed for this purpose, the MAAS is installed using a 19-stake anchoring scheme. This configuration is limited to unidirectional engagement capability with a maximum aircraft weight and speed of 40,000 pounds (18,144 kilograms) at 150 knots.

Figure A-5. Mobile Aircraft Arresting System (MAAS) in Set-Back Configuration.



A.5.3 The MAAS can be upgraded to accommodate bidirectional engagements with the full capacity of a standard BAK-12 aircraft arresting system. This is accomplished by increasing the total number of stakes used to anchor the system from 19 to 31, extending the runout to 1,200 feet (366 meters), and synchronizing the system for higher brake pressure.

Figure A-6. Mobile Aircraft Arresting System (MAAS) In Set-Back Configuration With Mobile Runway Edge Sheave (MRES)



A.6 **TEXTILE BRAKE.**

A.6.1 This modular arresting system is primarily intended as an emergency back-up system for standard operational systems. The system is considered a permanent system (though it could be set up for temporary use in a contingency location). It is composed of multiple modules arranged in equal numbers on both sides of the overrun (or runway if a bidirectional model) that contain specially woven textile tearing straps to absorb the kinetic energy generated during an engagement. One end of each module is anchored to the ground, and the other end is connected to a tensioned cable or barrier positioned across the runway to engage an aircraft. The system is available in a two-stage unidirectional configuration (A1-7) see T.O. 35E8-2-13-1, *Operation, Service, Overhaul with Illustrated Parts Breakdown Textile Brake and Hook Cable Aircraft Arresting System, Type MB 60.9.9.C.* For information on the single-stage bi-directional system (Figure A-8) MB 100.10.C, see T.O. 35E8-2-14-1, *Operation and Service, Overhaul Instructions, Illustrated Parts Breakdown for Textile Brake and Hook Cable Aircraft Arresting System, Type MB 100.10.C.*

A.6.2 The advantages of the two-stage system (MB 60.9.9.C) over the MB 100.10.C bi-directional system are higher system capacity and lower costs for reconfiguration after low-energy engagements. The modules in a stage (breaking line) are expended upon aircraft engagement and must be replaced; however, a life cycle analysis indicates system costs are approximately 50 percent of the life cycle cost for a BAK-12 installed in the overrun area of a runway due to the low number of engagements that occur there. These systems are designed for tail-hook-equipped fighter aircraft but can also be complemented with a net barrier such as the BAK-15 or a net and cable interconnect system. They may also be configured for expeditionary or temporary installations.

A.6.3 If the bi-directional version of the textile brake arresting system is installed on the operational runway surface due to a non-standard length overrun, the arresting gear marker (AGM) signs should be blanked when viewed from the approach. This is because the system is a low-energy-capacity system (compared with BAK-12) and is not intended for approach end engagements.

Figure A-7. Textile Brake, Model MB60.9.9.C

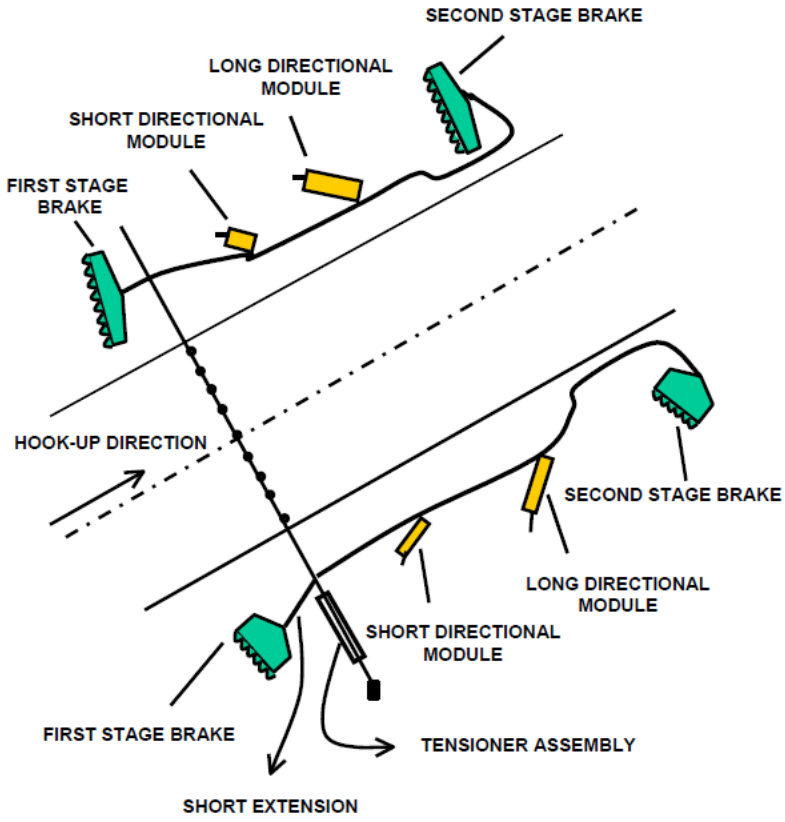
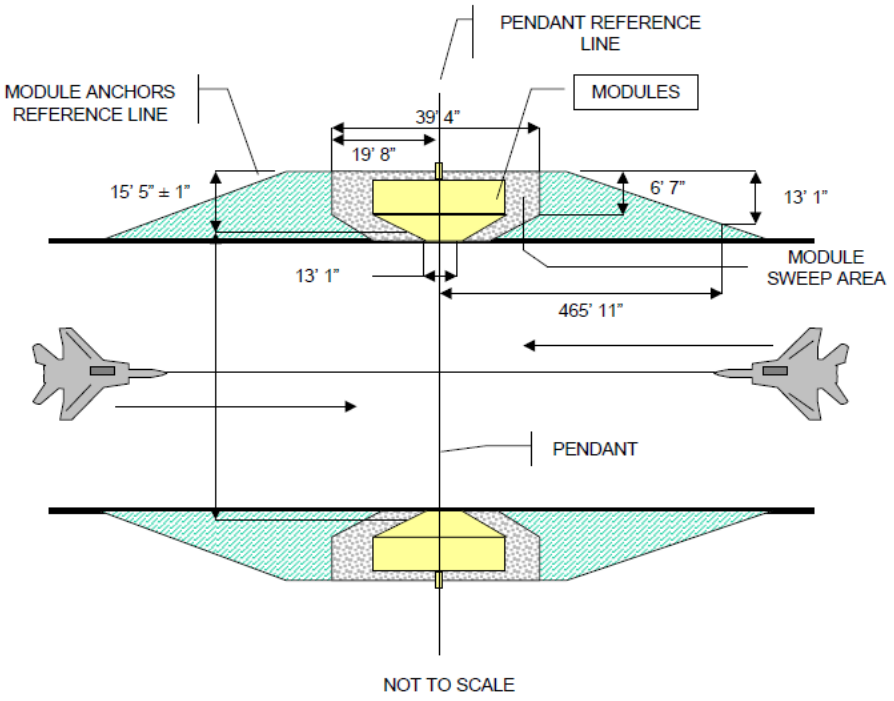


Figure A-8. Textile Brake, MB.100.10.C



A.7 TYPICAL INSTALLATION PHOTOGRAPHS

Figure A-9. Type H System with Fairlead Beam and Ramp and BAK-12 Pit in Background

Figure A-10. Fairlead Beam and Ramp

Figure A-11. BAK-12 Pit Looking Toward Runway

Figure A-12. Edge Sheave and Ramp

Figure A-13. Figure A2-5. Edge Sheave and Ramp (Side View)

Figure A-14. BAK-12 with no Retraction System and Painted Discs on Runway

Figure A-15. BAK-14 with Fairlead Beams and Pits—Note no grooving 10 feet within cable

Figure A-16. Type H Cable Retraction System with Fairlead Beam and BAK-12 Pit in Foreground. Discs Painted on Runway

Figure A-17. Plan View of Typical BAK-12/14 (or Type H) Installation

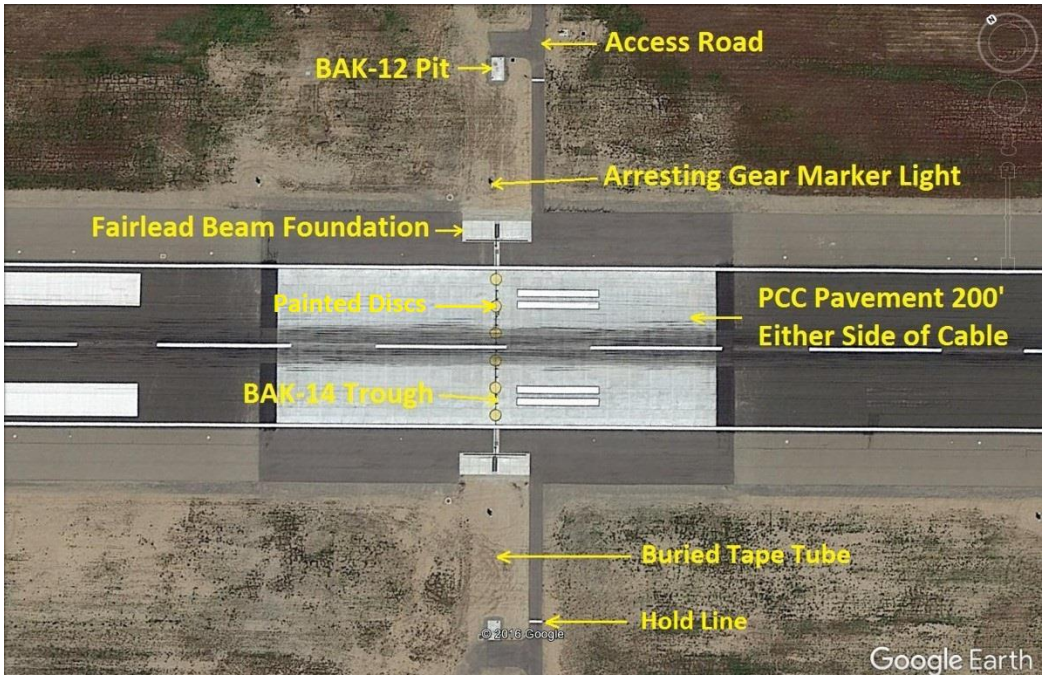


Figure A-18. Textile Brake – MB100.10.C Bi-directional System

Figure A-19. Mobile Aircraft Arresting System (MAAS) with Mobile Runway Edge Sheave (MRES) in front

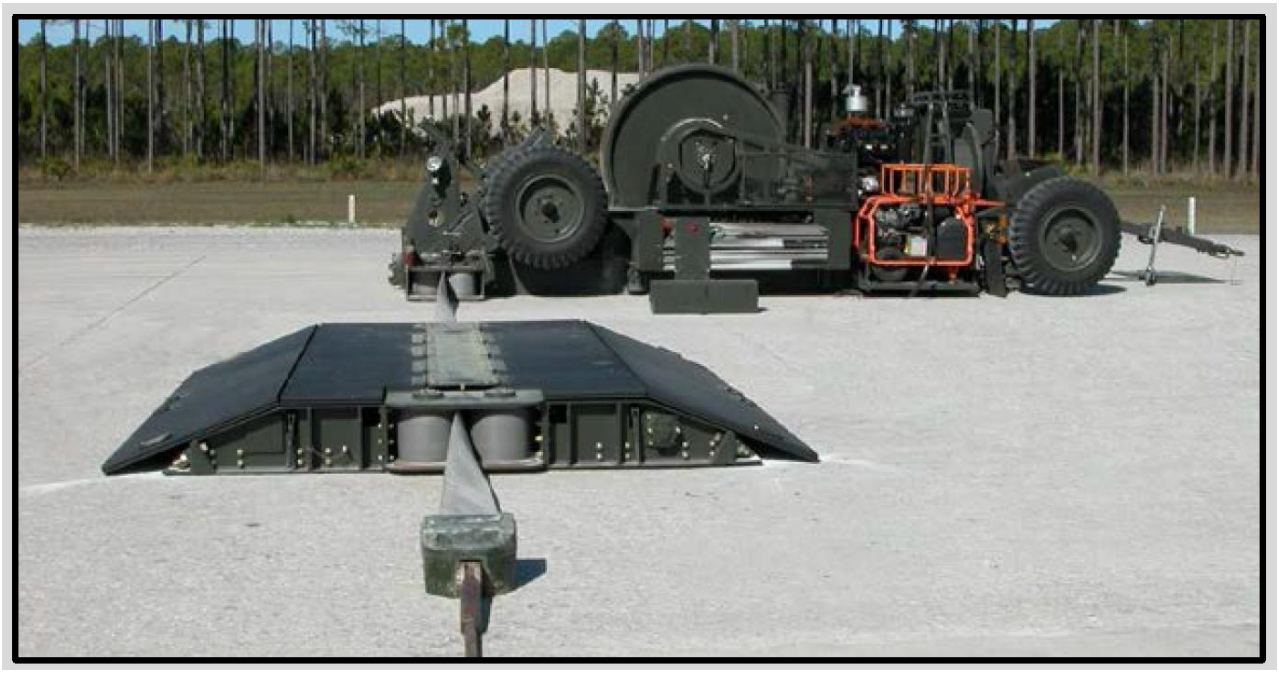


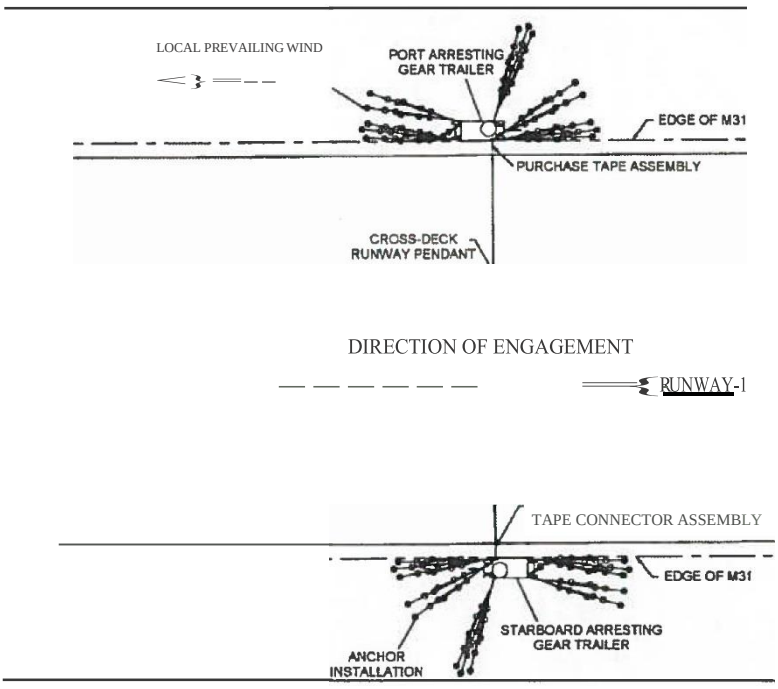
Figure A-20. Expeditionary BAK-12 Brake

Figure A-21. Expeditionary Fairlead Beam with Temporary Ramping

Table A-1. M-31 MCEAGS Characteristics

ITEM	DATA
Energy Absorbers Max Capacity	100 Million ft-lbs. for a single arrestment.
Aircraft Runout	950 or 1,000 feet.
Max Weight/Speed	65,000 at 175 Kts with 15,000 lbs. Thrust at 950 ft. runout
Off-Center Engagement	Full capacity up to:
	-10 Ft. 0 /C for 100 ft. span. (96 to 100 ft. Runway)
	-25 Ft. 0/C for 150 ft. span. (150 ft. Runway)
	O Ft. 0/C for 225 ft. span. (200 ft. Runway)
Engagement Direction	Bi-directional.
Ambient Temperature	-25uF to + 125uF Operational -60uF to + 160uF storage.
Environmental Restrictions	None.
Cross Runway Pendant	
Type	12 x 6 (6 x 30) Nonrotating wire rope.
Diameter	1.25 Inches.
Minimum Breaking Strength	150,000 Pounds.
Length	Varies with installation span.
Purchase Tape Type	Flat nylon.
Minimum Breaking Strength	140,000 Pounds. (Sewn Loop)
Width	10 Inches.
Thickness	0.30 Inches coated.
Terminations	Sewn loop.
Tape Length	894
Cooling System Maximum Capacity for Two Trailers	2,040,000 BTU/HR at 125°F Ambient temperature at 5,000 ft. density altitude.
Total Cooling System Volume	104 Gallons per trailer.
Arrestment Rate	6 A/C per hour for 12 hours per day.
Rapid Cycle Capacity	20 A/C per hour for 2 hours at 42,000 lbs. and 158 knots and 17.832 pounds of thrust.

Figure A-22. MCEAGS Installation Diagram
(Typical)



Advisory Circular Feedback

If you find an error in this AC, have recommendations for improving it, or have suggestions for new items/subjects to be added, you may let us know by (1) mailing this form to Manager, Airport Safety and Operations Division, Federal Aviation Administration ATTN: AAS-300, 800 Independence Avenue SW, Washington DC 20591 or (2) faxing it to the attention of AAS-300 at (202) 267-8663.

Subject: AC 150/5220-9B Date: _____

Please check all appropriate line items:

☐ An error (procedural or typographical) has been noted in paragraph _____ on page _____.

☐ Recommend paragraph _____ on page _____ be changed as follows:

_____
_____
_____

☐ In a future change to this AC, please cover the following subject:
(Briefly describe what you want added.)

_____
_____
_____

☐ Other comments:

_____
_____
_____

☐ I would like to discuss the above. Please contact me at (phone number, email address).

Submitted by: _____ Date: _____