

Heliport and Airways Committee

HSAC
New Orleans, LA
20 October 2016





Helideck Agenda

- **Rotor Magazine Article**
- **API RP 2L-1 Update**
- **Helideck RP Workgroup Update**
- **Industry Update ICAO Annex 14 and CAP 437**
- **Aircraft Grounding During Refueling**
- **BSEE Presentation**



Rotor Magazine (HAI) Article

- HSAC approached HAI at HeliExpo and they agreed to publish article on HSAC RP 2016-1 “New Builds”
- Article published Rotor Magazine Summer 2016, total of 4 pages with extracts from the RP

HSAC Develops Guidelines for New-Build Helidecks

By Eric Drown

Members of the Helicopter Safety Advisory Conference (HSAC) recently completed a three-year effort to develop guidelines for the design and marking of new-build offshore helidecks. The group of 115 companies and government agencies operating in the Gulf of Mexico works to improve the safety of offshore helicopter operations there. Their hope, the guidelines, released in May, will give greater standardization of helideck construction and marking not only to the Gulf but around the world.



An H-53C on a helideck on an early version of an offshore platform.

First Standards for Helidecks

HSAC recognizes that in the last three years, little to no knowledge of HSAC RP 2016-1, Helideck Design Practices (New Builds), the first recommended practice (RP) level standards for the design and marking of helidecks,

HSAC: A Proactive Approach to Offshore Helicopter Safety

HSAC will address the major offshore helideck Helicopter Safety Advisory Conference (HSAC), an industry-led, non-profit organization, was formed in 2013 to address the unique safety challenges of offshore helicopter operations. HSAC was formed in response to an accident in December 2011 that claimed 17 lives, when a helicopter collided with a crane tower at offshore platform. Since then, the group of helicopter operators, oil companies, offshore service companies, manufacturers and vendors, and government agencies has worked to improve offshore flight safety in the Gulf of Mexico.

The HSAC design is “Safety Through Cooperation.” The group emphasizes communication on safety issues. The development of recommendations and guidelines, structured as a proactive approach to resolving safety issues.

The helideck RP evolved in May as the result of a significant three-year collaboration involving a host of experts from industry and government. The FAA, and industry service and class operators. Those included some old friends like John Lunsford from Lunsford Aviation International, Bill Schroeder from Chevron, and Bob Roberts from ConocoPhillips, all of whom have worked closely for years with HSAC and the International Federation of Helicopter Associations on the ICAO Helideck Design Working Group. Some participants in creating the RP were new to the HSAC process, an operations manager at HAI and an HSAC member who volunteered to write an article regarding the new safety document for ROTOR. We intend a special thanks to him. Again, HAI salutes — and thanks — HSAC and all the operators and engineers involved in this important safety project. *—Eric Drown*

HAI will continue to report on the progress and developments.

helidecks with original helicopter parking areas. The types of helidecks becoming more common are design-build helidecks that are further apart. On a helideck designed for one aircraft with no parking area, an aircraft that drifts down for a long period of time has a serious chance of crashing. A parking area gives a long stop to writing that problem.

HSAC RP 2016-1 is a one-stop shop for guidance on new-build helideck planning, design, marking, lighting, fuel stations, and equipment for weather reporting, communications, and emergency response.

Public, recognizing that the world has no other minimum requirements for the design, construction, and marking of helidecks, HSAC has incorporated a complete parking area. The absence of such guidance has led to significant variability in marking requirements that also in marking and construction standards.

While establishing standards for helidecks with original parking areas, the RP also includes guidance for other, more traditional types of helidecks. HSAC RP 2016-1 is a one-stop shop for guidance on new-build helideck planning, design, marking, lighting, fuel stations, and equipment for weather reporting, communications, and emergency response.

Guidelines for Helideck Markings from an operational standpoint, one of the greatest improvements the RP offers is clear, concise, and unambiguous direction of marking both the helideck and parking areas. Prior to this, there existed four different, often conflicting guidelines for marking and lighting helidecks.

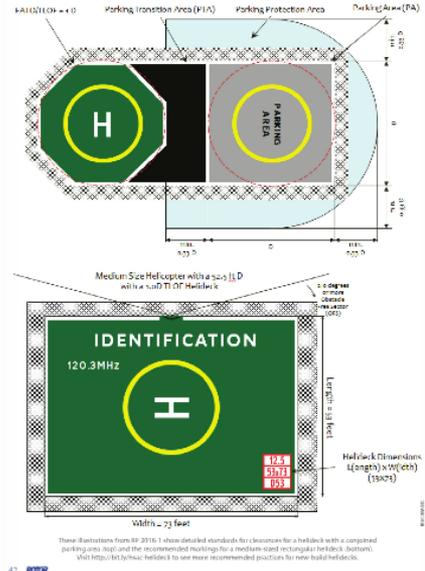
To ensure, how do we know the way? A signpost is one place in a grassy field, and in the mountains, a house sign, and not something else. It is not unique to the road. Anytime design, this would be a standard design convention.

To plan, helideck markings are their own. They tell pilots dimensions, weight capacity, and construction practices. They also provide the same white-



An H-53C on landing at an offshore helideck with a new paint job.

to the helideck and parking areas. This is the critical first step in any effort to improve the safety of offshore helicopter operations. The RP offers a clear, concise, and unambiguous direction of marking both the helideck and parking areas. Prior to this, there existed four different, often conflicting guidelines for marking and lighting helidecks.



Two illustrations from RP 2016-1 show detailed standards for dimensions for helidecks with a original parking area, and the recommended markings for a medium-size rectangular helideck. Helideck. Visit <http://www.hsac-helideck.com> for more recommended practices for new helidecks.

obvious from above — hazards that pilots need to know about before they approach. Helideck markings enhance pilot ability to safely operate to and from that location — but only if they both understand and believe in the markings.

Markings currently vary from facility to facility depending on local guidelines. To compound the issue, when residents from overseas enter the United States they often follow other variations. While compliant with the standard of whatever country the helideck falls from, these markings are rarely alike to local pilots. In the worst case, helideck markings convey a meaning opposite of what they were intended to — like driving in a country where red means go and green means stop.

Where the helideck markings were intended as an aid to pilots, they instead became a detriment. As a consequence, over time, many pilots have developed a general distrust of helideck markings. In an effort to return helideck markings to their state as a valuable resource for pilots, HSAC has spent a great deal of time and effort in creating clear, concise, and practical methods of marking helidecks, with a focus on aligning as much as possible with international guidelines. The goal is to get all helidecks in the world to follow the practice here. The last set of “road signs” for pilots to follow.

Members of HSAC have actively been working with the U.S. Civil Aviation Authority (CAA) and the International Civil Aviation Organization (ICAO) in an effort to make a worldwide helideck marking standard. The CAA is expected to release in 2017 a new version of CAP 437, its guidance for offshore helicopter landing areas, which will adopt HSAC. It is all of the helideck marking standards (found in RP 2016-1). It is also expected to release revised guidelines for offshore helideck design that will incorporate many of the HSAC recommendations for helideck markings.

HSAC encourages all owners and operators in the Gulf of Mexico to proactively adopt these new standards in an effort to enhance safe operations in the offshore environment. Furthermore, in those countries where the aviation authority has no published standard for offshore helidecks, we hope that regulators and operators see the value of having one worldwide standard and adopt HSAC RP 2016-1 in its entirety.

Safety Through Cooperation HSAC RP 2016-1 was the result of collaboration among many stakeholders in the offshore oil and gas industry. Special effort was made to ensure that contributions from a wide array of industry experts, including owners, facility operators, aviation service providers, engineers, and regulators, would guarantee a document that is applicable and effective in enhancing safety at all offshore facilities.

Operators that contributed to the RP include Chevron, Engineering Development Group, FluorMold, Hall, PPH Inc., Lovett Associates International, and numerous others. Contributions were also obtained from regulatory bodies such as the FAA, the Bureau of Ocean Energy Management, U.S. Coast Guard, and the Louisiana Department of Transportation and Development.

Having one single standardized method of designing and marking helidecks adopted both nationally and internationally would help all offshore helicopter operators take a major step toward the goal of zero accidents, zero injuries, and zero avoidable incidents. For more information on HSAC RP 2016-1, visit <http://www.hsac-helideck.com> or go to <http://rotor.hai.com>.

Eric Drown has 20 years of experience in aviation and began his career as a U.S. Army aviator. In 2008, he joined PPH Inc., where he eventually became an executive and chief owner of the 278 and 60. Drown joined PPH's management team as an area manager in Alaska before becoming an operations manager. He has been a member of the HSAC RP working group for the past six years along with the developer, Petroleum Institute.



SAVE THE DATE

HAI Firefighting Safety Conference

November 14-16, 2016
The Grove Hotel
Boise, Idaho

Register and Book Housing at
rotor.org/firefightingconf

HAI developed helideck RP of 5/17/16 ends Oct. 24.

For sponsorship information,
contact sales@rotor.org



Rotor Article

- **HAI provided this background:**

The helideck RP released in May was the result of a significant three-year collaboration involving a host of experts from industry and government, the FAA, and military services and state agencies. These included some old friends like John Leverton from Leverton Associates International, Bill Schroeder from Chevron, and Bob Williams from ExxonMobil, all of whom have worked closely for years with HAI and the International Federation of Helicopter Associations on the ICAO Heliport Design Working Group.

- **Special thanks to Eric Shores of PHI who agreed to write the article, from HAI:**

Some participants in creating the RP were new to us, like Eric Shores, an operations manager at PHI and an HSAC member, who volunteered to write an article explaining this new safety document for ROTOR. We extend a special thanks to him.

Again, HAI salutes — and thanks — HSAC and all the people and organizations involved in this important safety project.

– *David York*

HAI vice president for regulations and international affairs



API RP-L1 Update

- Meeting was held on 8 September 2016 in Houston
- After discussion it became apparent that some members of the API workgroup would never accept a minimal helideck size of 0.83D for new builds and there was no way forward given the API RP process.
- HSAC withdrew its support from the workgroup and advised API in writing of the following:
 - a) HSAC believes to allow these substandard sized helidecks to continue to be built poses a liability risk to helideck designers, builders, owners and helicopter operators as well as a safety risk to helicopter operations.
 - b) API would be better served to have no new build helideck design guidance rather than to have substandard guidance that has been proposed in the ballot comments for the new DRAFT RP for New Builds which would allow decks smaller than 0.83D.
 - c) API should remove / withdraw the current API RP2L document as reference due to time elapsed since it was last updated in 1996, and remove the draft RP2L-1 from the ballot process as discussed and agreed at this most recent workgroup meeting.



API Update

Continued from previous slide: Going forward, HSAC member companies including those with API membership will:

- a) Not recognize any API reference with regard to helideck design guidance and recommend government agencies do the same.
- b) Only support withdrawal of the old API RP 2L Design RP, and would comment ballot / negatively on any attempt to further revise the old document.
- c) Have its members with API membership actively support ONLY the above positions through the normal API processes.

(We need HSAC API members to contact their API contacts and advise of HSAC position and convey the message)

If for some reason it is required that there be further ballot efforts for the old API RP2L or the Draft 2L-1, both HSAC and its API members respectfully recommend that only voting members who were included in the original ballot of 2L-1 be allowed to participate.



HSAC RP 2016-2

DRAFT Revision 4



**Assessment, Upgrades, Modification,
Replacement and Marking of Existing and
Temporary Helidecks**

(Legacy Helidecks)



Helideck Workgroup

(Forward Plan)

1. **API RP:**

- a) *Continue to reinforce to HSAC members with API membership in API to reinforce the HSAC position on API's helideck guidance.*
- b) *Review / seek support of HSAC position with federal agencies.*

2. **HSAC RP 2016-2: Assessment, Upgrades, Modification, Replacement and Marking of Existing and Temporary Helidecks (Legacy Helidecks):**

- a) *Complete RP and publish. Complete before year end.*
- b) *Withdraw RPs 2008-01 and 2013-01. Complete before year end.*

3. **HSAC RP 2016-1 rev 1: Helideck Design Guidelines (New Builds):**

- a) *Align with 2016-2, correct some errors, and reinsert paragraph numbers, etc. Following release of RP 2016-2 issue Rev 2 to HSAC RP 2016-1. Target Year end.*

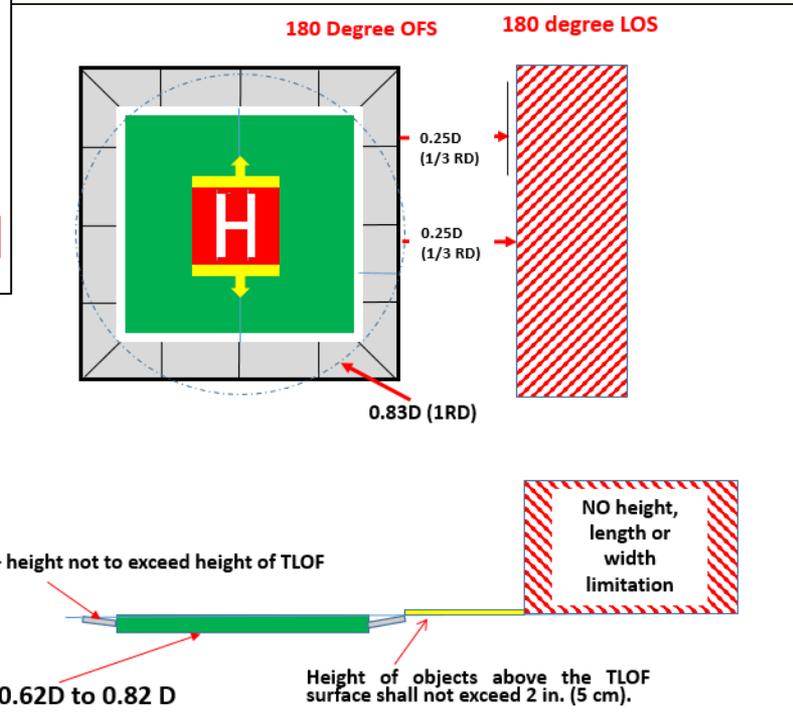
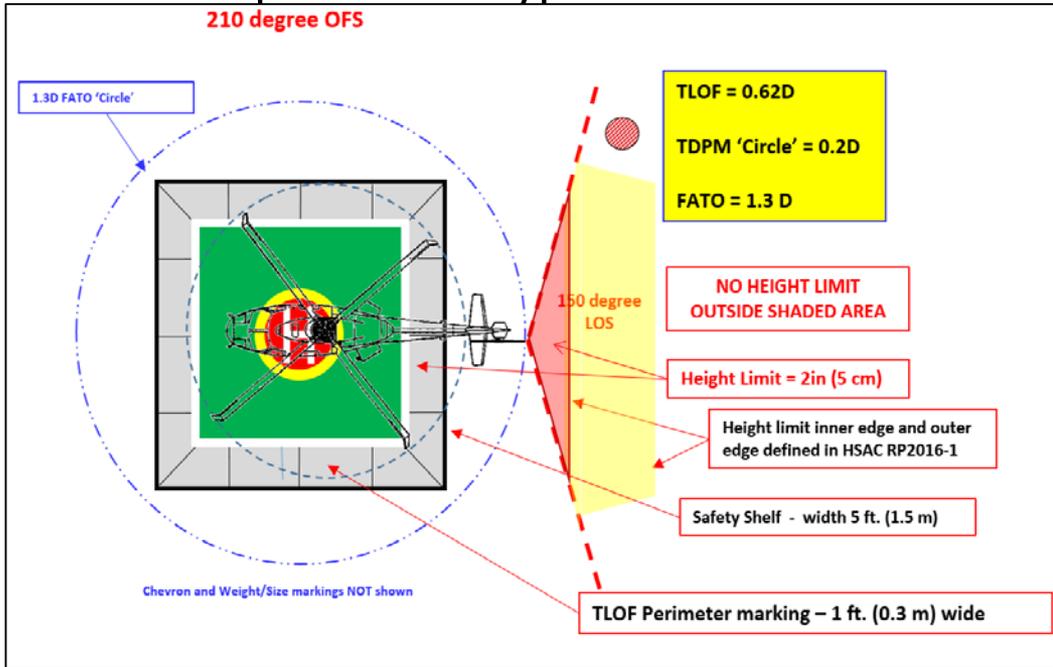
4. **HSAC RP 2016-3: Inspection, Maintenance and Management of Offshore Helidecks:**

- a) *Align with current industry best practices. Bill Schroeder (Chevron) and Pat Bosman (Shell) are co-chairs. Pending after RP 2016-1 and RP 2016-1 Rev 2 are issued. Target mid 2017.*



HSAC RP 2016-2

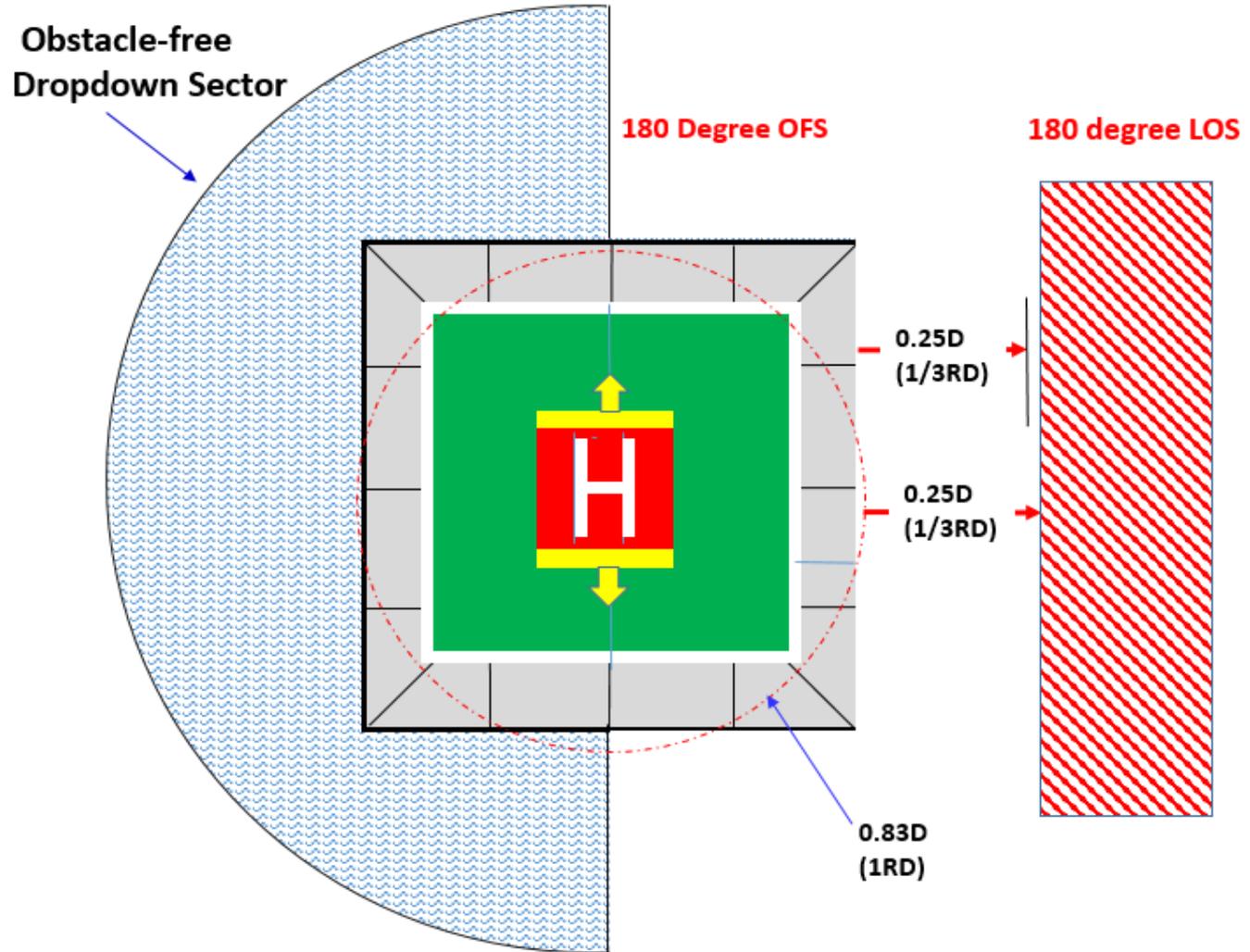
Provides option for 2 types of obstacle clearances





HSAC RP 2016-2

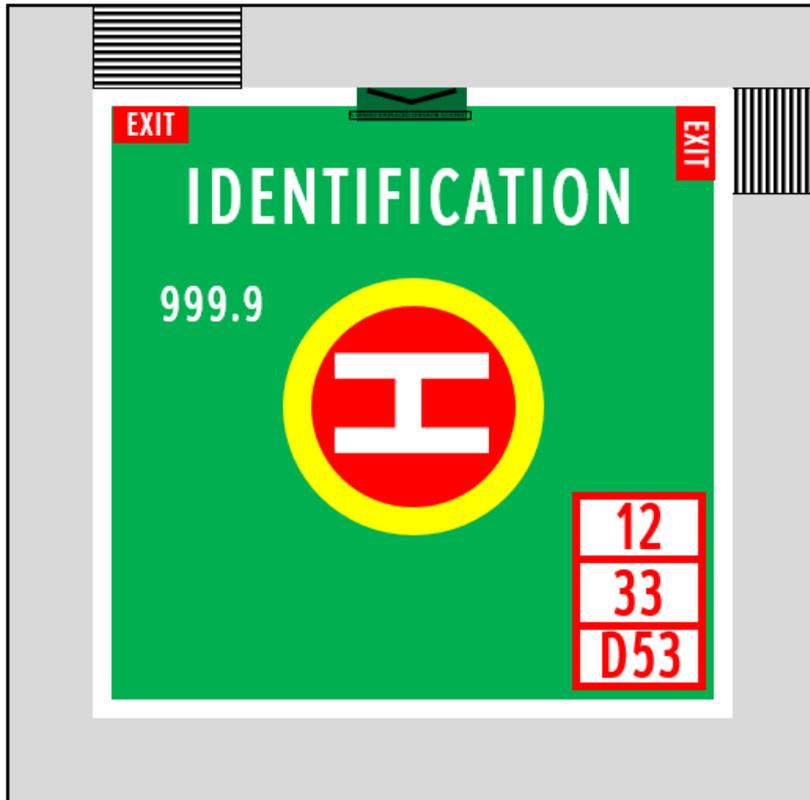
Restrictions to 0.62D decks with 180 degree LOS





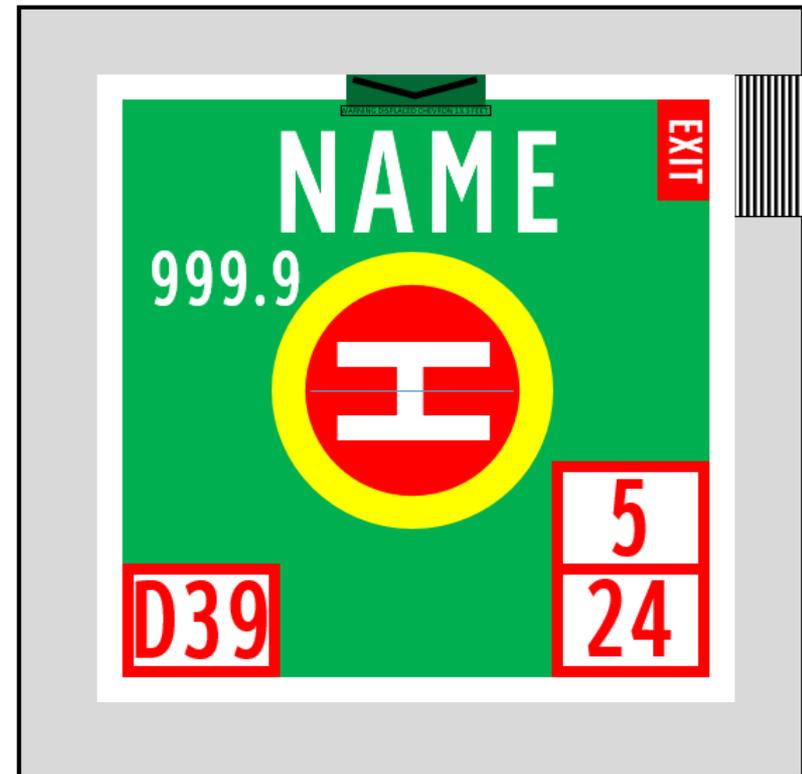
HSAC RP 2016-2

Sample Markings 0.62 TLOF



S76 with 0.62 TLOF

B206 with 0.62 TLOF

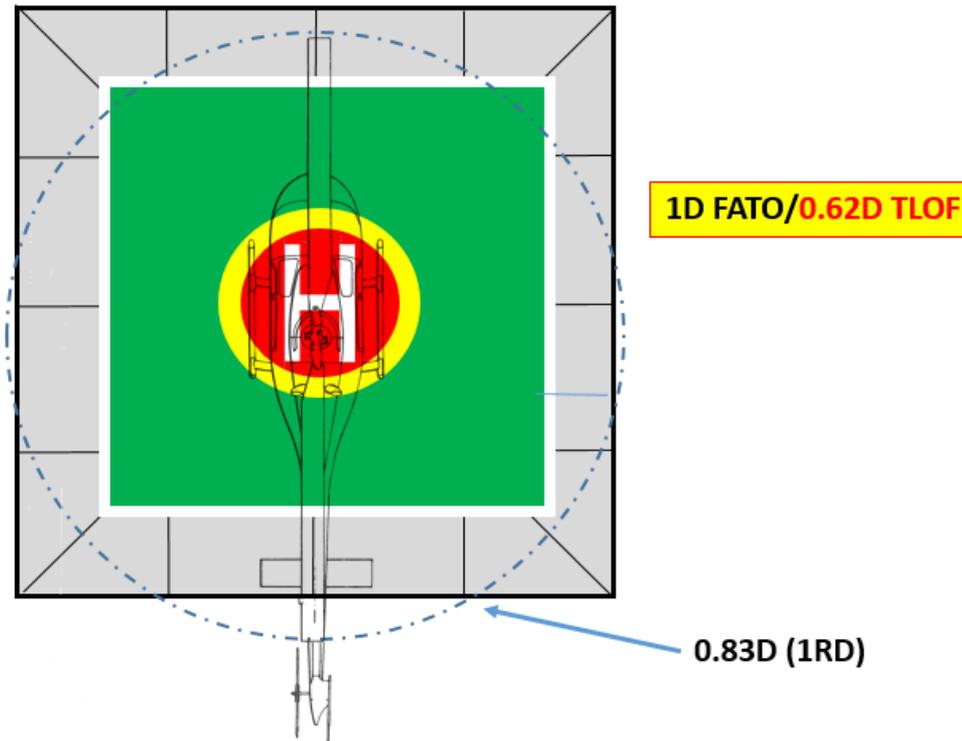




HSAC RP 2016-2

For decks with no obstacles, allows for 360 degree operation

360 Degree OFS





Industry Update

ICAO Annex 14

Revision 7 pending publication year end

ICAO Heliport Manual

To be published mid 2017.

Adopted several HSAC recommendations from RP 2016-1

Parking Area

Fonts

Markings

CAP 437

Revision 8 will be published first quarter of 2017

Adopted several HSAC recommendations from RP 2016-1

Parking Area

Fonts

<1D helidecks with a risk assessment

Fuel System requirements



Aircraft Bonding/Grounding During Refueling

Bonding VS. Grounding

Aviation Training Academy





Aircraft Bonding/Grounding

Grounding versus Bonding



- Grounding - Grounding is an electrical **connection** to an electrode that establishes a connection to the earth. This permissive wiring is only useful to provide a path for lightning, shunting high-frequency noise, or reducing static discharge.

- Bonding - Bonding is used to electrically connect metal parts together to provide a conductive path for the **equalization** of electrical potentials. Bonding prevents dangerous static electrical discharges during fueling operations; Static sparking cannot take place between objects that are at the same potential.



Aircraft Bonding/Grounding

Grounding versus Bonding



- In offloading operations at typical fuel farms, when a connection is made between the fuel farm equipment and the delivery vehicle, it is Grounding.
- Connections made between hydrant pits and hydrant carts, and between fueling cabinets and aircraft are also typically **Grounding**.
- Bonding will be the standard practice when fueling aircraft from fueling vehicles, hydrant carts, and between sampling buckets and any metal container.



BSEE Presentation

- **BSEE Safety Alert published 30 August 2016 on Helideck Hazards**

SAFETY ALERT



Safety Alert No. 322
30 August 2016

Contact: Steve Rauch
Phone: (571) 594-8383

Helideck Obstructions and Compounding Procedural Errors Contribute to Five Near Misses on OCS

In the past 4 months there have been at least 5 near misses involving helideck hazards on OCS oil and gas facilities.

Helicopter Safety Advisory Conference ([HSAC](#)) statistics for 2015 state that there have been 26 helicopter accidents associated with Gulf of Mexico oil and gas operations since 1999. Five of those accidents involved fatalities (19%), which resulted in 13 deaths and 16 injuries. The leading causes of the accidents since 1999 are listed below (some accidents fit in more than one category).

Significantly, the helideck size or design related issues are considered contributory in 11 of these accidents.

- 21 engine related,
- 25 loss of control or improper procedures,
- **17 helideck obstacle strikes,**
- 11 controlled flight into terrain or water, and
- 11 other technical failures.

The following near misses involved BSEE personnel or have been reported to BSEE:

- **Presentation by BSEE**

Questions?

