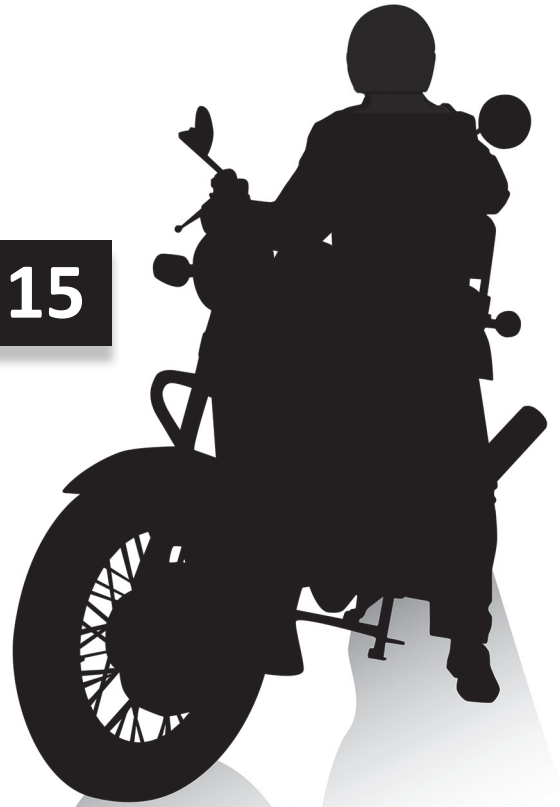




Motorcycle Mentorship Module 15

Used Motorcycle Inspection





Warning: Incorrect or inaccurate information could lead to tragic results on the road. If a question arises that is not covered in the guide and you don't know the answer from your own experience and training, simply state, "That is a great question, I'll get back to you with the answer."

Your Service Safety Center will help with these types of questions should they arise. Their numbers are as follows:

US Army Driving Directorate: **334.255.3039**

USMC Safety Division: **703.604.4459**

US Navy Shore Safety: **757.444.3520 x7165**

US Air Force Safety Center: **505.846.0728**

USCG Safety Division: **202.475.5206**



Preface

About: The Defense Safety Oversight Council (DSOC) Motorcycle Mentorship Modules are a set of thirty six (36) facilitation modules designed for the purpose of increasing rider knowledge on various aspects of riding and providing additional capability for self-policing within peer groups. The modules are intended as a mechanism to further decrease motorcycle related mishaps and fatalities within Department of Defense (DoD) by encouraging riders to talk, live, and think about the topic.

Using the Module: The module content enclosed is intended as a facilitation guide to assist you with discussing the topic. However, it is still critical to use your skills and talent to engage participants and develop “buy-in” on this subject from your group. To maximize this, motivate and moderate your participants, control the accuracy of participant feedback, and be mindful of their time.

| Page | Section |
|------|--|
| 2 | Facilitation Guide – A brief overview on conducting a facilitated discussion of a topic |
| 3 | Module Overview – This section provides the facilitator a synopsis of the topic, learning objectives, and the suggested environment, props, and handouts for conducting the module |
| 4 | Module Discussion Introduction – This section provides guidance to the facilitator in opening up the discussion and getting participants talking about the topic and their relevant experiences |
| 4 | Discussion Areas – This section provides various discussion topics, sample facilitation questions, and factual information for the facilitator to lead the discussion |
| 6 | Wrap-Up – This section provides guidance to the facilitator on wrapping up the topic discussion |
| 7 | Feedback Form – A feedback form to be given to all participants for their feedback on the module discussion |
| 8 | Resources – Additional resources and definitions to assist the facilitator in preparing for and conducting the topic facilitation |
| N/A | Handouts – Figures, pictures, diagrams, etc. to assist the facilitator to better demonstrate a topic idea |

Facilitation Guide for DSOC Mentorship Modules

It is recommended that this Mentorship Module be conducted in a facilitation style. Using the information provided in this Mentorship Module, you, as the facilitator, will lead a discussion on the subject. *You should not be conducting a lecture!* The facilitator's role is to help with how the discussion is proceeding. Participants will have much more "buy in" and connectivity with the information if they have input. One of your roles as the facilitator is to control the accuracy of the input and control the time. From the Mentorship Module, generate questions which will lead to group discussion. The more you let the group participate, the more success you will have.

Competencies of a Facilitator:

- Prepare prior to the event
- Make sure everyone gets a chance to participate and help members to express themselves
- Ask rather than tell
- Honor the group, display respect for the members, and acknowledge participant contributions
- Ask for others' opinions
- Listen without interrupting
- Demonstrate professionalism and integrity

The key characteristic distinguishing facilitation from other types of leadership, like scripted training, is that the outcomes are never predetermined in a facilitative setting. Although the background information provided with this Module remains the same, the result will depend on the participants, the knowledge and experience they bring, and the information that they feel they need to take away. The group uses the activities provided by the facilitator to unlock expertise, ensure thorough discussion, stay focused and reach decisions that are better than those any individual could come up with alone.

At the beginning of each Mentorship Event, discuss why the participants are there and what they will receive as a result of participating. Adults have limited time and they want to know "What's in it for me?" A facilitator should make training fun. Encourage humor and laughter in your Mentorship Event.

Principles of Adult Learning:

- Adult Learners want material that is relevant to them. "What's in it for me?" "What will I get out of this that will make a difference to me?"
- Adult Learners come to training events with varying amounts of experience. They like to share their experiences. If you have minimal or no motorcycle experience, you can still draw from your group.
- Even if you have motorcycle experience, you should draw from your group because people tend to remember what "they" said longer than what you said. Information that they "own" is more valuable to them.
- Facilitators are not always subject matter experts; nor do they need to be. Facilitators may draw on the existing knowledge of the participants and the information provided in these Modules.

Section I: Module Overview

Time Frame: One 30-40 minute facilitator-led discussion

Level of Prior Knowledge: Ideally participants are familiar with motorcycle riding or are familiar with driving.

Synopsis: Participants should have basic knowledge of proper user level maintenance and can identify: leaks, part breakage, and worn parts. The overall objective is for participants to understand the importance of self-inspections and to identify potential hazards or unsafe motorcycle conditions. Emphasis is placed on user modifications to motorcycles that are not compliant with DOT vehicle regulations — what looks “cool” does not always translate into DOT compliant vehicle standards and sometimes modifications are unlawful, unsafe, or impractical.

Learning Objectives:

- Understand basic principles and considerations for a pre-purchase inspection of a used motorcycle
- Understand differences in damage caused by abuse, neglect, and crashing
- Identify major motorcycle control systems
- Participant will demonstrate knowledge necessary to identify major structural or engine damage and minor cosmetic damage
- Participant can recall relevant facts and issues relevant when talking with the seller
- Participant comprehends presented facts and knowledge—participant may offer alternative perspectives, contribute or supplement accurate statements regarding terms, facts, sequential events, and may share experiential knowledge.

Suggested Environment/Props/Handouts:

Attachment 1: Pre-purchase inspection Check list

Section II: Module Discussion

Introduction: Facilitate discussion: What should be considered first when buying a used motorcycle?

Have a strategy: Before inspecting prospective motorcycles for purchase, the buyer must understand what they are looking for. Motorcycles vary in size, engine displacement, type, purpose, cost, etc. Buyers who define the parameters of their desired motorcycle are able to narrow the range of available motorcycles down. After the buyer decides what type of motorcycle they are looking for or at least identify a range of acceptable motorcycles — the search for the ideal used motorcycle can begin.

Open discussions with participant-focused activities and introductions. Activities should encourage participant interaction and develop camaraderie and peer-relatedness. Ask for and encourage participant sharing of experiences related to the module topic.

Sample questions may include:

- Before buying a used motorcycle, what things should one consider?
- Where might a buyer find information on buying a used motorcycle?
- What are some good reasons for buying a used motorcycle?

Suggested Discussion Areas:

Discussion Area 1: Potential Pitfalls

Facilitation Questions: What are some potential pitfalls in buying a used motorcycle? What can a buyer do to avoid some of these pitfalls? Who might help a buyer before, during, and after purchasing a used motorcycle?

- Buying a used motorcycle opens many potential opportunities for the buyer; however, the buyer must beware of the hidden pitfalls that come with buying a used motorcycle. Sometimes motorcycles are well cared for and have low mileage—many great deals are made of these used “gems”. Some motorcycles are disguised as a great buy but there are many easily hidden items the buyer must be aware of. Knowing what to look for in hidden damage is even more important if the buyer plans to test ride the motorcycle. Even the first time buyer can learn many things of what to look for in a motorcycle by studying well maintained or new motorcycles. Studying a prospective motorcycle owner’s manual can offer general guidelines and things to look for when inspecting a used motorcycle.
- Bringing a mechanic or knowledgeable friend is a good idea—even if it’s just for encouragement or a second opinion. Or, take it to a local dealer for an inspection. They typically charge an hour labor – well worth it!
- Consider bringing tools that help bring about a thorough inspection. Items such as a flashlight, inspection mirror, screwdrivers, fastener drivers, Allen wrenches, adjustable wrenches or a combination wrench set. Some motorcycles use metric part sizes and fasteners, some use standard measurements, and some motorcycle have both standard and metric parts—bring both tool types if able. A word of caution here, working on a bike not yet purchased is a fine line in tactfulness and decorum and it’s always a good idea to have the owner do all the work.
- If a test ride is allowed and expected, bring your own riding gear—full riding gear and personal protective equipment.

Discussion Area 2: Buying a Previously Owned Motorcycle

Facilitation Questions - What things must we consider before looking at used motorcycles? Why would we buy a used motorcycle? Is it better to buy a new un-ridden motorcycle? How do you know if the bike you like and want is a good deal? Who can help a buyer with the purchase decision? Is it safe to buy directly from an owner or is the used dealership the best way to go?

1. *Private sale or Dealerships:* Most reputable dealerships build future sales on the first-sale relationship and this includes sales of used motorcycles. Generally a dealer wants to move inventory and will assist a buyer in a purchasing decision – with the dealer’s interest in mind. However, many dealerships want to maintain a positive reputation and in some cases are obligated by law to honor the buyer’s rights (lemon laws). Private sales are more dynamic and usually do not have the pressure of profit during a sale. Depending on the buyer’s savvy in detecting a solid well maintained motorcycle, private motorcycle sales can result in “gold” strikes; though incorrect

analysis can lead to a bust. The buyer should understand what motorcycle is desired, price range, and how to detect post sale maintenance cost in time and money.

- 2. Organized buyer with a strategy:* An organized savvy buyer knows what to look for and, more importantly, how to look for a great used motorcycle buy. Perhaps the first factor in buying a used motorcycle is market price; what is the target bike price in retail stores? Researching current prices for similar or identical motorcycles will allow the buyer to negotiate offers. Knowledge of repair costs or required maintenance adds to buying power. The buyer should know what mechanic labor rates are for the local area.
- 3. What to look for in a used motorcycle purchase:* An important question to consider when buying a used motorcycle from a private sale – is the seller the lawful owner or sales agent? Ask for the title and registration if the bike is registered. While asking for the owner’s paperwork, also request maintenance records, warranty, and transferability of the warranty. A bill of sale is appropriate and advisable if the buyer decides to purchase the bike.

Discussion Area 3: Used Motorcycle Inspection

Facilitation Questions: What items of a used motorcycle need to be inspected? What are you looking for in each of these items?

Engine

The engine should be free from cracks, ground down bolts and any weld or metal ‘putty’. Look for leaks or dirty spots where separate pieces of the motor are bolted together. If you find a spot that is greasy and dirty it could signal a leak that is collecting road dirt.

Check the engine oil. A whitish or grey color could suggest an internal leak that is allowing water/coolant into the engine. Always request the seller to not start the bike (or to leave it cold) so you can start the bike and listen for any knocking or ticking. A cold engine that has a knocking sound that disappears after warming could be a sign that engine problems are on the way. Some bikes will run great once warmed up, but give you problems cold; you don’t want to find this out once you’ve bought the bike. Test ride the bike if at all possible, some engines will run fine until they are under load. Test clutch function by operating with engine running.

Clutch

The test-ride of the motorcycle should include utilizing the ‘friction zone’ (area of partial clutch engagement) to make sure the clutch is in good working order and at least one brisk acceleration in first or second gear to test for clutch slippage, which is indicated by engine RPM rising without a corresponding increase in road speed. In higher-mileage motorcycles clutch maintenance will often have been overlooked or ignored. All levers and controls on the motorcycle should be tested for smooth ease of use, function, and correct operation.

Frame

Small cracks or hairline fractures could be a potential safety hazard. If the frame or sub-frame is bent in any way the bike may not be safe to ride. A dented frame could mean the bike has been written off at some point.

Steering Head

If the bike has a center stand, prop it up and turn the handlebar from side to side. The bar should be free from irregularities or bends and the head should move smoothly in either direction. A grinding feeling could mean the bearings need to be replaced.

Tires

Tread wear should be evenly distributed and tread depth should be at least 1.5mm across the circumference of the tread surface. Along with condition and tread depth, you should always check the year a tire was manufactured. Tires can appear to have good tread but will be no good to you if they are too old. Every tire has a marking known as a DOT code on the tire's sidewall that will tell you the age of the tire. The last numbers on the DOT code identify the week and year the tire was produced. For example, 1905 means the tire was made in the 19th week of 2005. While there is not a specific age at which tires have to be replaced, tires break down over time and become compromised. If a tire shows signs of significant cracking in the tread grooves or sidewall it should be replaced; generally speaking, the newer the tire the better.

Electrical

Locate the fuse box on the bike, usually under the seat or tucked under the front fairing. Make sure the bike is turned off before you open the box. You will find a panel of fuses with each slot labeled to identify what part of the electrical system it relates to and the number of amps the fuse should be for that particular circuit. Check that all the fuses are the appropriate amp ratings. A fuse with too low an amp rating will cause the wire inside the fuse to blow and a loss of power through that circuit. By using a fuse with a too high amp rating you increase the likelihood of overloading the circuit, which can potentially cause a fire. A circuit requiring a 10 amp fuse that has been fitted with a 20 or 30 amp fuse could mean someone has made a mistake or that there is an electrical issue the seller is trying to hide.

Fuel Tank

Using a flash light, inspect the inside of the fuel tank for corrosion and rust. Rust can be a problem if it makes its way into the carburetor. If the rust is minor, you can treat the inside of the tank with a tank repair kit. Be careful not to cause any sparks near the fuel!

Brakes

Front and rear brake levers should have a firm solid feel when depressed at the maximum travel and should not be spongy. To check the rear brake, use your hand or foot to push the rear brake lever down. Check the front brake in the same manner using the front brake lever. Have a friend watch that the brake calipers squeeze the brake pads against the rotors when the brake is engaged. Visually inspect the inner and outer brake pads to check the thickness. If they are worn to the wear bar then factor a new set into your budget. Make sure the brake fluid level is adequate and look for any brake fluid leaks around the chamber and along the brake lines. Brake disks have a minimum thickness determined by the manufacturer and you should research this info before inspecting the bike. The surface should be even and relatively smooth.

Suspension

Sit on the bike, firmly squeeze the front brake and try compressing the forks; push down hard on the forks a few times. Some resistance is normal as they come back up to their starting point. Inspect the forks for oil leakage, surface irregularities, rust or bends. Upper forks should be smooth, scratch-free, and completely free from oil drops. To check rear suspension, look for any oil leaks on the shock absorber(s). There should be no cracks in the spring or shock mounting areas. Bounce up and down on the seat; rear suspension travel should be smooth and squeak-free.

Drive Systems

Chain and Sprockets:

Inspect the chain for corrosion and flexibility. The shape of the teeth on the sprockets should be even. Teeth on a worn sprocket will appear leaning to one side. On the swingarm of your bike, or in the manual you will find a sticker indicating how much tension should be in your chain. Variations in the exact dimension

occur among different brands. Grab a ruler or mark a piece of cardboard with the “range” specified for your bike. Hold that against the swing arm so you have a fixed point and pull your chain upwards and make sure the distance it moves is within the recommended range. Chains will stretch, some stretch is normal and combined with wear can mean that to keep the right tension on the chain the axle is moved rearward. Be sure to check where the axle is located in relation to the factory marks where the axle meets the swing arm. If it is at the end of its range and the chain has too much movement (past the recommended range) you might need to investigate further.

Belt Drive:

With many cruisers now utilizing belt drive, drive belt inspection is recommended prior to each ride. A complete service and detailed inspection is usually recommended annually or as specified in your motorcycle owner’s manual (M.O.M.). Replacement at the interval specified in the MOM is an important safety issue regardless of apparent belt condition. The drive belt should be periodically inspected for cuts, deep scars, missing teeth and excessive wear. Drive belt tension should be measured and/or adjusted at intervals in accordance with your motorcycle owner’s manual. A special tool may be required for belt tension measurement.

Drive Shaft:

Drive shafts on motorcycles are low-maintenance devices. The motorcycle owner’s manual will specify the inspection period and method. Most shaft drives require only periodic lubricant fluid checks with addition of lubricant when needed, and regular inspection for leaky seals. Your M.O.M will provide exact details regarding your specific motorcycle.

Wrap-Up:

Brief or discuss the following:

Final thoughts when considering a used purchase: A thorough bike inspection can uncover potential problems and gives an idea of how well the motorcycle was maintained. Even though nothing beats a complete bike inspection from an accredited motorcycle repair shop, you can inspect the bike yourself with these helpful tips. Make sure to sign a Bill of Sale that you are comfortable with. Most likely the seller will release all liability of the bike to you, so make sure you are comfortable with the purchase. Remember to insure the bike before you ride it.

DSOC Motorcycle Mentorship Feedback Form

Presenter Name:

Date:

Topic/Title:

Unit Number:

Please review each statement below and check the response that closely matches your experience in the Mentorship Module today:

1. Please rate the presenter's performance:

Prepared Not Prepared Engaging Not Engaging Led Discussion Lectured

Comments:

2. I was given opportunities to participate in the module's discussion

Never Only Once 2-4 Times Many Times Throughout Discussion

Comments:

3. With regard to my personal riding experiences, this discussion was:

Relevant Not Relevant Interesting Not Interesting

Comments:

4. This discussion topic has provided me with specific learning points that I can use to be a safer, better informed rider

None One Idea or Fact 2-4 Learning Points 5 or More

Comments:

5. I would be interested in participating in other Motorcycle Mentorship Module discussion topics

Never Again Willing to Try Another Module Would Like to Do Modules Regularly

Comments:

Thank you for your participation. Please make note of any other suggestions or comments below (continue on the back if needed):

Deliver or mail this completed form to the Command or Command Safety Office for processing. Please do not return this form directly to the Module Presenter.

Resources

Internet:

Used Motorcycle Shopping - What to Know:

<http://www.allstate.com/motorcycle-insurance/Tips-how-to-buy-bike.aspx>

Used Motorcycle Evaluation Guide:

<http://www.clarity.net/~adam/buying-bike.html>

Used Motorcycle Inspection List:

<http://www.legallearnerbikes.com.au/templates/Sigma-Black/images/UMIC.pdf>

Motorcycle Buyers Inspection Checklist:

<http://www.whybike.com/motorcycle187.htm>

Inspect a Used Motorcycle before You Buy:

<http://www.dummies.com/how-to/content/inspect-a-used-motorcycle-before-you-buy.html>





ACKNOWLEDGMENTS

This module was developed collaboratively through the Defense Safety Oversight Council's (DSOC) Private Motor Vehicle Accident Reduction Task Force (PMV TF), Service Safety Centers, Line Leaders, Military Riders, National Safety Council, and the Motorcycle Safety Foundation. The DSOC wishes to recognize the organizations and the Service Men and Women who made this Motorcycle Mentoring Module possible.

Some of the principal contributors to this effort include the following:

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Dr. Ray Ochs, Motorcycle Safety Foundation
Ms. Karen F. Nelson, Concurrent Technologies Corp.
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Mr. Steve Kurtiak, Global Support Services
Mr. Zack Sionakides, Cape Fox Professional Services

