

ENGLISH



军用车辆英语

English of Military Vehicle

● 张春润 贺宇 主编 资新运 主审



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电子工业出版社
PUBLISHING HOUSE OF ELECTRONICS INDUSTRY

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电子工业出版社
Publishing House of Electronics Industry
北京·BEIJING

内 容 提 要

本书以军用车辆运用为主线,共 28 篇课文,涵盖了汽车构造、军用车辆使用和保养、军用车辆开发研制、外军军用车辆的最新发展等。选题广泛,内容新颖,文体规范。学员不仅可以利用本书学习专业英语,还可以了解外军军用车辆开发和应用领域的最新进展,开拓知识面,辅助专业课程的学习。

本书主要用于军事高等院校“车辆运用工程”、“车辆技术勤务指挥”等专业的专业英语教学,也可供军内外对军用车辆知识有兴趣的读者自学或参考。

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图书在版编目(CIP)数据

军用车辆英语/张春润,贺宇主编. —北京:电子工业出版社,2003.7
ISBN 7-5053-8899-1

I. 军... II. ①张...②贺... III. 军用车辆-英语 IV. H31

中国版本图书馆 CIP 数据核字(2003)第 058768 号

责任编辑:夏平飞 马文哲

印 刷:北京天竺颖华印刷厂

出版发行:电子工业出版社 <http://www.phei.com.cn>

北京市海淀区万寿路 173 信箱 邮编 100036

经 销:各地新华书店

开 本:787×980 1/16 印张: 11.25 字数:252 千字

版 次:2003 年 7 月第 1 版 2003 年 7 月第 1 次印刷

印 数:6000 册 定价:18.00 元

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前 言

本书是根据《大学英语教学大纲》的要求,针对军事高等院校“车辆运用工程”、“车辆技术勤务指挥”等专业《专业英语》教学需要而编写的。

本书按照教材的体例编写,目的是使学员熟悉军用车辆运用工程领域的专业词汇,了解科技英语的句法和文体特点,提高阅读能力及翻译技巧。此外,还可以了解国外军用车辆的高新技术,以及军用车辆使用、管理等方面的知识。

全书共5章,28篇课文,每篇课文均附有专业术语的注释。所有课文均选自国外正式出版的书籍、杂志或专业 Internet 网站,文体规范、实用性强。课文难度适中,尽量做到专业性与趣味性并重。由于篇幅限制,在保持原文风格和内容完整的前提下,对部分文章进行了删改。

第1章的4篇课文选自美军军用车辆使用保养指导手册,内容浅显易懂,图文并茂,实用性和趣味性很强。本书将其作为军用车辆英语的入门内容,引导学员由浅入深地学习,提高学习兴趣。

第2、3、4章分别是汽车发动机、底盘和电气的基本构造和原理。这14篇课文均为规范的科技英语文体,基本涵盖了汽车领域常用专业词汇,还介绍了共轨燃油喷射、ABS、混合动力等先进汽车技术。

第5章是本书的重点,精心选择的10篇课文题材广泛,权威性强,比较全面地体现了世界军用车辆开发研制及应用领域的最新发展,具有重要的学习和参考价值。

本书由中国人民解放军军事交通学院张春润教授、贺宇讲师主编,参加编写的还有高昌卿、赵劲松、马维平、张煜、许洪军、曹会智、曲明辉、王佳宁等。全书由资新运副教授主审。

世界军用车辆的发展日新月异,本书的内容难免挂一漏万,加之编者水平有限,书中不妥及疏漏之处敬请大家不吝赐教。

编 者

2003年4月

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Chapter 1 Military Vehicle Application

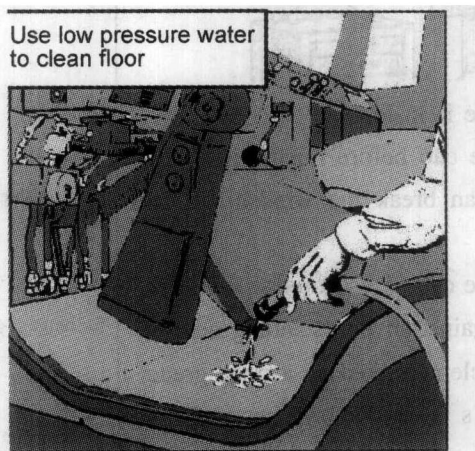
Unit 1 FMTV¹ Soldier's Smart Book (Part I)

Text

Smart 1...Interior Vehicle Cab Cleaning

Though the operator's TM² offers more specific information, pay special attention to these tips to prevent damage to your vehicle:

- You can use water from a low-pressure garden hose to clean mud and sand from the floor of cab.



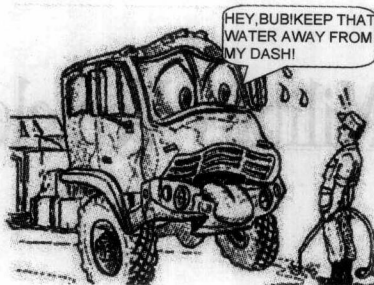
1. FMTV (Family of Medium Tactical Vehicle) 中型战术车族
2. TM (Technical Manual) 技术手册

• 2 • Unit 1

- Be sure to remove drain plugs to allow water to drain properly.

- Never use water to clean on or under the vehicle's dashboard³. That can cause electrical damage.

- Mop up excess water with rags.



3. dashboard 仪表板

Smart 2...Raising and Lowering the Cab

The operator's TM covers specific instructions on raising and lowering the cab.

There's a right way and a wrong way to raise the cab!

WARNINGS

Pay special attention to these warnings. Forget that you or others could be seriously injured or killed. At the very least, major damage to your equipment can occur.



- Never raise the cab while someone is inside.

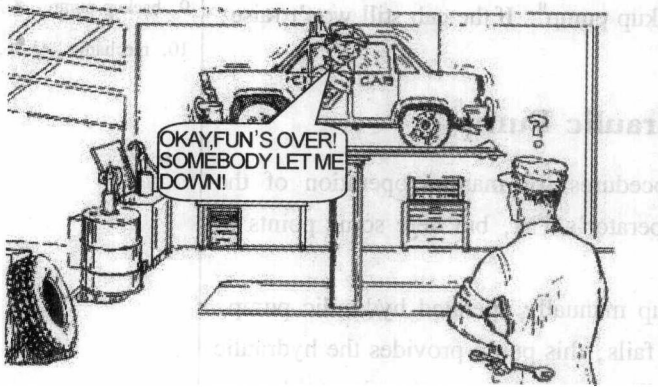
- Remove any loose items from the cab before raising it. While the cab is tilted forward, loose items can break the windshield⁴ and damage other parts of the interior.

- Check both doors before raising the cab. Unsecured doors swing open, damaging hinges⁵ and slamming against anyone standing nearby.

- Never raise the cab when the vehicle is parked on a steep grade. That places extra stress on the vehicle's hydraulic system and may cause failure.

4. windshield 挡风玻璃,风挡

5. hinge 合页,铰链

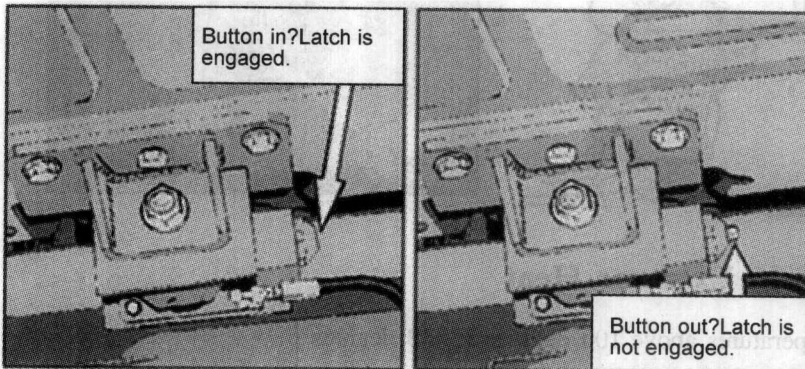


- Keep everyone away from the cab when it is being raised or lowered in case the hydraulic system fails.

- Make sure the cab's hydraulic latch⁶ is securely locked before driving the vehicle. The button on the right end of the hydraulic latch shows the status of the latch. If the button is in, the latch is engaged. If the button is out, the latch is not engaged. The button can be difficult to see, so climb up onto the cargo bed and look at the latch from over the center of the spare tire⁷.

6. hydraulic latch 液压锁止机构

7. spare tire 备用轮胎



NOTES

- Fully charged air tanks⁸ let you raise and lower the cab twice without starting the engine.

8. air tank 储气筒

- If the automated system does not raise the cab, try each of the following, one at a time:

- 1) Use the manual backup pump and automatic system at the same time. If that does not work,

- 2) Have one person shake the cab while a second person operates

• 4 • Unit 1

the automated system and the backup pump⁹. If the cab still won't raise,

3) Call your mechanic¹⁰.

9. backup pump 备用泵

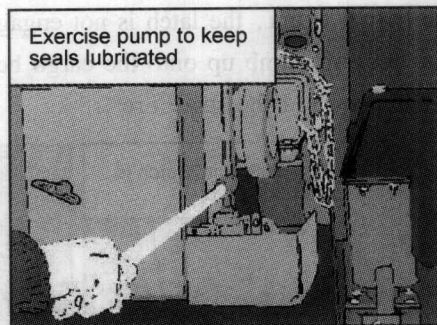
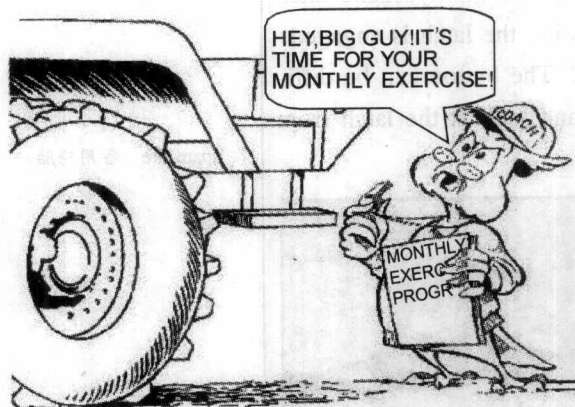
10. mechanic 技工, 技师

Smart 3...Backup Hydraulic Pump

You will find specific procedures for manual operation of the backup hydraulic pump in the operator's TM, but here some points of special emphasis.

- All FMTVs have a backup manually operated hydraulic pump. If the powered hydraulic system fails, this pump provides the hydraulic pressure needed to use the cab tilt, suspension compression and spare tire lowering and raising mechanism.

- Make sure you check out the pump by exercising it every month. That also keeps seals lubricated.



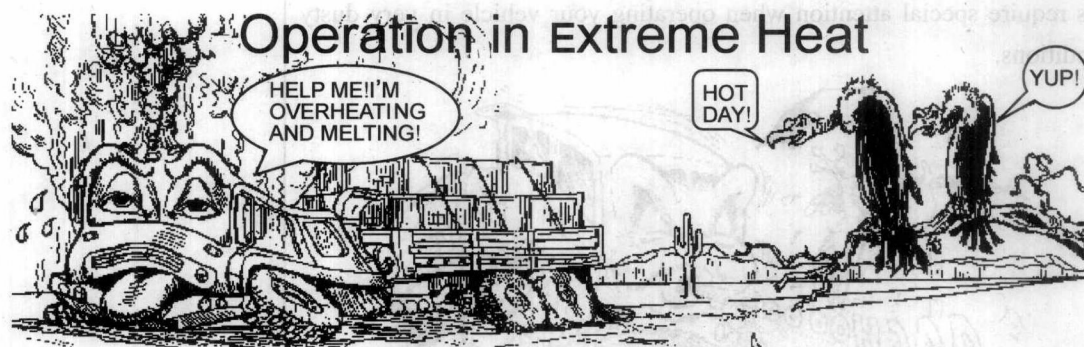
Smart 4...Operation in Extreme Heat

When operating in temperatures above 100 degrees F (38 degrees C), you must take extra care to prevent overheating the vehicle. Overheating starts when the engine temperature exceeds 230 degrees F (110 degrees C).

- Watch the temperature gauge¹¹, stop indicator, and engine coolant temperature indicator closely for signs of overheating.

- Check oil levels often keep operating strain as low as possible. Since the cooling and lubrication systems support each other, failure of one system will quickly lead to the failure of the other.

11. temperature gauge 温度表

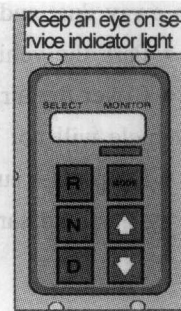
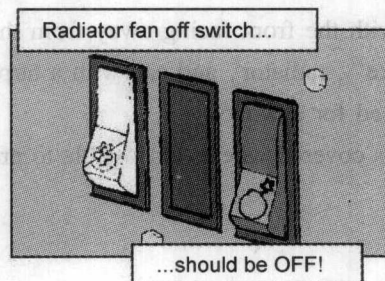
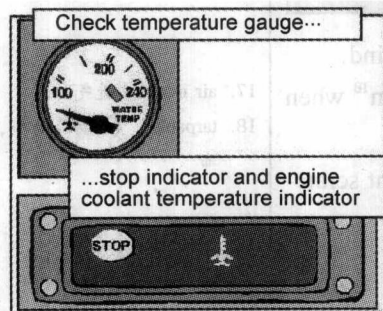


- Never operate the vehicle while the radiator fan shutdown switch is in the ON position. That means the fan is off. Double check to make sure the fan OFF indicator is not lit.

- Never operate the engine longer than 30 seconds at full throttle if the vehicle is not moving. For example, while operating the self-recovery winch¹² or other auxiliary equipment. This quickly raises transmission oil temperature and can damage the transmission. Watch the service indicator light¹³ in the shift window¹⁴. If it lights, or if the water temp gauge gets near 230 degrees F (110 degrees C), the transmission oil is overheating.

- Check the battery fluid level often in extreme heat. Batteries do not hold their charge well in extreme heat, so the special gravity must be adjusted.

12. self-recovery winch 自救绞盘
13. service indicator light 维修指示灯 (车辆发生故障时点亮)
14. shift window 换挡窗口 (显示自动变速器档位)



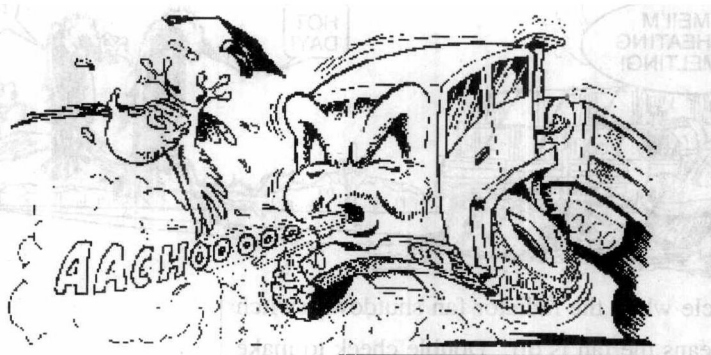
- Always idle¹⁵ the engine before shutdown. That cools the engine and prevents damage.

15. idle 怠速

Smart 5...Operation in Dusty Conditions

Though the operator's TM offers more specific information, these

tips require special attention when operating your vehicle in very dusty conditions.



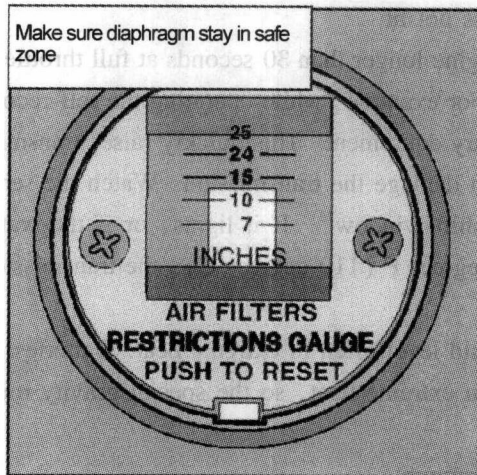
- Check the air filter restriction gauge¹⁶ frequently. If the yellow diaphragm enters the red zone, shut down the engine at once and clean the air filter.

- Watch for sand and dust accumulation on the radiator. That can cause the engine to overheat. Use low pressure water or air to clean away dust and sand.

- Park the vehicle with the front facing away from the wind.

- Cover the air intake¹⁷, radiator, and cab with a tarpaulin¹⁸ when the vehicle will not be used for a while.

- Keep glass surfaces covered whenever possible to prevent scratching by dust and sand.



16. air filter restriction gauge
空气滤清器阻力表

17. air intake 进气口

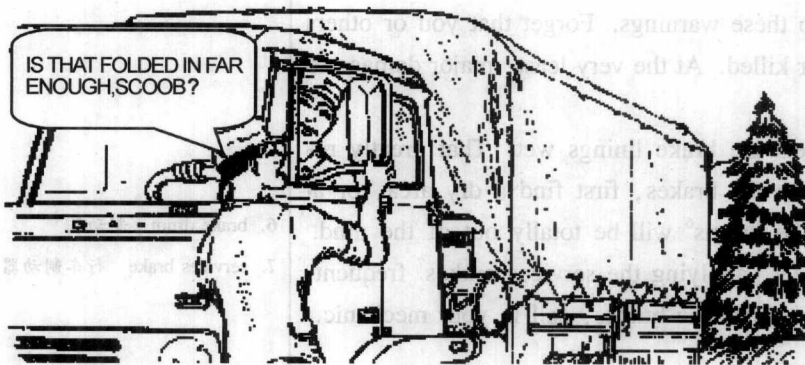
18. tarpaulin (防水) 油布, 帆布

Unit 2 FMTV Soldier's Smart Book (Part II)

Text

Smart 6...Forest & Rocky Terrain Operations

Though the operator's TM offers more specific information, these tips require special attention in order to prevent injury to the operator and damage to the vehicle.



- Check ground clearance¹ before driving over obstructions (tree stumps, rocks, etc.).
- Make sure the vehicle can clear overhanging tree limbs and other obstructions before going under them.
- Fold the vehicle's side mirrors² in as possible to limit damage by tree limbs. However, make sure you can still use the mirrors to see behind the vehicle.

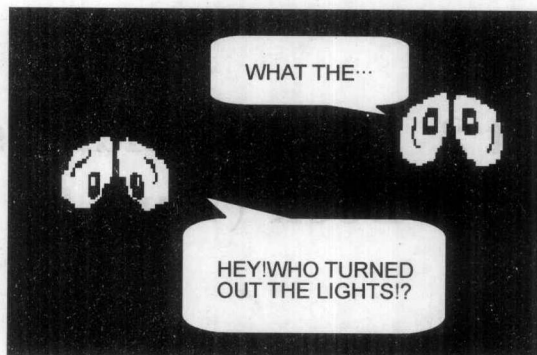
1. ground clearance 离地间隙

2. side mirror 后视镜

Smart 7...Operations under Blackout Conditions

Check out the operator's TM and FM21-305 for more specific information.

- In a blackout³ operation, your vehicle should maintain a speed of 5 - 10 mph⁴ (8 - 16 kph⁵) or less.



Smart 8...Operation in Sand and Mud

The operator's TM covers specific instructions on operating the vehicle in sand and mud.

WARNINGS

Pay special attention to these warnings. Forget that you or others could be seriously injured or killed. At the very least, major damage to your equipment can occur.

- Operation in mud gets the brake linings wet. That greatly reduces braking power. To dry the brakes, first find a dry area, or at least an area where the brake drums⁶ will be totally out of the mud. Drive the truck about 500 feet, applying the services brakes⁷ frequently. If you still have problems with the brakes, call in your mechanic.

NOTES

- Keep high pressure water, steam and air away from glass surfaces, seals, air intake, exhaust outlet⁸, and any other component that might be damaged.

- Keep glass surface covered whenever possible to prevent scratching by dust and sand.

- Check the air filter restriction gauge frequently. Shut down the engine immediately and clean the air filter if the yellow diaphragm enters the red zone.

- Whether operating in sand or mud, set the CTIS⁹ system to

3. blackout 灯火管制

4. mph (miles per hour) 英里/小时

5. kph (kilometers per hour) 千米/小时

6. brake drum 制动鼓

7. services brake 行车制动器

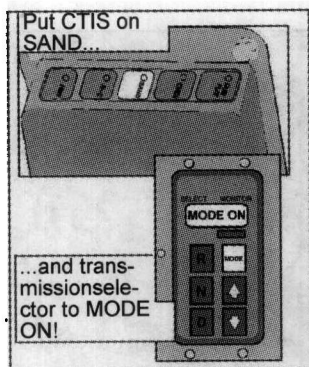
8. exhaust outlet 排气口

9. CTIS (Central Tire Inflating/deflation System) 中央轮胎充放气系统

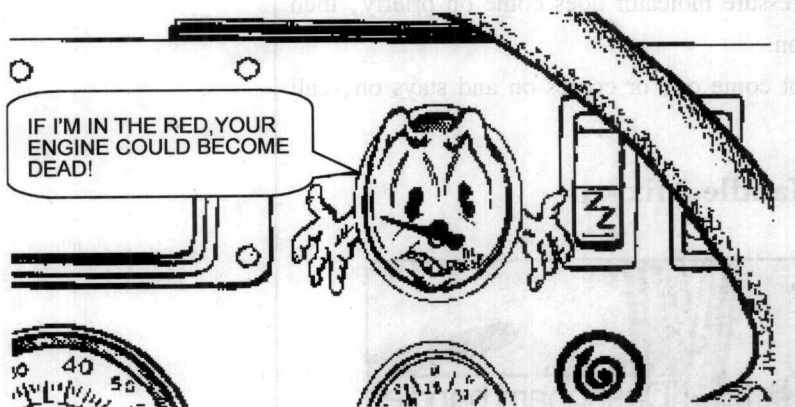
SAND mode, the transmission shift selector to MODE ON, and select a lower gear range for added traction.

- Watch for sand and dust accumulation on the radiator. Too much accumulation can cause the engine to overheat. Use low pressure water or air to clean away dust and sand.

- Clean mud off the vehicle as soon as possible. Pay special attention to the wheels, brakes, axles, universal joints¹⁰, steering mechanism¹¹, radiator, and oil cooler¹².



Smart 9...Engine Oil Pressure



The vehicle's normal engine oil pressure is 15 – 88 psi. Note the following action if a problem should occur.

- If the engine low oil pressure indicator is lit and the gauge reads above 15 psi¹³, continue the mission. When the mission is over, notify your mechanic.

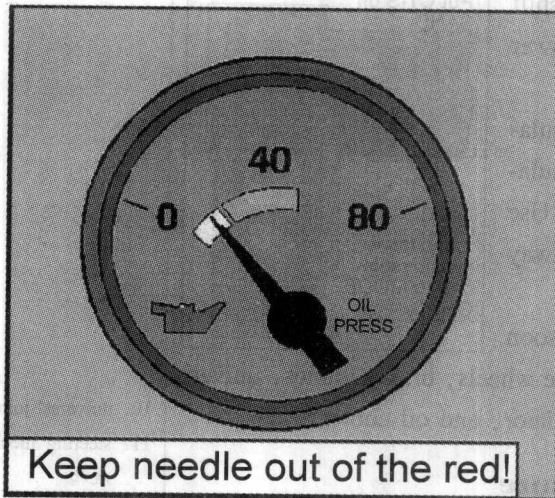
- If the engine oil pressure gauge reads in the red zone and the low oil pressure indicator is lit, shut off the engine and call in your mechanic.

- If the engine oil pressure gauge reads in the red zone and the engine low oil pressure indicator is not lit, shut off the engine and do the following:

- 1) Restart the engine. The light should come on briefly.

10. universal joint 万向节
11. steering mechanism 转向机构
12. oil cooler 机油冷却器, 机油散热器

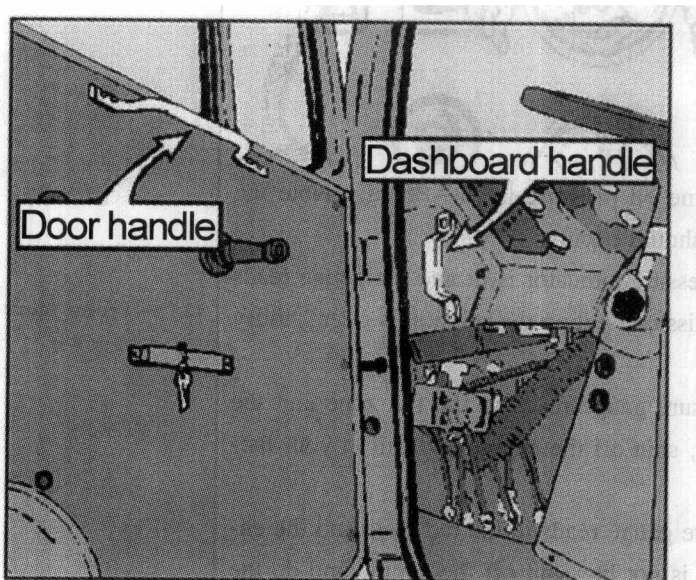
13. psi (pound square inch)
磅/平方英寸



2) If the engine oil pressure indicator does come on briefly, then go out, continue the mission.

3) If the light does not come on, or comes on and stays on, call in your mechanic.

Smart 10...Door Handle Mix-up



• Pulling yourself up into the cab with the door handle isn't a good idea. Continuous pulling will damage the handle and can warp

the door hinges.

- A broken handle that gives way at the wrong time will get your hurt. Only use the door handle to close the door once you're seated in the cab.

- The handle located on the side of the dashboard is the one to use. It's a lot more sturdy and will stand up to pulling.

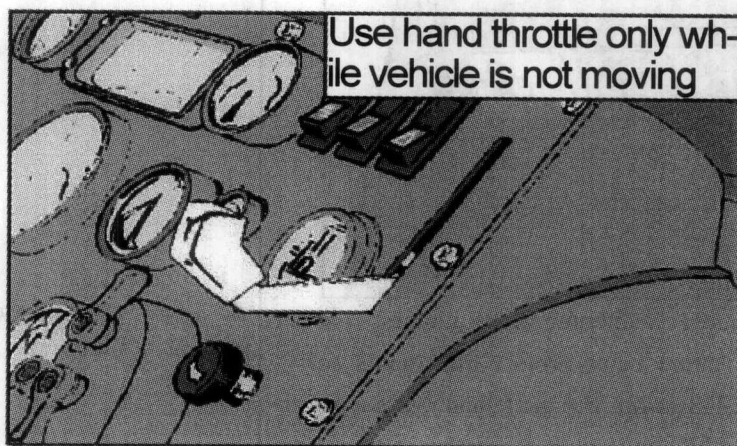
NOTES

Do not use the door handle to pull yourself up into the cab, use the handle located on the side of the dashboard instead.

Smart 11...Don't Cruise with Hand Throttle

While driving your vehicle, you may be tempted to use the hand throttle¹⁴ as a sort of "cruise control"¹⁵. Don't!

WARNINGS



Using the hand throttle when vehicle is moving may result in severe injury or death!

- Unlike the cruise control, the hand throttle doesn't cut off when you hit the brakes. When you need to stop in a hurry, you probably won't have time to mess with the hand throttle.

- So do yourself and your vehicle a favor. Use the hand throttle only while the vehicle is not moving-like during cold engine starts and winching operations.

14. hand throttle 手油门

15. cruise control 巡航控制