

# Don't Let FOD Take You Out!

MAINTENANCE IS A TEAM SPORT.

WHEN IT COMES TO FOREIGN OBJECT DEBRIS (FOD), EVERY MEMBER OF THE TEAM IS NEEDED TO PREVENT FOREIGN OBJECT DAMAGE (FOD).



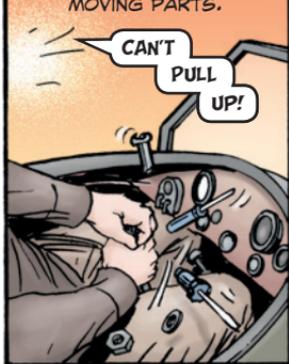
BACK IN THE DAY, FOREIGN OBJECT DAMAGE (FOD) WAS CONSIDERED ONE OF AVIATION'S MINOR PROBLEMS.

HOW DO YOU LAND THIS THING!??



BUT EVEN BEFORE LINDBERGH'S TIME, ITEMS LIKE LOOSE CHANGE, NUTS, BOLTS AND STRAY TOOLS JAMMED CONTROLS AND OTHER MOVING PARTS.

CAN'T PULL UP!

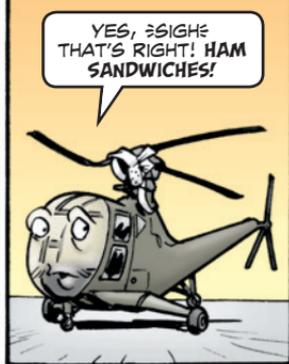


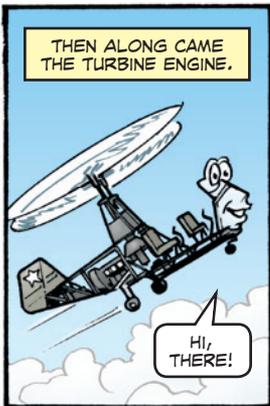
IN WORLD WAR II, PILOTS SWORE THAT GREMLINS WENT AROUND AT NIGHT DISPENSING FOREIGN OBJECTS THE WAY SANTA CLAUS HANDS OUT GIFTS AT CHRISTMAS.



SINCE THE HELICOPTER CAME ALONG, BLADES HAVE BEEN CHEWED UP BY EVERYTHING FROM TURKEY BUZZARDS TO HAM SANDWICHES.

YES, SIGH THAT'S RIGHT! HAM SANDWICHES!





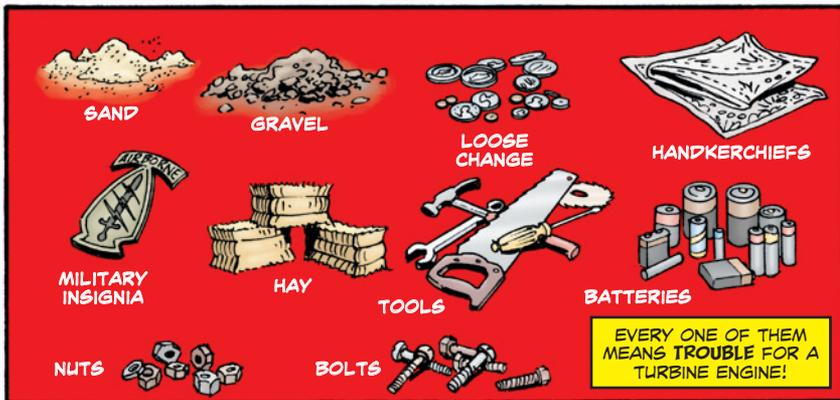
THEN ALONG CAME THE TURBINE ENGINE.



OVERNIGHT THE SITUATION WENT FROM BAD TO WORSE!



TRY TO LIST ALL THE FOREIGN OBJECT DEBRIS (FOD) PULLED OUT OF TURBINES' INNARDS AND YOU'LL HAVE A LIST LONG ENOUGH TO FILL AN ON-LINE CATALOGUE!



EVERY ONE OF THEM MEANS TROUBLE FOR A TURBINE ENGINE!



FOREIGN OBJECT DEBRIS (FOD) DOESN'T HAVE TO BE BIG TO INTERFERE WITH A TURBINE'S DIGESTIVE SYSTEM, EITHER.

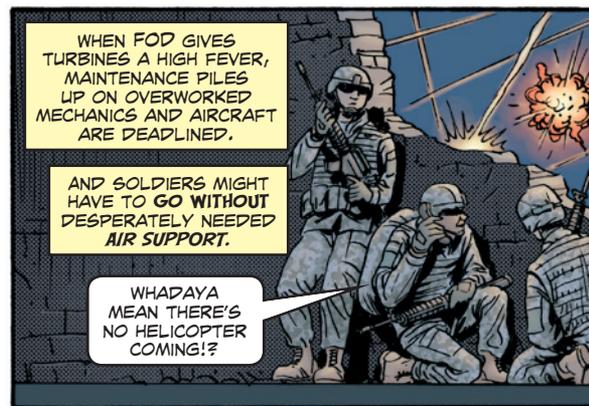


A SIMPLE FISHHOOK MAY ONLY SEEM BIG ENOUGH TO CATCH MINNOWS.



BUT STICK IT IN YOUR EAR AND YOU'LL SOON FIND OUT WHAT A SMALL OBJECT IN THE WRONG PLACE CAN DO!

NO THANKS! I BELIEVE YOU!



WHEN FOD GIVES TURBINES A HIGH FEVER, MAINTENANCE PILES UP ON OVERWORKED MECHANICS AND AIRCRAFT ARE DEADLINED.

AND SOLDIERS MIGHT HAVE TO GO WITHOUT DESPERATELY NEEDED AIR SUPPORT.

WHADAYA MEAN THERE'S NO HELICOPTER COMING!?



IT'S LIKE THAT OLD PROVERB...

FOR WANT OF A NAIL, THE BATTLE WAS LOST. THE KING LOST THE BATTLE BECAUSE HIS HORSE LOST HIS SHOE. THE SHOE WAS LOST BECAUSE IT NEEDED A NAIL.



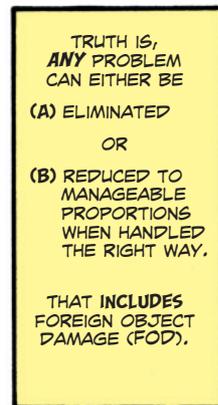
IT'S KINDA LIKE FOD-IN-REVERSE. NOBODY KNOWS WHAT HAPPENED TO THE NAIL, BUT IT SURE WASN'T WHERE IT SHOULD HAVE BEEN.



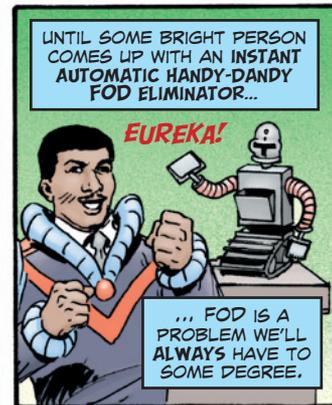
FOREIGN OBJECT DEBRIS THAT LODGES WHERE IT SHOULDN'T CAN BE COSTLY TO AIRCRAFT AND LIVES. SOUNDS PRETTY GRIM, HUH?



BUT STICKING YOUR HEAD IN THE SAND IS NO WAY TO FEND OFF ATTACKING LIONS.



TRUTH IS, ANY PROBLEM CAN EITHER BE (A) ELIMINATED OR (B) REDUCED TO MANAGEABLE PROPORTIONS WHEN HANDLED THE RIGHT WAY. THAT INCLUDES FOREIGN OBJECT DAMAGE (FOD).



UNTIL SOME BRIGHT PERSON COMES UP WITH AN INSTANT AUTOMATIC HANDY-DANDY FOD ELIMINATOR...

EUREKA!

... FOD IS A PROBLEM WE'LL ALWAYS HAVE TO SOME DEGREE.



BUT YOU CAN DO SOMETHING ABOUT IT!

ONCE EVERYONE KNOWS HOW LETHAL FOD IS AND WHAT TO DO ABOUT IT, THE PROBLEM WILL SUBSIDE.

## All Hands Alert

FOD IS EVERYONE'S PROBLEM.

EVEN IF YOUR UNIT HAS A SPECIAL FOD OFFICER, SECTION, OR PLATOON, FOD WILL *STILL* CREEP IN UNLESS THE ENTIRE UNIT IS ON THE ALERT.

IT'S EVERYONE'S RESPONSIBILITY TO WATCH OUT FOR...

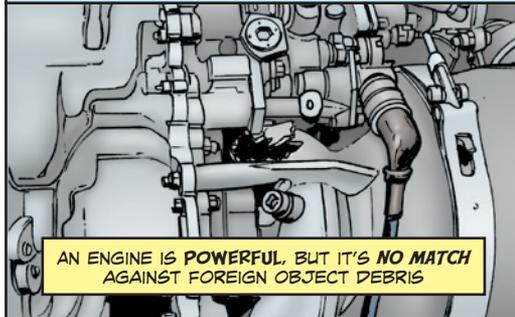
- grease on a mechanic's shoe that picks up bits of gravel, depositing them on a walkway near a turbine.
- litter, like paper cups and oily rags, that accumulate along ramps and runways where the wind can blow it onto the flight line.
- a mallet that's left in an intake by a forgetful mechanic.
- loose objects that accumulate in the cockpit.
- FOD that's dragged onto tarmac areas during snow removal.
- panel markers loosely anchored in mud.

PUT ONE PERSON TO WORK ON THE PROBLEM AND HE'LL SOON BE CLIMBING THE WALLS. GOOD HOUSEKEEPING IS THE RESULT OF EVERYONE WORKING TOGETHER TO KEEP A HOME CLEAN. THE SAME IS TRUE FOR AVIATION UNITS.

WHEN EVERYONE TAKES IT SERIOUSLY, PICKING UP FOD BECOMES AN AUTOMATIC REFLEX, LIKE SWATTING FLIES.



OTHERWISE, FORGOTTEN PLIERS GET LEFT WHERE THEY CAN *FALL* INTO ENGINES OR *JAM* CONTROLS. OILY RAGS AND PAPER GET *SERVED UP* TO HUNGRY TURBINES, MALLETS, HAMMERS, AND A HUNDRED OTHER ITEMS ARE LEFT IN THE COCKPIT JUST WAITING TO DO SOME *DAMAGE*.



AN ENGINE IS **POWERFUL**, BUT IT'S **NO MATCH** AGAINST FOREIGN OBJECT DEBRIS

TOOL ACCOUNTABILITY IS THE **BEST** WAY TO PREVENT FOD.



## Toolbox Sense

IF A SURGEON IS PATTING HIS POCKETS AND MUMBLED ABOUT A LOST SCALPEL, YOU'D DO WELL TO FIND ANOTHER DOCTOR.



PILOTS, AIRCREW, AND PASSENGERS FEEL THE SAME WAY ABOUT **MAINTENANCE PERSONNEL**. IT DOESN'T IMPROVE THEIR STATE OF MIND IF A MECHANIC IS ABSENTMINDED ABOUT HIS TOOLS.

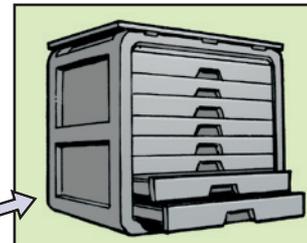
WHEN PLIERS AND SCREWDRIVERS GET LEFT BEHIND, **TROUBLE** FOLLOWS.

SURE, THERE ARE EXCUSES: FATIGUE, HASTE, PRESSURE, OVERWORK AND ALL THE REST. BUT TRY TELLING THAT TO A TURBINE SPITTING UP A WRENCH!



A FOOTBALL COACH ORGANIZES HIS BENCH TO AVOID SENDING IN THE WATER BOY INSTEAD OF THE QUARTERBACK.

AN AVIATION MECHANIC'S TOOLBOX SHOULD BE JUST AS **ORGANIZED**. IT HELPS HIM GET THE JOB DONE QUICKLY AND EFFICIENTLY, SAVING WEAR AND TEAR ON HIS NERVOUS SYSTEM. EVERYTHING IS WHERE IT SHOULD BE, EITHER IN THE TOOLBOX OR BEING USED.



TOOLS WON'T GET A TURBINE IN TROUBLE IF THEY'RE ACCOUNTED FOR, KEPT IN THEIR PROPER SLOT, AND UNDER LOCK AND KEY WHENEVER THE AIRCRAFT GOES TO THE FLIGHT LINE.

TOOLBOX INVENTORY IS THE **BEST** WEAPON MECHANICS HAVE IN THE WAR ON FOREIGN OBJECT DAMAGE (FOD).

IT HELPS **EVERYONE** SLEEP BETTER AT NIGHT.

IF AN AIRCRAFT CRASHES THE **ABSENT-MINDED** MECHANIC WILL HAVE TO WONDER IF *HIS* MISSING TOOL BROUGHT HIS BIRD DOWN.



## One Big Family

TOOLBOX INVENTORY, INDIVIDUAL RESPONSIBILITY AND SOUND TRAINING ARE THE FOUNDATION OF A PROPERLY TRAINED UNIT.

IF THEY'RE SUPPORTED BY EVERYONE FROM THE COMMANDER DOWN.



TAKE THE AIRCRAFT COCKPIT, FOR EXAMPLE.

SOMEONE ONCE SAID THE COCKPIT IS A PILOT'S PLACE OF BUSINESS AND THE MAINTENANCE FOLKS HIS OFFICE MANAGERS. IT'S A TEAM-A FAMILY-AND WHEN IT WORKS PROPERLY, IT'S THE KIND OF FAMILY A MARRIAGE COUNSELOR DREAMS ABOUT.

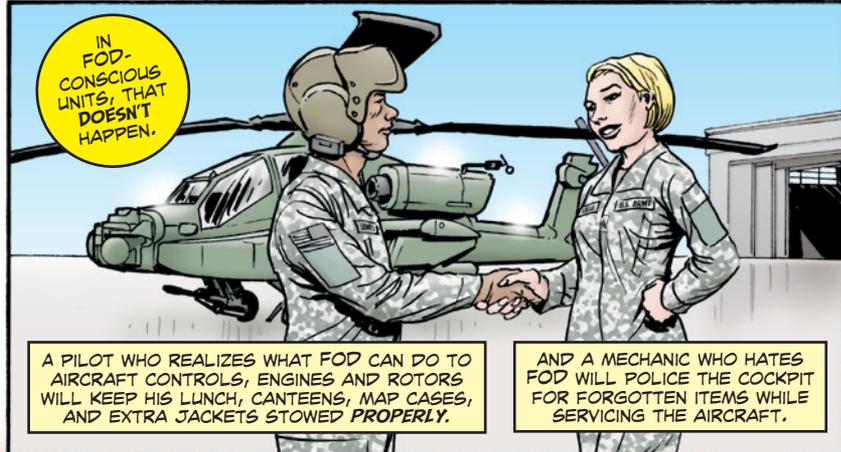
A PILOT HAS A RIGHT TO BE **ANGRY** IF HE COMES TO WORK AND FINDS ENOUGH RUBBISH STREWN AROUND THE FLIGHT LINE TO START A RUMMAGE SALE.



BY THE SAME TOKEN, A MECHANIC HAS THE RIGHT TO FEEL **IRRITATED** IF SHE SEES A COCKPIT THAT LOOKS LIKE THE FLOOR OF A LUNCH COUNTER AFTER THE NOON RUSH. IT'S A TWO-WAY STREET.

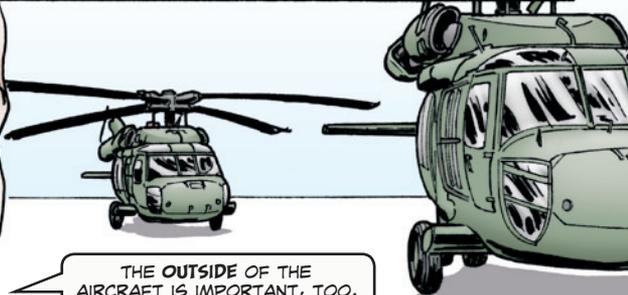


IN FOD-CONSCIOUS UNITS, THAT DOESN'T HAPPEN.



A PILOT WHO REALIZES WHAT FOD CAN DO TO AIRCRAFT CONTROLS, ENGINES AND ROTORS WILL KEEP HIS LUNCH, CANTEENS, MAP CASES, AND EXTRA JACKETS STOWED PROPERLY.

AND A MECHANIC WHO HATES FOD WILL POLICE THE COCKPIT FOR FORGOTTEN ITEMS WHILE SERVICING THE AIRCRAFT.



THE OUTSIDE OF THE AIRCRAFT IS IMPORTANT, TOO.

A FOD-TRAINED UNIT IS KEENLY AWARE THAT JUST ABOUT ANYTHING MOVABLE QUALIFIES AS FOD.

SOMETHING AS SMALL AS A COUPLE OF WIRES CAN CAUSE BIG TROUBLE ON THE FLIGHT LINE!



PAPER CUPS, BOTTLE TOPS AND ASSORTED LITTER DON'T GROW BESIDE THE RUNWAY.

SOMEONE DROPPED THEM THERE!

AND WHILE THAT SOMEONE MIGHT BE A GREAT MECHANIC OR PILOT, HE OBVIOUSLY DOESN'T KNOW MUCH ABOUT FOREIGN OBJECT DAMAGE (FOD).

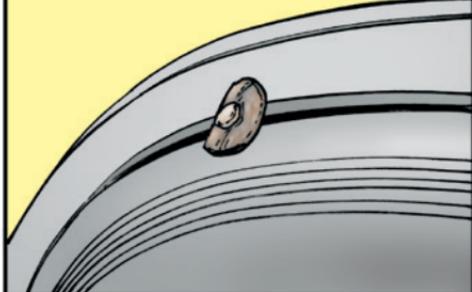
OKAY, SO MAYBE THE PAPER CUP BLEW THERE, OR MAYBE THE OTHER LITTER FELL OFF A PASSING TRUCK.

THE QUESTION IS, WHY IS IT STILL THERE?



IF YOU SEE IT, IT'S YOUR RESPONSIBILITY TO PICK IT UP!

IF YOU DON'T, YOUR TIRES MIGHT.



FOD IS PREVENTABLE. AND THAT PREVENTION IS SO SIMPLE, YOU'LL SOON WONDER WHY EVERYBODY DOESN'T PRACTICE IT FAITHFULLY.

ALERTNESS, PROFESSIONAL PRIDE AND INDIVIDUAL AND UNIT RESPONSIBILITY ARE THE TOOLS THAT DO THE TRICK.



FOD HAZARDS ARE REDUCED WHEN MAINTENANCE IS PERFORMED BY A TOOL-CONSCIOUS CREW, MOVEABLE ITEMS ARE SECURED, AND THE RUNWAYS AND RAMPS ARE AS BARE AS A BALD HEAD.

EVEN THEN, THIS SORT OF HOUSEKEEPING HAS TO BECOME PART OF STANDARD UNIT PROCEDURE THAT HAPPENS 24/7/365.

YOU CAN DO YOUR PART... JOIN THE TEAM. BECOME A FOD-BUSTER TODAY!

# BUST FOD!



EDITOR'S NOTE: THIS INFORMATION WAS PARAPHRASED FROM AN ORIGINAL ARTICLE THAT APPEARED IN THE 21 JAN 1981 ISSUE OF FLIGHTFAX.