



# The Hazardous Material Authorized Use List (HMAUL) Analysis Tool



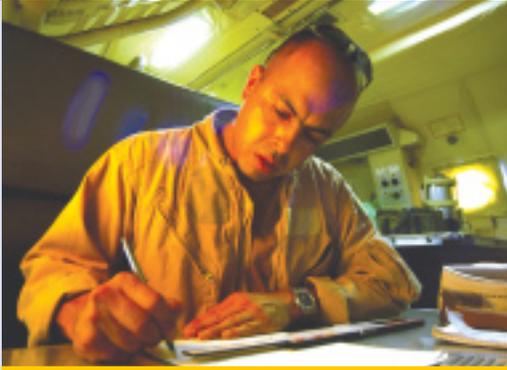
*Gaining Insights Into Maintenance  
Manuals To Reduce Hazardous Materials*

## **What is HAT?**

The Hazardous Material Authorized Use List (HMAUL) Analysis Tool or HAT is a software application intended to assist program managers in the identification and reduction of hazardous materials and obsolete specifications in NAVAIR maintenance manuals.

It currently provides this capability for over 11,000 manuals. Personnel from the Naval Air Warfare Center (NAWC) Lakehurst, NJ in conjunction with the Lead Maintenance Technology Center for the Environment (LMTCE) Working Integrated Product Team (WIPT) developed HAT.

# The Hazardous Material Authorized Use List (HMAUL) Analysis Tool



## What does HAT do?

In concert with NAVAIR's goals "to reduce the cost of doing business, continue to introduce best business practices and remove barriers to getting our job done with greater efficiency, and improving our ability to make rapid decisions in support of emerging Fleet requirements," HAT is the tool that can make it happen.

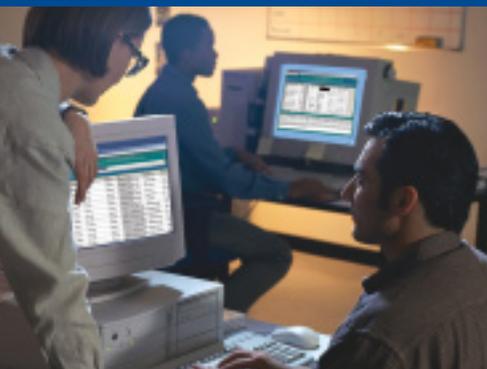
Through the use of a custom indexing process that identifies specifications and National Stock Numbers (NSN) in maintenance manuals and encapsulation of various other data sources, the HAT provides a multitude of reporting capability. Reports can be generated for all manuals available in HAT, all manuals under a specific program (e.g. for the AV-8B), or any combination of individually selected manuals.

## Reporting options include:

- **Analysis of Products and Their Ingredients.**

This report identifies products supplied according to the appropriate military specification (mil-spec) and/or NSN in selected manuals. The products are then linked to their ingredients, which enables the user to filter the results based on requesting only those products that contain a specific chemical or list of chemicals. This report provides the capability for hazardous material analysis by linking products containing methyl ethyl ketone, for example, to the manuals specifying their use.

Svc	Cnd	Type	Manual Number	Date	Title	Quantity	NSN	Chemical
Nav	AIR	GenSer	01-1A-20	06/01/02	ORGANIZATIONAL, INTERMEDIATE AND DEPOT	22, 26, 144	MIL-PRF-23377	Methyl Ethyl Ketone
Nav	AIR	GenSer	01-1A-20	06/01/02	ORGANIZATIONAL, INTERMEDIATE AND DEPOT	23, 27, 274	MIL-T-81772	Methyl Ethyl Ketone
Nav	AIR	GenSer	01-1A-20	06/01/02	ORGANIZATIONAL, INTERMEDIATE AND DEPOT	23, 27, 240	TT-P-1757	Methyl Ethyl Ketone
Nav	AIR	GenSer	01-1A-20	06/01/02	ORGANIZATIONAL, INTERMEDIATE AND DEPOT	27	MMMA-1617	Methyl Ethyl Ketone
Nav	AIR	GenSer	01-1A-20	06/01/02	ORGANIZATIONAL, INTERMEDIATE AND DEPOT	23, 207, 307	A-A-59281	Methyl Ethyl Ketone
Nav	AIR	GenSer	01-1A-21	11/01/01	ORGANIZATIONAL AND INTERMEDIATE MAINTENANCE	68	6810-01-074-9507	Methyl Ethyl Ketone
Nav	AIR	GenSer	01-1A-509	05/01/01	AIRCRAFT WEAPONS SYSTEMS CLEANING AND CORROSION	385	4540-30-803-6444	Methyl Ethyl Ketone



- Analysis of Military Specifications.**

This report provides basic information on the mil-specs “called out” in specific manuals. This report indicates the mil-specs that have been cancelled and provides recommended replacements. Specific information about the dates and titles of cancelled mil-specs as well as points of contact for additional information are also provided.

Src	Doc	Type	Manual Number	Date	Title	Location:Page(s)	Pgs	Specification	PS	PA	Sts	GPL	FSC	FRD
Navy	AR	GenSer	01-1A-12	07/01/82	ENGINEERING HANDBOOK, SERIES FOR	15	1	PP-101	Air Force	04	C	None	5250	N
Navy	AR	GenSer	01-1A-12	07/01/82	ENGINEERING HANDBOOK, SERIES FOR	14	1	CCC-466			C	None	3085	N
Navy	AR	GenSer	01-1A-12	07/01/82	ENGINEERING HANDBOOK, SERIES FOR	49	1	MIL-C-5796	Navy	AS	C	None	1730	N
Navy	AR	GenSer	01-1A-12	07/01/82	ENGINEERING HANDBOOK, SERIES FOR	7, 11, 16, 32, 34, 36, 37, 38, 40, 41	10	MIL-P-6886	Navy	AS	C	None	3030	N
Navy	AR	GenSer	01-1A-12	07/01/82	ENGINEERING HANDBOOK, SERIES FOR	22	1	MIL-S-7124	Navy	AS	C	Y4	3030	N
Navy	AR	GenSer	01-1A-12	07/01/82	ENGINEERING HANDBOOK, SERIES FOR	7, 12, 16, 32, 40, 54	6	MIL-P-6257	Navy	AS	C	Y4	3030	N
Navy	AR	GenSer	01-1A-12	07/01/82	ENGINEERING HANDBOOK, SERIES FOR	3, 16, 21, 32, 36, 39	6	MIL-A-8526	Navy	AS	C	None	3840	N

- Analysis of Military Specifications and Related Research & Development.**

This report identifies the mil-specs in the selected manuals that are known to have ongoing research and development aimed at identifying non/less hazardous replacements. This report is valuable for the transition of approved material replacements to the Fleet by identifying opportunities to incorporate environmentally compliant materials into specific manuals.

Src	Doc	Type	Manual Number	Date	Title	Location:Page(s)	Pgs	Specification	PS	PA	Sts	GPL	FSC	FRD
Navy	AR	GenSer	01-1A-508	05/01/91	AIRCRAFT WEAPONS SYSTEMS	347	1	QQ-C-328	Navy	AS	C	None	MFFP	Y
Navy	AR	GenSer	01-1A-508	05/01/91	AIRCRAFT WEAPONS SYSTEMS	347	1	QQ-S-365	Navy	MR	C	None	MFFP	Y
Navy	AR	GenSer	01-1A-508	05/01/91	AIRCRAFT WEAPONS SYSTEMS	347	1	AS1M-8603	Navy	SH	A	None	MFFP	Y
Navy	AR	GenSer	01-1A-508	05/01/91	AIRCRAFT WEAPONS SYSTEMS	97, 263	2	SAE-AMS1424	Air Force	11	A	None	6880	Y
Navy	AR	GenSer	01-1A-508	05/01/91	AIRCRAFT WEAPONS SYSTEMS	128, 128, 140, 217	4	TT-R-2918	Navy	AS	J	None	803E	Y
Navy	AR	GenSer	01-1A-508	05/01/91	AIRCRAFT WEAPONS SYSTEMS	101, 307, 347, 368, 367, 400	6	MIL-C-8541	Navy	AS	A	None	MFFP	Y
Navy	AR	GenSer	01-1A-508	05/01/91	AIRCRAFT WEAPONS SYSTEMS	263	1	MIL-A-8243	Air Force	11	C	None	6950	Y

Information For QQ-C-328						
Current Document	Date	Prep Service	Prep Activity	Status	GPL	FSC
QQ-C-328(4)MOT 1	5/3/2009	Navy	AS	C	None	MFFP
Document Title						
CHROMIUM PLATING (ELECTRODEPOSITED) (S-1) BY SAE AMS-QQ-C-328						



### How can HAT be used?

HAT can empower Program Managers with needed information to properly manage the use of hazardous materials in their maintenance operations. For example, HAT has made it easier for personnel involved in the Obsolescence and Environmental Review (OER) of aviation manuals or updating of electronic technical manuals to identify hazardous materials, eliminate references to outdated/banned materials, reduce or replace the hazardous materials with suitable alternative materials used in maintenance processes and operations. Several programs that have used HAT include: H1, H60, H53, AV8B, P3 and C130.

Furthermore, Hat enables Environmental Engineers to identify opportunities for process improvements and material substitutions across the Naval Air Systems Command community. Below are two examples of how HAT was used:

- 1 The Naval Air Depot Jacksonville (NADEP JAX) had initiated enhancements to its anodizing process. HAT was used to determine how extensive the anodizing process is across NAVAIR and found that 34 programs, 290 manuals, and 1,244 pages in the manuals references the MIL-A-8625 anodizing process. This provided the opportunity to further investigate enhancements of the anodizing process, similar to those initiated by at NADEP JAX, across multiple NAVAIR platforms.

- 2 The P-3 Squadron wanted to replace the existing lubricant (VV-L-800) with a new and approved lubricant Super Corr that lasted longer and was corrosion-resistant for the P-3 flap tracks and screw jacks. Environmental Engineers performed a HAT search and results showed that a total of 41 programs, 274 manuals, and 1,622 pages in the manuals referenced the use of VV-L-800. This information provided opportunities to further investigate substitution of Super Corr across multiple NAVAIR platforms and additional waste savings.



## What Manuals are in HAT?

The HAT currently contains reporting capability for 11,170 maintenance manuals.

The breakout of manuals in each program is provided in the following table:

No.	Service	Command	Manual Type	Number of Manuals in HAT	No.	Service	Command	Manual Type	Number of Manuals in HAT
1.	Army	--	Army Bulletins	4	37.	Navy	AIR	FA-18EF	189
2.	Army	--	Army Manuals	45	38.	Navy	AIR	General Series	128
3.	Navy	AIR	A-4	36	39.	Navy	AIR	Guns	24
4.	Navy	AIR	Accessories	227	40.	Navy	AIR	H-1	344
5.	Navy	AIR	Air Combat Electronics (ACE)	353	41.	Navy	AIR	H-2	6
6.	Navy	AIR	Aircraft Launch and Recovery Equipment (ALRE)	84	42.	Navy	AIR	H-3	70
7.	Navy	AIR	Air Material Command Manual (AMCM)	47	43.	Navy	AIR	H-46	157
8.	Navy	AIR	Air Traffic Control (ATC)	26	44.	Navy	AIR	H-53	642
9.	Navy	AIR	AV-8B	600	45.	Navy	AIR	H-57	3
10.	Navy	AIR	C-12	7	46.	Navy	AIR	H-60	432
11.	Navy	AIR	C-130	200	47.	Navy	AIR	Instruments	63
12.	Navy	AIR	C-2	199	48.	Navy	AIR	Missiles	113
13.	Navy	AIR	C-20	4	49.	Navy	AIR	Mobil Equipment	264
14.	Navy	AIR	C-35	3	50.	Navy	AIR	Ordnance	107
15.	Navy	AIR	C-4	1	51.	Navy	AIR	P-3	1,050
16.	Navy	AIR	C-40	1	52.	Navy	AIR	Photography	9
17.	Navy	AIR	C-9	99	53.	Navy	AIR	Racks and Launchers	25
18.	Navy	AIR	Consolidated Automated Support System (CASS)	29	54.	Navy	AIR	S-3	459
19.	Navy	AIR	Common Avionics Test Equipment (CATE)	259	55.	Navy	AIR	Shop Test Equipment	423
20.	Navy	AIR	Common (17- or 19-series publications)	2	56.	Navy	AIR	Survival	77
21.	Navy	AIR	Common Support Equipment (CSE)	280	57.	Navy	AIR	T-2	34
22.	Navy	AIR	E2C	546	58.	Navy	AIR	T-34	6
23.	Navy	AIR	E2C2	13	59.	Navy	AIR	T-38	1
24.	Navy	AIR	E6	75	60.	Navy	AIR	T-39	29
25.	Navy	AIR	EA-6B	796	61.	Navy	AIR	T-44	3
26.	Navy	AIR	Electronics	314	62.	Navy	AIR	T-45	146
27.	Navy	AIR	Engines	43	63.	Navy	AIR	T-56	2
28.	Navy	AIR	F110	9	64.	Navy	AIR	T-58	1
29.	Navy	AIR	F14	807	65.	Navy	AIR	T-6	24
30.	Navy	AIR	F4	7	66.	Navy	AIR	Targets	56
31.	Navy	AIR	F402	24	67.	Navy	AIR	TF-30	5
32.	Navy	AIR	F404	37	68.	Navy	AIR	TTRS	1
33.	Navy	AIR	F414	9	69.	Navy	AIR	Unmanned Aerial Vehicle	43
34.	Navy	AIR	F5	14	70.	Navy	AIR	V-22	7
35.	Navy	AIR	FA-18AB	66	71.	Navy	AIR	Weapons Support Equipment (WSE)	16
36.	Navy	AIR	FA-18ABCD	734	72.	Navy	AIR	Work Unit Code (WUC)	54
					73.	Navy	FACILITIES	Naval Facilities	49
					74.	Navy	SEA	Naval Ships Technical Manual (NSTM)	108
							<b>TOTAL</b>		<b>11,170</b>



### **What Is the Distribution of HAT?**

Because the HAT contains data from the proprietary version of the Hazardous Material Information System (HMIS), it can only be distributed to and used by U.S. government personnel.

*For more information about the NAVAIR environmental program, visit [www.enviro-navair.navy.mil](http://www.enviro-navair.navy.mil).*



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