740 38 HOBBY SHOP - AUTOMOTIVE (sq.m./SF)

Project Review: Base MWR representatives, EFD, NAVFAC HQ, BUPERS (Pers-656D)
Design Criteria: *(Military Handbook is not currently available)*

1. **GENERAL**. See General Notes to 740 series category codes for General Instructions regarding facility allowance planning procedures.

2. **DEFINITION**. The mission of Automotive Hobby Shops is to provide their customers with a quality, value-based program for the maintenance, repair, modification and improvement of their own vehicles including cars, trucks, trailers, motorcycles, and bicycles. Automotive Hobby Shops are not full-service stations, but rather facilities where patron self-help is fostered and automotive skills are learned. Such facilities may also provide space for instructional programs, club meetings, administration, tool issuance, storage and parts sales.

3. **RELATED FACILITIES**. Automotive Hobby Shops may be collocated with complementary facilities such as self-service carwashes (Category Code 740 32) or other compatible MWR facilities such as Arts and Crafts Hobby Shop (Category Code 740 36). Such collocations will have the advantage of drawing more patrons to a single location offering a wider assortment of services.

4. **AUTO BAY DEMAND**. The primary functional component of an Automotive Hobby Shop are Auto Bays which are sized on the basis of the peak hour demand at each installation, as follows:

   a) Use projected base loading data to determine the population for each significant population category, as listed in Table 740 38A.

   b) Calculate peak hour demand for Auto Bays by multiplying the population for each category by participation factors found in Table 740 38A. Add the demand for all population categories to derive peak hour Total Demand for Auto Bays.

   c) Apply the installation mission adjustment factor (divide by 2) for those bases with large numbers of personnel in training schools or on routine deployment.

   d) Determine the number of indoor or outdoor Auto Bays required to satisfy peak hour demand by dividing the Total Demand by the following capacities per bay per hour and rounding to the nearest whole unit:

      - 1.5 users per indoor bay per hour
      - 1.0 user per outdoor bay per hour

      The split between indoor verses outdoor Auto Bays may be determined at the discretion of the local command. Facility planning considerations based on climatic factors are discussed below under section 4, Space Allowances.

Notes for Demand Calculation -- Table 740 38A:

(1) Population numbers should be consistent with projected base loading data. Officers are O-1 through O-10 and enlisted are E-1 through E-9. Civilians are authorized DoD employees. Retirees are all military retirees within a 30-minute drive of the installation.

For facility planning purposes at installations with deployable forces, the active duty demand population is comprised of all the non-deployable population, plus two-thirds of the deployable population, to reflect time away on deployment. However, calculation of the deployable population may be adjusted based on the actual deployment experience at individual installations.

(2) Use of facilities by spouses and dependents has been statistically incorporated in the participation factors used in the tables. These participation factors may be revised periodically by NAVFAC HQ and BUPERS, and the most current figures must be used in all demand calculations.

(3) Installation Mission Adjustment Factor

A factor that influences the use of an Automotive Hobby Shop is the type of installation and it's particular mission. For example, Naval Stations have significant numbers of active-duty personnel routinely deployed, thereby losing potential patronage. Statistics show that even though the automobiles of active-duty personnel are routinely used by spouses and dependents during times of deployment, the auto hobby facilities are seldom used by these population groups. Likewise, naval installations which have a large percentage of their residents in training schools, with demanding study schedules, suffer declines in the use of Automotive Hobby Shops since those residents have fewer personally-owned vehicles and/or less leisure time. Therefore, if an installation has a large number of personnel in schools or on routine deployment -- greater than 50 percent of the active-duty population -- the total demand calculation derived in the steps indicated below in Table 740 38A should be adjusted by dividing by 2.

(4) The number of Indoor versus Outdoor Auto Bays may be determined by the local Command. If Outdoor Auto Bays are provided, they will substitute for Indoor Auto Bays at the rate of 3 Outdoor Bays for every 2 Indoor Bays.

TABLE 740 38A
AUTO BAY DEMAND CALCULATION

Note	Population Category	Population (per Base Loading)	x	Participation Factor	=	Peak Hour Demand	
(1), (2)	Enlisted	.....	x	.0034	=	.....	users
(1), (2)	Officers	.....	x	.0022	=	+	users
(1), (2)	Retirees	.....	x	.0004	=	+	users
(1), (2)	Authorized Civilians	.....	x	.0006	=	+	users
		Total Demand (round to the nearest whole unit)			=	.....	users
(3)		Divide by installation mission adjustment (for installations with more than 50 percent of their active-duty personnel in training schools or on routine deployment)				divide by 2.0	
		Adjusted Total Demand (round to the nearest whole unit)			=	.....	users
(4)		To calculate the number of Indoor Auto Bays divide by the capacity per auto bay				divide by 1.5	
		Total number of Indoor Auto Bays required to satisfy peak demand (round to the nearest even numbered whole unit)			=	.....	bays
(4)		LOCAL OPTION: If Outdoor Auto Bays are locally desired, substitute 3 Outdoor Bays for every 2 Indoor Bays					

4. **SPACE ALLOWANCE**. The maximum space allowance for an Automotive Hobby Shop is determined according to the sizing criteria presented in Table 740 38B.

In warm climates, many auto crafts activities can be performed outdoors or under canopies. Outdoor Auto Bays may, therefore, be used to increase the total work space allowed for an auto hobby shop located in a warm climate. Such covered outdoor spaces, however, should be properly shielded from climatic conditions such as wind-driven rain or dust and sand.

Conversely, in very cold climates, care should be exercised with designs which are drafty, uncomfortable and difficult to heat because of the large number of vehicular openings. The number of vehicular openings may be minimized be adopting a layout more common in commercial garages, with interior circulation to auto bays. However, a facility with a limited number of vehicular entrances will require more interior space for maneuvering cars. In such circumstances, an economic analysis of the options is recommended. This analysis should balance the additional cost of constructing extra space for internal vehicular circulation against the reduced operating cost, the possible savings in perimeter walls, and the improved comfort and, therefore, potentially greater use by customers.

Full compliance with all applicable local, state and federal environmental regulations is required in the planning and development of Automotive Hobby Shops at all naval installations. All facilities which have the potential for causing environmental contamination, such as, hydraulic lifts, oil tanks, drains, etc. must be appropriately designed with adequate safeguards. Furthermore, to avoid problems related to the safety of patrons and staff, provision of paint booths is not recommended.

TABLE 740 38B
SPACE ALLOWANCE FOR AUTO HOBBY SHOP

Note	Table	Functional Component	# Units	X	Space Allocation Factor	=	Total Net Area	Min. or Max. Net Area sq.m.(SF)
		ACTIVITY AREAS						
(1)	740 38A	Auto Stalls/Bays	.....	X	28 sq.m.(300 NSF) per bay	=	+	
		Machine Shop Workbenches (@ one bench per bay)	.....	X	6 sq.m.(65 NSF) per bench	=	+	
		Welding Area			25% total Net Area for workbenches	=	+	
		Engine Cages (@ one cage per bay)	.....	X	4 sq.m.(40 NSF) per cage	=	.....	
		Resale/Tool Issue		X	3 sq.m.(30 NSF) per bay	=	+	
		Classroom Teaching Area	.....	X	1 sq.m.(15 NSF) per seat	=	+	21(225)min 42(450)max
		Storage Area		X	25% total Net Area for classroom	=	+	
		Subtotal Activity Areas (Net Area)				=		
		ACTIVITY SUPPORT						
		Customer Lounge			15% total Net Area workbenches	=	.....	4(40)min.
		Patron Support (including lockers, toilets, vending machines)			7-14% X subtotal Activity Areas	=	+	28(300)min.
		Administration			12-16% X subtotal Activity Areas	=	+	26(285)min.
		Subtotal Activity Support (Net Area)				=	.....	
		BUILDING SUPPORT						
		Entrance/Lobby/Circulation/ Housekeeping Supplies/Janitor's Closet/ Structure/Partitions			13-17% X subtotal Activity Areas + subtotal Activity Support Areas	=	.....	
		Mechanical/Electrical/Communication Equipment Space			9-13% X subtotal Activity Areas + subtotal Activity Support Areas	=	.....	
		TOTAL FACILITY ALLOWANCE (Gross Area)				=	.....	

Notes for Space Allowance -- Table 740 38B:

(1) 28 net sq.m. (300 NSF) per auto bay is an average figure. Actual bay sizes may vary, ranging from typically, 27 net sq.m. (288 NSF) for muffler/tire/lubrication bays to 31 net sq.m. (336 NSF) for general repair/bodywork/steam cleaning bays.

sq.m.= square meter

NSF = Net Square Feet
GSF = Gross Square Feet
Minimum or Maximum NSF = Minimum or maximum space allowance to be provided for the particular function or activity.

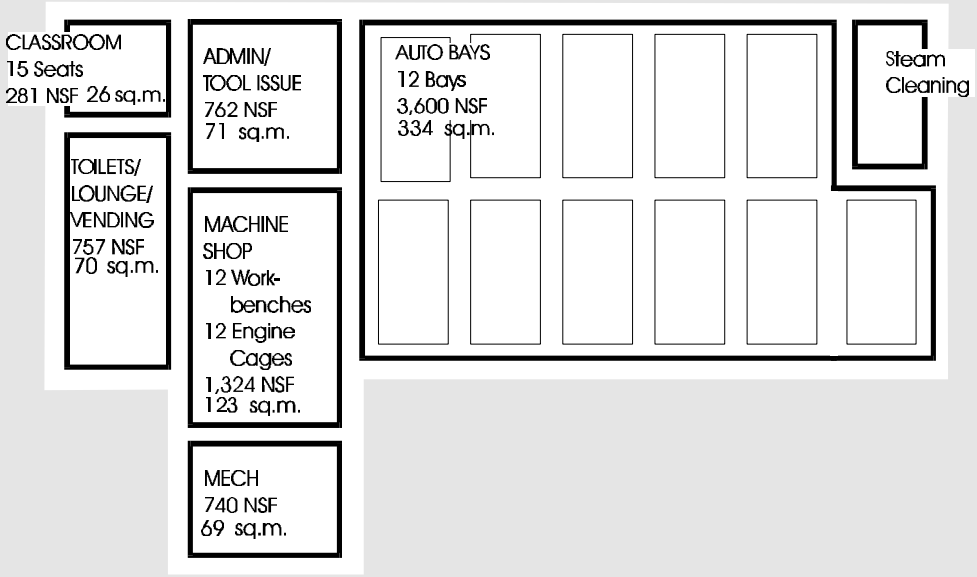
5. **ILLUSTRATIVE SPACE PROGRAMS**. Five space programs for extra-small, small, medium, large and extra-large Automotive Hobby Shops are presented to illustrate possible breakdowns of the overall space allowances into their primary functional components, with their respective sizes and capacities. These space programs are for illustrative purposes only.

6. **SAMPLE LAYOUT DIAGRAM**. A layout diagram is presented for a medium size Automotive Hobby Shop. This diagram is an example of the composition of such a facility in terms of its functional components, their respective sizes and adjacencies. The layout diagram is for illustrative purposes only.

AUTOMOTIVE HOBBY SHOP (Category Code 740 38)

Sample Space Programs

Functional Component/ Sub-Component	Space Allocation Standar		*EXTRA-SMALL SIZE* Capacit	Net sq.m.	Sub-Total Net sq.m.	*SMALL SIZE* Capacit	Net sq.m.	Sub-Total Net sq.m.	*MEDIUM SIZE* Capacit	Net sq.m.	Sub-Total Net sq.m.	*LARGE SIZE* Capacit	Net sq.m.	Sub-Total Net sq.m.	*EXTRA-LARGE SIZE* Capacit	Net sq.m.	Sub-Total Net sq.m.
ACTIVITY AREA																		
Auto Stalls/Bays					56			112			336			672				840
General Repair & Tune-ups	28	Net sq.m. per stall	1	28		2	56		4	112		8	224		9	252		
Muffler & Tire Shop	28	Net sq.m. per stall	0	0		0	0		2	56		4	112		5	140		
Lubrication	28	Net sq.m. per stall	1	28		1	28		3	84		6	168		8	224		
Bodywork	28	Net sq.m. per stall	0	0		0	0		2	56		4	112		5	140		
Steam Cleaning	28	Net sq.m. per stall	0	0		1	28		1	28		2	56		3	84		
Machine Shop					23			46			138			276				345
Workbenches	6	Net sq.m. per bench	2	12		4	24		12	72		24	144		30	180		
Welding Area	25%	total Net sq.m. for workbenches		3			6			18			36			45		
Engine Cages	4	Net sq.m. per cage	2	8		4	16		12	48		24	96		30	120		
Tool Issue/Resale	3	Net sq.m. per bay	2	6	6	4	12	12	12	36	36	24	72	72	30	90		90
Classroom					0			19			19			38				38
Teaching Area	1	Net Area per seat	0	0		15	15		15	15		30	30		30	30		
Storage Area	25%	total Net Area for classroom		0			4			4			8			8		
SUB-TOTAL ACTIVITY AREA (Net SF)					**85**			**189**			**529**			**1,058**				**1,313**
ACTIVITY SUPPORT																		
Customer Lounge	15%	total Net sq.m. workbenches		2	2		4	4		11	11		22	22		27		27
Toilets (male and female)					28			28			60			80				80
Water closets/Urinals	3	Net sq.m. per fixture	0	0		0	0		4	12		6	18		6	18		
Lavatories	3	Net sq.m. per fixture	0	0		0	0		4	12		6	18		6	18		
Handicap Toilets	6	Net sq.m. per toilet	2	12		2	12		2	12		2	12		2	12		
Lockers (male and female)	2	Net sq.m. per person	8	16		8	16		12	24		16	32		16	32		
Vending Machines	2	Net sq.m. per machine	1	2	2	1	2	2	2	4	4	3	6	6	4	8		8
Administration					21			21			37			41				55
Control Desk	4	Net sq.m. per station	1	4		1	4		2	8		3	12		3	12		
Administrative Office	11	Net sq.m. per office	1	11		1	11		2	22		2	22		3	33		
Office Storage Area	30%	total Net sq.m. office		6			6			7			7			10		
SUB-TOTAL ACTIVITY SUPPORT (Net SF)					**53**			**55**			**111**			**148**				**170**
BUILDING SUPPORT																		
Entrance/Lobby/Circulation/ Housekeeping Supplies/Janitor's Closet/ Structure/Partitions	13-17%	total Net sq.m. for Activity Area and Activity Support		23	23		39	39		96	96		169	169		193		193
Mechanical/Electrical/Communication Equipment Space	9-13%	total Net sq.m. for Activity Area and Activity Support		18	18		29	29		70	70		121	121		133		133
TOTAL SPACE ALLOWANCE (Gross sq.m.)					**179**			**311**			**807**			**1,495**				**1,809**
Total Number of Bays					**2**			**4**			**12**			**24**				**30**
Total Gross sq.m. per Bay					**90**			**78**			**67**			**62**				**60**
Gross sq.m. per Bay (not incl. Mech. Space)					**81**			**71**			**61**			**57**				**56**



LAYOUT DIAGRAM -- AUTOMOTIVE HOBBY SHOP
Medium Size Facility

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