

211 75 PARACHUTE AND SURVIVAL EQUIPMENT SHOP (NON-NARF) (SF)

A parachute and survival shop is required at Navy and Marine Corps air installations for drying, inspecting, repairing, repacking, and storage of parachutes and for the intermediate maintenance of other life support equipment. These include: life rafts and jackets and pressure and exposure suits. See basic Category 211 Supplement, Maintenance, Aircraft Spares for Marine Corps Aircraft Maintenance Facilities, for which special guidance is provided.

There are two types of shops.

A Type I shop provides facilities for inspecting, repairing, drying, repacking, and storing of personnel parachutes only.

A Type II shop has the additional facilities necessary for inspecting, repairing, washing, and drying aircraft (drogue), cargo, or other special purpose parachutes.

To determine the gross square footage requirements for a given air installation the number of assigned aircraft of each type is multiplied by the corresponding Intermediate Maintenance and Operations (I.M.O.) Factor for the aircrew survival equipmentman (PR) rating. Information pertaining to the I.M.O. factor will be released to approved requesters. The sum of the products for each type of aircraft becomes the "sizing factor". Referring to Table 211-75A, the sizing factor is then matched to the column that represents the predominant type of aircraft, and the required gross area is read from the gross area column.

TABLE 211-75A
Space Allowances for Parachute and Survival Equipment Shop Type I

Sizing Factor			Allowance
VA/VF	VP/VS/VR/ VMGR/HM	VT	Gross Area Square Feet
0-10	0-3	0-5	4,000
11-20	4-5	6-11	5,250
21-31	6-8	12-17	6,300
32-43	9-10	18-23	7,150
44-55	11-13	24-39	7,800
56-67	14-16	30-35	8,400
68-78	17-18	36-41	9,000
79-90	19-21	42-47	9,600
over 90	over 21	over 47	9,900

If only personnel parachutes are to be maintained, this becomes the gross square-foot area required. See Example 1 for a sample computation. If drogue, cargo, and/or other special purpose parachutes are to be maintained as well as personnel parachutes, a Type II shop is required, and the gross square-foot area for a Type II shop is computed by adding the applicable area from Table 211-7513 to the area determined from Table 211-75A. See Example 2 for a sample computation.

TABLE 211-75B
Additional Space Allowances for
Parachute and Survival Equipment Shop Type II

Nonpersonnel Chutes Assigned	Gross Area Square Feet
up to 100	1,200*
100 and over	2,200**

*Represents the addition of one 70-foot packing table, the addition of a wet loft, and increases in storage and issue and wash and test space.

**Represents the addition of two 70-foot packing tables and corresponding increases in the other spaces mentioned in the note above.

Example Computation 1 - Parachute and Survival Equipment Shop

A/C	No.	PR (I.M.O.)	Sizing Factor (I.M.O. x No. A/C)
Type A (VF)	96	.24	23.04
Type B (VF)	2	.35	.75
Type C (VA)	120	.14	16.80
Type D (VF)	76	.16	12.16
Type E (VF)	4	.08	.32
	<u>298</u>		<u>53.02</u>

The predominant aircraft type is VA/VF, none of the aircraft requires drogue chute support, and the station has no mission that requires other nonpersonnel parachute support. The sizing factor is matched to the VA/VF column in Table 211-75A, and the requirement for an area of 7,800 square feet is read from the gross area column.

Example Computation 2 - Parachute and Survival Equipment Shop

A/C	No.	PR(I.M.O.)	Sizing Factor (I.M.O. x No. A/C)
Type W (VF)	193	.24	46.32
Type X (VF)	145	.17	24.65
Type Y (VT)	24	.14	3.36
Type Z (VT)	2	<u>.08</u>	<u>.16</u>
	<u>364</u>		<u>74.49</u>

The predominant aircraft is VF, the Type W aircraft requires the use of a drogue chute for landing, and the station has no other mission that requires nonpersonnel parachute support. The sizing factor is matched to the VA/VF column in Table 211-758 and the requirement for an area of 9,000 square feet is read from the gross area column. With a drogue chute requirement for over 100 chutes, the 2,200 square feet from Table 211-76B is added to the 9,000 square feet from Table 211-758, giving a requirement for a Type II shop with a gross area of 11,200 square feet.

Exterior paved areas are provided for vehicle access and for nonorganizational vehicle parking. See Category Code 852 10, Parking Area. If exterior pavement requirements for a particular shop are not known, an area approximately equal to 50 percent of the gross floor area of the properly sized parachute and survival equipment shop may be used for planning purposes. For design criteria, see NAVFAC DM-28.1.

211 81 ENGINE TEST CELL (NON-NARF ACTIVITIES) (SF)

An engine test cell provides an acoustically attenuated and fully instrumented enclosure in which uninstalled turbojet and turbofan engines are tested at installations where intermediate level maintenance engine repair work is performed. The structure includes engine mounts, fueling system, and provision for observation and control. Engine test stands and power check facilities, without sound suppression (Category Code 211 89) or with sound suppression (Category Code 211 88), are normally authorized for all stations or activities requiring jet engine test facilities. The number of cells which may be planned for an activity can be established from the Ground Support Equipment allowance lists for the aircraft to be assigned to the activity.

211 82 AIRCRAFT WEAPONS ALIGNMENT SHELTER (NON-NARF) (SF)

A minimum of one aircraft weapons alignment shelter is required at Navy and Marine Corps air installations having fighter or attack aircraft which require alignment of on-aircraft weapons systems. In addition to weapons systems alignment, which is the process of mechanically and electrically aligning aircraft weapons electronic systems to a common aircraft axis, this facility provides space for on-aircraft electronic maintenance of the weapons systems. For the mechanical alignment of guns attached to aircraft, see Aircraft Boresight Range, Category Code 211 09. If vehicle and aircraft access pavement is required, see Category Code 851 10, Roads, and 113 40, Aircraft Access Apron.

To determine the square footage requirements for a given air installation, the number of assigned aircraft of the types that require weapons calibration is first determined. This number is used to enter column 1 of Table

211 82 in which column 2 shows the number of bays and column 3 the gross area of structure required.

TABLE 211 82
Space Allowances for Aircraft Weapons Alignment Shelter

Column 1	Column 2	Column 3
No. A/C	No. Bays	Gross Area Sq. Ft.
up to 20	1	5,246
21 to 41	2	10,423
42 to 63	3	15,503
64 to 87	4	20,583
88 to 114	5	25,663
115 to 145	6	30,743
146 to 181	7	35,822
182 to 223	8	40,902
224 to 272	9	45,983
over 272	10	51,063

See NAVFAC P-272 for single and multiple bay configurations of the facility and NAVFAC DM-28.1 for design criteria.

211 88 POWER CHECK PAD WITH SOUND SUPPRESSION (NON-NARF) (EA)

Power check pads provided with fixed or portable sound suppressors which meet desired noise criteria are categorized here. Planning is the same as in Category Code 211 89. NAVFAC P-970 provides an analytical method for evaluating location of the power check pad with respect to inhabited areas. It shows how to calculate the expected noise levels and estimate the probable response to the noise. This noise survey is essential for substantiating the requirement for a power check pad with sound suppression. For design criteria, see NAVFAC DM-21.1 and DM-28.1.

211 89 POWER CHECK PAD WITHOUT SOUND SUPPRESSION (NON-NARF) (EA)

Navy and Marine Corps air installations where aircraft are permanently assigned and aircraft maintenance is performed require power check facilities. The power check pad is used to test and adjust engines mounted in the aircraft and is planned on the basis of 1 per 35 assigned aircraft or portion thereof. Employing portable engine test stands, the power check pad is used for uninstalled engine testing. For this purpose, the planning factor is one facility per 120 installed engines, or portion thereof, base loaded on the station. A power check pad includes portland cement concrete airfield pavement with securing fittings, and, where required, protection walls and blast deflectors. When used for in-aircraft engine testing, the power check pad should be at least 2,000 feet from any other activity and preferably at greater distances from administrative, training, housing, and other inhabited buildings in order to reduce the sound suppression requirement. See Category Code 211 88 for a power check pad with sound suppression units. An access taxiway (Category Code 112 10) and vehicular access (Category Code 851 10) are required. When used for uninstalled engine testing, the power check pad includes provision for portable fueling and instrumentation equipment and must be located for ready accessibility from the engine maintenance shops. At existing airfields, maximum use shall be made of surplus airfield pavement which can be modified to satisfy the power check pad requirement.

211 96 MAINTENANCE - AIRCRAFT/SPARES STORAGE (SF)

Storage facilities for miscellaneous equipment/parts/goods, etc., will be provided only where it can be individually justified. In addition to the method of determining the gross square-footage requirement, the justification should include an explanation as to why the storage requirement cannot be met through storage space provided within hangars/shops or 440 series covered general supply facilities. No specific criteria are available for this type of facility; however, general information on normal stacking heights, SF per measurement ton, and other warehousing parameters are provided in Category Code 440 series.