211 MAINTENANCE - AIRCRAFT, SPARES

GENERAL

Facilities for the maintenance and repair of Navy and Marine Corps aircraft and related spares, including airframes, aircraft engines, aircraft weapons systems, avionics systems, and other related aircraft equipment are planned in accordance with maintenance functions and levels as authorized by the Chief of Naval Operations. Maintenance classifications are defined in OPNAVINST 4790. _____ (latest issue) and are the basis for the Naval Aircraft Maintenance Program (NAMP). These classifications of aircraft maintenance activities of the Naval Establishment are divided into three levels: depot maintenance, intermediate maintenance, and organizational maintenance. Each requirement for depot maintenance facilities must be planned and justified individually.

Planning factors for aircraft maintenance facilities are tabulated under category codes as follows:

(Note): The category codes marked "N" or with an asterisk are for Naval Air Rework Facility (NARF) use only. Those codes marked with an asterisk are pseudo codes and will be eliminated once criteria are developed for NARF facilities. The codes with an asterisk are to be used only for maintaining existing Basic Facility Requirement (BFR) data and must not be used for assets data or project submissions.

	211 01	Aircraft Acoustical Enclosure (NON-NARF)
	211 02	Nose Hangar
	211 03	Corrosion Control Hangar
	211 04	Pre-Engineered Maintenance Hangar
	211 05	Maintenance Hangar - OH space
	211 06	Maintenance Hangar - 01 Space
	211 07	Maintenance Hangar - 02 Space
	211 08	Airframes shop (NON-NARF)
	211 09	Aircraft Boresight Range (NON-NARF)
*	211 10	Aircraft Overhaul and Repair Shop (NARF)
N	211 11	Corrosion Control-Cleaning Shop (NARF)
N	211 12	Paint and Finishing Hangar (NARF)
N	211 13	Aircraft Non-Destructive Testing Shop (NARF)
N	211 14	Aircraft Rework Shop (NARF)
	211 15	Line Maintenance Shelter
*	211 20	Aircraft Engine Overhaul Shop (MARF)
	211 21	Engine Maintenance Shop (NON-NARF)
N	211 22	Engine Preparation and Storage Shop (NARF)
N	211 23	Engine Examination and Evaluation Shop (NARF)
N	211 24	Dedicated Aircraft Engine Overhaul-General Process (NARF)
N	211 25	Jet Engine Overhaul shop (NARF)
N	211 26	Reciprocating Engine Overhaul Shop (NARF)
N	211 27	Turbine Engine Overhaul Shop (NARF)
N	211 30	Aircraft and Engine Accessories Overhaul Shop (NARF)

N	211	31	Dedicated Aircraft and Engine Accessories Overhaul-General Process (NARF)
N	211	32	Metal Components Shop (NARF)
N	211	33	Non-Metal Components Shop (NARF)
N	211	34	Dynamic Components Shop (NARF)
N	211	35	Hydraulic Components Shop (NARF)
N	211	36	Electrical Components Shop (NARF)
N	211	37	Turbine Accessories Shop (NARF)
N	211	38	Pneumatic Oxygen shop (NARF)
N	211	39	Optical and Photographic Components Shop (NARF)
*	211	40	Electronics, Communication and Armament System Shop (NARF)
N	211	41	Dedicated Electronics, Communication and Armament-General. Process (NARF)
N	211	42	Electronic system Components Shop (NARF)
N	211	43	Inertial Quality Instrument Overhaul Shop (NARF)
N	211	44	Non-Inertial Quality Instrument Overhaul Shop (NARF)
	211	45	Avionics Shop (NON-NARF)
*	211	50	Aircraft Armament/Missile Rework Shop (NARF)
N	211	51	Dedicated Aircraft Armament/Missile Rework-General Purpose shop (NARF)
N	211	52	Aircraft Weapon Overhaul and Test Shop (NARF)
N	211	53	Air Launched Missile Rework Shop (NARF)
	211	54	Aviation Armament Shop (NON-NARF)
*	211	60	Support Equipment Rework Shop (NARF)
N	211	61	Dedicated Support Equipment Rework-General Purpose Shop (NARF)
N	211	62	Support Equipment Calibration Shop (NARF)
N	211	63	Ground Support Equipment Rework Shop (NARF)
N	211	64	Ground Support Equipment Holding Shed (NARF)
*	211	70	Manufacturing and Repair Shop (NARF)
N	211	71	Dedicated Manufacturing and Repair-General Purpose Shop (NARF)
N	211	72	Metal Fabrication/Manufacturing Shop (NARF)
N	211	73	Metal Treatment Shop (NARF)
N	211	74	Non-Metal Fabrication/Manufacturing Shop (NARF)
	211	75	Parachute/Survival Equipment Shop (NON-NARF)
N	211	76	Miscellaneous Parts/Components Repair Shop (NARF)
*	211	80	Test and Calibration Shop (NARF)
	211	81	Engine Test Cell (NON-NARF)
	211	82	Aircraft Weapons Alignment Shelter (NON-NARF)
N	211	83	Engine Test Cell (NARF)
N	211	84	Helicopter Blade Test Facility (NARF)
N	211	85	Radome Test Facility (NARF)
N	211	86	Radar/Antenna Test Facility (NARF)
N	211	87	Aircraft Weapons Alignment/Boresight Facility. (NARF)

	211	88	Power check Pad with Sound Suppression (NON-NARF)
	211	89	Power Check Pad Without Sound Suppression (NON-NARF)
*	211	90	Other Support Facilities (NARF)
N	211	91	Uncovered Ramp (NARF)
N	211	92	Covered Ground Check/Flight Test Facility (NARF)
N	211	93	Engineering Laboratory (NARF)
N	211	94	Aircraft Power Check Facilities (NARF)
N	211	95	Material and Equipment Staging/Storage Facility (NARF)
	211	96	Maintenance, Aircraft Spares Storage (Ready Issue/Shop Storage Miscellaneous)
N	211	97	Plant Services for Aircraft Overhaul (NARF)
N	211	98	Aircraft Acoustical Enclosure (NARF)
N	211	99	Hazardous Material Storehouse (NARF)

Additional air-related maintenance facilities are tabulated under the following category codes:

116-10 Airfield Washrack Pavement
116-15 Aircraft Rinse Facility
212-30 Missile Assembly and Test Building
214-30 Refueling Vehicle Shop
216-55 Air/Underwater Weapons Shop
218-60 Aircraft Ground Support Equipment Shop
218-61 Ground Support Equipment Holding Shed

AIRCRAFT LOADING

When planning Aircraft Maintenance Hangars for a given installation, the number of aircraft and squadrons to be counted are determined by projecting peak scheduled occupancy of all aircraft for which the station will have an air craft maintenance support mission. Peak scheduled occupancy defined as the maximum number of aircraft that are scheduled for simultaneous assignment to the installation for the planned construction year. Occasional periods of short-term overlap occupancy are not to be considered. If deployment schedules are available for the planned construction year (such as NAVAIRNOTE 013010, "Carrier Employment Support Planning Document"), these schedules, in conjunction with the Base Loading Report shall be used to determine peak scheduled occupancy* Long range projections, greater than five years, are available in the Aircraft Program Data File (APDF). When deployment schedules are not available, the base loading may be approximated by adding 100 percent of the permanently assigned aircraft to 75 percent of the deployable patrol aircraft and 66 2/3 percent of the deployable carrier-type aircraft.

Where maintenance operating factors (M.O. factors) are used as the basis for sizing intermediate level maintenance shops, the total assigned aircraft for the applicable construction year shall be utilized for planning computations. (The M.O. factor sizing curves have been adjusted for the various types of aircraft to account for deployed aircraft). In rare instances, an installation may be assigned the intermediate maintenance responsibility for aircraft not permanently assigned to the installation. In this case, these aircraft should be added to the base loading for the planning of intermediate

maintenance shops.

AIRCRAFT MAINTENANCE DEPARTMENT OFFICES

The shops comprising the Navy Intermediate Maintenance Facility may be established separately or grouped together in a consolidated complex. Space requirements for each individual shop having a specific category code include the administrative and training space for that shop. In addition, administrative and training spaces are required for the Aircraft Maintenance Department (AMD) offices, preferably in a centrally located administrative building within the maintenance complex. When shops are not consolidated into a complex, consideration shall be given to enlarging the administrative space in one of the intermediate maintenance shops to provide space for the AMD offices. Space allocations shall be made in accordance with Category Code 610 10.

MARINE CORPS CRITERIA

Marine Corps aircraft maintenance facilities are planned utilizing the basic criteria for comparable Navy facilities. However, additional guidance for planning intermediate maintenance facilities with a particular Marine Corps application is provided as a 211 - Supplement at the end of this section (Category Code 211).

DESIGN CRITERIA

See NAVFAC P-272 for definitive drawings and NAVFAC DM-28.1 for design criteria for aircraft maintenance facilities.