

application can give a definite basis for the selection of a safety factor. Where large production volumes are being contemplated, there is often a desire to reduce a factor of safety and thereby cut initial costs. Any reduction from established norms should be made only with a full understanding of all the factors involved. A major decrease in a previously accepted factor of safety can rarely be made. However, decreases of 10 to 15% are often feasible and safe. For common designs, experienced designers develop standard stress levels based on accepted safety factors. These factors may be established from a variety of sources. The selection of a safety factor is frequently governed by accepted standard design stresses or by municipal or state codes. However, many times, particularly on machine parts and devices, the selection of a safety factor is required in the early design stages. By reference and use of the six factors listed, this choice can be made using a comprehensive methodical analysis. True safety factors relating the damaging stress to the actual design stresses can be established, accurately representing the safety level intended by the designer.

305 Eye Injuries Due to Power Lawn Mowers. D. Bareky.
Arch. Ophthalmol. 64, 385 (Sept. 1960).

Five cases of missile eye injuries due to power lawn mowers are reported, covering a 4-year period beginning September 1955. In 3 cases, vision was totally lost. The need for safety features in the rotary type power lawn mower is stressed. Public awareness of the eye hazard should be aroused.

-- J. Am. Med. Assn. Abstr.

MISCELLANEOUS

306 Research in Water Pollution. F. C. Livingstone.
Water & Sewage Works 107, 126-128 (Mar. 1960).

This is a brief report of the research being conducted in a special laboratory for water pollution research of the Department of Scientific and Industrial Research in Great Britain. Tests were made on a new anionic surface-active material that had been developed by detergent manufacturers seeking to find a biological soft substance. In trickling filter pilot plants, it was found that about 90% of the new type of detergent was removed as compared with about 68% of the material presently being marketed. Owing to the fact that the new laboratory is situated in a community where domestic sewage and industrial wastes can be kept completely separate, precise studies were made of the characteristics and rate of flow of domestic sewage. The laboratory has investigated possible methods of pre-treatment of tannery wastes to remove suspended matter, toxic metals, and sulfide, and also to neutralize excessive alkalinity. Waste flue gases could be used to form calcium carbonate, to strip out the hydrogen sulfide, and to neutralize alkalinity. The waste gases containing hydrogen sulfide could then be passed through coke-packed filters irrigated with weak tannery wastes. Hydrogen sulfide is absorbed and oxidized biologically to sulfuric acid. Studies are also being made of treatment of tannery wastes by trickling filters. Simple cyanides and less stable complex cyanides may be treated with ferrous sulfate and an alkali prior to discharge to a municipal sewer. Where a higher degree of treatment is needed, chlorine and caustic are used. Almost complete removal of cyanide was affected from a solution of NaCN equivalent to 90 mg./liter HCN at a flow rate of 700 gal./cu. yd./day, with temperatures above 10°C.

-- Cond. from Public Health Eng. Abstr.

307 Chemical Coagulation and Pressure Flotation for Aircraft Oil Wastes. E. J. Malwood.
Wastes Eng. 31, 434-437 (Aug. 1960).

The waste flows in the United Air Lines Maintenance Base at San Francisco International Airport originate from numerous cleaning operations of engines, engine parts, accessories and air frame parts as well as paint stripping. The average workday wastes flow