(Italic Information was Added and not part of the original article)

PROCEEDINGS
ABSTRACTS OF PAPERS, 84th Annual Meeting of the Virginia Academy of Science, May 25-26, 2006, Virginia Polytechnic Institute and State University, Blacksburg, VA

←--- See Date

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NO NEED TO READ -→ **Aeronautical and Aerospace Sciences**

THIS ARTICLE – not related

A LOGISTIC AIRCRAFT CONCEPT. M. Leroy Spearman, NASA-Langley Research Center, Hampton, VA 23681 & Katie Klein, MITRE Corp., McLean, VA 22102. Airlift and sealift capability could be useful as a means of providing the logistic support of manpower, supplies and equipment in the event of natural disasters or in the event of warfare. Such events could be within the homeland area or could be at distant locations. Such support may be required rapidly and to locations inaccessible by normal means of transportation. Conventional aircraft can provide the need for speed but the load capacity may be limited. The use of aircraft is also dependent on the basing for take-off and landing. Water-based vessels can provide large load-carrying capability but the speed is limited and water ports must be available. An effort to combine the requirements for capacity, speed and basing, has lead to some research relative to unconventional designs. The concept considered has a large rectangular wing surface mounted inboard of large bodies that are attached to each wing tip. The use of two bodies of a conventional aircraft design results in doubling the capacity of the conventional aircraft. The large area of the rectangular wing provides adequate lift to sustain flight. In addition, if the wing was positioned near the surface, a cushion of air would be provided that would permit operation as a wing-in-ground (WIG) effect vehicle. Another possibility considered was the use of a portion of the bodies as containers for helium gas that would permit operation as a hybrid airship with vertical take-off and landing (VTOL) capability. Thus, the inboard wing arrangement potentially provides for large load carrying capability with a vehicle that could operate in freeair as an airplane, or near the surface in a WIG mode, or have greater basing freedom in a VTOL mode.

A CONCEPT FOR A LARGE TRANSPORT AIRCRAFT. M. Leroy Spearman, NASA-Langley Research Center, Hampton, VA 23681 & Karen Feigh, GA Inst. of Technology, Atlanta, GA 30332. The basic wing-body-tail arrangement of conventional transport aircraft has remained essentially unchanged over the years. Increased capacity has been achieved simply by increasing the overall size of the aircraft. However such an approach may be limited for aircraft beyond the size of the current jumbo jets such as the Boeing 747. Limitations may occur in the manufacturing process. There may be limitations in ground handling and in access to the boarding gate. A serious problem may occur from the trailing tip

See next page, which is page 26 of the 81 page report ----------→

of atrazine and endosulfan. These findings are consistent with previous research on the effects of pesticides on amphibian populations and future studies will explore the underlying neuroanatomy of tadpoles exposed to pesticides.

EFFECTS OF AMMONIUM PERCHLORATE ON THYROID FUNCTION AND PLASMA CORTICOSTERONE IN JAPANESE QUAIL. Eric R. Weigel, F. M. Anne McNabb, & Ignacio T. Moore, Dept. of Biol., Va. Polytechnic Inst. & State Univ., Blacksburg, VA 24061. Ingestion of perchlorate has been shown to inhibit the thyroid gland's production of thyroid hormones, tri-iodothyronine (T3) and thyroxine (T4) in various species. In this experiment, the effects of varying doses of ammonium perchlorate (AP) upon thyroid function and plasma corticosterone were investigated. Forty adult birds were separated into six experimental groups, with equal numbers of males and females. The groups received the followed doses of dissolved AP in their drinking water: 0 (control), 100, 250, 500, 1000, and 2000 mg AP/L of drinking water. Treatment was administered for 2 weeks, after which blood samples were taken, birds were sacrificed, and thyroid glands were removed. Thyroid function was assessed by T4 and T3 concentrations in the thyroid glands, T4 levels in plasma, and thyroid gland masses. Dose-dependent effects were observed, but only in male animals. In males, thyroidal T4 declined with increasing AP treatment, and thyroid gland hypertrophy was also evident, as expected. However, females did not respond significantly to any level of AP treatment. We hypothesize that some of the AP ingested by females may be accumulating in their eggs, thereby decreasing their effective thyroidal dose as compared to males.

READ THIS ARTICLE -> **THE EFFECT OF ANTIOXIDANT VITAMINS AND NSAID DRUGS ON PLAQUE FORMATION IN ALZHEIMER'S DISEASE. Kristen M. Zach & Deborah A. O'Dell. Dept. of Biological sciences, Univ. Mary Washington, Fredericksburg, VA. 22401. Alzheimer's Disease (AD) is characterized by the deposition of neurofibrillary tangles (NFTs), neuritic plaques composed of $-amyloid, the release of inflammatory molecules such as TNF-", and severe lipid peroxidation. Although the exact mechanism responsible for causing this cascade of events is unclear, it is clear that they are interrelated and act synergistically to cause neuronal death. Recent therapeutic strategies attempt to limit the neurotoxicitiy of oxidative and immune responses through the use of antioxidant vitamins and non-steroidal anti-inflammatory drugs (NSAIDs). To determine the efficacy of Cellect brand vitamins and Ibuprofen in performing this role, we fed mice predisposed to plaque development (J10, JAX), rodent chow supplemented with either vitamins, Ibuprofen, or both for either 4 or 7 months. Mice from two litters were sacrificed and their brains removed and analyzed for presence of inflammation (TNF-α) and β-amyloid protein. The level of TNF-" in mice treated with supplements for 7 months was much lower than that of the control (0.046 ng/mg tissue vs 5113.38 ng/mg tissue, respectively). Analysis using light microscopy revealed that mice treated with a combination of Ibuprofen and vitamins for 7 months had the least amount of β-amyloid protein in the brain. This study indicates that a long-term diet supplemented with both vitamins and NSAIDs may help prevent the onset of the hallmark pathologies associated with AD. This work was supported by an Undergraduate Research Grant from the University of Mary Washington.**

CELLECT →

5113.38 →

← 0.046

My Notes: Cellect effectiveness against neurotoxicity and immune responses reduced the plaque development. After 7 months, the presence of inflammation was reduced from 5113.38 down to 0.046

5113.38/ 0.046 = 111,160.43 = 11,116,043 % improvement