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Aircraft component manufacturing machines operation schedule usable informative text

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ABSTRACT
In this short paper the authors emphasized the aircraft component manufacturing operation schedule documentation informative for the initiation of solving transport facility hindering problems. The introduction contain a multipurpose linear programming text for touching the near future energy deficiency eradication solution for the regional academic institutions. The subsequent texts precisely describe the simple list of attribute variables for a large integrated plant automation machine operation schedule. Finally we have framed an example to describe how to decide maximum revenue saving by at the casting a proportional product mix alloy before furnace foundry process.
Key words: Aircraft manufacturing tasks, multipurpose program, and operation schedule.

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I. INTRODUCTION

Aircraft manufacturing is done in large integrated plants. Odisha Mining Corporation should utilize a portion of its extracted metal and production mineral-energy to execute the past intellectuals planning to build modern airports within Odisha with wider workshop facilities for assembling aircraft components either importing aircraft components materials or manufacturing within the state regional metal processing industries. Before building airport, the architecture farm and builder industry should have convinced thefacilities in the airports multipurpose use. The first purpose is, low cost quick transportationfacility and region connectivity within the state, the second purpose is to minimize maintenance materials using in roadways and railways. The third purpose is developing engineering technology education and workshop practice with world-wide employment to regional engineering graduates. Fourth purpose is convincing local builder those have not experienced with building infrastructure for robotic and crane operative aircraft manufacturing unit workshops.The output of this short communication may motivate the reader to utilize the state exiting resource for continuing a longer time sustainability. Subsequently, a few typical sentences are typed for helping the computational code writer for writing the plant automation operating systemcodes after convincing and realizing the text exterior knowledge.

Aircraft component manufacturing and assembler machine operation schedule are systematic procedure and computationalcodes, written and tested in the computer graphics. The soft computing facility and construction material process units machine operable measurements impact on machine operation schedules. In the next lines we write a course schedule for writing a practicable computer linear program codes.

Airframe manufacturing typically is done in large integrated plants. The task list for airframe manufacturing consists, Motor operated conveyor systematic, robotic arm operated Frame sizing, frame shaping, load balance, truss fitness designing, truss component fixing weld, or drilled bore sized screw tighten torque specification, bolt fixer at removable component joiner spots, built trusses'strength test, weight sustainable dynamic load resistance limit measure, stress measure, strain or deformation limit specification, etc. The tasks sequencing and task execution phase power supplying machine and power utilizing machines operation listing are named airframe manufacture machine operation scheduled.

The machine id, workshop-workbench location determiner, tool positioning, component holder, component shift required or not, turn required or not, if required how much angled turn, task execute machine processor to next machine transaction time, conveyer path determiner are some topics of machine operation schedule.

The jig guide instructions for operations such as cutting, drilling, fixing holding etc. sequential drafting is also named as machine operation schedule. The schedule are often coded with computer learnable instructions. Supplier power system protection during the operation is designed by the electrical power sub-grid control card.

Assembler works after the build-up component parts are manufactured from the sub-assemble units. The sub-assemble units for airframe manufacture units are also systems of workshop tasking schedules such as wings, frame-beam stability, fuselage section, gas tanker, engine holder floor beams and stringer, Power plant stabilizer holder frame-beam and string, landing gear, door, frame cover sheet enveloped structure interior components. Cranes are operated to lift and lower heavy parts during construction and component assembling workshop.

II. AIRFRAME MATERIALS PROCESSING TEXT

Airframe material alloy of Aluminum, beryllium, titanium and magnesium [1]. Airframe structures are used either in spacecraft or aircraft. The alloyed metals metallurgical mixing proportion are found in alloy manufacturing process industry notes. Frame precast dice and molten metalshaping frames are used in trusses.Some other frames are embedded in plastic matrix within similar dimension or different dimensional dice.

Welder machine for frame welding uses uniform electric power through the stabilizers and stabilizers inner plates covered with high temperature resistance resin. Weld technology texts and weld machine type specification, electrode carbide or fusion material, contact seconds for alloy specific and weld spot length, contact area, volume of fusion material are actuated from welder industry note.

Polymide resin systems are used where high temperature resistance are required (may be coil armature bunch separator edges or plate edges within thetransforma in stabilizers, or motor wire armature. Other resin system used phenolics, Kevlar and fiberglass.

2.1Aircraft frame structure cover sheet furnish material

The aircraft inner surface cover sheet are either thin aluminum sheet or polymer sheets. The cover sheet furnish material for aircraft inner wall surface or couch surface temperature smoothening uses polyesters, polyurethanes and vinyl, acrylic, etc. material.

2.2Aircraft surface paint material manufacture text

The aircraft surface paint are named primer, lacquer and enamel paints, which protect vulnerable surfaces from extreme temperatures and corrosive conditions. The fluid primer compose of synthetic resins pigmented with zinc chromate and extended pigments. Before primer coat, fluid primer temperature maintaining equipment, after primer paint material surface drier temperature measurement. Aircraft enamels are made of drying oils, natural and synthetic resins, pigments and appropriate solvents. The lacquer may contain resins, plasticizers, cellulose esters, zinc chromate, pigments, extenders and appropriate solvents.

2.3Aircraft oily lubricant utility chemicals

Rubber mixtures are use in fuel cell lining material, lubricants preservation, engine mounting, protective clothing, hoses, gaskets and seals. Natural and synthetic oils are used to cool, lubricate and reduce friction in engines, hydraulic systems and machine tools.

2.4Aircraft aviation fuel

Aviation gasoline and jet fuels are derived from petroleum based hydrocarbons. High energy liquid. The mixer component quantity are determined by a linear program methods, once the product variable and mixer ranges are well defined. Some chemicals are hazardous physical or chemical quality. Such chemicals are liquid oxygen, hydrazine peroxides and fluorine.

The chemicals methyl-ethyl ketone and Freon are some less toxic solvents used in air cooler gas cycling.

Chromium and nickel mixed steel alloys are used in tooling. Cobalt-tungsten carbide containing hard metal bits are used in cutting tool.

2.5Aircraft computing device PCB logic cards

The electronic parts are manufactured and fixer uses lead wire formally in electronic electrical component metal forming processes.

2.6Aircraft engine motor armature material

The different motors concerning armature manufacture phase tasks are based from cupper wire thinning or attenuation to specific uniform diameter, wire surface color coating, wire bundling. Attenuated cupper wire in armatures form fitted within transfoma, motor armature, etc. Wire cable manufacture machine operation are also separately before aircraft electrical wiring.

III. ALLOY METAL CASTING PREPROCESS AND PROPORTION DECIDING SAMPLE LINEAR PROGRAMMING MODEL

A simple Linear programming model example is discussed for determining total cost incurred in the production of a sample aluminum zinc alloy preprocess stage. A farm order to produce 100kg of alloys containing 0.45 percentage aluminum and between 0.325 percent to 0.550 percent zinc. The alloys can save $0.45 per kg revenue if to be used for making a frame. The foundry has three type of aluminum ore bauxite available in essential unlimited. The product mix proportions are

	Al A	Al B	Al C
Zinc	0.4	0.1	0.6
Aluminum	0.45	0.5	0.4

The production process has the provision that few pure aluminum can also be added directly to the melter furnace. The costs of the various possible inputs are

Al A	$21 * 10^3 for thousands kg
Al B	$25 * 10^3 for thousands kg
Al C	$15 * 10^3 for thousands kg
Pure Al	$0.8 for one kg
Zinc	$0.2 for one kg

If it costs $0.5 cents to melt down a kg of alloy (if this cost including electric heat energy and coal cost) out of what inputs should the foundry produce the alloys castings in order to maximize the revenue saving.
Solution: Let x_1 = thousands of kg of Al A, x_2 = thousands of kg of Al B ,x_3 = thousands of kg of Al C, x_4 = thousands of kg of pure aluminum andx_5 = thousands of kg of zinc
Total revenue saving is $0.45 \times 1000 = 450$.
To determine the total cost incurred in the alloy production, we should add melting cost of $0.005 per kg to the corresponding cost of each variety of aluminum ore bauxite used. The relevant unit cost of the aluminum in dollars per kg is listed bellow

Al A	$21+ $5 = $26
Al B	$25+ $5 =$30
Al C	$15+$5 =$20
Pure Al	$80.00
Zinc	$20,00

The total production and processing cost is 26 x_1 + 30 x_2 + 20x_3 + 80 x_4 +20 x_5 (1)
The objective or total revenue saved function is
Maximize 450- (26 x_1 + 30 x_2 + 20x_3 + 80 x_4 +20 x_5) (2)
The constraints for produce exactly 1000 kg of alloy is
1000(x_1 + x_2+ x_3) + x_4 + x_5=1000 (3)

- The casting should contain at least 0.45 percent Aluminum, so

4.5 x_1 + 5 x_2 + 4 x_3 + $x_4 \geq 0.45$ (4)
The term 4.5 x_1 means the kg of Al A, since each 1000 kg of bauxite or Al A contains 4.5 kg of aluminum. The terms containing variables, x_2, x_3 and x_4 account for the aluminum contributed from bauxite or Al B, Al C and pure aluminum. The restrictions regarding the zinc contents can be represent by the inequality
$40x_1 + 10x_2 + 6x_3 \geq 32.5$ (5)
And $40x_1 + 10x_2 + 6x_3 \leq 55.0$ (6)
Constraint (5) establishes that the minimum zinc content in the alloy casting is 0.325 and constraint (6) indicates te maximum zinc content is 0.5 percent in a unit percent alloy.

IV. CONCLUSION

The composed texts are not exact schedule of the aircraft components manufacturing machine operation. The authors attempt to introduce aircraft component production assemble literature and practical aircraft component manufacture industry applicable designed engineering science and technological development within Odisha higher education schemes for encouraging mathematical computation and its application in Transportation facilitator industries.

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