COMPOSITE PICKS

INTRODUCTION

(Show composite panel. Discuss cloth lay-ups and other composite technologies we do cloth, not tape or filament. Describe composite features.)

RETRIEVE PANEL_F PART

COMPOSITE / SEARCH-RETRIEVE / PANEL_F.PRT / VIEW / COSMETIC / SHADE / DISPLAY / DONE-RETURN /

RETRIEVE INTRO.LAY LAYOUT

QUIT WINDOW / LAYOUT / SEARCH-RETRIEVE / INTRO.LAY / SHEETS / NEXT / NEXT /

RETRIEVE REF_SURF.PRT PART

(People designing outer aircraft surface create (and own) this quilt. It is the general aircraft surface, and it is flattenable at least approximately.)

QUIT WINDOW / PART / SEARCH-RETRIEVE / REF_SURF.PRT / VIEW / COS-METIC / SHADE / DISPLAY / DONE-RETURN / QUIT WINDOW

RETRIEVE PANEL.PRT COMPOSITE

COMPOSITE / SEARCH RETRIEVE / PANEL.PRT / INFO/ REGEN INFO / BEGINING / CONTINUE / (First step is to reference a quilt.) / SKIP / [5] / CONTINUE / (Next step is to add surface geometry particular to composite panel - e.g. beads & flanges. This is a bead surface being created.) / CONTINUE / CONTINUE / CONTINUE / (Here the bead is being quilted into & the surface & filleted) / CONTINUE / CONTINUE / CONTINUE / CONTINUE / CONTINUE / CON-TINUE / CONTINUE / CONTINUE / CONTINUE / CONTINUE / (Stop when both lugs have been created, quilted & filleted) / (Here some lugs are being created and filleted) / VIEW / COSMETIC / SHADE / DISPLAY / DONE-RETURN / (At this point, we have cre-

COMPST

ated the "outer mold line", or "OML") / CONTINUE / CONTINUE / CONTINUE /

(The next step is to define the ply boundaries) / CONTINUE / QUIT / (Next we define coordinate systems for specifying ply orientation) / SETUP / MATERIAL / COMPOSITE / ADD / [cloth] / MOD PARAMS / DONE

(Next step is to create materials) / (Now we are ready to start creating plys. The first ply is "full body", meaning it covers the entire surface.)

FEATURE / CREATE / PLY / FULL BODY / DONE / OKAY / KEVLAR / (pick CSYS 1) / [0] / VIEW / PAN-ZOOM / RESET / DONE-RETURN /

(Here we have created the "inner mold line" or "IML" by offsetting the OML. The thickness is determined by the material file) / (Next, we create a partial ply, by selecting a boundary)

CREATE / PLY / DONE / (Select straight boundary) / REGENERATE / DONE / FLIP / OKAY / (create ply towards upper left) / KEVLAR / (pick CSYS 1) / [90] / VIEW / PAN-ZOOM / RESET / DONE-RETURN /

(Next, we create a ply which is offset from a boundary. This ability to offset existing boundaries minimizes the number of boundaries the user has to sketch.)

CREATE / PLY / OFFSET / DONE / (Select core boundary) / REGENERATE / DONE / OKAY / (create ply inside boundary) / ADHESIVE / [15] / (offset to the outside) / DONE SEL / VIEW / PAN-ZOOM / RESET / DONE-RETURN

(Next we create a pattern of offset plys, to create a drop off)

CREATE / PLY / OFFSET / DONE / (Select curved boundary) / REGENERATE / DONE / FLIP / OKAY / (create ply to right side of boundary) / KEVLAR / (pick CSYS 1) / [45] / [10] / (offset to the left) / DONE SEL / PATTERN / SEL BY MENU / LAST FEATURE / (select offset dim for first pattern direction) / [10] / (select angle dim to vary in first direction) / [45] / DONE / 3 / DONE / VIEW / PAN-ZOOM / RESET / DONE-RETURN / (Next we create a core feature) / CREATE / CORE / DONE / (Select core boundary) / REGENERATE / DONE

/ OKAY / (create core inside boundary) / CORE / (pick CSYS1) / [45] / [45] / DONE SEL /
VIEW / COSMETIC / SHADE / DISPLAY / DONE-RETURN / (Finally, we turn the model
into a full solid model) / CREATE / SOLIDIFY / DONE

SHOW DELIVERABLES

(Mass properties -taking into account all different materials) / INFO / MASS PROPS / PART MP /
<CR> / DEFAULT / DONE-RETURN / (Cross-sections & BOM) / X-SECTION / A / DONE-
RETURN / INFO / BOM / (Flat core geometry) / QUIT WINDOW / PART / SEARCH-
RETRIEVE / CORE.PRT / QUIT WINDOW

RETRIEVE PANEL.DRW DRAWING

(Drawings of the 3D panel, including dims for boundaries) / DRAWING / SEARCH-RETRIEVE /
PANEL.DRW / (Additional drawings showing all labeled boundaries) / SHEETS / NEXT / QUIT
WINDOW

FLAT PATTERN DRAWINGS

PART / SEARCH-RETRIEVE / PLY.PRT / (Ability to generate flat patterns for developible sur-
faces) / VIEW / NAMES / FRONT / DONE-RETURN / FEATURE / RESUME / ALL /
DONE / DONE / VIEW / NAMES / TOP / DONE-RETURN / (Ability to generate flat pattern
drawings) / QUIT WINDOW / DRAWING / SEARCH-RETRIEVE / FLAT.DRW / QUIT
WINDOW

SEQUENCE DRAWINGS

DRAWING / SEARCH-RETRIEVE / SEQUENCE.DRW / QUIT WINDOW

MAKE BIG CHANGE

MODE / PART / SEARCH-RETRUEVE / PANEL_F.PRT / (Change the reference surface) /
MODE / PART / SEARCH-RETRIEVE / REF_SURF.PRT / MODIFY / (Select base sur-
face) / (select small radius dim of conical surface) / [500] / REGENERATE /

SHOW EACH DELIVERABLE UPDATE

CHANGE WINDOW / REGENERATE / MODE / PART / SEARCH-RETRIEVE / CORE.PRT / REGENERATE / MODE / SHEET METAL / SEARCH-RETRIEVE / PLY.PRT / REGENERATE / MODE / DRAWING / SEARCH-RETRIEVE / FLAT.DRW / MODE / DRAWING / SEARCH-RETRIEVE / PANEL.DRW / CHANGE WINDOW / VIEW / COSMETIC / SHADE / DISPLAY / **EXIT**