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Enter case reference: tryout
Reading in parameter file: Parfiles/tryout.txt

Section identifier: naca4412_yt_v4
Number of panels: 400
Reynolds number: 20 million
Range of incidences (degrees): -10:1:10

Results for alpha = -10.000 degrees

  Lift coefficient: -0.361
  Drag coefficient: 0.00939
  Lift-to-drag ratio: -38.413

  Upper surface boundary layer:
    Natural transition at x = 0.420

  Lower surface boundary layer:
    Natural transition at x = 0.006
    Turbulent separation at x = 0.196


Results for alpha = -9.000 degrees

  Lift coefficient: -0.244
  Drag coefficient: 0.00826
  Lift-to-drag ratio: -29.487

  Upper surface boundary layer:
    Natural transition at x = 0.394

  Lower surface boundary layer:
    Natural transition at x = 0.006
    Turbulent separation at x = 0.201


Results for alpha = -8.000 degrees

  Lift coefficient: -0.126
  Drag coefficient: 0.00734
  Lift-to-drag ratio: -17.197

  Upper surface boundary layer:
    Natural transition at x = 0.373

  Lower surface boundary layer:
    Natural transition at x = 0.006
    Turbulent separation at x = 0.206


Results for alpha = -7.000 degrees

  Lift coefficient: -0.009
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  Drag coefficient: 0.00663
  Lift-to-drag ratio: -1.356

  Upper surface boundary layer:
    Natural transition at x = 0.353

  Lower surface boundary layer:
    Natural transition at x = 0.006
    Turbulent separation at x = 0.216


Results for alpha = -6.000 degrees

  Lift coefficient: 0.108
  Drag coefficient: 0.00609
  Lift-to-drag ratio: 17.785

  Upper surface boundary layer:
    Natural transition at x = 0.332

  Lower surface boundary layer:
    Natural transition at x = 0.006
    Turbulent separation at x = 0.226


Results for alpha = -5.000 degrees

  Lift coefficient: 0.226
  Drag coefficient: 0.00567
  Lift-to-drag ratio: 39.795

  Upper surface boundary layer:
    Natural transition at x = 0.312

  Lower surface boundary layer:
    Natural transition at x = 0.006
    Turbulent separation at x = 0.480


Results for alpha = -4.000 degrees

  Lift coefficient: 0.343
  Drag coefficient: 0.00639
  Lift-to-drag ratio: 53.636

  Upper surface boundary layer:
    Natural transition at x = 0.297

  Lower surface boundary layer:
    Laminar separation at x = 0.006
    Turbulent reattachment at x = 0.011
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Results for alpha = -3.000 degrees

  Lift coefficient: 0.460
  Drag coefficient: 0.00641
  Lift-to-drag ratio: 71.753

  Upper surface boundary layer:
    Natural transition at x = 0.276

  Lower surface boundary layer:
    Laminar separation at x = 0.006
    Turbulent reattachment at x = 0.011


Results for alpha = -2.000 degrees

  Lift coefficient: 0.577
  Drag coefficient: 0.00645
  Lift-to-drag ratio: 89.455

  Upper surface boundary layer:
    Natural transition at x = 0.256

  Lower surface boundary layer:
    Laminar separation at x = 0.011
    Turbulent reattachment at x = 0.016


Results for alpha = -1.000 degrees

  Lift coefficient: 0.693
  Drag coefficient: 0.00663
  Lift-to-drag ratio: 104.590

  Upper surface boundary layer:
    Natural transition at x = 0.225

  Lower surface boundary layer:
    Laminar separation at x = 0.011
    Turbulent reattachment at x = 0.016


Results for alpha = 0.000 degrees

  Lift coefficient: 0.810
  Drag coefficient: 0.00663
  Lift-to-drag ratio: 122.185

  Upper surface boundary layer:
    Natural transition at x = 0.195

  Lower surface boundary layer:
    Natural transition at x = 0.092
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Results for alpha = 1.000 degrees

  Lift coefficient: 0.926
  Drag coefficient: 0.00695
  Lift-to-drag ratio: 133.319

  Upper surface boundary layer:
    Natural transition at x = 0.169

  Lower surface boundary layer:
    Natural transition at x = 0.092


Results for alpha = 2.000 degrees

  Lift coefficient: 1.042
  Drag coefficient: 0.00727
  Lift-to-drag ratio: 143.463

  Upper surface boundary layer:
    Natural transition at x = 0.149

  Lower surface boundary layer:
    Natural transition at x = 0.097


Results for alpha = 3.000 degrees

  Lift coefficient: 1.158
  Drag coefficient: 0.00773
  Lift-to-drag ratio: 149.725

  Upper surface boundary layer:
    Natural transition at x = 0.119

  Lower surface boundary layer:
    Natural transition at x = 0.102


Results for alpha = 4.000 degrees

  Lift coefficient: 1.273
  Drag coefficient: 0.00840
  Lift-to-drag ratio: 151.614

  Upper surface boundary layer:
    Natural transition at x = 0.080

  Lower surface boundary layer:
    Natural transition at x = 0.107
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Results for alpha = 5.000 degrees

  Lift coefficient: 1.388
  Drag coefficient: 0.00923
  Lift-to-drag ratio: 150.371

  Upper surface boundary layer:
    Natural transition at x = 0.038

  Lower surface boundary layer:
    Natural transition at x = 0.152


Results for alpha = 6.000 degrees

  Lift coefficient: 1.503
  Drag coefficient: 0.00977
  Lift-to-drag ratio: 153.851

  Upper surface boundary layer:
    Natural transition at x = 0.034

  Lower surface boundary layer:
    Natural transition at x = 0.157


Results for alpha = 7.000 degrees

  Lift coefficient: 1.617
  Drag coefficient: 0.01044
  Lift-to-drag ratio: 154.829

  Upper surface boundary layer:
    Natural transition at x = 0.025

  Lower surface boundary layer:
    Natural transition at x = 0.162


Results for alpha = 8.000 degrees

  Lift coefficient: 1.731
  Drag coefficient: 0.01153
  Lift-to-drag ratio: 150.060

  Upper surface boundary layer:
    Natural transition at x = 0.016
    Turbulent separation at x = 1.000

  Lower surface boundary layer:
    Natural transition at x = 0.162
```

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Results for alpha = 9.000 degrees

  Lift coefficient: 1.844
  Drag coefficient: 0.01301
  Lift-to-drag ratio: 141.672

  Upper surface boundary layer:
    Natural transition at x = 0.009
    Turbulent separation at x = 0.995

  Lower surface boundary layer:
    Natural transition at x = 0.167


Results for alpha = 10.000 degrees

  Lift coefficient: 1.956
  Drag coefficient: 0.01465
  Lift-to-drag ratio: 133.542

  Upper surface boundary layer:
    Natural transition at x = 0.006
    Turbulent separation at x = 0.990

  Lower surface boundary layer:
    Natural transition at x = 0.172

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