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

Section identifier: naca4412_yt_v3
Number of panels: 400
Reynolds number: 20 million
Range of incidences (degrees): -10:1:10

Results for alpha = -10.000 degrees

  Lift coefficient: -0.428
  Drag coefficient: 0.00734
  Lift-to-drag ratio: -58.310

  Upper surface boundary layer:
    Natural transition at x = 0.421

  Lower surface boundary layer:
    Natural transition at x = 0.008
    Turbulent separation at x = 0.654


Results for alpha = -9.000 degrees

  Lift coefficient: -0.310
  Drag coefficient: 0.00726
  Lift-to-drag ratio: -42.706

  Upper surface boundary layer:
    Natural transition at x = 0.396

  Lower surface boundary layer:
    Natural transition at x = 0.008


Results for alpha = -8.000 degrees

  Lift coefficient: -0.192
  Drag coefficient: 0.00697
  Lift-to-drag ratio: -27.527

  Upper surface boundary layer:
    Natural transition at x = 0.375

  Lower surface boundary layer:
    Natural transition at x = 0.008


Results for alpha = -7.000 degrees

  Lift coefficient: -0.074
  Drag coefficient: 0.00676
  Lift-to-drag ratio: -10.900
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  Upper surface boundary layer:
    Natural transition at x = 0.355

  Lower surface boundary layer:
    Natural transition at x = 0.008


Results for alpha = -6.000 degrees

  Lift coefficient: 0.044
  Drag coefficient: 0.00662
  Lift-to-drag ratio: 6.711

  Upper surface boundary layer:
    Natural transition at x = 0.334

  Lower surface boundary layer:
    Natural transition at x = 0.008


Results for alpha = -5.000 degrees

  Lift coefficient: 0.163
  Drag coefficient: 0.00653
  Lift-to-drag ratio: 24.903

  Upper surface boundary layer:
    Natural transition at x = 0.314

  Lower surface boundary layer:
    Natural transition at x = 0.008


Results for alpha = -4.000 degrees

  Lift coefficient: 0.281
  Drag coefficient: 0.00646
  Lift-to-drag ratio: 43.437

  Upper surface boundary layer:
    Natural transition at x = 0.299

  Lower surface boundary layer:
    Natural transition at x = 0.008


Results for alpha = -3.000 degrees

  Lift coefficient: 0.399
  Drag coefficient: 0.00646
  Lift-to-drag ratio: 61.664
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  Upper surface boundary layer:
    Natural transition at x = 0.278

  Lower surface boundary layer:
    Laminar separation at x = 0.008
    Turbulent reattachment at x = 0.013


Results for alpha = -2.000 degrees

  Lift coefficient: 0.517
  Drag coefficient: 0.00646
  Lift-to-drag ratio: 79.917

  Upper surface boundary layer:
    Natural transition at x = 0.258

  Lower surface boundary layer:
    Natural transition at x = 0.018


Results for alpha = -1.000 degrees

  Lift coefficient: 0.634
  Drag coefficient: 0.00664
  Lift-to-drag ratio: 95.493

  Upper surface boundary layer:
    Natural transition at x = 0.227

  Lower surface boundary layer:
    Natural transition at x = 0.018


Results for alpha = 0.000 degrees

  Lift coefficient: 0.752
  Drag coefficient: 0.00687
  Lift-to-drag ratio: 109.497

  Upper surface boundary layer:
    Natural transition at x = 0.197

  Lower surface boundary layer:
    Natural transition at x = 0.023


Results for alpha = 1.000 degrees

  Lift coefficient: 0.869
  Drag coefficient: 0.00706
  Lift-to-drag ratio: 123.056
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  Upper surface boundary layer:
    Natural transition at x = 0.172

  Lower surface boundary layer:
    Natural transition at x = 0.058


Results for alpha = 2.000 degrees

  Lift coefficient: 0.986
  Drag coefficient: 0.00730
  Lift-to-drag ratio: 135.167

  Upper surface boundary layer:
    Natural transition at x = 0.147

  Lower surface boundary layer:
    Natural transition at x = 0.115


Results for alpha = 3.000 degrees

  Lift coefficient: 1.103
  Drag coefficient: 0.00769
  Lift-to-drag ratio: 143.467

  Upper surface boundary layer:
    Natural transition at x = 0.122

  Lower surface boundary layer:
    Natural transition at x = 0.135


Results for alpha = 4.000 degrees

  Lift coefficient: 1.219
  Drag coefficient: 0.00832
  Lift-to-drag ratio: 146.506

  Upper surface boundary layer:
    Natural transition at x = 0.083

  Lower surface boundary layer:
    Natural transition at x = 0.150


Results for alpha = 5.000 degrees

  Lift coefficient: 1.335
  Drag coefficient: 0.00880
  Lift-to-drag ratio: 151.727

  Upper surface boundary layer:
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    Natural transition at x = 0.059

  Lower surface boundary layer:
    Natural transition at x = 0.277


Results for alpha = 6.000 degrees

  Lift coefficient: 1.451
  Drag coefficient: 0.00954
  Lift-to-drag ratio: 152.142

  Upper surface boundary layer:
    Natural transition at x = 0.036

  Lower surface boundary layer:
    Natural transition at x = 0.293


Results for alpha = 7.000 degrees

  Lift coefficient: 1.566
  Drag coefficient: 0.01039
  Lift-to-drag ratio: 150.700

  Upper surface boundary layer:
    Natural transition at x = 0.019
    Turbulent separation at x = 1.000

  Lower surface boundary layer:
    Natural transition at x = 0.389


Results for alpha = 8.000 degrees

  Lift coefficient: 1.681
  Drag coefficient: 0.01164
  Lift-to-drag ratio: 144.337

  Upper surface boundary layer:
    Natural transition at x = 0.011
    Turbulent separation at x = 1.000

  Lower surface boundary layer:
    Natural transition at x = 0.394


Results for alpha = 9.000 degrees

  Lift coefficient: 1.795
  Drag coefficient: 0.01302
  Lift-to-drag ratio: 137.887
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```
  Upper surface boundary layer:
    Natural transition at x = 0.007
    Turbulent separation at x = 0.995

  Lower surface boundary layer:
    Natural transition at x = 0.399


Results for alpha = 10.000 degrees

  Lift coefficient: 1.909
  Drag coefficient: 0.01437
  Lift-to-drag ratio: 132.775

  Upper surface boundary layer:
    Natural transition at x = 0.007
    Turbulent separation at x = 0.990

  Lower surface boundary layer:
    Natural transition at x = 0.404

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```