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Predicting Success on a Special Forces Selection Course: Validating Standards



Australian Government
Department of Defence
Defence Science and
Technology Organisation



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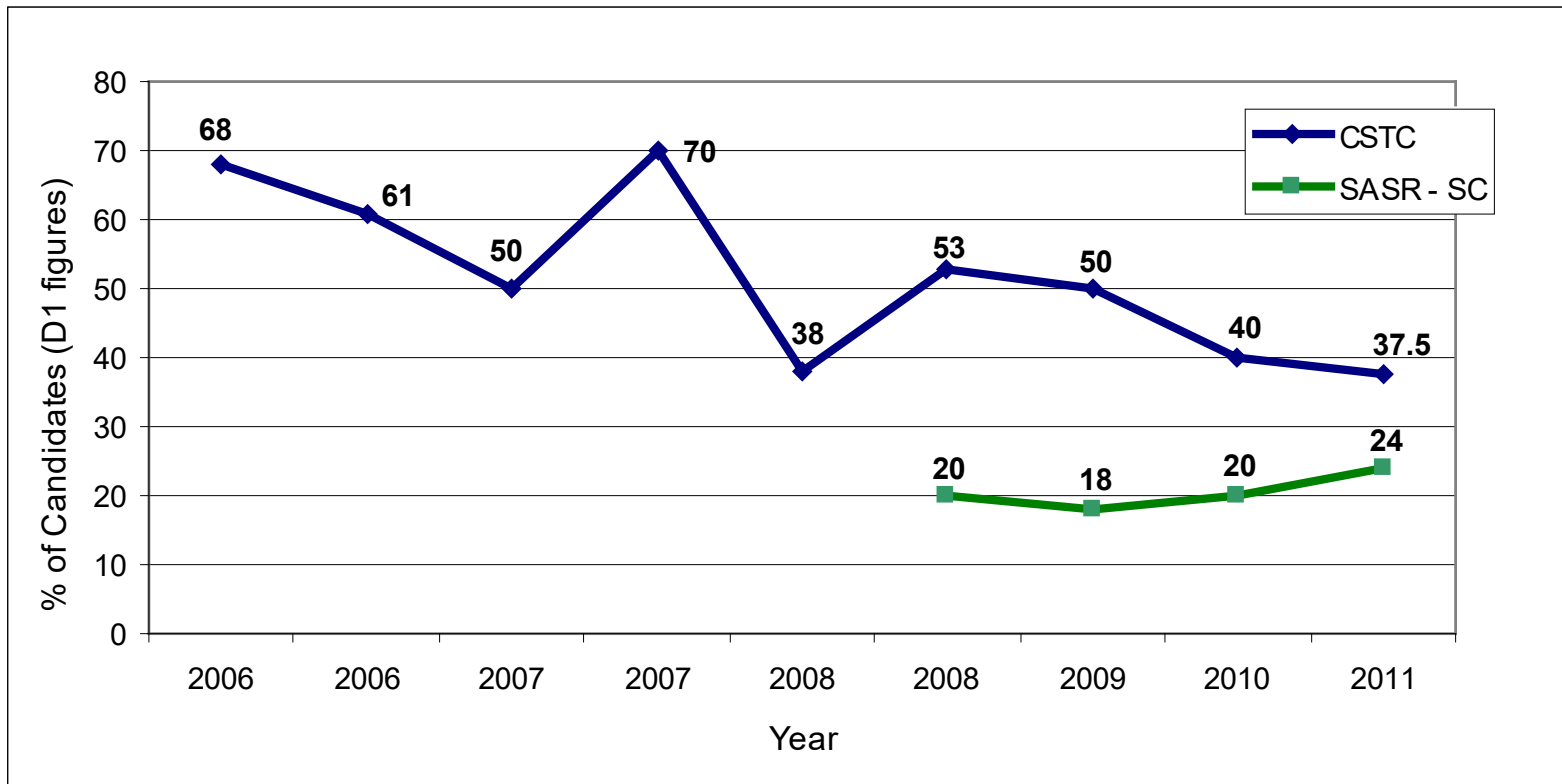


Predicting Success on a Special Forces Selection Course: Validating Standards



Australian Government
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Defence Science and
Technology Organisation

- Introduction & Background:



AIM: To validate proposed SFET standards as a means of predicting SF selection course survivability



Predicting Success on a Special Forces Selection Course: Validating Standards

- **Methods:**

Candidates volunteering to undergo SFET as part of their application for entry onto the SAS-SC

SFET: 5 sessions x 4 Locations

Analysis 1: Is there a difference in fitness levels between CSTC and SAS-SC candidates?

Analysis 2: Is there a difference in fitness levels between successful CSTC and SAS-SC candidates?

Analysis 3: Can SFET standards effectively identify candidates at risk of failing the SAS-SC?



Assessment

Sit and Reach

Vertical Jump

Push Ups

7-Stage Sit Up

Heaves

Agility

Beep Test

Yoyo

5km Pack March

Swim Test



Predicting Success on a Special Forces Selection Course: Validating Standards

- **Methods:**

Analysis 3: Can SFET standards effectively identify candidates at risk of failing the SAS-SC?



Push Ups (≥66 repetitions)

7-Stage Sit Up (≥ Stage 5)

5-km Pack March (≤45 min 30 s)

| AGE | WGT | HGT | V. Jump | Flex | P Ups | S up | HVS | BEEP | AGIL | YO-YO | 5 KM | SWIM |
|-----|-----|-----|---------|------|-------|------|-----|-------|------|-------|-------|------|
| 23 | 70 | 177 | 56 | 18 | 72 | 4 | 14 | 11.13 | 8.62 | 18.02 | 39.07 | 8.10 |
| 25 | 73 | 173 | 66 | 24 | 86 | 6 | 14 | 12.70 | 9.20 | 19.02 | 45.26 | 9.15 |
| 31 | 86 | 175 | 66 | 24 | 70 | 5 | 20 | 13.50 | 8.51 | 19.03 | 41.28 | 7.30 |
| 36 | 73 | 175 | 50 | 19 | 93 | 5 | 8 | 12.12 | 8.99 | 19.10 | 45.33 | 8.04 |
| 28 | 77 | 172 | 60 | 13 | 61 | 4 | 13 | 12.20 | 8.58 | 18.02 | 48.07 | 8.38 |
| 27 | 93 | 190 | 66 | 10 | 60 | 4 | 6 | 12.70 | 8.23 | 19.02 | 44.35 | 9.31 |
| 31 | 97 | 188 | 56 | 22 | 103 | 5 | 14 | 12.20 | 9.00 | 19.03 | 45.39 | 7.47 |



Predicting Success on a Special Forces Selection Course: Validating Standards

- Results:

Analysis 1: Is there a difference in fitness levels between CSTC and SAS-SC candidates?



| | SAS-SC 01/11 | CSTS 01/11 |
|-----------------------------|--------------|----------------|
| Group Size (n) | 97 | 104 |
| Age (y) | 27.6 | 26.0 |
| Height (cm) # | 182.5 | 178.6 |
| Weight (kg)* | 85.40 | 81.54 |
| Vertical Jump (cm) # | 58.66 | 55.67 |
| Sit and Reach (cm) # | 15.26 | 30.66 ? |
| Push Ups (count) | 68.48 | 65.01 |
| 7-Stage Sit Up (stage) | 4.24 | 4.35 |
| Heaves (count) | 11.50 | 12.03 |
| Agility (s)# | 8.89 | 8.03 |
| Beep Test (Level.shuttle) | 12.1 | 12.3 |
| VO2max (mL.kg-1.min-1) | 54.39 | 54.52 |
| Yoyo (laps)# | 19.29 | 18.72 |
| Pack March (min:s) | 45:02 | 45:41 |
| Swim Test (min:s) | 8:18 | 8:46 |

Significant at p<0.01

* Significant at p <0.05



Predicting Success on a Special Forces Selection Course: Validating Standards



- Results:

Analysis 2: Is there a difference in fitness levels between successful CSTC and SAS-SC candidates?

| | SAS-SC 01/11 | CSTS 01/11 |
|-----------------------------|--------------|--------------|
| Group Size (n) | 23 | 39 |
| Age (y) # | 26.5 | 23.9 |
| Height (cm) * | 185.2 | 180.4 |
| Weight (kg) # | 88.1 | 81.4 |
| Vertical Jump (cm) | 57.2 | 55.7 |
| Sit and Reach (cm) # | 14.3 | 31.2 |
| Push Ups (count) | 70.7 | 69.2 |
| 7-Stage Sit up (stage) | 4.0 | 4.6 |
| Heaves (count) * | 10.8 | 12.2 |
| Agility (s) # | 9.05 | 8.08 |
| Beep Test (Level.shuttle) | 12.2 | 12.5 |
| VO2max (mL.kg-1.min-1) | 54.2 | 55.1 |
| Yo- Yo (laps) # | 19.5 | 18.7 |
| Pack March (min:s) | 44:15 | 45:15 |
| Swim (min:s) | 7:52 | 8:36 |



Significant at $p < 0.01$

* Significant at $p < 0.05$



Predicting Success on a Special Forces Selection Course: Validating Standards

- Results / Discussion:

Analysis 3: Can SFET standards effectively identify candidates at risk of failing the SAS-SC?

| | PASSED | | FAILED | |
|------------|----------------|------------|----------------|------------|
| | NUMBER OF PERS | % OF GROUP | NUMBER OF PERS | % OF GROUP |
| PASSED ALL | 1 | 8% | 12 | 92% |
| FAILED 1 | 10 | 30% | 23 | 70% |
| FAILED 2 | 9 | 27% | 24 | 73% |
| FAILED 3 | 1 | 8% | 12 | 92% |

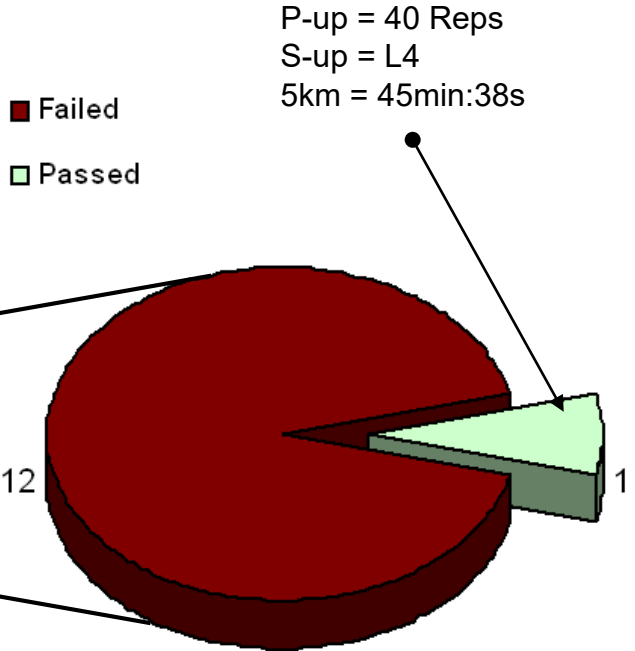
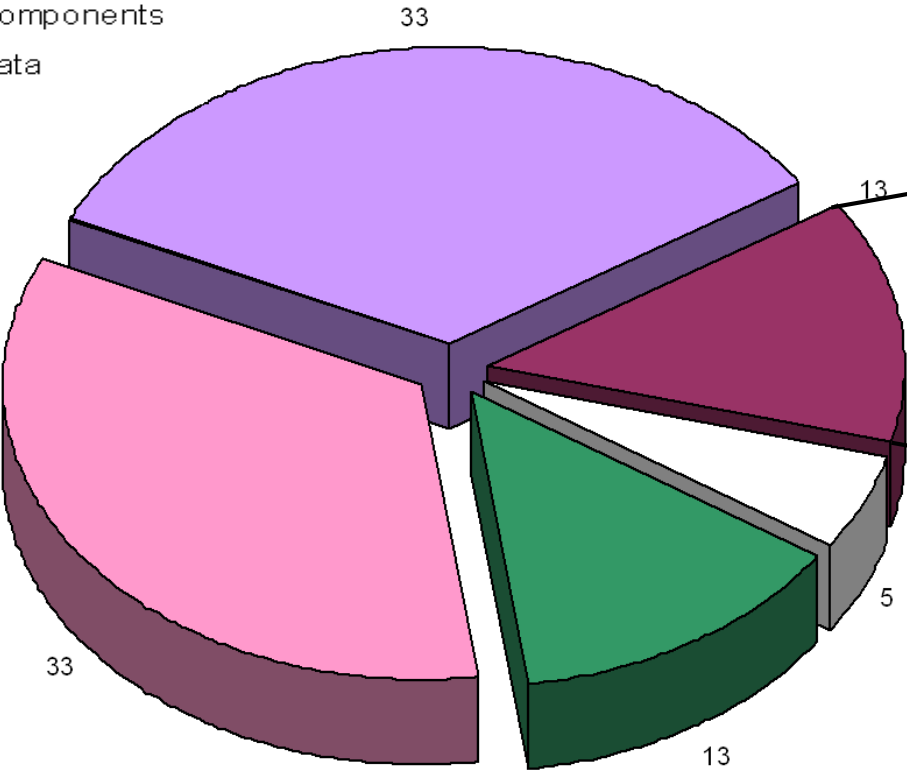


Predicting Success on a Special Forces Selection Course: Validating Standards

- Results / Discussion:

Analysis 3: Can SFET standards effectively identify candidates at risk of failing the SAS-SC?

- Passed All Components
- Failed 1 Component
- Failed 2 Components
- Failed 3 Components
- Missing Data





Predicting Success on a Special Forces Selection Course: Validating Standards

- Discussion:

Proposed SFET Standards Adjusted

- Push Ups : 66 reps → No Change
- 7 Stage Sit ups: Level 5 → No Change
- 5 km Pack March: 45min:30s → 45min:45s

Post Hoc Analysis of SFET results for both courses

| Actual Course Cohort | | | | Predicted Course Cohort Following Implementation Of SFET Standards | | | | |
|----------------------|-------------|-------------|-------------|--|-------------|-------------|----------------|-------------------------|
| | Cohort Size | PASS | FAIL | Cohort Size Post Screening | PASS | FAIL | False Negative | Increase in Pass Ratios |
| SAS SC | 92 | 21 (23%) | 71 (77%) | 80 | 21 (26%) | 58 (73%) | 0 | 13% |
| CSTC | 104 | 39 (38%) | 65 (63%) | 85 | 39 (46%) | 46 (54%) | 0 | 21% |



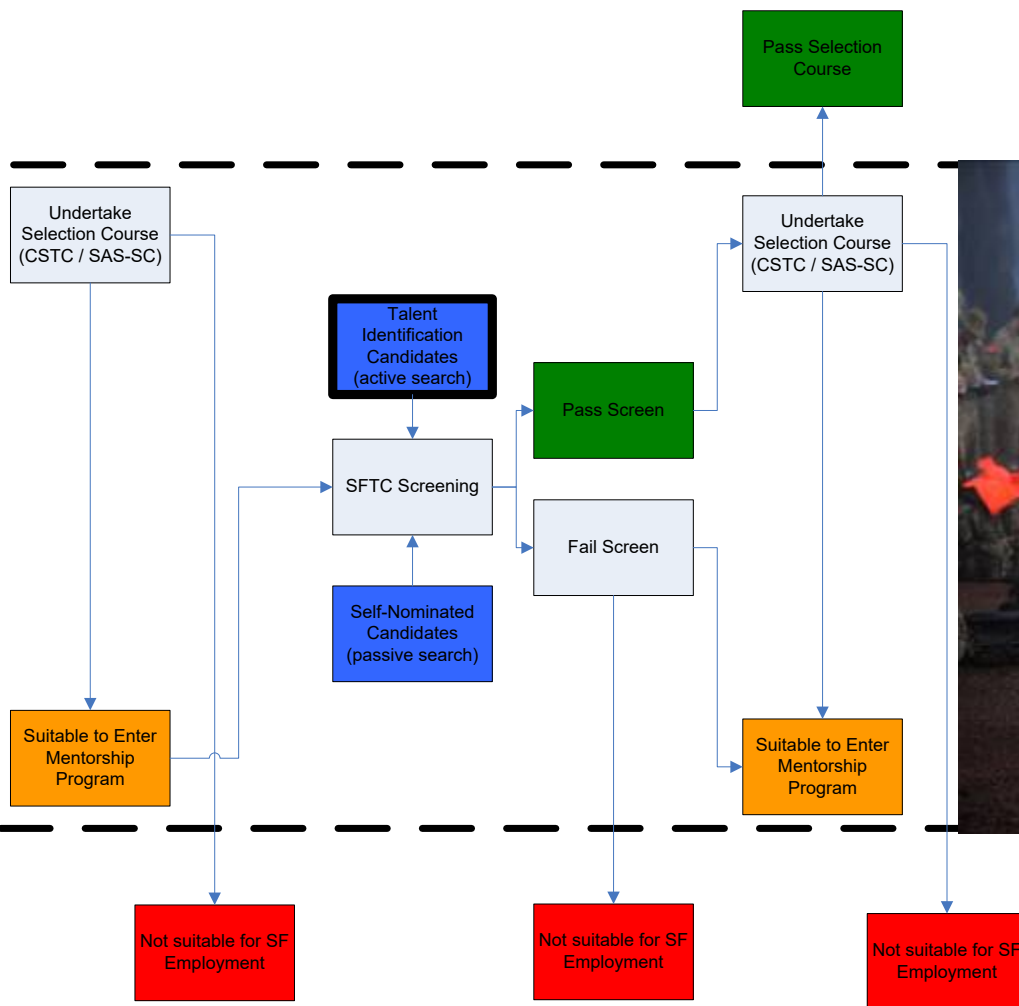
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- Discussion:

Suitable for SF Employment

Selection & Development

Not Suitable for SF Employment





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