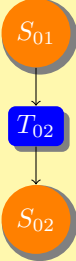


#### RULE-01

IF ( $S_{00}$ ) Engine overheats

AND ( $T_{01}$ ) Engine itself is not the cause

THEN ( $S_{01}$ ) Cooling system is responsible for overheat

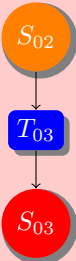


#### RULE-02

IF ( $S_{01}$ ) Cooling system is responsible for overheat

AND ( $T_{02}$ ) Pressure gauge reading of FW is low

THEN ( $S_{02}$ ) Loss of coolant occurs in FW loop

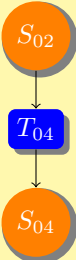


#### RULE-03

IF ( $S_{02}$ ) Loss of coolant occurs in FW loop

AND ( $T_{03}$ ) FW coolant pump is not operating

THEN ( $S_{03}$ ) Stopped FW coolant pump is responsible for overheat

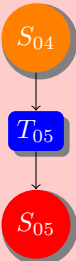


#### RULE-04

IF ( $S_{02}$ ) Loss of coolant occurs in FW loop

AND ( $T_{04}$ ) FW coolant pump is operating

THEN ( $S_{04}$ ) Loss of coolant occurs in FW loop with pump operating

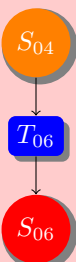


#### RULE-05

IF ( $S_{04}$ ) Loss of coolant occurs in FW loop with pump operating

AND ( $T_{05}$ ) Pressure gauge reading at suction valve of FW coolant pump is low

THEN ( $S_{05}$ ) Closed suction valve of FW coolant pump is responsible for overheat

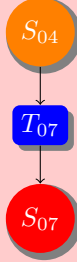


#### RULE-06

IF ( $S_{04}$ ) Loss of coolant occurs in FW loop with pump operating

AND ( $T_{06}$ ) Pressure gauge reading at delivery valve of FW coolant pump is high

THEN ( $S_{06}$ ) Closed delivery valve of FW coolant pump is responsible for overheat



#### RULE-07

IF ( $S_{04}$ ) Loss of coolant occurs in FW loop with pump operating

AND ( $T_{07}$ ) Ammeter reading at motor of FW coolant pump is abnormal

THEN ( $S_{07}$ ) Power decrease in motor of FW coolant pump is responsible for overheat

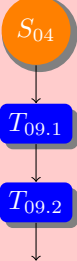


#### RULE-08

IF ( $S_{04}$ ) Loss of coolant occurs in FW loop with pump operating

AND ( $T_{08}$ ) Level gauge reading of expansion tank is low

THEN ( $S_{08}$ ) There is a low water level in the expansion tank and bubbles in FW loop are responsible for overheat



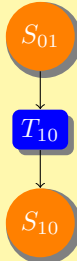
#### RULE-09

IF ( $S_{04}$ ) Loss of coolant occurs in FW loop with pump operating

AND ( $T_{09.1}$ ) Pressure gauge reading at delivery valve of FW coolant is low

AND ( $T_{09.2}$ ) Pressure gauge reading at suction valve of FW coolant pump is normal

THEN ( $S_{09}$ ) Impeller damage in FW coolant pump is responsible for overheat

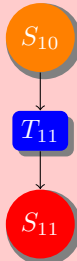


#### RULE-10

IF ( $S_{01}$ ) Cooling system is responsible for overheat

AND ( $T_{10}$ ) Pressure gauge reading of FW is normal

THEN ( $S_{10}$ ) Enough coolant circulates in FW loop

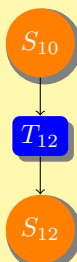


#### RULE-11

IF ( $S_{10}$ ) Enough coolant circulates in FW loop

AND ( $T_{11}$ ) Warm-up steam valve is open

THEN ( $S_{11}$ ) Failure to close warm-up valve after startup of engine is responsible for overheat



#### RULE-12

IF ( $S_{10}$ ) Enough coolant circulates in FW loop

AND ( $T_{12}$ ) Temperature reading of FW at exit of heat exchanger is high

THEN ( $S_{12}$ ) Heat exchanger is ineffective

$S_{12}$

$T_{13}$

$S_{13}$

#### RULE-13

IF ( $S_{12}$ ) Heat exchanger is ineffective  
AND ( $T_{13}$ ) Temperature reading of SW  
at exit of heat exchanger is low  
THEN ( $S_{13}$ ) Fouled heat exchanger and  
hence poor heat transfer is responsible for  
overheat

$S_{17}$

$T_{18}$

$S_{18}$

#### RULE-18

IF ( $S_{17}$ ) Loss of coolant occurs in SW  
loop with pump operating  
AND ( $T_{18}$ ) Pressure gauge reading of SW  
is high  
THEN ( $S_{18}$ ) SW discharge valve is closed

$S_{12}$

$T_{14}$

$S_{14}$

#### RULE-14

IF ( $S_{12}$ ) Heat exchanger is ineffective  
AND ( $T_{14}$ ) Temperature reading of SW  
at exit of heat exchanger is high  
THEN ( $S_{14}$ ) Loss of coolant occurs in  
SW loop

$S_{17}$

$T_{19}$

$S_{19}$

#### RULE-19

IF ( $S_{17}$ ) Loss of coolant occurs in SW  
loop with pump operating  
AND ( $T_{19}$ ) Pressure gauge reading at  
suction valve of SW coolant pump is low  
THEN ( $S_{19}$ ) Blocked strainer or closed  
suction valve of SW coolant pump is re-  
sponsible for overheat

$S_{14}$

$T_{15}$

$S_{15}$

#### RULE-15

IF ( $S_{14}$ ) Loss of coolant occurs in SW  
loop  
AND ( $T_{15}$ ) SW control valve is closed  
THEN ( $S_{15}$ ) Closed SW control valve is  
responsible for overheat

$S_{17}$

$T_{20}$

$S_{20}$

#### RULE-20

IF ( $S_{17}$ ) Loss of coolant occurs in SW  
loop with pump operating  
AND ( $T_{20}$ ) Pressure gauge reading at de-  
livery valve of SW coolant pump is high  
THEN ( $S_{20}$ ) Closed delivery valve of SW  
coolant pump is responsible for overheat

$S_{14}$

$T_{16}$

$S_{16}$

#### RULE-16

IF ( $S_{14}$ ) Loss of coolant occurs in SW  
loop  
AND ( $T_{16}$ ) SW coolant pump is not oper-  
ating  
THEN ( $S_{16}$ ) Stoppage in SW coolant  
pump is responsible for overheat

$S_{17}$

$T_{21}$

$S_{21}$

#### RULE-21

IF ( $S_{17}$ ) Loss of Coolant occurs in SW  
loop with pump operating  
AND ( $T_{21}$ ) Ampere meter reading of mo-  
tor of SW coolant pump is abnormal  
THEN ( $S_{21}$ ) Power decrease of motor of  
SW coolant pump is responsible for over-  
heat

$S_{14}$

$T_{17}$

$S_{17}$

#### RULE-17

IF ( $S_{14}$ ) Loss of coolant occurs in SW  
loop  
AND ( $T_{17}$ ) SW coolant pump is operat-  
ing  
THEN ( $S_{17}$ ) Loss of coolant occurs in  
SW loop with pump operating

$S_{17}$

$T_{22.1}$

$T_{22.2}$

$S_{22}$

#### RULE-22

IF ( $S_{17}$ ) Loss of coolant occurs in SW  
loop with pump operating  
AND ( $T_{22.1}$ ) Pressure gauge reading at  
delivery valve of SW coolant pump is low  
AND ( $T_{22.2}$ ) Pressure gauge reading at  
suction valve of SW coolant pump is nor-  
mal  
THEN ( $S_{22}$ ) Impeller damage in SW  
coolant pump is responsible for overheat